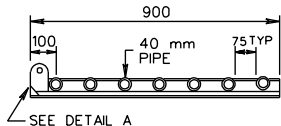


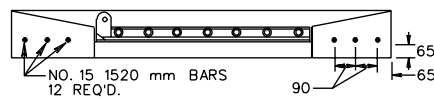
PLAN VIEW



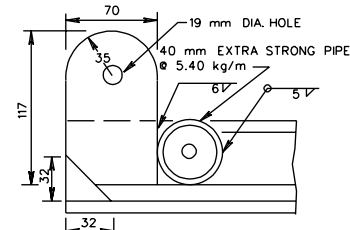
SECTION A-A



SECTION B-B



COVER DETAIL



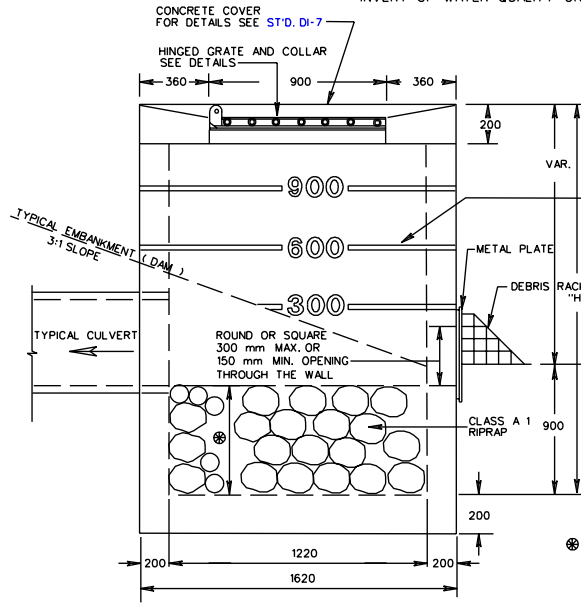
DETAIL A (IN-SIDE)

- NOTES:
1. GRATE AND COLLAR ARE TO BE GALVANIZED AFTER FABRICATION. COST OF THIS GRATE AND COLLAR ARE TO BE INCLUDED IN THE PRICE BID FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE.
 2. STRUCTURE MAY BE PRECAST OR CAST IN PLACE. FOR PRECAST DETAILS SEE SHEET 2 OF 4
 3. WEEP HOLES SHALL NOT BE PROVIDED.
 4. STEPS ARE TO BE PROVIDED WHEN HEIGHT OF STRUCTURE IS 1200 mm OR GREATER ABOVE INVERT OF OUTLET PIPE.
 5. FOR STEP DETAILS SEE ST'D. ST-1
 6. FOR DETAILS ON METAL PLATE AND DEBRIS RACK SEE ST'D.
 7. MARK HEIGHT OF STRUCTURE, IN BLACK, WITH 100mm HIGH NUMERALS AND 25mm WIDE HORIZONTAL STRIPES AT 300mm INTERVALS FROM INTERVALS FROM INVERT OF WATER QUALITY ORIFICE (ALL VISIBLE SIDES).

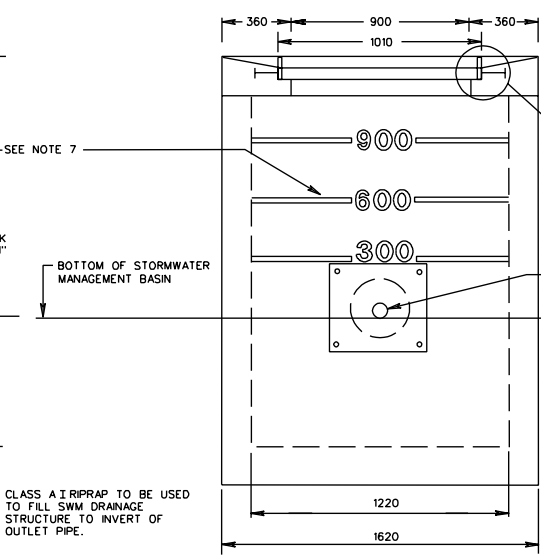
CAST IN PLACE CLASS 20 CONCRETE TO BE USED. MAXIMUM DEPTH (H) TO BE 4.0 m

PIPE SIZE	300	375	450	600	750	900	1050
MINIMUM DEPTH H	1500	1606	1689	1854	2019	2184	2350
CU. METERS CONC.	2.3	2.41	2.49	2.64	2.78	2.91	3.04

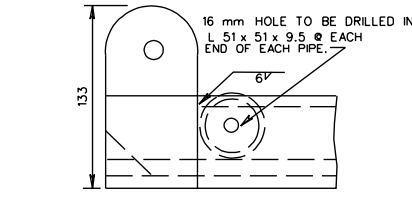
INCREMENT PER METER OF ADDITIONAL DEPTH "H" = 1.14 m³



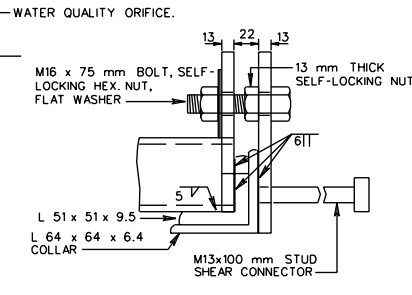
SIDE VIEW SWM DRAINAGE STRUCTURE



FRONT VIEW (DEBRIS RACK NOT SHOWN)



DETAIL A (OUT-SIDE)



DETAIL B

SPECIFICATION REFERENCE	
302	

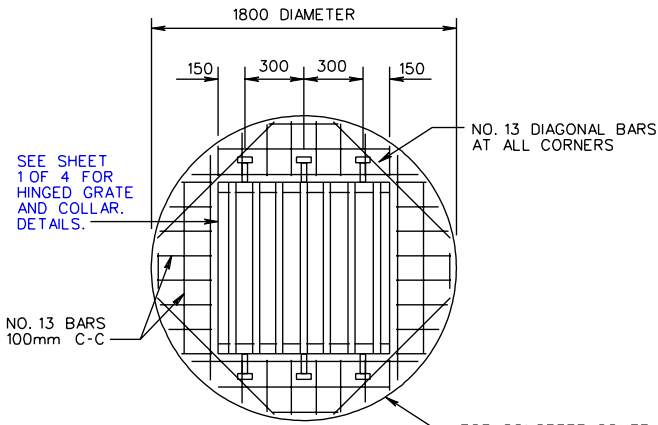
STORMWATER MANAGEMENT DRAINAGE STRUCTURE CAST-IN-PLACE

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED ON 11/02

REVISED ON 3/03

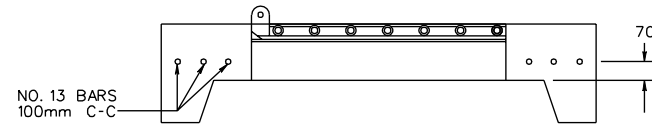
SWM-1



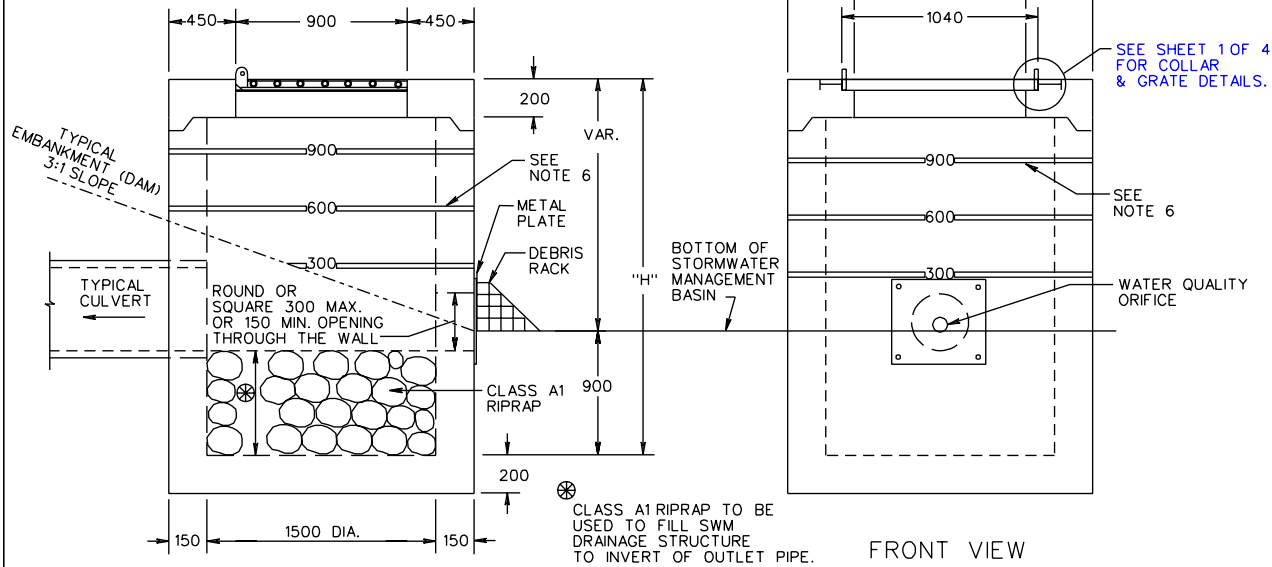
PLAN VIEW

NOTES:

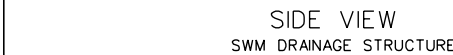
1. GRATE AND COLLAR ARE TO BE GALVANIZED AFTER FABRICATION. COST OF THIS GRATE AND COLLAR ARE TO BE INCLUDED IN THE PRICE BID FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE.
2. STRUCTURE MAY BE PRECAST OR CAST IN PLACE. FOR DETAILS FOR CAST-IN PLACE SEE SHEET 1 OF 4.
3. WEEP HOLES SHALL NOT BE PROVIDED. ANY LIFT HOLES SHALL BE PLUGGED.
4. STEPS ARE TO BE PROVIDED WHEN HEIGHT OF STRUCTURE IS 1200mm OR GREATER ABOVE INVERT OF OUTLET PIPE. FOR STEP DETAILS SEE STANDARD ST-1.
5. FOR DETAILS ON METAL PLATE AND DEBRIS RACK SEE STANDARD SWM-DR.
6. MARK HEIGHT OF STRUCTURE, IN BLACK, WITH 100mm HIGH NUMERALS AND 25mm WIDE HORIZONTAL STRIPES AT 300mm INTERVALS FROM INVERT OF WATER QUALITY ORIFICE (ALL VISIBLE SIDES).



PRECAST COVER DETAIL



FRONT VIEW
(DEBRIS RACK NOT SHOWN)



SIDE VIEW
SWM DRAINAGE STRUCTURE

SHEET 2 OF 4

STORMWATER MANAGEMENT DRAINAGE STRUCTURE
PRECAST

SPECIFICATION
REFERENCE

302

REVISED 12/99

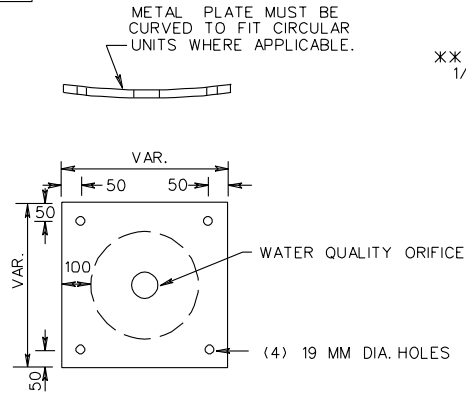
116.02 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

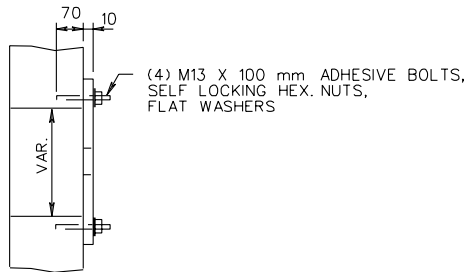
REVISED ON 11/02

REVISED ON 3/03

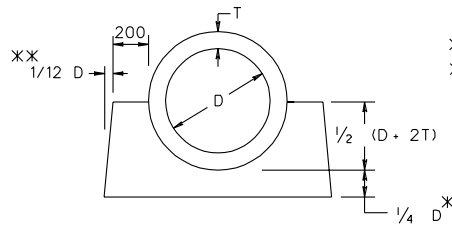
SWM-DR



RISER METAL PLATE DETAIL
(NOT GALVANIZED)



(4) M13 X 100 mm ADHESIVE BOLTS,
SELF LOCKING HEX. NUTS,
FLAT WASHERS



CONCRETE CRADLE

* BUT NOT LESS THAN 150 mm.

** IF THE PIPE IS LAID IN AN EXCAVATED TRENCH, THEN THE SIDE WALLS MAY CONFORM TO THE TRENCH SHAPE (IE THE TRENCH MAY BECOME THE CRADLE FORM).

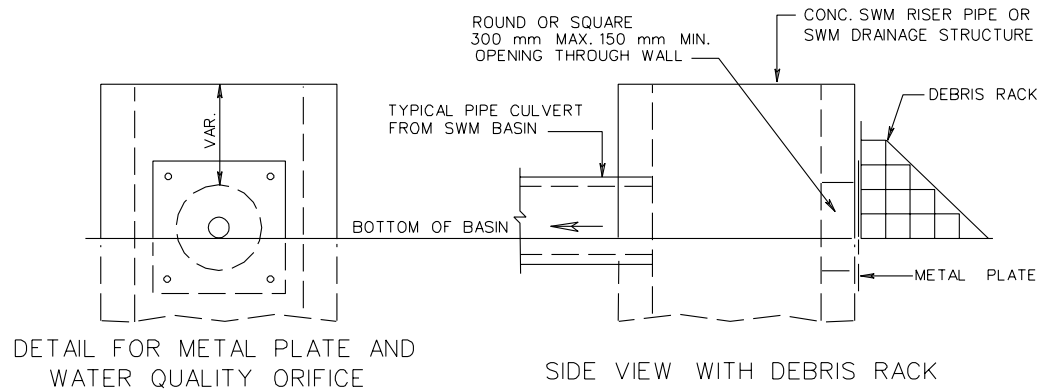
CONCRETE CRADLE IS TO BE INSTALLED UNDER THE ENTIRE LENGTH OF CULVERT AT EACH STORMWATER MANAGEMENT BASIN.
CONCRETE CRADLE IS TO BE PAID FOR AS MISCELLANEOUS CONCRETE AND SUMMARIZED AS EACH PER LOCATION.

NOTES:

TO PROVIDE THE REQUIRED WATER QUALITY ORIFICE, ALL STORMWATER MANAGEMENT (SWM) BASINS SHALL BE CONSTRUCTED WITH THE FOLLOWING:

1. FOR SWM DRAINAGE STRUCTURES, SWM DAMS OR SWM RISER PIPES OF CONCRETE, AN OPENING SHALL BE PROVIDED IN THE CONCRETE WALL: 300 mm MAX. OR 150 mm MIN. AND SHALL BE COVERED WITH THE 10 mm METAL PLATE.
2. DEBRIS RACK SHALL BE ATTACHED TO SWM DRAINAGE STRUCTURE, SWM DAM OR SWM RISER PIPE TO COVER WATER QUALITY ORIFICE.
3. SIZE OF WATER QUALITY ORIFICE IS TO BE SPECIFIED FOR EACH BASIN.

FOR DETAILS OF SWM DRAINAGE STRUCTURE SEE SPECIAL DESIGN DRAWING NO. 2216



DETAIL FOR METAL PLATE AND
WATER QUALITY ORIFICE

SIDE VIEW WITH DEBRIS RACK

TYPICAL SWM DRAINAGE STRUCTURE

REVISED 12/99

SHEET 4 OF 4

STORMWATER MANAGEMENT (SWM) DETAILS
DEBRIS RACK, METAL PLATE, WATER QUALITY ORIFICE, CONCRETE CRADLE

SPECIFICATION
REFERENCE

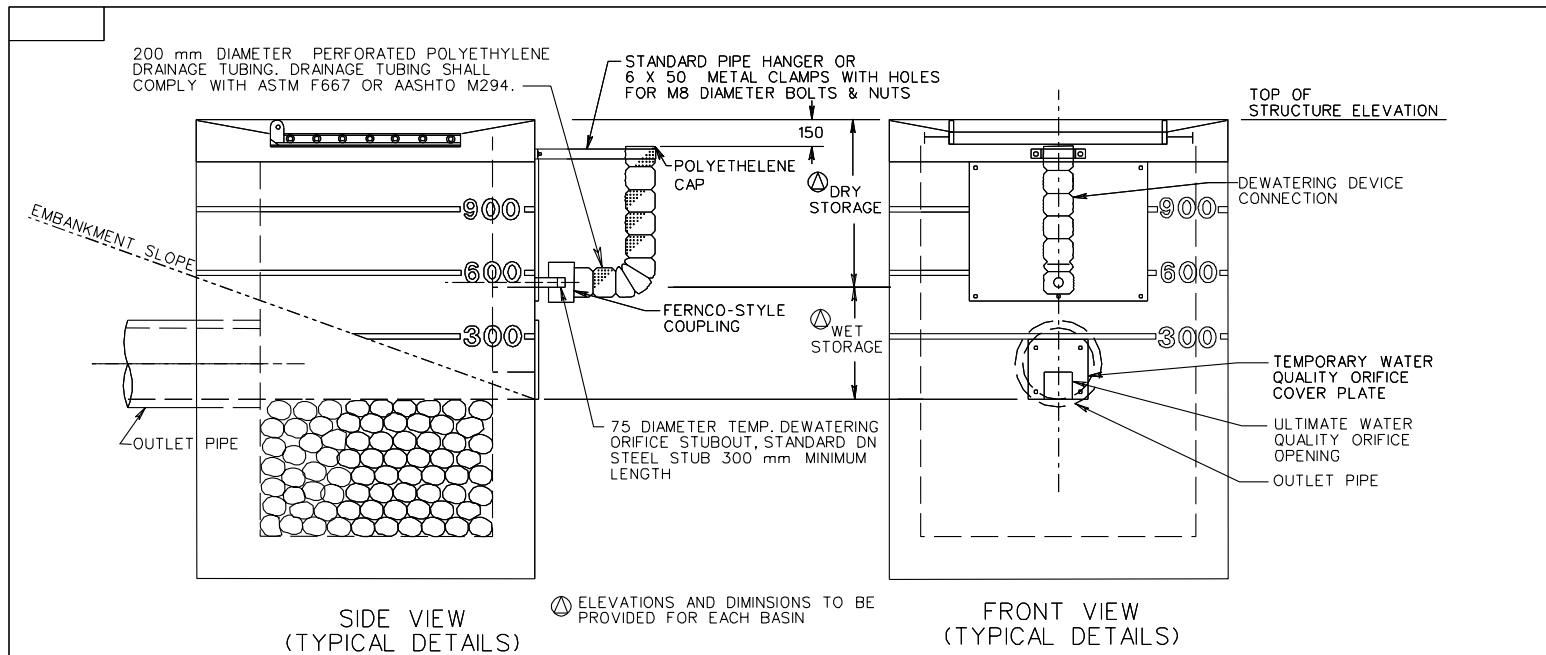
302

116.04

UNLESS OTHERWISE NOTED, ALL DIMENSIONS
ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED ON 2/01 REVISED ON 11/02 REVISED ON 3/03



TEMPORARY SEDIMENT BASIN (TSB)

NOTES:

1. DRAINAGE STRUCTURE MAYBE CAST-IN-PLACE OR PRECAST AS SHOWN ON SPECIAL DESIGN DRAWING NO. 2216.
2. GRADE BASIN AS SHOWN IN PLAN.
3. WHEN USING SWM BASIN AS TEMPORARY SEDIMENT BASIN DURING CONSTRUCTION, SWM OUTLET STRUCTURE SHALL BE USED AS THE TEMPORARY SEDIMENT BASIN'S PRINCIPAL SPILLWAY.
4. INSTALL 75MM DIAMETER DEWATERING DEVICE AND DEWATERING DEVICE STUBOUT IN ACCORDANCE WITH VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.
4. COVER ANY WEIR OPENINGS AND WATER QUALITY ORIFICE DURING CONSTRUCTION, COVER WEIR OPENINGS (IF ANY) ON THE SIDES OR BACK OF THE OUTLET STRUCTURE WITH SOLID METAL PLATES.
5. DEWATERING DEVICE AND COMPONENTS, AS SHOWN IN THE DETAIL, ARE TO BE REMOVED WHEN CONSTRUCTION IS COMPLETED AND AT SUCH TIME THE STORM DRAINAGE SYSTEM IS FULLY FUNCTIONAL.
6. SIMILAR DEVICE MAY ALSO BE USED ON WEIR WALL IN LIEU OF RISER OR (SWM-1).
7. COST OF TEMPORARY DEWATERING DEVICE SHALL BE INCLUDED IN THE BID PRICE FOR STORMWATER MANAGEMENT DRAINAGE STRUCTURE, MODIFIED SWM-1.

NEW 12/99

STORMWATER MANAGEMENT BASIN - MODIFICATION OF STRUCTURE FOR USE AS TEMPORARY SEDIMENT BASIN (TSB)

SPECIFICATION REFERENCE

302

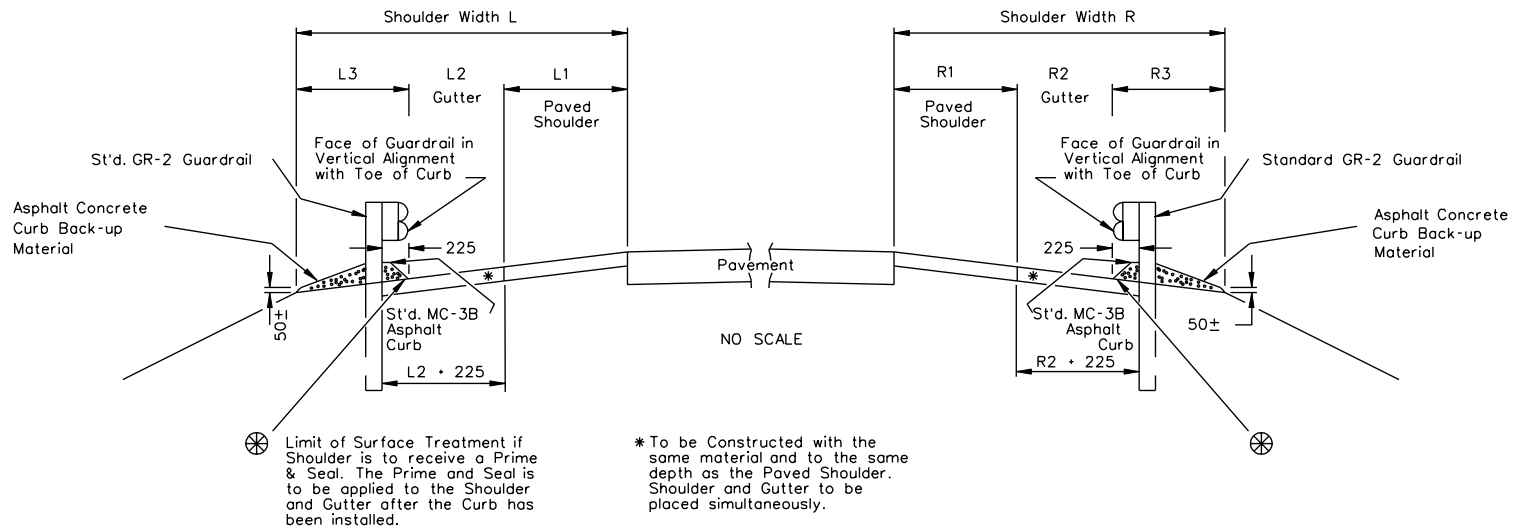
116.05 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

MC-4

LEFT OF TRAFFIC			
Shoulder Width L (m)	L1 (m)	L2 (m)	L3 (m)
4.5	3.0	0.6	0.9
4.5	1.2	2.4	0.9
4.5	0.9	2.7	0.9
3.9	0.9	2.1	0.9
3.6	3.0	—	0.6
3.3	0.9	1.5	0.9
2.4	1.2	0.6	0.6
2.4	0.9	0.9	0.6

RIGHT OF TRAFFIC			
Shoulder Width R (m)	R1 (m)	R2 (m)	R3 (m)
4.5	3.0	0.6	0.9
4.5	1.8	1.8	0.9
3.9	1.8	1.2	0.9
3.3	1.8	0.6	0.9
2.7	1.8	—	0.9



STANDARD GR-2 & MC-3B (225) ASPHALT CURB INSTALLATION

Sheet 1 of 2

REVISED 12/99

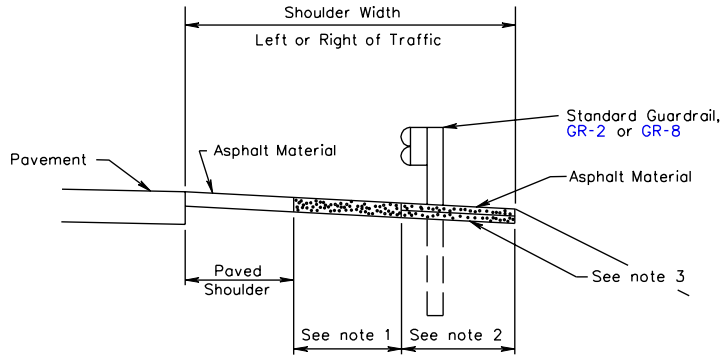
ASPHALT CURB AND GUTTER & ASPHALT PAVING UNDER GUARDRAIL

201.07 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

Note:
See Standard GR-2 and GR-8 details here-on for
Guardrail Placement Details.



ASPHALT PAVING UNDER GUARDRAIL
(For Use Where Asphalt Curb Is Not Required)

Notes:

- To be Constructed with the same material and to the same depth as the Paved Shoulder.
- To be Constructed with the same Asphalt Materials as the Paved Shoulder to the following depths:

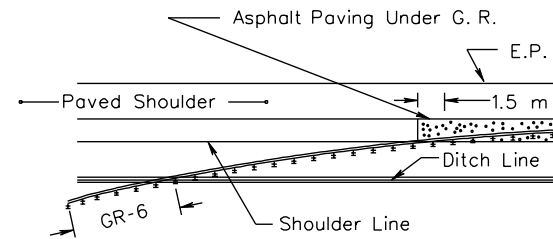
Allowable Depths of Asphalt Material	
IM-19.0A or 19.0D	50 mm Minimum
BM-25.0	75 mm Minimum
BM-37.5	100 mm Minimum

- Depth of Asphalt material may be extended at the Contractor's option to coincide with the bottom of the Paved Shoulder course at no increase in the quantity of Asphalt Material computed using the above specified depth.

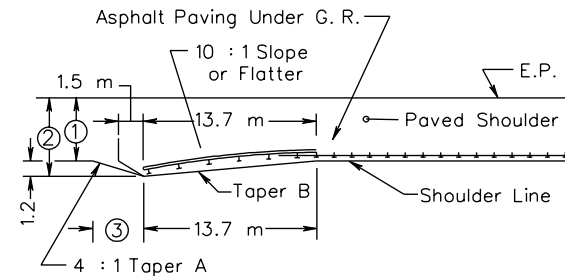
Additional 1.5 m Asphalt Paving beyond point where guardrail crosses Shoulder Line.

For additional design and placement information see sheet 1 Of 2.

SHOULDER WIDTHS AND TAPER REQUIREMENTS		
Normal Width For G. R. ①	Width @ Terminal ②	Taper A ③
m	m	m
4.5	5.7	4.8
3.9	5.1	4.8
3.6	4.8	4.8
3.3	4.5	4.8
2.7	3.9	4.8
2.4	3.6	4.8



GR-6 TERMINAL

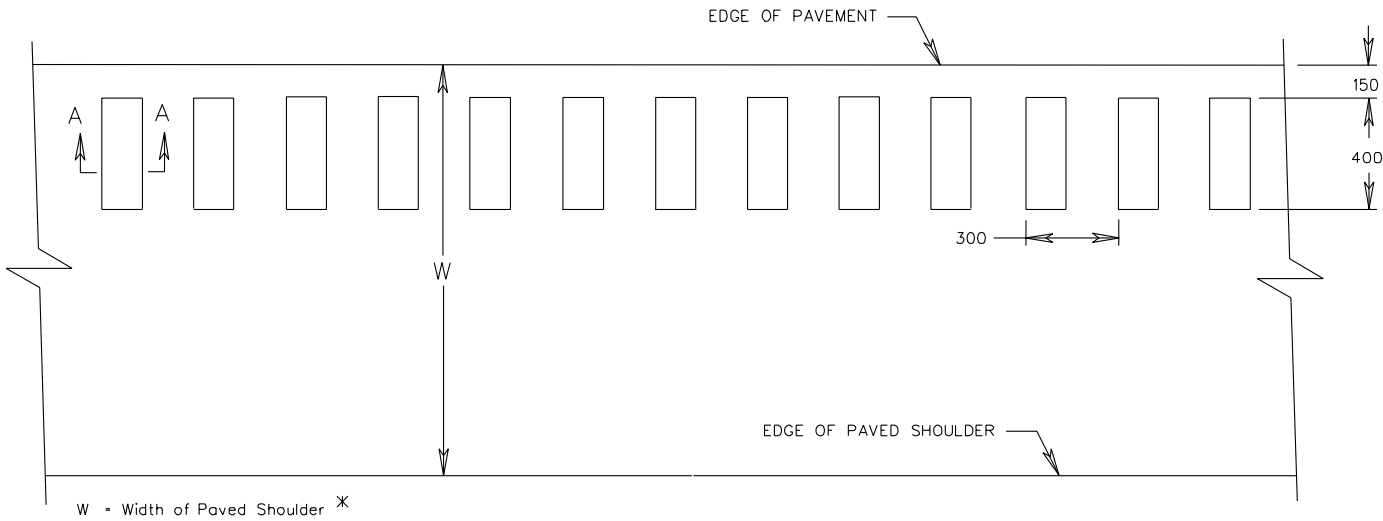


GR-7 TERMINAL

Methods for Beginning & Ending Asphalt Paving under Guardrail and Guardrail installation site preparation requirements for GR-7.

REVISED ON 11/02

RS-1



W = Width of Paved Shoulder *

PLAN VIEW

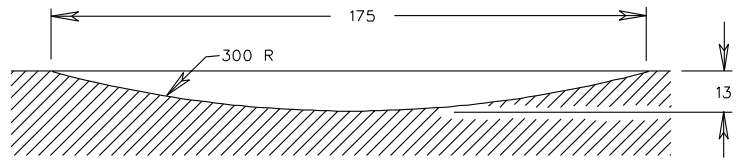
NOTES

Rumble Strips shall be placed continuously as directed by the Engineer.

Rumble Strips shall not be placed within limits of Bridge Drainage Aprons or Special Design Shoulder Slot Inlets.

Rumble Strips shall be placed on mainline shoulders only.

* Where bicycles are not prohibited, the minimum width of the outside paved shoulder shall be 2.4 m.



SECTION A-A

REVISED 12/99

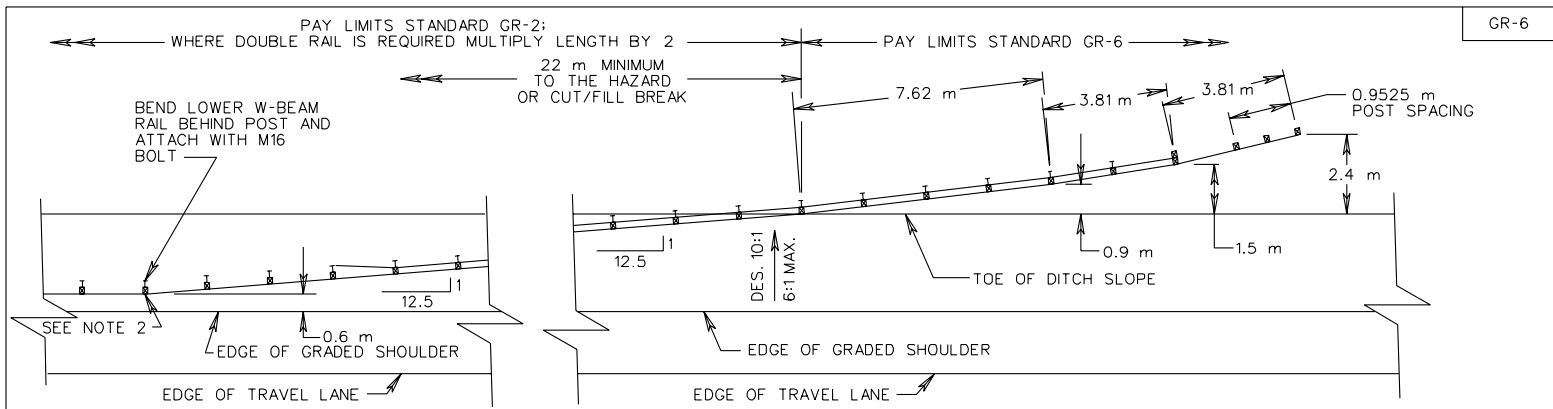
SPECIFICATION REFERENCE	RUMBLE STRIPS (ASPHALT SHOULDER)		
315	VIRGINIA DEPARTMENT OF TRANSPORTATION		UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS
			304.01

REVISED ON 2/01

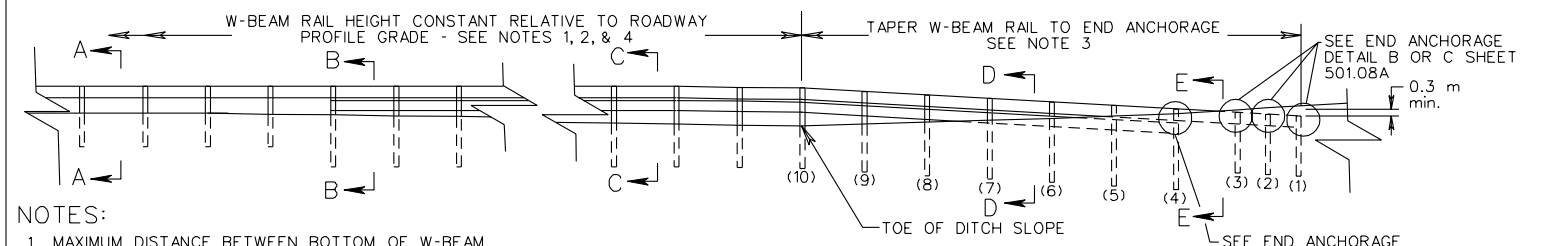
REVISED ON 7/01

REVISED ON 7/02

GR-6



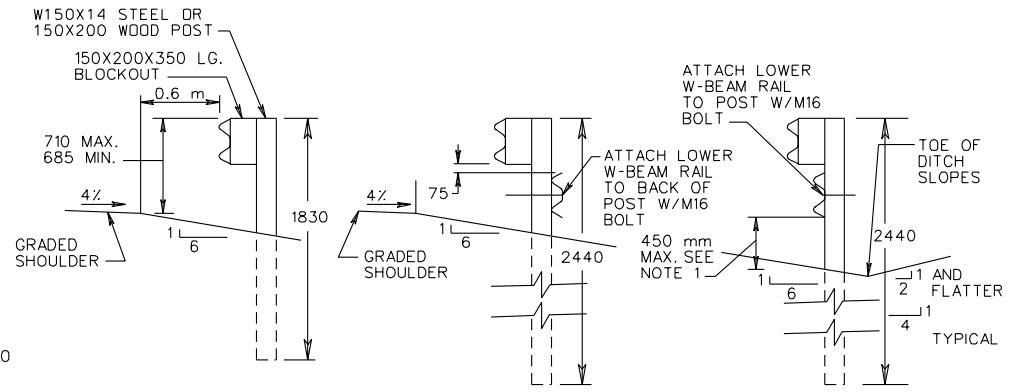
PLAN



ELEVATION

NOTES:

1. MAXIMUM DISTANCE BETWEEN BOTTOM OF W-BEAM RAIL AND FINISH GRADE IS 450 mm. WHEN DOUBLE RAIL IS REQUIRED, TAPER BOTH W-BEAM RAILS TO MAINTAIN 450 mm DISTANCE FROM THE GROUND.
2. A SECOND RAIL IS REQUIRED WHERE THE DISTANCE BETWEEN THE GROUND AND BOTTOM OF THE TOP RAIL EXCEEDS 450 mm (UP TO THE POINT WHERE THE RAIL CROSSES THE DITCH LINE). THE DOUBLE RAIL WILL EXTEND TO POST #4.
3. TAPER BOTH W-BEAM RAILS FROM HEIGHT AT TOE OF DITCH SLOPES TO 300 mm BELOW FINISHED GRADE AT POST #1 (2.4 m OFFSET).
4. A 2440 mm LONG POST MUST BE USED WHEN UPPER AND LOWER W-BEAM RAILS ARE REQUIRED (FROM THE BEGINNING OF SECOND RAIL THROUGH POST #4).
5. STANDARD GR-6 TERMINAL TREATMENT MAY BE USED AT THE RUN-ON END OF DIVIDED HIGHWAYS (LEFT AND RIGHT OF TRAFFIC) AND AT THE RUN-ON AND RUN-OFF ENDS ON UNDIVIDED HIGHWAYS.
6. ALL POST SPACING 1.905 m C-C UNLESS OTHERWISE NOTED. THE POSTS MAY BE W150X14 STEEL OR 150X200 WOOD EXCEPT THE LAST 4 TERMINAL POSTS MUST BE 150X14 STEEL.
7. FOR SECTIONS D-D & E-E, AND END ANCHORAGE DETAILS SEE SHEET 501.08A.



SECTION A-A

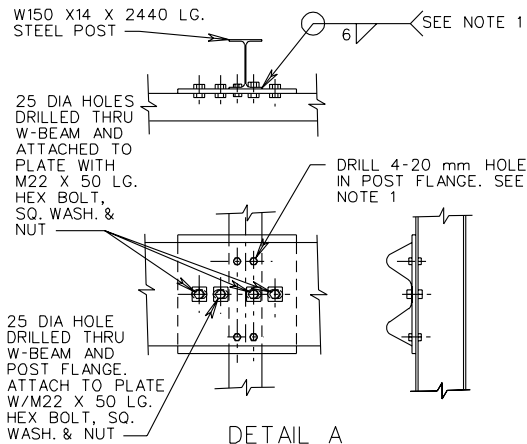
SECTION B-B

SECTION C-C

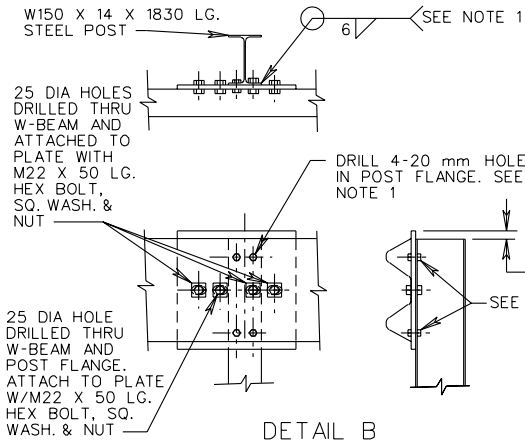
SHEET 1 OF 2

SPECIFICATION REFERENCE	TERMINAL TREATMENT FOR W BEAM GUARDRAIL		REVISED 12/99
505 221	VIRGINIA DEPARTMENT OF TRANSPORTATION		UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS
			501.08

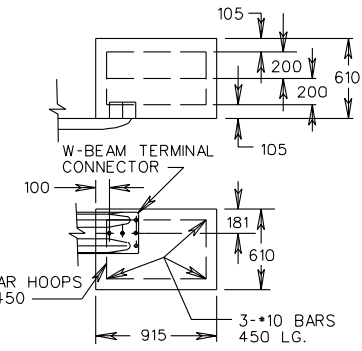
GR-6



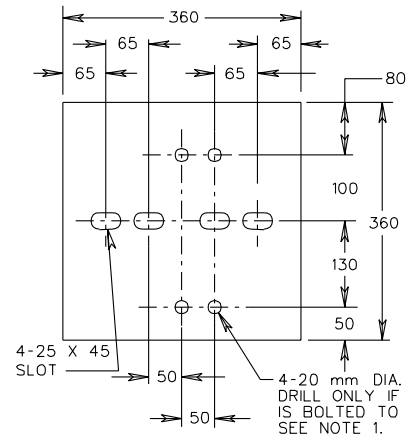
DETAIL A
END ANCHORAGE



DETAIL B
END ANCHORAGE (POST)



DETAIL C
END ANCHORAGE (CONCRETE)

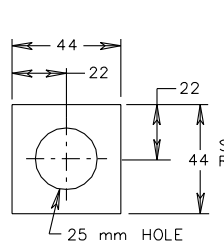


DETAIL D
13 mm THICK STEEL PLATE

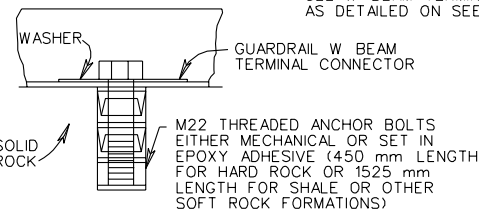
NOTE:

1. 13 mm STEEL PLATE MAY BE WELDED OR BOLTED TO POST. IF PLATE IS BOLTED TO POST USE 4-M16 X 40 LG. HEX HEAD BOLTS W/ HEX NUTS. IF PLATE IS WELDED TO POST DO NOT DRILL 20 mm HOLES IN PLATE OR IN POST FLANGES.
2. CONCRETE END ANCHORAGE MAY BE USED IN PLACE OF STEEL POST AT 2.4 m OFFSET.

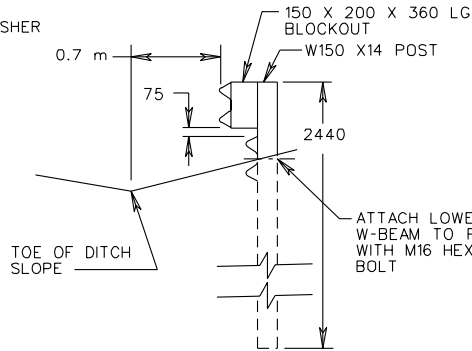
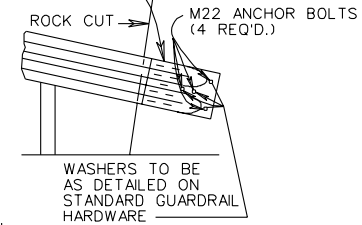
SHEET 2 OF 2



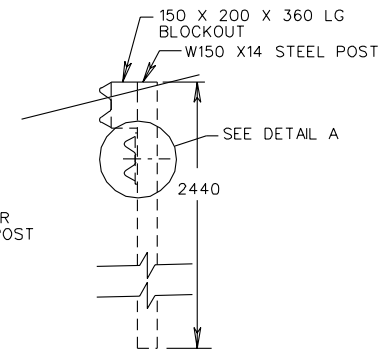
DETAIL E



DETAIL F
SOLID ROCK CUT INSTALLATION



SECTION D-D



SECTION E-E

TERMINAL TREATMENT FOR W BEAM GUARDRAIL

REVISED 12/99

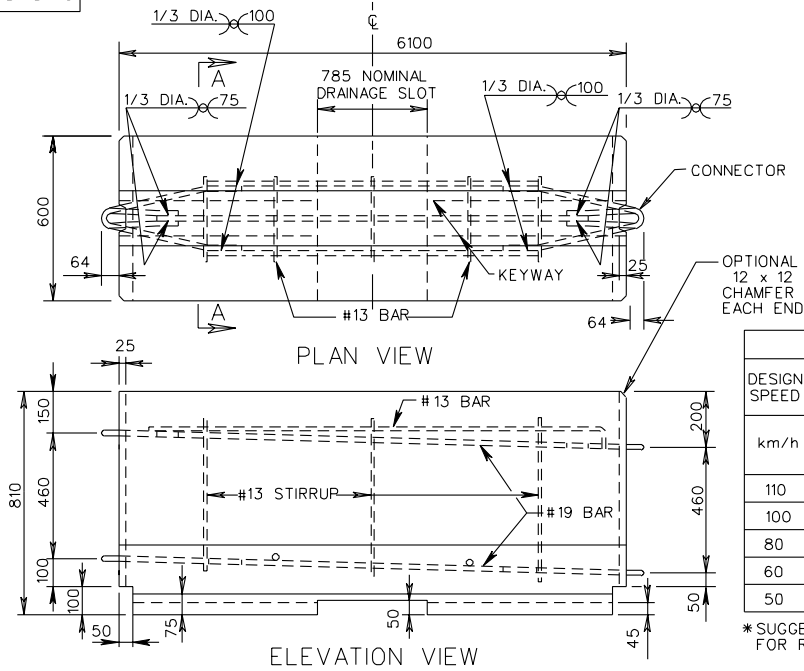
501.08A UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

505
221

MB-7D PC



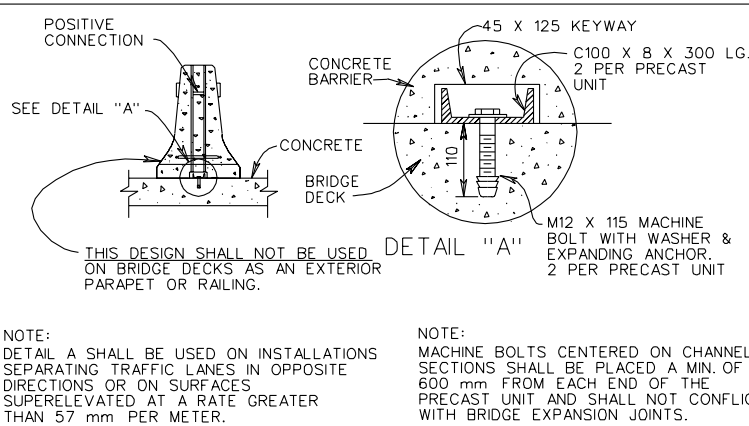
OPTIONAL
12 x 12
CHAMFER
EACH END

DESIGN SPEED	FLARE RATES *		
	INSIDE SHY LINE	BEYOND SHY LINE	
km/h	SHY LINE m	FLARE RATE	FLARE RATE
110	3.0	30:1	20:1
100	2.5	26:1	17:1
80	2.0	21:1	14:1
60	1.5	17:1	11:1
50	1.0	13:1	8:1

*SUGGESTED MAXIMUM FLARED RATE FOR RIGID BARRIER SYSTEMS.

NOTES:

- FOR OTHER NCHRP 350 APPROVED BARRIERS WITH POSITIVE CONNECTIONS SEE SHEET A-105.
- AT THE OPTION OF THE MANUFACTURER, ADDITIONAL REINFORCING MAY BE ADDED TO THE PRECAST CONCRETE BARRIER FOR HANDLING.
- CONCRETE SHALL BE 30 MPa 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 25 mm RADIUS MAY BE USED AS AN ALTERNATE FOR THE 20 mm 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.

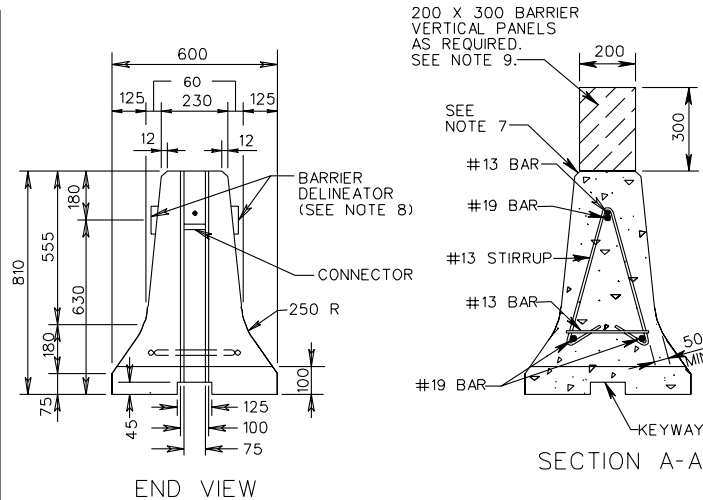


NOTE:
DETAIL A SHALL BE USED ON INSTALLATIONS SEPARATING TRAFFIC LANES IN OPPOSITE DIRECTIONS OR ON SURFACES SUPERELEVATED AT A RATE GREATER THAN 57 mm PER METER.

NOTE:
MACHINE BOLTS CENTERED ON CHANNEL SECTIONS SHALL BE PLACED A MIN. OF 600 mm FROM EACH END OF THE PRECAST UNIT AND SHALL NOT CONFLICT WITH BRIDGE EXPANSION JOINTS.

SHEET 1 OF 2
REVISED 12/99

DETAIL FOR TEMPORARY
INSTALLATION ON BRIDGE DECK



200 X 300 BARRIER
VERTICAL PANELS
AS REQUIRED.
SEE NOTE 9.

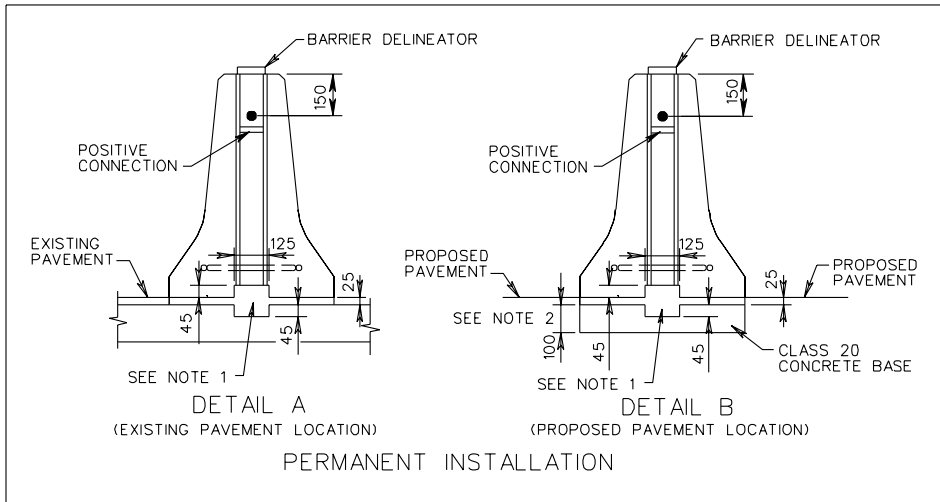
PRECAST TRAFFIC BARRIER SERVICE CONCRETE

VIRGINIA DEPARTMENT OF TRANSPORTATION

501.45 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

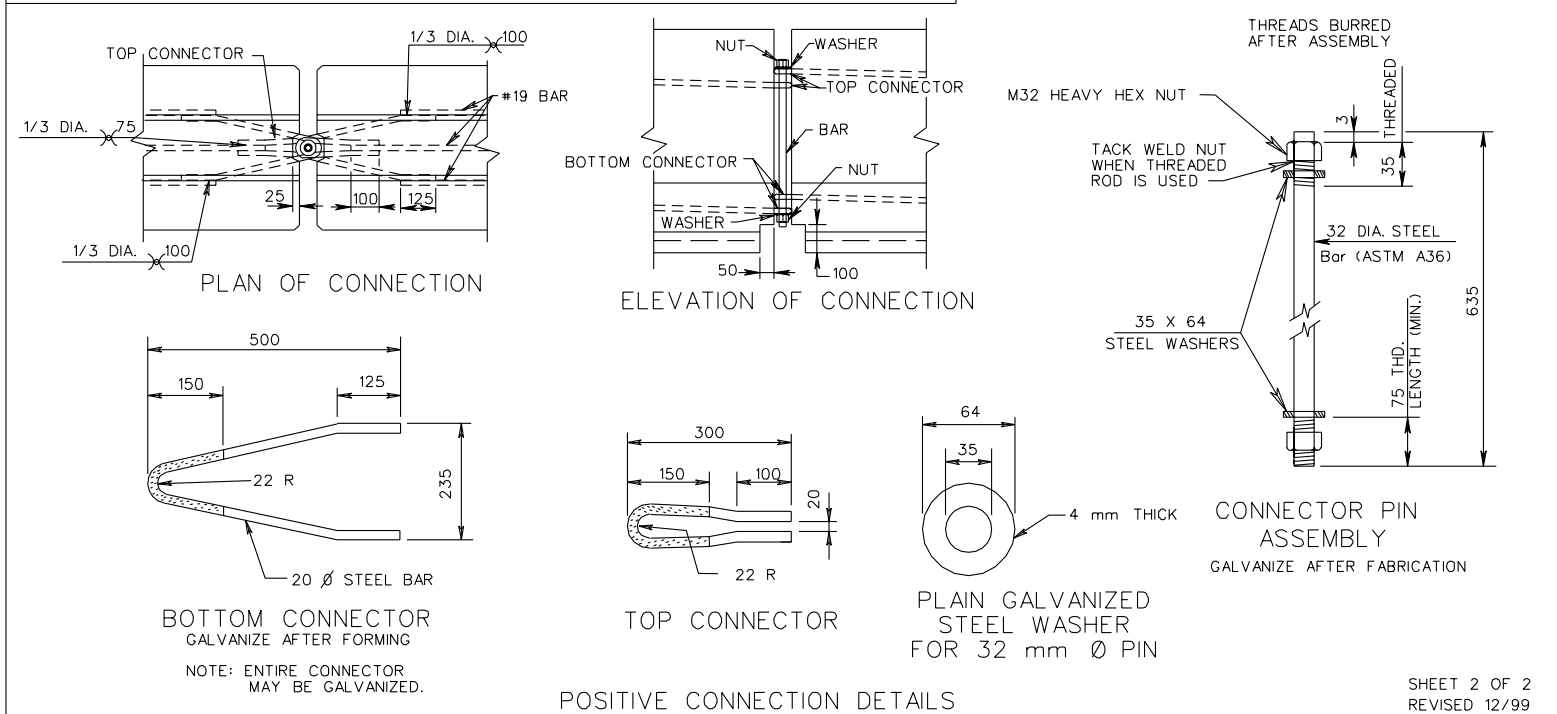
SPECIFICATION
REFERENCE

105
512



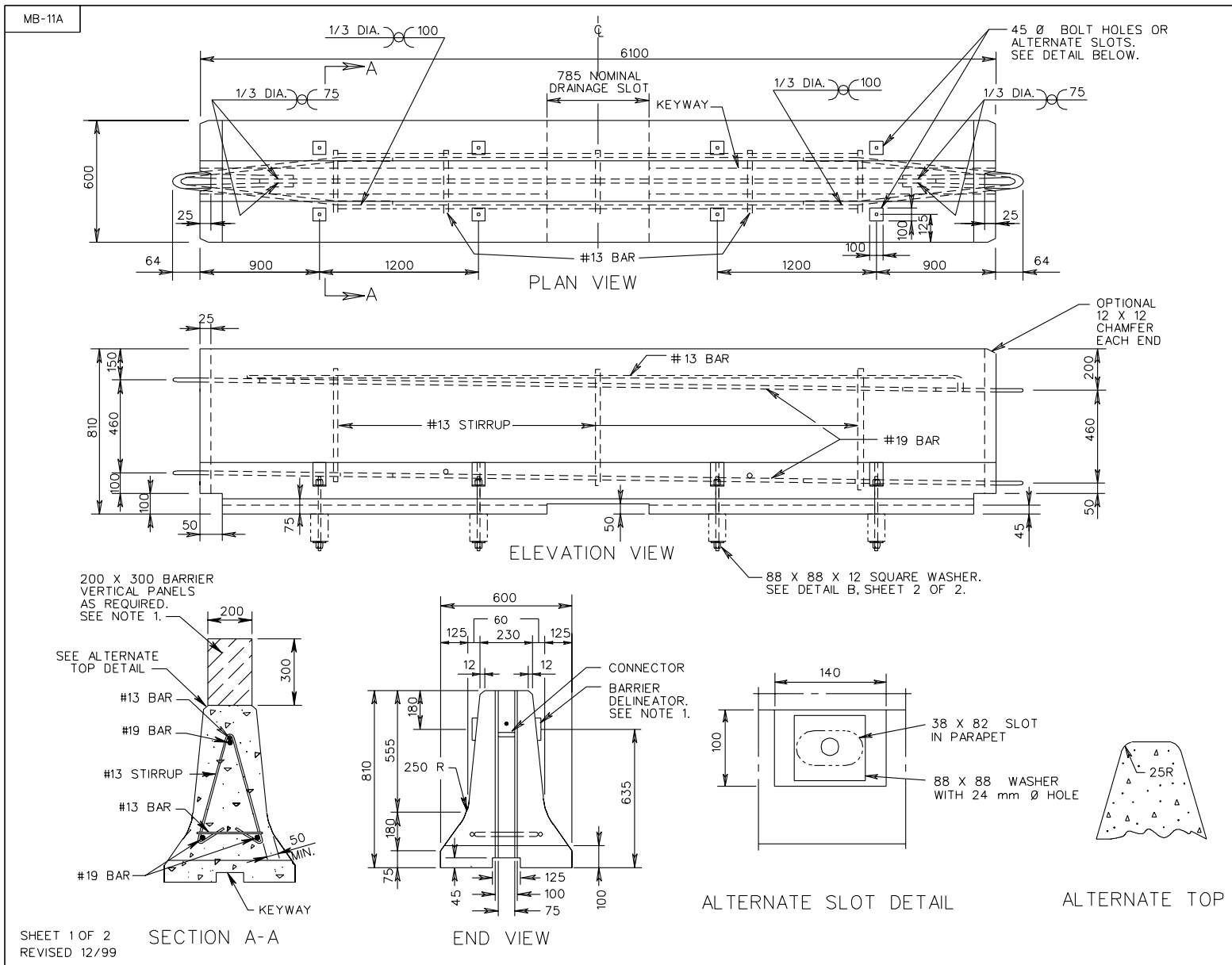
NOTES:

1. HIGH STRENGTH GROUT OR MORTAR SHALL BE IN ACCORDANCE WITH SECTION 218 OF THE SPECIFICATIONS.
2. 100 mm 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 400. ONE CONNECTOR PIN ASSEMBLY WITH EACH BARRIER SECTION.
8. FOR OTHER NCHRP 350 APPROVED BARRIERS WITH POSITIVE CONNECTIONS SEE SHEET A-105.



SPECIFICATION REFERENCE	<p>PRECAST TRAFFIC BARRIER SERVICE CONCRETE</p> <p>VIRGINIA DEPARTMENT OF TRANSPORTATION</p>		<p>UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS</p>	<p>501.46</p>
105 512				

REVISED ON 2/01



SHEET 1 OF 2
 REVISED 12/99

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

501.62 UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

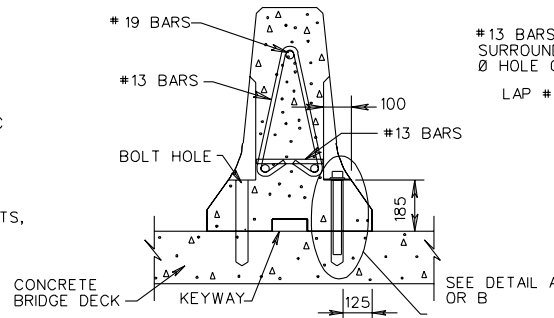
VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

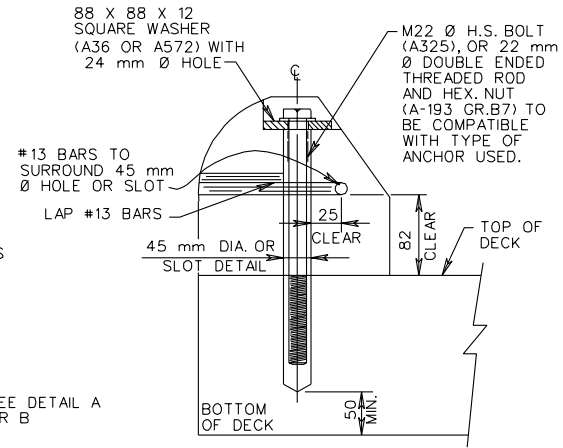
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NOTES:

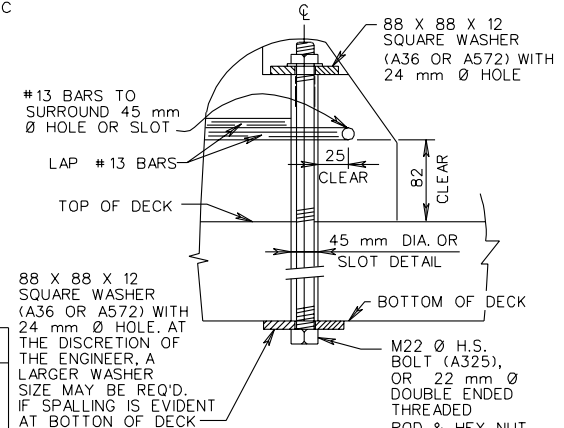
1. BARRIER DELINEATOR IS TO BE SPACED IN ACCORDANCE WITH SECTION 702 OF THE ROAD AND BRIDGE SPECIFICATIONS AND THE BARRIER VERTICAL PANELS ARE TO BE SPACED IN ACCORDANCE WITH THE VIRGINIA WORK AREA PROTECTION MANUAL.
2. REFLECTIVE SURFACE, IN ALL INSTANCES, ARE TO BE FACING ONCOMING TRAFFIC.
3. COST OF BARRIER DELINEATOR AND BARRIER VERTICAL PANELS ARE TO BE INCLUDED IN PRICE BID PER METER OF BARRIER SERVICE.
4. ANCHOR BOLTS SHALL BE INSTALLED ON TRAFFIC SIDE.
5. CONCRETE 30 MP_a (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 142.4 KN AND INSTALLED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
8. AFTER REMOVING TEMPORARY BARRIER, CUT 22 mm 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 22 mm 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 SPECIAL DESIGN DRAWING A-105.



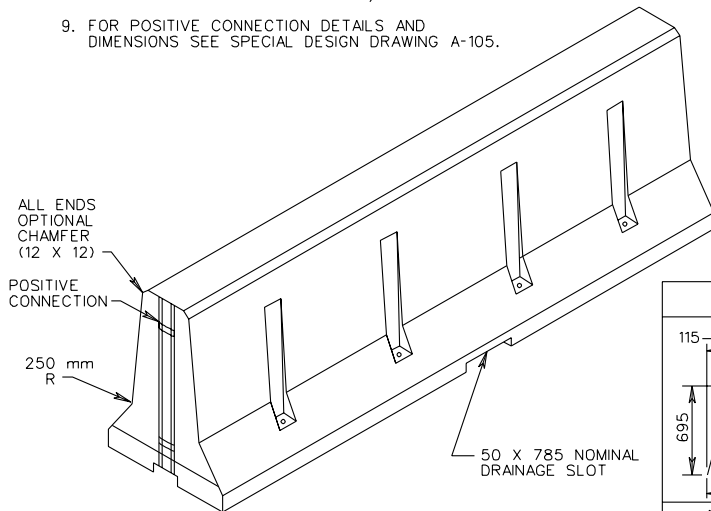
SECTION B-B
(ANCHOR BOLT)
BOLT DOWN SIDE ADJACENT TO TRAFFIC



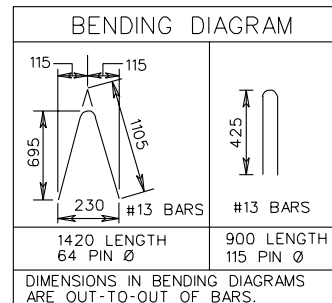
DETAIL A



DETAIL B



SECTION

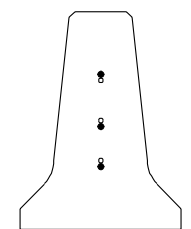
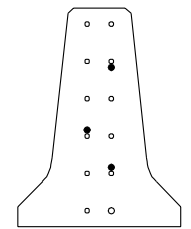
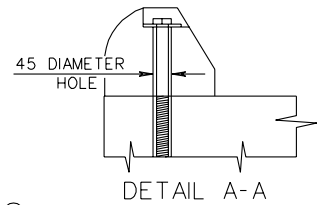
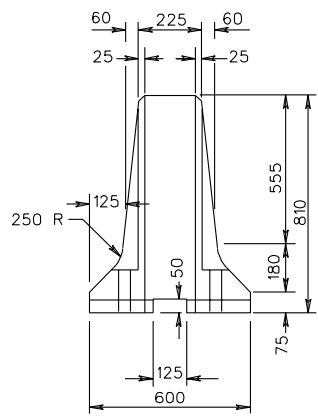
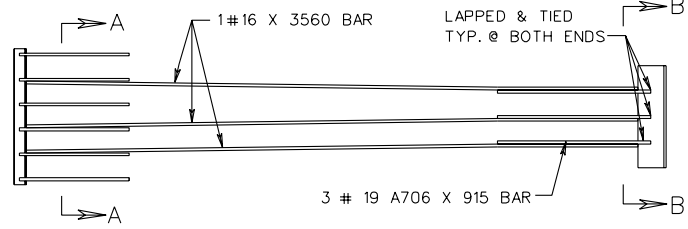
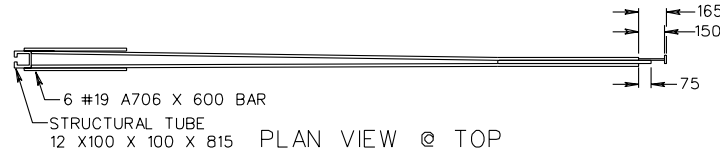
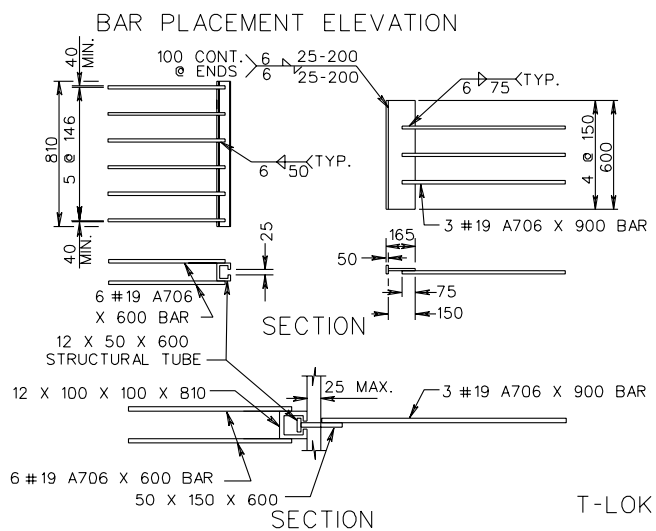
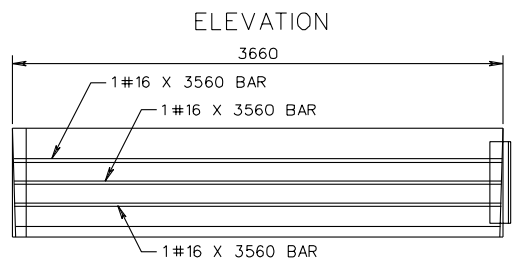
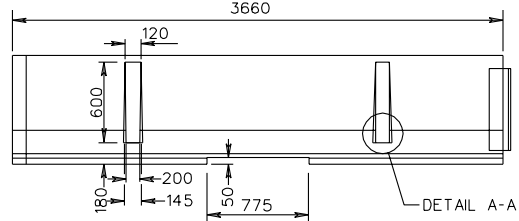
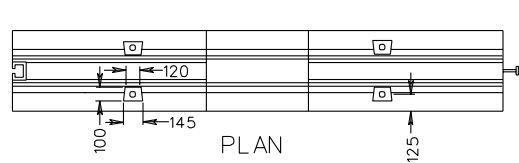


BENDING DIAGRAM

SPECIFICATION REFERENCE

105
512

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



LEGEND	
•	= 3560 BAR
○	= 600 AND 900 BAR

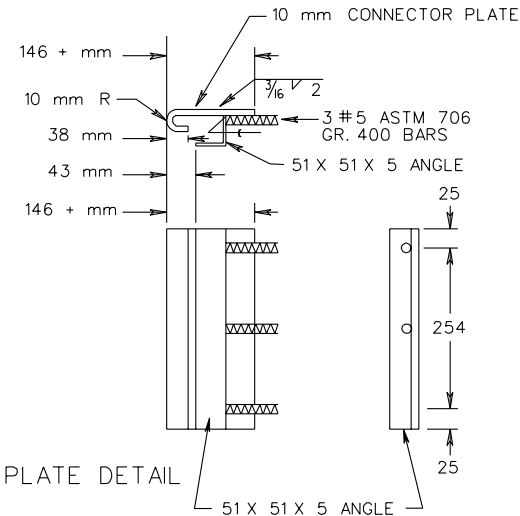
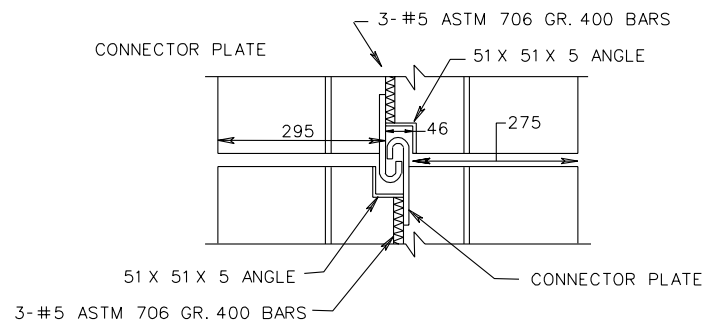
- NOTES:
- (1) MINIMUM COMPRESSIVE STRENGTH OF CONCRETE AT THE AGE OF 28 DAYS (FC) SHALL BE 30 MPa.
 - (2) ALL REINFORCEMENT SHALL CONFORM TO ASTM A615, GRADE 400.
 - (3) STANDARD BARRIER SECTIONS SHALL BE 3660 AS SHOWN OR 5490 mm SHORTER SECTIONS SHALL BE CAST IN REQUIRED LENGTHS AS ONE UNIT. LONGER 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 AND TEST FOR NCHRP 350.
 - (7) BEGINNING WITH JANUARY 2000 ADVERTISEMENT ALL POSITIVE CONNECTIONS MUST BE APPROVED BY THE FHWA IN ACCORDANCE WITH NCHRP 350 TEST REQUIREMENTS.

T-LOKTM DETAILS

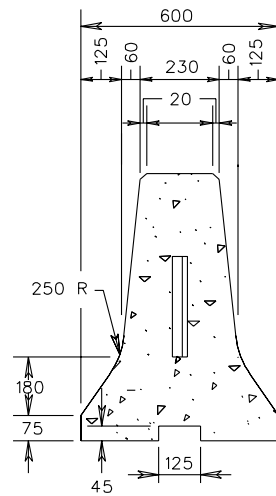
SPECIFICATION REFERENCE

PRECAST CONCRETE MEDIAN BARRIER
POSITIVE CONNECTION OPTIONS

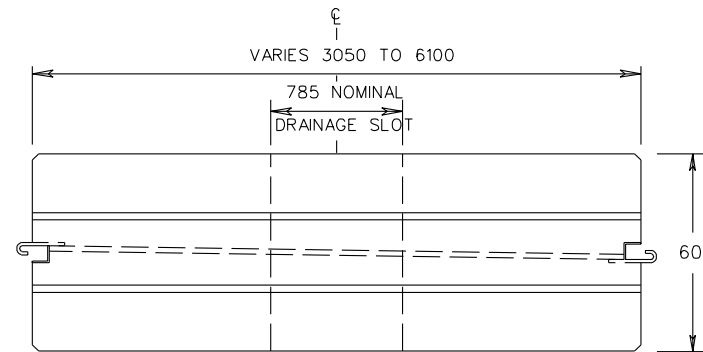
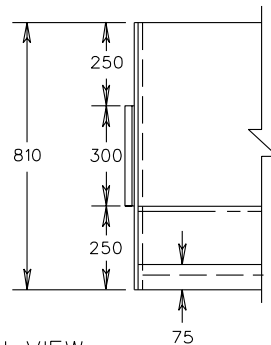
REVISED 12/99



CONNECTOR PLATE DETAIL



ELEVATION VIEW



PLAN VIEW

BEGINNING WITH THE JANUARY 2000 ADVERTISEMENT ALL POSITIVE CONNECTIONS MUST BE APPROVED BY THE FHWA IN ACCORDANCE WITH NCHRP 350 TEST REQUIREMENTS.

NOTES:

ALL EXPOSED METAL TO BE GALVANIZED.
J-J HOOK AS MANUFACTURED BY SMITH MIDLAND AND TESTED FOR NCHRP 350.

J-J HOOK DETAILS

SPECIFICATION REFERENCE

PRECAST CONCRETE MEDIAN BARRIER
POSITIVE CONNECTION OPTIONS

VIRGINIA DEPARTMENT OF TRANSPORTATION

REVISED 12/99

UNLESS OTHERWISE NOTED, ALL DIMENSIONS ON THIS SHEET ARE IN MILLIMETERS

501.69