



# COMMONWEALTH of VIRGINIA

## DEPARTMENT OF TRANSPORTATION

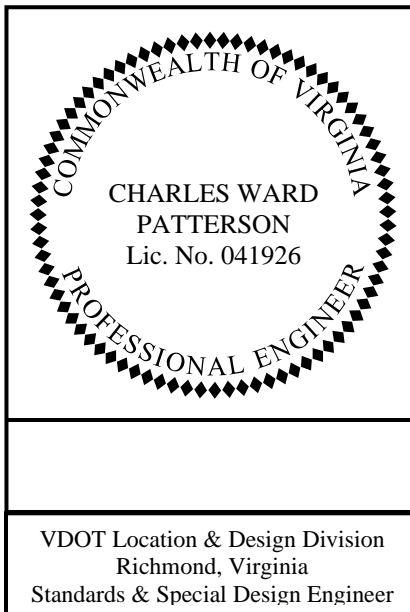
### DIVISION: Location & Design

### Road & Bridge Standards Revision

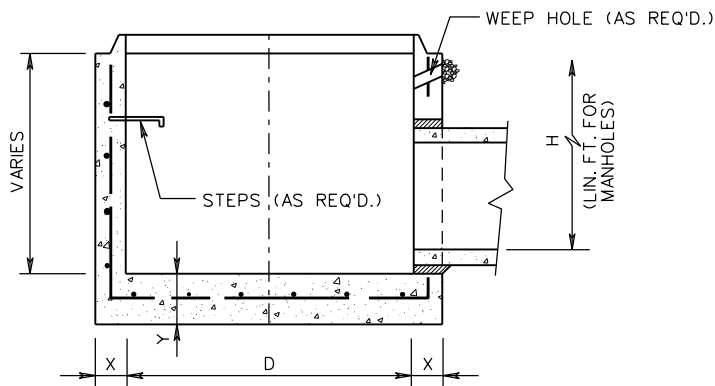
August 24, 2017:

B-1, B-2 Page: 103.11, MC-3B Page: 201.07,  
MC-4 Page: 201.08,

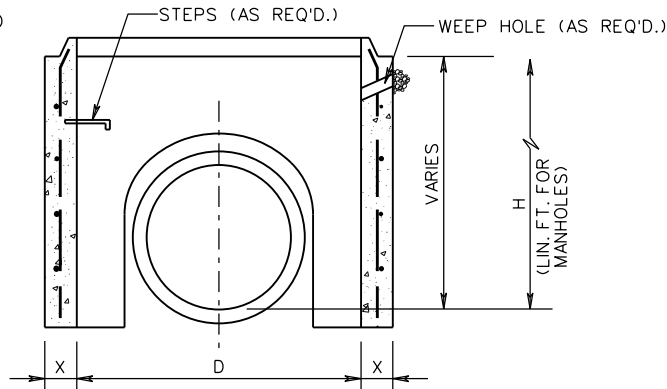
Drawings Prepared By Matthew Cross for : Charles W. Patterson P.E.



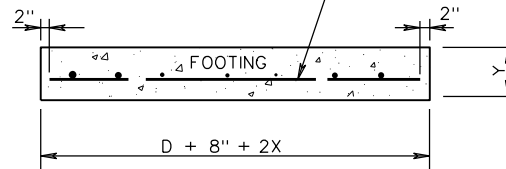
**Responsible for all attached Pages**



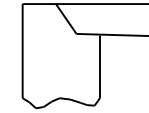
**B-1**  
MONOLITHIC



6" x 6" - W5.5 x W5.5 WELDED WIRE FABRIC OR EQUIVALENT AREA



**B-2**  
DOGHOUSE WITH FOOTING



ALTERNATE JOINT  
DETAIL

**NOTES:**

1. SEE GENERAL NOTES FOR ADDITIONAL INFORMATION ON WEEP HOLES, STEP REQUIREMENTS, "H" (LIN. FT. FOR MANHOLES) DIMENSIONS, ETC.
2. ALL BASE UNITS ARE TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF AASHTO M199.
3. CONCRETE SHALL BE 4000 PSI.
4. WHERE OPENINGS ARE REQUIRED FOR PIPE, THEY SHALL BE FORMED, DRILLED, OR NEATLY CUT AS APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL FURNISH THE FABRICATOR WITH THE ANGLES BETWEEN CENTER LINES, THE INVERT ELEVATIONS, AND THE SIZE OF ALL PIPES TO ENTER THE MANHOLE. HOLES ARE TO BE A MINIMUM OF 4" TO A MAXIMUM OF 8" LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE.
5. DIMENSIONS SHOWN ARE MINIMUM. ACTUAL DIMENSIONS MAY VARY WITH MANUFACTURER.
6. "D" IS NOMINAL DIAMETER.
7. IN THE EVENT THE INVERT OF THE OUTFALL PIPE IS HIGHER THAN THE BOTTOM OF THE STRUCTURE, THE INVERT OF THE STRUCTURE SHALL BE SHAPED WITH CEMENT MORTAR TO PREVENT STANDING OR PONDING OF WATER IN THE STRUCTURE.
8. TONGUE AND GROOVE JOINT ARE TO BE OF FABRICATOR'S DESIGN MEETING VDOT APPROVAL. JOINTS ARE TO BE SEALED WITH MORTAR, O-RING GASKETS, OR BUTYL RUBBER.

**DIMENSIONS**

D	X MINIMUM	Y MINIMUM	SUGGESTED MAX. PIPE SIZE	ABSOLUTE MAXIMUM ☆
* 36"	4"	6"	18"	21"
48"	5"	6"	24"	27"
60"	5"	8"	36"	42"
72"	6"	8"	48"	54"
84"	7"	8"	60"	66"
96"	8"	8"	66"	72"
108"	9"	8"	78"	84"
120"	10"	8"	90"	96"
126"	10 1/2"	8"	96"	102"
144"	12"	8"	108"	120"

\* DEPTH "H" OF 36" DIAMETER BASE UNIT RESTRICTED TO 4'-0" MAXIMUM.

☆ ONE THROUGH PIPE ONLY. (ONE PIPE ENTERING AND ONE PIPE EXITING STRUCTURE)



ROAD AND BRIDGE STANDARDS

**STANDARD PRECAST BASE UNITS**

SPECIFICATION  
REFERENCE

SHEET 1 OF 1

REVISION DATE

VIRGINIA DEPARTMENT OF TRANSPORTATION

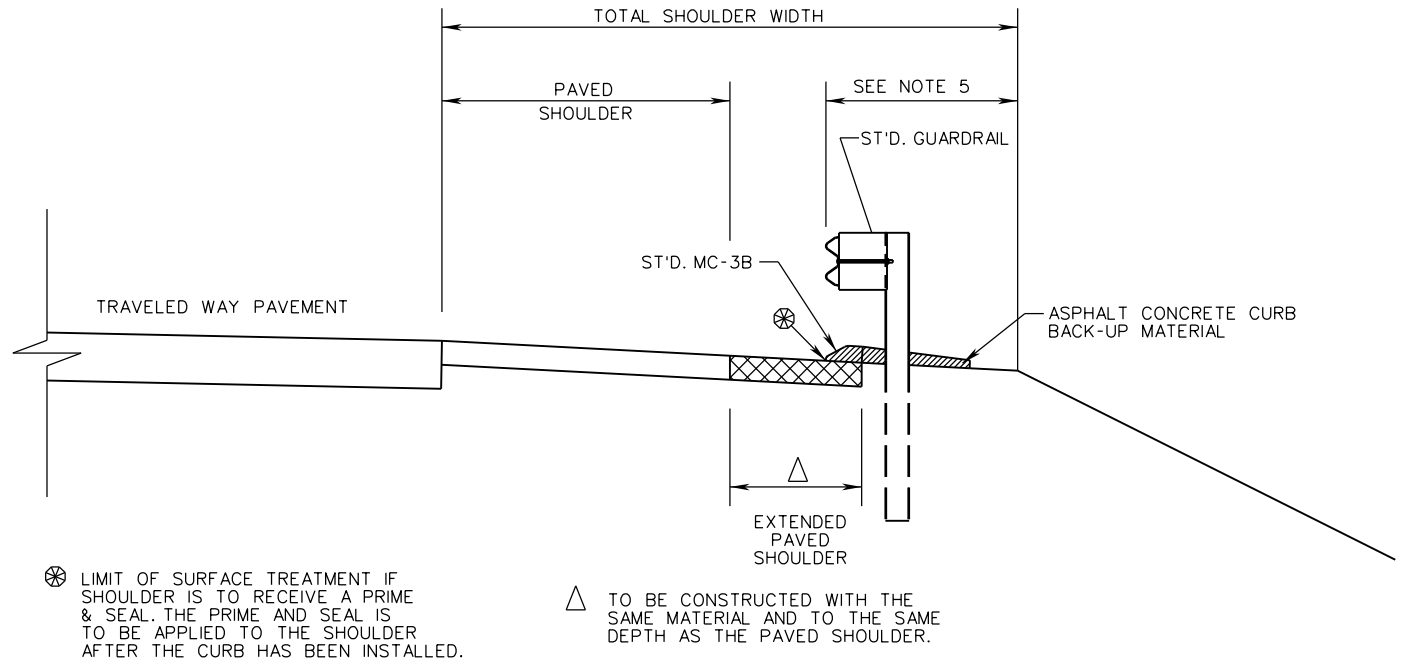
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08/17

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**NOTES**

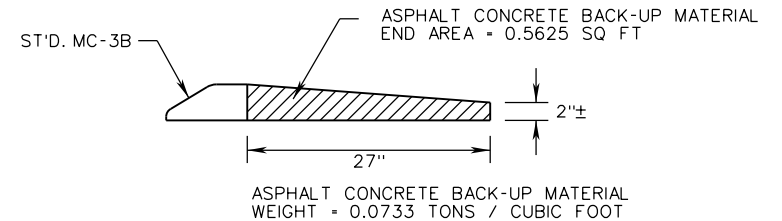
1. STANDARD MC-3B REQUIRES THE PAVED SHOULDER TO EXTEND TO THE BACK OF CURB.
2. PAVED SHOULDER WIDTHS TO BE IN ACCORDANCE WITH THE PLANS, VDOT POLICY, OR AS DIRECTED BY THE ENGINEER.
3. THE PAVED SHOULDER AND THE EXTENDED PAVED SHOULDER SHALL BE PLACED SIMULTANEOUSLY.
4. FACE OF GUARDRAIL SHALL BE ALIGNED WITH FACE OF THE CURB.
5. DISTANCE FROM THE FACE OF RAIL TO THE HINGE POINT IN ACCORDANCE WITH THE GUARDRAIL STANDARD USED.
6. MC-3B CURB NOT PERMITTED WITHIN THE LIMITS OF ANY GUARDRAIL TERMINAL.



**STANDARD GUARDRAIL & MC-3B ASPHALT CURB INSTALLATION**

TO CALCULATE THE ASPHALT BACKUP MATERIAL

1. MULTIPLY THE LENGTH OF MC-3B BY THE END AREA WHICH RESULTS IN CUBIC FEET.
2. MULTIPLY CUBIC FEET BY 0.0733 TONS / CUBIC FOOT WHICH RESULTS IN TONS OF ASPHALT CONCRETE BACKUP MATERIAL.

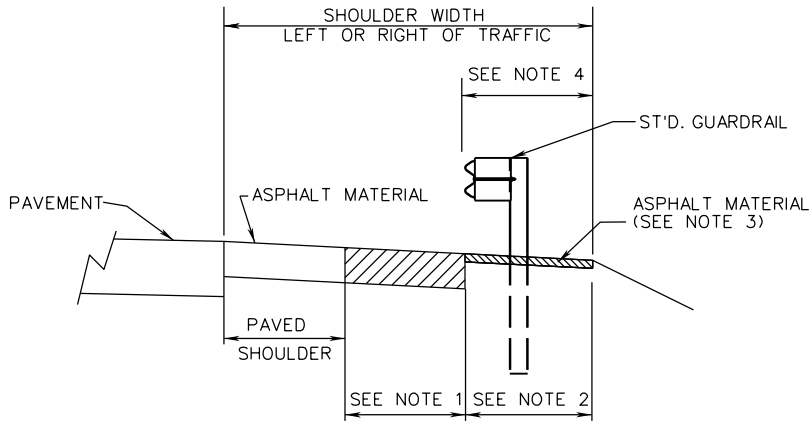


SPECIFICATION REFERENCE
105 502

**ASPHALT CONCRETE CURB  
(ASPHALT BACKUP MATERIAL INSTALLATION)**

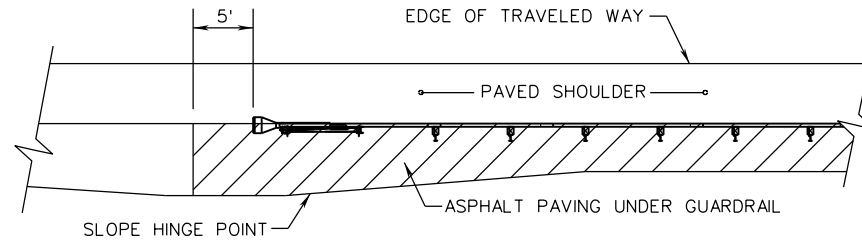
VIRGINIA DEPARTMENT OF TRANSPORTATION

<b>VDOT</b> ROAD AND BRIDGE STANDARDS	
REVISION DATE 08/17	SHEET 2 OF 2 201.07

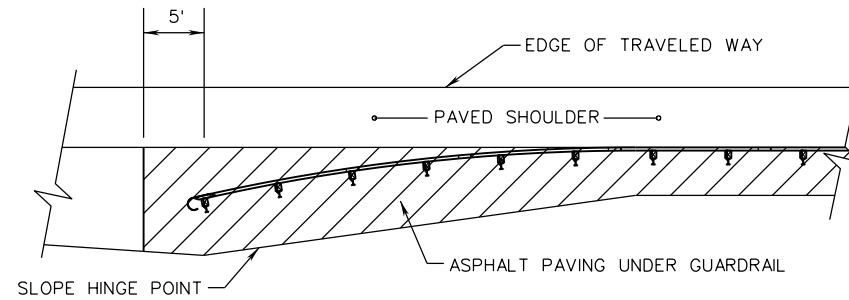


**ASPHALT PAVING UNDER GUARDRAIL**

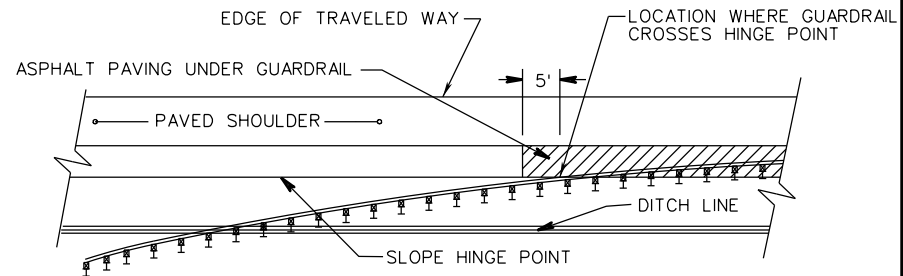
(FOR USE WHERE ASPHALT CURB IS NOT REQUIRED)



**TANGENT TERMINALS**



**FLARED TERMINALS**



**BURIED IN BACKSLOPE TERMINAL**

**NOTES:**

1. CONSTRUCTED WITH THE SAME MATERIAL AND TO THE SAME DEPTH AS THE ROADWAY PAVED SHOULDER.
2. CONSTRUCTED WITH THE SAME ASPHALT MATERIALS AS THE PAVED SHOULDER FROM THE FACE OF RAIL TO THE SHOULDER HINGE POINT AT FOLLOWING DEPTHS:  

SM-9.5A OR SM-12.5D	1.5"
OR	
IM-19.0A OR IM-19.0D	2"
3. MAXIMUM ALLOWABLE DEPTH FOR PAVING UNDER GUARDRAIL IS 2 INCHES.
4. DISTANCE FROM THE FACE OF RAIL TO THE HINGE POINT IN ACCORDANCE WITH THE GUARDRAIL STANDARD USED.
5. SEE GUARDRAIL OR GUARDRAIL TERMINAL STANDARD FOR INSTALLATION AND SITE PREPARATION REQUIREMENTS.

METHODS FOR BEGINNING & ENDING ASPHALT PAVING UNDER GUARDRAIL AND GUARDRAIL TERMINALS.



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

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201.08

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**ASPHALT PAVING UNDER GUARDRAIL**

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SPECIFICATION REFERENCE

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