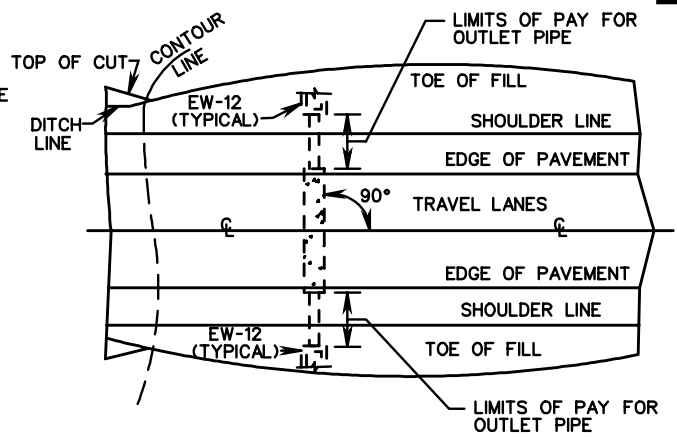
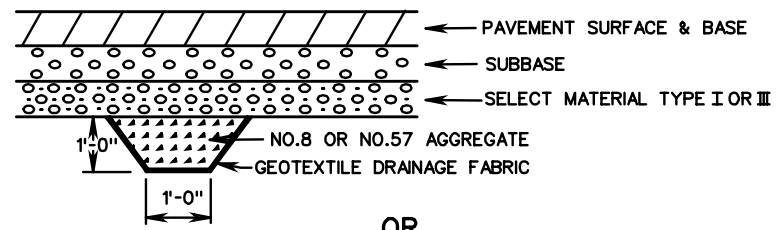


**COMBINATION UNDERDRAIN CD-2 ON FILLS  
CENTER LINE SECTION  
(WITH TYPE 1 SELECT MATERIAL)**

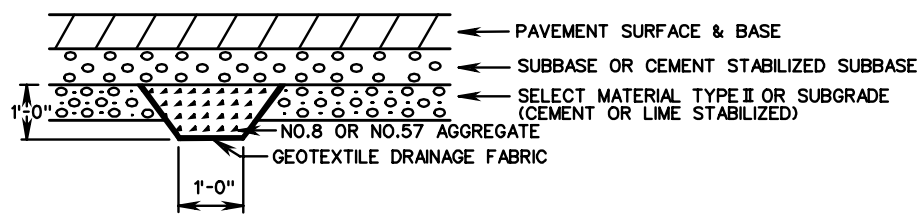


**PLAN VIEW SHOWING PLACEMENT OF  
CD-2 UNDERDRAIN**

**TRENCH PLACEMENT**



OR



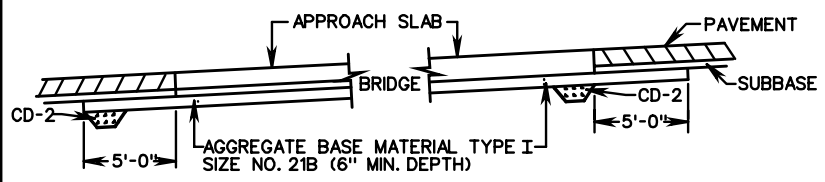
**NON-PERFORATED OUTLET PIPE**

TYPE OF PIPE	CRUSHING STRENGTH	
	W.T. 4" NOM. DIAMETER	W.T. 6" NOM. DIAMETER
SMOOTH WALL PVC	.103	0.153
SMOOTH WALL PE	70 PSI ***	70 PSI ***

✱ WALL THICKNESS (MIN) - INCHES  
 ✱✱✱ TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

**GENERAL NOTES**

1. TRENCH SHALL BE FILLED WITH AGGREGATE AND THOROUGHLY HAND TAMPED TO INSURE COMPACTNESS.
2. OUTLET PIPE SHALL BEGIN AT THE EDGE OF THE TRAVEL LANE PAVEMENT AND SHALL BE PLACED ON A GRADE PARALLEL TO THE SHOULDER SLOPE 2 ½ MIN. (3% DESIRABLE) GRADE.
3. ON CURB AND GUTTER SECTIONS, WHERE IT IS IMPOSSIBLE TO OTHERWISE PROVIDE OUTLETS FOR UNDERDRAINS, THEY ARE TO BE LOCATED SO AS TO DRAIN INTO DROP INLETS OR MANHOLES.
4. ON SUPERELEVATED SECTIONS, TRENCH IS TO BE UNDER ENTIRE PAVEMENT AREA WITH OUTLET PIPE ON LOW SIDE ONLY.
5. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-0" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
6. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
7. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-12OR OTHER DRAINAGE STRUCTURE.



**PLACEMENT OF CD-2 UNDERDRAIN AT  
BRIDGE APPROACH SLABS**

SPECIFICATION REFERENCE
232
501
701

**STANDARD COMBINATION UNDERDRAIN  
(AT GRADE SAGS AND BRIDGE APPROACHES)**

VIRGINIA DEPARTMENT OF TRANSPORTATION