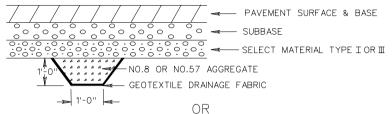
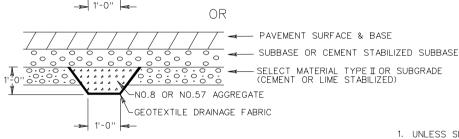


## COMBINATION UNDERDRAIN CD-1 AT LOWER END OF CUTS CENTER LINE SECTION (WITH TYPE 1 SELECT MATERIAL)

#### TRENCH PLACEMENT





## NON-PERFORATED OUTLET PIPE

TYPE OF PIPE	CRUSHING STRENGTH			
	× <sub>w.T.</sub>	4" NOM. DIAMETER	× <sub>w.⊤.</sub>	6" NOM. DIAMETER
SMOOTH WALL PVC	.103		0.153	
SMOOTH WALL PE		70 PSI ***		70 PSI XXX

\* WALL THICKNESS (MIN) - INCHES

\*\*\* TESTED ACCORDING TO ASTM D-2412 AT 5% DEFLECTION.

#### -EW-12 (TYPICAL) TOP OF CUT PAY LIMITS FOR OUTLET PIPE TO BEGIN WITH 45° ELBOW DITCH LINE SHOULDER LINE EDGE OF PAVEMENT TRAVEL LANES 45 EDGE OF PAVEMENT PAY LIMITS FOR OUTLET PIPE TO SHOULDER LINE BEGIN WITH 45° ELBOW DITCH LINE TOE OF FILL TOP OF CUI -EW-12 (TYPICAL)

PLAN VIEW
(PLACEMENT OF CD-1 COMBINATION UNDERDRAIN)

### GENERAL NOTES

- UNLESS SPECIFICALLY INDICATED, COMBINATION UNDERDRAIN WILL NOT BE LOCATED AT THIS POINT WHEN BOTH SUBBASE AND SUBGRADE ARE STABILIZED.
- 2. TRENCH SHALL BE FILLED WITH AGGREGATE AND THROUGHLY HAND TAMPED TO INSURE COMPACTNESS.
- 3. 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 % MIN. (3 % DESIRABLE) GRADE.
- 4. 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.
- 5. ON SUPERELEVATED SECTIONS, TRENCH IS TO BE UNDER ENTIRE PAVEMENT AREA WITH OUTLET PIPE ON LOW SIDE ONLY.
- 6. INVERT ELEVATION AT OUTLET END OF OUTLET PIPE TO BE A MINIMUM OF 1'-O" ABOVE INVERT ELEVATION OF RECEIVING DRAINAGE DITCH OR STRUCTURE.
- 7. ALL CONNECTIONS (ELBOWS, WYES, ETC.) WITHIN PAY LIMITS FOR OUTLET PIPE ARE TO BE OF THE SAME CRUSHING STRENGTH AS THE OUTLET PIPE.
- 8. OUTLET PIPE TO BE SECURELY CONNECTED TO EW-120R OTHER DRAINAGE STRUCTURE.

# STANDARD COMBINATION UNDERDRAIN (AT LOWER END OF CUTS)

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

> 232 501 701

Rev. 7/03 108.04