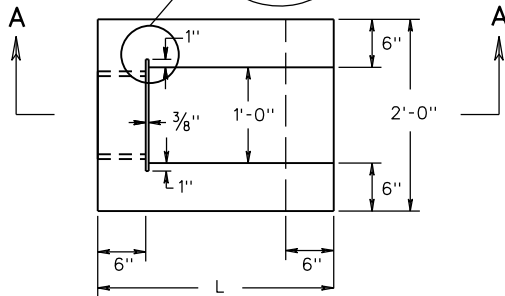
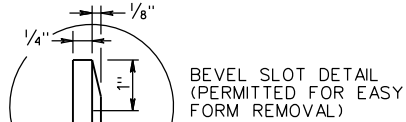
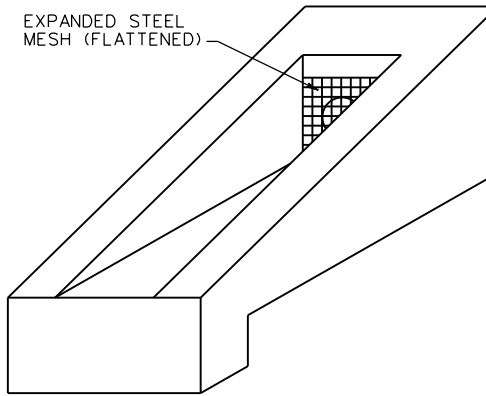


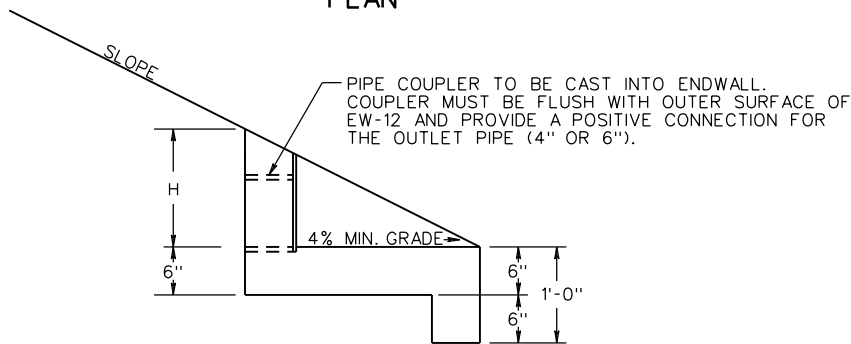
EW-12



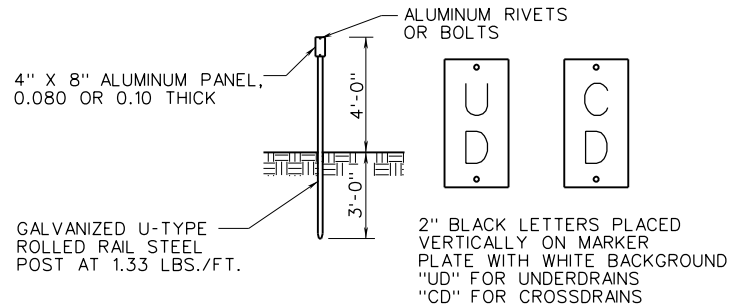
PLAN



ISOMETRIC



SECTION A-A



UNDERDRAIN OUTLET MARKER DETAIL

NOTES:

1. TYPICAL ENDWALL TO BE PLACED AT THE ENDS OF ALL UNDERDRAIN OUTLETS, BARRING LOCATIONS WHERE UNDERDRAIN IS TIED INTO OTHER DRAINAGE STRUCTURES. ENDWALL TO BE INSTALLED PERPENDICULAR TO ROADWAY AND FLUSH WITH THE SLOPE.
2. OUTLET PIPES SHALL BE RIGID NONPERFORATED, SMOOTH-BORE PIPE, MEETING THE REQUIREMENTS OF 70 PSI TESTED ACCORDING TO ASTM 2412.
3. EXPANDED STEEL MESH (FLATTENED) SHALL HAVE OPENINGS OF APPROX. 1/2" X 1" AND WEIGH APPROX. 0.82 LBS. PER SQ. FT. MESH SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A-123. THE MESH SHALL EXTEND A MINIMUM OF 1" ABOVE THE O.D. OF THE PIPE, AND IS A BARRIER FOR RODENTS, ETC. THE SLOT FOR THE STEEL MESH IS TO BE CONSTRUCTED SO THAT THE MESH CAN BE REMOVED FOR CLEANOUT PURPOSES.
4. THIS ITEM MAY BE PRECAST OR CAST IN PLACE. CAST IN PLACE CONCRETE IS TO BE CLASS A3 (3000 PSIMIN.). PRECAST CONCRETE IS TO BE CLASS A4 (4000 PSIMIN.).
5. STEEL POSTS SHALL BE GALVANIZED IN ACCORDANCE WITH THE ROAD AND BRIDGE SPECIFICATIONS. ALUMINUM MARKER PLATES SHALL BE ASTM B209 ALLOY 6061-T6 OR 5052-H38IF. SHEETING FOR WHITE BACKGROUND AND BLACK LETTERS SHALL CONFORM TO SECTION 701 OF THE ROAD AND BRIDGE SPECIFICATIONS.
6. MARKER SHALL BE PLACED AT ALL EW-12 INSTALLATIONS WITH 2 INCH LETTERS PLACED VERTICALLY DESIGNATING UNDERDRAINS WITH "UD" AND CROSSDRAINS WITH "CD".
7. MARKER WILL BE PAID FOR IN ACCORDANCE WITH SECTION 501 OF THE ROAD AND BRIDGE SPECIFICATIONS.

PIPE I.D.	SLOPE	DIMENSIONS		CLASS A3 CONCRETE CUBIC YARDS
		L	H	
4"	2:1	2'-5 1/2"	1'-2 3/4"	0.19
4"	3:1	3'-5 1/4"	1'-1 3/4"	0.25
4"	4:1	4'-5"	1'-1 1/4"	0.30
6"	2:1	2'-10 1/2"	1'-5 1/4"	0.20
6"	3:1	4'-3 1/4"	1'-4 1/4"	0.30
6"	4:1	5'-3"	1'-3 3/4"	0.38



ROAD AND BRIDGE STANDARDS

SHEET 1 OF 1

REVISION DATE

101.32

04/20

A COPY OF THE ORIGINAL SEALED AND SIGNED DRAWING IS ON FILE IN THE CENTRAL OFFICE.
STANDARD ENDWALL FOR PIPE UNDERDRAIN

VIRGINIA DEPARTMENT OF TRANSPORTATION

SPECIFICATION REFERENCE

105 701
 233
 302
 501