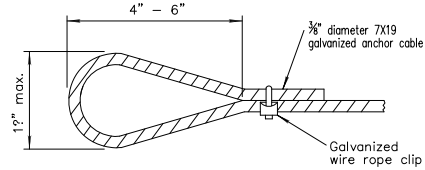
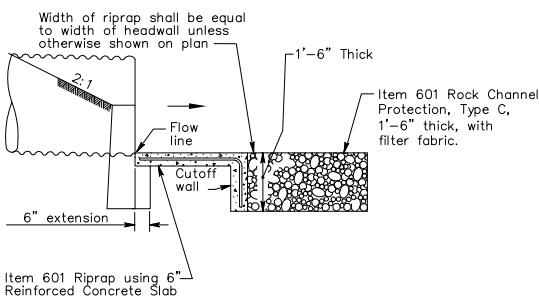
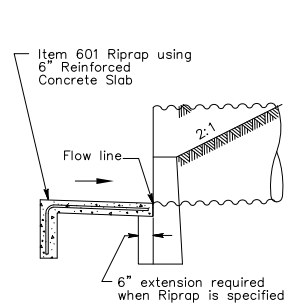
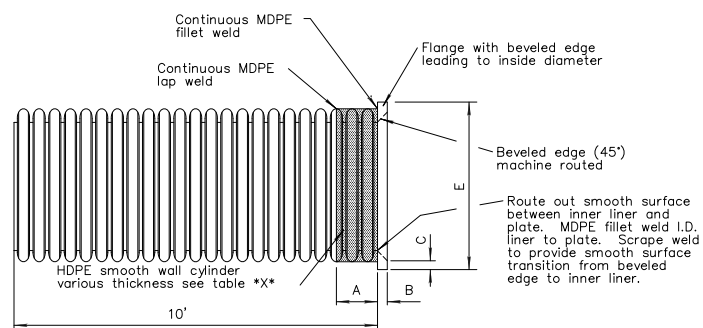


1 - Top Surface of 6" Inlet Headwall Extension

CIRCULAR				
D	W	H	T	CONC. cu. yds.
12"	2'-0"	3'-0"	12"	0.21
15"	2'-6"	3'-2"	12"	0.27
18"	3'-0"	3'-3"	12"	0.33
21"	3'-6"	3'-4"	12"	0.39
24"	4'-0"	3'-6"	12"	0.46
27"	4'-6"	3'-8"	12"	0.53
30"	5'-0"	3'-9"	12"	0.60
33"	5'-6"	3'-10"	12"	0.68
36"	6'-0"	4'-0"	12"	0.76
39"	6'-6"	4'-2"	12"	0.84
42"	7'-0"	4'-3"	12"	0.92
48"	8'-0"	4'-6"	12"	1.10
54"	9'-3"	4'-9"	12"	1.33
60"	10'-6"	5'-6"	12"	1.78



See sheet 2 of 3 of ODOT Drawing Number HW-2.1 for additional anchor cable details.



ADDITIONAL ANCHOR CABLE NOTES:
 CUT GALVANIZED ANCHOR CABLE TO LENGTH REQUIRED. WRAP GALVANIZED ANCHOR CABLE ONE TIME COMPLETELY AROUND THE CIRCUMFERENCE OF THE CONDUIT.
 FORM OR DRILL 1/2" DIAMETER OPENINGS FOR ANCHOR CABLE AT LOCATIONS SHOWN. ALTERNATIVELY, PLACE ANCHOR CABLE IN WET CONCRETE AT THE DIMENSIONS SHOWN ABOVE TO SECURE CONDUIT TO HEADWALL. A MINIMUM 4" HOOK LENGTH AT THE ENDS OF THE ANCHOR CABLE ARE REQUIRED AS SHOWN ON SHEET 3. FILL ANY OPENINGS MADE FOR ANCHOR CABLES WITH GROUT AFTER ANCHOR CABLES ARE PLACED.

NOTES

GENERAL: Provide a riprap reinforced concrete slab if the pipe is depressed or is specified in the plan. Payment for the slab shall be made per square yard of Item 601 Riprap using 6" Reinforced Concrete Slab and shall include the cost of the cutoff wall. Cutoff wall shall be as per ITEM 601, except that it shall be 1'-6" thick as shown.

When furnishing precast half-height headwalls, conform to Delaware County pre-approved designs. Precast half-height headwalls are only approved for round conduits with a maximum conduit diameter of 60". When precast headwalls are furnished, provide openings for the anchor cable as shown and fill with grout after placement of the anchor cable. If anchor bolts are to be used with a precast headwall, fill the anchor cable openings with grout.

CONCRETE: Headwall concrete shall be Class C. Concrete quantities are based on headwalls without the 6" extension under the channel protection.

ANCHOR BOLTS: Bolts (as detailed) for anchoring both ends of metal pipe shall meet ASTM A 307. The top 6" min. of bolt shall be galvanized according to ASTM A 153. Cost of anchors shall be included in the unit price bid per Foot of Item 603.

PLASTIC PIPE: Plastic pipe may not be available in all the sizes specified on this drawing.

ANCHOR CABLE: Anchor cable (as detailed) for anchoring both ends of plastic pipe shall meet ASTM A 603. Wire rope clip shall be galvanized according to ASTM A 153. Cost of anchor cable and wire rope clip shall be included in the unit price bid per foot of Item 603.

IMPROVED INLET FOR HDPE PIPE: Furnish improved inlet at upstream end of culverts using plastic pipe.

The smooth cap and flange materials shall be HDPE according to ASTM D 3350 345464C.

See the Delaware County Supplemental Specifications for mandrel requirements for plastic pipe. Plastic pipe shall not be installed under drives or roads.

PIPE SIZE	A	B	C	E	X
12 in.	6.00 in.	0.50 in.	1.00 in.	15.15 in.	0.13 in.
15 in.	6.00 in.	0.63 in.	1.26 in.	18.73 in.	0.19 in.
18 in.	6.00 in.	0.75 in.	1.50 in.	22.57 in.	0.25 in.
24 in.	8.00 in.	1.00 in.	2.00 in.	30.08 in.	0.25 in.
30 in.	8.00 in.	1.25 in.	2.50 in.	37.50 in.	0.38 in.
36 in.	10.00 in.	1.50 in.	3.00 in.	45.00 in.	0.38 in.
42 in.	10.00 in.	1.75 in.	3.50 in.	51.90 in.	0.38 in.
48 in.	10.00 in.	2.00 in.	4.00 in.	59.60 in.	0.38 in.
60 in.	12.00 in.	2.50 in.	5.00 in.	74.50 in.	0.38 in.

CHRIS E. BAUSERMAN, P.E., P.S.
 Delaware County Engineer

Delaware County Engineer

STANDARD CONSTRUCTION DRAWING
 CHANNEL PROTECTION
 (FOR PLASTIC PIPE
 NOT UNDER ROADS
 AND DRIVES)

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 Checked EM of 1

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