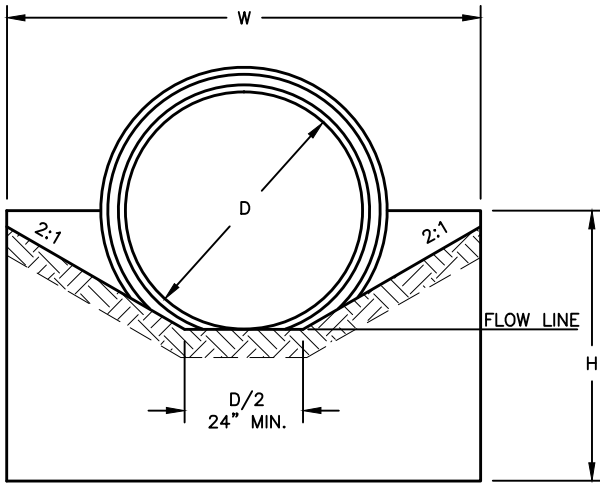
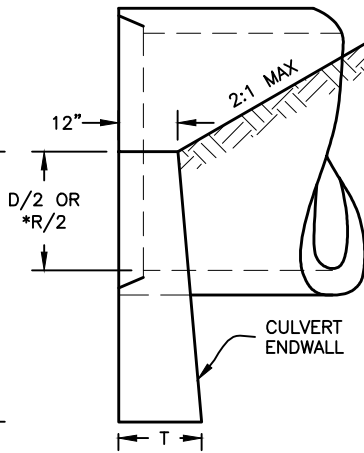


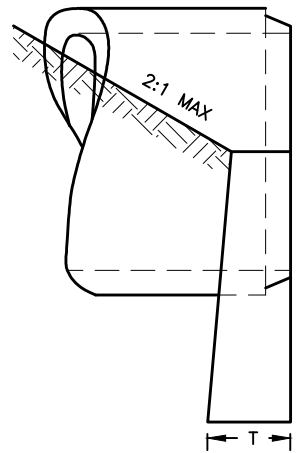
END TREATMENT AT ENDWALL



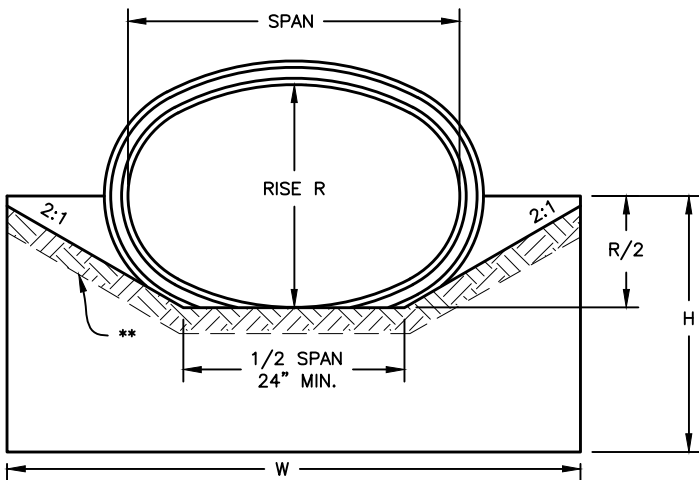
CIRCULAR PIPE



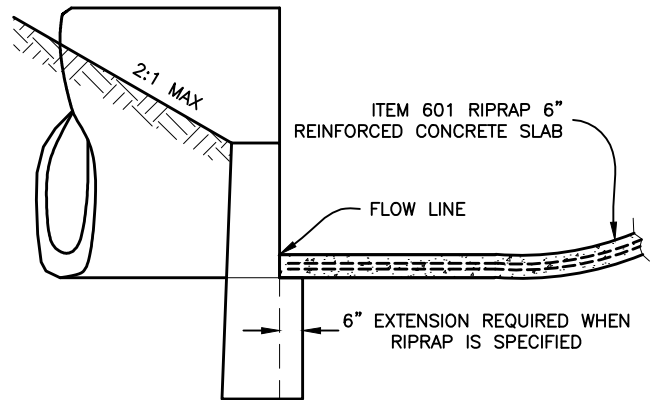
INLET END
GROOVE OR BELL
UPSTREAM



OUTLET END
TONGUE OR SPIGOT
DOWNSTREAM



ELLIPTICAL PIPE



INLET CHANNEL
PROTECTION DETAIL

NOTES:

1. CONCRETE SHALL BE CLASS "C".
2. IF PIPE IS TO BE EXTENDED IN THE FUTURE THE ENDWALL SHALL BE SET BACK 6".
3. DIMENSIONS AND QUANTITIES ARE SHOWN FOR CONCRETE SECTIONS ONLY. WHEN USED WITH OTHER PIPE MATERIALS IT WILL BE NECESSARY TO DETERMINE SUCH DIMENSIONS AND QUANTITIES.
4. * FOR ELLIPTICAL PIPE.
5. ** TOP SURFACE OF 6" INLET HEADWALL EXTENSION.
8. THE CONTRACTOR MAY PROPOSE TO USE PRECAST IN LIEU OF CAST IN PLACE BUT MUST SUBMIT DETAILED DRAWINGS OF THE PROPOSED STRUCTURE WITH AN OHIO REGISTERED PROFESSIONAL ENGINEER'S STAMP OF APPROVAL.

CITY OF COLUMBUS, OHIO
DEPARTMENT OF PUBLIC UTILITIES
DIVISION OF SEWERAGE & DRAINAGE

John J. Newson

SSES MANAGER

CAST-IN-PLACE
PIPE CULVERT ENDWALLS

STANDARD DRAWING
AA-S165

REVISED 7/9/12

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ENDWALL FOR CONCRETE PIPE										
CIRCULAR					ELLIPTICAL					
D	W	H	T	CONC. CU. YDS.	SPAN	RISE	W	H	T	CONC. CU. YDS.
8"~12"	2'-0"	3'-0"	12"	.20	23"	14"	3'-0"	3'-2"	12"	.29
15"	2'-6"	3'-2"	12"	.25	30"	19"	3'-7"	3'-4"	12"	.35
18"	3'-0"	3'-3"	12"	.31	34"	22"	3'-11"	3'-5"	12"	.38
21"	3'-6"	3'-4"	12"	.37	38"	24"	4'-6"	3'-6"	12"	.44
24"	4'-0"	3'-6"	12"	.43	42"	27"	4'-8"	3'-7"	12"	.45
27"	4'-6"	3'-8"	12"	.49	45"	29"	5'-2"	3'-8"	12"	.49
30"	5'-0"	3'-9"	12"	.56	49"	32"	5'-5"	3'-10"	12"	.52
33"	5'-6"	3'-10"	12"	.62	53"	34"	5'-11"	4'-0"	14"	.68
36"	6'-0"	4'-0"	12"	.69	60"	38"	6'-10"	4'-2"	14"	.82
39"	6'-6"	4'-2"	12"	.77	68"	43"	8'-0"	4'-4"	16"	1.01
42"	7'-0"	4'-3"	12"	.84	76"	48"	9'-2"	5'-0"	16"	1.34
48"	8'-0"	4'-6"	14"	1.09	83"	53"	10'-4"	5'-2"	18"	1.65
54"	9'-3"	4'-9"	14"	1.32	91"	58"	11'-6"	5'-5"	18"	1.97
60"	10'-6"	5'-6"	16"	1.93	98"	63"	12'-7"	5'-7"	20"	2.38
66"	11'-9"	5'-9"	18"	2.42	106"	68"	13'-9"	5'-10"	20"	2.69
72"	13'-0"	6'-0"	18"	2.77	113"	72"	14'-9"	6'-0"	22"	3.14
78"	14'-3"	6'-3"	20"	3.37	121"	77"	15'-11"	6'-3"	22"	3.49
84"	15'-6"	6'-6"	22"	4.05	128"	82"	17'-0"	6'-5"	24"	4.04
90"	16'-9"	6'-9"	22"	4.51	136"	87"	18'-2"	6'-8"	24"	4.84
96"	18'-0"	7'-0"	24"	5.31	143"	92"	19'-4"	6'-10"	26"	5.12
102"	19'-3"	7'-3"	26"	6.20	151"	97"	20'-6"	7'-1"	26"	5.42
108"	20'-6"	7'-6"	26"	6.78	166"	106"	22'-7"	7'-5"	28"	6.60
114"	21'-9"	7'-9"	28"	7.81	180"	116"	24'-10"	7'-10"	30"	7.99
120"	23'-0"	8'-0"	30"	8.93						
126"	24'-3"	8'-3"	30"	9.57						
132"	25'-6"	8'-6"	32"	10.84						
144"	28'-0"	9'-0"	34"	13.00						

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