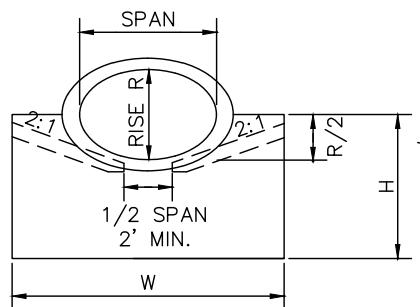
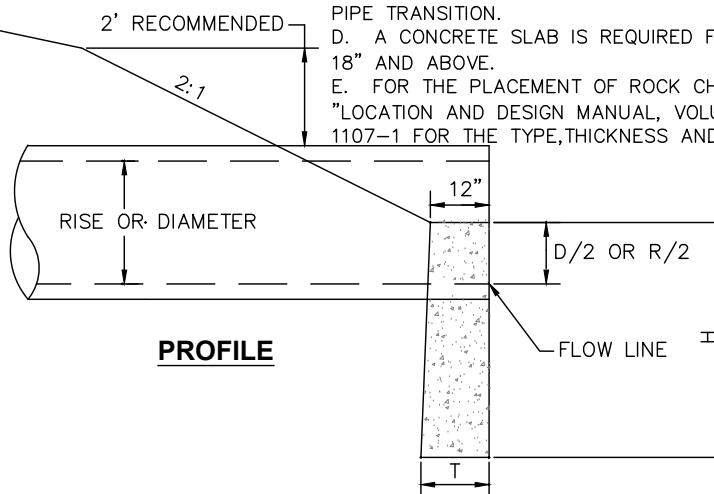


CIRCULAR



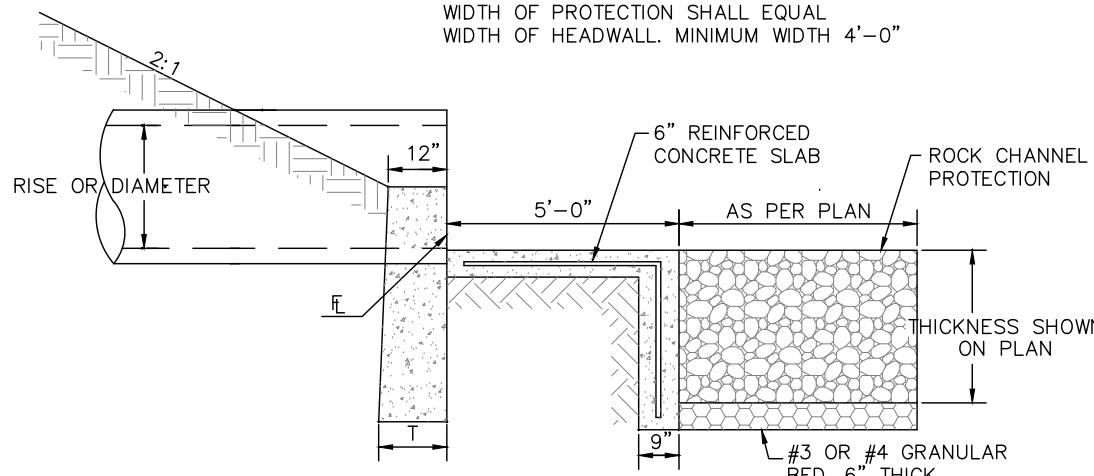
ELLIPTICAL



PROFILE

A technical drawing of a flange. It features a central circular hole with a diameter of 6 inches (TYP). The flange is supported by two vertical legs. The height of the flange is indicated as 2.7 inches, and the height of the legs is indicated as 2.1 inches. The flange is shown with a cross-hatched pattern on its outer surface.

WIDTH OF PROTECTION SHALL EQUAL
WIDTH OF HEADWALL. MINIMUM WIDTH 4'-0"



OUTLET CHANNEL PROTECTION DETAIL

(CUTOFF WALL DEPTH 2'-6" MINIMUM IS VARIABLE TO MATCH REQUIRED THICKNESS OF ROCK.)

NOTES

NOTE

- A. CONCRETE FOR HEADWALLS SHALL BE ODOT CLASS C. CONCRETE QUANTITIES ARE BASED ON HEADWALLS ONLY.
- B. HEADWALLS MAY BE PRECAST CONCRETE CONSTRUCTED TO THE ABOVE REQUIREMENTS. GROUT AROUND PIPE AFTER INSTALLATION.
- C. LAST 20'± OF PIPE BEFORE HEADWALL SHALL BE REINFORCED CONCRETE PIPE. SEE CONCRETE ENCASEMENT DETAIL, 600-9 FOR PIPE TRANSITION.
- D. A CONCRETE SLAB IS REQUIRED FOR PIPES WITH A DIAMETER OF 18" AND ABOVE.
- E. FOR THE PLACEMENT OF ROCK CHANNEL PROTECTION SEE ODOT "LOCATION AND DESIGN MANUAL, VOLUME 2, DRAINAGE DESIGN" TABLE 1107-1 FOR THE TYPE, THICKNESS AND LENGTH.

HEADWALL FOR CONCRETE PIPE

CIRCULAR				CONC. C.Y.	ELLIPTICAL					CONC. C.Y.
D	W	H	T		SPAN	RISE	W	H	T	
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"	.66
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



CITY OF SIDNEY

HALF-HEIGHT HEADWALL

REVISIONS: 07-22-13	DATE APPROVED: 06/03/2020
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