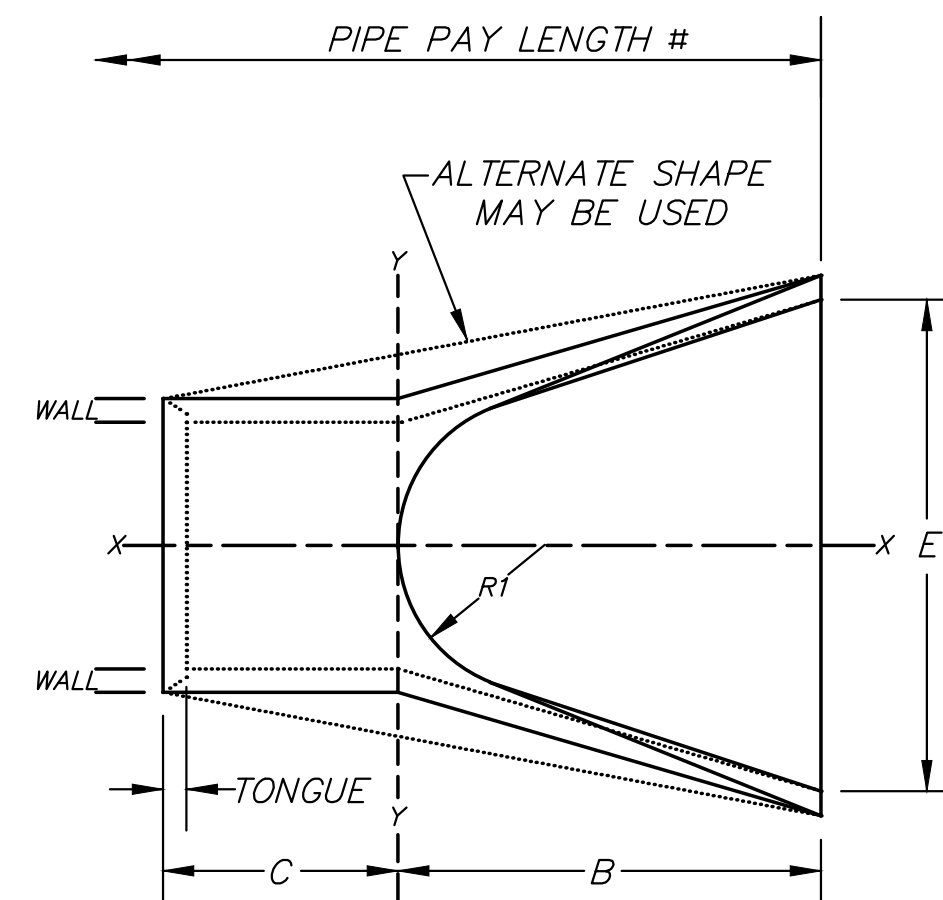


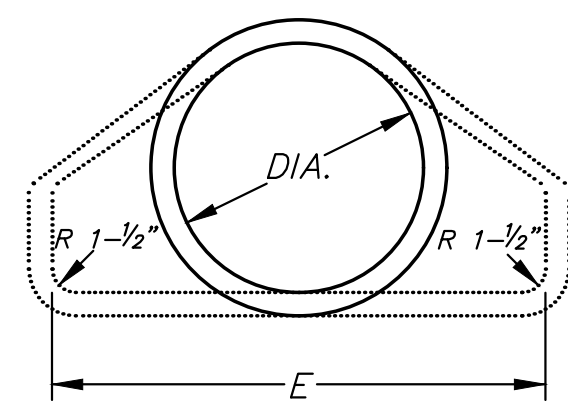
PLOTED: Thursday, July 25, 2019 @ 02:10PM

J:\PROJECTS\2018\1801010315_COW_2ND ST. BRIDGE AT BROOKSIDE\180315 CAD\SHS\05 CIVIL\SW\18315-DDM.DWG

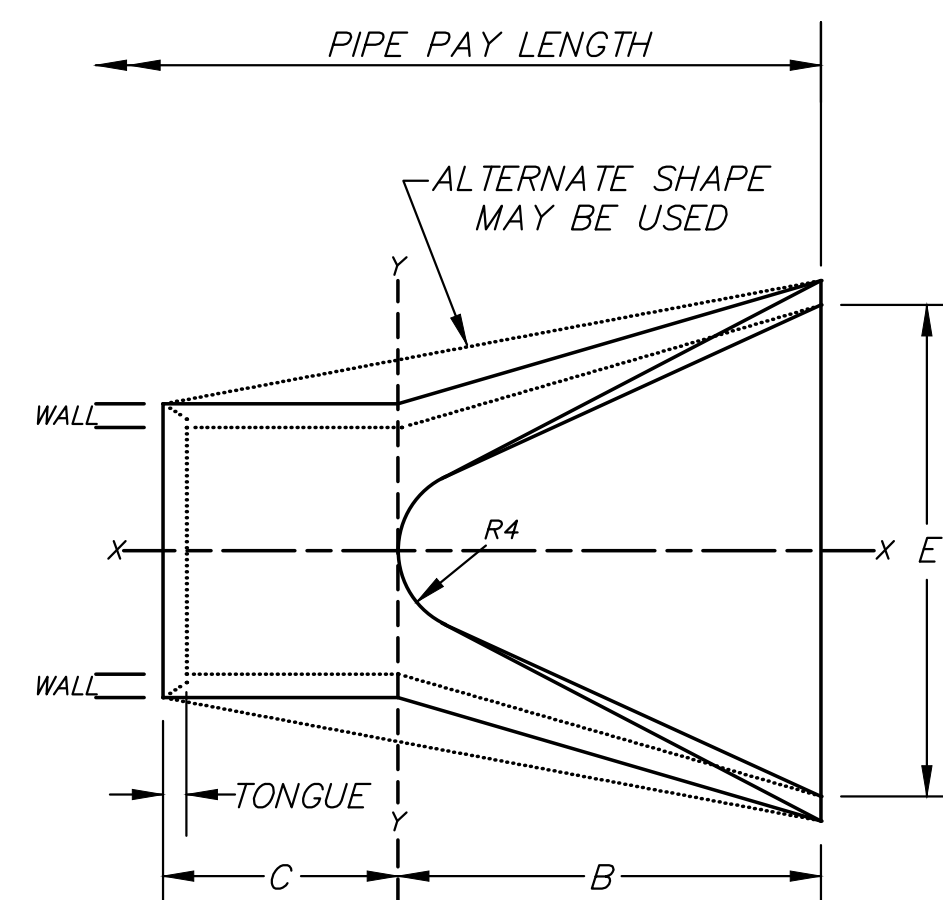
END SECTIONS ARE NOT PAID FOR SEPARATELY BUT ARE INCLUDED IN THE OVERALL PIPE LENGTH.



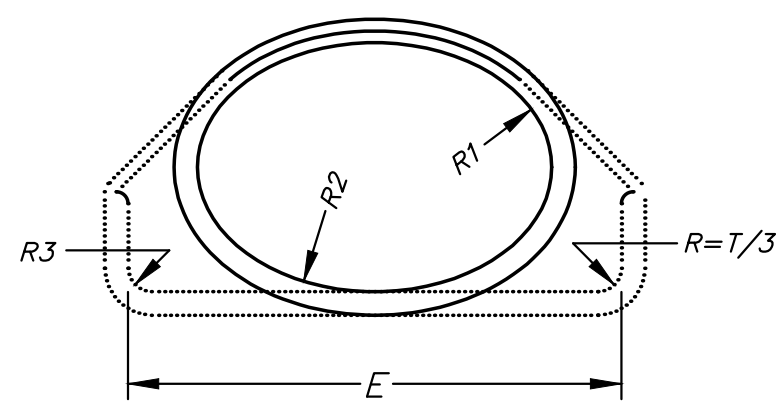
PIPE PLAN
ROUND PIPE



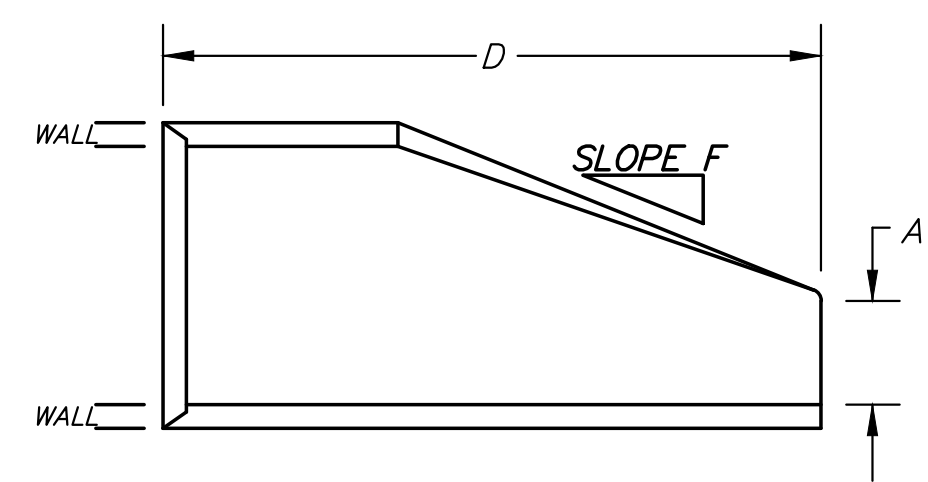
SECTION Y-Y
ROUND PIPE



PIPE PLAN
ELLIPTICAL PIPE



SECTION Y-Y
ELLIPTICAL PIPE

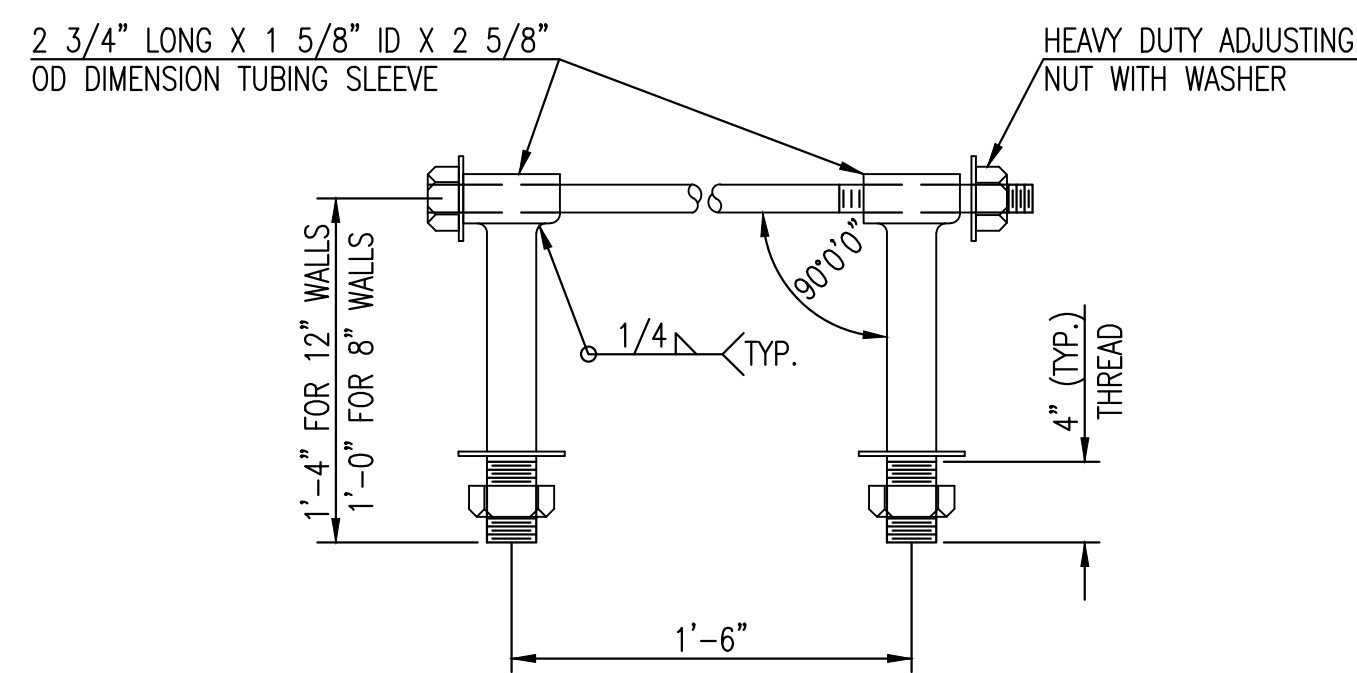


SECTION X-X

DIAM.	A	B	C	D	E	F	R1	TONGUE	WALL
18"	9"	2'-3"	3'-10"	6'-1"	3'-0"	3:1	12"	2-1/2"	2-1/2"

END AREA SQ.FT.	ROUND EQUIV.	SPAN	RISE	WALL	A	B	C	D	E	R1	R2	R3	R4
16.6	54"	68"	43"	6"	25-1/2"	5'-0"	3'-0"	8'-0"	7'-6"	18-21/32"	58-15/32"	6"	16"

TONGUE LENGTHS BASED ON QUINN STANDARD

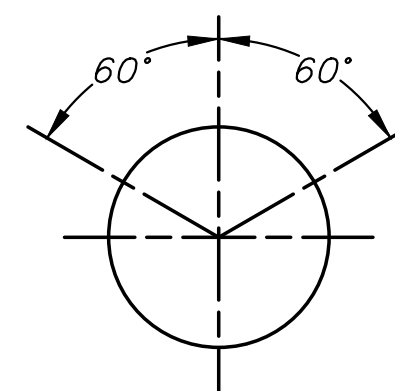


HEAVY DUTY (H.D.) COUPLER

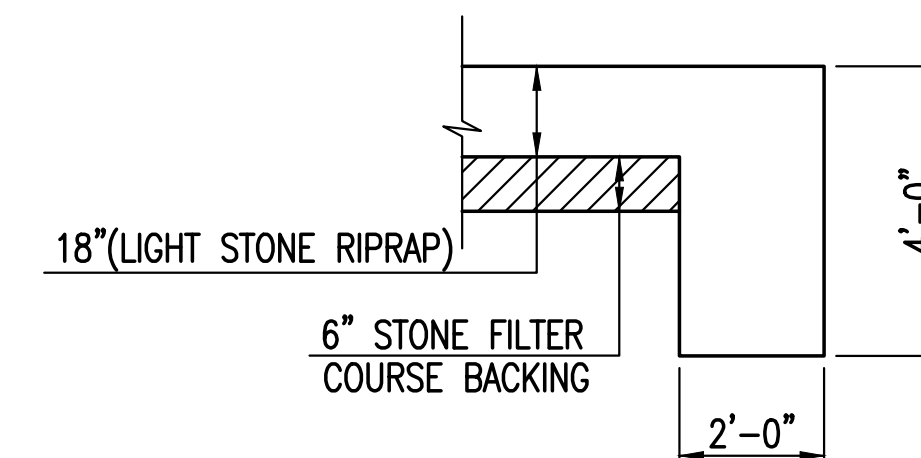
NO SCALE

NOTES

- BOLTS TO BE A-36 1 1/2" DIAMETER.
- BOLTS, NUTS, WASHERS AND SLEEVES TO BE ZINC PLATED.
- WASHERS TO BE 3 1/2" O.D. X 7 GAUGE.
- SHIP WITH NUTS AND WASHERS PLACED ON BOLTS.
- INSTALL PIPE COUPLER AT ALL STORM SEWER PIPE OUTFALLS. COUPLE A MINIMUM OF THREE JOINTS FROM THE END OF THE LINE.
- TIES ARE SUBSIDIARY TO STORM SEWER INSTALLATIONS.



ROUND AND ELLIPTICAL PIPE



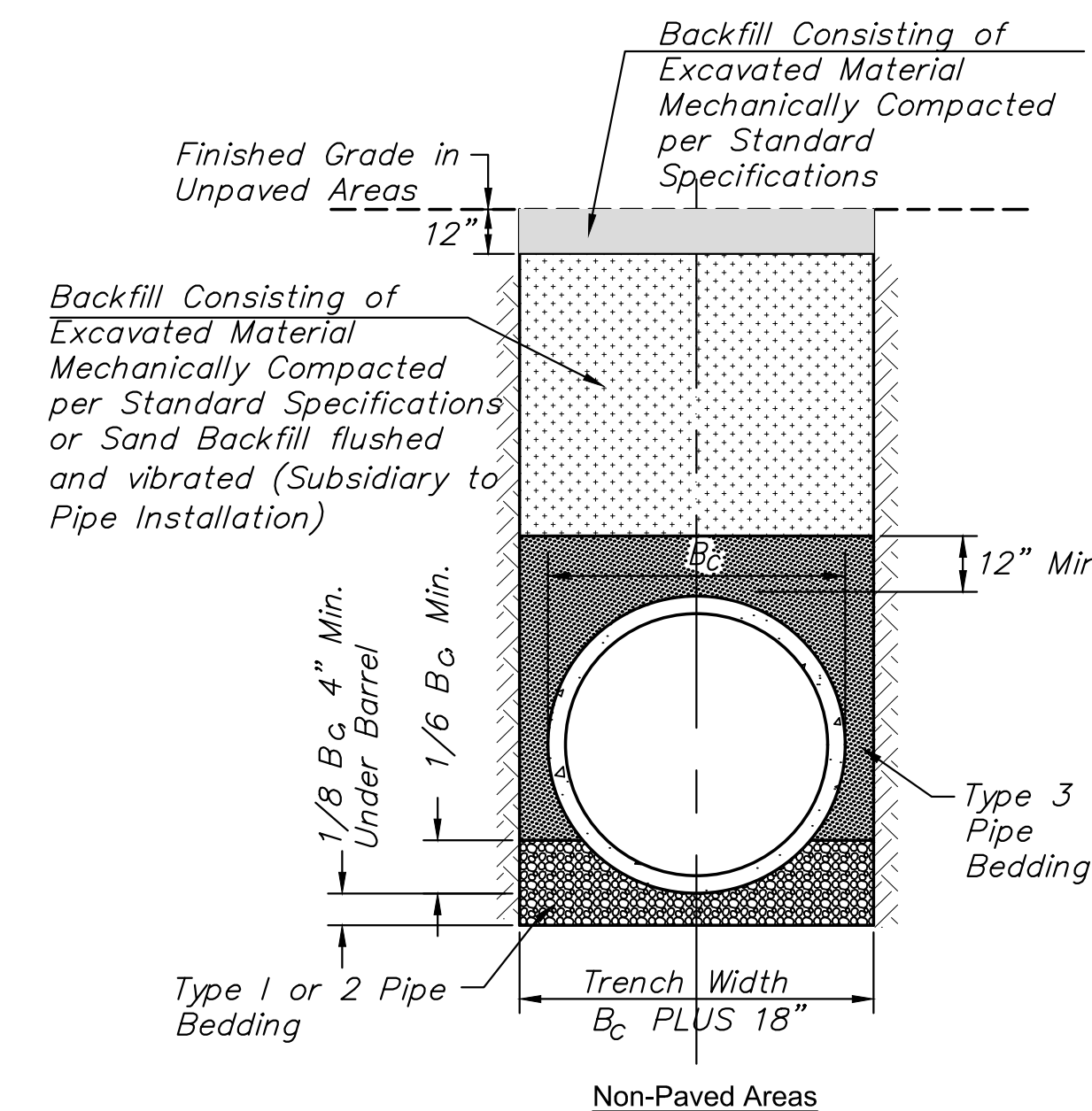
TYPICAL SECTION THRU TOEWALL

NO SCALE

NOTES

- ALL RIPRAP FOR THIS PROJECT SHALL BE NATURAL STONE. NEITHER BROKEN CONCRETE, FABRIC ENVELOPE, NOR PREMIXED DRY PACKAGED CONCRETE BAG ALTERNATES WILL BE ALLOWED, UNLESS INDICATED OTHERWISE.
- TOEWALLS SHALL BE INSTALLED ALONG ALL UNPROTECTED EDGES OF STONE RIPRAP.
- GROUTING OF THE SURFACE OF THE RIPRAP SHALL NOT BE PERFORMED, UNLESS INDICATED OTHERWISE. GROUTING OF THE TOEWALLS SHALL BE PERFORMED PER CITY SPECIFICATIONS.

LIGHT STONE RIPRAP DETAILS



STORM SEWER TRENCH DETAILS

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MISCELLANEOUS DETAILS (STORM SEWER)

PROJECT NO.	472-85435	
DATE	JULY 2019	
SCALE	NTS	
DESIGNED	DRAWN	CHECKED
JRA	RAM	JRA

NO.	REVISION	DATE

SHEET NO.