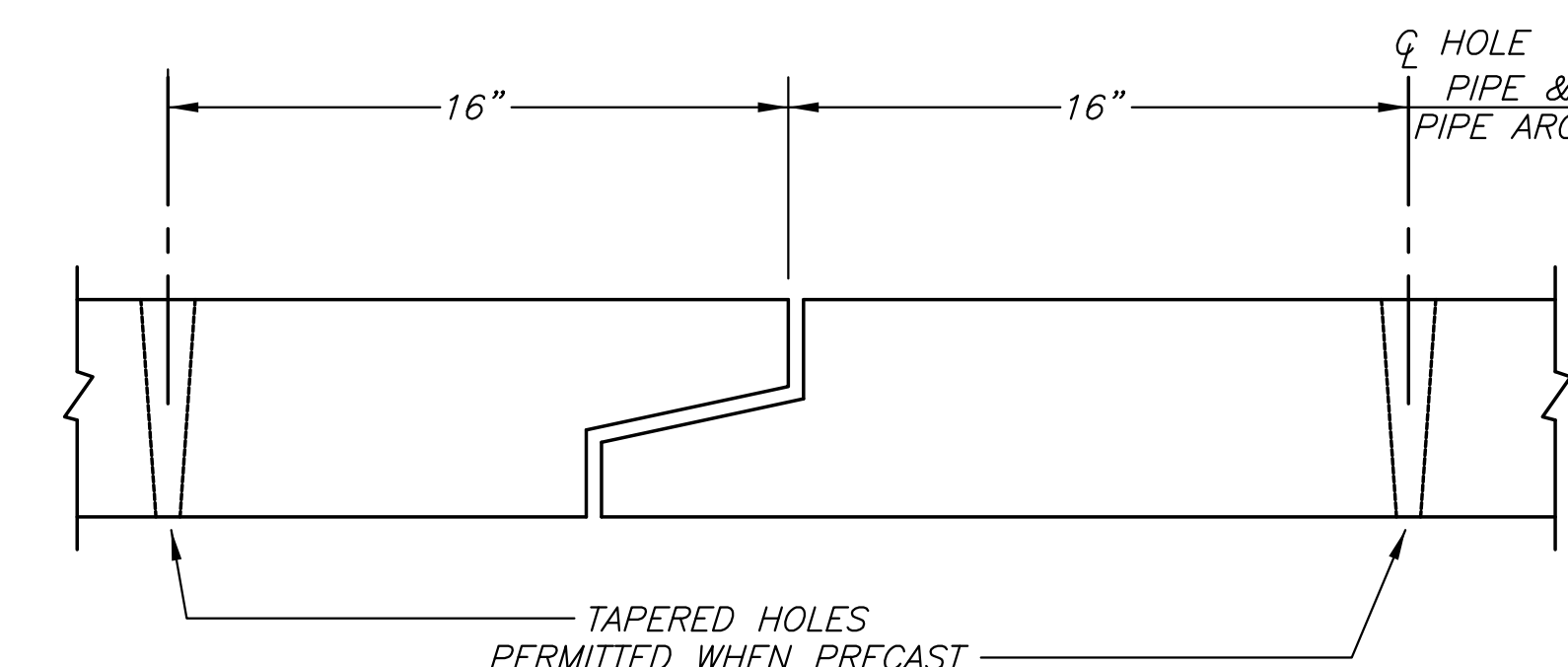
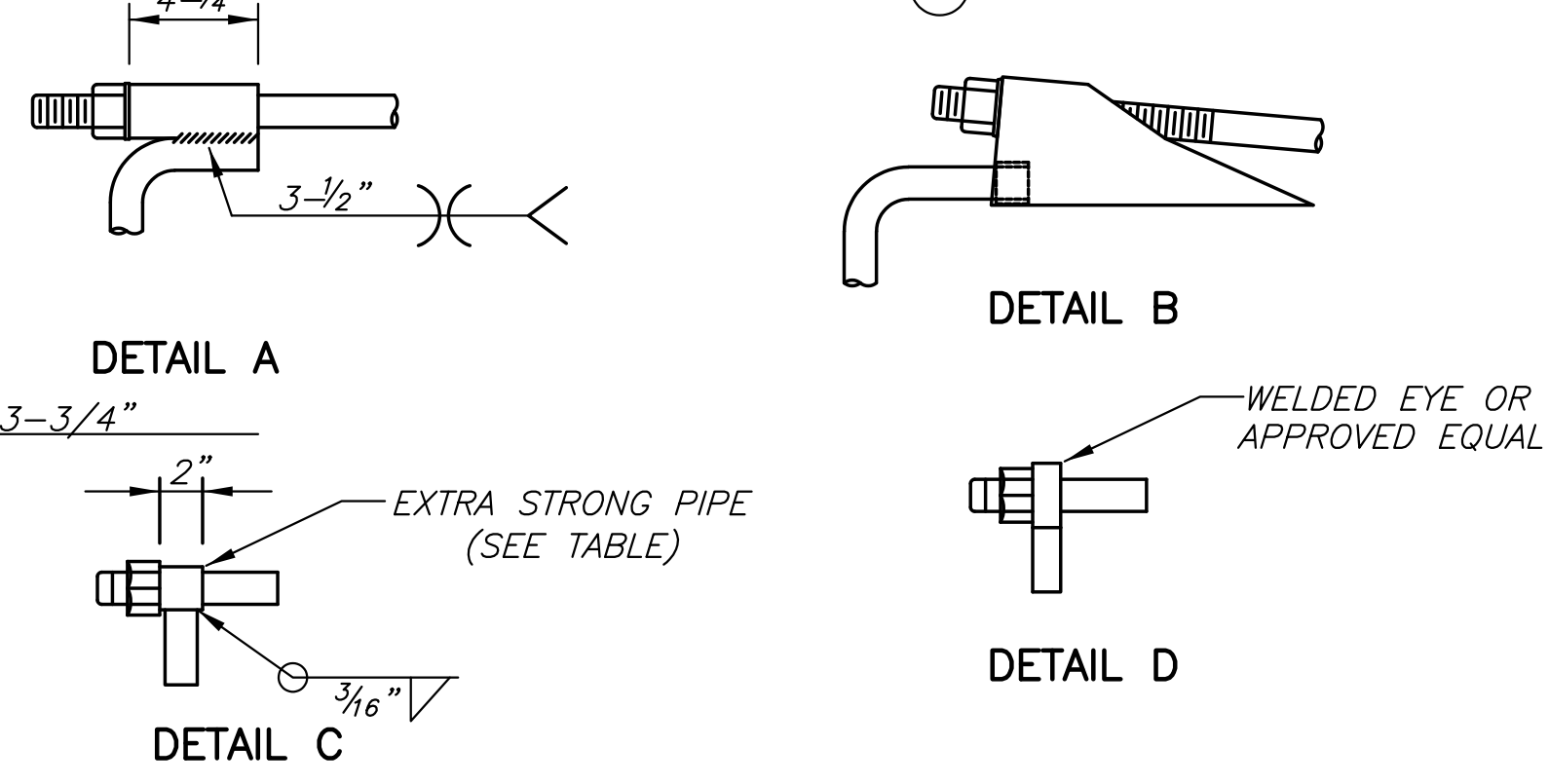
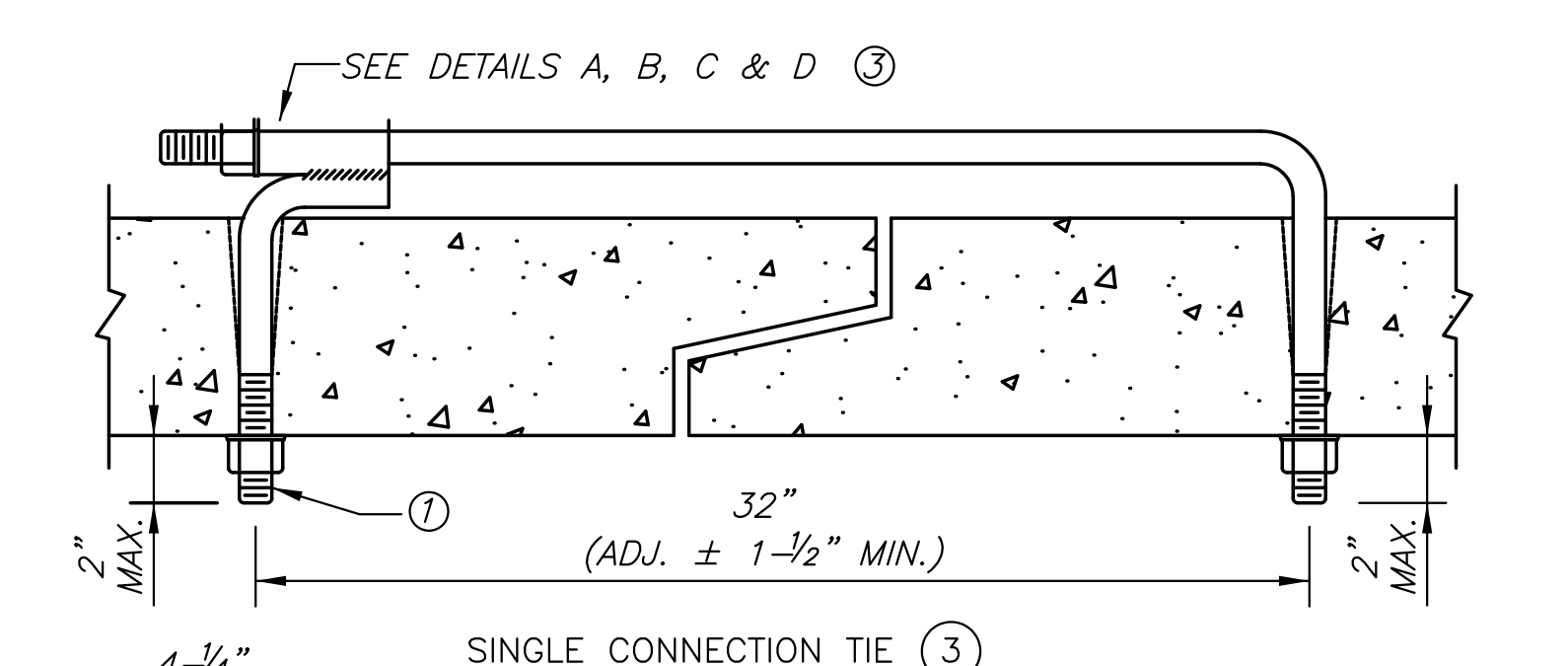
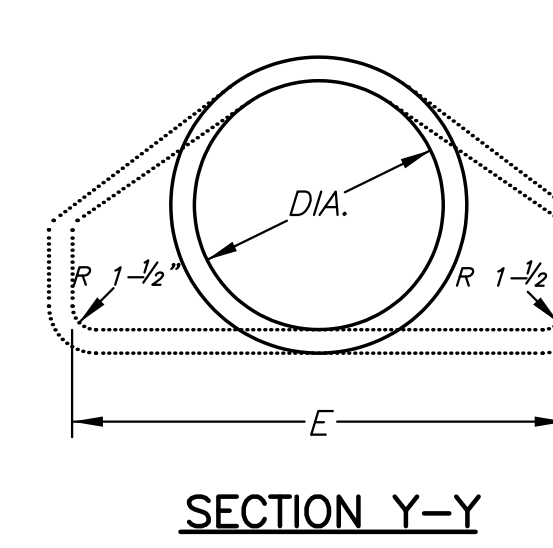
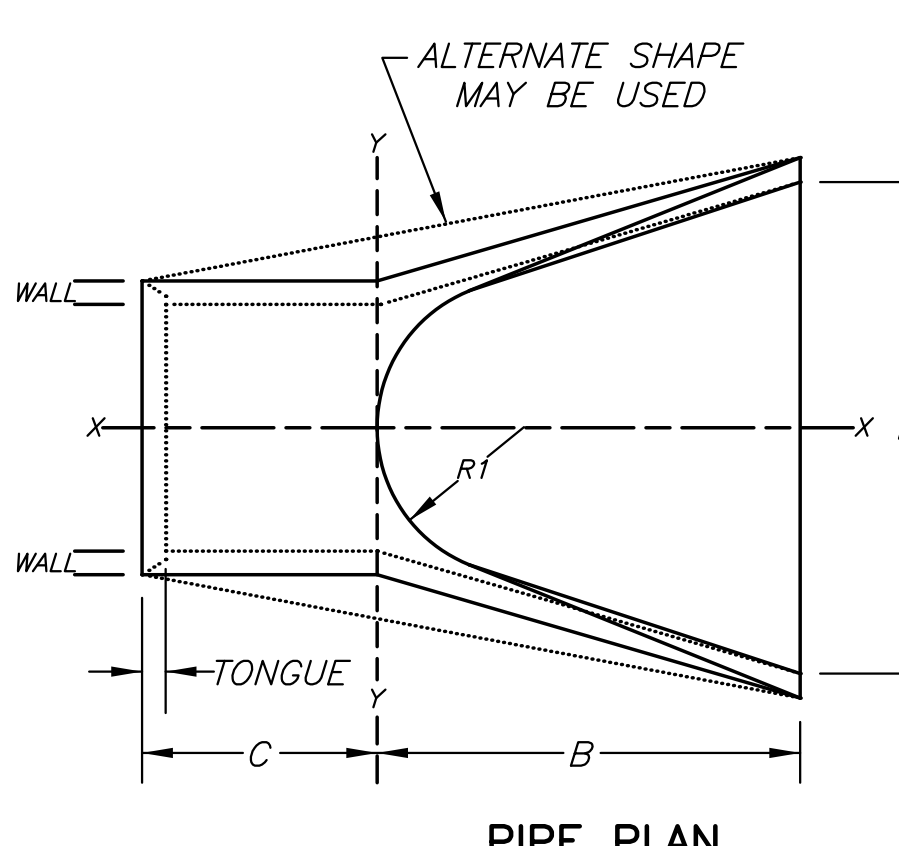


**SHEET PILING FOR END SECTIONS**



HOLES SHALL BE CAST OR DRILLED 16" FROM CENTERLINE OF JOINTS FOR BOX CULVERTS, AS SHOWN ABOVE, UNLESS FORMS ARE SET UP FOR 16" SPACING FROM OUTSIDE OF JOINT.



**NOTES:**

- TIES ARE SUBSIDIARY TO STORM SEWER PIPE.
- TIE RODS SHALL BE GALVANIZED OR POWER WASHED AND DIPPED IN AN APPROVED ZINC RICH EPOXY PRIME PAINT AFTER FABRICATION.
- TIES TO BE USED ONLY TO HOLD PIPE SECTIONS TOGETHER, NOT FOR PULLING SECTIONS TIGHT.
- CONNECT END SECTION AND PIPE SECTIONS WITH PIPE TIES A MINIMUM OF 2 JOINTS FROM THE END SECTION.

- ① TIE ROD THREADS SHALL PROJECT TO THE INSIDE OF PIPE EXCEPT AS NOTED IN PLANS.
- ② TIE ROD THREADS SHALL BE RECESSED WHEN PIPE IS USED AS CATTLE PASS OR PEDESTRIAN TRAIL.
- ③ TIES MAY BE COMPLETED WITH U-BOLT TIES, SINGLE CONNECTION TIES (AS SHOWN) OR DOUBLE CONNECTION TIES.

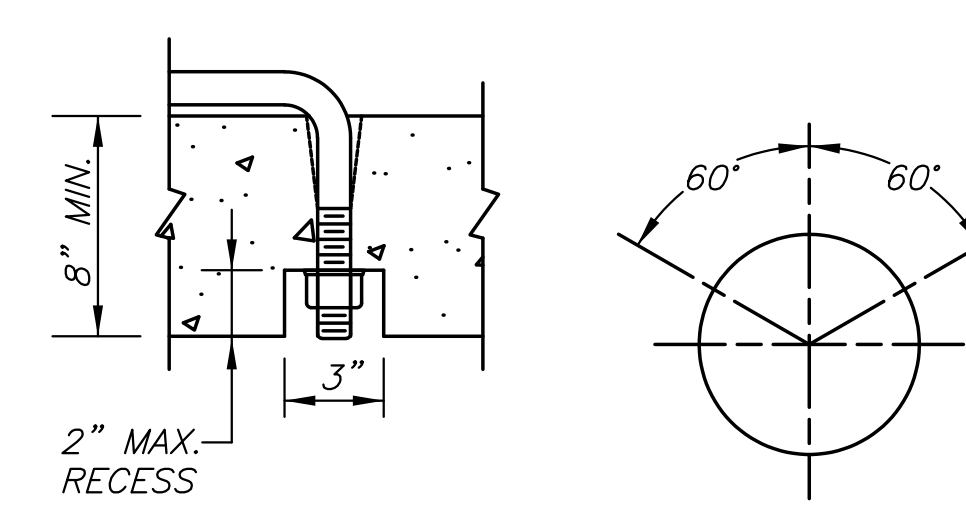
DIAM.	A	B	C	D	E	F	R1	TONGUE	WALL
12"	4"	2' 0"	4' 0"-7/8"	6' 0"-7/8"	2' 0"	3:1	9"	1-1/2"	2"
15"	6"	2' 3"	3' 10"	6' 1"	2' 6"	3:1	11"	2"	2 1/4"
18"	9"	2' 3"	3' 10"	6' 1"	3' 0"	3:1	12"	2-1/2"	2 1/2"
24"	9-1/2"	3' 7-1/2"	2' 6"	6' 1-1/2"	4' 0"	3:1	14"	2-1/2"	3"
30"	1' 0"	4' 6"	1' 7-3/4"	6' 1-3/4"	5' 0"	3:1	15"	3"	3-1/2"
36"	1' 3"	5' 3"	1' 10-3/4"	8' 1-3/4"	6' 0"	3:1	20"	3-1/2"	4"
42"	1' 9"	5' 3"	2'-11"	8' 2"	6' 6"	3:1	22"	3-3/4"	4-1/2"
48"	2' 0"	6' 0"	2' 2"	8' 2"	7' 0"	3:1	22"	4-1/4"	5"
54"	2' 3"	5' 5"	2' 11"	8' 4"	7' 6"	3:1	24"	4-3/4"	5-1/2"
60"	2' 6"	5' 0"	3' 3"	8' 3"	8' 0"	2.4:1	24"	5"	6"
66"	2' 0"	6' 6"	1' 9"	8' 3"	8' 6"	2:1	24"	5-1/2"	7"
72"	2' 0"	6' 6"	1' 9"	8' 3"	9' 0"	2:1	24"	6"	7-1/2"

END AREA SQ.FT.	ROUND EQUIV.	SPAN	RISE	WALL	A	B	C	D	E	R1	R2	R3	R4
3.3	24"	30"	19"	3 1/4"	8-1/2"	3' 3"	2' 9"	6' 0"	4' 0"	8-1/4"	26-1/4"	3"	7"
4.1	27"	34"	22"	3 1/2"	9"	3' 10"	2' 2"	6' 0"	4' 6"	9-1/4"	29-17/32"	3"	8"
5.1	30"	38"	24"	3 3/4"	9-1/2"	4' 6"	1' 6"	6' 0"	5' 0"	10-1/4"	32-3/4"	3"	9"
6.3	33"	42"	27"	3 3/4"	10-3/8"	4' 9"	1' 3"	6' 0"	5' 6"	11-7/16"	36-3/16"	3"	10-1/2"
7.4	36"	45"	29"	4 1/2"	11 1/4"	5' 0"	3' 0"	8' 0"	6' 0"	12-1/4"	39-1/4"	3"	12"

TONGUE LENGTHS BASED ON QUINN STANDARD

PIPE SIZE (INCHES)	ROD THREAD DIA.	ROD THREAD DIA.	EXTRA STRONG PIPE INSIDE DIA.
12 - 27	5/8"	5/8"	3/4"
30 - 66	3/4"	3/4"	1"
72 - 108	1"	1"	1-1/4"

PIPE SIZE LISTED IS INSIDE DIA. OF ROUND PIPE OR EQUIVALENT DIA. OF PIPE ARCH.



OPTIONAL RECESS DETAIL ② ROUND PIPE

STORM WATER SEWER PLAN FOR  
**STEEPLE BAY ADDITION**  
PART A

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**END SECTION DETAILS**

PROJECT NO.	468-85316	
DATE	JULY 2018	
SCALE	N/A	
DESIGNED	DRAWN	CHECKED
SPE	SPE	SPE
NO.	REVISION	DATE