



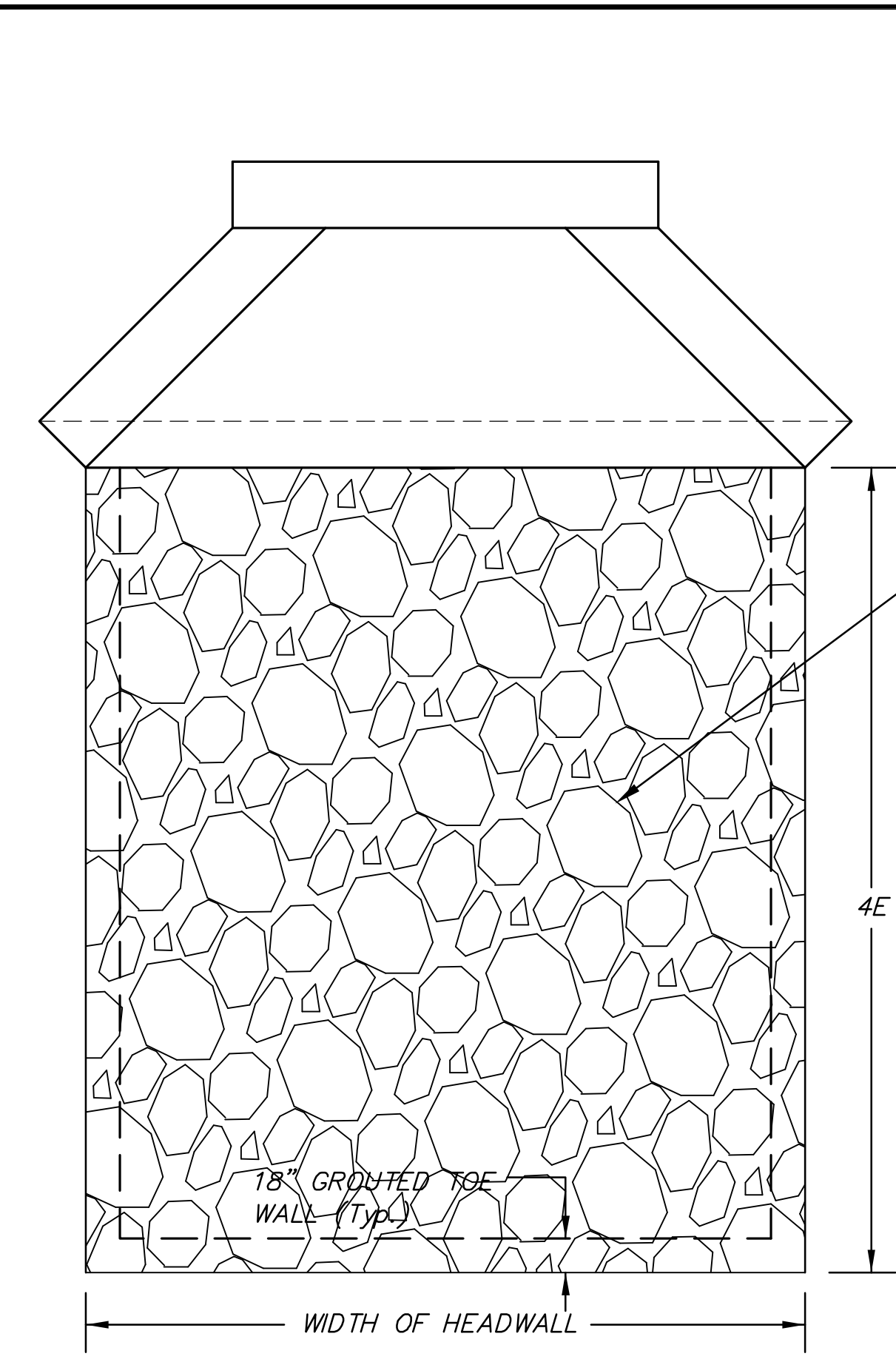
# BROADWAY BRIDGE AT 34TH STREET SOUTH

**RCP  
OUTFALL  
DETAIL**  
SHEET TITLE  
472-84830  
PROJECT NUMBER

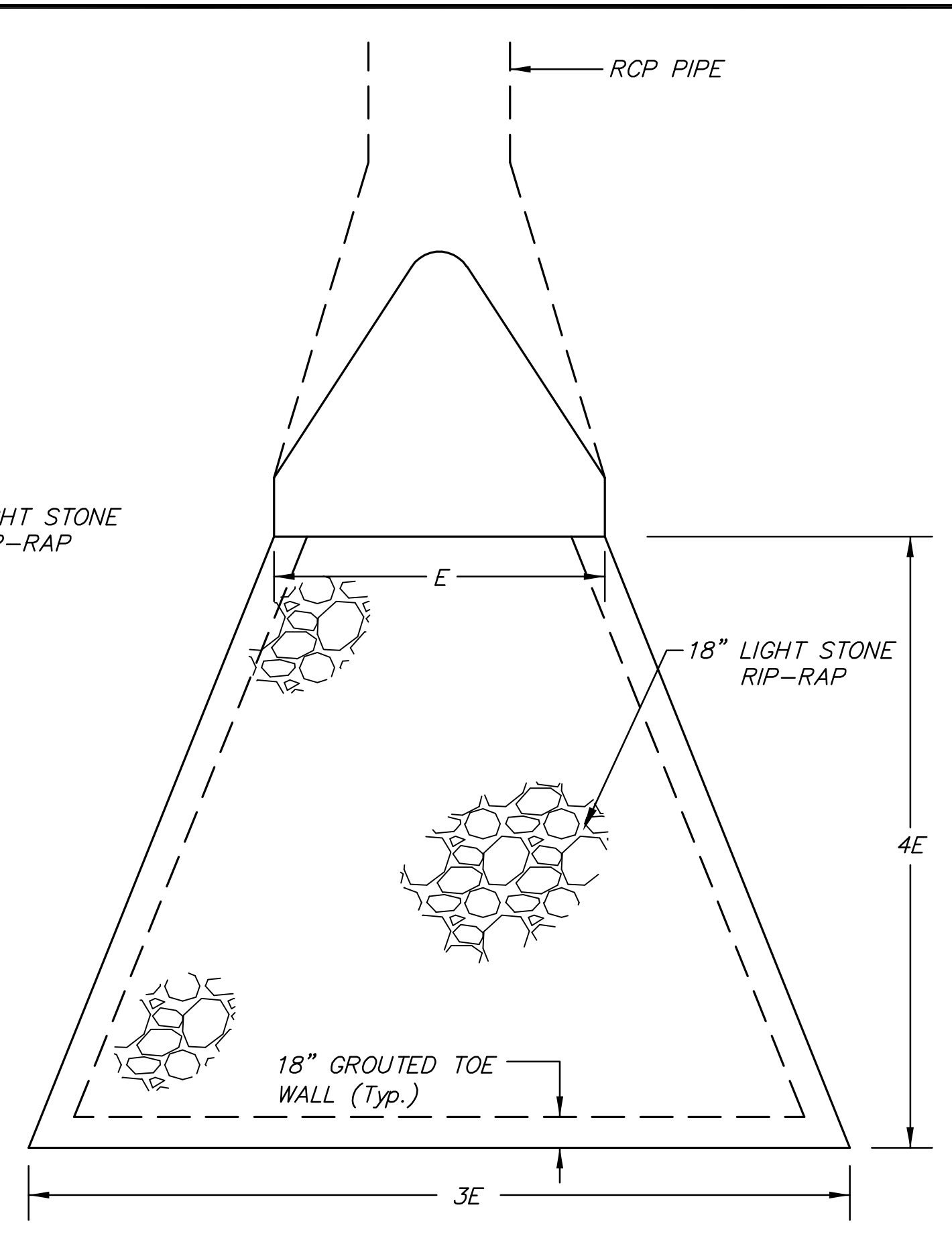
JRA  
DESIGN BY  
TBK  
DRAWN BY  
JRA  
CHECKED BY

ISSUED  
October 9, 2012  
REVISED

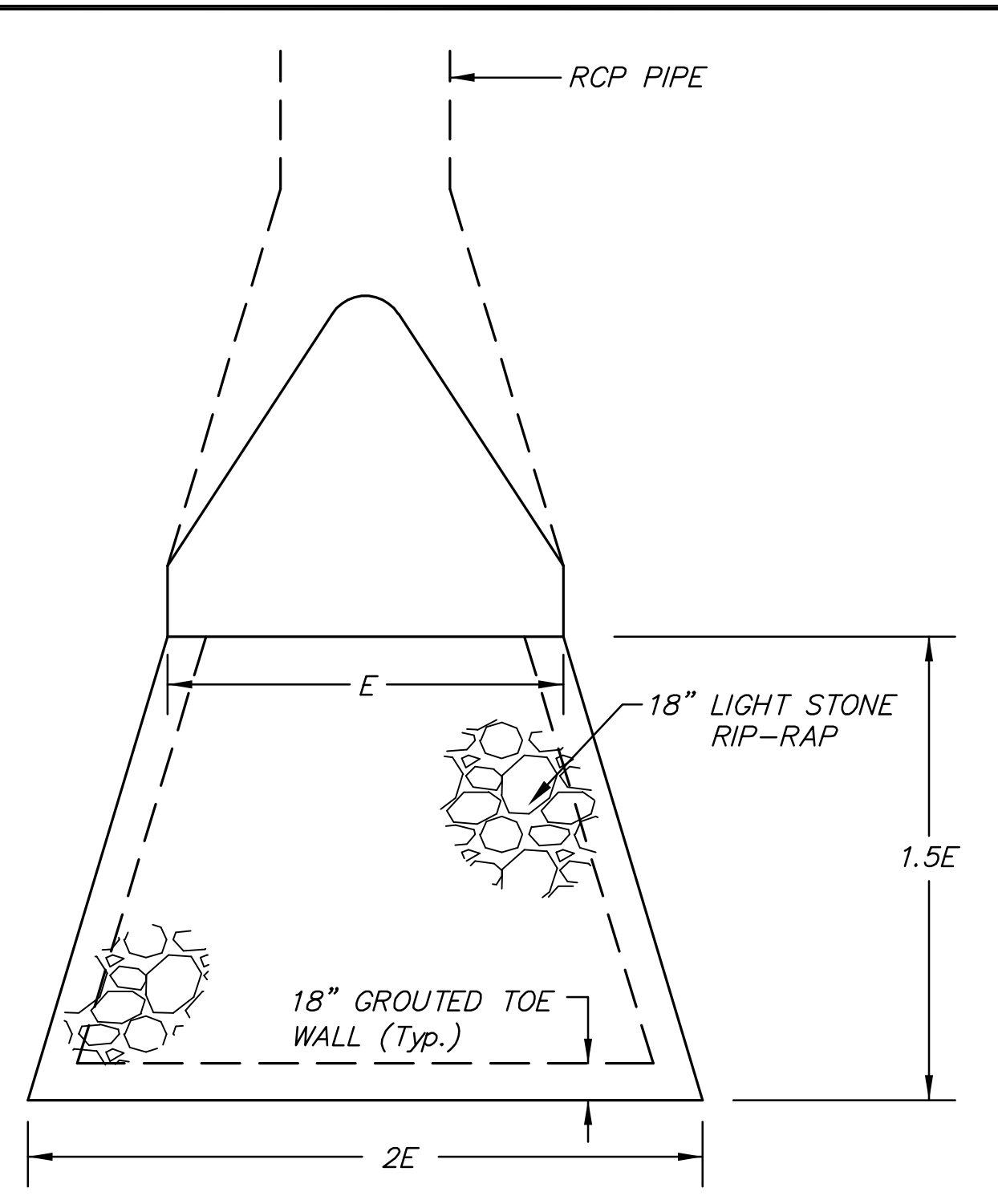
SHEET NO.  
64 of 212



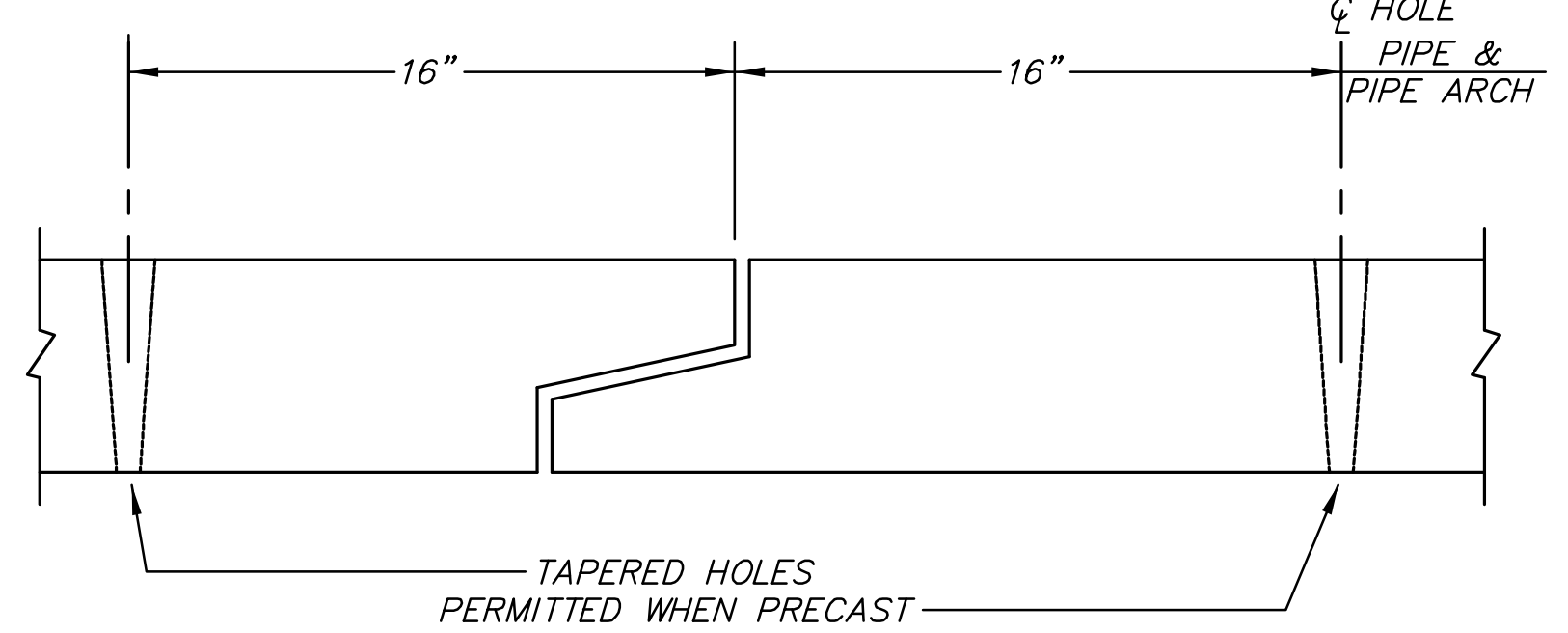
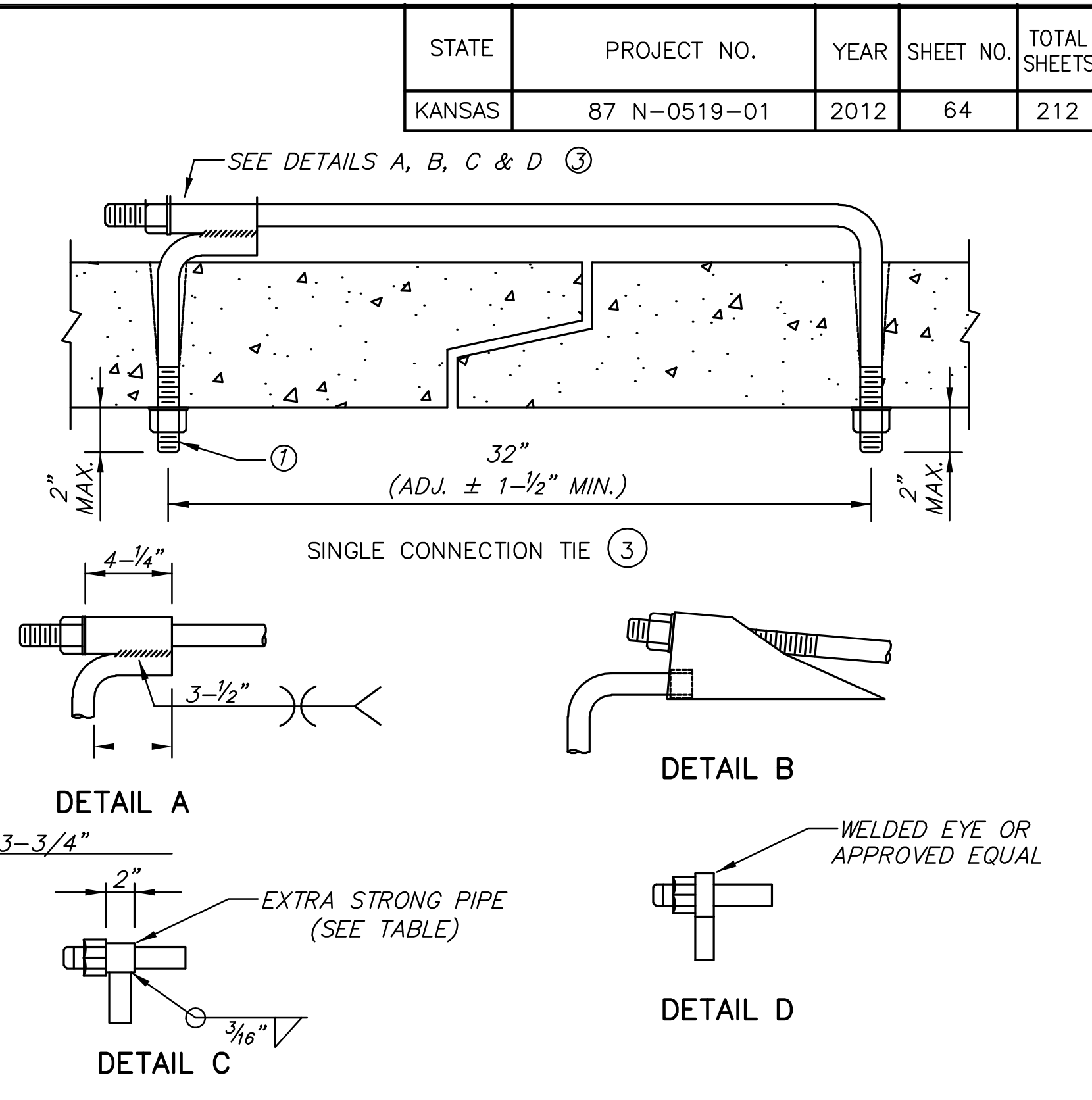
RIP-RAP PLAN AT HEADWALL



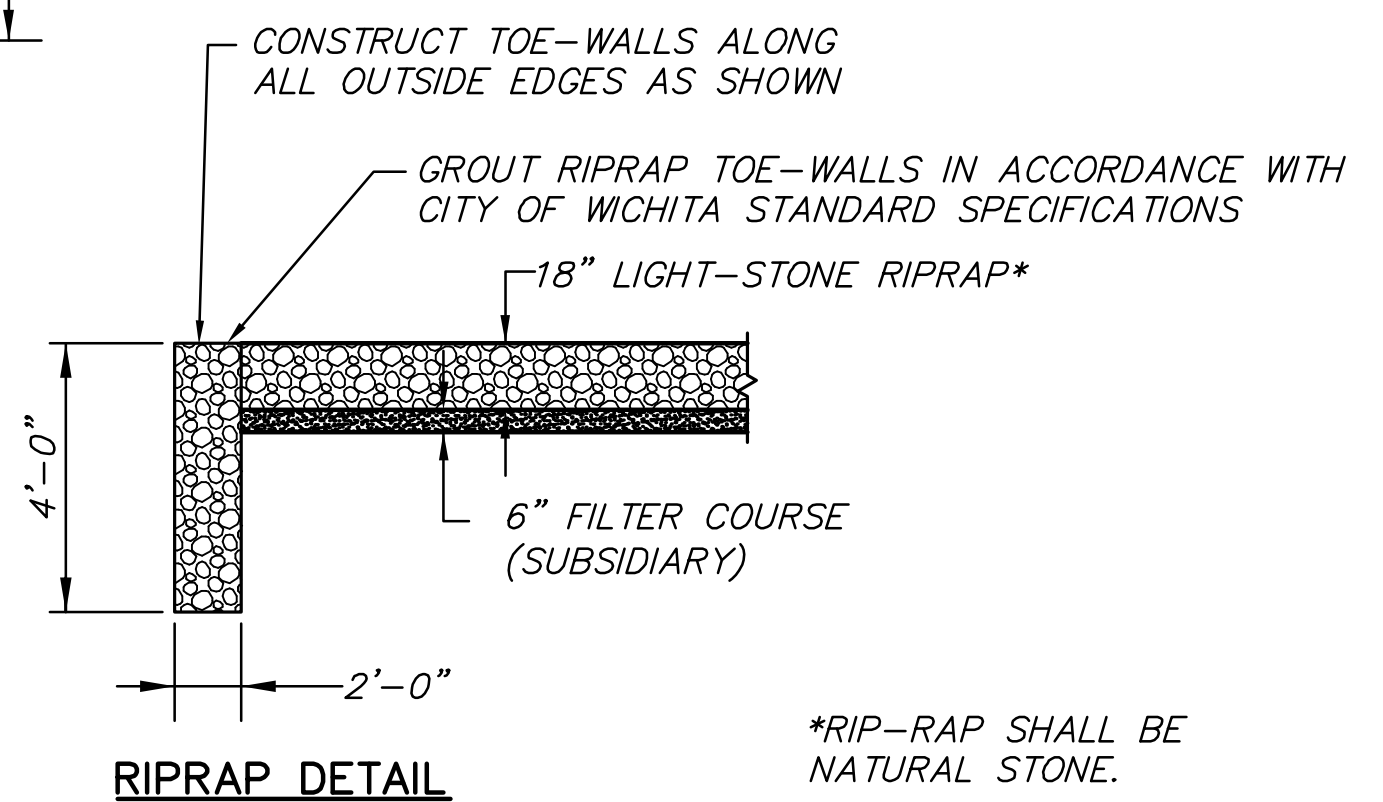
RIP-RAP PLAN PIPE INLET



RIP-RAP PLAN PIPE OUTLET



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.



RIPRAP DETAIL

\*RIP-RAP SHALL BE NATURAL STONE.

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

**NOTES:**

FILTER COURSE AND GROUTED TOE WALL SUBSIDIARY TO "RIP RAP, LIGHT STONE".

TIES ARE SUBSIDIARY TO STORM SEWER PIPE.

THE RODS SHALL BE GALVANIZED OR POWER WASHED AND DIPPED IN AN APPROVED ZINC RICH EPOXY PRIME PAINT AFTER FABRICATION.

RIP-RAP DIMENSIONS AT PIPE INLETS AND OUTLETS MAY BE ADJUSTED TO FIT ACTUAL FIELD CONDITIONS IF APPROVED BY THE ENGINEER.

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 DISTANCE OF 20' FROM THE END OF 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.

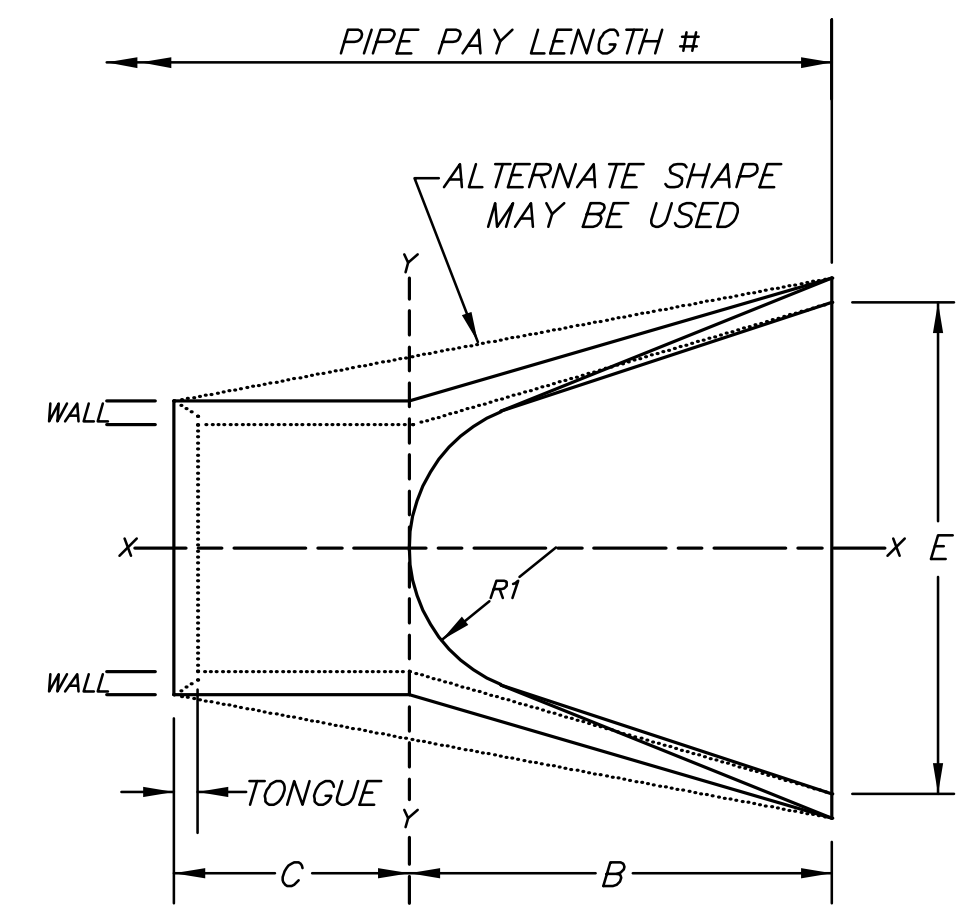
TIES MAY BE COMPLETED WITH U-BOLT TIES, SINGLE CONNECTION TIES (AS SHOWN) OR DOUBLE CONNECTION TIES.

NOTE: SEE ROADSIDE IMPROVEMENT PLANS FOR QUANTITY AND DIMENSIONS OF RIP-RAP AT EACH LOCATION.

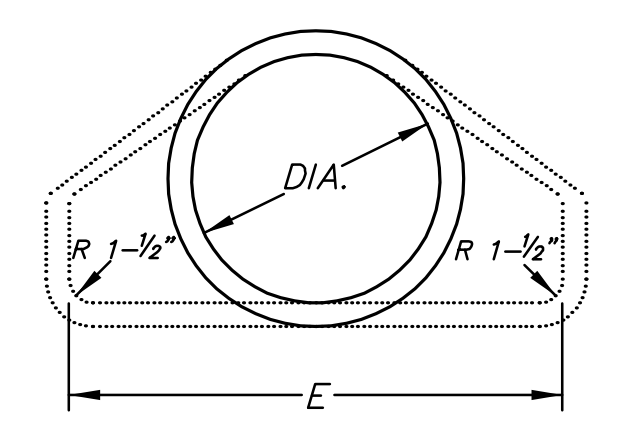
DIAM.	A	B	C	D	E	F	R1	TONGUE	WALL
12"	4"	2' 0"	4' 0-7/8"	6' 0-7/8"	2' 0"	3:1	9"	1-1/2"	2"
15"	6"	2' 3"	3' 10"	6' 1"	2' 6"	3:1	11"	2"	2 1/4"
18"	9"	2' 3"	3' 10"	6' 1"	3' 0"	3:1	12"	2-1/2"	2 1/2"
24"	9-1/2"	3' 7-1/2"	2' 6"	6' 1-1/2"	4' 0"	3:1	14"	2-1/2"	3"
30"	1' 0"	4' 6"	1' 7-3/4"	6' 1-3/4"	5' 0"	3:1	15"	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"

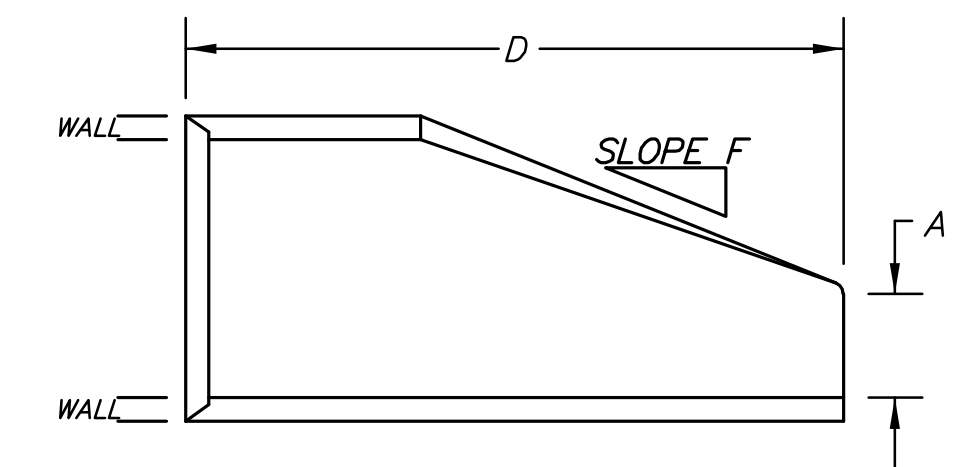
TONGUE LENGTHS BASED ON QUINN STANDARD



PIPE PLAN



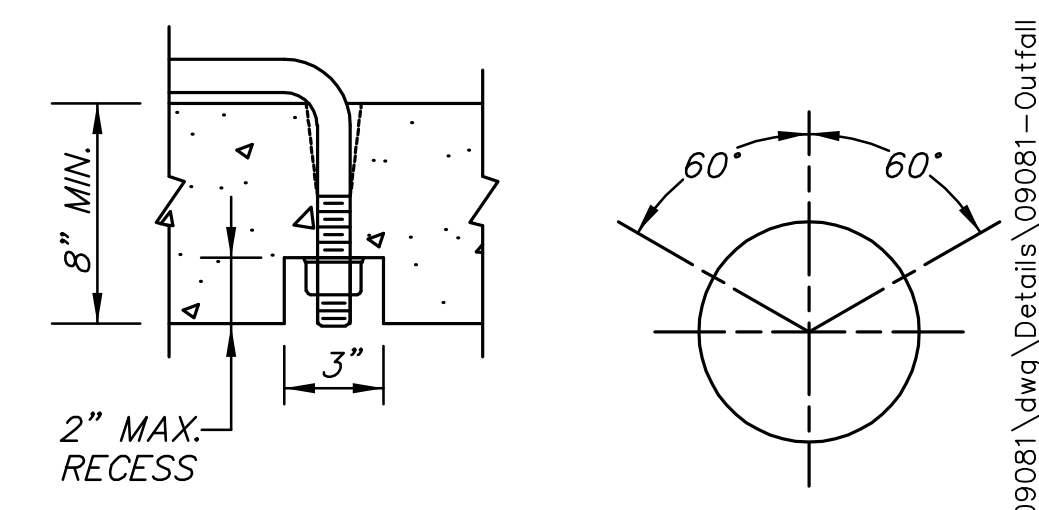
SECTION Y-Y



SECTION X-X

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

PLOTTED: Thursday, October 11, 2012 @ 10:44AM

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