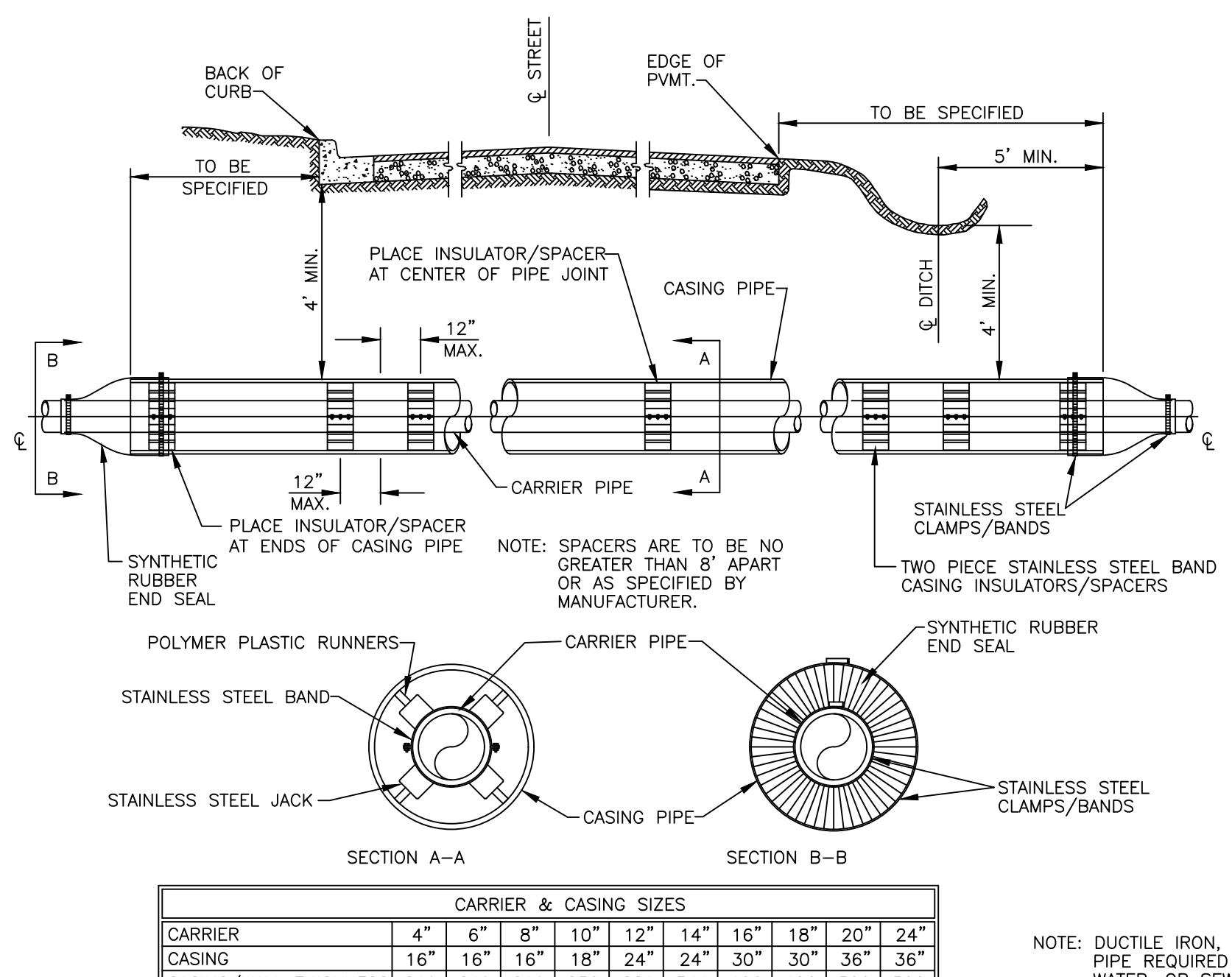




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WATER/SEWER DETAILS

ENCASEMENT DETAIL

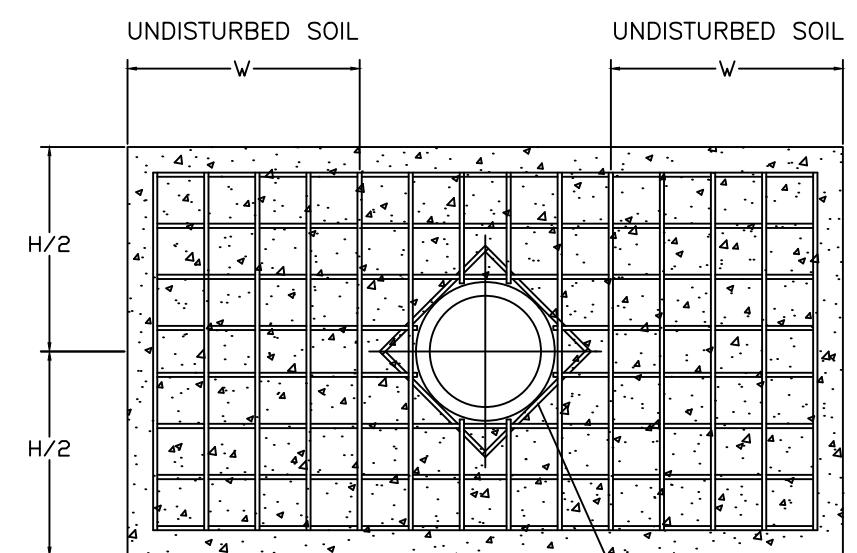


*ALL BELLS SHALL BE RESTRAINED INSIDE ENCASEMENT BY APPROVED METHOD.

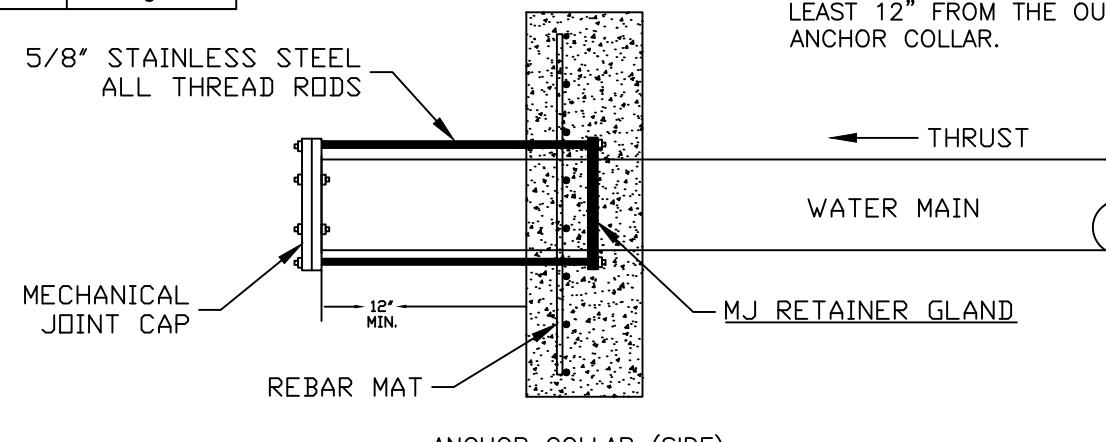
GENERAL WATER/SEWER DETAIL: GWS01

ANCHOR COLLAR SPECIFICATIONS

PIPE SIZE	DIMENSIONS			REINFORCING BARS		
	W	H	T	M	"A" BARS	"B" BARS
6"	1.5"	2.0"	1.0"	M.J. RETAINER GLAND	#6@6"	#6@6"
8"	1.5"	2.5"	1.0"	M.J. RETAINER GLAND	#6@6"	#6@6"
12"	2.0"	4.0"	1.5"	M.J. RETAINER GLAND	#6@6"	#6@6"
16"	3.0"	4.5"	1.5"	M.J. RETAINER GLAND	#6@6"	#6@6"
20"	3.0"	5.0"	2.0"	M.J. RETAINER GLAND	#6@6"	#6@6"
24"	3.5"	5.5"	2.0"	M.J. RETAINER GLAND	#7@6"	#6@10"
30"	6.5"	6.0"	2.5"		#8@6"	#7@10"
36"	7.0"	7.0"	2.5"		#8@6"	#7@10"



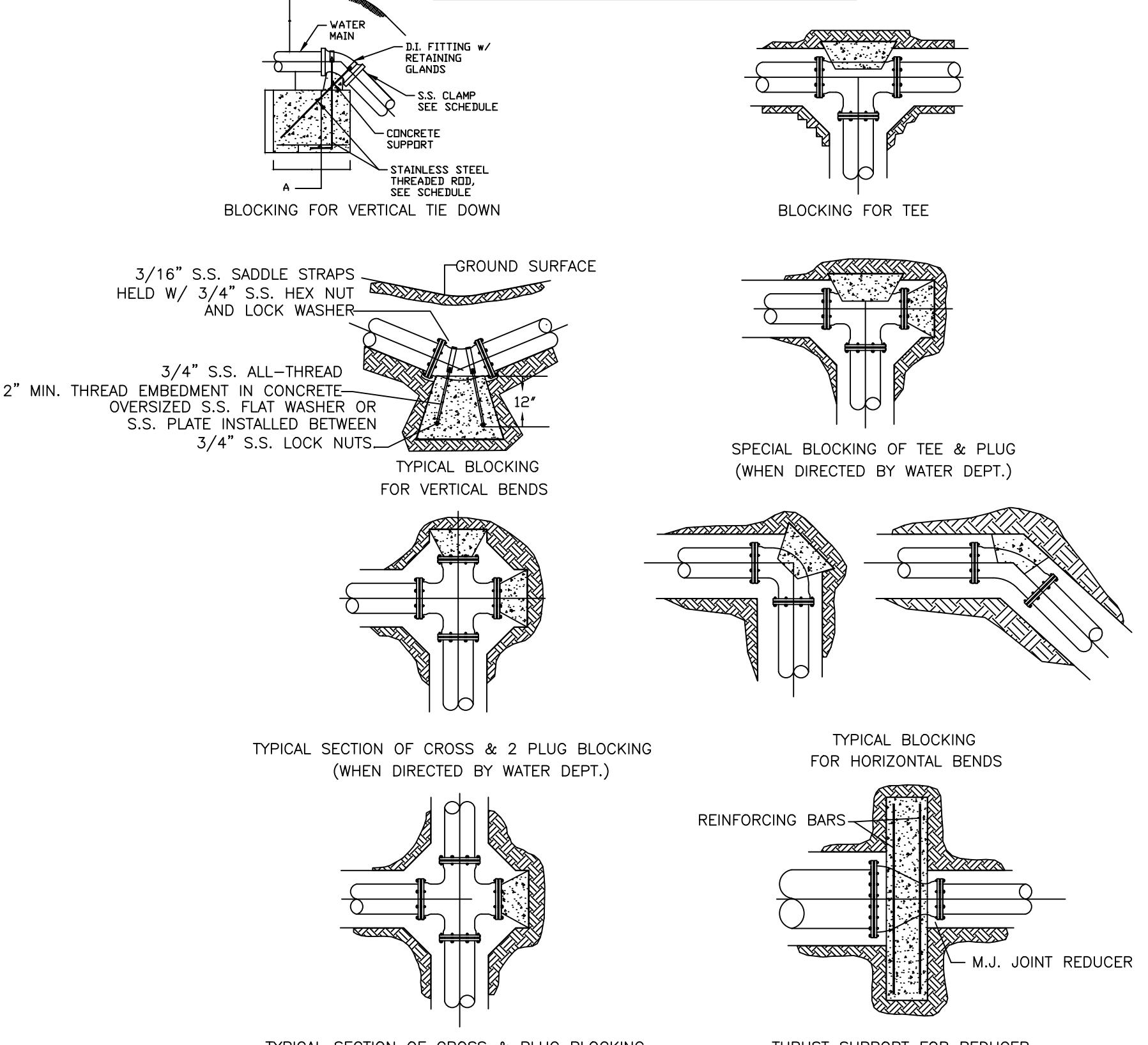
ROD REQUIREMENTS	
MAIN SIZE	NO. OF RODS
6"	2
8"	4
12"	4
16"	6
24"	6
30"	8
36"	8



NOTE:
ALL-THREAD STEEL RODS SHALL BE
5/8" STAINLESS STEEL WITH STAINLESS
STEEL HARDWARE.

GENERAL WATER/SEWER DETAIL: GWS04

THRUST BLOCKING



NOTES:
1. ALL BLOCKING SHALL BE AGAINST UNDISTURBED SOIL USING 4,000 PSI CONCRETE.
2. WHERE SOIL CONDITIONS MAKE IT NECESSARY TO POUR CONCRETE OVER JOINTS, THE ENDS OF THE ADJACENT PIPES MUST HAVE A THRUST BLOCK TO RESIST MOVEMENT OF THESE JOINTS.
3. WEIGHT CALCULATIONS TO BE BASED ON REACTION BACKING TABLE (SEE GWS03).
4. WHEN BLOCKING AGAINST FITTINGS, FITTINGS SHALL BE COVERED WITH POLYETHYLENE WRAP TO PREVENT BONDING OF CONCRETE.
5. WHERE SHEAR BECOMES A PROBLEM, PROPER REINFORCING MUST BE INSTALLED INTO THE BLOCKING.
6. CLEARANCE SHALL BE A MINIMUM OF 6" BETWEEN PIPE AND OBSTRUCTIONS.
7. CLEARANCE ON PIPES BELONGING TO OIL/GAS COMPANIES SHALL BE 18" UNLESS SPECIAL PERMISSION IS GIVEN BY THESE COMPANIES AND THE DEPARTMENT.
8. 12" OF ALL THREAD EMBEDDED IN CONCRETE.
9. MIN. 5/8" ALL THREAD FOR SECTIONS 10' OR UNDER

GENERAL WATER/SEWER DETAIL: GWS02

REACTION BACKING TABLE

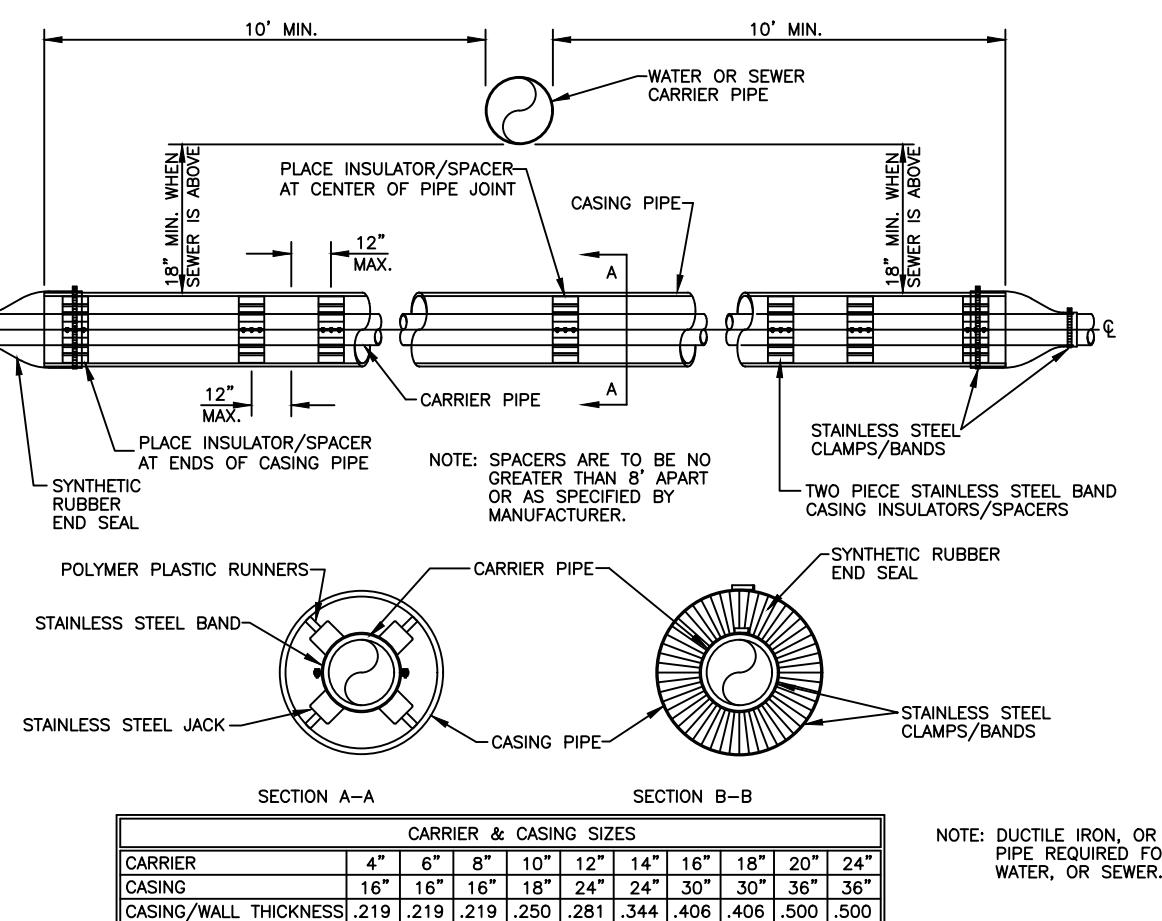
PIPE SIZE	BLOCKING SCHEDULE				
		BENDS			
	45°	22 1/2'	11 1/4'	ROD DIA.	
8"	VOLUME REQ'D (CU. FT.)	98.5	50.2	25.2	
	A (FT.)	5.00'	4.00'	3.00'	
	B (FT.)	4.00'	3.20'	2.80'	
12"	C (FT.)	5.00'	4.00'	3.00'	3/4 IN.
	MIN. CLAMP (2 EA)		3/8 IN. x 2 IN.		
	VOLUME REQ'D (CU. FT.)	209.5	106.8	53.7	
18"	A (FT.)	6.00'	5.00'	4.00'	
	B (FT.)	7.25'	5.50'	4.75'	
	C (FT.)	8.00'	6.50'	5.00'	
24"	MIN. CLAMP (2 EA)		1/2 IN. x 2 IN.		1 IN.
	VOLUME REQ'D (CU. FT.)	457.2	233.1	117.1	
	A (FT.)	8.00'	6.50'	5.00'	
30"	B (FT.)	9.50'	7.50'	6.00'	
	C (FT.)	9.00'	7.25'	5.75'	
	MIN. CLAMP (2 EA)		5/8 IN. x 3 IN.		1 1/4 IN.

VOLUME CALCULATED ON THE BASIS OF CONCRETE REACTING THRUST ON THE RESPECTIVE BENDS UNDER AN INTERNAL PRESSURE OF 250 PSI, 50 PSI SURGE AND THE WEIGHT OF CONCRETE IS 150 POUNDS PER CU. FT.

NOTES:
1. ALL FITTINGS SHALL BE MECHANICAL JOINTS.
2. DO NOT COVER BELLS OR FLANGES WITH CONCRETE.
3. WRAP ALL FITTINGS WITH POLY WRAP.
4. BACK ALL TEES ACCORDING TO SIZE OF BRANCH.
5. BACKING FUTURE LINE EXTENSIONS SHALL BE SUCH THAT LATER REMOVAL IS POSSIBLE.
6. ALL BENDS WHERE FITTINGS ARE USED, BOTH HORIZONTAL OR VERTICAL, SHALL BE BACKED WITH CONCRETE.
7. REACTION BACKING TABLE IS BASED ON 150 PSI AND SOIL BEARING PRESSURE OF 2,000 LB/SQ. FT. ADDITIONAL BACKING MAY BE REQUIRED IN SOME AREAS AS REQUIRED BY CITY WATER DEPARTMENT.

GENERAL WATER/SEWER DETAIL: GWS03

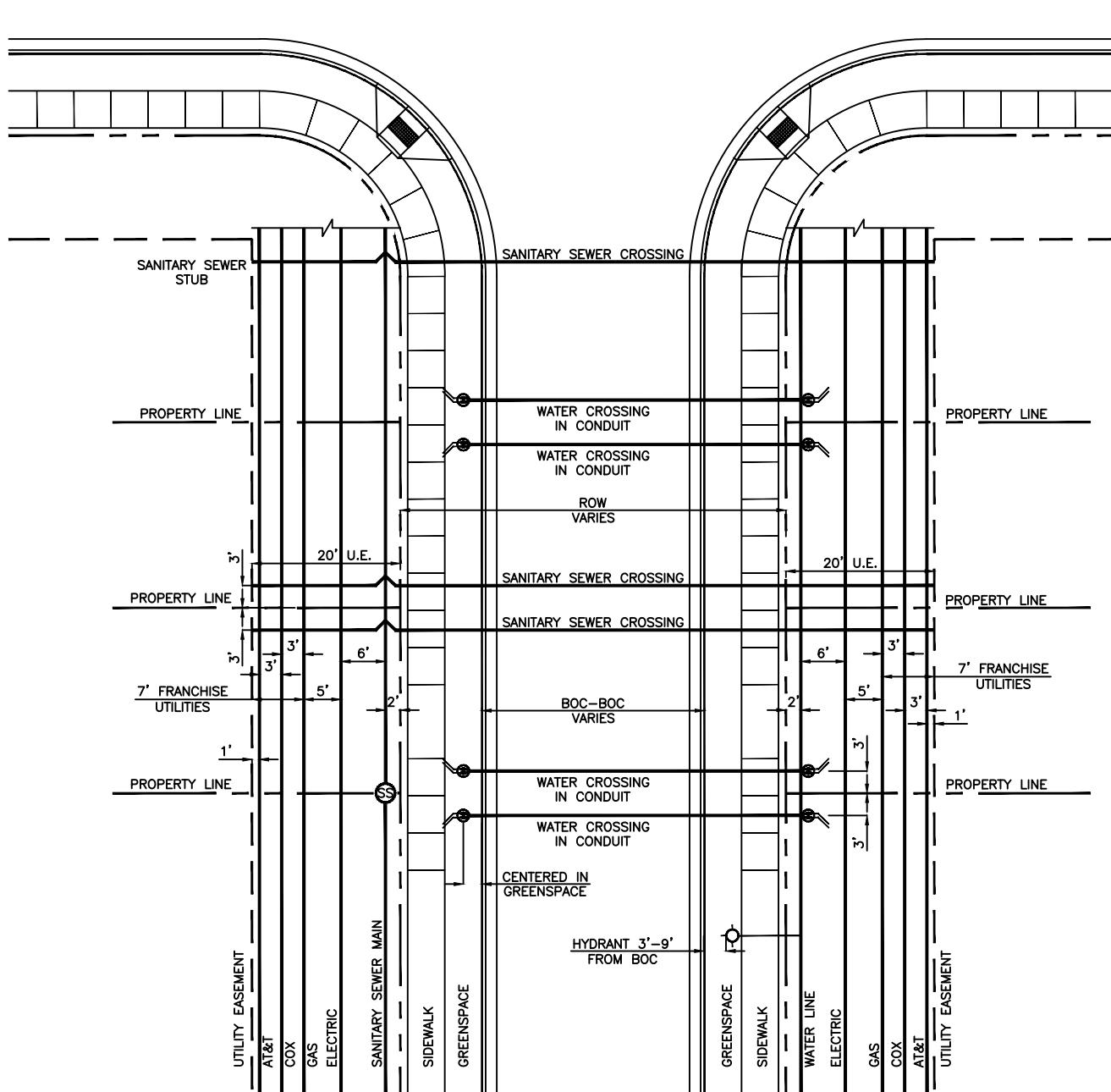
ENCASEMENT CROSSING DETAIL



*ALL BELLS SHALL BE RESTRAINED BY APPROVED METHOD.

GENERAL WATER/SEWER DETAIL: GWS05

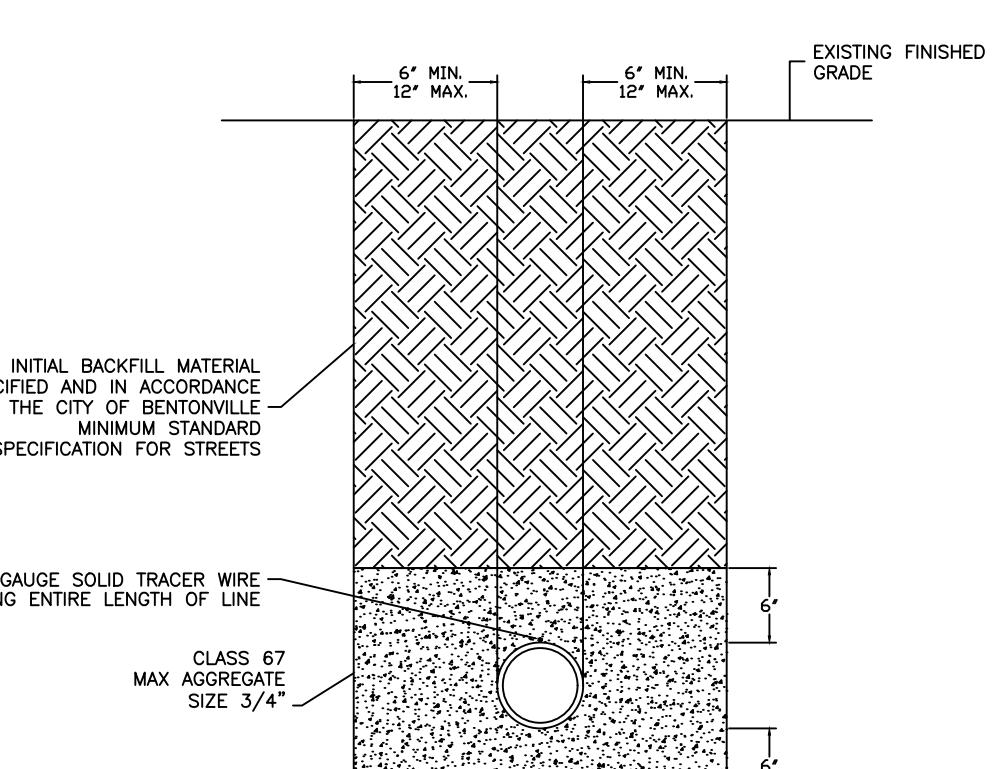
SUBDIVISION UTILITY PLACEMENT



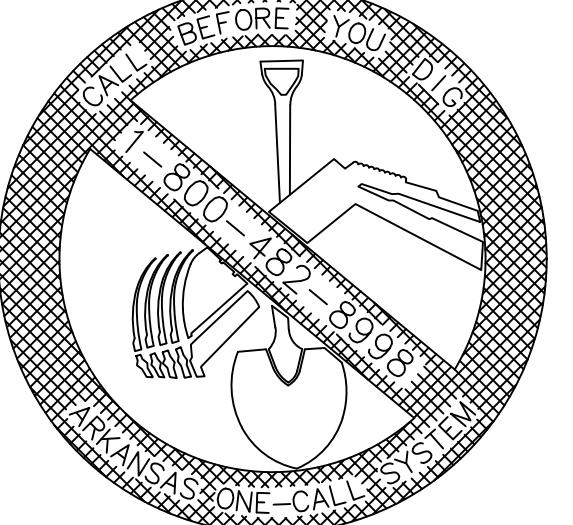
*ALL BELLS SHALL BE RESTRAINED BY APPROVED METHOD.

GENERAL WATER/SEWER DETAIL: GWS06

TYPICAL BEDDING DETAIL



* REFER TO STREET SPECIFICATIONS FOR STREET REPAIR INFORMATION



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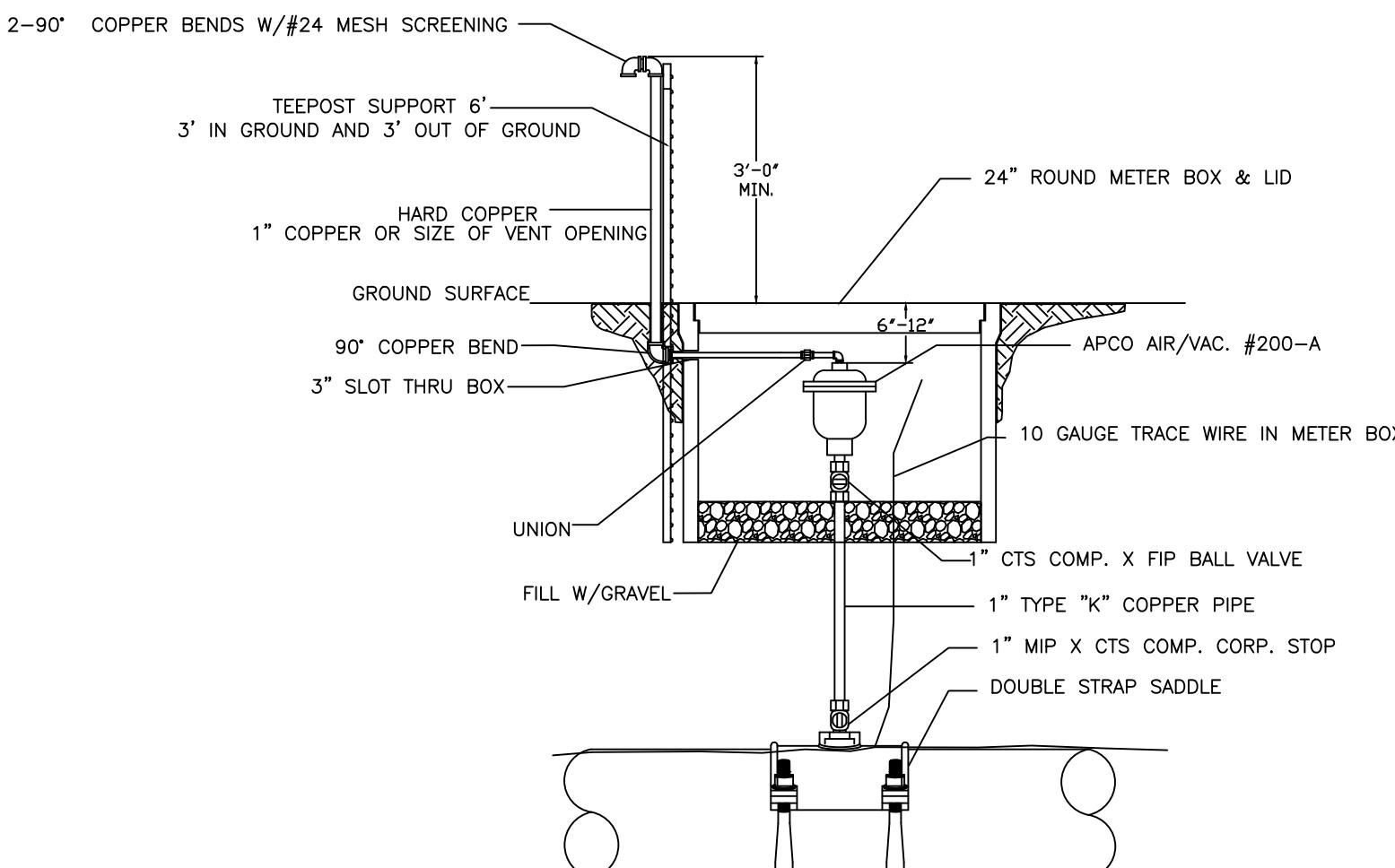
DRAWN BY: JS DATE: 08/27/2024
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WATER DETAILS

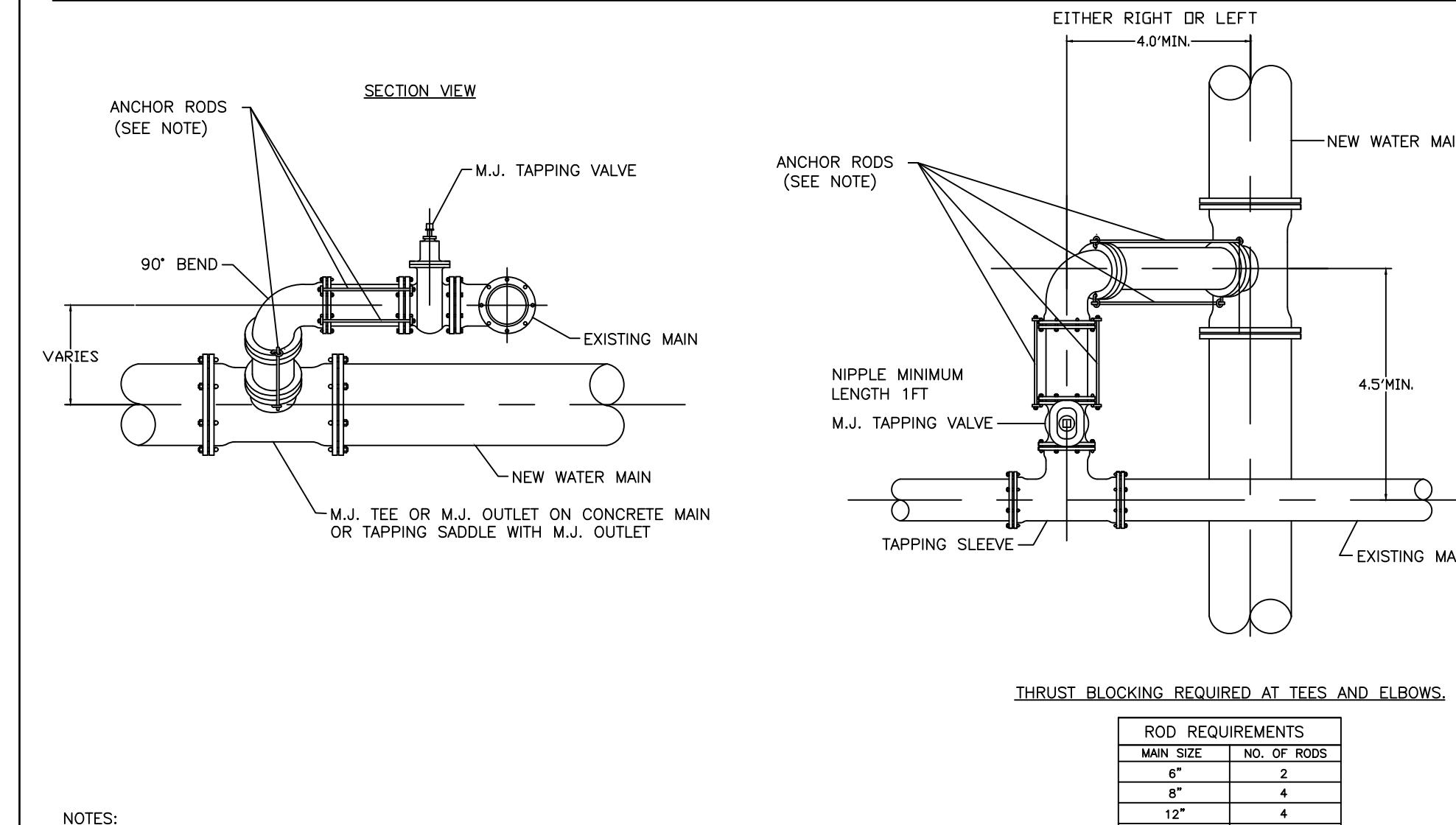
1" COMBINATION AIR/VACUUM VALVE DETAIL



NOTES:
1. ALL THREADED CONNECTIONS SHALL HAVE A DOUBLE WRAP OF TEFLOON TAPE ON THREADS.
2. DRILL HOLE IN SIDE OF METER BOX FOR OUTLET PIPING.
3. VALVES WILL BE PIPED TO POINT BEYOND PAVEMENT AND SHOULDER.

WATER DETAIL: W10

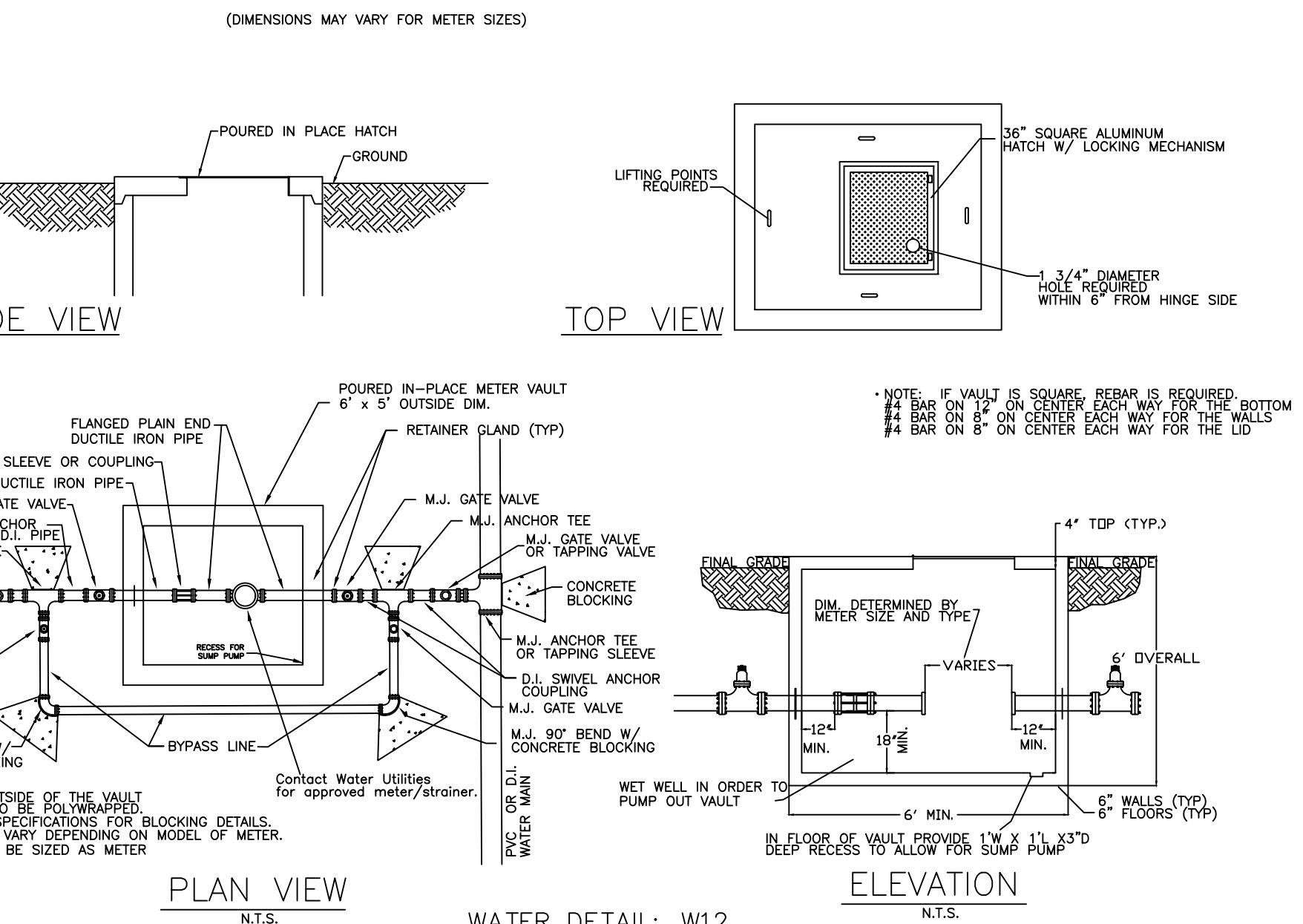
SWING CONNECTION - NEW MAIN TO EXISTING MAIN



NOTES:
1. CONTRACTOR SHALL LOCATE EXISTING MAIN IN ADVANCE OF LAYING NEW LINE IN ORDER TO ASSURE ADEQUATE LENGTH TO ADJUST DEPTH OF NEW MAIN.
2. DIMENSIONS SHOWN ARE RECOMMENDED MINIMUMS TO PROVIDE ADEQUATE ROOM FOR TIGHTNESS AND EASIER ON/OF THE EXISTING MAIN.
3. PROVIDE STAINLESS STEEL "ALL THREAD (MIN 5/8")" TIE RODS WITH EYE BOLTS FOR ANCHORING ALL JOINTS.
4. RODS SHALL BE FIELD CUT TO FIT & SHALL BE PROTECTED WITH POLYWRAP.
5. ROTATE TEE UP & ELBOW DOWN AS REQUIRED TO MATCH.
6. USE TYPICAL CONCRETE BLOCKING REQUIRED.

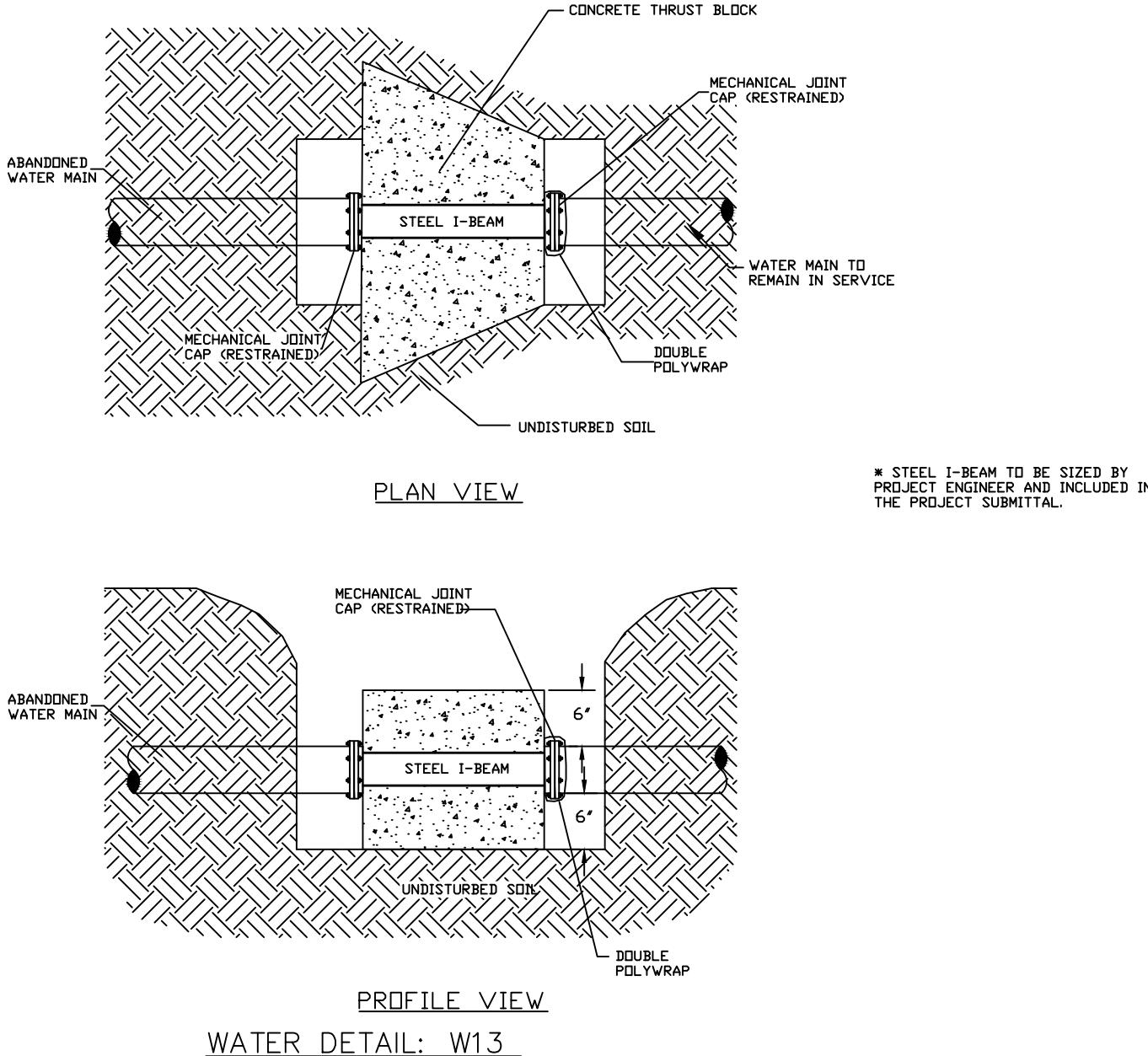
WATER DETAIL: W11

METER VAULT DETAIL FOR 4" - 8" METERS (TYPICAL)



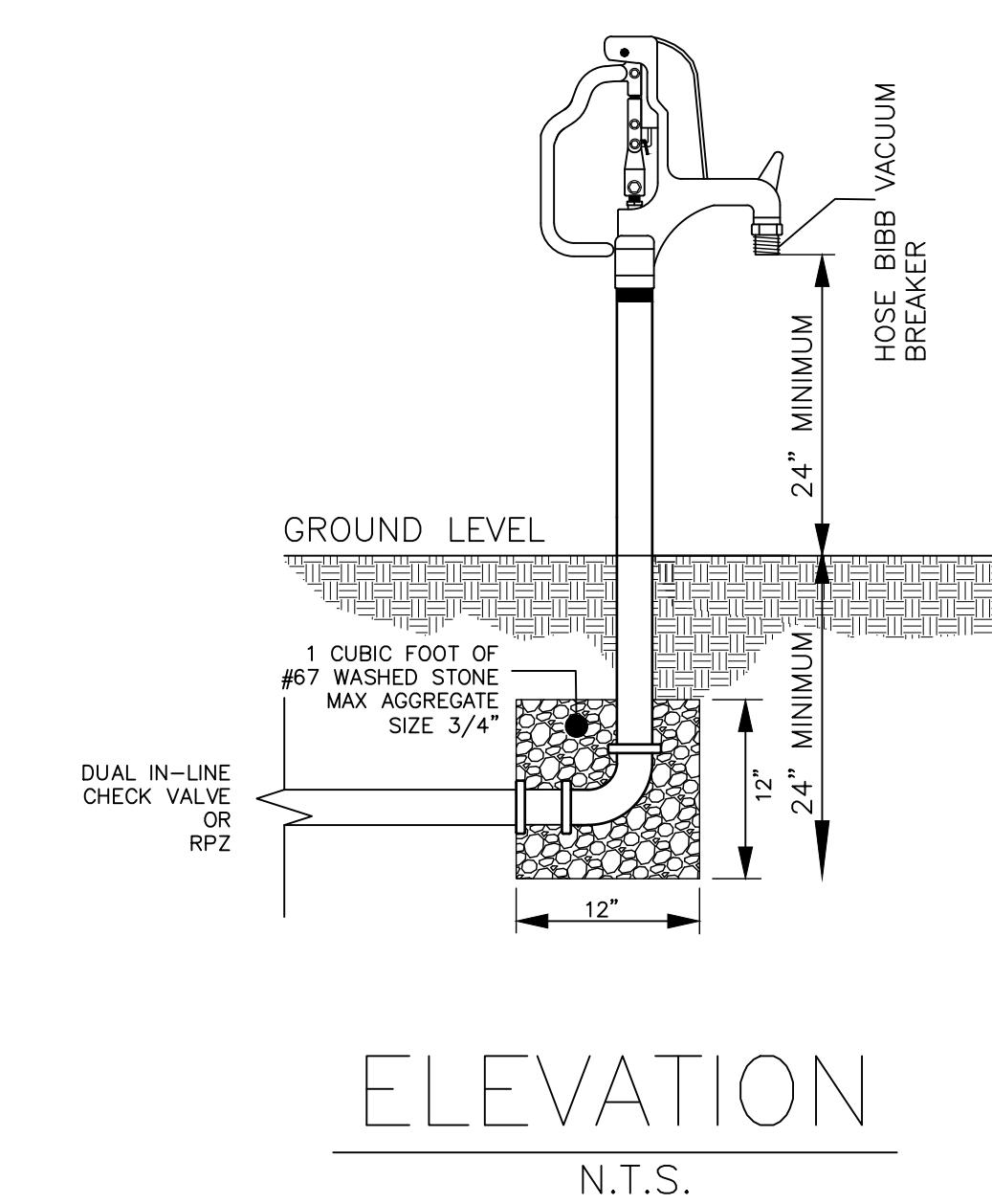
WATER DETAIL: W12

CUT/CAP DETAIL



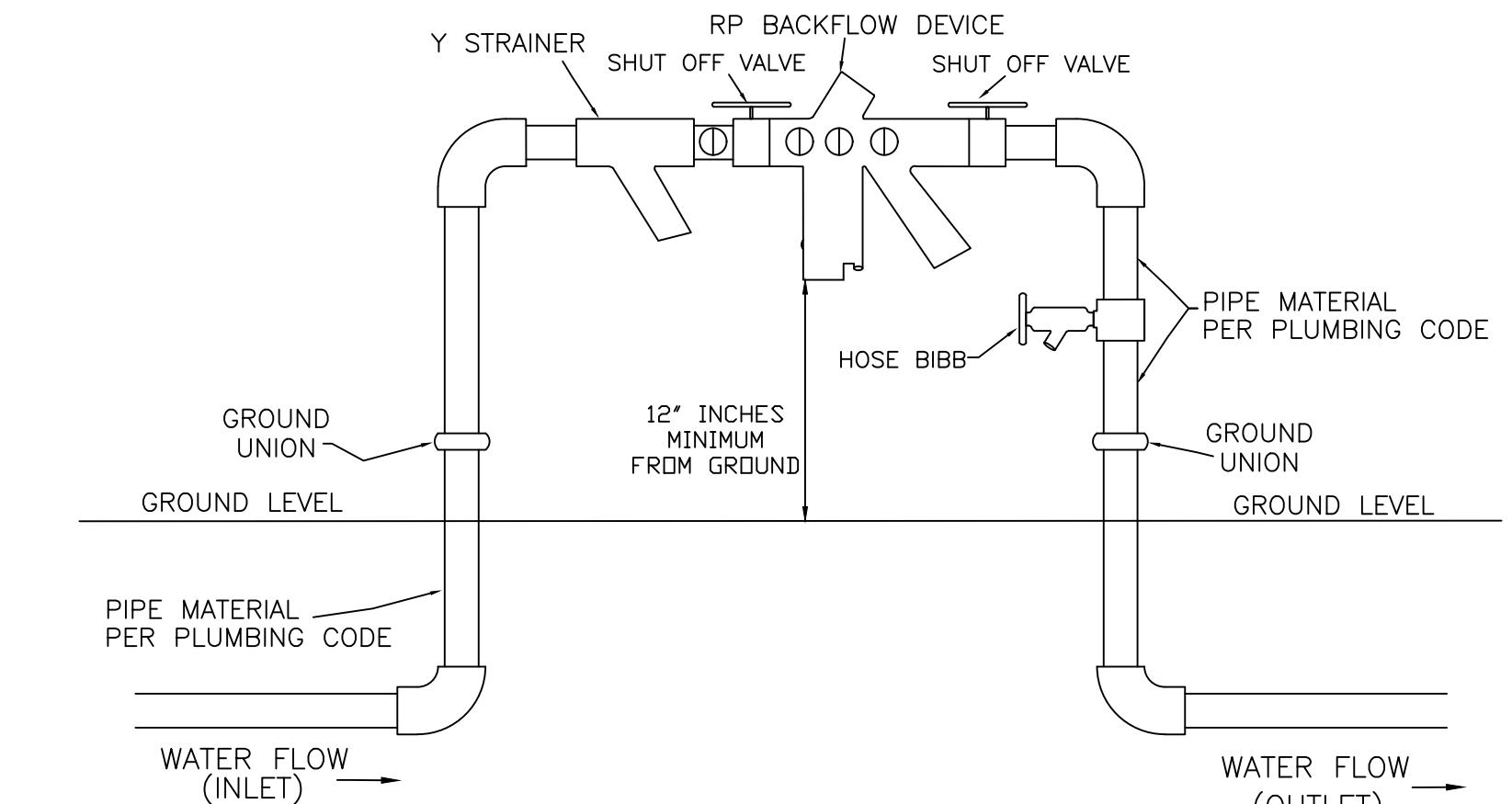
WATER DETAIL: W13

FROST FREE HOSE BIBB WITH BACKFLOW PREVENTION



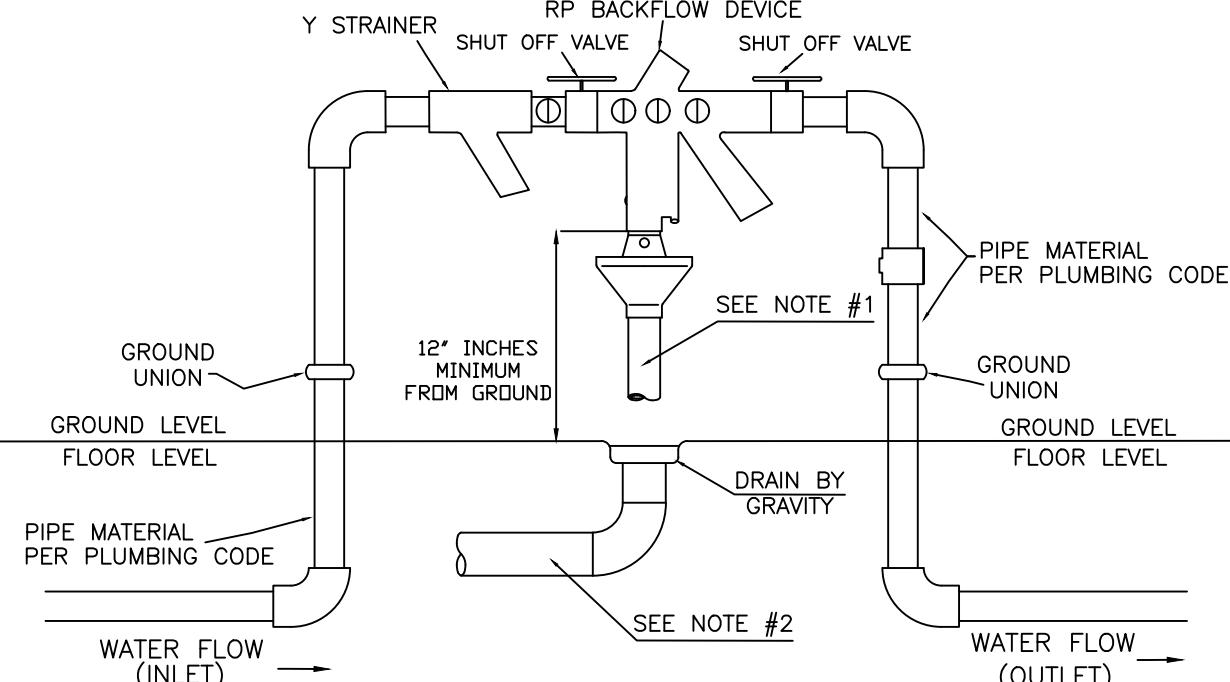
WATER DETAIL: W14

REDUCED PRESSURE (RP) BACKFLOW EXTERIOR IRRIGATION ONLY



WATER DETAIL: W15

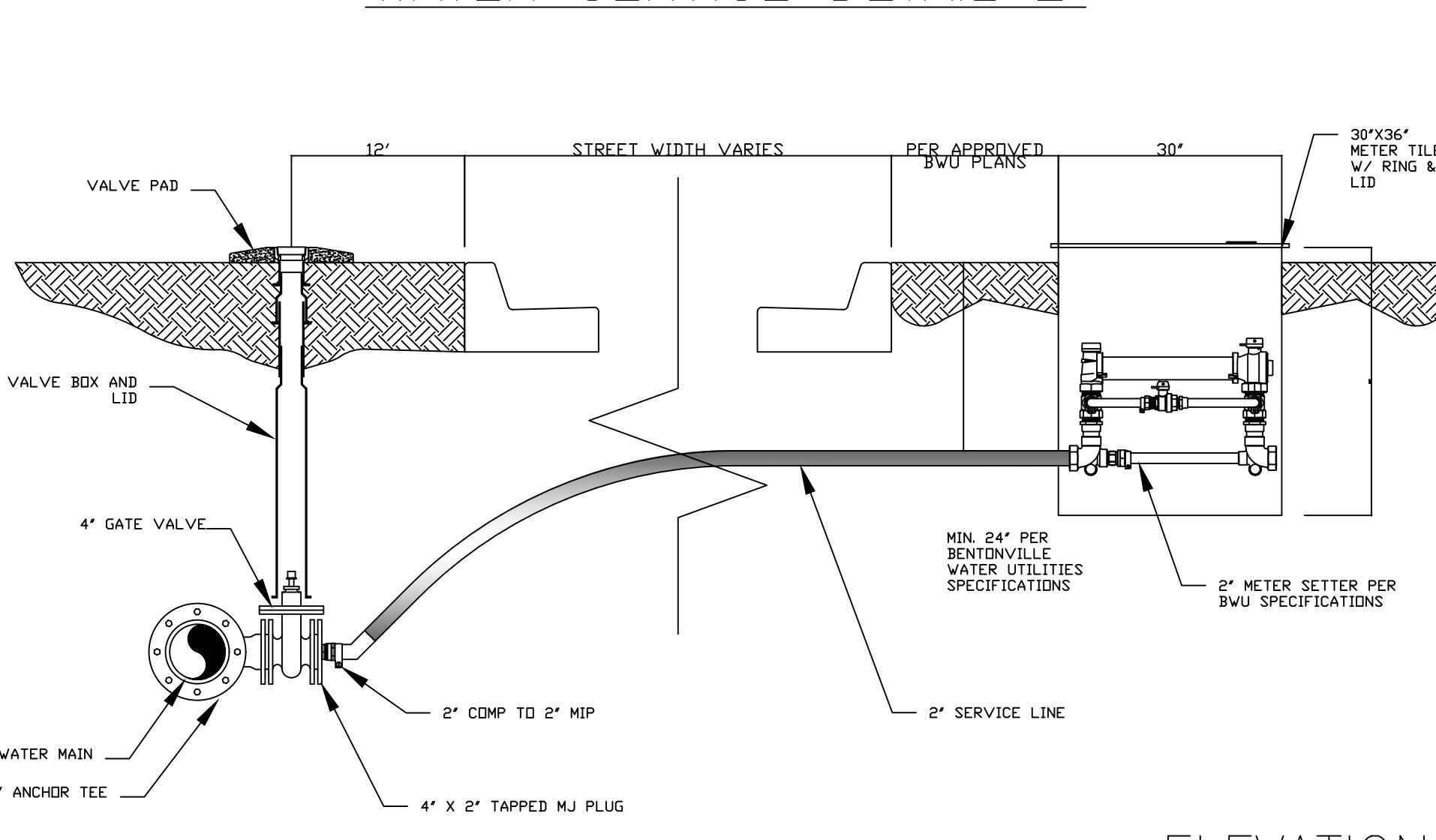
REDUCED PRESSURE (RP) BACKFLOW INTERIOR DOMESTIC OR IRRIGATION



INDOOR APPLICATION ONLY NOTES:
1. AN AIR GAP DRAIN IS REQUIRED TO REDUCE SPLASHING OF MINOR DISCHARGES FROM THE RELIEF VALVE DRAIN PORT.
2. INDOOR INSTALLATION OF RP'S SHOULD PROVIDE FOR DRAINAGE CAPABLE OF HANDLING IN EXCESS OF THE MAXIMUM DISCHARGE RATE EXPECTED BY THE BACKFLOW ASSEMBLY MANUFACTURER.

WATER DETAIL: W16

WATER SERVICE DETAIL 2"

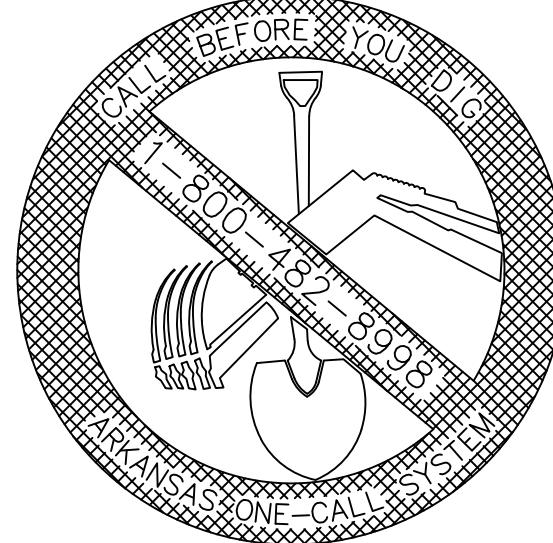


WATER DETAIL: W18

NOTES:

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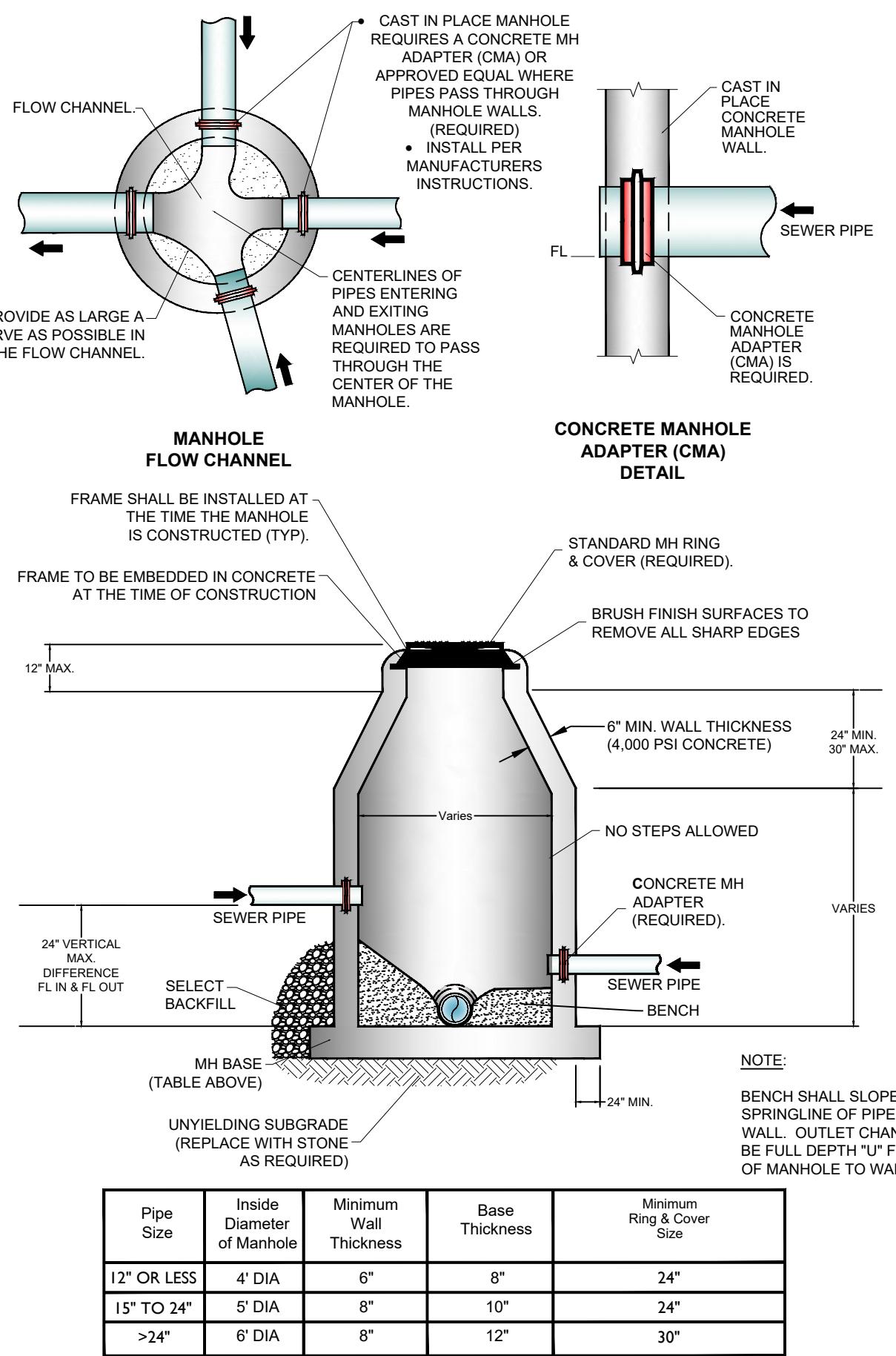
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B UTILITIES
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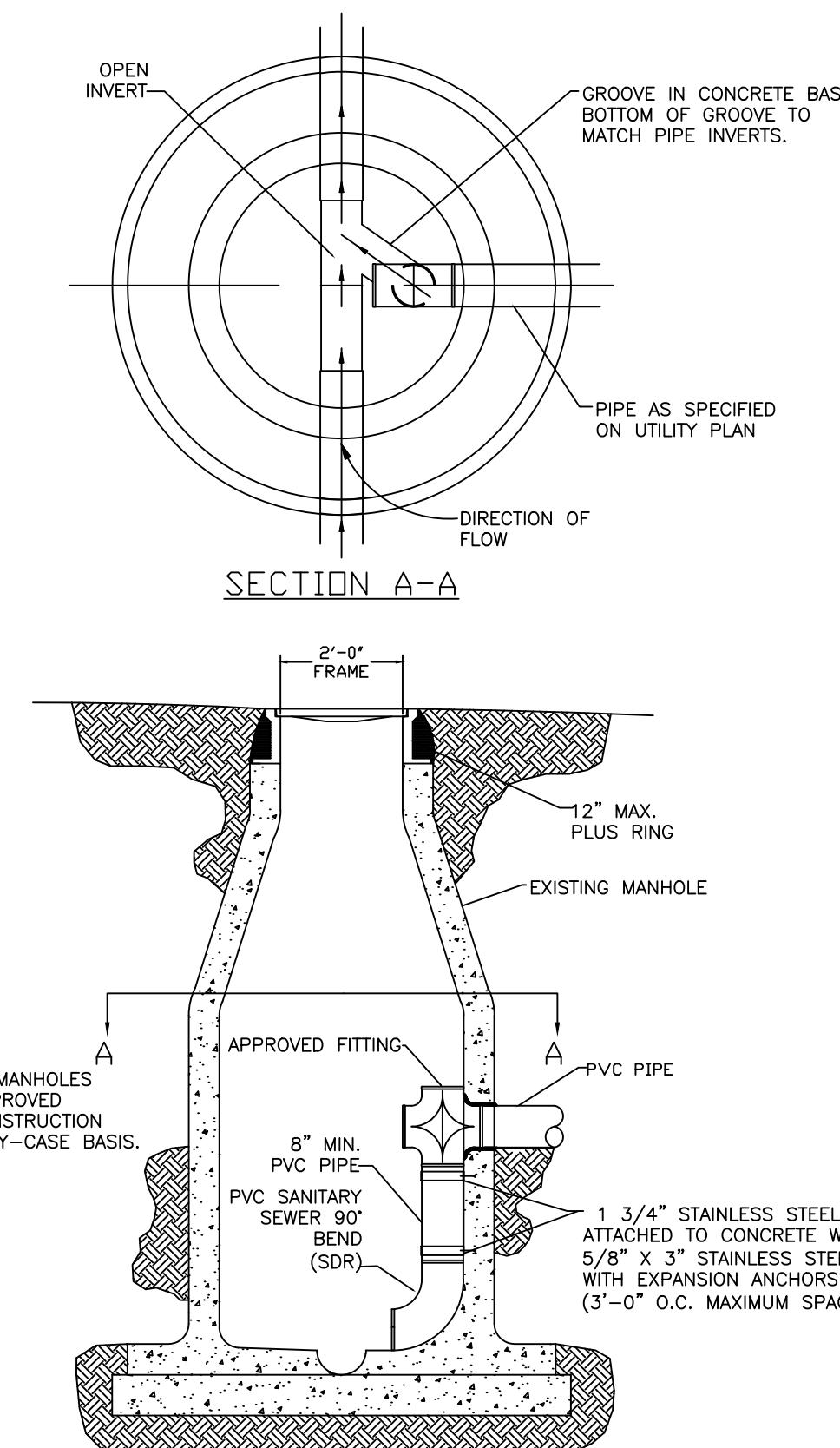
SAN. SEWER DETAILS

SANITARY SEWER CAST IN PLACE MANHOLE



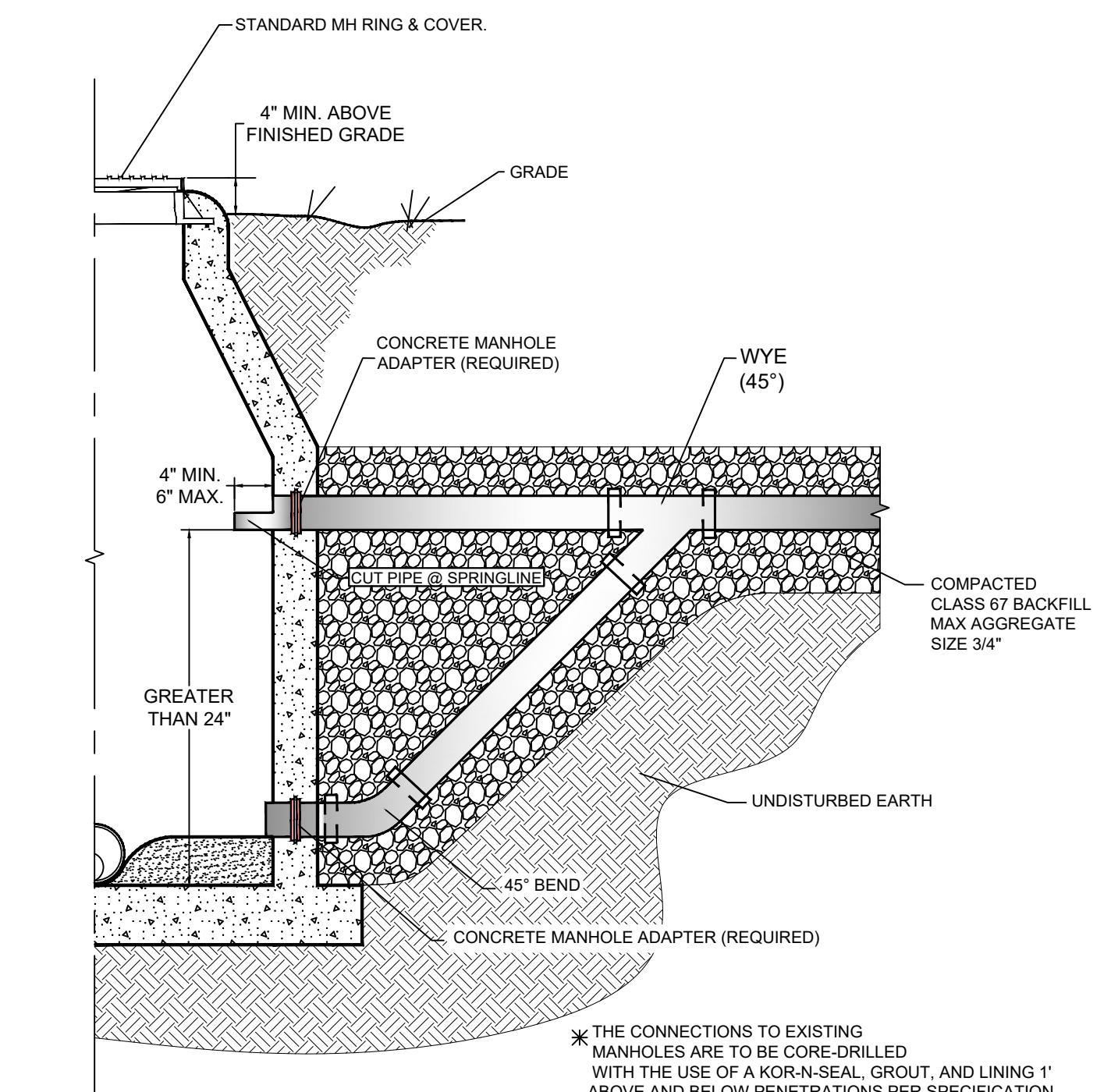
MANHOLE INFORMATION TABLE
SANITARY SEWER DETAIL: SS01

SANITARY SEWER INTERIOR DROP MANHOLE



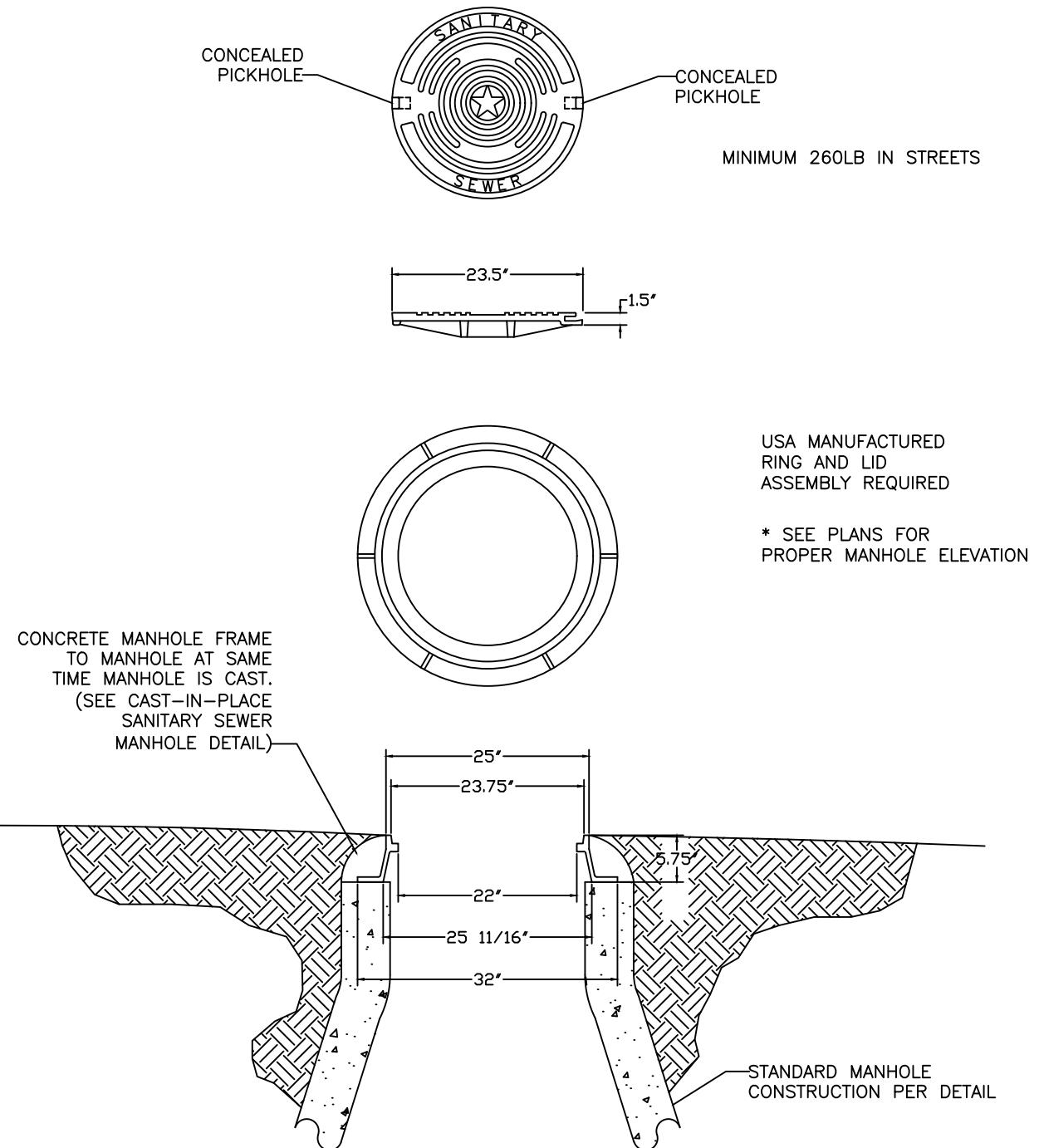
SANITARY SEWER DETAIL: SS02

SANITARY SEWER EXTERIOR DROP MANHOLE



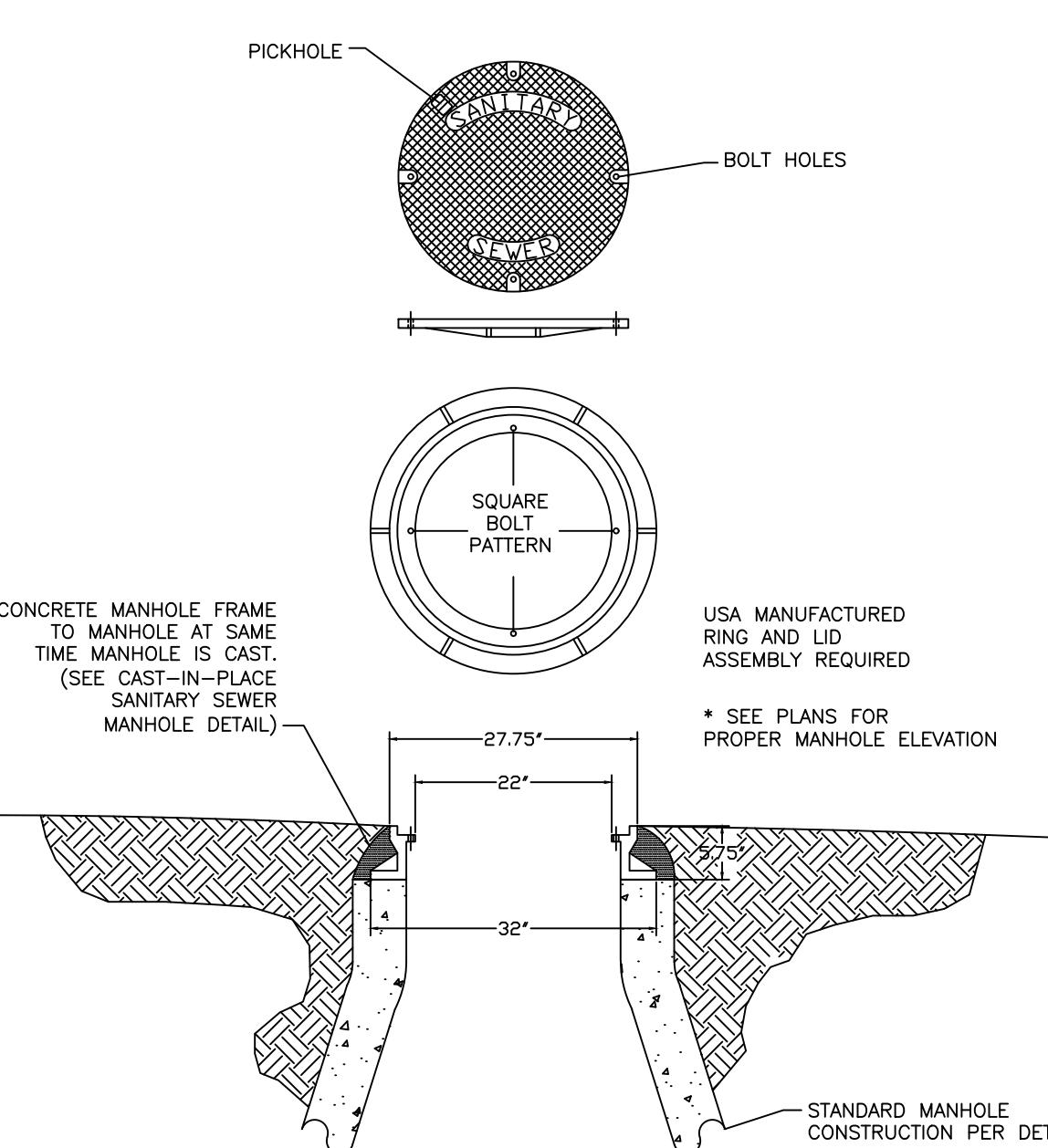
SANITARY SEWER DETAIL: SS03

HEAVY DUTY MANHOLE LID & FRAME



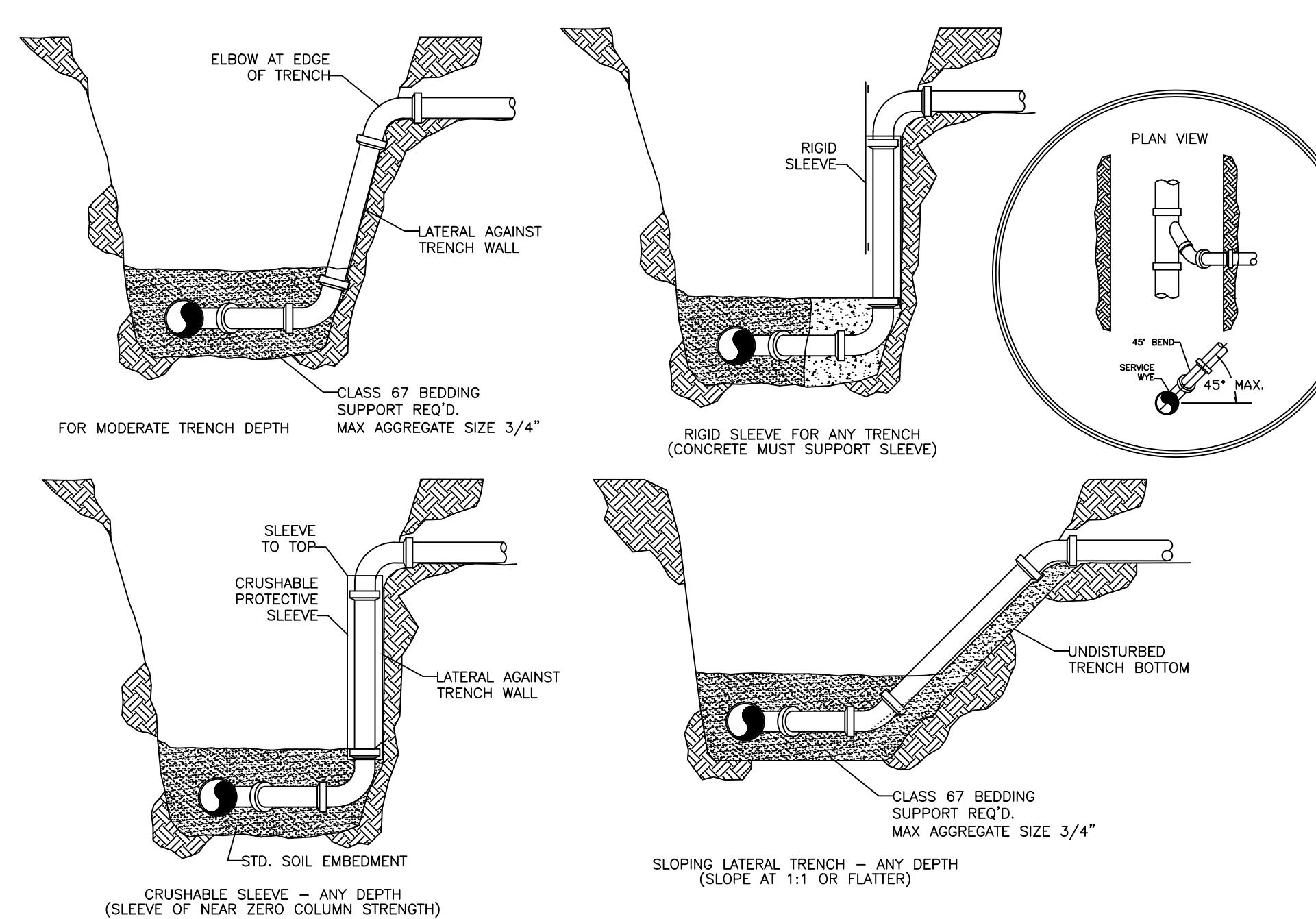
SANITARY SEWER DETAIL: SS04

WATER TIGHT BOLTED MANHOLE LID & FRAME

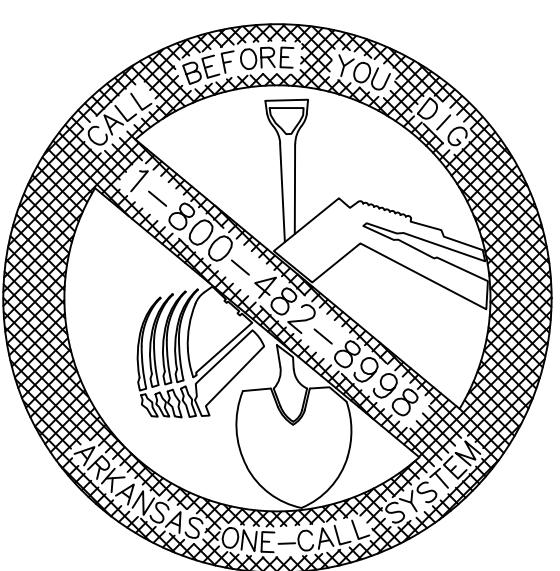


SANITARY SEWER DETAIL: SS05

SANITARY SEWER SERVICE WYE



SANITARY SEWER DETAIL: SS06



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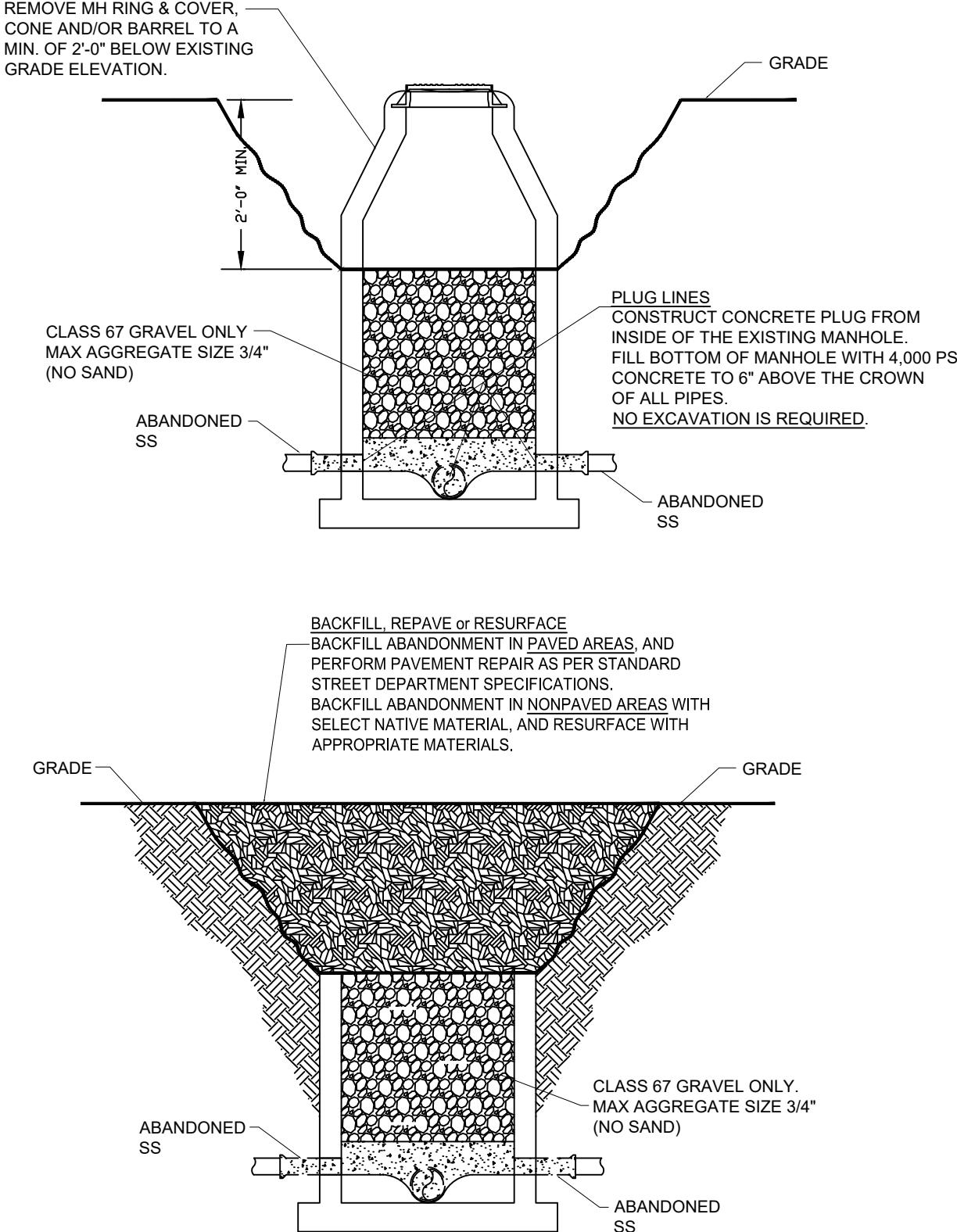
DRAWN BY: JS DATE: 08/27/2024
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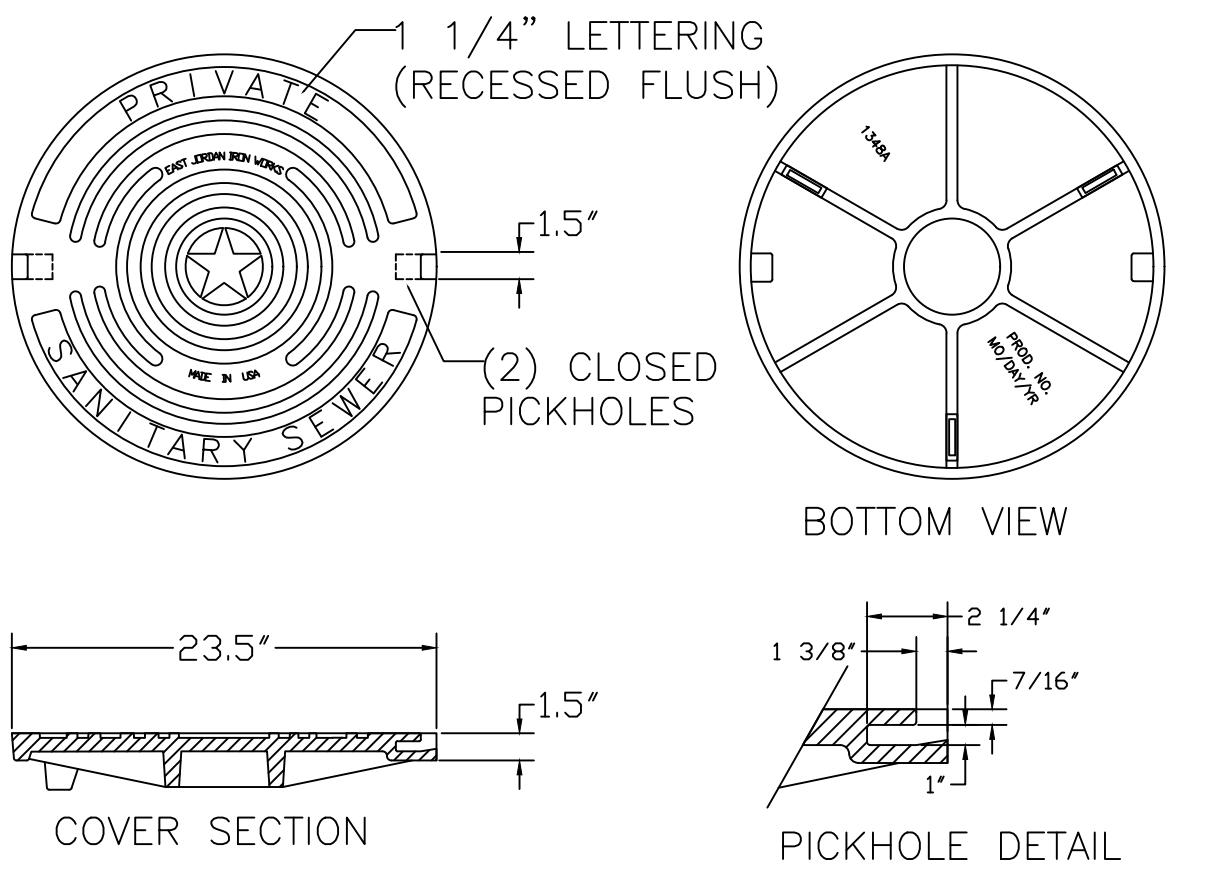
SAN.SEWER DETAILS

SANITARY SEWER MANHOLE ABANDONMENT



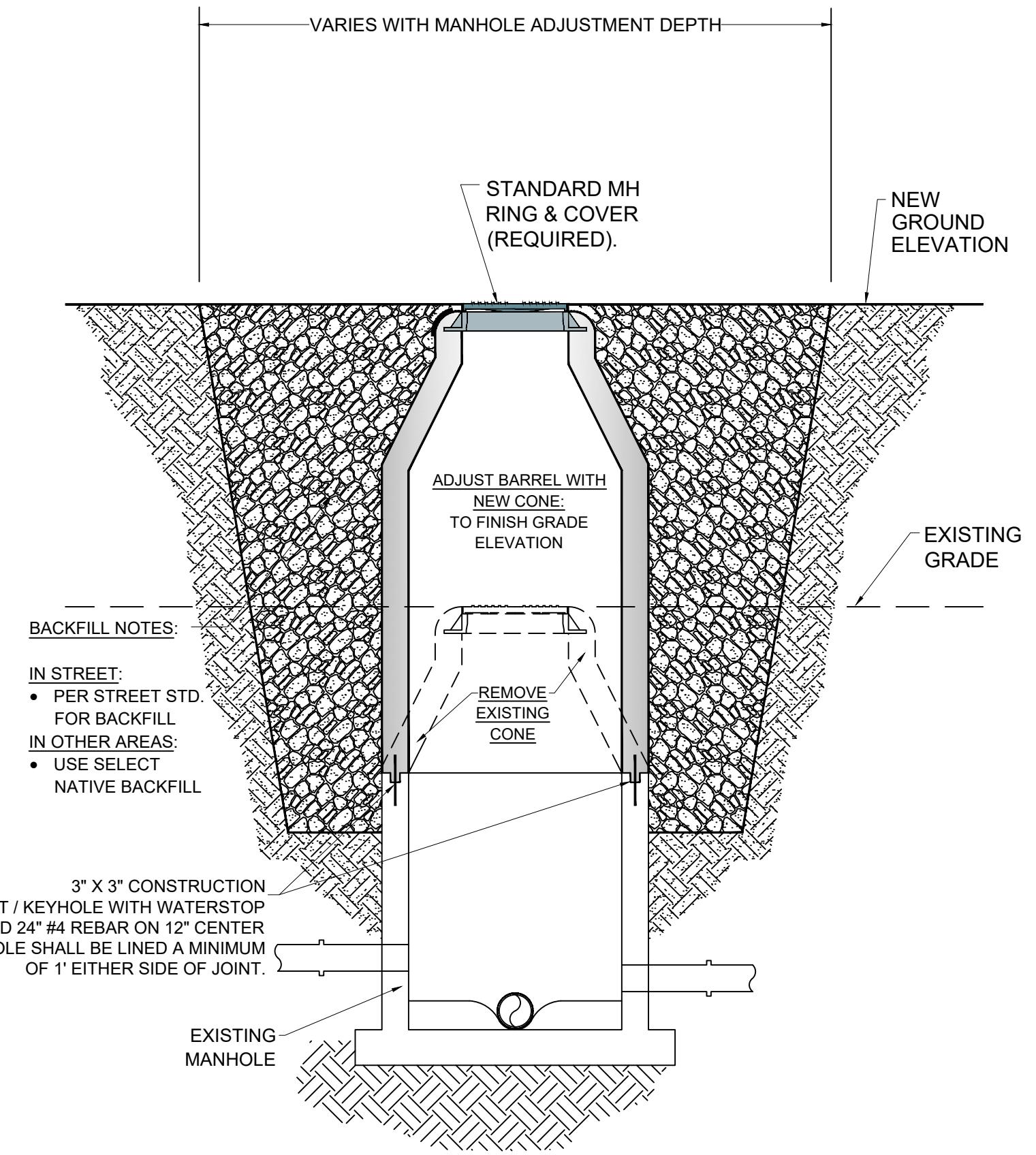
SANITARY SEWER DETAILS: SS07

PRIVATE MANHOLE RING AND LID

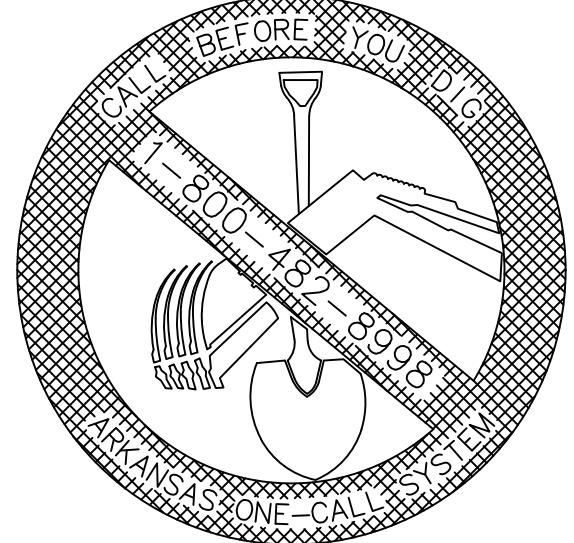


SANITARY SEWER DETAILS: SS08

TYPICAL MANHOLE ADJUST TO GRADE



SANITARY SEWER DETAILS: SS09



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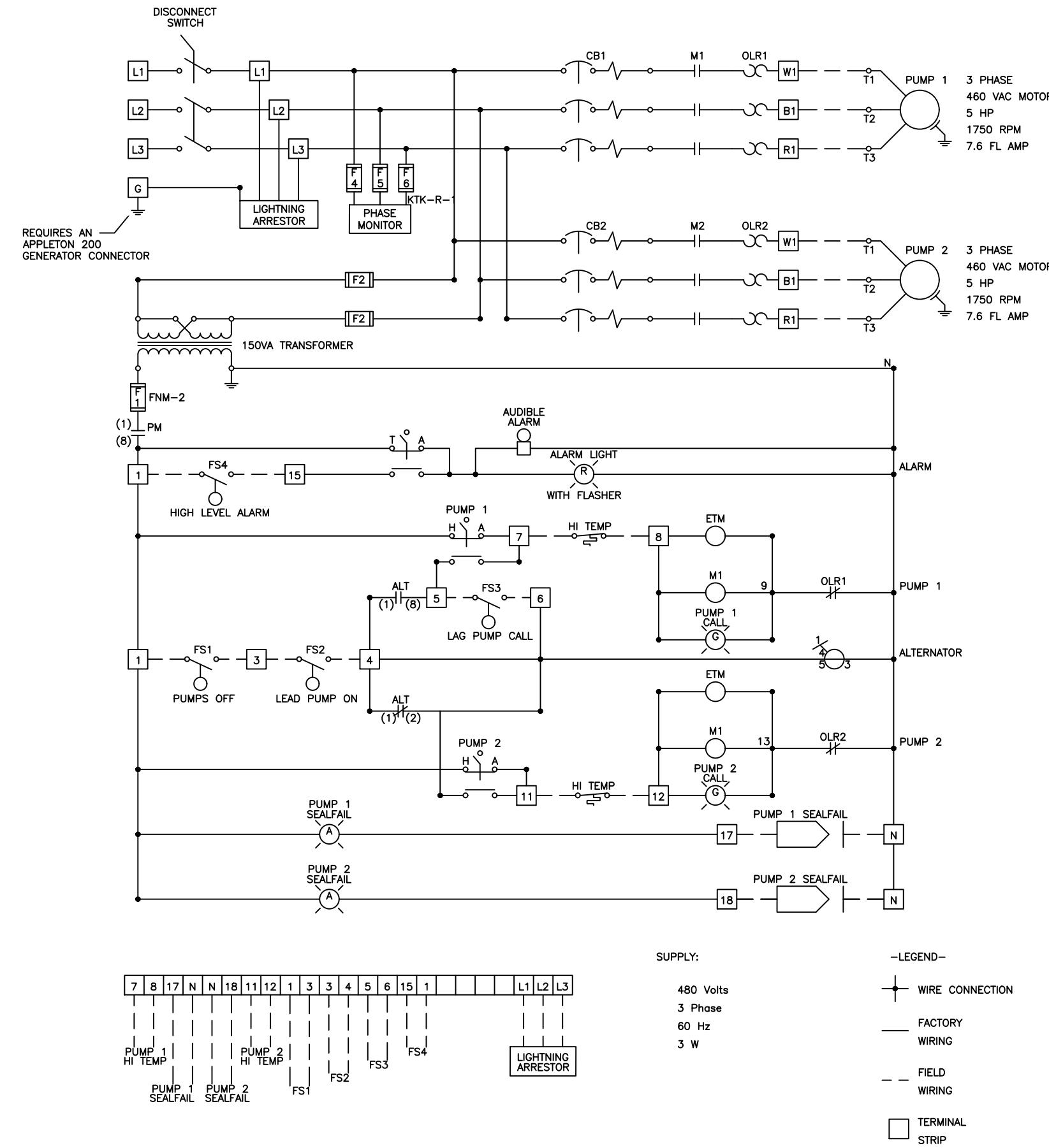
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DRAWN BY: JS DATE: 08/27/2024
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DUPLEX PUMP CONTROL PANEL

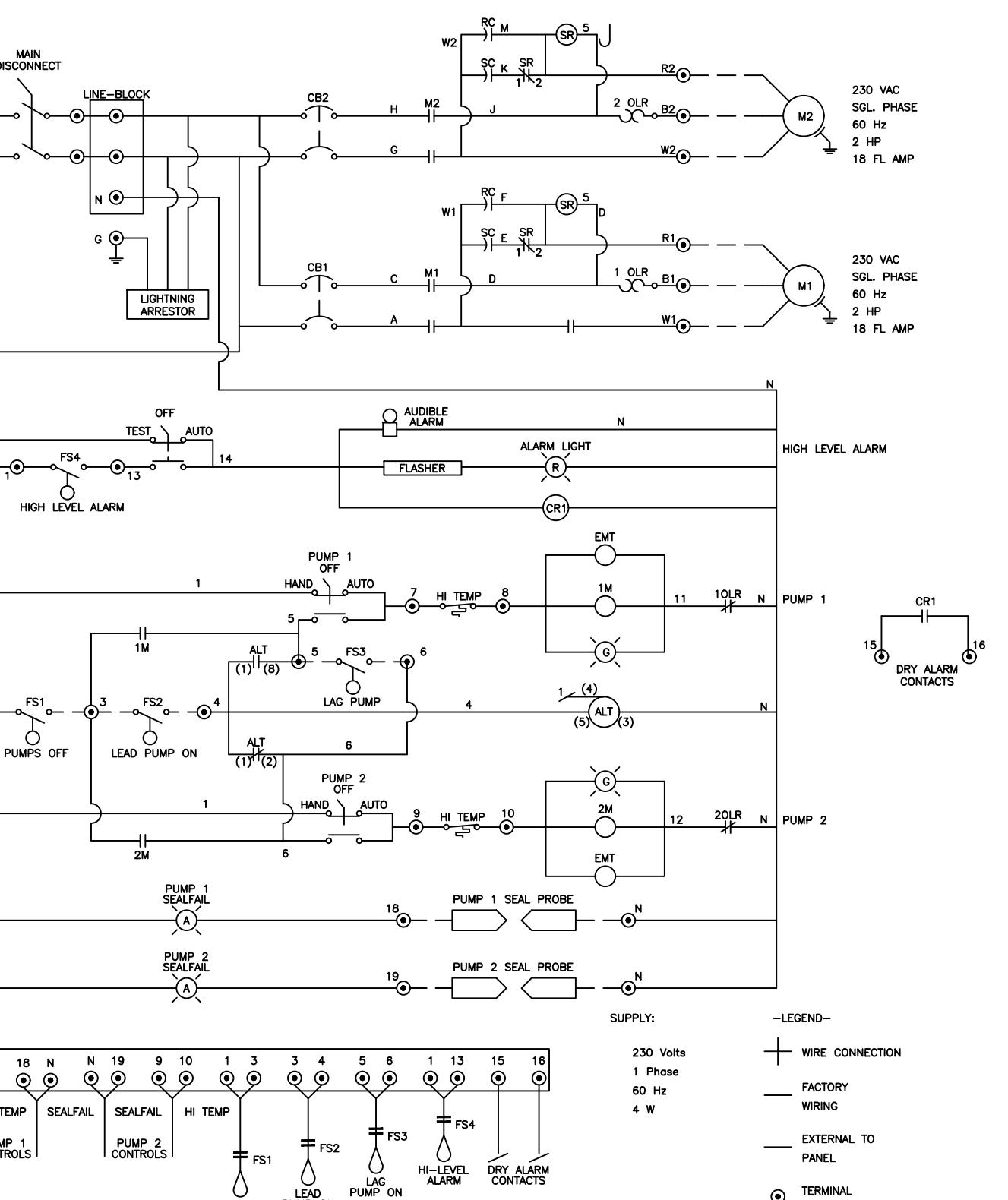
480 V / 3 PHASE



LIFT STATION DETAILS: LS01

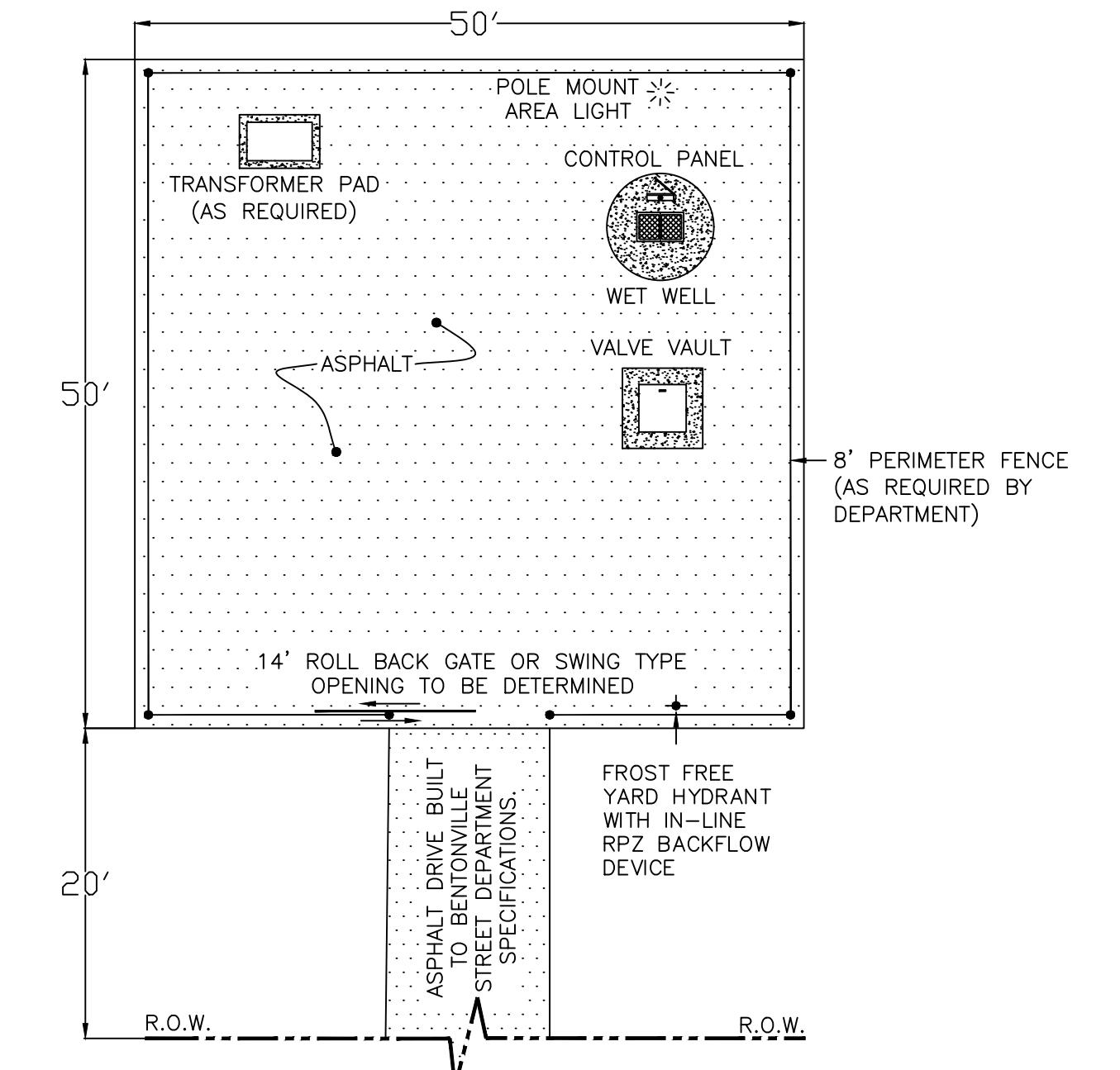
DUPLEX PUMP CONTROL PANEL

230 V / SINGLE PHASE



LIFT STATION DETAILS: LS02

LIFT STATION SITE DETAIL



*ACTUAL SITE LAYOUT MAY VARY

BENTONVILLE WASTEWATER DEPARTMENT
LIFT STATION DETAILS ARE NOT TO
BE USED AS CONSTRUCTION PLANS

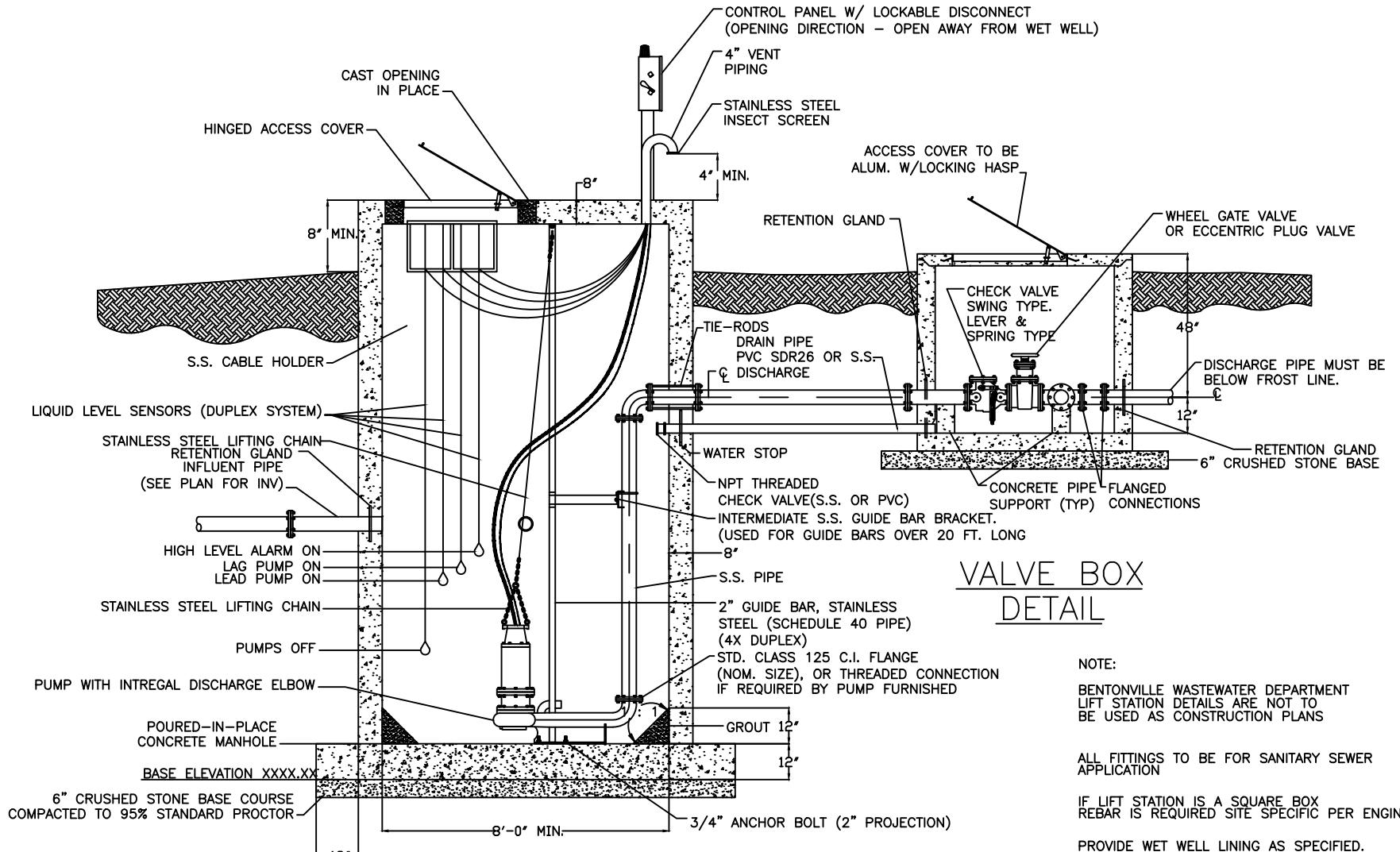
LIFT STATION DETAILS: LS03



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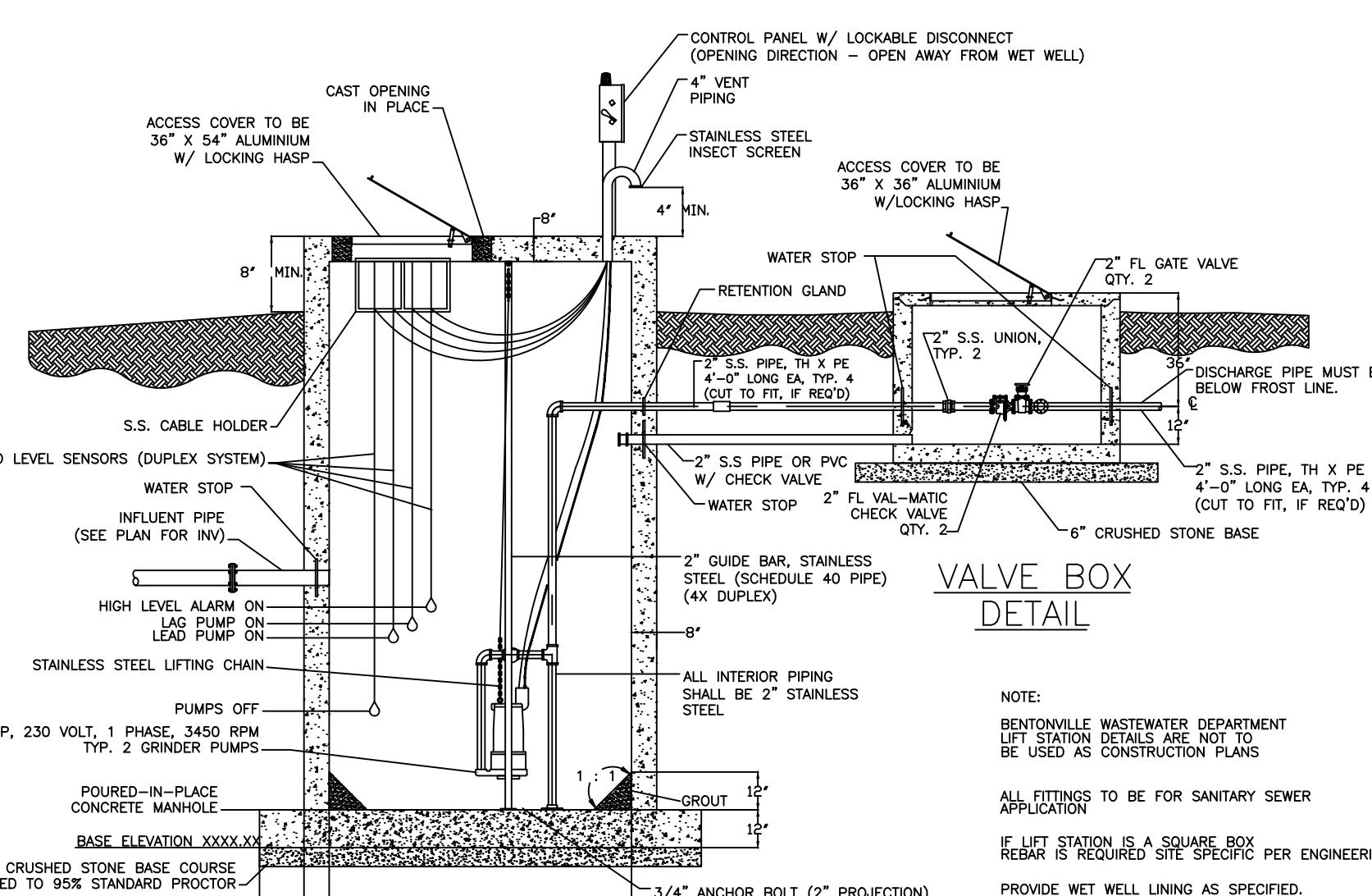
LIFT STATION DETAILS

LIFT STATION DETAIL NON-CLOG PUMPS 5 HP AND UP



LIFT STATION DETAILS: LS04

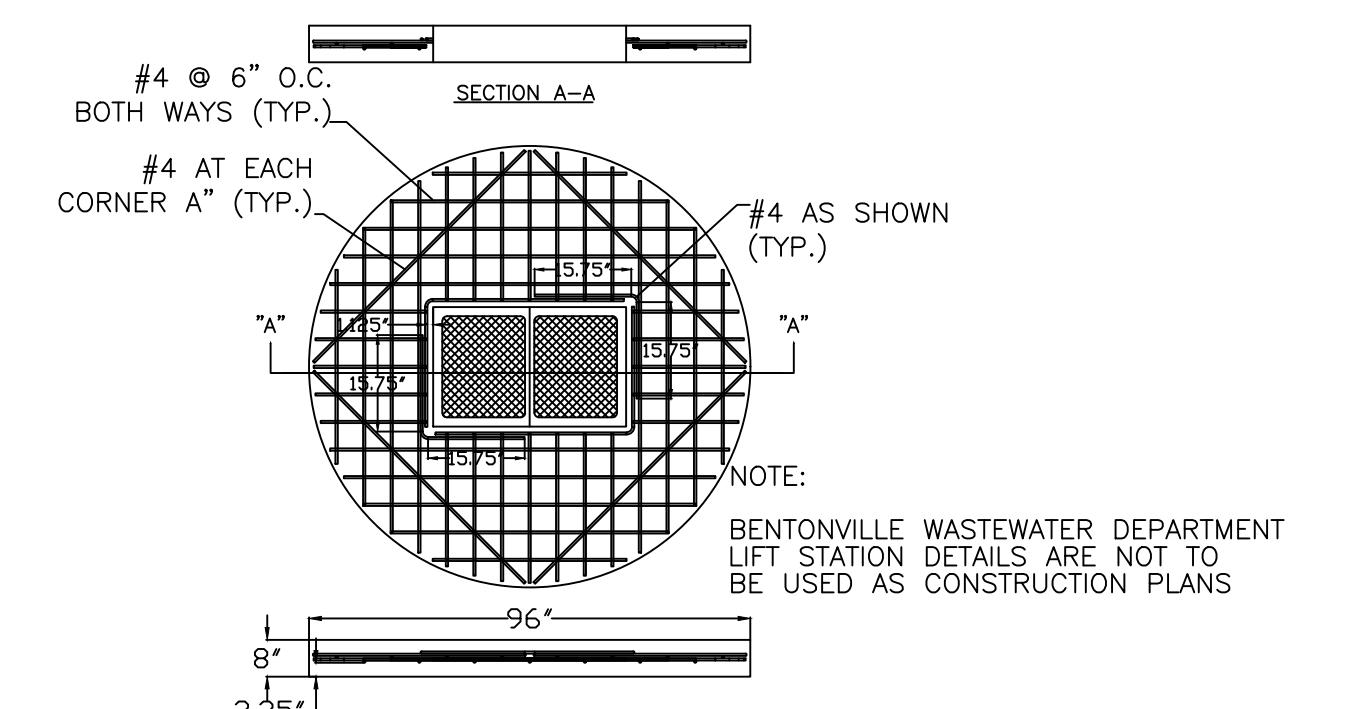
LIFT STATION DETAIL GRINDER PUMPS 5 HP AND LESS



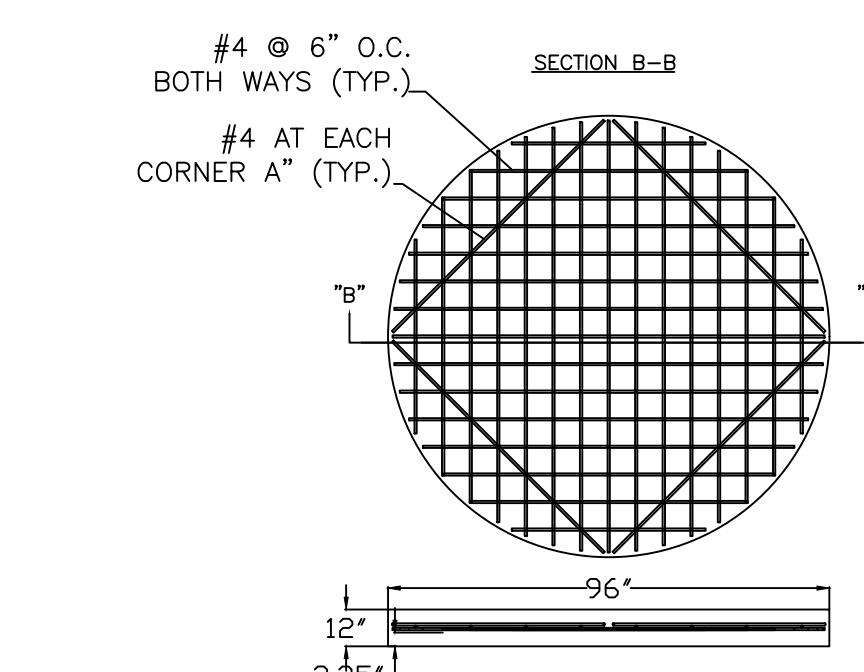
LIFT STATION DETAILS: LS05

WET WELL AND VALVE VAULT

TOP SLAB REINFORCEMENT DETAIL



BOTTOM SLAB REINFORCEMENT DETAIL



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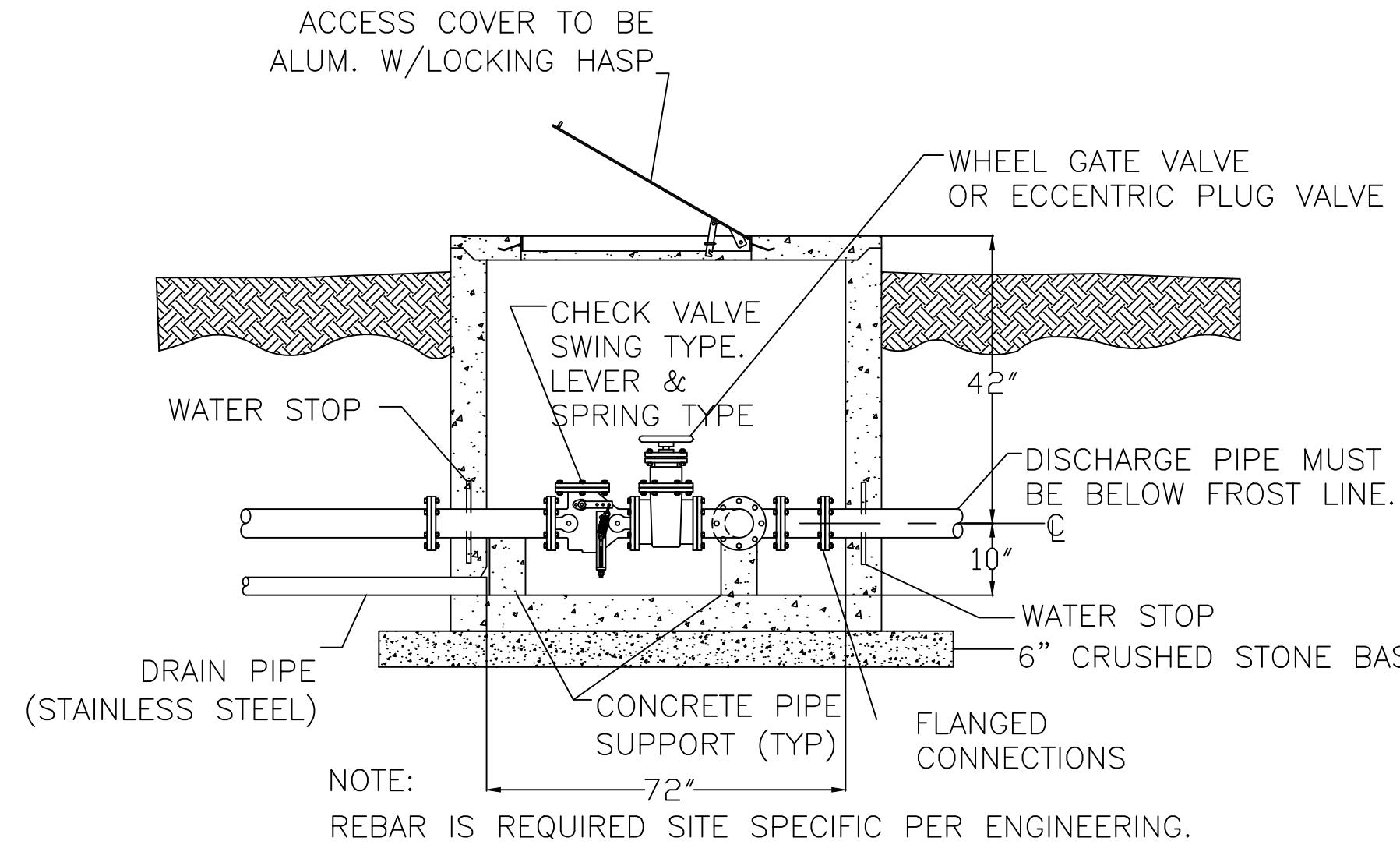
NOTES:

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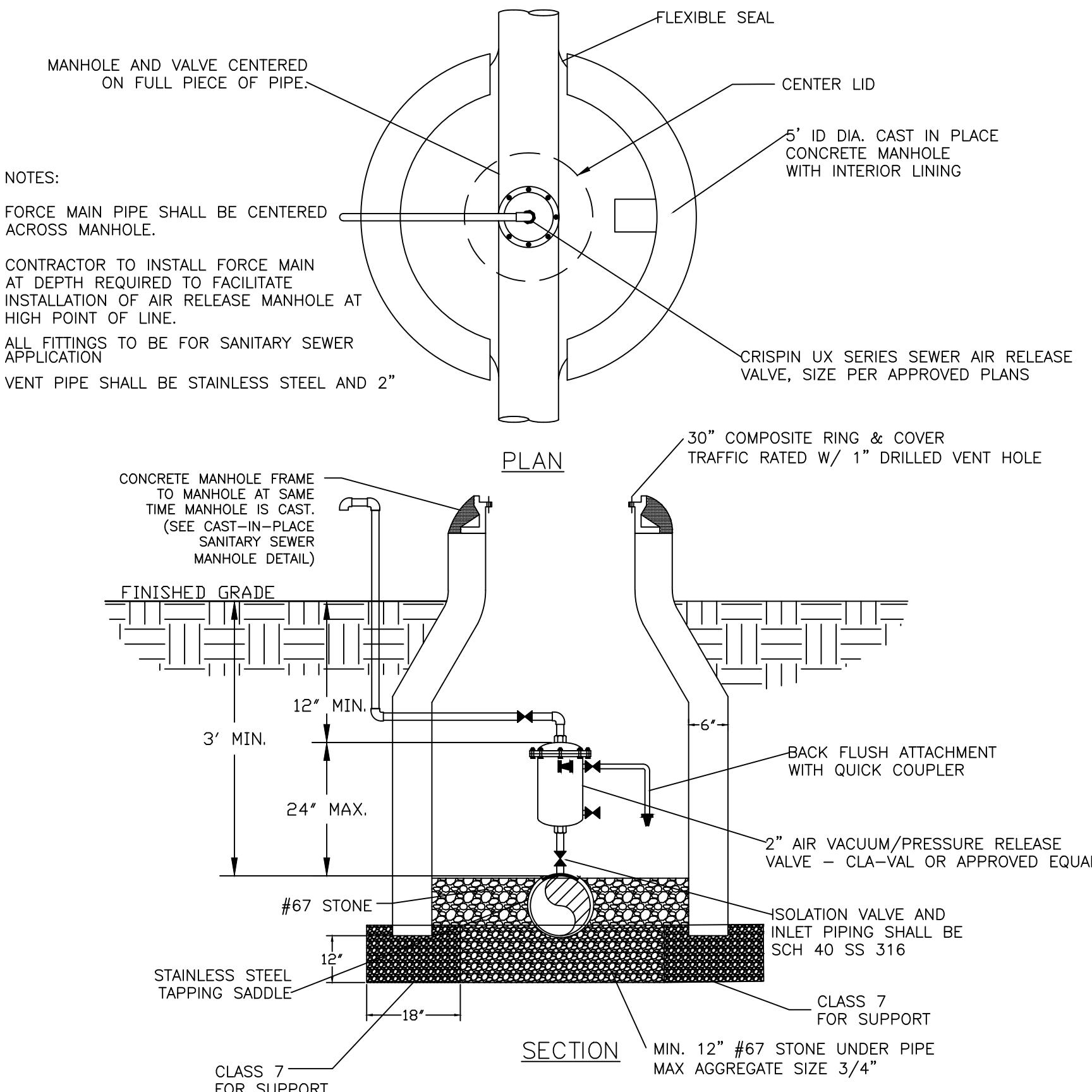
LIFT STATION DETAILS: LS06

LIFT STATION VALVE VAULT DETAIL



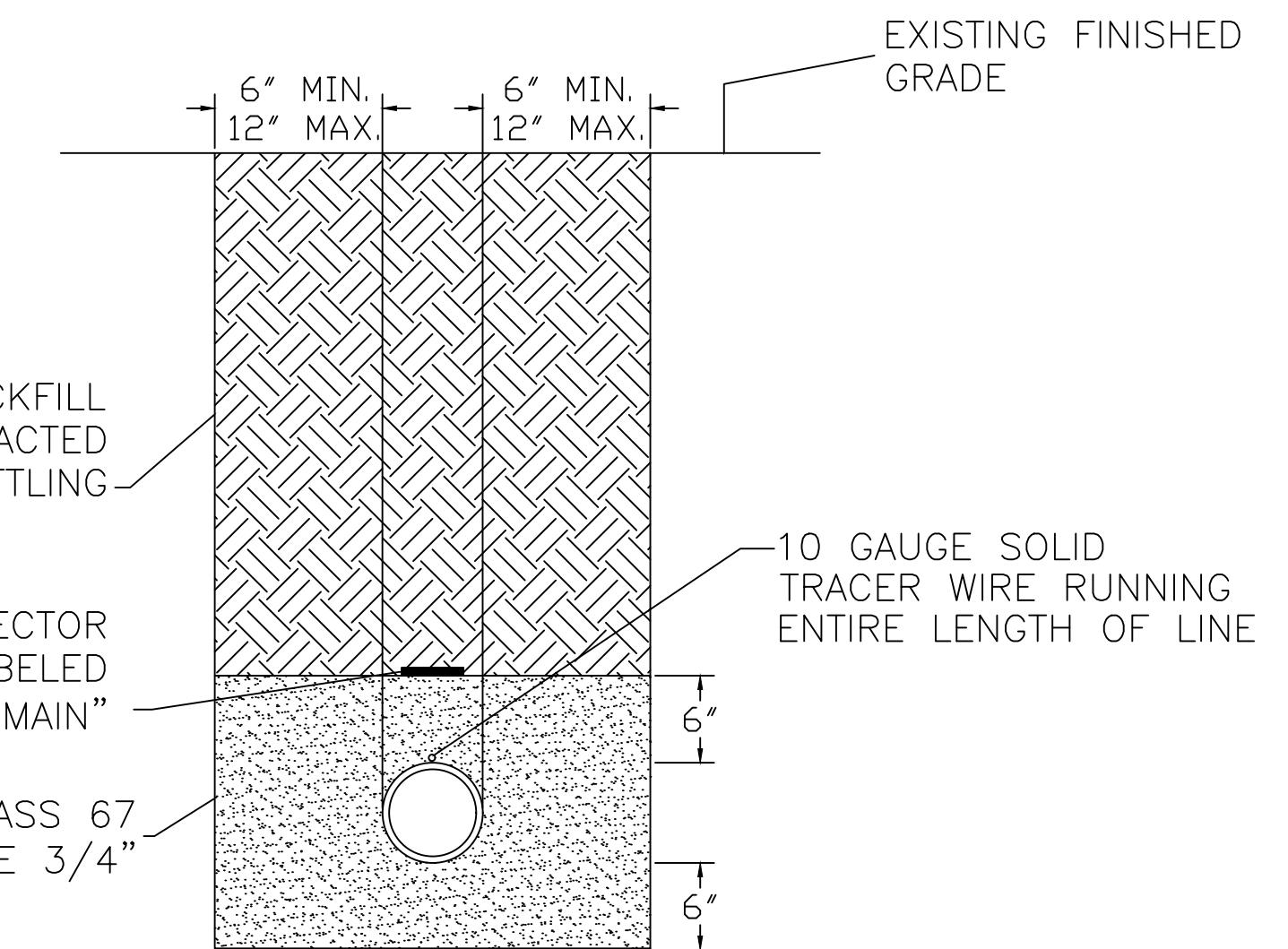
LIFT STATION DETAILS: LS01

AIR VACUUM/RELEASE
MANHOLE FOR FORCE MAIN



LIFT STATION DETAILS: LS08

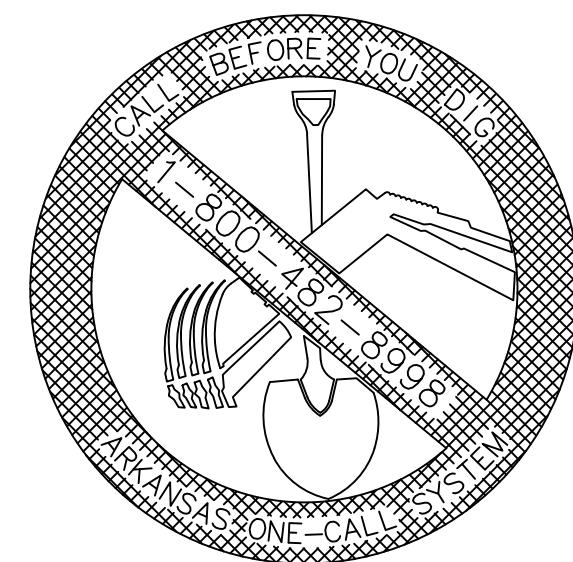
TYPICAL BEDDING DETAIL FOR FORCE MAIN



LIFT STATION DETAILS: LS09

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LIFT STATION DETAILS



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NOTES:

CAST IRON LID
STAMPED "SEWER"

CONCRETE COLLAR

FINAL GRADE

NOTES:

LOCATOR PORTS ARE LOCATED EVER 500' OR ANY CHANGE IN DIRECTION

TO BE LOCATED AS CLOSE TO A MANHOLE WHEREVER POSSIBLE TO EASE LOCATING.

4" PVC

SOLID 10 GAUGE TRACER WIRE

CLASS 67 BEDDING SUPPORT REQ'D.
MAX AGGREGATE SIZE 3/4"

6"

6"

FORCE MAIN

Detailed description: This technical diagram shows a cross-section of a sewer pipe system. At the top, a 'CAST IRON LID STAMPED "SEWER"' sits on a 'CONCRETE COLLAR'. A '4" PVC' pipe is shown above the main sewer pipe. A 'SOLID 10 GAUGE TRACER WIRE' runs vertically through the center of the main pipe. The main pipe is labeled 'FORCE MAIN'. Below the pipe, 'CLASS 67 BEDDING SUPPORT REQ'D.' is specified, with a note that 'MAX AGGREGATE SIZE 3/4"'. The pipe is surrounded by a bed of stones. Two dimensions of '6"' are shown, indicating the thickness of the bedding material on either side of the pipe. To the right, 'NOTES:' provide instructions for locator ports: 'LOCATOR PORTS ARE LOCATED EVER 500' OR ANY CHANGE IN DIRECTION' and 'TO BE LOCATED AS CLOSE TO A MANHOLE WHEREVER POSSIBLE TO EASE LOCATING.'

LIFT STATION DETAILS: LS10

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