

STANDARD DETAIL DRAWINGS

FOR

WATER MAIN AND SERVICE INSTALLATIONS

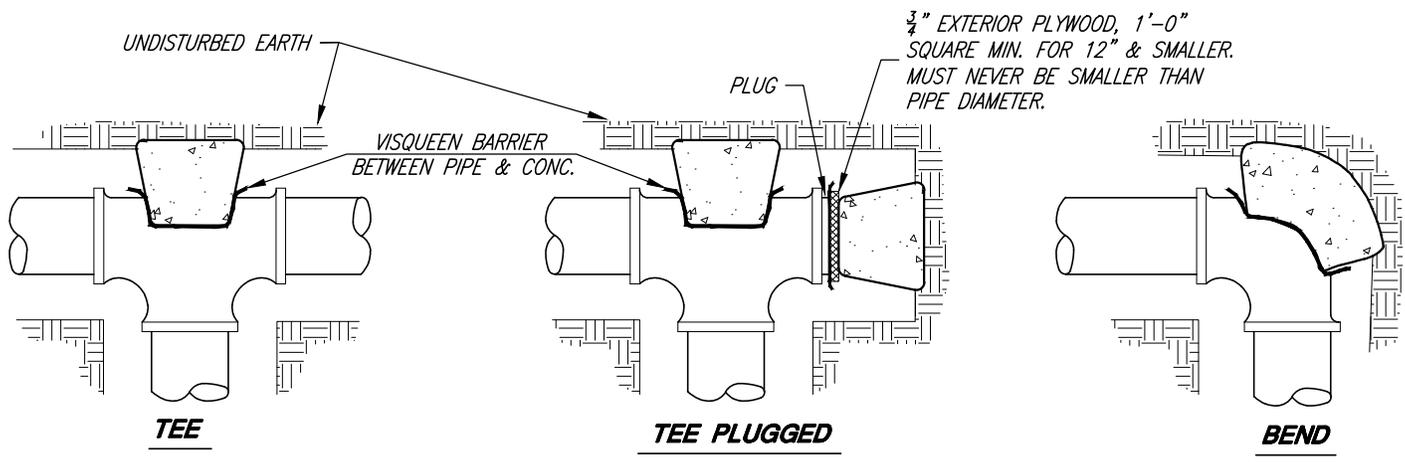
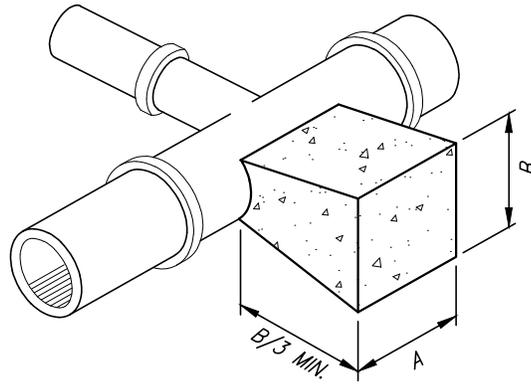


WELLSVILLE CITY CORPORATION

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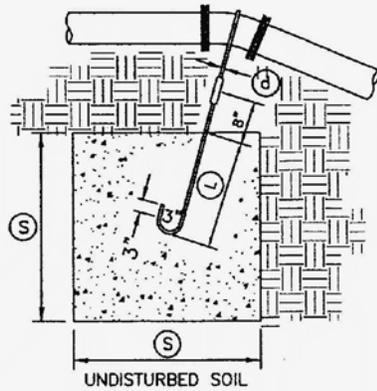
NOTE:
FOR TEE, PROVIDE THRUST
BLOCKING FOR BRANCH SIZE.



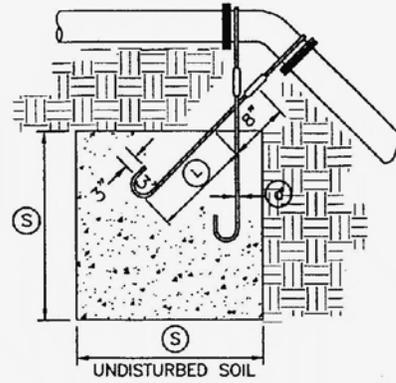
DIMENSIONS FOR THRUST BLOCKING

FITTING SIZES	TEES & PLUGS		90° BENDS		45° BENDS & "Y" S		22 1/2° BENDS	
	A	B	A	B	A	B	A	B
4"	1'-6"	1'-6"	1'-6"	1'-9"	1'-3"	0'-6"	1'-0"	0'-6"
6"	2'-0"	1'-0"	2'-0"	2'-0"	1'-3"	1'-6"	1'-0"	1'-5"
8"	2'-0"	1'-6"	2'-3"	2'-3"	1'-8"	1'-8"	1'-0"	1'-3"
10"	2'-6"	2'-3"	2'-9"	2'-10"	2'-3"	1'-10"	1'-3"	2'-0"
12"	3'-0"	2'-9"	3'-6"	3'-3"	2'-6"	2'-4"	2'-0"	1'-6"
14"	3'-5"	3'-0"	4'-0"	3'-8"	3'-6"	2'-4"	2'-0"	2'-3"
16"	4'-0"	3'-6"	5'-0"	4'-0"	3'-6"	3'-0"	2'-6"	2'-3"
18"	4'-0"	4'-3"	6'-0"	4'-0"	4'-0"	3'-3"	2'-9"	2'-6"
20"	5'-0"	4'-3"	6'-0"	5'-0"	4'-3"	4'-0"	3'-0"	2'-9"
24"	6'-0"	5'-3"	8'-0"	5'-6"	6'-0"	4'-0"	4'-0"	3'-0"

- NOTES:**
- THIS TABLE IS BASED ON 200 P.S.I. MAIN PRESSURE AND 2000 P.S.F. SOIL BEARING PRESSURE. ADJUST BEARING AREAS IN ACCORDANCE WITH SOIL CONDITIONS AND PRESSURES ENCOUNTERED.
 - FOR ASBESTOS CEMENT PIPE GREATER THAN 6 INCHES IN DIAMETER DOUBLE THE AREA REQUIRED IN THE TABLE ABOVE.
 - USE VISQUEEN BETWEEN CONCRETE AND PIPE.
 - REFER TO CONCRETE STANDARD SPECIFICATIONS.
 - THE "THRUST BLOCKING DETAILS" IN NO WAY LIMITS THE LOCATION OR SIZE OF ADDITIONAL BLOCKING WHEN SO WARRANTED OR REQUIRED BY THE ENGINEER.



TYPE A RESTRAINT
FOR 11 1/4° - 22 1/2° VERTICAL BENDS

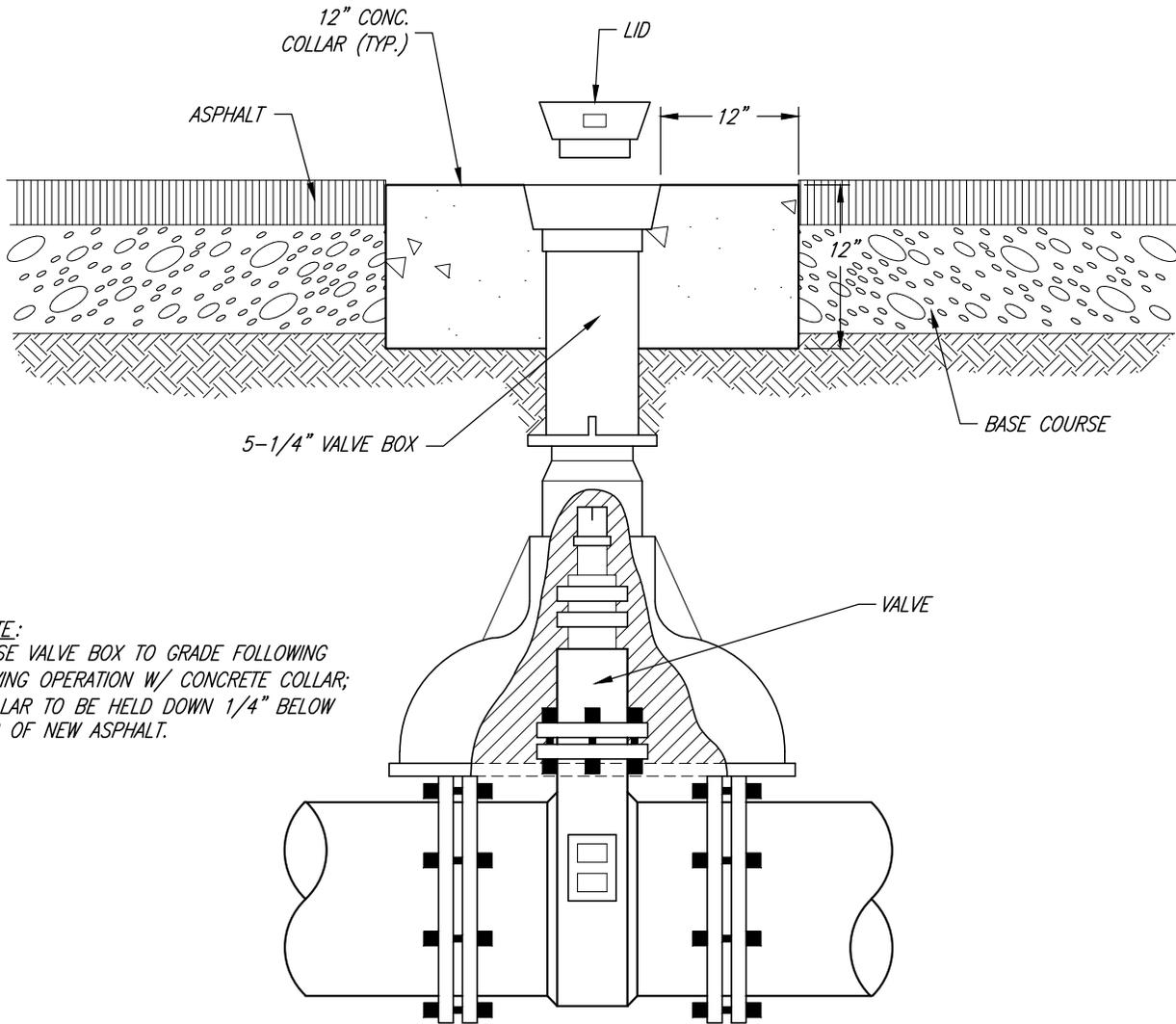


TYPE B RESTRAINT
FOR 45° VERTICAL BENDS

TABLE OF DIMENSIONS					
PIPE SIZE NOMIN. DIAMETER - INCH	VB	NO. OF CU FT. OF CONC. BLOCKING	(S)	(d)	(L)
4"	11 1/4°	8	2.0	5/8"	1.5
	22 1/2°	15.6	2.5	5/8"	2.0
6"	11 1/4°	15.6	2.5	5/8"	2.0
	22 1/2°	34.3	3.25	5/8"	2.0
8"	11 1/4°	27	3.0	5/8"	2.0
	22 1/2°	64	4.0	5/8"	2.0
12"	11 1/4°	64	4.0	3/4"	2.0
	22 1/2°	125	5.0	3/4"	3.0
16"	11 1/4°	107	4.25	7/8"	3.0
	22 1/2°	216	6.0	7/8"	4.0
20"	11 1/4°	138	5.17	1"	3.5
	22 1/2°	334	6.94	1"	4.0
24"	11 1/4°	240	6.22	1"	4.0
	22 1/2°	476	7.81	1"	4.0
30"	11 1/4°	369	7.17	1"	4.0
	22 1/2°	733	9.02	1"	4.0

TABLE OF DIMENSIONS					
PIPE SIZE NOMIN. DIAMETER - INCH	VB	NO. OF CU C.Y. OF CONC. BLOCKING	(S)	(d)	(L)
4"	45°	1	3.0	5/8"	2.0
				5/8"	
6"		2.37	4.0	5/8"	2.5
				5/8"	
8"		3.97	4.75	5/8"	2.0
				5/8"	
12"		9.04	6.25	5/8"	4.0
				5/8"	
16"		17.24	7.75	3/4"	4.0
				3/4"	
20"		26.52	5.17	3/4"	4.0
				3/4"	
24"		37.82	10.07	3/4"	4.0
				3/4"	
30"		58.26	11.63	3/4"	4.0
				3/4"	

NOTE: LOCKING RESTRAINT DEVICES MAY BE USED IN CONJUNCTION WITH CONCRETE THRUST BLOCKING



*NOTE:
 RAISE VALVE BOX TO GRADE FOLLOWING
 PAVING OPERATION W/ CONCRETE COLLAR;
 COLLAR TO BE HELD DOWN 1/4" BELOW
 TOP OF NEW ASPHALT.*



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**WELLSVILLE CITY CORPORATION
 CULINARY WATER STANDARDS**

VALVE BOX COLLAR DETAIL

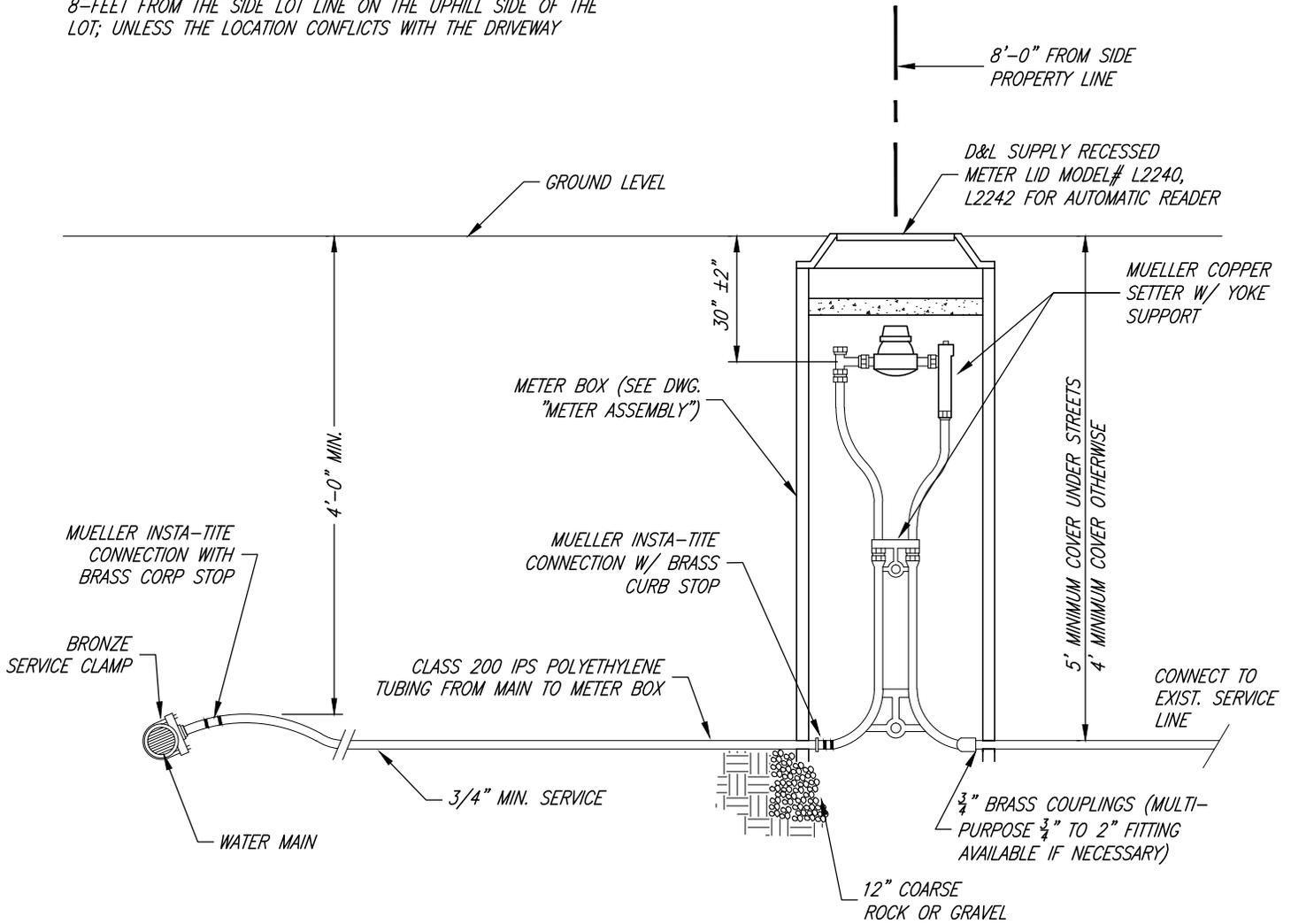
SHEET:

W3

OF 1 SHEETS

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NOTE:
 WATER METERS IN RESIDENTIAL SUBDIVISIONS MUST BE INSTALLED
 8- FEET FROM THE SIDE LOT LINE ON THE UPHILL SIDE OF THE
 LOT; UNLESS THE LOCATION CONFLICTS WITH THE DRIVEWAY



NOTES:

1. METER BOX SHALL BE SET PLUMB
2. THREADS ON TAP SHALL MATCH THREADS ON CORPORATION STOP.
3. REFER TO WRITTEN SPECIFICATIONS FOR ADDITIONAL DETAILS.
4. NO METERS ARE TO BE INSTALLED IN SIDEWALK OR DRIVEWAYS UNLESS FIRST APPROVED BY THE CITY PUBLIC WORKS DIRECTOR.
5. FOR DETAILED INFORMATION SEE SPECIFICATIONS.
6. METER BOX DIAMETERS (MINIMUMS):
 21" Ø FOR 3/4" SERVICE
 24" Ø FOR 1" SERVICE
 48" Ø FOR 1-1/2" AND ABOVE



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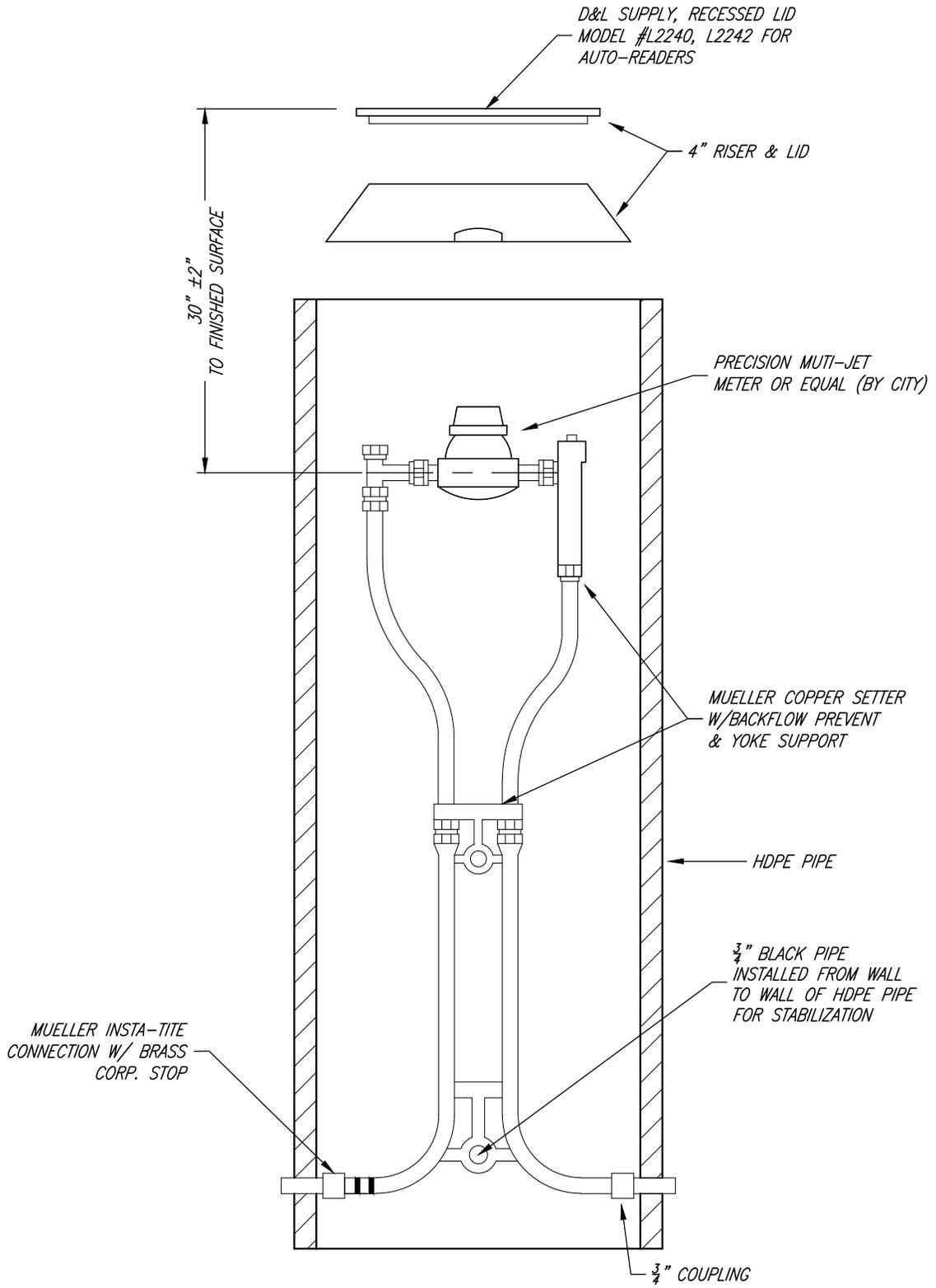
SERVICE CONNECTION & METER ASSEMBLY

SHEET:

W4

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NOTE:

ALL COMPONENTS EXCEPT METER PROVIDED BY CONTRACTOR.
METER PROVIDED BY PUBLIC WORKS DEPT.



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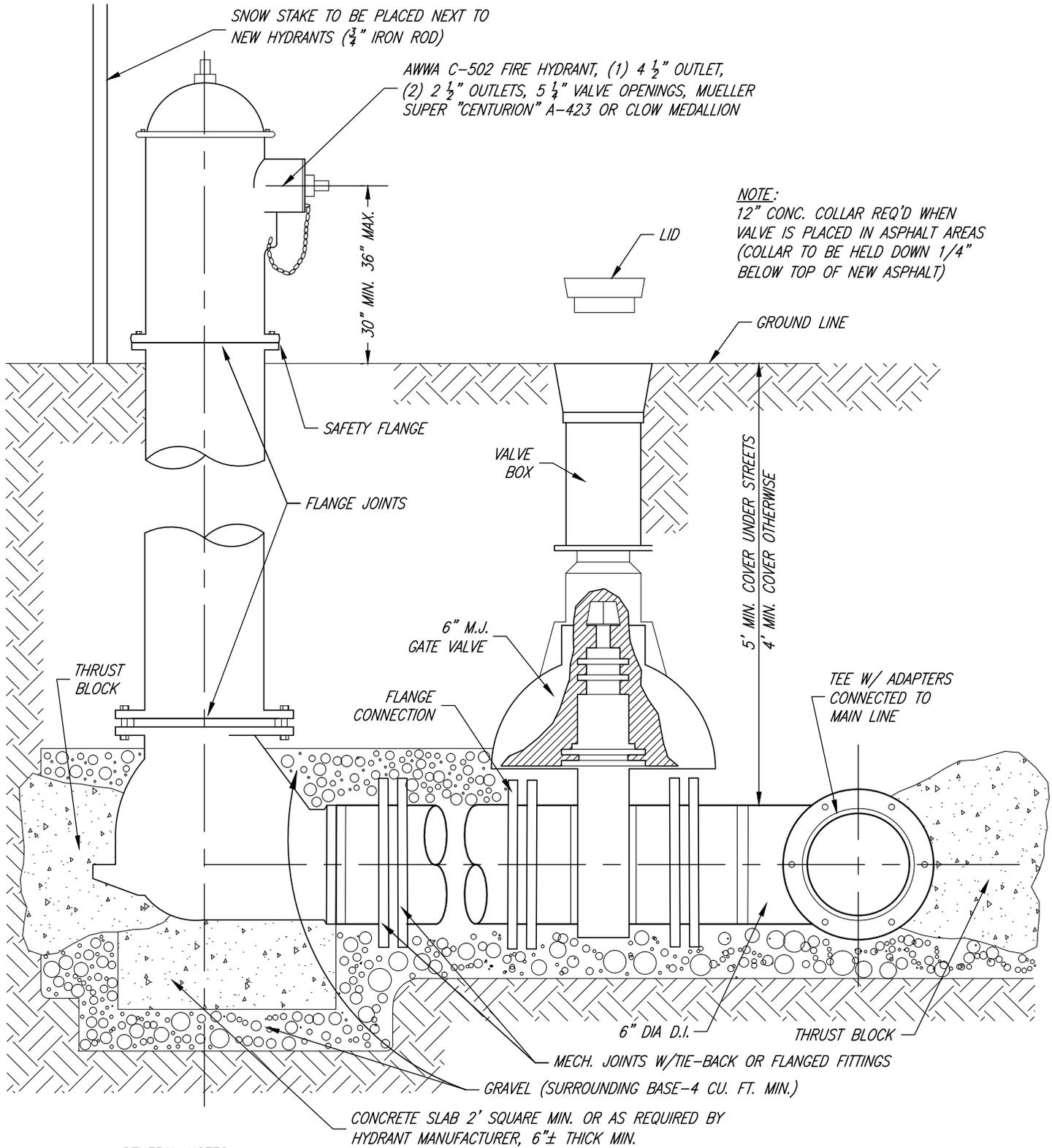
METER ASSEMBLY

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W5

OF 1 SHEETS

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NOTE:
12" CONC. COLLAR REQ'D WHEN VALVE IS PLACED IN ASPHALT AREAS (COLLAR TO BE HELD DOWN 1/4" BELOW TOP OF NEW ASPHALT)

GENERAL NOTES:

1. ALL FIRE HYDRANTS SHALL BE LOCATED AS SHOWN ON THE PLANS.
2. ALL FIRE HYDRANTS WILL STAND PLUMB WITH THE PUMPER NOZZLE FACING THE STREET.
3. THE VALVE WILL BE LOCATED AS APPROVED BY CITY. PIPE MATERIAL SHALL BE DUCTILE.
4. FOR DETAILED INFORMATION SEE SPECIFICATIONS.
5. FIRE HYDRANTS TO BE INSTALLED AT ALL CULINARY WATER LINE ENDS. BLOW-OFF VALVES ARE NOT AN ACCEPTABLE ALTERNATIVE.



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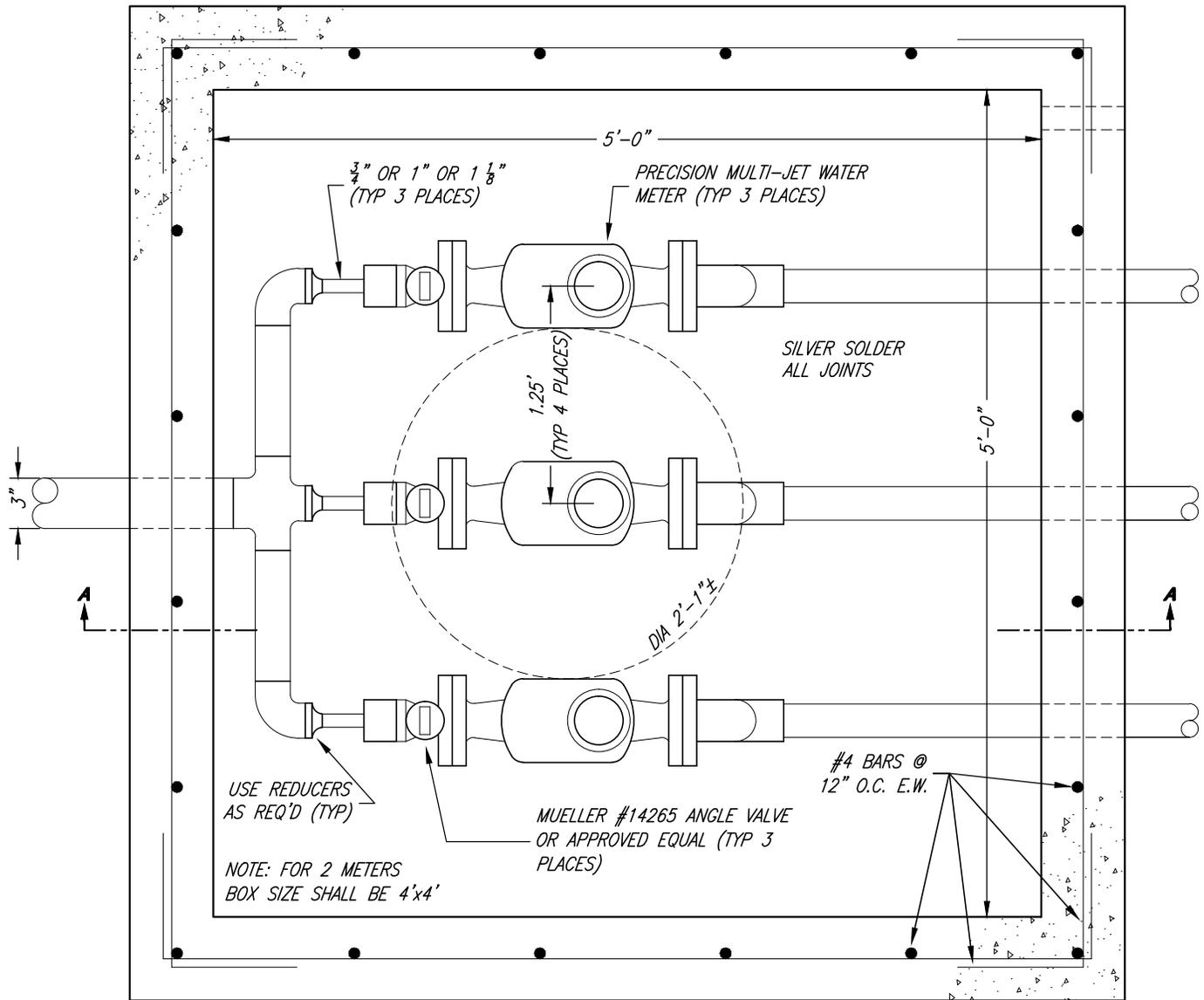
FIRE HYDRANT ASSEMBLY

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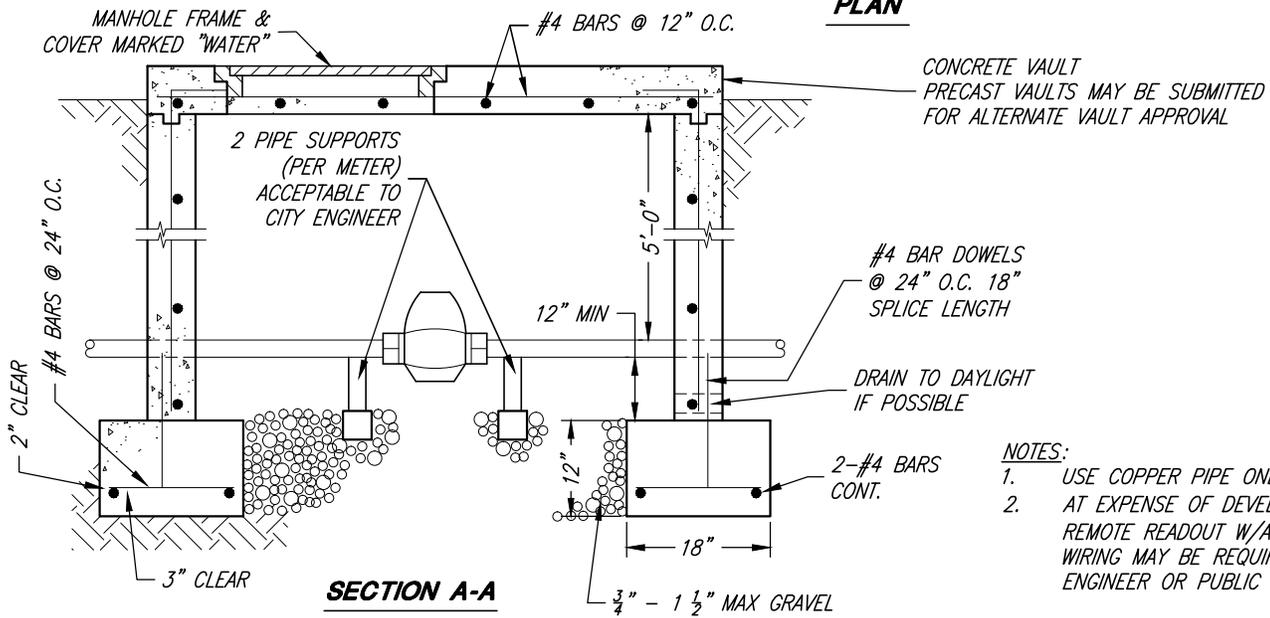
W6

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PLAN



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WELLSVILLE CITY CORPORATION

CULINARY WATER STANDARDS

METER VAULT FOR MULTIPLE METERS

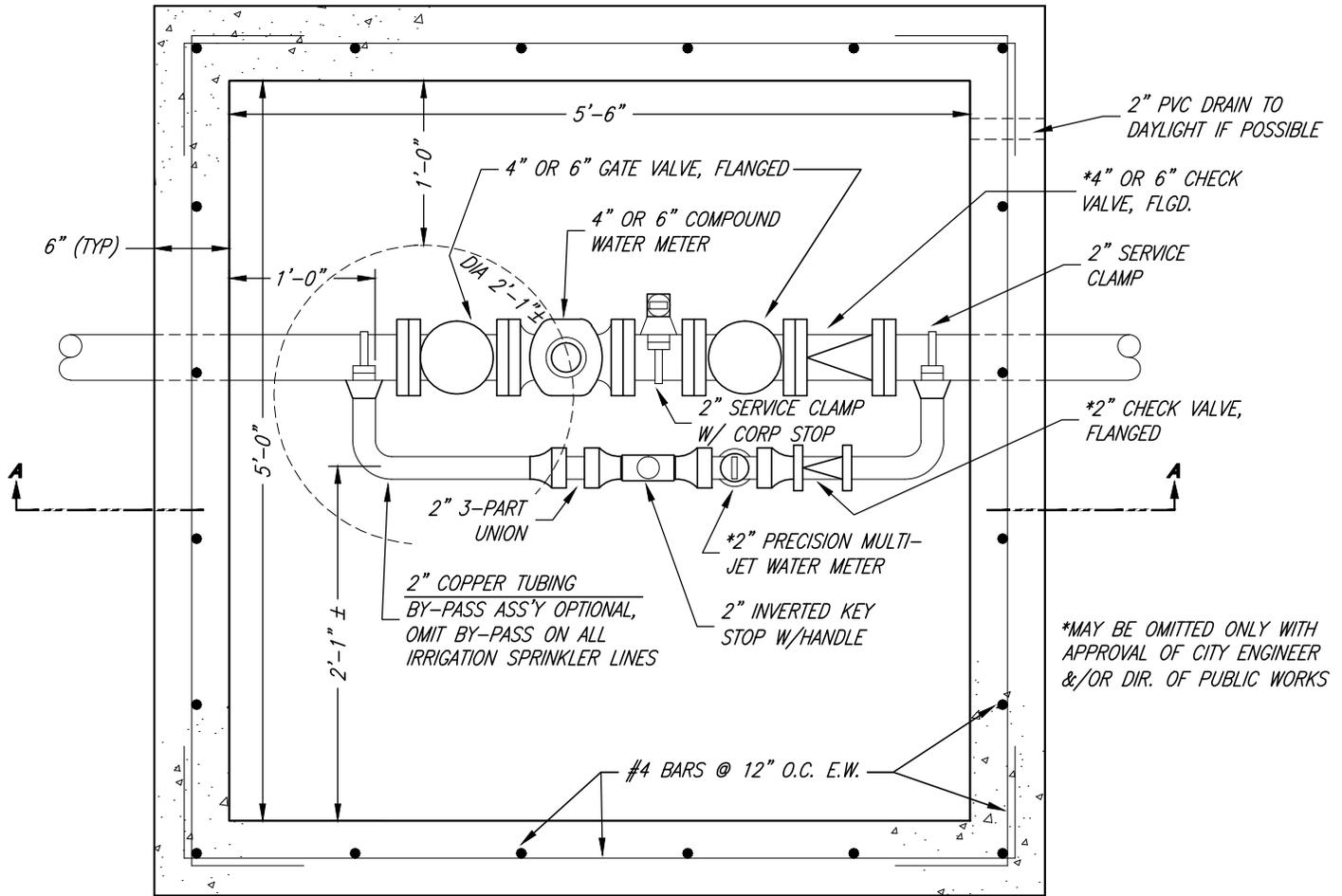
FOR 3/4" TO 1 1/2" METERS

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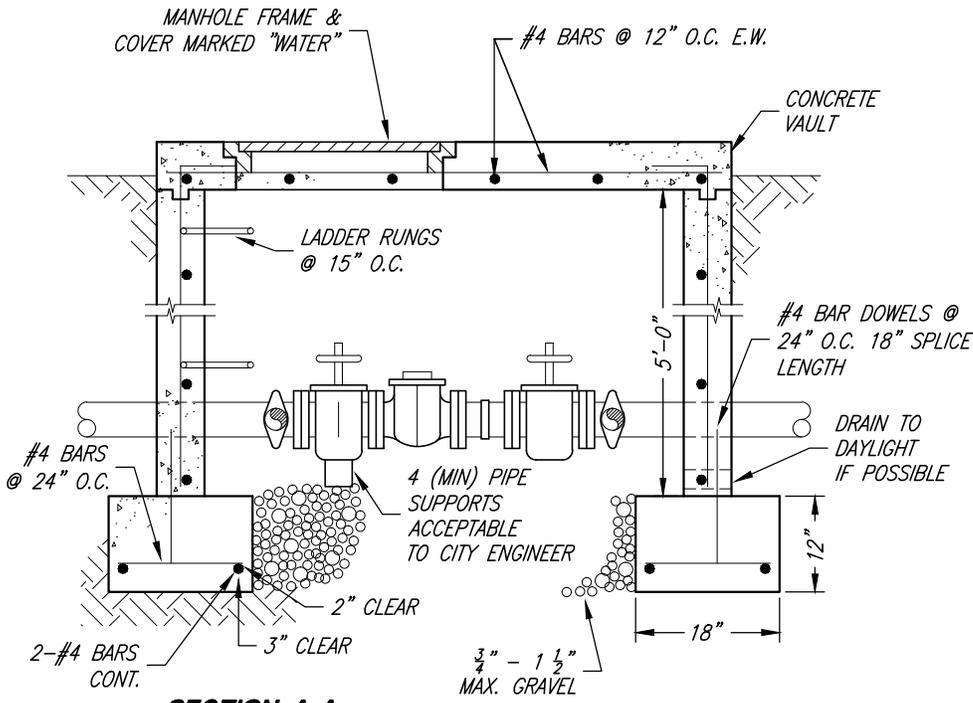
W7

OF 1 SHEETS

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PLAN



SECTION A-A

NOTE:
 FIRE LINES SHALL ALSO BE METERED UNLESS OTHERWISE APPROVED BY PUBLIC WORKS DIRECTOR. METER PROVIDED BY CITY AT NO CHARGE. VAULT BY DEVELOPER. IF MULTIPLE METERS ARE USED IN ONE VAULT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VAULT SIZE NECESSARY TO CONTAIN ALL COMPONENTS.

EIGHT-INCH OR LARGER METERS SHALL BE INSTALLED IN AN APPROPRIATELY SIZED VAULT SUBJECT TO APPROVAL OF CITY ENGINEER. AT THE EXPENSE OF DEVELOPER/OWNER, REMOTE READOUT WITH APPURTENANT WIRING MAY BE REQUIRED BY CITY ENGINEER OR PUBLIC WORKS DIRECTOR.



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CULINARY WATER STANDARDS

METER VAULT & BYPASS DETAIL

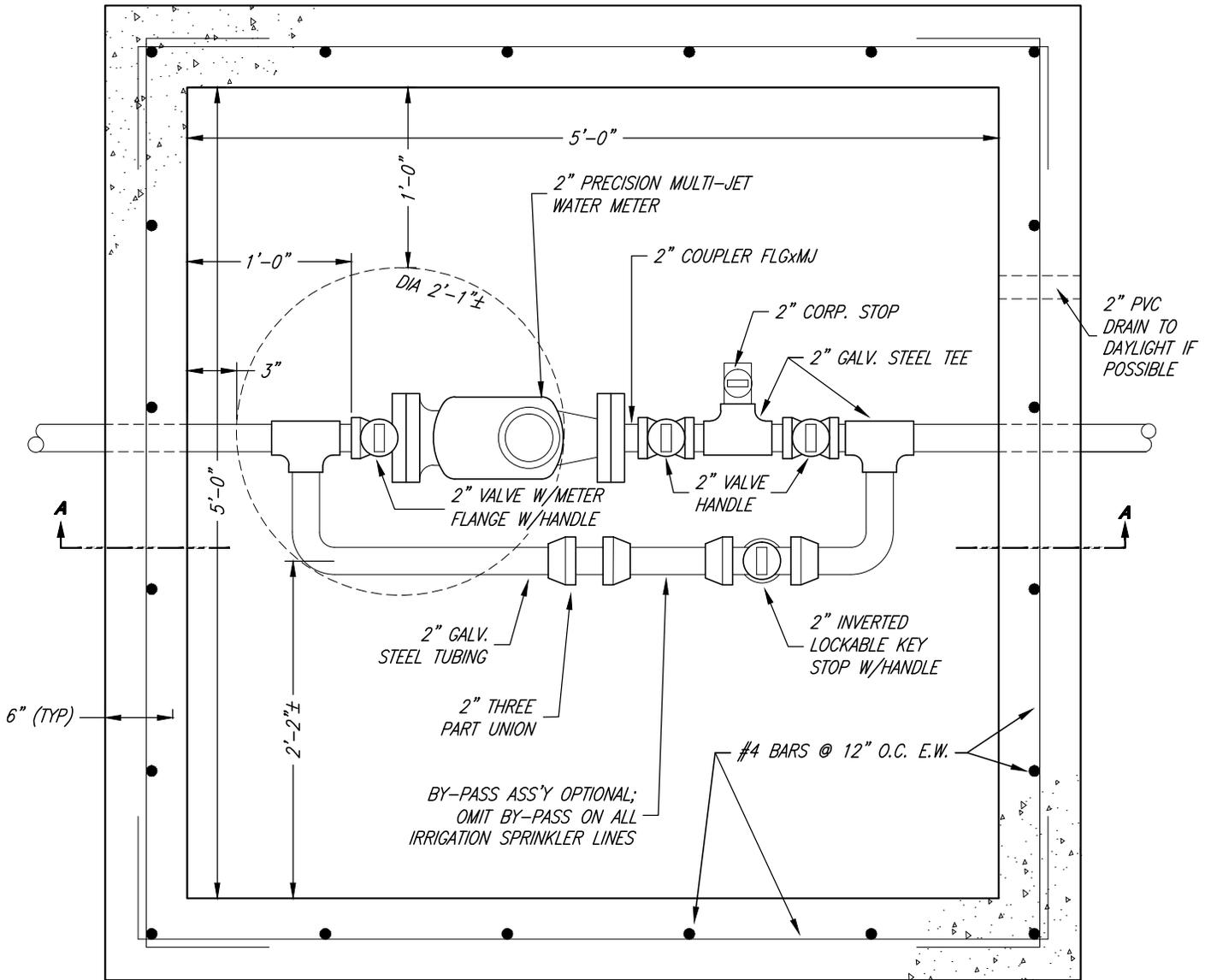
FOR 4" TO 6" METERS ONLY

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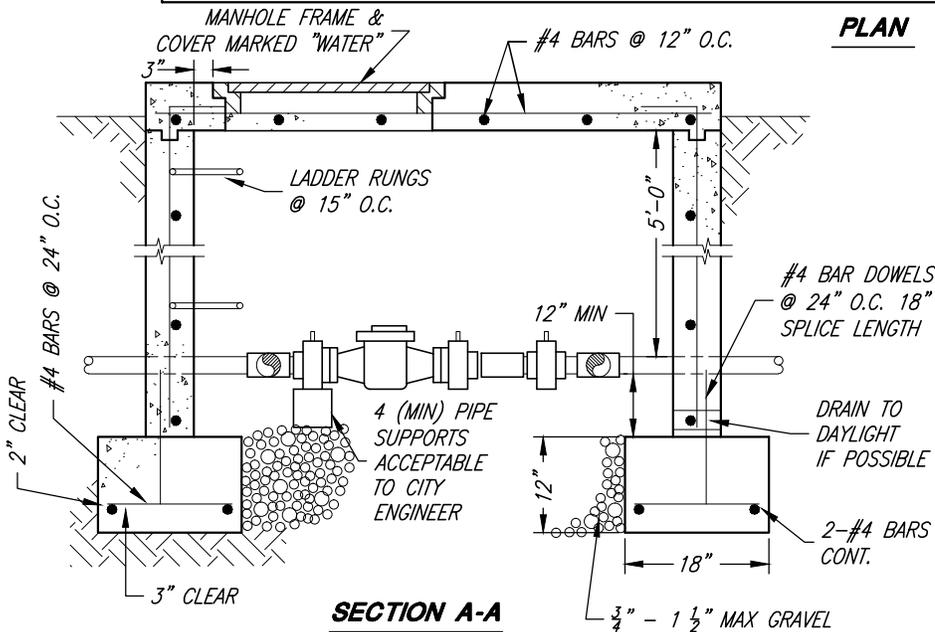
W8

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PLAN



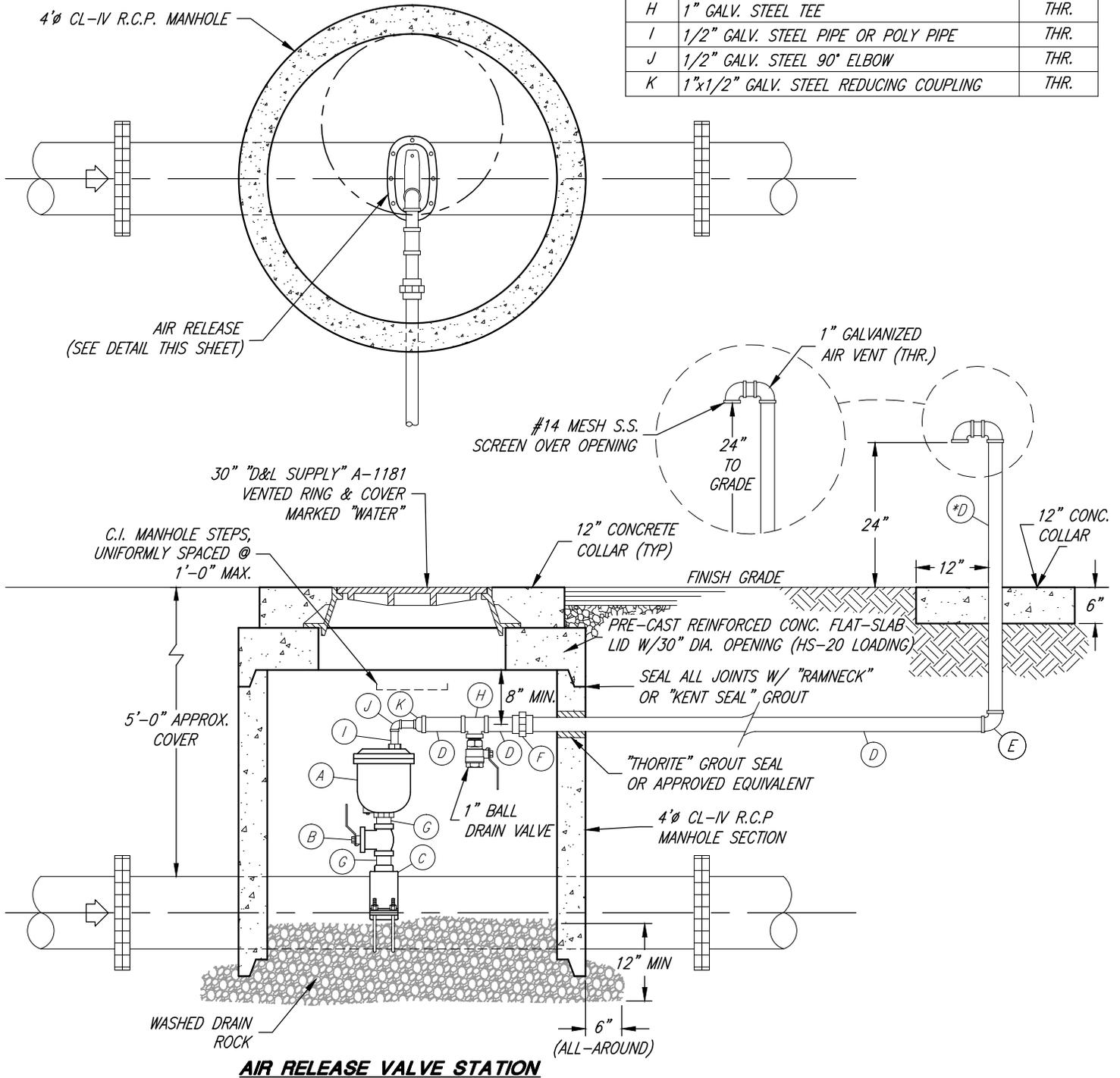
NOTES

1. FIRE LINES SHALL ALSO BE METERED UNLESS OTHERWISE APPROVED BY PUBLIC WORKS DIRECTOR. METER PROVIDED BY CITY AT NO CHARGE. VAULT BY DEVELOPER. IF MULTIPLE METERS ARE USED IN ONE VAULT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING VAULT SIZE NECESSARY TO CONTAIN ALL COMPONENTS.
2. PRECAST VAULTS ACCEPTABLE SUBJECT TO APPROVAL OF CITY ENGINEER.
3. AT THE EXPENSE OF DEVELOPER/ OWNER, REMOTE READOUT WITH APPURTENANT WIRING MAY BE REQUIRED BY CITY ENGINEER OR PUBLIC WORKS DIRECTOR.
4. NO SWEAT-FITTINGS. SILVER SOLDERED FITTINGS WITH PRIOR APPROVAL OF CITY ENGINEER.

NOTES:

1. LOCATION OF VENT PIPE TO BE DETERMINED BY THE CITY

AIR RELEASE VALVE - PIPE & FITTING SCHEDULE		
NO.	DESCRIPTION	FITTING
A	1" AIR RELEASE VALVE "VAL-MATIC" MODEL 22	THR.
B	1" BALL VALVE (1/4 TURN)	THR.
C	1" BRASS DOUBLE STRAP SERVICE SADDLE	-
D	1" GALV. STEEL PIPE OR POLY PIPE	THR.
*D	1" GALV. STEEL PIPE	THR.
E	1" GALV. STEEL 90° ELBOW	THR.
F	1" GALV. STEEL UNION	THR.
G	1" BRASS PIPE	THR.
H	1" GALV. STEEL TEE	THR.
I	1/2" GALV. STEEL PIPE OR POLY PIPE	THR.
J	1/2" GALV. STEEL 90° ELBOW	THR.
K	1"x1/2" GALV. STEEL REDUCING COUPLING	THR.



AIR RELEASE VALVE STATION



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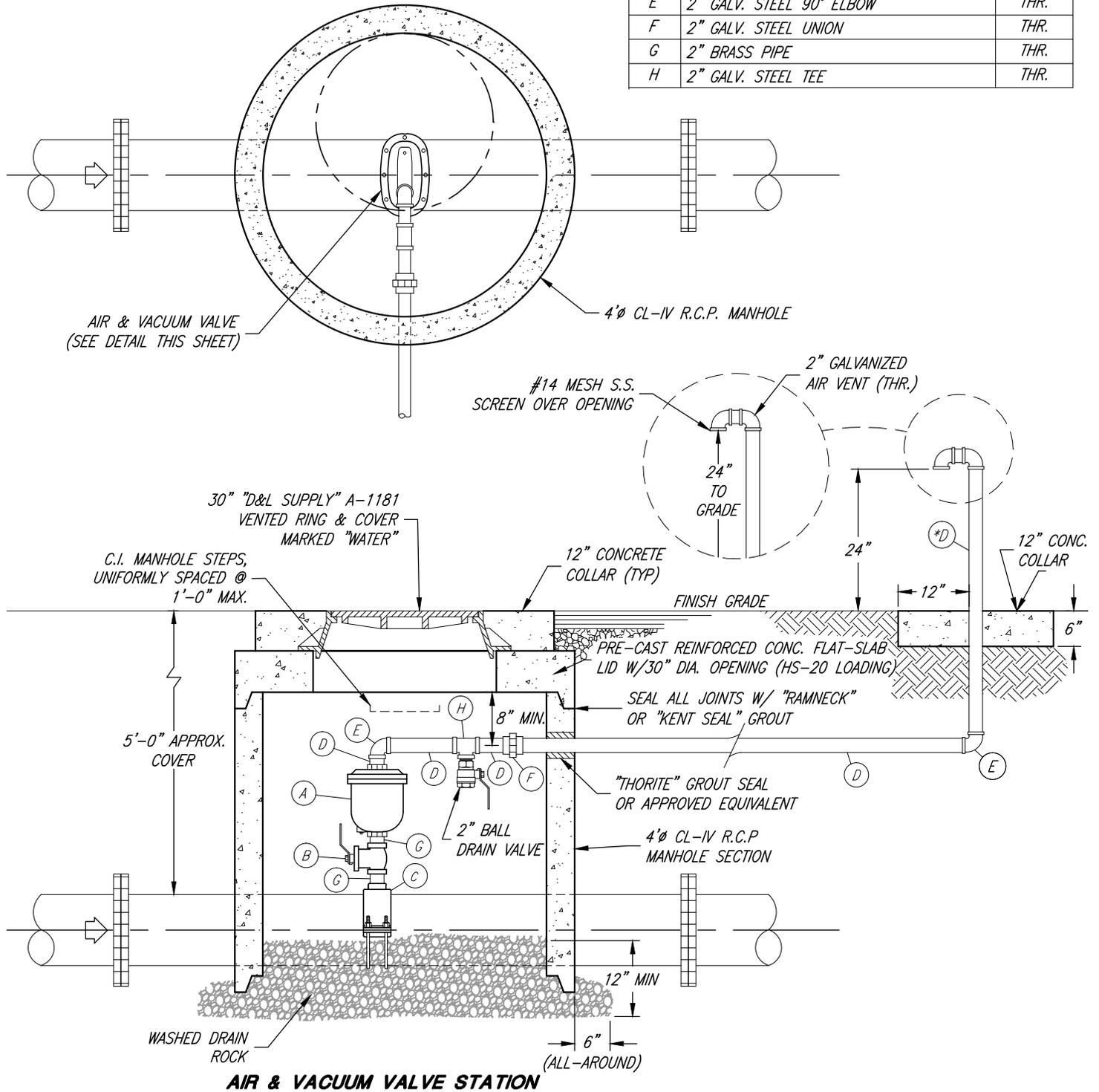
AIR RELEASE VALVE ASSEMBLY

SHEET:
W10A
 OF 1 SHEETS
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NOTES:

1. LOCATION OF VENT PIPE TO BE DETERMINED BY THE CITY

AIR & VACUUM VALVE - PIPE & FITTING SCHEDULE		
NO.	DESCRIPTION	FITTING
A	2" AIR & VACUUM VALVE "VAL-MATIC" MODEL 102	THR.
B	2" BALL VALVE (1/4 TURN)	THR.
C	2" BRASS DOUBLE STRAP SERVICE SADDLE	-
D	2" GALV. STEEL PIPE OR POLY PIPE	THR.
*D	2" GALV. STEEL PIPE	THR.
E	2" GALV. STEEL 90° ELBOW	THR.
F	2" GALV. STEEL UNION	THR.
G	2" BRASS PIPE	THR.
H	2" GALV. STEEL TEE	THR.



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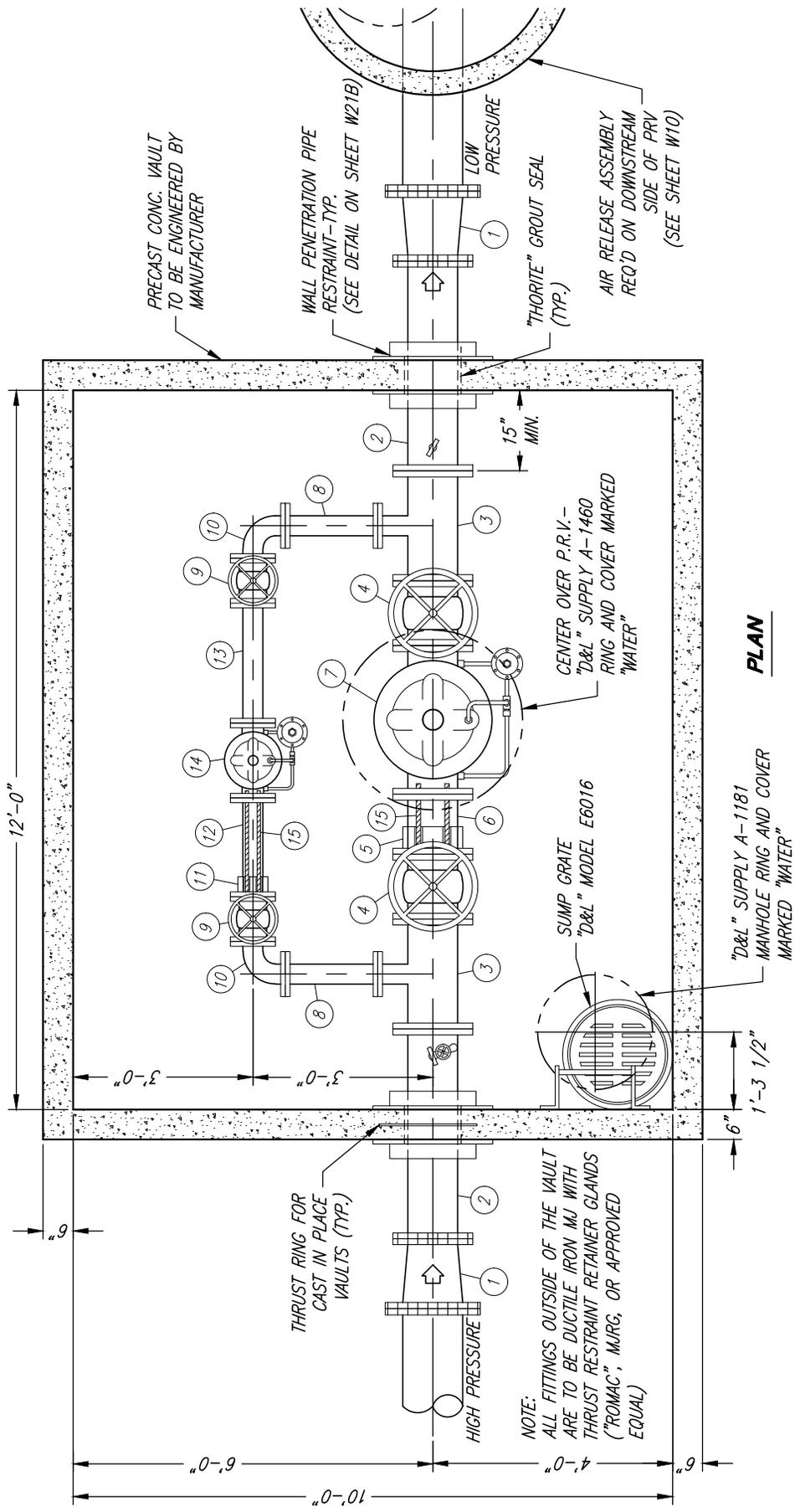
AIR & VACUUM VALVE ASSEMBLY

SHEET:

W10B

OF 1 SHEETS

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PLAN



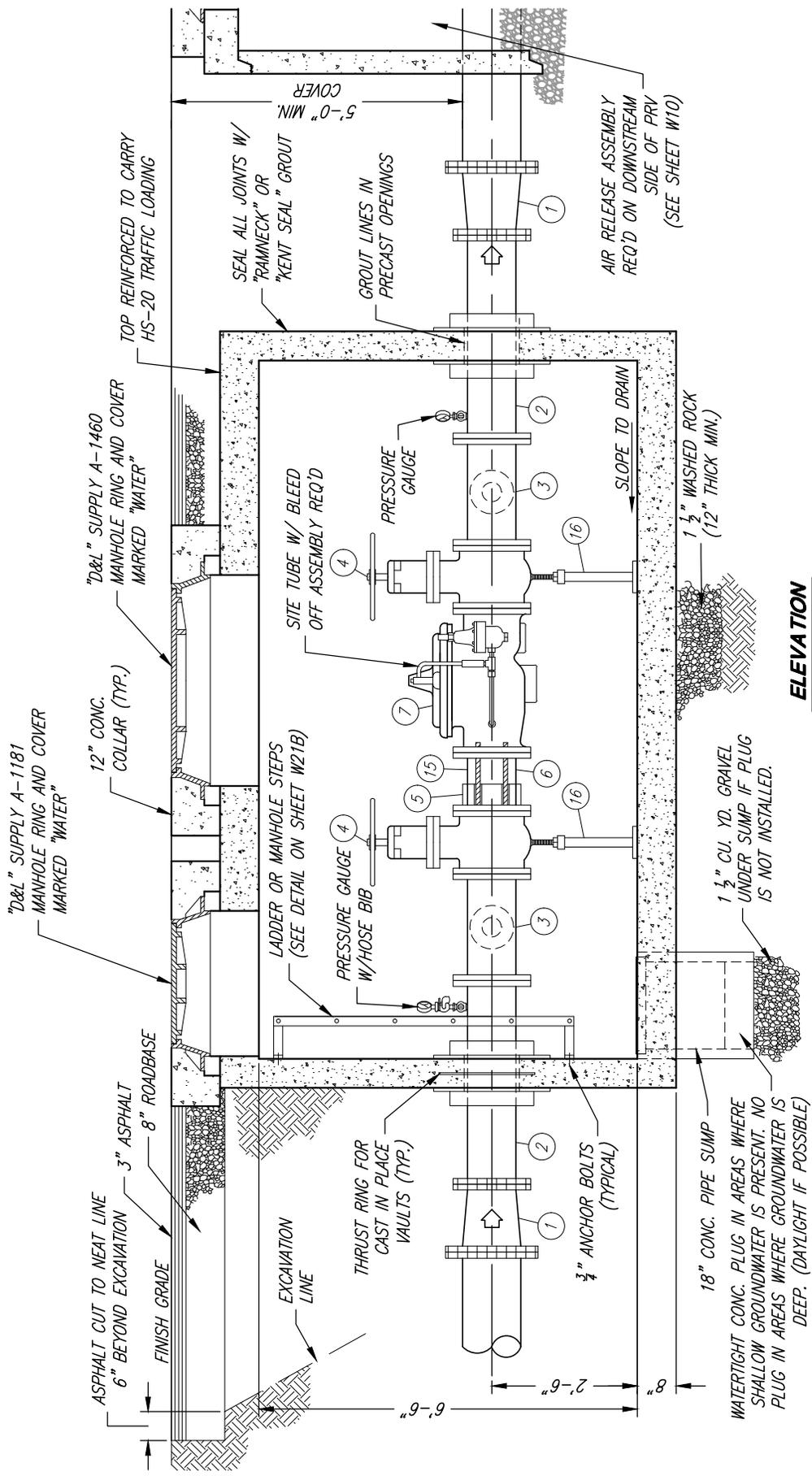
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WELLSVILLE CITY CORPORATION
CULINARY WATER STANDARDS

PRESSURE REDUCING VALVE

SHEET:
W11
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ELEVATION



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WELLSVILLE CITY CORPORATION
CULINARY WATER STANDARDS

PRESSURE REDUCING VALVE

SHEET:
W12
 OF 1 SHEETS
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PRV - PIPE & FITTING SCHEDULE

NO.	DESCRIPTION	JOINT TYPE	12" LINE	10" LINE	8" LINE	6" LINE
1	REDUCER W/ THRUST RESTRAINT JOINTS (2)	MJ	12"x10"	10"x8"	8"x6"	6"x4"
2	NIPPLE (2)	FLxPE	10"Ø	8"Ø	6"Ø	4"Ø
3	REDUCING TEE (2)	FL	10"x10"x4"	8"x8"x4"	6"x6"x4"	4"x4"x4"
4	GATE VALVE W/ HANDWHEEL (2)	FL	10"	8"	6"	4"
5	FLANGED COUPLING ADAPTER	FL	10"	8"	6"	4"
6	NIPPLE	FLxPE	10"Ø	8"Ø	6"Ø	4"Ø
7	CLA-VAL 90-01 PRESSURE REDUCTION VALVE	FL	10"	8"	6"	4"
8	SPOOL PIECE (2)	FL	4"Ø	4"Ø	4"Ø	4"Ø
9	GATE VALVE W/ HANDWHEEL (2)	FL	4"	4"	4"	4"
10	90° ELBOW (2)	FL	4"	4"	4"	4"
11	FLANGED COUPLING ADAPTER	FL	4"	4"	4"	4"
12	NIPPLE	FLxPE	4"Ø	4"Ø	4"Ø	4"Ø
13	SPOOL PIECE	FL	4"Ø	4"Ø	4"Ø	4"Ø
14	CLA-VAL 90-01 PRESSURE REDUCTION VALVE	FL	4"	4"	4"	4"
15	ALL THREAD BOLTED CONNECTION (4 REQ'D FOR CONNECTION)	THR.	¾"Ø	¾"Ø	¾"Ø	¾"Ø
16	CLOW F-1608 OR ANVIL #264 GALV. PIPE SUPPORT W/ 3" COMPANION FLANGE & VARIABLE HEIGHT 3" NIPPLE (4 EA REQ'D) - PLACE UNDER GATE VALVES					

*PRV'S TO BE GLOBE STYLE W/ GLASS INDICATOR (SITE TUBE) ON TOP OF BONNET

PRV GENERAL SPECIFICATIONS:

1. PRV TO BE CLA-VAL #90-01 (OR APPROVED EQUAL)
2. 150 # FLANGED FOR 250 PSI WORKING PRESSURE -
3. DUCTILE IRON BODY GLOBE OR ANGLE PATTERN
4. EPOXY LINED AND COATED
5. STAINLESS STEEL INTERNAL TRIM
6. BRONZE PILOT CONTROLS
7. STAINLESS STEEL TUBES & FITTINGS
8. SPRING RANGES FOR PRESSURE REDUCING PILOT
9. X101 VALVE POSITION INDICATOR

COATINGS:

1. ALL NEW AND EXISTING PIPING, VALVES, FITTINGS, METERS, ETC, INSIDE THE VAULT SHALL BE PAINTED.
2. METAL SURFACES TO BE PAINTED SHALL BE PRIMED AND THEN PAINTED W/ TWO COATS OF EPOXY PAINT.
3. ALL COMPONENTS ON HIGH-PRESSURE SIDE SHALL BE BLUE. ALL COMPONENTS ON LOW-PRESSURE SIDE SHALL BE WHITE.

GENERAL NOTES:

1. ALL WORK SHALL CONFORM WITH WELLSVILLE CITY DESIGN STANDARDS, CONSTRUCTION SPECIFICATIONS, AND STANDARD DRAWINGS.
2. RAISE ALL MANHOLES TO FINISH GRADE OF STREET FOLLOWING PAVING WITH A CONCRETE COLLAR. USE GRADE RINGS AS NEEDED.
3. PENETRATION WALLS NEED TO BE ADEQUATELY DESIGNED FOR ANTICIPATED THRUST.
4. THE PRECAST VAULT MANUFACTURER IS RESPONSIBLE FOR DESIGN RELATED TO TRAFFIC LOADING AND THRUST. VERIFICATION OF PROPER DESIGN MUST BE PROVIDED TO THE CITY PRIOR TO CONSTRUCTION.
5. REVEGETATION OF DISTURBED AREAS IS REQUIRED. MINIMUM 4" TOPSOIL, HYDROSEEDING, HYDROMULCHING
6. SMALL FITTINGS, INCLUDING TUBING & VALVES MUST BE STAINLESS STEEL. DO NOT USE GALVANIZED OR BRASS FITTINGS.



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**WELLSVILLE CITY CORPORATION
CULINARY WATER STANDARDS**

PRESSURE REDUCING VALVE

SHEET:

W13

OF 1 SHEETS

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THE ANCHOR PINS OF THE RESTRAINING GLAND MUST POINT AWAY FROM THE VAULT WALL AS SHOWN.

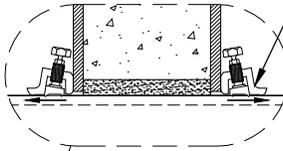
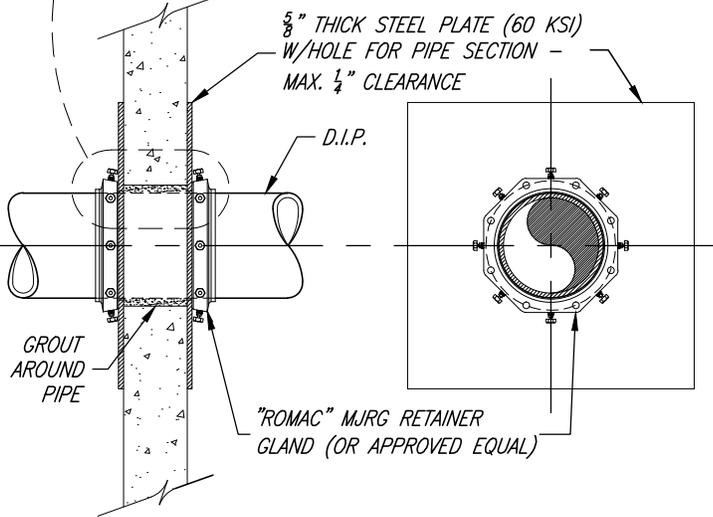
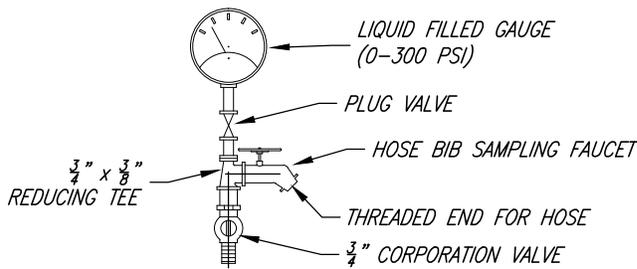


PLATE DIMENSIONS:

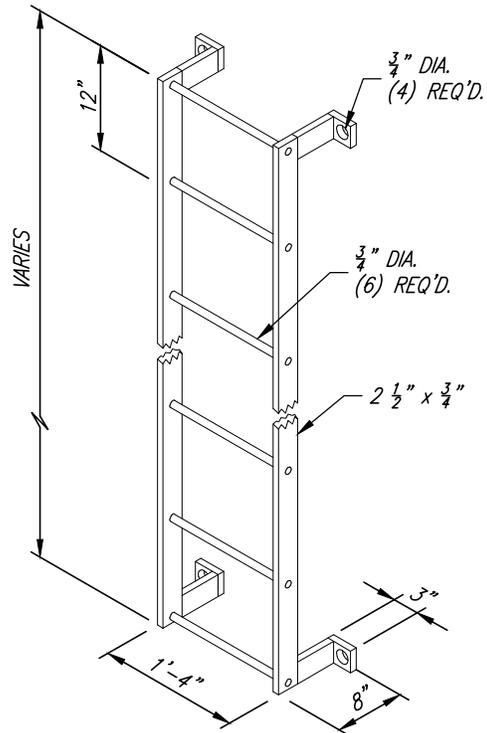
- LESS THAN 12"Ø PIPE = 24"x24" PLATE
- 12"Ø-18"Ø PIPE = 36"x36" PLATE
- 20"Ø OR GREATER = AS DIRECTED BY CITY ENGINEER



WALL PENETRATION DETAIL
FOR PRECAST VAULT (TYP)



PRESSURE GAUGE
W/SAMPLING FAUCET DETAIL



LADDER DETAIL
HOT DIP GALVANIZE AFTER FABRICATION



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CULINARY WATER STANDARDS

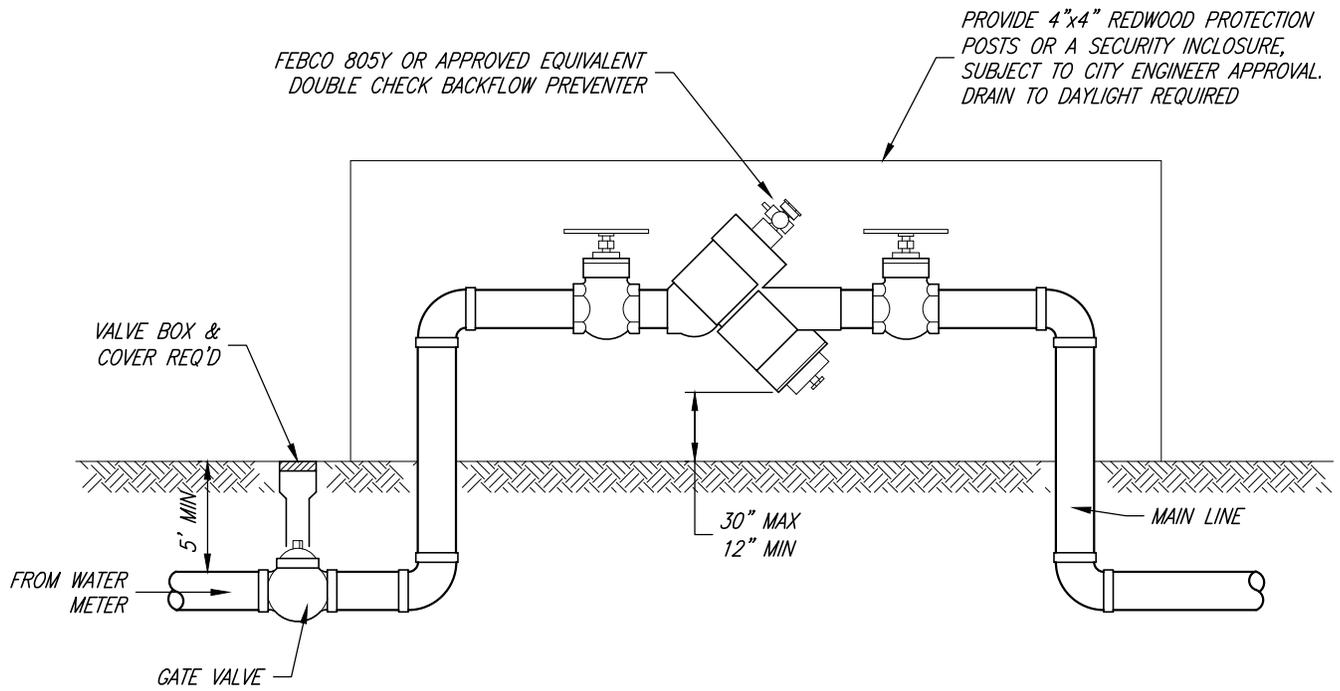
UTILITY VAULT APPURTENANCES

SHEET:

W14

OF 1 SHEETS

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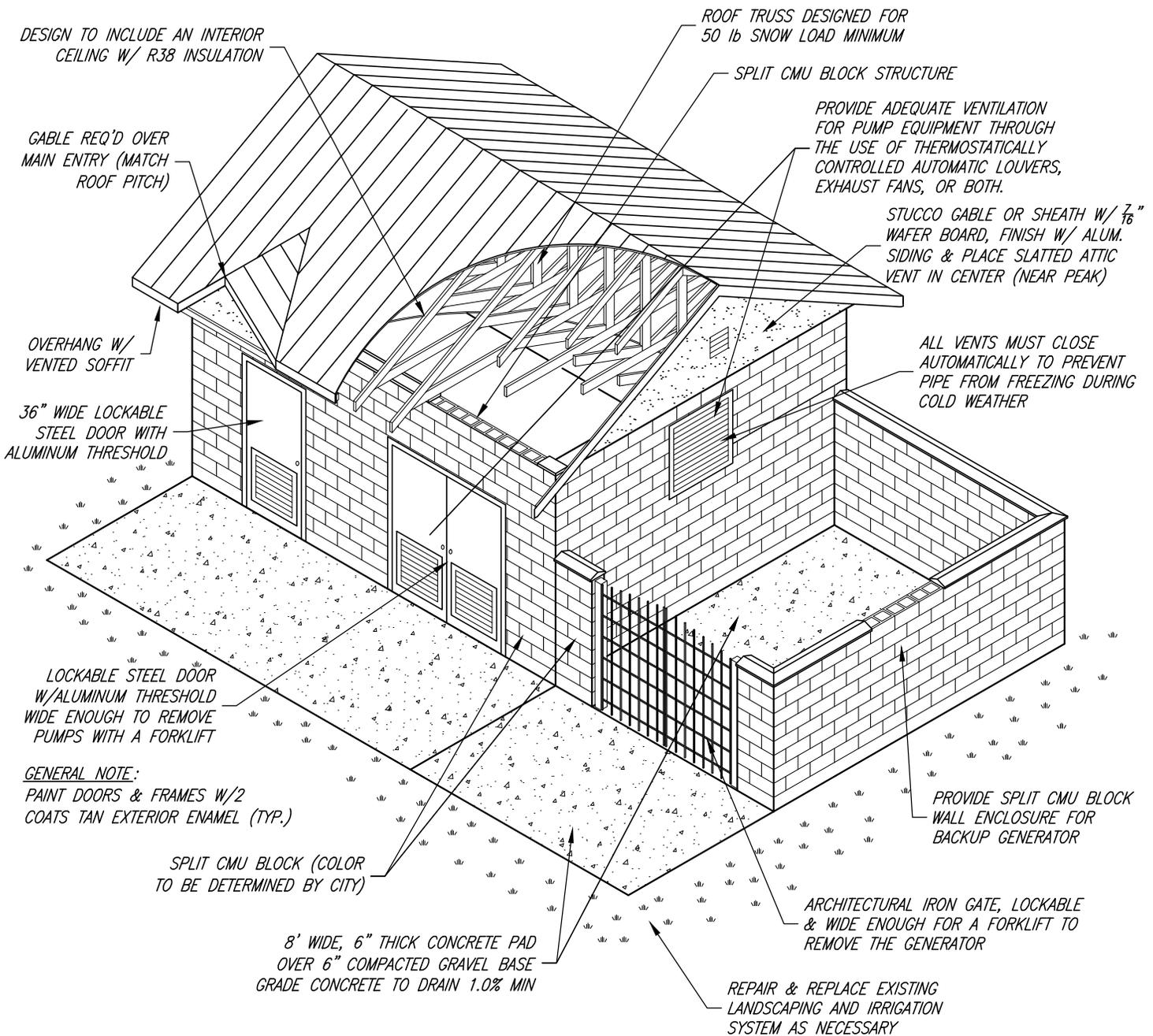
TYPICAL BACKFLOW PREVENTER INSTALLATION

SHEET:

W15

OF 1 SHEETS

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BUILDING NOTES:

THIS PLAN IS A MINIMUM FOR BOOSTER STATION BUILDING DESIGN AND MAY BE REVISED DEPENDING ON SPECIFIC PROJECT AND DESIGN REQUIREMENTS.

ALL WORK TO CONFORM TO LOCAL BUILDING CODES, WELLSVILLE CITY STANDARDS & SPECIFICATIONS AND THE UTAH STATE DIVISION OF WATER QUALITY RULES & GUIDANCE ON PUMP STATIONS.

DESIGN DRAWINGS OF THE BUILDING, PUMP SYSTEM AND WATER LINE IMPROVEMENTS TO BE PREPARED BY THE DEVELOPER'S ENGINEER AND SUBMITTED TO WELLSVILLE CITY FOR APPROVAL.

DESIGN DRAWINGS OF THE BUILDING, PUMP SYSTEM AND WATER LINE IMPROVEMENTS MUST BE SUBMITTED TO THE DEPARTMENT OF ENVIRONMENTAL QUALITY, DRINKING WATER DIVISION FOR APPROVAL.

COPIES OF THE PUMP STATION BUILDING MUST BE SUBMITTED TO CACHE COUNTY FOR APPROVAL PRIOR TO RECEIVING A BUILDING PERMIT.

DESIGN TO INCLUDE TELEMETRY & SCADA CONSISTENT WITH WELLSVILLE CITY'S EXISTING INFRASTRUCTURE MONITORING EQUIPMENT. TELEMETRY EQUIPMENT SUPPLIER: "REMOTE CONTROL" (NO SUBSTITUTE)



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WELLSVILLE CITY CORPORATION
CULINARY WATER STANDARDS

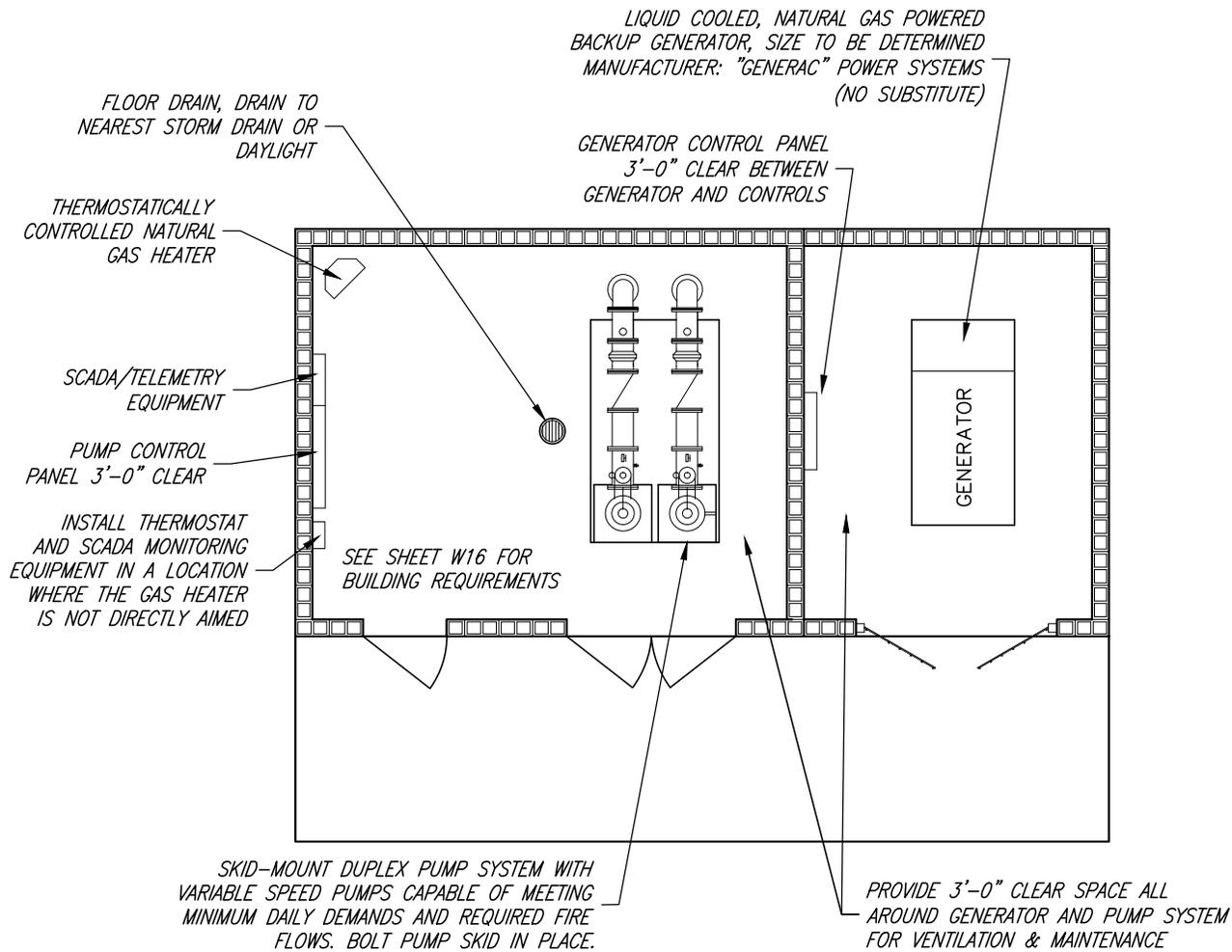
BOOSTER STATION DETAIL

SHEET:

W16

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BOOSTER PUMP SYSTEM PLAN VIEW

N.T.S.

PUMP SYSTEM NOTES:

DEVELOPER'S ENGINEER MUST SUBMIT CALCULATIONS SHOWING PUMPS ARE ADEQUATE FOR THE MINIMUM CULINARY WATER DEMANDS AND WILL MEET PEAK DEMANDS FOR REQUIRED FIRE FLOWS. CONSULT WITH WELLSVILLE CITY REGARDING REQUIRED FIRE FLOWS.

DESIGN CALCULATIONS MUST SHOW THE UPSTREAM WATER SYSTEM WILL NOT EXPERIENCE A RESIDUAL PRESSURE BELOW 20-PSI WHILE PUMPS MEET DOWNSTREAM FIRE FLOWS.

A THIRD STAND-ALONE PUMP MUST BE GIVEN TO WELLSVILLE CITY PUBLIC WORKS FOR FUTURE MAINTENANCE.

THIS PLAN IS A MINIMUM FOR CULINARY WATER BOOSTER STATION REQUIREMENTS AND MAY BE REVISED DEPENDING ON SPECIFIC PROJECT AND DESIGN REQUIREMENTS.

ALL WORK TO CONFORM TO LOCAL BUILDING CODES, WELLSVILLE CITY STANDARDS & SPECIFICATIONS AND THE UTAH STATE DIVISION OF WATER QUALITY RULES & GUIDANCE ON PUMP STATIONS.

DESIGN DRAWINGS OF THE BUILDING, PUMP SYSTEM AND WATER LINE IMPROVEMENTS TO BE PREPARED BY THE DEVELOPER'S ENGINEER AND SUBMITTED TO WELLSVILLE CITY FOR APPROVAL.

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**WELLSVILLE CITY CORPORATION
CULINARY WATER STANDARDS**

BOOSTER STATION DETAIL

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STANDARD DETAIL DRAWINGS

FOR

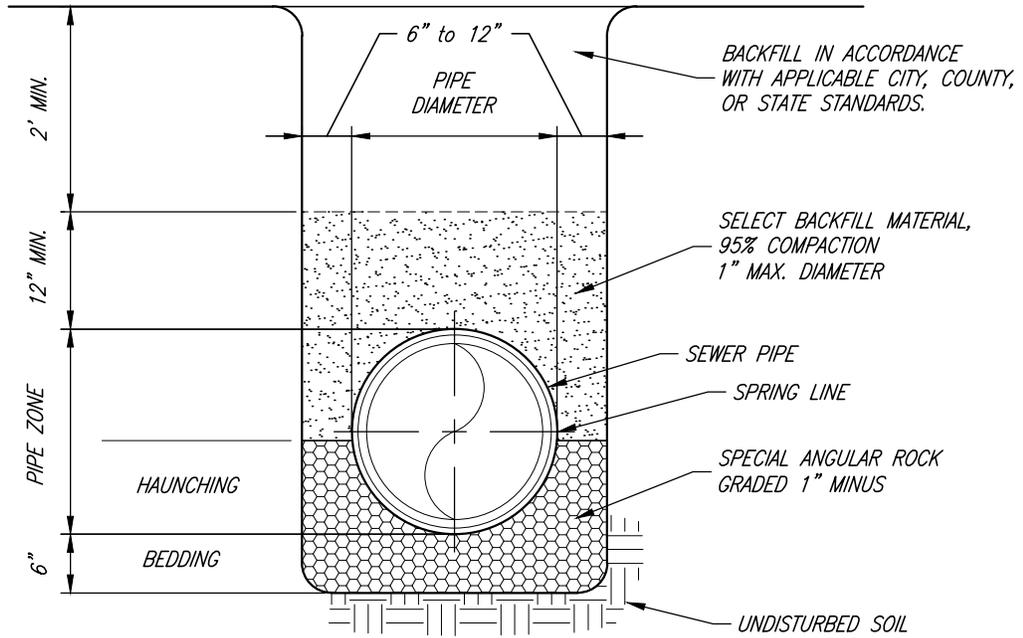
***SANITARY SEWER LINES &
APPURTENANCES***



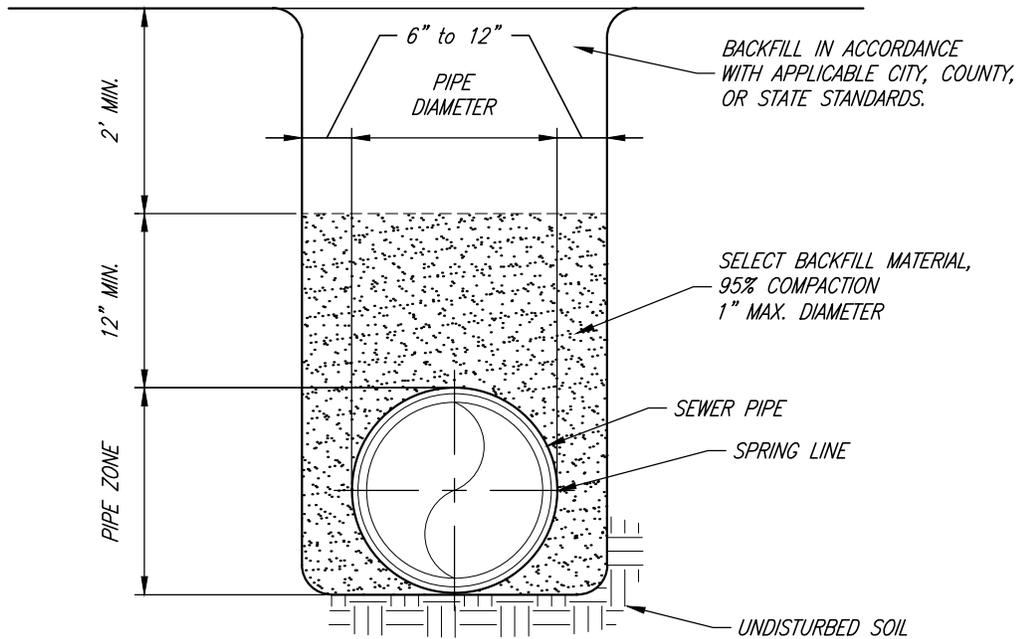
WELLSVILLE CITY CORPORATION

INDEX

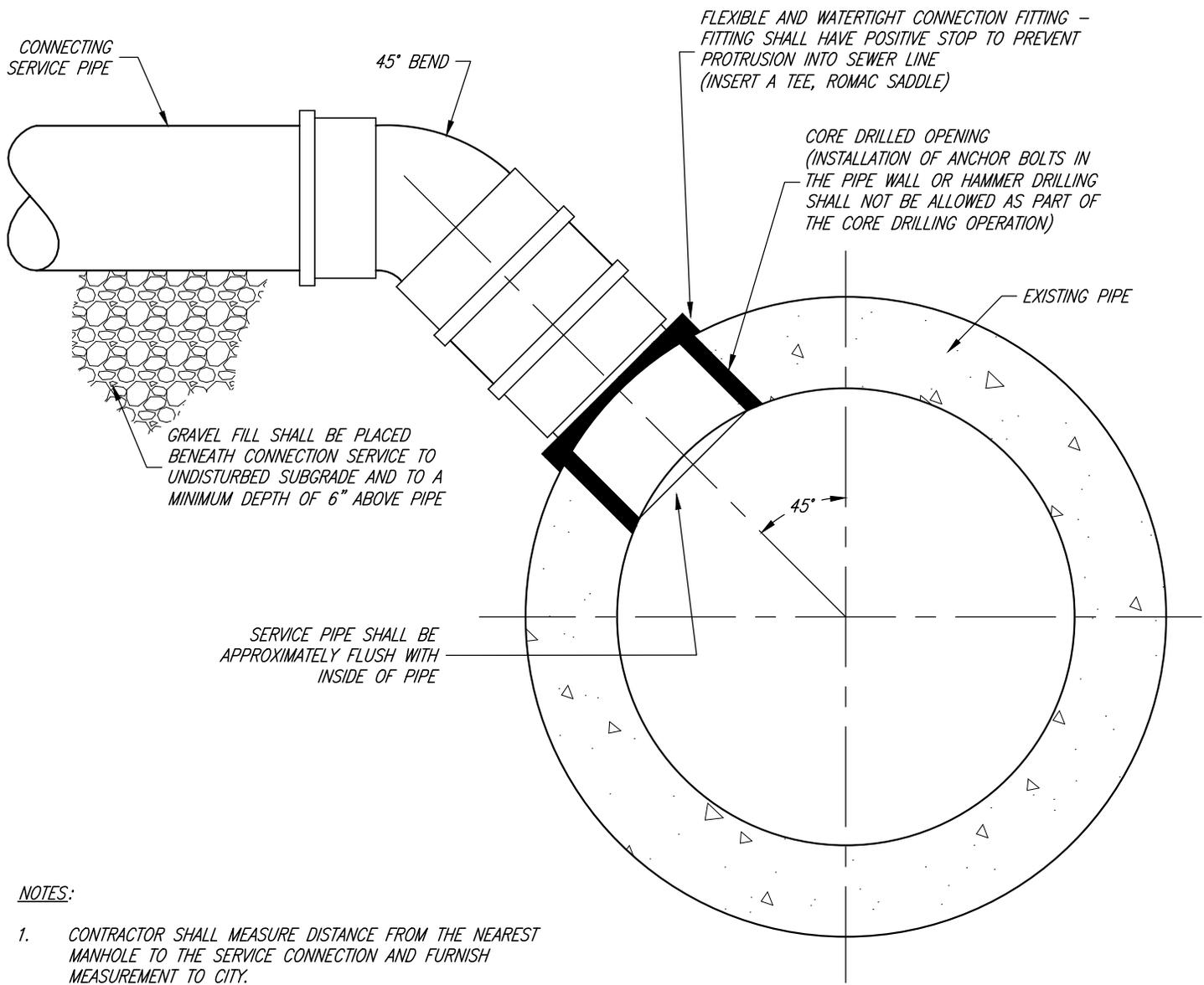
- S1 - PIPE INSTALLATION DETAIL*
- S2 - LATERAL CONNECTION TO EXISTING LINE*
- S3 - SANITARY SEWER SERVICE CONNECTION*
- S4 - MANHOLE DETAIL*
- S5 - DROP MANHOLE CONNECTION*
- S6 - SHALLOW MANHOLE*
- S7 - BORING & STEEL CASING DETAIL*
- S8 - LIFT STATION DETAIL*
- S9 - LIFT STATION DETAIL*
- S10 - LIFT STATION DETAIL*
- S11 - GREASE INTERCEPTOR*



FLEXIBLE AND RIGID PIPE ON UNSUITABLE SUBGRADE



RIGID PIPE ON SUITABLE SUBGRADE



SERVICE PIPE SHALL BE APPROXIMATELY FLUSH WITH INSIDE OF PIPE

NOTES:

1. CONTRACTOR SHALL MEASURE DISTANCE FROM THE NEAREST MANHOLE TO THE SERVICE CONNECTION AND FURNISH MEASUREMENT TO CITY.
2. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SLOPE AND CONSTRUCTION OF CONNECTING SERVICE PIPELINE.
3. INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF EXISTING SEWER AND OTHER UTILITIES, PROPER BACKFILLING, COMPACTING AND PAVEMENT RESTORATION.
4. CONTRACTOR SHALL NOTIFY CITY 24 HOURS BEFORE INSTALLATION BEGINS.
5. CONTRACTOR SHALL GUARANTEE WORK FOR A PERIOD OF ONE YEAR.



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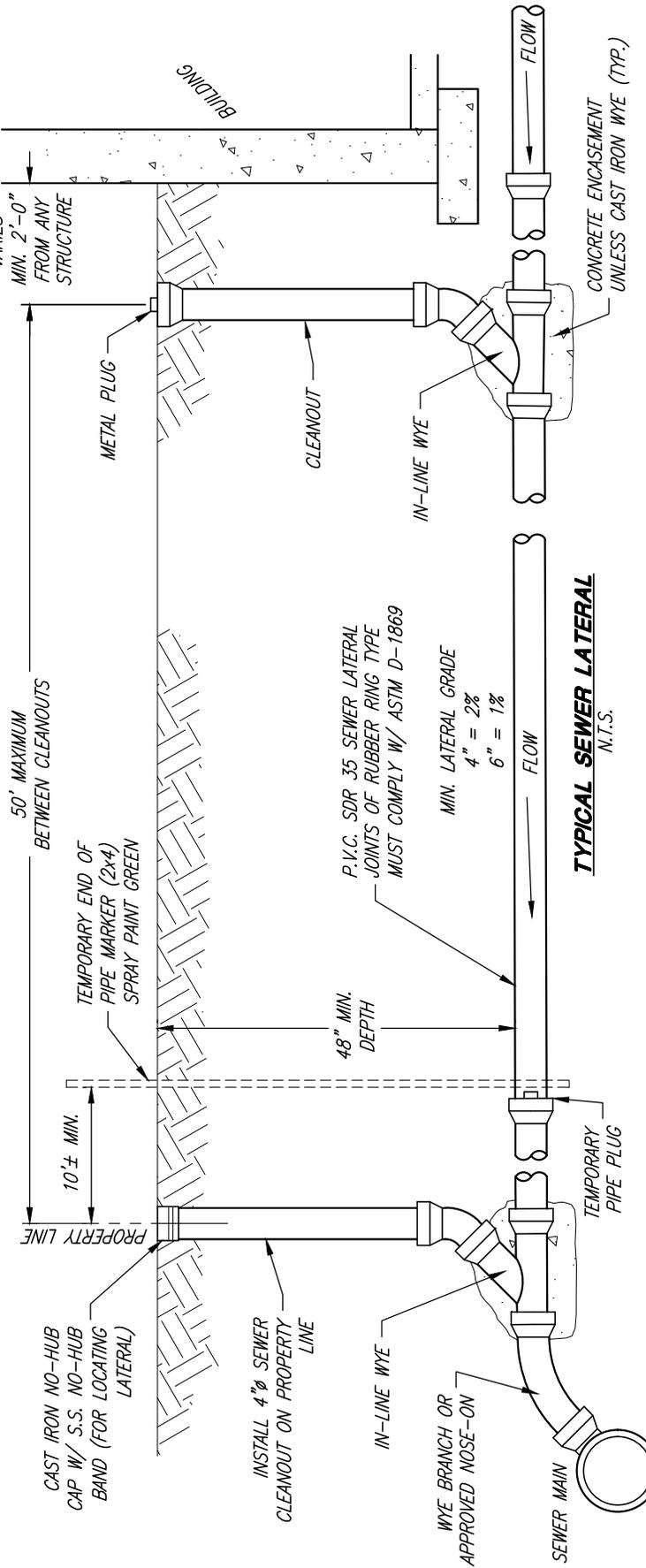
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WELLSVILLE CITY CORPORATION
SANITARY SEWER STANDARDS

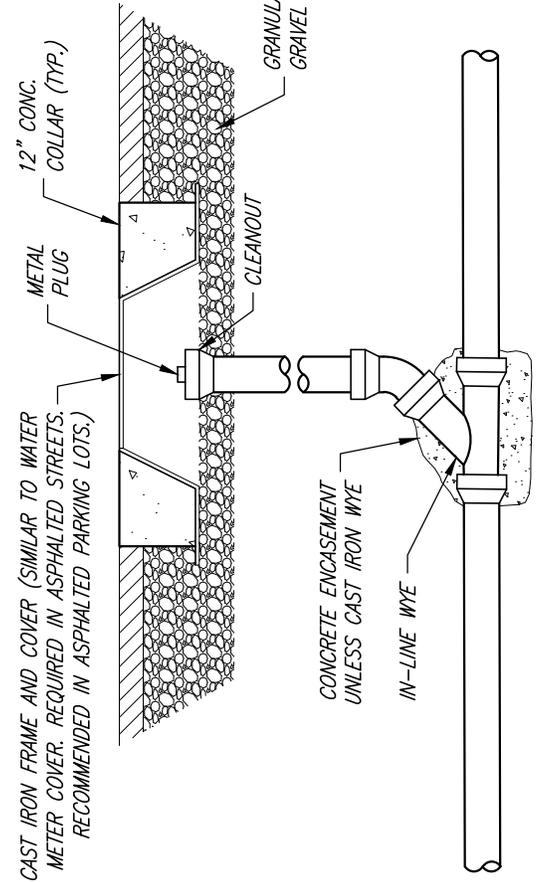
LATERAL CONNECTION TO EXISTING LINE

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NOTE: SEWER LATERALS MUST BE INSTALLED 8- FEET FROM THE SIDE LOT LINE ON THE LOW SIDE OF THE LINE.



TYPICAL SEWER LATERAL
N.T.S.



MID-LATERAL CLEANOUT IN TRAFFIC AREA
N.T.S.

NOTE:
A MINIMUM OF 6 INCHES OF BEDDING MATERIAL WILL BE REQUIRED. THIS MATERIAL SHALL BE 1/4" TO 1" CLEAN ANGULAR ROCK.



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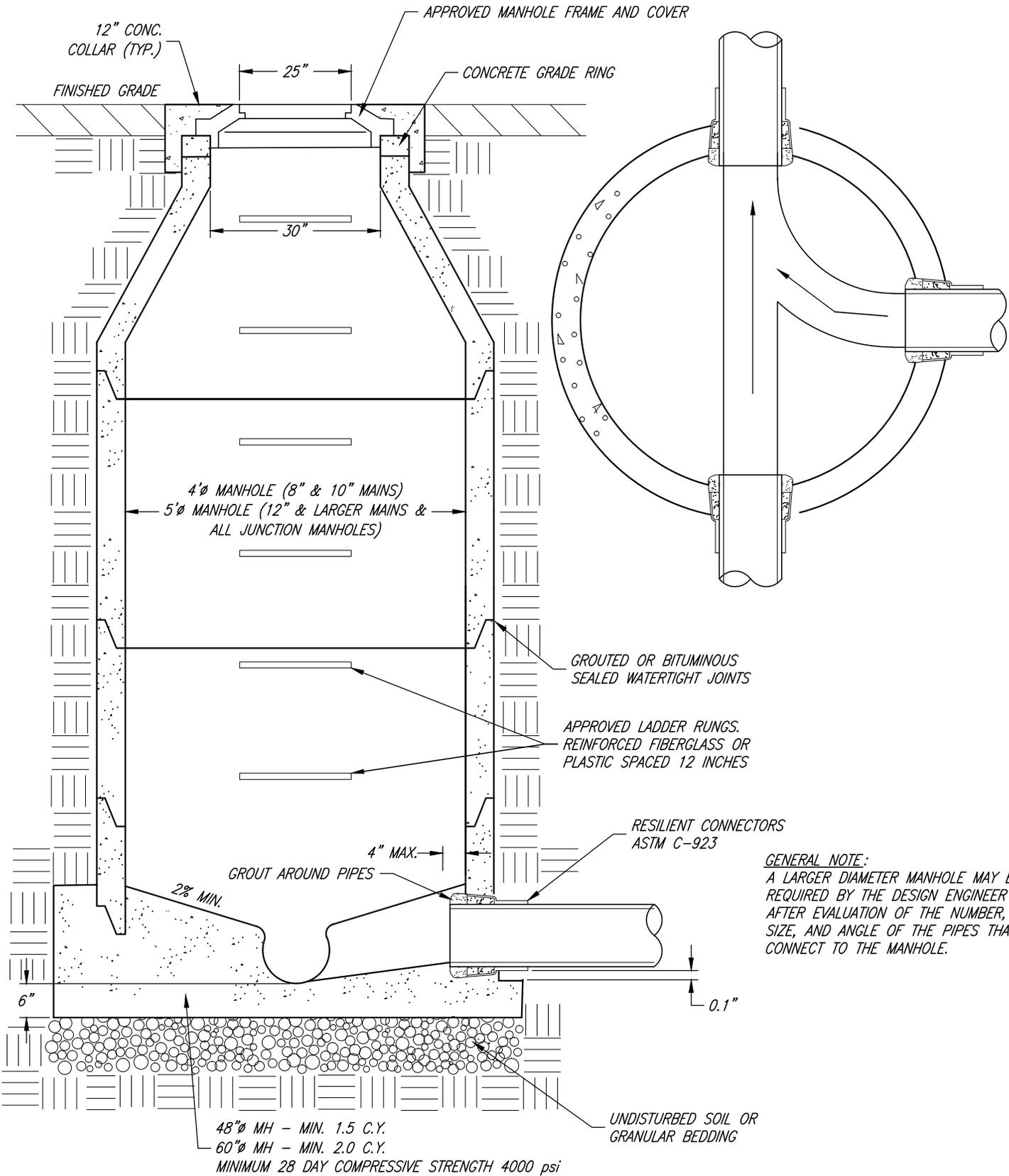
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WELLSVILLE CITY CORPORATION
SANITARY SEWER STANDARDS

SANITARY SEWER SERVICE CONNECTION

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NOTE:
SEWER LINES TO DEAD END WITH MANHOLE UNLESS
OTHERWISE SPECIFIED BY CITY ENGINEER



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SANITARY SEWER STANDARDS

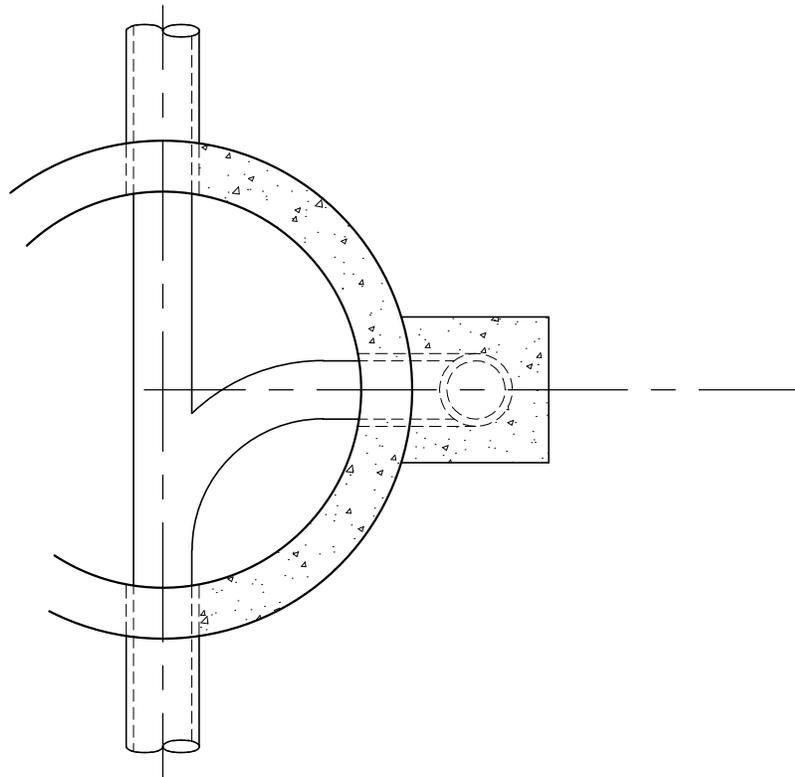
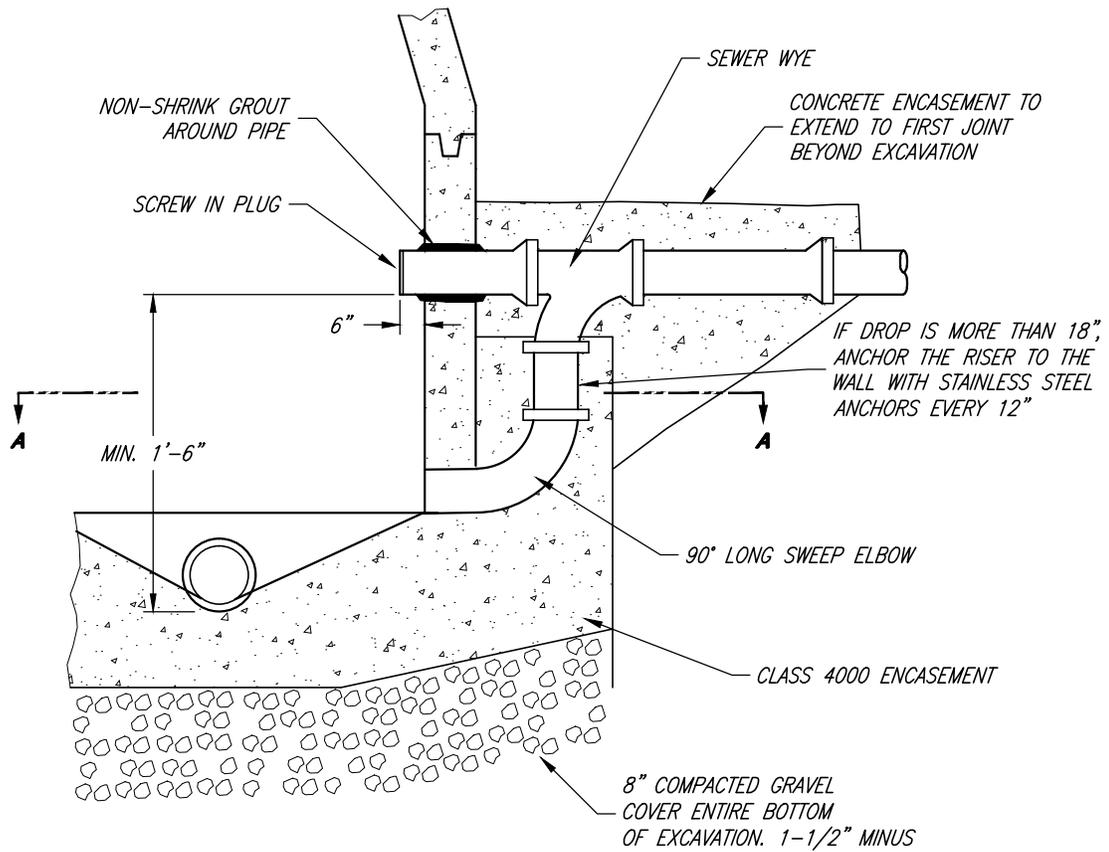
MANHOLE DETAIL

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SECTION A-A



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**WELLSVILLE CITY CORPORATION
 SANITARY SEWER STANDARDS**

DROP MANHOLE CONNECTION

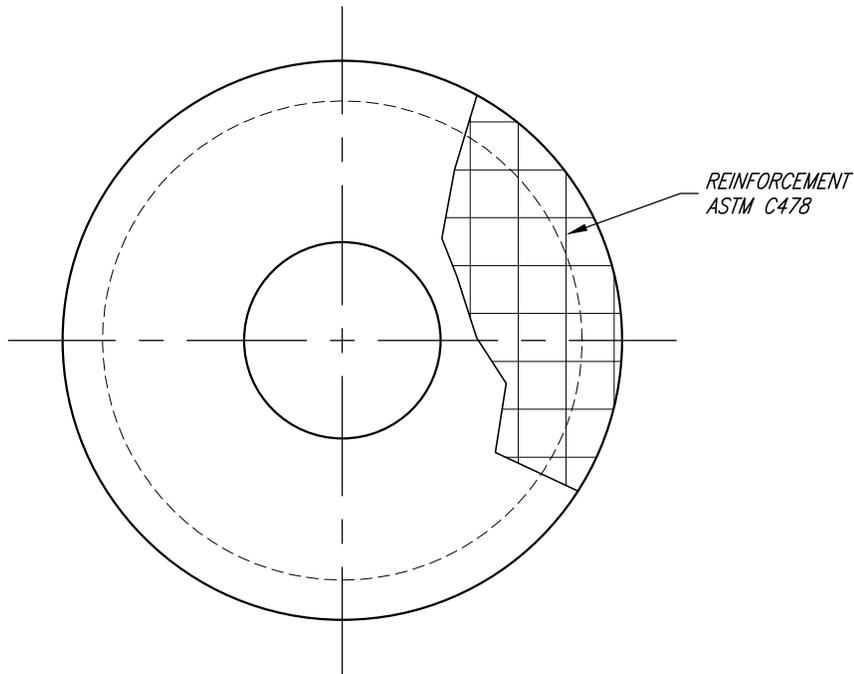
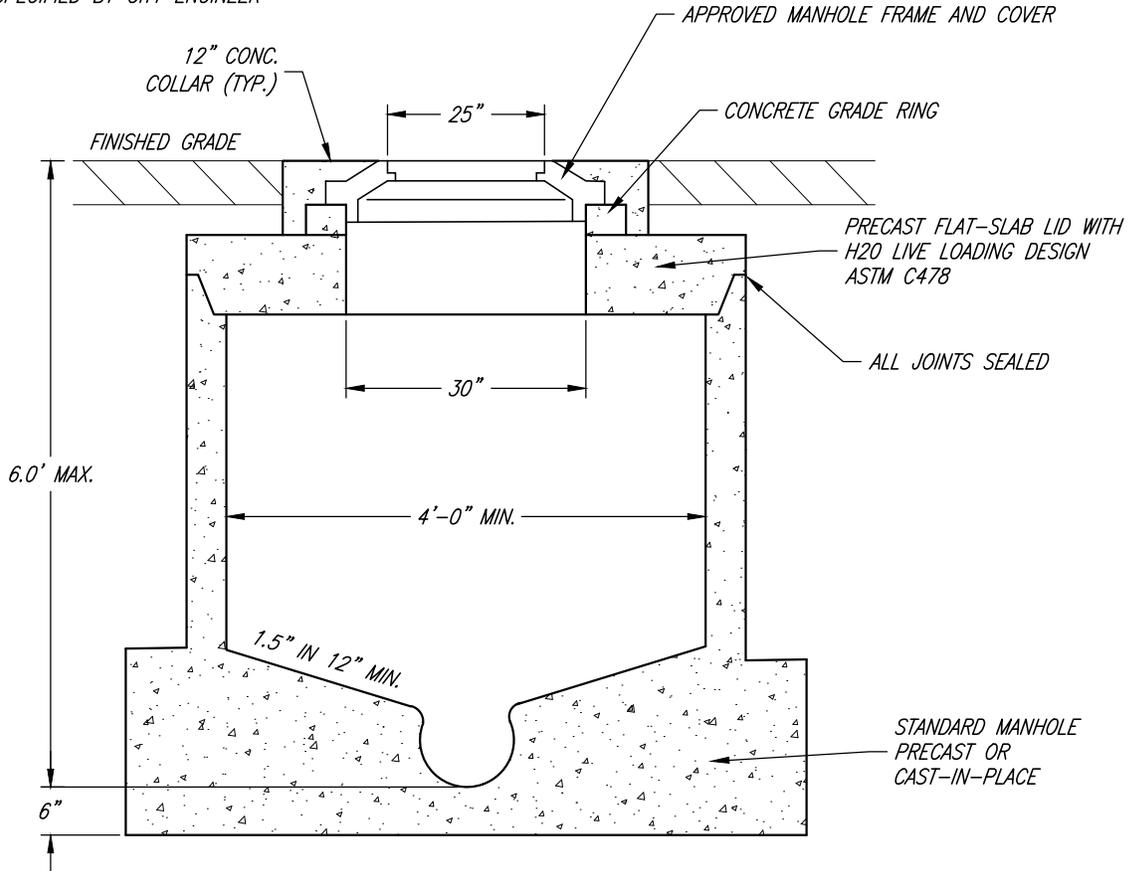
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NOTE:
SEWER LINES TO DEAD END WITH MANHOLE UNLESS
OTHERWISE SPECIFIED BY CITY ENGINEER



NOTE: TO BE USED ONLY WHEN APPROVED BY CITY ENGINEER



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SANITARY SEWER STANDARDS

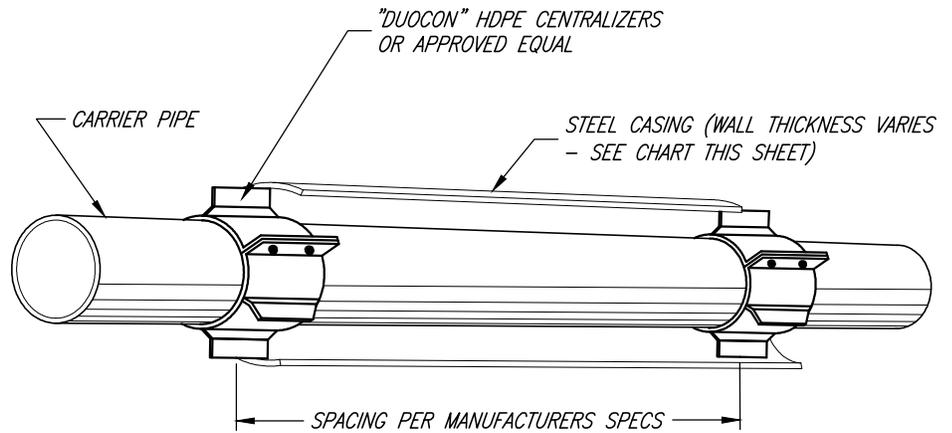
SHALLOW MANHOLE

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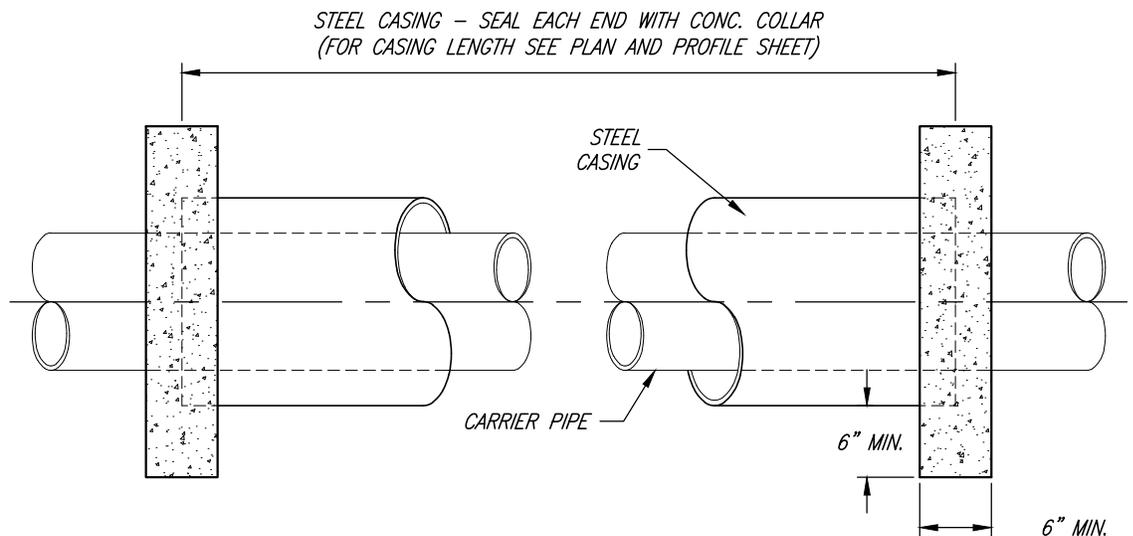
CENTERING GUIDE
WITH CASING CUT AWAY TO SHOW DETAIL (NTS)

CASEMENT DETAIL NOTES:

1. CARRIER PIPE TO BE SPECIFIED BY CITY ENGINEER.
2. AS AN ALTERNATE CONTRACTOR MAY USE A STANDARD PULL-ON WRAP-AROUND SYNTHETIC END SEAL.
3. CASING PIPE SHALL BE SMOOTH STEEL WITH MINIMUM YIELD STRENGTH = 35,000 P.S.I.
4. METHOD OF INSTALLATION OF CARRIER PIPE IN CASING SHALL BE AS RECOMMENDED BY CARRIER PIPE MANUFACTURER.

STEEL CASING WALL THICKNESS CHART

MINIMUM THICKNESS		DIAMETER OF CASING PIPE
.2500"	1/4"	12" OR LESS
.3125"	5/16"	OVER 12" - 18"
.3750"	3/8"	OVER 18" - 22"
.4375"	7/16"	OVER 22" - 28"
.5000"	1/2"	OVER 28" - 34"
.5625"	9/16"	OVER 34" - 42"
.6250"	5/8"	OVER 42" - 48"
OVER 48" MUST BE APPROVED BY CITY ENGINEER		



CASEMENT DETAIL
FOR PIPELINE BORE PROJECTS



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SANITARY SEWER STANDARDS

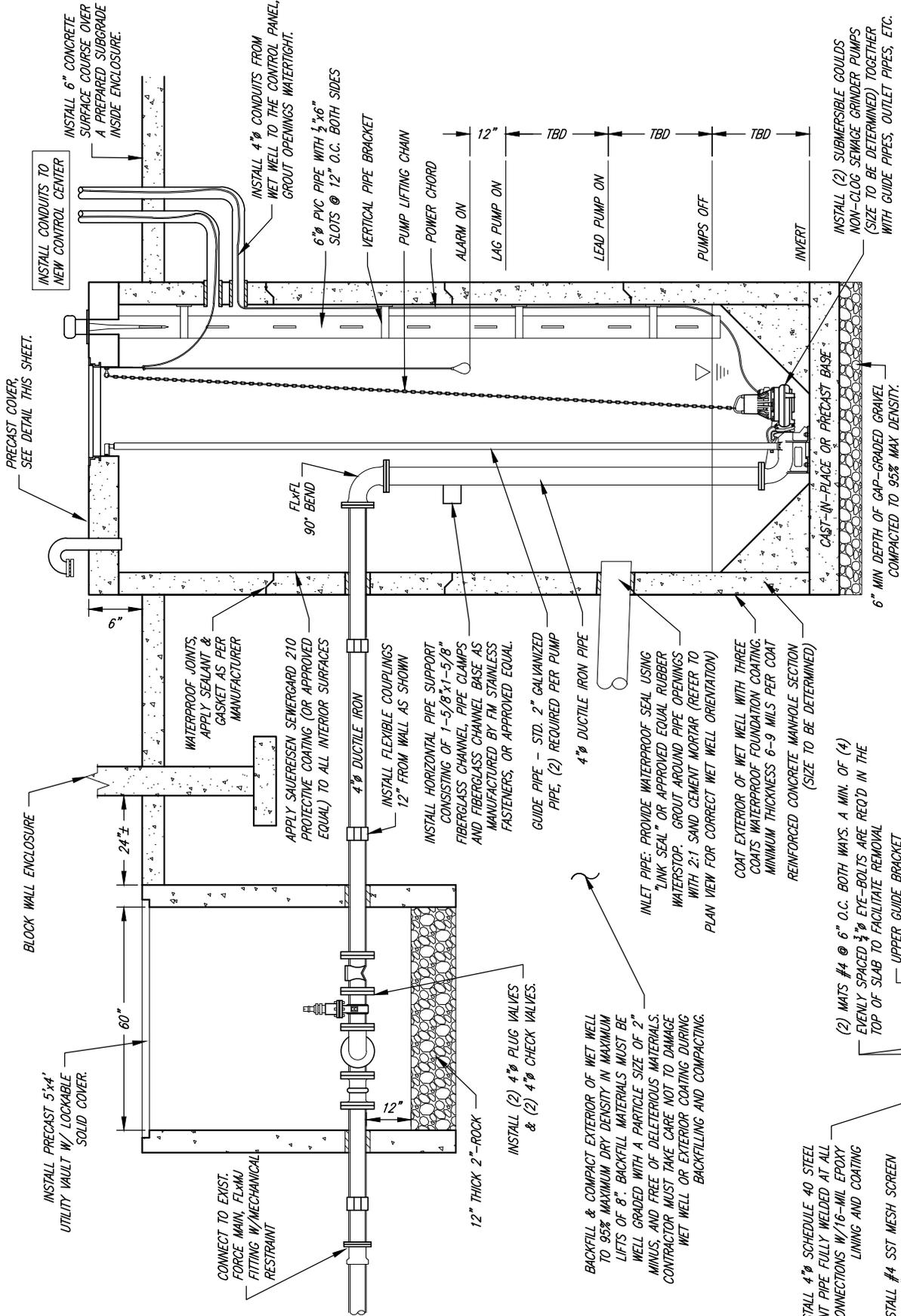
BORING & STEEL CASING DETAIL

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LIFT STATION DETAIL - SECTION VIEW

N.T.S.

BACKFILL & COMPACT EXTERIOR OF WET WELL TO 95% MAXIMUM DRY DENSITY IN MAXIMUM LIFTS OF 8". BACKFILL MATERIALS MUST BE WELL GRADED WITH A PARTICLE SIZE OF 2" MINUS, AND FREE OF DELETERIOUS MATERIALS. CONTRACTOR MUST TAKE CARE NOT TO DAMAGE WET WELL OR EXTERIOR COATING DURING BACKFILLING AND COMPACTING.

INSTALL 4" SCHEDULE 40 STEEL VENT PIPE FULLY WELDED AT ALL CONNECTIONS W/ 1/16" MIL EPOXY LINING AND COATING

INSTALL #4 SST MESH SCREEN UNDER A #14 SST MESH SCREEN ATTACHED SECURELY BETWEEN FLANGES

INSTALL RUBBER WATERSTOP

(2) MATS #4 @ 6" O.C. BOTH WAYS. A MIN. OF (4) EVENLY SPACED 1/2" EYE-BOLTS ARE REQ'D IN THE TOP OF SLAB TO FACILITATE REMOVAL

UPPER GUIDE BRACKET

LOCKABLE ALUMINUM ACCESS HATCH

MILLITRONICS SITRANS RADAR LEVEL CONTROL TRANSMITTER

CABLE GUIDE & CHAIN CONNECTION

ACCESS COVER DETAIL



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SANITARY SEWER STANDARDS**

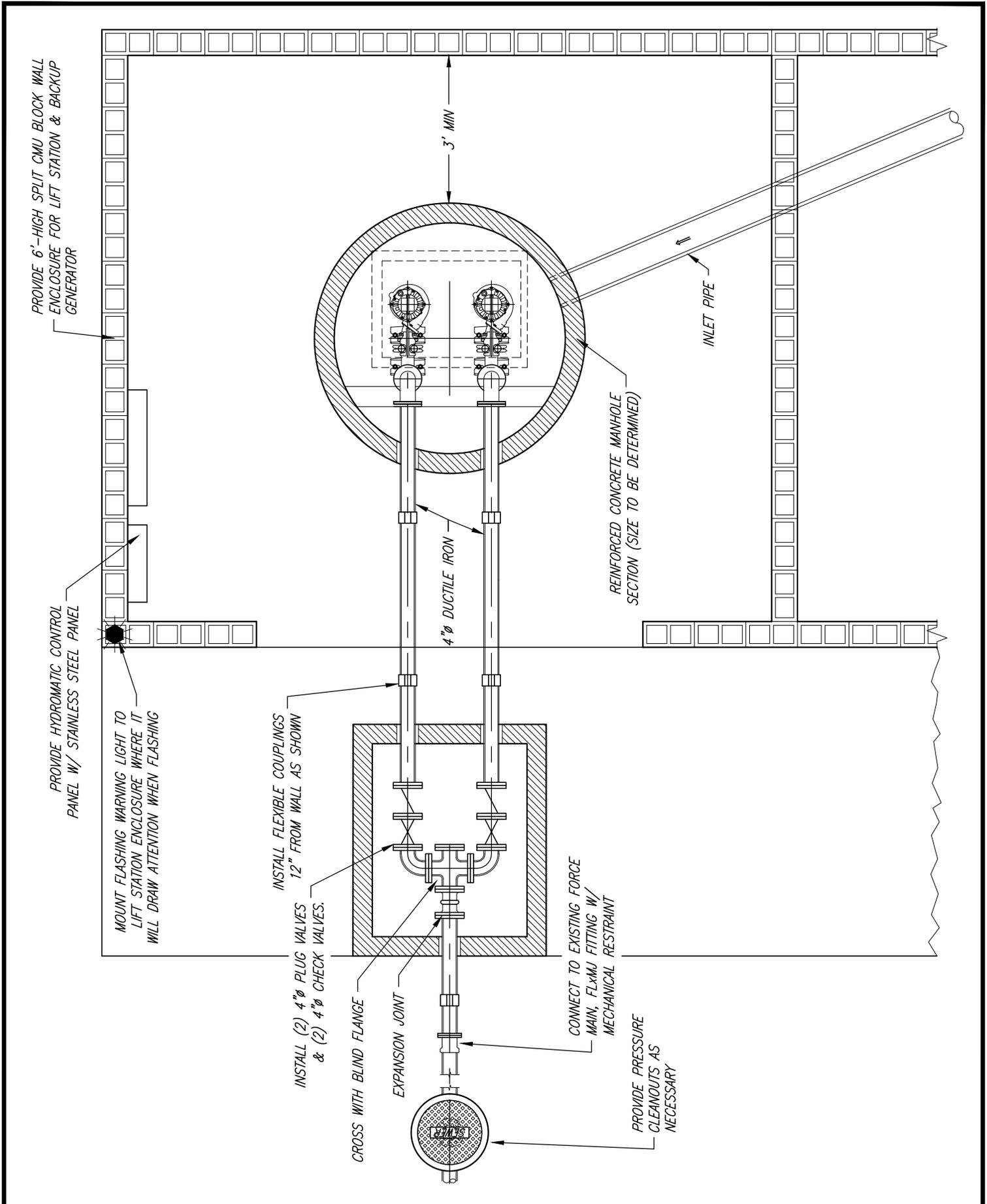
LIFT STATION DETAIL

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SANITARY SEWER STANDARDS

LIFT STATION DETAIL

SHEET:

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OF 1 SHEETS

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PROVIDE 3'-0" MINIMUM CLEAR SPACE ALL AROUND LIFT STATION WET WELL & GENERATOR FOR MAINTENANCE

6" THICK CONCRETE PAD OVER 6" COMPACTED GRAVEL BASE. GRADE CONCRETE TO DRAIN 1.0% MIN.

PROVIDE 6'-HIGH SPLIT CMU BLOCK WALL ENCLOSURE FOR LIFT STATION & BACKUP GENERATOR

ARCHITECTURAL IRON GATE, LOCKABLE & WIDE ENOUGH FOR MAINTENANCE ACCESS

8' WIDE, 6" THICK CONCRETE PAD OVER 6" COMPACTED GRAVEL BASE. GRADE CONCRETE TO DRAIN 1.0% MIN.

NOTES:

PUMP STATION DESIGN TO COMPLY WITH UTAH STATE DEPARTMENT OF ENVIRONMENTAL QUALITY R317-3-3 AND WELLSVILLE CITY STANDARDS & SPECIFICATIONS

DEVELOPER'S ENGINEER MUST SUBMIT CALCULATIONS AND PUMP CURVES TO WELLSVILLE CITY FOR REVIEW

A THIRD STAND-ALONE PUMP MUST BE GIVEN TO WELLSVILLE CITY PUBLIC WORKS FOR FUTURE MAINTENANCE.

SUBMERSIBLE PUMP STATION IS FOR DESIGN FLOWS NOT TO EXCEED 0.25 MGD.

PUMP CONTROLS SHALL INCLUDE A POWER FAILURE ALARM, HIGH WET WELL LEVEL ALARM AND PUMP FAILURE ALARM, COMPLETE WITH A D.C. POWERED ALARM LIGHT. EACH PUMP SHALL BE PROVIDED WITH A RUN TIME METER WHICH SHALL RECORD THE AMOUNT OF TIME EACH PUMP HAS BEEN ENERGIZED. ALARM LIGHT SHALL BE MOUNTED ON TOP OF LIFT STATION ENCLOSURE WALL.

DESIGN TO INCLUDE TELEMETRY & SCADA CONSISTENT WITH WELLSVILLE CITY'S EXISTING INFRASTRUCTURE MONITORING EQUIPMENT. TELEMETRY EQUIPMENT MANUFACTURER: "REMOTE CONTROL" (NO SUBSTITUTE).

THE CONTRACTOR SHALL CONTACT THE PROJECT ENGINEER AND THE CITY IF SANITARY SEWER INVERT ELEVATIONS ENTERING THE WET WELL ARE DIFFERENT THAN IDENTIFIED IN THE DESIGN DRAWINGS.

WET WELL SHALL BE CONSTRUCTED WITH SLOPED INTERIOR DIRECTING SEDIMENT TO BASE OF PUMP SUCTION PIPES. SLOPE AS SHOWN.

ALL BOLTS AND FASTENERS IN WET WELL SHALL BE STAINLESS STEEL.

ALL MECHANICAL JOINT FITTINGS SHALL BE SECURED WITH MEGA LUG JOINT RESTRAINTS.



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SANITARY SEWER STANDARDS**

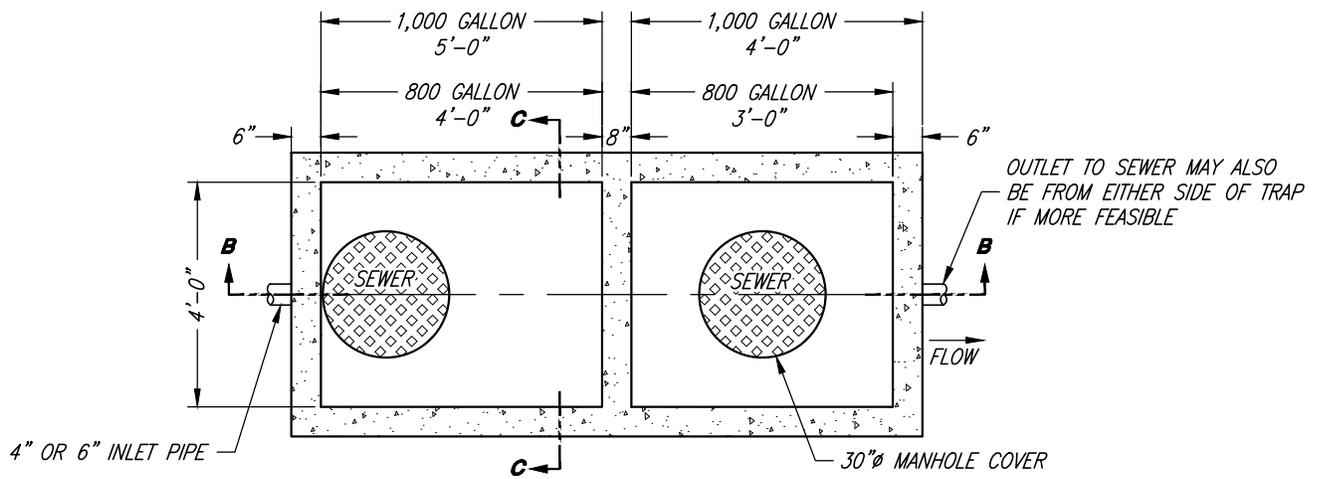
LIFT STATION DETAIL

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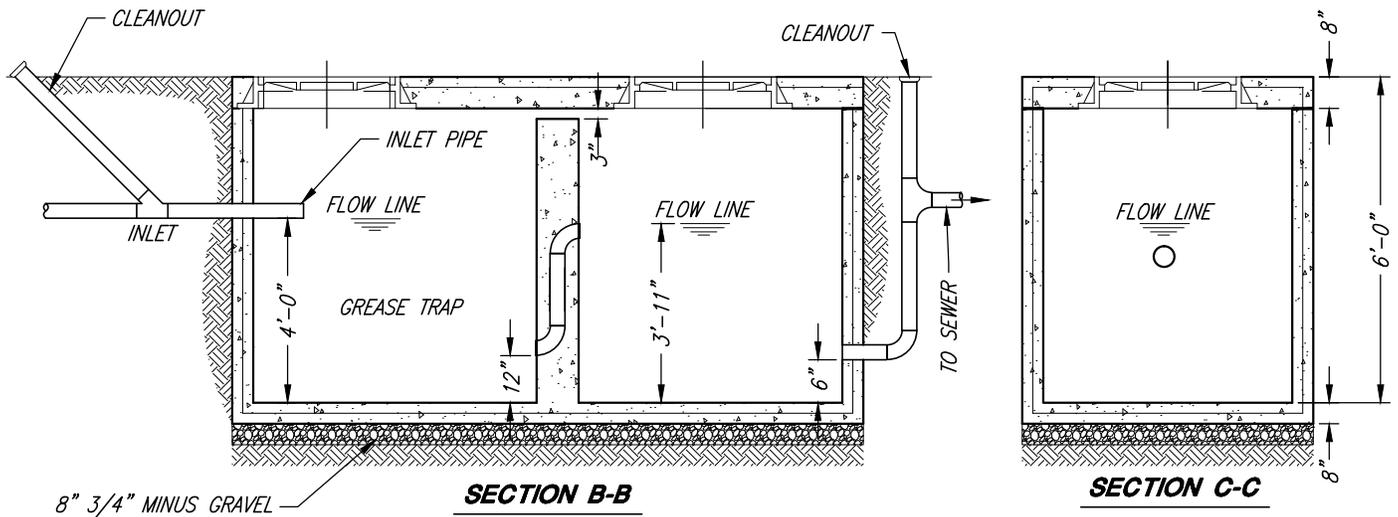
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PLAN VIEW - GREASE TRAP



GREASE TRAP INSTALLATION NOTES:

PROVIDE 8" MINIMUM COMPACTED GRAVEL BASE BENEATH GREASE TRAP

NOTIFY CITY ENGINEER IF GREASE TRAP BOTTOM IS BELOW THE WATER TABLE

BACKFILL AND COMPACT AROUND THE SIDES OF THE GREASE TRAP TO 90% MAXIMUM DRY DENSITY PER ASTM D-1557

GREASE TRAP SHALL BE LOCATED TO BE CONTINUOUSLY AND EASILY ACCESSIBLE FOR INSPECTION AND CLEANING AND AS CLOSE AS PRACTICAL TO THE SOURCE OF WASTEWATER. IT SHALL NOT BE LOCATED IN DRIVE UP LANES, PARKING STALLS, OR SIMILAR AREAS THAT COULD BE PERIODICALLY BLOCKED.

WHEN LOCATED IN PAVED AREAS; TRAP, MANHOLE COVERS, ETC. SHALL BE TRAFFIC RATED.

INLET AND OUTLET TEES SHALL BE LOCATED DIRECTLY BELOW MANHOLE ACCESSSES.

GREASE INTERCEPTORS SHALL HAVE A MINIMUM OF TWO COMPARTMENTS.

GREASE RETENTION CAPACITY OF TRAP SHALL BE AT LEAST TWICE IN POUNDS THE FLOW CAPACITY IN GALLONS PER MINUTE. MINIMUM HYDRAULIC VOLUME SHALL BE 800 GALLONS.

INSTALLING CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTION OF ALL UTILITIES, PROPER BACKFILLING, COMPACTING AND PAVEMENT RESTORATION.

CONTRACTOR SHALL NOTIFY CITY 24 HOURS BEFORE INSTALLATION BEGINS.

PRECAST GREASE TRAPS FROM LOCAL MANUFACTURERS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION



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SANITARY SEWER STANDARDS

GREASE INTERCEPTOR

SHEET:

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