

WATER STANDARD PLANS

2024

PREFACE

THESE STANDARD PLANS INCORPORATE CURRENT WATER REGULATIONS AND CITY WATER SYSTEM OPERATION, MAINTENANCE, AND ASSET MANAGEMENT CONSIDERATIONS.

THIS DOCUMENT IS INTENDED TO BE ALTERED PERIODICALLY TO ENSURE THAT THE MOST CURRENT OAKLEY CITY STANDARDS ARE AVAILABLE FOR THE PUBLIC USE. THIS DOCUMENT WILL BE REVISED AND PUBLISHED ON THE CITY'S WEB SITE AS UPDATES ARE APPROVED AND ADOPTED.



960 W. STREET, P.O. BOX 129, OAKLEY, UTAH 84055

GENERAL WATER NOTES

1. THE FOLLOWING DOCUMENTS ARE INCORPORATED INTO THESE CONTRACT DOCUMENTS BY REFERENCE:
 - a. OAKLEY CITY DESIGN STANDARDS, CONSTRUCTION SPECIFICATIONS, AND STANDARD DETAILS
 - b. AMERICAN WATER WORKS ASSOCIATIONS STANDARDS (AWWA)
 - c. UTAH DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER (DDW), R309-550 FACILITY DESIGN AND OPERATION: TRANSMISSION AND DISTRIBUTION PIPELINES
 - d. INTERNATIONAL PLUMBING CODE

2. ALL PIPE, JOINTS, FITTINGS, VALVES, AND FIRE HYDRANTS SHALL CONFORM TO ANSI/NSF STANDARD 61 AND APPLICABLE SECTIONS OF AWWA STANDARDS C104-08 THROUGH C550-05 AND C900-07 THROUGH C905-07. ALL BRASS AND BRONZE PIPE, FITTINGS AND VALVES SHALL MEET LOW LEAD COMPLIANCE REQUIREMENTS IN ACCORDANCE WITH ANSI/ASTM 371.

3. ALL PRODUCTS AND MATERIALS SHALL BE "MADE IN THE USA", UNLESS SPECIFICALLY APPROVED BY OAKLEY CITY. STEEL AND IRON MATERIAL PRODUCTS SUCH AS PIPE, FITTINGS, VALVES, MANHOLE, METER VAULT, AND VALVE BOX CASTINGS SHALL BE "MELTED & MANUFACTURED IN THE USA". OAKLEY CITY ACKNOWLEDGES THAT CERTAIN SPECIALIZED WATER SYSTEM PRODUCTS INCLUDED IN THE ACCEPTABLE PRODUCTS LIST, SUCH AS HIGHER PRESSURE-RATED VALVES, MAY NOT MEET THE MADE IN USA REQUIREMENT AND ARE IN THE "QUALIFIED" MADE IN USA CATEGORY. THESE PRODUCTS HAVE BEEN PREVIOUSLY REVIEWED AND APPROVED.

4. UTAH DIVISION OF DRINKING WATER (DDW) APPROVALS:
 - a. ALL PROJECTS SHALL BE REVIEWED BY DDW. NO WATER CONSTRUCTION SHALL COMMENCE UNTIL ALL REQUIRED DDW APPROVALS HAVE BEEN OBTAINED.
 - i. FINAL RECORD DRAWINGS AND O&M MANUALS
 - ii. HYDROSTATIC TESTING AND FLUSHING RECORDS (COMPLETED BY THE CITY'S INSPECTOR)
 - iii. ACCEPTABLE BACTERIOLOGICAL TESTING RESULTS
 - iv. CERTIFICATION BY THE (DEVELOPER'S) ENGINEER OF RECORD

5. THE CITY UTILIZES AS AUTOMATED METER READING (AMR) SYSTEM. THE DEVELOPER MAY BE REQUIRED TO CONDUCT A PROPAGATION STUDY AND INSTALL RESULTING RECOMMENDED IMPROVEMENTS TO FACILITATE A CLEAR SIGNAL TO THE PROJECT.

6. REFER TO APPLICABLE STANDARD PLANS FOR WATER SYSTEM DETAILS AND REQUIREMENTS.

7. EXTERNAL CORROSION PROTECTION MAY BE INCLUDED ON ALL WATER SYSTEM IMPROVEMENTS. A SOILS ANALYSIS MAY BE REQUIRED IN CONJUNCTION WITH THE DESIGN OF THE WATER SYSTEM TO DETERMINE THE EXTENT OF CORROSION PROTECTION REQUIRED.

8. REFER TO STANDARD PLAN NO'S. 4, 5, 6, 7 & 13 FOR GENERAL REQUIREMENTS FOR WATER METERS, METER VAULTS, AND WATER SERVICE LINES.

9. NOTIFY OAKLEY CITY AT LEAST 48 HOURS BEFORE START OF WORK. FOR PROJECTS INVOLVING ONLY SERVICE LINE AND/OR METER VAULT INSTALLATION, AN ON-SITE MEETING WITH THE CITY INSPECTOR 48 HOURS PRIOR TO CONSTRUCTION IS ACCEPTABLE.

10. ALL CONSTRUCTION OF WATER SYSTEM SHALL BE CLEARLY STAKED BY THE DEVELOPER'S OR CONTRACTOR'S SURVEYOR. STAKING SHALL INCLUDE ALL BENDS, VALVES, HYDRANTS, SERVICES, METER VAULTS, AND SPECIALS. A MINIMUM OF 50-FOOT STATIONING IS REQUIRED FOR PIPELINES.

11. CHANGES TO THE APPROVED WATER PLANS, INCLUDING PIPE ALIGNMENT, SIZE, AND DEPTH AS WELL AS FITTINGS, VALVES, SERVICES, AND METER VAULT LOCATIONS SHALL BE AUTHORIZED BY THE CITY PRIOR TO INSTALLATION.

NOT TO SCALE



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12. WATER SERVICE INTERRUPTION. THE FOLLOWING SHALL BE MET WITH RESPECT TO THE INTERRUPTION OF SERVICE TO CUSTOMERS INCLUDING THE SHUTDOWN OF THE EXISTING WATER SYSTEM:
 - a. CONTRACTOR SHALL NOT OPERATE EXISTING WATER VALVES
 - b. SCHEDULE SERVICE WORK REQUIRING WATER SERVICE INTERRUPTIONS OR SHUTDOWN OF THE EXISTING WATER SYSTEM A MINIMUM OF 96 HOURS IN ADVANCE WITH THE WATER DEPARTMENT (48 HOUR WATER DEPARTMENT REVIEW, AND 48 HOUR NOTIFICATION PERIOD).
 - c. LIMIT INTERRUPTIONS TO OCCUR AND BE COMPLETED ON MONDAY THRU THURSDAY, 9:00AM TO 4:00 PM. NO INTERRUPTIONS SHALL OCCUR ON FRIDAYS, WEEKENDS, OR HOLIDAYS.
 - d. CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFICATION TO AFFECTED CUSTOMERS. CONTACT OAKLEY CITY FOR NOTIFICATION REQUIREMENTS. BE ADVISED THAT ON OCCASION, VALVES IN THE EXISTING WATER SYSTEM MAY BE INOPERABLE AND MAY REQUIRED NOTIFICATIONS OF A LARGER AREA. IF VALVE MAINTENANCE IS REQUIRED, A SHUTDOWN DELAY OF SEVERAL DAYS SHOULD BE EXPECTED.
 - e. FOR WATER SHUTDOWNS LONGER THAN 8 HOURS, CONTRACTOR SHALL SUBMIT A TEMPORARY WATER PLAN TO KEEP ALL CUSTOMERS IN SERVICE. ALL COSTS ASSOCIATED WITH MAINTAINING SERVICE TO AFFECTED CUSTOMERS SHALL BE BORNE BY THE CONTRACTOR.
 - f. CONTRACTOR SHALL HAVE ALL PERTINENT PARTS AND MATERIALS ON SITE PRIOR TO SHUTDOWN OF THE WATER SYSTEM BY OAKLEY CITY.
 - g. CONSTRUCTION EXCAVATION MUST BE PREPARED AND THE WATER MAIN EXPOSED PRIOR TO SHUTDOWN OF THE WATER SYSTEM.
13. EXPOSE EXISTING WATER PIPES AND VERIFY HORIZONTAL AND VERTICAL LOCATION PRIOR TO INSTALLING NEW IMPROVEMENTS, POT HOLE ANY AND ALL UTILITIES TO ELIMINATE POTENTIAL CONFLICTS.
14. THE HORIZONTAL DISTANCE BETWEEN WATER LINES AND SANITARY SEWER LINES SHALL BE AT LEAST 10 FEET. WHERE A WATER MAIN AND SEWER MUST CROSS, THE WATER MAIN SHALL BE AT LEAST 18 INCHES ABOVE THE SEWER LINE. SEPARATION DISTANCES SHALL BE MEASURED EDGE-TO-EDGE (I.E. FROM THE NEAREST EDGES OF THE FACILITIES).
15. IF THE BASIC SEPARATION STANDARDS CANNOT BE MET, AN EXCEPTION TO THE RULE CAN BE APPLIED WITH ADDITIONAL MITIGATION MEASURES TO PROTECT PUBLIC HEALTH, IN ACCORDANCE WITH UTAH ADMINISTRATIVE CODE R309-105-6(2)(B).
16. THE OPEN ENDS OF ALL PIPELINES UNDER CONSTRUCTION SHALL BE COVERED AND EFFECTIVELY SEALED AT THE END OF THE DAY'S WORK.
17. PROVIDE ACCESS TO EXISTING MAIN LINE VALVES THROUGHOUT CONSTRUCTION. ALL VALVES MUST BE ACCESSIBLE WITHIN 24 HOURS AFTER PAVING OR COLLAR ADJUSTMENTS.
18. UNDER NO CIRCUMSTANCE SHALL THE PIPE OR ACCESSORIES BE DROPPED INTO THE TRENCH.
19. WHERE JOINING EXISTING ASBESTOS CEMENT PIPE, CUT IN ACCORDANCE WITH OSHA REQUIREMENTS AND DISPOSE OF IN ACCORDANCE WITH APPLICABLE ENVIRONMENTAL REGULATIONS.
20. PROVIDE EXTENSIONS ON VALVE STEM TOPS HAVING OVER 8 FEET BURY. REFER TO STANDARD PLAN NO.9.
21. INSTALL AIR AND VACUUM VALVES PER STANDARD PLAN NO.11 AT HIGH POINTS (8" DIAMETER PIPE OR LARGER) AS DEEMED NECESSARY BY OAKLEY CITY.
22. THRUST BLOCKING IS REQUIRED ON ALL WATER MAIN AND FIRE LINES. REFER TO STANDARD PLAN NO.10 .
23. REMOVE AND CORRECT DEFECTIVE WORK WITHIN 24 HOURS FOLLOWING WRITTEN NOTIFICATION BY OAKLEY CITY.
24. FIRE HYDRANTS SHALL NOT BE USED FOR FLUSHING. INSTALL VALVES/BLOW-OFF PIPING ON THE END OF NEW WATER MAINS AS REQUIRED TO MEET FLUSHING REQUIREMENTS. CONSULT WITH OAKLEY CITY TO DETERMINE ACCEPTABLE LOCATIONS AND SIZING REQUIREMENTS. MINIMUM ACCEPTABLE FLUSHING VELOCITY FOR INITIAL FLUSH IS 6 FEET PER SECOND. DO NOT PERFORM INITIAL FLUSH THROUGH THE FIRE HYDRANT FOR PROTECTION OF THE HYDRANT.
25. ALL TYPES OF INSTALLED PIPE SHALL BE PRESSURE TESTED AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARDS.

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26. ALL NEW WATER MAINS OR APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA STANDARD C651 OR A METHOD APPROVED BY OAKLEY CITY. THE SPECIFICATIONS SHALL INCLUDE DETAILED PROCEDURES FOR THE ADEQUATE FLUSHING, DISINFECTION AND MICROBIOLOGICAL TESTING OF ALL WATER MAINS. ON ALL NEW AND EXTENSIVE DISTRIBUTION SYSTEM CONSTRUCTION, EVIDENCE OF SATISFACTORY DISINFECTION SHALL BE PROVIDED TO THE CITY'S INSPECTORS. SAMPLES FOR COLIFORM ANALYSES SHALL BE COLLECTED AFTER DISINFECTION IS COMPLETED AND THE SYSTEM IS REFILLED WITH DRINKING WATER. A STANDARD HETEROTROPHIC PLATE COUNT IS ADVISABLE. THE USE OF WATER FOR PUBLIC DRINKING WATER PURPOSES SHALL NOT COMMENCE UNTIL THE BACTERIOLOGICAL TESTS INDICATE THE WATER IS FREE FROM CONTAMINATION.
27. DISINFECTION, FLUSHING, AND HYDROSTATIC PLANS SHALL BE SUBMITTED TO OAKLEY CITY A MINIMUM OF 5 WORKING DAYS PRIOR TO COMMENCEMENT OF ACTIVITY. CONTRACTOR SHALL NOT OPERATE EXISTING WATER VALVES.
28. BACKFLOW PREVENTION DEVICES MAY BE REQUIRED. IF REQUIRED, THE CITY MAY NOT SET A WATER METER UNTIL AN APPROVED AND TESTED BACKFLOW DEVICE IS INSTALLED AND INSPECTED.
29. ALL BACKFLOW PREVENTERS HAVE TO BE TESTED PERIODICALLY TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. A VISUAL CHECK OF AIR GAPS IS SUFFICIENT, BUT MECHANICAL BACKFLOW PREVENTERS HAVE TO BE TESTED BY A STATE CERTIFIED BACKFLOW SPECIALIST, WITH PROPERLY CALIBRATED GAUGE EQUIPMENT. TO OBTAIN A LIST OF STATE CERTIFIED TESTERS EITHER CALL US OR REFER TO THE STATE OF UTAH WEBSITE PAGE OF BACKFLOW TESTERS.
30. FIRE SPRINKLER SYSTEM BOOSTER PUMPS; FIRE SPRINKLER SYSTEM PUMPS, INTEGRAL TO THE FIRE SPRINKLER PIPING, REQUIRED TO MEET FIRE SPRINKLER PRESSURE DESIGN REQUIREMENTS, ARE CONSIDERED OUTSIDE THE INTENT OF UTAH DDW REGULATION R309-550-11(3) AND DO NOT REQUIRE APPROVAL OF THE DDW IF THEIR INSTALLATION CONFORMS TO UTAH ADOPTED PLUMBING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION (NFPA) 13 D. FIRE BOOSTER PUMPS SHALL BE INSTALLED ON THE BUILDING SIDE OF THE WATER METER VAULT, OUTSIDE THE VAULT, AND SHALL BE APPROVED BY OAKLEY CITY.

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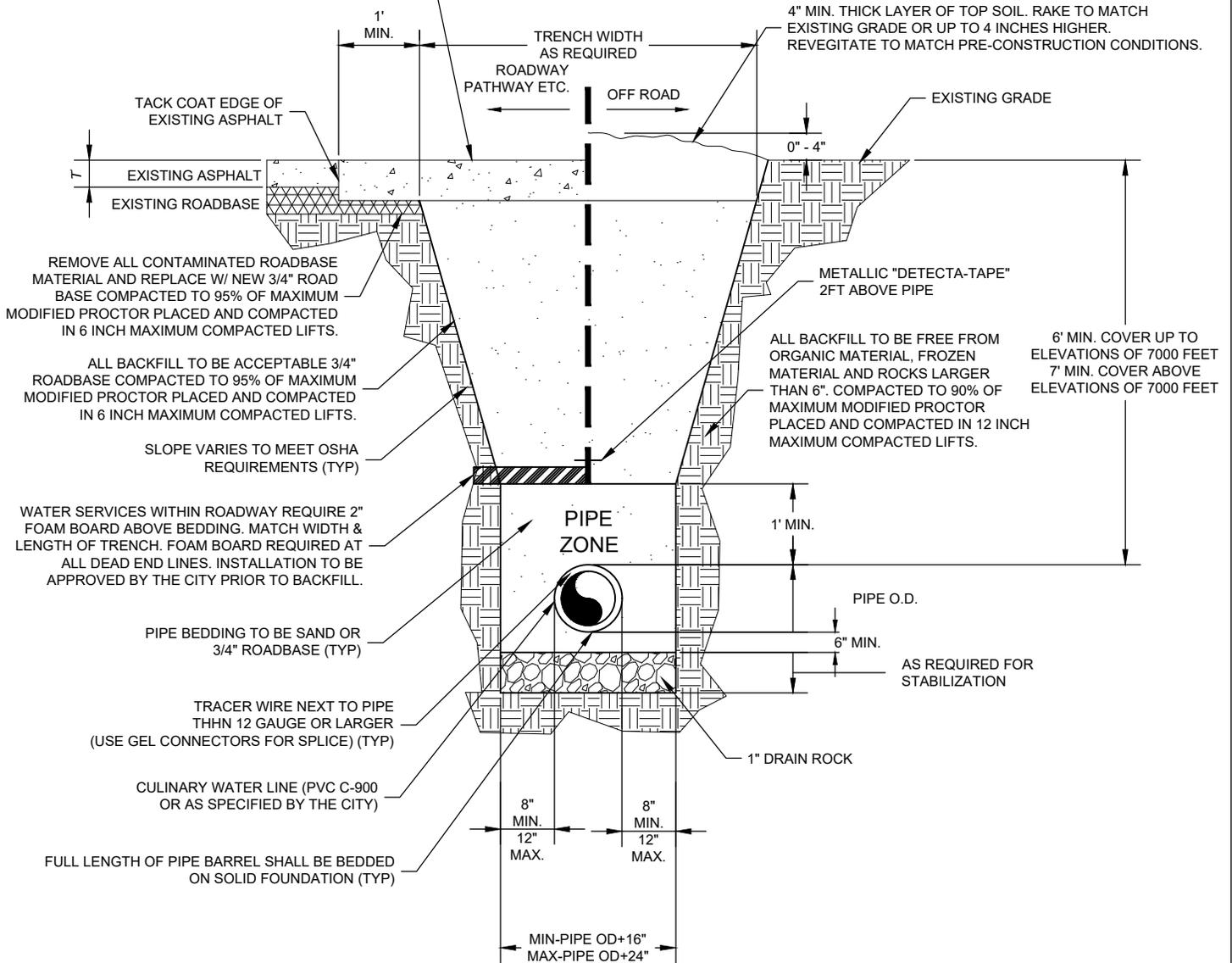
GENERAL WATER NOTES

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NEW ASPHALT 4" MINIMUM THICKNESS, IF EXISTING THICKNESS T IS GREATER THAN 3" THEN PATCH SHALL BE $T + 1"$.



NOTES:

- 1- PAVEMENT SECTION FOR NEWLY CONSTRUCTED ROADS SHALL BE PER APPROVED ROADWAY CONSTRUCTION PLANS.
- 2- DENSITY TEST REQUIREMENTS: ONE TEST PER 150 LINEAR FEET OF TRENCH WITH A MINIMUM OF TWO TESTS PER ROAD CROSSING. TEST RESULTS MUST BE SUBMITTED THE CITY WITHIN 24 HOURS, AND IN NO CASE MAY THE TRENCH BE PAVED PRIOR TO APPROVAL FROM A CITY INSPECTOR.
- 3- TRACER WIRE IS TO BE RAN INTO THE METER BOX OF EACH SERVICE LATERAL AND SHALL BE RAN TO EACH FIRE HYDRANT.
- 4- OPEN ENDS OF PIPE SHALL BE COVERED DURING THE INSTALLATION PROCESS
- 5- THE CITY, AT ITS SOLE DISCRETION, MAY REQUIRE BURY DEPTHS OTHER THAN WHAT IS IDENTIFIED ABOVE. BURY DEPTHS ARE A FUNCTION OF ELEVATION, LOCATION, WATER DEMAND, AND PROXIMITY TO OTHER UTILITIES.

NOT TO SCALE



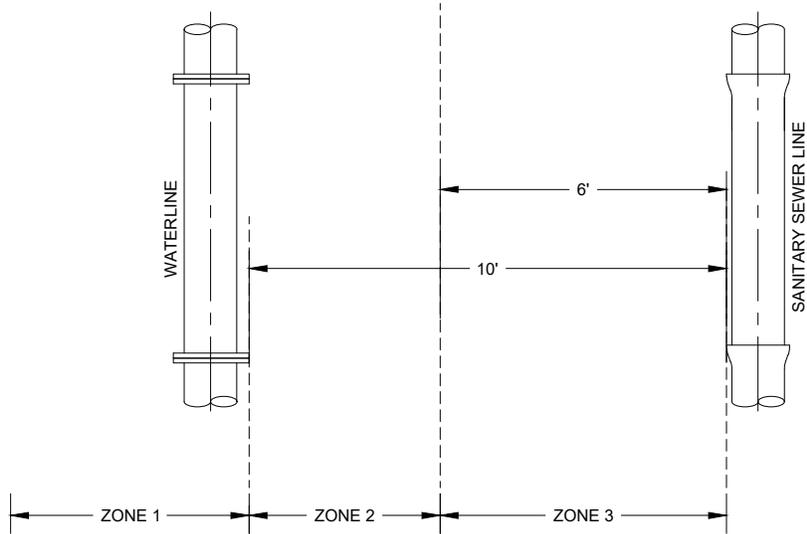
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CULINARY WATER MAIN/LATERAL TRENCH

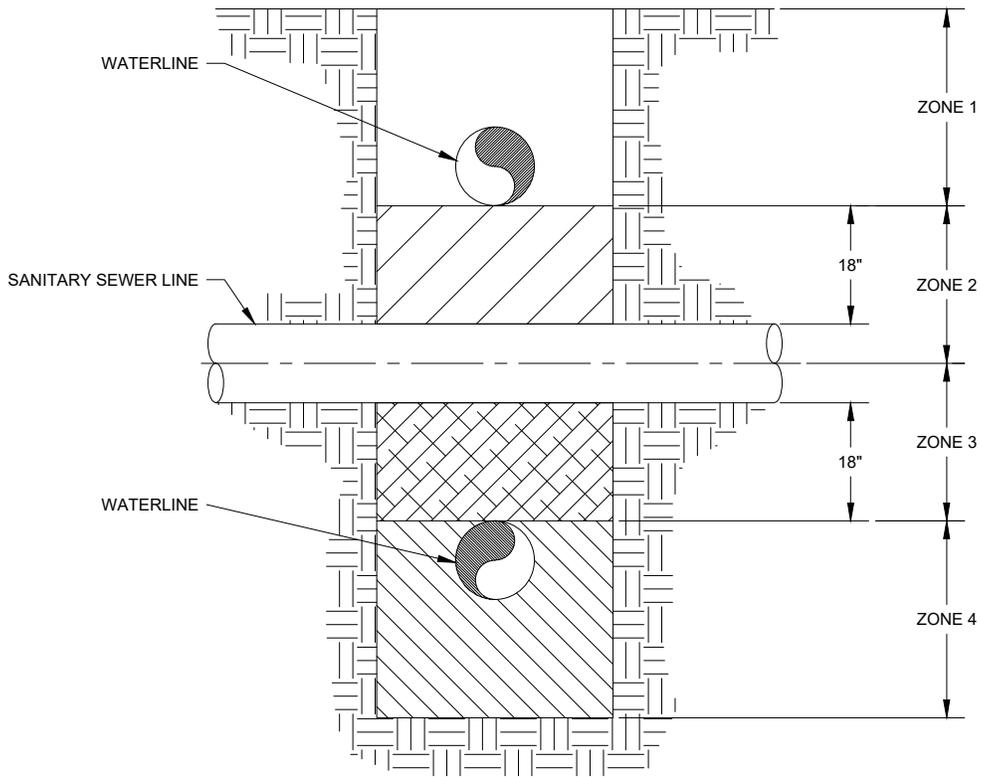
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HORIZONTAL SEPARATION REQUIREMENTS



VERTICAL SEPARATION REQUIREMENTS

NOTES:

- 1- SEE STD. PLAN 3B FOR HORIZONTAL AND VERTICAL SEPARATION REQUIREMENT NOTES.
- 2- ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY OAKLEY CITY AND UTAH DIVISION OF DRINKING WATER.

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WATER - SANITARY SEWER SEPARATION

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3A

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HORIZONTAL SEPARATION

NOTES:

- 1- ZONE 1: WATER LINE AND SEWER LINE SEPARATED 10 FEET OR GREATER - NO SPECIAL REQUIREMENTS
- ZONE 2: A) WATER LINE SEPARATED BY AT LEAST 6 FEET AT OUTSIDE PIPE WALLS
AND
B) BOTTOM OF WATER LINE IS AT LEAST 18 INCHES ABOVE TOP OF SEWER LINE
AND
C) WATER LINE CONSTRUCTED WITH MECHANICAL, RESTRAINED JOINT PIPE
AND
SITE SPECIFIC REQUIREMENTS APPROVED BY DIVISION OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER
- ZONE 3: WATER LINE AND SEWER LINE SEPARATION LESS THAN 6 FEET - NOT ALLOWED
- 2- SERVICE LINE TAPS NOT ALLOWED IN ZONE 2.
- 3- SERVICE LINE TAPS WITHIN ZONE 3 ALLOWED ONLY BY SITE SPECIFIC APPROVAL BY DIVISION OF ENVIRONMENTAL QUALITY, DIVISION OF DRINKING WATER
- 4- MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION ABOVE SANITARY SEWER FORCE MAINS

VERTICAL SEPARATION

NOTES:

- 1- ZONE 1: WATER LINE ABOVE SEWER LINE AND SEPARATED 18 INCHES OR GREATER - NO SPECIAL REQUIREMENTS
- ZONE 2: WATER LINE ABOVE SEWER LINE SEPARATED LESS THAT 18 INCHES. INSTALL CONTROLLED LOW-STRENGTH MATERIAL (CLSM), "FLOWABLE FILL", 150 PSI MAXIMUM MIX DESIGN WITHIN WATER PIPE ZONE AND TO 18 INCHES ABOVE SEWER LINE.
- ZONE 3: WATER LINE BELOW SEWER LINE SEPARATED LESS THAN 18 INCHES. INSTALL CONTROLLED LOW-STRENGTH MATERIAL (CLSM), "FLOWABLE FILL", 150 PSI MAXIMUM MIX DESIGN WITHIN WATER PIPE ZONE AND TO 18 INCHES ABOVE SEWER LINE
- ZONE 4: WATER LINE BELOW SEWER LINE SEPARATED GREATER THAN 18 INCHES - CENTER ONE FULL UN CUT LENGTH OF WATER PIPE OVER THE CROSSING AND PROVIDE MECHANICAL RESTRAINED PIPE JOINTS UNTIL THE WATER PIPE EXTENDS TO A DISTANCE OF 10 FEET PERPENDICULAR TO EACH SIDE OF THE SEWER LINE. INSTALL CONTROLLED LOW-STRENGTH MATERIAL (CLSM), "FLOWABLE FILL", 150 PSI MAXIMUM MIX DESIGN WITHIN WATER PIPE ZONE AND TO 18 INCHES ABOVE SEWER LINE
- 2- SERVICE LINE TAPS NOT ALLOWED IN ZONES 2 AND 3.
- 3- MAINTAIN 10 FEET HORIZONTAL SEPARATION AND 18 INCHES VERTICAL SEPARATION ABOVE SANITARY SEWER FORCE MAINS.
- 4- ALL CULINARY WATER MAINS AND LATERALS SHALL BE INSTALLED ABOVE SEWER LINES UNLESS APPROVED BY OAKLEY CITY AND UTAH DIVISION OF DRINKING OF DRINKING WATER.

NOT TO SCALE



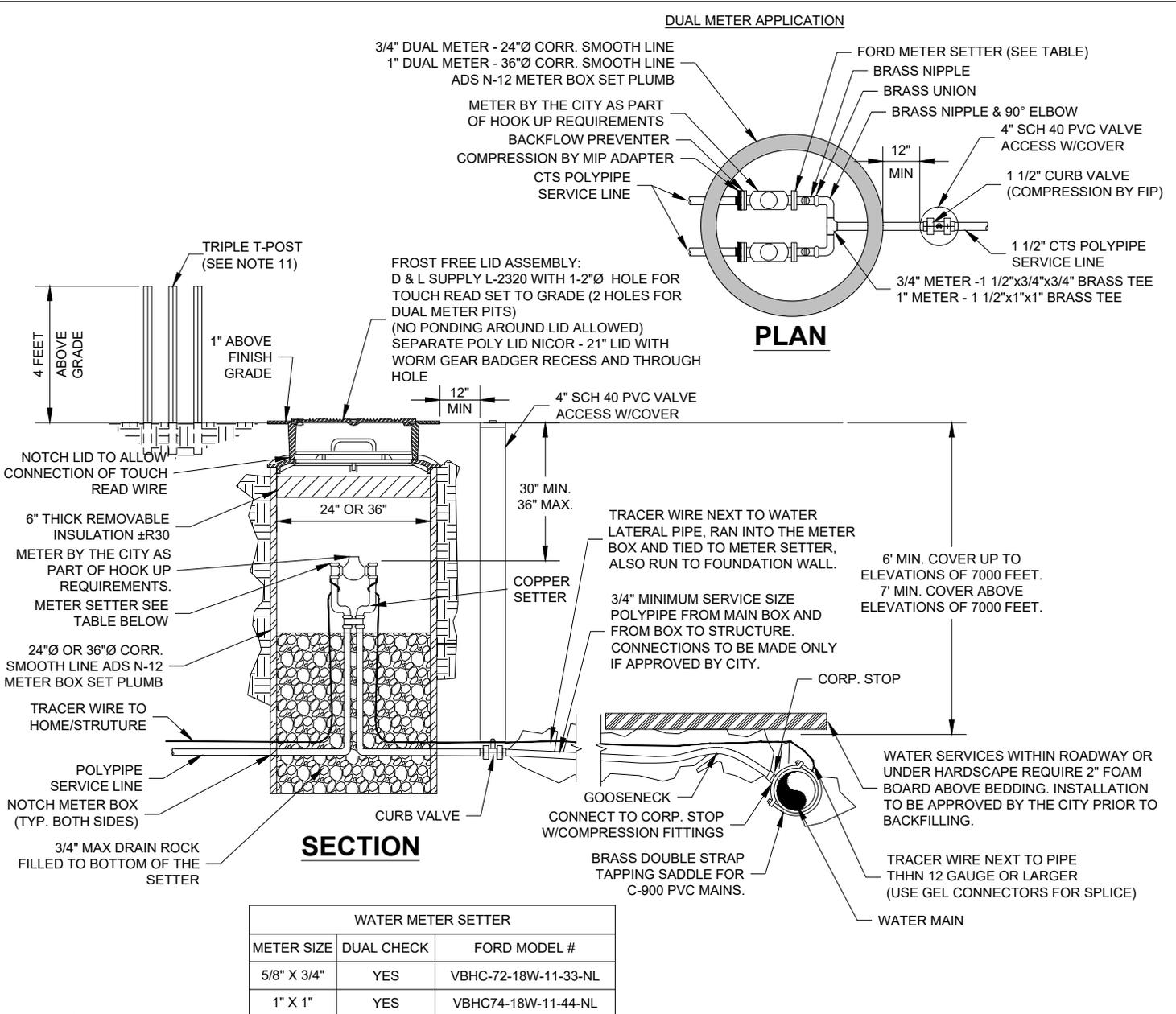
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WATER - SANITARY SEWER SEPARATION

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NOTES:

- 1- METER BOX SHALL BE SET PLUMB.
- 2- THREADS ON SERVICE CLAMP SHALL MATCH THREADS ON CORPORATION STOP.
- 3- METERS ARE TO BE INSTALLED IN AN APPROVED LANDSCAPED AREA; NOT IN SIDEWALK, ASPHALT OR DRIVEWAY, UNLESS FIRST APPROVED BY THE CITY.
- 4- NO SWEAT FITTINGS OR SILVER SOLDERED FITTINGS ARE ALLOWED. NO SPLICES ARE ALLOWED BETWEEN MAIN LINE AND METER SETTER.
- 5- COMPRESSION TYPE CONNECTIONS TO BE USED UNLESS APPROVED BY THE CITY.
- 6- BY-PASS DEVICES SHALL NOT BE USED ON RESIDENTIAL SERVICES.
- 7- TAPS TO EXISTING MAIN LINES SHALL BE PERFORMED BY CONTRACTOR AND WITNESSED BY THE CITY.
- 8- TRACER WIRE SHALL BE RAN INTO EVERY METER BOX AND TIED TO METER SETTER AND CONTINUED TO HOME/STRUCTURE. ALL SPLICES OF TRACER WIRE SHALL BE CONNECTED WITH A GREASE FILLED CONNECTOR.
- 9- ANY REQUESTS FOR A METER LARGER THAN 1" MUST BE ACCOMPANIED BY A PROPOSAL SUBMITTED TO THE CITY. PROPOSAL MUST INCLUDE PROPOSED BACKFLOW PREVENTION.
- 10- IN SCENARIO'S WHERE DUAL VAULTS ARE WARRANTED, THEY SHALL BE INSTALLED ON THE PROPERTY LINE BETWEEN THE TWO SERVICE ADDRESSES.
- 11- TRIPLE T-POST SHALL BE FURNISHED TO MARK TERMINUS OF SERVICE AND PROTECT METER DURING CONSTRUCTION, EXTEND 5' FROM METERING PIT.

RELOCATED METERS

EXISTING LID, BOX, METER AND SETTER TO BE RELOCATED TO LOCATIONS SHOWN ON PLANS. CONNECTION TO THE SUPPLY MAIN, CORP. STOP, AND SERVICE PIPING FROM THE MAIN TO THE METER, AND FROM THE METER TO THE OWNERS PIPING TO BE PROVIDED BY THE CONTRACTOR MAKING SERVICE COMPLETE AND OPERATIONAL. AT THE OPTION OF THE CITY, NEW COMPONENTS OF THE LID, BOX, METER OR SETTER MAY BE PROVIDED IN WHICH THE NEW COMPONENTS SHALL BE USED AS PART OF THE RELOCATION CONNECTION.

NEW METERS

NEW METER SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE PLANS. THE LID, BOX, AND SETTER WILL BE PROVIDED BY THE CONTRACTOR. CONNECTION TO THE SUPPLY MAIN, CORP. STOP, AND SERVICE PIPING FROM THE METER ON THE OWNERS PROPERTY SHALL BE PROVIDED BY THE CONTRACTOR. THE CITY WILL INSTALL METER AFTER INSPECTION HAS BEEN CONDUCTED.

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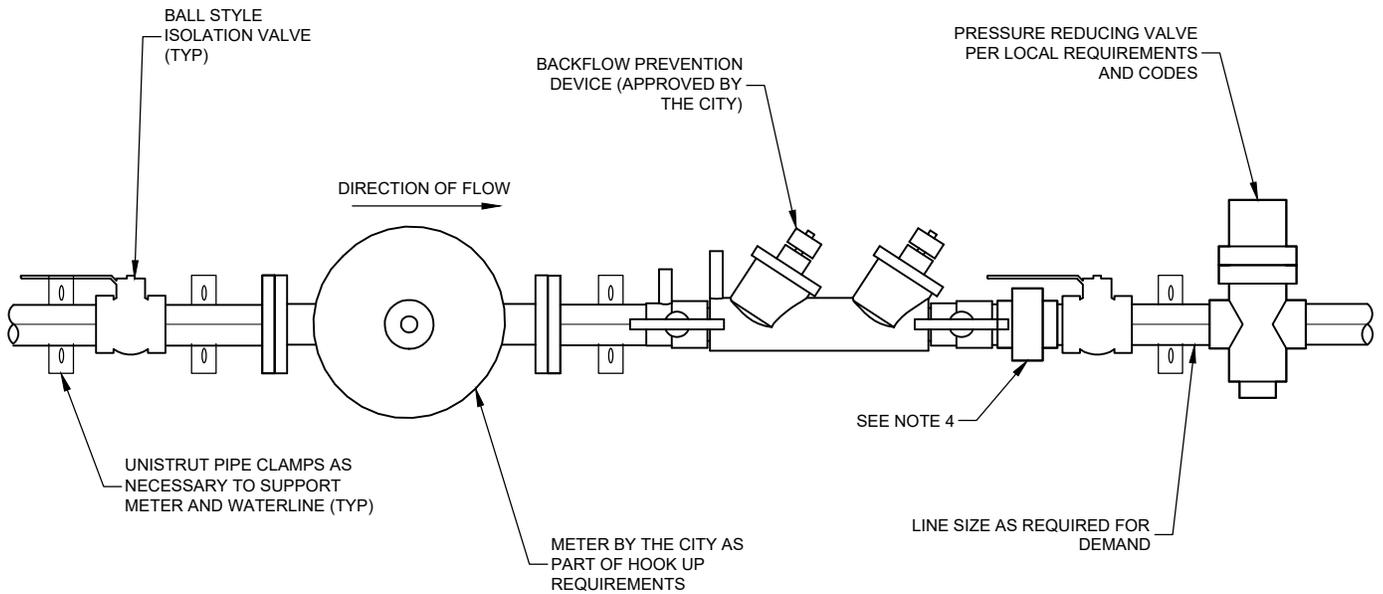
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3/4" AND 1" WATER SERVICE

DRAWING NO.

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NOTES:

- 1- METER SERVICE MAY BE ORIENTED AS NECESSARY TO FIT SPECIFIC INSTALLATION (HORIZONTAL, VERTICAL, LOOP) SUCH THAT ALL COMPONENTS ARE CONFIGURED AS SHOWN WITH RESPECT TO FLOW DIRECTION.
- 2- METER SHALL BE NO MORE THAN 5' OFF FINISH FLOOR.
- 3- INSTALLATION SHALL CONFORM TO ALL APPLICABLE CODES.
- 4- INSTALL UNIONS AS REQUIRED FOR INSTALLATION AND MAINTENANCE OF COMPONENTS.
- 5- INTERIOR SERVICE ONLY ALLOWED WITH CITY'S SPECIFIC APPROVAL.

NOT TO SCALE



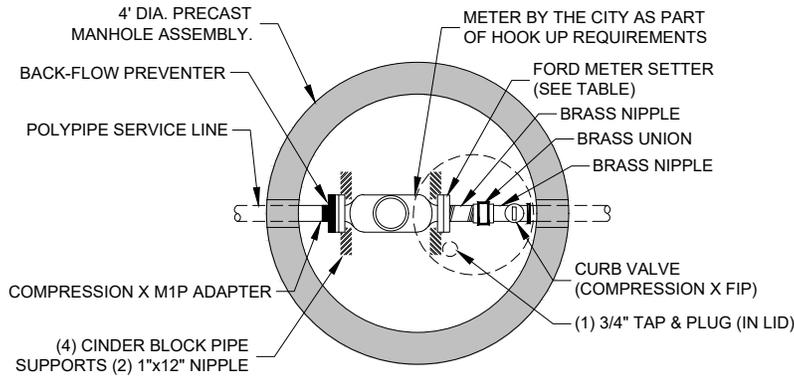
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SINGLE INTERIOR SERVICE

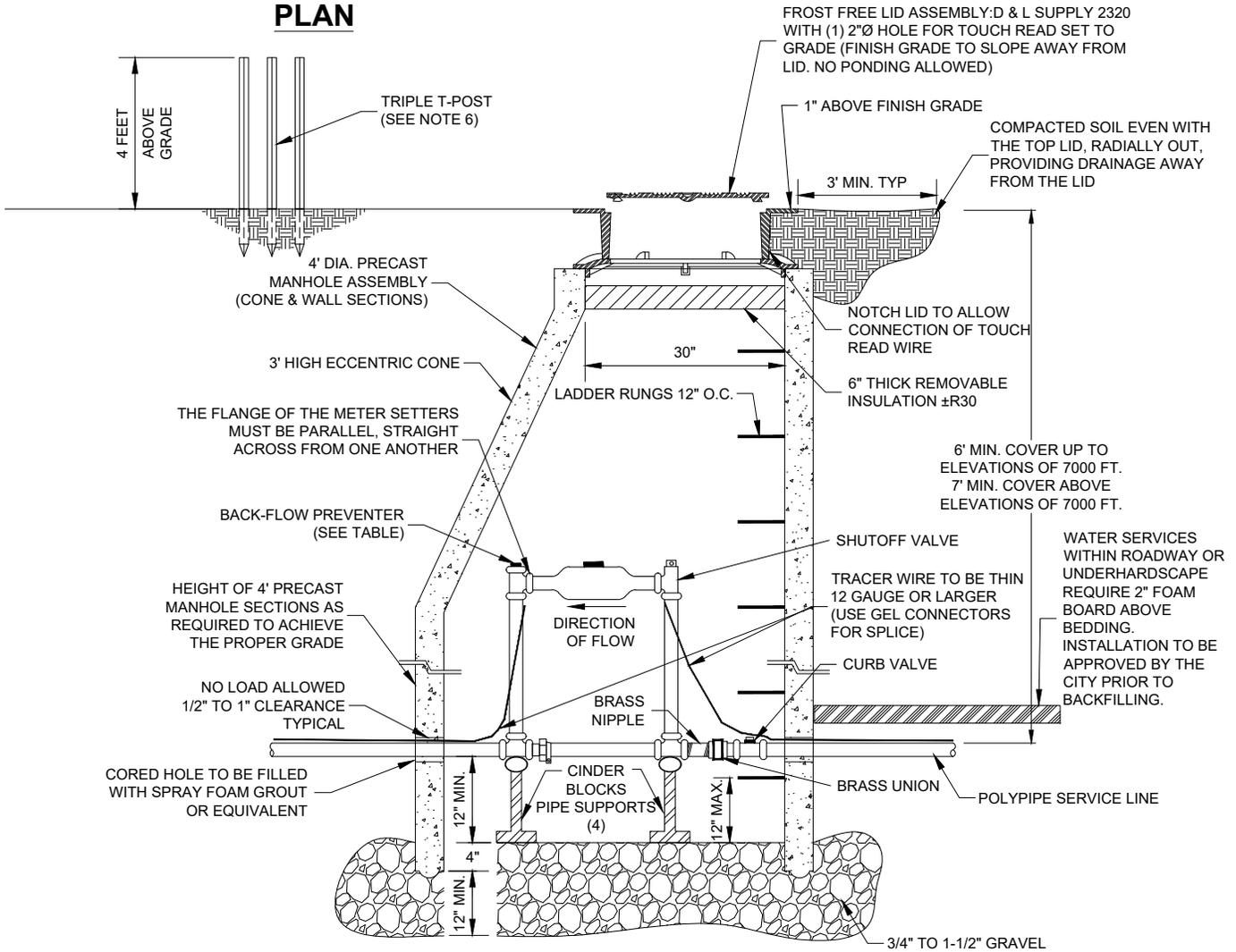
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PLAN



SECTION

NOTES:

- 1- NO SWEAT-FITTINGS OR SILVER SOLDERED FITTINGS ALLOWED.
- 2- BY-PASS DEVICES SHALL NOT BE ALLOWED.
- 3- TAPS TO EXISTING MAIN LINES SHALL BE PERFORMED BY CONTRACTOR AND WITNESSED BY THE CITY.
- 4- TRACER WIRE SHALL BE RAN FROM THE MAIN TO THE METER AND FROM THE METER TO THE FOUNDATION WALL. TRACER WIRE SHALL BE CONNECTED WITH A GREASE FILLED CONNECTOR.
- 5- ANY REQUEST FOR A METER LARGER THAN 1" MUST BE ACCOMPANIED BY A PROPOSAL SUBMITTED TO THE CITY. PROPOSAL MUST INCLUDE PROPOSED BACKFLOW PREVENTION. 1 1/2" AND 2" METER SETTERS SHALL BE INSTALLED WITH A LOCKABLE BYPASS VALVE FOR MAINTENANCE PURPOSES.
- 6- TRIPLE T-POST SHALL BE FURNISHED TO MARK TERMINUS OF SERVICE AND PROTECT METER DURING CONSTRUCTION, EXTEND 5' FROM METERING PIT.

WATER METER SETTER		
METER SIZE	DUAL CHECK	METER SETTER * FORD MODEL #
1 1/2"	YES	VBHH76-18-11-66-NL
2"	YES	VBHH77-18-11-77-NL

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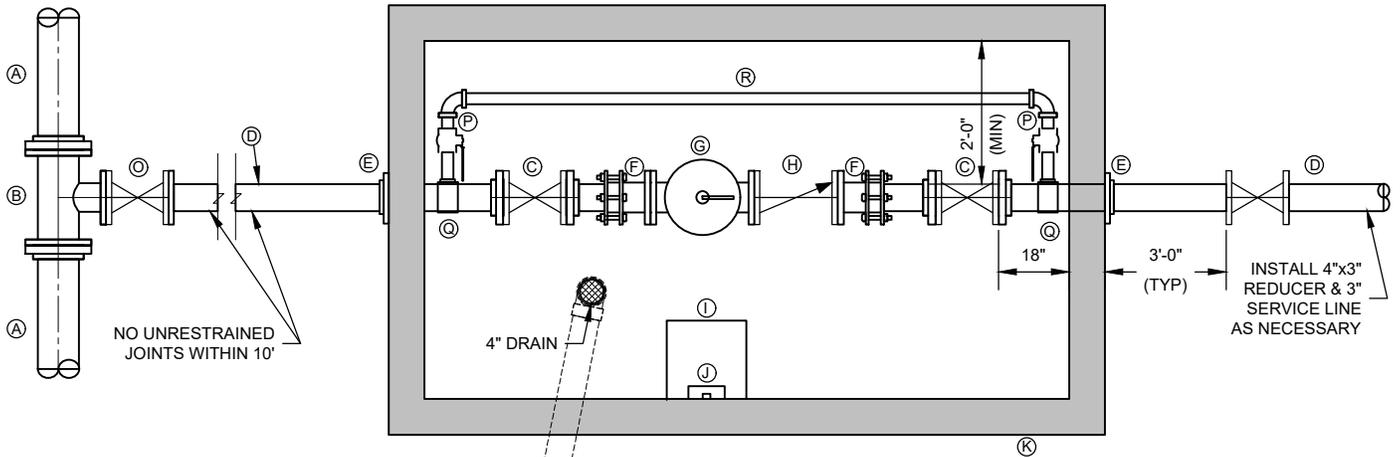
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1 1/2" AND 2" WATER SERVICE

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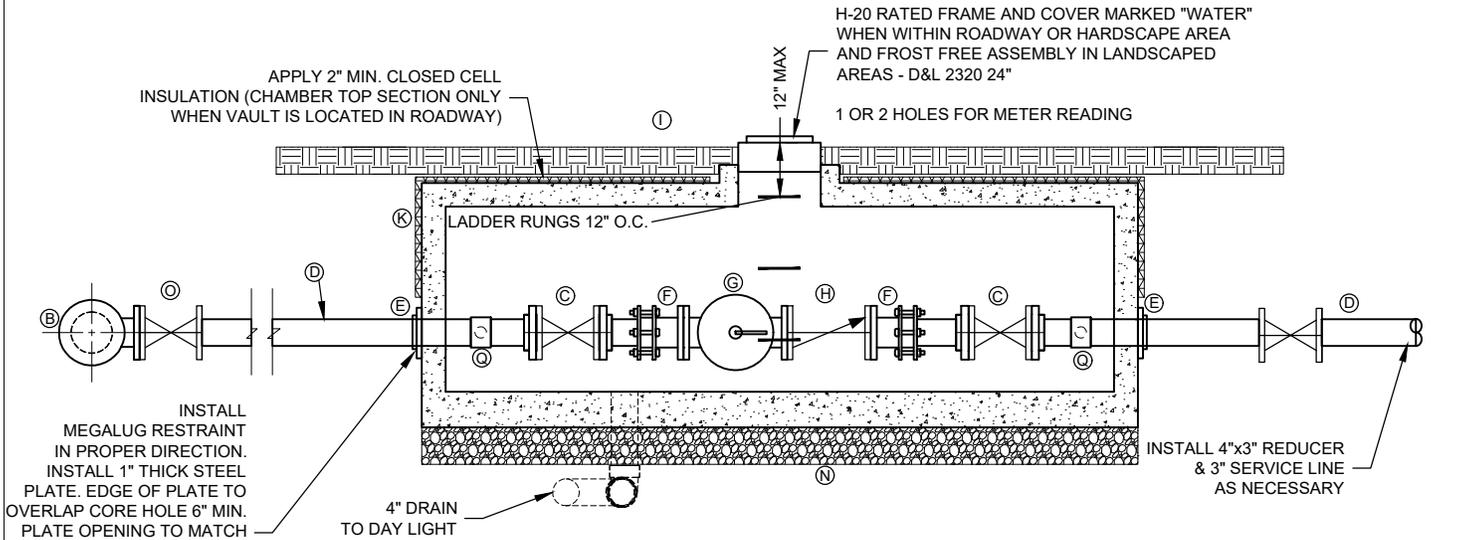
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PLAN

TO DAY LIGHT



INSTALL MEGALUG RESTRAINT IN PROPER DIRECTION. INSTALL 1" THICK STEEL PLATE. EDGE OF PLATE TO OVERLAP CORE HOLE 6" MIN. PLATE OPENING TO MATCH PIPE OD. CORE HOLE IN VAULT WALL (MINIMIZE DIAMETER) FILL GAP WITH LINK SEAL & GROUT GAP AT EDGE OF WALL WITH NON-SHRINK GROUT (TYP)

- | | |
|---|---|
| (A) WATER MAINLINE SIZE VARIES | (J) LADDER RUNG WITH LADDER UP |
| (B) TEE (MAINLINE SIZE x 3" OR 4") | (K) CONCRETE BOX APPROX. 5'x9' |
| (C) 3" OR 4" GATE VALVE WITH WHEEL | (L) 4" PVC DRAINLINE TO DAYLIGHT OR SUMP PUMP (POWER) |
| (D) 3" OR 4" SERVICE LINE | (M) PIPE SUPPORTS |
| (E) WALL RESTRAINT/LINK SEAL | (N) CONCRETE VAULT TO BE PLACE ON 12" OF GRAVEL |
| (F) FLANGE x M.J. ADAPTER | (O) 3" OR 4" GATE VALVE WITH VALVE BOX & NUT |
| (G) METER FURNISHED AND INSTALLED BY THE CITY | (P) 1.5" LOCKABLE CURB STOP |
| (H) 3" OR 4" CHECK VALVE | (Q) 3" OR 4"x1.5" SADDLE |
| (I) HATCH OR APPROVED LID (DIRECTLY ABOVE LADDER) | (R) 1.5" COPPER PIPE, TYPE K OR BRASS NIPPLE |

NOT TO SCALE



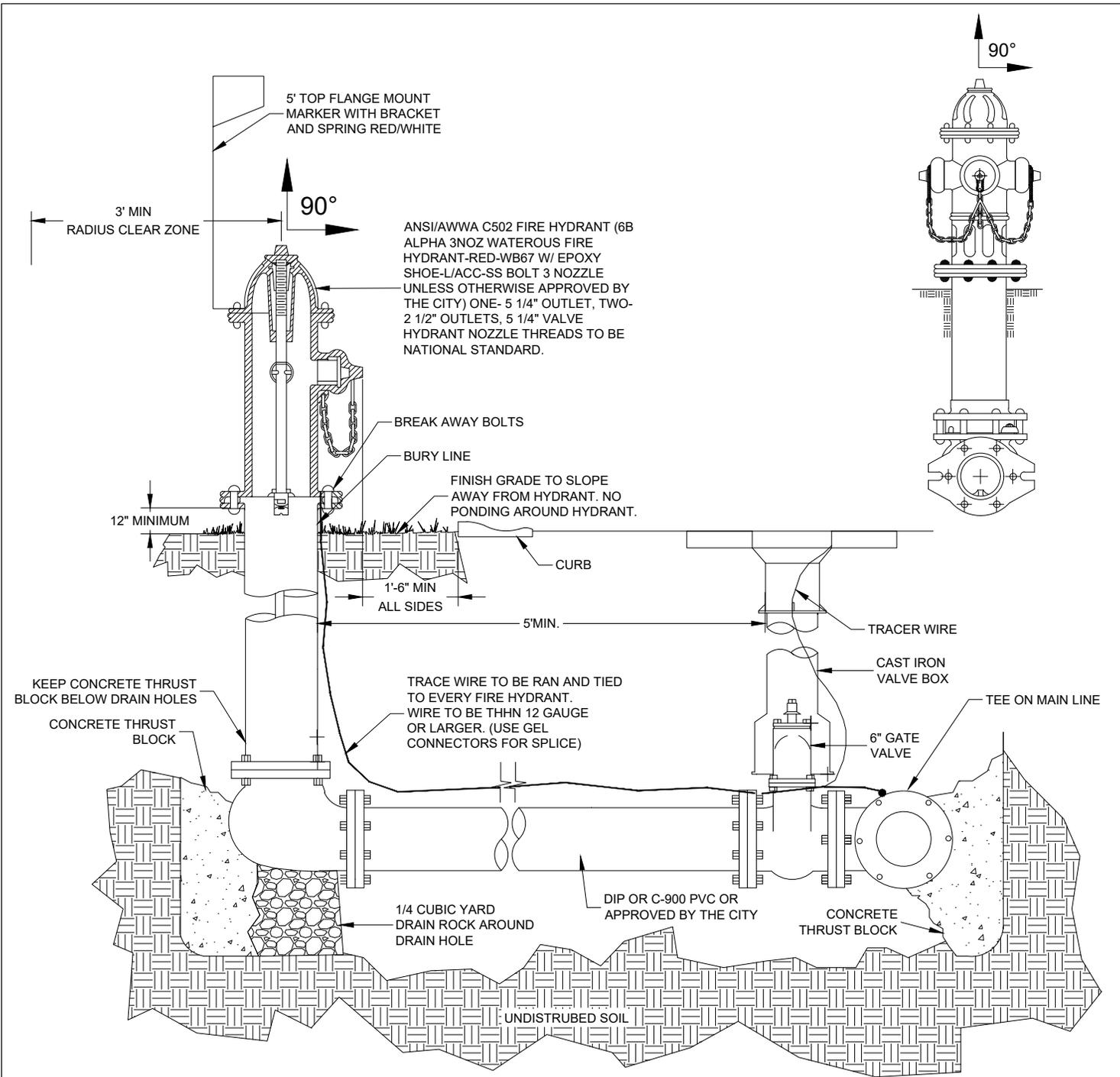
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3" AND 4" WATER SERVICE

DRAWING NO.

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NOTES:

- 1- LOCATION OF HYDRANT AND TEE ON WATER MAINLINE SHALL BE DETERMINED BY THE CITY
- 2- HYDRANT SHALL STAND PLUMB WITH PUMPER NOZZLE FACING THE STREET.
- 3- VALVE TO BE PLACED IN ASPHALT WITH CONCRETE RING.
- 4- TRACER WIRE TO BE ATTACHED TO HYDRANT VALVE.
- 5- HYDRANT AND FITTINGS TO BE POLY WRAPPED.
- 6- ALL BOLTS SHALL BE FREE OF CONCRETE AND FULLY ACCESSIBLE
- 7- DO NOT COVER BARREL DRAIN W/ DIRT OR CONCRETE, USE GRAVEL.

NOT TO SCALE



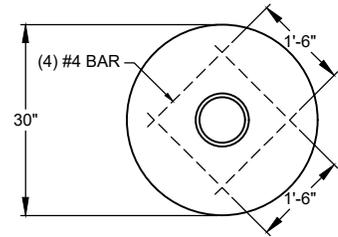
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FIRE HYDRANT

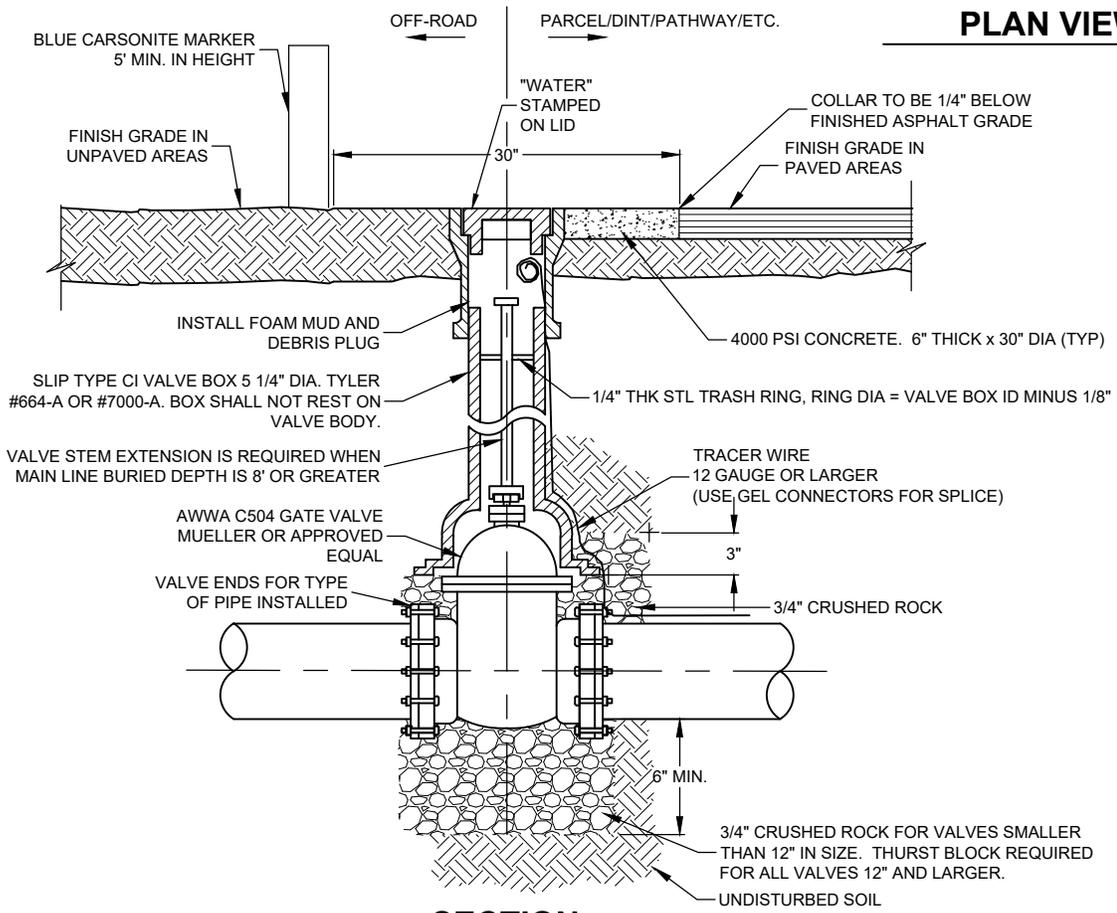
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**CONCRETE COLLAR
PLAN VIEW**



SECTION

NOTES:

- 1- ALL BURIED VALVES SHALL BE PROVIDED WITH STEM OPERATOR W/ 2" SQ AWWA NUT WITHIN 7' OF VALVE BOX COVER.
- 2- CLEAN VALVE BOX OF ALL DEBRIS & SOIL.
- 3- VALVE BOX TO BE SET PLUMB AND CENTERED ABOVE VALVE NUT.
- 4- ALL VALVES SHALL BE FURNISHED WITH RESTRAINT COLLARS.
- 5- VALVE SPACING NOT TO EXCEED 800' WITHOUT PRIOR APPROVAL BY THE CITY.
- 6- COORDINATE WITH CITY INSPECTOR FOR FINAL APPROVAL.

NOT TO SCALE



960 W. STREET, P.O. BOX 129, OAKLEY, UTAH 84055

VALVE WITH BOX AND VALVE BOX COLLAR

DRAWING NO.

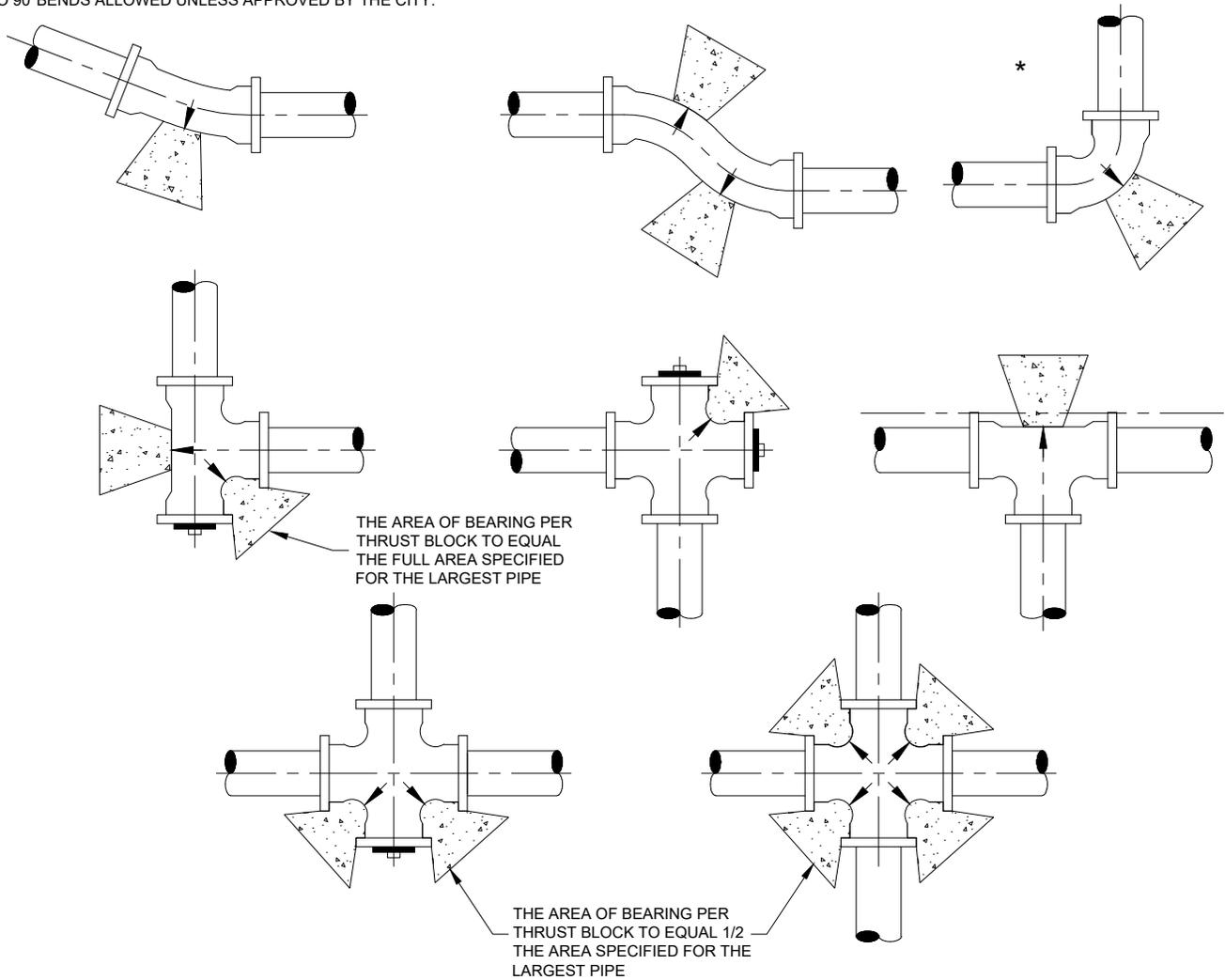
9

DATE: 05/08/2024

NOTES:

- 1- SECURE AN INSPECTION OF PREPARATION PRIOR TO POURING THRUST BLOCK.
- 2- SECURE AN INSPECTION PRIOR TO BACKFILLING. ALL WORK MUST BE INSPECTED PRIOR TO BACKFILLING.
- 3- THRUST BLOCKS MUST BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
- 4- ALL PIPE JOINTS MUST BE LEFT ACCESSIBLE. ALL FITTINGS ADJACENT TO THRUST BLOCKS SHALL BE WRAPPED WITH 8 MIL. THICK POLYETHYLENE SHEET AND TAPE WRAP.
- 5- CONCRETE MUST BE ALLOWED TO CURE FOR 5 DAYS PRIOR TO PRESSURIZING WATER LINES.
- 6- CONCRETE MUST HAVE A MINIMUM OF 3000 P.S.I. COMPRESSIVE STRENGTH IN 28 DAYS.
- 7- THRUST BLOCKS MUST BE POURED AS CLOSE AS POSSIBLE TO THE CONFIGURATION SHOWN.
- 8- BEARING AREAS FOR HORIZONTAL BEND THRUST BLOCKS ARE BASED ON TEST PRESSURE OF 200 P.S.I. AND AN ALLOWABLE SOIL BEARING STRESS OF 2000 LBS./SQ.FT. COMPUTATIONS OF BEARING AREAS SHALL BE REQUIRED FOR DIFFERENT TEST PRESSURES AND SOIL BEARING PRESSURES.
- 9- BEARING AREAS, VOLUMES, AND SPECIAL BLOCKING DETAILS SHOWN ON PLANS TAKE PRECEDENCE OVER THIS STANDARD.
- 10- BEARING AREAS FOR PIPE SIZES OR CONFIGURATIONS NOT SHOWN REQUIRE A SPECIAL DESIGN.
- 11- * NO 90° BENDS ALLOWED UNLESS APPROVED BY THE CITY.

MINIMUM BEARING AREA IN SQ.FT.					
PIPE SIZE	TEES, VAL DEAD END	*90 BEND	45 BEND	22.5 BEND	11.25 BEND
4"	2	3	2	2	2
6"	4	5.5	3	2	2
8"	6.5	9.5	5	3	2
10"	10	14	8	5	3
12"	14	20	11	6	3
14"	19	26.5	14.5	7.5	4
16"	24	34	18.5	9.5	6



NOT TO SCALE



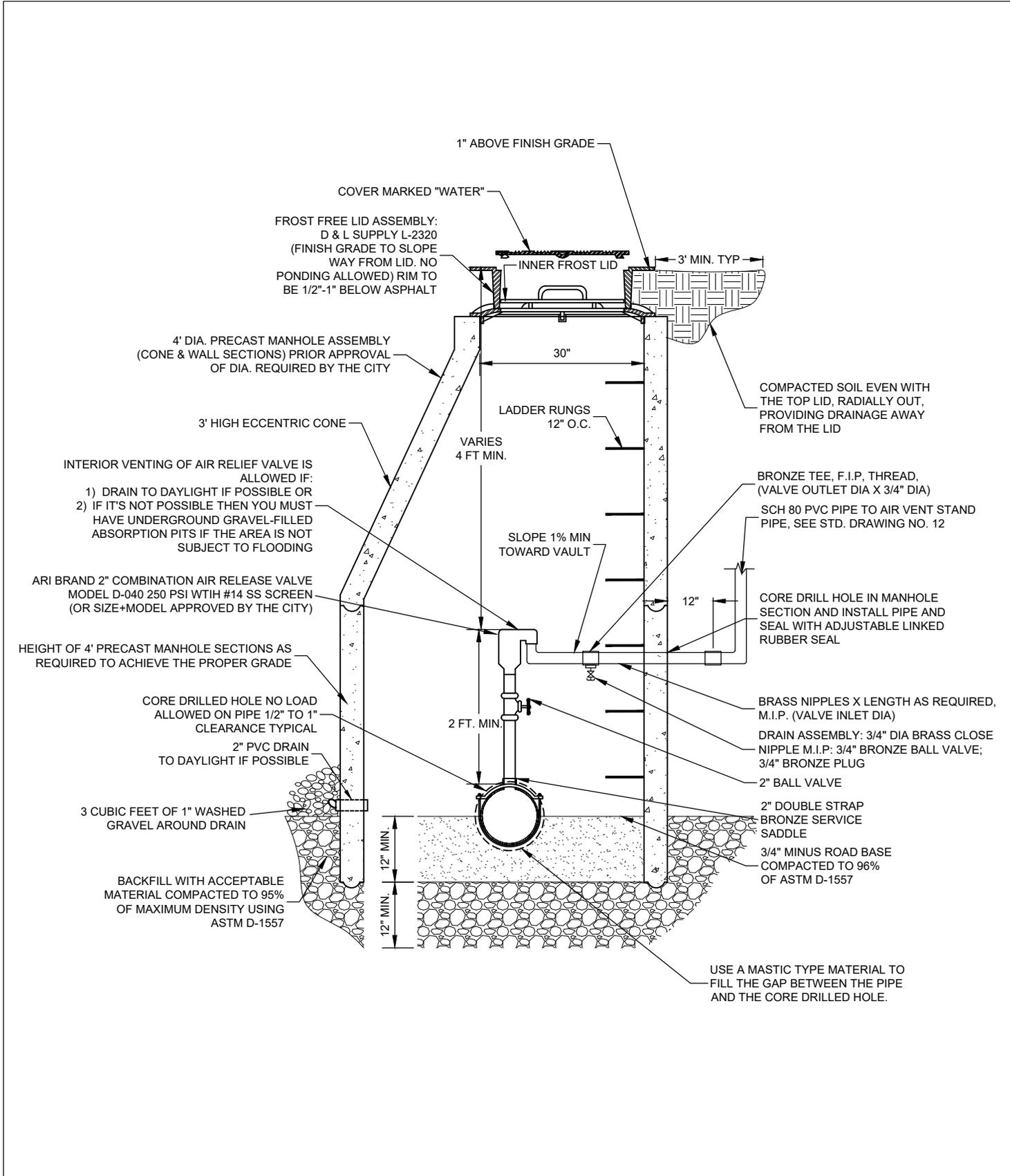
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THRUST BLOCK

DRAWING NO.

10

DATE: 05/08/2024



FROST FREE LID ASSEMBLY:
D & L SUPPLY L-2320
(FINISH GRADE TO SLOPE
WAY FROM LID. NO
PONDING ALLOWED) RIM TO
BE 1/2"-1" BELOW ASPHALT

4' DIA. PRECAST MANHOLE ASSEMBLY
(CONE & WALL SECTIONS) PRIOR APPROVAL
OF DIA. REQUIRED BY THE CITY

3' HIGH ECCENTRIC CONE

INTERIOR VENTING OF AIR RELIEF VALVE IS
ALLOWED IF:
1) DRAIN TO DAYLIGHT IF POSSIBLE OR
2) IF IT'S NOT POSSIBLE THEN YOU MUST
HAVE UNDERGROUND GRAVEL-FILLED
ABSORPTION PITS IF THE AREA IS NOT
SUBJECT TO FLOODING

ARI BRAND 2" COMBINATION AIR RELEASE VALVE
MODEL D-040 250 PSI WITH #14 SS SCREEN
(OR SIZE+MODEL APPROVED BY THE CITY)

HEIGHT OF 4' PRECAST MANHOLE SECTIONS AS
REQUIRED TO ACHIEVE THE PROPER GRADE

CORE DRILLED HOLE NO LOAD
ALLOWED ON PIPE 1/2" TO 1"
CLEARANCE TYPICAL
2" PVC DRAIN
TO DAYLIGHT IF POSSIBLE

3 CUBIC FEET OF 1" WASHED
GRAVEL AROUND DRAIN

BACKFILL WITH ACCEPTABLE
MATERIAL COMPACTED TO 95%
OF MAXIMUM DENSITY USING
ASTM D-1557

1" ABOVE FINISH GRADE

COVER MARKED "WATER"

INNER FROST LID

3' MIN. TYP

30"

LADDER RUNGS
12" O.C.

VARIES
4 FT MIN.

SLOPE 1% MIN
TOWARD VAULT

2 FT. MIN

COMPACTED SOIL EVEN WITH
THE TOP LID, RADIALLY OUT,
PROVIDING DRAINAGE AWAY
FROM THE LID

BRONZE TEE, F.I.P. THREAD,
(VALVE OUTLET DIA X 3/4" DIA)
SCH 80 PVC PIPE TO AIR VENT STAND
PIPE, SEE STD. DRAWING NO. 12

CORE DRILL HOLE IN MANHOLE
SECTION AND INSTALL PIPE AND
SEAL WITH ADJUSTABLE LINKED
RUBBER SEAL

BRASS NIPPLES X LENGTH AS REQUIRED,
M.I.P. (VALVE INLET DIA)

DRAIN ASSEMBLY: 3/4" DIA BRASS CLOSE
NIPPLE M.I.P.; 3/4" BRONZE BALL VALVE;
3/4" BRONZE PLUG

2" BALL VALVE

2" DOUBLE STRAP
BRONZE SERVICE
SADDLE

3/4" MINUS ROAD BASE
COMPACTED TO 96%
OF ASTM D-1557

USE A MASTIC TYPE MATERIAL TO
FILL THE GAP BETWEEN THE PIPE
AND THE CORE DRILLED HOLE.

NOT TO SCALE



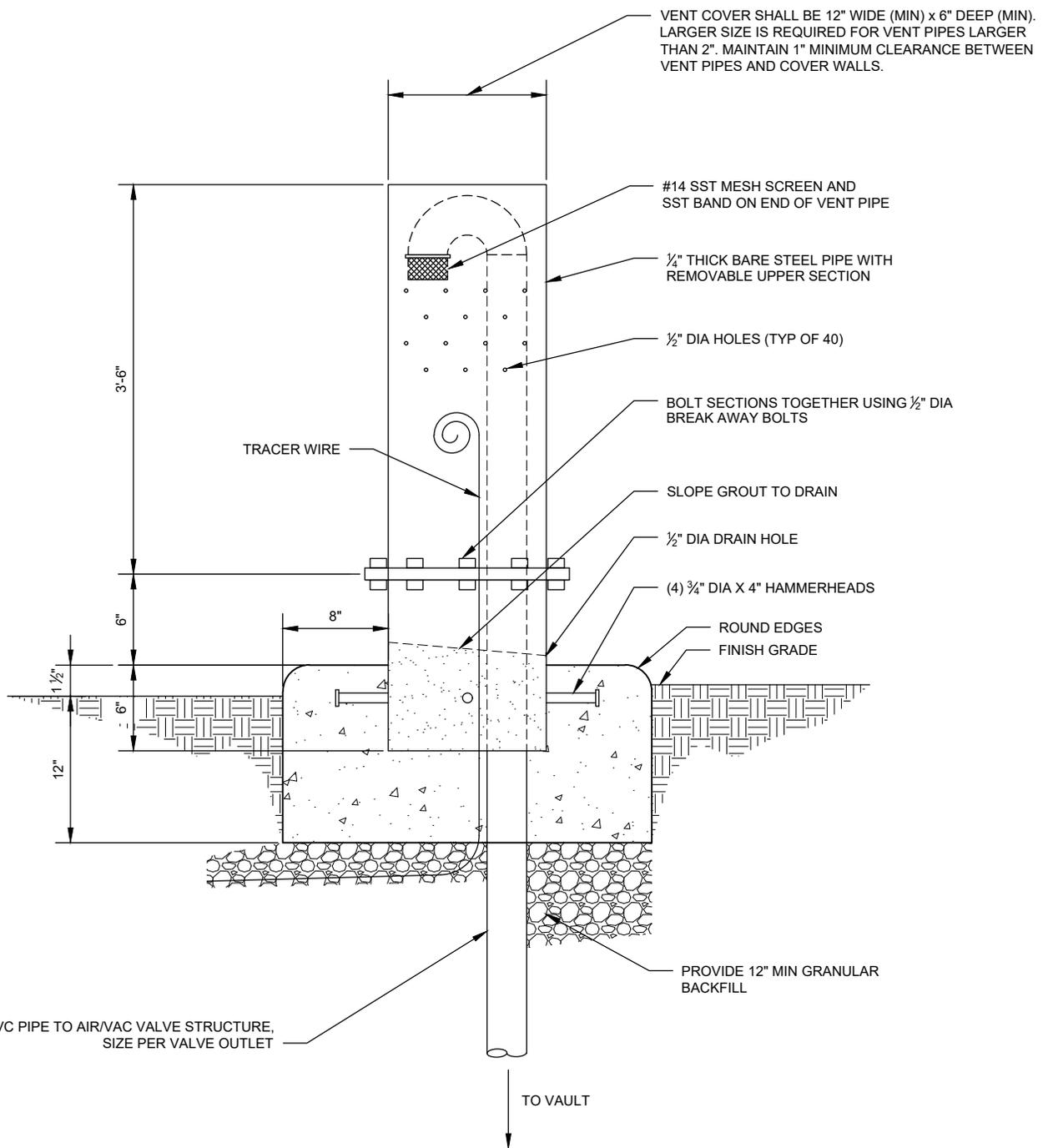
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COMBINATION AIR RELEASE VALVE

DRAWING NO.

11

DATE: 05/08/2024



NOTES:

- 1- LOCATE VENT AS SHOWN ON APPROVED PLANS, 1'-6" MINIMUM BEHIND TOP BACK OF CURB / GUTTER OR SIDEWALK.

NOT TO SCALE



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AIR VENT STAND PIPE

DRAWING NO.

12

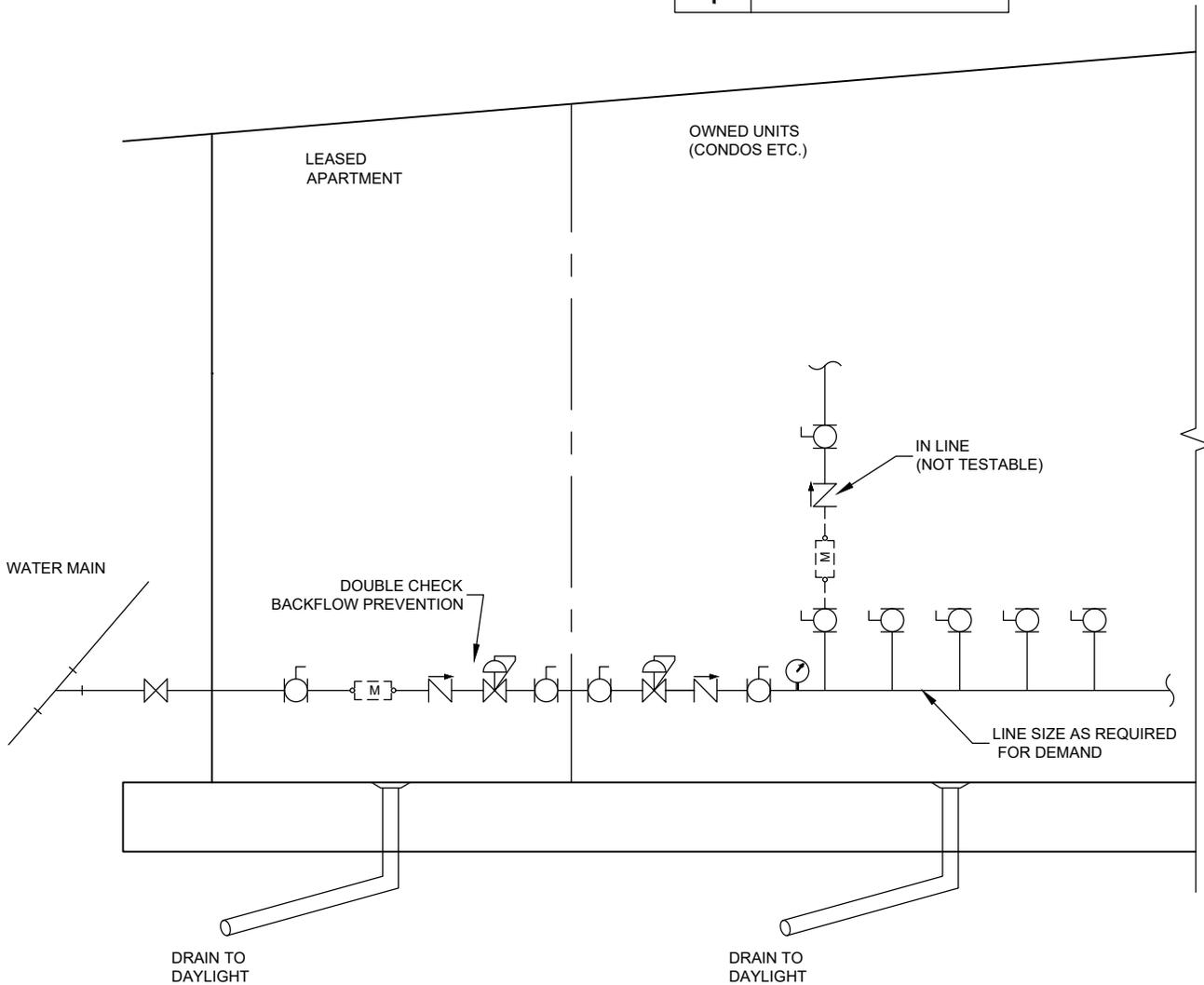
DATE: 05/08/2024

NOTES:

- 1- METERS INSTALLED FOR CONDOS, STRAIGHT PIPE IN APARTMENTS.
- 2- INTERIOR APPURTENANCES COLLOCATED IN A TEMPERATURE CONTROLLED SPACE.
- 3- MASTER METER INSTALLED IN APARTMENT COMPLEXES SHALL BE E-SERIES OR APPROVED BY THE CITY.
- 4- METER SIZE CALCULATIONS ARE TO BE SUPPLIED TO AND APPROVED BY THE CITY.
- 5- ALL CONNECTIONS TO METERS SHALL BE SWIVEL-TYPE AND APPROVED BY THE CITY.

LEGEND

SYMBOL	DESCRIPTION
	GATE VALVE SHUT OFF W/ NUT
	BALL VALVE
	FLOW METER
	PRESSURE REDUCING VALVE
	CHECK VALVE (TESTABLE)
	PRESSURE INDICATOR



NOT TO SCALE



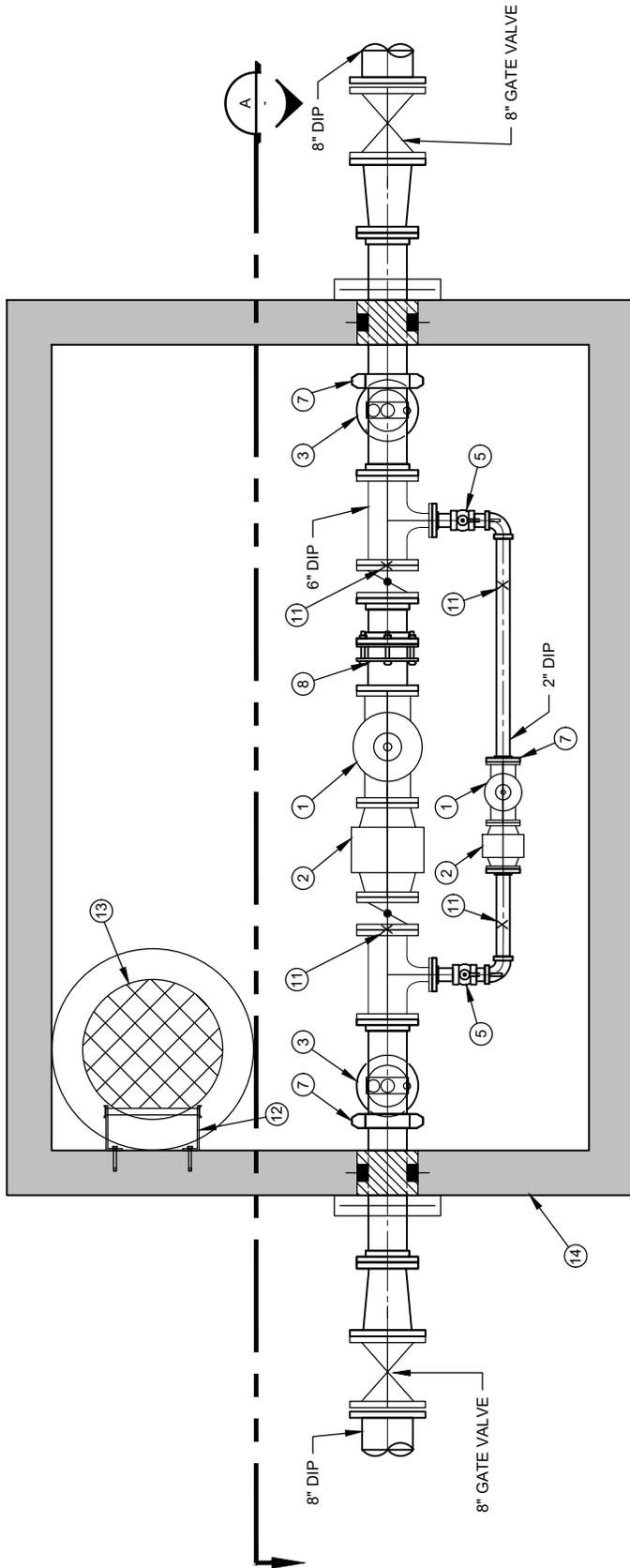
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MULTI-FAMILY WATER SERVICE

DRAWING NO.

13

DATE: 05/08/2024



PLAN
SCALE: NTS

- NOTES:
- 1- SIZES OF VALVES AND FITTINGS WILL BE DETERMINED FOR EACH SPECIFIC INSTALLATION.
 - 2- VAULTS SHALL BE DESIGNED FOR STANDARD H-20 LOADS WHEN LOCATED IN ROADWAY OR FOR H-20 INTERMITTENT LOADS WHERE NOT LOCATED WITHIN A ROADWAY.
 - 3- FINAL DESIGN OF PRV VAULT IS SUBJECT TO REVIEW AND APPROVAL BY THE CITY.
 - 4- ALL PIPE, INSIDE WETTED SURFACES TO BE SANDBLASTED, EPOXY LINED AND COATED TO AWWA C-210 AND NSF-61 SPECIFICATION. FINISH COATING WILL BE BLUE ENAMEL.

NOT TO SCALE



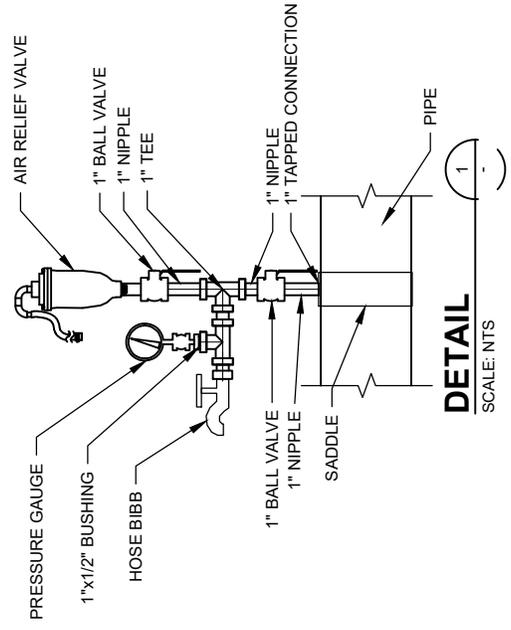
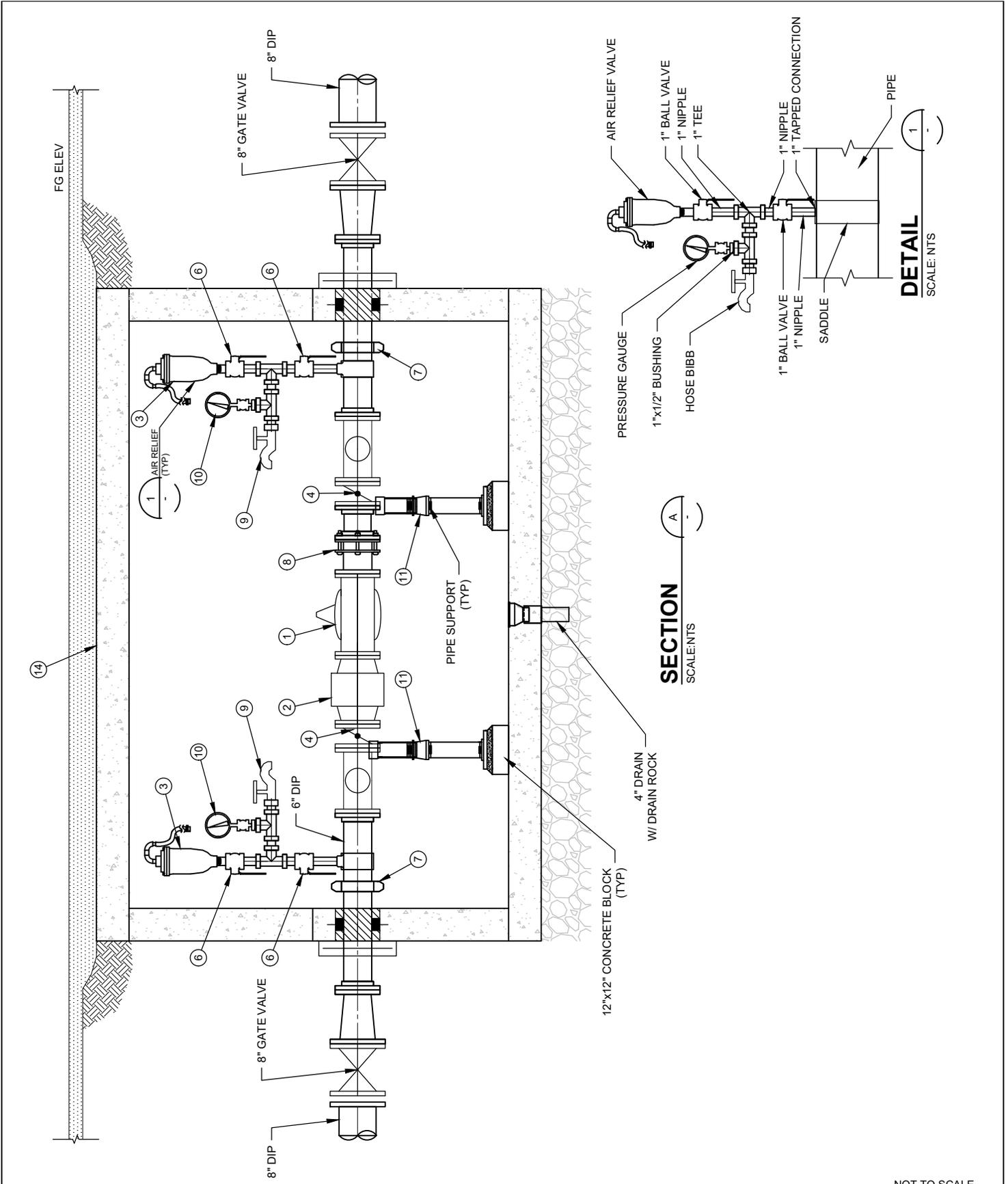
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BELOW GRADE PRV

DRAWING NO.

14A

DATE: 05/08/2024



SECTION
SCALE: NTS

DETAIL
SCALE: NTS



960 W. STREET, P.O. BOX 129, OAKLEY, UTAH 84055

BELOW GRADE PRV

NOT TO SCALE

DRAWING NO.

14B

DATE: 05/08/2024

ITEM	QTY	DESCRIPTION
1	2	CAL-VAL MODEL 90-01 PRESSURE REDUCING VALVE AND PRESSURE SUSTAINING VALVE WITH FLOW CONTROL, SHUT OFF COCKS, FLOW STABILIZER, STAINLESS STEEL TRIM, FLGxFLG
2	2	STRAINER DIST-#300 FLG
3	2	VALMATIC MODEL NO.201.C2 COMBINATION AIR/VAC
4	2	BUTTERFLY VALVE C/W HANDWHEEL ACTUATOR - WAFFER
5	2	PRESSURE REDUCER ISOLATION BALL VALVES - STAINLESS STEEL
6	4	ISOLATION BALL VALVES - STAINLESS STEEL
7	3	VICTAULIC COUPLING
8	1	RESTRAINED DISMANTLING JOINT
9	2	1/2" SMOOTH NOSE SAMPLING TAP
10	2	1/2" PRESSURE GAUGE 0-200 PSI, GRADE B, THREADED WITH STEM VALVE
11	4	ADJUSTABLE PIPE SUPPORTS
12	1	ALUMINUM LADDER C/W SAFETY POST
13	1	FROST FREE LID ASSEMBLY D&L A1366 MANHOLE FRAME & COVER (30" CLEAR OPENING)
14	1	PRECAST CONCRETE VAULT

NOT TO SCALE



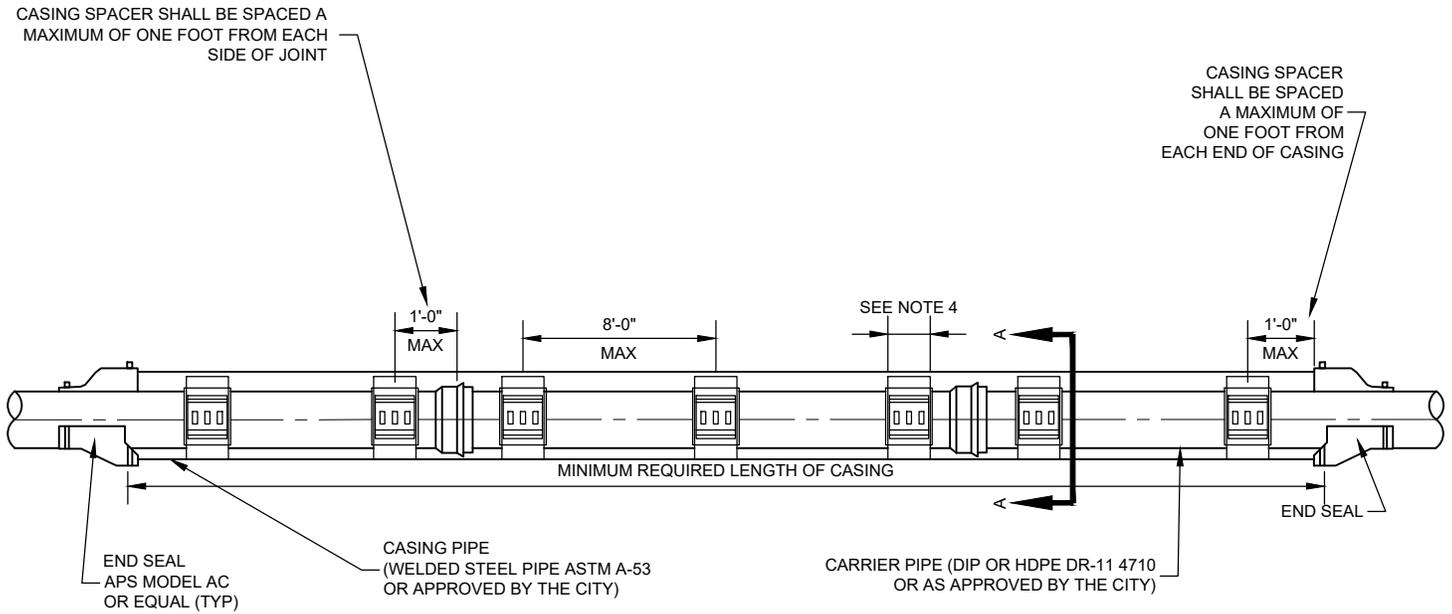
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BELOW GRADE PRV

DRAWING NO.

14C

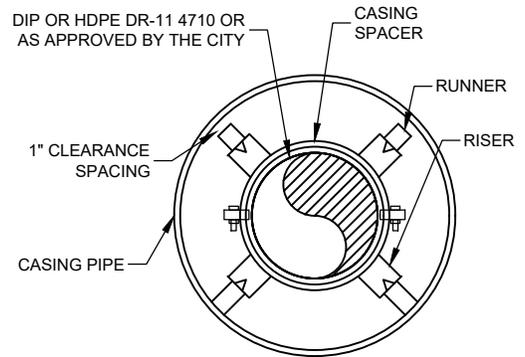
DATE: 05/08/2024



ELEVATION

NOTES:

- 1- CASING SPACERS AND END SEALS SHALL BE APPROVED BY THE CITY PRIOR TO INSTALL.
- 2- QUANTITY OF RUNNERS SHALL BE A MINIMUM OF 3 IN, ACCORDANCE WITH CARRIER PIPE SIZE AS FOLLOWS:
 TO 14" DIAMETER - 4 RUNNERS
 16" TO 36" DIAMETER - 6 RUNNERS
 38" TO 48" DIAMETER - 8 RUNNERS
- 3- ALL ENCASUREMENT PIPE SHALL BE NEW AND HAVE A MINIMUM WALL THICKNESS OF 0.25". CASING INSIDE DIAMETER SHALL BE AT LEAST 2" LARGER THAN OUTSIDE DIAMETER OF CASING SPACER.
- 4- WIDTH OF SPACERS SHALL BE IN ACCORDANCE WITH CARRIER PIPE SIZE AS FOLLOWS:
 TO 14" DIAMETER - 8" WIDTH
 16" AND LARGER DIAMETER - 12" WIDTH
- 5- WATER LINES SHALL BE "CENTERED" IN CASING.
- 6- ALL WATERLINES SHALL BE MECHANICALLY RESTRAINED THROUGHOUT THE CASING, AND A MINIMUM OF 20' BEYOND EACH END.



SECTION A

NOT TO SCALE



960 W. STREET, P.O. BOX 129, OAKLEY, UTAH 84055

PIPE ENCASEMENT

DRAWING NO.

15

DATE: 05/08/2024