MEMORANDUM TO THE INDUSTRY

TO: All Builders, Developers, Engineers, Site Contractors, and Distributors Engaging in the Installation of Loudoun Water’s Systems

FROM: Huy Tran P.E. LEED AP(BD+C), Manager of Land Development Programs

DATE: September 24, 2018

SUBJECT: Updated Loudoun Water EDM details and Approved Materials List

The Loudoun Water Engineer and Design Manual (EDM) has updated the following details:

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Noteworthy detail revisions are mentioned below:

- G-5 – Addition of note #18 regarding separation distance between pipe joints and taps.
- G-21 – Added notes 7-12 to include commonly required specifications for vaults.
- W-19 – (Fire Service to Single Family Attached Home) has been removed from Loudoun Water’s standard details. Fire services for residential dwellings will no longer be required to be a separate service line tap. Moving forward, all residential dwellings, with or without fire sprinklers, will utilize W-22 (Service Connection Residential), with both fire suppression and the domestic lines utilizing the same service line that is served through the meter.
- W-29, W-30, R-12, & R-13 – No longer requiring specifically “AccuMag” type meters; meter lay lengths revised.
- W-31 & R-14 – Indoor meters: clarification showing that flange is required to be within at least 5-feet of the external building wall and note added that piping shall not run under building slabs greater than 5-feet otherwise the meter will be required to be placed in an outside vault.
- R-9 – Pexa type tubing specified instead of copper.

These details shall be effective immediately for all projects that have not passed Beneficial Inspection. For projects already in construction, please contact your assigned Loudoun Water project engineer for requests for exception, which will be determined on a case-by-case basis.

These updates will not warrant submissions of revisions to approved plans (RAP) to Loudoun Water exclusively for the purpose of updating these details. However, moving forward, all plans submitted to Loudoun Water for review shall incorporate the most current details.

In addition, the Approved Materials List located in Appendix G has been updated to include recent product review additions/deletions and minor clarifications. Noteworthy Approved Materials List revisions:

- For all manufacturers, elimination of specifying a different size meter boxes for ¾-inch meters. Moving forward both ¾-inch and 1-inch meters shall be installed in approved manufacturers’ 1-inch meter box model.
- Pexa tubing specification added.

Both the EDM details and Approved Materials List can be accessed from the Loudoun Water website at: [www.loudounwater.org/engineering-design-manual](http://www.loudounwater.org/engineering-design-manual)
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## LOW PRESSURE COLLECTION

*WASTE WATER COLLECTION BY LOW PRESSURE NOT TO BE USED, EXCEPT AT THE SOLE DISCRETION OF LOUDOUN WATER.*

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<td>GREASE INTERCEPTOR</td>
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1. ALL WATER MAINS AND SANITARY SEWERS MUST BE CONSTRUCTED IN ACCORDANCE WITH THE CURRENT LOUDOUN WATER ENGINEERING DESIGN MANUAL AND PROJECT SPECIFICATIONS. OWNER MUST ENSURE THAT BUILDING PLANS ACCOMODATE WATER AND SEWER ENTRANCE POINTS, METERING CONSIDERATIONS, PRETREATMENT DEVICES, AND BACKFLOW PREVENTION DEVICES, TO ACCOMPLISH FULL COMPLIANCE WITH LOUDOUN WATER'S REQUIREMENTS.

2. NO BLASTING IS PERMITTED WITHIN 25' OF LOUDOUN WATER'S EXISTING UTILITIES.

3. A 6" MARKING TAPE MUST BE PLACED ABOVE ALL PIPE LINES.

4. UTILITIES OUTSIDE THE PUBLIC RIGHT–OF–WAY AND PAVEMENT SHALL BE PROVIDED WITH ABOVE GROUND MARKING STAKES. MARKERS ARE TO BE SPACED AT INTERVALS OF 300–500 FEET, AND AT MANHOLES, VALVES, AND CHANGES IN DIRECTION, TO ACCOMPLISH A CONTINUOUS LINE OF SIGHT BETWEEN MARKERS.

5. ALL PRESSURIZED PIPELINES SHALL BE RESTRAINED WITH CONCRETE REACTION BLOCKING AT ENDS AND CHANGES IN DIRECTION, EXCEPT WHERE OTHERWISE DIRECTED BY LOUDOUN WATER.

6. LANDSCAPING IS NOT PERMITTED WITHIN LOUDOUN WATER'S EASEMENTS, OR WITHIN 5' OF FIRE HYDRANTS AND METER BOXES.

7. SANITARY SEWER AND WATER MAINS MUST HAVE A MINIMUM 15' HORIZONTAL SEPARATION FROM PROPOSED OR EXISTING BUILDINGS, UNLESS PRIOR PERMISSION IS GRANTED BY LOUDOUN WATER.

8. UNLESS OTHERWISE SPECIFIED, ALL WATER MAINS MUST BE DUCTILE IRON PIPE, CLASS 52 MINIMUM.

9. ALL MECHANICAL JOINT ASSEMBLIES TO BE COATED PER STANDARD DETAIL CP–3.

10. WATER SERVICES MUST HAVE A MINIMUM 6' HORIZONTAL SEPARATION FROM SANITARY LATERALS.

11. ALL HYDRANTS AND METER BOXES MUST HAVE A MINIMUM 5' HORIZONTAL SEPARATION FROM EDGE OF DRIVEWAY APRONS.

12. UNLESS OTHERWISE SPECIFIED, ALL SANITARY SEWERS MUST BE PVC DR25 CONFORMING TO AWWA C900/C905.

13. ALL SANITARY SEWER LATERALS MUST BE 4" PVC DR25 AT 2.08% SLOPE UNLESS OTHERWISE SPECIFIED, AND MUST ENTER THE MAIN AT 90 DEGREES.

14. PROVIDE POSITIVE DRAINAGE AWAY FROM SANITARY MANHOLES THROUGHOUT CONSTRUCTION.

15. TOPS OF MANHOLES LOCATED OUTSIDE OF PAVEMENT MUST BE 1' ABOVE FINISHED GRADE. THIS REQUIREMENT SHALL NOT APPLY IN DEVELOPED LAWNS.

16. EXISTING SANITARY MANHOLES SHALL BE CORE BORED IN ORDER TO RECEIVE PROPOSED PIPE.

17. USE OF FIRE HYDRANT METERS IS RESTRICTED TO DESIGNATED HYDRANTS, AND TO METERS ISSUED BY LOUDOUN WATER. DESIGNATED HYDRANTS SHALL BE PAINTED FEDERAL SAFETY YELLOW. LOCATION OF THESE HYDRANTS WILL BE DETERMINED AT THE PRECONSTRUCTION MEETING.

NOTES:

1. LOUDOUN WATER APPROVED SHOP DRAWING REQUIRED FOR ALL FABRICATIONS. SEE APPROVED MATERIALS LIST FOR ADDITIONAL REQUIREMENTS.
2. INCORPORATE VENT AS DIRECTED BY LOUDOUN WATER.
3. SLOPE FLOOR TO SUMP.
4. SUPPORT PIPING WITH STEEL PIPE STANDS OR CONCRETE PIERS.
5. PAINT PIPING IF SO DIRECTED BY LOUDOUN WATER.
6. FOR ALL UNDERGROUND STRUCTURES WHERE ENTRY IS BY ACCESS DOOR AND LADDER, INCORPORATE SAFETY FEATURES AS FOLLOWS.
   A) PROVIDE GRAB BAR WHERE POSSIBLE. WHERE SITE CONSTRAINTS PROHIBIT THE USE OF A GRAB BAR, INSTALL A LADDER MOUNTED SAFETY POST. SEE G–23.
   B) AT STRUCTURES OF 10’ OR GREATER DEPTH IN THE WATER SYSTEM, PROVIDE FALL ARREST. THIS MAY BE BY THE MILLER DURAHOIST™ SYSTEM OR BY THE MILLER VI–GO™ LADDER MOUNTED CABLE SYSTEM. FOR DURAHOIST™, INSTALL DAVIT BASE, POSITIONED TO ALLOW DAVIT LINE TO BE CENTERED OVER LADDER. FOR VI–GO™, PROVIDE TWO CABLE SLEEVES.
   C) AT STRUCTURES IN WASTEWATER COLLECTION OR TREATMENT SYSTEM MAKE PROVISIONS FOR RETRIEVAL. LOUDOUN WATER USES THE DURAHOIST™ SYSTEM BY MILLER FALL PROTECTION. IF THE STRUCTURE IS AT A STATION OR FACILITY WITH APPROPRIATE STORAGE, PROVIDE THE DURAHOIST™ MIGHTEVAC™ SRL WITH EMERGENCY RETRIEVAL HOIST.
7. FINAL GRADING AROUND VAULT SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ACCESS DOOR HATCH COVER.
8. EXTERIOR OF VAULT SHALL BE COATED WITH BITUMASTIC SEALER.
9. INTERIOR WALLS OF THE VAULT SHALL BE COATED WITH WHITE DRYLOCK.
10. CONTRACTOR TO COORDINATE EXTENSION OF ELECTRIC SERVICE TO VAULT WITH OWNER.
11. AFTER WALL SLEEVES HAVE BEEN CAST INTO STRUCTURE AND WIRES HAVE BEEN INSTALLED, ALL VOIDS AROUND SLEEVES SHALL BE FILLED WITH REVERE NEO–SEAL COATING (NO B24700).
12. ALL VAULTS TO HAVE A SUMP PUMP. SUMP PUMP TO BE PROVIDED BY THE CONTRACTOR.
NOTES:
1. CONFINED SPACE: ATMOSPHERE MUST BE VENTED AND TESTED PRIOR TO ENTRY.
2. PROVIDE 2" FLOOD SAFE INFLOW PREVENTER BY VAL-MATIC WITH MOUNTING BRACKET.
   MOUNT TO WALL OF STRUCTURE.
3. FROM MAIN TO AIR RELEASE PIPE WITH 2" THREADED DUCTILE IRON PIPE. FROM AIR VALVE
   TO INFLOW PREVENTER, PIPE IN 2" PVC SCH 80 (ASTM D1785) WITH SOLVENT WELDED
   JOINTS.
4. MAXIMUM FRAME ADJUSTMENT BY GRADE RINGS IS 12" IN PAVEMENT AND 6" ELSEWHERE.
5. ALL MATERIALS MUST CONFORM TO APPLICABLE SECTIONS OF LOUDOUN WATER’S APPROVED
   MATERIALS LIST.
6. ALL PRECAST CONCRETE SHALL CONFORM TO AASHTO M199 AND ASTM A615.
7. IF OUTSIDE PAVEMENT BOLT FRAME TO CONE.
2"x4" MARKING POST (1' PAST END OF TUBING, EXTEND ABOVE GRADE.)

CENTRE BOX IN MINIMUM 2" UTILITY STRIP

COVER SET TO GRADE PER NOTE 1 METER CENTERED IN BOX

TRACER WIRE SEE NOTE 3 ANGLE VALVE DUAL CHECK YOKE

TRACER WIRE SEE NOTE 3 ANGLE VALVE DUAL CHECK YOKE

EXTEND COPPER 5'-7' BEYOND METER AND CRIMP CLOSED.

1" TYPE K COPPER TUBING FLARE CONNECTION AT MAIN AND METER. NO COUPLINGS.

NOTES:
1. A) AT INITIAL INSTALLATION, ROTATIONAL (ADJUSTABLE) FRAME TO BE IN CENTER OF HEIGHT RANGE.
   B) WHERE AT CURB, SET COVER FLUSH TO 1" ABOVE TOP OF CURB.
   C) WHERE NO CURB, SET COVER 1" ABOVE FINAL GRADE.
   D) IN SLOPE, PROVIDE TIMBER RETAINING WALL 3' FROM COVER.
2. WHERE TAP IS ON 4" MAIN, CORPORATION STOP SHALL HAVE 3/4" INLET AND 1" FLARE OUTLET. ON 3" WATER MAIN, USE 3"x3/4" BRASS SADDLE.
3. WHERE SERVICE BETWEEN METER AND BUILDING IS PLASTIC TUBING, PROVIDE TRACER WIRE OF AWG #12 SOLID COPPER WITH 45 MIL POLYETHYLENE INSULATION. TURN TRACER WIRE UP INSIDE METER BOX. TERMINATE TRACER WIRE INDOORS OR AT EXTERIOR WALL WITH A BLUE SOIL MARKER.
4. ALL MATERIALS MUST CONFORM TO LOUDOUN WATER'S APPROVED MATERIALS LIST.
5. METER FURNISHED AND INSTALLED BY LOUDOUN WATER.
2"x4" MARKING POST (1' PAST END OF TUBING, EXTEND ABOVE GRADE.)

CENTER BOX IN MINIMUM 2' UTILITY STRIP

COVER SET TO GRADE PER NOTE 1 METER CENTERED IN BOX

TRACER WIRE SEE NOTE 3

1" ANGLE VALVE

BEDDING

1" TYPE K COPPER TUBING FLARE CONNECTION AT MAIN AND METER. NO COUPLINGS.

EXTEND COPPER 5’-7” BEYOND METER AND CRIMP CLOSED.

NOTES:
1. A) AT INITIAL INSTALLATION, ROTATIONAL (ADJUSTABLE) FRAME TO BE IN CENTER OF HEIGHT RANGE.
   B) WHERE AT CURB, SET COVER FLUSH TO 1” ABOVE TOP OF CURB.
   C) WHERE NO CURB, SET COVER 1” ABOVE FINAL GRADE.
   D) IN SLOPE, PROVIDE TIMBER RETAINING WALL 3’ FROM COVER.

2. WHERE SERVICE BETWEEN METER AND BUILDING IS PLASTIC TUBING, PROVIDE TRACER WIRE OF AWG #12 SOLID COPPER WITH 45 MIL POLYETHYlene INSULATION. TURN TRACER WIRE UP INSIDE METER BOX. TERMINATE TRACER WIRE INDOORS OR AT EXTERIOR WALL WITH A BLUE SOIL MARKER.

3. ALL MATERIALS MUST CONFORM TO LOUDOUN WATER'S APPROVED MATERIALS LIST.

4. METER FURNISHED AND INSTALLED BY LOUDOUN WATER.

AUG. 2018

SERVICE CONNECTION FOR 3/4” AND 1” METERS — COMMERCIAL

W-23
NOTES:
1. METER PIT MUST BE LOCATED IN A MINIMUM 8' x 8' UNPAVED AREA.
2. CONNECTION AT MAIN TO BE 6"Ø WITH RESTRAINED BRANCH VALVE. CONTINUE SERVICE IN 4"
   DIP OR 2" COPPER. RESTRAIN ALL IRON SERVICE LINE BETWEEN MAIN AND METER. USE
   APPROVED RESTRAINING GLAND AT EACH MECHANICAL JOINT. RESTRAIN ALL PIPE JOINTS WITH
   LOCKING GASKET OR APPROVED RESTRAINED JOINT PIPING SYSTEM.
3. TRANSITION 4" DIP SERVICE TO 2"Ø COPPER WITH BRASS FLARE ADAPTER.
4. CONTINUE BEDDING MATERIAL AS BACKFILL AROUND ENCLOSURE TO 1' BELOW GRADE.

AUG. 2018
2" OMNI T2 METER  W–28
1. CONNECTION AT MAIN TO BE 6” MINIMUM WITH RESTRAINED BRANCH VALVE. RESTRAIN ALL SERVICE LINE BETWEEN MAIN AND BUILDING.
2. ALL PIPE IN VAULT TO BE FLANGED DUCTILE IRON. ALL VALVES TO BE RESILIENT WEDGE WITH HAND WHEEL OPERATOR.
3. DOWNSTREAM OF MAGNETIC METER ADD 3”X3”, 4”X4” OR 6”X4” TEE WITH BLIND FLANGE (TAPPED 2”) TO SERVE AS TEST PORT.
4. CEILING HEIGHT TO BE 6’-6” MINIMUM. PIPE CENTER LINE 2’-6” ABOVE FLOOR. MANWAY TO BE COVERED WITH 36”X36” HINGED FRAME AND COVER.
5. SUBMITTAL REQUIRED FOR VAULT. STRUCTURAL DESIGN TO BE CERTIFIED BY A VIRGINIA PROFESSIONAL ENGINEER. SEE G–20 THROUGH G–23 FOR ADDITIONAL REQUIREMENTS.
6. THE BUILDING’S INTERNAL PLUMBING SHALL INCLUDE A BACK FLOW PREVENTER (CERTIFIED BY A.S.S.E. OR C.S.A.). INSTALLATION & TESTING SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (INCLUDING BUT NOT LIMITED TO SECTIONS 312.9.2 & 608.2 & 608.3) & LOUDOUN WATER’S CROSS CONNECTION / BACKFLOW PREVENTION MANUAL. SYSTEMS THAT REQUIRE AN R.P.Z. BACK FLOW PREVENTER SHALL HAVE, AT MINIMUM, AN EQUIVALENTLY SIZED DRAIN.

NOTES:

3”, 4” AND 6” OMNI C2, OMNI T2 OR MAGNETIC METER IN VAULT

METER SIZE

<table>
<thead>
<tr>
<th>METER SIZE</th>
<th>3”</th>
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<tr>
<td>LAY LENGTH</td>
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<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>9”</td>
<td>9”</td>
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<td>7”</td>
<td>8”</td>
</tr>
<tr>
<td>C</td>
<td>3”</td>
<td>4”</td>
<td>5”</td>
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</table>

ADD TWO GASKETS (3/8” EACH).

ADD FOUR (4) GASKETS AND TWO (2) GROUND RINGS (7” TOTAL)

WATERPROOF
120 V
20A DUPLEX RECEPTACLE
MIN 5’ FROM BOTTOM

FLOW
NOTES:

1. IF DISTANCES SPECIFIED ARE NOT AVAILABLE, PUT METER OUTSIDE IN A VAULT. ALL PIPES MUST CLEAR WALLS BY 1'. FLOOR DRAIN REQUIRED. WATER ROOM MUST HAVE A LOCKED EXTERIOR DOOR. LOUDOUN WATER SHALL BE PROVIDED A KEY.

2. ALL MATERIALS MUST CONFORM TO LOUDOUN WATER’S APPROVED MATERIALS LIST.

3. METER WITH INTEGRAL STRAINER SUPPLIED BY LOUDOUN WATER, FOR INSTALLATION BY CONTRACTOR. MAGNETIC METERS DO NOT USE STRainers.

4. DOWNSTREAM OF MAGNETIC METER ADD 3"X3", 4"X4" OR 6"X4" TEE WITH BLIND FLANGE (TAPPED 2") TO SERVE AS TEST PORT.

5. MOUNT METER’S TRANSMITTER ON EXTERIOR OF BUILDING, ORIENTED TOWARD READING TOWER. PROVIDE 1" PVC CONDUIT FROM METER TO TRANSMITTER. MAXIMUM RUN IS 300".

6. THE BUILDING’S INTERNAL PLUMBING SHALL INCLUDE A BACK FLOW PREVENTER (CERTIFIED BY A.S.S.E. OR C.S.A.). INSTALLATION & TESTING SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (INCLUDING BUT NOT LIMITED TO SECTIONS 312.9.2 & 608.2 & 608.3) & LOUDOUN WATER’S CROSS CONNECTION / BACKFLOW PREVENTION MANUAL. SYSTEMS THAT REQUIRE AN R.P.Z. BACK FLOW PREVENTER SHALL HAVE, AT MINIMUM, AN EQUIVALENTLY SIZED DRAIN.

AUG. 2018

3", 4" OR 6" OMNI C2, OMNI T2 OR MAGNETIC METER INDOORS
NOTES:

1. SERVICE TO BE MINIMUM 4" DIAMETER DUCTILE IRON PIPE, CLASS 52 OR BETTER.
2. USE APPROVED RESTRAINING GLAND AT EACH MECHANICAL JOINT. RESTRAIN ALL PIPE JOINTS
   WITH LOCKING GASKET OR OTHER APPROVED RESTRAINING SYSTEM.
3. THREADED RODS SHALL BE 3/4" DIAMETER, BITUMASTIC COATED. USE DOG-EAR, DUC LUGS,
   OR TWISTED EYE BOLTS FOR RODDING.
4. ALL MATERIALS MUST CONFORM TO APPLICABLE SECTIONS OF LOUDOUN WATER'S APPROVED
   MATERIALS LIST.
5. SERVICE INSTALLATION & HYDROSTATIC TESTING TO BE WITNESSED BY LOUDOUN WATER
   PERSONNEL (150 PSI FOR 2 HOURS WITH NO LEAKAGE).
6. PIPING SHALL NOT BE EXTENDED UNDER SLAB MORE THAN MAX DISTANCE SHOWN. IF PIPE
   CANNOT TURN UP INTO BUILDING WITHIN 5' OF WALL, AN OUTDOOR METER MUST BE
   INSTALLED.
NOTES:
1. EXTEND BEDDING MATERIAL TO BASE OF SAMPLING STATION.
2. IF STATION IS NOT ADJACENT TO STREET INSTALL MARKER POST PER FIGURE G–15 BESIDE STATION.
3. ALL MATERIALS MUST CONFORM TO APPLICABLE SECTIONS OF LOUDOUN WATER’S APPROVED MATERIALS LIST.
4. PROVIDE TRACER WIRE OF AWG#12 SOLID COPPER WITH 45-MIL POLYETHYLENE INSULATION. TERMINATE TRACER WIRE WITHIN SAMPLING STATION.

3/4" PEXa TUBING
USE APPROVED COMPRESSION CONNECTOR WITH PLASTIC INSERT. NO COUPLINGS PERMITTED.

3/4" M.P.T. COMPRESSION ELBOW

VALE BOX AND COVER PER FIGURE R–1

PURPLE SAMPLING STATION
SEE NOTE 3

VALVE BOX AND COVER PER FIGURE R–1

36" MINIMUM COVER

M.J. PLUG (TAPPED) WITH BRASS THREAD ADAPTER

ANCHORED 6" GATE VALVE

SWIVEL TEE OR ANCHOR COUPLING

CONCRETE THRUST BLOCK

CLASS A3 CONCRETE PAD

SIDEWALK
1. METER PIT MUST BE LOCATED IN A MINIMUM 8’ x 8’ UNPAVED AREA.

2. CONNECTION AT MAIN TO BE 6”Ø WITH RESTRAINED BRANCH VALVE. CONTINUE SERVICE IN 4” DIP OR 2” PEXa TUBING. RESTRAIN ALL IRON SERVICE LINE BETWEEN MAIN AND METER. USE APPROVED RESTRAINING GLAND AT EACH MECHANICAL JOINT. RESTRAIN ALL PIPE JOINTS WITH LOCKING GASKET OR APPROVED RESTRAINED JOINT PIPING SYSTEM.

3. TRANSITION 4” DIP SERVICE TO 2”Ø PEXa TUBING. THREAD ADAPTERS SHALL HAVE APPROVED COMPRESSION CONNECTION TO TUBING. USE STAINLESS STEEL INSERT IN TUBING.

4. CONTINUE BEDDING MATERIAL AS BACKFILL AROUND ENCLOSURE TO 1” BELOW GRADE.
1. CONNECTION AT MAIN TO BE 6’ MINIMUM WITH RESTRAINED BRANCH VALVE. RESTRAIN ALL SERVICE LINE BETWEEN MAIN AND BUILDING.
2. ALL PIPE IN VAULT TO BE FLANGED DUCTILE IRON. ALL VALVES TO BE RESILIENT WEDGE WITH HAND WHEEL OPERATOR.
3. DOWNSTREAM OF MAGNETIC METER ADD 3"X3", 4"X4" OR 6"X4" TEE WITH BLIND FLANGE (TAPPED 2") TO SERVE AS TEST PORT.
4. CEILING HEIGHT TO BE 6’-6” MINIMUM. PIPE CENTER LINE 2’-6” ABOVE FLOOR. MANWAY TO BE COVERED WITH 36"X36" HINGED FRAME AND COVER.
5. SUBMITTAL REQUIRED FOR VAULT. STRUCTURAL DESIGN TO BE CERTIFIED BY A VIRGINIA PROFESSIONAL ENGINEER. SEE G-20 THROUGH G-23 FOR ADDITIONAL REQUIREMENTS.
6. THE BUILDING’S INTERNAL PLUMBING SHALL INCLUDE A BACK FLOW PREVENTER (CERTIFIED BY A.S.S.E. OR C.S.A.). INSTALLATION & TESTING SHALL BE IN ACCORDANCE WITH THE INTERNATIONAL PLUMBING CODE (INCLUDING BUT NOT LIMITED TO SECTIONS 312.9.2 & 608.2 & 608.3) & LOUDOUN WATER’S CROSS CONNECTION / BACKFLOW PREVENTION MANUAL. SYSTEMS THAT REQUIRE AN R.P.Z. BACK FLOW PREVENTER SHALL HAVE, AT MINIMUM, AN EQUIVALENTLY SIZED DRAIN.

NOTES:

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</thead>
<tbody>
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<tr>
<td>4”</td>
<td>13.4”</td>
<td>9’0” 7’0” 4’0” 3”</td>
</tr>
<tr>
<td>6”</td>
<td>14.6”</td>
<td>12’0” 8’0” 5’0” 4”</td>
</tr>
</tbody>
</table>

WATERPROOF 120 V 20A DUPLEX RECEPTACLE MIN 5’ FROM BOTTOM

ADD FOUR (4) GASKETS AND TWO (2) GROUND RINGS (½” EACH)

FLANGE ADAPTER OR FLANGE x MJ COUPLING
PIPE SUPPORTS AS NEEDED TEST PORT
FLANGE x MJ COUPLING SEE NOTE 3
VALVE

NOTES:

AUG. 2018
3”, 4” OR 6” MAGNETIC REUSE METER IN VAULT

R-13
NOTES:
1. UNDERGROUND PIPING TO BE PAINTED PURPLE OR ENCASED IN PURPLE POLYETHYLENE. PAINT ALL INDOOR PIPING WITH APPROVED PURPLE COATING AND LABEL "CAUTION: RECLAIMED WATER. DO NOT DRINK."
2. SERVICE TO BE MINIMUM 4" DIAMETER DUCTILE IRON PIPE, CLASS 52 OR BETTER.
3. USE APPROVED RESTRAINING GAND AT EACH MECHANICAL JOINT. RESTRAIN ALL PIPE JOINTS WITH LOCKING GASKET OR OTHER APPROVED RESTRAINING SYSTEM.
4. THREADED RODS SHALL BE 3/4" DIAMETER, BITUMASTIC COATED. USE DOG–EAR, DUC LUGS, OR TWISTED EYE BOLTS FOR RODDING.
5. ALL MATERIALS MUST CONFORM TO APPLICABLE SECTIONS OF LOUDOUN WATER’S APPROVED MATERIALS LIST.
6. SERVICE INSTALLATION & HYDROSTATIC TESTING TO BE WITNESSED BY LOUDOUN WATER PERSONNEL (150 PSI FOR 2 HOURS WITH NO LEAKAGE).
7. PIPING SHALL NOT BE EXTENDED UNDER SLAB MORE THAN MAX DISTANCE SHOWN. IF PIPE CANNOT TURN UP INTO BUILDING WITHIN 5' OF WALL, AN OUTDOOR METER MUST BE INSTALLED.

AUG. 2018
REUSE SERVICE ENTRANCE WITH INDOOR METER
R-14
1. If distances specified are not available, put meter outside in a vault. All pipes must clear walls by 1'. Floor drain required. Water room must have a locked exterior door. Loudoun water shall be provided a key.

2. All materials must conform to Loudoun Water's approved materials list.

3. Meter supplied by Loudoun Water, for installation by contractor.

4. Downstream of magnetic meter add 3"x3", 4"x4" or 6"x6" tee with blind flange (tapped 2") to serve as test port.

5. Mount meter's transmitter on exterior of building, oriented toward reading tower. Provide 1" PVC conduit from meter to transmitter. Maximum run is 300'.

6. The building's internal plumbing shall include a back flow preventer (certified by A.S.S.E. or C.S.A.). Installation & testing shall be in accordance with the international plumbing code (including but not limited to sections 312.9.2 & 608.2 & 608.3) & Loudoun Water's cross connection / backflow prevention manual. Systems that require an R.P.Z. Back flow preventer shall have, at minimum, an equivalently sized drain.
NOTES:
1. CONFINED SPACE: ATMOSPHERE MUST BE VENTED AND TESTED PRIOR TO ENTRY.
2. MAXIMUM ADJUSTMENT BY GRADE RINGS IS 12" IN PAVEMENT AND 6" ELSEWHERE.
3. MANHOLE SHALL BE REINFORCED TO MEET ASTM 478/AASHTO M199. JOINTS TO BE GASKETED IN ACCORDANCE WITH ASTM C443. APPLY PROPER LUBRICANT FOR ASSEMBLY.
4. ALL COMPONENTS TO BE IN ACCORDANCE WITH LOUDOUN WATER'S APPROVED MATERIALS LIST.
5. IF OUTSIDE PAVEMENT BOLT FRAME TO CONE.
NOTES:
1. MATERIALS SUBMITTAL FOR EACH DEVICE MUST BE APPROVED BY LOUDOUN WATER; PRIOR TO FABRICATION AND INSTALLATION.
2. EACH DEVICE MUST BE SIZED IN ACCORDANCE WITH CHAPTER 5 OF LOUDOUN WATER’S ENGINEERING MANUAL AND DESIGNED TO MEET THE REQUIREMENTS CITED IN THE APPROVED MATERIALS LIST.
3. INTERCEPTORS MAY BE MADE OF CONCRETE OR FIBERGLASS REINFORCED PLASTIC.
4. FOR DEVICES WITH MORE THAN 4’ OF COVER, PROVIDE MINIMUM 3" ACCESS SHAFTS, OF WATERTIGHT CONSTRUCTION, WITH INTERLOCKING JOINTS.