NOTES:
1. ALL WATER METERS SHALL REGISTER IN GALLONS AND BE SET LEVEL - METERS PROVIDED BY PWCSA.
2. 36" OF COVER SHALL BE REQUIRED OVER SERVICES FROM DISTRIBUTION MAIN TO METER BOX.
3. METER BOX SHALL BE ONE PIECE CONSTRUCTION OF CONCRETE, PVC, OR RIGID FIBERGLASS.
   (NOT ORANGEBURG)
4. METER YOKE SHALL INCLUDE ONE ¾" ANGLE VALVE AND ONE BACKFLOW PREVENTER.
5. ALL FITTINGS SHALL BE FLARED. (SOLDERED FITTINGS WILL NOT BE PERMITTED)
6. SERVICE LINE LEAVING METER BOX SHALL BE STUBBED OUT AT LEAST 5' WITH TYPE "K" COPPER OR MUNICIPEX PIPE.
7. METER SET BEHIND SIDEWALK — NOT IN DRIVEWAY, WALKWAYS, ETC.
8. THE SERVICE LINE BETWEEN THE MAIN AND THE METER WILL BE ONE CONTINUOUS PIECE OF PIPE. (NO JOINTS WILL BE PERMITTED)
9. ALL YARD IRRIGATION CONNECTIONS WILL BE MADE AT THE END OF THE 5-FOOT STUB ON THE HOUSE SIDE. (NO CONNECTIONS WILL BE PERMITTED INSIDE THE METER BOX)
10. FORD 500P SERIES (OR EQUIVALENT) YOKE AND 1" DIAMETER GALVANIZED STEEL TUBING TO BE USED WITH MUNICIPEX SERVICES.
11. FORD FB600-X-NL CORPORATION STOP TO BE USED WITH COPPER SERVICE.
12. FORD FB1000-XX-NL CORPORATION STOP TO BE USED WITH MUNICIPEX SERVICES.

5/8" X 3/4" RESIDENTIAL METER
N.T.S. W-1
REV-2018
NOTES:

1. METER PROVIDED BY PWCSA.
2. ONE PIECE BOX 24"W x 30"H (1" METER) MUST BE USED.
3. METER BOX MATERIAL: PVC, or CONCRETE DEPENDING ON APPLICATION.
4. THE SERVICE LINE BETWEEN THE MAIN AND THE METER WILL BE ONE CONTINUOUS PIECE OF PIPE. (NO JOINTS PERMITTED)
5. FORD 500 SERIES (OR EQUIVALENT) YOKE AND 1" GALVANIZED STEEL TUBING TO BE USED WITH MUNICIPEX PIPE.

* PWCSA MUST GIVE SPECIFIC PERMISSION TO ALLOW USE OF THIS DETAIL WITHIN A PROJECT. IF ALLOWED, THIS CONFIGURATION WILL BE USED FOR ALL SERVICES USED IN THE PROJECT.
5/8" x 3/4" to 1" ADAPTER (2 EACH)
A.Y. McDonald #10J24 or APPROVED SUBSTITUTE

20" WATER METER BOX COVER, SET UP FOR SCHLUMBERGER PRO-READ SYSTEM.
(FORD OR APPROVED SUBSTITUTE)

1" to 2" ADAPTER (2 each)
A.Y. McDonald #10J47 or APPROVED SUBSTITUTE

FINISH GRADE

56" MIN.

2" COPPER METER SETTER
MUeller B-2423

PACK JOINT W/ SET-LOCKING NUT. MUeller P.15428 OR APPRV'D EQUAL

5.0' MIN.

FLOW

4" DIP FROM MAIN TO METER SETTER

STONE DUST OR SUITABLE SOIL INSIDE OF CROCK, NOT TO EXCEED TOP OF BRICK (NO GRAVEL)

SOLID BRICK AT QUARTER POINTS

SOLID CONC. BLOCK

BYPASS CLOSED & CABLE TIED

NOTES:
1. METER TO BE OBTAINED FROM THE SERVICE AUTHORITY
2. 36"W x 30"H ONE PIECE BOX MUST BE USED.
3. ALL ADAPTERS AND GASKETS ARE THE CONTRACTOR'S/DEVELOPER'S RESPONSIBILITY.
4. METER BOX MATERIAL: CONCRETE, PVC or RIGID FIBERGLASS.
5. COPPER METER SETTER (MUeller B-2423 or APPROVED SUBSTITUTE) TO BE USED.
6. NO FIELD ADJUSTMENTS OF METER SETTER IS PERMITTED.
7. ONLY 2" METER SETTER TO BE INSTALLED.

5/8" x 3/4" METER IN 2" COPPER SETTER
for COMMERCIAL USE (ONLY)
N.T.S.

W-3
REV-2018
1" TO 2" ADAPTER (2 EACH) A.Y. MCDONALD #10147 or APPROVED SUBSTITUTE PROVIDED BY CONTRACTOR

2" COPPER METER SETTER MUELLER B-2423

PACK JOINT W/ SET-LOCKING MUELLER P.15428 OR APPROVED EQUAL

56" MIN.

FINISH GRADE

FLOW

4" DIP FROM MAIN TO METER SETTER

STONE DUST OR SUITABLE SOIL INSIDE OF CROCK, NOT TO EXCEED TOP OF BRICK (NO GRAVEL)

SOLID BRICK AT QUARTER POINTS

SOLID CONCRETE BLOCK

BYPASS CLOSED & CABLE TIED

NOTES:

1. METER TO BE OBTAINED FROM THE SERVICE AUTHORITY.
2. 36"W x 30"H ONE PIECE BOX MUST BE USED.
3. ALL ADAPTERS AND GASKETS ARE THE CONTRACTOR'S RESPONSIBILITY.
4. METER BOX MATERIAL: CONCRETE, PVC or RIGID FRP.
5. COPPER METER SETTER TO BE MUELLER B-2423 OR APPROVED EQUAL.
6. NO FIELD ADJUSTMENT OF METER SETTER IS PERMITTED.
7. ONLY 2" METER SETTER IS TO BE INSTALLED.
20" WATER METER BOX COVER (A.Y. Macdonald #74ML20RG or APPROVED SUBSTITUTE) SET-UP FOR SCHLUMBERGER PRO-READ SYSTEM.

1" TO 2" ADAPTER (2 EACH) A.Y. Macdonald #10147 or APPROVED SUBSTITUTE PROVIDED BY CONTRACTOR

FINISH GRADE

2" COPPER METER SETTER MUELLER B-2423

PACK JOINT W/ SET-LOCKING MUELLER P.15428 OR APPRV'D EQUAL

56" MIN.

18"

18"

5.0' MIN.

FLOW

4" DIP FROM MAIN TO METER SETTER

STONE DUST OR SUITABLE SOIL INSIDE OF CROCK, NOT TO EXCEED TOP OF BRICK (NO GRAVEL)

SOLID BRICK AT QUARTER POINTS

SOLID CONCRETE BLOCK

BYPASS CLOSED & CABLE TIED

NOTES:

1. METER TO BE OBTAINED FROM THE SERVICE AUTHORITY.
2. 36"W x 30"H ONE PIECE BOX MUST BE USED.
3. ALL ADAPTERS AND GASKETS ARE THE CONTRACTOR'S RESPONSIBILITY.
4. METER BOX MATERIAL: CONCRETE, PVC or RIGID FRP.
5. COPPER METER SETTER TO BE MUELLER B-2423 OR APPROVED EQUAL.
6. NO FIELD ADJUSTMENT OF METER SETTER IS PERMITTED.
7. ONLY 2" METER SETTER IS TO BE INSTALLED.

1" METER IN 2" COPPER SETTER
for COMMERCIAL USE (ONLY)
N.T.S.
W-5
REV-2018
20" WATER METER BOX COVER (A.Y. McDONALD 74ML20GP or APPROVED SUBSTITUTE) SET-UP FOR SCHLUMBERGER PRO-READ SYSTEM.

36" MIN.

2" COPPER METER SETTER
PACK JOINT W/ SET-LOCKING NUT. MUELLER #15428 or APPROVED EQUAL

4" DIP FROM MAIN TO METER SETTER
STONE DUST OR SUITABLE SOIL INSIDE OF CROCK, NOT TO EXCEED TOP OF BRICK (NO GRAVEL)

NOTES:

1. METER TO BE OBTAINED FROM THE SERVICE AUTHORITY.
2. 36"W x 30"H ONE PIECE BOX MUST BE USED.
3. INSTALLER MAY SUBSTITUTE TYPE "K" SOFT COPPER FOR BRASS SHOWN, PROVIDED APPROPRIATE FITTINGS AND VALVES ARE USED.
4. METER BOX MATERIAL: CONCRETE, PVC or RIGID FRP.
5. COPPER METER SETTER TO BE MUELLER B-2423 OR APPROVED EQUAL.
6. NO FIELD ADJUSTMENT OF METER SETTER IS PERMITTED.
7. ONLY 2" METER SETTER IS TO BE INSTALLED.

WATER DISTRIBUTION SYSTEM
1½" METER IN 2" COPPER SETTER
N.T.S.

W-6
REV-2018
20" WATER METER BOX COVER (A.Y. McDonald #74ML20RG or APPROVED SUBSTITUTE) SET-UP FOR SCHLUMBERGER PRO-READ SYSTEM.

FINISH GRADE

2" COPPER METER SETTER MUELLER B-2423

36" MIN.

PACK JOINT W/ LOCKING NUT

2.0'

2" BRASS/TYPE "K" COPPER/PEX A PIPE (TYP.)

PLUG (OR CAP) DRILLED & TAPPED

4" D.I.P.

BYPASS CLOSED & CABLE TIED

SOLID BRICK AT QUARTER POINTS

SOLID CONCRETE CLOCK

CAP (OR PLUG) DRILLED & TAPPED

STONE DUST OR SUITABLE SOIL INSIDE OF CROCK, NOT TO EXCEED TOP OF BRICK (NO GRAVEL)

NOTES:

1. METER TO BE OBTAINED FROM THE SERVICE AUTHORITY.
2. 36"W X 30"H ONE PIECE BOX MUST BE USED.
3. INSTALLER MAY SUBSTITUTE TYPE "K" SOFT COPPER FOR BRASS SHOWN, PROVIDED APPROPRIATE FITTINGS AND VALVES ARE USED.
4. METER BOX MATERIAL: CONCRETE, PVC or RIGID FRP.
5. COPPER METER SETTER TO BE MUELLER B-2423 OR APPROVED EQUAL.
6. NO FIELD ADJUSTMENT OF METER SETTER OR METER BOX IS PERMITTED. FACTORY CUT LENGTH TO 2" METER.
7. ONLY 2" METER SETTER IS TO BE INSTALLED.

WATER DISTRIBUTION SYSTEM
1½" & 2" METER WITH D.I.P. SERVICE

N.T.S.

W-7
REV-2018
NOTE:
1. PIPING UP TO AND LEADING OUT OF VAULT WILL BE RESTRAINED USING MEGA-LUGS SERIES 1100 OR APPROVED SUBSTITUTE. CALCULATIONS FOR RESTRAINT BASED ON DEAD END LINE.
2. SHOP DRAWINGS FOR VAULT AND PIPING MATERIALS WILL BE SUBMITTED TO THE PWCSA FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
3. 4" x 3" REDUCERS REQUIRED BETWEEN VALVES FOR 3" METER APPLICATION.
4. METER WILL BE PROVIDED BY PWCSA.
5. FLOOR WILL BE DESIGNED TO DRAIN TO SUMP AREA, PROVIDE GRAVITY DRAIN TO DAYLIGHT.
6. THE STRUCTURE SHALL NOT BE INSTALLED WHERE SUBJECT TO VEHICULAR OR PEDESTRIAN TRAFFIC.
7. ALL METERS TO HAVE TEST PORT SPOOL PIECE AFTER METER.
8. THE EXTERIOR OF ALL METER VAULTS SHALL HAVE A BITUMASTIC COATING.

3" or 4" MASTER METER VAULT
N.T.S. W-8 REV-2018
NOTES:

1. PIPING UP TO AND LEADING OUT OF VAULT WILL BE RESTRAINED USING MEGA–LUGS SERIES 1100 or APPROVED SUBSTITUTE. CALCULATIONS FOR RESTRAINT BASED ON DEAD END LINE.

2. SHOP DRAWINGS FOR VAULT AND PIPING MATERIALS WILL BE SUBMITTED TO THE PWCSA FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

3. METER WILL BE PROVIDED BY PWCSA.

4. FLOOR WILL BE DESIGNED TO DRAIN TO SUMP AREA. PROVIDE GRAVITY DRAIN TO DAYLIGHT.

5. THE STRUCTURE SHALL NOT BE INSTALLED WHERE SUBJECT TO VEHICULAR OR PEDESTRIAN TRAFFIC.

6. APPROVED FLEXIBLE JOINT REQUIRED ON ALL PIPE CONNECTIONS IN STRUCTURE. INSTALLATION SHALL BE IN ACCORDANCE WITH MANUFACTURE’S RECOMMENDATIONS.

6”, 8”, OR 10” MAIN LINE
METER VAULT
N.T.S.

W–9
REV–2018
1. THE SERVICE LINE BETWEEN THE MAIN AND THE METER WILL BE ONE CONTINUOUS PIECE OF PIPE. (NO JOINTS WILL BE PERMITTED)
2. BACK TO BACK TAPS ON A WATER MAIN ARE NOT ALLOWED.
3. TAPS SHALL BE SPACED A MINIMUM OF 24 INCHES.
4. IF USE OF C-900 IS PERMITTED BY PWCSA, INJECTION MOLDED TEES SHALL BE USED FOR DOMESTIC TAPS ON C-900 PIPE.
5. FORD FB600-X-NL CORPORATION STOP TO BE USED WITH COPPER SERVICES.
6. FORD FB1000-XX-NL CORPORATION STOP TO BE USED WITH MUNICIPEx SERVICES.
POUR 2'x2' CONCRETE PAD AROUND ALL VALVE BOXES IN GRASS AREAS. PAD TO BE 4" THICK.

EXISTING WATER MAIN

4" GATE VALVE W/ RESTRAINT

4" D.I.P. (TO METER)

2' DIP NIPPLE

X" x 4" TEE (MECHANICAL JOINT)

NOTE:
1. ALL JOINTS FROM THE MAIN TO THE METER WILL BE RESTRAINED USING AN APPROVED RESTRAINING GLAND.
NOTES:

1. ALL 2" PIPE TO BE WITH I.P. THREAD.
2. PROVIDE RESTRAINT IN ACCORDANCE WITH DEAD END LINE, ACCORDING TO MAIN LINE SIZE.
PERMANENT BLOW-OFF ASSEMBLY

1. ALL 2" PIPE TO BE WITH I.P. THREAD.
2. PROVIDE RESTRAINT IN ACCORDANCE WITH DEAD END LINE, ACCORDING TO MAIN LINE SIZE.
POUR 2'x2' CONCRETE PAD AROUND ALL VALVE BOXES IN GRASS AREAS. PAD TO BE 4" THICK.

SET TO FINISHED GRADE

SLIDE STYLE ADJUSTABLE VALVE BOX AND LID. CAPITOL FOUNDRY #564A or APPROVED SUBSTITUTE.

MIN. 42" COVER

2" TO 12" RESILIENT SEAT WEDGE VALVE MUELLER #A-2360
16" thru 48" BUTTERFLY VALVE MUELLER LINE SEAL III, CLASS 250B or APPROVED SUBSTITUTE

RESTRANNT REQUIRED. EBAA MEGA-LUG SERIES 1100 or APPROVED SUBSTITUTE

EPOXY COATED INSIDE & OUT

NOTES:

1. VALVES THAT ARE NORMALLY CLOSED, PROVIDE ACCESS INSERT AND PAINT TOP OF VALVE BOX RED.
2. VALVE AND PIPE SHALL HAVE SAME NOMINAL DIAMETER.
3. VALVE EXTENSIONS TO BE ONE ROD ONLY, USE OF MULTIPLE EXTENSIONS IS PROHIBITED.

ONLY SERVICE AUTHORITY TO ACCESS AND OPERATE ANY OPERATIONAL VALVE
THE OPEN END OF THE BLOWOFF SHALL BE EXTENDED AT LEAST 1-FOOT ABOVE FINISHED GRADE AND HAVE A PROTECTIVE SCREEN. SEE THE VIRGINIA WATERWORKS REGULATIONS SECTION 12 VAC 5-590-1160 FOR COMPLETE REQUIREMENTS.

STD. MANHOLE FRAME & COVER MARKED "WATER" (SEE DETAIL S14.07.01). USE EASEMENT TYPE (BOLT DOWN FRAME & COVER)

GRADE

STD. MANHOLE WITH FLAT TOP OR ECCENTRIC TOP. TOP SHALL CONFORM TO STANDARD MANHOLE DETAIL.

MANHOLE STEPS CAST IN PLACE

5' DIAMETER DOGHOUSE MANHOLE

AY MCDONALD 2030T 2" BALL VALVE WITH HANDLE OR APPROVED EQUIVALENT.

2" AIR RELEASE VALVE

2" DIF

CORPORATION STOP

4-4"x8"x16" SOLID CINDER BLOCKS EQUALLY SPACED AROUND RISER

DUCTILE IRON SERVICE SADDLE WITH STAINLESS STEEL DOUBLE STRAPS & BOLTS.

NOTES:
1. AIR RELEASE VALVE SHALL BE SIMPLEX TYPE "AV" "CRISPIN UNIVERSAL" OR APPROVED SUBSTITUTE. VALVE SHALL HAVE 2" DIAMETER SCREWED CONNECTION AND SHALL FUNCTION AT WORKING PRESSURE UP TO 150 PSI.
2. PIPE TO BE GROUTED IN AT DOG HOUSE OPENINGS.
3. DUCTILE IRON SERVICE SADDLE WITH STAINLESS STEEL DOUBLE STRAPS AND BOLTS SHALL BE "MUELLER DR2S" OR APPROVED SUBSTITUTE.
4. 2" PIPE SHALL BE THREADED DUCTILE IRON MADE BY HARCO OR APPROVED SUBSTITUTE.
5. MANHOLE STEPS TO BE AMERICAN STEP COMPANY ML-10–TDS–SSR OR APPROVED EQUIVALENT.

* PWCSA MUST GIVE SPECIFIC PERMISSION AND OR APPROVAL TO USE THIS OR ANY OTHER DESIGN
NOTES:
1. MAKE ANY JOINT DEFLECTION NECESSARY BEFORE TORQUING THE T-HEAD BOLTS.
2. TIGHTEN T-HEAD BOLTS, BOTTOM FIRST, THEN TOP, SIDES AND REMAINDER.
3. REPEAT NOTE #2 UNTIL ALL T-BOLTS ARE PROPERLY TORQUED.
4. TIGHTEN TWIST-OFF NUTS SO THAT ALL WEDGES FIRMLY CONTACT PIPE.
5. TIGHTEN TWIST-OFF NUTS IN ALTERNATING MANNER, SHEARING OFF NUTS.
6. MEGALUG MAY BE RESET OR REUSED BY ASSEMBLY AS DESCRIBED ABOVE AND TORQUING WEDGE BOLTS TO 90 FT. LBS.
<table>
<thead>
<tr>
<th>Soil Properties</th>
<th>Size</th>
<th>Concrete Block Dimensions at 150 PSI Pressure</th>
<th>Add to Dimension D for Each Add 50 PSI Pressure Up to 300 PSI</th>
<th>Adjustment for Conc. Area for Different Height HC to Be Measured from Grade to Q of Pipe</th>
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<tr>
<td>SOIL</td>
<td>SIZE</td>
<td>D</td>
<td>E</td>
<td>F</td>
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<td>CLAY OR BETTER</td>
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**Notes:**
- Dimension D & E shall be adjusted for required area.
- Dimension F & G shall remain same.
- Dimension D shall be adjusted for required pressure in excess of 150 PSI before making adjustment for height.

**Buttresses for 22½° Horizontal Bend**

- W-18
- Rev-2018
<table>
<thead>
<tr>
<th>SOIL PROPERTIES</th>
<th>SIZE</th>
<th>Concrete Block Dimensions At 150 PSI Pressure</th>
<th>Add To Dimension D For Each Add 50 PSI Pressure Up To 300 PSI</th>
<th>Adjustment For Conc. Area For Different Height HC To Be Measured From Grade to G Of Pipe</th>
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<td>D</td>
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<td><strong>CS = 1000 PSF</strong>&lt;br&gt; <strong>ϕ = 15°</strong>&lt;br&gt;SOFT SILTY CLAY OR BETTER</td>
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<td><strong>CS = 0°</strong>&lt;br&gt; <strong>ϕ = 15°</strong>&lt;br&gt;LOOSE SILTY SAND</td>
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DIMENSION D & E SHALL BE ADJUSTED FOR REQUIRED AREA.<br> DIMENSION F & G SHALL REMAIN SAME.<br> DIMENSION D SHALL BE ADJUSTED FOR REQUIRED PRESSURE IN EXCESS OF 150 PSI BEFORE MAKING ADJUSTMENT FOR HEIGHT.<br> CONCRETE THRUST BLOCKING TO BE USED ONLY AT THE DISCRETION OF THE SERVICE AUTHORITY FIELD INSPECTOR.
### BUTTRESSES FOR 90° HORIZONTAL BEND

**N.T.S.**

REV-2018

<table>
<thead>
<tr>
<th>SIZE</th>
<th>Concrete Block Dimensions At 150 PSI Pressure</th>
<th>Add to Dimension &quot;D&quot; For Each Addition Up To 300 PSI</th>
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<td>D</td>
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DIMENSION D & E SHALL BE ADJUSTED FOR REQUIRED AREA.
DIMENSION F & G SHALL REMAIN SAME.
DIMENSION D SHALL BE ADJUSTED FOR REQUIRED PRESSURE IN EXCESS OF 150 PSI BEFORE MAKING ADJUSTMENT FOR HEIGHT.
SPECIAL DESIGN REQUIRED FOR LINES 24" OR GREATER IN DIAMETER.
CONCRETE THRUST BLOCKING TO BE USED ONLY AT THE DISCRETION OF THE SERVICE AUTHORITY FIELD INSPECTOR.
BUTTRESSES FOR TEES, PLUGS, & CAPS

N.T.S.

W–21
REV–2018

NOTES:
1. $F_c = 3000$ PSI AT 28 DAYS.
2. THE BUTTRESS DIMENSIONS ARE BASED ON THE WATER PRESSURE OF 150 PSI WHERE THE PRESSURE IS DIFFERENT, THE AREA OF BLOCK SHALL BE PROPORTIONED TO REQUIRED PRESSURE.
3. CARRY ALL BEARING SURFACES TO UNDISTURBED GROUND OR FIRM SUBGRADE.
4. CONCRETE THRUST BLOCKING TO BE USED ONLY AT THE DISCRETION OF THE SERVICE AUTHORITY FIELD INSPECTOR.
NOTES:
1. $F_c = 3000$ PSI AT 28 DAYS.
2. CARRY ALL BEARING SURFACES TO UNDISTURBED EARTH OR FIRM SUBGRADE.
3. THE BUTTRESS DIMENSIONS ARE BASED ON THE WATER PRESSURE OF 150 PSI AND SOIL BEARING PRESSURE OF 2500 PSI. WHERE THE WATER PRESSURE AND SOIL BEARING PRESSURE ARE DIFFERENT, THE AREA OF CONCRETE BLOCK (I.E. L & M) SHALL BE PROPORTIONED ACCORDINGLY. AREA ADJUSTMENT FOR REQUIRED PRESSURE SHALL BE MADE FIRST BEFORE MAKING ADJUSTMENT FOR SOIL BEARING PRESSURE.
4. CONCRETE THRUST BLOCKING TO BE USED ONLY AT THE DISCRETION OF THE SERVICE AUTHORITY FIELD INSPECTOR.
DOUBLE ACTING STEEL WEDGES

EMBED REINFORCING BARS MINIMUM 36” DIAMETER INCLUDING THE HOOKS. PAINT EXPOSED BARS WITH TWO COATS OF BITUMINOUS PAINT.

12” MIN CLEARANCE

REINFORCING BARS WHERE 4 REINFORCING BARS ARE USED, PLACE 2 SYMMETRICALLY PLACED REINFORCED BARS AT BENDS AND OTHER 2 BARS AS SHOWN IN DETAIL

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<tr>
<th>BEND</th>
<th>SIZE</th>
<th>3&quot;</th>
<th>4&quot;</th>
<th>6&quot;</th>
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| 11-1/4 | L | 1'-6" | 1'-6" | 2'-0" | 2'-0" | 2'-3" | 2'-6" | 3'-3" | 4'-0" | 4'-6" | 5'-0"
| W | 1'-6" | 1'-6" | 2'-0" | 2'-0" | 2'-3" | 2'-6" | 3'-3" | 4'-0" | 4'-6" | 5'-0" |
| D | 1'-6" | 1'-6" | 2'-0" | 2'-0" | 2'-3" | 2'-6" | 3'-3" | 4'-0" | 4'-6" | 5'-0" |
| REINFOR. BARS NO & SIZE | 3 #5 | 3 #5 | 3 #5 | 3 #6 | 3 #6 | 3 #6 | 3 #6 | 3 #6 | 3 #6 | 3 #6 |
| 22-1/2 | L | 1'-6" | 2'-0" | 2'-6" | 2'-9" | 3'-6" | 4'-0" | 4'-6" | 5'-6" | 6'-0" | 7'-0"
| W | 1'-6" | 2'-0" | 2'-6" | 2'-9" | 3'-6" | 4'-0" | 4'-6" | 5'-6" | 6'-0" | 7'-0" |
| D | 1'-6" | 1'-6" | 2'-0" | 2'-0" | 2'-3" | 2'-6" | 3'-0" | 3'-6" | 4'-0" | 4'-6" |
| REINFOR. BARS NO & SIZE | 3 #5 | 3 #5 | 3 #5 | 3 #6 | 3 #6 | 4 #6 | 4 #6 | 4 #6 | 4 #6 | 4 #6 |
| 45° | L | 2'-0" | 2'-6" | 3'-0" | 3'-6" | 4'-0" | 4'-6" | 6'-0" | 7'-0" | 8'-6" | 10'-0"
| W | 2'-0" | 2'-6" | 3'-0" | 3'-6" | 4'-0" | 4'-6" | 6'-0" | 7'-0" | 8'-6" | 10'-0"
| D | 1'-6" | 2'-0" | 2'-0" | 2'-6" | 2'-9" | 3'-0" | 3'-6" | 4'-0" | 4'-6" | 5'-0" |
| REINFOR. BARS NO & SIZE | 3 #5 | 3 #5 | 3 #5 | 3 #6 | 4 #6 | 4 #6 | 4 #6 | 4 #6 | 4 #6 | 4 #6 |

NOTES:
1. Fc=3000 PSI AT 28 DAYS.
2. CARRY ALL BEARING SURFACES TO UNDISTURBED EARTH OR FIRM SUBGRADE.
3. THE ANCHORAGE DIMENSIONS ARE BASED ON THE WATER PRESSURE OF 150 PSI.
   WHERE THE PRESSURE IS DIFFERENT, THE VOLUME OF THE CONCRETE (I.E. L x W x D)
   SHALL BE PROPORTIONED TO REQUIRED PRESSURE.
4. CONCRETE THRUST BLOCKING TO BE USED ONLY AT THE DISCRETION OF THE SERVICE AUTHORITY FIELD INSPECTOR.
NOTES:
1. BEARING AREA IS BASED ON 200 PSI TEST PRESSURE OF 2,000 LBS. PER SQUARE FOOT. INCREASE BLOCK DIMENSIONS AS REQUIRED IN SOILS WITH LOWER BEARING VALUES.
2. EXTEND DEAD END ANCHOR AS NEEDED TO UNDISTURBED SOIL AS INDICATED ON CHART.
3. ADDITIONAL REINFORCEMENT SHALL BE AS SPECIFIED BY THE DESIGN ENGINEER AND APPROVED BY THE SERVICE AUTHORITY.
4. ALL FORM BOARDS SHALL BE REMOVED PRIOR TO BACK FILL.
5. ANCHOR SCHEDULE TO BE COMPLETED BY THE DESIGN ENGINEER.
6. NO ALLOWANCE SHALL BE MADE FOR FRICTION BETWEEN THE PIPE WALL AND THE THRUST COLLAR.

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DEAD END ANCHOR SCHEDULE

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PLAN VIEW

RESILIENT SEAT WEDGE VALVE

ELEVATION

MEGA-LUG FLANGE or APPROVED SUBSTITUTE.

M.J. PLUG

MEGA-LUG FLANGE or APPROVED SUBSTITUTE.

2'-0" MIN.  4'-0" MIN.  5'  9'

DEAD END ANCHOR DETAIL

N.T.S.  W-24  REV-2018
1. Fire hydrant to be set plumb.
2. Finished grade not to exceed 0 to 3" below the bury line on hydrant barrel.
3. Fire hydrant leads 50' or greater shall have an additional valve within 6' of hydrant.
4. Hydrant barrels shall be factory painted yellow.

Pour 2'x2' concrete pad around all valve boxes in grass areas. Pad to be 4" thick.

Valve in grass/open area typical.

Slide style adjustable valve box and lid. Capitol Foundry #664A or approved substitute.

Restrain all joints with Series 1100 Mega-Lug or approved substitute.

6" resilient seat wedge valve Mueller #A-2360 or approved substitute.

Ductile iron tee

8"x8" solid concrete block

Back of excavation to flange

Mueller Centurion Kennedy Model K-81-A & D or approved substitute

Wrap gravel area around opening with filter fabric

Concrete not to block weep holes

Hydrant drain

Elevation

Bury line

0" - 3" max

TYPICAL
FIRE HYDRANT
N.T.S.

W-25
REV-2018
NOTE:
HYDRANT SHALL CONFORM IN ALL RESPECTS TO TYPICAL FIRE HYDRANT DETAIL.
INTERSECTION OR DRIVEWAY APRON

RADIUS

SIDEWALK

10’ (MIN.)

FIRE HYDRANT
4" # STEEL POSTS, PAINTED YELLOW
7' LONG, FILLED WITH CONCRETE
SET IN 3' OF CONCRETE

THIS AREA MAY BE DESIGNATED FIRE LANE
BY THE FIRE MARSHAL
Poured 2'x2' concrete pad around all valve boxes in grass areas. Pad to be 4" thick.

Valve in grass/open area typical.

Tapping sleeve shall be:
- Mueller #H-615 Mechanical Joint Tapping Sleeve or Approved Substitute.
- Mueller #T-2360 Resilient Seat Wedge Tapping Valve or Approved Substitute.

#57 stone base

8"x8" solid concrete block set on or against undisturbed soil.

Slide style adjustable valve box and lid. Capitol Foundry #664A or Approved Substitute.

Ductile iron pipe

NOTES:
1. Tapping sleeve and valve shall be tested for 10 min. at 200 PSI for sizes 4" thru 12" prior to tapping main. Taps larger than 12" will be tested for 10 min. at 150 PSI.
2. 1 piece valve extension required when valve depth from top of operating nut to finished grade is 5' or greater.

TAPPING SLEEVE & VALVE DETAIL
N.T.S.

W-30
REV-2018
STD. CORPORATION STOP
FORD F-600 (WITH FLARE COPPER
OUTLET) or TEE WITH VALVE

REFERENCE PWCSA
METER DETAIL FOR
REQUIRED METER AND
LINE SIZE.

SUB-METER PROVIDED
BY PWCSA

FORD Y-502 METER YOKE
WITH FORD #AV92-323W
ANGLE VALVE or (APPROVED
SUBSTITUTE) ON BOTH
SIDES OF YOKE.

60° MAX. DISTANCE

24" MIN. DIST.

INSPECTION OF ALL FITTINGS PAST THE
MAIN METER BOX IS THE RESPONSIBILITY
OF PWPC PLUMBING DEPARTMENT.

ALL FITTINGS ON BUILDING
SIDE OF MAIN METER WILL
CONFORM TO THE
INTERNATIONAL/ BOCA
PLUMBING CODES

NOTES:
1. SUB-METERS FOR NEW CONSTRUCTION WILL BE LOCATED OUTSIDE WITHIN 5-FEET OF THE MAIN METER, NO
   EXCEPTION.
2. METERS MUST BE SET IN GRASS AREA. METERS ARE NOT PERMITTED TO BE PLACED IN PEDESTRIAN TRAVEL WAY.
3. METERS WILL BE PROVIDED BY PWCSA AND WILL REGISTER IN GALLONS.
4. METERS MUST BE SET LEVEL.
5. ONLY ONE SUB-METER IS PERMITTED PER ACCOUNT.

5/8"x 3/4" AND 1"
SUB-METER DETAIL
N.T.S.
W-31
REV-2018
NOTE:
1. MAXIMUM DEFLECTION FOR EACH JOINT OF PIPE WILL NOT EXCEED MANUFACTURES RECOMMENDATIONS AND APPROVED BY PWCSA.

OR

NOTE:
1. LOWERED SECTION TO BE OF DUCTILE IRON MECHANICAL JOINT PIPE WITH RESTRAINED JOINTS. THE ENGINEER SHALL CALCULATE LENGTH OF RESTRAINED SECTION.
TRACER WIRE
TEST STATION
N.T.S.
W-33
REV-2018

NOTES:
1. TRACER WIRE SHALL BE 12 GAUGE SOLID COPPER, SECURED ALONG THE LENGTH OF THE PIPE WITH CABLE TIES @ 60" O.C.
2. TWO TRACER WIRES SHALL BE PROVIDED ALONG THE LENGTH OF THE PIPE, AT THE 4 AND 8 O'CLOCK POSITIONS (BOTH 60" FROM THE BOTTOM OF PIPE).
BEDDING AND BACKFILL FOR ALL C-900 AND POLY-WRAPPED DIP

BACKFILL AND 4" MIN SIDEWALL SHALL BE CRUSHED AGGREGATE LESS THAN 1" OR #57 STONE A MIN. OF 24" ABOVE CROWN OF PIPE.

#12 SOLID COPPER TRACER WIRE FOR ALL NON METALLIC PIPE.

BEDDING DEPTH SHALL BE A MIN. OF 4" CRUSHED AGGREGATE < 1" OR #57 STONE.

NOTES:

1. WHEN USING C-900 PIPE, MARKER BALLS TO BE PLACED AT ALL BENDS WITH A MAXIMUM DISTANCE OF 100'.

2. 6" WIDE DETECTABLE MARKING TAPE TO BE PLACED 2' ABOVE PIPE.
NOTES:
1. ALL METAL USED IN THE MANUFACTURING OF THE ACCESS GATE TO BE HOT DIP GALVANIZED.
2. ALL WELDS AND PIPE TO BE PAINTED AND TOUCHED UP IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS.
3. ALL JOINTS TO BE WELDED ALL AROUND WITH 3/16" WELDS.
4. ALL PIPE TO BE SCHEDULE 40 STEEL, DIAMETERS SHOWN ARE NOMINAL PIPE SIZE.
5. PAD LOCK TO BE FURNISHED.
6. CONTRACTOR TO FURNISH AND INSTALL AN ADDITIONAL 3" DIA. POST WITH 3/8" ROD, LOCATED TO HOLD GATE IN AN OPEN POSITION OF 90°.

ACCESS GATE DETAILS
N.T.S.
W-35
REV-2018
NOTES:
1. CONDUIT TO BE PVC SCHEDULE 40.
2. CONTINUE CIRCUIT TO GFI DUPLEX RECEPTACLE.
3. METER, METER HARNESS, AND CONVERTER ARE SUPPLIED
   BY PWCSA FOR INSTALLATION BY CONTRACTOR.
4. MUST BE WATERPROOF, MINIMUM 5' FROM BOTTOM;
   MULTIPLE BOXES ALLOWED.
SPECIFICATIONS:
1. BOLTS AND NUTS ARE MANUFACTURED IN ACCORDANCE WITH ANSI/AWWA C111/A21.11
2. MATERIAL IS HIGH STRENGTH LOW ALLOY STEEL PER ANSI/AWWA C111/A21.11
3. THREADS PER ASEM B1.1 UNIFIED STANDARD COARSE (CLASS 2A & 2B)

MECHANICAL PROPERTIES:
1. YIELD STRENGTH 45,000 PSI (MIN)
2. ELONGATION IN 2in. 20% (MIN)

CHEMICAL PROPERTIES:
CARBON 0.20% MAX
MANGANESE 1.25% MAX
SULFUR 0.05% MAX
NICKLE 0.25% MAX
COPPER 0.20% MAX
COMBINED 1.25% MAX (Ni, Cu, Cr)

OPTIONAL COATING:
T–BOLTS & NUTS HAVE A FLUROPOLYMER COATING MATERIAL WHICH IS VOC–COMPLIANT, RESIN–BONDED THERMALLY CURED AND DRYED LUBRICANT

COATING PHYSICAL PROPERTIES:
FILM THICKNESS .03 TO .04 MIL PER COAT
NUMBER OF COATS 3 TO 4 COATS
ADHESION 1MM CROSS HATCH TEST + 5 PULLS. GOOD KNIF RESISTANCE
CURE TEST 50+ RUBS WITH MEK. NO SUBSTRATE EXPOSURE
PENCIL HARDNESS 4–6H
VOLATILE ORGANIC COMPOUNDS 2.74lbs/gal

T–BOLTS AND NUTS
HSLA STEEL
N.T.S.  W37
REV–2019