

UTILITY CONSTRUCTION

STANDARD AIR RELEASE MANHOLE FOR WATER MAIN
NOT TO SCALE

NOTES:
1. WATER MAIN SHALL BE DUCTILE IRON PIPE 10 LF CENTERED ACROSS MANHOLE.
2. CONTRACTOR TO INSTALL WATER MAIN AT DEPTH REQUIRED TO FACILITATE INSTALLATION OF AIR RELEASE MANHOLE AT HIGH POINT OF LINE.
3. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

PLAN
MIN. 10 LF DIP WATER MAIN CENTERED ON MANHOLE
5" DIA. PRECAST CONCRETE MANHOLE WITH FLAT TOP
FLEXIBLE SEAL

SECTION
5" DIA. PRECAST CONCRETE MANHOLE WITH FLAT TOP
FINISHED GRADE
12" MIN.
24" MAX.
5" MIN.
LOCKABLE 21" RING & COVER NCDOT TRAFFIC RATED W/ 1" DRILLED VENT HOLE USE STAINLESS STEEL HEX-HEAD BOLTS FLUSH WITH FINISHED GRADE
MANHOLE STEPS SHALL BE PLACED 18" O.C. WHEN DEPTH OF MANHOLE EXCEEDS 5'.
2" AIR VACUUM/PRESSURE RELEASE VALVE (SHORT BODY) ARK D-025 OR APPROVED EQUAL
2" ISOLATION VALVE AND INLET PIPING SHALL BE SS 316
TAPPING SADDLE
MIN. 12" #57 STONE

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Approved By:			P.O. Box 2263		
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STANDARD BORE ENCASEMENT
NOT TO SCALE

NOTES:
1. CARRIER PIPE SHALL BE D.I.P. UNLESS EXPRESSLY APPROVED BY THE COUNTY.
2. STAINLESS STEEL SPACERS SHALL BE USED, NO TIMBER SKIDS ARE ALLOWED.
3. TWO SPACERS PER JOINT SHALL BE USED FOR D.I.P. CARRIER PIPE.
4. THREE SPACERS PER JOINT SHALL BE USED FOR PVC CARRIER PIPE.
5. ENCASED BORES ALONG GRAVITY COLLECTION SYSTEMS SHALL NOT REQUIRE BRIDLE RODS.
6. 2 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 8"Ø AND SMALLER. 4 EA. 3/4" S.S. BRIDLE RODS SHALL BE REQUIRED ON ALL LINES 10"Ø AND LARGER.
7. CARRIER PIPE SHALL BE INSTALLED USING FIELD LOK GASKETS OR APPROVED EQUAL.

PLAN
FASTEN BRIDLE RODS TO FITTING FLANGE USING 3/4" TURNED EYE BOLTS.
3/4" S.S. BRIDLE RODS SHALL BE WELDED TO THE ENCASEMENT PIPE. WELD AREAS SHALL BE PAINTED WITH 2 COATS OF BITUMINOUS BASE PAINT.
STAINLESS STEEL SPACERS
ENCLOSE ENDS WITH BRICK MASONRY & GROUT

SECTION
120°
120°
120°
STAINLESS STEEL SPACERS
CARRIER PIPE
STEEL ENCASEMENT PIPE CONFORMING TO ASTM SPECIFICATION A252-81 GRADE 2 AND A BITUMINOUS COATING ON THE OUTSIDE.

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STORM SEWER CROSSING DETAILS
NOT TO SCALE

NOTE:
WATER LINE SHALL BE DUCTILE IRON PIPE AT ALL AREAS WHERE MIN 12" CLEARANCE CANNOT BE MAINTAINED. INSTALL AT LEAST ONE JOINT CENTERED OVER STORM DRAIN.

PLAN
PROPOSED WATER MAIN
EXISTING STORM SEWER
3" MIN.
12" MIN. (24" IN NCDOT ROW) CLEARANCE

SECTION
PROPOSED WATER MAIN
1 EA. JOINT OF DUCTILE IRON PIPE CENTERED UNDER STORM DRAIN IF TOP OF PIPE IS WITHIN 3 FEET OF BOTTOM OF STORM PIPE.
EXISTING STORM PIPE
12" MIN. (24" IN NCDOT ROW) CLEARANCE
NO. 57 WASHED STONE
10" MIN D.I.P. OR HDPE FUSED PIPE
10" MIN D.I.P. OR HDPE FUSED PIPE
STORM PIPE O.D. + 3"

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STANDARD WATER TAP DETAIL
NOT TO SCALE

NOTE:
1. ALL TAPS 2" AND SMALLER SHALL BE MADE WITH TAPPING SADDLE. ALL TAPS LARGER THAN 2" SHALL BE MADE WITH TAPPING SLEEVE AND VALVE. NO DIRECT TAPS SHALL BE MADE.
2. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

TAPPING SADDLE SHALL BE BRASS OR BRONZE FOR "CC" THREADS WITH DOUBLE STRAPS, FORD S-90, MUELLER BR2B OR APPROVED EQUAL.
TAPPING SLEEVE SHALL BE BRASS OR BRONZE FOR "CC" THREADS, FORD S-70, MUELLER H-134, JCM 403 OR APPROVED EQUAL FOR SDR-21 PVC.
CLASS 200 POLYETHYLENE
CORPORATION STOP SHALL BE BRONZE WITH "CC" THREADS AND RATED 300 PSI, MUELLER B-2508B, FORD FB-1009NL, OR APPROVED EQUAL

SECTION
DUCTILE IRON PIPE (CLASS 50 CEMENT LINED)
P.V.C. PIPE (CLASS 200)
NOTE: ALL TAPS TO BE MADE ON TOP QUARTER OF MAIN.

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3/4" & 1" WATER METER SERVICE DETAIL
NOT TO SCALE

NOTE:
1. CONTRACTOR SHALL PLACE METER BOX IN NON TRAFFIC AREA ONLY, OUTSIDE FENCED AREAS, AND 4 FEET AWAY FROM BUSHES AND TREES THAT COULD COVER THE BOX.
2. PLASTIC METER BOX SHALL BE CENTURY #1015, NDS D1200, OR APPROVED EQUAL.
3. CONTRACTOR SHALL CENTER METER YOKE IN METER BOX.
4. METER YOKE TO MUELLER NO. H-1404-2A, FORD NO. VHH-72-7W-11 OR APPROVED EQUAL.
5. METER TO MEET AWWA C-200 STD. AND SPECS.
6. METER TO BE PROVIDED AND SET BY JOHNSTON COUNTY. METER WILL NOT BE INSTALLED IF THE SETTER IS NOT CENTERED IN THE BOX. THE SETTER HAS BEEN PULLED UP ON ONE END. THE SETTER IS LAYING ON ITS SIDE. THE SETTER IS TO CLOSE TO THE BOX LID. THE BOX IS BELOW GRADE OR BROKEN. THE CUSTOMERS SERVICE LINE IS NOT HOOKED TO THE UNION NUT. THE 3/4" GATE VALVE HAS NOT BEEN INSTALLED WITHIN 12 INCHES OF THE METER BOX.
7. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.
8. SERVICE LINE TO HOME MUST PASS PLUMBING INSPECTION PRIOR TO SETTING METER.

SECTION
FINISHED GRADE
LID SHALL BE LABELED "WATER METER" AND SHALL BE "AMR" TYPE WITH METAL FLIP-UP LID AND 2" HOLE
METER (US GAL.) 3/4" x 3/4"
6"-10" MIN.
CL.
7"
MIN. 4" WASHED STONE
BLOCK SUPPORT OR STONE AS NEEDED (CAN NOT EXTEND MORE THAN 1" INTO BOX)
3/4" OR 1" CLASS 200 POLYETHYLENE WATER SERVICE LINE
WIDE BODY OR DOUBLE STRAP SADDLE
300 PSI CORP. STOP
WATER MAIN
METER YOKE COMPLETE WITH DUAL PURPOSE FITTINGS
COPPER SETTER
METER YOKE SHALL BE MUELLER NO. H-1404-2, FORD NO. VHH-72-7W OR APPROVED EQUAL FOR 3/4" SERVICE

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2" WATER SERVICE W/ RPZ & BFP
NOT TO SCALE

NOTES:
1. 12" MIN. SEPARATION REQUIRED BETWEEN YOKE CENTERLINE AND TOP OF METER BOX.
2. RPZ MUST BE LOCATED AT THE POINT OF DELIVERY. IF RPZ IS LOCATED IN THE BUILDING, AN ADDITIONAL DOUBLE CHECK VALVE IS REQUIRED AT THE POINT OF DELIVERY.
3. METER AND STRAINER SHALL BE FURNISHED AND SET BY JOHNSTON COUNTY.
4. IF THE METER BOX IS LOCATED IN A TRAFFIC AREA A CONCRETE METER BOX, BROOKS, No. 38-H WITH 12" EXTENSION SHALL BE USED.
5. ALL MATERIALS USED IN THE POTABLE WATER SYSTEM MUST BE NSF61 AND NSF372 CERTIFIED AND MEET THE LATEST FEDERAL SAFE DRINKING WATER ACT REQUIREMENTS.

PLAN
WATER SERVICE FROM WATERMAIN
RW
12" MINIMUM SEPARATION
RPZ
WATER SERVICE
YOKE FOR 2" COMPOUND METER WITH STRAINER, McDONALD-72012 WWFF OR FORD WB72-15B ADJUSTABLE TO ACCOMMODATE 22-25" OPENING
RPZ BACKFLOW PREVENTER BY FIBRO - RPZ MODEL 607A
INSULATED ENCLOSURE "HOT BOX", "HYDROCOIL", OR EQUAL ENCLOSURE SHALL HAVE FINISHED, LOCKABLE LID AND MINIMUM 9" CLEARANCE ON EACH END AND EACH SIDE OF THE RPZ ASSEMBLY.
FLANGED COUPLING ADAPTER
MASONRY SUPPORT (TYP)
1-1/2" PVC DRAIN TO DAYLIGHT

SECTION
FINISHED GRADE
NATURAL GROUND
2" CLASS 200 POLYETHYLENE SERVICE LINE
GATE VALVE WITH BOX
WATER SERVICE FROM WATERMAIN
ANGLE CHECK VALVE
BLOCK SUPPORT OR STONE AS NEEDED
3/4" MIN. RADIUS OF CURVE
90° BEND
90° BEND
DUPLIX OUTLET SHALL BE PROVIDED FOR POWER TO HEAT BOX
4" CONCRETE SLAB, MIN. 4" WIDER THAN BOX ON ALL SIDES
1-1/2" PVC DRAIN TO DAYLIGHT
BYPASS VALVE
857 WASHED STONE

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STORM DRAIN PIPE CROSSING DETAIL
NOT TO SCALE

NOTES:
1. CULVERT CROSSINGS IN EXISTING NCDOT RIGHT-OF-WAY REQUIRE 24" MIN. SEPARATION FROM BOTTOM OF CULVERT TO TOP OF WATER MAIN.
2. IN LIEU OF RESTRAINT (TIE) RODS, APPROVED RESTRAINT JOINT PIPE MAY BE USED.

SECTION
FINISHED GRADE
PROPOSED WATER MAIN
DIP
12" MIN. (24" MIN. IN NCDOT ROW)
THRUST COLLAR
45° BEND
3/4" S.S. THREADED RODS
CONCRETE BLOCKING
10" D.I.P. OR HDPE FUSED PIPE
10" D.I.P. OR HDPE FUSED PIPE
45° BEND
THRUST COLLAR (TYP)
1 EA. JOINT OF DUCTILE IRON OR HDPE FUSED PIPE. PIPE CENTERED UNDER STORM DRAIN. PIPE SHALL BE BEDDED BACKFILLED TO 6" ABOVE PIPE IN WASHED STONE.

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