KITTERY WATER DISTRICT

WATER LINE CONSTRUCTION SPECIFICATIONS

September 2019

Questions about installations should be directed to
***Michael Rogers, Superintendent* at 439-1128 or by email at**
mikerkwd@comcast.net

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INTRODUCTION

This information is intended to inform and guide homeowners and contractors regarding procedures to follow while working on Kittery Water District (here after KWD) water lines. **This summary does not relieve the owner/contractor of the responsibility for meeting all State and Federal requirements pertaining to the installation of water and sewer lines.**

NOTE: Provided that both the material specifications and installation requirements of the KWD are followed, upon successful installation and testing of the underground and aboveground infrastructure, KWD will accept the ownership of the infrastructure for perpetuity. If the infrastructure is not located within the Town or State right of way, a utility easement will need to be issued to the KWD.

NOTE: ALL PARTIES ARE STRONGLY ENCOURAGED TO READ THIS BOOKLET AND CALL WITH ANY QUESTIONS PRIOR TO STARTING WORK.

This information is subject to revision.

BEFORE BEGINNING ANY WORK

1. The KWD requires **at least one week's notice** before any work can begin. This allows the KWD time to review the project with the owner/contractor and schedule installations and inspections, etc. **The owner/contractor must contact Michael Rogers, Superintendent at (207) 439-1128 prior to beginning work.**

2. Pursuant to Federal Law, the owner/contractor must contact Dig Safe at 1-888-344-7233 at least three (3) working days prior to the date work is scheduled to begin. A Dig Safe Project Number is required prior to excavation.

3. The owner/contractor shall not operate any hydrants, valves or curb stops that are the property of the KWD.

4. The owner/contractor shall be responsible for notifying all users/property owners affected prior to shutting off any services. Appropriate agencies shall also be notified.

INSTALLATION REQUIREMENTS

Inspection services

Installation inspections will be performed by the District or its representative and paid for by the Developer or contractor. Full time inspections will be performed by the District or its representative at an hourly rate of $70.00 per hour. Inspections will be performed during regular business hours 7:30 am – 4:00 pm Monday – Friday.

Bedding and Backfill

- Ledge must be fully excavated a minimum of 6” below and 12” on either side of the pipe.
- A Minimum of 6” of clean sand bedding under the pipe and 12” on either side of the pipe is required.
- Pipe Bedding – AWWA Type 4 bedding conditions will be maintained during pipe installation. Trenches shall be flat bottomed, with 6” of compacted clean sand beneath and 12” above the pipe. Where ledge is encountered, 12” of compacted clean sand shall be installed beneath the pipe. The trench will be kept dewatered during pipe laying.
- The pipe bedding shall be clean granular sand, free from organic matter, frozen material or any other objectionable material and shall meet the following requirement:
  100% passing a 2” sieve.
- A Minimum of 12” of compacted sand backfill above the pipe is required. Compaction can be accomplished by either the excavator bucket or a mechanical compactor.
- Minimum earth cover over the top of the pipe is 5’-0” (finish grade to top of pipe).
- The remainder of the trench is to have compacted backfill material pre-approved by the District or its representative. Compaction of this material must be by a mechanical compactor.
- Locking Tyton gaskets shall be installed in the last 3 sections of pipe that is assembled before installing the blow–off assembly.
- The blow–off assembly will require that a MJ Tap Cap be installed which will require a spigot end of the pipe.
- Field cutting of pipe is not allowed within 3 feet of the bell of the pipe.

Blow-Off Installation

- High density polyethylene (H.D.P.E.) blow-offs are fabricated and installed by KWD (time and material rates apply).
- Valve and riser shall be 2”.
- Contractor is responsible to backfill after the blow-off and thrust blocks are installed by KWD.

- Sand backfill is required from the base of the valve and riser pipe to the top of the ground.
- Care must be taken not to dig beyond the blow-off installation area such that thrust blocks installed by KWD will be against undisturbed soil.

Services Line Installations

- Upon successful completion and acceptance of the water main, KWD will install the water services within the right of way. Normally, KWD provides the material and labor and the contractor does the digging and backfilling (time and material rates apply).
- Clean sand bedding is also required 6" below the copper tubing and 12" above. Sand backfill is also required around the service box, from the foot piece to the cap.
- Services that exceed more than 150 feet from the curb stop will require a meter vault to be installed by KWD.
- 6" top flange valve box top sections and covers are to be installed over all service boxes.

Test Service / Chlorination Tap

The KWD or contractor shall install a 1" corporation and a CTS plastic riser pipe on the first length of water main that is installed. Upon successful completion of a pressure test, chlorination and a negative bacteria test, the contractor shall excavate to allow removal of the test service and installation of a brass plug by either KWD or the contractor (time and material rates apply).

Fire Hydrant Installations

- The traffic break flange of the hydrant shall not be more than 6" above the finish grade and shall not be buried.
- Sand backfill is required around the barrel of the hydrant, from the shoe to the grounds surface.
- Valve anchoring tees are to be used for all hydrant installations and lateral water mains.
- Marker poles will be provided by the District and installed by the contractor in the appropriate location (material rates apply).

Water Main Acceptance Policy

- The newly installed water main will be filled, flushed, hydrostatically tested and chlorinated by KWD (time and material rates apply).
- A negative bacteria result is needed before the water is used for any reason. KWD will take this sample and have it analyzed (this cost is included in the testing fee).

- An as-built drawing of the water main installation performed by a licensed surveyor or engineer is required before acceptance of the main by KWD.
- Receipt of an electronic version of the project plan.
- Acknowledgement and execution of any agreements (fire protection lines, fire hydrants, etc.).
- Execution of an easement, if applicable. (and recording of the documents).
- Payment shall be made to KWD for all invoiced services and materials.

Meters

- Meters are both supplied and installed by KWD (time and material rates apply).

NOTES:

- All materials that are installed are to be made in the USA or Canada.
- Material submittal sheets (cut sheets) shall be submitted for approvable before purchasing the materials.
- Inspection and service work performed by KWD will be billed at the District's current time and material rates. Services provided by a third party will be billed at their rate.
- The horizontal distance between water and sewer lines shall be a minimum of 10 feet.
- During new construction groundwork, the owner/contractor is responsible for protecting any service or meter that may be in danger of freezing. Associated damage repair costs will be the responsibility of the owner / contractor.
- The installation of H.D.P.E. main and CTS Plastic service lines will require the installation of Copper Head tracing wire and Snake Bite connectors. The KWD has very specific requirements for the installation of the tracer wire. The on-site inspector will provide detailed guidance at the time of installation.

Water Line Construction Material Specifications

Water Main

- ductile iron
- class 52 thickness class
- Tyton joint
- double cement lined
- Zinc coated

Alternate Water Main Material

- High Density Polyethylene (H.D.P.E.)
- SDR 11
- Butt Fusion / Electrofusion Couplings
- Blue Stripe
- Copper Head tracer wire is required on the main and all laterals

Ductile Iron Fittings

- class 350
- made in the USA or Canada

Ductile Iron Gate Valves

- 250 P.S.I. working pressure
- open left
- resilient wedge
- stainless steel nuts and bolts
- stainless steel or bronze operating nut
- valve centering rings are required
- mud plugs are required

Fire Hydrants

- Kennedy valve Guardian K81-D
- AFC Waterous Pacer WB 67
- open left
- Non draining barrel

Service Boxes

- 4 ½' - 5 ½' height
- rope thread with pentagon nut

Valve Boxes

- cast iron
- 36” top flange
- 36” bottom base belled (minimum length)
- 5 ¼” diameter
- drop in cover with pick hole with the word “WATER” cast in the cover
- made in the USA or Canada
- ALL service boxes are to be protected using a 5 ¼” x 6” valve box top extension with the cover stamped “WATER”

Corporations

- minimum size 1” for residential
- Mac Pac compression style nut
- ball construction
- AY McDonald or Ford brand
- CC thread type

Curb stops

- minimum size 1” for residential
- Mac Pac compression style nut
- ball construction
- AY McDonald or Ford brand

Service Lines

- Service lines shall be K-copper tubing
- Minimum size of tubing is 1”
- CTS Plastic tubing may be used only when installing an H.D.P.E. main

Stainless Steel Service Rods

- 5/8” x 36” long
- Brass pins

Tapping Sleeve

- Series 304 stainless steel
- ductile iron or stainless steel welded flange
- size on size taps are not permitted on cast iron water mains

Retainer Glands

- Romac grip ring brand (R-Blue T-Bolts and nuts required)
- MJ Field Lok brand (R-Blue T-Bolts and nuts required)
- MEGA Lug brand (R-Blue T-Bolts and nuts required)

Service Saddles

- Ductile Iron body
- Nylon coated body
- Double stainless steel straps
- Electrofusion service saddles with cc threads are required when using H.D.P.E. pipe