NORTH KINGSTOWN
DEPARTMENT OF WATER SUPPLY

PLANNING, MATERIAL AND CONSTRUCTION SPECIFICATIONS

Revised
January 2020

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PREFACE

The intent of these specifications is to provide contractors, engineers, developers and others with a uniform set of standards by which any proposed or actual water work must adhere to. Exceptions to these specifications may be granted if in the benefit of the NKWD upon written request and written approval from the Director of Water Supply.

These specifications may be amended from time to time at the discretion of the Director. Failure to know of, or conform to, these specifications shall not be considered a suitable reason for deviation from these standards. It is the equal responsibility of the property owner and contractor to ensure proper compliance with the specifications as prescribed at the time of the work. Property owners and contractors are strongly encouraged to arrange for an on-site pre-design and pre-construction meeting with the Director (Ph: 268-1520) to determine compliance with these specifications.

DEFINITIONS

Director - The Director of Water Supply, Town of North Kingstown.

Engineer - The Town Engineer or his designated representative for the Town of North Kingstown Rhode Island.

Inspector - The NKWD Director or his designated representative.

Rules - North Kingstown Department of Water Supply Rules & Regulations NKRO Chapter 20 Utilities.

Substantial Completion - The point in construction at which the director determines the installation of a main is complete. Substantial completion does not constitute final approval or acceptance of the work for the release of securities held by the Town on behalf of the property owner.

Specifications - The North Kingstown Department of Water Supply Standard Specifications as published and amended from time-to-time by the Director of Water Supply.

Town - Town of North Kingstown, Rhode Island

Water - Potable water produced and supplied by the NKWD.

Water Department - The North Kingstown Department of Water Supply (NKWD).

Water System (System) - Any pipe, valve, meter, fixture, facility, apparatus, or appendage that is in any way associated with the production, storage, transmission, and/or use of municipal water. Also known as distribution system.

Work - The furnishing of materials, equipment, labor, and all incidentals necessary for adherence to these specifications.

GENERAL NOTES

Contractors should contact the Director for a pre-construction meeting, inspection charges and scheduling at 268-1520 ten days before start of work.

Phased installation of water mains shall not be permitted in any plat development unless specifically approved by Town Council resolution. The Town reserves the right to retain water related securities until such time the installation, testing, and final inspection of all work is complete and deficiencies corrected.
Department personnel shall inspect water system improvements during the installation. The contractor is responsible for notifying the director five days before any work is to take place. NKWD inspectors must be on site for the following:

1. Test pits, taps, tie-ins, or the installation of mains, hydrants and services.
2. When crossing any culvert, drainage pipe, stream or obstacle requiring a change in pipe material, direction, elevation, or as deemed necessary by the director.
3. Flushing, pressure testing and disinfecting operations.

The contractor is responsible for obtaining state or town excavation permit and all work zone safety requirements and police details. If in the opinion of NKWD personnel, the contractor has failed to provide adequate police details or any other appropriate excavation/roadway safety measures the work will be stopped until the situation is corrected.

The director shall issue a Notice of Completion to the contractor when the improvements reach the point of substantial completion and all fees due the NKWD are paid in full. A Notice of Completion provided to the contractor does not relieve the property owner from correcting items identified as deficient during later inspections. Department policy requires additional inspections of system improvements for each bond reduction request made by the owner. The NKWD shall notify the Town Engineer of each deficiency and request of the Planning Commission to retain water related securities until the deficiencies are corrected. Property owners are encouraged to coordinate with the Director before making a request for bond reductions to avoid delays in the release of securities.

No person not in the employ of the NKWD shall operate any gate valve, hydrant or curbstop on any main or service for the purpose of turning water on or off.

No water shall be sold or taken from any hydrant, blowoff, corporation, or curbstop for construction or paving purposes. Any unauthorized use of water shall be reported to the police.

All cost associated with work done by NKWD personnel outside of normal business hours of the Department will be charged to the applicant or contactor.

WATER MAIN MATERIALS

All water main materials used within the NKWD system shall conform to AWWA standards. All material must be installed as to have no leakage under pressure.

PIPE: All water main pipe shall be buried at a depth of no less than 4½ feet*; be a minimum of 8 inch diameter; be of a length of no less than 18 feet; and conform to the following standard: Class 52 Cement Lined Ductile Iron* The department will consider the use of C-900 DR18 Class 150 on a case by case basis.
*NOTE: All pipes used to transverse any culvert, bridge, small streams, drainage pipe etc. shall be ductile iron CL52. It is the policy of the NKWD to minimize the use of mechanical joints wherever possible. Therefore, the "sloping" of pipe to transverse any culvert, bridge, small stream, drainage pipe etc. is an acceptable practice provided an installation drawing is pre-approved by the director, and the installation is inspected by NKWD staff.

PIPE FITTINGS: All pipe fittings shall be mechanical joint compact ductile iron class 350 conforming to AWWA standard C-153. All mechanical joints shall be secured with a restraint as defined below.

MECHANICAL JOINT RESTRAINTS: Retaining glands shall be provided wherever any water pipe is inserted into any valve, hydrant, or fitting. Due to the varied pressures found in the system, the use of non-restraint type MJ glands for the purpose of inserting pipe into any valve, hydrant or fitting is not authorized and will require replacement if used. The use of thrust blocking in addition too mechanical restraints is at the discretion of the Water Director or Water Department Foreman. The following retaining devices are approved:

1. For C-900 PVC Pipe
    a. Mega-Lug® restraints
    b. GripRing® restraints
    c. Standard MJ gland secured with threaded rod, tie bolts and rod clamps.

2. For CL52 DI Pipe
    a. Mega-Lug® restraints
    b. GripRing® restraints
    c. MJ friction glands with threaded rod tie bolts and rod clamps.

VALVES: All gate, hydrant and tapping valves shall open left and conform to AWWA Standard C-509 for resilient wedge valves constructed of either cast or lightweight ductile iron. The distance from the top of the valve nut to *final* grade should be no greater than six (6) feet. Valves buried greater than six (6) feet below *final* grade require an extension on the valve nut. Valves shall be operated through a 5¼ valve box. Three valves are required on a "Tee" intersection and four valves on a 4-way intersection. On straight runs there should be a line valve every 500 feet whenever possible.

TAPPING SLEEVES: Tapping sleeves shall be full circumference shell and seal 304 stainless steel. NOTE: The majority of pipe in the system is asbestos cement. Contractors should determine pipe OD by test pitting before ordering the sleeve. Sleeves that do not properly fit the OD will be rejected.

AIR RELEASE VALVES: Air release valves are not permitted for use in the NKWD system.

BLOWOFF ASSEMBLIES: Blowoff assemblies for air purging, pressure testing and disinfection shall be temporary installations. The NKWD requires a one (1) inch assembly consisting only of a tapping saddle, one-inch corporation, and HDPE tubing. Ten feet of tubing should remain above grade for pressure testing and disinfection purposes. Assemblies should be installed as close to the main line tap as possible yet be safely out of the travel way. Consideration should be given to the need to re-excavate the corporation once testing is complete. Upon successful completion of required testing, the tubing will be removed from the corporation, and the corporation closed at the saddle. Hydrants located "in-line" at the end of any main may be used for flushing instead of a blowoff assembly.

FIRE HYDRANTS: All fire hydrants shall be 5¼ inch diameter open left valve (Kennedy Guardian or Mueller Super Centurion 250 (3-way)) traffic model hydrants. All hydrants shall have a gate valve, be painted red body with white bonnet, and have the steamer port invert 18 to 20 inches above *final* grade. Barrel risers will be installed as required. One 5¼ inch main valve repair kit and one traffic repair kit shall be provided for every three hydrants installed. Cul-de-sacs hydrants may be installed "in-line" eliminating the need for the hydrant tee and blow off assembly.

VALVE BOXES: All gate and hydrant valves shall be operated through a standard water valve box. The box shall consist of a cover marked water, a bell or flared base, and a 5¼ inch diameter flanged sliding top. The valve box shall measure the length from the valve body to the finished grade plus six (6) inches. All valve nuts shall be centered in the box at a depth of between four and one half (4 ½) and six (6) feet below *final* grade. Valves buried greater than six (6) feet below *final* grade will require a centering extension rod drilled and tapped onto the valve nut.

VALVE BOX EXTENSIONS: Valve boxes may be brought to final grade utilizing 5¼ by 12-inch valve box flanged extensions. Pioneer style extensions are not acceptable for this application.

COUPLINGS: Couplings used in the installation, joining, or repair of water main pipe shall be "Dresser" style constructed of ductile iron. All couplings will be of the same nominal diameter as the pipe. Gaskets and end rings shall be sized to compensate for variations in pipe OD and materials.

PIPE REPAIR CLAMPS: Leaks along the longitudinal length of a pipe may be repaired in place using clamps. Repair clamps shall be full circumference shell and seal 304 stainless steel sized to properly fit the OD of the pipe being repaired.

BELL JOINT LEAK CLAMPS: Leaks from C-900 and DI pipe bell joints may be repaired in place using joint clamps properly sized for the pipe.

WATER SERVICE MATERIALS

Water services shall be either one (1) or two (2) inch taps. All connections shall be compression type fittings with stainless steel inserts; flared fittings are not permitted. All material must be installed as to have no leakage under pressure.

Residential meters shall be 5/8" x 3/4" (3/4-inch couplings) positive displacement nutating disk type capable of providing 20 gallons per minute maximum flow with an accuracy rating of >98.5 percent. Meters, regardless of size, shall only be purchased from the NKWD. All meters shall remain the sole property of the Town. Requests for a meter larger than 5/8" x 3/4" will require the submission of a fixture survey prepared in accordance with AWWA M-22 standards.

SERVICE SADDLES: All water services shall be saddled. No direct service or blowoff taps are permitted. Saddles shall be CC threads with a double two-inch stainless-steel band and high strength ductile iron body sized to properly fit DI, PVC or AC pipe.

WATER SERVICE TUBING: All water service tubing shall be Copper Tube Size (CTS) Polyethylene (HDPE) tubing with a working pressure of no less then 200 PSI, conforming to AWWA C-901.

CORPORATION STOP: Corporation stops shall be open left compression plug stops with a tapered CC thread and a compression pack joint (CPPJ) for CTS tubing conforming to AWWA C-800 standards.

STAINLESS STEEL INSERTS: Stainless steel inserts shall be compatible for use with 200 psi CTS HDPE flexible water service tubing and shall be used with all compression fittings.

CURB STOP: Curb stops shall be open left ball valve with compression type pack joints (CCPJ) on both ends and shall be compatible for use with CTS HDPE tubing.

THREE PART UNION: This service fitting has compression type pack joints (CCPJ) on both ends and is compatible for use with CTS HDPE tubing.

MALE and FEMALE CPPJ X IP ADAPTERS: Adapters are to be used with CTS HDPE tubing having compression type pack joint on one end, and iron pipe thread on the other.

CURB BOX: All water service boxes shall be "Buffalo" Style 2½ inch to include cover, slide top and base. The curb box shall measure the length from the curb stop to the finished grade plus six (6) inches. All curb stops shall be centered in the box at a depth of between four and one half (4 ½) and six (6) feet below *final* grade.

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WATER SERVICE APPLICATION AND INSTALLATION PROCEDURE

APPLICATION - Owner shall complete a Water Service Application. Applications are available at the Water Department located in the Town Hall. The water service application fee is $500.00 payable at the time application is made. Existing units on private wells that wish to apply for water service must provide location plans for septic systems/cesspools and existing wells. (**Please Note: Filing the application activates the water service account for billing**.)

Filing of **Water Service Application** shall include payment of all fees due and must be submitted ten (10) days before the installation of the service. Fees include meter charge, sales tax, turn on fee*, and tapping charge** if required.

* Meter charge (which includes tailpieces), sales tax, and turn on fee is in addition to the application fee as follows:

METER SIZE	METER COST	SALES TAX	TURN ON FEE	TOTAL
5/8 INCH	$249.32	$17.45	$50.00	$316.77
3/4 INCH	$293.32	$20.53	$50.00	$363.85
1 INCH	$371.26	$25.99	$50.00	$447.25
1.5 INCH	$590.56	$41.34	$50.00	$681.90
2 INCH	$743.82	$52.07	$50.00	$845.89

** Tapping charge (if required) pays only for the material and labor for the water main tap to curbstop. No excavation or road repair work is included. The minimum fee for a 1" service from main to curbstop is $1,383.53. The fee includes tapping machine rental, 1" corporation stop, 1" PVC tubing, 1" curb stop, 2.5" curb box, tapping saddle, a 5/8" meter, and two hours of labor. All additional material and labor costs incurred by the Town as a result of owner or contractor inefficiency, delay, or site conditions shall be charged to the owner.

SCHEDULING SERVICE TAP

Upon application, the owner/contractor can schedule the tap with the Director, (401) 268-1520. A pre-installation site visit with department staff is recommended. **Owner is responsible for road cut, trenching, backfill, road repair and associated materials and labor (beyond the main tap and service line installation) and all traffic control (including signage) within the right-of-way.** Meter pits may be required depending on site conditions. Owner shall obtain all permits for the road cut, including:

- Dig safe number (1 888 344-7233)
- North Kingstown Public Works Excavation Permit (Town Engineer 268-1563)
- State Department of Transportation trenching permit (State Roads Only)

SERVICE LINE INSPECTION FROM CURB STOP TO FOUNDATION- Only licensed master plumbers or drain layers are permitted to install water service lines. Inspections shall be scheduled with the water department at 268-1521. Inspections must be scheduled before 2PM on the workday before the actual installation. There is no charge for scheduled inspections. Requests for same day inspections require a $25.00 service fee.

A valve must be installed on the service line inside the foundation for the inspection to be performed. Owner shall be responsible for all costs associated with installing the service line from curb stop to meter. **Inspections must be done before backfilling the trench.**

Inspection on backfilled lines requires that water line piping materials be verified and that a pressure test be performed. The property owner shall be responsible for all costs associated with conducting the test. Pipes will be filled slowly with water. Only hydrostatic testing is approved. Pressure testing with air may result in personal injury or material damage and is prohibited. Internal pressure of the pipeline shall be gradually increased to a steady reading of at least 100-psi (150 psi may be required in high service areas or areas where line pressures exceed 100 psi). With the pressure pump off the pipeline must hold and maintain psi for the first two-(2) minutes of the test. Any loss of pressure at this phase of the test requires the termination of the test until the leak is located and repaired. After two minutes at no measurable loss of pressure, the pressure shall be reduced to 80 psi. No measurable loss in pressure is permitted for a period of one hour. Any loss of pressure at this phase of the test requires the termination of the test until the leak is located and repaired.

METER INSTALLATION - The meter setup shall be for horizontal meter installation and backflow device must be installed according to NKWD specifications before the meter can be set. Water meters shall be installed, and water turned on only by water department personnel. Meter appointments shall be scheduled with the water department at 268-1521. Meter installations must be scheduled before 2PM on the workday

before the actual installation. There is no charge for scheduled appointments. Requests for same day installations require a $25.00 service fee.

SERVICES - Normally plans for a single residential service shall not be required provided the proposed location of the water service is included on the building permit plot plan. The precise location of the water service may be altered in the field with the concurrence of the NKWD. A plan may be required for installations which are greater than 150 feet in length, that cross wetlands or wooded lots, or are within 25 feet of a septic system, require a meter pit, or some other condition exists where a plan would benefit the NKWD. No water service will be permitted to any building connected to a well. Buildings on properties with wells may be serviced provided there is no physical connection between the well and the plumbing serviced by Town water.

WATER MAINS - The installation of water main requires the submission of plans prepared and stamped by a professional engineer. All plans shall contain the note: "Installation of all mains, valves, hydrants and services shall be in accordance with the latest published NKWD specifications unless specific written relief is granted by the Director." The NKWD requires the submission of the following plans for approval. The plans submitted to NKWD are in addition to the detailed drawings required by Town Engineer.

1. WATER MODEL PLANS - Requests for water mains must be approved by the Town Council. Three copies of modeling plans shall be provided directly to the Director during the planning phase of the development. Modeling plans are conceptual in nature used to determine the Town's ability to provide adequate fire flow (750 gpm) while maintaining residual system pressure (25 psi) under peak demand conditions. Modeling plans shall be prepared on **one (1) sheet** and contain both a plan and profile view of the proposed extension. The plan view shall include lot lines, the pipe size and length. The profile view shall show pipe depth in relation to existing and final grades. Both the plan and profile views shall identify pipe location in 1+00 station segments. Plans which contain topographical, drainage, landscaping, roadway, or other non-water, related notes, details or drawings will be rejected. A data block shall include: sub-division name, developer and engineer contacts, plat and lot numbers, average lot and dwelling sizes, type of development, connecting and proposed street names, and other information as deemed necessary.

2. TECHNICAL REVIEW COMMITTEE (TRC) PLANS - The TRC plan shall be similar to the model plan only in greater detail and without the profile view. TRC plans shall indicate the general layout of the plat in relation to the water improvements. In place of the profile view will be the notes and details necessary for the Director to review the plan. TRC plans shall be prepared on **one (1) sheet** and contain no non-water related information. TRC plans or drawings that contain topographical, drainage, landscaping, roadway, or other non-water, related notes and or details will be rejected without review. Three copies of the TRC plan will be supplied directly to the NKWD. All plans shall be marked as "TRC PLAN".

3. FIELD PLANS - Field plans are similar to TRC plans except they contain the revisions noted during the review process. Field plans are used by the NKWD during pre-construction and construction activities for planning and inspection purposes. Construction plans are not acceptable for use as field plans. During pre-construction and construction activities the Director may agree to, or require, minor modifications to the field plan if the revision benefits the Town. Field plans shall be prepared on **one (1) sheet** and contain no non-water related information. Field plans that contain non-water related notes, details or drawings will be rejected. Three copies of the field plan will be supplied directly to the NKWD before the pre-construction site meeting. All plans shall be marked as "FIELD PLANS" and contain the following statement block: "These plans have been reviewed by the NKWD Director (signed) _____.

4. AS BUILT PLANS - As-Built plans shall be submitted to the Town Engineer and the NKWD upon completion of the work. As-built plans shall accurately reflect the installation of the water main. As-built plans shall be clearly marked as such. As-built plans will be used to perform bond reduction inspections of the completed work. Submission of as-built plans to the NKWD is required before the release of any water related securities held by the Town. As built plans shall be similar to field plans, but include the measurements, swing ties, depths and other information relating to the installation. As-built plans shall be prepared in accordance with the requirements of the Town Engineer.

INSPECTIONS, TESTS, PERMITS, AND RECORDS

Contractor shall coordinate with the Director for inspections. Contractor shall arrange for and pay for all required tests. NKWD must be present on-site at the initiation of the test for it to be validated by the Director. Contractor is responsible for obtaining and having on site, excavation permits to include: Digsafe, DPW or RIDOT road cut permits. No water work shall take place without the proper permits. Contractor is responsible for the keeping of accurate records in order to produce "as-built" plans at the completion of the work.

Inspection services provided by the NKWD do not guarantee the quality of workmanship or the functionality of the improvement at the time of installation or thereafter. Inspections provided by the NKWD are to determine that materials used in the improvement comply with these specifications. No Town approval of the work, design, materials or installation is expressed or implied as a result of any inspection by the NKWD.

EXCAVATIONS

Excavations that cross or extend into the public-right-away shall be saw cut and backfilled with a “flowable fill” type material to grade and allowed to cure for at least 24 hours before the application of the binder coat. Contractor is responsible for maintaining at least one lane of traffic flow using road plates or barricades. Binder coat shall be a minimum of three (3) inches in depth, set in place as to accommodate a minimum of two (2) inches of finished topcoat. Finished asphalt shall be rolled to a flat uniform surface. The Town Engineer shall issue a permit detailing any additional conditions or requirements. Public Works may receive and retain for a period of one year a Performance Bond as determined by the Town Engineer.

Excavations across State of Rhode Island roadways as of 15 April 2000 will require the utilization of "trenchless technology" per RIDOT correspondence dated 12/6/99.

TRENCHING AND BACKFILLING

The minimum depth of cover over the spring line, crown, or top of the pipe shall not be less than 4½ feet at the time of installation. The trench bottom and sidewalls shall be free of boulders, protruding ledge, stones larger than four inches, roots, trash, asphalt, debris or other unsuitable materials. Backfill shall likewise be free of boulders, ledge, stones larger than four inches, roots, trash, asphalt, debris, clay, fine sand or other unsuitable materials. Backfill material shall be compacted in twelve-inch lifts except where "flowable fill" is used. Any trench or backfill that is unsuitable in the opinion of the Town due to depth, stability, wetness or clay content shall be rejected for use.

Trench bottoms shall be at a uniform depth to grade at installation. Irregular trench bottoms may be made uniform using a bedding material six inches in depth. Bedding material shall meet the same standards as the backfill previously described. Pipes shall be installed only in dry trenches. All open ends of pipe shall be closed off to prevent water, dirt, animals, or other foreign substances from entering the pipe.

PRESSURE, CHLORINATING, AND BACTERIA TESTING

All pipelines shall be tested for leakage before the installation of service taps. Contractor will retain an independent testing company at their expense to conduct the test. Pipes will be filled slowly with water through valves operated by the NKWD. Only hydrostatic testing is approved. Pressure testing with air may result in personal injury or material damage and is prohibited. Testing is performed as follows:

1. Internal pressure of the pipeline shall be gradually increased to a steady reading of 200-psi gage.
2. With the pressure pump off the pipeline must hold and maintain 200 psi for the first two-(2) minutes of the test. Any loss of pressure at this phase of the test requires the termination of the test until the leak is located and repaired.
3. After two minutes at no measurable loss of pressure, the pressure shall be reduced to 150 psi. No measurable loss in pressure is permitted for a period of one hour. Any loss of pressure at this phase of the test requires the termination of the test until the leak is located and repaired.

All pipelines must pass the hydrostatic pressure test before the introduction of chlorine. Chlorine may be in the form of liquid or gas applied at a minimum dosage of 50 parts per million. Granular chlorine flakes or chlorine tablets are not to be used in the system. The pipeline shall remain chlorinated for at least 24 hours.

After each chlorine treatment, the NKWD will flush the pipeline. Flushing will continue until no measurable residual is detected. After flushing, two consecutive sets of acceptable samples for coliform bacteria and heterotrophic plate count (HPC), taken 24 hours apart, shall be collected from the termination of the new main. At least one sample shall be collected every 1000 ft. of new main, plus one set of two samples from the end of the line. Samples shall be collected by North Kingstown Water Department employees and tested by a laboratory approved by the North Kingstown Water Department. A fee shall be imposed for each test. The contractor is permitted to "split" the sample for independent analysis if they so desire. Any pipeline sample, which tests positive for bacteria, will require additional chlorine disinfection. Flushing is not an acceptable means of removing bacteria from a pipeline. All costs associated with flushing, chlorinating, and sampling will be paid for by the contractor.

METER SET-UP

The property owner shall pay for meters at the time of service application. All meters shall be supplied and installed by the NKWD. All meters shall be the sole property of the NKWD and register in gallons. Residential properties shall be fitted with a 5/8 x 3/4-inch meter. Requests for larger meters will be considered if documented by a fixture analysis in accordance with AWWA M-22. All meters shall be placed in the horizontal position and shall include: a quarter turn ball valve before the meter, meter couplings, meter, suitable backflow device, and a pressure reducing valve if required. All fixtures, fittings, couplings, and piping from and including the curbstop connecting fitting (except the meter) shall be owned and maintained by the property owner. Meters shall be maintained by the NKWD in accordance with NKO Chapter 20.

METER PITS

Meter pits, when installed, will be owned and maintained by the property owner. Meter pits will be required if, in the opinion of the Director, it is in the best interest of the Town (i.e. high ground water tables, excessive service length, lateral connections, or within minimum septic setback). Meter pits should a Ford meter pit or equivalent.

SERVICE INACTIVATION

All water accounts shall remain active for the payment of the "Flat Charge" until such time the service is disconnected from the water main at the corporation. All costs associated with the removal of a service shall be the responsibility of the property owner.

BACKFLOW DEVICES

A backflow device shall protect all water services. A Watts #7 dual check valve shall protect residential services. A pressure vacuum breaker, reduced pressure zone device, or a testable double check valve shall independently protect irrigation systems. A device as specified by the Town consistent with the hazard potential shall protect commercial and industrial services. A testable double check valve or reduced pressure zone device shall protect fire protection systems as specified by the Town.

WATER SERVICE CONFLICTS WITH ONSITE WASTEWATER TREATMENT SYSTEMS (OWTS)

The separation between water services and all components of an onsite wastewater treatment system shall be a minimum of 25-feet.

Water services that fall within the minimum twenty-five-foot setback from OWTS must be sleeved using the following guidelines:

1. Sleeve shall be at least twice the diameter of the water service pipe.

2. Sleeve shall be either SDR35 pipe with push on joints, or a continuous length of 200-psi HDPE tubing.
3. Any portion of the service installed within the twenty-five-foot separation limit shall be sleeved to a point at least five feet beyond the setback limit.
4. The sleeve shall extend through the building foundation to the curb stop if the above requirement can not be met.
5. Sleeve shall be sealed at either end using Fernco style watertight coupling.
6. A backflow device on the water service is required. In certain applications, the Town may require the installation of a meter/backflow pit.
7. The installation must be inspected by the NKWD before backfilling. One-day prior notice is required.
8. In cases where the water line and building sewer line cross, the sewer line should be laid below the water supply line and either the water service must be sleeved, or the sewer line must be encased in accordance with RIDEM specifications. Joints shall be watertight and minimized to the extent possible. The work must be inspected by the North Kingstown Department of Water Supply.

WATER SERVICE CONFLICTS WITH SANITARY SEWER LINES OR COMPONENTS

The lateral separation between water services and sewers shall be a minimum of 10 feet.
In cases where it is not possible to maintain a 10-foot horizontal separation between water and sewer line, the Director of Water Supply may allow deviation on a case by case basis provided that:

1. The sewer pipeline and water line are laid in separate trenches.
2. The crown of the sewer pipeline must be at least 18 inches below the invert of the water line.

In situations where it is impossible to obtain proper horizontal and vertical separation as stipulated above, the following will be required:

1. Encasement of the **sewer** pipeline (min. 6-inch thickness) or a carrier pipe for at least 10 feet on either side of the area that does not comply with the minimum horizontal and vertical separation.
2. In instances of conflict with sewer components/structures, relocation of water line to achieve the 10-foot horizontal or 18 inch vertical separation.

In cases where sewer lines and water lines must cross, the sewer line should be laid below the water line with a minimum of 18-inches vertical separation between the invert of the water line and the crown of the sewer line.

In situations where conditions prevent the 18-inch vertical separation the following shall apply:

1. Either the water line shall be sleeved in accordance with the guidelines listed above for conflicts with OWTS or the sewer may be encased in concrete or a carrier pipe for a distance of 10 feet on each side of the crossing, measured perpendicular to the water line.

FIRE SERVICE

Fire services shall enter the building separate from the domestic service. The NKWD does not require meters on fire services. All fire services shall pay a quarterly fee as described in the NKWD fee schedule. An approved fire service backflow device shall protect all fire service lines immediately after the point of entry to the structure. Fire services that include an additive for corrosion or freeze protection shall require a reduced pressure backflow device.

IRRIGATION SERVICES

Water used for irrigation shall be an independent tap off the domestic service downstream of the meter. No independent meter for irrigation is required. A suitable backflow device as described in the state plumbing code shall independently protect all irrigation systems. Installation of irrigation requires a plumbing permit.

STANDARD METER REPLACEMENT SCHEDULE

All water meters older than ten (10) years may be replaced at the discretion of the Town. Costs associated with the replacement of meters shall be as prescribed in Chapter 20. It is the policy of the department to reduce meter sizes whenever possible. If a meter is to be reduced in size the Town will supply and install the necessary fittings. The standard meter for residential use is 5/8 x 3/4. Customers wishing to keep or install a larger meter must submit a fixture analysis to the Director of Water Supply. A qualified professional engineer in accordance with AWWA M22 Standards shall make the analysis. Based on the findings contained in the fixture analysis the Director may provide a larger meter at the customer's expense.