NEW SHOREHAM WATER DISTRICT

UTILITY STANDARDS
WATER REQUIREMENTS

MARCH 2019

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1.00 PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS:

A. The New Shoreham Board of Water Commissioners (NSBWC) adopted the following priorities among the existing enactments which affect water in the Town of New Shoreham:

1. Public Acts establishing and amending the Water District: P.A. Chapter 18 (2000 as amended).

2. Current Management Agreement between the Town of New Shoreham Director of Public Works, the New Shoreham Board of Sewer Commissioners and the New Shoreham Board of Water Commissioners.

3. Regulations adopted by the Water District subsequent to the adoption by the Rhode Island General Assembly of P.A. Chapter 18 (2000).

4. Remaining provisions of enactments by the Town of New Shoreham, which are not inconsistent or superseded by the above legal enactments and documents.

B. The proposer must complete the applicable service application forms, along with all supporting documents as required for the project contemplated, to obtain approval for:

1. A service extension

2. A main extension

3. A request for service to a new project

4. An upgrade or change in use or occupancy that affects the water service requirements of the existing property

C. Plans and specifications shall be prepared and stamped by an Engineer currently registered in the State of Rhode Island.

D. Definitions:

1. New Shoreham Board of Water Commissioners (NSBWC): The NSBWC are appointed by the New Shoreham Town Council to oversee the operation of the water treatment and distribution system.

2. Superintendent: Means the Superintendent of the water treatment and distribution system or his duly appointed representative.

E. Application for service must be made in writing on the prescribed form, and signed by the owner or duly authorized agent. The application must fully state the purpose for which the water will be used, together with the proper legal description of the property, official town or city street and property owner of the premises or property to be supplied. All accompanying design drawings, calculations and pertinent detailed project data must be attached to the application.

F. In all cases where fire services may be required, a letter of review detailing the needed fire flow demand requirements for the sprinkler system must accompany the application submission. The review letter shall be signed by the local fire chief or district authority.

G. The proposal package must be in full compliance with all the rules, regulations and utility standards, along with any pertinent state and local regulations or codes.

1. Should the proposal package be found deficient in any manner during the initial review, a full re-submission shall be required.

2. All documents, along with the revised "Request for Plan Review Application" form, must be contained in the revised submission. The revised submission shall include all pertinent information from previous submissions and two (2) sets of the revised plans.

H. It is expressly understood that the developer and/or proposer is entirely responsible for providing a project proposal package and design that is in full compliance with the current rules, regulations and utility standards. The NSBWC assumes no responsibility for project proposal packages or designs that do not fully comply with current NSBWC requirements.

I. The applicant must follow the Rules and Regulations made by the New Shoreham Water District, as amended from time to time (included as Exhibit A in Section B). The Rules and Regulations constitute a contract between the customer and Water District upon acceptance by the District of an application for water service. The customer is considered to have expressed its consent to be bound thereby and to take water only for the purposes stated in the application at the established rate.

1.02 UNDERGROUND UTILITY CONTRACTOR REQUIREMENTS:

A. General:

1. The licensed Underground Utility Contractor or Master Plumber shall perform his or her work in the Town of New Shoreham in accordance with all applicable sections of the New Shoreham Town Ordinance, New Shoreham Water Ordinance and the Standard Water Requirements.

2. The licensed Underground Utility Contractor or Master Plumber shall comply with the requirements of the State of Rhode Island.

B. An accurate record of all Underground Utility Contractor's licenses shall be kept at the Superintendent's office. Notice must be given to the Superintendent at least two (2) work days prior to the beginning of any work. No inspections will be scheduled until the permit application has been duly signed and returned to the Superintendent. All permits shall be posted in a visible manner at the site of any and all water work. Such information as the NSBWC has with regard to the existence or location of main or building sewers will be furnished to the Underground Utility Contractor upon request, but at their risk as to the accuracy of the information. No materials shall be used or work covered until inspected and approved by the Superintendent or his designee, and the Underground Utility Contractor's return portion of each building water service permit shall be promptly returned to the Superintendent after the work has been thoroughly inspected and the return has been signed by the inspecting authority.

C. Failure to comply with any provisions of this article by the Underground Utility Contractor or Master Plumber may result in the forfeiture of the right, as determined by the Superintendent, or his designee, to perform work within the Town. The NSBWC also reserves the right to withhold the issuance of any water permits to any Underground Utility Contractor or Master Plumber found in violation of any provisions of this article.

2.00 PART 2 - DRAWINGS

2.01 The applicant must furnish drawings showing the location of the premises to be supplied together with the location of all valves, pipes, hydrants, tanks, sprinkler heads, proposed connection points, applicable details, general notes, utility conflict corrections, and other appurtenances to be installed on the premises at the time of making the application.

2.02 The applicant also agrees to furnish the Water Board with drawings showing revisions to piping or appurtenances. The drawings shall become and remain the property of the Water Board.

2.03 Drawings shall be submitted on a maximum size of 22" by 34" prints. Two (2) sets shall be submitted at the initial submission for indication of comments during the review stage. If a project is to be implemented in stages or phases, a master plan showing the entire site development, including all future expansion areas, shall be submitted for review during the first submission.

2.04 Drawings shall not be at a scale less than 1-inch per 40 feet and no more than 1-inch per 20 feet.

2.05 All site plans shall contain contours at a minimum of 2-foot intervals based on National Geodetic Vertical Datum (N.G.V.D.) and not with assumed elevations. Site plans shall include a locus map at a scale of not less than 1 inch = 2,000 feet and a north arrow.

2.06 A thrust block or restrained joint pipe table shall be included on the plan reflecting the size(s) for all thrust blocks, length of all restrained pipe per fitting style and the accompanying fittings proposed.

2.07 All drawings are to be signed and wet-stamped by a registered, professional engineer licensed in the State of Rhode Island under whose direction the design has been prepared.

2.08 All applicable details shall be shown on the drawing sets.

3.00 PART 3 - AS-BUILT / RECORD DRAWINGS

3.01 Upon completion of all water main infrastructure and appurtenance work, the developer/owner shall provide a preliminary as-built drawing documenting the record of actual construction. The preliminary as-built drawing shall be on 22" x 34" sheets (plan scale 1" = 40') for review prior to activation of the new construction infrastructure. Upon approval by the Water Board, water service may be activated to facilitate development of the site.

3.02 The owner/developer shall provide a revised as-built drawing reflecting measurements from the building foundations and above grade permanent structures and/or visible accessible permanent features to water appurtenances (such as bends, valve boxes, services, and so on). Valve boxes, curb boxes and telephone poles are not considered permanent features to retain measurements from. The final as-built drawing(s) set shall accurately mark the location of each infrastructure component or appurtenance as constructed including, but not limited to:

A. Measured horizontal and vertical locations of the above and below grade water main, valves, fittings, services and appurtenances referenced to permanent surface improvements, above grade permanent structures and/or permanent visible and accessible features of the installation.

B. Information concurrent with the actual construction.

C. Distance from the main to curb box at each service.

D. Three point measured swing ties from permanent surface improvements, above grade permanent structures and/or visible and accessible features of the installation to identify all bends, services and end caps.

E. Depth of main at maximum of 50-foot intervals. Ties at every 100-foot interval, each recorded service and at each bend.

F. Total overall footage.

G. Detail of water main tap connection and all utility crossings.

H. The completed water main and its proper orientation.

I. Valve opening rotation (open left).

3.03 Upon approval of the "as-built" submission and print of the final "as-built" record drawing(s) shall be submitted and will remain the property of the NSBWC upon its approval and acceptance.

3.04 Upon final approval, the contractor shall also provide the "as-built" in AutoCAD and PDF, latest edition digital format acceptable to the NSBWC.

3.05 Water service will not be activated until all requirements have been met to the satisfaction of the NSBWC.

4.00 PART 4 - QUALIFICATIONS OF MATERIAL AND EQUIPMENT

4.01 Specific manufacturers' names and catalog numbers are used herein to establish quality and design of a particular item.

4.02 Wherever in the Specifications any item of equipment or material is designated by reference to a particular brand, manufacturer, or trade name, it is understood that a reviewed equal product, acceptable to the New Shoreham Board of Water Commissioners (NSBWC), may be submitted by the Contractor.

4.03 If the Contractor proposes to use a material which, while suitable for the intended use, deviates in any way from the detailed requirements, he shall inform the NSBWC, in writing, of the nature of such deviations at the time the material is submitted for review, and shall request a review of the deviation from the requirements.

4.04 In requesting a review of deviations or substitutions, the Contractor shall provide evidence leading to a reasonable certainty that the proposed substitution or deviation shall provide a result at least equal in quality to that specified. If, in the opinion of the NSBWC, the evidence presented by the Contractor does not provide a sufficient basis for such reasonable certainty, the NSBWC will reject such substitution or deviation without further investigation, in which case it shall be the responsibility of the Contractor to provide another product which is satisfactory the NSBWC.

1.00 PART 1 - GENERAL

1.01 DESCRIPTION OF WORK:

A. The Contractor shall obtain all Town permits necessary to complete the installation of a water system. The work consists of furnishing and installing water pipe, pipe fittings and specials, valves, valve boxes, hydrants, water service connections, connections of existing and new piping, miscellaneous metal for strapping piping, underground line markers, accessories, miscellaneous and appurtenant work for providing construction as directed, complete in place tested, disinfected and accepted.

1.02 SPECIAL REQUIREMENTS:

A. The Superintendent of the Block Island Water Company (BIWC) shall be notified twenty-four (24) hours in advance to inspect construction, witness testing and taking water samples.

1.03 SUBMITTALS:

A. Contract Drawings: Submit three (3) sets of drawings of proposed water system or water service to the Water Superintendent for review.

B. Record Drawings: At completion of project, submit record drawings of installed water system or water service piping showing a minimum of three ties from permanent installations such as poles, hydrants, etc., for valves, bends and service connections at main, property line and dwelling unit and distances.

2.00 PART 2 - PRODUCTS

2.01 IDENTIFICATION:

A. Underground-Type Line Markers for Non-Metallic Pipings: Manufacturer's standard permanent detection tape, bright colored, continuous-printed polyethylene tape with a metallic core for easy detection of non-metallic underground installations, intended for direct-burial service; not less than 6" wide x 4 mils thick. Provide blue detection tape with black printing reading "CAUTION WATER LINE BURIED BELOW" as manufactured by Seton or equal.

B. Underground-Type Line Markers for Metallic Pipelines: Manufacturer's standard permanent, bright colored, continuous-printed polyethylene tape, intended for direct-burial service; not less than 6" wide x 4 mils thick. Provide blue tape with black printing reading "CAUTION WATER LINE BURIED BELOW" as manufactured by Seton or equal.

2.02 PIPE AND PIPE FITTINGS:

A. Ductile iron fittings shall conform to ANSI/AWWA C153/A21.53. Foreign fittings, gasket glands and accessories are strictly forbidden. All fittings shall have a bituminous outside coating in accordance with ANSI/AWWA C151/A21.51 and ANSI/AWWA C153/A21.53 respectively. All fittings shall be cement-mortar lined and seal coated in accordance with ANSI/AWWA C104/A21.14 except the lining thickness shall be twice that specified. Joints for fittings shall be mechanical joint conforming to ANSI/AWWA C111. All mechanical joint fittings shall be supplied with glands and accessories.

1. Type: 4-inch to 12-inch Ductile Iron compact meeting ANSI/AWWA C153/A21.53.

2. Pressure Class: Pipe fittings shall have a pressure rating of 350 for 12-inch and smaller. Fittings shall, at a minimum, have the same pressure rating s the connecting pipe.

3. Gaskets: Rubber meeting ANSI/AWWA C111/A21.11.
Nitrile (in contaminated soil).

4. Restrained Joint Pipe and Fittings: Mechanical joint restraints shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536-80. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11 and ANSI/AWWA C153/A21.53 of latest revision. Twist-off nuts shall be used to insure proper actuating of the restraining devices. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc. MEGALUG or equal.

B. Couplings shall be furnished with corrosion-proof vinyl coating on middle ring and followers.

C. Polyvinyl Chloride (P.V.C.) Piping: Piping shall be Class 150 conforming to AWWA C900 standard specification and the pipe shall have integral bell and spigot joints through 12". The P.V.C. pipe shall be supplied in lengths not in excess of 20 feet. Each pipe shall have cast on it; nominal size, AWWA pressure class, dimension production record code and seal of testing agency that verified the suitability of the pipe material for portable water.

1. Fittings: The fittings shall be cast-iron or ductile iron compiling to the requirements stated under "Ductile-Iron Piping" with mechanical joint restraints.

2. Mechanical joint restraint shall be incorporated in the design of the follower gland. The restraint mechanism shall consist of a plurality of individually activated gripping surfaces to maximize restraint capability. Glands shall be manufactured of ductile iron conforming to ASTM A536-80. Dimensions of the gland shall be such that it can be used with the standardized mechanical joint bell and tee-head bolts conforming to ANSI/AWWA A21.11/C111 and ANSI/AWWA A21.53/C153 of latest revision. Twist-off nuts, sized same as tee-head bolts, shall be used to insure proper actuating of restraining devices. The mechanical joint restraint shall have a working pressure of at least 100 psi with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc., MEGALUG^{R} or equal. The length of upstream and downstream piping requiring mechanical joint restraint from a fitting shall be in accordance with the manufacturer's requirements.

3. When it is required to restrain PVC push-on joints adjacent to restrained fittings, a harness restraint device shall be used. This harness restraint shall be split to enable installation of the restraint after the spigot has been installed into the bell. The restraint shall consist of three major parts: the first part being a split ring that fits behind the bell; the second part being a split restraint ring that installs on the spigot; the third part being a number of tie bars to connect parts one and two to facilitate joint restraint. All of these components shall be cast of ductile iron conforming to ASTM A536-80. The restraint ring shall consist of a plurality of individually activated gripping surfaces to hold the spigot and maximize restraint capability. The harness restraint shall have a working pressure of at least 100 psi with a minimum safety factor of 2:1 and shall be EBAA Iron, Inc., MEGALUG^{R}, Series 1100HV or equal.

2.03 FLEXIBLE COUPLINGS:

A. Where flexible couplings are to be installed, they shall be Dresser, Skinner, Smith Blair or equal for Class 52 Ductile Iron Pipe. Coupling shall be furnished with corrosion-proof vinyl coating on middle ring and followers. Adapters shall conform to the manufacturers specifications.

2.04 STRAP RODS:

A. For purpose of anchoring pipe or fittings shall be ¾" round steel or wrought iron. Clamps shall be not less than 2" wide and ⅜" round. Clamps and rods are to be protected against corrosion by heavy coat of bituminous asphalt varnish after final assembly. Where pipe or fittings will be exposed under normal conditions, joints shall be sufficiently restrained so as to prevent blow off of pipe or fittings or movement of same during normal use.

2.05 THRUST BLOCKS:

A. Concrete for thrust blocks shall be 3000 psi.

2.06 HYDRANTS:

A. Fire hydrants: Fire hydrants shall be in accordance with the requirements of the latest "Standard Specification for Fire Hydrants for Ordinary Water Works Service" as adopted by the American Water Work Association, Specification AWWA C502-64, as manufactured by Mueller Centurion, Size 4½ inch. Hydrants shall meet the specific requirements and exceptions of the aforementioned specifications as follows:

1. Hydrants shall be so constructed that if accidentally broken off at top, i.e., above grade, the top section can readily be replaced without closing any valves outside the hydrant, and without excavation.

2. Hydrants shall be unsuitable to set in a trench 4'-6" deep, that being the distance from the ground surface to the underside of the 6" pipe connecting with the hydrant. Hydrant extension pieces, barrel type shall be furnished for depths exceeding 4'-6" as directed by the Superintendent.

3. Hydrant drain outlet shall be surrounded with not less than two (2) cubic feet of washed stone or crushed gravel.

4. Hydrants shall open LEFT, hydrant head shall have arrow to indicate opening direction.

5. Hydrants furnished shall be complete, i.e., with no additional fittings or conveniences (other than replacement parts) to be purchased by the Town.

6. Contractor shall paint exposed portion of hydrants with a field coat of red paint and a finish coat of high grade oil paint in colors to be selected by the Town. Below ground, hydrants shall be coated with pitch tar varnish of same composition as AWWA specifications for tar coated pipe.

B. Hydrant Wrench: One hydrant wrench shall be provided to the Town. The wrench shall be pentagonal non-adjustable and specifically for use with hydrants.

2.07 VALVES:

A. Resilient Seat Gate (4-inch to 12-inch):

1.	Type:	Buried Service non-rising stem. Above grade service or pits OS&Y with hand wheel or non-rising stem with hand wheel.
2.	Working Pressure:	250 psi
3.	Opening:	Left on system location.

4. Stem: 420 stainless steel or equal with minimum 60,000 psi yield strength.

5. Fasteners: Stainless steel, type 304 for all of the valves.

6. Coatings: Internal and exterior to be coated with fuse bonded holiday-free epoxy coating, minimum 8 mils nominal thickness, meeting or exceeding AWWA C550.

7. Wedges: Fully rubber encapsulated cast iron, ductile iron or bronze gate meeting AWWA C509.

8. Opening Nut: 2-inch square operating nut with hexagon stainless steel bolt fastener.

9. Stem Seal: Minimum two (2) O-ring seals.

10. Connection: Mechanical joint.

B. Tapping Sleeves and Valves: Valves shall be full body and full port tapping type meeting the requirements for resilient seat gate valves. Sleeves shall be full port ductile iron or grade 18-8 type 304 stainless steel. Ductile iron sleeves shall be of the same manufacturer as of the valve and bituminous coated. All sleeves shall be manufactured to meet or exceed the design and operating characteristics of one of the following devices:

1. Type: Resilient seat gate valves designed specifically for tapping.

2. Seal: Stainless steel sleeves shall use grid pattern virgin rubber ASTM 2000, full 360-degree pipe coverage. Ductile iron sleeves shall use mechanical joint with rubber seals.

C. Valve Boxes: Valve boxes shall be two piece, buffalo type, adjustable of the sliding type, round body, heavy pattern, with at least ten inches of overlap of top section over the other and with flanged top section. The castings shall be made of gray cast-iron, true to pattern and free from flaws. They shall be thoroughly coated with an asphaltum varnish, inside and out. The covers shall be 5¼-inch diameter solid ring seat with the word "WATER" cast in the top. At the completion of the work, valve boxes shall be set plumb and flush with the road surface.

D. The upper portion of the box shall be manufactured with a heavy flange having sufficient bearing area to prevent settlement. The lower section shall be configured to enclose the valve stuffing box with an inside diameter of at least 4¼-inch. The installed box shall be capable of vertical adjustment of a minimum of 6-inch while maintaining an overlap of at least 4-inch between sections.

E. Valve Key: The Contractor shall furnish one standard valve operating key to the Town.

2.08 INSULATION OF UNDERGROUND PIPING:

A. Foamglass Insulation: ASTM C552 "Spec. for Cellular Glass Thermal Insulation" shall be 3" thick as manufactured by Pittsburgh Corning Corporation.

B. Jacketing: The jacketing shall be Pittwrap Jacketing as manufactured by Pittsburgh Corning Corporation.

C. Asphalt Coating: Pittcote 300 finish by Pittsburgh Corning Corporation.

D. Reinforcing Fabric: PC Fabric 79 by Pittsburgh Corning Corp.

E. Strapping Tape: Glass fiber reinforced, 1" wide, Scotch Brand No. 880 by 3M.

F. Bore Coating: Hydrocal B-11 by U.S. Gypsum.

2.09 SERVICE CONNECTIONS:

A. Service pipe sizes to 2-inch shall be H.D.P.E. pipe. Color must be blue with a virgin clear natural center. Continuous identification markings over the entire length of the pipe with sealed ends and coiled in rolls from 100-ft. minimum.

1. H.D.P.E. shall conform to ASTM D1248 Type III, Grade P34, Class A, Category 5, color blue with virgin clear natural center, AWWA C901, 200 psi (CTS).

B. Corporation Stops: Corporation stops shall be lead-free brass full port ball and plug style with a thick wall cast brass body and stainless steel stem. The inlet connection shall be tapered AWWA (cc) and the outlet connection compression type. The corporation stop shall be equal to American Water Works Association standards as manufactured by Mueller, Cambridge, or Red Hed.

C. Curb Stops: Curb stops shall be lead-free full port ball style with a thick wall cast brass body with drain and stainless steel stem. The inlet and outlet shall be compression type. The stop shall have 90° rotation with casted arrow depicting direction of flow. The curb stop shall be equal to American Water Works Association Standards as manufactured by Mueller, Cambridge or Red Hed. The Contractor shall furnish to the Town, two (2) socket wrenches suitable for operating curb stops. One end of wrench handle shall have a socket of proper size and shape to remove curb stop box cover nuts.

D. Curb Boxes: Curb boxes shall be of cast-iron of one of the standard makes, sliding, New England Style, inside cover, with upper section 2½" or larger, and shall be coated

with asphaltum varnish, inside and out. They shall have round covers with the word "WATER" cast thereon. Boxes shall be adjustable for a maximum bury of 4 feet-6 inches. Cover shall be attached to box with locknuts or lock lugs.

E. Backflow Preventers: All devices must have been approved by the University of Southern California (FCCCHR, USC), American Water Works Association and American Society of Sanitary Engineers. Backflow device assemblies tested with manufacturer's isolation valves to meet FCCCHR, USC standards shall be installed with the manufacturer valves as an assembly. Bronze or brass components shall meet or exceed the lead leaching performance specifications of ANSI/NSF 61 Standard or be manufactured with lead-free "Environ Brass II" USN Alloy Number C89520, ASTM B584-98a.

1. Testable Double Check:

a.	Type:	Watts or equal
b.	Body:	Cast iron, bronze or stainless steel (depending on size)
c.	Coating:	Iron components shall be epoxy coated AWWA C-500
d.	Springs:	Stainless steel
e.	Pressure:	Maximum 150 psi - Minimum 10 psi

2. Testable Reduced Pressure:

a.	Type:	Watts or equal
b.	Body:	Cast iron, bronze or stainless steel (depending on size)
c.	Coating:	Iron components shall be epoxy coated AWWA C-500
d.	Springs:	Stainless steel
e.	Pressure:	Maximum 175 psi - Minimum 10 psi

3. Household Dual Check:

a.	Type:	Watts or equal
b.	Body:	Cast bronze
c.	Springs:	Stainless steel
d.	Pressure:	Maximum 150 psi - Minimum 10 psi

F. Saddles: Service saddles and repair saddles shall be ductile iron or type 304 stainless steel, with stainless steel bolts, washers, nuts and bands. Ductile iron components shall be coated with fusion bonded epoxy minimum 8 mils thickness meeting or exceeding AWWA C550 or nylon coated. Saddles shall be manufactured to meet or exceed the design and operating characteristics of the following:

1. Service:

a.	Type:	Ford or equal.
b.	Body:	Ductile iron or grade 18-8 type 304 stainless steel.

c. Coating: Ductile iron components shall be epoxy coated AWWA C500 or nylon coated.
d. Band: Grade 18-8 type 304 stainless steel double band.
e. Fasteners: 304 stainless steel stud, nut and washers.
f. Gasket: Virgin rubber ASTM 2000.
g. Outlet: Threaded outlet tapped to AWWA C800 for the appropriate service size.

2. Repair:

a. Type: Ford or equal.
b. Body: Ductile iron or grade 18-8 type 304 stainless steel.
c. Coating: Ductile iron components shall be epoxy coated AWWA C500 or nylon coated.
d. Band: Grade 18-8 type 304 stainless steel double band.
e. Fasteners: 304 stainless steel stud, nut and washers.
f. Gasket: Virgin rubber ASTM 2000.
g. Outlet: Threaded outlet tapped to AWWA C800 for the appropriate service size.

2.10 GRAVEL BASE:

A. Gravel shall be free of foreign material such as loam, silt, clay and vegetable matter and meet the following requirements:

Passing 1¼-inch sieve	100%
Passing ¼-inch sieve	30-65%
Passing No. 40	5-50%
Passing No. 100	0-10%

2.11 BEDDING MATERIAL:

A. Pipe bedding shall be processed borrow gravel, granular in nature, the major portion of which may be sand or gravel. It shall be free from peat, vegetable or organic matter or any other debris and readily compactable. Recycled road sweepings and contaminated material are forbidden.

B. Selected backfill may be from excavated materials that shall be free draining, clean, granular soil suitable for backfill. It shall be free from peat, vegetable or organic matter or any other debris and shall be readily compactable to the requirements of BIWC, type 5 trench. Recycled road sweepings and contaminated material are forbidden. Up to 20 percent may be rock-like material, not to exceed 3-inches in length or diameter, and must be evenly distributed within the total volume of the fill.

2.12 SAND BLANKET:

A. The sand shall be free from ice, snow, roots, sod, rubbish, and other deleterious or organic matter. The sand blanket shall conform to the requirement of 100-percent passing the ½-inch screen, 85 to 100-percent passing the ⅜-inch screen, 60 to 85-percent passing the No. 4 sieve, 35 -60-percent passing the No. 16 sieve, 10 to 35-percent passing the No. 50 sieve and 2 to 10-percent passing the No. 100 sieve.

2.13 BACKFILL:

A. Backfill shall be excavated material free-draining clean granular soil suitable for backfill. Up to 20-percent of backfill material may be rock-like materials not to exceed 0.05 cubic feet in volume, not more than 6-inches in length. The backfill shall not contain any debris, pavement, frozen material, organic matter, or peat.

3.00 PART 3 - EXECUTION

3.01 EARTHWORK:

A. Cutting Pavement: Excavations made on pavement shall be made in a careful manner so as to cause the least amount of damage to the pavement. Pavement shall be sawcut prior to trench excavation. Pavement and/or cement concrete will be cut 12" either side of the maximum allowable trench width. Any damage to the cut line due to the excavations, backfilling or removal of temporary pavement shall be re-cut to neat lines. The width of pavement removed shall be kept as narrow as practicable. Existing pavement and base course disturbed or damaged shall be replaced by the Contractor to match existing pavement and base course. Excavated pavement shall not be mixed with other excavated material which is to be used as backfill, and shall be removed immediately from the site of the work.

B. Trench Excavation: Trenches shall be excavated to lines and grades shown on the drawings and shall include the removal of materials such as clay, pavements, sand, gravel, soft or disintegrated rock, which in the opinion of the Superintendent can be removed without blasting or drilling, and boulders less than 1 cubic yard in volume. Wherever rock is encountered in trench excavation, rock shall be removed by a method acceptable to the Superintendent to the lines and grades indicated on the plans, or to a minimum depth of 6" beneath the pipe barrel. Final decision as to suitability of excavated material for use as backfill or fill shall be made by the Superintendent. If in the judgment of the Superintendent the excavated material is unsuitable, the Contractor shall import bank run gravel to make up the deficiency.

C. Excavation Support System: The Contractor shall furnish, put in place, maintain and remove, as required and/or necessary for safe and proper construction in accordance with OSHA regulations, all excavation support systems which may be required to support the sides of the excavation, preventing damage to persons, adjacent property and structures.

D. Pumping and Dewatering: The Contractor shall furnish all pumps, equipment, power and attendance to maintain and operate such pumping and dewatering systems consisting of any means and devices, including spare units in case of breakdown, which accomplish the removal and prompt disposal of all water entering the excavation. The pumping manner, method or both shall be sufficient such that the natural state of the soil is not significantly disturbed and that groundwater is controlled at levels which will permit all work to be performed in dry conditions.

E. Excavation and Backfill for Pipes:

1. The width of the trench shall be held to a minimum consistent with the space required to permit satisfactory jointing of the pipe and tampering of the bedding and backfill material under and around the pipe. In general, the maximum trench width shall be the pipe diameter plus two feet or a minimum width of three feet, whichever is greater. If necessary, sheeting and/or shoring shall be used to prevent overcutting at the level of the top of the pipe and to maintain the trench sides. The trench bottom should be smooth, level and all large stones or rocks lying on or protruding from the trench bottom shall be removed.

    a. Over-excavation shall be refilled in six (6) lifts with approved granular material and compacted to 95-percent maximum density.

2. Where unsuitable material is encountered at the trench bottom, the material shall be excavated to a stable bottom and refilled with compacted bedding material in 6-inch lifts.

3. Backfill from the centerline of the pipe to the height 2-feet above the pipe shall be sand blanket material placed evenly the full width of the trench and compacted. The remainder of the trench shall be backfill material and compacted in 12-inch layers. Cushion and backfill material shall be compacted to 95-percent maximum density by tamping and compacting in layers (1-foot maximum) to achieve the required compaction.

3.02 IDENTIFICATION MARKERS:

A. Install identification marker two (2) feet below grade above top of pipe or in accordance with requirements of state in which project is located.

3.03 INSPECTION:

A. All pipe, fittings, valves and hydrants shall be carefully inspected for defects immediately prior to placing in the trench.

3.04 INSTALLATION OF PIPE:

A. Each pipe shall be handed into the trench carefully and in a workmanlike manner. The Contractor shall furnish all slings and straps to permit satisfactory support of all parts of pipe when it is being handled. The Contractor shall take all necessary precautions to prevent movement of pipe in the event of the trench flooding. Any length of pipe broken or damaged shall be replaced.

B. Ends of pipe shall be thoroughly cleaned before joint is made. The surface of the joint shall be painted with required lubricant applied in accordance with the manufacturer's direction. The lubricant shall be of type recommended by pipe manufacturer. Pipes shall be jointed in strict accordance with pipe manufacturer's directions and work shall be done by skilled workmen.

C. No pipe or fittings shall be laid in water or on a frozen trench bottom or when the trench conditions or the weather are unsuitable for such work. All joints shall be checked by feeler ring gauge to insure proper positioning of rubber gaskets.

3.05 FITTINGS:

A. Fittings of the proper type shall be furnished and installed wherever shown on the drawings and as required by the Block Island Water Company.

B. The fittings shall be supported on cement blocks to prevent settlement and resulting shear action to attached pipes. Cement blocks at fittings shall remain in place. At all plugged tees the plug shall be strapped to tee.

C. Bends and tees shall be installed in the mains where shown on the contract drawings. Vertical bends where shown on the drawings shall be anchored in both directions with pipe-clamps and tie-rods. All other fittings shall be equipped with proper sized thrust blocks poured against undisturbed earth. The Contractor shall provide the necessary tie rods and clamps. Tie rods and clamps shall be as manufactured by the Grinnel Company, Inc. or equal.

3.06 RESTRAINED JOINTS:

A. Fittings and bends may be restrained through the use of mechanical joints with MEGALUG or with thrust blocks. If mechanical joints with MEGALUG are utilized, the required length upstream and downstream pipe shall be restrained based on the manufacturer's recommendation.

B. Thrust blocks shall be of sufficient size as shown in the details to prevent movement or the pipe shall in all cases be poured against undisturbed earth. Where thrust blocks are in contact with the pipe, concrete shall be kept clear of pipe joints.

C. Concrete thrust blocks shall be constructed at all underground fittings that results in a change of direction of pipe line. Thrust blocks shall be of bearing size indicated on the drawings.

3.07 INSTALLATION OF VALVES:

A. Each valve shall be equipped with a gate box set vertically with top even with finished grade.

3.08 METHOD OF INSTALLING SERVICES:

A. Services shall be installed by open cut method. Under no circumstances will tunneling under surfaced roadways be permitted.

3.09 SERVICE TAPS:

A. Taps for service connections shall be made with a standard tapping machine, using a sharp tap, the threads of which shall have the same taper as the taper of the threads on the corporation stop. Service taps shall be of the size directed by the Superintendent.

3.10 COUPLINGS AND CONNECTIONS:

A. All couplings for service piping and connectors to corporation and curb stops shall be flared tube or compression type.

3.11 HYDRANTS:

A. Hydrants shall set straight and true on a firm base. Bury shall be 4'-6" to centerline of inlet. Each hydrant shall be equipped with a thrust block, drain connection, and gravel drainage pocket all as shown on the contract drawings. The Contractor shall supply the necessary 3/4" threaded to copper fittings and ¾" Type K soft copper tubing to install the hydrant drain connections.

3.12 DEFLECTION:

A. Wherever curves are negotiated by deflecting successive lengths of pipe the deflection of each length of pipe shall not exceed 3 degrees, or as recommended by manufacturer.

3.13 INSULATION OF UNDERGROUND PIPING:

A. Insulation and jacket shall be installed in accordance with written manufacturer's installation procedures. Prior to backfilling, roofing felt shall be placed over the Pittcote 300 coatings.

3.14 FIELD QUALITY CONTROL:

A. Pressure Testing:

1. All services, water mains, bypass piping and appurtenances must be installed prior to commencement of any test. A pressure test shall be conducted on all completed water lines prior to acceptance. The proposer, at no cost to the BIWC, shall accomplish the pressure test. An authorized representative of the BIWC shall witness the test.

2. Each valve section of the main shall be filled slowly with water at a rate no greater than one foot of pipe section per second. All air shall be released via corporation stops, hydrants, and installed automatic air release fittings. All air must be removed and the full pipe shall sit idle for a period of 24-hours prior to commencement of the pressure test. Piping installations greater than 1,000 feet shall be accomplished in sections no greater than 1,000 feet.

3. The test pressure shall be brought up to at least 50% higher than the normal anticipated working pressure, or 150 psi, whichever is greater, and maintained for a continuous two (2) hour period. An authorized representative of the BIWC shall witness the test. Any loss of pressure indicates a leak, and no pipe installation will be accepted with any leakage.

4. Proper thrusting of all pipefitting, caps, hydrants and appurtenances shall be provided to resist the imposed test pressure.

B. Chlorination/Disinfection:

1. All new or repaired potable water system distribution mains, service pipe and the necessary connecting pipes, fittings, control valves, and all appurtenances in or adjacent to any residence, building or premises shall be purged of deleterious matter and shall be disinfected prior to utilization or permanent connection to the BIWC system. That portion of the customer's service pipe after the curb stop shall be disinfected under the supervision of the local plumbing official. The owner must provide written laboratory certified documentation of the disinfection test results to the BIWC before making any permanent connection to the BIWC system or before re-activation of any existing water service can be authorized.

2. The proposer or the contractor for the proposer, in accordance with Chapter 5, Distribution System Chlorination, American Water Works Association Manual #20, shall perform chlorination. Tablet chlorination shall not be allowed.

3. The owner or customer is responsible for all costs associated with the disinfection process or procedure.

4. The disinfection must result in eliminating from the various parts of the new pipe line any evidence of the existence, therein, of bacteria indicative of any contamination, as determined by tests of the bacterial content of samples of

water taken from the new water main. The disinfection may be accomplished by introducing into all the various parts of the new water mains, a liquid solution containing 1% available chlorine in such volume that the rate of dosage to the water mains shall be at least 50 parts per million of available chlorine. Tablet chlorination is not allowed. The contact period for this disinfection shall be at least 24 hours, and a longer period will be required if tests of residual chlorine show it to be necessary for proper disinfection.

5. The new water system shall be flushed out after disinfection and refilled with fresh water. All chlorinated water used in the disinfection process shall be dechlorinated prior to discharge to the surrounding area.

6. Water must sit in the main for at least 24 hours prior to taking a test sample. Water utilized for this purpose, flushing or pressure testing, which is obtained directly from the BIWC system, must flow through an isolate connection to the BIWC system via an approved meter, testable backflow prevention device and jumper line. The contractor shall make all necessary arrangements for securing the water for test purposes and shall bear the expense of these arrangements. The installer shall furnish and install suitable temporary testing plugs, caps, pumps, pipe connections and other appurtenances, as necessary, to obtain samples at points no further than 1,000 feet apart.

7. After final flushing and before the new water main is connected to the distribution system, 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 1,000 ft. of new main, plus one set of two samples from the end of the line. At least one set of two samples shall be taken from each branch. Samples shall be collected by BIWC employees, given a two-day notice, and tested by a laboratory approved by the BIWC.

C. Flushing of Main: Temporary fittings for flushing, pressure testing and chlorination are required for all newly installed mains. New mains shall be capped at each end. Each end shall be fitted with a temporary riser of sufficient length to reach finished grade and an isolation valve. The live main tap shall be fitted with an isolation valve, two feet of main that is restrained, restrained cap and temporary riser of sufficient length to reach finished grade and an isolation valve. Risers and isolation valves shall be sized to provide a flushing water velocity of at least 2.5 feet per second based on the installed main size. A meter and testable backflow preventer is required to be placed in the jumper line between the existing and new main prior to obtaining water for any process. Depending on the size of the main, multiple taps and backflow preventers may be required to provide the required velocities within the new main.

3.15 TEMPORARY BYPASS PIPING AND SERVICES:

A. Piping, Valves and Hydrants:

1. All pipe and appurtenances used in providing the temporary bypass service piping shall be in good condition and adequate to withstand at least 1½ times the normal water working pressures and all other conditions of use. The pipe and other materials shall provide adequate watertightness.

B. Temporary Bypass Piping and Services:

1. The Contractor shall provide temporary valve bypass piping and services as required to satisfactorily provide adequate fire protection in accordance with the Fire Department and serve all water customers serviced by the section of water main that is out of service during the performance of the work under this contract. In general, bypass pipe shall be 2-inch diameter high density polyethylene pipe joined by the fusion welding process. Dead-end bypass lines shall be provided with valves and piping for blow-offs and bleeding. The Contractor shall provide temporary building service connections to every building served by the section of water main taken out of service. Temporary building service connections shall extend from the 2-inch bypass pipe and shall be of adequate size to satisfactorily provide adequate water to the building being serviced.

2. In general, all temporary piping and services shall be provided in such a manner as to protect it from damage and to insure uninterrupted supply, and shall be located out of traveled ways where practicable, in locations where it will cause the least obstruction and inconvenience, and where it will be least subject to damage.

3. The Contractor shall furnish all work and fittings and make all necessary connections required to supply the bypass pipes (including services) with water from hydrants or existing water mains.

4. All temporary building service connections shall extend from the bypass pipe and terminate at the connection to the building plumbing. Temporary building services shall include all necessary hoses, pipes, valves and fittings, of approved size, required to service consumers. The Contractor shall make the actual connection and disconnection to the consumer's building plumbing, and shall coordinate his work with the Town of any building to be serviced so that there will be the least amount of inconvenience to the Town.

5. Once put in use, all temporary piping and services shall be maintained until the new water main is placed and in service. Any interruptions, whether caused by frost, physical damage, or otherwise, shall be immediately corrected, and the service restored or replaced without additional payment.

C. Disinfection:

1. All temporary bypass lines, services and connections shall be disinfected just before being placed into service in accordance with Paragraph 3.14 (Field Quality Control).

D. Disconnection and Removal of Temporary Piping:

1. After the new water main is accepted and placed in service, and permanent service to consumers has been restored, and when approved, the Contractor shall remove all temporary bypass piping and building service connections, and all other temporary work, as directed; place temporary paving as required; restore to their original condition all walks, drives, curbs, grassed areas and such other parts which have been disturbed as a result of the Contractor's operations.

E. Protection:

1. The Contractor shall be responsible for taking and providing all necessary and required precautionary measures at all times during the installation and removal of the temporary bypass service piping and building service connections, to prevent any contamination of the water supply, water mains and service piping, and for the protection of public health and safety.

3.16 INSTALLATION METHODS:

A. Installation of all water conveyances, mains, pipes or lines shall be in accordance with the Ductile Iron Pipe Research Association's installation manual and ANSI/AWWA C600 and all other requirements of the BIWC.

B. Water main and services shall be installed with a minimum cover of 4'-6" to the crown of the pipe in an American Water Works Association "Type 5 Trench". Where unsuitable material is found at or below the grade of the placement of the pipe of fitting, the undesirable material shall be removed to the required width and depth and replaced with thoroughly compacted bank run gravel above the crown of the pipe. Material shall be deposited across the full width and length of the trench in layers of not more than 12" in depth before compaction. Each layer, to within 12" or sub-grade of the permanent patch, shall be compacted to 95% Standard Proctor. The final 12" shall be processed gravel compacted in two (2) equal courses to 95% Standard Proctor.

C. Each length of pipe and/or fitting shall be inspected for cracks, defects in coating on lining, cleanliness or any other evidence of unsuitability.

D. Piping shall be laid straight true to line.

E. Air release manholes shall be installed at all high points throughout the proposed installation and shall be equipped with automatic air release valves. Manholes shall be

located at roadway crowns or areas where it is free draining away from manhole covers.

F. Manholes shall be watertight precast concrete constructed with watertight cast iron manhole frame (30" clear opening) and diamond check pattern cover. Outer cover shall have the word “WATER” cast upon it in 4" capital letters. The inner cover shall be gasketed with adjustable locking bar design. The chamber, frame, cover, and structural components shall be designed to withstand an H-20 wheel loading.

G. Manhole steps shall be of safety type, 12" on center and shall be cast into the units during the manufacturing process. The distance from the rim of the cover frame to the top step shall be no greater than 12".

H. The manhole chamber shall be fitted with leak tight mechanical pipe connections properly sized to fit the proposed water main. Manholes shall be vacuum or hydrostatically tested for watertight integrity of the manhole installation.

I. Horizontal joints between all barrels, top slab, bases, and entrance slab joints shall be sealed using a flexible but5yl resin sealant conforming to Federal Specifications SS-S-210A and AASHTO-M-198B or equal. The exterior of the manhole shall be completely coated and void filled with an asphaltic, waterproofing compound.

J. Line valves shall be installed at all intersections in a configuration that allows for isolation in all directions. On long lengths of main, valves shall be installed at a minimum of 800 foot intervals and at all dead end sections.

K. Pipe may be deflected in order to make minor adjustments in the alignment. All deflections shall be a maximum of 75% of the manufacturer’s safe allowable deflection per pipe length as indicated in the following tables. It is required that bends in the pipe be accomplished by fittings wherever possible.

Allowable Deflection for 18-Foot Lengths D.I. Pipe

Size of Pipe (inches)	Push-On Joint (inches)	Mechanical Joint (inches)
4	14	23
6	14	20
8 - 12	14	15

Allowable Deflection for 20-Foot Lengths D.I. Pipe

Size of Pipe (inches)	Push-On Joint (inches)	Mechanical Joint (inches)
4	16	26
6	16	23
8 - 12	16	17

L. Whenever pipe requires cutting to fit the line, the work shall be done only by experienced (State of Rhode Island, licensed contractor) or plumber, and in such a manner as to leave a smooth end at right angles to the axis if the pipe and on pipe that is center rounded designed specifically for field cutting. The cut ends shall be beveled to conform to the manufactured spigot end. Particular care shall be exercised to prevent damaging the lining when cutting cement-lined cast or ductile iron pipe. Jointing of pipe or fittings shall be made only by persons thoroughly skilled in this work. For pipe diameters 16" and larger, pipe cutting shall be done by machine.

M. Blocking under the pipe shall not be permitted except where a concrete cradle is proposed.

N. Metalized detectable identification tape 2" in width or greater, blue in color and printed with “CAUTION - WATER LINE BURIED BELOW” shall be utilized over all mains. Set to a depth from finished grade of no more than 1'-0".

O. A temporary patch shall be installed over the freshly backfilled trench in an existing street or sidewalk using hot bituminous concrete. It shall be at least 3" thick, consisting of equal thickness layers of Modified Binder and Type I-1 Wearing Course. After sixty (60) days, the temporary patch shall be removed and replaced with a permanent patch.

P. At all temporary cul-de-sacs and future streets, the main shall end with a full size line valve followed by a full length of pipe with an additional 3-foot section of pipe and end with a (MJ) cap, thrust block and 2-inch style blow-off assembly.

Q. Water distribution mains shall be designed in a grid or loop type system to prevent the occurrence of dead end lines. When the potential for dead end lines exist, the contractor shall make <u>every</u> effort to pass the main through the development to the next existing distribution line.

1. In all cases, where a dead end main is to be installed on a dead end street or cul-de-sac, the BIWC reserves the right to have the main extended to another existing main or looped back to the feeder main with proper valving to prevent a dead end main condition.

R. Water mains shall be laid with a minimum of ten-foot horizontal clearance from any existing sewer facilities. The distance shall be measured edge to edge. Water mains crossing under sewers shall be forbidden. Water mains crossing over sewers shall be

laid to provide a minimum vertical separation of eighteen (18) inches between the invert of the water main and the crown of the sewer. Re-alignment of an existing water main or relocation of the sewer may be necessary to achieve this vertical separation. The Water Superintendent must approve any deviation from these requirements. Concrete encasement shall not be allowed in the design for sewer and water main crossings.

S. At all times, during construction, all piping and fittings shall be kept from becoming contaminated from construction materials, dirt, non-potable water, yard waste, or substances produced as a result of animals, rodents and insects. Without exception, all stored piping shall be timber cribbed above grade, and shall be fitted with watertight plugs or plastic sheet securely fastened to the pipe. All valves, fittings, and appurtenances shall be fitted with caps, plugs or plastic sheet securely fastened to the fitting. The implementation of these protective measures is required to reduce the significant loss of water and labor hours expended during multiple attempts to sufficiently clean the new mains to meet the water quality standard set by the US EPA Primary Drinking Water Regulations.

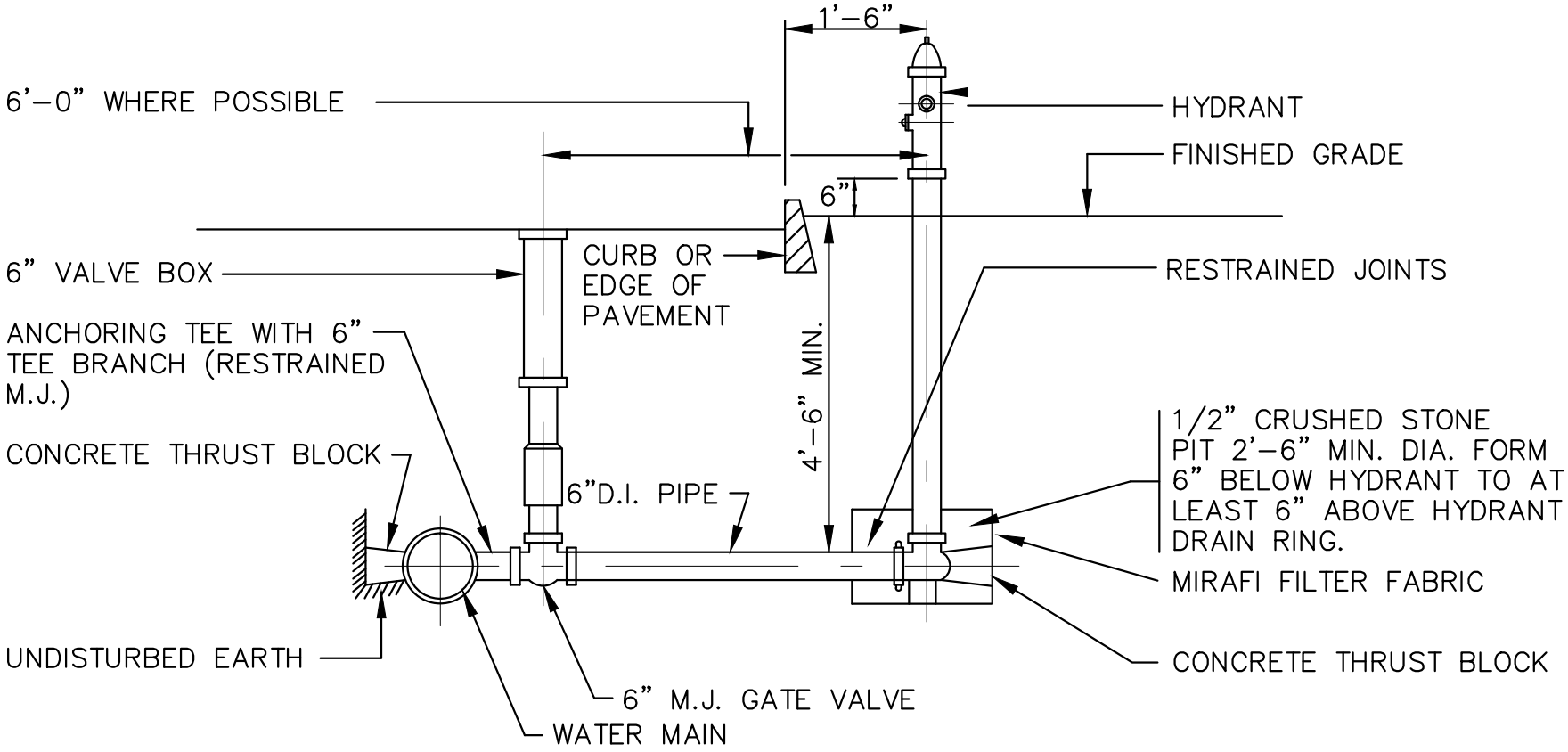
T. Adequate, temporary provisions shall be made to care for the flow from sewers or drains interfered with by the work. All necessary measures shall be taken to prevent sewage or other contaminating matter from entering the water main. Any broken or damaged utility connection or services (water, sewer, gas, telephone, electric, etc.) shall be fully repaired at the expense of the party responsible for the damage. Underground structures shall be thoroughly supported or otherwise protected to maintain uninterrupted service.

U. Pipe that is removed shall remain the property of the party whose responsibility it shall be to properly dispose of it. For example, if a private contractor is authorized to do this work, the contractor is the responsible party and must dispose of the pipe.

V. No person, except an authorized representative of the BIWC or under their observation, will be allowed under any circumstances to tap the mains or distribution pipes, insert corporation stops therein, set or remove meters on service pipes, or interfere with water gates or curb stops.

W. No new piping system shall be permanently connected to an existing BIWC main until after obtaining successful results from water quality tests from a State of Rhode Island certified laboratory meeting the standards set by RI Department of Health, and water quality test indicate that the samples are consistent with the quality of water in the BIWC system, including heterotrophic plate count results.

END OF SECTION



Town of New Shoreham Rhode Island	Figure W-1 TYPICAL HYDRANT DETAILS	
	Standard Water Requirements	
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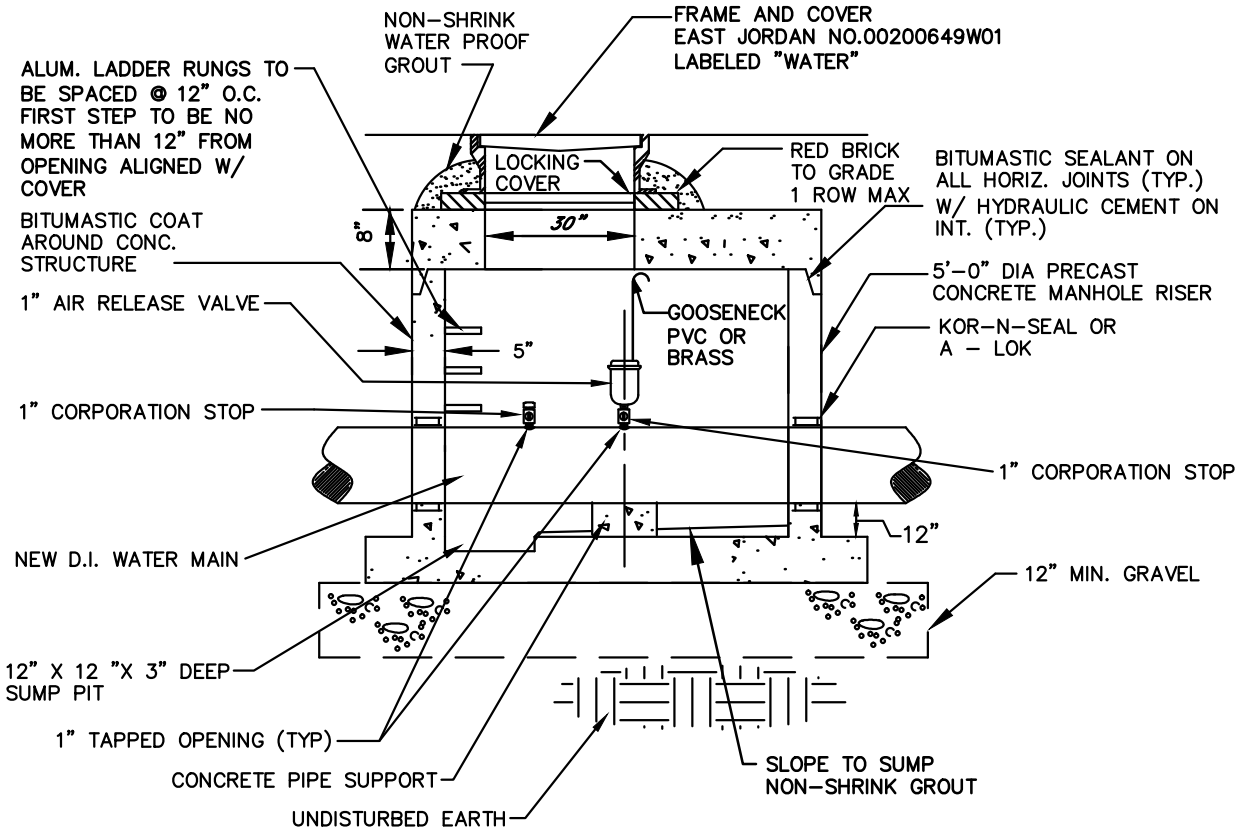

Town of New Shoreham Rhode Island	Figure W-2 AUTOMATIC AIR RELEASE MANHOLE	
	Standard Water Requirements	
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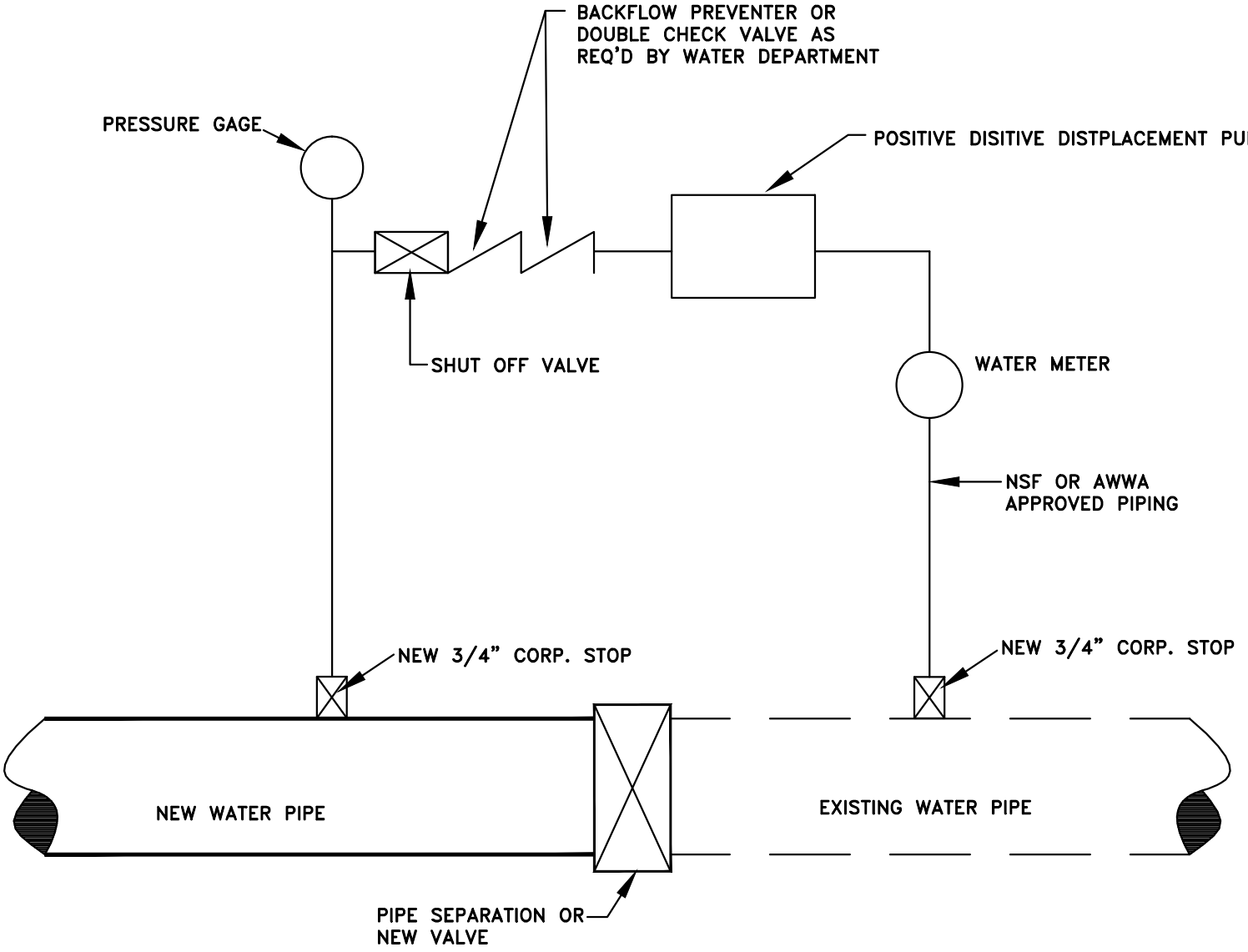
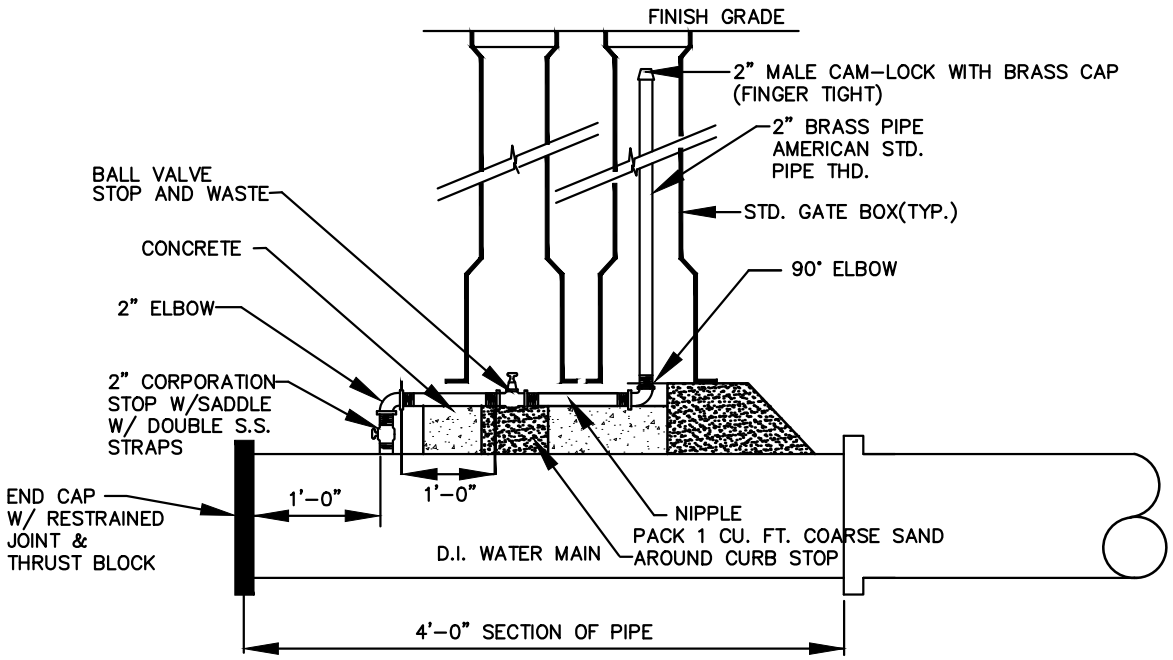


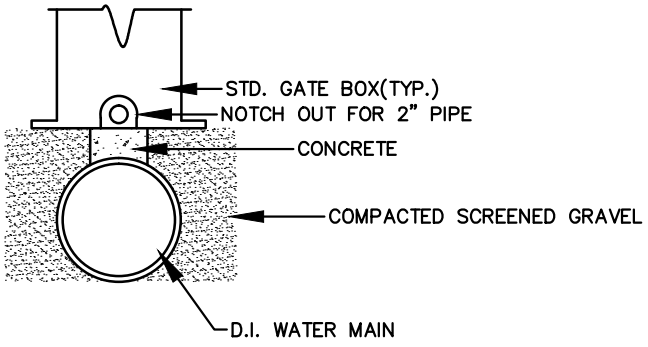
Town of New Shoreham
Rhode Island

Figure W-3
WATER TESTING DETAILS

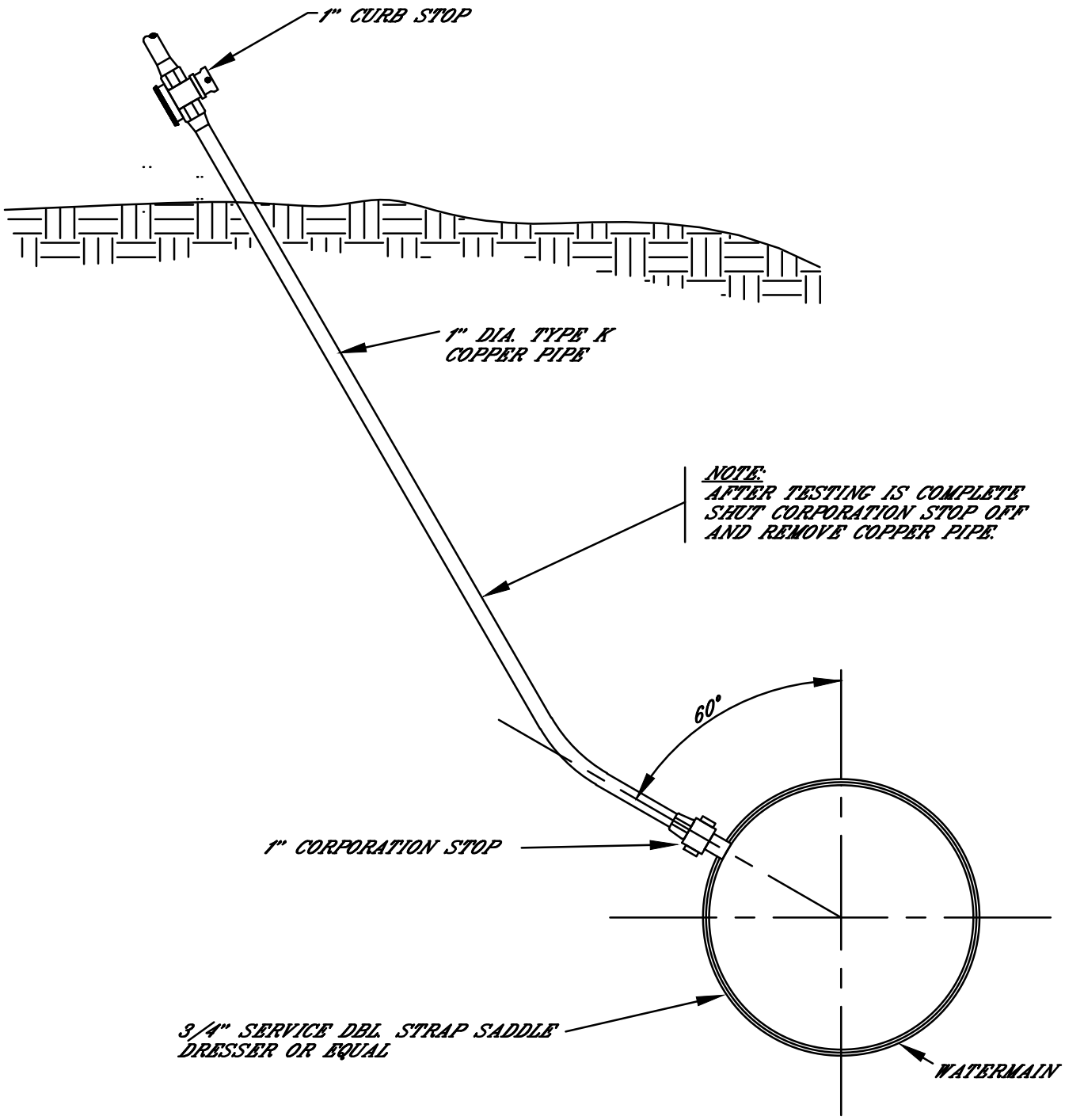
Standard Water Requirements

Date: 2019 | Scale: No Scale

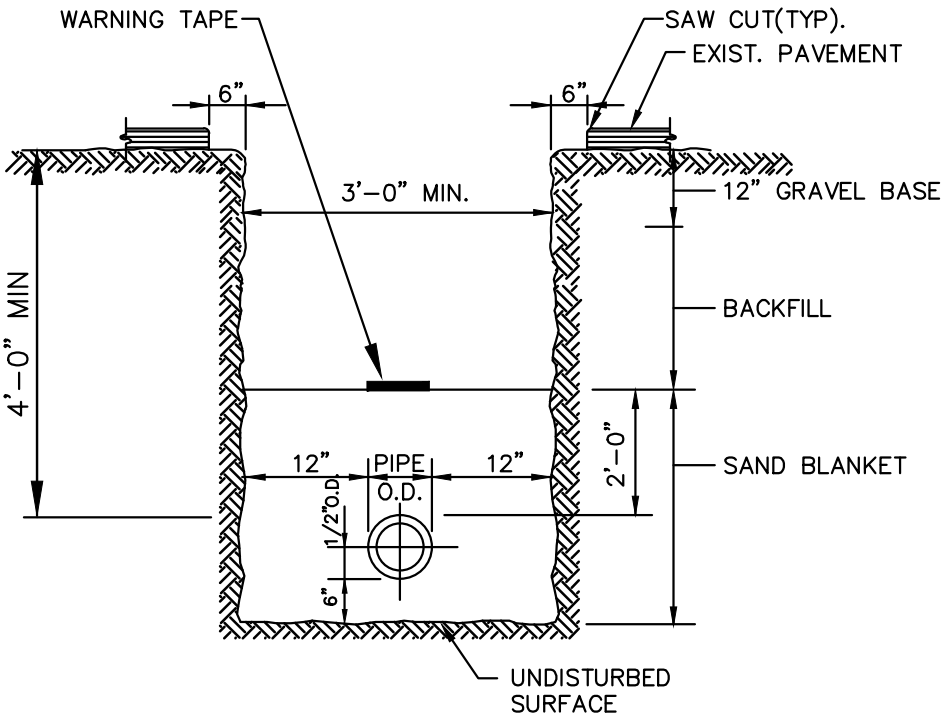




Town of New Shoreham Rhode Island	Figure W-4 PERMANENT BLOW OFF ASSEMBLY	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale



Town of New Shoreham Rhode Island	Figure W-5 TEMPORARY BLOW OFF DETAIL	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale



Town of New Shoreham Rhode Island	Figure W-6 WATER MAIN TRENCH DETAIL	
	Standard Water Requirements	
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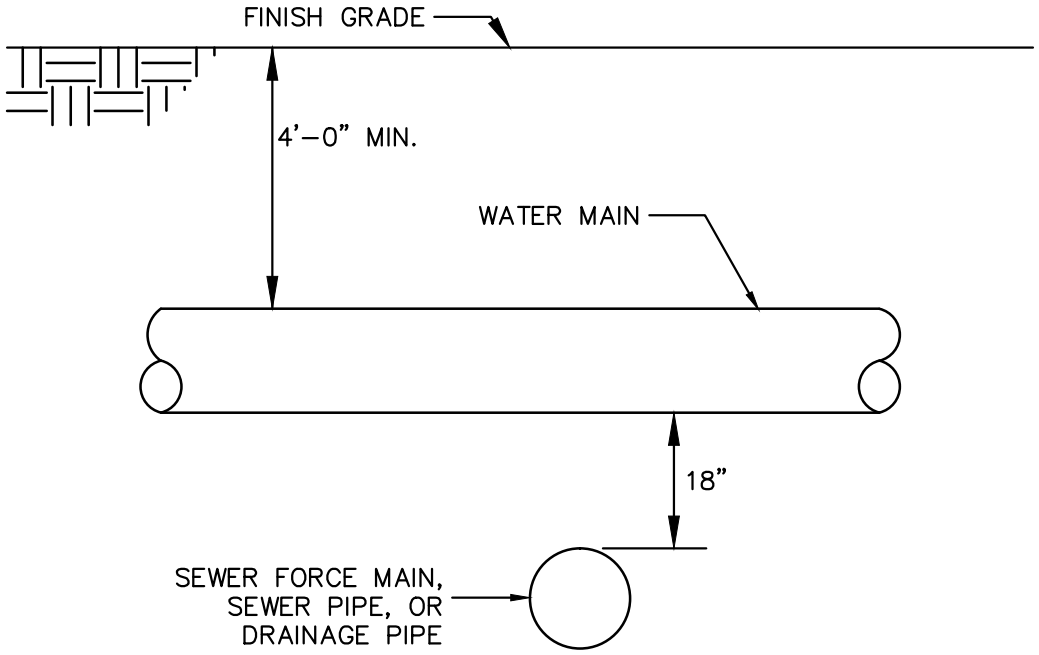
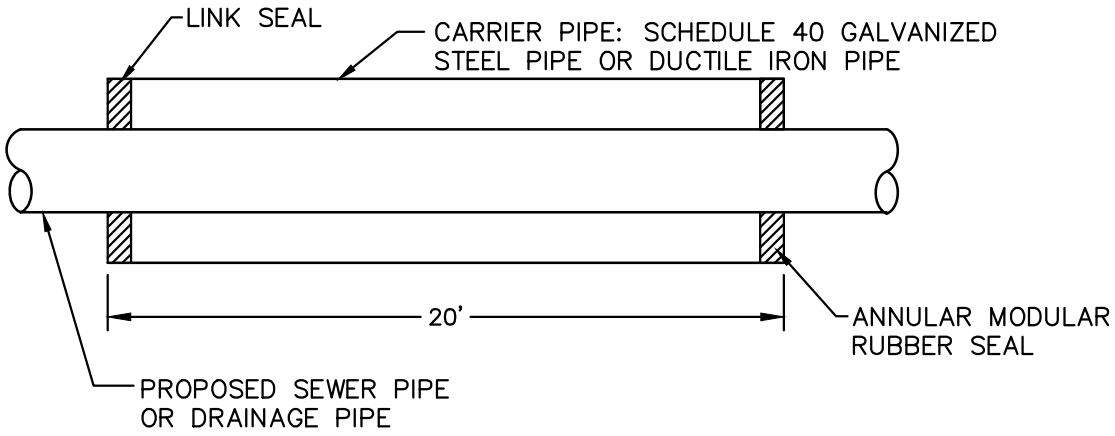


NOTES:

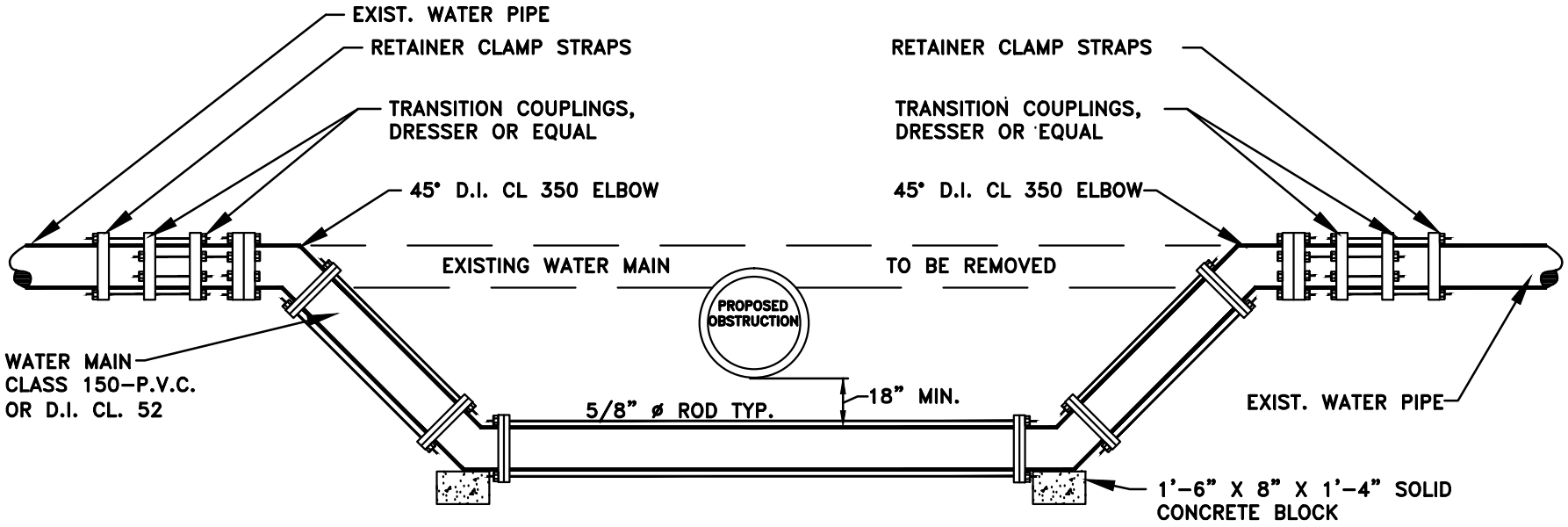
1. THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 18 INCHES.
2. THE HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 10 FEET.
3. IF 1 OR 2 CANNOT BE MAINTAINED THE PROPOSED UTILITY SHALL BE INSTALLED WITHIN A CARRIER PIPE UPON WRITTEN APPROVAL BY THE BIWC.
4. SEWER MAIN AND SERVICES ARE NOT ALLOWED TO CROSS OVER THE TOP OF WATER MAIN.
5. CONCRETE ENCASEMENT IS NOT ALLOWED.



CARRIER PIPE DETAIL

Town of New Shoreham Rhode Island	Figure W-7 UTILITY SEPARATION	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale

FOR TRENCH SPECIFICATIONS REFER TO:
"TYPICAL PIPE BEDDING AND TRENCH DETAILS"



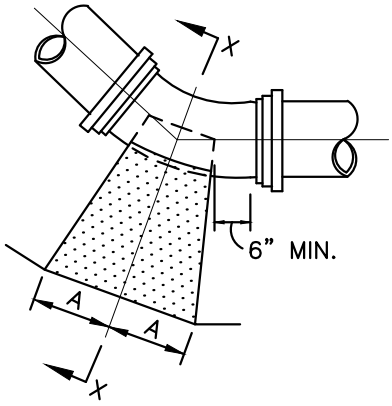
NOTE:
ALL RODS TO BE 5/8" DIAMETER AND COATED WITH BITUMISTIC

Town of New Shoreham
Rhode Island

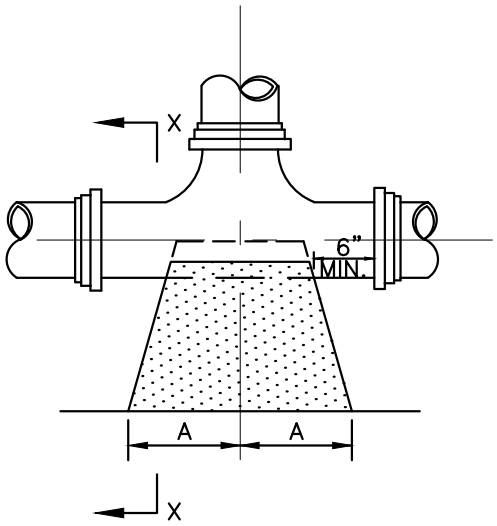
Figure W-8
WATER MAIN HORIZONTAL OR VERTICAL RELOCATION

Standard Water Requirements

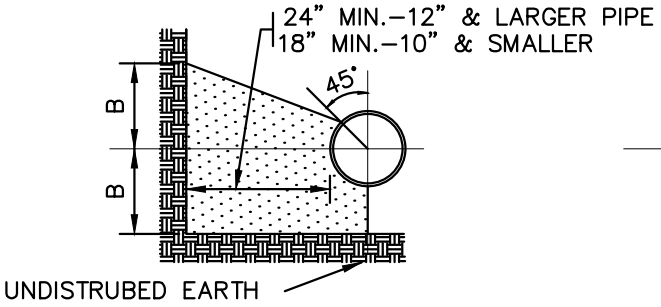
Date: 2019 | Scale: No Scale



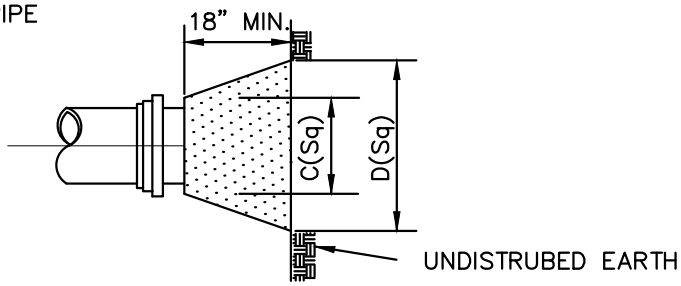
PLAN
BENDS



PLAN
TEES



SECTION X–X
BENDS & TEES



PLAN & ELEVATION
PLUGS

TYPE	SIZE	1/4 BENDS		1/8 BENDS		1/16 BENDS		TEES		PLUGS	
		A	B	A	B	A	B	A	B	C	D
TYPE 1 4000 PSF SOIL	6"	5"	10"	6"	8"	3"	8"	8"	8"	10"	15"
	8"	12"	12"	8"	10"	5"	9"	9"	12"	12"	20"
	10"	16"	14"	10"	12"	6"	10"	11"	14"	14"	25"
	12"	19"	16"	12"	14"	8"	11"	14"	16"	16"	30"
	14"	23"	18"	14"	16"	10"	12"	16"	18"	18"	34"
	16"	26"	20"	16"	18"	11"	13"	18"	20"	20"	38"
TYPE 2 2000 PSF SOIL	6"	16"	10"	9"	10"	6"	8"	10"	12"	10"	21"
	8"	22"	13"	12"	13"	8"	10"	13"	16"	12"	29"
	10"	26"	17"	14"	17"	10"	13"	16"	20"	14"	36"
	12"	29"	21"	16"	21"	11"	16"	18"	24"	16"	41"
	14"	35"	24"	19"	24"	12"	20"	22"	27"	18"	48"
	16"	38"	27"	21"	27"	12"	24"	24"	30"	20"	54"

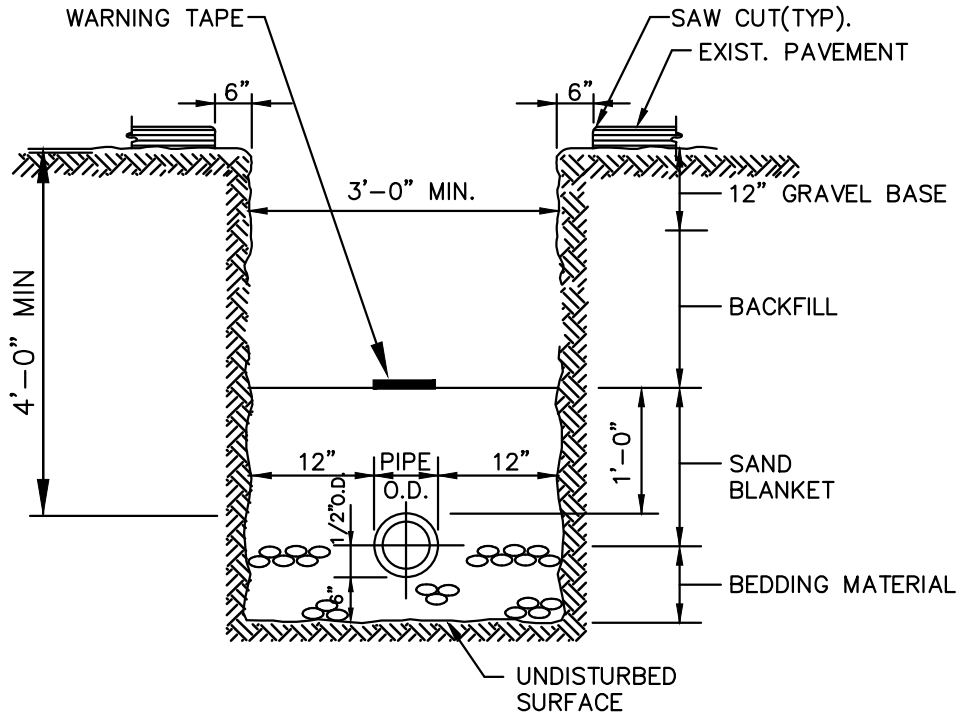
THRUST BLOCKS

Town of New Shoreham
Rhode Island

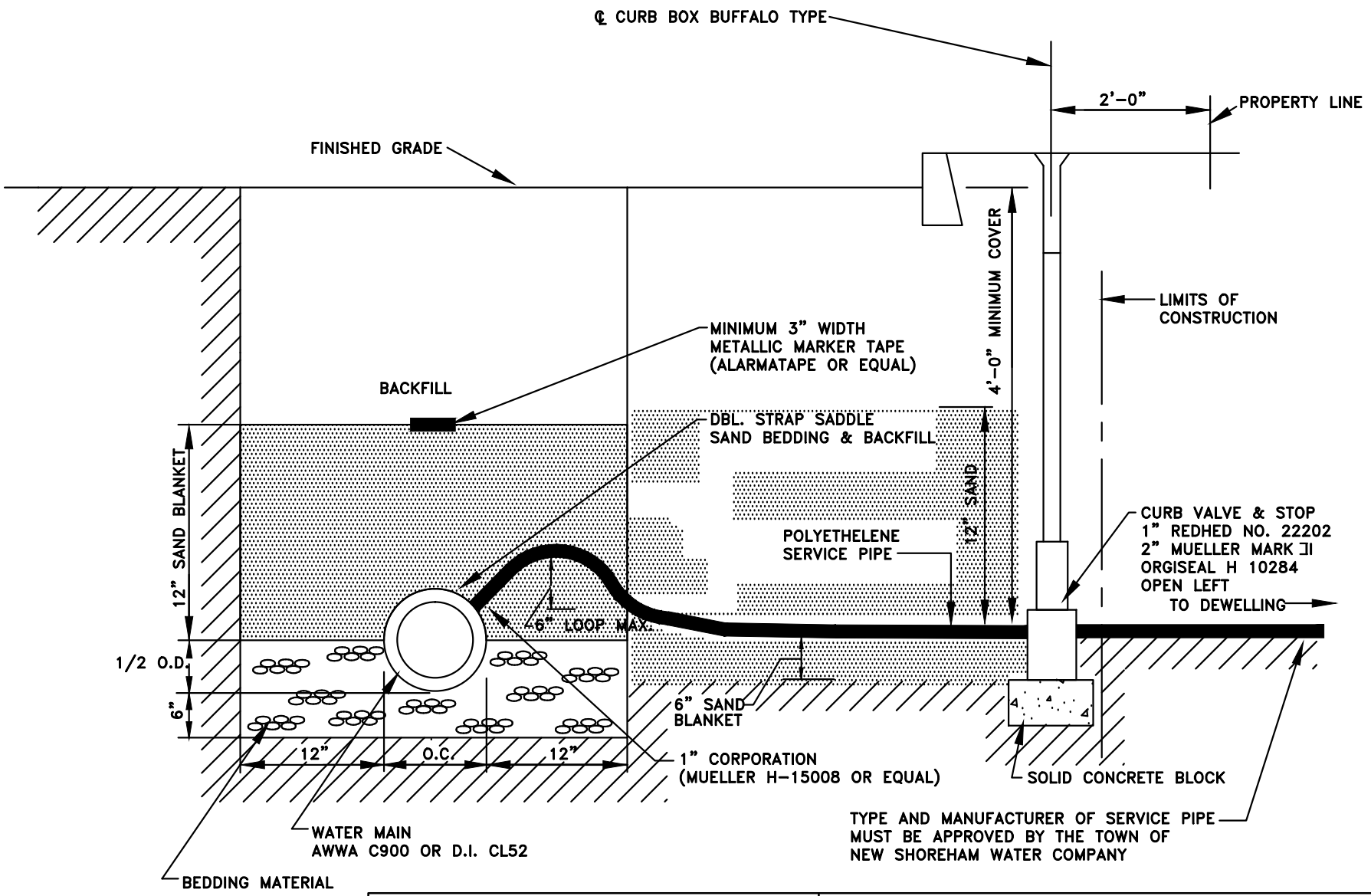
Figure W-9
TRUST BLOCKS

Standard Water Requirements

Date: 2019 | Scale: No Scale



Town of New Shoreham Rhode Island	Figure W-10 WATER SERVICE TRENCH DETAIL	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale



Town of New Shoreham
Rhode Island

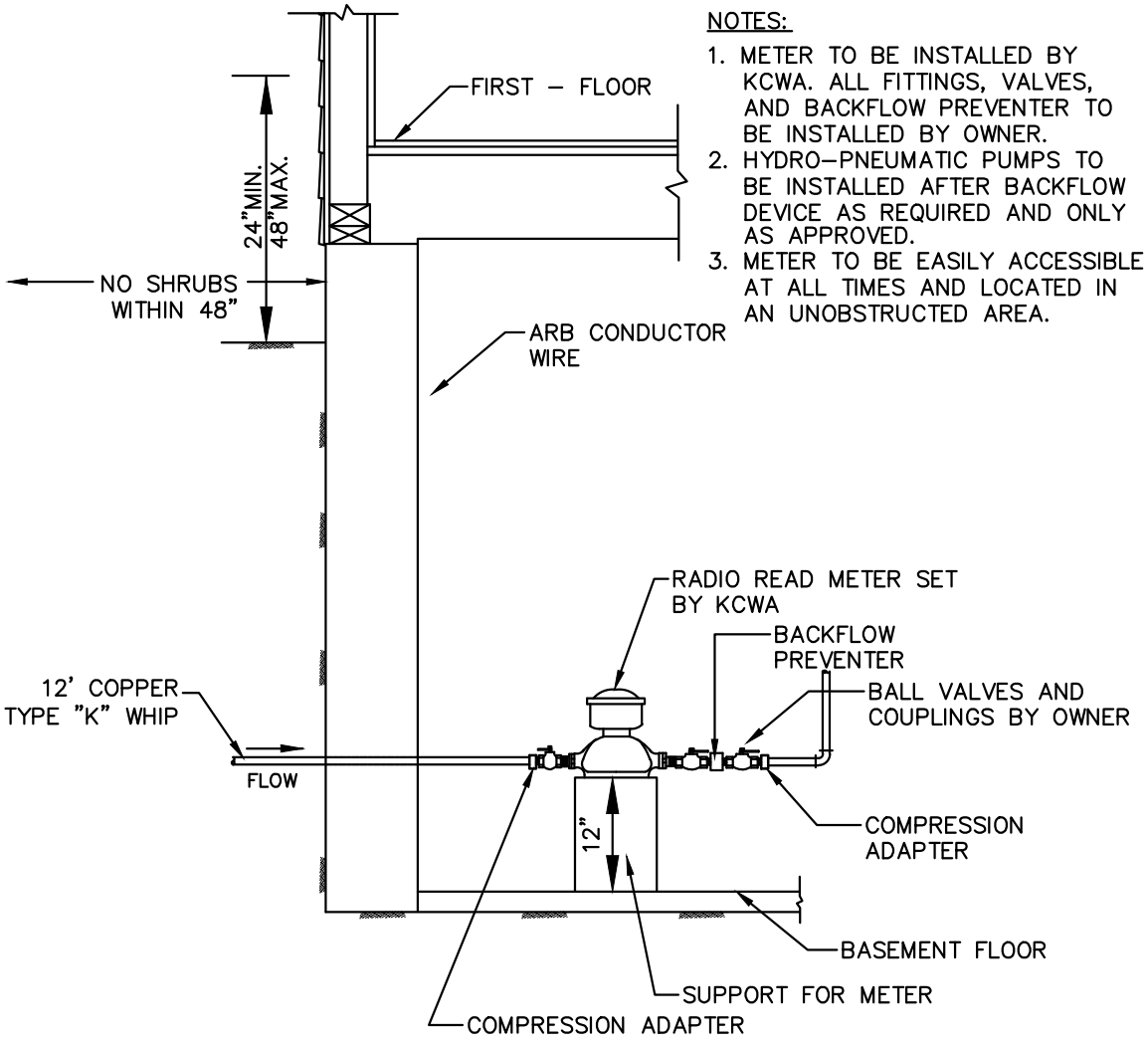
Figure W-11
TYPICAL WATER MAIN AND SERVICE DETAIL

Standard Water Requirements

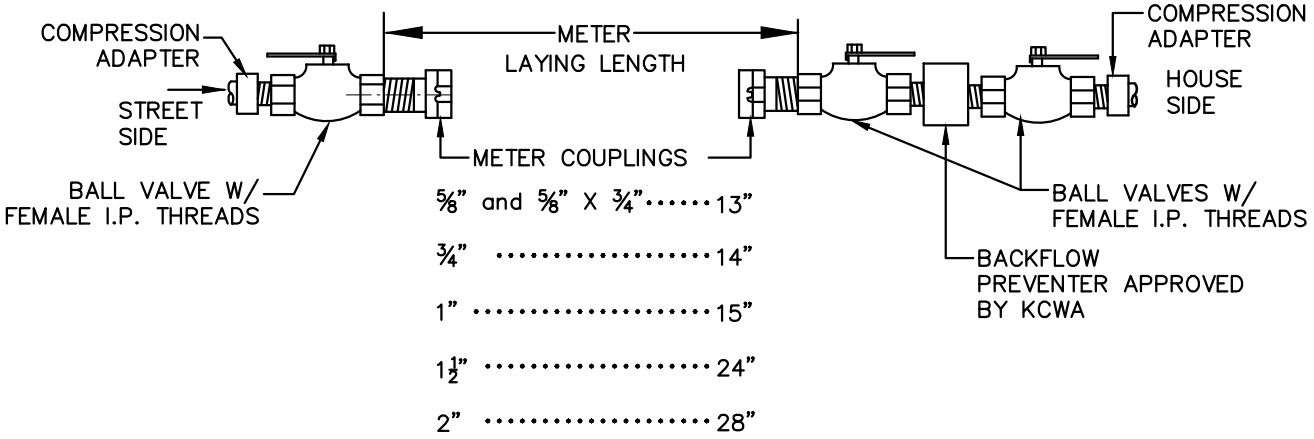
Date: 2019 | Scale: No Scale

NOTES:

1. METER TO BE INSTALLED BY KCWA. ALL FITTINGS, VALVES, AND BACKFLOW PREVENTER TO BE INSTALLED BY OWNER.
2. HYDRO–PNEUMATIC PUMPS TO BE INSTALLED AFTER BACKFLOW DEVICE AS REQUIRED AND ONLY AS APPROVED.
3. METER TO BE EASILY ACCESSIBLE AT ALL TIMES AND LOCATED IN AN UNOBSTRUCTED AREA.

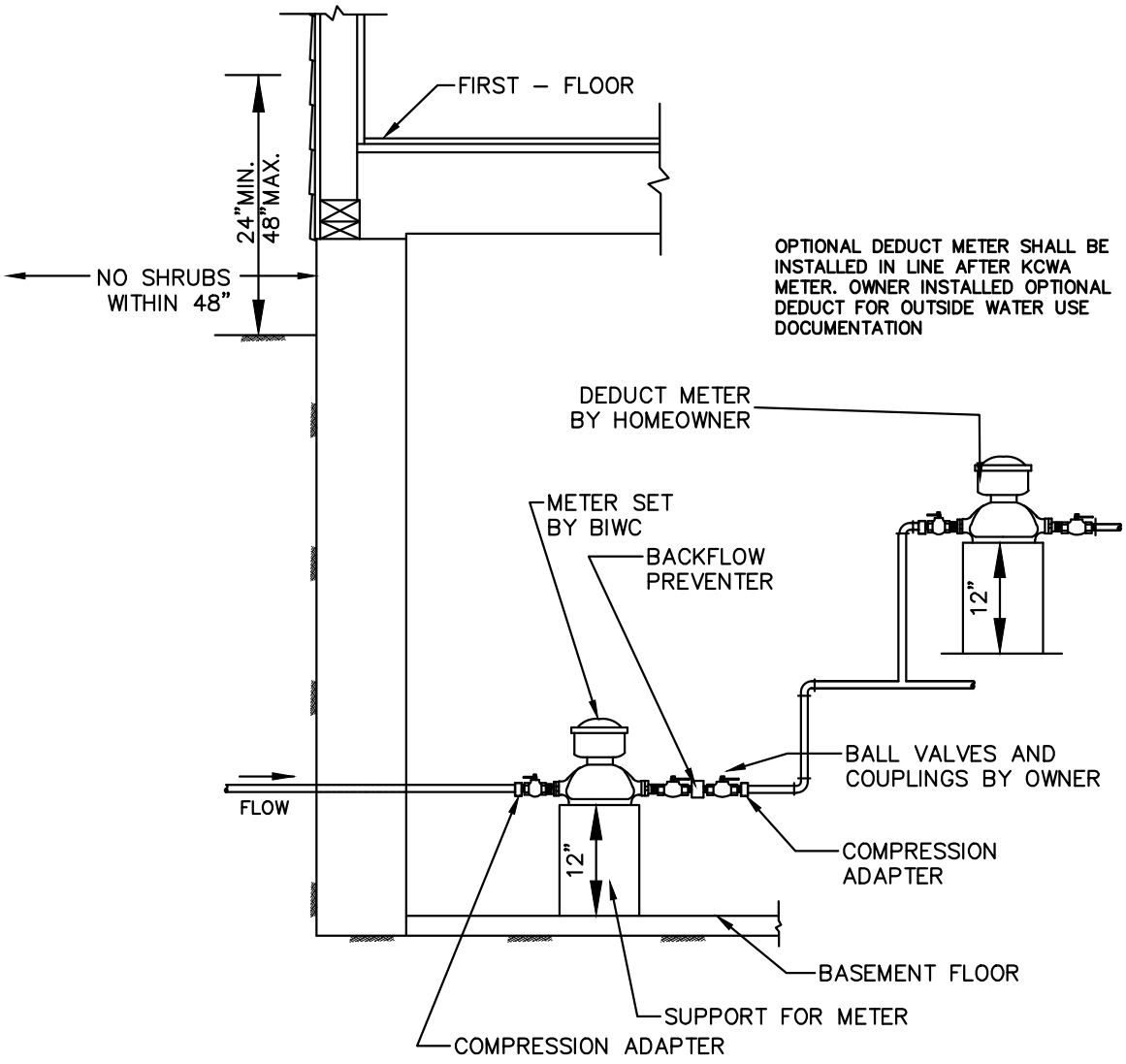


RESIDENTIAL WATER METER INSTALLATION

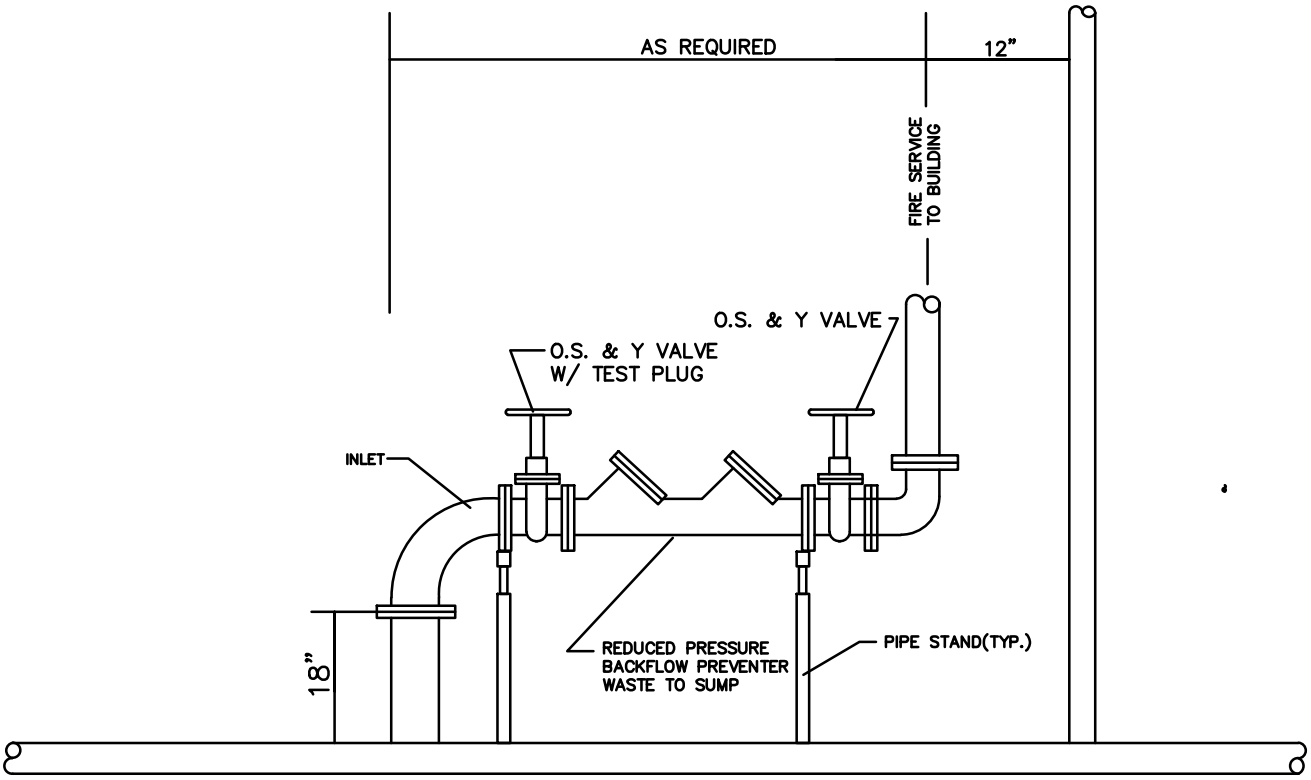


WATER METER SETTINGS WITH FITTINGS

Town of New Shoreham Rhode Island	Figure W-12 RESIDENTIAL WATER METER	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale

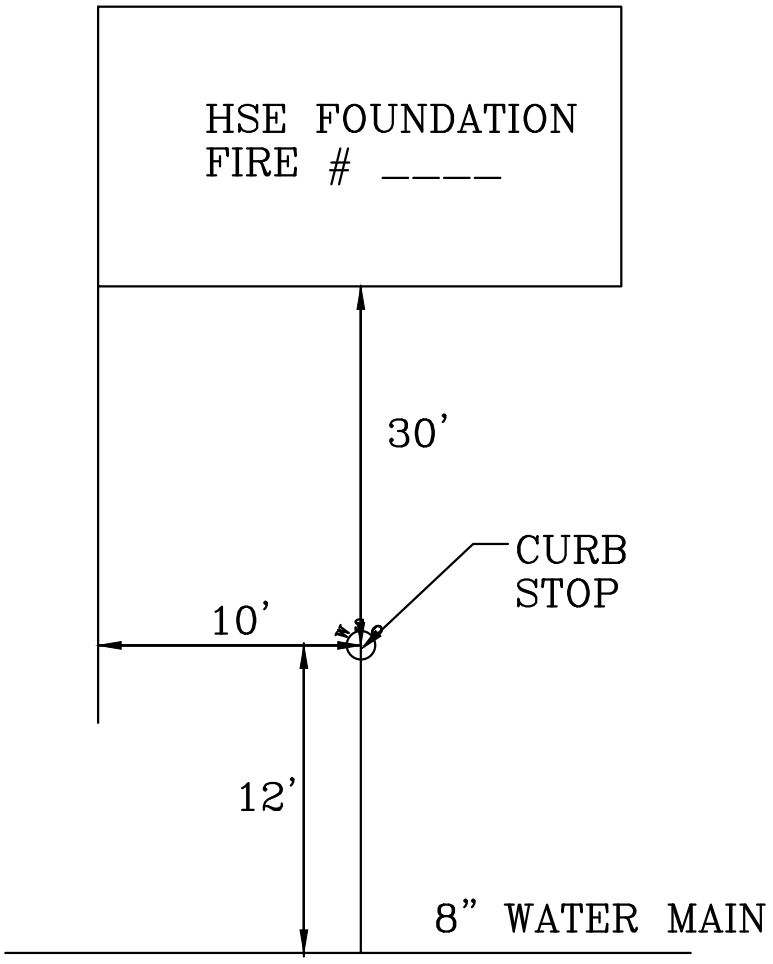


Town of New Shoreham Rhode Island	Figure W-13 DEDUCT METER INSTALLATION HOMEOWNERS RESPONSIBILITY	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale



Town of New Shoreham Rhode Island	Figure W-14 ABOVE GRADE FIRE INSTALLATION	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale

EXAMPLE OF HOUSE
SERVICE AS- BUILTS



DEPTH OF MAIN = 4'
STANDARD SIZE OF SERVICE = 3/4"

Town of New Shoreham Rhode Island	Figure W-15 AS BUILT EXAMPLE FOR WATER SERVICE	
	Standard Water Requirements	
	Date: 2019	Scale: No Scale

TOWN OF NEW SHOREHAM
POLICY
PRIVATE SEWER / WATER LINES - INSTALLATION

1. If your property **is not** already in the Water/Sewer District, a letter requesting to be added to the District needs to be sent to the New Shoreham Sewer Commission @ P.O. Box 774 or Board of Water Commissioners @ Box 998, Block Island, RI 02807 listing the property owner's name, address, telephone numbers on/off island, Plat and Lot of parcel to be included.

2. If your property **is** in the Water/Sewer District, call to make an appointment with Water Superintendent at 466-3232 or Sewer Superintendent at 466-3231 for instructions and a permit application to connect.

3. With approval by the District, separate Allocations must be purchased for water and sewer. All charges/fees outstanding or due for water/sewer service must be paid in full before any new allocation for service can be approved through the New Shoreham Sewer and Water District Office. No Building Permit will be issued unless all Allocations are paid for.

4. Once the Allocation has been approved and paid for, then the applicant shall submit two (2) sets of plans for review: 1 set to the Town Engineer (James J. Geremia & Associates, Inc., 272 West Exchange St., Suite 201, Providence, RI 02903) and 1 set submitted to the Water Superintendent and/or 1 set to the Sewer Superintendent for review and approval.

5. Upon receipt of approval for the plans, the Applicant can then apply for a permit to connect (water or sewer). The permit application must contain the signatures of the property owner and the Rhode Island licensed Underground Utility Contractor or Master Plumber.

6. The Applicant must obtain the necessary road opening permits from the Town's Public Works Department and/or RIDOT, as applicable. Note that a Town Road Opening Permit is required for any work in a Town right-of-way.

7. Prior to commencing the work, the Underground Utility Contractor/Master Plumber must provide the Water/Sewer Superintendent at least two (2) work days prior to starting the work. No work requiring inspection shall be performed on Saturdays or Sundays without approval of the Water/Sewer Superintendent.

8. The inspection shall be performed by the Water/Sewer Superintendent or his/her duly authorized representative.

9. The Applicant must strictly conform to all existing ordinances and to all ordinances, rules and regulations relating to the use of public water/sewer as presented in the Town's Utilities Standards.

10. All contractors must be Rhode Island licensed Underground Utility Contractors or Master Plumbers.

11. In any new construction, a Certificate of Occupancy (CO) will not be issued until the Building Official is notified that an inspection of lines by the Water/Sewer Department is complete, as-built plans are provided, and the Superintendent has approved the work.

Office of the New Shoreham Sewer and Water Districts
Box 774, Block Island, RI 02807
401-466-3231 Mon. – Fri. 8:00 AM-3:00 PM

New Shoreham Sewer Commission Adopted March 18, 2019

New Shoreham Board of Water Commissioners Adopted March 18, 2019

Date:
Permit #:
Offical Use only

Town of New Shoreham Water District
P.O. Box 998 Block Island, RI 02807

Application to Connect to the New Shoreham Water District Water Lines and/or private lines serviced by municipal water

☐ **Residential** ☐ **Commercial**

1. Property Owner:

Name: _____ Company Name: _____

Billing Address: _____ City, State: _____

Zip: _____ Phone: _____ Email: _____

2. Connection Description: ☐ **Domestic** ☐ **Fire**

Is the connection a part of a subdivision? ☐ YES ☐ NO

Plat: _____ Lot: _____ Sublot: _____ Fire #: _____ Street: _____

☐ New Construction ☐ Existing Building ☐ Private ☐ Public

3. Construction/Installation: ☐ District Engineer Approval (attach approval letter)

Does the installation require a road alteration permit? ☐ YES ☐ NO If **YES**, approvals needed.

Does the installation affect a public right-of-way? ☐ YES ☐ NO If **YES**, approvals needed.

_____ _____ _____ _____

Signature of Director of Public Works Date Signature of Superintendent of Roads Date

Installer Information: ☐ Master Plumber or ☐ Underground Utility Contractor

Name: _____ Company Name: _____

RI License #: _____ Address: _____

City, State: _____ Zip: _____ Phone:_____

Email: _____ Construction Start Date: _____ End Date: _____

4. Fees: ☐ Account Fee ☐ Permit Fee ☐ Inspection Fee Fees Collected: $_____

☐ Engineer Plan Review Fee (if applicable): $_____ ☐ Allocation Purchased

The Owner's and Installer's signatures certifies that the "Policy for Private Sewer/Water Lines Installation" has been reviewed, that the application is complete and accurate, and Owner and Installer agree to fully comply with the District's Utility Standards and Rules and Regulations as a condition of the application approval.

_____ _____ _____ _____

Signature of Property Owner Date Signature of Installer Date

This Application must be returned to the Water Superintendent in order to receive a permit to connect.

_____ _____

Signature of Water Superintendent Date