

THE CITY OF WILDWOOD WATER UTILITY  
3100 NEW JERSEY AVENUE  
WILDWOOD, N.J. 08260

WATER MAIN SPECIFICATIONS

FILE NO. 2017

DETAILED SPECIFICATIONS

TABLE OF CONTENTS

SECTION	TITLE	PAGE
1.0	GENERAL	3
1.1	DEFINITIONS AND ABBREVIATIONS	3, 4, 5
1.2	PROVISIONS OF LAW DEEMED INSERTED	5
1.2A	REQUIRED CAPITAL IMPROVEMENTS	5, 6
1.3	DEVELOPERS RESPONSIBILITY PRIOR TO CONSTRUCTION	6
1.3A	DEVELOPERS RESPONSIBILITY AFTER CONSTRUCTION	6
1.4	PROPERTY DAMAGE	6
1.5	CONSTRUCTION SITE SAFETY	6
1.6	BACKFILL	6
1.7	TREES AND SHRUBS	7
2.0	MATERIALS	7
2.1	DUCTILE IRON PIPE	7
2.2	FITTINGS	7
2.3	VALVES	7
2.4	VALVE BOXES	7
2.5	SELECT FILL	7, 8
2.6	CONCRETE	8
2.7	FIRE HYDRANTS	8
2.8	BACKFLOW PREVENTION DEVICES	8
2.9	HOUSE CONNECTION DETAILS	9, 10
3.0	METHODS OF CONSTRUCTION	10, 11
3.1	THRUST BLOCKS	11
3.2	FIRE HYDRANT LOCATIONS	12

2017 Wildwood Water Utility Specifications  
Updated 03/03/16

3.3	WATER AND SEWER LINE SEPARATION	12
3.4	STERILIZATION AND TESTING	12, 13
3.5	PRESSURE AND LEAKAGE TESTS	13, 14
3.6	BACKFLOW PREVENTION DEVICE INSTALLATION	14
3.7	TAPPING OF MAINS FOR WATER SERVICES	15
3.8	WATER SERVICE TAPS AND SERVICE LATERALS	15
3.9	LARGE SERVICE TAPS	15
3.10	FIRE SERVICE CONNECTIONS	15, 16
3.11	DEVELOPER'S RESPONSIBILITY	16
3.12	WATER METER INSTALLATION	16, 17
3.13	USE OF FIRE HYDRANTS	17
FIGURE 1	BACKFLOW PREVENTERS	18
FIGURE 2	LARGE DETECTOR CHECK DETAIL	19
FIGURE 3	2" DETECTOR CHECK DETAIL	20
FIGURE 4	2" FIRE SERVICE CONNECTION DETAIL	21
FIGURE 5	TYPICAL LARGE FIRE SERVICE CONNECTION DETAIL	22
FIGURE 6	FLOOR, VAULT AND SIDEWALK DOORS	23
FIGURE 7	4" COMPOUND METER INSTALLATION	24
FIGURE 8	6" COMPOUND METER INSTALLATION	25
FIGURE 9	TYPICAL FIRE HYDRANT CONNECTION	26
FIGURE 10	HOUSE CONNECTION DETAIL 5/8" - 3/4" - 1" METERS	27
FIGURE 11	HOUSE CONNECTION DETAIL 1 1/2" - 2" METERS	28
FIGURE 12	TYPICAL LARGE & FIRE SERVICE CONNECTION	29
FIGURE 13	TYPICAL LARGE SERVICE CONNECTION	30
FIGURE 14	WATER METER MANIFOLD DIAGRAM	31
FIGURE 15	LARGE METER PIT SPEC COMBO	32
FIGURE 16	2" DOMESTIC & FIRE SERVICE COMBO	33
FIGURE 17	SPRINKLER MANIFOLD	34

## DETAILED SPECIFICATIONS

### 1.0 GENERAL

The customers in the WILDWOOD WATER UTILITY service area depend on the WILDWOOD WATER UTILITY to provide safe, clean, potable water in sufficient quantities and at adequate pressures for domestic and commercial consumption. To this end, the WILDWOOD WATER UTILITY must promulgate certain minimum standards of design, construction and use to protect the public's right to a safe water supply.

To ensure the continued reliable delivery of potable water for domestic consumption, commercial use, fire protection and other purposes, the WILDWOOD WATER UTILITY has adopted these specifications for the installation or modification of all water mains, services, and related appurtenances. To ensure the proper construction of all extensions and modifications to the WILDWOOD WATER UTILITY facilities, all said work must be reviewed, approved, tested, and sanitized to ensure that the minimum requirements of those specifications and provisions of the law are satisfied.

### 1.1 DEFINITIONS AND ABBREVIATIONS

#### DEFINITIONS

The titles, subtitles, headings and table of contents used throughout these specifications are intended for the convenience of reference and shall not be considered to affect, limit, or cast light upon the interpretation of the provisions to which they refer. Whenever the words or expressions defined under this heading, or pronouns used in their stead, occur in these specifications, they shall have the following meanings:

**OWNER** WILDWOOD WATER UTILITY (WWU)

**ENGINEER** The term Engineer shall mean the current engineering firm under contract with the City of Wildwood.

**INSPECTOR** The authorized representative of the Engineer assigned to make all necessary inspections of the work performed.

**DEVELOPER** An individual, firm, or corporation which undertakes modification to or the extension of the water system or its appurtenances.

**CONTRACTOR** The party entering into the contract with the developer or the performance of the work and the legal representative of such party or agent appointed to act for such a party in the performance of the work.

**SUBCONTRACTOR** An individual, firm, or corporation who contracts with the prime contractor to perform the part of the latter's' contract.

**SURETY** The Corporation which is bound with and for the developer and or the contractor on the bond furnished in connection with the improvement work to be performed in accordance with the rules and regulations of the owner.

**NOTICE** The term notice shall mean written notice. Written notice shall be deemed to have duly served when delivered to, or at last known business address of the person, firm, or corporation for whom intended or to his, their or its' duly authorized agent, representative or officer, when enclosed in a postage prepaid envelope addressed to such a person, firm, or corporation at his, their, or its' last known business address and deposited in the U.S. mail box.

**DIRECTED,  
REQUIRED,  
ORDERED,  
APPROVED,**

**AND ACCEPTED** Whenever these words refer to the work or its' performance, " directed ", " required ", " ordered ", "permitted ", " designated " or the Engineer an "approved ", " accepted ", " satisfactory ", " in the judgment of ", and the words of "like" shall mean the " approval by " the Engineer.

Whenever any power is possessed by, or any act or thing be done by the owner under these contract documents, the exercise of such power or the doing of such act or thing by the Engineer shall be sufficient compliance thereunder unless by law or by the provisions of these contract documents some other body, officer, or the agent of the owner is required to act.

#### **ABBREVIATIONS**

Where any of the following abbreviations are used in the specifications, they shall have the meaning set forth opposite each:

<b>W W U</b>	The Wildwood Water Utility
<b>A A S H O</b>	American Association of State Highway Officials
<b>A C I</b>	American Concrete Institute
<b>A I S C</b>	American Institute of Steel Construction
<b>A R E A</b>	American Railway Association
<b>A S C E</b>	American Society of Civil Engineers
<b>A S A</b>	American Standards Association
<b>A S T M</b>	American Society for Testing Materials
<b>A W W A</b>	American Water Works Association

**FEDERAL SPECIFICATIONS**

Federal specifications issued by the Federal Supply Service of the General Services Administration, Washington, DC

**PERMITS**

The contractor shall, at his own expense, take out all necessary permits from the state, county, municipality, other public authorities, all railroad companies, and all utility companies, and shall post all bonds and pay all fees, inspection costs and charges incidental to the due and lawful prosecution of the work to be covered by this contract.

**1.2 PROVISIONS OF LAW DEEMED INSERTED**

The provisions of the Federal Safe Drinking Water Act (PL 93-523), the NJ Safe Drinking Water Act (PL 1977, Chapter 224, N.J.S.A. 58:12 A-1. et seq.) and the American Water Works Standards C 100 Iron Pipe, C 200 Steel Pipe, C 300 Concrete Pipe, C 400 AC Pipe, C 500 Valves, C 600 Pipelaying, C 700 Meters, and C 800 Service Lines, shall be deemed inserted in these specifications and consulted in matters not contained herein.

**1.2A REQUIRED CAPITAL IMPROVEMENTS**

1. If a developer demolishes a single family home and rebuilds a single family home using the existing water service, the WWU will not request any infrastructure improvements.
2. If a developer demolishes a single family home and constructs a duplex using the existing single service and sells the duplex as a condominium, then the WWU will not request any infrastructure improvements.
3. If a developer demolishes a duplex and constructs a new duplex where there is one (1) existing service, then that duplex will be required to be condominium ownership and will receive the one (1) existing water service. If the developer demolishes a duplex which has two (2) services, then the developer may construct a duplex utilizing the two (2) existing services and sell those units as fee simple units. Under the above situation, the developer of the duplexes will not be required to provide infrastructure improvements.
4. All other development including single family homes and duplexes where no service is available or where additional service is required for either fire protection or for additional individual units will be subject to the WWU's requirements for infrastructure improvements. These infrastructure improvements will be based on the new units having adequate fire service in accordance with the Insurance Services Offices ("ISO") recommendation and

these units will also be required to have their water services connected on the street in which they front.

### **1.3 DEVELOPER'S RESPONSIBILITY PRIOR TO CONSTRUCTION**

Prior to construction, the developer must submit plans for all of the proposed work to the WWU for review. The Developer and Contractor shall notify the WWU twenty-four hours (24) prior to the start of construction and must have in his possession a set of WWU APPROVED PLANS.

In addition, the Developer must have paid all the necessary charges, escrow's, and fees, as well as obtaining the necessary permits, bonds, and insurance. When easements are necessary, all deeds, surveys, plans, and agreements must be in proper order and duly filed. If road-opening permits are necessary, proof of said permit shall be provided. The contractor shall provide proof of all required insurance and licenses that are in effect.

### **1.3A CONTRACTOR'S RESPONSIBILITY AFTER CONSTRUCTION**

Complete and accurate as-builts must be provided to the Superintendent of Water Distribution upon completion of the project.

### **1.4 PROPERTY DAMAGE**

When private or public property is damaged during construction, it shall be the responsibility of the Contractor to re-establish same in as good or better condition than said property damaged prior to construction. Should the Contractor fail to restore the property to its' original condition, the WWU may, at their option, restore the property and said bill the Contractor for the cost thereof.

### **1.5 CONSTRUCTION SITE SAFETY**

The Developer and said Contractor shall be responsible to see that all work proceeds in a safe manner and that at all times the safety of the public is protected. The WWU and the Engineer will not accept responsibility for any accidents resulting from the failure of the Contractor to conduct his work in a safe manner.

### **1.6 BACKFILL**

Select backfill shall be used to backfill trenches when, in the option of the Engineer, the soil is not suitable for use as backfill.

**1.7 TREES AND SHRUBS**

The Contractor shall use the utmost care not to uproot or damage any more trees and shrubs than is necessary during the construction of water mains and related work.

**2.0 MATERIALS**

**2.1 DUCTILE IRON PIPE**

Transmission lines shall be centrifugally cast ductile iron pipe, cement lined "TYTON " joint as manufactured in accordance with AWWA specifications, C 151, by the U.S. PIPE AND FOUNDRY COMPANY or approved equal. Cement lining shall be of standard thickness with a seal coat resistant to leaching. The minimum thickness shall be CLASS 52. Unless otherwise directed by the Engineer, two (2) bronze wedges shall be inserted in pipe sizes up to twelve (12) inches. The manufacturer for electrical continuity shall recommend larger sizes. Thicker classes of pipe shall be required based upon unusual laying conditions or depth of cover. Minimum pipe size for all mains shall be eight (8) inches in diameter (inside) or otherwise approved.

**2.2 FITTINGS**

All cast iron fittings shall meet all applicable AWWA requirements. All fittings shall be cement lined and sealed compatible with "TYTON " joint CLASS 52 cement lined ductile iron pipe. Such fittings are to be supplied by U.S. PIPE FOUNDRY COMPANY or approved equal.

**2.3 VALVES**

Valves shall conform to the current AWWA standard C 500-71, or the latest revision for iron body, double-disc gate valves with parallel seats. Valves shall be MUELLER VALVE COMPANY or approved equal. Unless otherwise specified, valves shall be operated by a two-inch square operating nut off cast iron and shall OPEN IN A CLOCKWISE DIRECTION. The direction of the opening shall be marked on the nut by an arrow and the word "OPEN ". All cast iron surfaces of valves and valve boxes shall be painted with three (3) coats of asphaltum paint, inside and out. Valves shall be equipped with "O " ring seals and supplied with duct rubber gaskets for use with CLASS 52 DUCTILE IRON PIPE.

**2.4 VALVE BOXES**

Valve boxes shall be complete with covers and both valve box and cover be of ample strength and dimension to fully sustain the shocks of heavy vehicular traffic and to maintain the upper section and cover at the proper grade under heavy vehicular

traffic. Covers shall be round, at least six (6) inches in diameter and shall be marked with the word "WATER".

**2.5 SELECT FILL**

Fill under this item shall be bank run, sand, and gravel. This fill shall contain no stone larger than five (5) inches in diameter. The contractor shall be responsible for the proper disposal of materials, which are judged unacceptable by the Engineer for backfill.

**2.6 CONCRETE**

Concrete for cradles and thrust blocks shall be constructed with a minimum twenty eight (28) day compressive strength of 3500 pounds per square inch conforming to requirements as specified elsewhere herein. The contractor shall provide test cylinders and testing shall be provided by the contractor by a NEW JERSEY CERTIFIED TESTING LABORATORY when requested by the Engineer.

**2.7 FIRE HYDRANTS**

KENNEDY HYDRANT MODEL - GUARDIAN

\*ALTERNATE MANUFACTURERS OR MODELS SHALL BE SUBMITTED TO THE WWU PRIOR TO CONSTRUCTION FOR APPROVAL.

- A. Size of hydrant 5 1/4" Minimum
- B. Direction to open Clockwise
- C. Nozzle arrangement 3 Way  
Size of nozzle 2 - 2 1/2" ID National Standard  
Set 180 degrees  
1 - 5" STORZ Connection
- D. Size and shape of operating nut  
1 1/2" from point to flat - pentagon
- E. Depth of bury 3'
- F. Size and type of connection to main  
6" MJ or larger as recommended by the Engineer
- G. Color Yellow

**2.8 BACKFLOW PREVENTION DEVICES**

A backflow prevention device shall be a WATTS SERIES 900 or approved equal. The Reduced pressure backflow preventor assembly shall be as defined and specified in N.J.A.C. 7:10-10 et seq. PHYSICAL CONNECTIONS.



2017 Wildwood Water Utility Specifications  
Updated 03/03/16

**2.9 HOUSE CONNECTION DETAILS**

**1" Services**

Corporation stop	Ford F 600 w/ CO6-44
Curb stop	Ford B 61- 444
Curb box	Buffalo Type # 92C (if applicable)
Meter box	MIDSTATE 20" X 30" (for 5/8 x 3/4" & 3/4" Meters) Non-tapered
Meter Resetters & Couplings	5/8 x 3/4" Resetter - Ford VH32-12 Couplings C38-23-2.5 1 Ford C18-34 Bushing
	3/4" Resetter - Ford VH33-12 Couplings C38-23-2.5 1 Ford C18-34 Bushing
	1" Resetter - Ford VH34-12 Couplings C38-44-2.625
Meter Box Cover	Ford A-53 – T - 15" Lid 20" Tile
Service type	200 PSI IPS PE
Compression couplings	CO6-44

**2" Services**

Corporation stops	Ford FB – 1000 – saddle required
Curb stop	Ford BF53-777W
Straight Check Valves	Ford HSF-31-777
Curb box	CENTRAL FOUNDRY 143R
Meter box	MIDSTATE 36" X 36"
Meter box cover	Ford MC-36-MB RML-12 XX Heavy Duty Locking Lid
Service type	200 PSI CTS PE

**Meter Manifolds**

The Wildwood Water Utility realizing that there are times when multiple taps on the water main would create a hardship for the owner/developer; therefore the WWU will permit the installation of a single tap with a multiple meter manifold. The WWU will direct the size of the service and the number of meters per manifold. Upon completion the owner/developer shall provide an "as built" to be placed in the account file as a

2017 Wildwood Water Utility Specifications  
Updated 03/03/16

record of the tap to the Utility Inspector. All material and lengths shall be listed. (SEE Figure

POLYETHYLENE CONNECTION PIPE SHALL BE ULTRA HIGH MOLECULAR WEIGHT 200 PSI, TYPE PE 3306, SDR 7 IRON PIPE SIZE POLYETHYLENE TUBING FOR 1" SERVICES, TYPE PE 3306, SDR 9 TUBING SIZE POLYETHYLENE SERVICE TUBING FOR 2" SERVICES, 200 PSI CTS PE.

Polyethylene pipe shall conform to the requirements of ASTM D-1248-65T, ASTM D-2239-65, USDCCS 255-63 and be approved by the NATIONAL SANITATION FOUNDATION for potable water use. Tube size insert stiffeners shall be used with the plastic pipe.

### **3.0 METHODS OF CONSTRUCTION**

Excavation and backfill shall conform to the requirements for Sub-surface Excavation. The contractor shall provide adequate equipment and so operate it as to maintain an essentially dry excavation, stable trench bottoms suitable working conditions and protection from water damage through out and until the completion of the work.

**NO EXISTING VALVES OR EQUIPMENT SHALL BE OPERATED, NOR SHALL ANY LINE BE CHARGED UNLESS AN AUTHORIZED REPRESENTATIVE OF THE WWU IS PRESENT. THE ONLY EXCEPTION TO THE RULE IS IN AN EMERGENCY, TO PROTECT PUBLIC SAFETY. THE CONTRACTOR SHALL TAKE SUCH ACTION AS IS IMMEDIATELY REQUIRED TO PROTECT PUBLIC SAFETY, AND NOTIFY THE WWU IMMEDIATELY OF THE INCIDENT.**

Water mains shall be laid in straight lines except when otherwise specifically approved drawings or directed by the WWU inspector. When deviation from a straight line is permitted, the deflection of each joint shall not exceed the manufacturers recommended maximum for the type of joint and the size of the pipe to be installed. Pipe shall be laid with at least three (3) feet of cover over the pipe to the proposed finished grade or to the future grade when such is lower. Along extensions of roads, which are unimproved, the pipe shall be laid with at least four (4) feet of cover over the top of the pipe to the existing grade. The depth of the pipe may be increased locally to pass obstructions. Grade changes shall be accomplished by fittings and / or dividing the necessary deflection among several joints as approved by the inspector.

Special care shall be exercised to remove all dirt, stone and other materials from each pipe as it is laid, and to prevent such materials from entering each length of pipe. The contractor shall see that the entire line is maintained absolutely clean on the inside line and that all valves and hydrants are clean and in good working order when installed. Open ends shall be adequately protected at all times and shall be securely sealed with approved plugs whenever work is stopped for any reason whatsoever. Unsanitary

practices will not be permitted. After removing the plug, the interior of the pipe shall be inspected and cleaned before resuming pipe-laying operations.

Before laying each length of pipe, the contractor shall carefully examine it for breaks, cracks, or other defects and shall discard any section, which appear in any way to be defective. All pipe and fittings shall be handled and installed with care to avoid damage. Ringing of the cast iron with a small hammer is recommended to detect cracks in the pipe that may not be readily visible to the naked eye.

Each section of pipe shall be solidly bedded in the trench bottom and shall be supported for its full length.

Before making a connection, the ends of the pipe and all joint members shall be thoroughly cleaned. All mating shall be done in strict accordance with the manufacturer's recommendations and the requirements of the WWU inspector.

The contractor shall perform all necessary pipe cutting and locate valves, fittings, and fire hydrants in the exact positions indicated on approved drawings. He shall provide and use cutting tools of an approved type and in good order, so as to ensure clean, square cuts to exact measurements. All fittings and valves shall be accurately set true and to square with the pipelines. Valve stems shall be accurately plumb. Fittings and valves shall be supported by approved blocking so as to ensure their remaining accurately in position during jointing and in such a manner that their weight will not place undue strain on connecting pipe or joints. Valve boxes shall be set plumb, accurately centered with respect to the valve stem, well supported by solidly tamped earth and with their tops flush with the finished grade of the roadway or surface of the ground where set.

### **3.1 THRUST BLOCKS**

Thrust blocks shall be installed on lines rodded at all bends greater than ten(10)degrees and at all tees, plugs, valves, blow-offs, reducers, and fire hydrants. This is to prevent movement of the lines or appurtenances under pressure. The contractor shall use rods instead of thrust blocks or reverse when directed by the WWU inspector. The use of "MegaLugs"- mechanical joint restraints for Ductile Iron Pipe are permitted with approval of the WWU inspector.

#### **THE FOLLOWING IS A LIST OF REQUIREMENTS GOVERNING THE CONSTRUCTION OF THRUST BLOCKS:**

1. All thrust blocks shall be constructed of poured concrete with minimum twenty-eight (28) day compression strength of 3500 PSI. Dry laid concrete block or any other type of construction is not acceptable for thrust block unless prior approval has been obtained in writing from the WWU.

2. The bearing area of the thrust blocks shall be poured against undisturbed soil and the bearing area shall be sufficient to prevent any movement when lines are tested and again when they are put into operation. Always use 100 PSIG as the internal line pressure.

### **3.2 FIRE HYDRANT LOCATIONS**

Hydrants must be within 500 feet of each other along road or street lines. Hydrants will be located in accordance with WWU drawings. The steamer will be turned to face the road or street for easy access. The elevation of the hydrant will be such that the bottom of the steamer connection will not be less than thirteen (13) inches from the finished grade or top of the curb. A 3/4 inch stone sump two (2) feet in length, width and depth will be installed under each fire hydrant to drain after it has been turned off. A concrete thrust block will be poured behind the tee and also at the base of the hydrant or, if so desired, the hydrant may also be rodded to eliminate the requirement of the thrust block. (SEE FIGURE 9)

### **3.3 WATER AND SEWER LINE SEPARATION (N.J.A.C. 7:10-12.36)**

Water and sewer mains normally will be separated at a distance of at least ten (10) feet horizontally. If such a lateral separation is not possible, the pipes shall be laid in separate trenches (step trenches are prohibited) with the sewer at least eighteen (18) inches below the bottom of the water main; and or such other separation as approved by the WWU shall be made. In general, the vertical separation at a crossing of water and sewer lines shall be at least eighteen (18) inches. Where this is not possible, the sewer shall be constructed of cast iron pipe using mechanical or slip on joints for a distance of at least ten (10) feet on either side of the crossing or suitable protection shall be provided, such as concrete encasement of the sanitary sewer for at least ten (10) feet either side of the water pipe. This encasement is to be six (6) inches thick.

### **3.4 STERILIZATION AND TESTING**

**A.** Before new water lines or appurtenances are put into service, they shall be completely sterilized with chlorine. The chlorine shall be introduced and distributed into the new pipe line by suitable and approved means, and in such a manner that it shall reach all interior surfaces of the pipe and all fittings, valves, and appurtenances. Sterilization may be done in connection with pipe testing or independently, as may appear more practical. The manner and method of the introduction of chlorine must be approved by the WWU. The actual chlorine residual test shall be performed by a NEW JERSEY STATE CERTIFIED TESTING LABORATORY and paid for by the contractor. Acceptable methods of disinfection shall conform to AWWA STANDARDS C651-86 and C652-86 or the latest revision, and will include the following:

1. Contact with a chlorine solution of a concentration not less than fifty (50) parts per million, for a minimum contact period of twelve (12) hours.
2. Contact with a chlorine solution of a concentration not less than twenty (20) parts per million, for a minimum contact period of twenty four (24) hours.

3. Thorough wetting of the surfaces to be disinfected by means of brushing or spray application of a chlorine concentration not less than five hundred (500) parts per million, with a minimum contact period of one(1) hour.

**B.** Following chlorination, all treated water shall be thoroughly flushed from the pipe until the replacement water throughout it's length shall, upon testing be proven comparable to the quality of water served the public from the existing water supply system. The contractor shall pay for BACTERIOLOGICAL TESTS by a NEW JERSEY STATE CERTIFIED LABORATORY. Should the tests prove unacceptable, the contractor shall rechlorinate the pipe and perform additional testing. Any section of pipe line which is drained or emptied of water at any time or for any purpose in connection with the work, whether newly laid or part of the existing water main system shall be sterilized as specified above before being returned to service. Existing water service shall not be interrupted unless necessary for the completion of the work, and then only in accordance with the requirements and approval of the WWU. When service interruption is required, the contractor shall give the WWU a 24 hour advance notice to allow the contractor sufficient time to notify the WWU customers affected by the disruption. These interruptions are to be kept to a minimum.

**C.** All test results must be reported to the WWU as soon as the testing is completed.

### **3.5 PRESSURE AND LEAKAGE TESTS**

#### **A. Procedure and Duration**

Each section of pipe line shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a pump connected to the pipe in a manner as satisfactory to the Engineer. The pump, pipe connection gauges and all necessary apparatus shall be furnished by the contractor. The contractor shall furnish all necessary assistance for conducting the tests. The duration of the test shall be two (2) hours unless otherwise directed by the Engineer. All air must be expelled from the high points in the pipe line prior to the test period.

#### **B. Pressure During Test**

The pipe shall be subjected to a hydrostatic pressure one hundred (100%) percent above normal operating pressure, but not exceeding the rated working pressure of the pipe. The normal operating pressure shall be defined by the Engineer. During the test all exposed pipe, fittings, valves, hydrants, and joints will be carefully examined. If the pipe is found to be defective, they shall be removed and replaced by the contractor with sound material. The test shall then be repeated until satisfactory to the Engineer.

#### **C. Leakage Test**

The pressure during the leakage test shall be at normal operating pressure. The duration of the test shall be two (2) hours unless otherwise directed by the Engineer. The test shall be conducted in the same manner as the pressure test except that the

2017 Wildwood Water Utility Specifications  
Updated 03/03/16

contractor shall provide suitable equipment for measuring the amount of leakage. No pipe installation will be accepted until or unless the leakage for the section of line tested is less than the rate of leakage specified in the following table. (TABLE A) In calculating leakage, the Engineer will make allowances for added joints in the pipe line above those incidentals to normal lengths of pipe.

D. Above results must be reported to the WWU as soon as the testing is completed.

**TABLE A**

LEAKAGE IN U.S. GALLONS PER 24 HOURS PER MILE PER INCH DIAMETER PIPE AT PRESSURE STIPULATED

PRESSURE PSI	U.S. GALLONS
150	64.5
125	59.0
100	52.0
75	45.5
50	37.5

Should any test of a section of the pipe line disclose leakage greater than permitted, the contractor shall locate and repair the defective joints and or pipe until the leakage is within the permitted allowance.

**3.6 BACKFLOW PREVENTION DEVICE INSTALLATION**

The following backflow prevention devices shall be installed between the meter assembly and the building: (SEE FIGURE 1)

1. For dwelling units - a single check valve assembly;
2. For places with a minor hazard - offices, stores, shops, nurseries, clubs, bars etc. - a single check valve is required;
3. For places with an intermediate hazard - diners, restaurants, motels, gasoline stations, auto repair shops, etc. - a reduced pressure backflow preventor is required.

For places with a major hazard - chemical plants, sewage treatment plants, sewage pumping stations, industrial waste treatment plants, laundries, car washes, manufacturing plants, drug and pharmaceutical plants etc. - a reduced pressure zone backflow preventer is required. Gate valves pressure gauges, and drain cocks should be provided so that the device can be tested for water tightness and satisfactory operation. (SEE FIGURE 1)

### **3.7 TAPPING OF MAINS FOR WATER SERVICES**

Prior to making any taps for water service the following conditions must be met:

1. A proper service application must be filed including the block and lot number; type of property to be serviced; number of rooms per unit; complete listing and numbers of all fixtures; the name and address (for **Billing**) of owner; and the name, address; phone number and license number of the plumber.
2. A complete set of Utility Prints must be submitted showing the total number of fixtures and the total number of rooms, etc.

After the above conditions are met, the WWU will review the application and determine the meter and service size and if any additional conditions that may be required. This evaluation will be processed within four (4) to six (6) weeks. After the WWU has approved the application, a water commitment will be sent to the local building inspector. The applicant and plumber will also receive a copy listing the requirements of the WWU.

### **3.8 WATER SERVICE TAPS AND SERVICE LATERALS**

The owner or his representative shall request permission to tap the main and install water service to the property line or curb line after receipt of the Water Commitment during regular Utility business hours (Monday – Friday 8:00AM to 4:00PM). This request will be scheduled at the earliest possible date.

### **3.9 LARGE SERVICE TAPS**

All taps to the WWU water mains shall be “wet tapped”. The only exception is listed below.

**Where cement mains exist, it will be required that an eight- (8) foot section of pipe be removed and replaced with ductile iron pipe to accommodate the tapping sleeve.**

Service taps larger than two (2) inches shall be provide with a Mueller tapping sleeve or tee or approved equal. The minimum size above two inch shall be four inches (4”).

### **THE USE OF LEAD FITTINGS IS PROHIBITED**

### **3.10 FIRE SERVICE CONNECTIONS**

Fire service connections shall have a separate tap and valve from the domestic water line. The water main shall be provided with proper valving to prevent accidental activation of the system from the street valve. All fire services shall be provided with a reduced pressure backflow prevention device. No interconnection of the fire service with the potable water system will be permitted. With the exception of fire hoses, no

hose bibs or irrigation systems shall be connected to the fire system. (SEE FIGURES 4 & 5) All new fire service connections shall be provided with a Detector Check Valve Hersey Model EDC111 (SEE FIGURES 2 & 3) or approved equal. The detector checks valve, meter trim package, box and lid will be provided by the owner/ developer. The meter will be provided by the WWU.

### **3.11 DEVELOPER'S RESPONSIBILITY**

The developer shall be responsible for the construction of the water service beyond the curb box. However, curb box connection must be inspected by the WWU's inspector prior to backfilling. In addition, the WWU reserves the right to inspect the water service line up to and including the house stop, check valve, and gate valve. During this phase, the inspector will examine the materials; workmanship and the depth of bury to see that they meet the minimum requirements of the WWU. (SEE FIGURES 7, 8, 10, 11, 12 & 13) Provisions for installing the service along with providing all necessary material following WWU Specifications is also the responsibility of the contractor for the developer. **When a meter bypass (JUMPER) is used to test the internal plumbing, the bypass will be immediately removed when testing is completed.**

### **3.12 WATER METER INSTALLATION**

Prior to the Water Meter installation, the owner/developer is responsible for all applicable meter fees (based on the meter size). The owner/developer must present a copy of the water commitment to the **water billing department** and **pay the fee**. The owner/developer will then receive a receipt. Said receipt is proof of payment and will be shown to the Meter Division Supervisor to set up installation etc. However, when plans call for the installation of a meter larger than two (2) inch, the WWU will supply the meter for the contractor to install. The requirements and conditions listed below must be met by the owner or the meter will not be installed. An additional charge will be levied against the OWNER any time a call back for inspection is necessary.

1. The inspection of the service lateral by the WWU inspector must have been completed and the installation found acceptable.
2. The area provided for the meter must be such that access for installation, servicing, and reading is adequate.
3. The meter shall be located between the curblin and the sidewalk or as directed by the WWU. (SEE FIGURES 7, 8, 10, 11, 12 & 13) A meter shall not be located in a crawl space.
4. The heating system for the structure being serviced must be complete and operational, or other arrangements made with the WWU to install the meter.
5. A water meter will not be installed until the sanitary sewer hookup and sewage facilities have been completed to the satisfaction of the WWU.



2017 Wildwood Water Utility Specifications  
Updated 03/03/16

6. Construction must be completed on all exterior openings of the property to be serviced. (I.e. The interior area must be satisfactorily sealed against the elements.)
7. All plumbing fixtures must be installed and associated work completed and tested.
8. On all installations, the water meters shall be traced to verify what they feed. There will be no exceptions. If they cannot be verified the water meters will not be installed.
9. All service laterals must be installed below the accepted frost - line.

After the installation is approved and the meter installed, a minimum of one hundred (100) gallons of water will be run through the system to test the operation of the water meter. Once proper water service operation has been established, the meter installation crew will TURN OFF the water at the meter valve. If for any reason, the water is turned on by anyone other than the WWU, the OWNER of record will be billed at the standard rate until the new owner submits a change of ownership form to the WWU'S BILLING DEPT.

A fine of not more than \$500.00 may be levied against anyone caught tampering with the water meter, seals, or appurtenances after the meter is installed.

### **3.13 USE OF FIRE HYDRANTS**

The use of fire hydrants for purposes other than fire protection, without written permission (i.e. PERMITS) of the WWU is prohibited. **Unauthorized use will be considered THEFT OF SERVICES, and violators will be prosecuted.** Persons who need to use hydrants and water for suitable purposes must obtain written permission from the WWU. Upon submission of proper deposits established by local ordinances, the WWU will issue the hydrant meter to the contractor unless other arrangements have been made with the WWU.

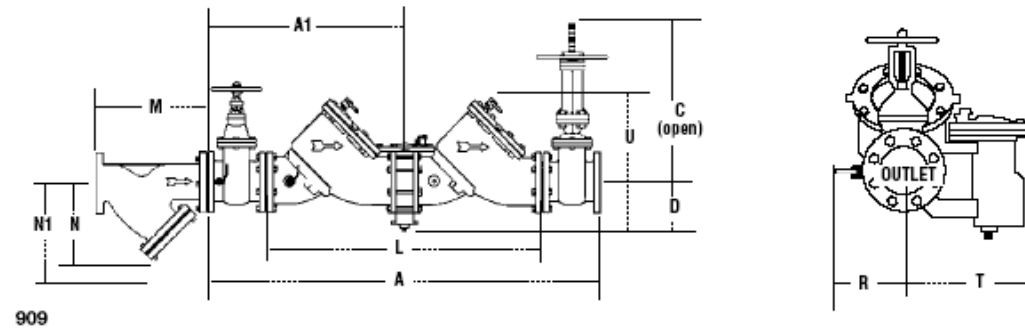
**THE WWU WILL NOT ISSUE HYDRANT METER PERMITS BETWEEN JUNE 15TH AND SEPT. 15TH SO AS NOT TO DISTURB THE DISTRIBUTION SYSTEM DURING THE SUMMER MONTHS.**

Figure 1

## Series 909 Reduced Pressure Zone Assemblies

Sizes: 2½" – 10" (65 – 250mm)

Dimensions – Weights



SIZE (DN)	DIMENSIONS (APPROX.)											WEIGHT										
	A		A1		C (OSY)*		C (NRS)		D		L		clearance for check U	R	R (OT)	T	NRS		OSY		OT	
in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	in. mm	lbs.	kgs.	lbs.	kgs.	lbs.	kgs.
2½ 65	41¼ 1048	20¾ 524	16¾ 416	9¾ 238	5¼ 133	26½ 663	11 279	4 102	16 406	9¼ 230	195 88.4	198 89.8	182 82.6									
3 80	42¼ 1073	21¼ 540	18¾ 479	10¼ 260	5¼ 133	26½ 663	11 279	5 127	16 406	9¼ 230	225 102	230 104	190 86									
4 100	55½ 1400	27¾ 702	22¾ 578	12¾ 310	6 152	37 940	14 356	6 152	19¾ 502	14¾ 365	455 206	470 213	352 160									
6 150	65½ 1664	32¾ 832	30¾ 765	16 406	6 152	44½ 1130	16 406	11 279	26 660	14¾ 365	718 326	798 362	762 346									
8 200	78½ 2000	39¾ 1000	37¾ 959	19¾ 506	9¾ 248	55¼ 1403	21 533	11¼ 286	11¼ 286	19¼ 489	1350 612	1456 660	2286 1037									
10 250	93¾ 2378	46¾ 1190	45¾ 1162	23¾ 605	9¾ 248	67¾ 1711	21 533	12½ 318	12½ 318	21 533	2160 990	2230 1011	3716 1685									

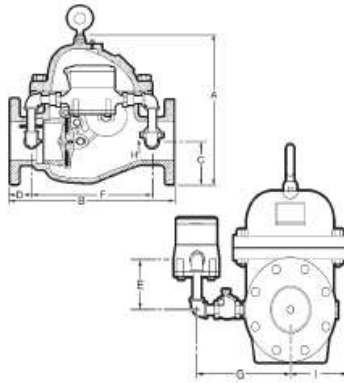
\*UL, FM approved backflow preventers must include UL/FM approved OSY gate valves.

Figure 2

Meter Size	E* All Valves	G*			
		4"	6"	8"	10"
5/8"	7"	8-5/8"	9-5/8"	9-5/8"	—
5/8"x3/4"	7"	8-5/8"	9-5/8"	10-7/8"	10-7/8"
3/4"	7"	—	9-5/8"	10-7/8"	—
1"	8"	—	12-7/8"	14-1/8"	15-1/4"

\*Nominal

Size	4"	6"	8"	10"
Net Wt. No Bypass Lbs.	165	315	427	565



**Hersey Meters**

**Model EDC III**

**Dimensions and weights**

Size	4"	6"	8"	10"
A	16"	20-1/4"	24"	27-1/4"
B	16-1/2"	22-1/2"	25"	28"
C	4-1/2"	5-1/2"	6-3/4"	8"
D	2-3/8"	3"	3-5/16"	4-3/4"
F	11-3/32"	16-1/2"	18"	18-1/2"
H	1"	1-1/2"	2"	2"
I	5-7/8"	7-1/16"	8"	8-1/8"

Figure 3

**Hersey Meters**

METER	TAP	SERVICE
2"	2"	2"

**Model DC**

Weighted Lever Detector Check Valves  
 Sizes 2", 3", 12"

**Materials and Specifications**

- MODEL DESIGNATION ..... DC
- SIZES ..... 2", 3", 12"
- MAXIMUM WORKING PRESSURE ..... 175 PSI
- HYDROSTATIC TEST PRESSURE ..... 350 PSI
- TEMPERATURE RANGE ..... 33F to 100F
- STANDARDS ..... UL, ULC listed;  
 FM approved (2" and 3")
- VALVE BODY ..... Bronze - 2";  
 Epoxy coated cast iron - 3" and 12"
- CLAPPER SEAT ..... Reinforced elastomer on a bronze seat
- OPTIONAL BYPASS METER CASE ..... Bronze
- OPTIONAL BYPASS METER INTERIOR ..... Plastic (400IIS)
- OPTIONAL BYPASS METER REGISTER ..... Sealed plastic

Size	2"
A	17"
B	15-1/2"*
C	2-1/4"
D	-
E	4-1/2"
F	-
G	4"
H	13-3/8"
Net weight less bypass	47
Net weight with bypass	58

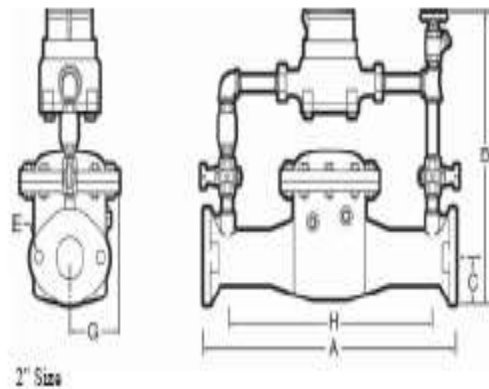


Figure 4

**WILDWOOD WATER UTILITY  
 TYPICAL 2" FIRE SERVICE CONNECTION DETAIL**

METER	TAP	SERVICE
2"	2"	2"

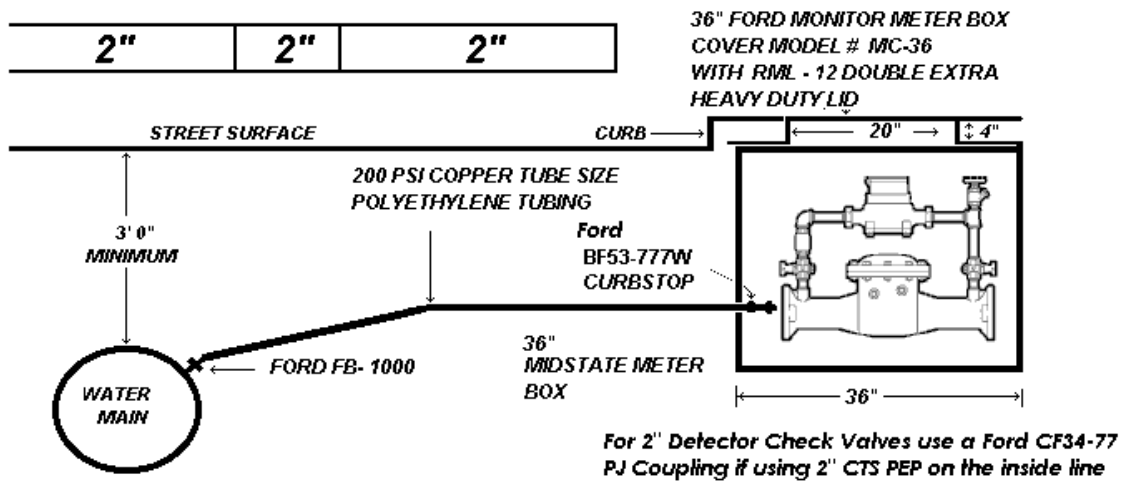


Figure 5

## Wildwood Water Utility Typical Large Fire Service Connection

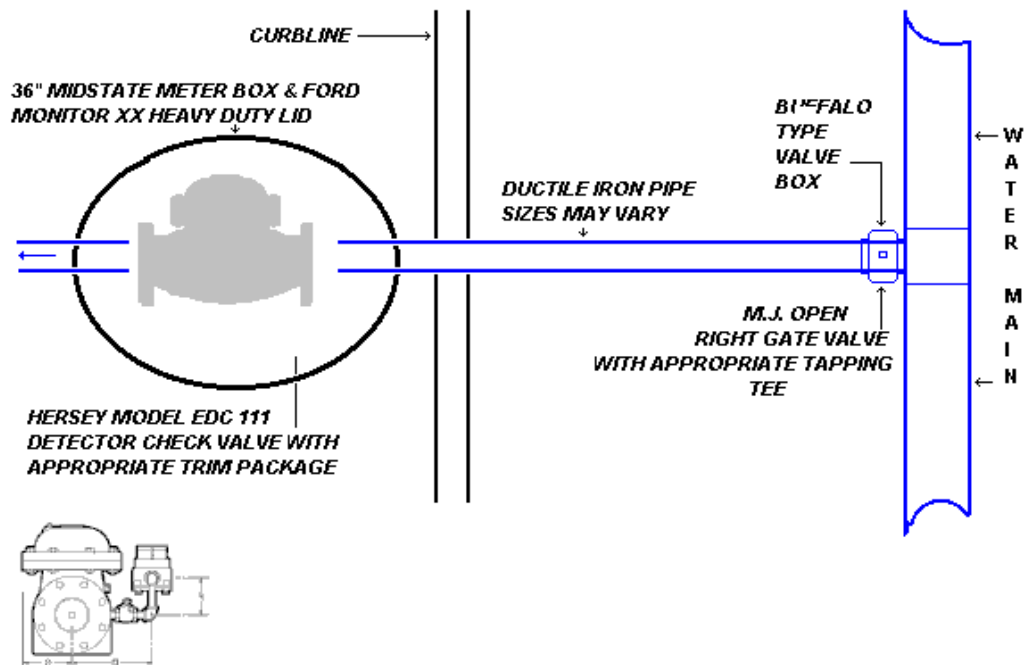
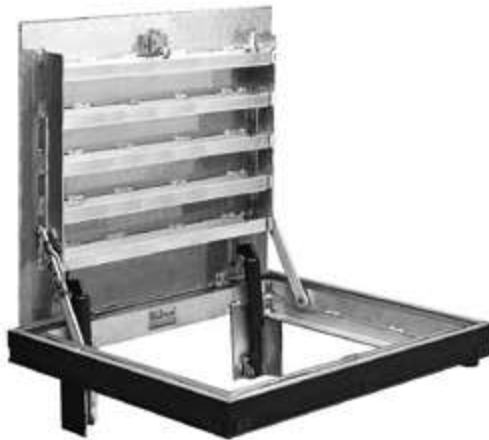


Figure 6

## Floor, Vault and Sidewalk Doors



### **Type J-AL H20 & JD-AL H20**

#### **Single or Double Leaf Aluminum Construction**

Designed to withstand vehicular traffic in off-street locations. Single or Double leaf covers are constructed of ¼" (6.35mm) diamond pattern plate and reinforced for AASHTO wheel loading. With all the same features as the J-AL model, this door is also ideal for most corrosive environments.



### **Type J-AL & JD-AL**

#### **Single or Double Leaf Aluminum Construction**

Ideal for most corrosive environments. Single or double leaf covers are constructed of ¼" (6.35mm) diamond pattern plate and reinforced for a 300-lb/ft<sup>2</sup> (1464 kg/m<sup>2</sup>) live load. Features all anti-corrosion hardware, standard debris gasket and a versatile anchoring system for ease of installation.

Figure 7

## Wildwood Water Utility 4" Compound Meter Pit Specifications

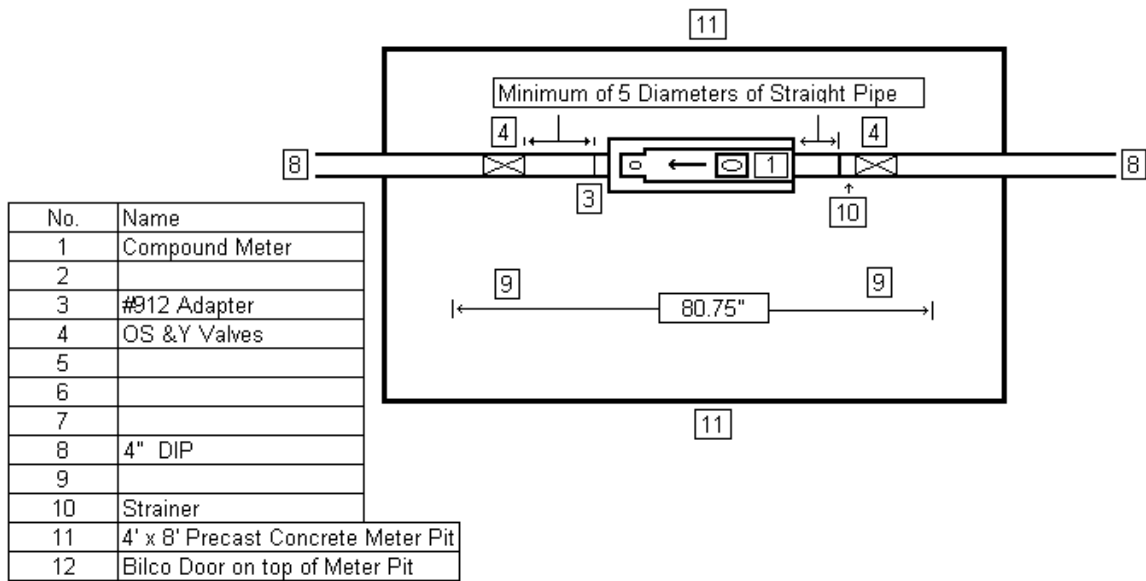




Figure 8

## Wildwood Water Utility 6" Compound Meter Pit Specifications

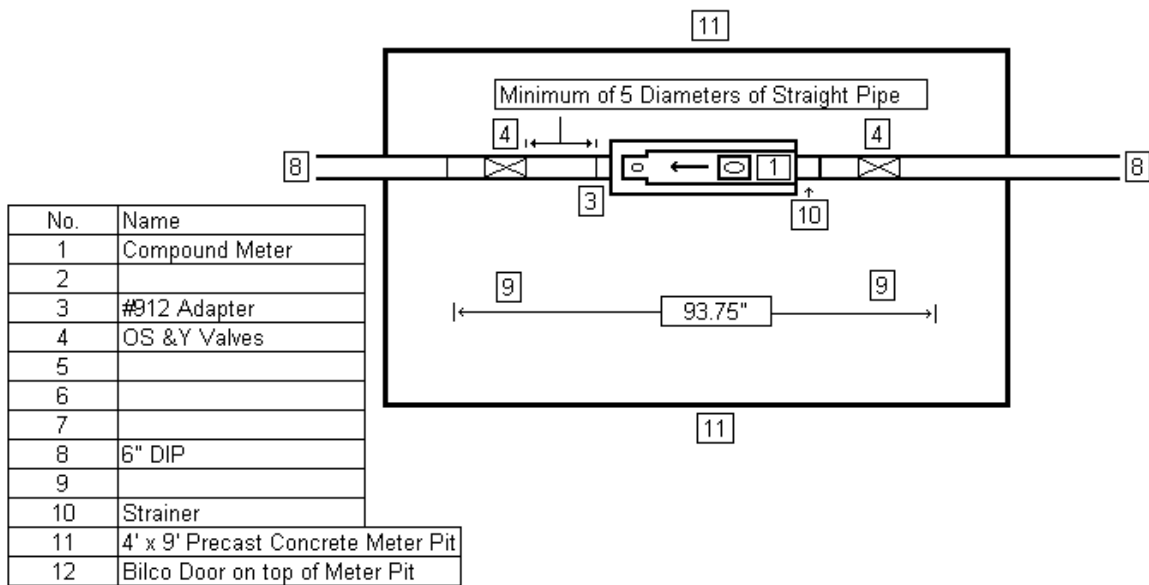
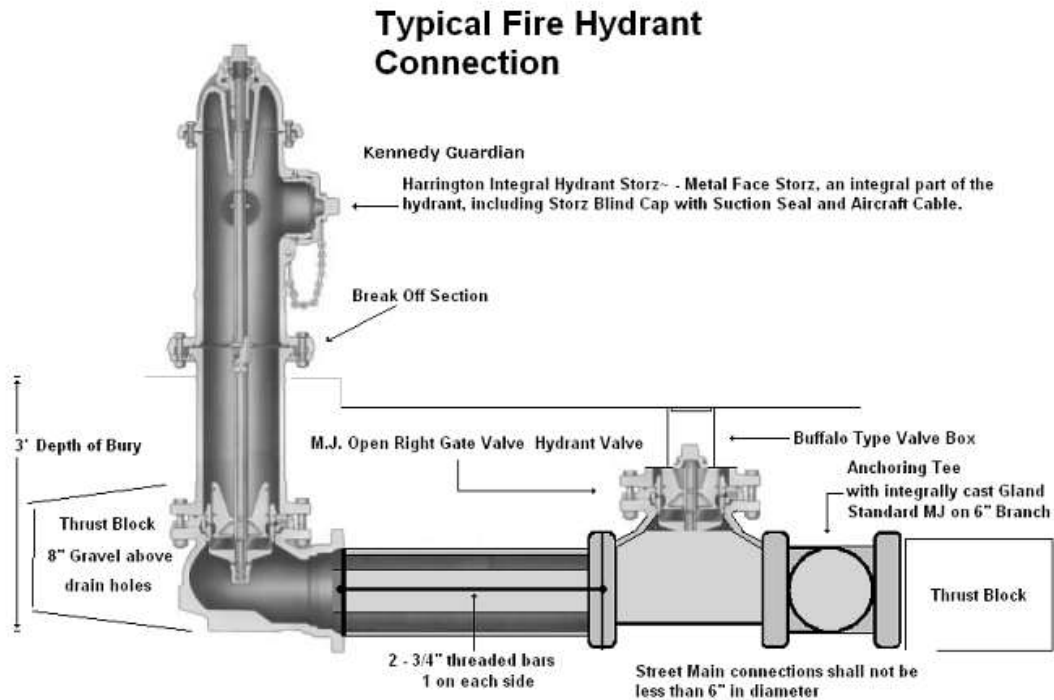


Figure 9



The Integral Hydrant Storz nozzle is installed on new hydrants during assembly. The HIHS meets or exceeds the requirements of AWWA C502 regarding material and pressure testing. A Storz spanner wrench is required for cap removal.

The Storz nozzle shall have a brass metal face seal and hard anodized aluminum Storz ramps and lugs. The aluminum's finish shall be hardcoat anodized to Mil-A-8625f, Type 3, and dark gray. The adapter shall be made of forged or extruded 6061-T6 aluminum.

The blind cap shall have hard anodized aluminum Storz ramps and lugs; made of forged or extruded 6061-T6 aluminum. The center cap shall be equipped with a suction seal. The cap shall be connected to the adapter or the hydrant with a 0.125" vinyl coated aircraft cable. The high torque cap requires a Storz spanner wrench for removal. Once installed, the Integral Hydrant Storz with cap extends less than 2" front the hydrant nozzle.

Figure 10

House Connection Detail

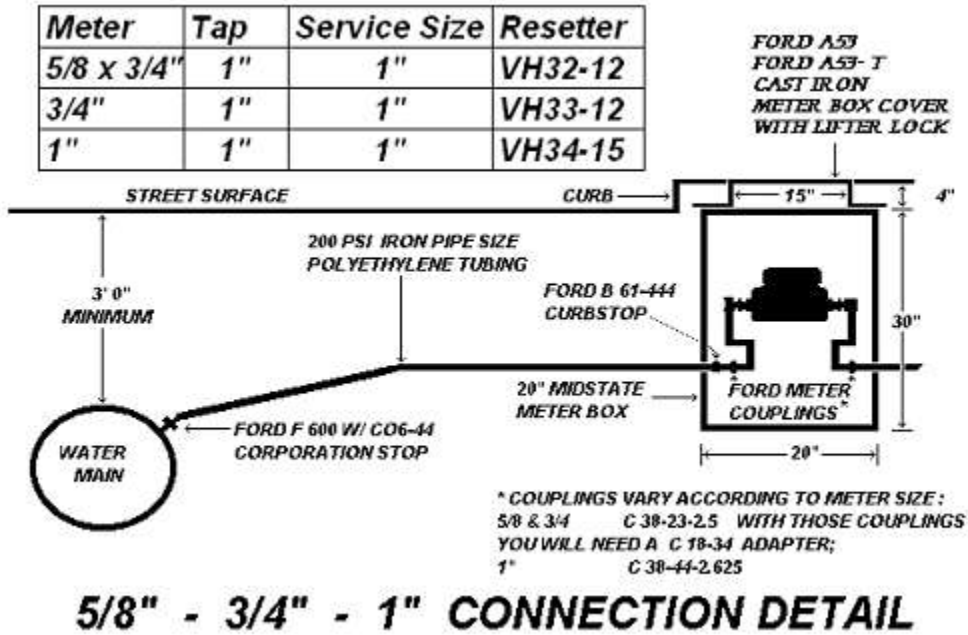
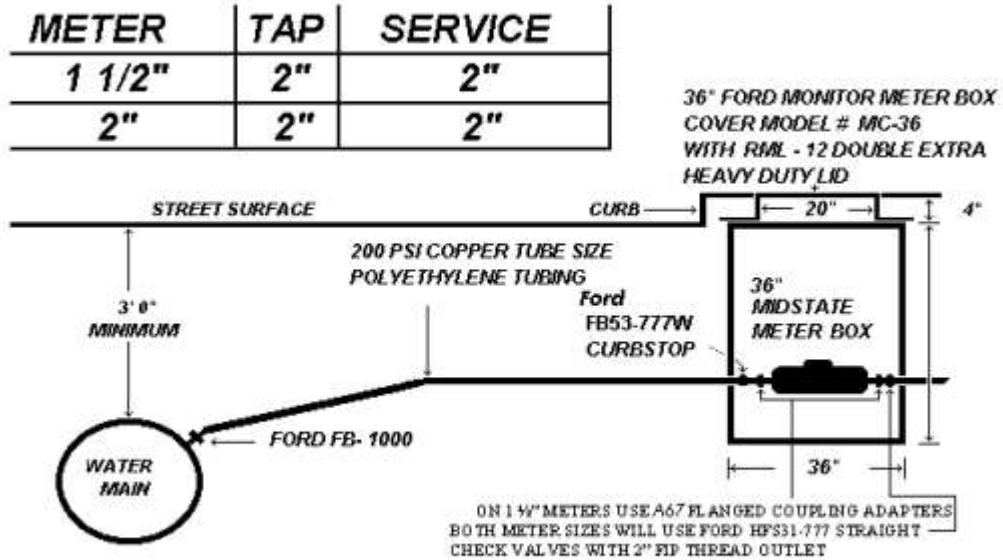


Figure 11

## House Connection Detail 1 1/2" – 2" Meters



### 1 1/2" & 2" METER DETAIL

Figure 12

# Typical Large & Fire Service Connection

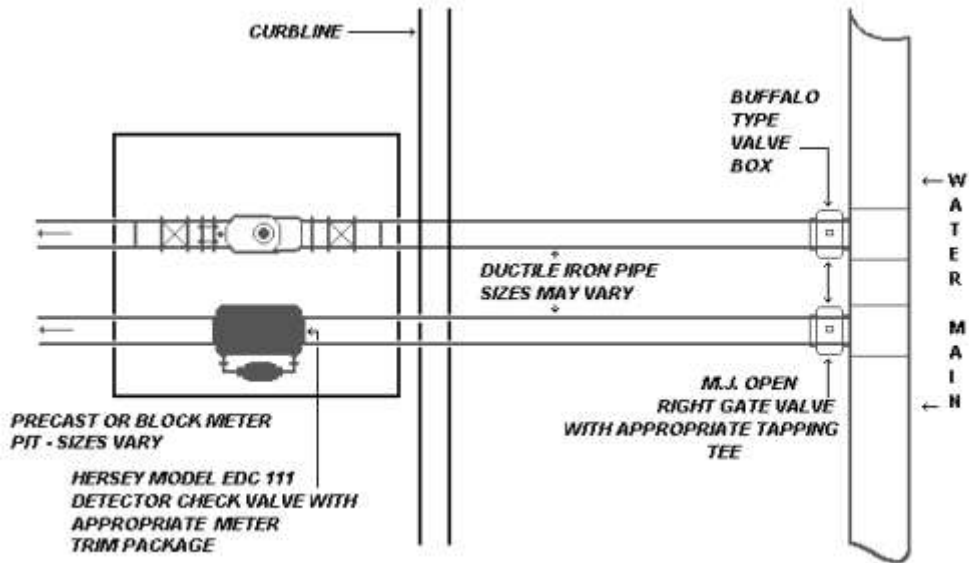


Figure 13

### Typical Large Service Connection

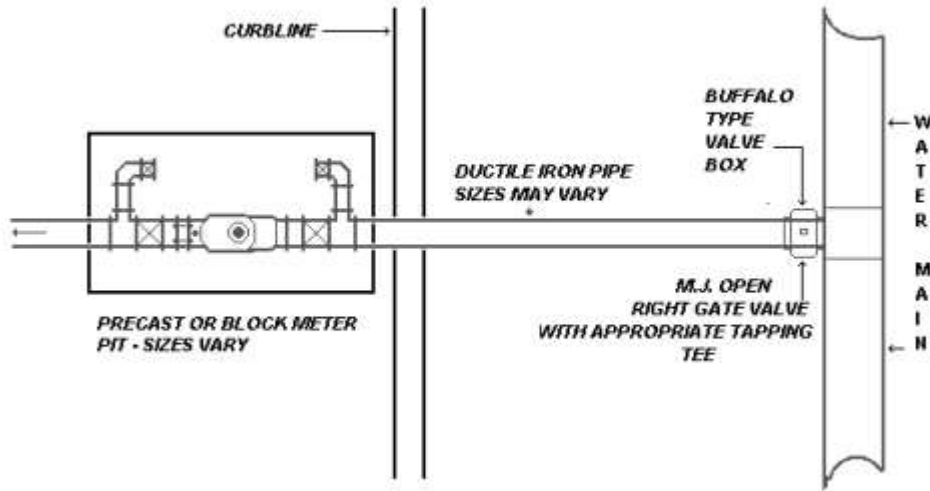
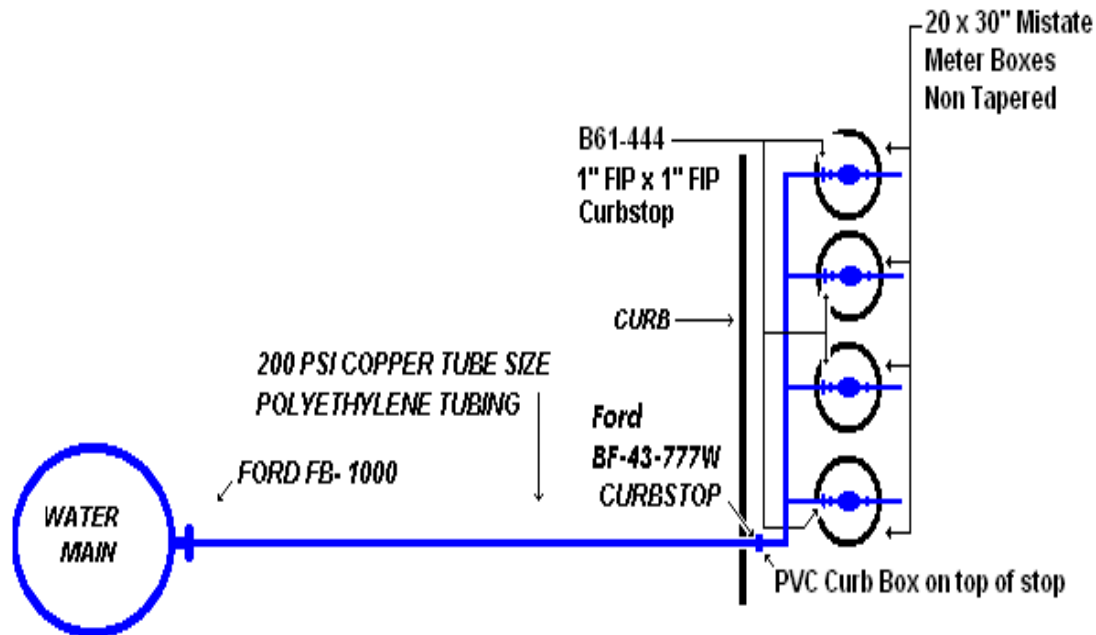


Figure 14

## City of Wildwood Water Meter Manifold Diagram



VH32-12 Resetter for 5/8 x 3/4" Meters - 4 meters can be manifolded for 5/8 x 3/4" Meters  
Use C18-34 Brass Bushing adapter for coupling into curbstop C38-23-2.5 Meter Couplings on both sides of resetter

VH33-12 Resetter for 3/4" Meters - 4 meters can be manifolded - Use C18-34 Brass bushing adapter for coupling into curbstop - C38-23-2.5 Meter Couplings on both sides of resetter.

VH34-12 Resetter for 1" Meters - 4 Meters can be manifolded - No Brass Bushing adapter needed.  
Use C38-44-2.625 couplings at bottom of setter into curbstop - B51-444 - 1" FIP x 1" FIP inside meter box on each

BF-43-777W 2" Curbstop on service from street - install galvanized fittings from that point for manifold

Figure 15

### Large Meter Pit Spec Combo

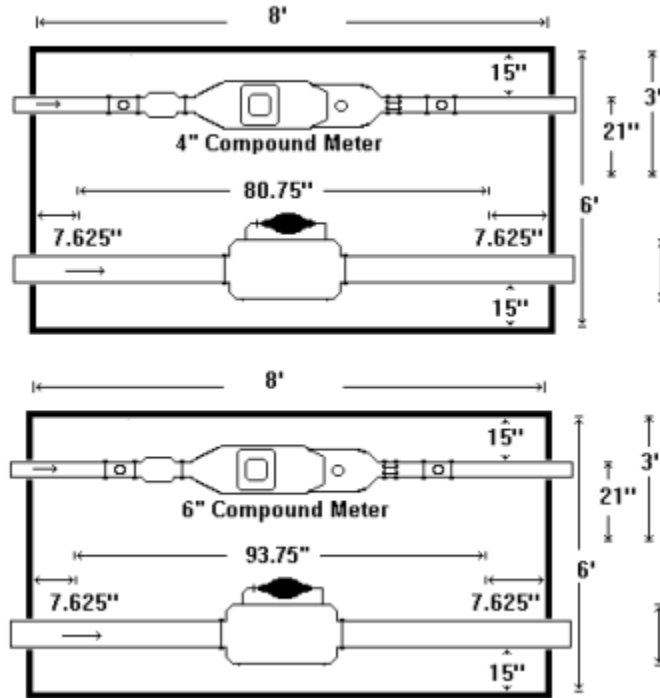




Figure 16

## 2" Domestic & Fire Service Combo

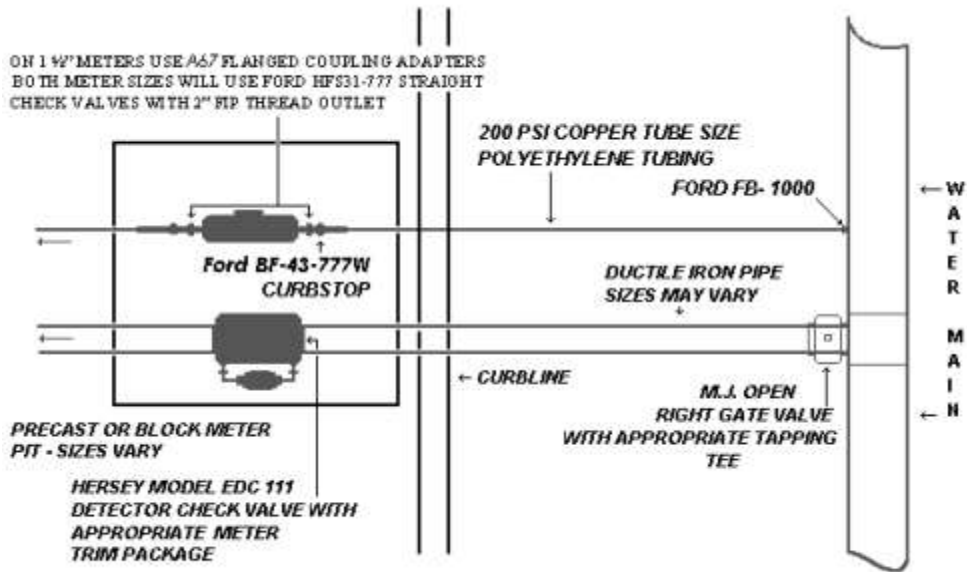


Figure 17

## Sprinkler Manifold

Meter	Tap	Service Size	Resetter
5/8 x 3/4"	1"	1"	VH32-12
3/4"	1"	1"	VH33-12
1"	1"	1"	VH34-15

