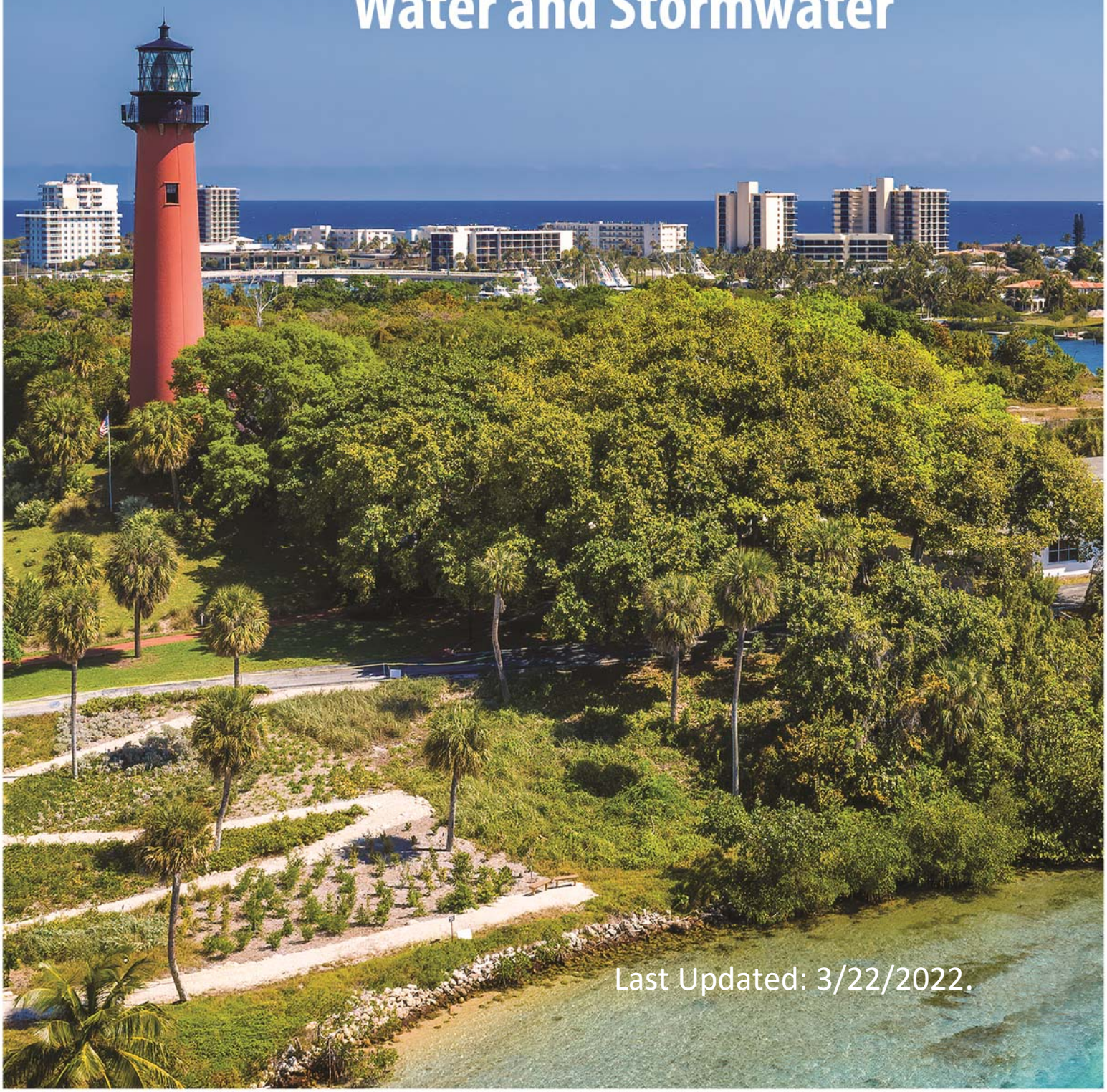
TOWN OF
JUPITER
WATER UTILITIES

Guide for Development Design and Construction Standards Water and Stormwater



Last Updated: 3/22/2022.

Helpful Contact Information

Customer Service & Billing Manager	Travis Sanders Office: (561) 741-2264 E-mail: TravisS@jupiter.fl.us
Potable Water Systems	Rodney Carroll, Utility Services Manager Office: (561) 741-2713 E-mail: RodneyC@jupiter.fl.us
Cross Connection Control Program and Stormwater Systems	Jonathan Batista, Utilities Engineer Office: (561) 741-2531 E-mail: JonathanB@jupiter.fl.us
Jupiter Utility Details	Steven Montemayor, Utilities Engineer Office: (561) 741-2710 E-mail: StevenM@jupiter.fl.us

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TOWN OF JUPITER UTILITIES

SECTION I
GUIDE FOR DEVELOPMENT

Procedures for Initial Planning

It is highly recommended that the project representative(s) meet with Town of Jupiter Utilities staff early in the planning stages of the project. At such time, a conceptual perspective of the Town's requirements pertaining to utility service can be provided which should lead to an efficient and effective development process.

A. Procedures Prior to Project Submittal

Town of Jupiter Utilities requires certain approvals and reservations prior to submission of the project application to the Planning, Zoning, Building and Engineering Departments.

Town of Jupiter Utilities is comprised of two divisions, Water and Stormwater. Procedures for both divisions are outlined below.

Water System - Capacity Reservation is Required

1. A Water System Capacity Reservation is required concurrent with application for development approval by the Town of Jupiter. A capacity reservation can be obtained by two methods. Execution of a Water Service Agreement or a 12 month Concurrency Reservation.

    a. A twelve (12) month concurrency reservation provides the applicant with the ability to proceed through the Town's Planning and Zoning processes and obtain necessary approval prior to and without executing a formal water service agreement. A concurrency reservation requires a twelve (12) month guaranteed revenue payment on 100% of the project's equivalent residential connections (ERC's). The applicant will be provided with an allocation of capacity letter and a potable water provider report. For submittal requirements see attached form on page 13, entitled “INFORMATION REQUIRED TO REQUEST AN ALLOCATION OF CAPACITY LETTER AND POTABLE WATER PROVIDER REPORT”.

    b. Full execution of a formal water service agreement requires payment of 50% of the connection fees and 100% payment of administrative fees, accrued guaranteed revenue fees and annual guaranteed revenue fees. For submittal requirements see attached form on page 14 entitled “INFORMATION REQUIRED TO REQUEST A WATER SERVICE AGREEMENT”.

2. The size of homes and the use of potable water for landscape irrigation have been determined to be directly proportional to residential property total water demand. Therefore, meters for single family residences shall be sized dependent upon the air-conditioned square footage of the home and whether potable water is to be utilized for irrigation of the parcel as follows:

Air Conditioned Square Footage (ft^2)	Potable Water Used for Irrigation	Required Meter Size
0 – 3,499	Yes	⅝” x ¾”
3,500 and greater	Yes	1”
0 – 3,999	No	⅝” x ¾”
4,000 and greater	No	1”

Stormwater – Jupiter Inlet Village Stormwater Management Availability Charge

A Stormwater Management Availability charge is required to be paid for properties within the boundaries of the Jupiter Inlet Village. The charge is based on the square footage of the property. The fee must be paid prior to submittal of engineering plans for the project. Contact the Utility Services Manager to determine if the property is within the Jupiter Inlet Village and what the current Availability charge is.

B. Plan Review and Approval

Once the project has secured the necessary approvals from the appropriate Planning and Zoning Department and/or subsequent Town Council approval, the Developer must submit the appropriate documents to Utilities for review. Document packages for the Water and Stormwater Utilities may be delivered to Town of Jupiter Utilities at 210 Military Trail, Jupiter, Florida 33458-5784. Once compliant with Jupiter Utilities requirements, the Developer is advised to check with other Town Departments for their requirements.

All plan submissions must be in full compliance with Town of Jupiter Utilities Design and Construction Standards. These documents are available to the public at no charge on the Town's website at www.townofjupiter.fl.us .

1. Water Utility - The submittal package must contain the following items:

    a. If not previously completed in section A above, a fully executed water service agreement is required at this time.

    b. Two sets of Fire Marshall approved civil engineering plans along with an electronic disk in PDF format for review and comment, by the Director of Utilities. Whenever a plan set is to consist of multiple sheets, an overall single page site plan is required detailing pipe routes, pipe sizes and connections both internal and external to the project.

    c. Specification and details relating to construction materials proposed for the water system components of the project. Standards and details must be in accordance with those provided on the Town's website.

    Plans must be re-submitted unless approved for construction by the Town of Jupiter Director of Utilities. Upon approval of the initial plan submission, submit six (6) sets of final plans and six (6) FDEP permit applications to the Director of Utilities for approval and signature. Four (4) approved sets will be returned to the Developer for submittal to the necessary permitting agencies. Two sets will be retained by the Town.

2. Stormwater Utility - The submittal package must contain the following items:

    a. Two sets of engineering drawings which contain topographical survey information, the drainage system and paving with flow arrows, easements, control structure details and drainage structure details. Whenever a plan set is to consist of multiple sheets, an overall single page site plan will be required detailing pipe routes, pipe sizes and connections both internal and external to the project.

    b. Drainage calculations addressing Town Level of Service Standards (See section IV) of this Guide for Development.

c. Copy of any South Florida Water Management District permits, if applicable.

d. Copy of NPDES permit, or Notice of Intent if the proposed project is one (1) acre or larger.

e. Pollution Prevention Plan (PPP) for projects over one acre or part of a project that already has a PPP.

f. Calculations of site pervious and impervious areas within the proposed project in square feet.

g. An identification and analysis of potential downstream impacts due to the proposed development.

h. Construction and conflict details.

i. An administrative fee equal to 1% of the estimate of construction, cost shall be paid (rounded up to the nearest dollar), as calculated by the Developer's professional Engineer in responsible charge of the Project.

j. One set of the drawings will be returned to the Developer with Town Utilities comments and /or approvals by the Town. Plans must be re-submitted unless noted approved for construction.

C. Procedures for Construction

Water and Stormwater Utilities

Upon approval by the necessary permitting agencies, the project may begin construction after the following criteria have been met:

1. "Pre-work package" is submitted containing the following:

   a. Shop drawings for review/approval

   b. Copy of Contractor's License

   c. Copy of applicable permits

2. Preconstruction meeting – No meeting will be scheduled until an approved pre-work package has been obtained from the Town by the Developer. A pre-construction meeting of the Contractor, Project Engineer, Town Inspector, Town Engineer, and Jupiter Utility Department Representatives is required to provide coordination and explanation of the Town's procedures and requirements during the construction process. A minimum of 48 hour notice prior to the meeting is required.

3. Inspections - The Town of Jupiter Utilities inspector(s) will inspect the installation of all water main infrastructure, drainage infrastructure and retention/detention areas. Please refer to the Town of Jupiter Utilities Design & Construction Standards for inspection requirements. Final inspection of construction for the permitted facility is required prior to setting meters or placing water or stormwater systems into operation.

D. Procedures Following Construction

1. Water Utility - Project Completion

   A project is not considered complete until such time as:

   a. All water system facilities are installed, flushed or pigged, pressure tested and bacteriologically cleared by the Palm Beach County Health Department.

   b. Owner transmits to the Town full project completion submittal package (see item 3 below).

   c. The developer obtains, through his contractor(s)/builder(s) that the final grade around the meter box, valve boxes, and fire hydrant assemblies. All installed boxes and or hydrants shall be level and pose no hazards.

   d. Warranty: All materials and equipment furnished and/or installed on water facilities by the contractor shall be new and shall carry a complete, indisputable guarantee against defective materials and equipment and faulty workmanship for a period of at least one year from the date of Jupiter Utilities final letter of acceptance. In the event that any defective material and/or equipment is discovered within the one year period, Jupiter Utilities will require the Developer, his successors or assigns to replace and/or repair said defects at no cost to Jupiter Utilities. Materials and equipment shall be further warranted for a period of one year from the date of written acceptance of said replacement and/or repair.

2. Stormwater Utility

   a. Project Completion

      A project is not considered complete and prepared for final inspection until:

      (1) All drainage system construction is completed in accordance with approved plans and specifications and inspected and certified by the Professional Engineer in responsible charge of the project.

      (2) All lines and structures are cleaned, pumped down and prepared for inspection by Town of Jupiter Utilities.

      (3) Roads are paved and curb work is completed.

      (4) Owner transmits to Jupiter Utilities full project completion submittal package (see item 3 below).

   b. Final Inspection

      After the project owner and engineer have fully completed the project and submitted all required documentation, the Town's Stormwater Utility staff will conduct a final inspection and recommend acceptance or provide a list of deficiencies to be addressed prior to a follow up inspection.

   c. Warranty: All materials and equipment furnished and/or installed on water facilities by the contractor shall be new and shall carry a complete, indisputable guarantee against defective materials and equipment and

faulty workmanship for a period of at least one year from the date of Jupiter Utilities final letter of acceptance. In the event that any defective material and/or equipment is discovered within the one year period, Jupiter Utilities will require the Developer, his successors or assigns to replace and/or repair said defects at no cost to Jupiter Utilities. Materials and equipment shall be further warranted for a period of one year from the date of written acceptance of said replacement and/or repair. Any deficiencies will be required to be repaired by the Developer prior to the project warranty period being closed out.

3. Water and Stormwater Utility Project Completion Submittals

Upon completion of construction, but prior to final inspection & approval, the following applicable documents must be submitted to the Utilities Department:

a. One set of black line print and one electronic set in both PDF and CADD.

b. Certification Letter from a Professional Engineer certifying that installation has been performed in accordance with the approved construction drawings and in accordance with all of the Town of Jupiter specifications.

c. Executed Easements and Right of Ways

(1) All water utility easements must be a minimum of twelve (12) feet wide and all stormwater utility easements must be twenty (20) feet wide (except where adjacent to a right-of-way) in order to insure adequate room exists for routine operation and maintenance. Structures, trees, shrubs, etc. shall not be placed closer than ten (10) feet to a Jupiter Utilities owned and maintained pipe or facility.

(2) Adjacent and parallel to ROW's, a l0-foot wide easement may be sufficient.

(3) A 25·foot utility easement will be necessary when two Jupiter Utilities owned pipes parallel each other.

(4) Wider easements may be required for facilities constructed deeper than normal per Jupiter Utilities discretion.

(5) Proposed water, raw water and stormwater utilities shall not be constructed in areas that are to be landscaped. If Jupiter Utilities determines that there is no alternative, they may consent to the location of small plants with nonaggressive root systems within five (5) feet of a utility facility. Root barriers may be required anytime when the ten (10) foot separation cannot be maintained.

(6) If plantings are allowed by Jupiter Utilities within five (5) feet of water/raw water utility mains and/or stormwater pipes, or should Jupiter Utilities allow a structure, fence, pavers, decorated pedestrian or vehicular surfaces, hardscapes, etc., to encroach within an easement, the property owner shall execute an Indemnity Agreement.

- All Indemnity Agreements shall be signed by the property owner and notarized. This Indemnity Agreement shall be recorded with the Clerk of the Circuit Court in the County where the Property is situated. The Indemnity Agreement shall be recorded by the property owner or by the Town. All fees

associated with the recording of the Indemnity Agreement shall be the property owner's responsibility. The Town shall hold the original recorded document or certified copy. The Indemnity Agreement can be obtained by contacting the Town of Jupiter Utilities Business Office.

(7) Easements shall allow unhindered access to all Jupiter Utilities facilities and mains.

(8) Deviations from these requirements may be considered on a case by case basis.

(9) "Maintenance Easements" dedicated for construction and maintenance of utilities serving abutting lots are required for all "zero lot line" subdivisions.

(10) A Florida registered land surveyor must provide a signed and sealed statement that the facilities being dedicated to the Town are located within the described easements and/or rights-of-way as indicated on the record drawing. (see page 2 for contact information)

d. Bill of Sale

The standard required form for a bill of sale may be obtained from the Town of Jupiter Utilities Business Office. (see page 2 for contact information)

TOWN OF JUPITER UTILITIES

INFORMATION REQUIRED TO REQUEST
AN ALLOCATION OF CAPACITY LETTER
AND POTABLE WATER PROVIDER
REPORT

1. Submit, on Company letterhead, your request for an Allocation of Capacity Letter and Potable Water Provider Report.

2. Provide legal name, mailing address and phone number of property owner/agent, of which all correspondence will be made.

3. Provide Name of Project.

4. Provide Location Map showing location of project.

5. Provide the Property Control Number(s) for all parcels in the project.

6. Provide intended use of property. Such as # single family homes, # multi-family units or # sq. ft. of commercial space or # of seats in a restaurant. Include common facilities such as pools, fountains, recreation buildings, etc.

7. Provide a statement of site irrigation sources such as well, potable water or reuse.

Upon receipt by the Town of Jupiter Utilities of the above information, guaranteed revenue fees will be calculated and forwarded to the property owner/agent in letter form.

The property owner/agent must provide payment of the amount due for capacity reservation to the Town of Jupiter prior to the issuance of the Allocation of Capacity Letter and Potable Water Provider Report.

ALL CAPACITY RESERVATIONS ARE FOR A PERIOD OF 12 MONTHS ONLY. A FORMAL WATER SERVICE AGREEMENT MUST BE EXECUTED WITHIN 60 DAYS OF THE PROJECT APPROVAL BY THE TOWN.

All requests must be submitted to:

Town of Jupiter
Utilities
Attn: Customer Service and Billing
Manager
210 Military Trail
PO Box 8900
Jupiter FL 33468-8900

Phone: 561-741-2300
Fax: 561-741-2539

TOWN OF JUPITER UTILITIES
INFORMATION REQUIRED TO REQUEST A
WATER SERVICE AGREEMENT

1. The request for a Water Service Agreement must be made in writing by the property owner or authorized agent of the property owner.

2. Provide the Name of Project.

3. The request must include the legal name, mailing address and phone number of the property owner for whom all correspondence will be made.

4. The request must include a written legal description of the property, including number of acres, and the Property Control Number(s) (PCN).

5. a. The request must indicate the proposed use of the property; Single Family, Individually Metered Multi-Family, Master Metered Multi-Family, Mixed Use (Residential and Commercial) or Commercial.

6. The request must state the number of individually metered Single Family units and/or individually metered Multi Family units along with the associated square footage of each living unit. Master Metered Multi Family must provide the number of living units. Commercial must provide the total square footage and type of commercial use (retail, office, etc.) State if there is a pool, cabana, or fountain, etc. Provide the clubhouse or other amenity building square footage along with the number of toilets/urinals/showers in each building.

7. If Mixed Use, the request must state the total number of living units and associated square footage of each living unit and the total square footage of the commercial area. State if there is a pool, cabana, or fountain, etc. Provide the clubhouse or other amenity building square footage along with the number of toilets/urinals/showers in each building.

8. If the project is to be a restaurant or include a restaurant, the request must state the total square footage of the restaurant plus the number of seats in the restaurant plus the type of service provided (full sit down, fast food, etc.)

9. The request may provide projected gallons per day the project will use based upon a determination by the Professional Engineer for the project. This determination must be submitted in writing by the engineer. This request can be in lieu of the above information (No. 5a to 5d) only if the project is to be serviced by one Master Meter. This request does not allow for Master Metered site irrigation water.

10. For ALL irrigation use (except private single family residential) the request must be submitted on letterhead from the irrigation system designer and include the designed demand in gallons per day of the purposed irrigation system. This letter must be signed by the irrigation system designer. All irrigation water will be separately metered.

11. A legible location map of the property must accompany the request.

UPON RECEIPT OF THE ABOVE INFORMATION, A WATER SERVICE AGREEMENT WILL BE PREPARED AND RETURNED TO THE PROPERTY OWNER FOR SIGNATURE AND NOTARY.

All requests must be submitted to:
Town of Jupiter Utilities
Attn; Customer Service and Billing Manager
210 Military Trail
PO Box 8900
Jupiter FL 33468-8900
Phone: 561-741-2300 Fax: 561-741-2539

TOWN OF JUPITER UTILITIES

SECTION II POTABLE WATER SYSTEM

Construction Standards and Details

- **General**

  The standards set forth within this document are intended to provide a basis for design and construction of potable and raw water systems. In typical form, these standards will change as conditions, materials, and rules change to reflect improvements in design and operation.

  1. Following Florida Administrative Codes, Ordinances, Rules and Publications, Jupiter Utilities requires that all design and construction comply with applicable rules, regulations, ordinances and acceptable practices in the industry. The following list is generated to assist users of this document. It is not intended to be a complete list of relevant agencies responsible for the regulation of this industry;
     Environmental Protection Agency (EPA), NSF International (NSF), Florida Department of Environmental Protection (FDEP), Palm Beach County Health Department Environmental Control Rule II (PBCHD)(ECR II), Town of Jupiter (TOJ), South Florida Water Management District (SFWMD), American Water Works Association (AWWA), Occupational Safety and Health Administration (OSHA).

  2. Primary Objective

     Providing potable water for all customers of Jupiter Utilities, that is secure from interruption of service, meets water quality regulatory standards and is the best quality possible.

- **Engineering Plans**

  1. Plan Preparation and Approval

     The developer's engineer shall be responsible to obtain all existing utility information, including horizontal and vertical locations, size, materials, location of fittings, valves, and structures in order to prepare construction plans in accordance with these standards.

     All construction plans shall be approved by Jupiter Utilities prior to construction. No changes shall be made on the approved plans without specific written approval from Jupiter Utilities. Jupiter Utilities shall conduct inspections during construction to ensure conformance with the approved construction plans and regulatory requirements.

     No construction activities shall start prior to a pre-construction meeting with the Town of Jupiter Utilities.

  2. General Design Guidelines

     The design engineer shall conform to the following guidelines when making a utility construction plan submission.

     (a) Prepare utility plans on ANSI D (22” x 34”) sheets using a scale no smaller than 1" = 40' for plans with up to two piping systems. 1" = 30' for plans with more than the two piping systems unless specific approval for a smaller scale is obtained from the Jupiter

Utilities prior to initial plan submittal. Drawings submitted on other size sheets or at an unacceptable scale shall be returned without review. The scale used shall be one that appears on a standard engineer's box scale. Like scales shall be used on plan and profile with correct grids. (i.e., 1"= 40' hor., 1"= 5' vert.; 1"= 40' hor., 1"= 4' vert.) Do not interchange scales or grid count.

(b) Obtain Palm Beach County (PBC) Fire Marshal approval of potable water system plans prior to plan submission to the Jupiter Utilities. The Fire Marshal approved set shall indicate the minimum fire flow requirement for the project.

(c) Submit (PBC) Fire Marshal approved set, paving and drainage plan, preliminary plat or utility easement plan, at a scale, matching the potable water, raw water, reclaimed water, and/or wastewater plan & landscaping plan. Master plan for multi- phase project, cover sheet and all plan sheets with relevant and legible location sketch, canal and road permits, with two (2) copies of DEP forms.

(d) Show clear phase lines and match lines as appropriate. Phasing shall be decided before initial plan review and with the Jupiter Utilities Department.

(e) Provide all applicable construction details. Town of Jupiter details shall not be altered without the expressed written permission from the Town of Jupiter Utilities.

(f) Show the vertical and horizontal separation between potable and/or raw water mains and all other utilities. Indicate top and bottom pipe elevations where water main (potable or raw), cross another utility.

(g) Identify the number of stories and number of dwelling units and show lot lines with driveway locations (if applicable). Identify each lot, bay, and building to be served with the Town of Jupiter water.

(h) All revisions made after the Jupiter Utilities first review, shall be noted in the revision block on the revised plan sheet. (Plans with no revisions noted, will be returned with no review).

(i) A legible project location map shall be provided which shall include the Section, Township, and Range for the project.

(j) A legible master site plan shall also be provided. This plan shall clearly delineate phasing plans, any additional main required and all valves.

(k) Numerically identify all manholes, catch basins, fire hydrants, and valves.

(l) If a raw or potable water main is to be constructed in an undeveloped area that will be developed at a later date, a topo map must be provided extending 20 feet horizontally each side of the main to be constructed.

3. Computer Generated Drawings

(a) Do not use computer generated scales that cannot be read with a

standard engineer's box scale. Plans must be layered using the following format:

(1) First layer(s) is base map using Florida State Plane NAD 83, feet.

(2) Second layer(s) is the water system.

(3) Third layer(s) is the drainage system.

(4) Fourth Layer(s) is the raw water system.

(b) Show profile grade between manholes and profile of water/raw water main installation.

(c) Use appropriate symbols for natural ground, compacted earth and pavement.

(d) Include one (1) set of electronic (CAD) data files with final plan submittal prior to approval.

(e) Refer to Record Drawing requirements on Page 29.

4. Service Line Relocations

(a) In cases where potable water lines and services have been constructed and a developer chooses to relocate such services, Jupiter Utilities requires the services be removed and plugged at the main. Services must have a minimum of three feet separation from other services and fittings.

(b) If the number of services removed is more than 25% of the total services located in 1500 feet of water main, the developer will be required to replace the main at the Town of Jupiter Utility Department request.

5. Show all Easements and Right of Ways in accordance with the requirements on page 12.

- **Inspections**

The Town of Jupiter Utilities (TOJU) shall inspect all materials of construction, all installations of potable, raw water and drainage systems. TOJU may also inspect preparation, fabrication of components, materials, supplies and excavations. Access to the work shall be provided by the contractor to all Town of Jupiter personnel. The Town of Jupiter (TOJ) inspector is not authorized to revoke, alter or waive any requirements of the Town's specifications, but may call to the attention of the Engineer of Record and/or contractor any failure of work or materials to conform to the plans or specifications. The TOJ inspector shall have the authority to reject materials or suspend the work until questions regarding specific issues are addressed and resolved by all concerned parties.

Jupiter Utilities inspector(s) in no case shall act as, or perform duties of the Engineer of Record, his representatives, and/or the contractor, nor direct or manage the work.

Any advice which the inspector may give regarding a specific problem, shall in no way, be construed as binding on Jupiter Utilities, or releasing the developer, the

Engineer of Record, his representative(s) and/or the contractor from performing the work according to the intent of the plans, specifications, permits and regulatory requirements.

Inspections will only be scheduled during regular working hours, except for pre-approved work involving service interruptions; Jupiter Utilities requires close coordination of all connections made to existing systems and any work requiring interruption of water service to the water plant or TOJ customers. Adequate advance notification of two weeks shall be required, in order to minimize all service interruptions to our customers, water plant operators and field crew.

Written approval shall be required from Jupiter Utilities when the Engineer of Record, his representative, or the contractor request work to be done on weekends, holidays, or after normal working hours of the Town of Jupiter. Request shall be made with seven days advance notice. Overtime expenses shall be reimbursed by the contractor/developer to TOJ.

In cases where the contractor has proceeded with work and done so without affording the Town's inspector the opportunity to inspect or witness said work, the contractor shall bear all costs associated with uncovering, retesting, performing additional testing and all other cost associated with providing physical evidence to TOJU to determine acceptability of the work performed by the contractor. Such costs shall be the responsibility of the contractor regardless of whether the work is found to be defective or acceptable to Jupiter Utilities.

The Engineer of Record shall coordinate inspections such as pressure tests, connections to existing systems, jack and bores, directional bores, service interruptions, bacteriological testing and final inspections with TOJU.

The Engineer of Record or his/her representative shall be present for all scheduled inspections or the inspection will be canceled. The Engineer's representative shall observe preliminary pressure test prior to scheduling a pressure testing inspection with Jupiter Utilities.

- **Installation Requirements**

1. General

   (a) No work shall begin without drawings approved by the Town of Jupiter Utilities. Should one (1) year pass after approval without initiation of construction a re-submission may be required.

   (b) A pre-construction meeting shall be held prior to the initiation of work. All necessary permits must be obtained and presented at the pre-construction meeting.

   (c) The Town of Jupiter Utilities shall be given 48 hour notice prior to beginning of construction. The Town of Jupiter Utilities may be notified by calling 561-748-2705. If construction of a water line is delayed, the inspectors must be notified prior to work resuming.

   (d) All work shall conform to the latest revision of Florida Administration Codes, FDEP regulations, Palm Beach County Environmental Control Rule II, AWWA standards, OSHA standards, and the Town of Jupiter Design and Construction Standards.

(e) Any unanticipated conflict with other underground utilities shall be brought to the attention of the Town of Jupiter Utilities. Resolution for each conflict shall receive approval by the Town of Jupiter Utilities.

(f) Any deviation from the approved plans shall be approved by the Town of Jupiter Utilities.

(g) Hydrant replacements within Right-Of-Way and access easements shall meet the following criteria:

- On a rural road section, all hydrants shall be offset a minimum of 6 feet horizontally from edge of travel lane on a local road and 10 feet horizontally from edge of travel lane on a collector road. On a road section with a raised curb, hydrants shall be a minimum of 5 feet from back of curb.
- All hydrants shall be a minimum of 2 feet from residential driveways and 5 feet from commercial driveways.
- Hydrants adjacent to pedestrian sidewalks and pathways shall have a minimum of 1 foot separation from the back edge of the sidewalk or pathway to the hydrant nozzle cap. No hydrant shall be located within sidewalks or bike paths.
- Landscape material shall be installed in a manner that provides a minimum of a 5 foot clear radius from the fire hydrants for proper access.

(h) Contractor is responsible for applying food grade anti-seize to all hydrant nozzles.

(i) Above ground meters and backflow shall be offset (same as hydrants above).

(j) All piping shall be laid in a trench having a dry and stable bottom. Backfill shall be free of boulders and debris. Pipe shall be fully supported along its entire length. Sharp or rocky material encountered in the base shall be replaced with proper bedding. Pipe shall be laid on line and grade as designed.

(k) Pipe excavation shall be to the elevation necessary to install the pipe on undisturbed soil. In event of over excavation, backfill shall be compacted to 98% density or better. In the event compaction cannot be obtained, #57 stone or flowable fill (Town to decide) will be required.

(l) Pipeline trenches shall be backfilled in 4” lifts hand tamped up to 12”above the top of pipe. After of which backfill shall be installed in 12” lifts and mechanically compacted to the required density.

(m) Trace wire shall be installed on all watermains that are not ductile iron. The wire shall be installed in such a manner as to be able to properly trace all watermains without loss or deterioration of signal or without the transmitted signal migrating off the tracer wire.

- All non-ductile distribution pipe shall have a tracer wire, fourteen (14) gauge Copperhead tracer wire or approved equal for all open cut construction and Copperhead SoloShot Xtreme or approved equal for all horizontal directional drilled or pipe bursting construction (blue insulation color).
- Wire shall be continuous from valve box to valve box and extended to each valve box collar to enable location devices to be attached without digging up the valve box (see drawing No.

W-6).

- All approved spliced-in wire connections shall be made with 3M DBR connectors, or approved equal, and shall be watertight to provide electrical continuity. Branch connections for laterals, turnouts, services,and appurtenances shall use DryConn Direct Bury Lug Aqua, or approved equal.
- Trace wire shall be installed in the same trench, bore holes and casing with pipe during installation. It shall be securely affixed flat to top of pipe at 10 foot intervals. The wire shall be protected from damage during installation process. No breaks or cuts in the tracer wire or tracer wire insulation shall be permitted. At water service saddles, the tracer wire shall not be allowed to be placed between the saddle and the water main.
- Trace wire access points shall be accessible at all water valves boxes, water meter boxes, blowoffs, ARVs and fire hydrants.
- Trace wire access points shall in general be no more than five-hundred (500) feet and at every proposed 24”x24”x8” concrete valve box collar. Concentrations of multiple proposed valves near pipe intersections, i.e. tees or crosses, may require more than one access point assembly in each concrete valve box collar.
- Each trace wire access point shall be composed of one Copperhead Snake Pit Magnetized Tracer Box, Test and Monitoring Station or approved equal, installed in each proposed 24” x 24” x 8” concrete valve box collar.
- At all water main end caps, a minimum of 6 feet of tracer wire shall extend beyond the end of the pipe, coiled and secured for future connections. The end of the tracer wire shall be spliced to the wire of a six pound zinc anode and is to be buried at the same elevation as the water main.
- For all directional drilling, auguring, boring or pipe bursting installations, four (4) #14 tracer wires shall be installed with the pipe and connected to the pipe at both ends, or cad welded to the existing iron pipe at both ends.
- EMS markers will still be required, (see page 30 for EMS requirements)

(n) Changes in pipe alignment may be accomplished using appropriate fittings or through pipe deflection. Deflection of push joints (DI) shall not exceed 75% of manufacturer’s recommended maximum, longitudinal bending of PVC pipe is permitted according to manufacturer’s requirements. General reference may be consulted using the "Handbook of PVC Pipe" provided by the Uni-Bell PVC Pipe Association.

(o) No rocks larger than two (2) inches in diameter or other items that can damage the pipe shall be permitted over the pipe. In the event pipe is installed in rock excavation, six (6) inches of granular material shall be
Provided for bedding under the pipe, all pipe joints, thrust blocks, conflicts and service connections shall be left exposed until visually inspected and approved by a Jupiter Utilities inspector.

(p) A minimum 10 feet horizontal separation shall be maintained between water main and any structure (buildings, privacy walls, etc.).

(q) Taps for service shall be supplied with corporation stops or

approved tapping valve. All taps shall be located 24 inches or more away from bell joints, fittings and valves. Taps 6 inches and larger in diameter shall be located as near to center of pipe as possible and inspected for approval by Jupiter Utilities inspector.

(r) Existing pipes to be tapped shall be thoroughly cleaned and disinfected with a chlorine solution (minimum of 100 mg/L as free chlorine) prior to installation of tap saddle or tapping sleeve. Taps on pipes shall use the 304 or 316 stainless steel full wrap tap sleeve.

(s) Town of Jupiter Utilities will not accept any type of repair including but not limited to, bell repair clamps, wrap around repair clamps, sleeves or hydrant extensions on new work without written approval from the Town of Jupiter Utilities Department.

(t) Contractor responsible for maintaining integrity of new services, pipes, hydrant, and valves until last meter is installed on project.

(u) Above ground meter hardware shall be 316 stainless steel nuts and bolts.

(v) All DIP shall have a blue 4” stripe painted on the pipe per FDEP requirements. Paint is Glidden 100% Acrylic, color Alaskan Blue.

(w) All service road crossings shall be installed utilizing sleeves to protect services. 1.5” sleeves for 1” services and 3” sleeves for 2” services. Sleeves shall be PVC (Sch. 40) or DIP pipe and the end of the sleeves shall be filled with insulation spray foam. Wrap and tie both ends of sleeves with filter fabric. EMS markers shall be located at the ends of sleeves.

2. Grades and Conflicts

(a) The Palm Beach County Health Department Environmental Control Rules shall be strictly observed and applied.

(1) All installations of potable, raw and storm water mains shall comply with Florida Department of Environmental Protection (FDEP) **Chapter 62-555.314**. See Pages (W-1 thru W-3) illustrating the separation required.

(2) The ground shall be rough grade prior to water main installation.
Water main shall be installed with 30" of cover as a minimum and
maximum of 36” cover unless otherwise noted, from proposed finished grade elevation. Any deviations must be approved by the Town of Jupiter Utilities Department.

(3) All water service lines shall be laid with 20" of cover from the proposed finished ground elevation above the pipe. Road crossings require 30" minimum of cover with no exceptions.

(4) The contractor shall provide offset stakes showing a finished grade over the pipe. Stakes shall be maintained until inspected by the Town of Jupiter Utilities. Offset stakes shall be spaced no greater than 50’ apart.

(5) Where a water main crosses another utility which requires the water main to deflect below the conflicting utility, the water main deflection shall be accomplished utilizing ductile iron pipe and fittings so as to minimize the amount of cover over the pipe (see standard details.) Size of utilities in conflict shall be used to determine which utility deviates in order to reduce the costs of installation and maintenance. Jupiter Utilities shall be consulted for all field conflicts.

Reclaimed water system main shall be identified as required. Purple pipe shall be used to identify reclaimed water system mains.

Sanitary sewers and force mains shall be green pipe or appropriately marked. No blue pipe may be used.

(6) Conflicts involving gas, electric, telephone, cable, fiber optic, irrigation, and other such utilities (not including storm sewer, sanitary sewer, and reclaimed water) shall be designed and constructed such that a minimum vertical separation of 12 inches is achieved between the utility and a watermain or raw watermain, regardless of whether the utility crosses over or under the watermain or raw watermain; and a minimum 5 feet horizontal separation is achieved between the utility and the watermain or raw watermain. Where the utility crosses over or under the watermain or raw watermain, the utility shall be located such that a minimum of 5 feet horizontal distance is achieved between the utility and watermain or raw watermain joints, fittings and valves. At a maximum, only two conduits/pipes will be permitted to cross over a section of watermain or raw watermain. Crossings of more than two conduits/pipes will be required to cross under the watermain or raw watermain unless the conduits or pipes are installed within a single sleeve meeting the separation requirements of this paragraph and minimum cover requirements for the specific utility. Deviations from the separation requirements contained in this paragraph will not be permitted without written authorization from the Town of Jupiter Utilities.

Jupiter Utilities is concerned with access to maintain or extend the water main and requires a design that would not encumber or prevent efficient access for those purposes. Many variations can exist; therefore Jupiter Utilities shall be consulted in these matters.

Progress inspections found violating the separation requirements; the contractor shall cease any construction in the affected area until the separation issue is resolved in writing from the Town.

3. Flushing

(a) Submitted Record Drawings for review are required prior to requesting a flush. A minimum of 48 hour notice to the Jupiter Utilities is required before flushing operations.

(b) All lines shall be flushed prior to conducting the pressure test. Jupiter Utilities personnel shall be present and in control of the flushing. Contractors are NOT authorized to operate any Jupiter Utilities valves.

(c) All water utilized for flushing, pressure and leakage test shall be potable water with an adequate chlorine residual of 0.5 mg/L combined residual.

(d) Flushing of lines shall require a volume of water equal to 2 ½ times the volume of the pipe line being flushed. Rate of flow during the flushing operation shall be at least 5 feet per second. When not able to meet this volume and/or velocity the contractor shall be required to pig the pipe.

(e) The contractor is responsible for providing a flushing point capable of discharging the flushing water into a safe location. Any erosion or other damage which may occur is the contractor's responsibility.

4. Pressure Testing

(a) The Engineer of Record shall request witnessing of all pressure tests and provide a minimum of 24 hour notice to the Town of Jupiter Utilities.

(b) Jupiter Utilities personnel shall be present along with the Engineer of Record during all pressure tests.

(c) The Contractor shall perform a preliminary test prior to calling the Engineer of Record and Jupiter Utilities for an official test.

(d) All pressure testing equipment shall be in good and proper operating condition. The test gauge shall be rated to 300 psi maximum with a reading in 2 psi increments and the gauge face shall be 4 ½". Oil glycerin filled type gauges are required; however, exceptions may be approved prior to the test at the sole discretion of the Town's inspector.

(e) Main line valves and valve boxes shall be clean and accessible at all times and maintained in acceptable condition until system gets released by the P.B.C.H.D.

(f) The maximum length of line to be tested as one section shall be 2,500 feet. Various designs may require sectioning for pressure testing. The test shall be performed as determined in the current AWWA and Jupiter Utilities specifications. The standard test duration is two (2) hours.

The maximum quantity of water that shall be supplied into the tested pipe to maintain pressure at the specified test pressure shall not exceed 50% of the applicable AWWA C-600 Standard. Where multiple valve sections are being tested, the smallest valve section shall be used for the total allowable to maintain test pressure. However, if Engineer of Record and Jupiter Utilities inspector agree to exceed the test parameters (i.e., zero allowable); then multiple sections shall be allowed in one pressure test.

(g) During pressure testing, the maximum deviation of pressure shall

not exceed 5 psi. If the pressure deviation exceeds 5 psi, the test has failed.

(h) All tapping sleeves shall be pressure tested at 150 psi for 1 hour with Jupiter Utilities personnel and the Engineer of Record present. Any loss of pressure is considered a failure. All tapped coupons must be given to the Jupiter Utilities inspector. A minimum of 24 hour notice to the Town of Jupiter Utilities is required prior to all such testing.

(i) HDPE pipe testing shall be done to manufacturer's and Jupiter Utilities requirements.

(j) All roadways will have their rock base in place prior to pressure testing.

(k) If pressure tests are over 30 days old and bacteriological test have not been obtained or expired, a new pressure test will be required. The new pressure test will only be for 1 hour in duration.

(l) All hydrants are to be facing the roadway prior to pressure test being performed.

5. Disinfecting Water Mains

(a) The procedures and materials used for disinfecting water mains shall be in accordance with the latest edition of ANSI/AWWA C651-14.

(b) As described in ANSI/AWWA C651-14, only the “Continuous Feed” and “Slug” methods of chlorination are allowed.

(c) During final connections to water mains that have been cleared by the Palm Beach County Health Department for potable water use, the connection length shall be less than 20 feet and disinfection of connection fittings and pipe shall be performed by cleaning, swabbing and/or spraying the material with a minimum of 1% solution of chlorine just before being installed.

(d) The chlorine used for disinfection shall be NSF/ANSI 60 certified; the Town will allow two types of chlorine to be used for disinfection:

- Liquid sodium hypochlorite that contains approximately 5% to 15% available chlorine; it comes in glass, rubber-lined, or plastic containers typically ranging in size from one quart to five gallons.

- Granular calcium hypochlorite that conforms to ANSI/AWWA B300 and contains a minimum of 65% available chlorine by weight.

6. Construction Safety

(a) Jupiter Utilities signing as the applicant for any required permit, does not, and shall not in any way, release the contractor from liability for any injuries, accidents, property damage or losses resulting from project construction.

(b) All work shall be performed in a safe and professional manner. The

contractor shall comply with all applicable laws and regulations regarding the safety of persons and property. The responsibility for project safety rests solely and specifically with the contractor. The Jupiter Utilities, its employees and agents, are specifically indemnified and held harmless from any actions of the contractor relating to the safety procedures implemented during construction and for any claims brought by any persons regarding safety, personal injury or property damage.

(c) Handling abandonment and disposal of cement/asbestos pipe shall be done in an approved manner. Applicable Federal regulations, State of Florida regulations, and OSHA standards shall be met.

7. Workmanship/ Warranty

All contractors performing any work on a portion of the underground facilities which shall ultimately be dedicated to the Jupiter Utilities for ownership or which directly interacts with the Jupiter Utilities system (such as a water main) shall be properly licensed to do such work. All materials and equipment shall be installed in accordance with the manufacturer's recommendations and specifications. Required workmanship shall be of a quality acceptable to the Jupiter Utilities.

Jupiter Utilities reserves the right to reject any and all work deemed to be of questionable quality. In the event that faulty workmanship is discovered at any time within the one (1) year period following the date of clearance for service by the Palm Beach County Health Department, Jupiter Utilities reserves the right to require the developer, its successors, or assigns and/or the contractor to replace or repair said faulty workmanship in a manner acceptable to the Jupiter Utilities and at no cost to the Jupiter Utilities. In addition, said restored work shall be further warranted for one (1) year from the date of acceptance.

- **Clearance Requirements/Record Drawings**

1. Bacteriological Clearance

(a) Contractor shall utilize an approved State Department of Health (DOH) Certified Laboratory.

(b) If a contractor is to utilize an independent laboratory, only the following parties shall be included in the chain of custody for each sample: Jupiter Utilities, consulting engineers, and/or independent lab personnel.

Following two consecutive samples that have failed to clear bacteriological quality requirements, an approved re-chlorination technique and flushing shall be performed prior to re-sampling.

(c) Coordination of sampling with Jupiter Utilities or its consulting engineers is required prior to initiating bacteriological clearance procedures. The furthest sample point from the source shall remain open until DOH has provided clearance.

(d) A minimum of one sample is to be collected from every 1200 feet of new water main.

2. Miscellaneous

   (a) All PVC pipe taps shall be made with a shell cutter or pipe manufacturer approved tool only.

   (b) All ductile iron pipe taps shall be made with drill and arbor tool. Contractor shall provide pipe coupons to Jupiter Utilities inspectors.

   (c) All sample point piping shall be removed from the corp stop. Brass plugs shall be installed at the corp stop within one week after bacteriological clearance (brass shall be no-lead).

   (d) Backflow preventers shall be required. Reference is made to the Town of Jupiter Utilities Cross-Connection Control Program Backflow Assembly Installation Requirements within Section III of this manual

   (e) Adequate protective measures against corrosion shall be used as determined by the design engineer. Material selections and/or coating systems shall require specialized inspection and/or testing. Details are required.

   (f) Thrust Restraint: The mechanical method is the required method of restraining all bends, tees, crosses, reducers, valves, dead ends, branch valves and stub outs for future extensions, vertical deviations and casing installations. Page W-14 list restraint requirements, any deviations from this method shall require Jupiter Utilities approval.

3. Warranty Inspection

   (a) All materials and equipment to be furnished and/or installed on water facilities by the contractor under any contract on any project for which a developer intends to dedicate said facilities to the Jupiter Utilities, shall be new and shall carry a complete, indisputable guarantee against defective materials and equipment and faulty workmanship for a period of at least (1) year from the date of clearance for service by the Palm Beach County Health Department.

   (b) In the event that any defective material and equipment and/or faulty workmanship is discovered within the one (1) year period, the Jupiter Utilities reserves the right to demand that the developer, his successors or assigns and/or the contractor to replace and/or repair said defects at no cost to Jupiter Utilities and said materials and equipment shall be further warranted for a period of one (1) year from the date of written acceptance of said replacement and/or repair.

4. As-Built Drawings

   (a) Two sets of as-builts in Autocad, two sets in PDF format and two sets of as-built blacklines shall be submitted to the Utility Services Manager, upon completion of installation of water mains, raw water mains, and prior to submittal of FDEP/PBCHD request for release forms. As-built drawings shall be produced in a computer aided drafting system capable of producing the following:

(1) Electronic files shall be on a CD Rom

(2) The following file types are acceptable:

i) AUTOCAD version 2018 or higher DWG files

ii) DXF files

(3) Files may be compressed by: PK Zip or WinZip utilities.

(4) Drawings must be developed in full scale; 1 computer unit = 1 foot

(5) The coordinate positions within this file are to be rotated and translated to State Plane Coordinates in NAD 83/90 Florida East Zone or currently approved datum, based upon the tie-in to geodetic control.

(6) The vertical datum for elevations on the Construction Drawings and Record Drawings shall be noted on each drawing sheet, in either NAVD 1988 or NGVD 1929, with conversion factor for NAVD 1988 to NGVD 1929 or NGVP 1929 to NGVD 1988, as applicable, also noted on each drawing sheet.

(b) Record drawings shall provide GPS coordinates for all main fittings, saddles, valves, hydrants, blow-offs, corporation stops, curb stops, and meter boxes. The coordinate system must be Florida State plane NAD 83/90. Accuracy minimum tolerance must equal one (1) decimeter (10 centimeters). Any deviations from the specified pipe cover shall be shown. Field notes, sketches, and additional information shall be presented on the record drawing. **Record Drawing must contain notes stating size, type, manufacturer and manufactured year of: tap sleeves, pipes, fittings, valves, and hydrants installed.**

(c) Plans must be layered using three groups of layers:

(1) Group #1: Background information including surveys with landscape and hardscape shall have a minimum of five layers

(2) Group #2: Potable water distribution and transmission system shall have a minimum of four layers with the following specific requirement for each layer:

- Existing water distribution and transmission mains with material type, pipe elevations, fittings, valves and tie-in points.
- Water distribution and transmission mains with pipe lengths, material type, pipe elevations, fittings, valves and tie-in points.
- Water services showing service size, material type, tie-in location to the main and meter location with GPS coordinates,
- Profile information and other miscellaneous text.

(3) Group #3: Raw water distribution and transmission mains with material type, pipe elevations, fittings, valves and tie-in points.

- Existing raw water distribution and transmission mains with pipe lengths, material type, pipe elevations, fittings, valves and tie-in points.
- Raw water distribution and transmission mains with pipe lengths, material type, pipe elevations, fittings, valves and tie-in points.

(4) Group #4: Stormwater system shall have a minimum of three layers with the following specific requirements for each layer:

- Existing stormwater infrastructure pipes, culverts catch basins, manholes, outfalls etc. with material type, pipe elevations, inverts and tie-in points.
- Stormwater pipe, exfiltration trench, catch basins, manholes, outfalls etc. with pipe lengths, material type, pipe elevations, fittings, baffles, tie-in points, etc.
- Profile information and other miscellaneous text.

(5) GPS coordinates shall be numbered and shown in a “chart” format on the as-builts.

5. Bill of Sale Information

A developer who has constructed portions of the water distribution system on the developer's own property prior to interconnection with the Jupiter Utilities existing facilities shall convey such component parts of the water distribution system to the Jupiter Utilities by bill of sale in a form satisfactory to the Town Attorney, together with such evidence as may be required by the Town of Jupiter Utilities that the water distribution system proposed to be transferred to the Jupiter Utilities is free of all liens and encumbrances.

Any facilities in the category of "consumer's lines" or "plumber's lines" located on the discharge side of the water meter or on the consumer's side of the point of delivery of service shall not be transferred to the Town of Jupiter Utilities and shall remain the property of developer, subsequent owner-occupant thereof or their successors and assigns. Such "consumer's lines" or "plumber's lines" shall remain the maintenance responsibility of the developer or subsequent consumers.

Jupiter Utilities shall not be required to accept title to any component part of the water distribution system as constructed by developer until Palm Beach County Health Department clearance is received and Jupiter Utilities approves the construction of said lines, accepts the tests to determine that such construction is in accordance with the written criteria established by Jupiter Utilities and thereby has evidenced its acceptance of such lines for Jupiter Utilities ownership, operation and maintenance.

Engineer and/or Developer shall provide accurate cost records establishing the construction costs of all utility facilities constructed by Developer and proposed to be transferred to Jupiter Utilities. Such cost information shall be furnished to the Jupiter Utilities concurrently with the bill of sale and such cost information shall be a prerequisite for the acceptance by the Jupiter Utilities of the portion of the water distribution system constructed by developer.

Jupiter Utilities reserves the right to refuse connection and to deny the commencement of service to any consumer seeking to be connected to portions of the water system installed by the developer until such time as

these provisions have been fully met by the developer or the developer's successors or assigns.

6. Final Inspection

   (a) Acceptable bacteriological clearance testing results are required. Jupiter Utilities requires the water to meet potable standards prior to release for service.

   Note: Chlorine residual shall be above 0.5 mg/L combined residual. If more than 30 days have passed since the bacteriological clearance test, and/or the pipe has been stagnant, been compromised or damaged, re-testing may be required.

   (b) Preliminary punch list by the contractor, project engineer, and Jupiter Utilities is required to be completed prior to the first permanent meter set. Service valves shall be set in a grassy area generally at a common property line. See construction standards and details for service connection details.

      (1) Multi-unit buildings with 2" service lines must also have the 2" valve cover set to grade, clean, unbroken and readily accessible.

      (2) Commercial connections with meters installed by contractors shall be complete prior to being placed into service. See construction standards and details.

      (3) The system shall be released to the full extent or partially released by the P.B.C.H.D. (FDEP). Partial release is usually for construction needs of potable water.

7. Warranty Inspection - Eleven Months After Final Inspection

   (a) All materials, workmanship, and equipment to be furnished and/or installed on water facilities by the contractor, under any contract and on any project for which a developer intends to dedicate said facilities to Jupiter Utilities, shall be new and shall carry a complete, indisputable guarantee against defective materials, equipment, and faulty workmanship for a period of at least one year from the date of Jupiter Utilities final acceptance and release into service.

   (b) In the event that any defective material, workmanship, and/or equipment is discovered within the one year period, Jupiter Utilities will require the Developer or his successors or assigns to replace and/or repair said defects at no cost to Jupiter Utilities and said materials and equipment shall be further warranted for a period of one year from the date of written acceptance of said replacement and/or repair.

- **Approved Materials**

1. Pipe - Distribution and Transmission Mains

   (a) All piping 4" through 8" shall be PVC C-900 or ductile iron, 10" and over shall be ductile iron.

   (b) All piping within utility easements, commercial projects and high density residential projects (as determined by the Utilities Dept.)

shall be ductile iron pipe.

(c) All road crossings shall be ductile iron pipe.

(d) Water mains in Arterial or Collector roads shall be DIP. Arterial roads shall mean a facility of two or more lanes designed primarily to serve as major access route to expressways; and/or as a connector of sub-regions, inter- county and intercity vehicular movement.

(e) Collector roads-a street satisfying one or both of the following requirements:

(1) Carries traffic from local streets to the major system of arterial streets, expressways, and provides access to abutting properties.

(2) Street that collects the traffic from multiple local streets and carries traffic to another through road collector, major system, or arterial streets and expressways.

(f) All water pipe installed within state and county road right of ways shall be ductile iron.

(g) Ductile iron pipe shall be Pressure Class 350 for sizes up to and including 20 inch and Pressure Class 250 for sizes larger than 20 inch and shall conform to ANSI-A21.5 and AWWA C-151. Pipe interior shall have a cement mortar lining.

(h) High Density Polyethylene Pipe may be considered by the Town by special request.

(1) Materials used for the manufacturing of polyethylene pipe and fittings shall be PE 4710 High Density Polyethylene (I-IDPE) meeting ASTM D3350 cell classification of 345434C. The material shall have a minimum Hydrostatic Design Basis (HDB) of 1000 psi at 73° F when tested in accordance with PPI TR-4 and shall be listed in the name of the pipe and fitting manufacturer in PPI TR-4. The materials shall be NSF approved for potable water pipe. Note: Our distribution system requires AWWA SDR 11 pipe.

(2) HDPE pipe shall be manufactured in accordance with AWWA C901 for sizes ½" through 3" and in accordance with AWWA C906 for sizes 4" through 54". Fittings shall meet the requirements of AWWA C906. Butt weld fittings shall be manufactured in accordance with ASTM D3261 and shall be marked accordingly. Joints between plain ends of HDPE pipe shall be made by butt fusion when possible. The wall thickness of the adjoining pipes shall have the same dimension ratio at the point of fusion.

(3) Mechanical fittings used with HDPE pipe shall be specifically designed for, or tested and found to be acceptable for use with HDPE pipe. Mechanical fittings designed for other materials shall not be used. Requirements of stainless steel inserts shall be observed.

(4) Pressure testing of HDPE pipe and fittings shall be conducted in accordance with the Manufacturer's

recommended procedure. Pressure testing shall use water as the test media. Pneumatic (air) testing is prohibited.

(5) Acceptability of the use of HDPE pipe shall be determined by the Town of Jupiter Utilities on a case by case basis.

(6) Techniques for heat fusion shall be according to manufacturer's specifications. All Technicians performing heat fusion shall be certified.

2. Water Main Fittings

(a) All pressure pipe fittings of size 3 inch inside diameter and larger shall be ductile iron fittings with mechanical joints unless the plans specifically call for flanged joints, restrained joints, etc. Mechanical joints fittings shall be used for buried installations. Flanged joints shall be used for above ground service only.

(b) Mechanical joint fittings shall conform to ANSI/AWWA C-153/A 21.53. Glands for mechanical joint fittings shall be ductile iron and tee bolts shall be cor-ten steel unless otherwise specified. Flanged fittings shall conform to ANSI/AWWA-C-ll0/A21.10 and lined inside and outside as specified for the pipe.

(c) Tapping sleeves shall be stainless steel joint type for ductile iron pipe and PVC-C900; cement/asbestos piping.

3. Electronic Marking System (EMS)

Three types of EMS Markers may be used dependent upon the depth of the pipe, valves, or fittings and manufacturers recommendations. The following guidelines shall apply:

(a) EMS Markers are required to be placed flat and level 6" to 12" directly above pipe joint or fitting to be marked. EMS Markers are to be covered with 4" of firm soil to prevent movement or damage during backfill.

(b) Service markers are to be placed directly adjacent to tap saddle and corporation

(c) All fittings including valves, sleeves, crosses, tees, terminal ends, 90° ells, 45º, 22 ½º and 11 ¼ º, whether horizontal or vertical, are to be marked.

(d) All valves shall require EMS markers.

(e) EMS Markers are required no less than 50´ apart on all water mains.

(f) Where horizontal deflection occurs, one marker per length of pipe at each joint throughout entire radius of curve is required.

(g) For depths to a maximum of 5´ the following EMS Markers shall be used:

(1) 3M EMS Marker #1257 mid-range.
(2) 3m 4" Ball Marker-water 1403-XR mid-range.

(h) For depths over 5´ to a maximum of 7´ the following EMS Marker shall be used:

(1) 3M EMS Marker #1252 full-range.

4. Valves

(a) 4" through 10" valves shall be mechanical joint resilient seated gate valves conforming to the latest edition of AWWA C-509, (Epoxy coated).

(b) Valves 12" through 24" and over in size shall be mechanical (gear) side actuated resilient seated gate valves conforming to the latest edition of AWWA C-509, (Epoxy coated)

(c) 2" inline valves shall be Ford B44-777 with QT-67 or McDonald equivalent.

(d) 2" valves located on tapped plugs or caps, cul-de-sacs, or terminal end blow offs shall be Ford B11-777 with QT-67 and 2" x 6" brass nipple or McDonald equivalent, (note: all wetted brass shall be lead free).

(e) When valve is deeper than 36", an extension shall be required to bring operating nut within 24" of finished grade.

(f) For a 3' valve extension, use 1" schedule #40 steel pipe, 2 ½" square socket with 3/16" wall and set screw, a centering ring (4" in diameter) is located 12" from bottom of 2" valve key adapter.

5. Valve Boxes

(a) Valve boxes shall be installed with a 24" square concrete collar that is 8" in thickness.

(b) Valve boxes shall be domestic only.

(c) All valve boxes on 4" valve and larger, shall be cast iron construction with screw type riser sections, Valve box lids shall carry the word "water" and be non-pop water valve lids. Valve boxes shall be 5 ¼" diameter shaft two
(2) piece screw type adjustable valve box.

(d) Height adjustments to valve boxes shall require a screw type, cast iron extension. A Tyler Series 6850 or equal for the 4" valve and larger. No substitutions other than approved, shall be allowed.

(e) Valve boxes for 2" valves shall be 4 ¼" shaft two (2) piece screw type roadway boxes with arched bottom. Cast iron valve boxes by:

(1) Opelika Foundry

(2) Bingham Taylor

(3) Star Pipe

6. Services

(a) No-lead brass shall be used for all wetted surface applications for potable water systems.

(b) See details see page W-20 thru W-23

(c) 1” Service Tap valves shall be Ford FB-1000-4-NL-G

(d) 2" service tap valves shall be Ford B81-777 with-QT-67 or McDonald equivalent.

(e) 2" inline valves shall be Ford B44-777 with-QT-67. 2" valves located on tapped plugs or caps, cul-de-sacs, or terminal end blow offs shall be Ford Bll-777 with QT-67 and 2" x 6" brass nipple or McDonald equivalent.

(f) 1 1/2" and 2" meter valves shall be Ford BFA13-777 with C84-77 or McDonald equivalent.

(g) A 5/8" x 3/4" single meter service shall require a l" polyethylene service line

(h) 1" tapping saddles for single meter set shall be double strap brass for ductile iron or a Ford S-90 for C-900 PVC pipe. Both are with AWWA threads or McDonald equivalent.

(i) 2" tapping saddles shall be double strap brass for ductile iron or a Ford S-91 for C-900 PVC pipe. Both are iron pipe thread or McDonald equivalent.

(j) 2" services shall be polyethylene ASTM-D2737 for 200 PSI with permanent specification markings.

(k) 1" service pipe shall be polyethylene ASTM-D2737 for 200 PSI with permanent specification markings.

(a) All services exceeding 50 feet in length shall be 2" in diameter, polyethylene ASTM-D2737 for 200 PSI.

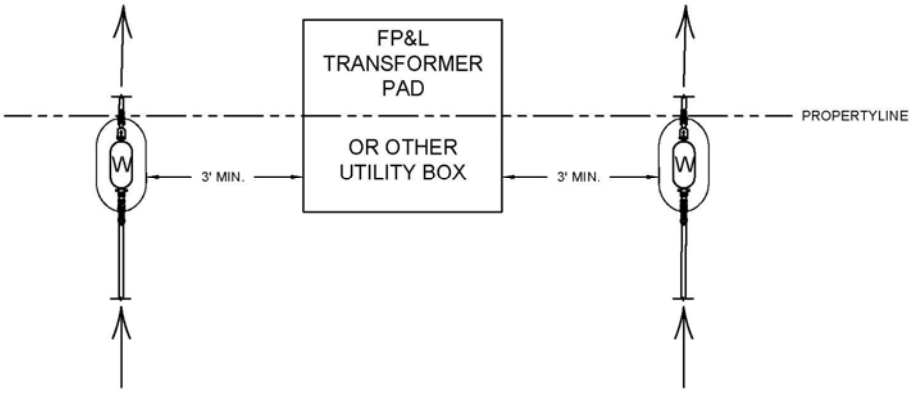
7. Meters

(a) Meters up to and including those two inches in size shall be installed by the Town of Jupiter Utilities. Water meters 3” and larger shall be installed by the contractor and shall meet the specifications below. All meters are required to have AMR system (Radio read), Developer and/or his engineer should consult with Jupiter Utilities regarding this requirement prior to initiating design. Note: 3” meters shall require 4” pipe to and from the meter.

(b)

1. Services should be located three (3) feet from the outside edge of the FP&L transformer slab.

2. Service should be at the property line corners just inside right-of-way and/or easement line.



(c) All large meters (3”-12”) for domestic use, whether commercial or residential, shall use:

1. 3” Octave – p/n #0303 AMR
2. 4” Octave – p/n #0304 AMR
3. 6” Octave – p/n #0305 AMR
4. 8” Octave – p/n #0306 AMR
5. 10” Octave – p/n #0307 AMR
6. 12” Octave – p/n #0308 AMR

- Meters may be purchased from Empire Waterworks; Ph: 407-295-2400, inform vendor the meter being purchased is for the Town of Jupiter.

(d) Fire Services Only, will require Reduced Pressure Detector Assemblies.

*see page W-22B for detailed drawing.

8. Meter Boxes

Contractor to install appropriate sized meter box and backflow prevention based upon Town of Jupiter’s requirements.

For service areas using both **non-potable** and **potable** water for irrigation:

a) **¾” meters** – Ford: GBIB (box), GBV83-32 (valve), GBO83-83 (outlet), C14-34G (3/4”x1” CTS adapter), YLL (Box Lid)
b) **1” meter**-Ford YL111-444 (Box Complete)

For more details regarding Backflow Prevention, see section Cross Connection Control Section.

9. Fire Hydrants

AWWA traffic breakaway flange, drain hole shall be plugged, 5 '/4 inch main opening bronze to bronze seating, non-rising stem; epoxy coated shoe, left opening only. Hydrant shall be white in color from manufacturer.

(a) Clow Medallion

(b) American B-84-B

(c) Mueller

10. Resilient Seat Gate Valves 4” Through 20”

Shall be epoxy coated and meet all applicable AWWA Specifications.

(a) American

(b) Clow

(c) Kennedy

(d) M & H Dresser

(e) Mueller Super Centurion

(f) Waterous

(g) Tyler

(h) U.S. Pipe

11. Butterfly Valves 24" and Larger

Shall be epoxy coated and meet all applicable AWWA Specifications.

(a) Mueller

(b) Kennedy

(c) Pratt

(d) Clow

(e) Dresser

(f) DeZurik

12. Tapping Sleeves

Heavy gauge 304 SS or 316 Stainless Steel

(a) Ford

(b) Romac sst

(c) JCM

(d) Smith-Blair

(e) Total Piping Solutions, Inc.

13. Tapping Valves

Epoxy coated and resilient seat

(a) American

(b) M&H

(c) Mueller

(d) Claw

(e) Kennedy

(f) Waterous

14. Tapping Service Saddles (DIP)

Brass tapping service saddles 1" and 2" for D.I.P. shall be double strap. The 1" is Corporation Cock (CC) AWWA thread. The 2" is International Pipe (I.P.) thread.

(a) Ford

(b) Mueller

(c) McDonald

(d) Total Piping Solutions, Inc.

15. Tapping Service Saddles (C-900-PVC)

Brass tapping service saddles 1" and 2" for C-900-PVC shall be hinged design. The 1" is Corporation Cock (CC) AWWA thread. The 2" is International Pipe (I.P.) thread.

(a) Ford

(b) Mueller

(c) McDonald

(d) Total Piping Solutions, Inc.

16. Mechanical Joint and Flanged Fittings

Fittings shall meet all applicable AWWA and ANSI specifications. Cement lined, cast iron or ductile iron anchor tees, and 90° bends are preferred.

(a) Tyler - Union Foundry

(b) U.S. Pipe

(c) Griffin

(d) American (Domestic only)

(e) One Bolt (Sniken & Kennedy)

(f) Star Pipe Products

(g) Sigma

17. Mechanical Joint Retainer Glands

All retainer glands shall be installed in accordance with the manufacturer's recommendations and specifications.

(a) Romac (Grip Ring)

(b) Ebba Iron Megulng

(c) Ford Uni-Flange

(d) Stargrip (Star Pipe Products)

(e) Sigma (One - lok)

(f) Tyler Union (Tuf Grip)

18. Ductile Iron Pipe Push Joint Gaskets

(a) U.S. Pipe Field Lok

(b) American Fast Grip

19. Polyethylene (PE) Service Lines
(poly tube fittings require stainless steel inserts)

Polyethylene service lines shall be ASTM D2737 (PE) Plastic tubing 3408 rated for 200 psi with permanent markings and NSF certification.

(a) Driscopipe

(b) Endot

(c) Parr

(d) ADS

20. Brass Fittings
(Corporations, curb stops, adapters, couplings, etc.)

All brass fittings shall be as required by the Town of Jupiter Utilities System Potable Water Construction Standards and Details shall be of no-lead construction.

(a) Ford

(b) McDonald

21. Miscellaneous

(a) Sample Points - see Appendix A; details W-16 thru W-17

(b) Air Release

i) Bermad

ii) Crispin

TOWN OF JUPITER UTILITIES

SECTION III
CROSS CONNECTION CONTROL PROGRAM

Program Requirements and Responsibilities

A. General

In accordance with the State of Florida Department of Environmental Regulation Standard Chapter 62.555.360, “Permitting and Construction, of Public Water Systems” and the Town of Jupiter Ordinance No. 59-88, the Town of Jupiter Water System has established a Cross-Connection Control Program for its service area. The primary objective of this program is to ensure the protection of the health, safety, and welfare of its residents and the general public.

Backflow is literally a reverse in the normal direction within a water system and is what turns a cross-connection into a health hazard. Consequently, cross-connections and the chance of backflow must be eliminated to prevent these “unseen hazards” from degrading the quality of water that the Town of Jupiter Water System strives to maintain.

B. Installation Requirements

1. All backflow prevention assembly shall be of a model and size approved by the Town of Jupiter Utilities. The term “approved backflow prevention assembly” shall mean an assembly that has been manufactured in full conformance with the standards established by the American Water Works Association entitled:

    - “ AWWA M 14 Third Edition Standards for Reduced Pressure Principle and Double Check Valve Backflow Prevention Assembly” or most recent edition.
    - The standards set forth by the Foundation for Cross Connection Control and Hydraulic Research of the University of Southern California.

2. All approved backflow prevention assemblies shall be installed in accordance with the Town of Jupiter requirements and the manufacturer’s installation instructions.

3. Required Permits shall be obtained. Backflow devices shall be installed by a Licensed Plumber.

4. All Backflow devices shall be Lead Free.

5. Check local codes for requirements, additional isolation devices may be required.

6. Florida Plumbing code (FBS-Plumbing) and the Florida Building code – Residential (FBC – R) require thermal expansion control to be addressed when installing back flow prevention devices. Consult plumbing code.

C. Owner/Customer Responsibilities

1. Ownership of Backflow Prevention Assemblies belongs to the customer of each site where a Reduced Pressure Device (RPZ), Double Check Valve (DCV), or Pressure Vacuum Breaker (PVB) is required.

2. Backflow devices shall be tested following installation.

3. Backflow devices shall be tested after any repairs are made to the device.

4. RPZ, DCV and PVB shall be tested every two years by a certified prevention assembly tester.

5. Backflow Test results shall be provided to the Town of Jupiter Utilities.

6. Existing consumers shall be given sixty (60) days to install and test backflow devices required by the Town of Jupiter. Failure to comply with the time limits shall result in the discontinuance of water service and constitute a violation of Town Code.

7. Residential Dual Check Valves shall be serviced by the Town

D. Backflow Prevention Assembly Requirements for Residential Sites

1. **Residential Sites that have a well on the property, unless it has been grouted, sealed and abandoned,** will be required to install a Double Check Valve Assembly, Check local codes for additional isolation devices that may be required.

2. **Residential Sites using Reclaim Water for Irrigation** will be required to install a Double Check Valve Assembly or Reduced Pressure Backflow Assembly.

3. **Residential Sites using Non-Potable Pond or Lake Water for Irrigation** will be required to install a Reduced Pressure Backflow Assembly.

E. Backflow Prevention Assembly Requirements for Commercial Sites (Industrial, Non-Residential, Multi-Family, Mixed-Use)

1. Commercial Sites using Potable Water for Domestic Use will be required to install a Reduced Pressure Backflow Assembly

2. Commercial Sites using Potable Water for Irrigation will be required to have a separate metered service and install a Pressure Vacuum Breaker device.

F. Backflow Prevention Assembly Requirements for Fire Services

1. All Commercial Sites requiring Fire Protection will be required to install a Reduced Pressure Detector Assembly for services 3” and larger.

2. All Commercial or Residential Sites requiring Fire Protection will be required to install a separate metered service and install a Reduced Pressure Backflow Assembly for services 2” and smaller.

3. Existing consumers shall be given sixty (60) days to install and test backflow assemblies required by the Town. Failure to comply with the time limits shall result in the discontinuance of water service and constitute a violation of Town Co

TOWN OF JUPITER UTILITIES

SECTION IV STORMWATER

Construction Standards and Details

A. General Introduction

The problems associated with stormwater runoff in urban areas have become well known. These problems relate to both the quality and the quantity of stormwater runoff. Examples of these problems include: increased flooding, accelerated erosion and degraded water quality. Flooding occurs when the increased volume and peak rate of runoff exceeds the historical carrying and storage capacity of manmade and natural water bodies. Erosion is caused by the increased runoff and flow velocities and the loss of natural vegetation in developed areas. The water quality itself is degraded by the pollutants of urbanization and the increase in soil erosion, which is washed off the land into streams.

The intent of these Construction Standards and Details is to establish guidelines that the development sector and government can follow, to help prevent future degradation of the environment by stormwater runoff and to minimize the occurrence of flooding.

The guidelines established within these Construction Standards and Details are intended to be the minimum standard. In the event of conflicting criteria, due to overlapping of jurisdiction, the most stringent regulation shall govern. Some agencies which govern within the Town of Jupiter's municipal boundaries include: South Florida Water Management District, Florida Department of Environmental Protection, State of Florida DOT, Palm Beach County, Northern Palm Beach County Improvement District, North Palm Beach Heights Water Control District, South Indian River Water Control District, Jupiter Inlet District, Palm Beach County Department of Environmental Resources Management, Loxahatchee River Environmental Control District, and Palm Beach County Health Department.

B. Accountability

The Town of Jupiter Utilities Code Article VI, Section 20-271 thru Section 20-334 established a Stormwater Management System with the authority to improve stormwater systems through construction, reconstruction and extension. The code also provides for enforcement against undesirable actions which could result in degradation of water quality diversion of design stormwater flow.

C. Design and Plan Review

1. Basic Specifications

    a. A complete drainage system shall be provided for: draining roads, streets, lots, other areas in the subdivision, area of land development, and handling runoff that enters or crosses the subdivision or area of land development. The runoff coefficients used shall be those which will be applicable to the areas involved after complete development has occurred. The drainage systems shall be designed for long life, low maintenance cost, and ease of maintenance by normal maintenance methods.

    Where additional facilities are required to accommodate contributory surface waters an easement/right-of-way shall be provided for future needs; however, the developer may be permitted to excavate or

open sufficient capacity to provide for existing drainage needs whenever the developed or undeveloped state of adjacent areas so warrants as determined by the Utilities Director.

b. Roadside swales, curbs, and gutters within the right-of-way shall generally have slopes that parallel the centerline road grade. Conveyance swales and small ditches of similar size and capacity shall have slopes not flatter than 0.0025 foot per foot in the direction of flow. Permanent protection against scour or erosion shall be provided where necessary. Runoff in excess of the capacity of swales and gutters shall be diverted and carried away in storm sewers, outfall-ditches, or by other means separate from the roads and streets. Road grades shall be shown on the development plans by the direction and percentage of fall and with the centerline lineal distance between the control points. Minimum road slopes for swale and guttered sections shall be 0.0025 foot per foot.

c. Outfall ditches and other open channels shall be designed so they will not overflow their banks consistent with their intended purpose; additionally they shall be designed for flow velocities that will not cause scour or erosion. Where higher velocities must be used, ditch pavement or other adequate permanent protection against scour or erosion shall be provided.

d. Where canals and ditches are permitted, the width shall be adequate to accommodate drainage facilities plus 20 feet on one side for maintenance access. The canal or ditch must be acceptable to and placed under the control of the drainage district, a property owner's associations, or the Town. Drainage easements shall be provided to facilitate conveyance of surface waters from contributory areas.

When a subdivision or area of land development is traversed by or develops canals, watercourses, lakes, streams, drainage ways, or channels there shall be provided a drainage easement or right-of-way conforming substantially with the lines of such watercourse and such further width or construction or both, as will be adequate for the purpose.

2. Level of Service Standards

Flood protection level of service (LOS) standards are dictated by the LOS criteria in effect at the time of development. Redevelopment/infill development may obtain waivers due to constraints by existing neighboring developments. However, the Town may increase flooding level of service in coastal areas prone to tidal flooding due to sea level ride when deemed feasible by the Town.

The design of any drainage system shall meet the following LOS as adopted by the latest edition of the Town of Jupiter Utilities Design and Construction Standards.

a. Lowest finished floor elevation shall be above the greater of the following:

(1) Above calculated flood stage during a 100-year, 3-day event with no discharge.

(2) Eighteen inches (18") above the 100-year flood elevation

established by the applicable FEMA FIRM or a regional basin study adopted by the Town.

(3) Eighteen inches (18") or seven inches (7") (respectively for residential and non-residential construction) above the adjacent average road crown, except as waived by the Town.

(4) In accordance with current Town adopted Florida Building Code, amendments and ASCE 24-05 requirements.

b. Arterial roads have one-half of their width dry based on the predicted flood stage at the roadway during a 25-year, 3-day event.

c. Collector roads have their width dry based on the predicted flood stage at the roadway during a l0-year, 1-day event.

d. Local roads are allowed to flood up to the crown elevation based from the predicted flood stage at the roadway during a 10-year, 1-day event.

e. Parking lots serving residential, commercial and industrial development must remain without standing water during a 5-year, 1-hour event. The lowest drainage structure grate in the parking lot must be a minimum of six (6") inches above the discharge elevation for the project.

f. Land development projects shall be provided with a positive drainage outfall.
If this is deemed impossible, recovery of system storage/ drainage capacity must be documented to the satisfaction of the Director of Utilities.

In order to design storm sewer systems and determine minimum road grades, the applicant shall perform and submit a hydraulic analysis. For the purposes of this analysis, either of the following will be acceptable:

(1) A fully dynamic simulation of the stormwater management system, including contributing storm sewer, for the appropriate storm event (based on the roadway types(s).

(2) Static condition storm sewer hydraulic calculation using the year intensity duration frequency curve of the FDOT (Zone 10). The starting tailwater condition for the calculations shall be based on the design storm event designated for determining the minimum road elevations (based on the roadway type(s)). The tailwater condition shall be representative of the flood stage (for the design storm) at the time of peak discharge from the storm sewer being analyzed.

For the purpose of estimating this tailwater condition, either of the following is acceptable:

- Utilize the receiving water stage at time {T=12 hours + Tc (time of concentration)}. This can be taken from typical project flood routings.

- The FDOT's 24 hour duration "Mass Rainfall Curve"

and "Intensity Curve" indicate that the rainfall intensity peaks at approximately time {T=12 hours}, and that at that time, approximately 54% of the total design rainfall volume has fallen. Therefore, the design rainfall occurring for the time period {T=12 hours + Tc (time of concentration)}.

3. The engineering practices and principals employed shall be consistent with all applicable rules, regulations, policies of the Code of the Town of Jupiter, and other agencies noted in IWWA with jurisdiction over the subject area. Best Management Practices (BMP) shall also be used. Drainage calculations shall consider all relevant information that would affect the hydraulics of the drainage system. All design assumptions and methodologies shall be clearly defined.

   Some influences which may impact a proposed drainage design may include, but are not limited to, existing drainage basin characteristics both upstream and downstream, existing system hydraulics, system operating conditions and efficiency, and hydraulic interrelationships with the regional or basin-wide system. The drainage design calculations shall be submitted for approval with the preliminary engineering plans and preliminary site plans. Stormwater systems shall be designed to facilitate periodic cleaning and maintenance by taking into consideration the placement of manhole, inlet, and junction structures. Dedicated drainage easements and right-of-way access shall be free of fixed obstacles such as utility poles, trees, landscaping, and fencing which inhibit vehicle maneuverability and reasonable access to stormwater facilities.

   For dewatering and maintenance purposes, lake interconnect drainage systems and systems designed to be normally full and not having FDOT approved end walls shall provide manhole structures near intakes and outfalls.

D. Erosion and Sediment Control

Minimum Requirements

1. The following are minimum requirements for controlling erosion and sedimentation from "Land Disturbing Activities". Town of Jupiter may impose more stringent practices for controlling erosion and sedimentation on an "as needed" basis. These practices may include the use of silt fences, sediment traps, check dams, diversion dikes, and inlet/outlet protection.

   Additional precautions shall be taken to secure the construction site prior to a hurricane or severe weather. Conditions relative to other agencies regulating erosion and sediment control must also be adhered to.

   Permanent or temporary soil stabilization shall be applied to denuded areas within 15 days after final grade is reached on any portion of the site.

   Sediment basins, traps, perimeter dikes, sediment barriers, and other measures intended to trap sediment on-site shall be constructed as the first step in grading and be made functional before up slope land disturbances take place. Earthen structures such as dams, dikes and diversions shall be seeded and mulched within 15 days of installation.

   “Cut and fill” slopes shall be designed and constructed in a manner which will minimize erosion. Consideration shall be given to take length and steepness of a slope, the soil type, up slope drainage area, ground water conditions, and other applicable factors.

All storm sewer inlets which are made operable during construction shall be protected so that sediment laden water will not enter the conveyance system without first being filtered or otherwise treated.

All temporary and permanent erosion and sediment control devices shall be maintained and repaired as needed to assure continued performance of their intended function. All temporary erosion and sediment control devises shall be removed when the project is finalized, but not until approved by the Town.

Whenever construction vehicle access routes intersect paved roads, provisions shall be made to minimize the transport of sediment (mud), concrete, and other construction materials by runoff or vehicle tracking on to the paved surface. Where sediment is transported onto a public road surface, the road shall be cleaned thoroughly at the end of each day. Sediment shall be removed from the road surface by shoveling or sweeping. Street washing shall be permitted only after sediment is removed in this manner.

2. National Pollutant Discharge Elimination System (NPDES) - Construction Site Requirements

   State and (FDEP) rules must be adhered to for construction activities that require an NPDES Construction Activities Permit. Applicant shall consult current state and federal regulations to determine applicability and specific requirements.

   A Stormwater Pollution Prevention Plan (PPP) must be prepared prior to submitting a Notice of Intent (NOI) to the FDEP. Forms can be obtained from the appropriate agency. Information regarding the PPP is contained in the appendix of this manual.

   To obtain state forms go to the Florida State website at:

   www.dep.state.fl.us/water/stormwater/npdes.

   Weekly reports must be provided to the Town of Jupiter's Stormwater Division. These reports must be received by the following Wednesday. Failure to provide reports may result in a "Stop Work" order.

3. Construction Dewatering

   Construction dewatering activities shall meet all State and South Florida Water Management District requirements (especially turbidity requirements for dewatering discharge). If necessary due to the amount, location, or type of dewatering proposed the applicant shall obtain and provide the appropriate permit (s) from SFWMD.

E. Quality Control

1. Structures

   a. The type and size of inlet, manhole, and junction structures shall satisfy the plan and dimension requirements of the most current FDOT Roadway Traffic Standards and Design Manual, with the exception that structures shall have a minimum wall thickness of 8 inches.

   b. Precast structures are acceptable provided the floor and walls have 8" thickness and do not have weep holes. Additionally, shop drawings shall

be submitted to the Town of Jupiter Utilities Stormwater Division for approval prior to structure casting.

c. FDOT approved cast iron grates shall be required on all type C, E, H inlets.
No foreign foundry products will be accepted.

d. FDOT approved steel grates, hot dipped galvanized after fabrication, will be accepted where bicycle traffic is anticipated.

e. Concrete aprons may be required on ditch bottom inlets depending on the amount of runoff, ditch grades, and traffic considerations.

f. Exposed portions of all structures shall be required to have a Class I surface finish and edges be chamfered 3/4".

g. Non-shrink grout consisting of Portland type II cement shall be required for all grout applications. No additives may be used with cement unless approved by the Town of Jupiter Stormwater Department.

2. Piping

a. Pipe shall be sloped and structures channeled to develop sufficient scouring unless otherwise approved by the Town.

b. FDOT approved (Reinforced Concrete Pipe) shall be used for all installations within Town of Jupiter roads and right of ways unless an alternative material is approved by the Town.

c. The pipe used in the system shall be reinforced concrete or corrugated aluminum meeting ASTM, ASSH70 and current FDOT specifications. Only high performance HDPE (HP) or (HP Storm) drainage pipe as manufactured by ADS or equal may be used with Town approval *(*see Section 3 for additional specifications*). Other pipe material may be used if approved by the Town of Jupiter.

d. Pipe dimensions and maximum/minimum cover shall conform to the most current FDOT Roadway Traffic Standards and Design Manual.

e. Drainage pipe shall be fitted with headwalls, end walls, inlets, manholes and other appropriate terminating and intermediate structures.

f. Minimum coverage to finished grade for drainage pipe shall be 12" or the minimum per FDOT Roadway Traffic Standards and Design Manual, whichever is greater.

g. Concrete pipe shall have gasket joints.

h. Round pipe size shall be 15" minimum and elliptical pipe shall have the equivalent capacity of 15" pipe.

i. When using elliptical pipe specify Oval Ultra Seal rubber gaskets.

j. HDPE HP pipe shall have water tight gaskets.

k. Lifting holes shall be allowed on 72" diameter and larger pipe. The holes shall be formed at the factory. Repair of the holes shall be by a method

approved by the Design Engineer and the Town of Jupiter Utilities.

l. All pipe joints shall be wrapped in filter fabric.

m. Transition from one pipe material or pipe size to another shall be done using a structure (except for lake outfalls).

n. Distance between terminating or intermediate structures shall not exceed 400 feet without the construction of a maintenance inlet or manhole. The distance for pipes less than 24" in diameter shall be 300'.

o. Pre-cast manufactured RCP-CMP concrete collar must be used at lake outfall. No poured in place collar.

3. HDPE HP Drainpipe

a. Polypropylene drainage pipe shall be allowed within green areas and parking lots within the Town of Jupiter, it shall not be used within road right-of-ways.

b. 12 through 30 inch pipe shall have a smooth interior and corrugated annular exterior, meet or exceed ASTM F2736 and AASHTO MP-21-11.

c. 36 through 60 inch pipe shall have a smooth interior and corrugated annular exterior, meet or exceed ASTM F2736 and AASHTO MP-21-11.

d. Manning's "n" value for use in design shall be 0.012.

e. Pipe shall be joined with a gasketed integral bell & spigot joint meeting the requirements of ASTM F2736 and F2881, for the respective diameters.

f. 12 through 60-inch shall be watertight according to the requirements of ASTM D3212. Spigots shall have gaskets meeting the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly.

g. 12- through 60-inch diameters shall have a reinforced bell with a polymer composite band installed by the manufacturer.

h. Fittings shall conform to ASTM F2736, ASTM F2881 and AASHTO MP-21-11, for the respective diameters. Bell & spigot connections shall utilize a spun-on, welded or integral bell and spigot with gaskets meeting ASTM F477. Bell & spigot fittings joint shall meet the watertight joint performance requirements of ASTM D3212. Corrugated couplings shall be split collar, engaging at least 2 full corrugations.

4. Rain Leaders and Piped Roof Drainage Systems

a. Such systems shall require design approval. Manhole adapters must be used and approved by the Town of Jupiter Stormwater Department.

b. Such systems shall be inspected in an open trench at time of construction.

c. Such systems shall be installed by a licensed underground utilities or general contractor.

5. Backyard Swales

   a. Backyard swales may be used for runoff conveyance only. The use of backyard swales for storage/treatment is not permitted.

   b. Backyard swales used for conveyance must have a minimum longitude slope of 0.3% and a maximum side slope (steepness) of 4:1 (HV).

   c. Swales must be placed in a permanent drainage easement dedicated to the Town of Jupiter (in which no landscaping or other encumbrances may be placed). The easement must be a minimum of 20 feet wide continuous and connected to a public right-of-way for maintenance access.

6. Inverted siphons will not be allowed for drainage unless approved by the Director of Utilities.

7. Alternate Methods, Facilities

   Alternate methods or facilities which in the opinion of the Director of Utilities are equal or superior to the previous requirements may be approved. Applications for such approvals shall be accompanied by written data, calculations and analysis which show by accepted engineering principles that the alternate methods or facilities are equal or superior to those specified.

F. Exfiltration Trenches

1. Exfiltration systems shall be used for water quality purposes only unless detailed analysis indicating function for flood control is appropriate. Said analysis may include effects of groundwater mounding during design storm events.

2. Not more than 40% of stormwater runoff may be stored in underground storage structures without specific Town approval.

3. The remainder of the required stormwater runoff shall be accommodated through retention/detention, green space, and allowable discharge.

G. Bank Stabilization / Rock (Armor) Underlayment

1. Site Preparation

   Clear the site of all large stones, roots, or other debris that might damage the geotextile. Excavate and shape the site to the lines and grades as directed by the Engineer. Fill depressions or holes to ensure intimate contact between the geotextile and the prepared surface.

   Place the geotextile in close contact with the soil, eliminating folds or excessive wrinkles, both longitudinally and transversely. The geotextile need not be placed in tension before covering with riprap or other materials. Use care in placing the geotextile to avoid possible damage.

   The geotextile can be joined by overlapping or sewing. The minimum overlap distance in the transverse or longitudinal direction is 0.6m (2 ft), except in underwater overlap in the transverse or longitudinal direction is at least 15 cm (6 in).

Anchor the geotextile firmly at the top of the slope using an anchor trench. For maximum effectiveness, the trench should be at least 1 m (3 ft.) from the crest of the slope and at least 0.6 m (2 ft.) deep. Compact soil in the trench to 95% maximum dry density as determined by AASHTO T-180 specifications.

When placing geotextile along a stream or other places where water movements are expected, anchor the toe of the geotextile in a similar fashion as at the top to prevent scour beneath it.

2. Rock (Armor) Placement

Stone or armor block shall be placed directly on the geotextile material as directed by the Project Engineer. Riprap and heavy rock cover shall not be dropped onto the geotextile from a height of more than 0.3m (1 ft.). Slope protection and smaller sizes of rock cover shall not be dropped onto the geotextile from a height exceeding 1 m (3 ft). Any geotextile damaged during placement shall be replaced as directed by the Project Engineer.

H. Land Development

1. Filling of property may be done as needed in conjunction with an approved drainage system. However, compliance with all other state, federal and local regulations and requirements is required.

2. Land development including, but not limited to: dredging, filling, grading, paving or excavation within the Town shall comply with the provisions of the Town of Jupiter Codes Chapter 22 and this document.

I. Inspections

The Town of Jupiter Utilities Inspector(s) will inspect the installation of drainage infrastructure and retention/detention areas.

1. The Town of Jupiter Utilities Inspector(s) may inspect all construction, materials, and including preparation, fabrication or manufacture of components, materials, and supplies. The Inspector is not authorized to revoke, alter, or waive any requirements of the specifications. The Inspector is authorized to call to the attention of the project engineer and/or contractor any failure of work or materials to conform to the plans or specifications. The inspector shall have the authority to reject materials or suspend work until questions regarding the issue can be referred to and decided upon by all parties involved.

2. The drainage system shall be pumped down so that the inlet, manholes, catch basin, and pipes can be inspected.

3. The Town reserves the right to have the drainage system cleaned and televised if mud, sand and/or debris is found in the pipes or structures. The cost of cleaning and televising shall be the responsibility of the contractor/developer. Any additional cost due to the interruption of work because of poor material or workmanship shall be borne by the developer or contractor and the Town of Jupiter shall be held harmless.

J. Installation

1. General

a. No work may begin without drawings approved by the Town of Jupiter

Utilities Stormwater Division. Should one (1) year pass after approval without initiation of construction, a re-submission will be required.

b. A pre-construction meeting shall be held prior to the initiation of work. All necessary permits must be obtained and presented at the pre-construction meeting.

c. The Town of Jupiter Utilities Stormwater Division shall be given a 48 hour notice prior to the beginning of construction. Notification should be given by calling (561) 748-2705.

d. All work shall conform to the latest revision of FDOT Traffic Standards and Design Manual and the Town of Jupiter Specifications.

e. Any anticipated conflict with other underground utilities shall be brought to the attention of the Town of Jupiter Utilities Stormwater Division. Resolution for each conflict shall receive approval by the Town of Jupiter Utilities and/or all affected parties (i.e. FP&L, Bell South, Cable, Encon, Gas, etc.).

f. Any deviation from the approved plans shall be approved by the Town of Jupiter Utilities Stormwater Division.

g. No large rocks or other deleterious material that may damage the pipe will be permitted over pipe or in bedding material.

h. A minimum 10' horizontal separation shall be maintained between storm sewer and any structure (building, privacy wall, etc.).

i. The bases of all drainage structures shall be bedded in a minimum of 6"(depth)
#57 rock that is wrapped and on undisturbed or compacted earth.

j. Bitumastic Joint, Ram-Neck, Kent Seal or approved equal shall be required for joining precast structure sections.

k. The maximum chimney height adjustment shall be 4 to 6 courses of clay fired cured brick to a maximum height of 12" from finish grade to top of the structure.

l. No joint deflection shall be permitted in pipe runs.

m. Laser alignment is required for all pipe runs in excess of three (3) joints.

n. The only permitted additives to mud work shall be Hydro, calcium chloride and masonry sand.

o. Compaction is required for all pipe and structure installations. Pipe may be installed if bed is undisturbed otherwise compaction must be tested at 98%. If compaction is not possible, #57 stone or flowable fill (Town's discretion) will be required. Maximum lift shall be 1foot per lift. Density report shall be sent to the Town's project manager. See detail SW-05.

2. Grades

a. The contractor shall provide offset stakes showing a finished grade over the pipe Stakes shall be maintained until inspection by the Town of Jupiter Utilities Stormwater Division.

b. Sanitary sewers and force mains should cross under storm sewers whenever possible sanitary sewers, force mains, and storm sewers crossing water mains shall be laid to provide a minimum vertical distance of 18" between the invert of the upper pipe and the crown of the lower pipe whenever possible. Alternative vertical distances may be allowed upon approval by all required agencies.

3. Construction Safety

a. Jupiter Utilities signing as the applicant for any required permit, does not, and shall not in any way, release the contractor from liability for any injuries, accidents, property damage or losses resulting from project construction.

b. All work shall be performed in a safe and professional manner. The contractor shall comply with all applicable laws and regulations regarding the safety of persons and property. The responsibility for project safety rests solely and specifically with the contractor. The Town of Jupiter Utilities and its employees and agents are specifically indemnified and held harmless from any actions of the contractor relating to the safety procedures implemented during construction and for any claims brought by any persons regarding safety, personal injury or property damage.

4. Workmanship/Warranty

All contractors performing any work on a portion of the underground facilities shall be properly licensed to do such work. All materials and equipment shall be installed in accordance with the manufacturer's recommendations and specifications. Required workmanship shall be of a quality acceptable to Jupiter Utilities.

Jupiter Utilities reserves the right to reject any and all work deemed to be of questionable quality.

In the event that faulty workmanship is discovered at any time within one (1) year period following the date of the final letter of acceptance, Jupiter Utilities reserves the right to require the developer, its successors or assigns and/or the contractor to replace or repair said faulty workmanship in a manner acceptable to Jupiter Utilities. Such replacement or repair shall be at no cost to Jupiter Utilities. In addition, said restored work shall be further warranted for one (1) year from the date of acceptance.

5. Record Drawings

a. One set of as-built prints shall be submitted to the Jupiter Utilities Stormwater Division upon completion of drainage facilities/infrastructure and before a system or portion thereof is placed into service.

b. Final Inspections will not be performed until as-builts have been submitted and approved.

c. Construction as-built drawings produced on a computer aided drafting or geographic information system, digital data (lot lines, right of ways, etc.) shall be required to be submitted if compatible with the following specifications:

(1) Electronic files shall be on a CD, DVD for flash drive

(2) The following file types are acceptable:
- AUTOCAD version 2018 or higher DWG files
- DXF files

(3) Files may be compressed by: PK Zip or WinZip utilities.

(4) Drawings must be developed in full scale; 1 computer unit = 1 foot

(5) The coordinate positions within this file are to be rotated and translated to State Plane Coordinates in NAD 83/90 Florida East Zone or currently approved datum, based upon the tie-in to geodetic control.

(6) Vertical data shall be in relation to NAVD 1988 with a numerical conversion to N.G.V.D. 1929.

(7) Record drawings shall provide GPS coordinates for all drainage structures, outfalls, control structures, etc. The coordinate system must be Florida State plane NAD 83/90. Accuracy minimum tolerance must equal one (1) decimeter (10 centimeters). Any deviations from the specified pipe cover shall be shown. Field notes, sketches, and additional information shall be presented on the record drawing.

(8) Plans must be layered using four groups of layers:
- Group #1: Background information including surveys with landscape and hardscape shall have a minimum of five layers

- Group #2: Potable water distribution and transmission system shall have a minimum of four layers with the following specific requirement for each layer:
  - Existing water distribution and transmission mains with material type, pipe elevations, fittings, valves and tie-in points.
  - Water distribution and transmission mains with pipe lengths, material type, pipe elevations, fittings, valves and tie-in points.
  - Water services showing service size, material type, tie-in location to the main and meter location with GPS coordinates.
  - Profile information and other miscellaneous text.

- Group #3: Raw water distribution and transmission mains with material type, pipe elevations, fittings, valves and tie-in points.
  - Existing water distribution and transmission mains with material type, pipe elevations, fittings, valves and tie-in points.
  - Existing raw water distribution and transmission mains with pipe lengths, material type, pipe elevations, fittings, valves and tie-in points.
  - Raw water distribution and transmission mains with pipe lengths, material type, pipe elevations, fittings, valves and tie-in points.

- Group #4: Stormwater system shall have a minimum of three layers with the following specific requirements for each layer:
  - Existing stormwater infrastructure pipes, culverts catch basins, manholes, outfalls etc. with material type, pipe elevations, inverts and tie-in points.
  - Stormwater pipe, exfiltration trench, catch basins, manholes, outfalls etc. with pipe lengths, material type, pipe elevations, Structures, grate elevation, control elevations, bleeder elevation, weir dimensions, baffles, tie-in points and a bench mark within 100’ of the control structure.

- Location of any conflict structure.
- Profile information and other miscellaneous text.
- GPS coordinates of structures and outfalls, minimum accuracy shall be 1 decimeter (10 centimeters).

(9) GPS coordinates shall be numbered and shown in a “chart” format on the as-builts.

(10) Record drawings shall contain the following as-built information:

- Structures, grate elevation, type and inverts for each pipe.
- Control structures - type, invert elevations, control elevations, bleeder elevation, bleeder and weir dimensions and a bench mark within 100' of the control structure.
- Location of any conflict structures.
- GPS coordinates of structures and outfalls. The minimum accuracy shall be 1 decimeter (10 centimeters).

6. Bill of Sale/Easements

Each developer who has constructed portions of the drainage system on developer's own property for which the Town wishes to accept responsibility for future ownership and maintenance shall convey such component parts of the drainage system to the Jupiter Utilities by bill of sale and dedicated easements in form satisfactory to the Town Attorney, together with such evidence as may be required by the Town of Jupiter Utilities that the drainage system proposed to be transferred to the Jupiter Utilities is free of all liens and encumbrances.

Developer shall provide accurate cost records establishing the construction costs of all utility facilities constructed by Developer and proposed to be transferred to the Jupiter Utilities. Such cost information shall be furnished to the Jupiter Utilities Stormwater Division concurrently with the bill of sale and such cost information shall be a prerequisite for the acceptance by the Jupiter Utilities of the portion of the drainage system constructed by developer.

The requirements for easements are located on Page 11 &12 of Section I of this guide.

7. Warranty Inspection

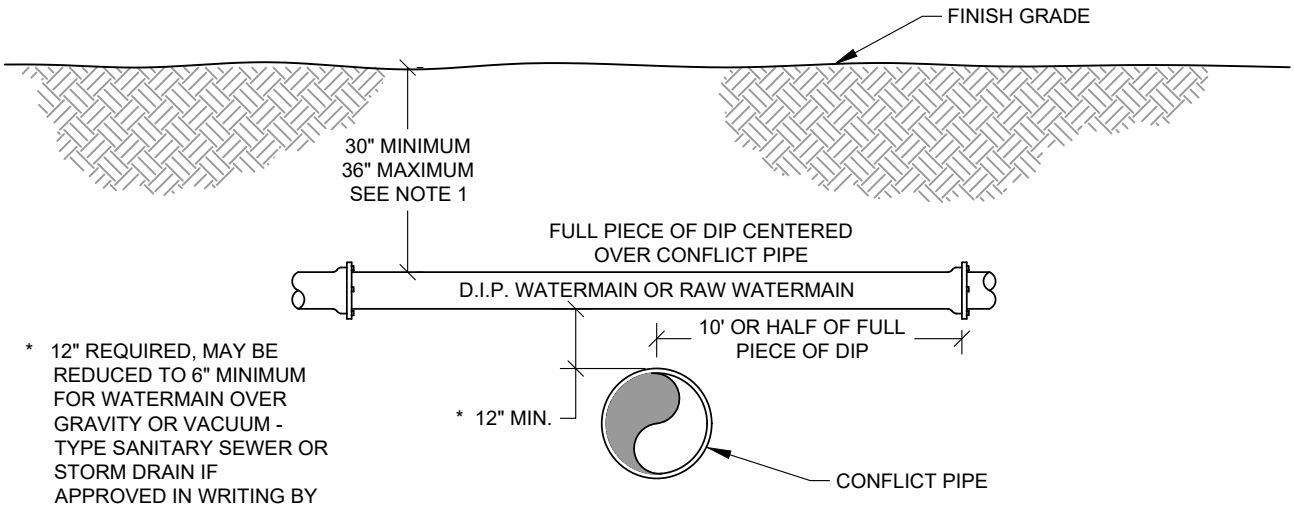
A warranty inspection will be done one month prior to the end of the one year warranty period. This inspection may require the system to be pumped down. Any deficiencies shall be repaired and accepted by Jupiter Utilities Stormwater Division within one month, so that the project can be deemed finally accepted. If there are any major defects found, then the drainage system shall be pumped out, cleaned, repaired and inspected.

8. Commercial Impervious Area

The Engineer of Record shall provide a signed and sealed calculation of the total impervious area by a Registered Professional Engineer in the State of Florida (e.g. building footprint, parking, sidewalks, hardscape, etc.) of the commercial project. The statement shall include the total area of the project, impervious area and pervious area.

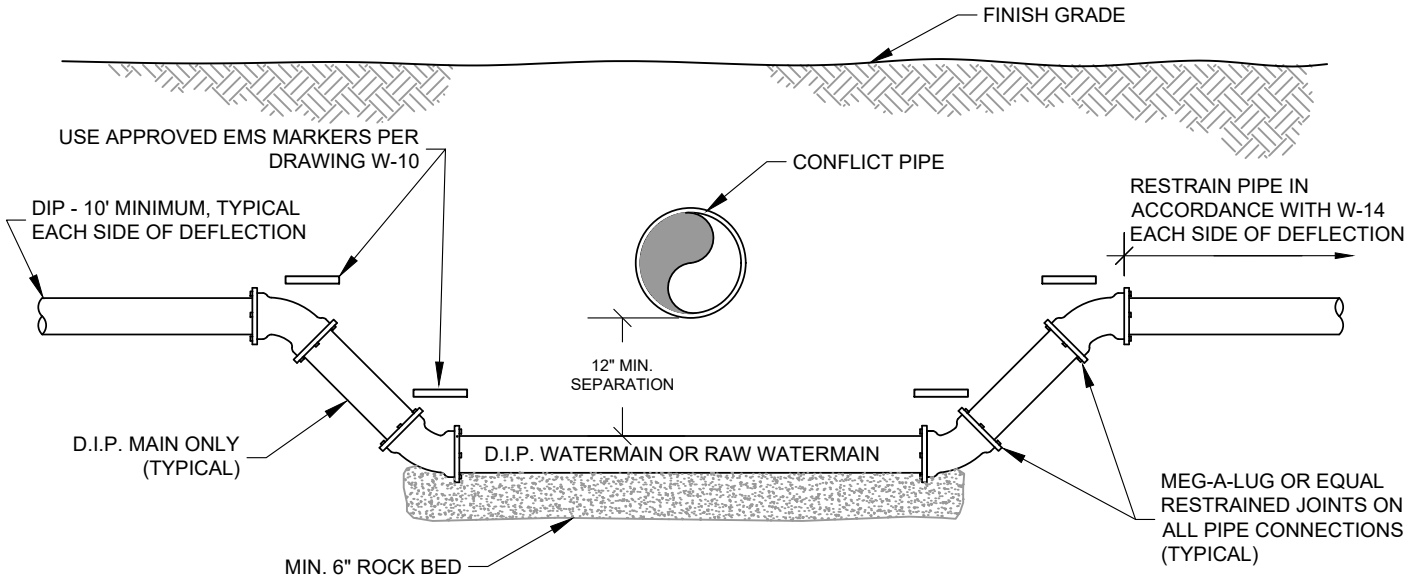
TOWN OF JUPITER UTILITIES

APPENDIX A



* 12" REQUIRED, MAY BE REDUCED TO 6" MINIMUM FOR WATERMAIN OVER GRAVITY OR VACUUM - TYPE SANITARY SEWER OR STORM DRAIN IF APPROVED IN WRITING BY THE TOWN OF JUPITER.

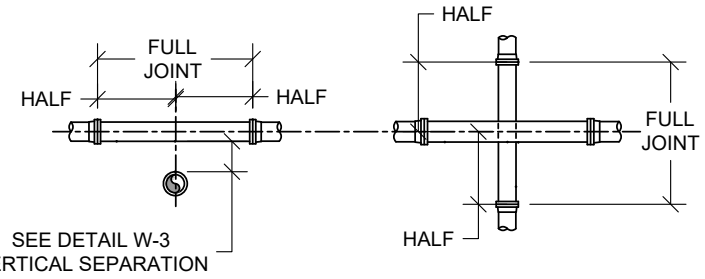
DEFLECTION OVER CONFLICT



DEFLECTION UNDER CONFLICT

NOTES:

1. MINIMUM COVER MAY BE REDUCED ONLY IF APPROVED BY THE TOWN OF JUPITER UTILITIES DEPARTMENT
2. USE APPROVED E.M.S. MARKERS PER DRAWING W-10
3. THE CROSSING SHALL BE ARRANGED SO THAT THE CONFLICT PIPE JOINTS AND THE POTABLE WATERMAIN JOINTS ARE EQUIDISTANT FROM THE POINT OF CROSSING. TEN (10) FEET OR HALF A FULL JOINT OF PIPE (DIP FOR WATERMAIN) SHALL BE BETWEEN THE CONFLICT AND THE JOINTS ON BOTH PIPES.
4. MUST MEET FDEP REQUIREMENTS ACCORDING TO SECTION 62-555-314, LOCATION OF PUBLIC WATERMAIN SYSTEMS.



TYPICAL SECTION - WATER MAIN DEFLECTION

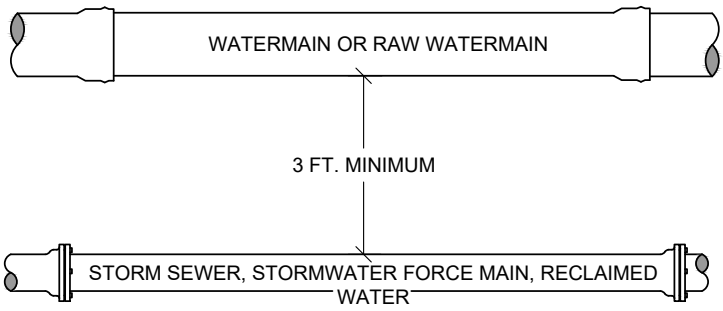
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 05/2013

DRAWING No. W-01

CASE # 1

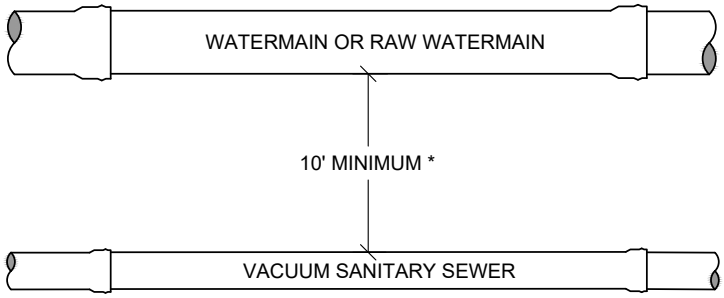
WATERMAIN PARALLEL TO STORMSEWER, STORMWATER FORCE MAIN OR RECLAIMED WATER (RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.)



NOTE: CASE # 1 SHALL BE USED FOR ALL UNDERGROUND ELECTRICAL UTILITIES, TELECOMMUNICATION UTILITIES, GAS UTILITIES AND OTHER CONDUITS, CABLE, WIRE ETC.

CASE # 2

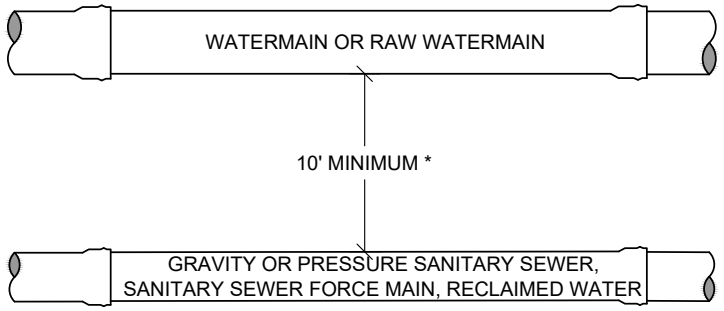
WATERMAIN PARALLEL TO VACUUM SANITARY SEWER



* MAY BE REDUCED TO THREE (3) FEET IF APPROVED IN WRITING BY THE TOWN OF JUPITER.

CASE # 3

WATERMAIN PARALLEL TO GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPETER 62-610, F.A.C.)



* 3' FOR GRAVITY SEWER WHERE THE BOTTOM OF THE WATERMAIN IS LAID AT LEAST 6" ABOVE THE TOP OF THE GRAVITY SEWER.

WATER MAIN HORIZONTAL SEPARATION

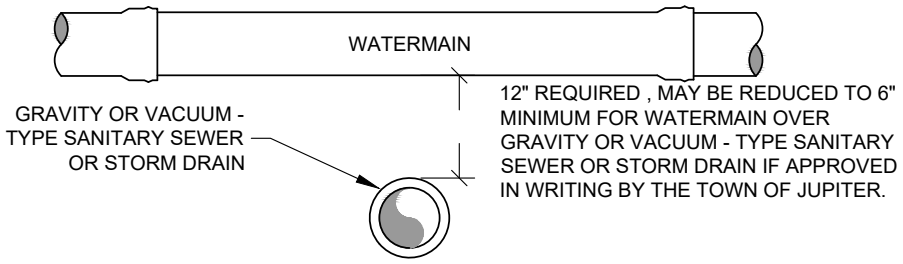
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. W-02

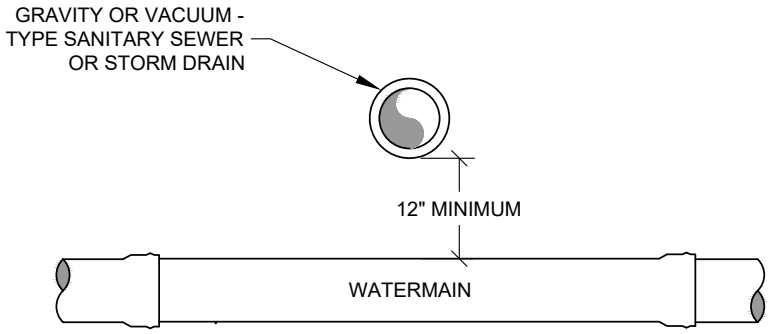
CASE # 1

WATERMAIN OVER GRAVITY OR VACUUM - TYPE SANITARY SEWER OR STORM SEWER



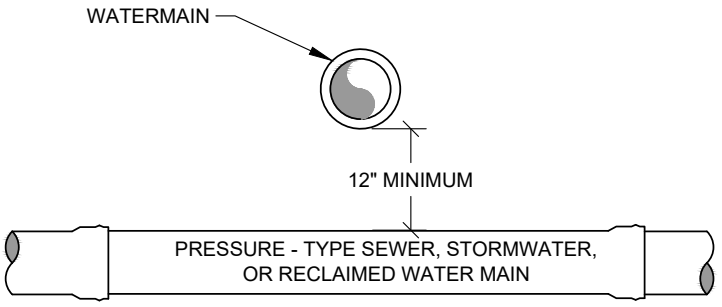
CASE # 2

WATERMAIN UNDER GRAVITY OR VACUUM - TYPE SANITARY SEWER OR STORM SEWER



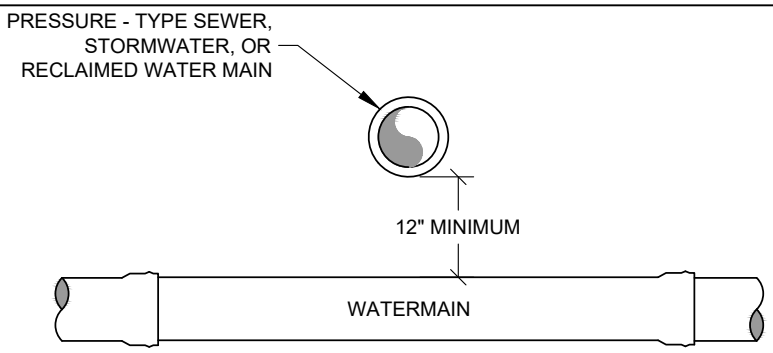
CASE # 3

WATERMAIN OVER PRESSURE - TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER



CASE # 4

WATERMAIN UNDER PRESSURE - TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER

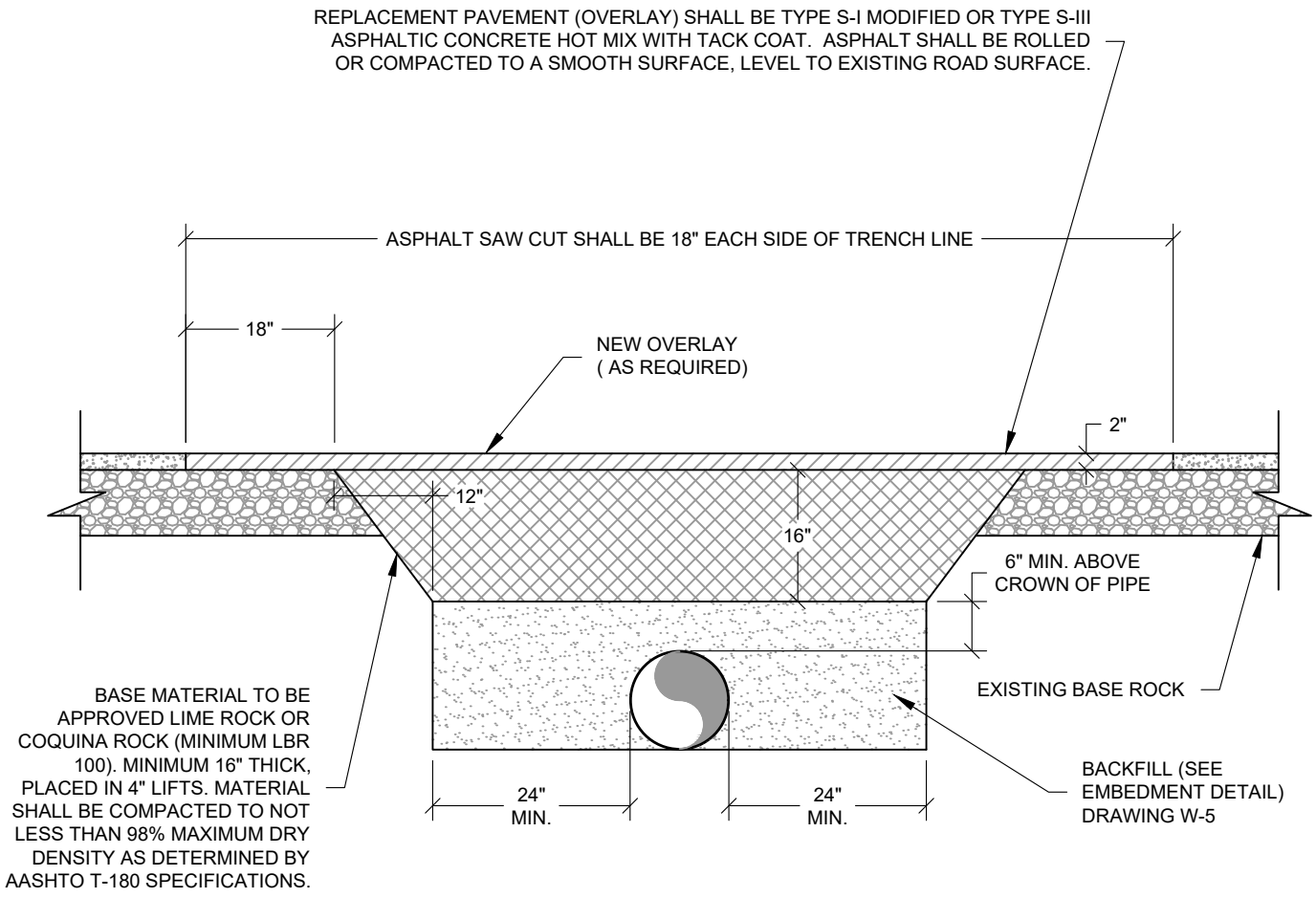


WATER MAIN VERTICAL SEPARATION

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. W-03



NOTES:

1. ALL CUTS WILL REQUIRE COMPACTION TO MAXIMUM DRY DENSITY SPECIFICATIONS.
2. SAW-CUT ASPHALT BEFORE EXCAVATION.
3. COMPACTION SHALL BE ACCOMPLISHED BY USE OF A MECHANICAL VIBRATORY COMPACTOR. EACH LIFT SHALL RECEIVE, AT A MINIMUM, FIVE (5) PASSES OF THE COMPACTOR OVER THE ENTIRE SURFACE. BEFORE COMPACTING EACH LIFT, WATER SHALL BE APPLIED AT A RATE OF 1 GALLON PER LINEAL FOOT OF TRENCH FOR BACKFILL, AND ½ GALLON PER LINEAL FOOT OF TRENCH FOR COQUINA BASE. WATER SHALL BE SPRINKLED EVENLY OVER THE ENTIRE TRENCH WIDTH.
4. ASPHALT SHALL BE ROLLED / COMPACTED TO A SMOOTH UNIFORM SURFACE, LEVEL WITH EXISTING / ADJOINING ASPHALT.
5. MINIMUM DENSITY SHALL BE 94% OF THE DESIGN DENSITY FOR THE ASPHALT MIX.

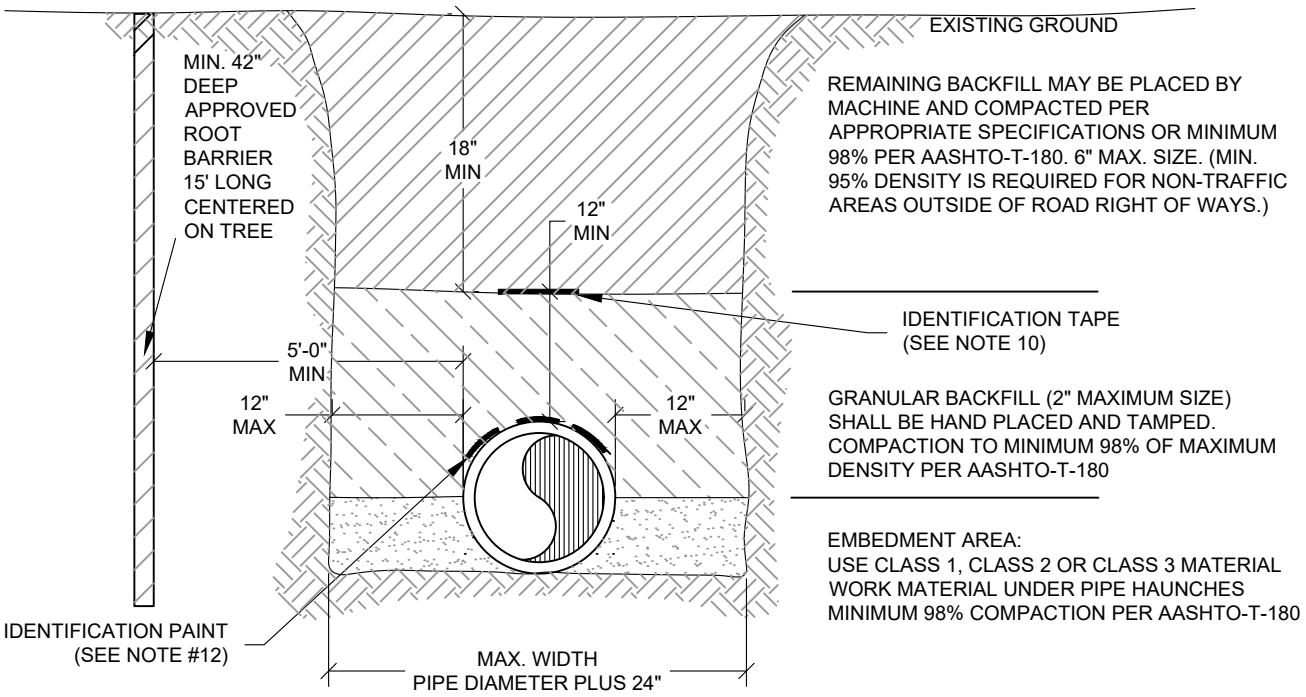
TRENCH - PAVEMENT RESTORATION DETAIL

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. W-04



NOTES:

CLASS 1 MATERIAL - ANGULAR 1/4" TO 3/4" GRADED STONE SUCH AS CORAL, CRUSHED STONE, CRUSHED SHELLS, OR BEDDING ROCK (100% PASSING 1" SIEVE)

CLASS 2 MATERIAL - COURSE SAND AND GRAVEL WITH A MAXIMUM PARTICLE SIZE OF 3/4" WITH A SMALL PERCENTAGE OF FINES COMPACTED TO A MINIMUM OF 98% DRY DENSITY PER AASHTO T-180

CLASS 3 MATERIAL - FINE SAND AND CLAYEY GRAVEL INCLUDING FINE SANDS, SAND-CLAY MIXTURES, AND GRAVEL-CLAY MIXTURES, COMPACTED TO A MINIMUM OF 98% DRY DENSITY PER AASHTO T-180.

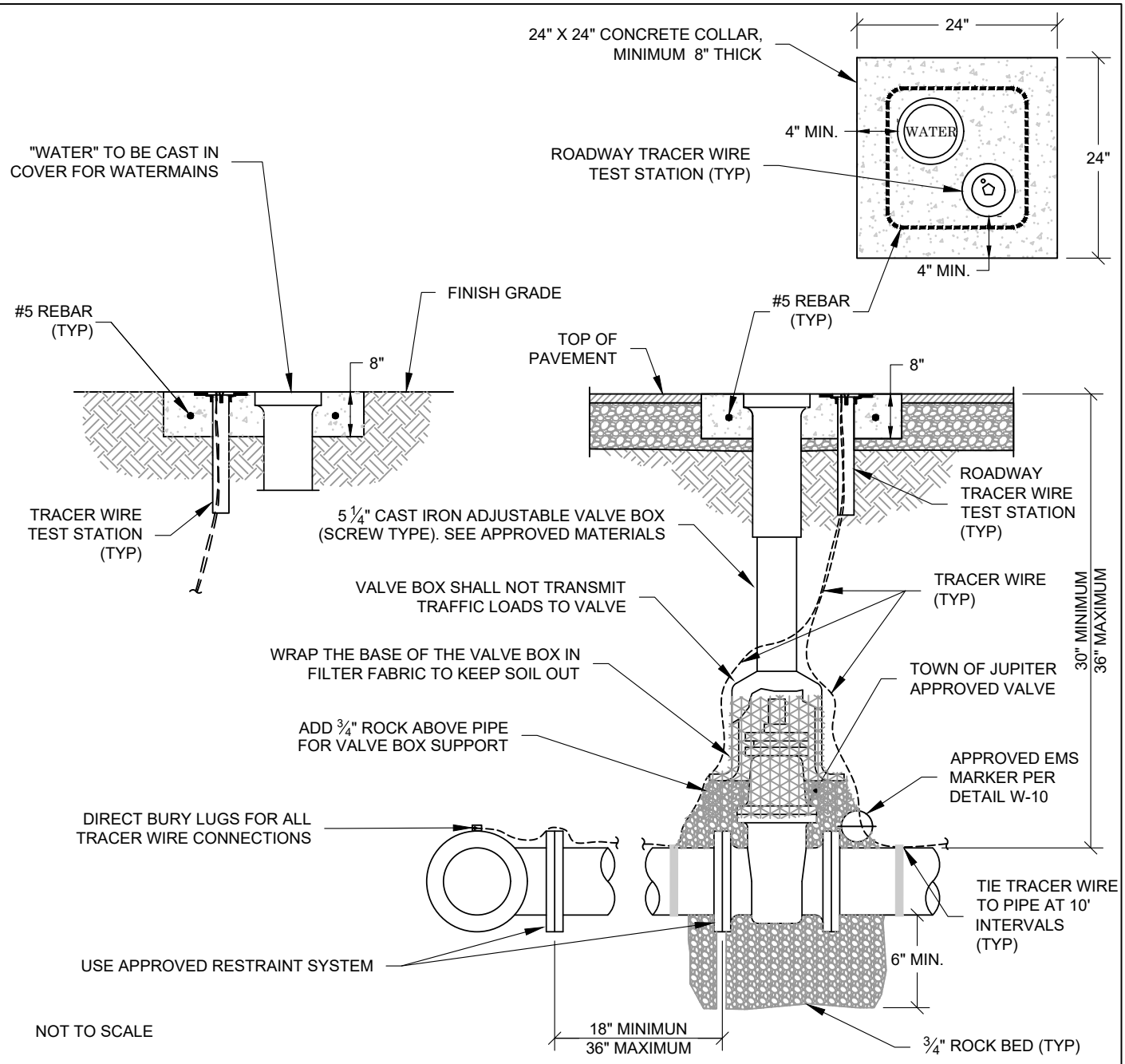
1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK 3/8"- 7/8" SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
2. IF CLASS 1 MATERIAL IS USED FOR BEDDING, IT SHALL BE USED FOR THE ENTIRE EMBEDMENT AREA.
3. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.
4. THE PIPE SHALL BE PLACED IN A DRY TRENCH.
5. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK AND DEBRIS.
6. DENSITY TESTS ARE REQUIRED IN 1 FOOT LIFTS ABOVE THE PIPE AT INTERVALS OF 400' MAXIMUM OR AS DIRECTED BY THE TOWN.
7. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH ALL TRENCH SAFETY LAWS AND REGULATIONS.
8. SEE SEPARATE DETAIL FOR INSTALLATION UNDER PAVEMENT "TRENCH - PAVEMENT RESTORATION DETAIL."
9. THE AFFECTED AREA SHALL BE RESTORED TO EQUAL OR BETTER CONDITION OR AS SPECIFIED IN PERMIT/CONTRACT DOCUMENTS.
10. APPROVED MAGNETIC TAPE IS REQUIRED FOR ALL POTABLE WATER MAINS. THE TAPE SHALL BE INSTALLED MAX. 24" BELOW FINISHED GRADE.
11. ROOT BARRIER IS REQUIRED FOR APPROVED TREE INSTALLATIONS CLOSER THAN 10 FEET FROM UTILITY FACILITIES.
12. CONTINUOUS 4" WIDE BLUE PAINT STRIPING IN ACCORDANCE WITH F.A.C. 62-555.320(10) IS REQUIRED FOR DIP WATER MAINS.
13. A TRACER WIRE SYSTEM SHALL BE INSTALLED ON ALL NON-DUCTILE IRON WATER MAIN WITH TEST STATIONS AT ALL WATER MAIN VALVES (NOT HYDRANT VALVES) AND MAGNESIUM ANODES AT ALL PIPE DEAD ENDS AND TIE-IN POINTS. TRACER WIRE MATERIAL SHALL BE COPPERHEAD INDUSTRIES, LLC OR APPROVED EQUAL, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. TRACER WIRE SHALL BE TIED TO PIPE AT 10' MAX. INTERVALS. SEE DETAIL W-6 FOR ACCEPTABLE MATERIAL.

WATER MAIN EMBEDMENT DETAIL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2017

DRAWING No. W-05



NOTES:

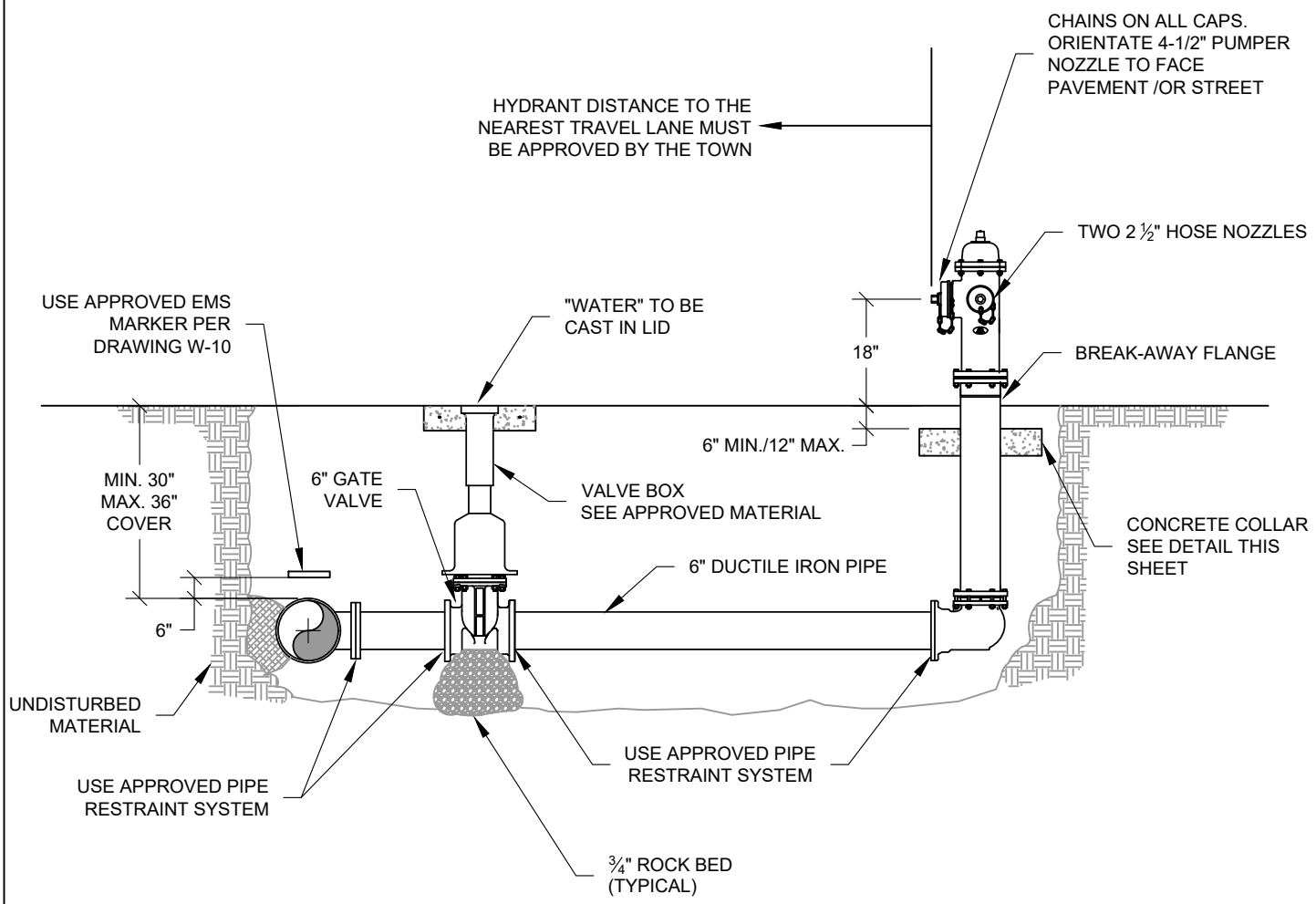
1. CONCRETE COLLAR MAY NOT BE REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION AND VALVE BOX LID IS AT FINISHED GRADE.
2. WHEN VALVE IS DEEPER THAN 36" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT TO +/- 24" OF FINISHED GRADE. EXTENSION MUST BE SET SCREW TYPE AND ATTACHED TO OPERATING NUT.
3. TRACER WIRE SHALL BE USED ON NON-DUCTILE PIPE ONLY. TRACER WIRE MATERIAL SHALL BE COPPERHEAD INDUSTRIES, LLC OR APPROVED EQUAL, INSTALLATION AND TESTING SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. TRACER WIRE MATERIAL SHALL BE AS FOLLOWS:
   - ROADWAY TRACER WIRE TEST STATION SHALL BE COPPERHEAD PART NUMBER RB14BTP OR APPROVED EQUAL.
   - TRACER WIRE TEST STATION SHALL BE COPPERHEAD PART NUMBER LD14BTP OR APPROVED EQUAL.
   - DIRECT BURY LUGS SHALL BE COPPERHEAD SNAKEBITE DRYCONN DIRECT BURY LUG AQUA OR APPROVED EQUAL.
   - TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER 1430-HS OR APPROVED EQUAL.
   - TRACER WIRE SHALL DEAD END WITH COPPERHEAD MAGNESIUM ANODE PART NUMBER ANO-1005 OR APPROVED EQUAL.
   - ABOVE GROUND TEST STATION SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER T1-B75 OR APPROVED EQUAL.

TYPICAL UNDERGROUND VALVE INSTALLATION

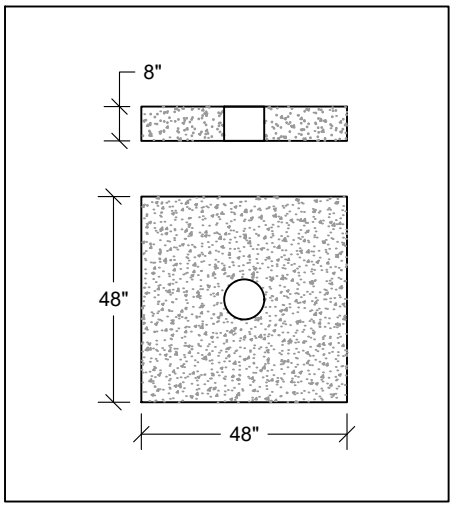
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-06



NOT TO SCALE



CONCRETE COLLAR DETAIL

NOTES

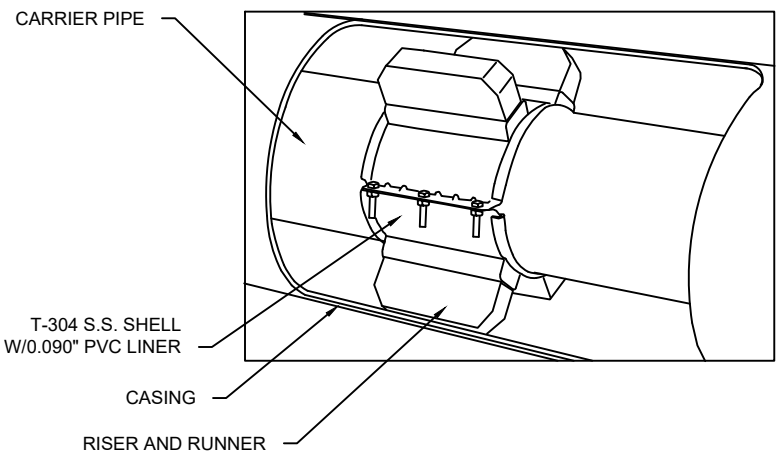
1. HYDRANT COLOR SHALL BE FACTORY PAINTED GLOSS WHITE
2. TRAFFIC BREAK-AWAY FLANGE SHALL BE AT A MAXIMUM OF 6" ABOVE FINISH GRADE

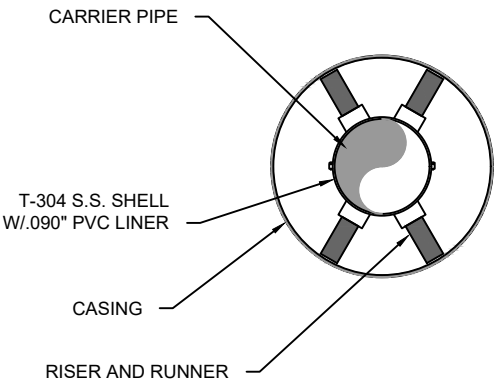
TYPICAL FIRE HYDRANT DETAIL

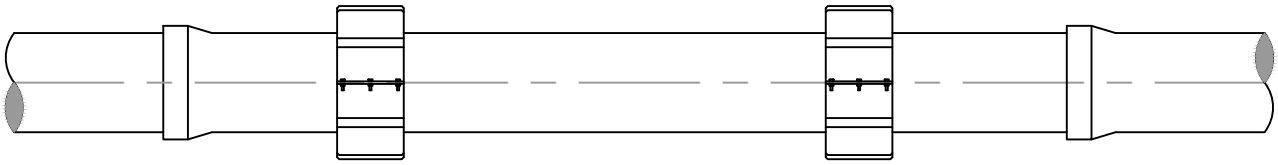
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2018

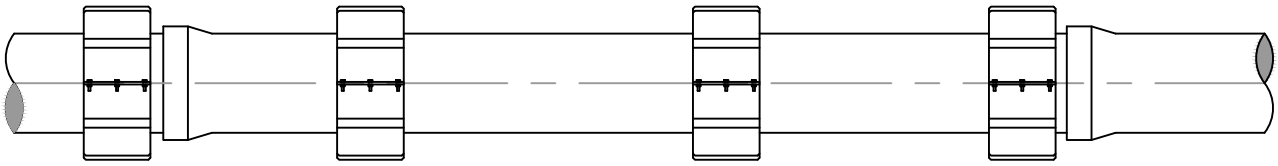
DRAWING No. W-07







DUCTILE IRON CARRIER PIPE (TYPICAL)



PVC CARRIER PIPE (TYPICAL)

NOTES:

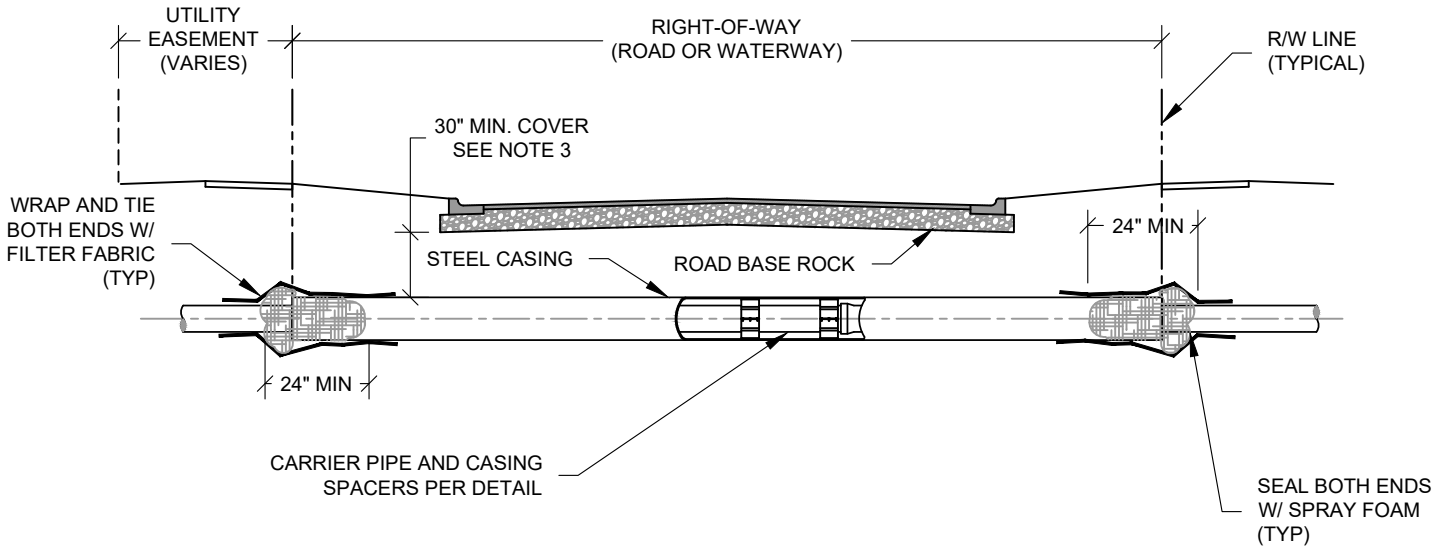
1. APPROVED SELF-RESTRAINING GASKETS SHALL BE USED ON 4" THROUGH 24" DIAMETER PIPE.
2. RESTRAINED MECHANICAL JOINTS SHALL BE USED FOR 30" DIAMETER PIPE AND ABOVE.
3. CASING SPACER MATERIAL SHALL BE A MINIMUM 14 GAUGE T-304 STAINLESS STEEL, TWO-PIECE SHELL WITH A 0.090" THICK PVC LINER, AND ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE RUNNER AS MANUFACTURED BY CASCADE WATERWORKS MTG. OR APPROVED EQUAL.
4. CASING SPACERS SHALL BE PLACED PER MANUFACTURERS RECOMENDATIONS.
5. THE CARRIER PIPE SHALL BE CENTERED INSIDE THE CASING WITH A MINIMUM CLEARANCE OF 1 INCH BETWEEN PIPE BELL/JOINT AND STEEL CASING.

WATER MAIN CASING SPACER DETAIL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. W-08



	NOMINAL PIPE SIZE	STEEL CASING	THICKNESS SCHEDULE (INCHES)
FIELD-LOC GASKET	4"	12"	0.375
	6"	16"	0.375
	8"	18"	0.375
	10"	20"	0.375
	12"	24"	0.375
	14"	24"	0.375
	16"	30"	0.375
	18"	30"	0.375
	20"	36"	0.375
	24"	42"	0.500
RESTRAINED JOINT	30"	48"	0.500
	36"	54"	0.500
	42"	60"	0.500
	48"	72"	0.500

PIPE JOINT AND CASING SIZE GUIDE

NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL PROVIDE A PROFILE DRAWING SHOWING ALL PIPE/CASING MATERIAL, LENGTHS, DIAMETERS, ELEVATIONS, CONFLICTS, AND ANY OTHER RELEVANT DATA FOR EACH ROAD AND/OR CANAL CROSSINGS, JACK AND BORE, OR DIRECTIONAL DRILL.
2. THE CASING ON JACK AND BORE ROAD OR CANAL CROSSING SHALL NOT RISE OR FALL MORE THAN ONE FOOT.
3. THE DEPTH OF THE CASING SHALL BE DETERMINED BY TOWN OF JUPITER ENGINEER, FIELD INSPECTOR OR AGENCY HAVING JURISDICTION.

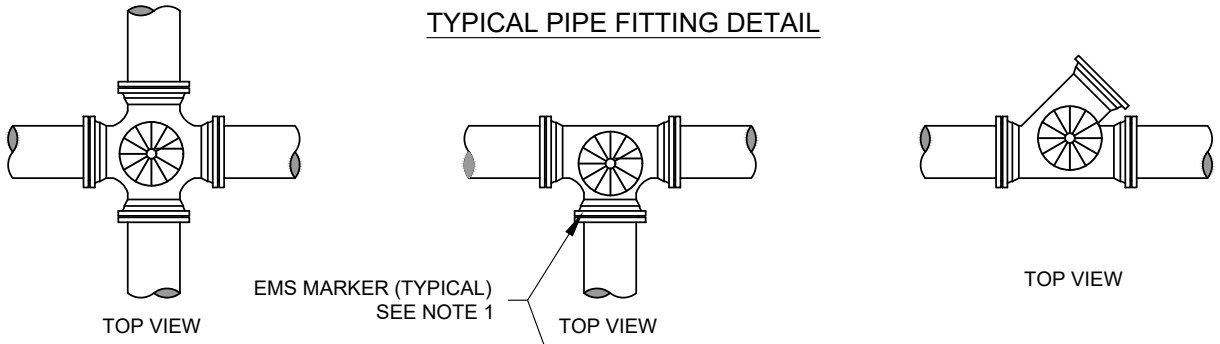
WATER MAIN CASING INSTALLATION DETAIL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 01/2018

DRAWING No. W-09

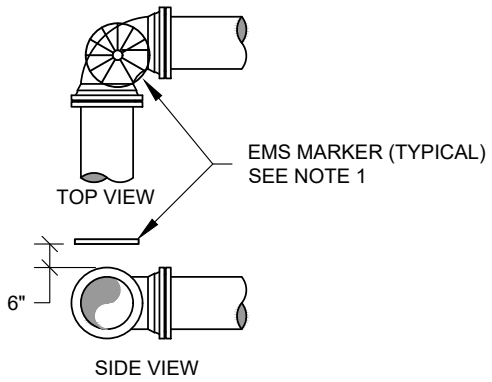
TYPICAL PIPE FITTING DETAIL



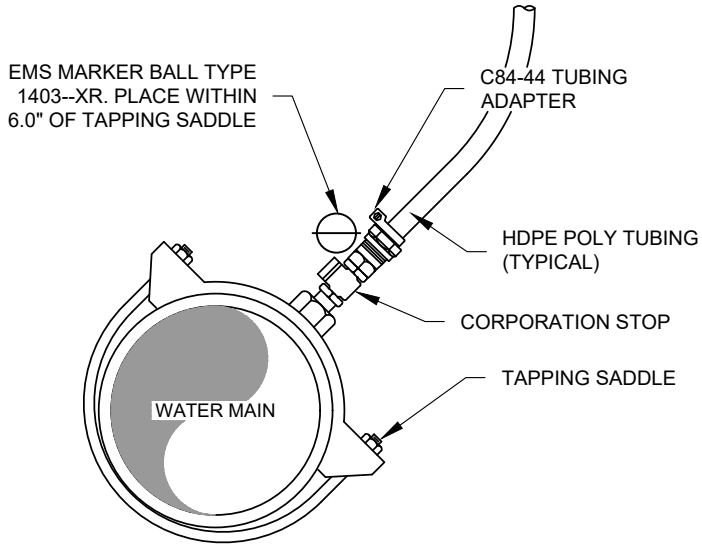
CROSS TEE FITTING

TEE FITTING

WYE FITTING



TYPICAL EL FITTING



TYPICAL SERVICE TAP AND VALVE DETAIL

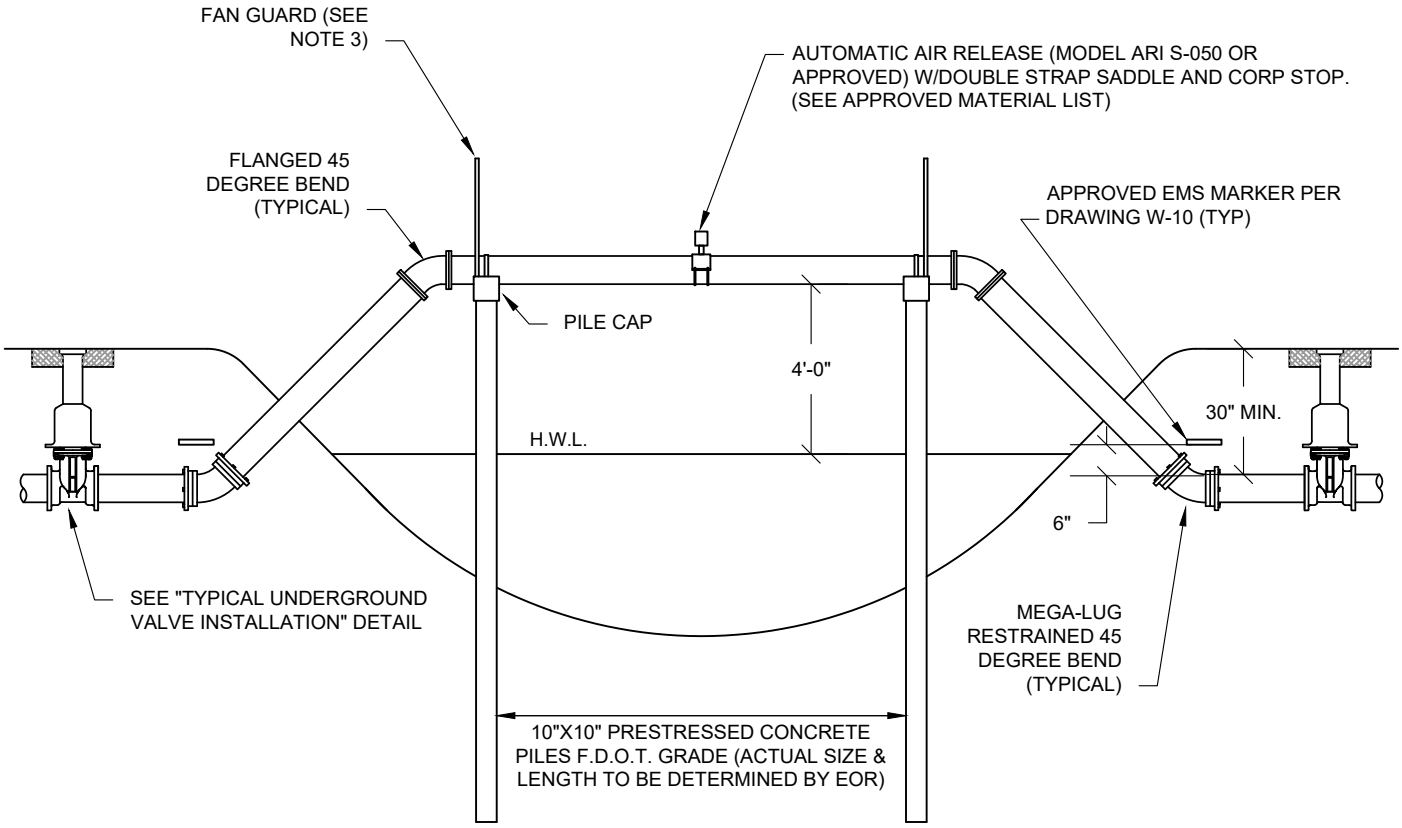
NOTES:
1. USE ELECTRONIC MARKERS (E.M.S.) AS FOLLOWS:
   A) 3M #1257 OR 4" BALL TYPE 1403--XR FOR ALL FITTINGS INCLUDING VALVES AND SERVICE TAPS AT A 5 FT MAXIMUM DEPTH.
   B) 3M #1252 FOR ALL FITTINGS INCLUDING VALVES AND SERVICE TAPS WITH DEPTH FROM 5 FT T0 7 FT MAXIMUM.
2. ALL E.M.S. MARKERS SHALL BE VERIFIED TO BE PROPERLY PLACED PRIOR TO METER SETTING.
3. ALL E.M.S. MARKERS SHALL BE PLACED SO THAT THE FACE OF THE MARKER IS IN THE DIRECTION OF THE FINISH GRADE.

WATER MAIN ELECTRONIC MARKER SYSTEM

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. W-10



NOT TO SCALE

NOTES:

1. ALL EXPOSED PIPE SHALL BE DUCTILE IRON WITH FLANGED FITTINGS. RETAINER GLANDS AND UNIFLANGE TYPE FITTINGS ARE NOT AN ACCEPTABLE SUBSTITUTE FOR FLANGED FITTINGS.
2. SPAN LENGTHS AS REQUIRED BY PERMITTING AGENCY.
3. FAN GUARDS AS REQUIRED. SEE "TYPICAL FAN GUARD" DETAIL W-12.
4. PIPE SHALL BE CRADLED ON NEOPRENE, 1/2" THICK MINIMUM.
5. TIE-DOWN STRAPS SHALL FIT PROPERLY AND SECURE PIPE IN CRADLE.
6. PIPE CRADLE ON PILING CAP SHALL CONTACT 1/2 CIRCUMFERENCE OF PIPE.
7. SHOW ULTIMATE CANAL SECTION AND RELEVANT ELEVATIONS AND DISTANCES ON THE DETAIL.
8. PIPE SHALL BE RESRAINED FOR A MINIMUM DISTANCE AS NOTED ON THE WATERMAIN RESTRAINT TABLE, OR OVER 60 FEET, WHICHEVER IS LONGER.
9. STAINLESS STEEL (316) REQUIRED FOR ALL STRAPS, SADDLES, FLANGE BOLTS, AND OTHER HARDWARE FOR INSTALLATIONS OVER BRACKISH OR MARINE WATERS. STAINLESS STEEL (304) REQUIRED AT ALL OTHER LOCATIONS. ANTI-GALL COMPOUND SHALL BE USED ON ALL STAILNESS STEEL NUT AND BOLT THREADS.
10. PILING SHALL BE SET A MINIMUM OF 10' INTO FIRM SAND. LENGTH OF SPAN WILL DETERMINE THE NUMBER OF PILES REQUIRED.
11. AERIAL CROSSINGS SHALL BE FIELD COATED PER F.D.O.T. SPECIFICATIONS FOR PIPING ATTACHED TO BRIDGE STRUCTURES. COLOR SHALL BE WHITE WITH A BLUE STRIP, SHERWIN WILLIAMS INDUSTRIAL ENAMEL OR APPROVE EQUAL.

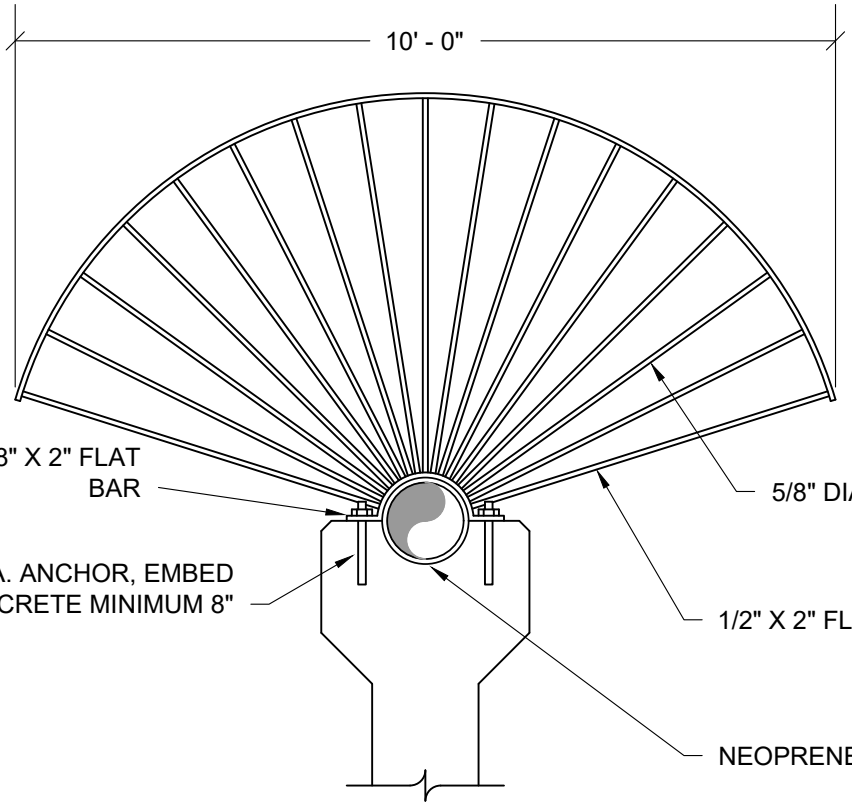
H.W.L. = HIGH WATER LEVEL

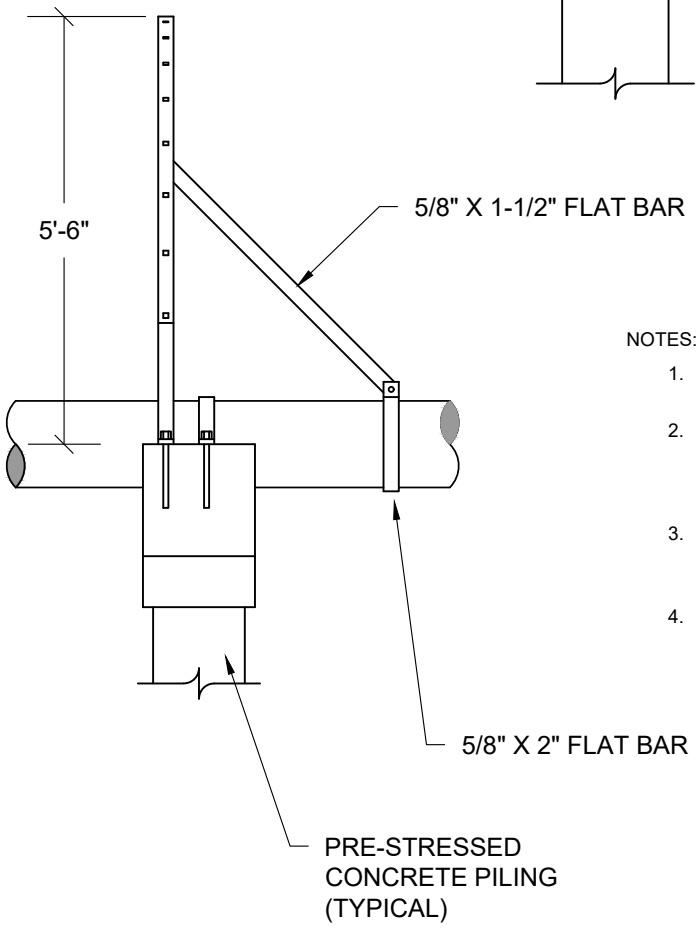
WATER MAIN CANAL CROSSING

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. W-11





NOT TO SCALE

NOTES:

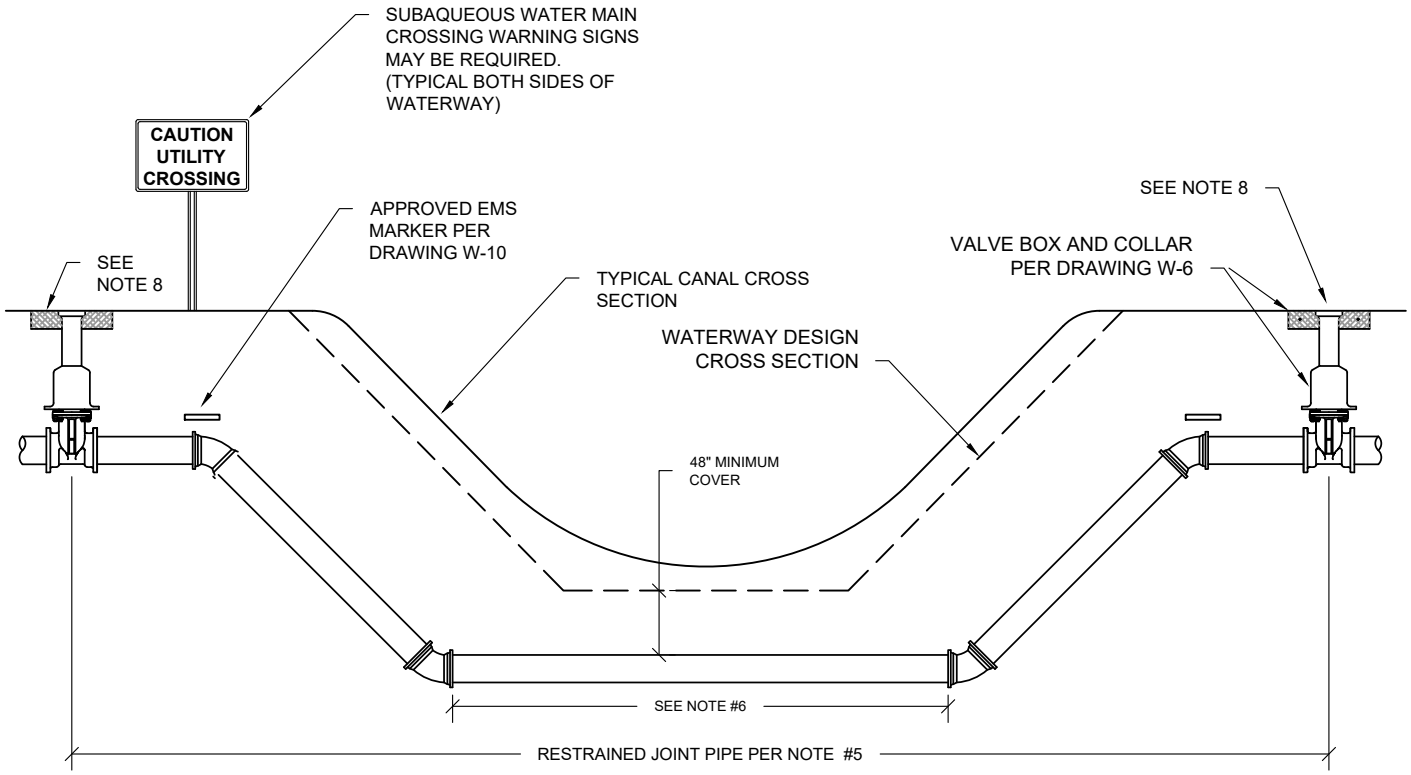
1. FAN GUARDS SHALL BE PLACED ON EACH END OF CROSSING.
2. FAN GUARDS, MOUNTING BRACKETS, BRACES, NUTS AND BOLTS SHALL BE 304 STAINLESS STEEL UNLESS NOTED OTHERWISE. WHEN PLACED OVER MARINE OR BRACKISH CROSSINGS, 316 STAINLESS SHALL BE USED.
3. 1/2" THICK NEOPRENE PADS SHALL BE USED TO INSULATE PIPE FROM CONTACTING ALL MOUNTING HARDWARE, FAN GUARD, AND CONCRETE SURFACES.
4. PAINT ALL EXPOSED METAL GLOSS WHITE WITH SHERWIN WILLIAMS INDUSTRIAL ENAMEL OR APPROVED EQUAL. SURFACE PREPARATION AND PRIMER SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.

TYPICAL WATER MAIN FAN GUARD

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. W-12



NOT TO SCALE

NOTES:

1. AIR RELEASE VALVES SHALL BE REQUIRED ON UPSTREAM SIDE OF CROSSING UNLESS NOTED OTHERWISE
2. THE LOCATION AND NUMBER OF BLOW-OFFS, AIR RELEASES, VALVES EMS MARKERS AND SIGNS SHALL BE DETERMINED BY TOWN OF JUPITER ENGINEER OR FIELD INSPECTOR.
3. IF THE WATERWAY IS NOT CUT TO THE DESIGN CROSS SECTION, THE 48" MINIMUM COVER SHALL APPLY TO THE DEEPER SECTION, WHETHER EXISTING OR DESIGN.
4. PIPE SHALL BE RESTRAINED FOR A MINIMUM DISTANCE AS NOTED ON THE WATER MAIN RESTRAINT TABLE OR 60', WHICH EVER IS LONGER FROM EACH TOP DEFLECTION.
5. ONLY APPROVED PIPE RESTRAINTS SHALL BE USED FROM VALVE-TO-VALVE THROUGHOUT SUBAQUEOUS CROSSING.
6. WHEN THIS DISTANCE EXCEEDS ONE LENGTH OF PIPE, CLASS 56 DUCTILE IRON BALL AND SOCKET PIPE SHALL BE USED FROM VALVE-TO-VALVE SPAN.THE MAXIMUM DEFLECTION ON BALL AND SOCKET PIPE SHALL NOT EXCEED 15 DEGREES.
7. WHERE HDPE PIPE IS USED FOR DIRECTIONAL BORE, PIPE SHALL BE UP-SIZED TO COMPENSATE FOR INSIDE DIAMETER CHANGE.
8. REFER TO DRAWING W-31 FOR SUBAQUEOUS CROSSING TESTING AND AIR RELEASE SYSTEM REQUIREMENTS.

SUBAQUEOUS WATER MAIN CROSSING

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 01/2013

DRAWING No. W-13

PIPE DIAMETER (INCHES)	FULL THRUST CONDITION 90° BENDS IN HORIZONTAL OR VERTICAL DOWN POSITION ALL BRANCH AND THROUGH SIDES OF TEES, CROSSES AND REDUCERS	45° BEND IN HORIZONTAL OR VERTICAL UP POSITION	22 ½° BEND IN HORIZONTAL OR VERTICAL UP POSITION	11 ¼° BEND IN HORIZONTAL OR VERTICAL UP POSITION	FULL THRUST CONDITION DEAD END AND VALVES (INLINE OR BRANCH)
4"	2 L	1 L	1 L	1 L	3 L
6"	3 L	2 L	1 L	1 L	4 L
8"	4 L	2 L	1 L	1 L	5 L
10"	5 L	2 L	1 L	1 L	6 L
12"	5 L	2 L	1 L	1 L	7 L
16"	6 L	3 L	2 L	1 L	8 L

L = ONE PIPE LENGTH (18FT MIN.)

NOTES:

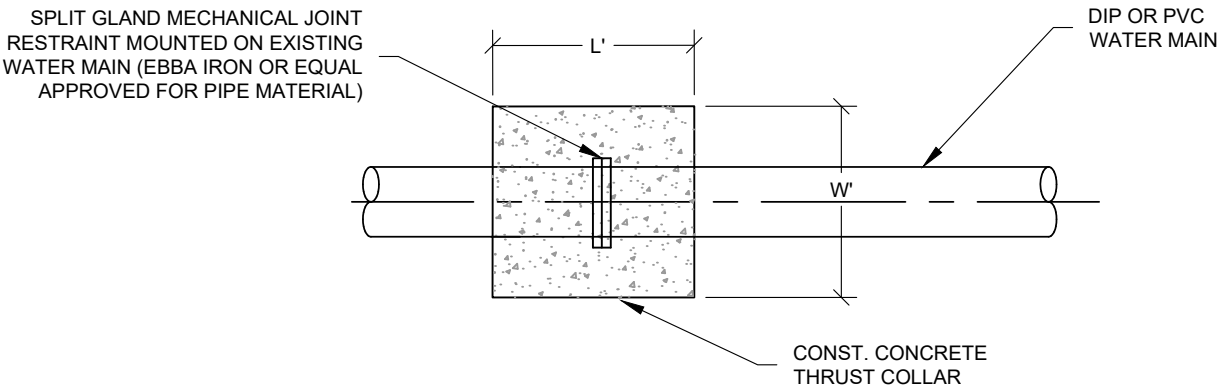
1. THE ABOVE TABLE SHALL SERVE AS A GUIDE ONLY. THE ENGINEER OF RECORD SHALL BE RESPONSIBLE FOR THE DESIGN AND SHALL SPECIFY THE MINIMUM LENGTHS OF RESTRAINED PIPE WITH CONSIDERATION TO SOIL TYPE AND LBR, AND PIPE LAYING CONDITIONS.
2. PIPES SHALL BE TESTED TO A MINIMUM OF 150 PSIG WITH A 2.5 SAFETY FACTOR.
3. SUBAQUEOUS CROSSINGS REQUIRE SPECIFIC RESTRAINT SYSTEMS. SEE DRAWING W-13 "SUBAQUEOUS WATER MAIN CROSSING".

WATER MAIN RESTRAINT SYSTEM TABLE

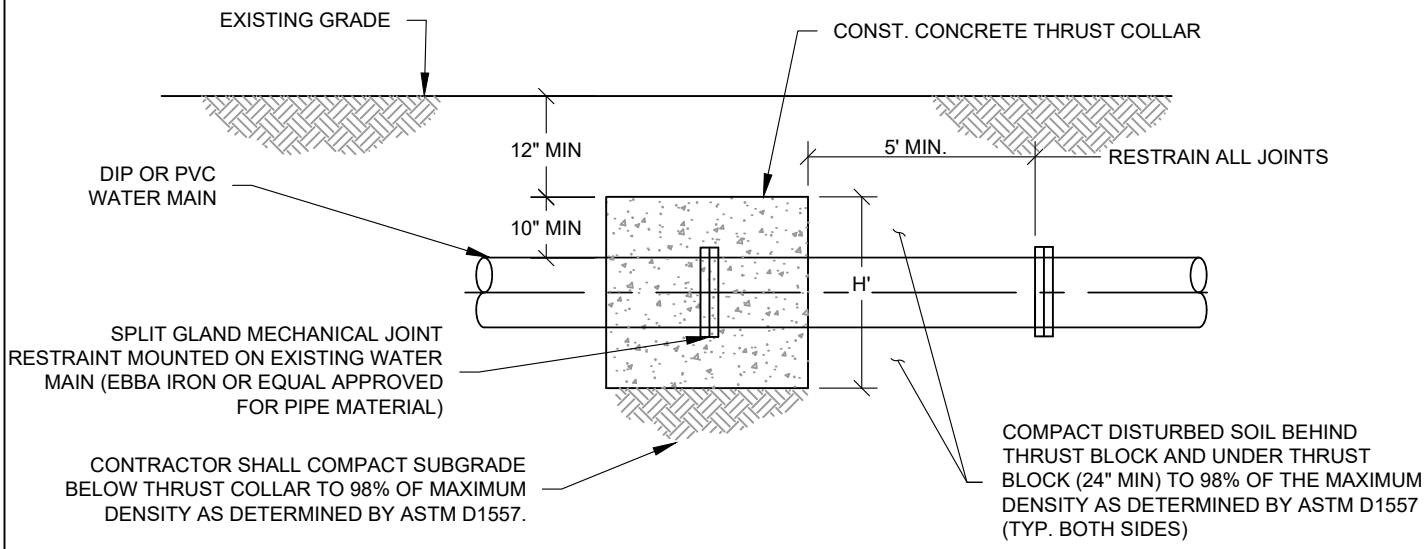
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 1/2015

DRAWING No. W-14



TOP VIEW



FRONT VIEW

NOT TO SCALE

DETAIL NOTES:

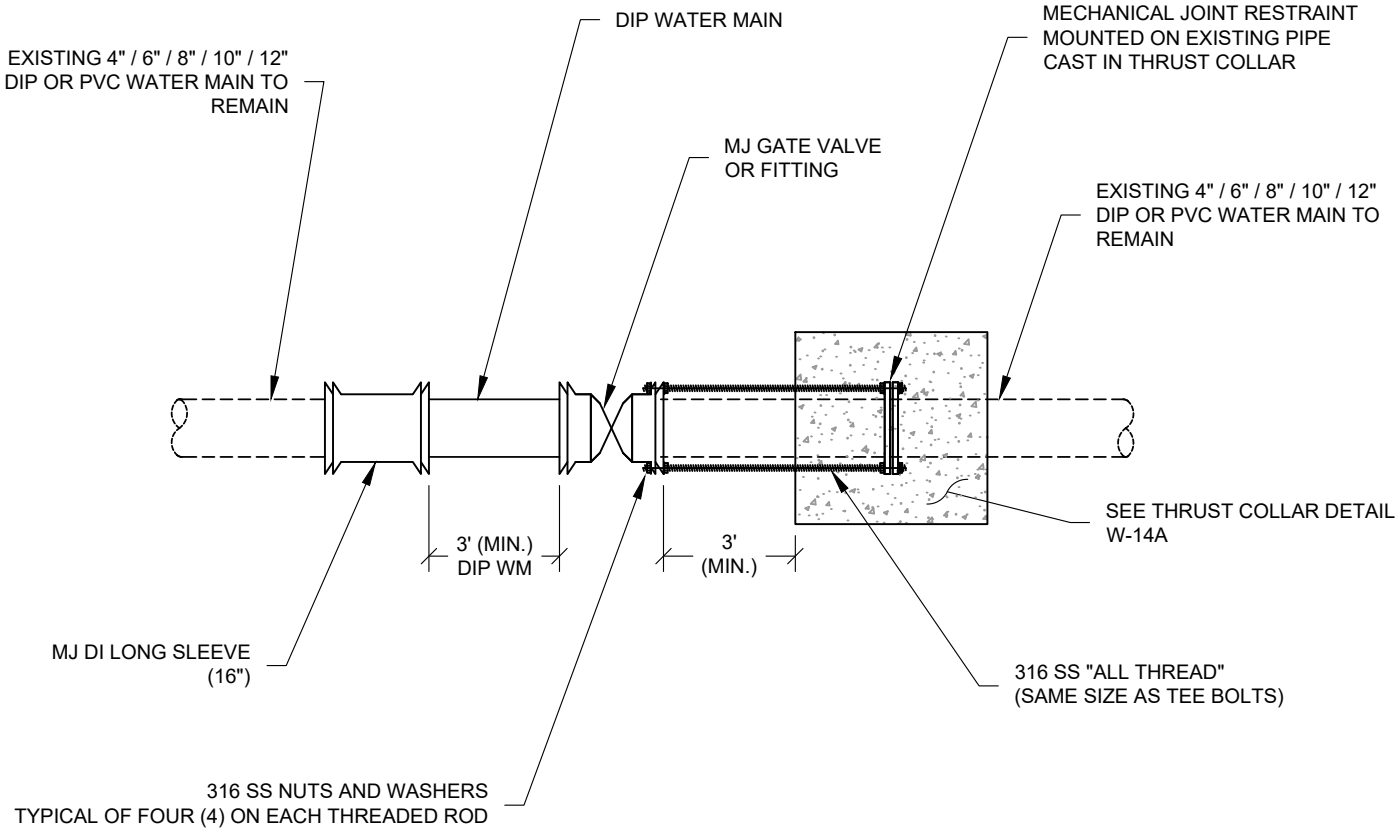
1. CONTRACTOR SHALL COMPACT SUBGRADE BELOW THRUST COLLAR TO 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557.
2. BACKFILL COMPACTION SHALL BE 98% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D1557. LIFTS SHALL BE 12" MAXIMUM.
3. CONTRACTOR SHALL CONSTRUCT A THRUST COLLAR ON EACH SIDE OF A 90 DEGREE BEND.
4. H X W X L (MIN) = 2.25' X 2.25' X 2.25' FOR 6"/4" PIPE
5. H X W X L (MIN) = 2.75' X 2.75' X 2.75' FOR 8" PIPE
6. H X W X L (MIN) = 3.25' X 3.25' X 3.25' FOR 10" PIPE
7. H X W X L (MIN) = 4.0' X 4.0' X4.0' FOR 12" PIPE
8. USE 4,000 PSI COMPRESSIVE STRENGTH CONCRETE IN ACCORDANCE WITH ASTM C94 MEETING THE FOLLOWING REQUIREMENTS:
   - WATER/CEMENT RATIO 0.48 WITHOUT ADMIXTURES BY WEIGHT
   - FLY ASH MAX. 15% OF CEMENT CONTENT, TYPE F ONLY
   - SLUMP 4" +/- 1" , 7" - 8" WITH SUPERPLASTICIZER
9. THRUST BLOCK SIZING IS BASED ON THE TYPICAL SYSTEM PRESSURE OF 75 PSI AND GENERALLY SANDY SOILS THAT YIELD BEARING PRESSURES OF 2000 PSF. THE CALCULATIONS DO CONSIDER SURGES AND A SAFETY FACTOR. WHERE CONDITIONS EXPERIENCE HIGHER SYSTEM PRESSURES, LOWER QUALITY SOILS OR SHALLOWER BURY DEPTHS THAN 3 FEET THE THRUST BLOCK SHALL BE RESIZED BY AN ENGINEER REGISTERED IN THE STATE OF FLORIDA.

WATER MAIN THRUST COLLAR

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 01/2022

DRAWING No. W-14A



NOT TO SCALE

NOTES:

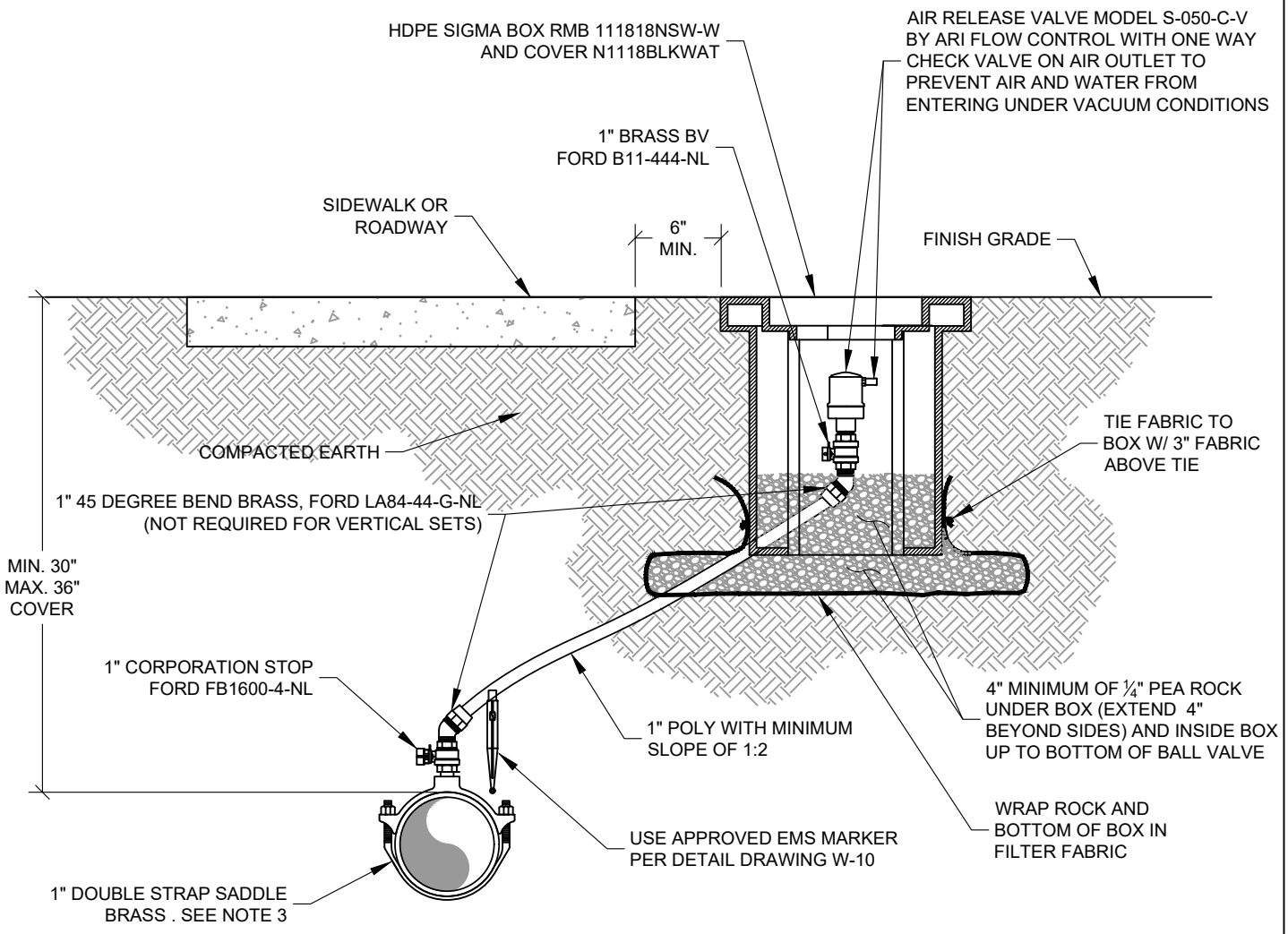
1. SEE THRUST COLLAR DETAIL W-14A FOR CONCRETE, SIZING, COMPACTION AND EMBEDMENT REQUIREMENTS.
2. MECHANICAL JOINT RESTRAINT MOUNTED ON THE EXISTING PIPE AND EMBEDDED IN THE CONCRETE THRUST COLLAR MAY BE SPLIT SLEEVE OR SOLID RING COMPATIBLE WITH PIPE MATERIAL.
3. RESTRAIN ALL FITTINGS WITH A MECHANICAL JOINT TYPE RESTRAINT COMPATIBLE WITH THE PIPE MATERIAL AND ACCEPTED BY THE TOWN OF JUPITER UTILITIES.
4. THE THREE FEET MINIMUM DISTANCE SHOWN ABOVE BETWEEN THE SLEEVE, VALVE AND THRUST COLLAR IS TYPICAL AND DEPENDING ON FIELD CONDITIONS MAY BE REDUCED OR INCREASED BY THE TOWN AND SHALL BE CONFIRMED IN THE FIELD.
5. TIE-BACKS ON 4", 6" AND 8" WATER MAIN SHALL CONSIST OF TWO THREADED RODS AND ASSOCIATED NUTS AND WASHERS 180 DEGREES APART. ALL TYPE 316 STAINLESS STEEL.
6. TIE-BACKS ON 10" AND 12" WATER MAIN SHALL CONSIST OF THREE THREADED RODS AND ASSOCIATED NUTS AND WASHERS 120 DEGREES APART. ALL TYPE 316 STAINLESS STEEL.

VALVE TIE-BACK (DEAD MAN)

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-14B



NOT TO SCALE

NOTES:

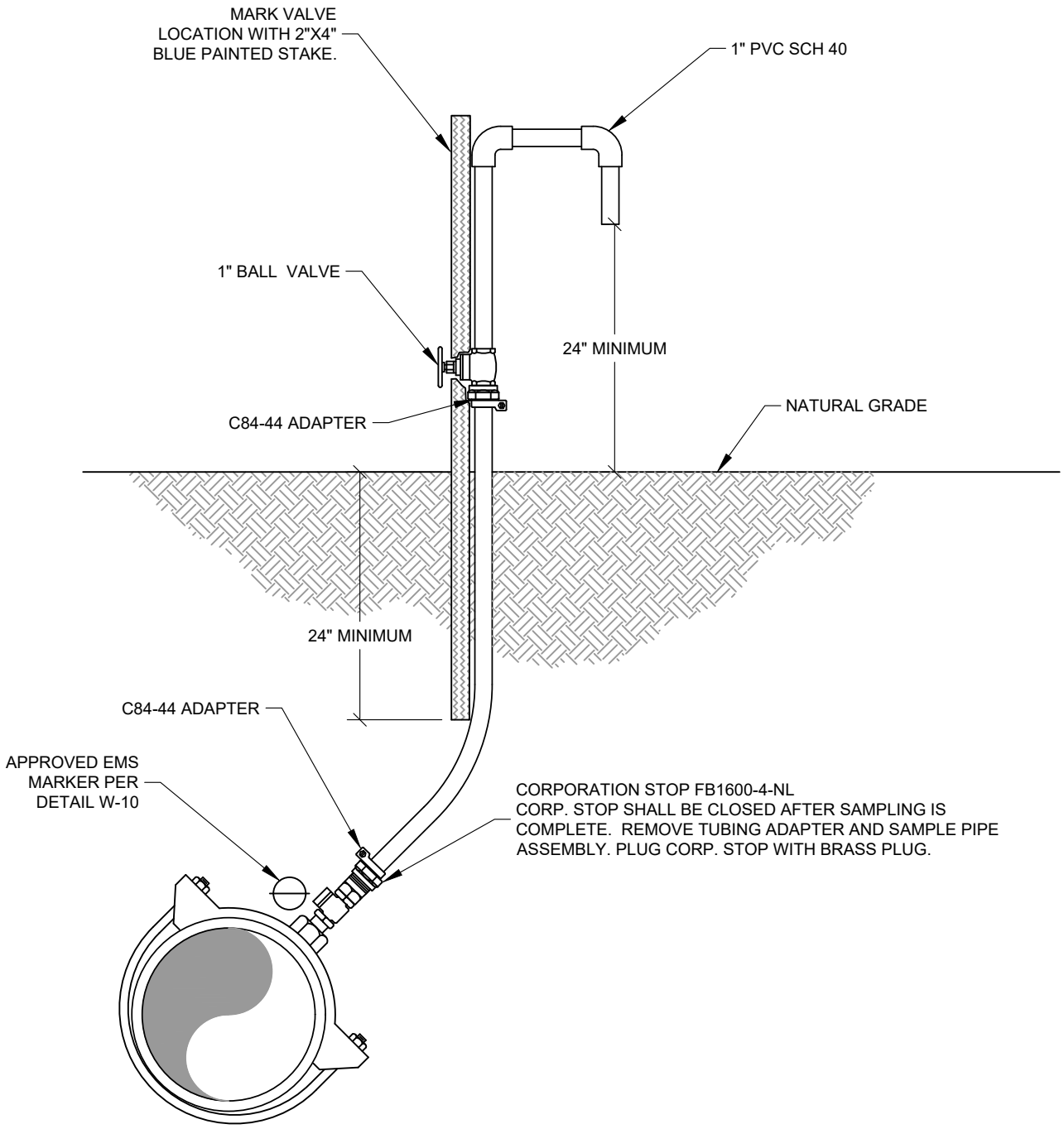
1. INSTALL SERVICE/ARV DIRECTLY ABOVE CORPORATION STOP IF NOT LOCATED UNDER SIDEWALK OR ROAD.
2. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
3. TAPPING SADDLES:
   FOR D.I.P., USE 1" DOUBLE STRAP TAP SADDLE WITH AWWA THREADS.
   FOR C-900 PVC, USE FORD S-90 SERIES TAP SADDLE WITH AWWA THREADS.

WATER MAIN AIR RELEASE DETAIL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-15



NOTES:

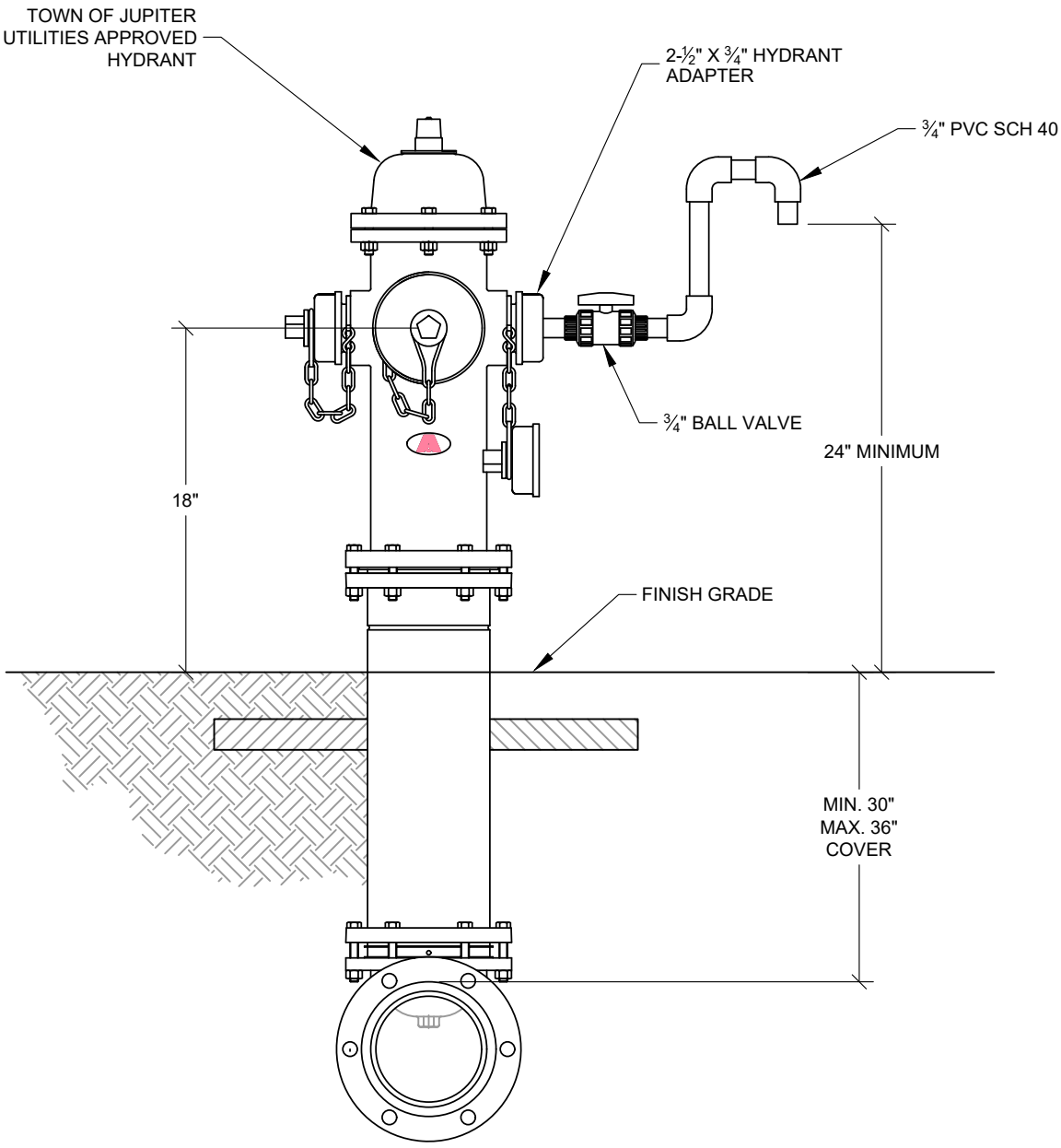
1. SERVICE TAPS SHALL BE USED AS SAMPLE TAPS WHERE POSSIBLE.
2. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
3. TAPPING SADDLES:
   FOR D.I.P., USE 1" DOUBLE STRAP TAP SADDLE WITH AWWA THREADS.
   FOR C-900 PVC, USE FORD S-90 SERIES TAP SADDLE WITH AWWA THREADS.

WATER MAIN SAMPLE POINT (IN-LINE)

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. W-16

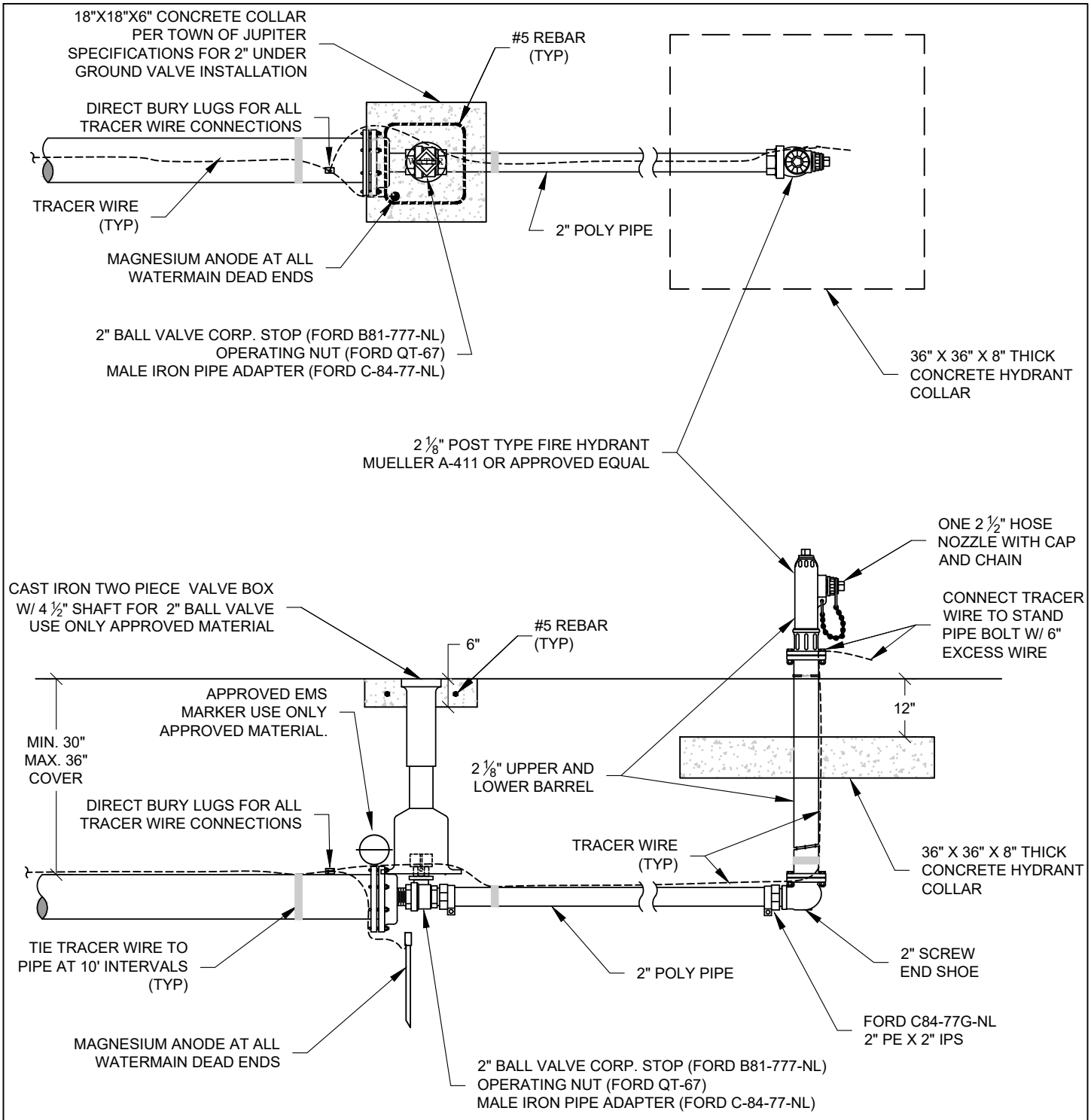


FIRE HYDRANT SAMPLING POINT

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. W-17



NOTES:

1. POLY PIPE SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
3. ALL PIPING SHALL BE RESTRAINED PER TOWN OF JUPITER STANDARDS.
4. TRACER WIRE SHALL BE USED ON ALL NON-DUCTILE IRON WATER MAIN.
5. TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER 1430-HS OR APPROVED EQUAL.
6. TRACER WIRE SHALL DEAD END WITH COPPERHEAD MAGNESIUM ANODE PART NUMBER ANO-1005 OR APPROVED EQUAL.
7. DIRECT BURY LUGS SHALL BE COPPERHEAD SNAKEBITE DRYCONN DIRECT BURY LUG AQUA OR APPROVED EQUAL.

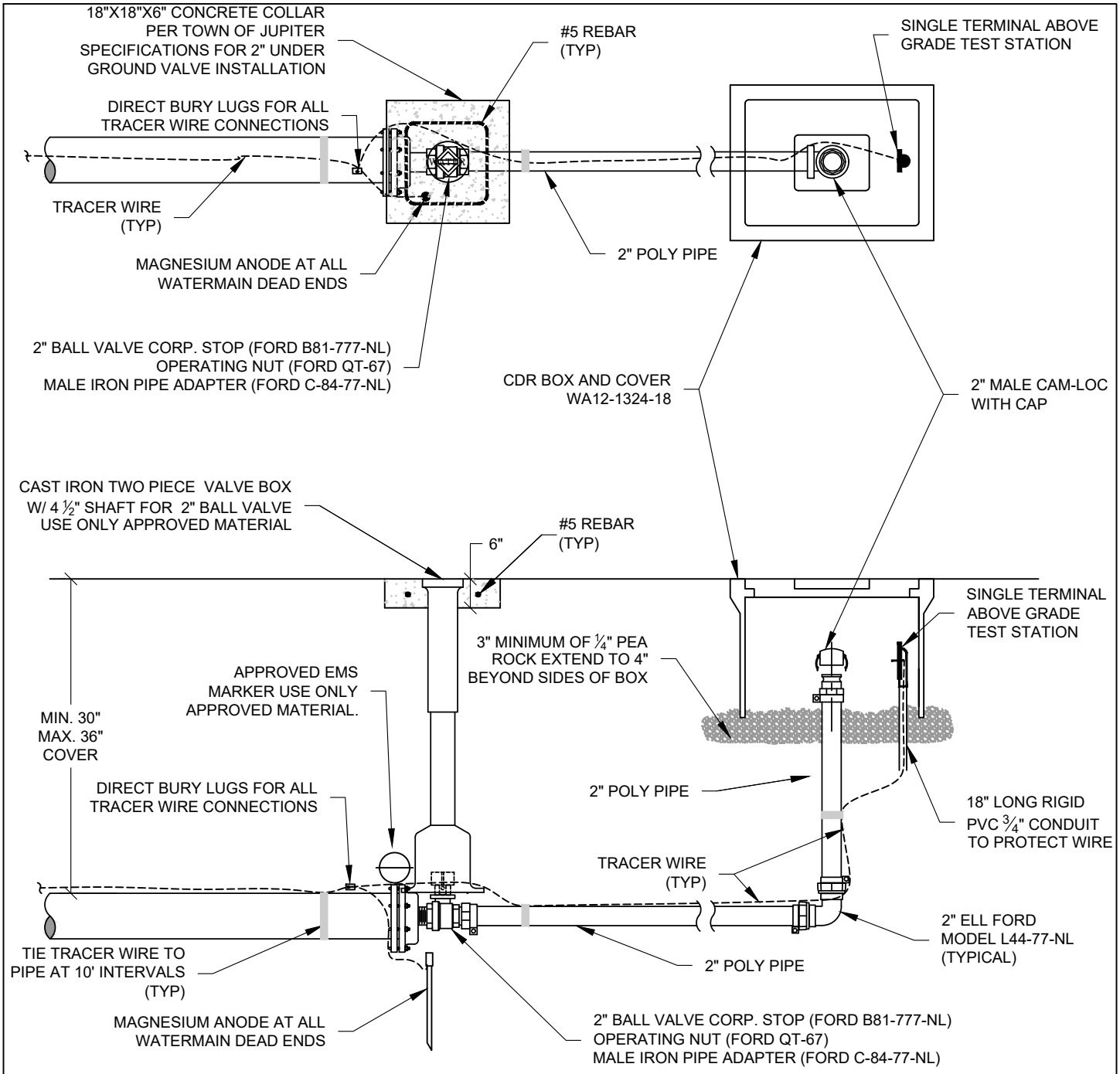
PERMANENT BLOWOFF - POST HYDRANT

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2017

DRAWING No. W-18



NOTES:

1. POLY PIPE SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. TRAFFIC RATED BOXES SHALL BE REQUIRED IN ALL PAVED AREAS AND AREAS TO BE PAVED IN THE FUTURE.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. ALL PIPING SHALL BE RESTRAINED PER TOWN OF JUPITER STANDARDS.
5. TRACER WIRE SHALL BE INSTALLED ON ALL NON-DUCTILE IRON WATER MAIN.
6. TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER 1430-HS OR APPROVED EQUAL.
7. TRACER WIRE SHALL DEAD END WITH COPPERHEAD MAGNESIUM ANODE PART NUMBER ANO-1005 OR APPROVED EQUAL.
8. ABOVE GROUND TEST STATION SHALL BE COPPERHEAD INDUSTRIES, LLC PART NUMBER T1-B75 OR APPROVED EQUAL.

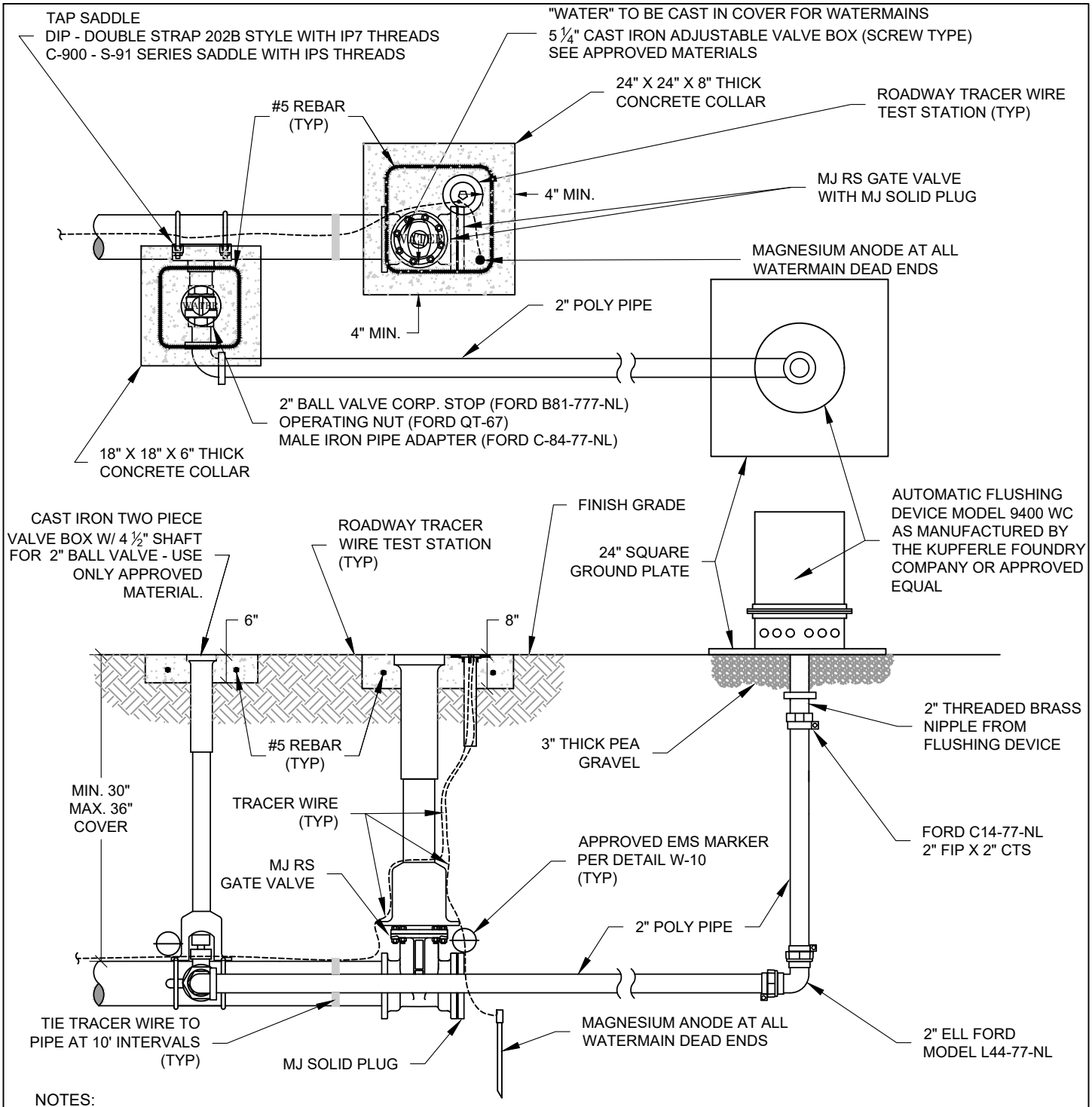
TEMPORARY BLOWOFF

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 06/2017

DRAWING No. W-18A



NOTES:

1. POLY PIPE SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. CONCRETE COLLAR MAY NOT BE REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION AND VALVE BOX LID IS AT FINISHED GRADE.
3. TRAFFIC RATED BOXES SHALL BE REQUIRED IN ALL PAVED AREAS AND AREAS TO BE PAVED IN THE FUTURE.
4. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
5. ALL PIPING SHALL BE RESTRAINED PER TOWN OF JUPITER STANDARDS.
6. WHEN VALVE IS DEEPER THAN 36" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT TO +/- 24" OF FINISHED GRADE. EXTENSION MUST BE SET SCREW TYPE AND ATTACHED TO OPERATING NUT.
7. TRACER WIRE SHALL BE INSTALLED ON ALL NON-DUCTILE IRON WATER MAIN. SEE NOTE 3 ON W-06, TYPICAL UNDERGROUND VALVE INSTALLATION FOR TEST STATION AND TRACER WIRE MATERIAL.

AUTOMATIC FLUSHING DEVICE

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

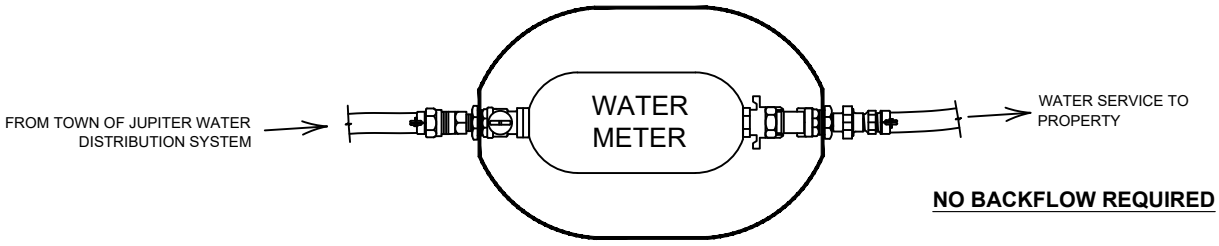
DATE APPROVED: 06/2017

DRAWING No. W-19

RESIDENTIAL WATER SERVICE TYPES REQUIRE SPECIFIC BACKFLOW PREVENTION

TYPE "A" - EXISTING OR NEW WATER SERVICE

NO WELL ON PROPERTY AND IRRIGATED WITH POTABLE WATER.

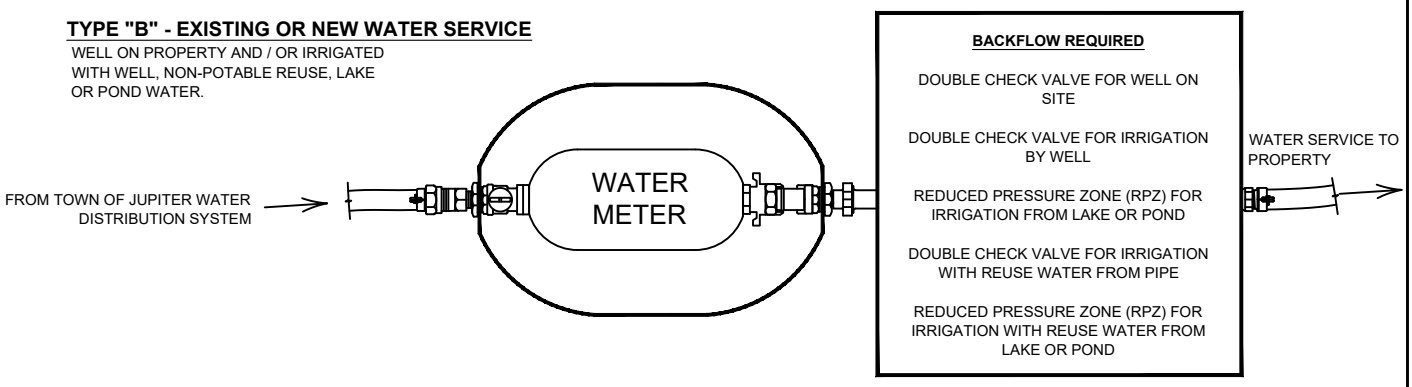


NO BACKFLOW REQUIRED

SEE DETAILS W-20A AND W-21A FOR ¾" AND 1" METERS RESPECTIVELY

TYPE "B" - EXISTING OR NEW WATER SERVICE

WELL ON PROPERTY AND / OR IRRIGATED WITH WELL, NON-POTABLE REUSE, LAKE OR POND WATER.



SEE DETAILS W-20B AND W-21B FOR ¾" AND 1" METERS RESPECTIVELY

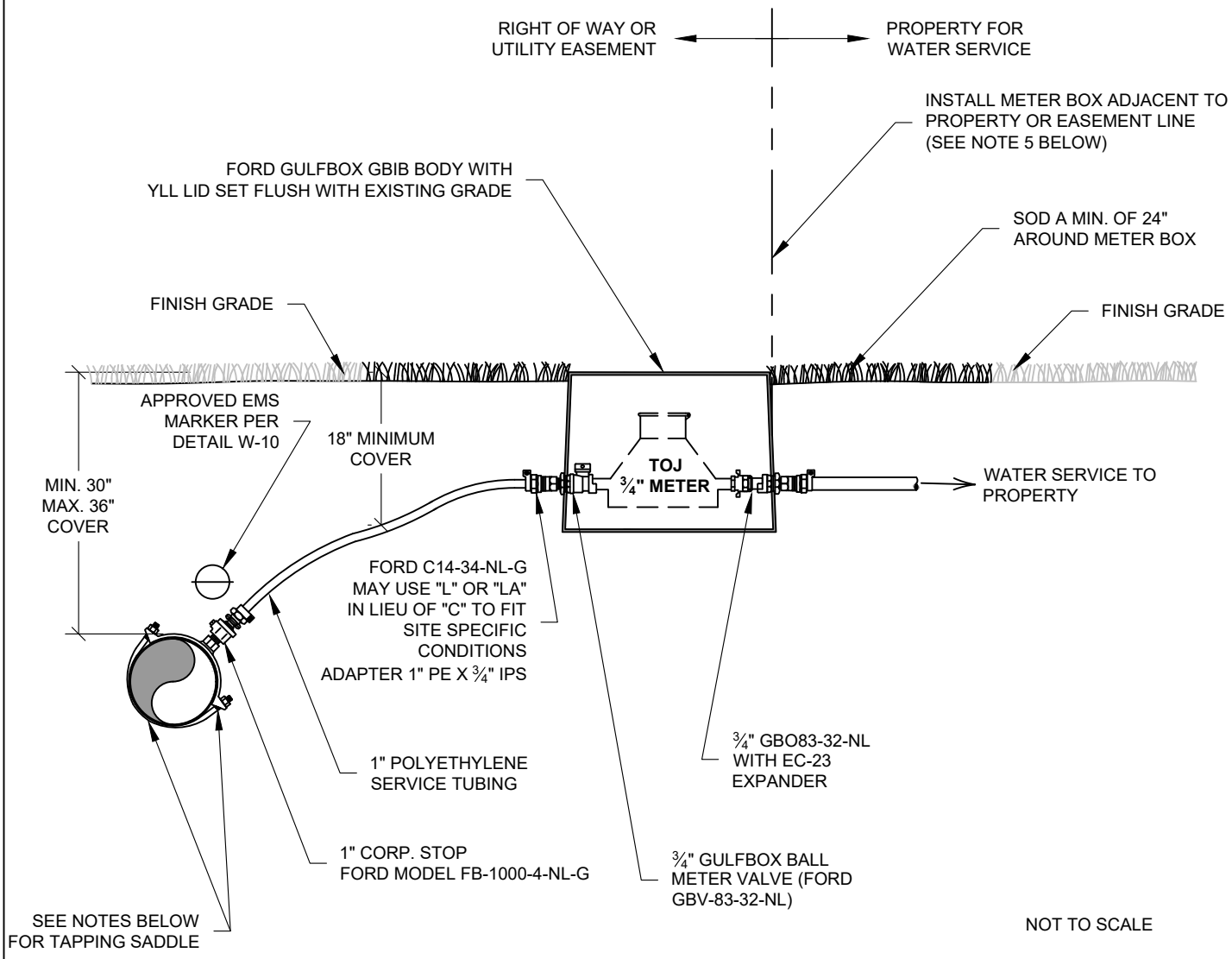
RESIDENTIAL WATER SERVICE TYPES

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 02/2018

DRAWING No. W-20

SEE DETAIL W-20 TO CONFIRM
BACKFLOW PREVENTION REQUIREMENT



TYPICAL SAME-SIDE SERVICE TAP
(SEE DETAIL W-23 FOR ROAD CROSSING REQUIREMENTS)

NOTES:

1. SERVICE TUBING SHALL BE 1" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ANY SERVICE LENGTH FROM THE MAIN TO THE METER IN EXCESS OF 50' SHALL BE 2" PE3408 HDPE POLY TUBING WITH A VALVE BOX AND CONCRETE COLLAR AS SHOWN AND INSTALLED IN ACCORDANCE WITH DETAIL W-24.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
5. IF THERE IS A CONCRETE SIDEWALK / ASPHALT PATHWAY ALONG THE PROPERTYLINE, THE METER BOX SHALL BE INSTALLED INSIDE PRIVATE PROPERTY ADJACENT TO THE CONCRETE / ASPHALT.
6. TAPPING SADDLES:
   FOR D.I.P., USE 1" DOUBLE STRAP TAP SADDLE 202B STYLE WITH CC4 OUTLET THREADS.
   FOR C-900 PVC, USE FORD 1" S-91 SERIES TAP SADDLE WITH AWWA THREADS.
7. ALL BRASS FITTING MATERIAL NOTED ABOVE FOR WATER SERVICES AND METER BOXES SHALL BE "NO LEAD" (-NL).
8. ALL MATERIAL EXCEPT METERS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

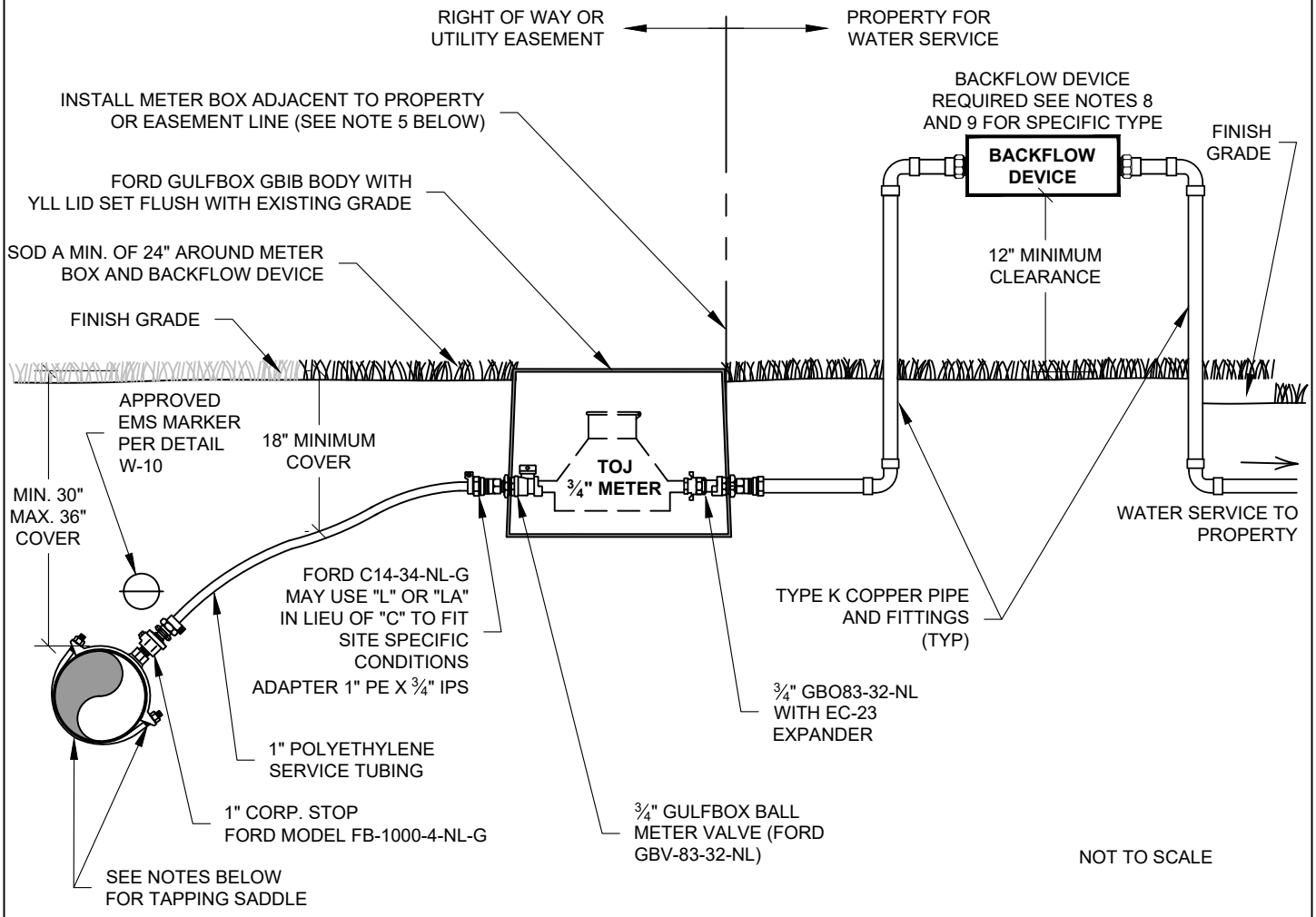
TYPE "A" SINGLE CONNECTION DETAIL FOR ¾" METERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021

DRAWING No. W-20A

SEE DETAIL W-20 TO CONFIRM
BACKFLOW PREVENTION REQUIREMENT



TYPICAL SAME-SIDE SERVICE TAP
(SEE DETAIL W-23 FOR ROAD CROSSING REQUIREMENTS)

NOTES:

1. SERVICE TUBING SHALL BE 1" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ANY SERVICE LENGTH FROM THE MAIN TO THE METER IN EXCESS OF 50' SHALL BE 2" PE3408 HDPE POLY TUBING WITH A VALVE BOX AND CONCRETE COLLAR AS SHOWN AND INSTALLED IN ACCORDANCE WITH DETAIL W-24.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
5. IF THERE IS A CONCRETE SIDEWALK / ASPHALT PATHWAY ALONG THE PROPERTY LINE, THE METER BOX SHALL BE INSTALLED INSIDE PRIVATE PROPERTY ADJACENT TO THE CONCRETE / ASPHALT.
6. TAPPING SADDLES:
   - FOR D.I.P. USE 1" DOUBLE STRAP TAP SADDLE 202B STYLE WITH CC4 OUTLET THREADS.
   - FOR C-900 PVC USE FORD 1" S-90 SERIES TAP SADDLE WITH AWWA THREADS.
7. ALL BRASS FITTING MATERIAL NOTED ABOVE FOR WATER SERVICES AND METER BOXES SHALL BE "NO LEAD" (-NL).
8. THE BACKFLOW PREVENTION DEVICE IS CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.
9. DOUBLE CHECK VALVE ASSEMBLIES MAY BE INSTALLED IN PITS, SEE CROSS CONNECTION DETAIL CC-6.
10. DOUBLE CHECK VALVE ASSEMBLIES ARE REQUIRED FOR THE FOLLOWING:
    - A WELL IS LOCATED ON THE PROPERTY.
    - IRRIGATION IS FROM AN ON-SITE OR OFF-SITE WELL.
    - IRRIGATION IS FROM REUSE WATER FROM A PIPE OR DISTRIBUTION SYSTEM WITH NO LAKE STORAGE.
11. REDUCED PRESSURE ZONE (RPZ) ARE REQUIRED FOR LAKE OR POND IRRIGATION (INCLUDING REUSE LAKES OR PONDS).
12. ALL MATERIAL EXCEPT METERS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

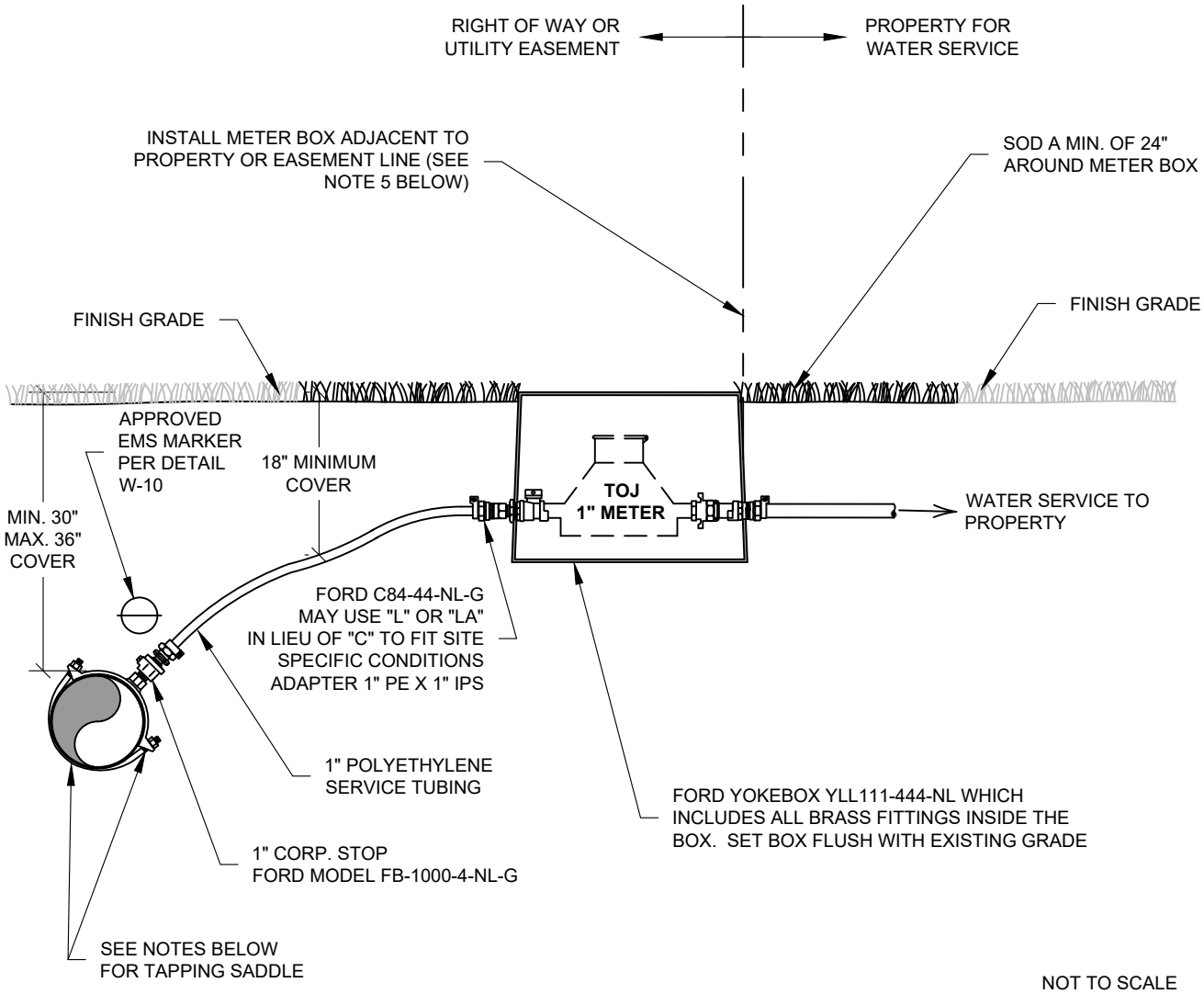
TYPE "B" SINGLE CONNECTION DETAIL FOR ¾" METERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021

DRAWING No. W-20B

SEE DETAIL W-20 TO CONFIRM
BACKFLOW PREVENTION REQUIREMENT



NOT TO SCALE

TYPICAL SAME-SIDE SERVICE TAP
(SEE DETAIL W-23 FOR ROAD CROSSING REQUIREMENTS)

NOTES:

1. SERVICE TUBING SHALL BE 1" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ANY SERVICE LENGTH FROM THE MAIN TO THE METER IN EXCESS OF 50' SHALL BE 2" PE3408 HDPE POLY TUBING WITH A VALVE BOX AND CONCRETE COLLAR AS SHOWN AND INSTALLED IN ACCORDANCE WITH DETAIL W-24.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
5. IF THERE IS A CONCRETE SIDEWALK / ASPHALT PATHWAY ALONG THE PROPERTY LINE, THE METER BOX SHALL BE INSTALLED INSIDE PRIVATE PROPERTY ADJACENT TO THE CONCRETE / ASPHALT.
6. TAPPING SADDLES:
   FOR D.I.P. USE 1" DOUBLE STRAP TAP SADDLE 202B STYLE WITH CC4 OUTLET THREADS.
   FOR C-900 PVC, USE FORD 1" S-90 SERIES TAP SADDLE WITH AWWA THREADS.
7. ALL BRASS FITTING MATERIAL NOTED ABOVE FOR WATER SERVICES AND METER BOXES SHALL BE "NO LEAD" (-NL).
8. ALL MATERIAL EXCEPT METERS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

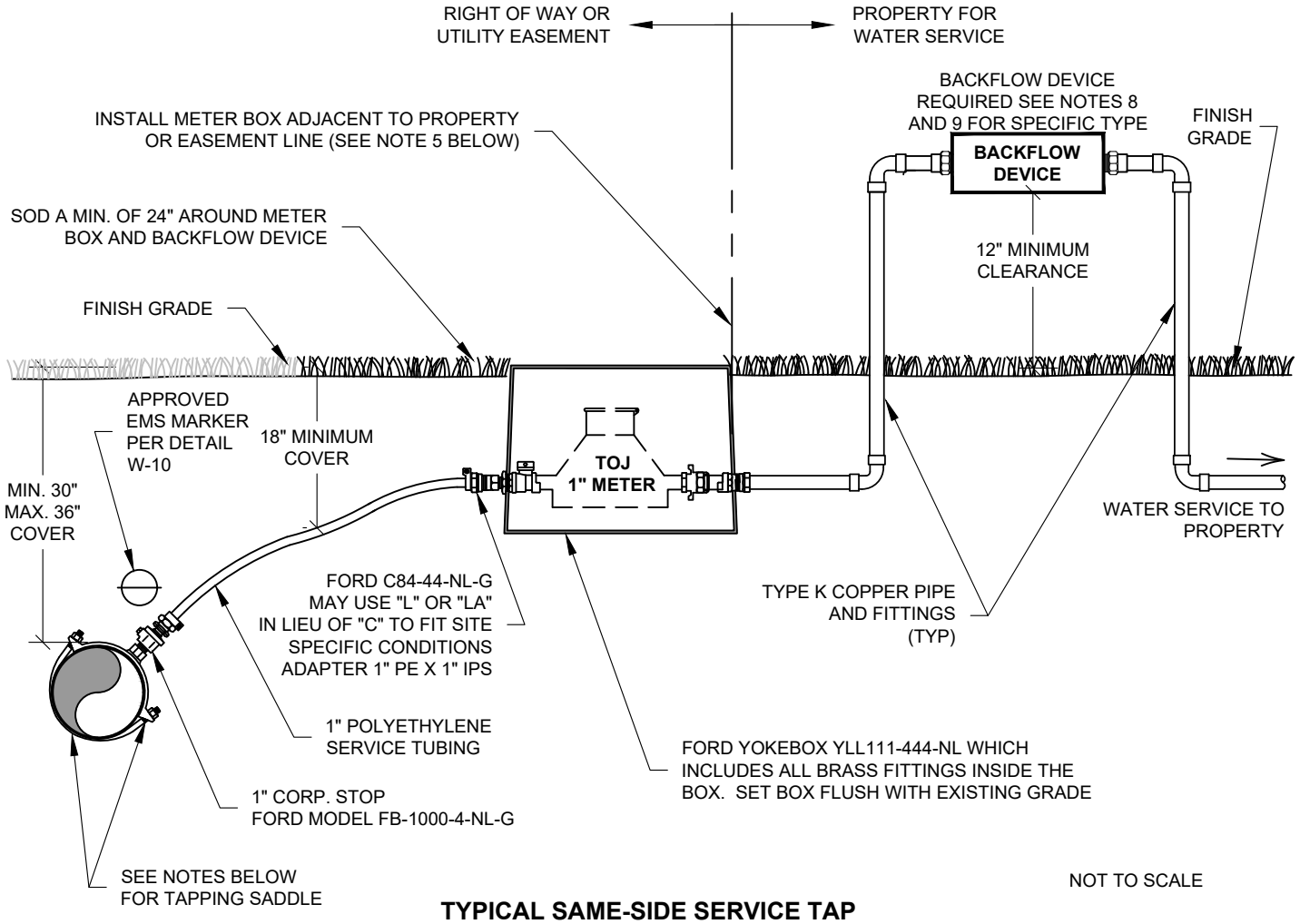
TYPE "A" SINGLE CONNECTION DETAIL FOR 1" METERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021

DRAWING No. W-21A

SEE DETAIL W-20 TO CONFIRM
BACKFLOW PREVENTION REQUIREMENT



TYPICAL SAME-SIDE SERVICE TAP
(SEE DETAIL W-23 FOR ROAD CROSSING REQUIREMENTS)

NOTES:

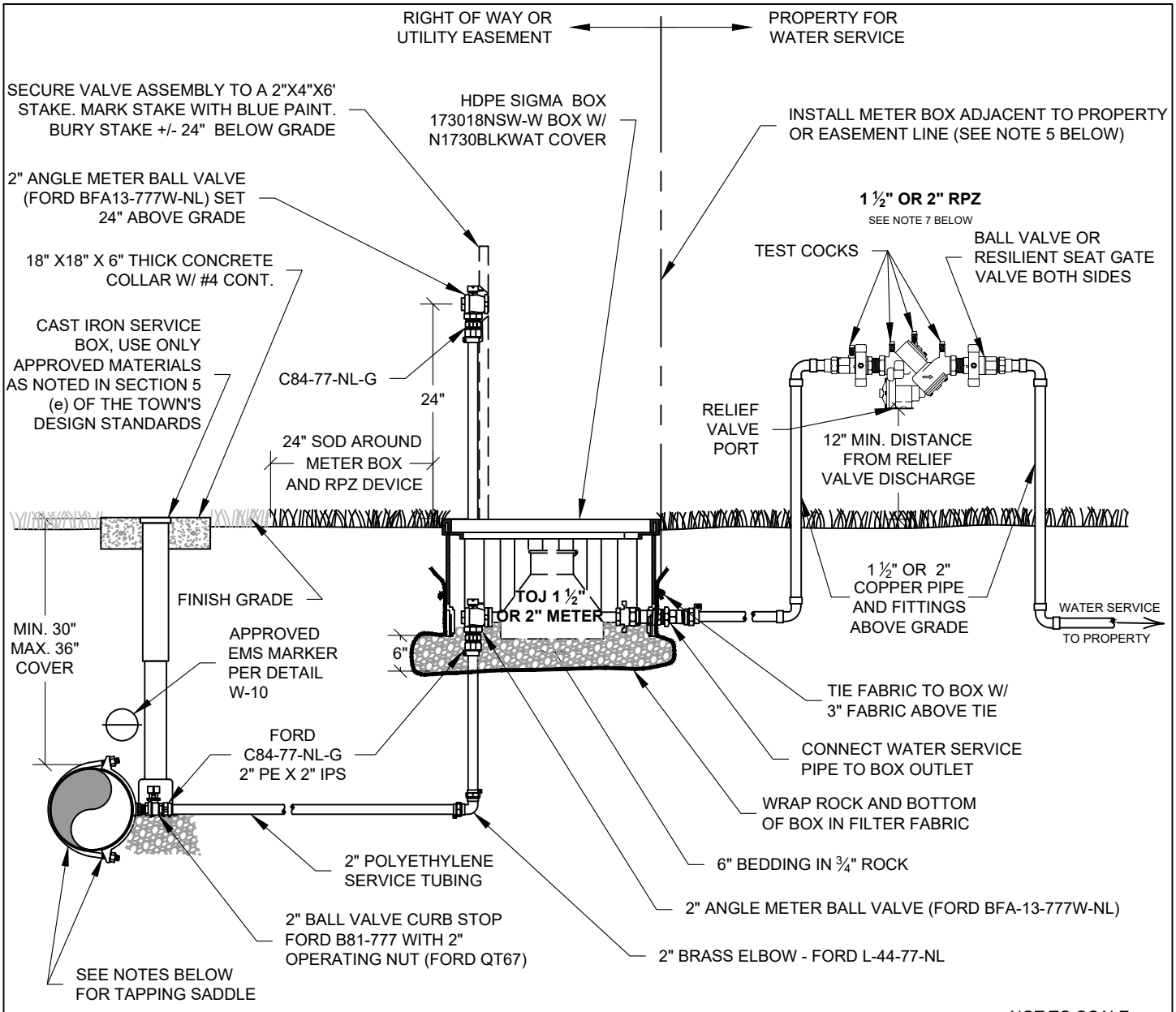
1. SERVICE TUBING SHALL BE 1" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ANY SERVICE LENGTH FROM THE MAIN TO THE METER IN EXCESS OF 50' SHALL BE 2" PE3408 HDPE POLY TUBING WITH A VALVE BOX AND CONCRETE COLLAR AS SHOWN AND INSTALLED IN ACCORDANCE WITH DETAIL W-24.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
5. IF THERE IS A CONCRETE SIDEWALK / ASPHALT PATHWAY ALONG THE PROPERTY LINE, THE METER BOX SHALL BE INSTALLED INSIDE PRIVATE PROPERTY ADJACENT TO THE CONCRETE / ASPHALT.
6. TAPPING SADDLES:
   - FOR D.I.P. USE 1" DOUBLE STRAP TAP SADDLE 202B STYLE WITH CC4 OUTLET THREADS.
   - FOR C-900 PVC USE FORD 1" S-90 SERIES TAP SADDLE WITH AWWA THREADS.
7. ALL BRASS FITTING MATERIAL NOTED ABOVE FOR WATER SERVICES AND METER BOXES SHALL BE "NO LEAD" (-NL).
8. THE BACKFLOW PREVENTION DEVICE IS CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.
9. DOUBLE CHECK VALVE ASSEMBLIES MAY BE INSTALLED IN PITS, SEE CROSS CONNECTION DETAIL CC-6.
10. DOUBLE CHECK VALVE ASSEMBLIES ARE REQUIRED FOR THE FOLLOWING:
    - A WELL IS LOCATED ON THE PROPERTY.
    - IRRIGATION IS FROM AN ON-SITE OR OFF-SITE WELL.
    - IRRIGATION IS FROM REUSE WATER FROM A PIPE OR DISTRIBUTION SYSTEM WITH NO LAKE STORAGE.
11. REDUCED PRESSURE ZONE (RPZ) ARE REQUIRED FOR LAKE OR POND IRRIGATION (INCLUDING REUSE LAKES OR PONDS)
12. ALL MATERIAL EXCEPT METERS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

TYPE "B" SINGLE CONNECTION DETAIL FOR 1" METERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021

DRAWING No. W-21B



NOT TO SCALE

TYPICAL SAME-SIDE SERVICE TAP
(SEE DETAIL W-23 FOR ROAD CROSSING REQUIREMENTS)

NOTES:

1. SERVICE TUBING SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
4. TAPPING SADDLES:
   FOR D.I.P. USE 2" DOUBLE STRAP TAP SADDLE 202B STYLE WITH IP7 OUTLET THREADS.
   FOR C-900 PVC USE FORD 2" S-91 SERIES TAP SADDLE WITH IRON PIPE THREADS.
5. IF THERE IS A CONCRETE SIDEWALK / ASPHALT PATHWAY ALONG THE PROPERTY LINE, THE METER BOX SHALL BE INSTALLED INSIDE PRIVATE PROPERTY ADJACENT TO THE CONCRETE / ASPHALT.
6. ALL BRASS FITTING MATERIAL NOTED ABOVE FOR WATER SERVICES AND METER BOXES SHALL BE "NO LEAD" (-NL).
7. A REDUCED PRESSURE ZONE (RPZ) DEVICE IS REQUIRED FOR IRRIGATION WITH LAKE OR POND WATER (WILKINS MODEL 975XL OR APPROVED EQUAL), A DOUBLE CHECK VALVE OR RPZ MAY BE USED FOR IRRIGATION WITH REUSE WATER.
8. THE BACKFLOW PREVENTION DEVICE IS CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.
9. ALL MATERIAL EXCEPT METERS SHALL BE SUPPLIED AND INSTALLED BY CONTRACTOR.

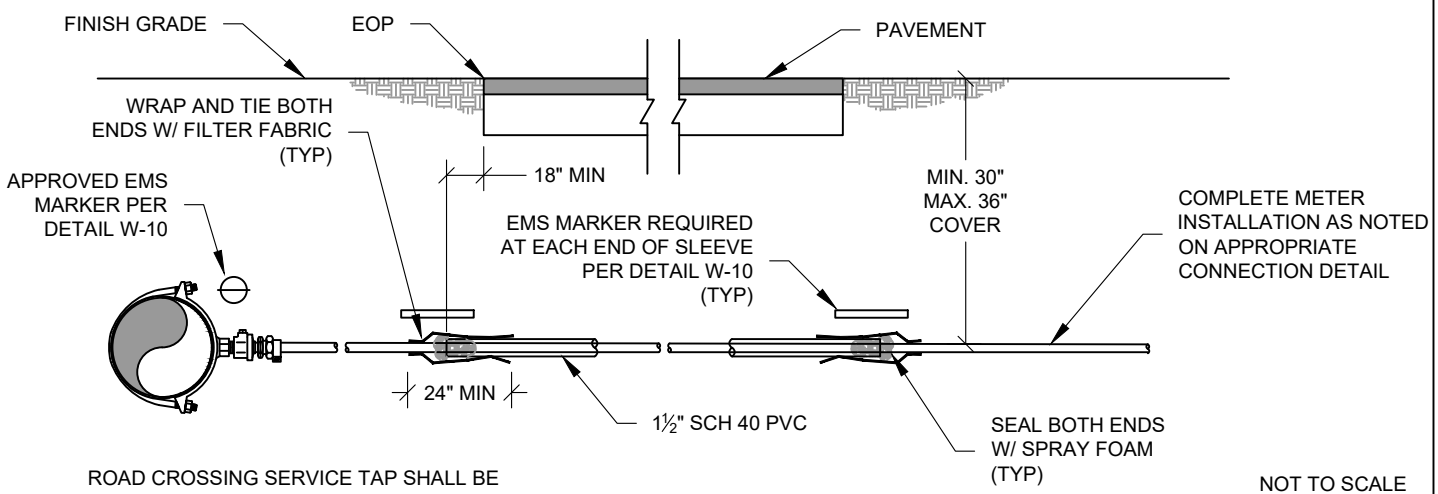
CONNECTION DETAIL FOR 1 ½" AND 2" METERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-22

ROAD CROSSING FOR ¾" AND 1" SERVICES



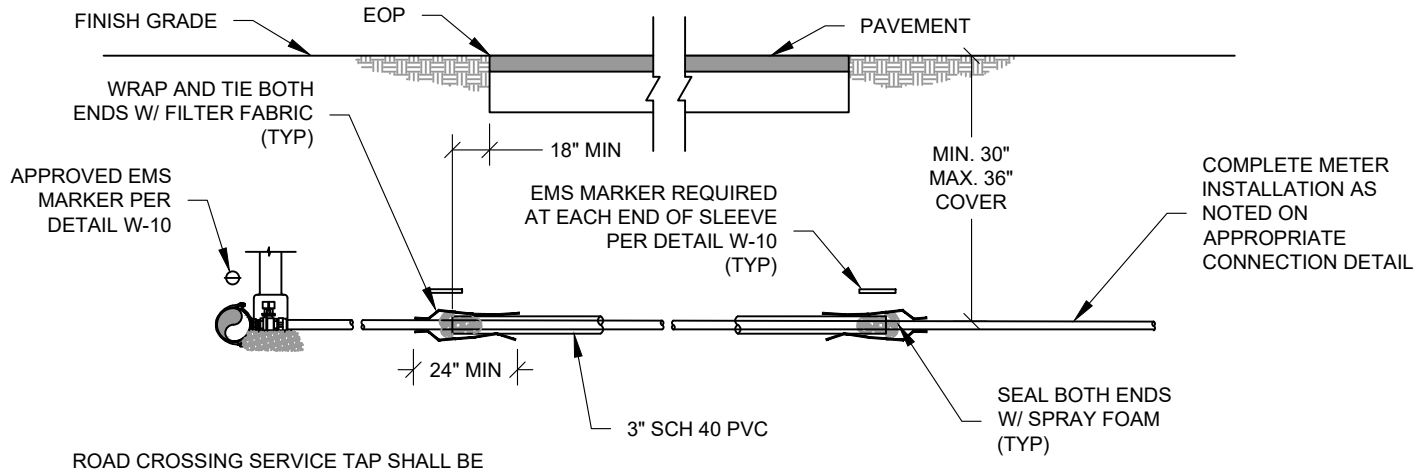
ROAD CROSSING SERVICE TAP SHALL BE ROTATED 90 DEGREE FROM PERPENDICULAR

NOT TO SCALE

NOTES:

1. SERVICE LINES SHALL BE 1" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ANY SERVICE LENGTH FROM THE MAIN TO THE METER IN EXCESS OF 50' SHALL BE 2" PE3408 HDPE POLY TUBING WITH A VALVE BOX AND CONCRETE COLLAR AS SHOWN AND INSTALLED IN ACCORDANCE WITH DETAIL W-24.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
5. TAPPING SADDLES:
   FOR D.I.P. USE 1" DOUBLE STRAP TAP SADDLE 202B STYLE WITH CC4 OUTLET THREADS.
   FOR C-900 PVC USE FORD 1" S-90 SERIES TAP SADDLE WITH AWWA THREADS.

ROAD CROSSING FOR 1 ½" AND 2" SERVICES



ROAD CROSSING SERVICE TAP SHALL BE ROTATED 90 DEGREE FROM PERPENDICULAR

NOT TO SCALE

NOTES:

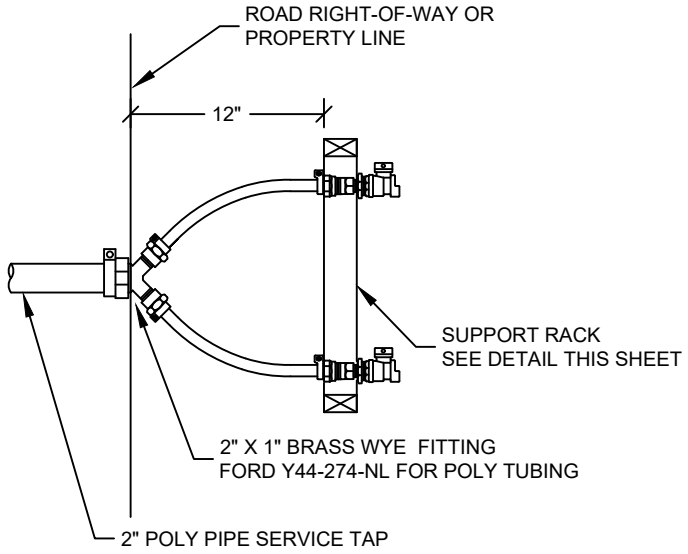
1. SERVICE LINES SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200 PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
2. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
3. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
4. TAPPING SADDLES:
   FOR D.I.P. USE 2" DOUBLE STRAP TAP SADDLE 202B STYLE WITH IP7 OUTLET THREADS.
   FOR C-900 PVC USE FORD 2" S-91 SERIES TAP SADDLE WITH 2" IPS THREADS.

WATER SERVICE ROAD CROSSING

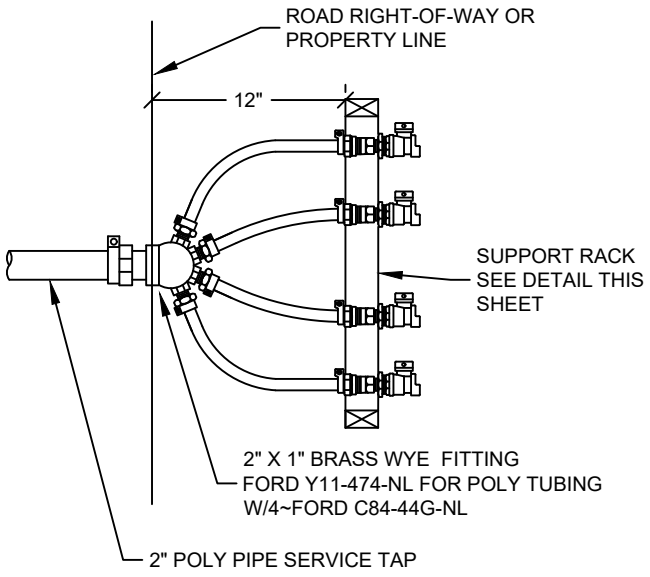
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 05/2018

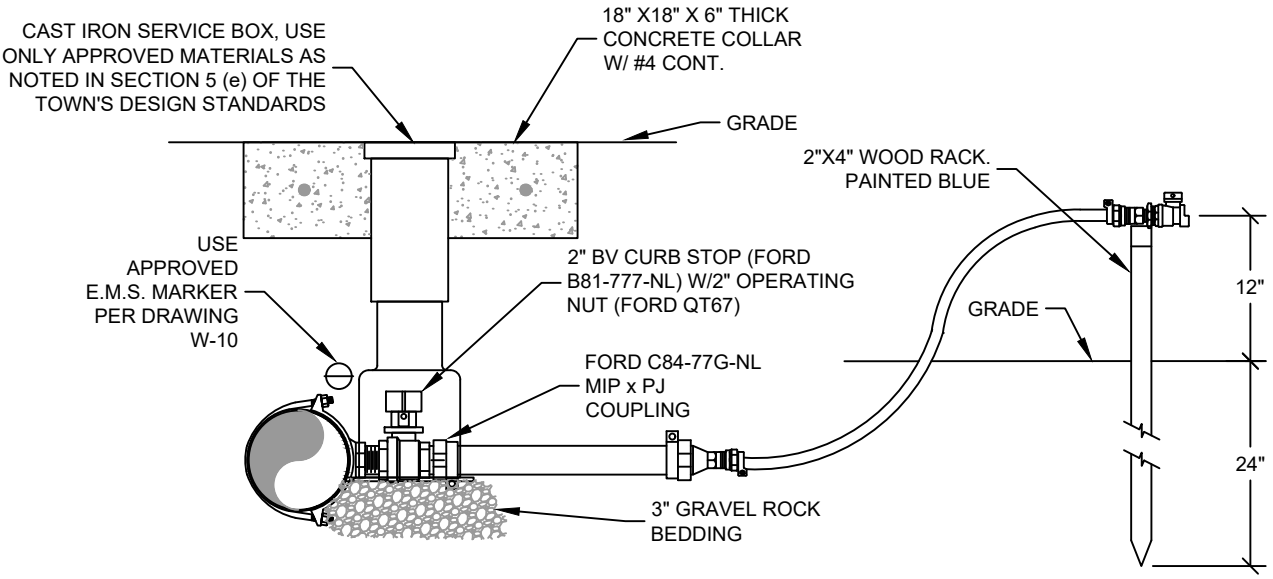
DRAWING No. W-23



DOUBLE METER SET



MULTI-METER SET



2" TAP SADDLE WITH MULTI-METER SET
(TYPICAL DETAIL)

NOTES:

1. ¾" MULTI-METER SETS SHALL BE MULTIPLE SINGLE GULF BOXES WITH GBV83-32-NL BRASS METER BALL VALVE AND C14-34G-NL ADAPTER.
2. SERVICE LINES SHALL BE 2" PE3408 HDPE POLY TUBING, ASTM D-2737 FOR 200PSI WITH PERMANENT SPECIFICATION MARKINGS. TUBING FITTINGS SHALL REQUIRE STAINLESS STEEL INSERTS.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. CONTRACTOR SHALL MAINTAIN A MINIMUM OF 36" UNOBSTRUCTED AREA AROUND THE OUTSIDE EDGE OF THE METER BOX.
5. TAPPING SADDLES:
   FOR D.I.P. USE 2" DOUBLE STRAP TAP SADDLE 202B STYLE WITH IP7 OUTLET THREADS.
   FOR C-900 PVC, USE FORD S-91 SERIES TAP SADDLE WITH 2" IPS THREADS.

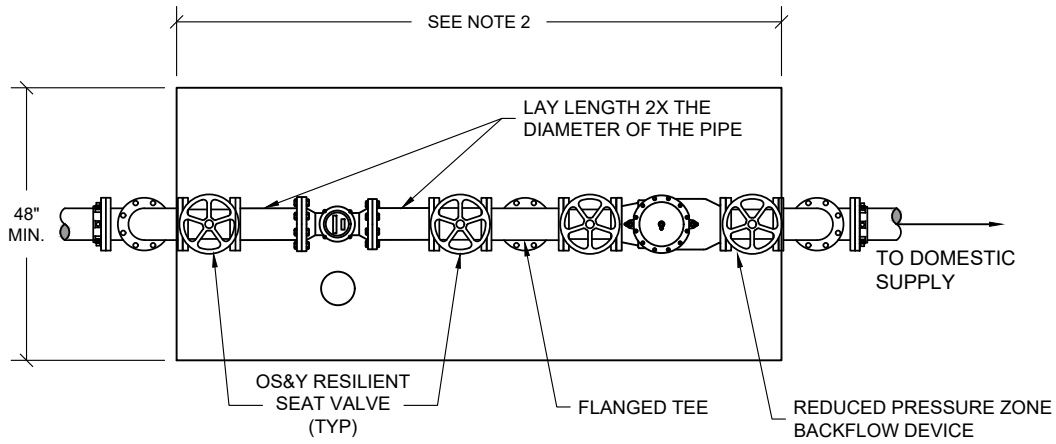
NOT TO SCALE

¾" MULTI-METER SET CONNECTION DETAIL

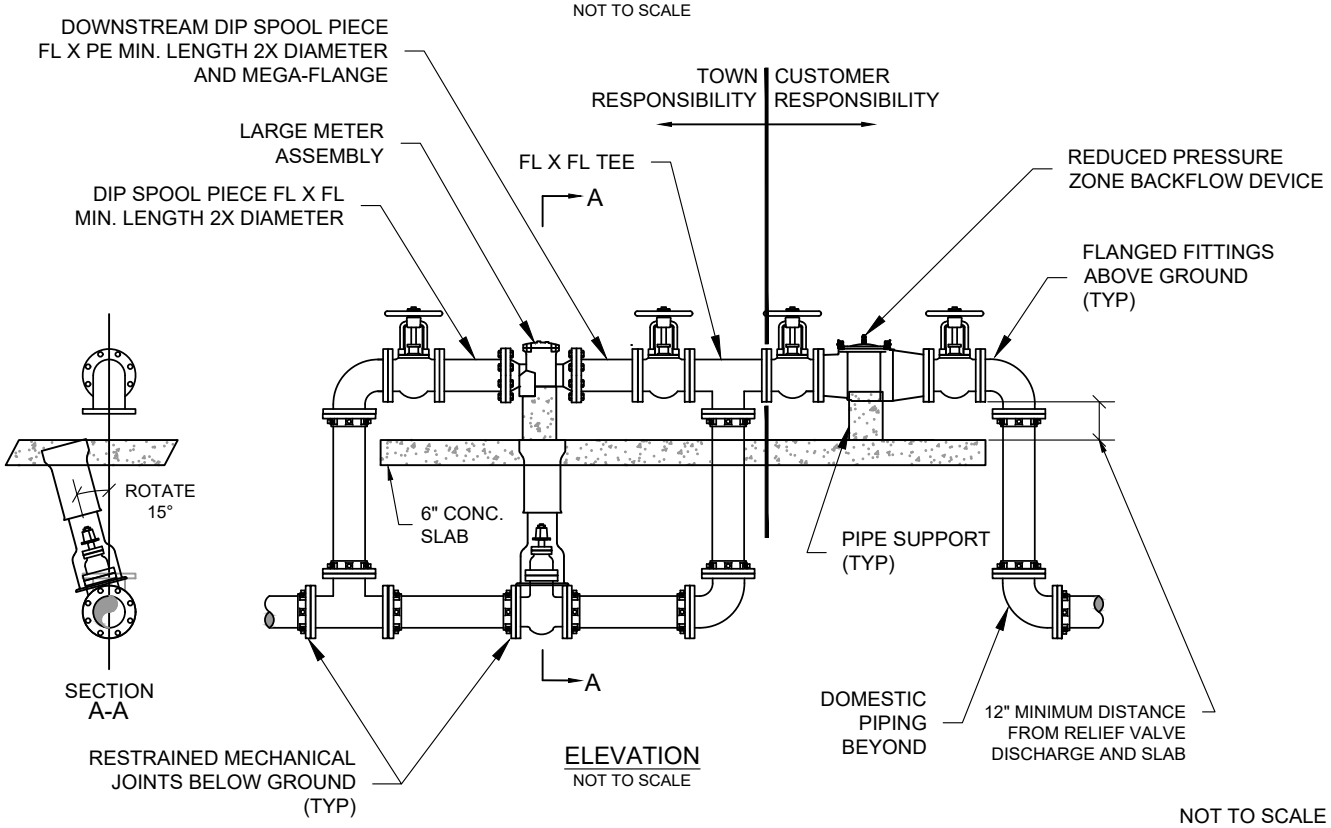
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-24



PLAN VIEW
NOT TO SCALE



ELEVATION
NOT TO SCALE

NOT TO SCALE

NOTES:

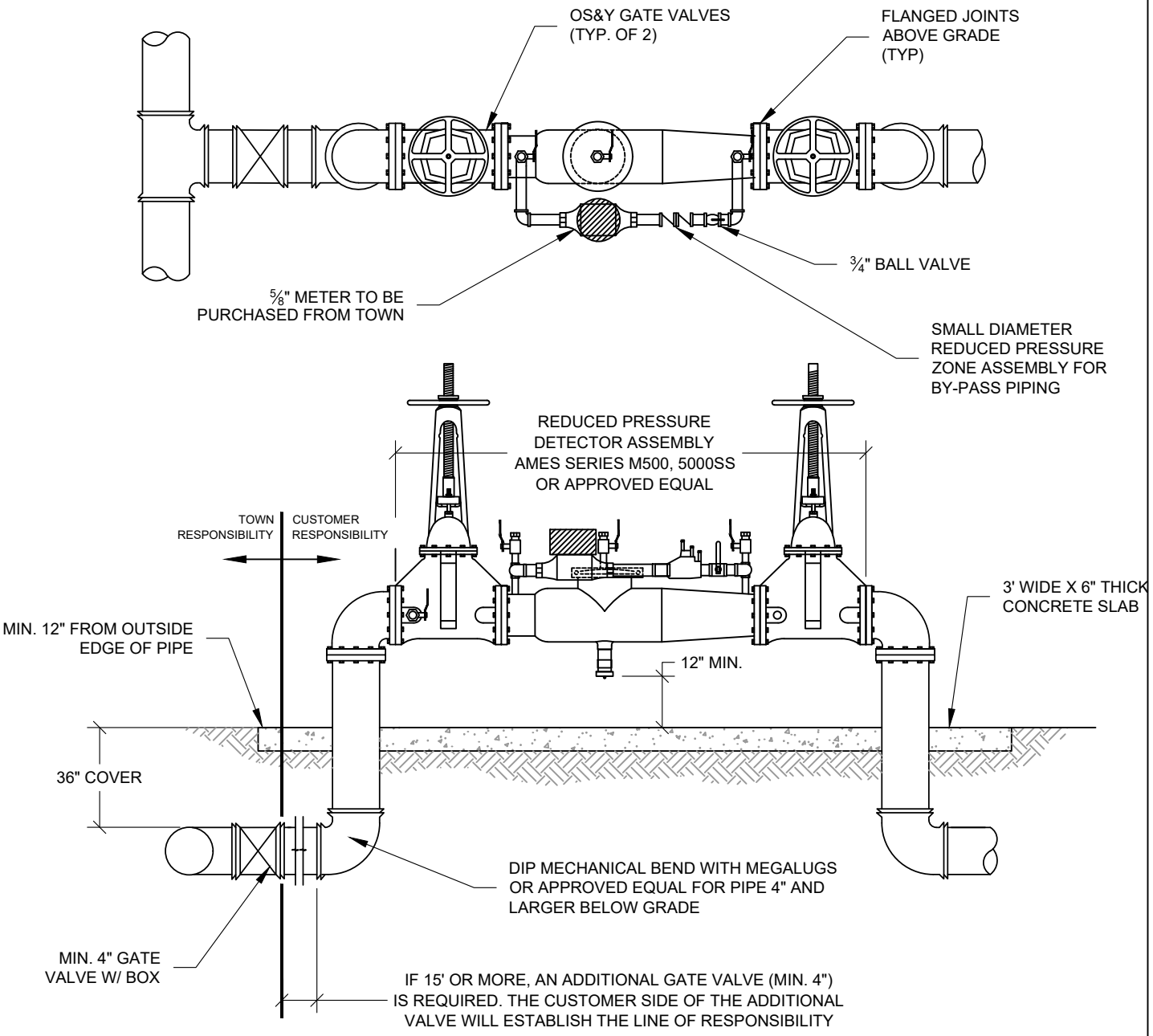
1. REFER TO PAGE 31 OF THE TOWN OF JUPITER UTILITIES GUIDE FOR DEVELOPMENT, DESIGN AND CONSTRUCTION STANDARDS, WATER AND STORMWATER.
2. CONCRETE SLAB LENGTH SHALL BE FROM OUTSIDE FACE OF VALVE FLANGE BEFORE FLOW METER AND AFTER BACKFLOW DEVICE.
3. ALL ABOVE GRADE PIPING SHALL BE PAINTED WITH SHERWIN WILLIAMS INDUSTRIAL ENAMEL COLOR PERENNIAL GREEN
4. FLOW METERS SHALL BE OCTAVE METERS BY MASTER METER.
5. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
6. ALL PIPING SHALL BE RESTRAINED PER TOWN OF JUPITER WATER UTILITIES STANDARDS.
7. PIPE AND METER SIZES SHALL BE DETERMINED BY ENGINEER OF RECORD AND FIRE MARSHAL.
8. ALL PIPING SHALL MATCH SIZE OF THE LARGE METER ASSEMBLY EXCEPT FOR 3" LARGE METER ASSEMBLIES WHICH SHALL HAVE 4" PIPING.
9. THE BACKFLOW PREVENTION DEVICE SHALL BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

DOMESTIC METER ASSEMBLY (3" - 12")

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-25



NOT TO SCALE

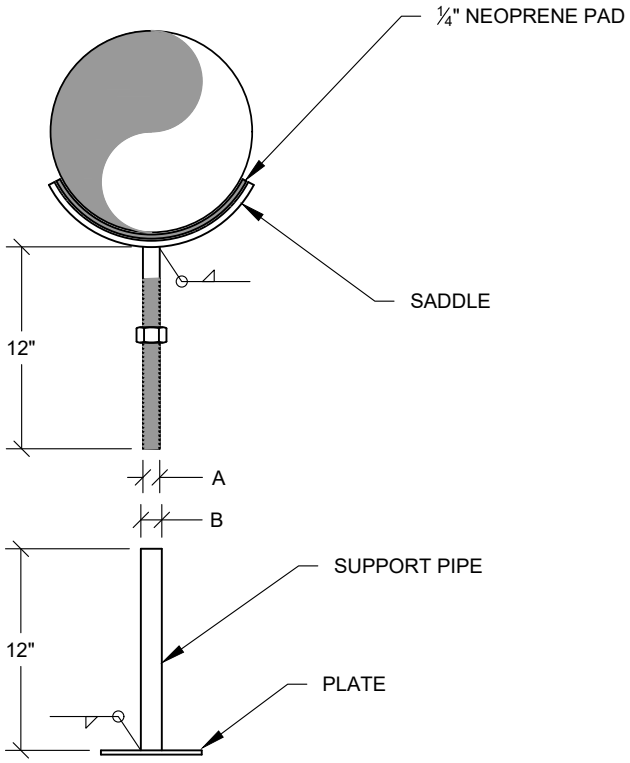
1. CONCRETE SLAB SHALL EXTEND A MINIMUM OF TWELVE INCHES (12") FROM THE OUTSIDE EDGES OF THE RISER PIPES.
2. ALL ABOVE GRADE PIPING SHALL BE PAINTED WITH SHERWIN WILLIAMS INDUSTRIAL ENAMEL, COLOR PERENNIAL GREEN.
3. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
4. ALL PIPING SHALL BE RESTRAINED PER TOWN OF JUPITER WATER UTILITIES STANDARDS.
5. PIPE AND METER SIZES SHALL BE DETERMINED BY THE ENGINEER OF RECORD AND FIRE MARSHAL.
6. TWO INCH (2") FIRE LINES WILL REQUIRE A 2 ½" RPDA.
7. THE BACKFLOW PREVENTION DEVICE SHALL BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

FIRE ONLY - REDUCED PRESSURE DETECTOR ASSEMBLY (2 ½" - 10")

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 09/2017

DRAWING No. W-27



PIPE SIZE	A	B	SADDLE	PLATE
3"	3/4"	1"	1/4" X 2"	4" X 4" X 1/4"
4"	3/4"	1"	1/4" X 2"	4" X 4" X 1/4"
6"	3/4"	1"	1/4" X 2"	4" X 4" X 1/4"
8"	3/4"	1"	1/4" X 2"	4" X 4" X 1/4"
10"	1"	1 1/4"	3/8" X 3"	6" X 6" X 3/8"
12"	1"	1 1/4"	3/8" X 3"	6" X 6" X 3/8"
14"	1"	1 1/4"	3/8" X 3"	6" X 6" X 3/8"
16"	1 1/4"	1 1/2"	1/2" X 3"	6" X 6" X 1/2"
18"	1 1/4"	1 1/2"	1/2" X 3"	6" X 6" X 1/2"

NOT TO SCALE

NOTES:

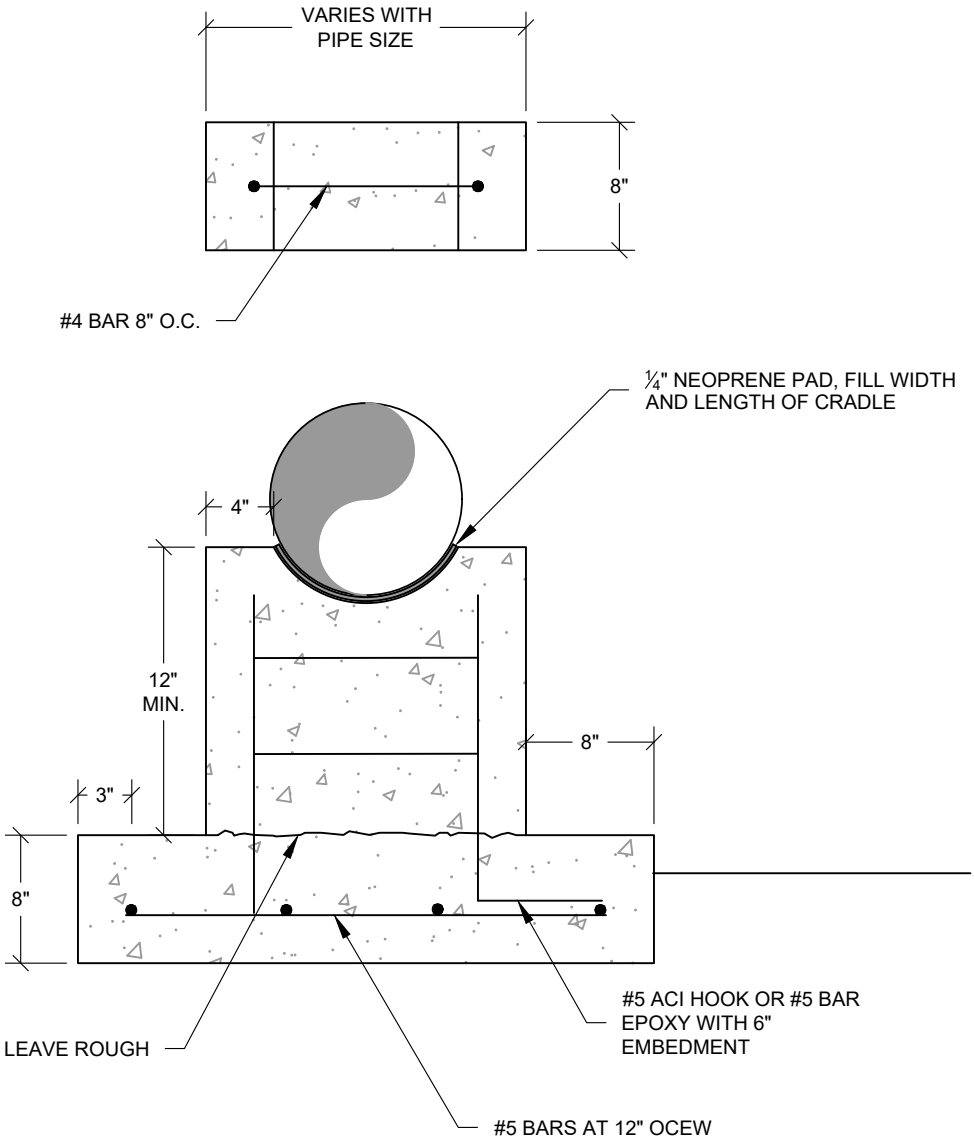
1. PIPE SABBLE, SUPPORT PIPE AND SUPPORT PLATE SHALL BE 304 STAINLESS STEEL. THREAD AND NUT AND WASHER SHALL BE 18/8 STAINLESS, UNLESS NOTED OTHERWISE.
2. SADDLE SUPPORT SHALL BE LINED WITH 1/4" NEOPRENE RUBBER, FULL WIDTH AND LENGTH OF SADDLE

STEEL PIPE SUPPORT

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. W-28



NOT TO SCALE

NOTES:

1. COMPACT SOIL UNDER CONCRETE PAD OR SLAB TO NOT LESS THAN 98% MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 SPECIFICATIONS.
2. CONCRETE SHALL BE 3000 PSI (F'c = 3000 PSI)
3. CONTRACTOR SHALL PROVIDE A SCALED DRAWING SHOWING LOCATION OF PIPE SUPPORTS, DIMENSIONS OF SLAB AND SUPPORT TO THE TOWN OF JUPITER UTILITIES PRIOR TO CONSTRUCTION OF SLABS AND SUPPORTS.
4. CONCRETE COVERAGE SHALL BE 3" WHEN CONCRETE IS DIRECTLY AGAINST SOIL AND 2" WHEN CONCRETE IS EXPOSED TO WEATHER. ALL CORNERS SHALL HAVE A ¾" CHAMFER.
5. REINFORCING STEEL SHALL BE DEFORMED, NEW BILLET STEEL, ASTM A-615 GRADE 60.

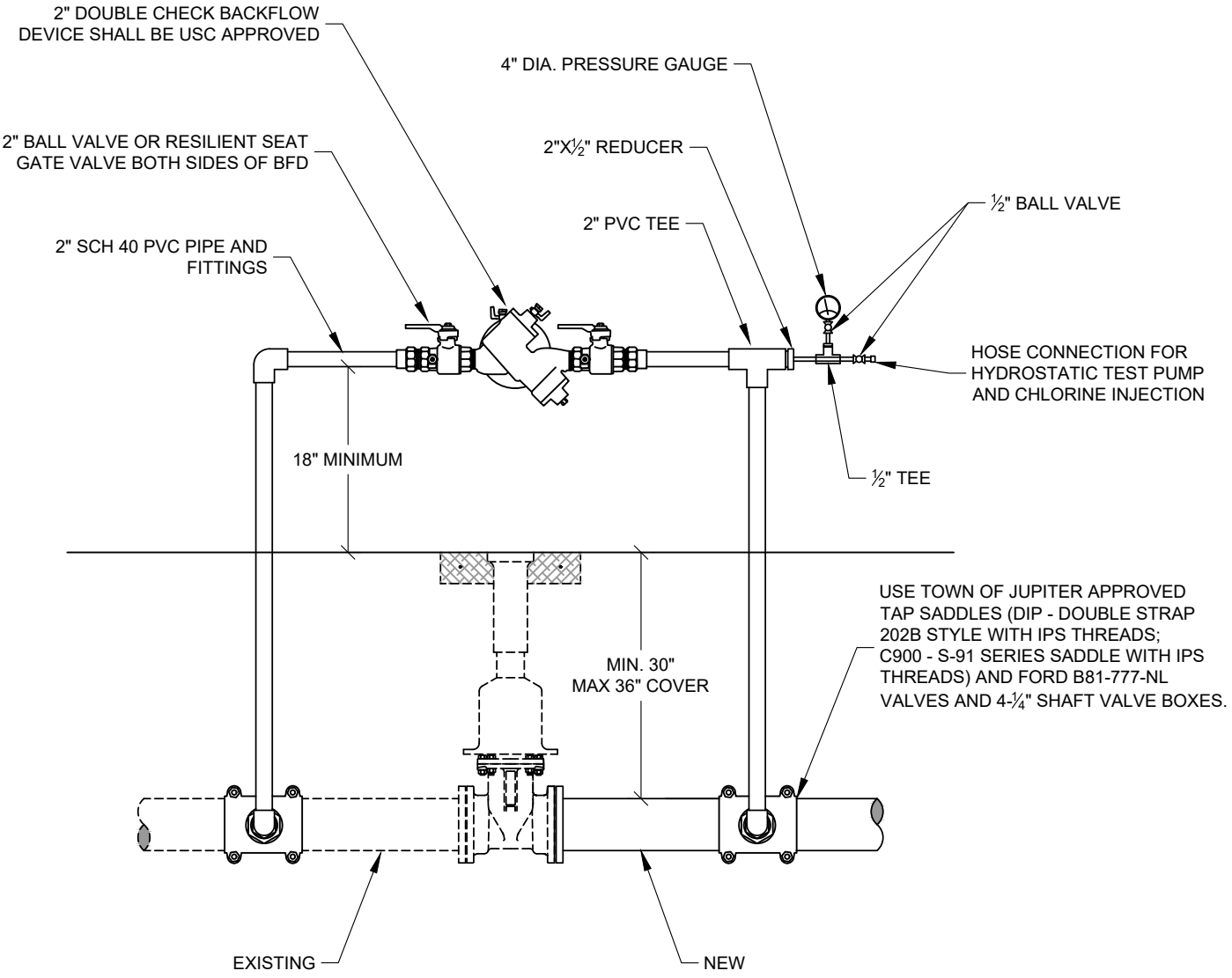
CONCRETE PIPE SUPPORT

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. W-29



NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL VERIFY PIPE AND VALVE RESTRAINT CONDITIONS OF EXISTING SYSTEM MEET TOWN OF JUPITER STANDARDS, AND ALL VALVES OPERATE PROPERLY PRIOR TO CONNECTING NEW PIPE.
2. CONTRACTOR SHALL REMOVE EXISTING BLOW-OFF AND/OR MJ PLUG AND DISPOSE OF PROPERLY.
3. CONTRACTOR SHALL CONNECT TO EXISTING VALVE AND INSTALL NEW 2" TAP SADDLE, BY-PASS PIPING AND BACKFLOW DEVICE AS SHOWN. A NEARBY HYDRANT OR SERVICE TAP MAY ALSO BE UTILIZED AS A POTABLE WATER SOURCE.
4. LINE FLUSHING AND PRESSURE TESTING SHALL BE PERFORMED IN THE PRESENCE OF A TOWN OF JUPITER WATER UTILITY INSPECTOR, AND SHALL MEET ALL LOCAL AND/OR STATE REGULATORY SPECIFICATIONS.
5. DISINFECTION AND BACTERIOLOGICAL CLEARANCE OF THE NEW WATER LINE SHALL BE IN ACCORDANCE WITH TOWN OF JUPITER SPECIFICATIONS, OR THOSE AGENCIES HAVING JURISDICTION.
6. UPON CLEARANCE AND ACCEPTANCE OF THE NEW WATER LINE, THE CONTRACTOR SHALL CLOSE THE 2" TAP SADDLE BALL VALVES AND CAP WITH A BRASS PLUG. ALL BYPASS ASSEMBLIES AND ROADWAY BOXES SHALL BE REMOVED PRIOR TO BACKFILLING AND GRADING AREA.

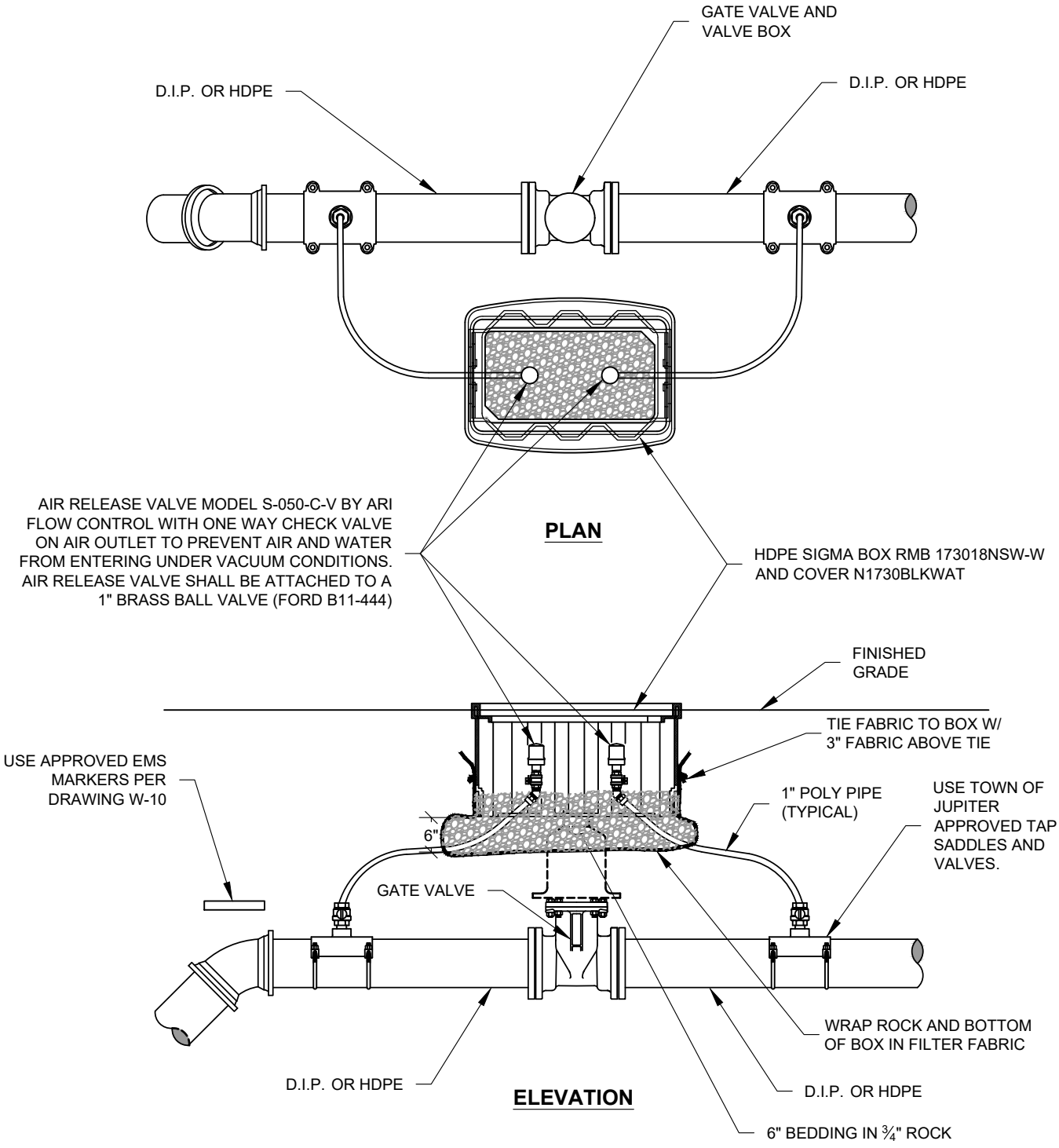
WATER MAIN JUMPER

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 09/2018

DRAWING No. W-30



NOTES:

1. INSTALL ALL GATE VALVES, TAP SADDLES, AIR RELEASES EMS MARKERS, VAVLE AND GOLF BOXES PER TOWN OF JUPITER CONSTRUCTION STANDARDS.
2. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.

NOT TO SCALE

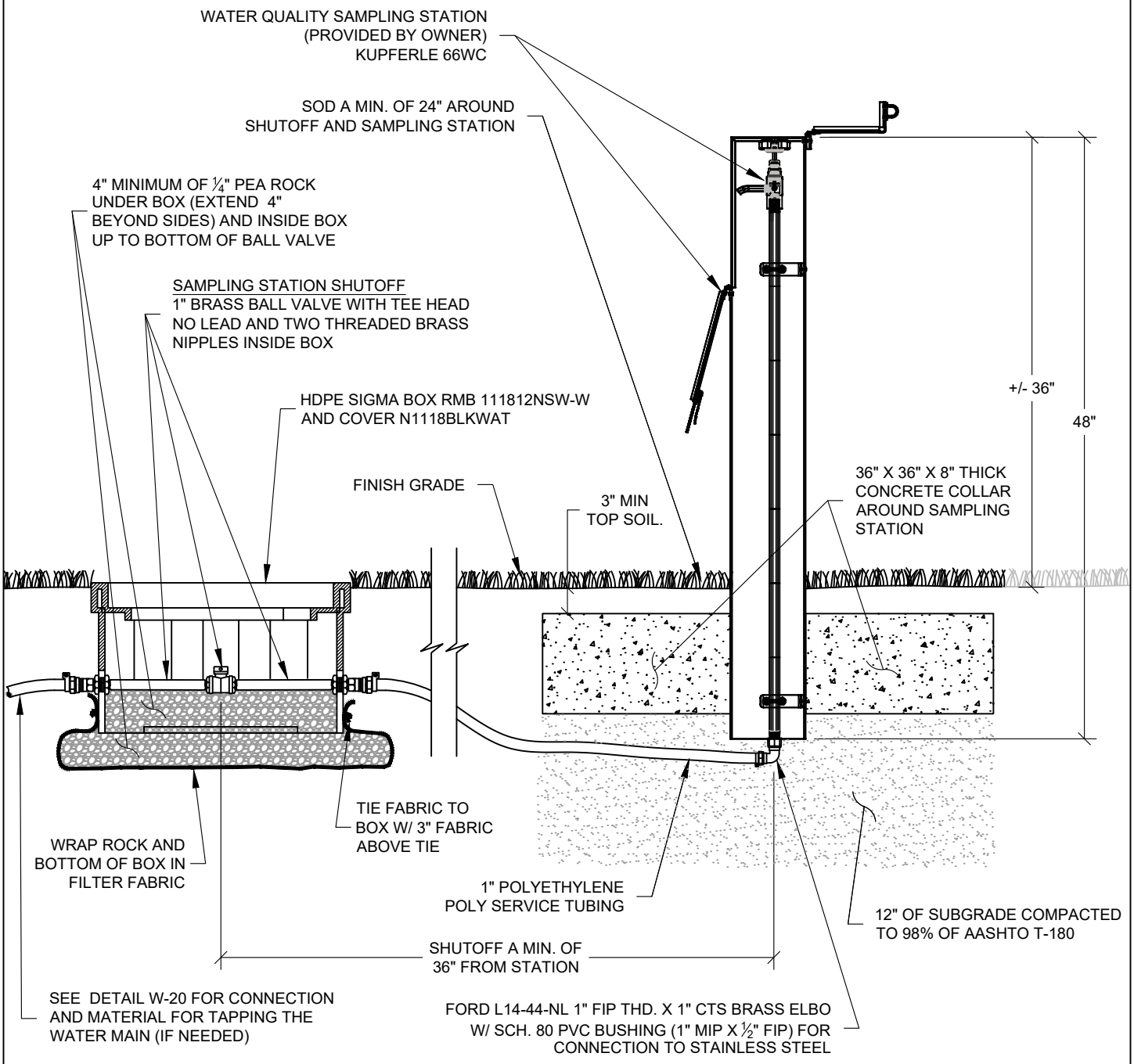
SUBAQUEOUS CROSSING TESTING AND AIR RELEASE PIT

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. W-31



NOT TO SCALE

NOTES:

1. CONTRACTOR SHALL COORDINATE WITH TOWN OF JUPITER STAFF FOR THE FOLLOWING:
   - LOCATION OF THE WATER DISTRIBUTION SYSTEM
   - WATER MAIN CONNECTION AND MATERIAL (IF NECESSARY)
   - LOCATION OF WATER SERVICE SHUTOFF VALVE AND BOX
   - LOCATION AND ORIENTATION OF THE SAMPLING STATION
   - RESTORATION OF THE SITE
2. CONCRETE COLLAR MIX SHALL MEET A MINIMUM COMPRESSIVE STRENGTH OF 3,000 PSI IN 28 DAYS.
3. ANY HARDSCAPE (CONCRETE/ASPHALT/PAVERS) REPLACEMENT SHALL BE EXISTING OR BETTER CONDITION PRIOR TO CONSTRUCTION.
4. SOD REPLACEMENT SHALL BE LIKE KIND AS EXISTED PRIOR TO SAMPLING STATION INSTALLATION.
5. ALL BRASS FITTING MATERIAL NOTED ABOVE OR PROVIDED FOR THIS INSTALLATION SHALL BE "NO LEAD" (-NL).

WATER QUALITY SAMPLING STATION

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

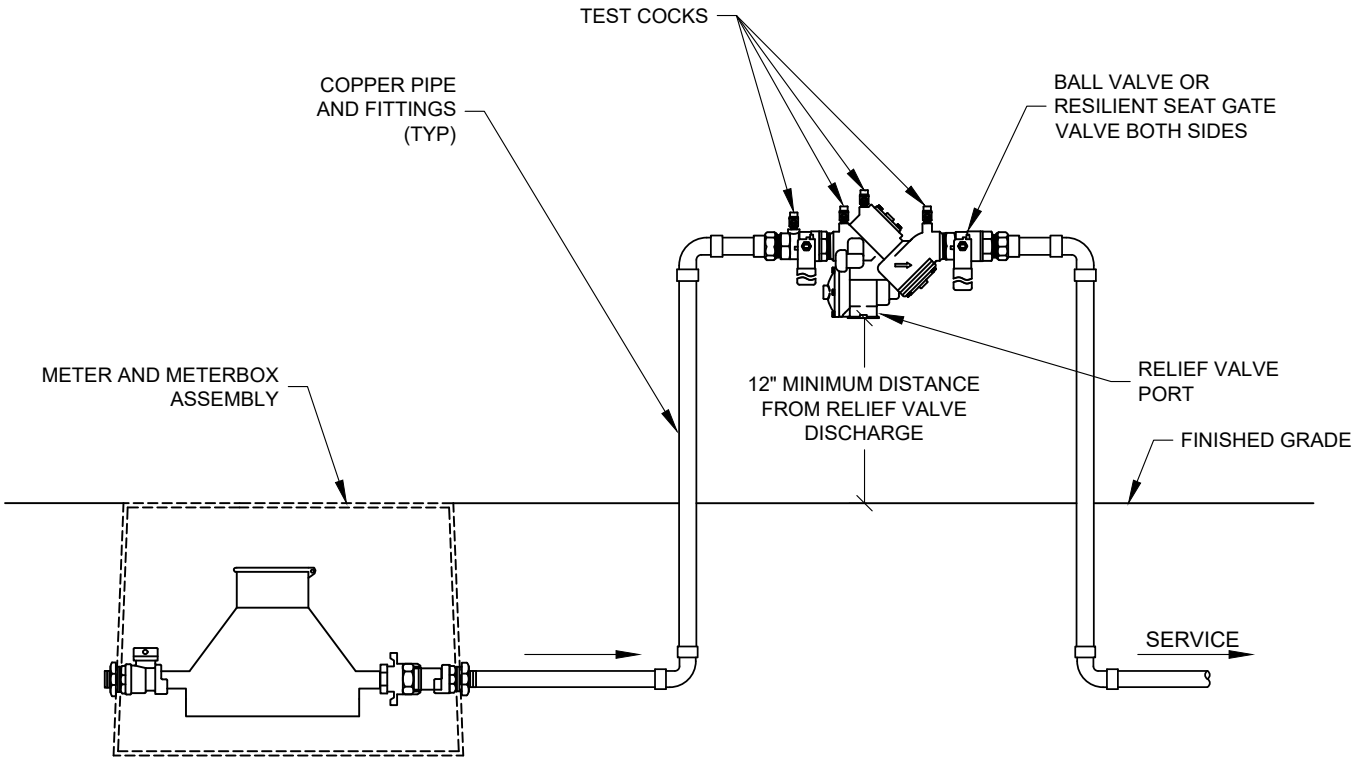
DATE APPROVED: 12/2021

DRAWING No. W-32

TOWN OF JUPITER UTILITIES

APPENDIX B

REDUCED PRESSURE ZONE (RPZ) BACKFLOW PREVENTION ASSEMBLY FOR ¾", 1", 1-½", AND 2" INSTALLATIONS



NOT TO SCALE

NOTES:

1. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
2. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

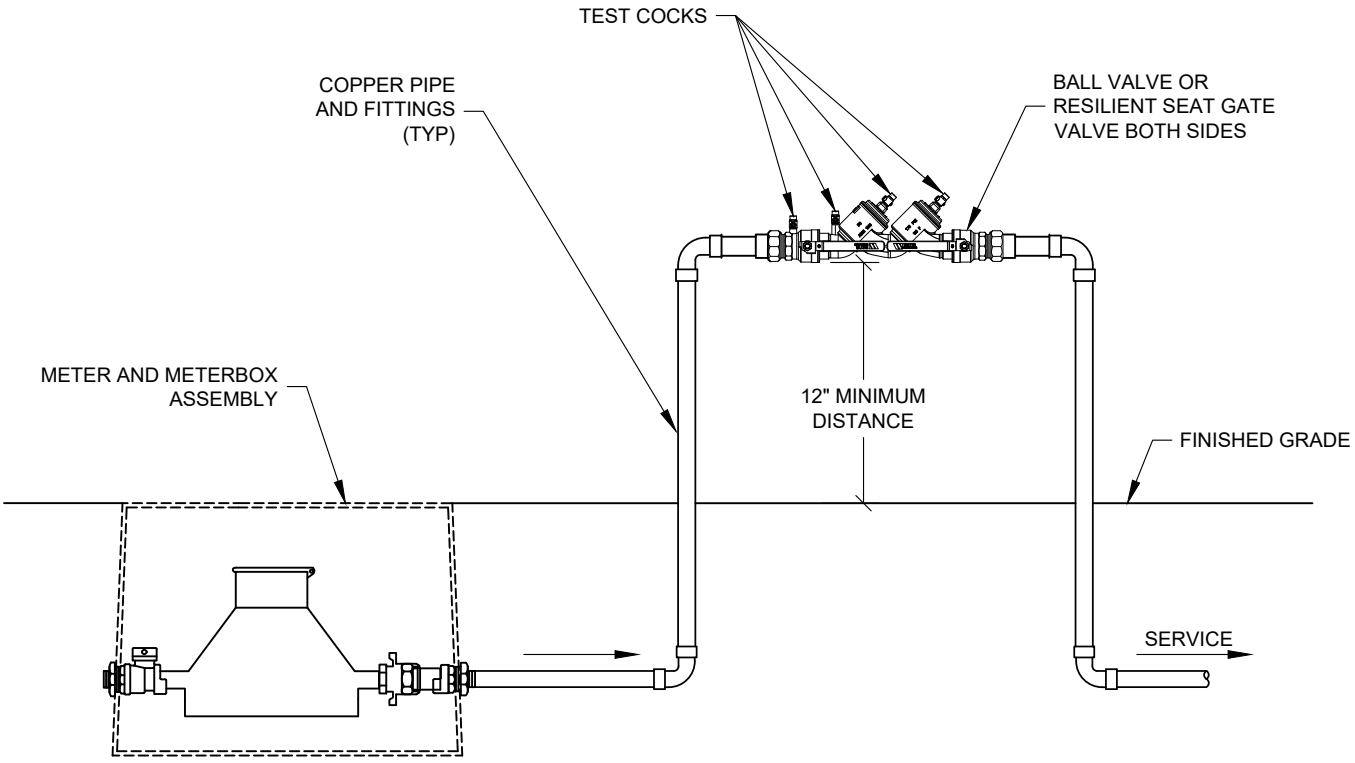
REDUCED PRESSURE ZONE BACKFLOW PREVENTION ASSEMBLY

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021

DRAWING No. CC-1

DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY FOR ¾", 1", 1-½", AND 2" INSTALLATIONS



NOT TO SCALE

NOTES:

1. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
2. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

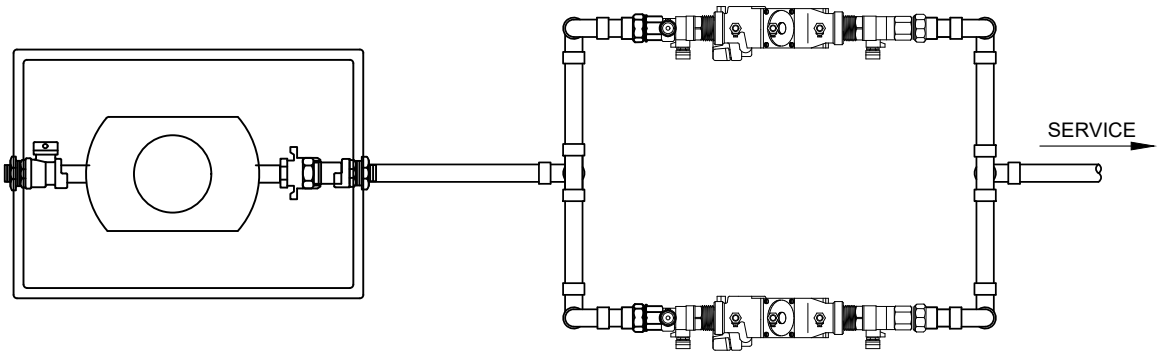
DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

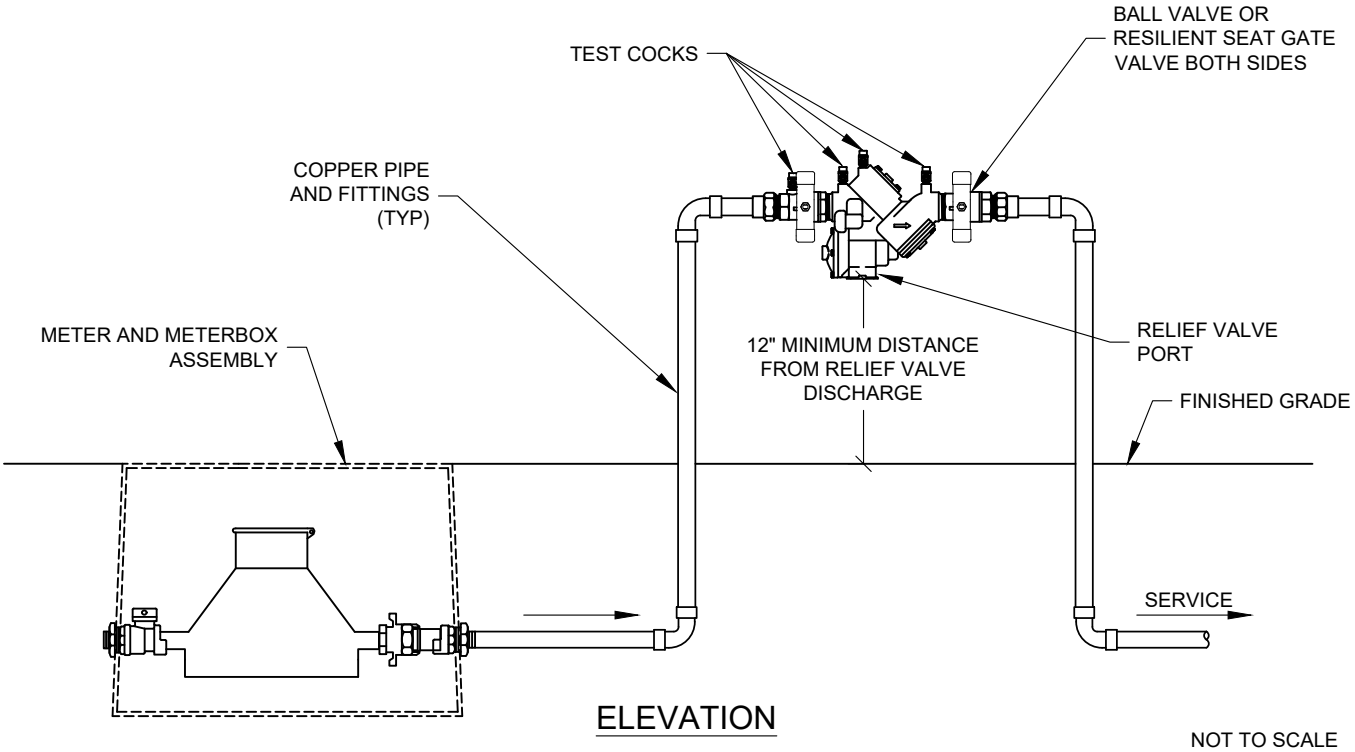
DATE APPROVED: 04/2021

DRAWING No. CC-2

REDUCED PRESSURE ZONE
¾", 1", 1-½", AND 2"
PARALLEL INSTALLATIONS



PLAN



ELEVATION

NOT TO SCALE

NOTES:

1. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
2. PARALLEL BACKFLOW DEVICE INSTALLATIONS SHALL BE USED WHERE CONTINUOUS FLOW IS REQUIRED DURING SERVICING AND/OR TESTING, OR WHERE A GREATER CAPACITY THAN A SINGLE UNIT IS NECESSARY.
3. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

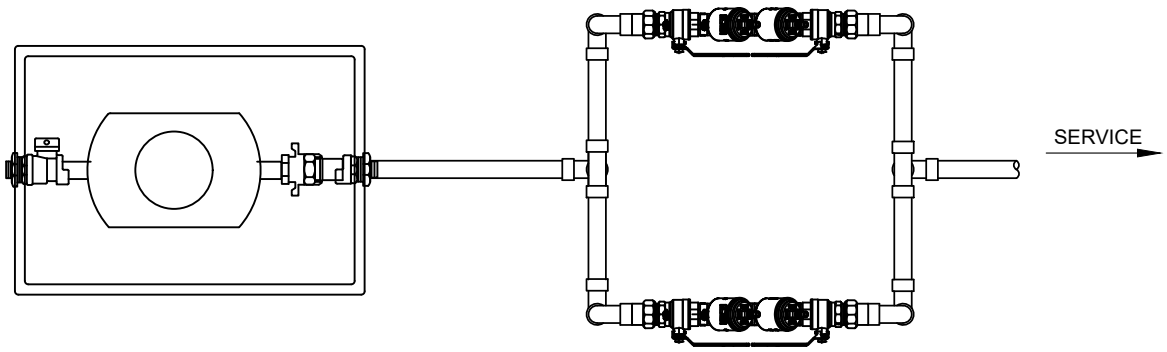
PARALLEL REDUCED PRESSURE ZONE BACKFLOW PREVENTION ASSEMBLIES

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

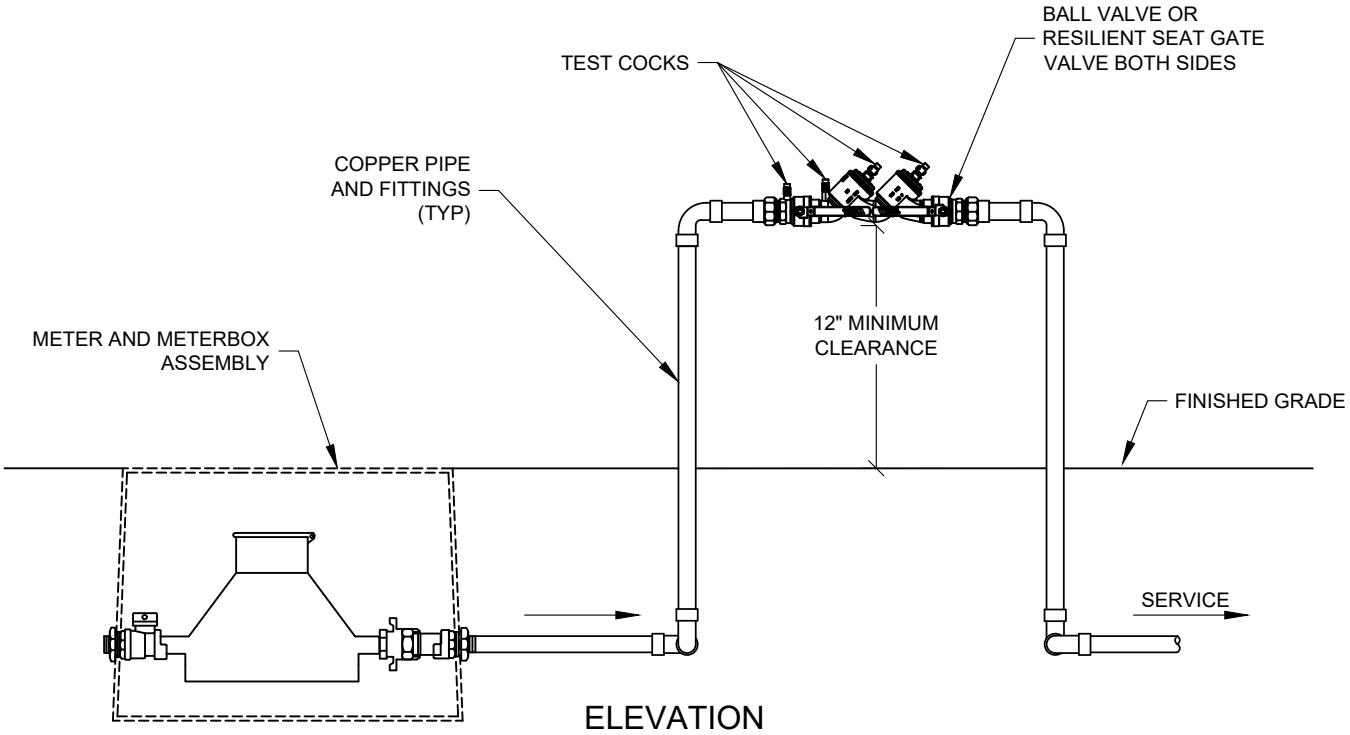
DATE APPROVED: 04/2021

DRAWING No. CC-3

DOUBLE CHECK VALVE BACKFLOW ASSEMBLY
¾", 1", 1-½", AND 2"
PARALLEL INSTALLATIONS



PLAN



ELEVATION

NOT TO SCALE

NOTES:

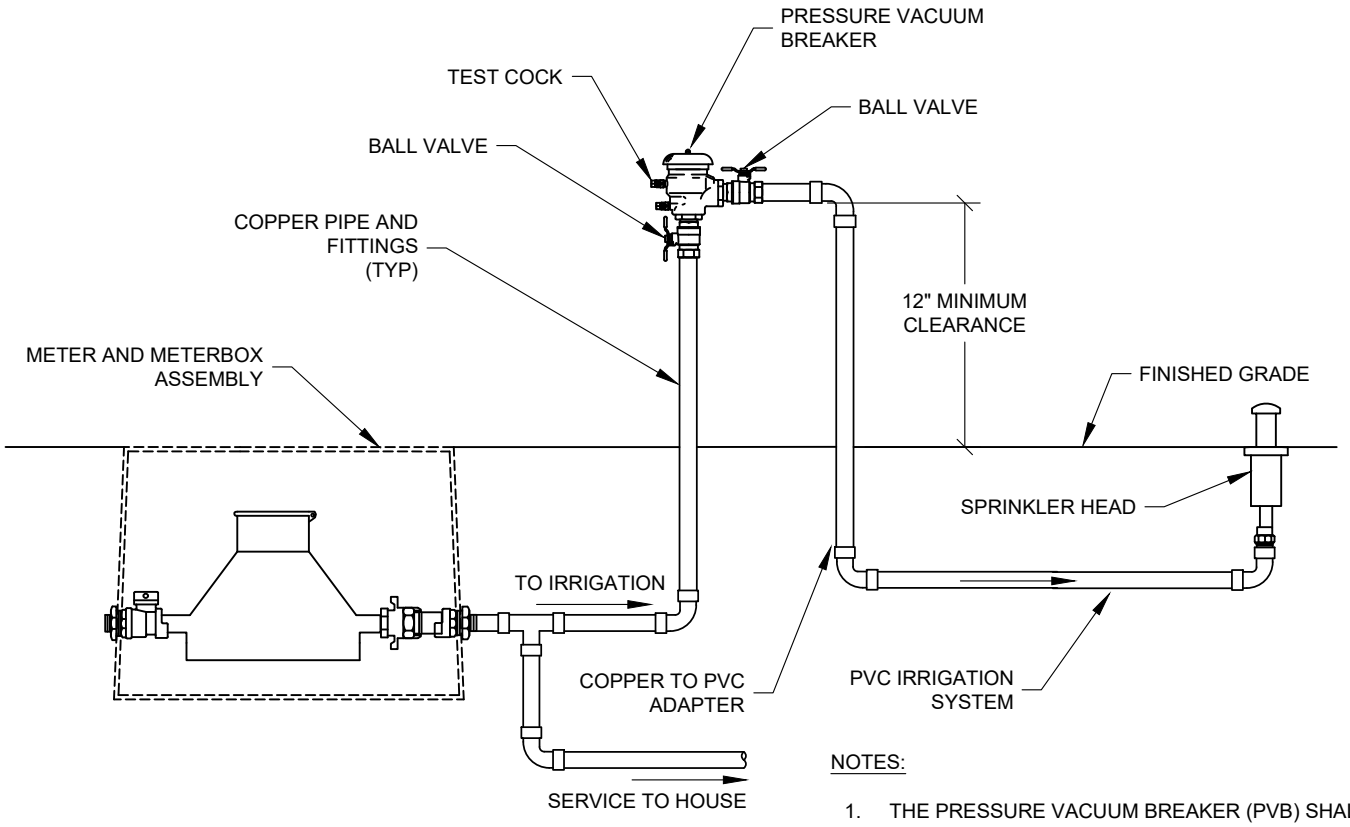
1. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
2. PARALLEL BACKFLOW DEVICE INSTALLATIONS SHALL BE USED WHERE CONTINUOUS FLOW IS REQUIRED DURING SERVICING AND/OR TESTING, OR WHERE A GREATER CAPACITY THAN A SINGLE UNIT IS NECESSARY.
3. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

PARALLEL DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLIES

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

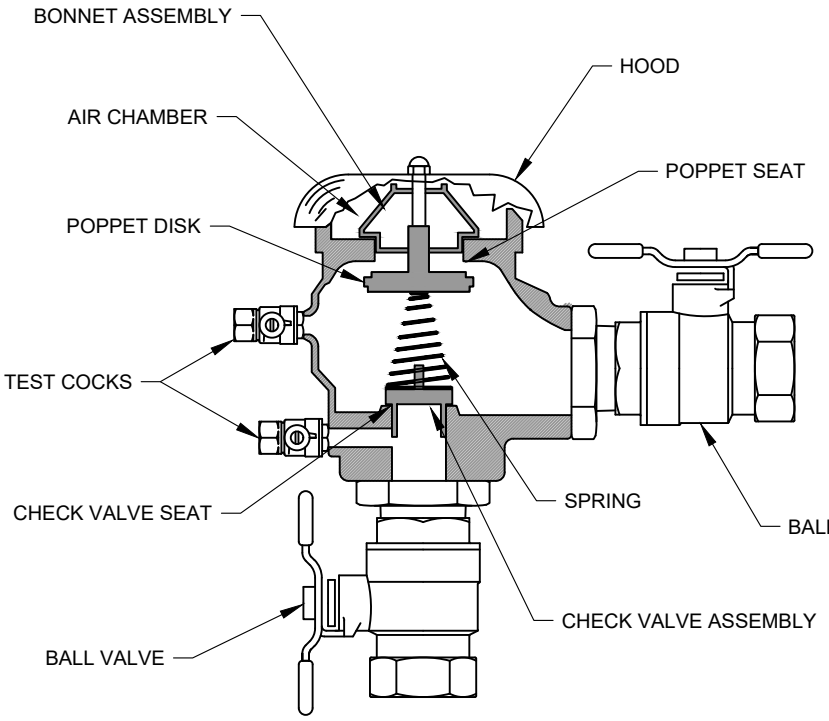
DATE APPROVED: 04/2021

DRAWING No. CC-4



NOTES:

1. THE PRESSURE VACUUM BREAKER (PVB) SHALL BE INSTALLED ONLY ON SYSTEMS SUBJECT TO NO BACK PRESSURE.
2. THE PRESSURE VACUUM BREAKER SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION FOR SERVICE AND INSPECTION.
3. THE PRESSURE VACUUM BREAKER SHALL BE INSTALLED IN THE MAIN LINE TO THE IRRIGATION SYSTEM, NOT LESS THAN 12 INCHES ABOVE THE HIGHEST SPRINKLER HEAD.
4. ALL MATERIAL SHALL BE APPROVED BY THE TOWN OF JUPITER WATER UTILITIES PRIOR TO INSTALLATION.
5. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
6. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.



NOT TO SCALE

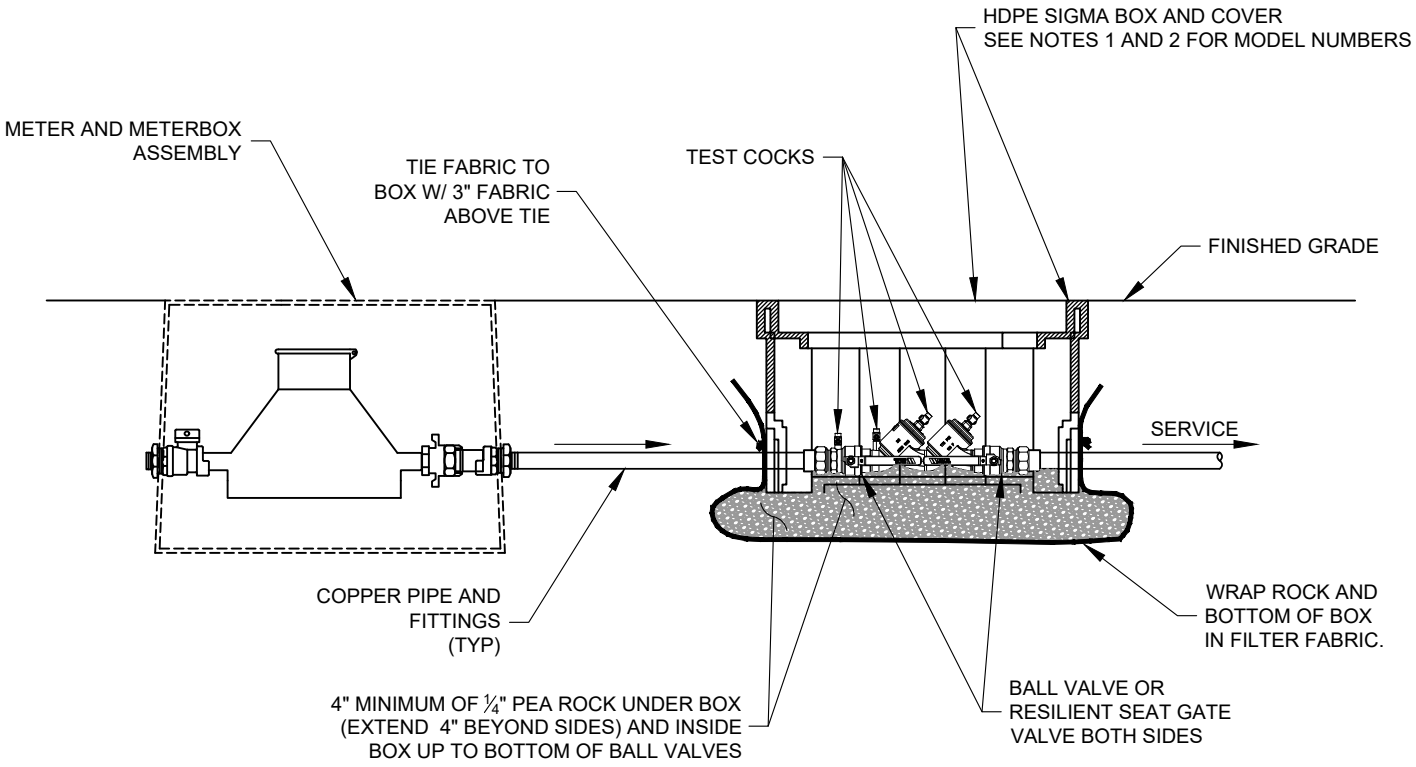
PRESSURE TYPE VACUUM BREAKER FOR POTABLE IRRIGATION

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 04/2021

DRAWING No. CC-5

DOUBLE CHECK VALVE BACKFLOW PREVENTION ASSEMBLY FOR ¾", 1", 1-½", AND 2" PIT INSTALLATIONS



NOT TO SCALE

NOTES:

1. FOR ¾" AND 1" PIT INSTALLATIONS PROVIDE A HDPE SIGMA BOX RMB 111812NSW-W AND COVER N1118BLKWAT
2. FOR 1-½" AND 2" PIT INSTALLATIONS PROVIDE A HDPE SIGMA BOX RMB 173012NSW-W AND COVER N1730BLKWAT
3. ALL TEST COCKS SHALL BE PROTECTED WITH DUST CAPS OR COVERS.
4. TO BE USED WHEN RESIDENTIAL RECLAIMED WATER IS AVAILABLE TO LOT.
5. ALL BRASS FITTING MATERIAL INSTALLED SHALL CONTAIN NO LEAD IN ACCORDANCE WITH THE CURRENT DRINKING WATER STANDARDS.
6. THE BACKFLOW PREVENTION DEVICE MUST BE CERTIFIED BY THE UNIVERSITY OF SOUTHERN CALIFORNIA HYDRAULIC RESEARCH.

DOUBLE CHECK VALVE BACKFLOW PREVENTION PIT INSTALLATION

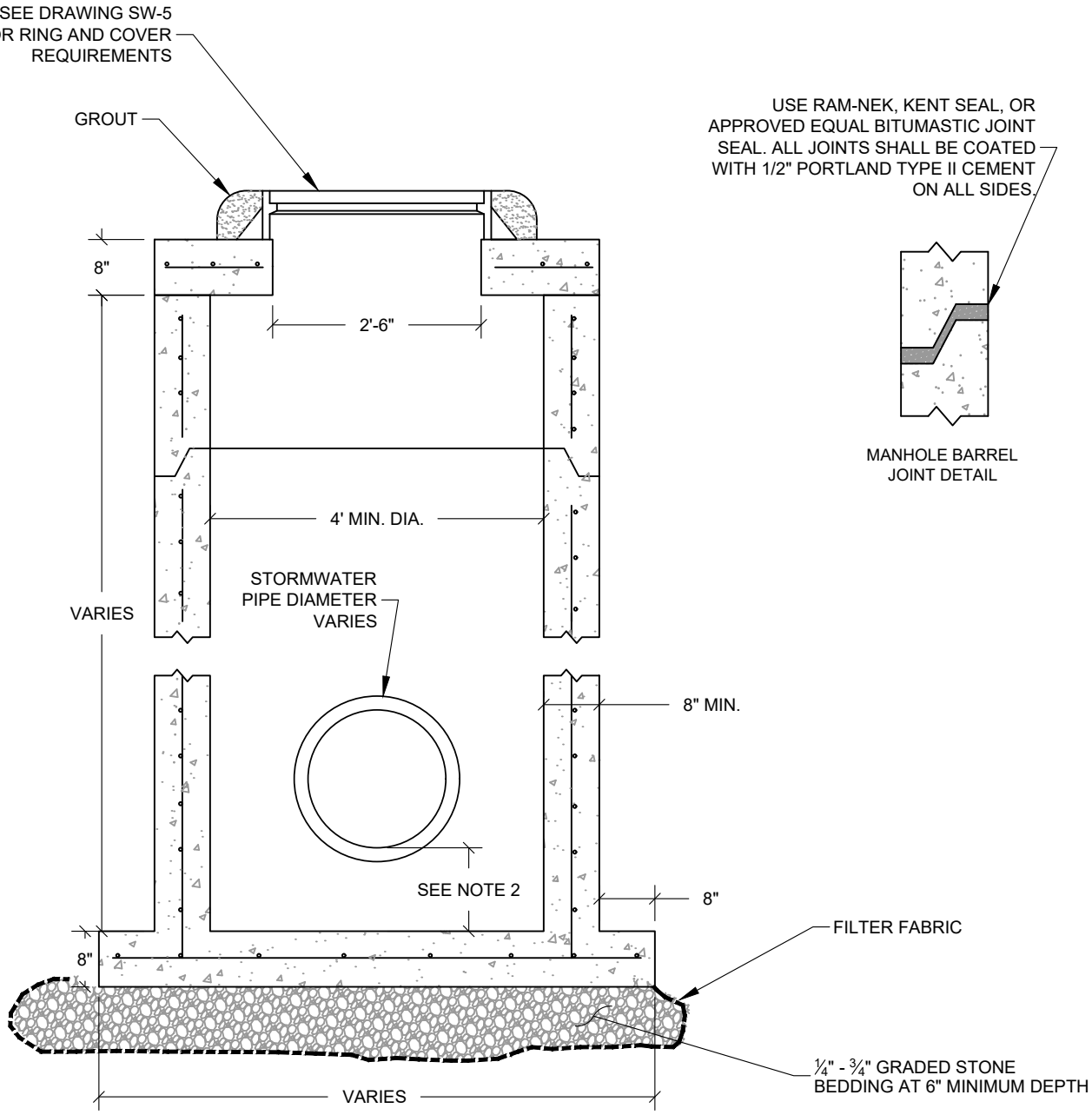
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

DRAWING No. CC-6

TOWN OF JUPITER UTILITIES

APPENDIX C



NOT TO SCALE

NOTES

1. MANHOLES SHALL CONFORM TO ASTM C478 (F'c=4,000 PSI CONCRETE).
2. PIPE PENETRATIONS ON NEW STRUCTURES SHALL BE CAST AT A MINIMUM OF12 INCHES ABOVE THE MANHOLE BOTTOM. OPENINGS REQUIRED ON EXISTING MANHOLES SHALL BE CORED WITH APPROVED CORING EQUIPMENT.
3. ANNULUS AREA BETWEEN PIPE AND MANHOLE SHALL BE COMPLETELY FILLED WITH CLAY BRICK AND TYPE II PORTLAND CEMENT.
4. MANHOLE BASE AND WALL SHALL BE A MINIMUM OF 8 INCHES THICK CONCRETE WITH #5 RE-BAR AT 12" O.C.E.W. BASE WALLS SHALL BE CAST WITH THE BOTTOM SLAB.
5. REFER TO FDOT SPECIFICATIONS FOR ROADWAY AND TRAFFIC DESIGN, LATEST EDITION FOR ADDITIONAL MANHOLE DESIGN INFORMATION.
6. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.

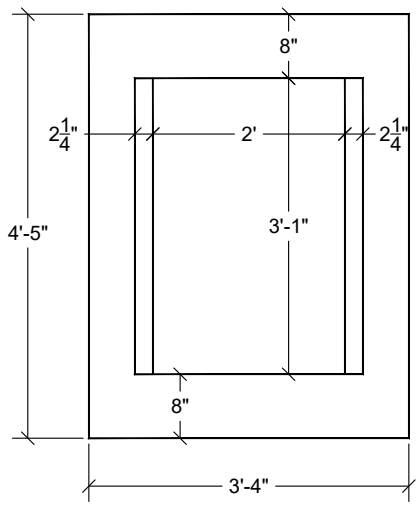
NOT TO SCALE

STORM SEWER PRECAST MANHOLE

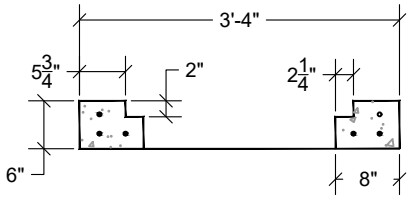
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. SW-1



PLAN

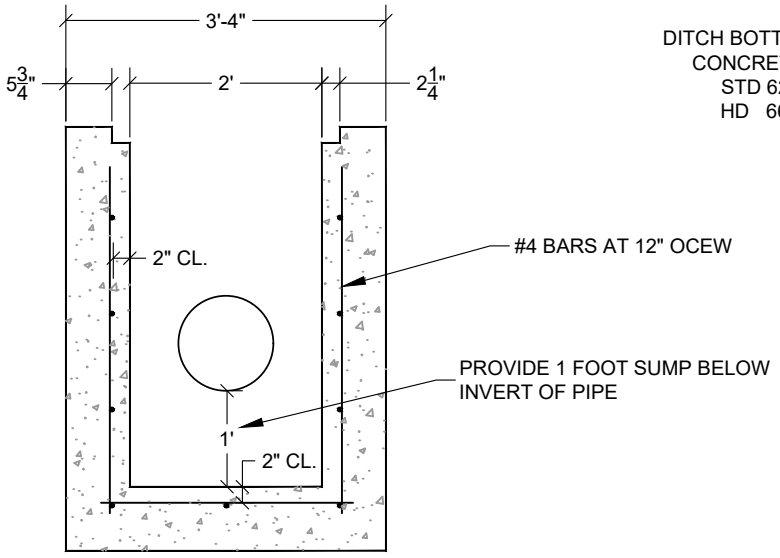


COLLAR SECTION

CAST IRON U.S. FOUNDRY FRAME/GRATE:
DIRECT TRAFFIC AREAS
STD 4155-6210
HD 4155-6212

DITCH BOTTOM INLETS FOR PEDESTRIAN/BICYCLE TRAFFIC:
CONCRETE COLLAR/STEEL GRATE (NOT IN ROADWAY)
STD 6610
HD 6212

DITCH BOTTOM INLET:
CONCRETE COLLAR/STEEL GRATE (NOT IN ROADWAY)
STD 6210
HD 6611



SECTION

NOT TO SCALE

NOTES:

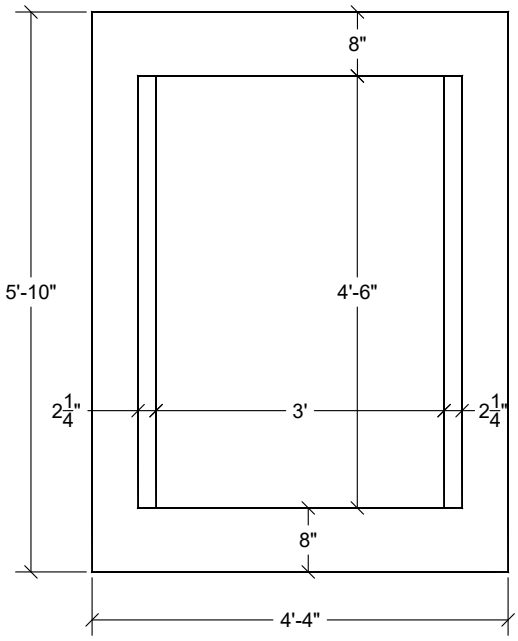
1. DISTANCES BEWTEEN STRUCTURES SHALL NOT EXCEED 300 FEET FOR PIPES LESS THAN 24" IN DIAMETER.
2. DISTANCES BETWEEN INLET STRUCTURES SHALL NOT EXCEED 400 FEET FOR PIPES 24" DIAMETER OR LARGER.
3. METAL FRAME AND GRATE SHALL BE USED IN ASPHALT AND CONCRETE AREAS. ROUND BOTTOMS MAY BE USED.
4. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.
5. STRUCTURE SHALL CONFORM TO ASTM C913.

TYPICAL "C" INLET DETAIL

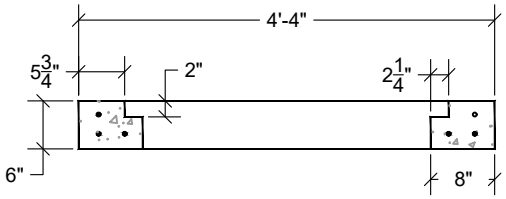
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 07/2017

DRAWING No. SW-2



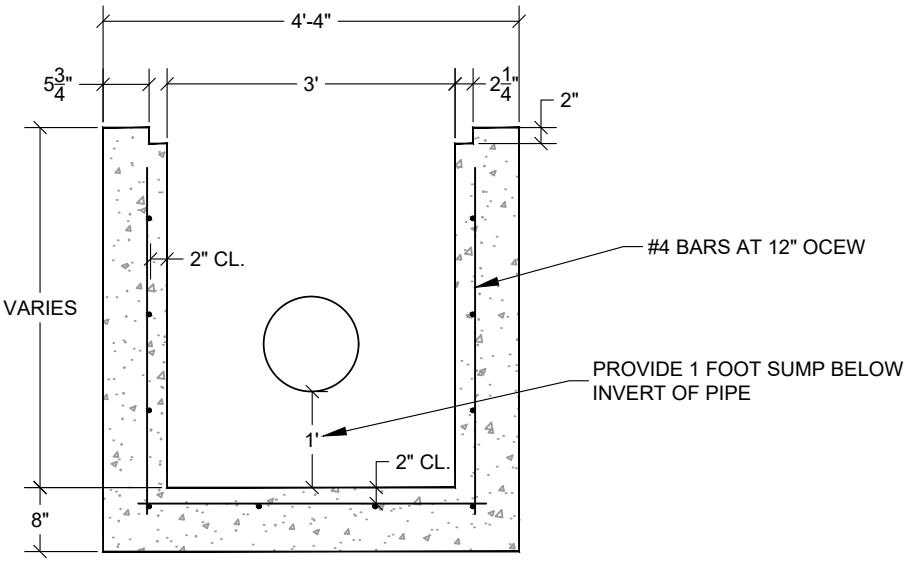
PLAN



COLLAR SECTION

USE U.S. FOUNDRY DITCH BOTTOM INLET:
CONCRETE COLLAR - CASE IRON GRATE (NOT IN ROADWAY)
STD 6300
HD 6290

FOR PEDESTRIAN/BICYCLE TRAFFIC:
CONCRETE COLLAR - STEEL GRATE
STD 6615
H20 LOADING 6616



SECTION

NOT TO SCALE

NOTES:

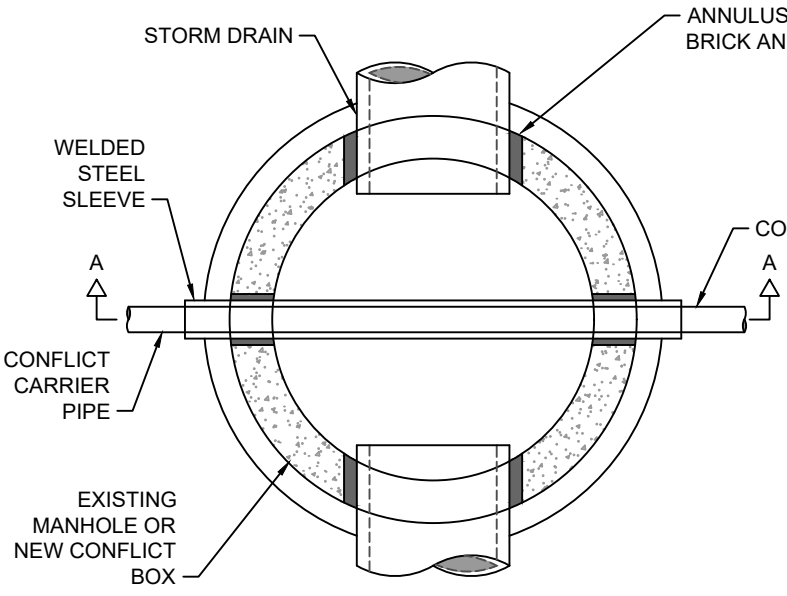
1. DISTANCES BEWTEEN STRUCTURES SHALL NOT EXCEED 300 FEET FOR PIPES LESS THAN 24" IN DIAMETER.
2. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.
3. STRUCTURE SHALL CONFORM TO ASTM C913.

TYPICAL "E" INLET DETAIL

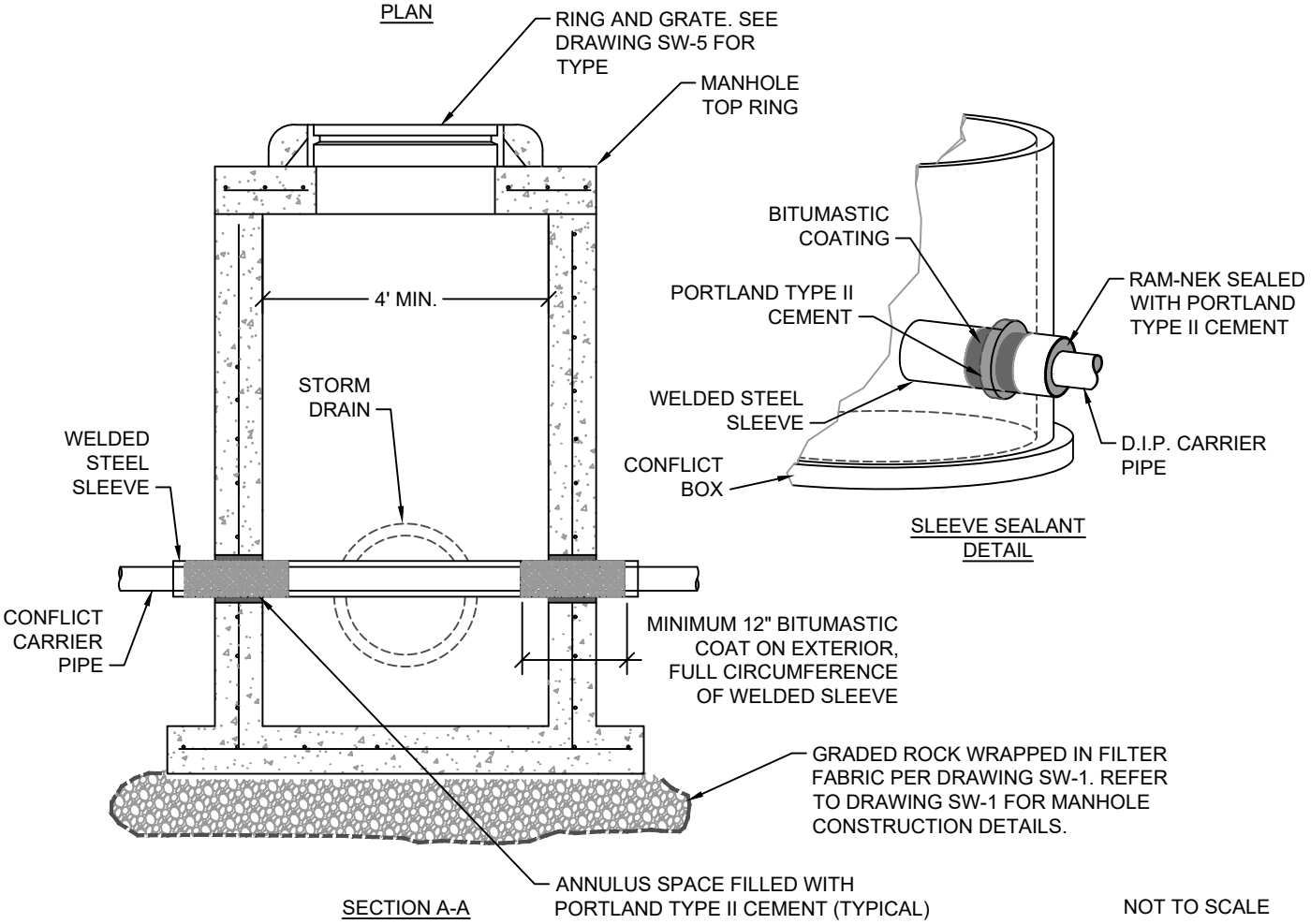
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 07/2017

DRAWING No. SW-3



PLAN



SECTION A-A

SLEEVE SEALANT DETAIL

NOT TO SCALE

NOTE:
INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW–5.

CONFLICT STRUCTURE DETAIL

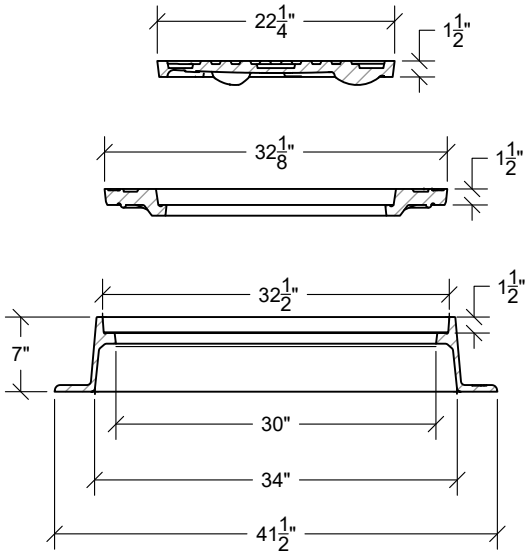
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

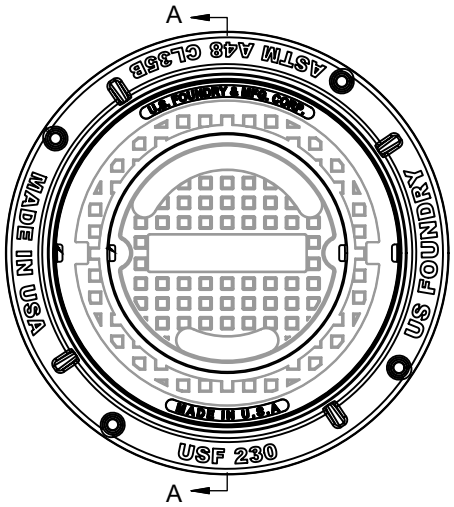
DRAWING No. SW-4

BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE:

1. IT IS A BASIC REQUIREMENT OF THE TOWN THAT EXCAVATIONS SHALL BE FREE FROM WATER BEFORE PIPE OR STRUCTURES ARE INSTALLED. THE CONTRACTOR SHALL PROVIDE PUMPS, AND OTHER APPURTENANT EQUIPMENT NECESSARY TO REMOVE AND MAINTAIN WATER AT SUCH A LEVEL AS TO PERMIT CONSTRUCTION IN A DRY CONDITION. THE CONTRACTOR SHALL CONTINUE DEWATERING OPERATIONS UNTIL BACKFILLING HAS PROGRESSED TO A SUFFICIENT HEIGHT (ABOVE THE WATER TABLE) TO PREVENT GROUNDWATER FROM ENTERING THE EXCAVATION.
2. IF NECESSARY THE CONTRACTOR SHALL USE DEWATERING SYSTEMS THAT ENSURE CONTINUOUS DEWATERING DURING INSTALLATION. WATER FROM THE TRENCHES AND EXCAVATION SHALL BE DISPOSED OF IN SUCH A MANNER AS WILL NOT CAUSE INJURY TO PUBLIC HEALTH, TO PUBLIC OR PRIVATE PROPERTY, TO THE WORK COMPLETED OR IN PROGRESS, TO THE SURFACE OF THE STREETS, CAUSE ANY INTERFERENCE WITH THE USE OF THE SAME BY THE PUBLIC, OR CAUSE POLLUTION OF ANY WATERWAY OR STREAM.
3. THE CONTRACTOR SHALL SUBMIT A DEWATERING PLAN AND PROPOSED METHODS FOR TRENCH WATER DISPOSAL TO THE TOWN FOR APPROVAL PRIOR TO EXCAVATING.
4. STRUCTURE EXCAVATIONS AND PIPE TRENCHES SHALL BE EXCAVATED TO THE ELEVATION NECESSARY FOR INSTALLATION OF THE PIPE AND/OR STRUCTURE (INCLUDING BEDDING MATERIAL IF REQUIRED) ON UNDISTURBED SOIL. IN THE EVENT OF OVER EXCAVATION, BACKFILL WITH ACCEPTABLE MATERIAL, UP TO THE LEVEL NECESSARY. THIS BACKFILL SHALL BE TAMPED AND COMPACTED TO PROVIDE A PROPER BEDDING FOR THE PIPE OR STRUCTURE. BEDDING SHALL BE PROVIDED UNDER THE BRANCH OF ALL FITTINGS TO FURNISH ADEQUATE SUPPORT AND BEARING UNDER THE FITTING.
5. ALL STRUCTURE EXCAVATIONS AND PIPELINE TRENCHES SHALL BE BACKFILLED TO A LEVEL 12 INCHES ABOVE THE BOTTOM OF THE STRUCTURE OR TOP OF THE PIPE WITH SELECT BACKFILL OBTAINED FROM THE EXCAVATION. SUCH MATERIAL SHALL BE PLACED IN 6 INCH LAYERS; EACH COMPACTED TO THE DENSITIES SPECIFIED BELOW. ONLY HAND OPERATED MECHANICAL COMPACTING EQUIPMENT SHALL BE USED WITHIN SIX INCHES OF THE INSTALLED PIPE.
6. AFTER THE INITIAL PORTION OF BACKFILL HAS BEEN PLACED AS SPECIFIED ABOVE, AND AFTER ALL EXCESS WATER HAS COMPLETELY DRAINED FROM THE TRENCH, BACKFILLING THE REMAINDER OF THE TRENCH OR EXCAVATION MAY PROCEED. THE REMAINDER OF THE BACKFILL SHALL BE SELECTED MATERIAL OBTAINED FROM THE EXCAVATION AND SHALL BE PLACED IN HORIZONTAL LAYERS, THE DEPTH OF WHICH SHALL NOT EXCEED THE ABILITY OF THE COMPACTION EQUIPMENT EMPLOYED, AND IN NO EVENT SHALL EXCEED A DEPTH OF 12 INCHES. EACH LAYER SHALL BE MOISTENED, TAMPED, PUDDLED, ROLLED AND/OR COMPACTED TO THE DENSITIES SPECIFIED BELOW.
7. STRUCTURE AND PIPE TRENCH BACKFILL AND BEDDING WHICH DOES NOT COMPLY WITH THE SPECIFIED DENSITIES, AS INDICATED BY SUCH TESTS, SHALL BE REWORKED AND RECOMPACTED UNTIL THE REQUIRED COMPACTION IS SECURED. IN THE EVENT PROPER COMPACTION CANNOT BE OBTAINED UNDER ANY STRUCTURES, PIPE OR AT CONNECTION, WRITTEN APPROVAL TO USE PROPER BEDDING STONE, 1/4" TO 3/4" GRADED STONE (100% PASSING 1"), IS REQUIRED BY THE TOWN OF JUPITER FOR BEDDING AND SELECT PORTIONS OF BACKFILL.
8. EXCAVATED UNSUITABLE MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF BY THE CONTRACTOR. MATERIALS REMOVED FROM THE TRENCHES SHALL BE STORED IN SUCH A MANNER THAT IT WILL NOT UNDULY INTERFERE WITH SITE OPERATIONS, TRAFFIC ON PUBLIC ROADWAYS AND SIDEWALKS AND SHALL NOT BE PLACED ON PRIVATE PROPERTY. IN CONGESTED AREAS, SUCH MATERIALS AS CANNOT BE STORED ADJACENT TO THE TRENCH OR USED IMMEDIATELY AS BACKFILL SHALL BE REMOVED TO OTHER CONVENIENT PLACES OF STORAGE ACCEPTABLE TO THE TOWN.
9. COMPACTION OF BACKFILL SHALL BE 98 PERCENT OF THE MAXIMUM DENSITY WHERE THE TRENCH IS LOCATED UNDER STRUCTURES OR PAVED AREAS, AND 95 PERCENT OF THE MAXIMUM DENSITY ELSEWHERE. MORE THOROUGH COMPACTION MAY BE REQUIRED WHEN WORK IS PERFORMED IN OTHER REGULATORY AGENCIES JURISDICTIONS, SUCH AS THE DOT. MAXIMUM DENSITY OF THE MATERIAL IN TRENCHES SHALL BE DETERMINED BY AASHTO T-180.
10. LABORATORY AND FIELD DENSITY TESTS, WHICH IN THE OPINION OF THE TOWN ARE NECESSARY TO ESTABLISH COMPLIANCE WITH THE COMPACTION REQUIREMENTS SHALL BE REQUIRED BY THE TOWN. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH THE TESTING LABORATORY. THE TOWN SHALL ESTABLISH DEPTHS AND LOCATIONS OF TESTS. MODIFICATIONS TO THE PROGRAM WILL BE MADE AS JOB CONDITIONS CHANGE.



A-A



RING

NOT TO SCALE

MATERIAL: ASTM A-48
CLASS 35B
GREY IRON

USF 230-AB-M RING & COVER

STRUCTURE/PIPE INSTALLATION & FRAME/GRATE REQUIREMENTS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 05/2019

DRAWING No. SW-05

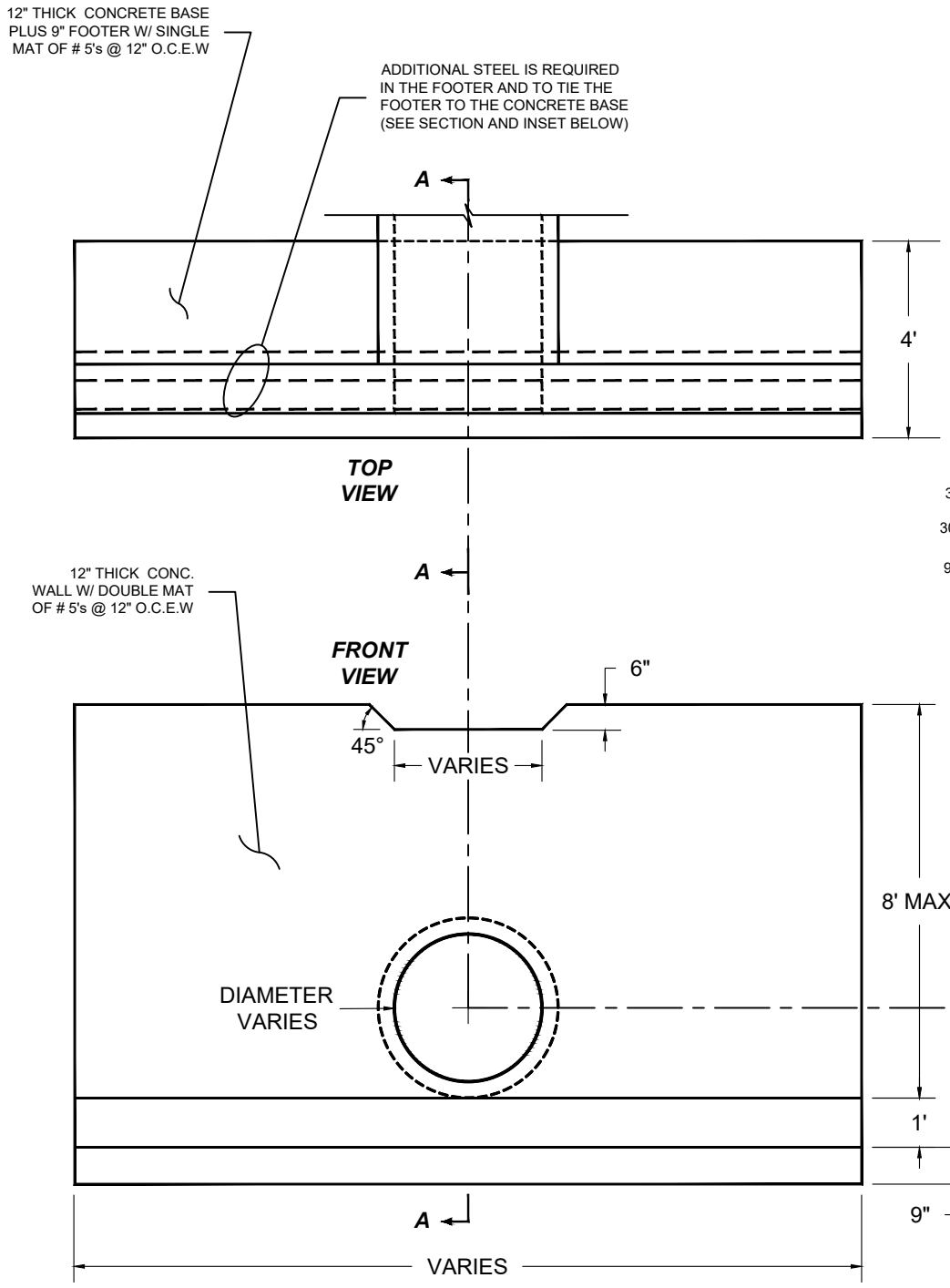
JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

CONCRETE HEADWALL

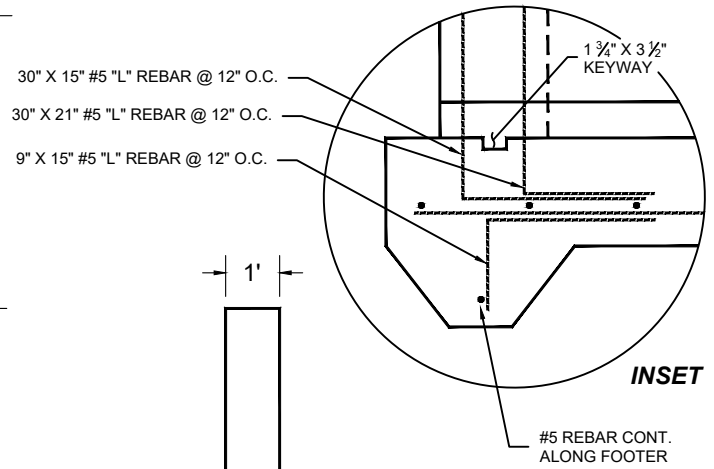
DRAWING No. SW-06

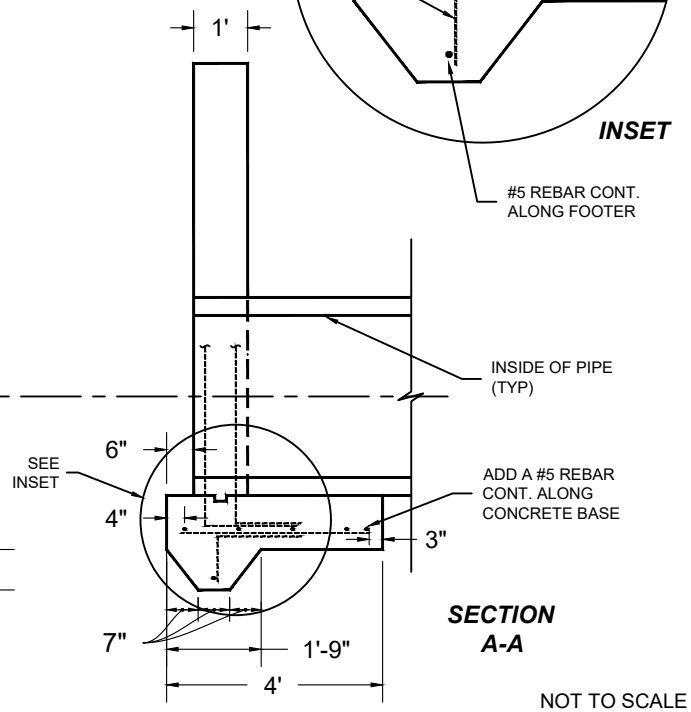
DATE APPROVED: 10/2013



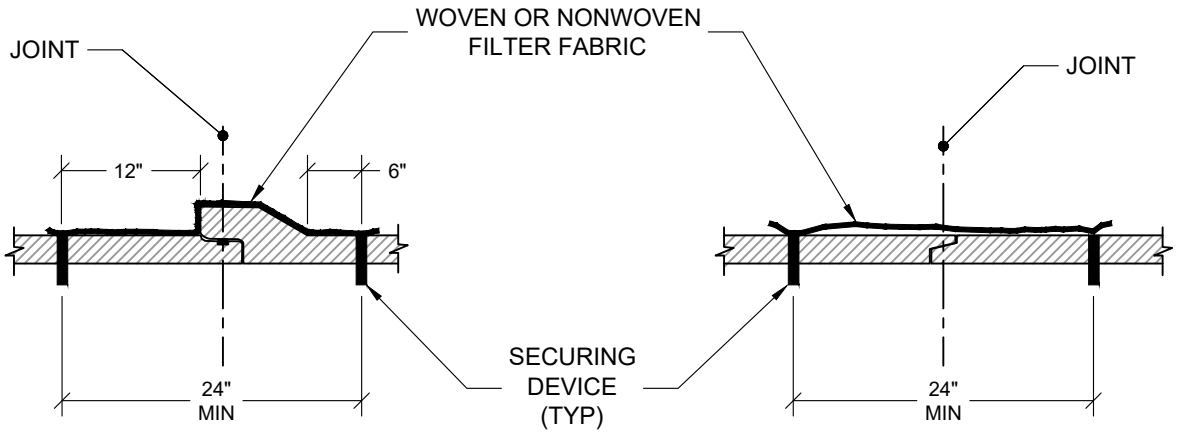
GENERAL NOTES

1. *Headwall dimensions, locations and positions are for round and elliptical concrete pipe and for round corrugated aluminum pipe. Round concrete pipe shown.*
2. *Front slope and ditch transitions shall be approved by Town of Jupiter Utilities.*
3. *Headwalls may be cast in place or precast concrete. Reinforcing steel shall be Grades 40 or 60. Additional reinforcement necessary for handling precast units shall be determined by the Contractor or the supplier. Cost of reinforcement shall be included in the contract unit price for Concrete, (Headwalls). All rebar to have minimum 3" embedment.*
4. *All exposed corners and edges of concrete are to be chamfered ¾".*
5. *Concrete shall conform to ASTM C478 (4000 psi).*
6. *On outfall ditches with side slopes flatter than 1:1½ provide 20' transitions from the headwall to the flatter side slopes, right of way permitting.*
7. *Sod all disturbed areas around headwall with adjacent area like kind sod (use bahia sod area(s) is/are not irrigated).*
8. *Installation of all pipe and structures must meet the bedding, installation and backfill requirements for new structures and pipe on Detail SW-5.*





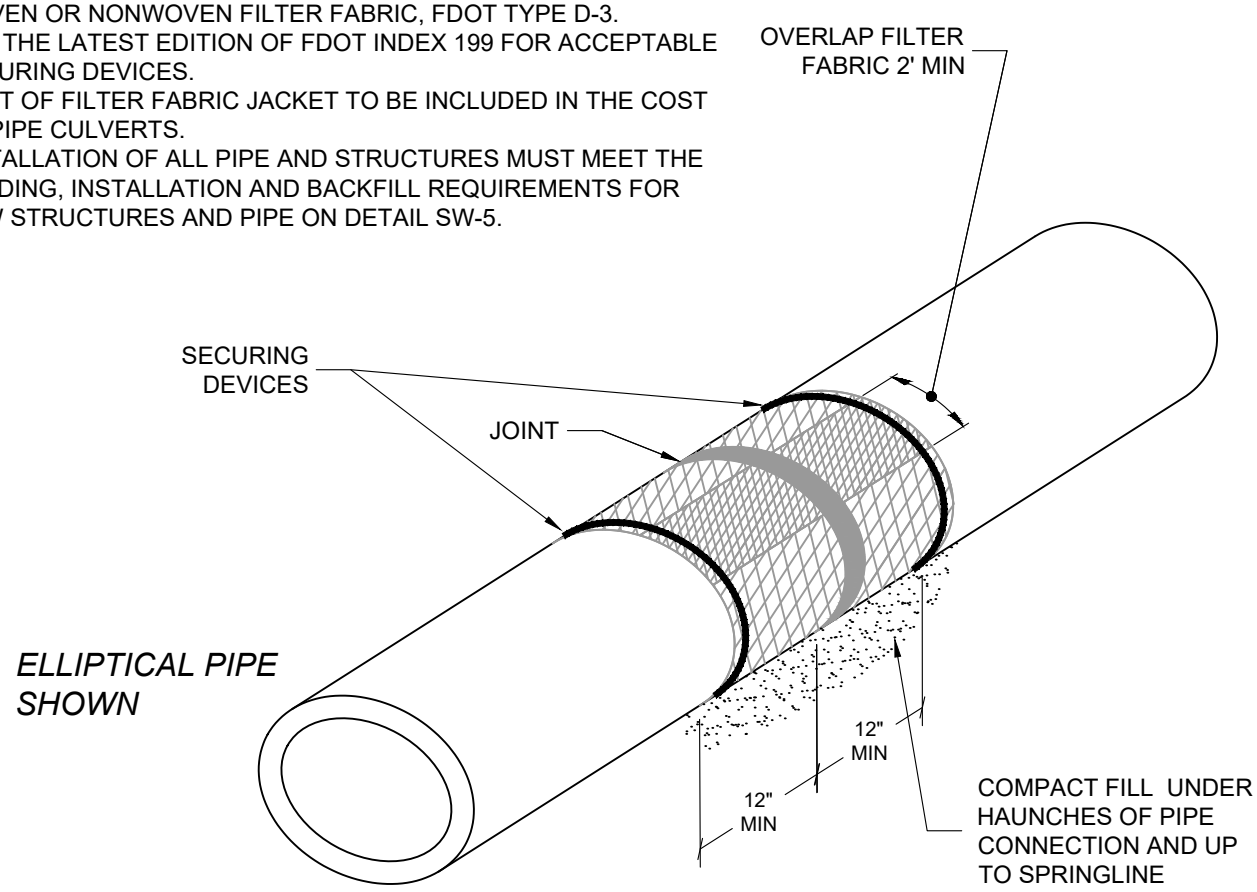
NOT TO SCALE



PIPE SECTIONS

NOTE:

1. SECURING DEVICES MAY BE ELIMINATED BY DOUBLE WRAPPING PIPE WITH FILTER FABRIC.
2. FOR ALL PIPE TYPES - CONCRETE PIPE SHOWN.
3. WOVEN OR NONWOVEN FILTER FABRIC, FDOT TYPE D-3.
4. SEE THE LATEST EDITION OF FDOT INDEX 199 FOR ACCEPTABLE SECURING DEVICES.
5. COST OF FILTER FABRIC JACKET TO BE INCLUDED IN THE COST OF PIPE CULVERTS.
6. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.



ELLIPTICAL PIPE SHOWN

NOT TO SCALE

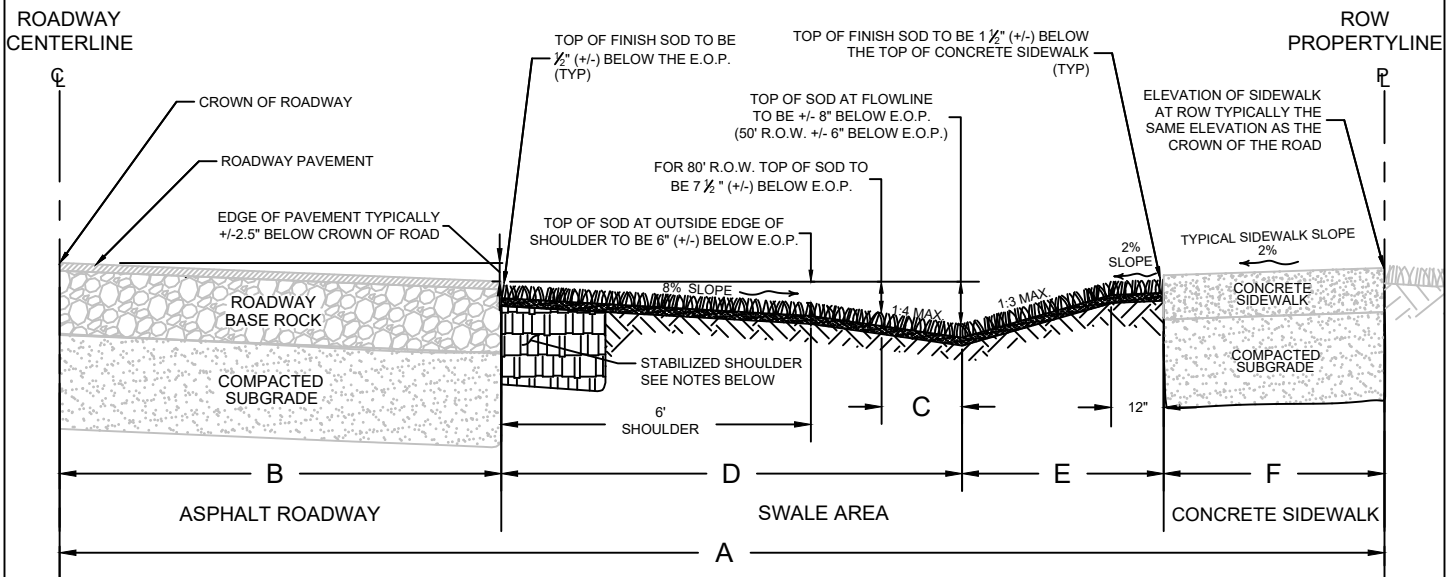
FILTER FABRIC JACKET FOR STORMWATER PIPE

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

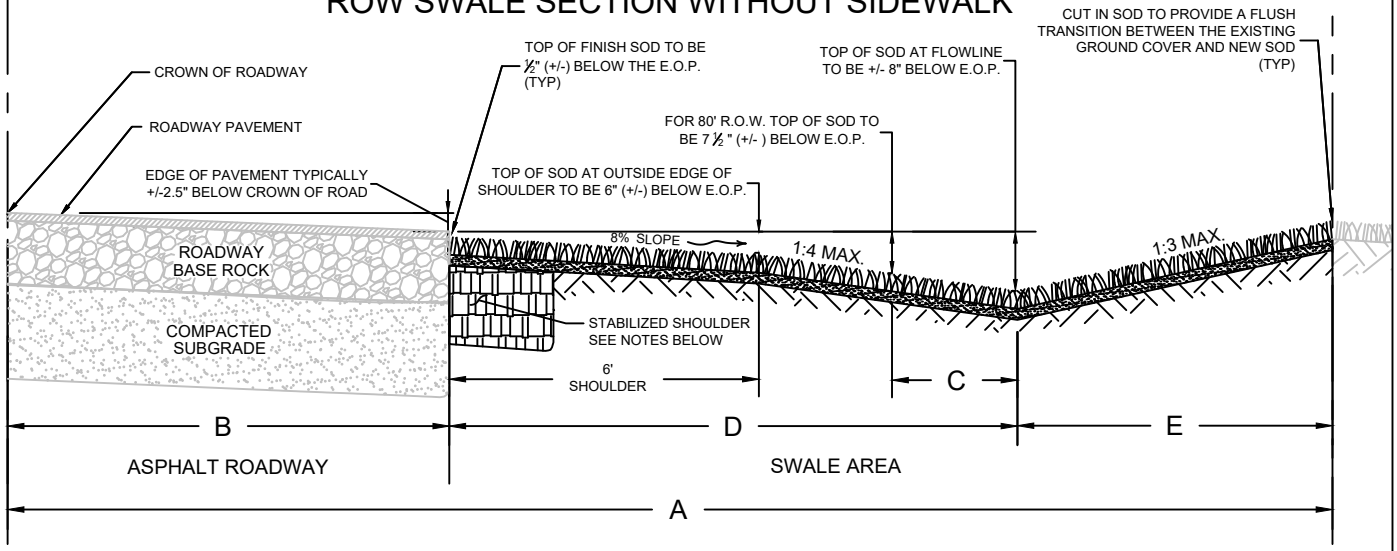
DATE APPROVED: 05/2019

DRAWING No. SW-7

ROW SWALE SECTION WITH SIDEWALK



ROW SWALE SECTION WITHOUT SIDEWALK



ROW WIDTH	(A)	LANE WIDTH (B)	WIDTHS IN SWALE SECTION (C)	(D)	(E)	SIDEWALK WIDTH (F)
ROW WITH SIDEWALK						
60 FEET	30'	11'	--	8'	6'	5'
80 FEET	40'	12'	6'	15'	7'	6'
ROW WITH NO SIDEWALK						
60 FEET	30'	11'	--	9'	11'	--
80 FEET	40'	12'	7'	17'	11'	--

PLEASE NOTE:

- STABILIZE ROADWAY SHOULDER +/- 24" WIDE X 12" DEEP TO LBR OF 40 AND COMPACT TO 98% OF AASHTO T-180
- FOR R.O.W'S LESS THE 50 FEET OR SWALE AREAS LESS THEN 10 FEET SHAPE AND DEPTHS AS DIRECTED BY THE TOWN OF JUPITER STAFF

NOT TO SCALE

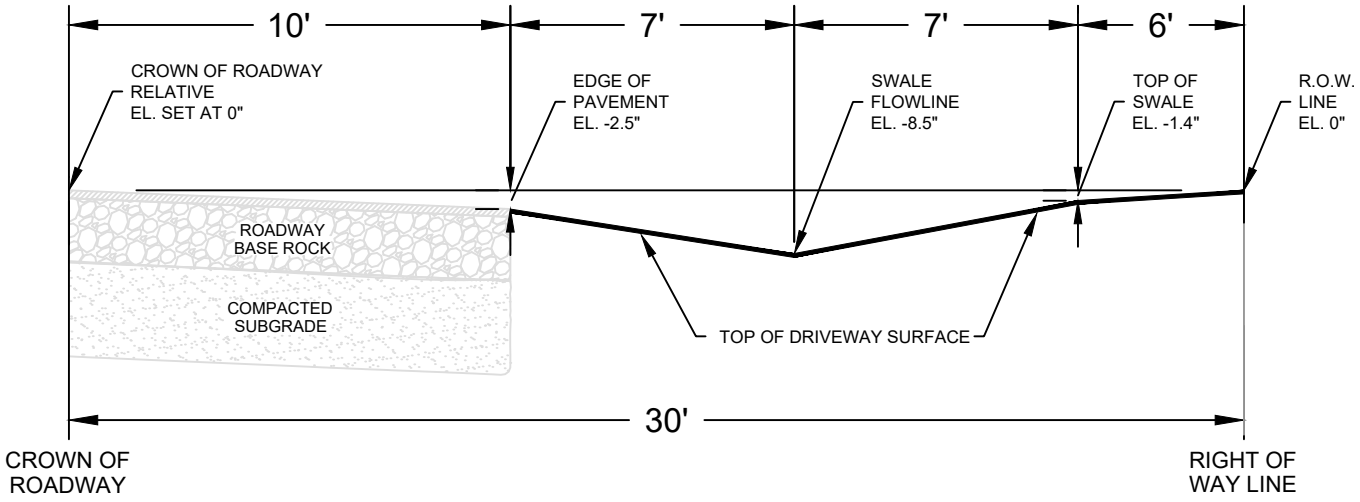
RIGHT OF WAY SWALE SECTION

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

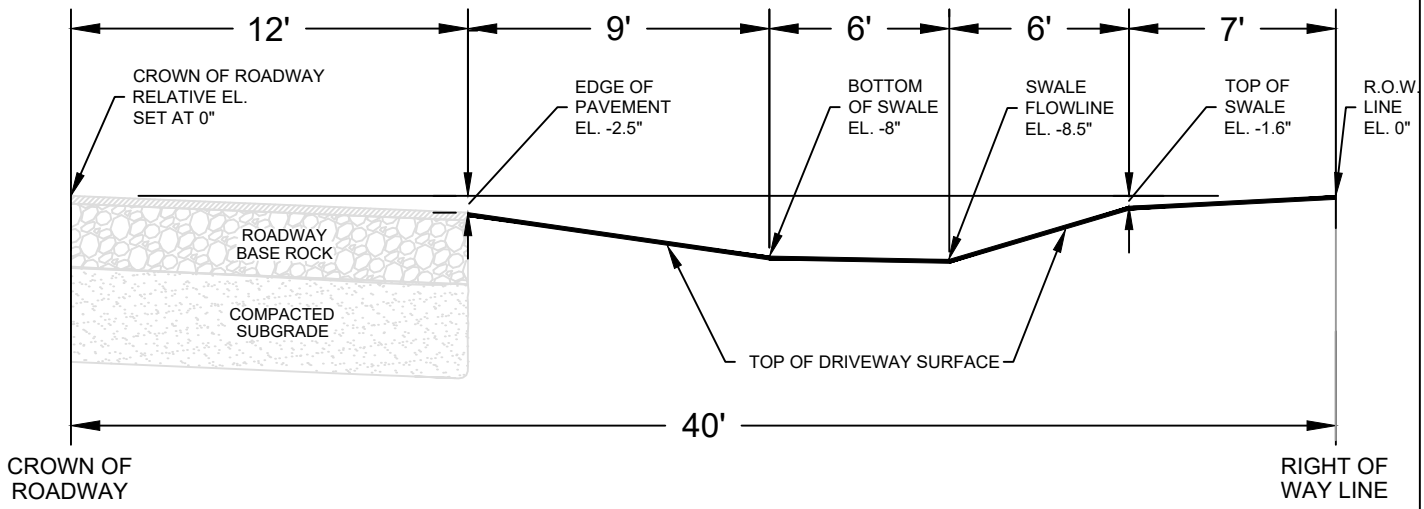
DATE APPROVED: 02/2014

DRAWING No. SW-8

60' R.O.W.



80' R.O.W.



NOT TO SCALE

PLEASE NOTE:

1. DRIVEWAY MATERIAL MAY BE ASPHALT, CONCRETE OR BRICK PAVERS; ELEVATIONS NOTED ABOVE ARE THE TOP OF THE DRIVEWAY SURFACE. DRIVEWAY SUBSURFACE IS NOT DEPICTED AND MUST MEET THE TOWN OF JUPITER ENGINEERING, PARKS, PUBLIC WORKS AND UTILITY REQUIREMENTS.

2. DRIVEWAY ELEVATIONS ARE RELATIVE TO THE CROWN OF THE ROAD AND TYPICAL OF THESE RIGHT-OF-WAY WIDTHS. TOWN OF JUPITER STAFF MAY CHANGE ELEVATIONS BASED ON CURRENT SITE CONDITIONS AND FUTURE PLANNED IMPROVEMENTS.

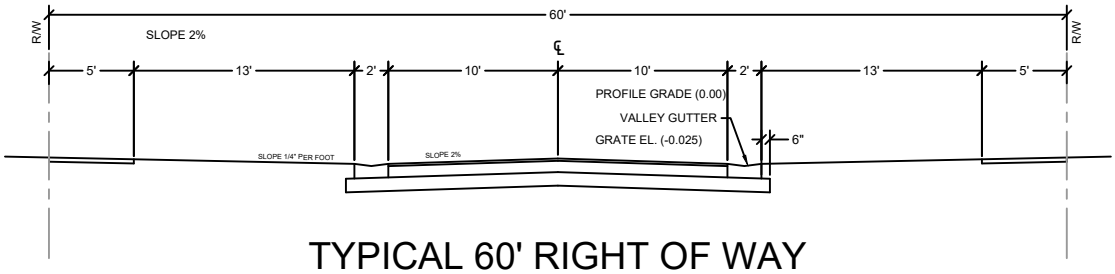
3. FOR RIGHT-OF-WAYS LESS THEN 60 FEET OR SWALE AREAS LESS THEN THAT SHOWN ABOVE, TOWN OF JUPITER STAFF WILL PROVIDE DRIVEWAY ELEVATIONS ON A CASE BY CASE BASIS.

RURAL RIGHT OF WAY TURNOUT SECTION

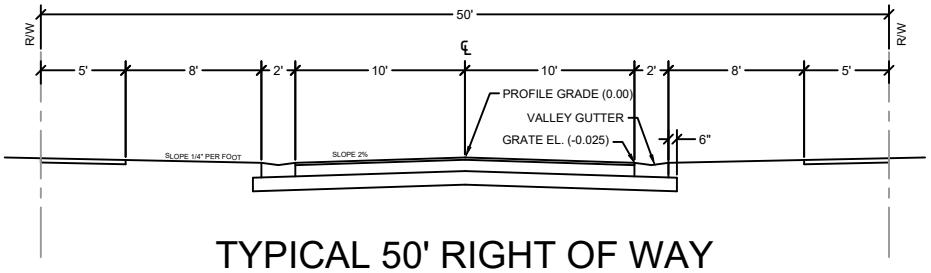
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 02/2014

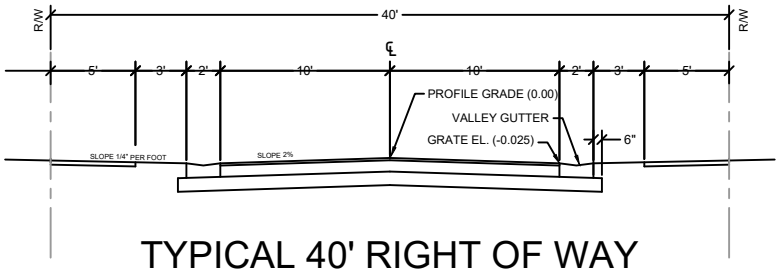
DRAWING No. SW-9



TYPICAL 60' RIGHT OF WAY
SECTION DETAIL



TYPICAL 50' RIGHT OF WAY
SECTION DETAIL



TYPICAL 40' RIGHT OF WAY
SECTION DETAIL

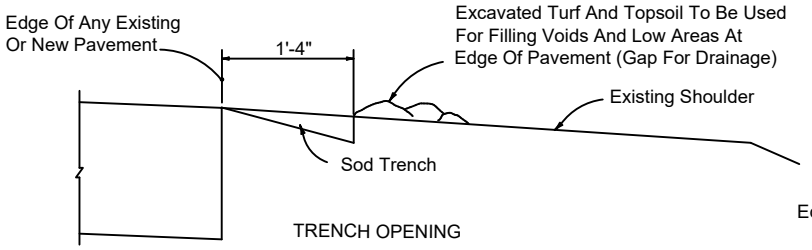
NOT TO SCALE

TYPICAL VALLEY GUTTER SECTION DETAIL OF PUBLIC RIGHT OF WAYS

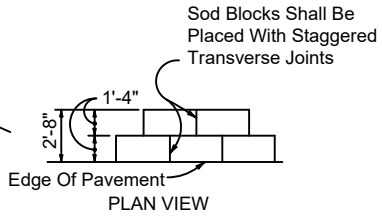
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. SW-10

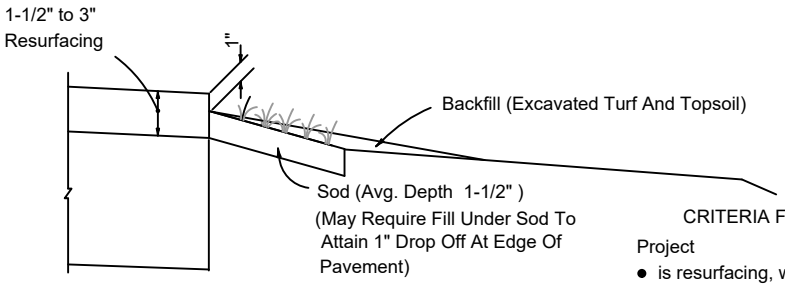


TRENCH OPENING



PLAN VIEW

PATTERN DETAIL

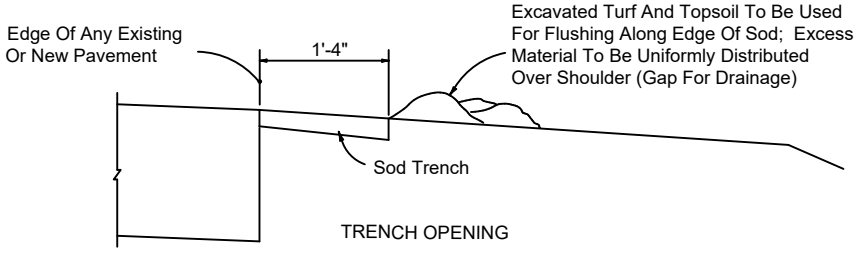


COMPLETED SHOULDER

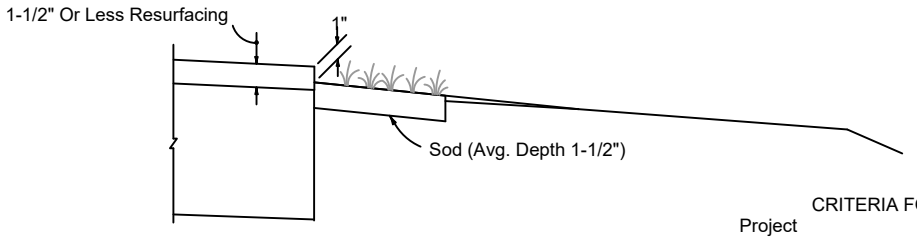
CRITERIA FOR USING TREATMENT TYPE R1

Project

- is resurfacing, widening and resurfacing or construction of shoulder pavement
- is rural or is urban without curb and gutter
- has good existing soil and turf with no significant shoulder erosion (Isolated areas of significant erosion will require additional special treatment. Where poor soil and/or turf conditions exist shoulder reworking, Type R-2, should be applied.)
- resurfacing build-up is 1-1/2" to 3"



TRENCH OPENING



COMPLETED SHOULDER

CRITERIA FOR USING TREATMENT TYPE R-3

Project

- is resurfacing, widening and resurfacing or construction of shldr. pavt.
- is rural or is urban without curb and gutter
- has good existing soil and turf with no significant shoulder erosion (isolated areas of significant erosion will require additional special treatment. Where poor soil and/or turf conditions exist shoulder reworking, Type R-2, should be applied.)
- resurfacing build-up is 1-1/2" or less

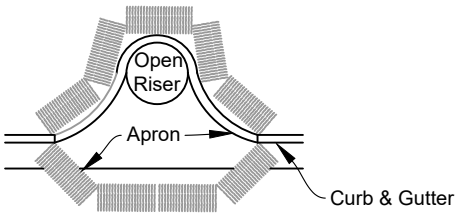
NOT TO SCALE

SHOULDER SODDING AND REWORKING DETAIL

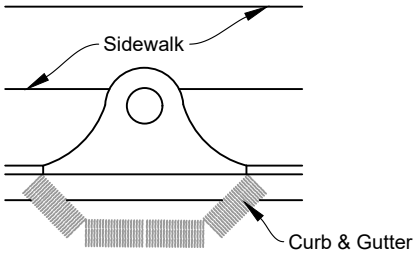
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. SW-11

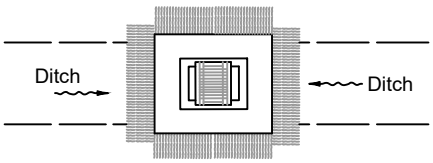


PARTIAL INLET



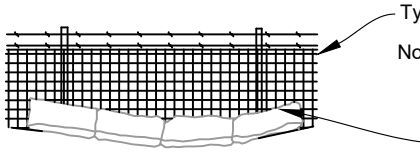
COMPLETED INLET

Anchor Bales With 2 - 2" x 2" x 4' Stakes Per Bale.



DITCH BOTTOM INLET

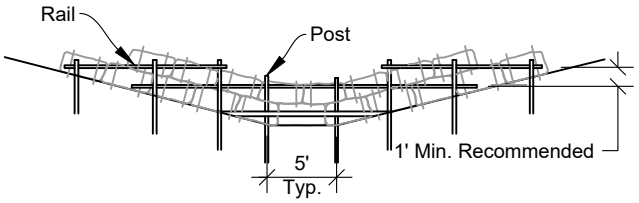
PROTECTION AROUND INLETS OR SIMILAR STRUCTURES



Type A Or B Fence

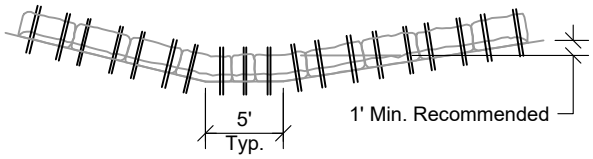
Note: Bales to be staked at the direction of the Engineer.

Loose Soil Placed By Shovel And Lightly Complacted Along Upstream Face of Bales



Anchor Bales With 2 - 2" x2" x4' Stakes Per Bale.
Anchor Top Bales To Lower Bales With 2 - 2" x2" x4' Stakes Per Bale.

ELEVATION
TYPE II

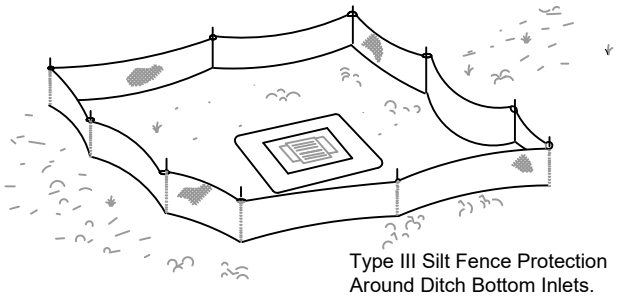


Anchor Bales With 2 - 2" x2" x4' Stakes Per Bale.

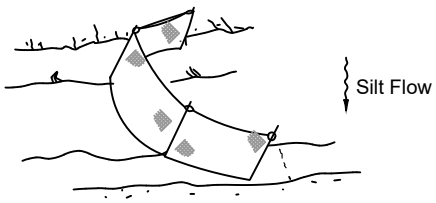
ELEVATION
TYPE I

Application and Spacing: The use of Types I & II bale barriers should be limited to the conditions outlined in Chart I, Sheet 1 of 3, Index No. 102, FDOT standard specifications.

BARRIER FOR UNPAVED DITCHES



Type III Silt Fence Protection Around Ditch Bottom Inlets.



Note: Spacing for Type III Fence to be in accordance with Chart 1, Sheet 1 of 3, and ditch installations at drainage structures Sheet 2 of 3.

Type III Silt Fence

Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS

NOT TO SCALE

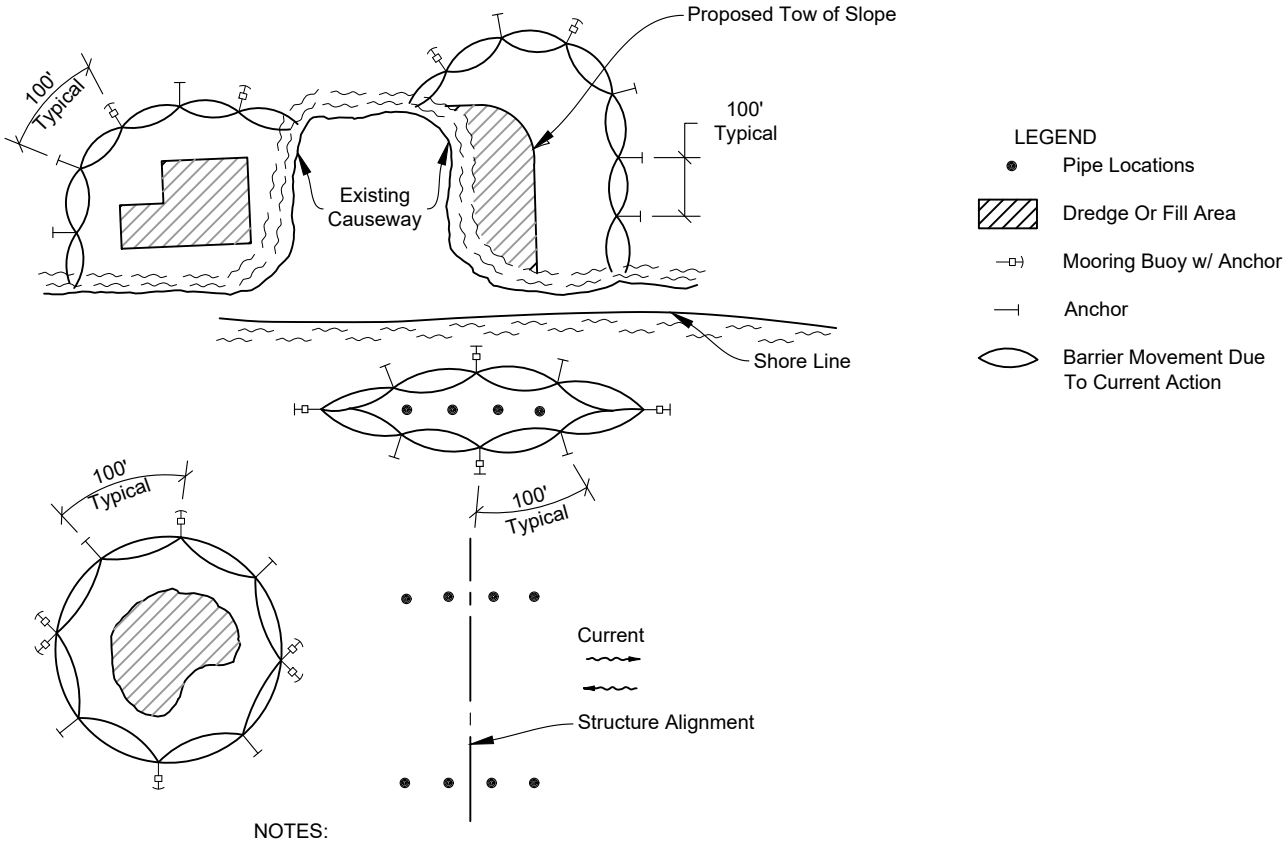
BALED HAY OR STRAW BARRIERS AND SILT FENCES

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

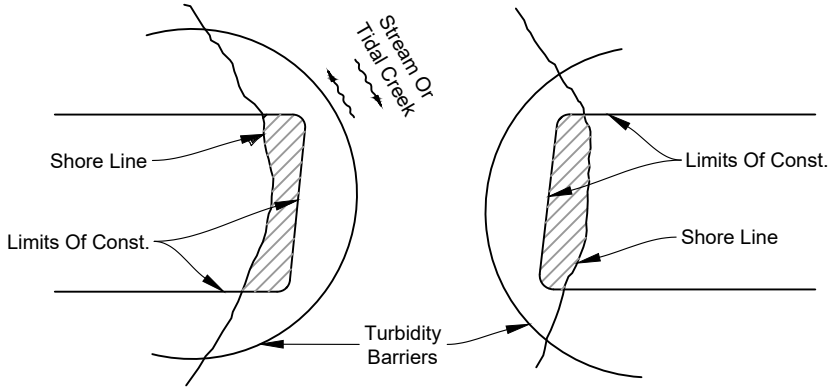
DRAWING No. SW-12

TURBIDITY BARRIERS



NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the FDOT Standard Specifications.



NOT TO SCALE

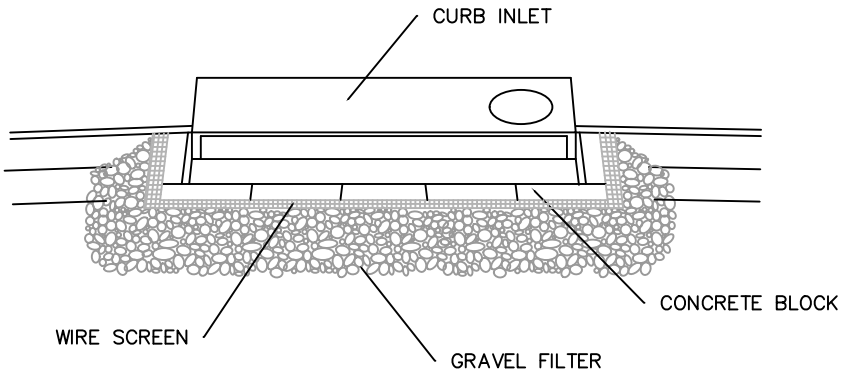
NOTE:
TURBIDITY BARRIERS FOR FLOWING STREAMS AND TIDAL CREEKS MAY BE EITHER FLOATING, OR STAKED TYPES OR ANY COMBINATIONS OF TYPES THAT WILL SUIT SITE CONDITIONS AND MEET EROSION CONTROL AND WATER QUALITY REQUIREMENTS. THE BARRIER TYPE(S) WILL BE AT THE CONTRACTORS OPTION UNLESS OTHERWISE SPECIFIED IN THE PLANS, HOWEVER PAYMENT WILL BE UNDER THE PAY ITEM(S) ESTABLISHED IN THE PLANS FOR FLOATING TURBIDITY BARRIER AND/OR STAKED TURBIDITY BARRIER. POSTS IN STAKED TURBIDITY BARRIERS TO BE INSTALLED IN VERTICAL POSITION UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

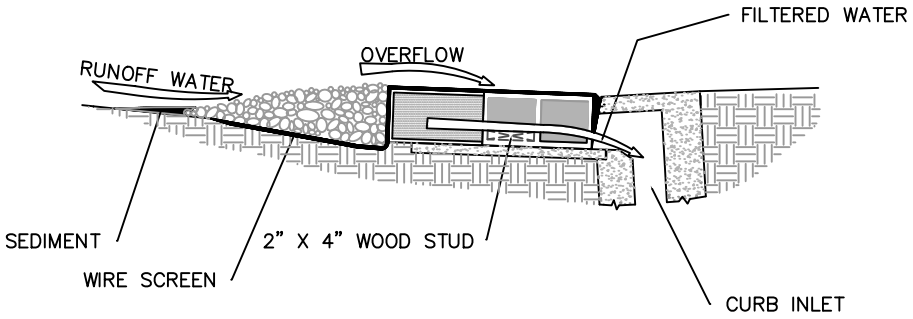
STORMWATER TURBIDITY BARRIERS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. SW-13

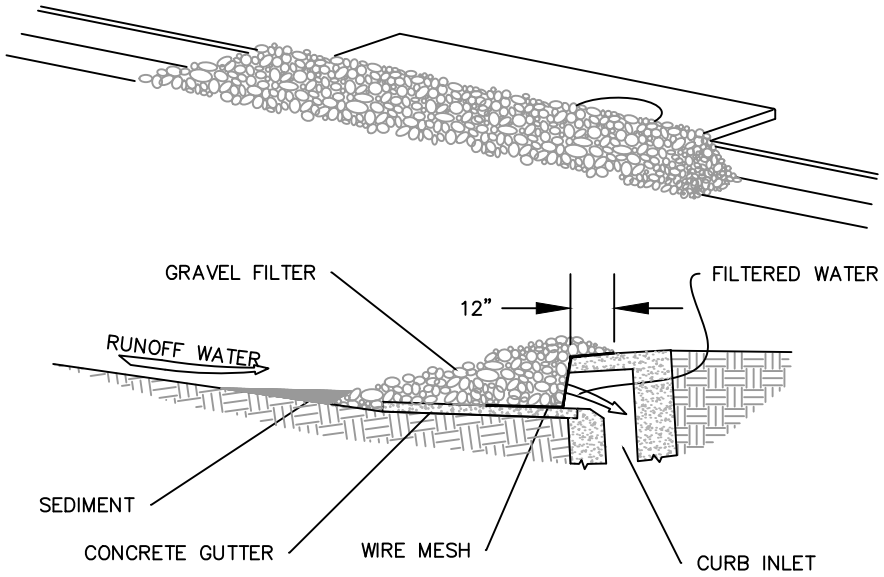




SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE AN OVERFLOW CAPABILITY IS NECESSARY TO PREVENT EXCESSIVE PONDING IN FRONT OF THE STRUCTURE.

BLOCK AND GRAVEL CURB INLET SEDIMENT FILTER



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE AT CURB INLETS WHERE PONDING IN FRONT OF THE STRUCTURE IS NOT LIKELY TO CAUSE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED AREAS.

GRAVEL CURB INLET SEDIMENT FILTER

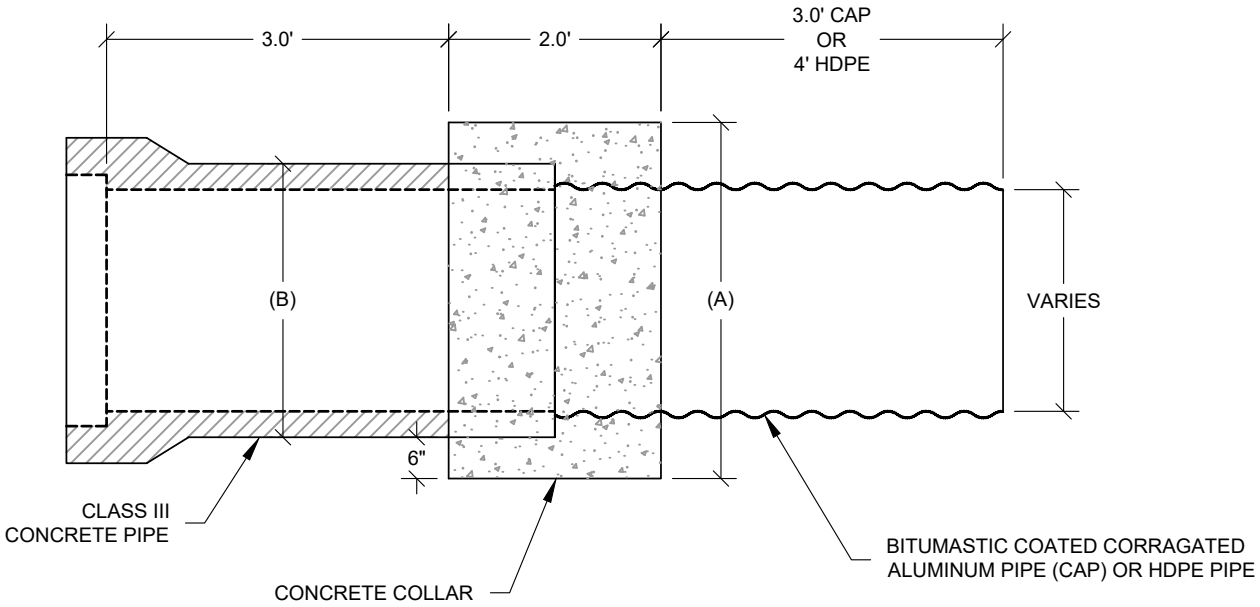
NOT TO SCALE

CURB INLET SEDIMENT FILTER DETAIL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. SW-14



NOTES:

1. CONCRETE COLLAR SHALL BE 3000 PSI CONCRETE (F'c= 3,000 P.S.I.).
2. CONCRETE COLLAR REINFORCEMENT SHALL BE SAME AS CLASS III CONCRETE PIPE PER ASTM C76 LATEST ADDITION.
3. CONCRETE COLAR DIAMETER (A) SHALL BE EQUAL TO LARGEST PIPE O.D. (B) PLUS 12 INCHES.
4. ALUMINUM CORRAGATED PIPE SHALL HAVE ANNULAR CORRAGATIONS FOR O-RING GASKET JOINTS.
5. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.
6. ALUMINUM OR HDPE PIPE ADAPTERS ARE ACCEPTABLE.
7. METAL PIPE ADAPTERS SHALL HAVE A BITUMINOUS COATING.
8. FOR HDPE ADAPTERS, CONTRACTOR SHALL SUPPLY FOUR FEET (4') OF HDPE.
9. ALL ADAPTERS SHALL MEET FDOT INDEX N0. 280 SPECIFICATIONS.
10. ALL NEW DEVELOPMENT/CONSTRUCTION REQUIRES A PRE-FABRICATED COLLAR FROM THE PIPE MANUFACTURER. INSTALLATION SHALL BE AS RECOMMENDED BY MANUFACTURER.

NOT TO SCALE

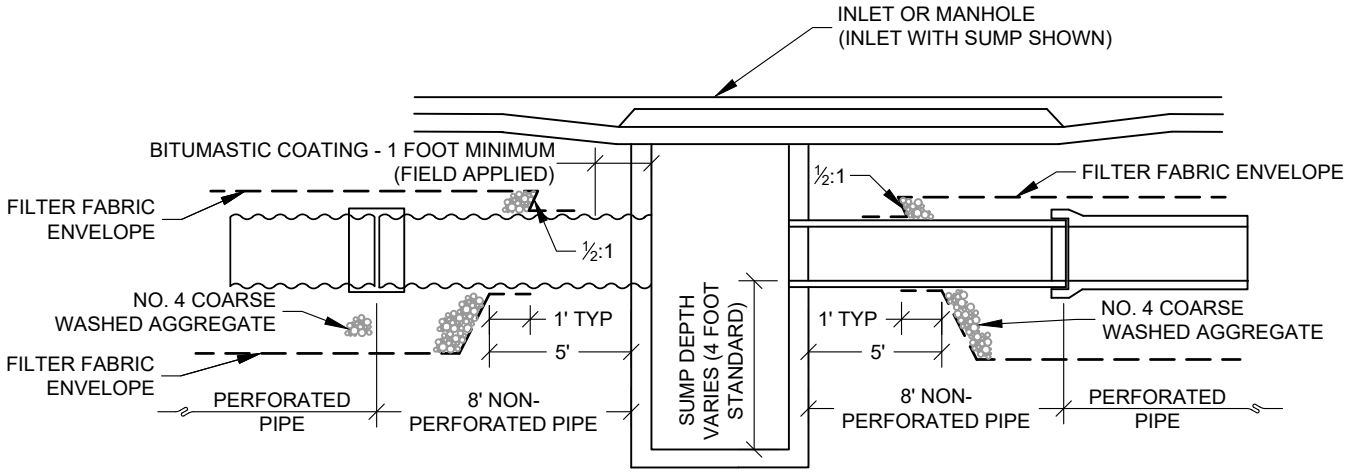
PREFABRICATED CONCRETE TO METAL / HDPE PIPE ADAPTER

JUPITER UTILITIES

CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 01/2018

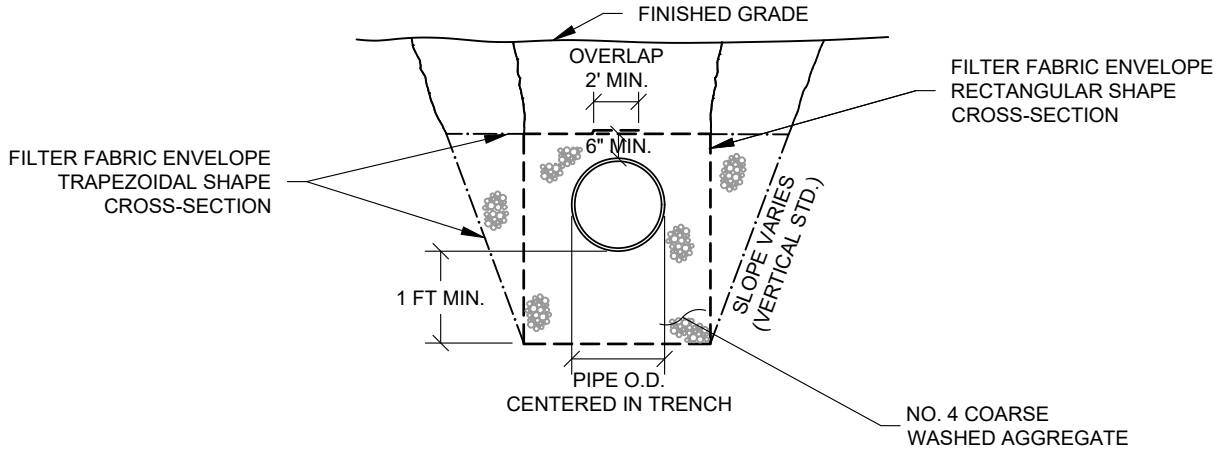
DRAWING No. SW-15



CORRUGATED ALUMINUM PIPE

REINFORCED CONCRETE PIPE

— — — LONGITUDINAL SECTION



ROUND PIPE SHOWN
STANDARD CROSS SECTION
EXFILTRATION SYSTEM

NOT TO SCALE

GENERAL NOTES:

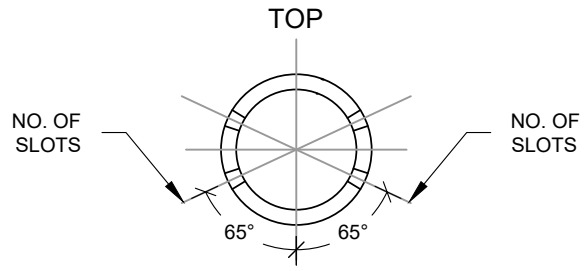
1. EXFILTRATION PIPE SHALL BE OF THE TYPE PERMITTED IN FDOT SECTION 443, UNLESS NOTED OTHERWISE. DISSIMLAR TYPES OF PIPE WILL NOT BE PERMITTED IN A CONTINUOUS RUN OF PIPE.
2. CONCRETE PIPE SHALL BE PLACED WITH SLOTS POSITIONED ON SIDES.
3. THE CONTRACTOR MAY SUBMIT OTHER METHODS OF PROVIDING SLOTS HAVING EQUAL OR GREATER AREA OF OPENING TO THE TOWN OF JUPITER FOR APPROVAL.
4. FILTER FABRIC SHALL BE SUBSURFACE DRAINAGE TYPE PER FDOT SECTION 985. ALL FILTER FABRIC JOINTS SHALL LAP A MINIMUM OF 2 FEET.
5. EXFILTRATION TRENCHES WITH MINOR DIMENSIONAL CHANGES OR OTHERWISE DIFFERENT FROM THE STANDARD CROSS-SECTION SHALL BE EITHER DESCRIBED OR DETAILED IN THE PLANS. THOSE WITH SIGNIFICANTLY DIFFERENT CROSS-SECTIONS SHALL BE DETAILED IN THE PLANS.
6. CONTRACTOR SHALL MAKE NECESSARY PRECAUTIONS TO PREVENT CONTAMINATION OF THE TRENCH WITH SAND, SILT AND FOREIGN MATERIALS.
7. NO WEEP HOLES SHALL BE PERMITTED IN STRUCTURES.
8. FOR SUPPLIMENTAL DETAILS, REFER TO FDOT INDEX NUMBER 443.
9. EXFILTRATION TRENCH USED FOR DRY RETENTION / DETENTION SHALL HAVE THE PIPE INVERT AT OR ABOVE THE WATER TABLE WHEN POSSIBLE.
10. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.

EXFILTRATION TRENCH (1 OF 2)

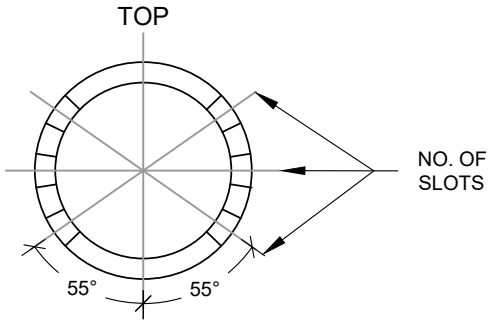
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2021

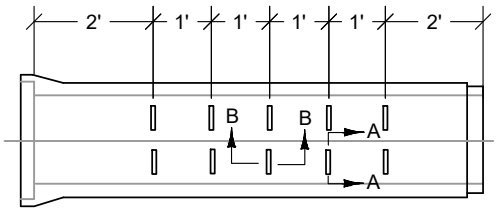
DRAWING No. SW-16



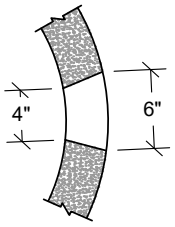
15" TO 30" DIAMETER



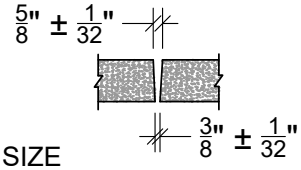
36" TO 72" DIAMETER



SIDE VIEW



SECTION A-A



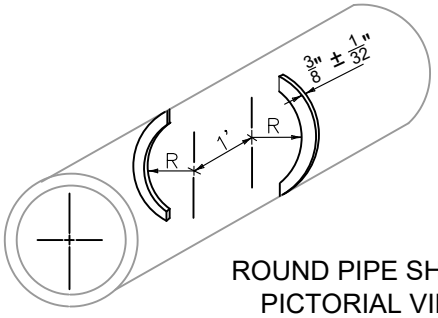
SLOT SIZE

SECTION B-B

OPTION A - ROUND PIPE

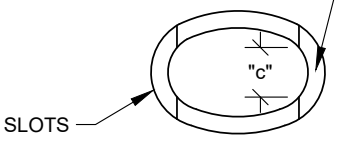
ELLIPTICAL PIPE		
Pipe Size	Slot Cut Opening c	
	Min.	Max.
14"x23"	10"	12"
19"x30"	14"	16"
24"x38"	14"	16"
29"x45"	20"	22"
34"x53"	20"	22"
38"x60"	20"	22"

ROUND PIPE		
Pipe Size	Slot Cut Opening c	
	Min.	Max.
15"	12"	14"
18"	12"	14"
24"	16"	18"
30"	16"	18"
36"	22"	24"
42"	22"	24"
48"	22"	24"
54"	24"	26"
60"	24"	26"
66"	24"	26"
72"	24"	26"

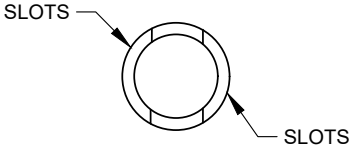


ROUND PIPE SHOWN PICTORIAL VIEW

CURVE CUTS ARE ACCEPTABLE PROVIDED THE CONTROL DIMENSION IS MAINTAINED (TYPICAL FOR ELLIPTICAL AND ROUND PIPE

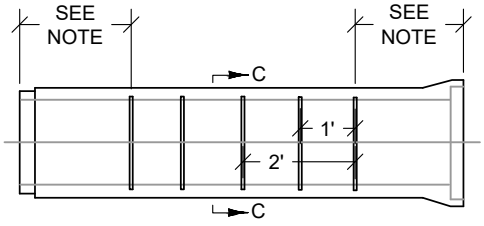


ELLIPTICAL PIPE



ROUND PIPE

SECTION C-C



SIDE VIEW

OPTION B - ROUND OR ELLIPTICAL PIPE

NOT TO SCALE

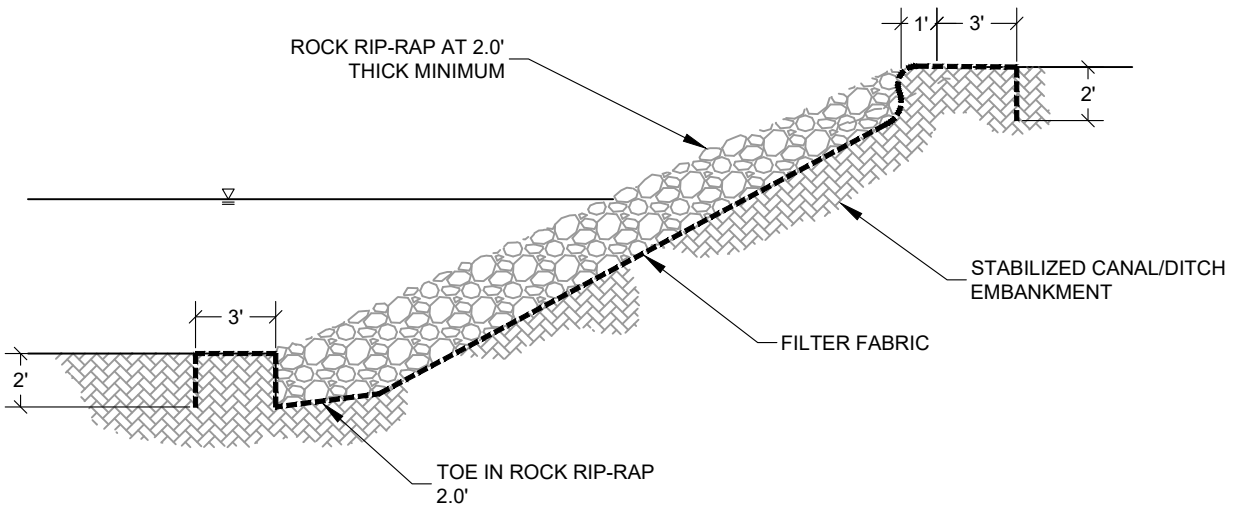
SLOTTED PIPE OPTIONS

EXFILTRATION TRENCH (2 OF 2)

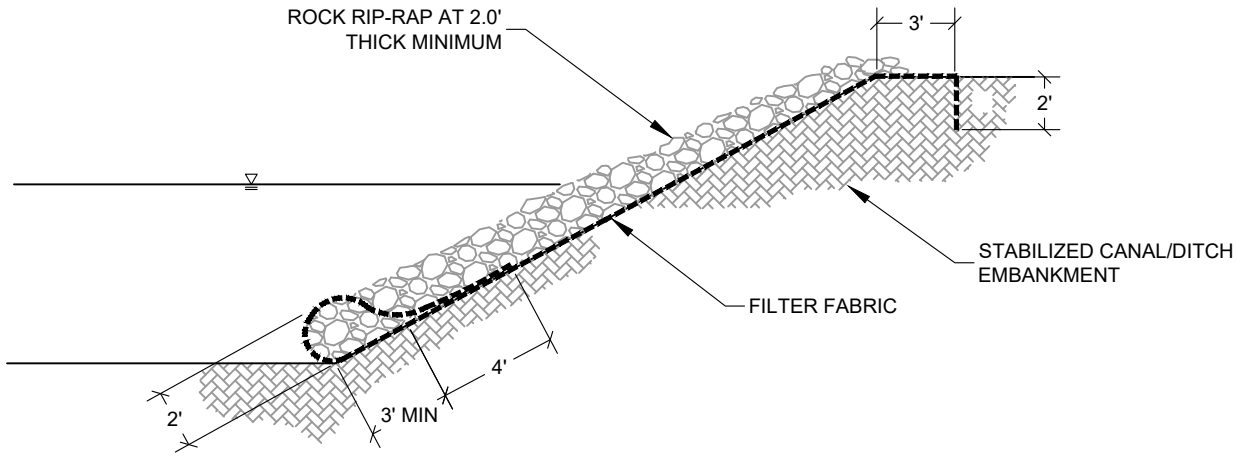
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. SW-17



STANDARD METHOD



ALTERNATE METHOD

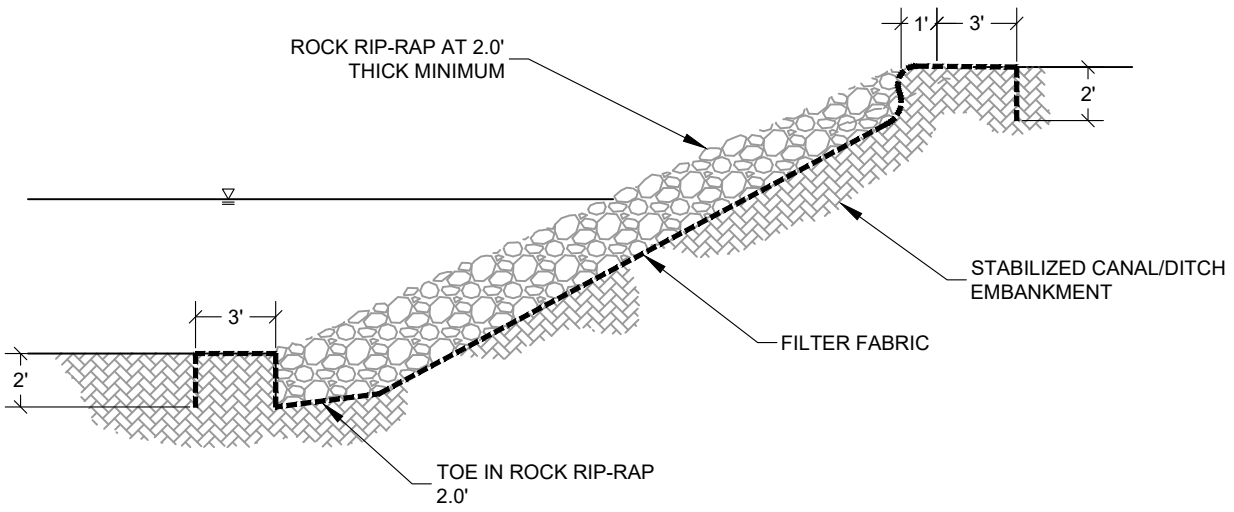
NOT TO SCALE

BANK STABILIZATION/ROCK (ARMOR) UNDERLAYMENT

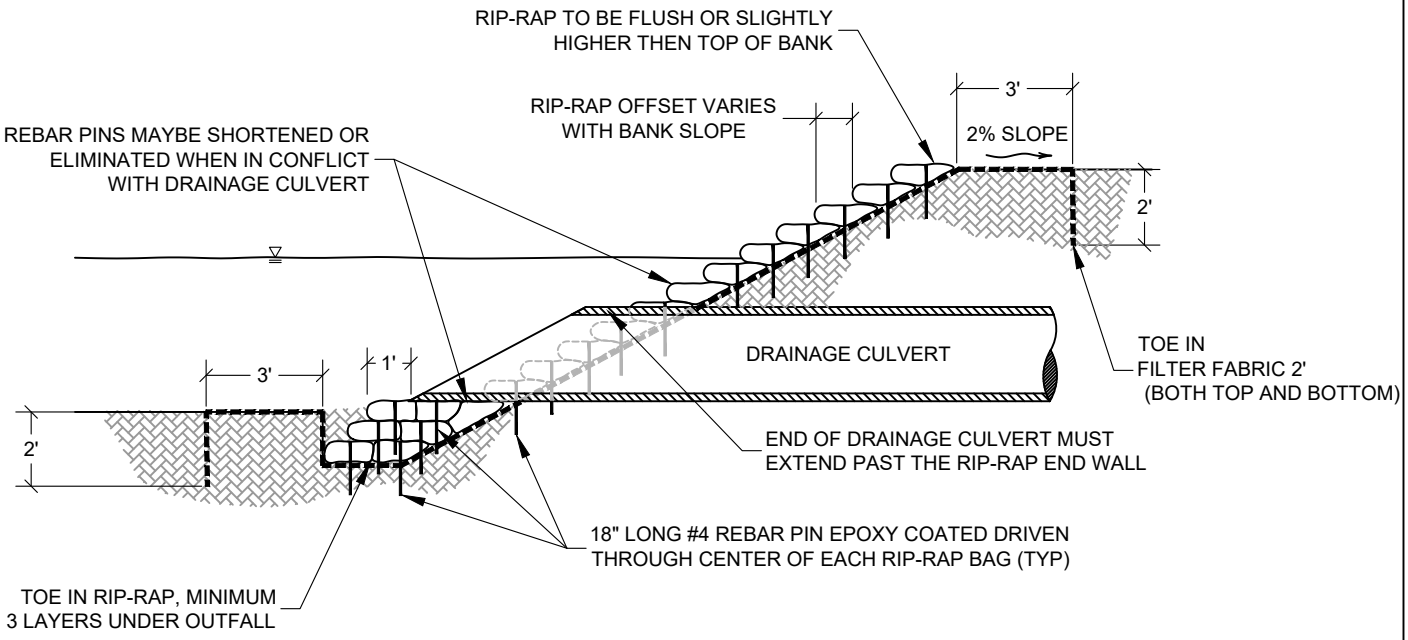
JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 12/2008

DRAWING No. SW-18



NEAR VERTICAL RIP-RAP END WALL



SLOPED RIP-RAP END WALL

UNLESS OTHERWISE NOTED FOR DRAINAGE CULVERTS:
- 24" OR LESS END WALL WIDTH SHALL BE 12'
- GREATER THEN 24" END WALL WIDTH SHALL BE 18,

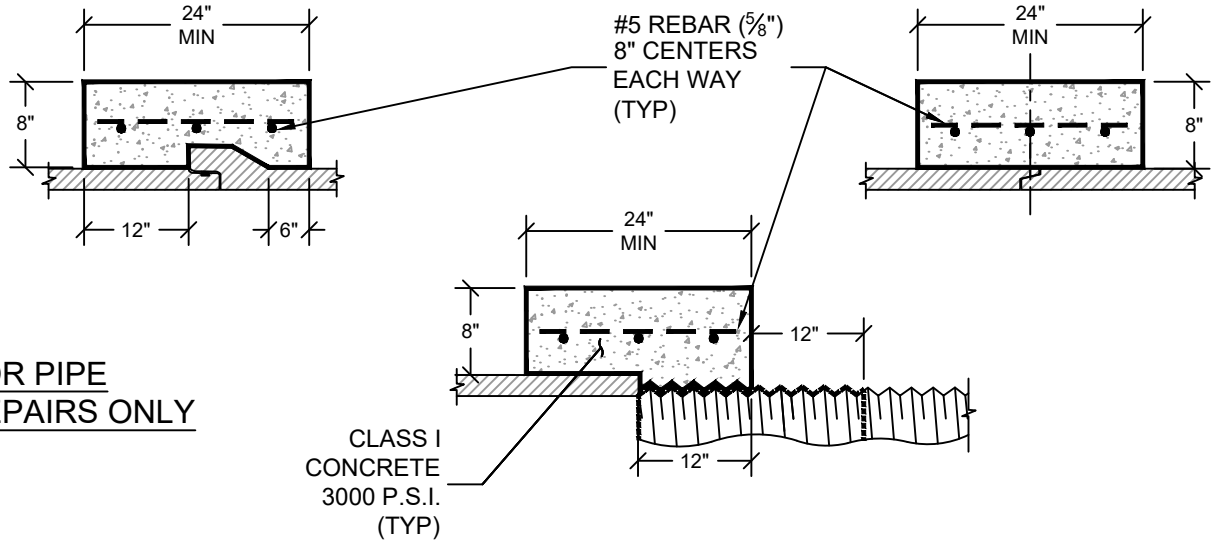
NOT TO SCALE

RIP-RAP END WALL

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

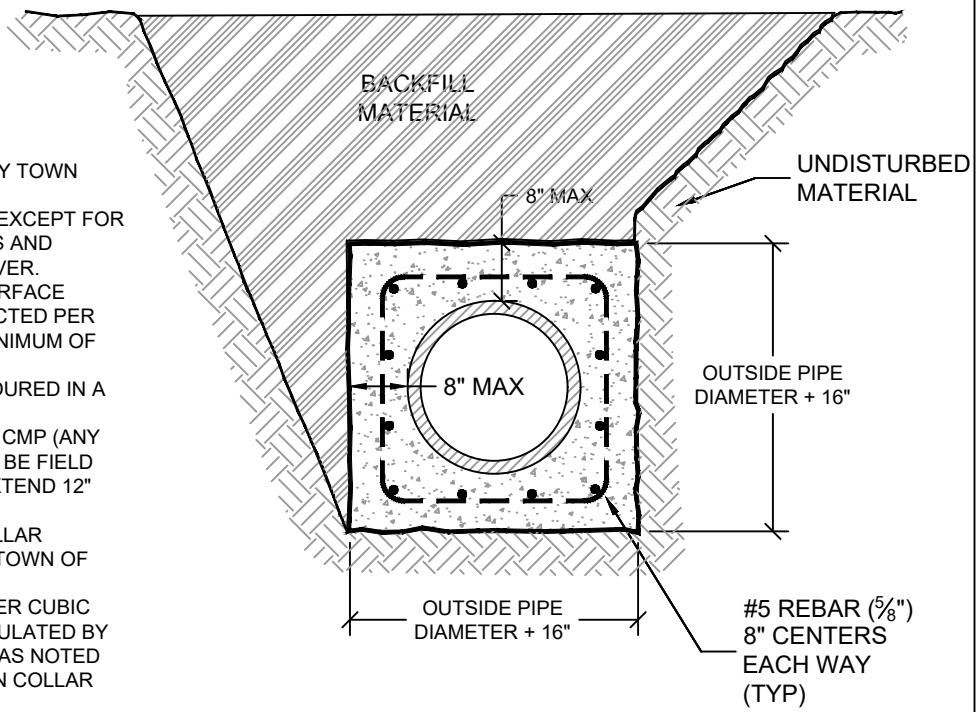
DATE APPROVED: 12/2021

DRAWING No. SW-18A



FOR PIPE REPAIRS ONLY

CONCRETE COLLAR SECTIONS



TYPICAL PIPE SECTION

NOTE:

1. REPAIRS TO BE APPROVED FOR USE BY TOWN ONLY
2. THIS DETAIL COVERS ALL PIPE TYPES EXCEPT FOR METAL PIPE OF DISSIMILAR MATERIALS AND FLEXIBLE PIPE WITH THE MINIMUM COVER.
3. BACKFILL (6" MAX. SIZE), BASE AND SURFACE MATERIAL TO BE PLACED AND COMPACTED PER APPROPRIATE SPECIFICATIONS OR MINIMUM OF 95% PER AASHTO T-180.
4. CONCRETE SHALL BE FORMED AND POURED IN A DRY TRENCH.
5. BITUMINOUS COATING REQUIRED FOR CMP (ANY SUITABLE BITUMINOUS MATERIAL MAY BE FIELD APPLIED) BITUMINOUS COATING TO EXTEND 12" BEYOND CONCRETE COLLAR.
6. ALTERNATE CONNECTION AND/OR COLLAR DETAILS MUST BE APPROVED BY THE TOWN OF JUPITER PRIOR TO INSTALLATION.
7. CONCRETE COLLAR COST SHALL BE PER CUBIC YARD OF CLASS I CONCRETE AS CALCULATED BY USING THE THEORETICAL NEAT LINES AS NOTED ON THIS DETAIL AND AN AGREED UPON COLLAR LENGTH (MIN 2 FT.).
8. PER CUBIC YARD COST SHALL INCLUDE SPECIFIED STEEL AND BACKFILL COMPACTION.
9. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.

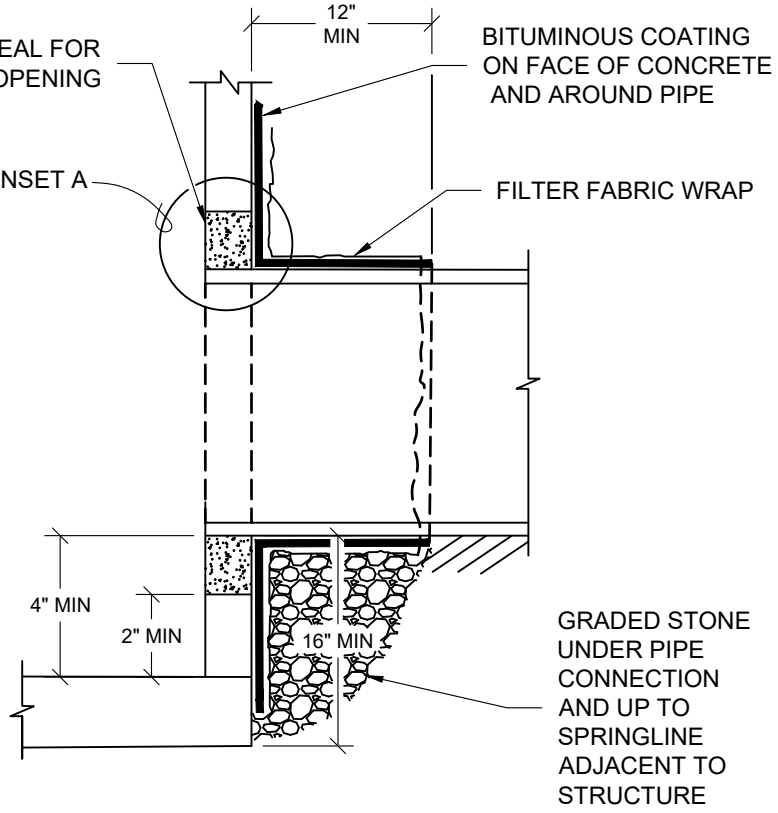
NOT TO SCALE

CONCRETE COLLARS FOR STORMWATER PIPE REPAIRS

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 01/2018

DRAWING No. SW-19



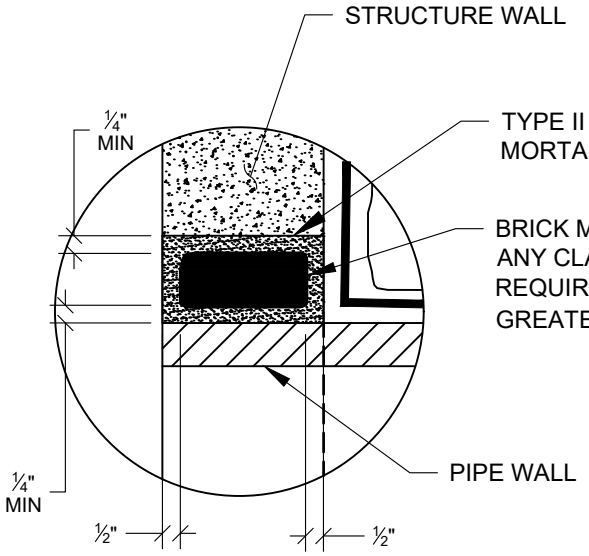
THIS DETAIL COVERS ALL PIPE CONNECTIONS TO STRUCTURES.

NEW PIPE CONNECTION NOTES:

1. CONNECTION SHALL BE MADE IN A DRY TRENCH.
2. EXISTING STRUCTURES SHALL BE CORED FOR NEW PIPE CONNECTIONS.
3. PIPE BEDDING AT CONNECTION TO BE ¼" TO ¾" GRADED STONE (100% PASSING 1" SIEVE).
4. BACKFILL (6" MAX. SIZE) MATERIAL TO BE PLACED AND COMPACTED PER APPROPRIATE SPEC'S DEPENDING ON THE SURFACE IMPROVEMENTS OR A MINIMUM OF 95% PER AASHTO T-180.
5. BITUMINOUS COATING REQUIRED (ANY SUITABLE BITUMINOUS MATERIAL MAY BE FIELD APPLIED) BITUMINOUS COATING TO EXTEND 2" BEYOND FILTER FABRIC.
6. ALTERNATE CONNECTION AND/OR MODIFICATION TO THIS DETAIL MUST BE APPROVED BY THE TOWN OF JUPITER PRIOR TO INSTALLATION.
7. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.

EXISTING PIPE CONNECTION REPAIR NOTES:

1. CONNECTION REPAIR SHALL BE MADE IN A DRY TRENCH.
2. REPAIR BOTH THE INSIDE AND OUTSIDE OF THE STRUCTURE PENETRATIONS.
3. CHIP AWAY ANY LOOSE MATERIAL.
4. SAWCUT OR CUT BACK THE EXTREMITIES OF THE REPAIR LOCATION TO A DEPTH OF ½" TO AVOID FEATHER EDGING.
5. MINIMUM MUD THICKNESS FOR REPAIR IS ½".
6. WHERE BREAKING OUT IS NOT REQUIRED, ROUGHEN THE SURFACE AND REMOVE ANY LAITANCE BY LIGHT SCABBING OR ABRASIVE BLASTING.
7. CLEAN SURFACE TO REMOVE ANY DUST, UNSOUND OR CONTAMINATED MATERIAL, PLASTER, PAINT, OIL, GREASE, CORROSION DEPOSITS OR ALGAE.
8. APPLY THOROC LA40 OR APPROVED EQUAL IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
9. ALTERNATE CONNECTION AND/OR MODIFICATION TO THIS DETAIL MUST BE APPROVED BY THE TOWN OF JUPITER PRIOR TO INSTALLATION.
10. ITEMS 3 THROUGH 6 UNDER NEW PIPE CONNECTION NOTES ABOVE APPLY TO REPAIR ON OUTSIDE OF STRUCTURE.
11. INSTALLATION OF ALL PIPE AND STRUCTURES MUST MEET THE BEDDING, INSTALLATION AND BACKFILL REQUIREMENTS FOR NEW STRUCTURES AND PIPE ON DETAIL SW-5.



INSET A

NOT TO SCALE

PIPE TO STRUCTURE CONNECTION

JUPITER UTILITIES
CONSTRUCTION STANDARDS AND DETAILS

DATE APPROVED: 10/2013

DRAWING No. SW-20

TOWN OF JUPITER UTILITIES

APPENDIX D

INDEMNITY AGREEMENT – Contact the Utility's Customer Service and Business Manager for most recent revision.

BILL OF SALE – Contact the Utility's Customer Service and Business Manager for most recent revision. Must include Engineers Cost and Fees.

EASEMENT DEED – Contact the Utility's Customer Service and Business Manager for most recent revision.

Watermain and Related Appurtenances Installation Cost Breakdown

Project Name_____

Qty	Description	Unit Cost	Total Cost
		TOTAL	

I hereby certify the above cost breakdown is completed and accurate as to the scope of
the water service agreement.

Property Owner Signature Date

FINAL STEPS FOR JOB COMPLETION FOR WATER

1.	FLUSHING	SEE PAGE #22
2.	PRESSURE TEST	SEE PAGE #23
3.	BACTERIOLOGICAL CLEARANCE	SEE PAGE #24
4.	AS-BUILT DRAWINGS	SEE PAGE #25
5.	EASEMENT & RIGHTS OF WAY	SEE PAGE #11
6.	BILL OF SALE INFORMATION	SEE PAGE # 27
7.	FINAL INSPECTION (Must be	SEE PAGE # 27
8.	UTILITY DIRECTOR SIGN OFF	CHECK OFF LIST BELOW

UTILITY DIRECTOR SIGN OFF REQUIREMENTS:

1. Four (4) Sets of approved as-builts, plus electronic version of as-built.
2. Certification Letter
3. Bacteriological of two consecutive samples
4. Pressure test report
5. Bill of Sale
6. Easements – Land surveyor must provide a signed and sealed statement that the facilities being dedicated to the Town are located within the described easements and/or rights-of-way as indicated on the record drawing.
7. Only complete submittal package will be accepted, partial submittal package will be returned to Project Engineer.

WATER FINAL SUBMITTAL CHECKLIST

Project Name: Town Project No:

__ Two sets of black lines as-builts Date _____

__ Certification letter by engineer Date _____

__ Maintenance Bond if applicable Date _____

__ Easements Date _____

__ Certification from Land Surveyor that water main is located in easement or right-of-way as indicated on record drawing Date _____

__ Bill of Sale Date _____

__ Bacteriological Test Date _____

__ Pressure Test Date _____

__ Punch list items completed Date _____

__ Signed off by Utility Field Manager Date _____

__ Electronic version of as-builts Date _____

__ DEP form(s) Date _____

STORMWATER SUBMITTAL CHECKLIST

PROJECT NAME: **TOWN PROJECT NO:**

____ Administrative Fee 1% of total drainage cost (**round to highest dollar**) and Stormwater Permit

____ Two (2) sets of engineering plans.

____ One (1) set of final landscape plans (council approval).

____ Two (2) copies of drainage calculation (including soil test, pre & past runoff quantities).

____ Copy of SFWMD permit.

____ Copy of other applicable permits (County, DEP, SIRWCD, NPBCID, NPBHWCD).

____ Signed & sealed Engineer's estimate of cost for stormwater system.

____ Copy of NPDES permit or application if the proposed project is 1 acre or larger.

____ Pollution Prevention Plan (PPP) for projects over one (1) acre or part of a project that already has a PPP

____ Total impervious area within the proposed project in square feet.

____ Identification and analysis of potential downstream impacts due to the proposed development.

____ Conflict details.

____ Letter from both the Landscape Architect and the Engineer that their respective plans have been reviewed by each other and are not in conflict.

Please submit a copy of this checklist with all the appropriate boxes checked with your submittal package.

STORMWATER MANAGEMENT/SYSTEM PERMIT APPLICATION

210 Military Trail, Jupiter, FL 33458
(561) 746-5134

Project Address								
Zone	CTY	RGE	TWP	SEC	SUB	BLK	LOT	Subdivision Name
Owner			Mailing Address					Zip
Contractor			Mailing Address					Zip
Contractor Cert No.		Jupiter Registration No.		Office Phone		Fax No.		Job Site Phone
Architect or Designer			Mailing Address			Phone		License No.
Engineer			Mailing Address			Phone		License No.

Retention/Detention Pond ( ) Exfiltration Trench ( ) Control Structure ( )
RCP ( ) HDPE ( ) CAP ( ) Swale ( )
New Construction ( ) Addition to Existing ( ) Repair Existing ( )

Describe Work: _____

MISINFORMATION AND MISREPRESENTATION MAY CAUSE THIS PERMIT TO BE REVOKED

Construction activity is permitted Monday through Saturday, 6:00 AM to 8:00 PM only. No construction activity is permitted on Sunday, Code of Jupiter, Section 13-93.

THIS PERMIT BECOMES NULL AND VOID IF WORK OR CONSTRUCTION AUTHORIZED IS NOT COMMENCED WITHIN 6 MONTHS OR IF CONSTRUCTION OR WORK IS SUSPENDED OR ABANDONED FOR A PERIOD OF 6 MONTHS AT ANY TIME AFTER WORK IS COMMENCED.

I hearby certify that I have read and examined this application and know the same to be true and correct. At provisions of laws and ordinances governing this type of work will be compiled with whether specified herein or not. The granting of a permit does not presume to give authority to violate of cancel the provisions of any other state or local law regulating construction or the performance of construction. Site safety along with maintenance of traffic is the contractors responsibility. Final certification by a registered professional engineer that the project as constructed is in strict conformance with the engineering plans may be required by the Town (Jupiter Code 25-35).

Print Name of Contractor, Authorized Agent or Owner-Builder

Signature of Contractor, Authorized Agent or Owner-Builder
Sec. 102.1 Right of Entry is acknowledged by active permit

Value	Permit Fee
Date Issued	Permit No.

Fee Simple Titleholder's Address _____
City_____ State_____Zip_____

Bonding Company_____
Address_____
City_____State_____Zip_____
Mortgage Lender's Name_____
Mortgage Lender's Address_____
City_____State_____Zip_____

Application is hereby made to obtain a permit to do the work installations as indicated. I certify that no work or installation has commenced prior to the issuance of a permit and that all work will be performed to meet the standards of all laws regulating construction in the jurisdiction. I understand that a separate permit must be reused for ELECTRICAL, PLUMBING, SIGNS, WELLS, POOLS, FURANCES, BOILERS, HEATERS, TANKS, AND AIR CONDITIONERS, ETC.

OWNER'S AFFIDVAVIT: I certify that all the foregoing information is accurate and that all work will be done in compliance with all applicable laws regulating construction and zoning.

WARING TO OWNER: YOUR FAILURE TO RECORD A NOTICE OF COMMENCEMENT MAY RESULT IN YOUR PAYING TWICE FOR IMPROVEMENTS TO YOUR PROPERTY. IF YOU INTEND TO OBTAIN FINANCING, CONSULT WITH YOUR LENDER OR AN ATTORNEY BEFORE RECORDING YOUR NOTICE OF COMMENCEMENT.

Contractor's Certificate of Competency No. _____ (contractor may act as Agent for owner only if he submits copy of contract signed by the Owner.)

_____	_____
Owner or Agent (Print)	Contractor (Print)
_____	_____
Signatur e	Signature
_____	_____
Date	Date

The foregoing instrument was acknowledged before me this_____day of_____, 20___by

_____, who has produced_____as

identification and who did (or did not) take an oath.

Notary Public, State of Florida at Large

Name Printed:___

My Commission Expires:____

The foregoing instrument was acknowledged before me this_____day of_____, 20___by

_____, who has produced_____as

Serial Number, if any:_____

identification and who did (or did not) take

an
oath.

Notary Public, State of Florida at

Large Name Printed:

_____ My

Commission Expires:_____

Serial Number, if any:_____

The Pollution Prevention Plan (PPP)

The PPP consists of a narrative description of the construction activity and should contain the following:

A site plan
Sequence of major activities
A sediment and erosion control plan
Description of the storm water management facilities Other controls (waste disposal, reuse water)
Offsite vehicle sediment tracking
Fertilizer/pesticide usage
Potential pollution sources
Maintenance requirements Inspections
Non-storm water discharges
Certifications
Modifications to the PPP

More detail can be found in the *Components of a Storm Water Pollution Prevention Plan for Storm* Water *Discharges Associated with Construction Activities*, which is a summary of the components to be included in the PPP in accordance with the EPA Region 4 General NPDES Construction Permit. A definition of terms used in the PPP can be found in the State portion of the Federal Register (pages 15669-15671).

Generally, the initial PPP is prepared and submitted by the owner and his/her authorized agent. Once a site operator or contractor has been selected they will be responsible for the implementation of the PPP, any modifications necessary to the PPP and onsite inspections of the controls listed within the PPP. The PPP is to be certified by both the owner and operator of the site. Certification forms for both the owner and contractors are attached at the end of this section.

The operator is required to inspect all controls and components of the plan on a weekly basis or after a ½" inch rainfall event. A sample of the Site Operator's Inspection Form for Construction Activity is attached at the end of this section.

The EPA may notify the co-permittee at any time of deficiencies within the plan. Within seven days of such notification, the co-permittee shall make required changes to the plan and submit to EPA a written certification that the requested changes have been made. Any amendments must be submitted to the state agency that issued the storm water permit. Amendments must be kept on site with the original PPP. All amendments to the plan shall be prepared, dated and kept as separate documents from the original plan. The co-permittee must retain records or copies of all reports required under the general permit, including storm water pollution prevention plans and records of all data used to complete the NOI, for a period of at least three years from the date of final stabilization.

Stormwater/Drainage and Related Appurtenances Installation Cost Breakdown

Project Name_____

Qty	Description	Unit Cost	Total Cost
		TOTAL	

I hereby certify the above cost breakdown is completed and accurate as to the scope of
the water service agreement.

Property Owner Signature Date

Stormwater Final Submittal Checklist

Project Name:_____ **Town Project No:**_____

___ Two sets of black line as-builts.

___ Certification letter by engineer.

___ Copy of certification of completion form for SFWMD (if applicable)

___ Bill of Sale if Town owned.

___ Easements if applicable

___ Certification from Land Surveyor that drainage line is located in easement or road right-of-way as indicated on record drawings.

___ Electronic Version of As-Builts

___ Engineer of Record to provide a signed and sealed statement as to the total site acreage, total impervious area and pervious area.

SURVEYORS CERTIFICATION

KNOW ALL MEN BY THESE PRESENTS, that the undersigned_____ _____has prepared the record drawings for water and Drainage and does hereby Certify, in his professional opinion that the water or drainage and related appurtenances show on the RECORD DRAWINGS, sheets_____ Dated_____and observed by_____in Their Constructed locations at the project known as_____ Being dedicated to The Town of Jupiter for ownership and maintenance, were installed within the limits of the following parcels of land:

Easements and/or Tracts as dedicated for utility purposes on the Plat of _____ Plat Book_____, Pages_____,
Public Records of Palm Beach County, Florida.

Easement as dedicated to the Town of Jupiter in Official Record Book_____ Pages_____Public Records of Palm Beach County, Florida.

And the following facilities have been located and depicted on the record drawings do not encroach onto adjacent parcels of land.

Signed_____Florida Registration No._____

Name_____AFFIX SEAL
(Please type)

Company Name: _____

Address: _____

_____

Telephone:_____

Exhibit