

SPRING TOWNSHIP WATER AUTHORITY

**SPRING TOWNSHIP
CENTRE COUNTY, PENNSYLVANIA**

**DEVELOPER
POLICY, PROCEDURES AND STANDARDS FOR WATER SYSTEMS**

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AMENDED: AS NOTED

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A. POLICY

1. The Board of the Spring Township Water Authority of Centre County, Pennsylvania in conformance with: Pennsylvania Department of Environmental Protection, adopts the following policies for the provision of water service within the service area of Spring Township Water Authority.
2. The Board of the Spring Township Water Authority subscribes to and supports, "The Spring Township Subdivision and Land Development Ordinance", adopted by the Spring Township, Centre County, Pennsylvania. To this end, the provision of water service within Spring Township shall be in full conformance with, "The Spring Township Subdivision Regulations".
3. The Board of the Spring Township Water Authority deems it necessary to establish uniform procedures for the providing of water service within the Spring Township Service Area.
4. The Board of the Spring Township Water Authority deems it necessary to establish regulations and standards for the design and construction of water systems within the Spring Township Service Area.
5. The Board of the Spring Township Water Authority deems that the entity proposing to provide water service to a subdivision or land development unit shall bear all costs for easements, water distribution extension design, design review, permit applications, water distribution extension construction and construction monitoring. Design review and construction monitoring by Spring Township Water Authority is to assure the conformance of the proposed water distribution extension with adopted Developer Policy, Procedures, and Standards for Water Systems.
6. The Board of the Spring Township Water Authority deems it advisable, to the extent permitted by law, to enter into contracts with entities who propose to provide water service within the Spring Township Service Area.
7. The Board of the Spring Township Water Authority deems that any approval of an application for a water distribution extension shall be valid only for a period of five (5) years from the date of such approval by the Authority. Completion of the facilities approved must be within this time period or a new application for a water distribution extension must be filed and a new water distribution extension agreement executed.
8. The Board of the Spring Township Water Authority deems that when any application for a water distribution extension has been approved, no subsequent changes in these Developer Policy, Procedures and Standards for Water Systems shall be applied to affect adversely the right of the applicant to commence and to complete any aspect of the approved application for water distribution extension in accordance with the terms of such approval within five (5) years from the date of said approval by the Authority. The terms of said approval shall be construed in the light of the provisions of the governing documents as they stood at the time of approval by the Authority.
9. The Board of the Spring Township Water Authority deems that the maximum protection to the public and the optimum operation of the system can best be achieved through careful and strict monitoring of any and all connections to, modifications to, and

extensions of the Authority's facilities. Therefore, all connections to, modifications to, and extensions of the Authority's facilities shall be approved by the Board prior to the start of any work on the proposed improvements. Any unauthorized connections to, modifications to, or extensions of the Authority's facilities shall be the basis for the refusal of water service to the unauthorized improvements.

10. The Board of the Spring Township Water Authority deems that it is in the best interests of Spring Township to plan for future growth within the Authority's service area and, in some cases to require installation of water mains larger in size than are otherwise required by the Developer Policy, Procedure and Standards for Water Systems.
11. The Board of the Spring Township Water Authority deems it essential that Spring Township have full and free right of access to the public water system. Therefore, prior to the Authority's certification of the completion of the water distribution extension and the subsequent acceptance by the Authority, the Developer shall furnish the Authority copies of all applicable documents showing that all easements to be used by or to be granted to the Authority have been properly recorded in the Office of the Clerk of the County Court of Centre County, Pennsylvania.

B. DEFINITIONS

Phrases, terms and words used herein shall have the definitions stipulated herein:

1. Authority - The Spring Township Water Authority of Centre County Pennsylvania.
2. AWWA - American Water Works Association, Denver CO. and their standards and specifications of latest revision.
3. Construction Documents - Detailed engineering plans and specifications for the proposed mainline extension.
4. Consultant - Engineering firm and/or individual licensed to practice engineering in Pennsylvania which has been retained by the Authority to provide engineering services relative to and to review applications with supporting data for service within the Authority's service area.
5. Contractor - The person, firm or corporation that the Developer has hired to construct the Work.
6. Developer - An individual, firm, association, syndicate, partnership, corporation, trust or other legal entity having sufficient proprietary interest in the land to be subdivided or developed to commence and maintain the proceedings of securing a water distribution extension and water service from the Authority for the land to be subdivided or developed.
7. DPP&S - The Developer Policy, Procedures and Standards for Water Systems.
8. Drawings - The drawings which show the scope, extent and character of the Work to be furnished and performed by Contractor which have been approved for construction by the Authority. Shop drawings are not Drawings as so defined.
9. PADEP - Pennsylvania Department of Environmental Protection

10. PennDOT - Pennsylvania Department of Transportation
11. Project - The water distribution extension with appurtenances required by the Authority to provide water service to the Developer's proposed subdivision or land development unit. A Project may be submitted, approved and constructed in phases.
12. Project Designer - The registered professional engineer retained by the Developer to perform the project design services and to prepare the construction documents.
13. Shop Drawings - All drawings, diagrams, illustrations, schedules and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
14. Specifications - Written technical descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Work and certain administrative details applicable thereto.
15. Subdivision Regulations - "The Spring Township Subdivision and Land Development Ordinance", adopted by Spring Township of Centre County, Pennsylvania.
16. Utility - Any one of the private or public utilities (water, sewer, gas, electric, telephone, TV cable and drainage) which may provide service to the proposed development and their physical facilities within the area to be developed.
17. Water Distribution Extension - The extension of the Authority's system which shall include all water mains, valves, fire hydrants, air-release/vacuum valves, valve boxes, blow-off assemblies, casings, restraints and service connections within the easement or right-of-way limit and through and including the curb box. This definition includes the construction components of all water distribution extensions.
18. Water Distribution Extension Agreement - Agreement between the Authority and Developer covering the particulars of the water distribution extension.

C. OVERVIEW OF PROCEDURES FOR DEVELOPER TO OBTAIN WATER SERVICE

1. Developer shall make a written request to the Authority for water service availability for a specific site within the Authority's service area. The written request for water availability shall include a description of the proposed land use of the specific site, estimated water needs and sketch, map or plat showing the specific site location.
2. The Authority will make a written response to the Developer as to the availability of water service.
3. Should the Developer desire to pursue the proposed project further, Developer shall purchase a copy of the DPP&S. The fee charged for the DPP&S will be the cost of printing and binding the document.
4. Developer shall execute a "Water Distribution Extension Agreement" with the Authority.
5. It is recommended that the Developer or a member of the Developer's design team attend a pre-Application meeting with the Authority to discuss the project approval and execution process, Authority requirements and project-specific concerns.

6. Developer designs project and shall submit three (3) sets of the construction documents to the Authority for review. A review will be made and the comments transmitted directly to the Developer and/or the Project Designer. Project Designer shall address all review comments, make the necessary modifications and return three (3) revised copies of the documents to the Authority. A second review will be made. If necessary, a meeting will be scheduled at the Authority office to include the Developer, the Project Designer and the Authority.
7. Developer secures all needed permits based upon the Authority approved construction documents. All permits and copies of the approved drawings must be in the possession of the Authority before construction may begin.
8. Developer shall give Authority ten (10) days written notice prior to beginning construction. Developer and developer's contractor shall meet with the Authority and the project inspector at the project site a minimum of 48-hours before construction of the mainline extension may begin. Developer must submit materials specifications for review and approval prior to starting construction.
9. The Developer shall construct the water distribution extension in accordance with the approved construction documents.
10. Following construction, all water distribution extensions shall be pressure tested, disinfected and flushed before connection to the existing the Authority distribution system. Cross-connections in any form are prohibited.
11. Developer shall deliver Dedication Agreement, maintenance bond, as-built drawings and all easements for the water distribution extension to the Authority.
12. After the as-built drawings are deemed acceptable to the Authority, the Developer will submit the electronic files of the drawings.
13. Authority will conduct a review of completed construction and with all needed documentation in-hand, will sign and record the Dedication Agreement. Upon recording the Dedication Agreement, the Authority owns the mainline extension and individual water services may now be activated.
14. An Application for Service must be submitted for each lot requiring water service.

D. APPLICATIONS FOR WATER DISTRIBUTION EXTENSIONS

1. Applications to the Authority for water distribution extension shall include: (a) the legal name and address of the entity to execute the agreement; (b) the name of the proposed subdivision or land development to be covered by the agreement; (c) a site map to show the location of the proposed project; and (d) the estimated type and number of units to be served.
2. Authority will prepare and send the Water Distribution Extension Agreement to the Developer for signature. The Water Distribution Extension Agreement will be signed by the Developer and returned to the Authority.

3. The Authority Board will approve and execute the Agreement. A copy of the executed Agreement will be forwarded to the Developer. No agreement nor liability exists between the Authority and the Developer until the Agreement is approved by the Authority.

E. PREPARATION AND SUBMISSION OF CONSTRUCTION DOCUMENTS

1. All construction documents for water distribution extensions shall be prepared and submitted in accordance with the applicable State regulations and DPP&S. The requirements outlined herein are to supplement the applicable State regulations and the more stringent of these requirements or regulations shall govern.
2. Drawings shall be 24" x 36" in size.
3. Drawings shall include an Authority signature block. Signature block shall be shown on each sheet that includes water system components. Signature block should not be shown on sheets not directly related to the water system, including erosion and sediment control, stormwater drawings, and sewer profiles. To the extent possible, the signature block should be placed in the lower right hand corner of each sheet or incorporated into the right side margin.
4. Original drawings and their reproducibles shall be accurate, explicit, clear and legible to provide an accurate basis for review and construction. The use of shading shall be avoided. Should special circumstances require shading, pattern shading is acceptable due to the variability of reproduction processes. Lettering shall be simple, legible, free of adornment and spaced to assure complete legibility when photographically reduced. Notes, descriptions, etc. shall not be smaller than 0.125" size. Notes shall not be placed in shaded areas, nor crowded into small spaces. Leaders shall be utilized for clarity.
5. A suitable north arrow shall be provided on all plan views. Insofar as possible, plans shall be oriented such that the north arrow points toward the top or toward the left side of the drawing sheet. Graphic scales (both horizontal and vertical when applicable) shall be shown on each sheet.
6. Construction drawings shall consist of a cover plan, plan drawings, profile drawings, and detail drawings.

7. Cover plan shall include a location map, a site map showing the extent of the project, an index of the sheets in the set of drawings, bench mark location and description with plane of datum, and a legend where needed.
8. Plan drawings shall consist of and/or show:
 - a. The area to be developed with all property lines, all lot lines, all easements and all street rights-of-way complete with property monuments and pins.
 - b. Existing contours, features and utilities.
 - c. Proposed contours, features and utilities.
 - d. Water distribution extension and appurtenances (shown as symbols).
 - e. Water distribution extension shall be stationed continuously from point of connection to the existing system or point of origin. Point of origin within the proposed development is where the minor street branches from the major street.
 - f. Reference data to be shown on each drawing shall include: (1) station elevations at each street intersection; (2) referenced benchmark and description located within 500 ft. of the sheet limits; and (3) one (1) foot contour intervals labeled at the ten (10) foot interval.
 - g. Where the water distribution extension, appurtenances and easements are referenced to a survey baseline, this baseline must be shown and stationed with bearings and distances.
 - h. Easements shall be provided for water distribution extensions. Easements shall show survey and alignment data and shall be dimensioned. Minimum easement width shall be twenty (20) feet with the water main and/or appurtenance located in the center of said easement. For dead-end mains, fire hydrants, blow-offs, and similar appurtenances the easement shall extend full width perpendicular to the centerline of the water distribution extension and shall extend a minimum of ten (10) feet beyond the limits of the appurtenance.
 - (1) Easements shall be granted to the Authority prior to the Authority taking ownership of the water distribution extension.
 - (2) Easements shall be located to maximize current and future utilization of the adjoining property.
 - *i. Service connections to buildings shall be located water up-grade and sewer down-grade from the building. Water, sewer and other utility services shall not be placed in a common trench and there shall be a minimum of five (5) feet of separation between water service and any other utility. Location of water services are to be considered approximate unless otherwise noted.
 - j. Proposed, typical street cross-section showing the location of all utilities to be installed in the project.
9. Profile drawings shall consist of and/or show:
 - a. Existing and proposed features and utilities.

- b. A continuous profile of the proposed water distribution extension showing existing ground surface and finished roadway center-line grade for a proposed water distribution extension to be installed parallel to and within 15 feet of the center-line of the street. All other proposed water distribution extensions shall have the finished grade shown at the center-line of the water distribution extension.
- c. Water distribution extension pipe size, specification, material and class:
EXAMPLE: 8" CLASS 52 DUCTILE IRON
- d. Water distribution extension appurtenances shall be shown using a vertical leader at the station of location. Vertical lettering along the leader shall give the station and type of appurtenance.
- e. Standard terms and their definitions to be used on the profile drawings:
 - (1) "Size" GV - Gate valve with screw type valve box and cover. "Size" = Appurtenance pipe size, i.e., 6", 8", 12", etc. EXAMPLE: 8" GV.
 - (2) "size" "angle" BEND (Direction) - Bend with anchorage. "size" as above. "angle" = 900, 450, 22.50, and 11.250. (Direction) = Bend opening to the (RT) or (LT) looking up station. EXAMPLE: 8" 11.250 BEND(RT).
 - (3) "Size" x "Size" x "Size" TEE (Direction) - Tee with anchorage. Label tee run x run x branch. "Size" as above. (Direction) = Branch opening (RT) or (LT) looking up station. EXAMPLE: 8"x 8" x 6"TEE(LT).
 - (4) "Size" x "Size" INCREASER or REDUCER - Increaser or reducer fitting with anchorage. "size" as above. EXAMPLE: 8"x 6" REDUCER.
 - (5) "Size" CAP or PLUG - Cap or plug fitting. "Size" as above.
 - (6) "Size" METER - Meter assembly including meter, meter setter and meter crock or vault. "Size" as above.
 - (7) "Size" SERVICE CONNECTION - Customer service connection. "Size" as above.
 - (8) AR/VV - air release and vacuum valve with vault.
 - (9) BLOW-OFF - Blow-off assembly.
 - (10) FIRE HYD - Fire hydrant assembly of 6"GV, 6" connecting line, fire hydrant and anchorage.
 - (11) May combine TEE and FIRE HYD at one station on one leader and CAP or PLUG and BLOW-OFF at one station on one leader.
- f. The limiting pipe deflection where pipe joints are deflected.
- g. Sewer crossings shall be shown in the profile view.

10. Special structures and any other work not covered by the Authority Construction Standards shall be detailed fully to insure that the finished work is structurally sound and hydraulically correct.
11. Supplemental construction specifications shall stipulate and describe any construction material, equipment, or procedure not covered by the Construction Standards. Construction Standards may be duplicated in whole or in part on the drawings or incorporated by reference.

F. WATER DISTRIBUTION EXTENSION CRITERIA

1. General Requirements:

- a. Trenches shall provide solid and continuous bearing for all pipe installed. Over excavation shall be backfilled to the proper grade with compacted earth, sand fine gravel or similar material. Piping may not be supported by rocks or blocks at any point. Rocky soil shall be over excavated to a depth equal to one (1) times the pipe diameter or six (6") inches whichever is greater and backfilled to the proper grade with compacted granular material.
- b. No rocks, broken concrete, frozen chunks or other rubble can be deposited within the trench until the pipe is covered by at least twelve (12") inches of compacted approved bedding. Remaining trench depth can be backfilled with approved material in layers of eight (8") inches and compacted in place.
- c. PennDOT 2A or 2RC aggregate shall be placed and compacted in six (6") inch layers within the trench to a minimum depth of twelve (12") inches over the top of the pipe.
- d. Bedding for copper pipe or when unsuitable native material exists shall be clean topsoil, non-limestone select granular material or sand, conforming to PennDot Publication 408, Section 703.1, 703.2 or 703.3 respectively. Bedding shall be placed twelve (12") above and six (6") inches below the waterline.
- e. Shall have the following cover over the pipe barrel and service line:

<u>Pipe Size</u>	<u>Minimum Cover</u>	<u>Maximum Cover</u>
Up to 8-inch		42 inches 84 inches
12-inch and greater	39 inches	84 inches

If for any reason the stipulated cover cannot be maintained over pre-existing or newly installed water mains or water service lines, the effected mains and service lines shall be relocated at no expense to the Authority.

- f. To the extent possible, water main shall be located 5 feet outside of the limits of the pavement.
- g. Where the line is to be constructed on fill exceeding 4 feet in depth, pipe shall include restrained joints.
- h. Main line at road crossings within the PennDOT right-of-way shall be installed in

- casing. All other road crossings shall not require casing; however, all joints beneath the roadway shall be restrained.
- I. If the Project includes widening of existing roadways, and such widening results in existing water mains being located beneath pavement, relocation of said existing water mains and all meters and other existing appurtenances is required.
 - *j. Water and sewer mains shall be located to maintain a horizontal separation of at least 10 feet and a vertical separation of at least 18 inches. Where the specified separation cannot be met, the water main must be cased with a full stick of larger pipe, with the larger pipe centered at the crossing.
2. Pipe:
- a. Pipe shall be ductile iron pipe (DIP), Class 52, double cement lined.
 - b. Eight-inch water main is the Authority's standard for water distribution extensions.
 - c. Six-inch main size permitted on cul-de-sac or dead-end street, provided the following criteria are met:
 - (1) Maximum of 12 residential services or equivalent connected thereto.
 - (2) Minimum 35 psi static pressure at terminal end.
 - (3) Maximum length of main is 500 feet.
 - *d. Waterlines shall be looped with all existing and proposed waterlines. There shall be no dead end lines within a development and all developments shall have two (2) connections to the water system at opposite ends of the development to provide redundant water sources.
 - e. Line extensions shall be mechanically restrained and physically restrained with concrete at all changes in size, direction, horizontal and vertical, and at all termini. Mechanical restraint shall be designed for local water system test pressures and local soil conditions. Test pressure is defined as 1.50 times the local operating pressure. Restraint locations and lengths shall be shown on the construction drawings.
3. Water distributions extensions shall terminate with a cap (plug) and blow-off. With the Authority approval, fire hydrants may be placed in lieu of blow-offs. Where a water distribution is intended for future extension, an isolation valve shall be provided at the termination.

4. Automatic air release valve with vault or automatic air release and vacuum valve with vault:
 - a. Shall be installed at the high point(s) along a water distribution extension to discharge entrapped air from the system or to admit air to the main to prevent conduit failure.
 - **b. Deleted.
5. Isolation and control valves shall:
 - a. Shall be gate valves, direct burial type with screw type, adjustable roadway boxes.
 - b. Open by turning left (counter-clockwise).
 - c. Shall be located to minimize service disruptions and to maintain adequate fire protection during emergencies which require shut-down of a section(s) of the water system.
 - d. Shall be located to allow a section of water main to be shut down or to be taken out of service by operating a maximum of four (4) valves.
 - e. Shall be placed on each leg of a tee or cross fitting.
 - f. Shall be located outside the limits of existing, proposed or future pavements.
 - g. Consider the existing and proposed systems in isolation valve location.
6. Fire hydrants:
 - a. Shall have six-inch minimum connection to the main.
 - b. Shall be tied to valve and valve tied to main.
 - c. Shall be installed so hydrants are conspicuous to the public.
 - d. Shall be installed with the extension of water mains in locations, approved by the water authority, which assure adequate accessibility of fire equipment and personnel. Fire hydrants shall be placed in such a manner that no lot so served shall be further than 500 feet from a hydrant.
 - * e. Shall be manufactured by American Flow Control, Model B-62-B and shall be provided with National Standard Thread. The hydrant pumper nozzle shall be of one-piece design, compatible with 5" Storz hose coupling. The nozzle shall be an integral part of the fire hydrant.
7. Services:
 - a. Services for all lots in the Developer's Project shall include: (1) service taps and utility service lines; and, (2) all curb stops with curb box containing an extension stem at the right-of-way or easement line.

- *b. Service lines shall be copper, Type K, soft temper conforming to ASTM B-88 and B-251. Service lines up to 100 feet must be continuous with no couplings.
 - c. Corporation shall have tapered inlet threads that conform to AWWA/CC and compression joint outlet. Shall be Ford Type F1800 or Mueller Type 300.
 - d. Curb stops shall have compression joints on both sides. Shall be Ford Type B44 or Mueller Type 300.
 - e. All services larger than 2" shall have gate valves.
 - f. Curb boxes shall be cast iron, two piece, screw type with bituminous coating.
 - *g. If the service line to the proposed building is going to exceed 150 feet, a meter pit shall be placed at the property line for installation of the water meter. Meter pits for services up to and including two (2) inch shall be high density polyethylene with cast iron locking lid and associated mounting for touch read equipment. Coppersetters shall be provided for meters up to one (1) inch. Meter pits for larger meters shall be precast concrete with lockable aluminum hatch manufactured by Bilco or equal, mounting for touch read equipment, access steps, ladder-up safety device, meter isolation valves and drain sump. Meter pit design and layout drawings shall be submitted to the authority for approval.
 - ***h. Fire protection (sprinkler systems) for commercial, industrial and single ownership multi-family may be provided through normal use service lines (combined use) or a dedicated fire service line. If a combined use service line will be installed, backflow prevention and flow detection specific for fire protection shall be provided on the line providing fire protection. If water metering will take place prior to the splitting of the fire protection and normal use lines, metering capable of accurately measuring low and high flows must be provided. If a dedicated fire protection line is going to be installed, then backflow prevention and flow detection specific to fire service shall be provided.
 - ***i. Service for residential single family and multi-family properties served individually that require sprinkler service shall be served by a single service line (1" minimum). Water meter shall be placed to meter all water used with domestic and sprinkler use splitting after the meter. Sprinkler line shall include flow detection and backflow prevention. In cases where an existing 3/4" tap already exists, the developer/ property owner will have to determine whether the 3/4" tap is sufficient for fire sprinkler system water demands. If the existing 3/4" tap is insufficient, the developer/property owner shall incur the cost to increase tap size. In cases where system pressure is insufficient for fire sprinkler system, the developer/ property owner may install a pump/pressure tank. All fire sprinkler systems will be in accordance with NFPA 13R.
8. Limit of water distribution extensions:
- a. All water distribution extensions shall begin at the existing Authority water system main which has adequate capacity to provide water service to the proposed land development/subdivision.
 - b. Rural areas or open land areas shall have the water distribution extension from the existing Authority water system to a terminus point as necessary to adequately serve the applicant/Developer. Said extension shall fully cover the subject property frontage.

- c. Urban areas where the land is or is proposed to be subdivided into lots:
 - (1) Areas adjoining existing improvement and development or rights-of-way and easements containing water mains shall have the mainline extension connect to all existing the Authority water system mains located in any roadway or street right-of way or easement which is proposed to be extended to or into the proposed land development/subdivision.
 - (2) Areas without adjoining improvements and development shall have the mainline extension from the existing Authority water system to all limits of the tract.

- 9. Pumping Stations:
 - a. A pump station shall be provided when insufficient pressure exists from the Authority's system to service proposed development.
 - b. Pumps shall be sized to pump from Authority's system to a storage tank that will service the proposed development. Pump capacity will be such to provide estimated projected daily water demands with operating for six (6) hours.
 - c. Duplicate pumps will be provided and installed so that if a pump fails the backup pump will operate.
 - d. Pump controls will be provided to automatically control the pumps based upon tank level. Tank level data shall be telemetered to pump station via radio telemetry system.
 - e. Pump stations shall be split-face block structure, insulated, and shall include all necessary appurtenances such as but not limited to piping, valves, electric service, phone service, heat, ventilation, pump controls, radio telemetry and alarm dialer.

- 10. Storage Tanks:
 - a. A storage tank shall be provided when proposed development is such that it can't be serviced from the existing Authority's system and a pump station is required.
 - b. Storage tank shall be sized to provide a minimum of two (2) days storage of projected maximum customer needs plus sufficient capacity to provide required fire flows. Elevation at tank shall be such to provide a minimum of 35 psi to all customers in proposed development.
 - ***c. Storage tank shall be constructed of stainless steel, welded steel or concrete. Storage tanks shall meet all applicable AWWA standards.
 - d. The entire tank site shall be fenced for security. Fence shall be 8' high chain link style, with three (3) strands of barbed wire on top. One (1) double wide vehicle gate and one (1) main gate shall be provided.
 - e. All necessary appurtenances shall be provided including but not limited to piping, valves, electric service, security lighting, radio telemetry equipment and building for telemetry equipment.

11. Highway crossings will be controlled by PennDOT criteria. Casings are required at all crossings of PennDOT roadways and shall be placed in accordance with PennDOT specifications. Casings are required at all stream crossings requiring a water ways construction permit from the State. Casing shall include the steel pipe, the steel and plastic insulators or pipe carriers and the mechanical, synthetic rubber end seals.
12. All required appurtenances shall be shown on the plans. "As required or placed per field conditions" will not be accepted.

G. ELECTRONIC FILE SUBMISSIONS

1. The Authority maintains an AutoCAD-based map of its entire water distribution network. In order to maintain the currency of the Authority's map, Project Designers are required to submit electronic data files for all projects, in addition to the paper copies. The electronic file must be submitted when the Project is ready for approval and signature by the Authority's Board.
2. The electronic file must be compatible with AutoCAD.

H. PERMITTING

1. All construction of water mains within the PennDOT right-of-way requires a permit from PennDOT. All applications shall be made in the name of the Authority and shall be signed by the designee of the Authority. The Developer is responsible to submit the signed application, construction drawings and permit fee directly to PennDOT.

I. CONSTRUCTION ACTIVITIES

1. The Developer must submit materials specifications for review and approval prior to starting construction. The Authority will review the data submitted and when found complete and acceptable, will provide written approval for their use on the Project.
2. Developer shall maintain one (1) copy of all approved construction documents at the job site during the execution of the work.
3. The Authority's inspector or its representative will inspect all construction activities on a frequency and at times determined to be appropriate and necessary.
4. As-built drawings shall be maintained during construction by the Developer and provided to the Authority once construction is complete.
5. Water distribution extension shall be pressure tested as previously stated.
6. Water distribution extension shall be disinfected following completion of the hydrostatic testing in accordance with AWWA C651 as amended.

J. ACCEPTANCE OF WATER DISTRIBUTION EXTENSION

1. Acceptance by the Authority of Developer water distribution extension shall be based

upon meeting the Authority DPPS and current State regulations. Said acceptance shall follow a site review of the completed work by the Authority who will certify to the completion of the facilities and establish a date for acceptance.

2. Developer shall execute a Dedication Agreement conveying all installed facilities to the Authority.
3. Developer shall provide a Maintenance Bond, Letter of Credit or cash escrow in the amount of 15% of installed system cost for a period of 18 months to cover any expenses incurred in connection with the extension.
4. Following completion of construction of the water distribution extension, successful hydrostatic testing and disinfecting of the mains, payment of any outstanding fees, receipt of all recorded easements, receipt of signed Dedication Agreement and Maintenance Bond, approval of as-built drawings, the Authority will sign and record the Dedication Agreement.

K. APPLICATION FOR INDIVIDUAL WATER SERVICES

1. Every individual or entity (owner, tenant, contractor, builder or developer) shall make a written application to the Authority for water service on the standard forms. No applications will be accepted prior to the line being dedicated to the Authority. Following receipt of the application and any required fees:
 - a. Applicant shall install the customer service pipe from the curb stop location to an isolation valve located inside the foundation of the new premises or to an isolation valve located below the frost line in a vault, accessible to the Authority, at the mobile home premises to receive water service.

L. FEE CHARGES

1. The Developer shall pay all cost associated with the water distribution extension including but not limited to engineering reviews, legal consulting and inspection services.