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Ferdinand Water Department Distribution System Specifications

December 2020

The Followings Specifications can be revised from time to time without notice. Engineers and Contractors shall talk to the Water/Wastewater Superintendent as to changes and submittals prior to construction to make sure specifications have not changed.

General Water Construction;

Excavation and Grading

Excavating shall be as indicated on the plan and profile sheet to lines, grades, and elevations as shown.

If rock is encountered, then rock shall be removed to a point of 6 inches below pipe and bedded with fill sand. The final sand grade shall be 6" above the pipe crown. Under Town Streets rock shall be installed to full grade and must extend 4 foot past the curb and gutter.

Trench excavation with 8" and 10" pipe will be 24" wide following 10 State Standards.

Adequate and proper shoring of all excavations shall be the responsibility of the contractor, and they shall provide barricades, signs, fencing, etc. to protect trenches.

Pipe laying, Bedding and Backfilling

Pipe shall be laid accurately to the lines and grade as shown on the plans and profile sheet. Pipe laying shall proceed up-grade.

All Water pipe will be put to grade on a minimum of 4" of fill sand and there shall be no voids under or around the pipe. The pipe shall have a minimum of 6" of fill sand above the pipe crown. If the rock is encountered during excavation, a minimum of 6" of fill sand will be used under the pipe.

The sanitary sewer line shall be separated from a water line with 18" vertical and 10 feet horizontal clearance.

Vertical Separation

If the 18" vertical separation is not practical the crossing shall be arranged so that the sewer joints will not be equal distant and as far as possible from the water main joints. The contractor shall follow the latest Ten States Standards manual recommendation.

Horizontal Clearance

Horizontal clearance shall be at least 10 feet. If this is not practical the design engineer may require construction of a slip on or mechanical joint pipe complying with public water supply design standards of the agency and be pressure tested to 150 psi (1034kpa) to assure watertightness before backfilling.

Stream Crossing

All materials and construction shall be in accordance with INDOT specifications, and in Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers, and must comply with all requirements of the permit as issued by IDEM and Town of Ferdinand Specifications.

The top of all water mains entering or crossing streams shall be at a sufficient depth below the natural bottom of the stream bed to protect the water service line. In general, the following cover requirements must be met:

- a. Three feet of cover in other material. In major streams, more than 3 feet of cover may be required; and
- b. In paved stream channels, the top of the water service line should be placed below the bottom of the channel pavement.

The pipe segment is composed of a material not subject to damage from freezing, such as ductile iron. PVC piping encased in concrete will not necessarily be adequately protected.

Inspection

When the job is in progress, the Town of Ferdinand will inspect and approve and/or reject any portion of the construction that has been performed even if there is a site inspector.

No portion of the work shall be covered prior the Town of Ferdinand's inspection or a field inspector selected by the Town. A 24 hour notice shall be given to the Water/Wastewater Superintendent prior to the start of construction. If not inspected and it was backfilled the contractor shall at his own expense uncover the pipe and fittings for inspection.

Maps

Upon completion of the project, 3 sets of AS-Builts plans will be made to show the exact location of all lines, fittings, valves, hydrants, elevations, grades, etc. These plans shall be given to the Town of Ferdinand within 30 days after all testing is complete. All CAD Drawings and electronic files shall also be given to the Town of Ferdinand with all changes.

Guarantee

Work shall be guaranteed for 1 year from the date of acceptance (after all testing has been completed). This guarantee will be on valves, pipe, hydrants and service connections, backfilling, yard work, road patches, etc., and the workmanship associated with the installation of the water system.

The developer and/or contractor shall be responsible for requesting the Town to accept the water mains after the 1 year warranty period if built to Town Specifications. The Town has the right to reject the take over of water main. This shall be done at a regular Town Council Meeting as to provide proof in the minutes recorded by the Town Clerk/Treasurer of the request. If this is not recorded it will be the developer and/or the contractor's responsibility for any and all cost of upkeep and/or repairs of the water mains they installed.

Water Specifications;

Water Pipe/Fittings and Bury Depth;

The minimum water main size is 8" C900

Fire Hydrant service line shall be 6" C 900

All Fire Hydrants shall have a 6" valve installed within 3 feet of hydrant and a valve box installed to grade

All water mains shall be C900 DR-18 Pipe.

Water mains shall have a minimum depth of 52 inches

All water mains shall be stored 12" above grade and never in mud or water flooding areas during construction. If pipe gets mud or debris in stored pipe it shall be cleaned before being installed. Superintendent shall be notified.

All Fittings shall be AWWA Standards and stored 12" above construction grade as to keep out of dirt, mud, and water. All fittings shall be kept clean.

All water main fittings shall be blocked with solid concrete blocks or poured concrete but pipe shall be protected with felt or plastic, no direct pipe contact with liquid concrete

Commercial and Industrial connections shall be specified by an engineer

Home service connections can be either ¾” or 1” in size. Again this will be determined by distance and type of service.

Home service lines shall be ¾” or 1” SCH-40 pipe or roll HDPE pipe

Home service lines shall have a minimum bury depth of 30 inches

Water meter pit shall be to finish grade

The top of water meter setter will be 12 inches down from the meter lid and the crock shall be centered around the setter for service of the check valve.

The crock shall be 18 inch PVC and the lid shall be PVC with a bracket for the Remote Read meter antenna to slide into as to the Towns existing units.

Hydrants, Valves Install;

Hydrants and valves and all fittings shall rest on a concrete pad.

Hydrants shall be placed onto a concrete block and after all bolts are tightened number 7 rock shall be placed 24” above weep hole before backfill.

Connections;

All new construction will have a Meter Crock, Meter Setter with check valve installed by contractor on every lot proposed. The Town will provide the meter setter to the contractor during the construction. The Remote Radio read meter will be installed by the Town. All Tap-in fees are based on pipe sizes and other requirements.

A 3” PVC Curb stop shall be installed by the contractor during construction and installed within 5 foot of the road curb and gutter. The curb stop riser shall be brought to the proposed grade height and staked as to the location until the construction has been completed. The stake shall be 30 inches high and painted blue and made of 1” PVC pipe.

Comercial connections fees will be calculated by type of service and size requirements. There are 3 type of water services, Domestic water for drinking, Irrigation for watering grass and plants, and Fire sprinkler service for fire protection.

Sprinkler lines shall not be tapped into for domestic water service. A separate drinking water service line shall be installed. It may be installed in the same trench but seperated 2 foot appart from the fire sprinkler main.

Fire sprinkler pit shall be designed by an engineer and the Town water/wastewater superintendent shall be given plans for review prior to construction. This will give the supervisor time to review and make changes before construction begins.

Tracer Wire;

All service lines and water mains shall have a number 12 ga. coated Tracer wire taped to pipe every 6 to 8 feet with 3 rounds of tape to hold the tracer wire in place. A 12 ga. Solid coated copper wire shall be secured along the pipe and brought 24" above grade next to the cleanout and secured with a stainless clamp at the end of the cleanout or a separate 3/4" pipe shall be installed over the wire and secured to the home or structure. If the wire is to be spliced a water proof connectors shall be used.

Please note;

Due to progress, some materials that may be new to our area, the contractor and/or sub-contractors shall gain approval from the water/wastewater superintendent. The Superintendent has all final say as to materials used. No unapproved materials are to be brought onto the job site. The contractor and/or sub-contractor shall provide all written information on the new product they are seeking to use and shall give the information to the water/wastewater superintendent 10 days in advance or that product shall be rejected.

If Engineering specifications state other type of materials on project the Town of Ferdinand specifications are to be followed. Some engineering firms are not aware of our requirements or they are using the wrong or outdated specifications. Engineering firms and/or contractors shall follow Town specifications and talk to the water/wastewater superintendent as to current specifications. Some projects may have been designed years ago and not using the current specifications

NOTE; All older specifications written before 2020 are **Voided** from this date on. This has been Revised as of December 2020.