

Standards and Specifications Changes & Updates 2019 Edition

The following updates/changes to the Town of Erie's Standards and Specifications for Design and Construction of Public Improvements have been PROPOSED:

UNIVERSAL-

- Changed all 2018 dates to 2019 in footers

COVER SHEET-

- Updated edition date

TABLE OF CONTENTS-

- No changes

SECTIONS-

SECTION 100- Title, Scope and General Requirements

- Changed all references of "Construction Acceptance" or "Substantial Completion/Construction" to "Initial Acceptance."

Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.

151.01 Design Review

Proposed for 2019 Edition:

Submit the following for review:

1. Plans showing:
 - a. Vicinity map
 - b. Property limits
 - c. Existing contours
 - d. Detailed plans of all surface and subsurface drainage devices
 - e. Finished contours
2. Drainage report
3. Geology and soils report
 - a. Stormwater Management Plan (SWMP) including erosion control plan, erosion control practices, proposed permanent stormwater Best Management Practices (BMPs) and other information as requested by the Town Engineer.

Deleted: and

Reason: added wording to refer to the town Engineer

SECTION 200 – Acceptance Procedures

- Changed all references of "Construction Acceptance" to "Initial Acceptance."

Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.

SECTION 300 – Site Work and Earthwork

- No changes

SECTION 400 – Concrete Work

- No changes

SECTION 500 – Town Street Construction

- **Changed all references of “Construction Acceptance” to “Initial Acceptance.”**

Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.

- **523.01 – Structural Sections for Streets**

Proposed for 2019 Edition:

	EDLA	Composite Section	
		Base	Asphalt
Local Residential			
< 50 D.U.	8	8"	4"
> 50 D.U.	10	8"	4"
Collector			
70' Right-of-way Width	30	8"	4"
80' Right-of-way Width	100	9"	6"
Minor Arterial	200	9"	6"
Principal Arterial	200	12"	8"

Deleted: Residential Zoning

Deleted: Com./Indust. Zoning

Reason: Changed table to make collector typical sections

- **544.00 – Hot Bituminous Pavement**

Proposed for 2019 Edition:

The gradation of the mineral aggregate will be grading SG (1 1/2" nominal), or S (3/4" nominal) for new street construction. Grading SX (1/2" nominal) shall be used for top lifts and overlays or in special cases as required on the accepted plans or authorized in writing by the Town Engineer.

Deleted: may

Reason: Toplift SX Only

SECTION 600 – Water Supply Facilities

- **632.09 – Valve Boxes**

Proposed for 2019 Edition:

All buried valves shall be provided with a valve box. Valve boxes shall be gray cast iron, ASTM A48 Class 20A, two (2) piece adjustable screw boxes with a round base and a five and one-fourth (5-1/4) inch screw-type shaft suitable for depth of cover as required. Valve box lids for water lines shall be marked with the word "WATER," valve box lids for fire lines shall be marked "FIRE," and valve box lids for Non-Potable

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water lines shall be marked “NON-POTABLE WATER.” Refer to Parks and Recreation Section 1000 regarding valve box lids for irrigation lines.

Reason: Added “WATER” (WP)

▪ **632.18 – Tracer Wire and Warning Tape**

Proposed for 2019 Edition:

A No. 12 AWG insulated, single strand copper wire shall be attached to all pipes, for the purpose of future locating, as detailed in the Standard Drawings. A three (3) inch wide, detectable warning tape shall be installed above all pipe, for the purpose of warning of location of buried pipeline as detailed in the Standard Drawings. Certification of continuity testing required at time of Substantial Completion/Construction Acceptance.

Deleted: detachable

Reason: Incorrect word - Replaced detachable with detectable

▪ **Added 634.00 – 634.06 – NON-POTABLE WATER SYSTEM (WP)**

Reason: Added Non-Potable Water to section 600

Proposed for 2019 Edition:

634.00 NON-POTABLE WATER SYSTEM

634.01 General

The minimum standards for the Non-Potable Water System shall be similar to those given in Section 630.00 for Water Distribution Systems with the exceptions as listed hereinafter.

634.02 Design/Sizing

Non-Potable Water Main sizing shall be to deliver not less than ~~twenty~~ (20) psi dynamic pressure at the Non-Potable Water Main during peak flow rate (demand) conditions. The Non-Potable Water System will not be designed to provide any fire protection flows.

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634.03 Non-Potable Water Main Materials

Non-Potable Water Mains shall be purple and shall conform to AWWA C900 PVC, Purple Pressure Pipe for Non-Potable water, minimum Pressure Class 235. DR 18.

634.04 Valve Boxes:

Valve boxes shall be in accordance with Drawing NO. W38. The triangular valve box covers shall be Model #4TCI16S by Castings, Inc. or approved equal and shall have “Non-Potable Water” cast on the cover.

634.05 Warning Notification on Lines and Tape

All Non-Potable Water Mains shall be installed with warning tapes and with the warning printed directly onto the Non-Potable Water Main. The warning tape, and printing directly on the Non-Potable Water Main, shall state: “NON-POTABLE LINE – DO NOT DRINK”.

634.06 Non-Potable Water Main Installation

All mains shall be flushed in accordance with Section 633.13. Disinfection of Non-Potable Water Mains is not required.

The Non-Potable Water Main shall not be installed closer than ten feet (10') horizontally to the Potable Water Main or Sanitary Sewer.

▪ **644.00 – Inspection**

Proposed for 2019 Edition:

All taps, meter sets, and inspections must be scheduled during regular working hours a minimum of two working days (forty-eight [48] hours) in advance. All taps must be scheduled by calling 303-926-2870. All inspections must be scheduled by calling 303-926-2870. All meter sets must be scheduled by calling 303-926-2870. All installations by Contractors must meet these STANDARDS AND SPECIFICATIONS. Unnecessary recall inspections or meter installations are subject to an assessment that will equal the expenses accrued to complete the inspection. This amount will be one and one-half (1½) times that of the inspector's wages.

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Reason: Incorrect phone number

▪ **Added 645.00 - 645.05 – NON-POTABLE WATER SERVICES (WP)**

Reason: Added Non-Potable Water to section 600

Proposed for 2019 Edition:

645.00 NON-POTABLE WATER SERVICES

645.01 General

The Non-Potable Water Service Lines shall be installed similarly to the standards designated in Section 640.00 for Water Service Lines; with the exceptions in materials and installation as itemized below. Non-Potable Water Service Lines shall be marked on the curb with an "R" where the service line cross under the curb.

645.02 Non-Potable Water Service Line Materials

All Non-Potable Water Service Lines outside the meter pit shall be of plastic materials, as follows:

Three-quarter inch (3/4") through three-inch (3") size Non-Potable Water Service Lines shall be polyethylene, non-jointed, conforming to AWWA C901, minimum Class 160 psi, using HDPE 3408 material. All PE service lines shall conform to Iron Pipe Size (IPS) sharing the same O.D. as Schedule 40 and 80 PVC. The pipe shall have purple color coding, permanently co-extruded stripes on the pipe

Non-Potable Water Service Lines four-inch (4") diameter and larger shall be AWWA C900 Purple Pressure Pipe for reclaimed water, minimum Pressure Class 235, DR 18.

645.03 Warning Notification on Non-Potable Water Service Line and with Tape

All Non-Potable Water Service Lines shall be installed with warning tapes and with the warning printed directly onto the pipe. Warning tapes shall be installed directly on top of the Non-Potable Water Service Line longitudinally and shall be centered. Acceptable tape or printing directly on the Non-Potable Water Service Line shall state: "NON-POTABLE LINE – DO NOT DRINK".

645.04 Meters and Meter Pits

Three-quarter inch (3/4") and one inch (1") meters shall be installed per Drawing W12A; one and one-half (1-1/2") and two-inch (2") meters shall be installed per Drawing W13. The requirements of Potable Water meters shall apply except; polyethylene by copper compression couplings shall be provided at the meter pit inlet and outlet, the meter color shall be purple, the pre-cast polyethylene meter pit interior color shall be purple, and by-pass piping is not needed. The ball valves shall be shall have an enlarged tee-head embossed with "Non-Potable Water". The meter and meter pit cover shall be marked for identification purposes with a color designated by the Town.

645.05 Non-Potable Water Service Line Installation

The Non-Potable Water Service Line shall not be installed closer than ten feet (10') horizontally to the Water Service Line or Sewer Service Line. No Non-Potable Water Service Lines shall be installed inside a building or within five feet (5') of a building foundation. A marking tape with the words "NON-POTABLE LINE – DO NOT DRINK" shall be installed just above the Non-Potable Water Service Line. If the meter is not installed at the time of Non-Potable Water Service Line installation, in the right-of-way, a one and one-half inch (1-1/2") black PVC or Acrylonitrile-Butadiene-Styrene marker pipe six feet (6') long, shall be installed vertically at the end of the Non-Potable Water Service Line as a marker.

SECTION 700 – Sanitary Sewer Facilities

- **Changed all references of "Construction Acceptance" to "Initial Acceptance."**

Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.

- **743.05 – Tapping the Main**

Proposed for 2019 Edition:

Where wyes have not been installed in the sewer main, the main will be tapped by machine drilling a hole into it sized to fit the saddle being used for the tap. The Town Engineer shall approve the drilling machine and method of drilling. A representative of the Town shall inspect the main and saddle at every tap prior to backfilling. In the event that a tap is covered before it is inspected, the Contractor, at his own expense, shall uncover the tap and remove any concrete or mortar from around the fitting to allow for a visual inspection of the tap and the main. If the sewer main is cracked or broken during the process of locating and tapping, the Contractor shall, at his expense, immediately repair the broken. Sewer tapping saddle shall be an epoxy and double strapped saddle. Service taps directly into a manhole will not be allowed without the written approval of the Town Engineer. When approved, service taps into manholes will be completed in accordance with Section 730.00 of these STANDARDS AND SPECIFICATIONS.

Reason: 6" Sewer service into wye, doesn't require manhole

Deleted: A manhole will be installed instead of a service tap when a six (6) inch connection is to be made to an eight (8) inch or smaller main.

SECTION 800 – Storm Drainage Facilities

- Changed all references of “Construction Acceptance” to “Initial Acceptance.”

Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.

SECTION 900 – Traffic Control Devices

- No changes

SECTION 1000 – Parks

- Updated date in footer from pages 34-95 for consistency
- Updated the word Rhyzomatous to the correct spelling – Rhizomatous

1051.00 – General

Proposed for 2019 Edition:

The Contractor will furnish the Town with:

- quick coupler key with hose swivel (1)
- drain key (1)
- turn-off key (1)
- control clock keys (2)
- valve box key
- head wrench (1 for each type of head)
- sprinkler heads (2 of each type)
- remote controller (1)
- quick coupler square locking/unlocking key (1)
- square gate valve key, if applicable (1)
- stop and waste key (slotted) (1)
- maintenance manuals for all components
- as built drawings
- controller charts at each field controller
- sample program

Reason: Added “remote controller (1); quick coupler square locking/unlocking key (1); square gate valve key, if applicable (1); stop and waste key (slotted) (1)”

Remote controller (1): To perform system checks in the field

Quick coupler square locking/unlocking key (1): Provide the Town access to quick coupler

Square gate valve key, if applicable (1): To isolate the irrigation system after the backflow

Stop and waste key (slotted) (1): To isolate the water supply before the backflow

1051.02 – Coverage

Proposed for 2019 Edition:

For permanent irrigation systems, system must be designed to provide 100% head to head coverage with matched precipitation rates. For temporary irrigation systems, irrigation heads must reach at least 80% of the distance to the next head. Shrub and perennial beds are to be zoned separately. Heads shall not overspray walkways, pavements or other hard surfaces. Spray radius of heads will be limited to water only areas intended to be watered.

Deleted: s

Reason: Added "...irrigation heads must reach at least 80% of the distance between the next head."
Reduces cost to the developer and falls in line with industry standards.

■ 1052.11 – Zone Valves

Proposed for 2019 Edition:

The zone valves will be direct burial, diaphragm type with a contamination-proof filter, a flow control and a manual bleed screw, such as the Rainbird PEB series, for "dirty water" applications. PESB-R valves shall be used. They will be operated with a twenty-four (24) volt solenoid and will be capable of allowing compressed air to flow through them. All zone valves will be placed in a locking Rain Bird or equal valve box approved by the Assistant to the Town Administrator Community Services or designee. Install valve at proper depth so that the top of the flow control handle is one (1) to three (3) inches from the bottom of the valve box lid. All valves will be installed with a PVC, true-union ball valve upstream of valve, and a PVC union downstream of valve. ~~Install only one valve per valve box. Install all valve boxes a minimum of twelve (12) inches apart, and at least twelve (12) inches from and aligned with all adjacent walls or pavement edges.~~ Stamp all valve box lids with corresponding controller station number.

Deleted: ,

Deleted: in valve box over three (3) inches depth of three-quarter (¾) inch gravel.

Reason: Removed "...in valve box over three (3) inches depth of three-quarter (¾) inch gravel".
Components can be lost in the gravel making them difficult to locate. Should the valve break, gravel can enter the lateral or main line and cause maintenance issues.

■ 1052.12 – Heads

Proposed for 2019 Edition:

In shrub and flower beds, Rainbird 1812 SAM-PRS or equivalent heads will be used. They will have a minimum pop-up height of twelve (12) inches, and will be installed using the bottom inlet.

Deleted: In some cases, bubblers may be permitted with approval of the Assistant to the Town Administrator-Community Services.

Reason: Removed "In some cases, bubblers may be permitted with approval of the Assistant to the Town Administrator-Community Services." We are no longer using bubblers; associated bubbler detail has also been removed. Multiple outlet emitters are being used instead of bubblers.

■ 1052.15 – Quick Coupler Valves

Proposed for 2019 Edition:

Each system will have a minimum of one quick coupler valve located adjacent to the downstream side of the backflow preventer. This valve will be a Rain Bird No.44QC (or approved equivalent). It will be installed in a ten (10) inch diameter round locking valve box as manufactured by Rain Bird ~~and installed with a fabric lined bottom.~~ All quick couplers will be installed with a swing joint. The quick coupler valve shall be connected to the mainline using a pre-manufactured PVC swing joint and shall be equipped with a rubber cover and solid brass body with anti-rotation stabilizing wings.

Deleted:

Deleted: over 3" of ¾" gravel.

Reason: Removed "...over 3" of ¾ gravel" and replaced with "...and installed with a fabric lined bottom". Should the valve break, gravel can enter the lateral or main line and cause maintenance issues.

■ 1052.17 – Isolation Valves

Proposed for 2019 Edition:

Install isolation valve in a separate 10" Rain Bird round locking box with stand pipe.

Deleted: over a three (3) inch depth of three-quarter (¾) inch gravel for each assembly

Reason: Removed "...over a three (3) inch depth of three-quarter (¾) inch grave for each assembly. Should the isolation valve break, gravel can enter the lateral or main line and cause maintenance issues.

▪ 1052.20 – Drip Irrigation

Proposed for 2019 Edition:

A flush cap will be installed at the end of each distribution line. Install flush cap in appropriate round **valve** box.

Deleted: over three (3) inches of three-quarter (¾) inch gravel

Reason: Removed "...over three (3) inches of three-quarter (¾) inch gravel." Added "...valve". Should there be a break, gravel can enter the lateral or main line and cause maintenance issues.

▪ 1052.20 – Drip Irrigation

Proposed for 2019 Edition:

Do not use risers, or any drip components that extend above finish grade of beds.

Deleted: bubblers,

Reason: Removed "...bubblers," We are no longer using bubblers; associated bubbler detail has also been removed. Multiple outlet emitters are being used instead of bubblers.

▪ 1083.04 – Requirement for Flared Ends at Intersecting Trail Connections

Proposed for 2019 Edition:

At each trail intersection, there shall be a flared end to assist maintenance vehicles, pedestrians and cyclists in navigating the turn. At ninety (90) degree intersections, flare shall be placed. For more information, **refer to Detail Drawing P26 for required flare sizes.** If not clearly shown on approved construction drawings, trails which intersect at an orientation other than ninety (90) degrees will be field-fitted to create an appropriate flared trail connection.

Deleted: a three foot (3')

Deleted: see the Stand Detail sheet which shows this requirement.

Reason: Flared ends of various sizes at trail intersections are necessary to facilitate safety and mobility of maintenance vehicles. One size, as currently designed, does not meet the current needs of staff vehicle size and turning radii.

▪ 1083.05 – Crusher Fines Specifications

Proposed for 2019 Edition:

Crusher fines shall be **tan** or grey colored, depending upon project requirements.

Deleted: gold

Reason: Removed "...gold" and replaced with "...tan". Crusher fines are not available in the color gold locally. Replaced with tan, which has been used by the Town for several years.

▪ 1084.01 – Spine Trail

Proposed for 2019 Edition:

T. No manholes to be located within eight feet (8') of spine trail edges (as measured from outermost edge of concrete and/or crusher fines).

Reason: Added "T." For plowing and maintenance mowing safety purposes. Similar to requirement J. in the same section.

SECTION 1100 – Traffic Signals

- No changes

STANDARD DETAILS:

Curb/Gutter and Sidewalk Details

- SW4A – Add concrete wings to drive cut (MW)

Reason: Correcting a drawing error.

- SW5, SW6, SW8, SW10A, SW10B, SW10C – Delete sidewalk grooves and notes from diagram (WP)
- SW9 – Delete sidewalk grooves and notes from diagram (WP) Delete 6' Dimension (JM)

Streets Details

- ST1A, 1B, 2A, 2B, 3, 4 – Update to transportation master plan street sections (WP)
- ST3 – Structural Sections – One sidewalk to 8' wide (WP)
- Detail ST5- Change sight distance (MW)
- Detail ST7- Add note that final overlay must be SX mix (JM)
- Detail ST15B- Add note regarding sizing of signs (GH)

Sanitary Sewer Details

- No changes

Storm Sewer Details

- STM2 – Modify drawing to include concrete cutoff wall as well as other modifications. (MW)
- STM3 – Update inlet protection to UDFCD detail. (MW)
- STM12 – Modify callouts and notes to refer to "Note 7" rather than "See Table" and change title.
- STM14 – Modify callouts and title.
- STM16A & STM16B – New sidewalk chase drain details.

Water Details

- W11B - Depth should be 4.5' min, it currently says "max" (WP)
- W13 – Change to composite lid (MW)
- W39A – Include new detail for Standard Irrigation Meter Vault (Plan View) and update index. (WP)
- W39B – Include new detail for Standard Irrigation Meter Vault (Section View) and update index. (WP)

Parks Details

- P02, P03, P04, P08, P09 - Remove gravel and call-out from diagram (DC)

- P05, P21 - Remove gravel and call-out from diagram ALSO add “Non-woven Landscape Fabric” and call-out to diagram. (DC)
- P05 – Change title to “Electric Control Valve Assembly Turf Zone.” Also update index. (RC)
- P06 – Change title to “Commercial Control Valve Drip Zone Assembly.” Also update index. (RC)
- P06 - Remove gravel and call-out from diagram, add “Non-woven Landscape Fabric” and call-out to diagram. Modify one portion of lateral diagram and remove portion of notes that reads, “and PSI M40X-100 Pressure Regulator.” (DC)
- P11, P13 – Remove sizes from titles on detail and index. (RC)
- P17 –Change title to “Multiple Outlet Emitter to Trees.” (DC)
- P22 – Remove standard (DC) – replaced with blank page.
- P25 – Include a diagram for crusher fine trail to be located uphill and another diagram for downhill. (DC)
- P28 – Modify signage wording to include “DO NOT DRINK” (TF)
- P29 – Remove gravel and call-out from diagram ALSO add “Non-woven Landscape Fabric” and call-out to diagram. (DC)
- P27 – Create new diagram for changes in trail flare shape and dimensions. Include notes to scale flares for smaller and larger than typical trail intersections.
- P28 – Add language to Non-Potable sign that says “DO NOT DRINK.”

Traffic Signal Details

- TS-1 – Addition of safety cables, notes and new Erie logo (GH)
- TS-3 – Changes to school flashing beacon (MW)
- TS-10 – Changes to controller cabinet (GH & MW)

GENERAL NOTES:

Construction

- Changed all references of “Construction Acceptance” to “Initial Acceptance.”
- Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.*

Grading

- No Changes

Parks

- No Changes

Roadway

Proposed for 2019 Edition:

- Added “11. The gradation of the mineral aggregate will be grading SX (1/2” nominal) for all top lifts and overlays.

Sewer

- Changed all references of “Construction Acceptance” to “Initial Acceptance.”
- Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.*

Storm Drain

10. WHERE RIPRAP OR GROUTED BOUDERS ARE CALLED FOR ON THE PLANS FOR EROSION CONTROL, IT SHALL CONFORM TO THE URBAN STORM DRAINAGE CRITERIA MANUAL SPECIFICATIONS (LATEST REVISION).

Reason: To include direction for the contractor when Grouted Boulders are called for

Deleted: IS

Water

- Changed all references of “Construction Acceptance” to “Initial Acceptance.”

Reason: Initial Acceptance is the more commonly used term rather than construction acceptance.

- Added “Non-Potable Water” to General Notes

Non-Potable Water (New section added)

1. AT ALL POINTS OF CONNECTION OF NEW NON-POTABLE WATER MAINS TO EXISTING MAINS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR EXCAVATING AND VERIFYING LOCATION OF THE EXISTING MAINS PRIOR TO ANY CONSTRUCTION.
2. EXCEPT IN CASE OF AN EMERGENCY, VALVES ON THE TOWN OF ERIE NON-POTABLE WATER SYSTEM SHALL BE OPERATED BY OR UNDER THE DIRECTION OF THE APPROPRIATE TOWN OF ERIE PERSONNEL. THE CONTRACTOR SHALL GIVE THE TOWN OF ERIE ENGINEERING STAFF 48 HOURS NOTICE TO ARRANGE FOR OPERATING VALVES. BOTH THE CONTRACTOR AND THE APPROPRIATE TOWN OF ERIE PERSONNEL SHALL BE PRESENT WHEN THE VALVES ARE OPERATED.
3. NON-POTABLE WATER, WATER AND SANITARY SEWER LINES SHALL HAVE A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET. WHEN A TEN (10) FOOT SEPARATION IS NOT PROVIDED OR WHEN SEWER LINES CROSS NON-POTABLE WATER MAINS WITH LESS THAN ONE AND ONE-HALF (1½) FEET OF VERTICAL SEPARATION, SEWER LINE JOINTS SHALL BE CONCRETE ENCASED. FOR PERPENDICULAR CROSSINGS, ENCASED JOINTS SHALL EXTEND TEN (10) FEET, PERPENDICULAR TO THE NON-POTABLE WATER LINE IN BOTH DIRECTIONS.
4. ALL NON-POTABLE WATER MAINS SHALL HAVE A MINIMUM OF FOUR AND ONE-HALF (4½) FEET OF COVER AND BE LOCATED A MINIMUM OF TEN (10) FEET FROM THE SANITARY SEWER AND THREE (3) FEET FROM THE EDGE OF CONCRETE CURB AND GUTTER PAN.
5. CHANGES IN DIRECTION OF NON-POTABLE WATERLINE PIPE SHALL REQUIRE BENDS IN ALL INSTANCES. AXIAL DEFLECTION AT THE JOINTS SHALL NOT BE ALLOWED.
6. WHEN IT IS NECESSARY TO DEPRESS WATER MAINS AT UTILITY CROSSINGS, A MINIMUM CLEARANCE OF ONE AND ONE-HALF (1-1/2) FEET SHALL BE MAINTAINED BETWEEN OUTSIDES OF PIPE.
7. DISTANCES FOR NON-POTABLE WATER MAINS ARE THE HORIZONTAL DISTANCE BETWEEN THE CENTERS OF THE FITTINGS. THEREFORE, DISTANCES SHOWN ON THE PLANS ARE APPROXIMATE AND COULD VARY DUE TO VERTICAL ALIGNMENT AND FITTING DIMENSIONS.

8. ALL NON-POTABLE WATER LINE VALVES SHALL BE SET ADJACENT TO THE TEE, EXCEPT FOR POINTS THAT FALL IN THE FLOW LINE OF A CONCRETE CROSS PAN. IN WHICH CASE, THE VALVE SHALL BE LOCATED SO THAT SURFACE DRAINAGE DOES NOT INFILTRATE THE VALVE BOX. VALVE BOXES SHALL BE SET AT AN ELEVATION IN ACCORDANCE WITH TOWN PAVING REQUIREMENTS.
9. ALL NON-POTABLE WATER MAINS SHALL BE POLYVINYL CHLORIDE (PVC) PRESSURE PIPE UNLESS SPECIFIED OTHERWISE. NOMINAL PVC PIPE SIZES 6-INCH THROUGH 12-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-900, PRESSURE CLASS 150 (DR18). NOMINAL PVC PIPE SIZES 16-INCH THROUGH 24-INCH SHALL CONFORM TO ALL REQUIREMENTS OF AWWA STANDARD C-905, PRESSURE CLASS 165 (DR25). ALL PVC PIPES SHALL HAVE OUTSIDE DIAMETERS EQUIVALENT TO CAST IRON PIPE.
10. FIRE HYDRANT ASSEMBLY INCLUDES THE FIRE HYDRANT, SIX (6) INCH VALVE, AND SIX (6) INCH PIPE. INSTALLATION SHALL BE IN ACCORDANCE WITH THE TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
11. ALL FITTINGS SHALL BE MADE FROM DUCTILE IRON, FURNISHED WITH MECHANICAL JOINT ENDS OR INTEGRAL RESTRAINED JOINTS, AND SHALL HAVE A PRESSURE RATING OF 350 PSI.
12. POLYETHYLENE WRAPPING SHALL BE INSTALLED AROUND ALL DUCTILE IRON PIPES, FITTINGS, VALVES, FIRE HYDRANT BARRELS AND ROD AND CLAMPS. THE POLYETHYLENE SHALL HAVE A MINIMUM THICKNESS OF EIGHT (8) MILS, IN ACCORDANCE WITH AWWA STANDARD C-105.
13. ALL NON-POTABLE WATER MAINS SHALL BE PROVIDED WITH A MINIMUM GAGE SIZE OF 12 SINGLE STRAND INSULATED COPPER WIRE. SPLICES IN TRACER WIRE SHALL BE CAPPED IN NON-POTABLE WATER PROOF GEL CAP TYPE CONNECTORS SUITED FOR DIRECT BURY APPLICATION (3M TYPE DBY-6 LOW VOLTAGE OR EQUAL). WIRE SHALL BE ATTACHED TO TOP OF NON-POTABLE WATER LINE WITH 2-INCH WIDE PVC TAPE @ 5-FT INTERVALS ALONG PIPE. TRACER WIRE SHALL EXTEND TO THE SURFACE AND BE COILED IN A LOCATE BOX AT THE BACKSIDE OF EITHER EACH FIRE HYDRANT OR VALVE. UNDER THE SUPERVISION OF TOWN OF ERIE ENGINEERING STAFF, TEST SHALL BE MADE BY THE CONTRACTOR @ THE COMPLETION OF CONSTRUCTION TO INSURE THAT THE TRACER WIRES CARRY A CONTINUOUS CURRENT BETWEEN ALL ACCESS POINTS.
14. WARNING TAPE SHALL BE INSTALLED 12" MINIMUM AND 18" MAXIMUM ABOVE THE NON-POTABLE WATER PIPE.
15. BEDDING MATERIAL SHALL CONFORM TO TOWN OF ERIE STANDARDS AND SPECIFICATIONS.
16. VALVES SHALL OPEN COUNTER CLOCKWISE. VALVES 12-INCH AND SMALLER SHALL BE RESILIENT SEAT GATE VALVES. LARGER VALVES SHALL BE BUTTERFLY VALVES.
17. VALVE BOXES SHALL BE RAISED TO ONE-FOURTH (1/4) INCH BELOW GRADE AFTER COMPLETION OF SURFACE PAVING OR FINAL GRADING. VALVE BOXES IN NON-

PAVED AREAS SHALL HAVE A CONCRETE COLLAR AROUND THE VALVE LID IN ACCORDANCE WITH THE DETAIL.

18. ALL SERVICE LINE TAPS SHALL HAVE DOUBLE STRAP BRASS TAPPING SADDLES. (ROMAC 202B OR APPROVED EQUAL).
19. ALL NON-POTABLE WATER SERVICE LATERALS SHALL EXTEND FIVE (5) FEET BEYOND RIGHT OF WAY OR UTILITY EASEMENTS, WHICHEVER IS GREATER. THE ENDS SHALL BE MARKED BY A BLUE PAINTED WOOD POST UNTIL CURB AND GUTTER IS IN PLACE. WHEN CURB AND GUTTER IS IN PLACE THE LATERALS SHALL BE MARKED ON THE CONCRETE CURB FACE WITH AN "N".
20. CONCRETE THRUST BLOCKS AND/OR "MEGA-LUG" MECHANICAL RESTRAINTS ARE REQUIRED AT ALL MECHANICAL FITTINGS. THRUST BLOCKS MAY NOT BE REQUIRED IF PIPE RESTRAINT IS PROVIDED IN ACCORDANCE WITH RESTRAINED PIPE DETAIL.
21. NO WORK SHALL BE BACKFILLED (INCLUDING BEDDING MATERIAL ABOVE THE SPRING LINE OF THE PIPE) UNTIL THE CONSTRUCTION HAS BEEN INSPECTED AND APPROVED FOR BACKFILLING BY THE TOWN OF ERIE ENGINEERING STAFF.
22. ONLY ONE CONNECTION TO THE EXISTING NON-POTABLE WATER DISTRIBUTION SYSTEM SHALL BE MADE UNTIL ALL HYDROSTATIC TESTING AND FLUSHING HAS BEEN COMPLETED.
23. HYDROSTATIC TESTING SHALL BE DONE IN THE PRESENCE OF A TOWN OF ERIE ENGINEERING STAFF. CONTACT THE TOWN OF ERIE DEPARTMENT OF PUBLIC WORKS, FORTY-EIGHT (48) HOURS PRIOR TO DISINFECTING AND/OR TESTING.
24. ALL NON-POTABLE WATER MAINS SHALL BE HYDROSTATIC TESTED. PRESSURE AND LEAKAGE TESTS SHALL BE CONDUCTED ACCORDING TO THE APPLICABLE SECTIONS OF AWWA C600/605 TO A MINIMUM PRESSURE OF ONE HUNDRED AND FIFTY (150) POUNDS PER SQUARE (PSI) INCH AT THE LOW POINT OF THE SECTION BEING TESTED FOR THE DURATION OF TWO (2) HOURS. THE MAXIMUM LENGTH OF LINE TO BE TESTED SHALL BE ONE THOUSAND (1,000) FEET. ALL JOINTS IN CONNECTIONS ARE TO BE WATERTIGHT WITHIN TOLERANCES ALLOWED BY THE SPECIFICATIONS IN AWWA C600/605. ANY LEAKAGE THAT IS DISCOVERED BY OBSERVATION OR TESTS SHALL BE LOCATED AND MADE WATERTIGHT BY THE CONTRACTOR. PRESSURE AND LEAKAGE TESTS SHALL NOT BE CONDUCTED UNTIL THE LINE HAS PASSED ALL REQUIRED DISINFECTION TESTS.
25. SUBSTANTIAL COMPLETION/CONSTRUCTION ACCEPTANCE OF THE NEW NON-POTABLE WATER MAINS ARE CONTINGENT UPON RECEIVING COPIES OF:
 - A. TRENCH COMPACTION TEST RESULTS
 - B. HYDRO STATIC TESTING OF 100% OF THE SYSTEM
26. ALL METER PITS AND CURB STOPS SHALL BE PROTECTED AT THE TIME OF INSTALLATION WITH A MINIMUM OF THREE (3) T-POSTS AND ORANGE SAFETY

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FENCE. THE T-POST AND SAFETY FENCE SHALL REMAIN IN PLACE AND IN GOOD CONDITION UNTIL THE LANDSCAPING IS INSTALLED.

27. ALL NON-POTABLE WATER VAULTS SHALL BE WATER TIGHT. CONTRACTOR SHALL SEAL VAULTS TO ENSURE SURFACE WATER DOES NOT INFILTRATE INTO THE VAULTS. VAULT LIDS SHALL BE PLACED TO ENSURE THAT SURFACE WATER DOES NOT FLOW INTO THE VAULTS.

Reason: Added "Non-Potable Water" to General Notes