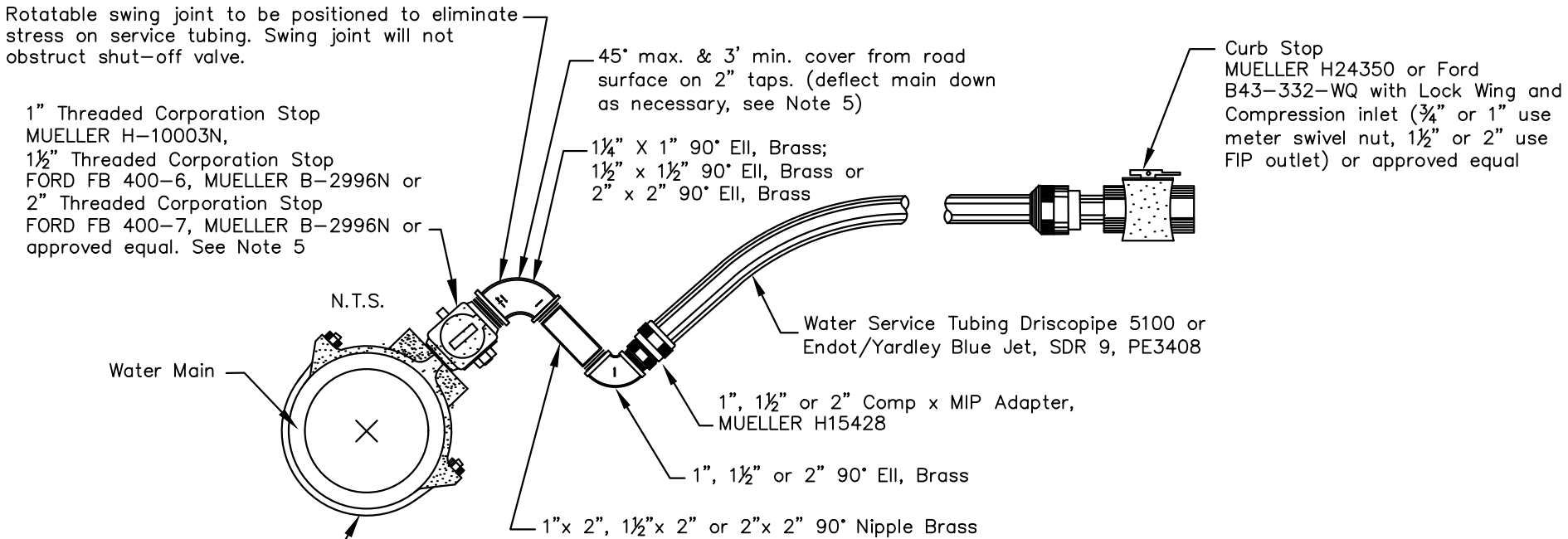


NOTES:

1. Contractor to stake service connections, which are to be 2' from side lot line on either side of lot (See Index 401 Sheet 3 of 3). These services to be consistent within the subdivision. Driveways shall not be built over meters or service taps. Meters or service taps shall not be installed within or under driveways.
2. All lines shall be chlorinated and pressure tested (Test for two hours @ 150 P.S.I.) under the direction of the Construction Inspector. After successful completion of the testing and chlorination, standard operating pressure shall remain on the system at all times.
3. Ten (10) FT. separation required between parallel water & sanitary sewer lines.
4. Saddle is required for all service connections to mains.
5. Taps should be made on a 45° angle from top of pipe. For cover less than 30", City of Clearwater Engineering Department approval is required.
6. Minimum distance between service taps to be not less than 36".
7. Minimum 5' separation between potable & reclaim services. See Index. No. 501.
8. Curb Stop to be located approx. 1 foot back of Right–of–Way.
9. Insert stiffeners at corporation stop and curb stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483.
10. See also City of Clearwater's Technical Specification Section IV.

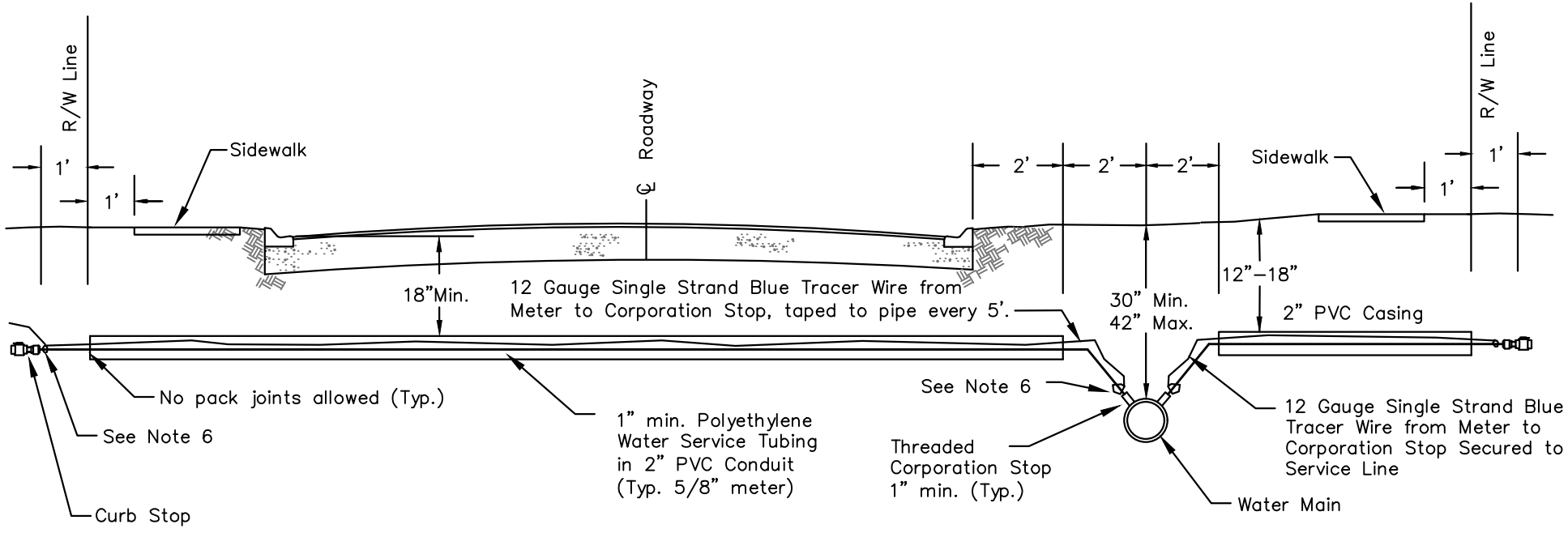
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

POTABLE WATER MAIN SERVICE CONNECTION DETAIL

INDEX NO.	PAGE NO.
401	1 OF 3
LATEST REVISION	10/21/2019

NOTES:
1. PVC casing shall be 2x the size of the service line and appropriately color coded.
2. PVC conduit to be between 18"–24" below the surface measured from the top of face of curb.
3. Water Mains to be min. 30" below grade and approx. 4' back of curb.
4. Curb Stop to be located approx. 1 foot back of Right–of–Way.
5. Casing to be continuous, 2' from tap to 2' to curb stop.
6. Connect 12 gauge Tracer Wire with tie wraps at Corporation Stop and at Curb Stop. Provide 1 foot minimum excess length of Tracer Wire in Meter Box.
7. Insert stiffeners at Corporation Stop and Curb Stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483
8. Service lines 90° from main to meter.
9. See also City of Clearwater's Technical Specifications Section IV.



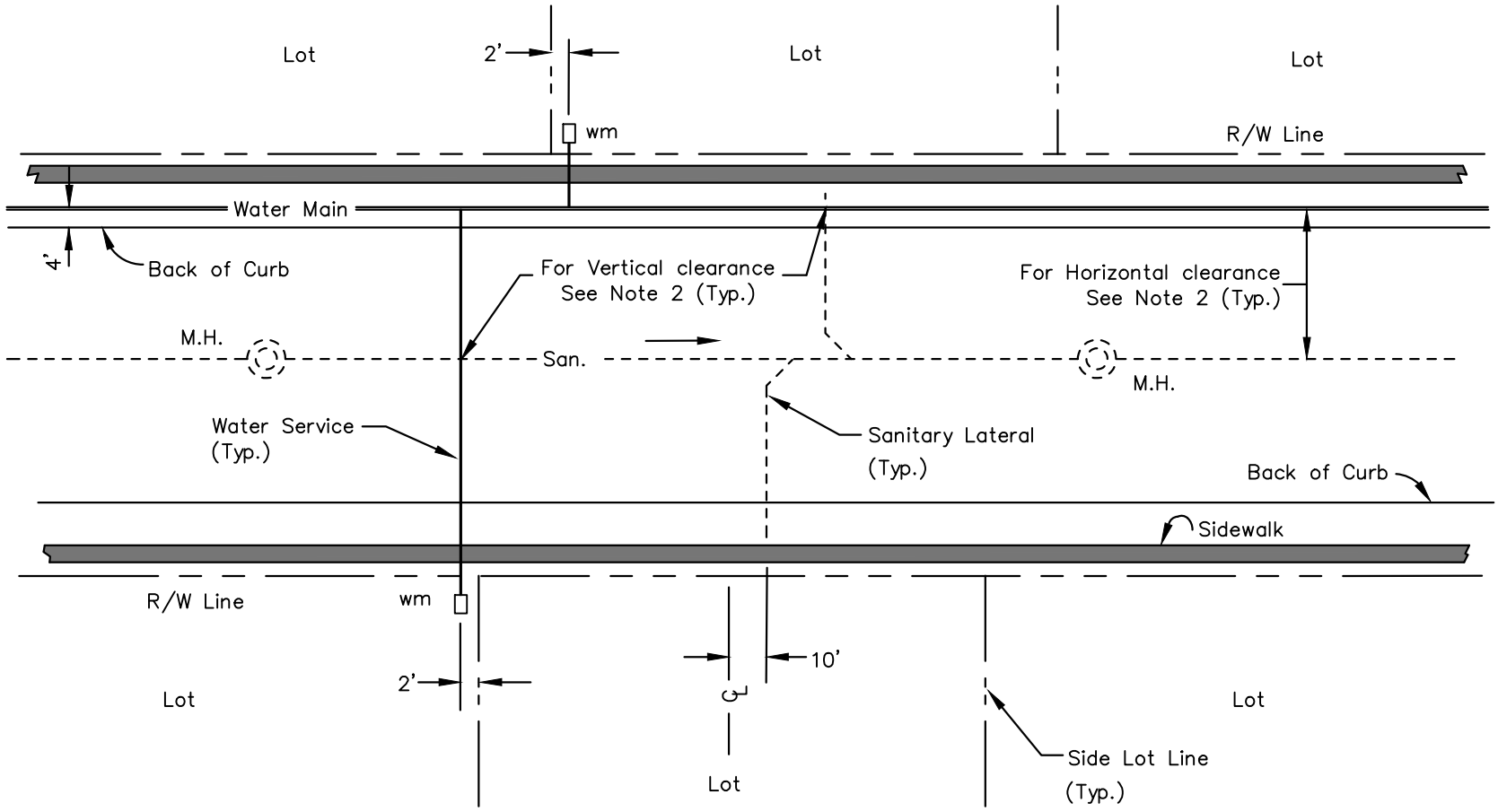
N.T.S.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

1"–2" WATER MAIN SERVICE LINE TYPICAL SECTION

INDEX NO.	PAGE NO.
401	2 OF 3
LATEST REVISION	10/21/2019



N.T.S.

NOTES:
1. See Index 401, Sheet 1 of 3, Note 2 regarding Water Meter and Service Tap locations under driveways.
2. Vertical and horizontal clearance between potable water main and sanitary sewer lateral at each intersection to be per FDEP requirements. (See F.A.C. Rule 62–555)
3. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

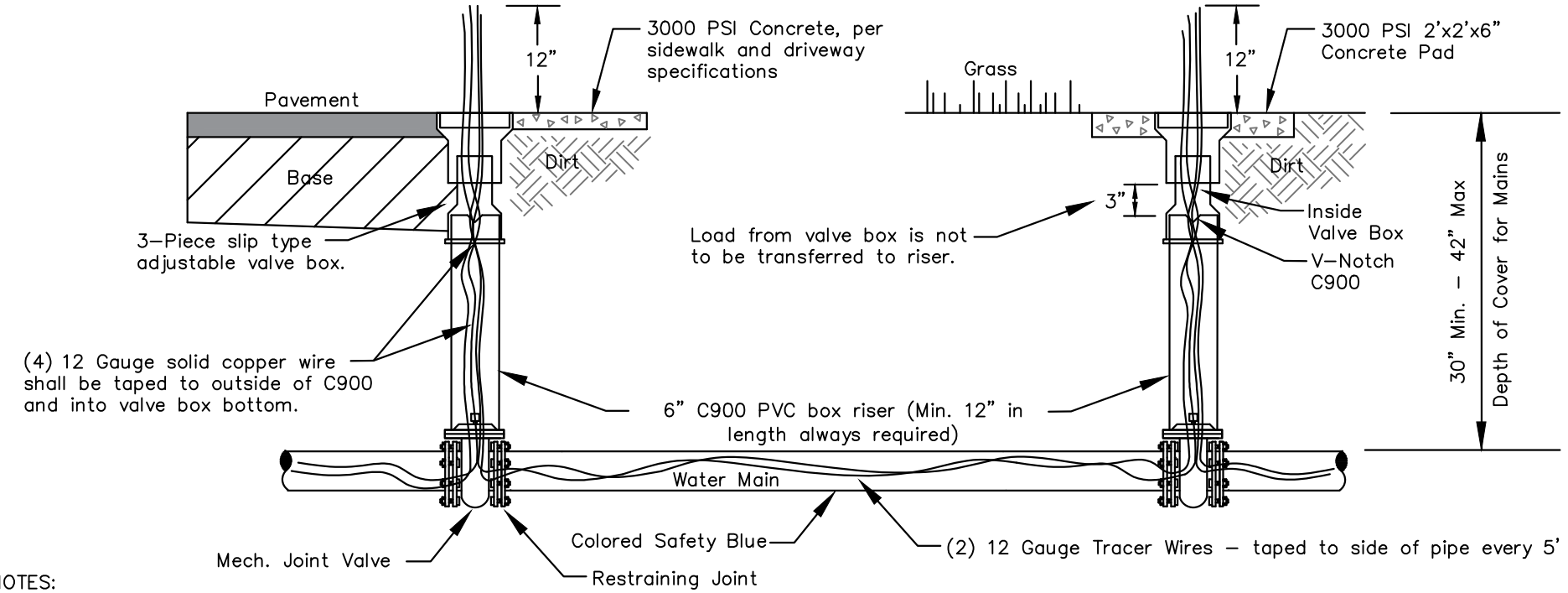
CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

WATER METER AND SERVICE LOCATIONS PLAN VIEW

INDEX NO.	PAGE NO.
401	3 OF 3
LATEST REVISION	10/21/2019

Roadway/Sidewalk Installation

Green Space Installation



NOTES:

1. Must center operation nut in box.
2. C900 Riser to be one continuous section and color coded "Safety Blue."
3. Gate Valves shall be open left only.
4. Valve key extensions required on valves with operator nut over 3' deep.
5. Tracer Wire required in all applications including on D.I.P. and colored "Safety Blue."
6. See also City of Clearwater's Technical Specification Section IV.

SECTION VIEW

N.T.S.

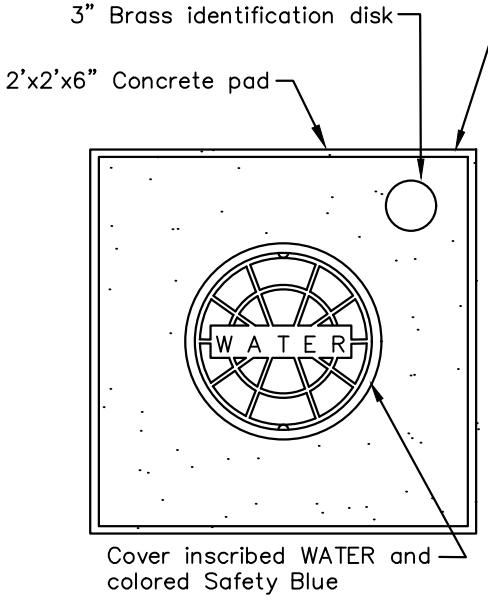
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

TYPICAL VALVE AND BOX SETTING

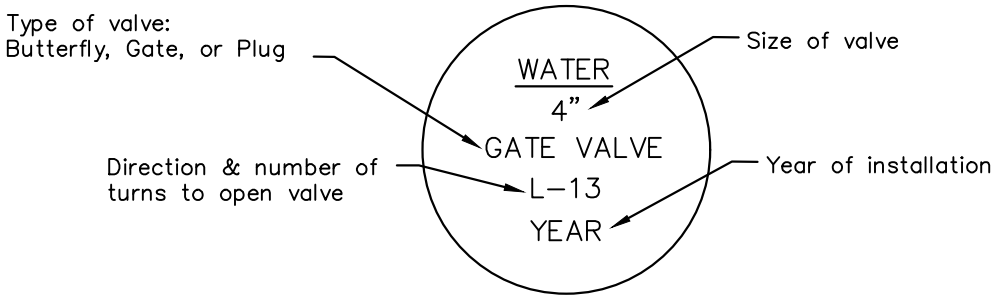
INDEX NO.	PAGE NO.
402	1 OF 3
LATEST REVISION	10/21/2019

NOTES:
1. Extension on valve box shall be set so as to reserve 1/2 of the adjustment length for future use.
2. Valve key extension required on valves with operator nut over 3' deep.
3. Install 3" brass identification disk in concrete, per detail below.
4. Terminate insulated, solid 12 gauge copper tracer wire at 12" above box cover.
5. Valve Box to be centered in concrete slab in green space only.
6. See also City of Clearwater's Technical Specification Section IV.



WATER VALVE BOX CONCRETE PAD PLAN VIEW

N.T.S.



3" BRASS IDENTIFICATION DISK

N.T.S.

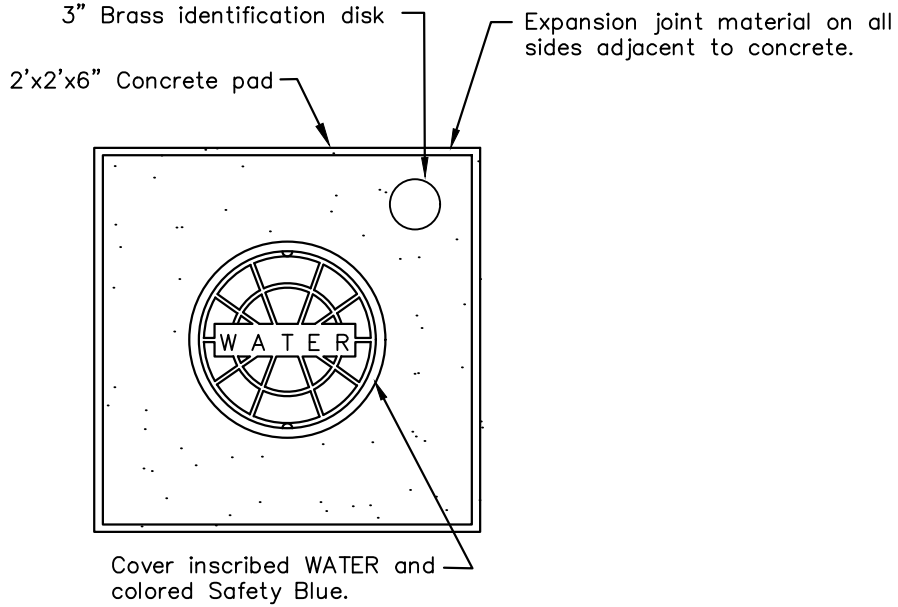
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

POTABLE WATER VALVE BOX
CONCRETE PAD PLAN VIEW
GREEN SPACE ONLY

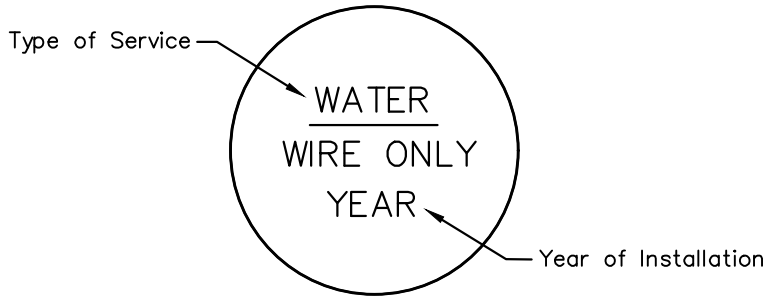
INDEX NO.	PAGE NO.
402	2 OF 3
LATEST REVISION	10/21/2019

NOTES:
1. Extension on valve box shall be set so as to reserve 1/2 of the adjustment length for future use.
2. Install 3" brass identification disk in concrete, per detail below.
3. Terminate insulated, solid 12 gauge copper tracer wire 12" above box cover.
4. Valve Box to be centered in concrete slab in green space only.
5. See also City of Clearwater's Technical Specification Section IV.



WATER VALVE BOX
CONCRETE PAD PLAN VIEW

N.T.S.



3" BRASS IDENTIFICATION DISK

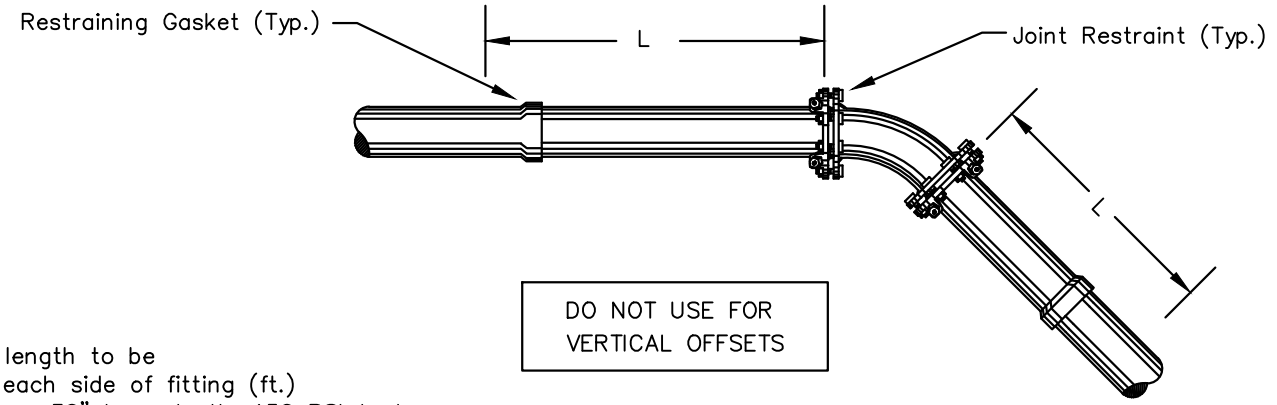
N.T.S.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER
DETAILS

POTABLE WATER TRACING WIRE STATION
CONCRETE PAD PLAN VIEW
GREEN SPACE ONLY

INDEX NO.	PAGE NO.
402	3 OF 3
LATEST REVISION	10/21/2019



L = Minimum length to be restrained on each side of fitting (ft.)
Figures based on 30" bury depth, 150 PSI test pressure
Figures apply to poly wrapped pipe

N.T.S.

NOM. PIPE SIZE	ELBOWS (deg.)				VALVES TEES	DEAD END
	11.25	22.50	45	90		
LENGTH IN FEET (L)						
4"	22	22	22	42	50	50
6"	22	22	25	50	67	67
8"	22	22	35	60	85	85
12"	22	22	42	100	125	125
16"	22	30	55	130	150	150
20"	22	33	65	150	160	160

The following joints must be restrained in all applications:
1. Bend – inlet and outlet
2. Tee – inlet and outlets
3. Offsets – inlet and outlet
4. Caps
5. Plugs
6. Dead ends
7. Hydrant runouts shall be restrained as dead ends

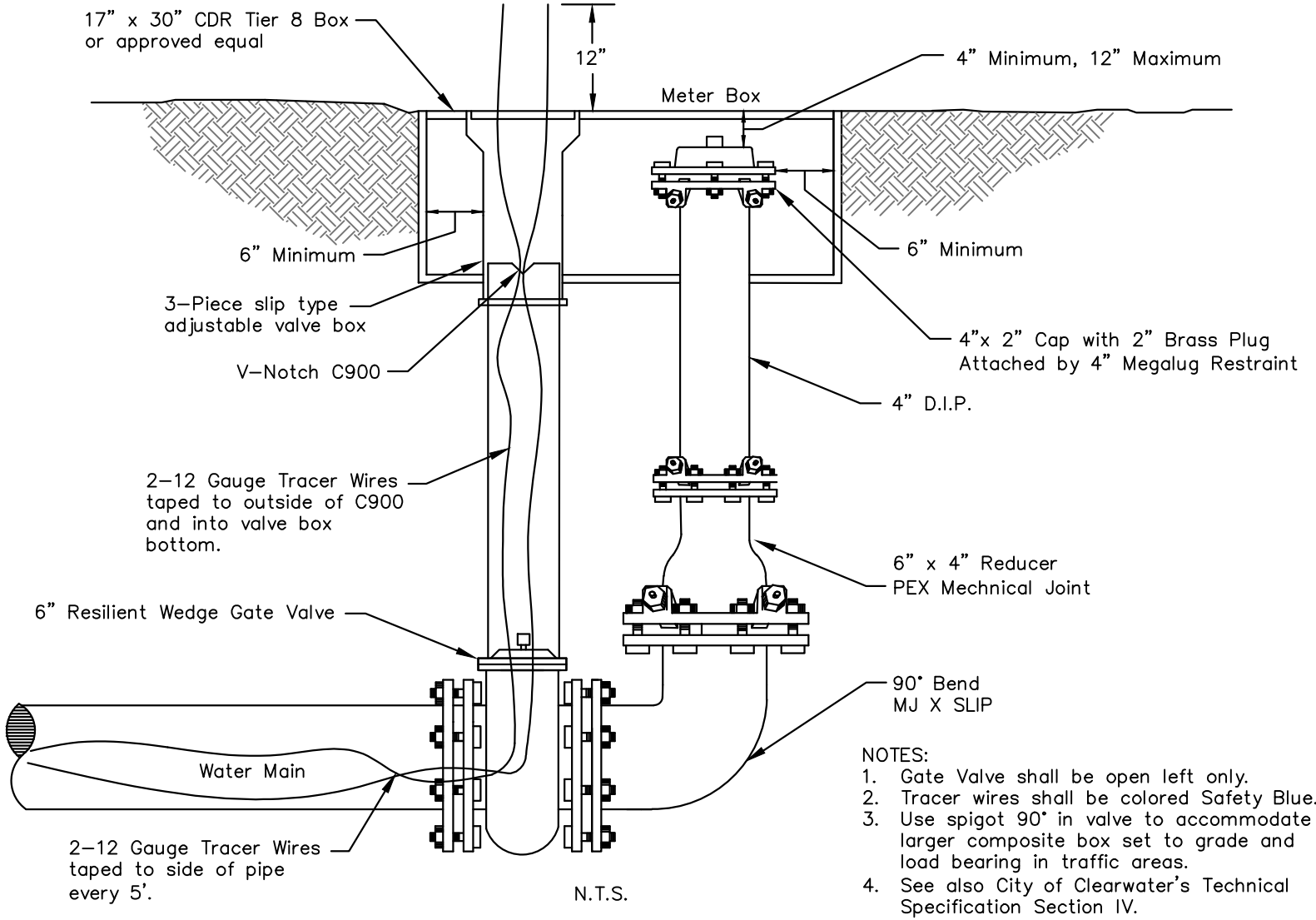
NOTES:
1. Water mains larger than 8" will be ductile iron pipe only.
2. Thrust restraint on slipjoint ductile iron pipe shall be U.S. Pipe Field Lock Gaskets for Tyton Joint Pipe or American Fast–Grip Gaskets for American Fastite Pipe, witnessed by Construction Inspector.
3. Thrust restraints on slip joint PVC pipe shall be EBBA iron 1500 Series restrainers, or approved equal.
4. Thrust restraint on Ductile Iron Fittings shall be provided by the use of Megalug Retainers and mechanical joint fittings.
5. No thrust blocks allowed.
6. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

RESTRAINED JOINT DETAIL (PVC & DIP)

INDEX NO. 403 | PAGE NO. 1 OF 1
LATEST REVISION 10/21/2019



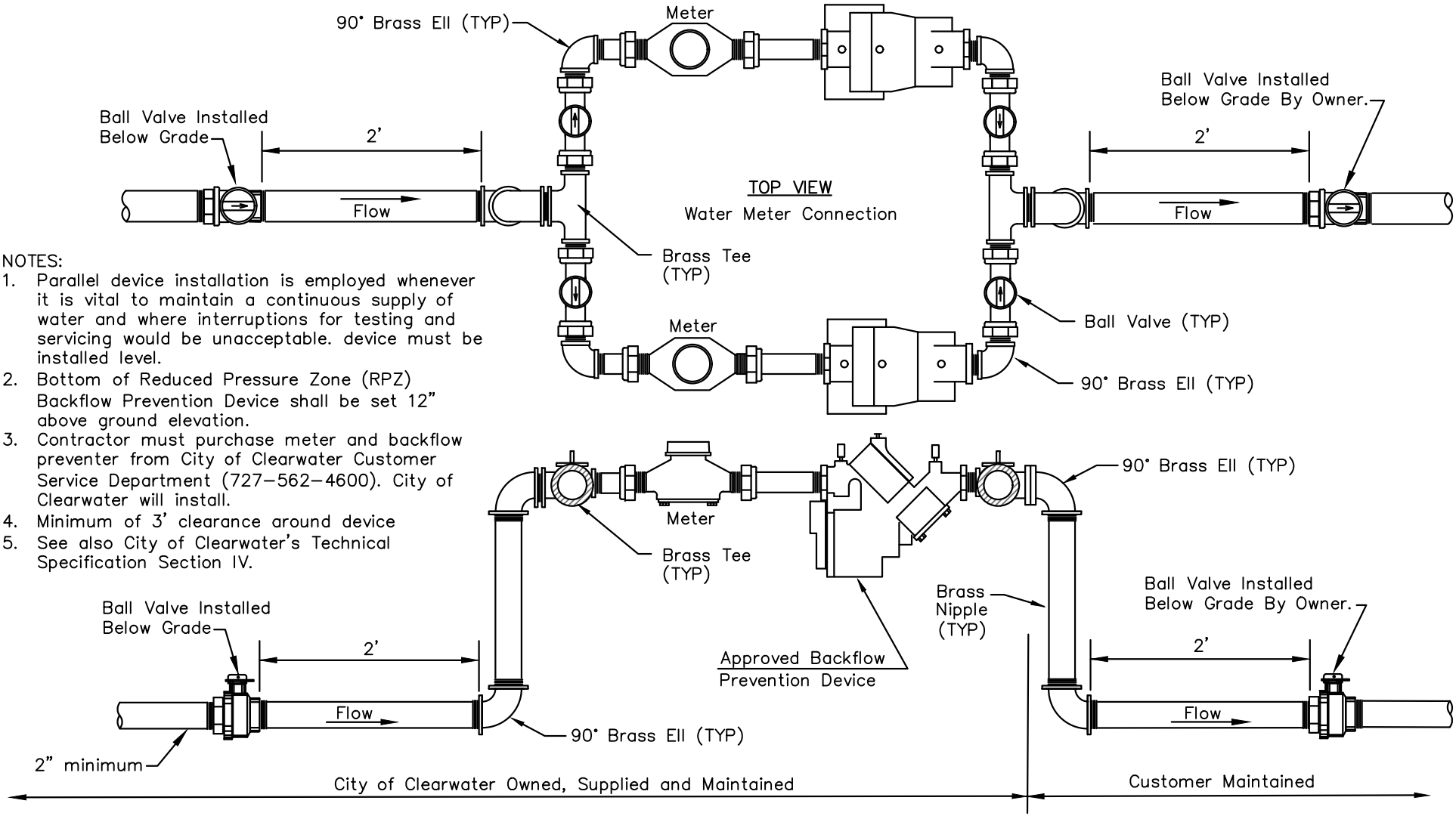
NOTES:
1. Gate Valve shall be open left only.
2. Tracer wires shall be colored Safety Blue.
3. Use spigot 90° in valve to accommodate 1 larger composite box set to grade and load bearing in traffic areas.
4. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER
DETAILS

BLOWOFF DETAIL

INDEX NO.	PAGE NO.
404	1 OF 1
LATEST REVISION	11/08/2019



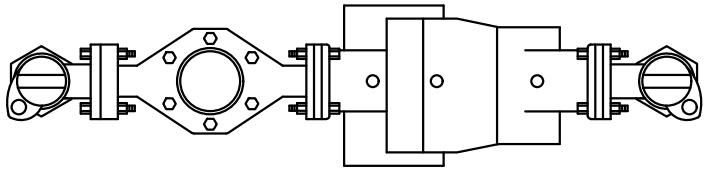
N.T.S.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

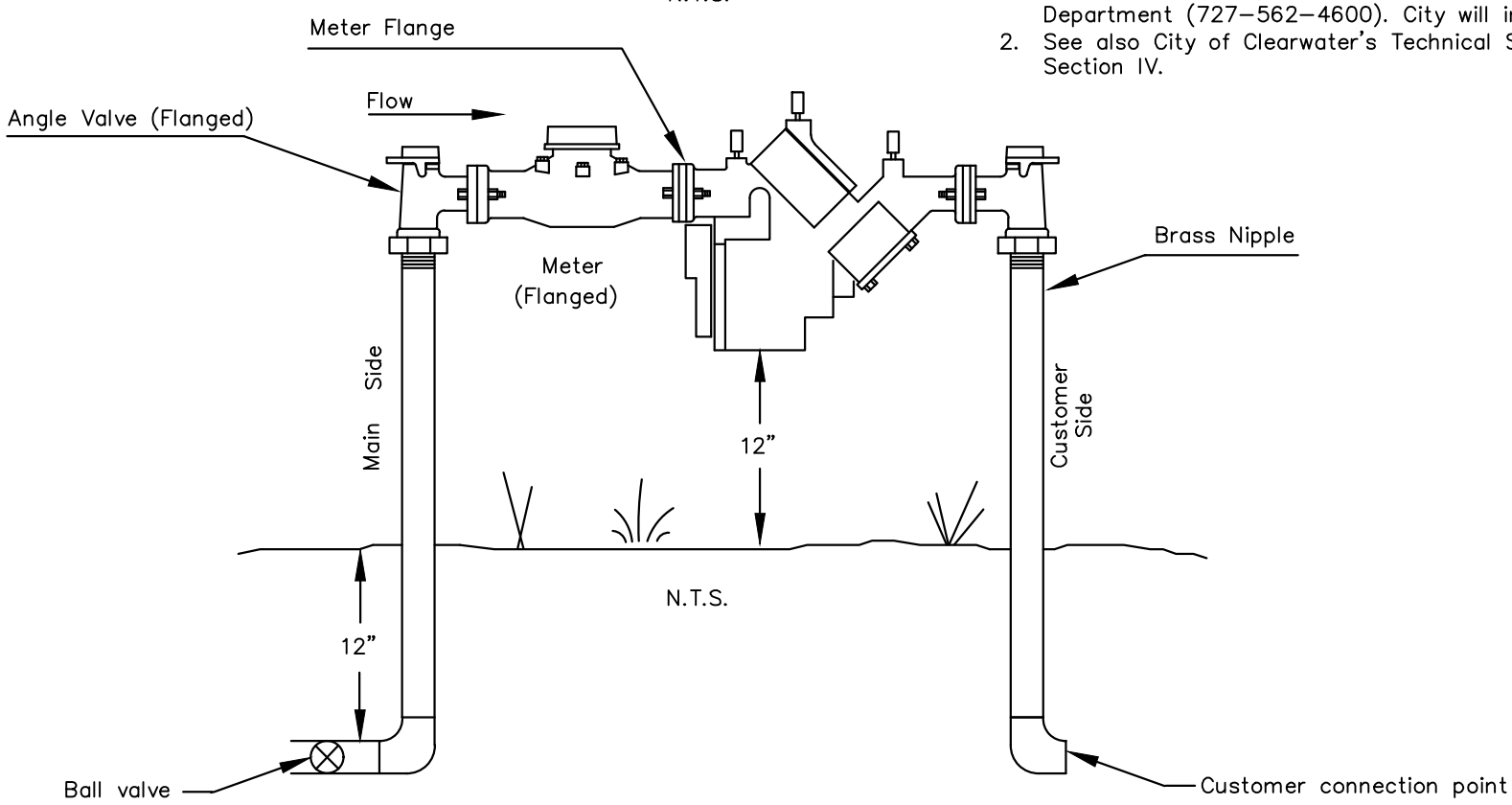
TYPICAL DUAL PARALLEL METER SET 1" to 2" MODELS

INDEX NO.	PAGE NO.
405	1 OF 2
LATEST REVISION	10/21/2019



TOP VIEW
N.T.S.

NOTES:
1. Contractor must purchase meter and backflow preventer from City of Clearwater Customer Service Department (727–562–4600). City will install.
2. See also City of Clearwater's Technical Specification Section IV.

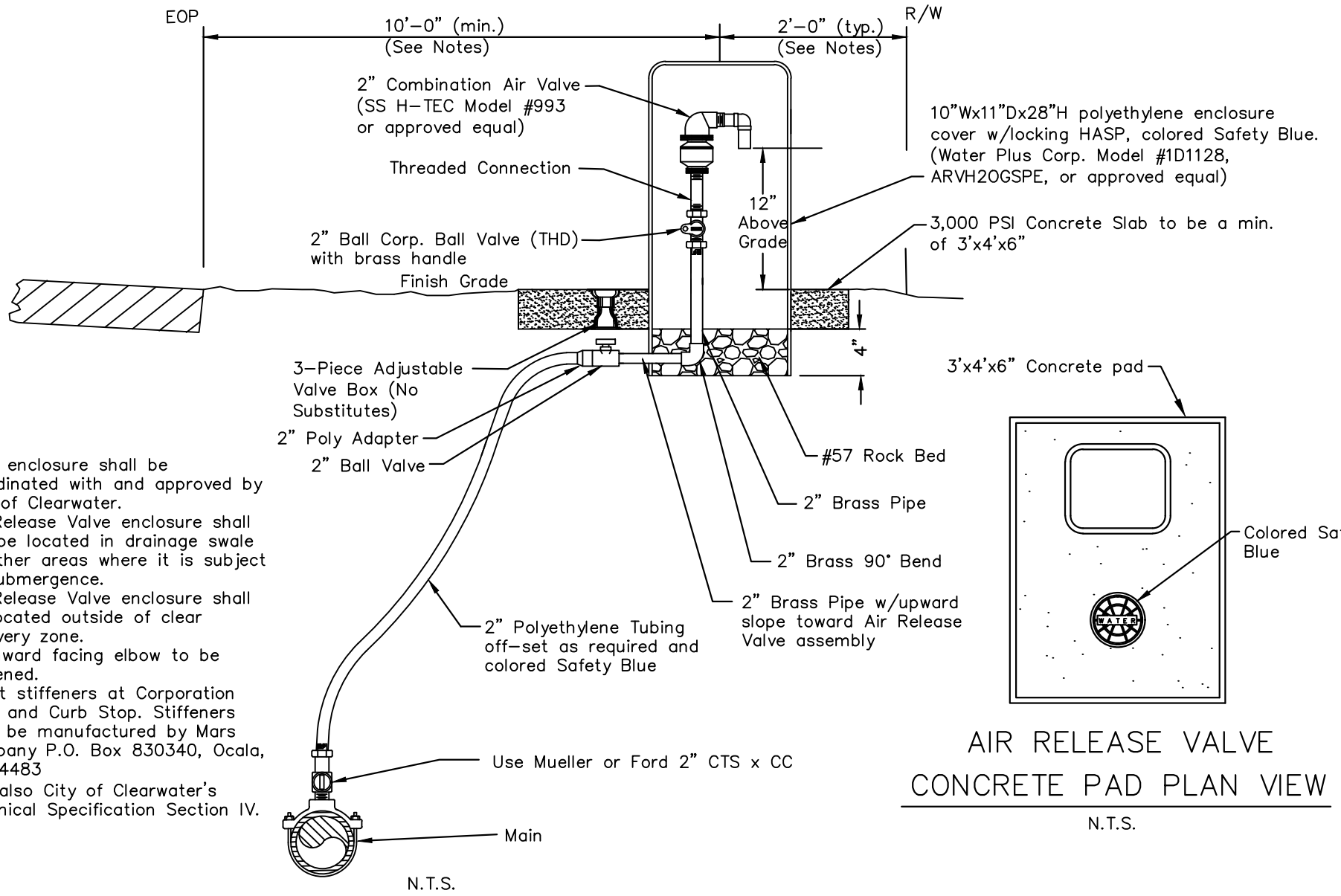


DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

TYPICAL METER SETS W/ BACKFLOW PREVENTERS 1–1/2" & 2" MODELS

INDEX NO.	PAGE NO.
405	2 OF 2
LATEST REVISION	10/21/2019



NOTES:

1. Final enclosure shall be coordinated with and approved by City of Clearwater.
2. Air Release Valve enclosure shall not be located in drainage swale or other areas where it is subject to submergence.
3. Air Release Valve enclosure shall be located outside of clear recovery zone.
4. Downward facing elbow to be screened.
5. Insert stiffeners at Corporation Stop and Curb Stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483
6. See also City of Clearwater's Technical Specification Section IV.

AIR RELEASE VALVE CONCRETE PAD PLAN VIEW

N.T.S.

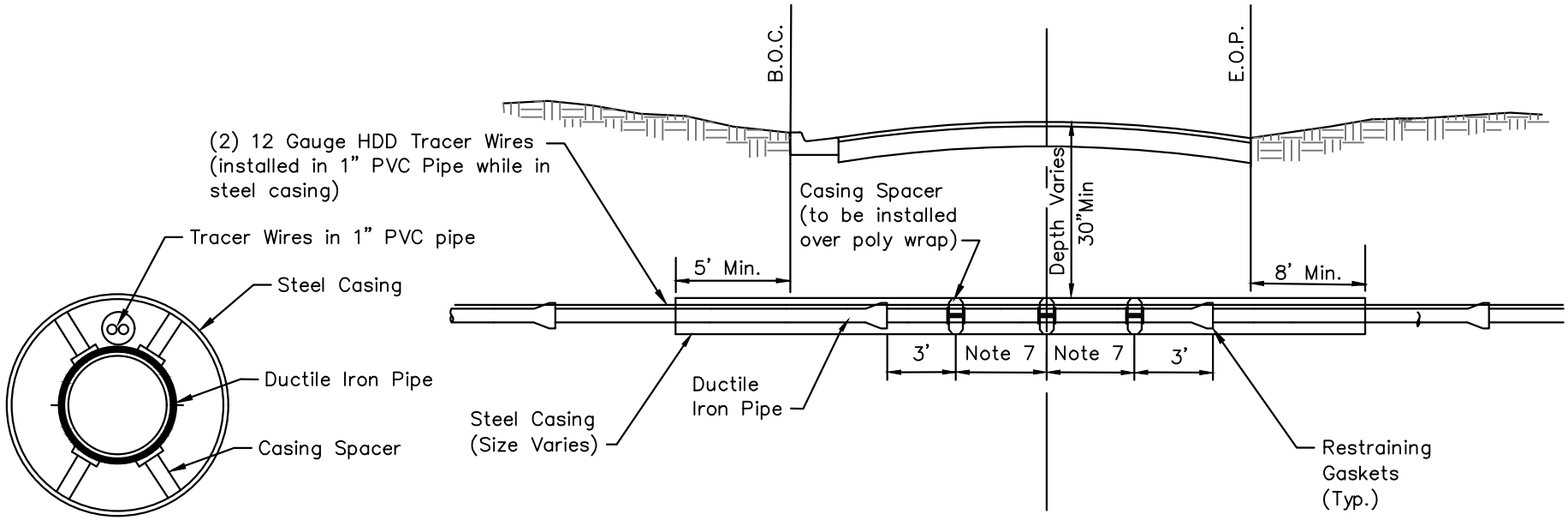
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

TYPICAL AIR RELEASE VALVE POTABLE WATER APPLICATION

INDEX NO.	PAGE NO.
406	1 OF 1
LATEST REVISION	10/21/2019

STREET WITH CURB ℄ STREET WITHOUT CURB



N.T.S.

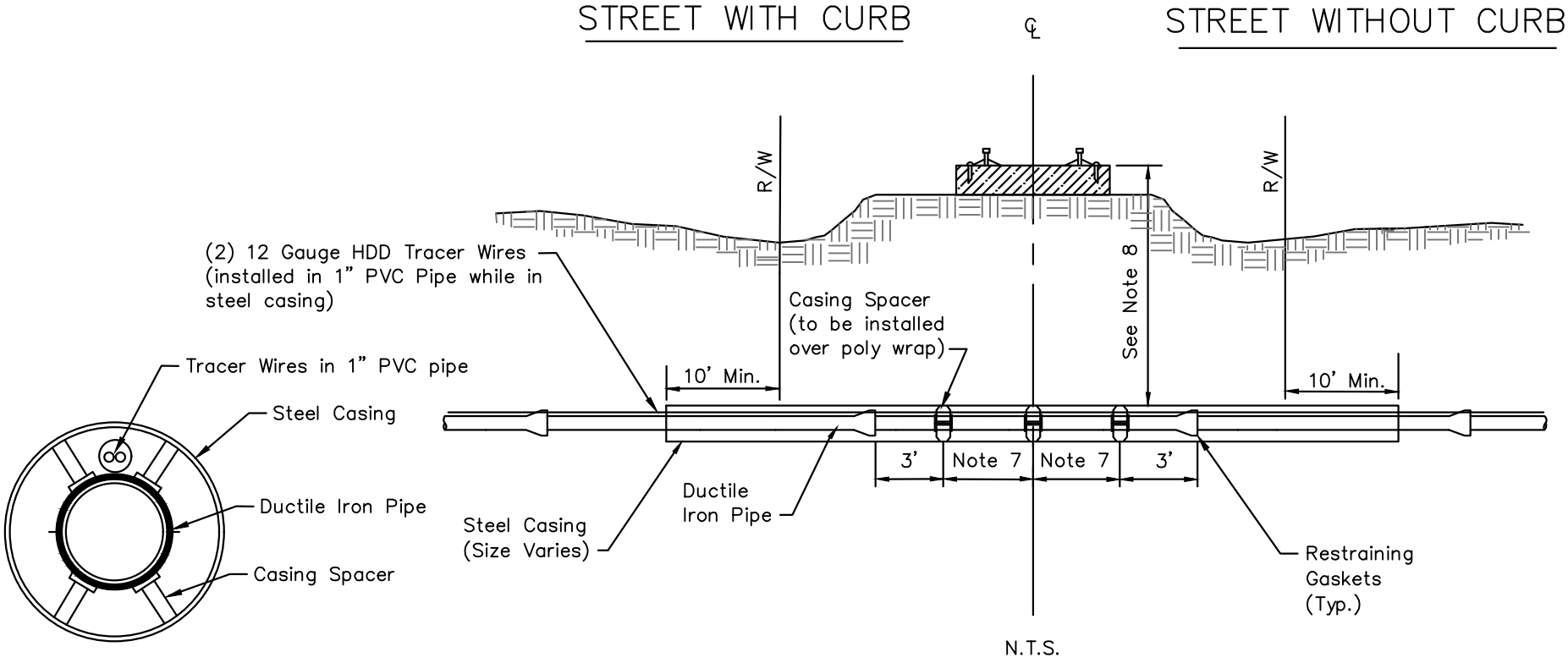
NOTES:
1. All pipe installed within the casing shall be ductile iron or approved by City Engineering Department
2. (2) 12 gauge HDD tracer wires will be used over D.I.P.
3. All pipes within casing to be restrained by restraining gaskets.
4. All materials to meet latest F.D.O.T. standards.
5. Approved casing spacers must be installed to keep pipe centered in casing.
6. Ends of casing must be sealed with bricks and cement to prevent infiltration of soil or by City of Clearwater Engineering Department's approved method.
7. Distance between Casing Spacers shall be 6' for 18' joints and 7' for 20' joints.
8. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

JACK AND BORE UNDER ROADWAY DETAIL

INDEX NO.	PAGE NO.
407	1 OF 2
LATEST REVISION	10/21/2019



NOTES:

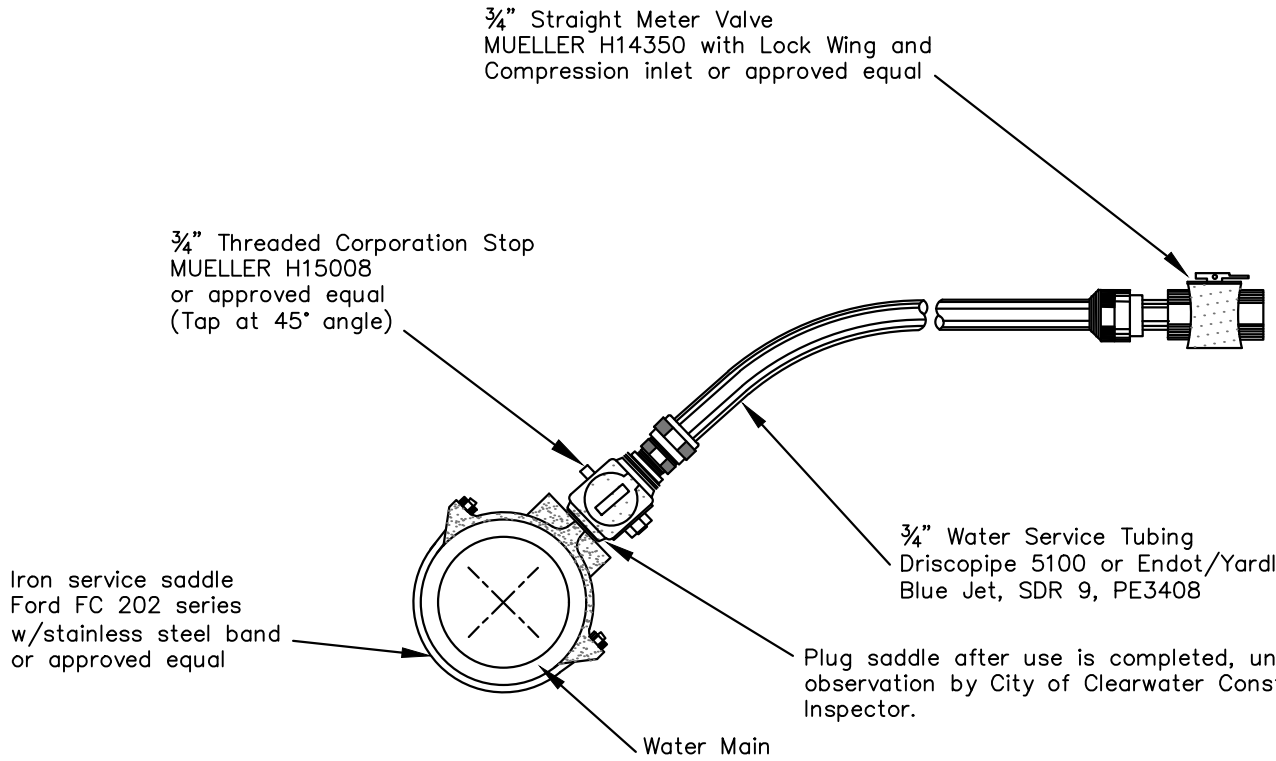
1. CSX permit required for work under railway right–of–way.
2. All pipe installed within the casing shall be ductile iron or approved by City Engineering Department.
3. (2) 12 gauge HDD tracer wires will be used over D.I.P.
4. All pipes within casing to be restrained by restraining gaskets.
5. All materials to meet latest F.D.O.T. standards.
6. Approved casing spacers must be installed to keep pipe centered in casing.
7. Ends of casing must be sealed with bricks and cement to prevent infiltration of soil or by City of Clearwater Engineering Department's approved method.
8. Distance between Casing Spacers shall be 6' for 18' joints and 7' for 20' joints.
9. Distance from top of railway to top of casing shall be 5' min.
10. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER
DETAILS

JACK AND BORE UNDER RAILWAY DETAIL

INDEX NO.	PAGE NO.
407	2 OF 2
LATEST REVISION	10/21/2019



N.T.S.

NOTES:

1. Insert stiffeners at Corporation Stop and Curb Stop. Stiffeners shall be manufactured by Mars Company P.O. Box 830340, Ocala, FL 34483
2. See also City of Clearwater's Technical Specification Section IV.

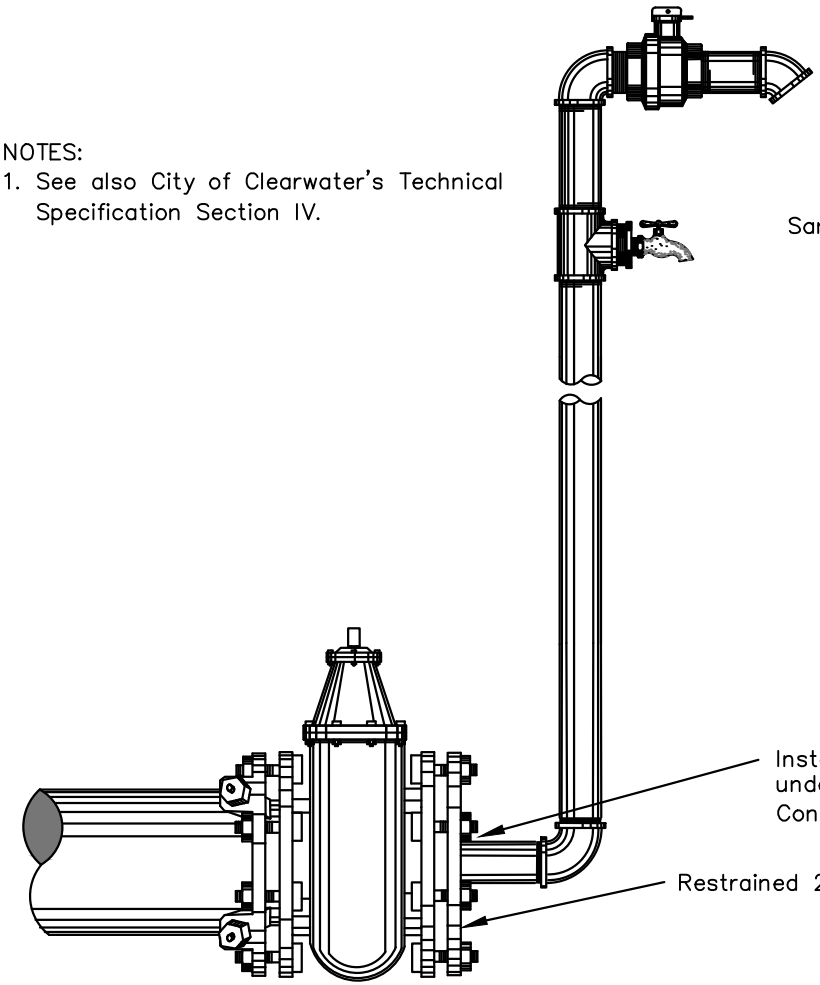
DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

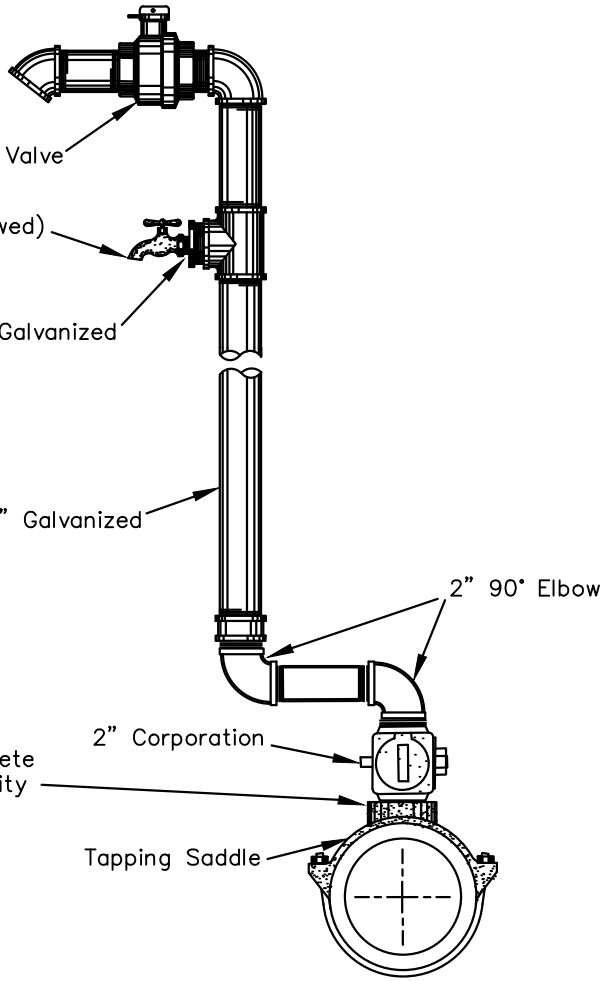
CHLORINATION / SAMPLE POINT

INDEX NO.	PAGE NO.
408	1 OF 2
LATEST REVISION	10/21/2019

NOTES:
1. See also City of Clearwater's Technical Specification Section IV.



END CONNECTION
N.T.S.



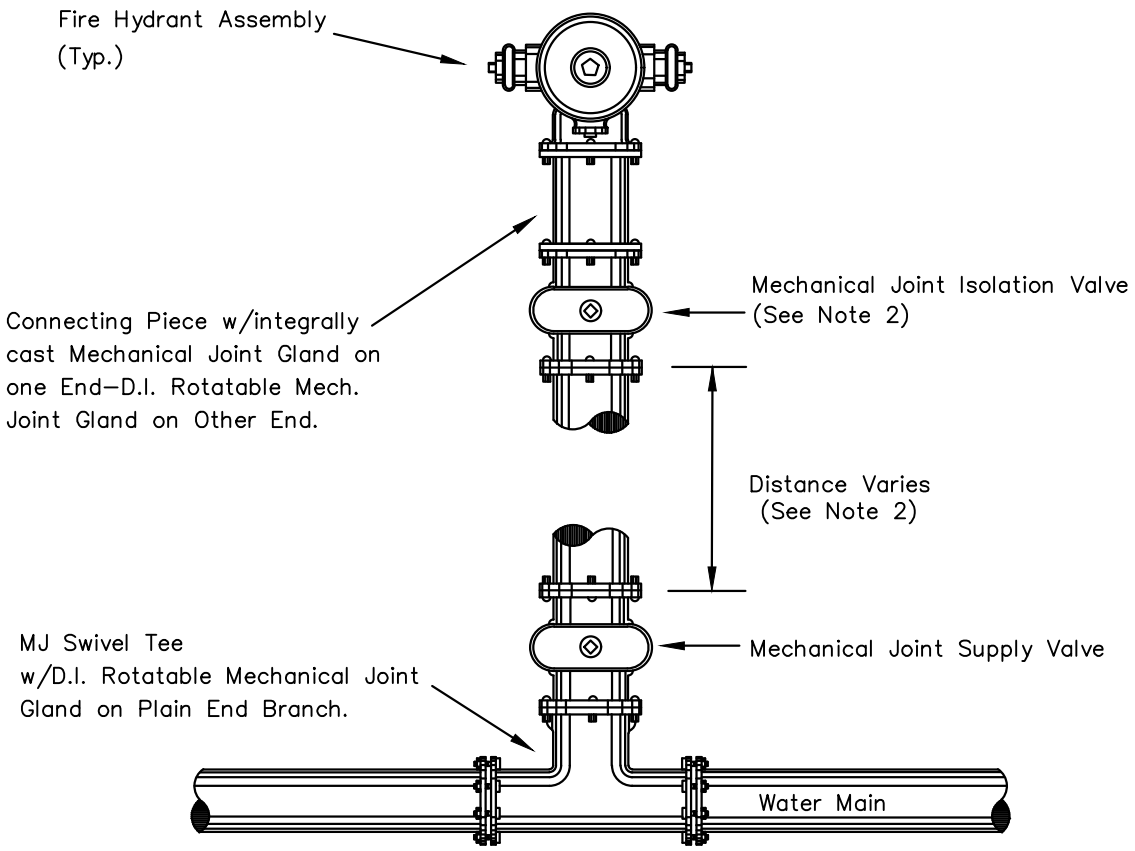
TOP CONNECTION
N.T.S.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

TEMPORARY BLOWOFF AND SAMPLE POINT

INDEX NO.	PAGE NO.
408	2 OF 2
LATEST REVISION	10/21/2019



N.T.S.

NOTES:

1. All joints must be restrained and must be ductile iron pipe.
2. A mechanical joint isolation valve is required at the hydrant on hydrant runouts greater than 20 feet from center of supply valve to the center of the hydrant.
3. Hydrant sets can be purchased and installed by the City (does not include tap). 727–562–4600.
4. All hydrants must have stainless steel stem.
5. All hydrants must be installed plumb.
6. 4' minimum clearance from nearest obstruction, including back of curb and vehicular travel. 2' minimum clearance from sidewalk.
7. All clearances for Fire Department apparatus must conform with latest NFPA Fire code.
8. See also City of Clearwater's Technical Specification Section IV.

ONLY APPROVED

Kennedy Guardian No. K–81D

Mueller Super Centurion No. 250

American Darling B–84–B–5

AVK–Nostalgic 2780

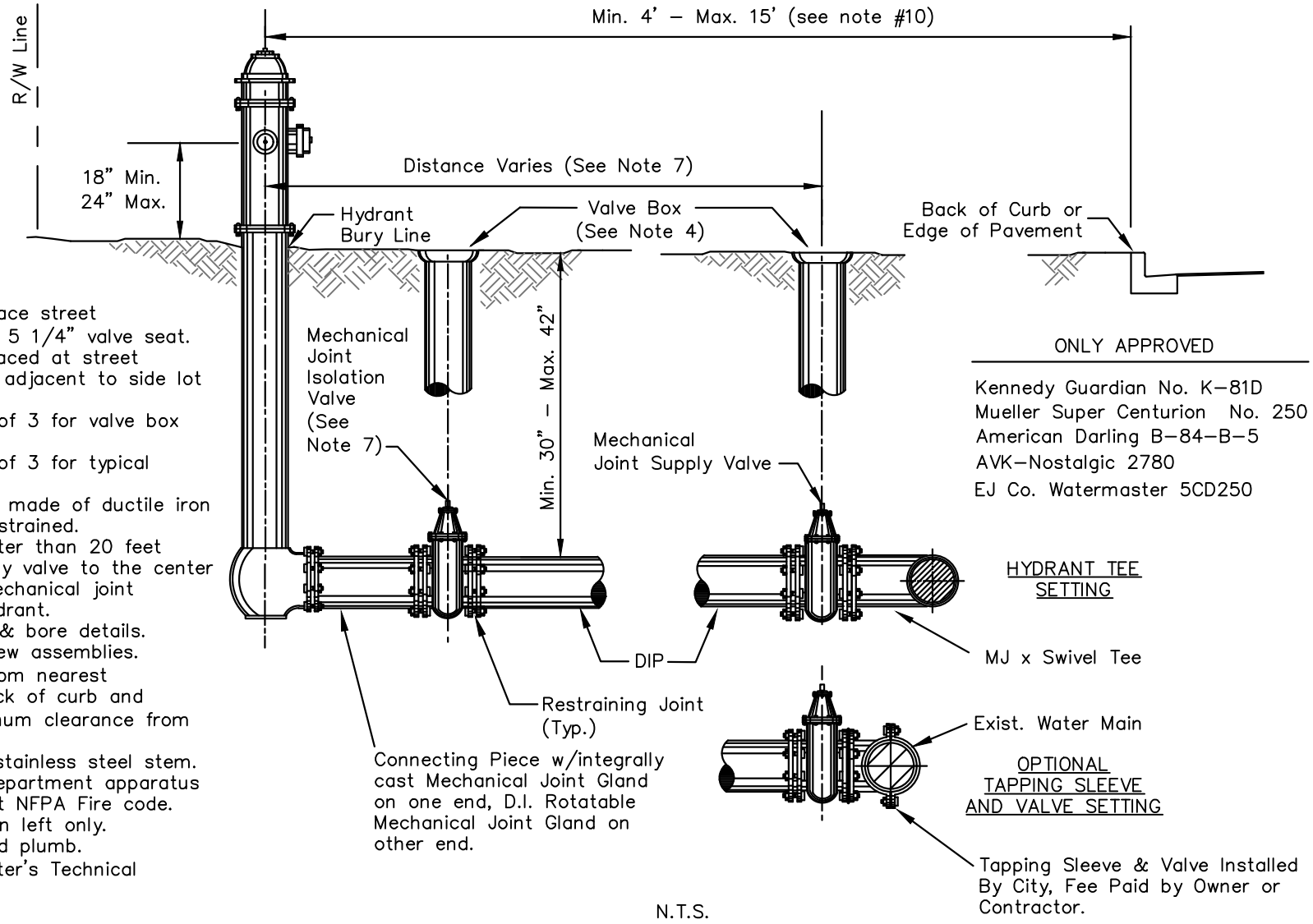
EJ Co. Watermaster 5CD250

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

TYPICAL FIRE HYDRANT SETTING PLAN VIEW

INDEX NO.	PAGE NO.
409	1 OF 3
LATEST REVISION	10/22/2019



NOTES:

1. Steamer connection to face street
2. All fire hydrants to have 5 1/4" valve seat.
3. Fire hydrants shall be placed at street corners or in the R.O.W. adjacent to side lot lines whenever possible.
4. See Index 402, Sheet 1 of 3 for valve box settings.
5. See Index 409, Sheet 1 of 3 for typical connections & fittings.
6. Hydrant runouts shall be made of ductile iron pipe. All joints will be restrained.
7. On hydrant runouts greater than 20 feet from the center of supply valve to the center of hydrant requires a mechanical joint isolation valve at the hydrant.
8. See Index 407, for jack & bore details.
9. No lift kits allowed on new assemblies.
10. 4' minimum clearance from nearest obstruction, including back of curb and vehicular travel. 2' minimum clearance from sidewalk.
11. All hydrants must have stainless steel stem.
12. All clearances for Fire Department apparatus must conform with latest NFPA Fire code.
13. Gate Valves shall be open left only.
14. Hydrant must be installed plumb.
15. See also City of Clearwater's Technical Specification Section IV.

ONLY APPROVED

Kennedy Guardian No. K–81D
Mueller Super Centurion No. 250
American Darling B–84–B–5
AVK–Nostalgic 2780
EJ Co. Watermaster 5CD250

N.T.S.

DATE	REVISION DESCRIPTION	APP

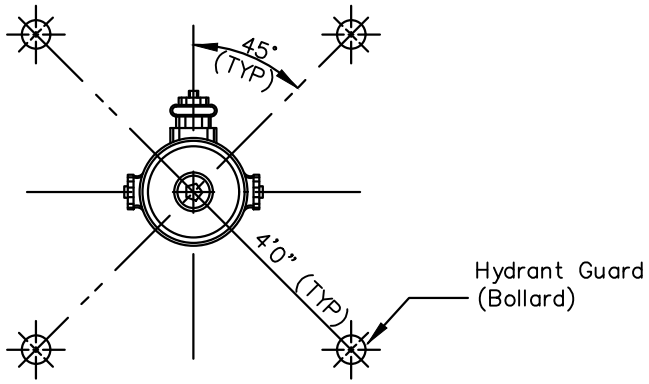
CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER
DETAILS

TYPICAL FIRE HYDRANT SETTING
SECTION VIEW

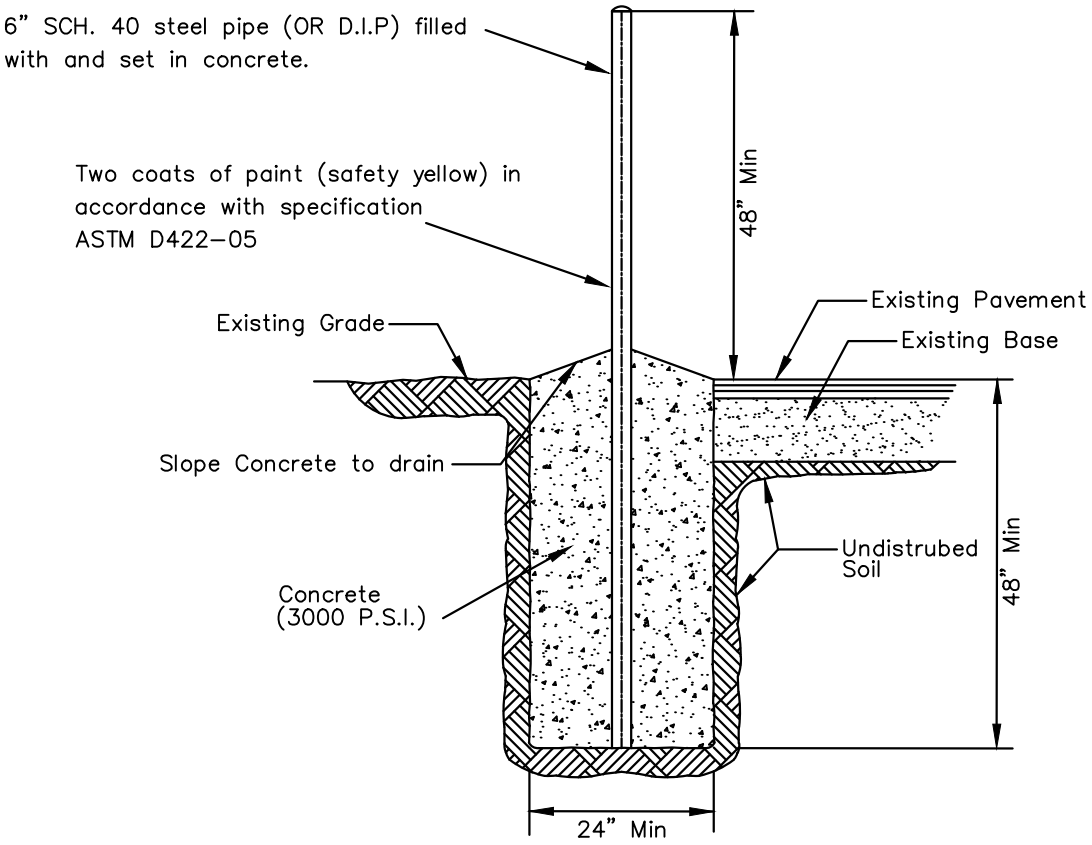
INDEX NO.	PAGE NO.
409	2 OF 3
LATEST REVISION	10/22/2019

NOTES:
1. See also City of Clearwater's Technical Specification Section IV.

LAYOUT



INSTALLATION

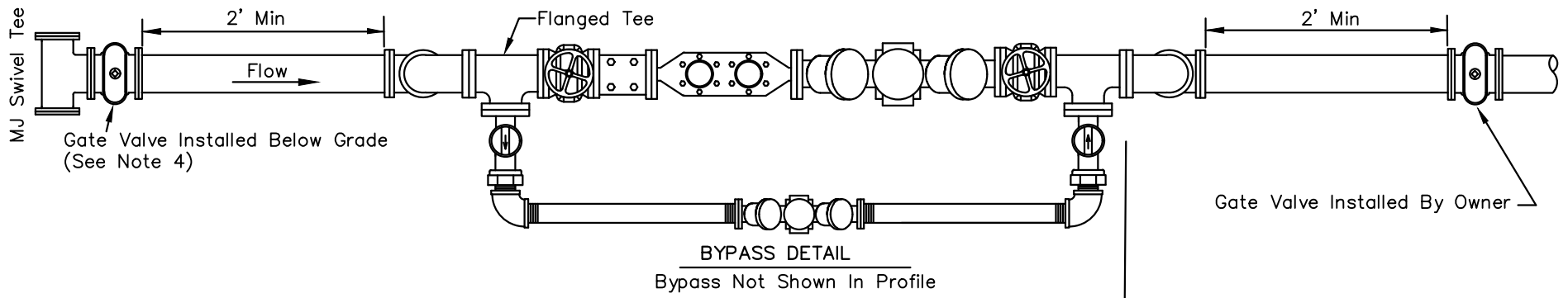


DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER DETAILS

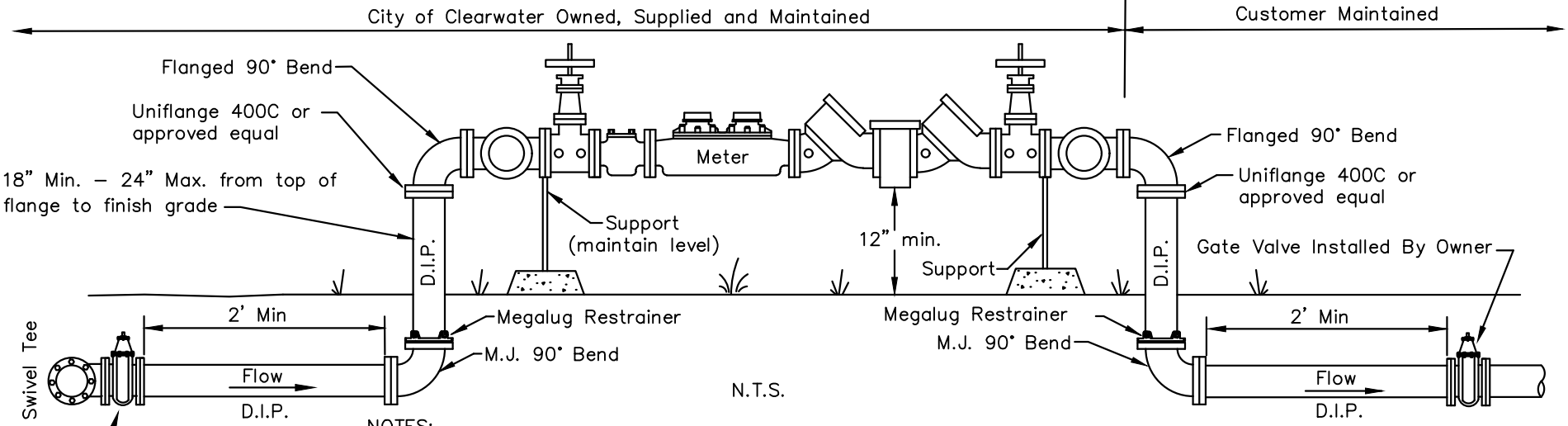
FIRE HYDRANT PROTECTION BOLLARD DETAIL

INDEX NO.	PAGE NO.
409	3 OF 3
LATEST REVISION	10/21/2019



BYPASS DETAIL

Bypass Not Shown In Profile



N.T.S.

NOTES:

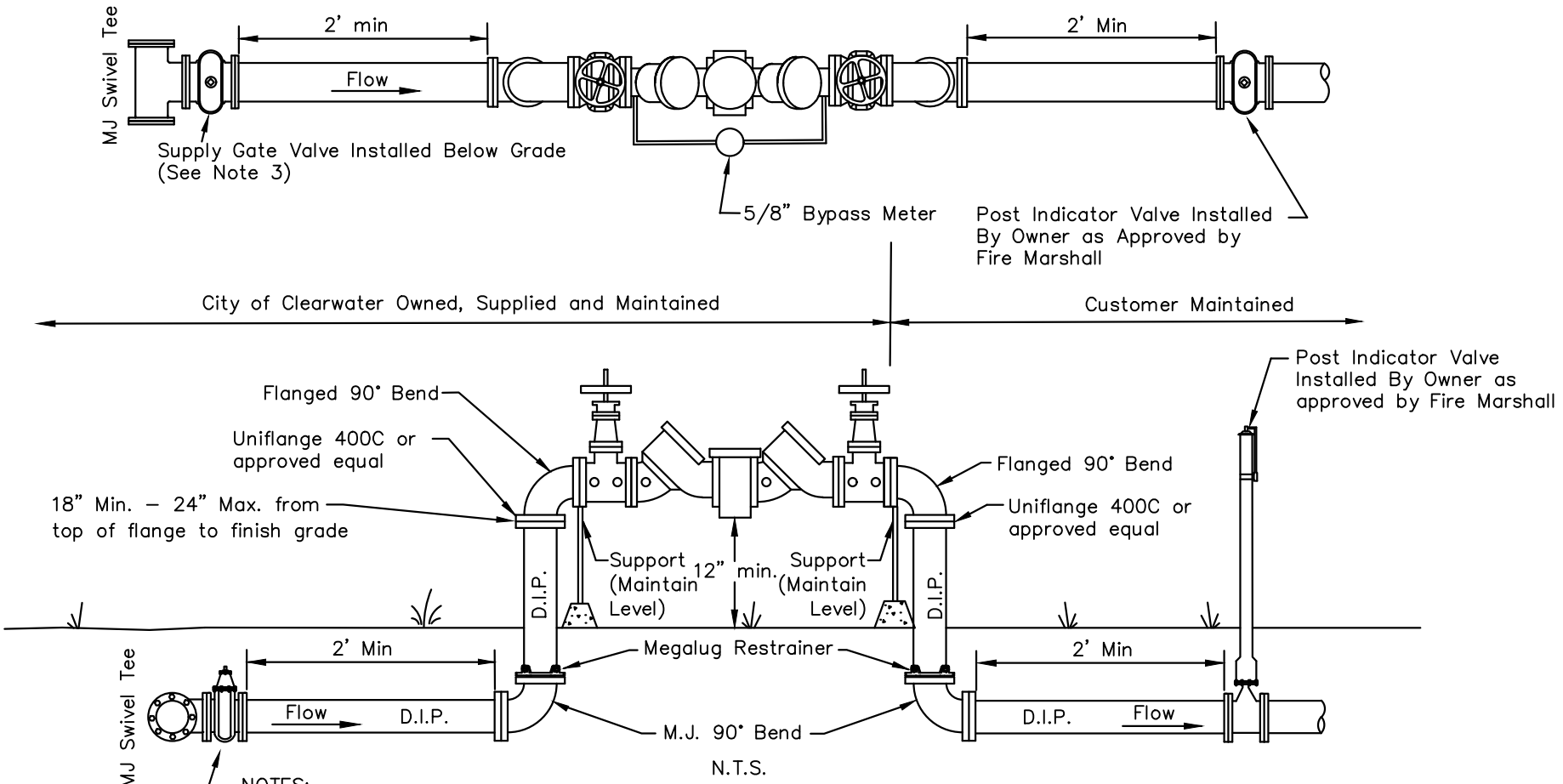
1. O S & Y valve handles will be chained and locked by City.
2. Meter sets will be painted after installation by City.
3. Bypass pipe & fittings shall be threaded brass.
4. Gate valve shall be set at water main. For all water meter sets over 20 feet from water main, an additional isolation gate valve shall be installed within 2 feet of the device and all bells must be restrained.
5. All pipes between the water main and owner installed gate valve shall be ductile iron.
6. 3" meter requires 4" tap, DIP service Line and 4" DIP standpipes.
7. Minimum of 3' clearance from back of curb and sidewalk.
8. Minimum of 3' clearance around all sides.
9. No concrete slabs allowed under device.
10. Contractor must purchase meter and backflow sets from the City of Clearwater Customer Service Department (727–562–4600). City will install.
11. For Installation, contractor shall schedule with Clearwater Public Utility Department (727–562–4960 Ext. 7227).
12. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER
DETAILS

TYPICAL COMPOUND WATER METER SET
90° RISE
3", 4", 6" & 8" MODELS

INDEX NO.	PAGE NO.
410	1 OF 2
LATEST REVISION	10/21/2019



NOTES:

1. O S & Y valve handles will be chained and locked by City.
2. DDCVA will be painted after installation by City.
3. Gate valve shall be set at water main. For all fire line sets over 20 feet from water main, an additional isolation gate valve shall be installed within 2' of device.
4. All pipes between the water main and Post Indicator Valve shall be ductile iron. All bells restrained.
5. Minimum of 3' clearance from back of curb and sidewalk.
6. Minimum of 3' clearance around all sides.
7. No concrete slabs allowed under device.
8. Contractor must purchase DDCVA sets from the City of Clearwater Customer Service Department (727–562–4600). City will install.
9. See also City of Clearwater's Technical Specification Section IV.

DATE	REVISION DESCRIPTION	APP

CITY OF CLEARWATER
ENGINEERING DEPARTMENT
POTABLE WATER
DETAILS

TYPICAL FIRE LINE DDCVA
90° RISE
4", 6" & 8" MODELS

INDEX NO.	PAGE NO.
410	2 OF 2
LATEST REVISION	10/21/2019