WATER SYSTEM NOTES

1. Specifications for this project shall conform to the City of Lake Wales Utility Standards and Specifications, current edition, including any item which may not be shown on this sheet.

2. Ductile Iron water main pipe shall conform to the requirements of A.N.S.I. A.W.W.A. C–151/a 21.51–Current Edition and lined and coated per A.N.S.I. A.W.W.A. c–104/A–214 Current Edition. 20" and smaller pipe shall be pressure class 350; 24" and larger, pipe shall be pressure class 250.

3. All P.V.C. mains shall be series 1120, class 150 (DR 18) pressure pipe, conforming to A.N.S.I. A.W.W.A. C–900–89, or latest revision, and shall have push on joints, and iron pipe O.D.

4. Fittings shall be ductile iron meeting A.N.S.I. A.W.W.A. C–110/A21.10–Current Ed. Fittings must be cement lined and seal coated per A.N.S.I. A.W.W.A.C–104/A–21.4–Current Edition.

5. Tapping valves shall be Mueller H667, American, Clow, and M&H or approved equal.

6. Gate valves 3" or less shall be NIBCO T–113 OR American 3FG with malleable hand wheels. No substitutions allowed.

7. Tapping sleeves shall be Mueller H304,Romack SST, Ford FTSS or approved equal.

8. Restrained joint pipe shall be used for all bends, tees, crosses, plugs, and fire hydrants. Thrust blocks shall not be allowed.

9. All valves shall be furnished with extension type cast iron valve boxes of proper length for pipe depth. All boxes shall conform with A.W.W.A. specifications with a shaft of no less than 5 inches and have the word "WATER" cast in the cover. Base of valve box shall have a flared section to fit over stuffing box of valve.

10. Gate valves 4" or larger shall meet A.N.S.I. A.W.W.A. C–500 specification (latest revision). Valves shall be Mueller, American, Clow, M&H or approved equal.

11. Fire hydrants shall be breakaway Mueller Co. Centurion model #A–423, or Kennedy K–81 only.

12. Fire hydrants shall be installed in accordance with fire hydrant detail.

13. All meter service connections shall be bronze from plug valve. No gate valves are to be used (2" or less).

14. The Owner/Developer's Contractor will take all bacteriological tests, to be scheduled via inspector. If otherwise specified in contract detailed specification and/or authorized by the engineer of record, bacteriological tests may be performed by a certified environmental testing laboratory.

15. All connections to existing mains shall be made under the direction of the City of Lake Wales Utility Department.

16. Pipe shall be tested under constant pressure of 150 P.S.I. for a minimum test period of 2 hours and shall not exceed the leakage requirements as per A.N.S.I. A.W.W.A. current specifications of C–600 leakage formula: $Q = SD\sqrt{P} / 133{,}200$

    Q = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
    D = DIAMETER OF THE PIPE TESTED, IN INCHES.
    S = TOTAL LENGTH OF PIPE TESTED, IN FEET.
    P = AVERAGE TEST PRESSURE, IN POUNDS PER SQUARE INCH.

17. The minimum depth of cover over water mains is 36" except where shown differently on plans.

18. Disinfection of mains shall comply with A.N.S.I. A.W.W.A. C–651– Current Standard. Bacteriological sampling points shall be designated on the engineering plans. Minimum one sampling point at each end. Maximum space between sampling points is 1200 feet.

19. Dead end water mains are not permitted.

20. There shall be no connection to an existing water main until pressure and bacteriological tests have been conducted and the results are approved and accepted by the City of Lake Wales.

21. All service lines shall be plasticized polyethylene 3408, A.S.T.M. D–2737, S.D.R. 9, 200 P.S.I.

22. All joints on the water main within 20 feet of the crossing must be mechanically restrained

23. All DIP shall have adequate protective measures against corrosion and it shall be used only if as determined by the design engineer, based on field conditions.

24. Retainer glands/megalug shall be used only if authorized by the Engineer and shall conform to A.N.S.I. A.W.W.A. standards C 111/A–21.11–90 , or latest revision.

25. All glands shall be manufactured from ductile iron as listed by underwriter's laboratory for 250 P.S.I. minimum water pressure rating.

26. Glands shall be CLOW Corporation model F–1058 , standard fire protection equipment company, or approved equal.

27. Service saddles shall be stainless steel with stainless steel straps. Saddles shall be double strap type. All service saddles shall conform to A.N.S.I. A.W.W.A. C 111/A–21.11– Current Edition and A.S.T.M. A588.

28. All P.V.C. pipe shall be installed in accordance with the Uni–Bell plastic pipe Association's "Guide for installation of P.V.C. pressure pipe for Municipal water distribution system". Water distribution pipe shall be of "BLUE" color.

29. A blue–coated #10 gauge UF solid tracer and joint seal shall be installed along all pipe and service. Tracer wire shall be taped to the pipe and stubbed up at all hydrants and valves.

30. All DIP shall be installed in accordance with A.N.S.I. A.W.W.A. C–600–93, or latest revision.

31. Pipe deflection shall not exceed 75% of the maximum deflection recommended by the manufacturer.

32. A continuous and uniform bedding shall be provided. Backfill material shall be tamped in layers around the pipe as shown on the plans and/or City of Lake Wales, Florida Standards and Specifications. Rocks or stones larger than 3/4" diameter found in the trench shall be removed for a depth of at least 6" below the bottom of the pipe.

33. All details and notes on this sheet shall be applicable unless otherwise indicated elsewhere in plans or specifications.

FLORIDA ADMINISTRATIVE CODE

62–555.314 Location of Public Water System Mains.
For the purpose of this section, the phrase "water mains" shall mean mains, including treatment plant process piping, conveying either raw, partially treated, or finished drinking water; fire hydrant leads; and service lines that are under the control of a public water system and that have an inside diameter of three inches or greater.

(1)Horizontal separation between underground Water Mains and Sanitary or Storm Sewers, Wastewater or Storm water Force Mains, Reclaimed Water Pipelines, and On–Site Sewage Treatment and Disposal Systems.

(a) New or relocated, underground water mains shall be laid to provide a horizontal distance of at least three feet between the outside of the water main and the outside of any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of chapter 62–610, F.A.C.

(b) New or relocated underground water mains shall be laid to provide a horizontal distance of at least three feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed vacuum–type sanitary sewer.

(c) New or relocated underground water mains shall be laid to provide a horizontal distance of at least six feet, and preferably ten feet, between the outside of the water main and the outside of any existing or proposed gravity– or pressure–type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62–610, F.A.C. The minimum horizontal separation distance between water mains and gravity–type sanitary sewers shall be reduced to three feet where the bottom of the water main is laid at least six inches above the top of the sewer.

(d) New or relocated underground water mains shall be laid to provide a horizontal distance of at least ten feet between the outside of the water main and all parts of any existing or proposed "on–site sewage treatment and disposal system" as defined in section 381.0065(2),F.S., and Rule 64e–6.002, F.A.C.

(2) Vertical Separation Between Underground Water Mains and Sanitary or Storm Sewers, Wastewater or Stormwater Force Mains, and Reclaimed Water Pipes.

(a) New or relocated, underground water mains crossing any existing or proposed gravity– or vacuum–type sanitary sewer or storm sewer shall be laid so the outside of the water main is at least 6 inches, and preferably 12 inches above, or at least 12" below the outside of the other pipeline. However, It is preferable to lay the water main above the other pipeline.

(b) New or relocated underground water mains crossing any existing or proposed pressure–type sanitary sewer, wastewater or stormwater force main or pipeline conveying reclaimed water shall be laid so the outside of the water main is at least 12 inches above or below the outside of the other pipeline. However, it is preferable to lay the water main above the other pipeline.

(c) At the utility crossings described in paragraphs (a) and (b) above, one full length of water main pipe shall be centered above or below the other pipeline so the water main joints will be as far as possible from the other pipeline. Alternatively at such crossings the pipes shall be arranged so that all water main joints are at least three feet from all joints in vacuum–type sanitary sewers, storm sewers, stormwater force mains, or pipelines conveying reclaimed water regulated under Part III of Chapter 62–610, F.A.C. and at least six feet from all joints in gravity– or pressure–type sanitary sewers, wastewater force mains, or pipelines conveying reclaimed water not regulated under Part III of Chapter 62–610, F,A.C.

(3) Separation between Water Mains and Sanitary or Storm Sewer Manholes.

(a) No water main shall pass through, or come in contact with, any part of a sanitary sewer manhole.

(b) Effective August 28, 2003, water mains shall not be constructed or altered to pass through, or come in contact with, any part of a storm sewer manhole or inlet structure. Where it is not technically feasible or economically sensible to comply with this requirement (i.e., where there is a conflict in the routing of a water main and a storm sewer and where alternative routing of the water main or the storm sewer is not technically feasible or is not economically sensible), the Department shall allow exception to this requirement)i.e., the Department shall allow construction of conflict manholes), but suppliers of water or persons proposing to construct conflict manholes must first obtain a specific permit from the Department in accordance with Part V of this chapter and must provide in a preliminary design report or drawings, specifications, and design data accompanying the permit application the following information:
1. Technical or economic justification for each conflict manhole.
2. A statement identifying the party responsible for maintaining each conflict manhole.
3. assurance of compliance with the design and construction requirements in sub–subparagraphs a. through d. below.
a. each water main passing through a conflict manhole shall have flexible, watertight joints on each side of the manhole to accommodate differential settling between the main and the manhole.
b. Within each conflict manhole, the water main passing through the manhole shall be installed in a watertight casing pipe having high impact strength (i.e., having an impact strength at least equal to that of 0.25–inch–thick ductile iron pipe).
c. Each conflict manhole shall have an access opening, and shall be sized, to allow for easy cleaning of the manhole.
d. Gratings shall be installed at all storm sewer inlets upstream of each conflict manhole to prevent large objects from entering the manhole.

(4) Separation between Fire Hydrant Drains and Sanitary or Storm Sewers, Wastewater or Stormwater Force mains, Reclaimed Water Pipes, and On–Site Sewage Treatment and Disposal Systems. New or relocated fire hydrants with underground Drains shall be located so that the drains are at least three feet from any existing or proposed storm sewer, stormwater force main, or pipeline conveying reclaimed water regulated under Part III of Chapter 62–610, F.A.C.; at least three feet, and preferably ten feet, from any existing or proposed vacuum–type sanitary sewer; at least six feet, and preferably ten feet, from any existing or proposed gravity– or pressure–type sanitary sewer, wastewater force main, or pipeline conveying reclaimed water not regulated under Part III of Chapter 62–610. F.A.C.; and at least ten feet from any existing or proposed "on–site sewage treatment and disposal system" as defined in Section 381.0065(2), F.S., and Rule 64E–6.002, F.A.C.

5. Exceptions. Where it is not technically feasible or economically sensible to comply with the requirements in subsection (1) or (2) above, the Department shall allow exceptions to these requirements if suppliers of water or construction permit applicants provide technical or economic justification for each exception and provide alternative construction features that afford a similar level of reliability and public health protection. Acceptable alternative construction features include the following:
(a) Where an underground water main is being laid less than the required minimum horizontal distance from another pipeline and where an underground water main is crossing another pipeline and joints in the water main are being located less than the required minimum distance from joints in the other pipeline:
1. Use of pressure–rated pipe conforming to the American Water Works Association standards incorporated into Rule 62–555.330, F.A.C., for the other pipeline if it is a gravity– or vacuum–type pipeline;
2. Use of welded, fused, or otherwise restrained joints for either the water main or the other pipeline; or
3. Use of watertight casing pipe or concrete encasement at least four inches thick for either the water main or the other pipeline.
(b) Where an underground water main is being laid less than three feet horizontally from another pipeline and where an underground water main is crossing another pipeline and is being laid less than the required minimum vertical distance from the other pipeline:
1. Use of pipe, or casing pipe, having high impact strength (i.e., having an impact strength at least equal to that of 0.25–inch–thick ductile iron pipe) or concrete encasement at least four inches thick for the water main; and
2. Use of pipe, or casing pipe, having high impact strength (i.e., having an impact strength at least equal to that of 0.25–inch–thick ductile iron pipe) or concrete encasement at least four inches thick for the other pipeline if it is new and is conveying wastewater or reclaimed water.

ISSUE CODE
REVISED : 1/22/2018 NCH
REVISED : 5/23/2018 MJC

CITY OF LAKE WALES
201 W CENTRAL AVE. LAKE WALES, FLORIDA 33853

ISSUE CODE					
A	PRELIMINARY	B	DESIGN		
C	BIDS	D	CONSTRUCTION	E	APPROVAL

DESIGN:	SCALE: N.T.S.
CHK'D BY:	DATE:
DRAWN BY:	ENGR.

DRAWING TITLE
WATER NOTES

AREA	JOB NO.
CITY–OF–LAKE–WALES	

SHEET	REV.
– OF –	–