PROJECT SPECIFIC NOTES: (CONTINUED) **B. CITY OF JACKSONVILLE**

1. CONTRACTOR SHALL CALL THE CITY OF JACKSONVILLE PUBLIC SERVICES DEPARTMENT AT 910-938-6500 FOR WATER / SEWER LOCATION SERVICES BEFORE BEGINNING ANY WORK.

2. SERVICE IS TO BE CONTINUOUSLY MAINTAINED TO CUSTOMERS IN THE PROJECT AREAS. EXCEPT FOR THE MINIMUM AMOUNT OF TIME REQUIRED TO MAKE CONNECTIONS TO THE EXISTING SYSTEM. BEFORE SHUTTING OFF ANY WATER LINE, RESIDENTS ARE TO BE NOTIFIED BY THE CITY OF JACKSONVILLE IN WRITING AT LEAST 24 HOURS IN ADVANCE OF THE SHUT DOWN. THE CONTRACTOR SHALL ASSIST THE CITY IN DISTRIBUTION OF THE NOTIFICATIONS.

3. EXCEPT AS NEEDED FOR FIRE SUPPRESSION PURPOSES, THE CITY OF JACKSONVILLE SHALL BE THE SOLE OPERATOR OF ALL VALVES AND HYDRANTS ON THE CITY OF JACKSONVILLE WATER DISTRIBUTION SYSTEM. THE CONTRACTOR SHALL NOTIFY THE CITY AT LEAST 48 HOURS IN ADVANCE OF REQUEST FOR OPERATION OF VALVES AND MAKING A WET TAP OR CUT-IN. ONLY IN AN EMERGENCY, MAY THE CONTRACTOR CLOSE A VALVE. CONTRACTOR SHALL KEEP A RECORD OF ANY VALVES CLOSED DURING AN EMERGENCY AND NOTIFY THE PUBLIC SERVICES DEPARTMENT AT THE EARLIEST REASONABLE TIME OF THE SPECIFIC VALVES THAT WERE CLOSED.

4. WATER LINES 14-INCH AND LARGER SHALL BE DUCTILE IRON. ALL DUCTILE IRON PIPE, 4-INCHES AND LARGER, SHALL BE PRESSURE CLASS 350.

5. WATER LINES, 6-INCH THROUGH 12-INCH, SHALL BE PVC C-900 DR-18 PIPE THAT IS D.I.P.S. FUSIBLE PVC C-900 PIPE SHALL **BE USED FOR HORIZONTAL DIRECTIONAL** DRILLING (HDD) ONLY, UNLESS OTHERWISE APPROVED BY THE CITY OF JACKSONVILLE.

6. CONCRETE THRUST BLOCKING, TIE RODS, **RESTRAINED JOINT PIPE AND/OR OTHER** MEANS OF RESTRAINT SHALL BE PROVIDED AT ALL CHANGES IN PIPE DIRECTION. CONCRETE THRUST BLOCKING IS NOT RECOMMENDED WHERE THE THRUST BLOCK MAY BEAR ON OTHER UTILITIES OR WHERE THE AREA BEHIND THE THRUST BLOCK MAY BE EXCAVATED IN THE FUTURE.

7. WATER SERVICE LINE, 3/4-INCH THROUGH 2-INCH, SHALL BE HDPE C-901 PE-4710 (DR-9 OR DR-11 OR DR-13.5) OR PE-3408/3608 (DR-9 OR DR-11), ANSI/NSF-61 CERTIFIED, COPPER TUBING SIZE (CTS) PIPE.

8. ALL VALVES, 6-INCH AND LARGER, SHALL BE RESILIENT WEDGE TYPE GATE VALVES WITH NON RISING STEM AND MECHANICAL JOINT ENDS.

9. NON-METALLIC UNDERGROUND WARNING TAPE WITH THE TEXT "CAUTION WATER LINE **BELOW" SHALL BE INSTALLED 8-INCHES TO** 12-INCHES BELOW FINAL GRADE DIRECTLY ABOVE ALL PVC WATER LINES DURING BACKFILL.

10. TEN GAUGE SINGLE STRAND BARE COPPER TRACER WIRE SHALL BE INSTALLED ALONG THE TOP OF ALL NON-METALLIC PIPE.

11. ALL CONCRETE USED FOR THRUST BLOCKS, THRUST COLLARS, VALVE STABILIZING PADS, CONCRETE ENCASEMENT OF PIPES, AND FIRE HYDRANT SETTING AND THRUST BLOCKS SHALL BE NCDOT CLASS A WITH A COMPRESSIVE STRENGTH OF 3.000 PSI AT 28 DAYS. READY MIX CONCRETE SHALL COMPLY WITH ASTM C94. ALL EXPOSED CONCRETE SHALL BE AIR ENTRAINED.

UTILITY CONSTRUCTION

PROJECT SPECIFIC NOTES: (CONTINUED) C. ONWASA

1. ALL FITTINGS SHALL BE SECURED BY TWO (2) FORMS OF RESTRAINT. RESTRAINING GLANDS AND CONCRETE THRUST BLOCKING ARE PREFERRED. WEDGE ACTION RESTRAINT **GLANDS SHALL ONLY BE USED ON DUCTILE** IRON PIPE. FULL CIRCUMFERENTIAL PIPE **RESTRAINT GLANDS MAY BE USED ON PVC** PIPE OR DUCTILE IRON PIPE. OTHER FORMS OF RESTRAINT (THREADED RODS, BELL RESTRAINT HARNESSES, ETC.) MAY BE APPROVED BY ONWASA ON A CASE BY CASE BASIS.

2. ALL JOINTS ON FIRE HYDRANT ASSEMBLIES SHALL BE RESTRAINED.

3. ALL REVERSE (BACKSIDE) TAPS SHALL REQUIRE THE INSTALLATION OF A JOINT RESTRAINT SYSTEM.

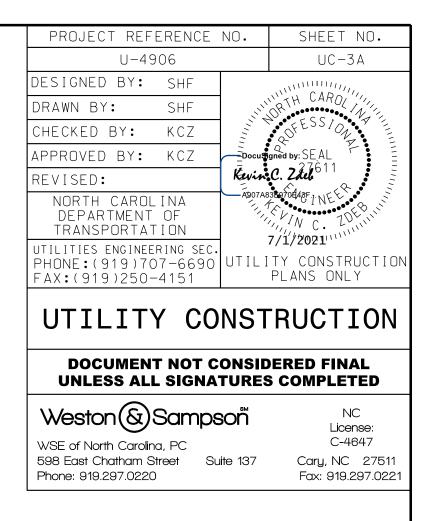
4. ALL CONCRETE SHALL BE NCDOT CLASS A WITH A COMPRESSIVE STRENGTH OF 3,000 PSI AT 28 DAYS. MAXIMUM SLUMP OF CONCRETE SHALL BE 3.5-INCHES FOR **VIBRATED IN PLACE CONCRETE AND 4-INCHES** FOR NON-VIBRATED CONCRETE.

5. HEAVY GAUGE TRACER WIRE SHALL BE INSTALLED ALONG THE TOP OF ALL PIPE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING (HDD). TRACER WIRE SHALL BE FASTENED TO THE PIPE EVERY FIVE (5) FEET WITH HEAVY PLASTIC ZIP TIES. CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THE TRACER WIRE IS PULLED SUCCESSFULLY WITH THE PIPE BY PERFORMING A CONTINUITY TEST OF THE TRACER WIRE AFTER COMPLETION OF THE HDD PULLBACK.

6. PIPE USED FOR SANITARY FORCE MAIN HDD INSTALLATIONS, 4-INCH THROUGH 16-INCH, SHALL BE HDPE C-906 SDR-9 PIPE THAT IS D.I.P.S.

7. WATER LINES 18-INCH AND LARGER SHALL BE DUCTILE IRON. DUCTILE IRON PIPE, 4-INCHES TO 12-INCHES, SHALL BE PRESSURE CLASS 350. DUCTILE IRON PIPE. 14-INCHES AND LARGER. SHALL BE PRESSURE CLASS 250.

8. WATER LINES, 6-INCH THROUGH 16-INCH, SHALL BE PVC C-900 DR-18 PIPE THAT IS D.I.P.S.



9. ALL VALVES, 6-INCH TO 14-INCH, SHALL BE RESILIENT WEDGE TYPE GATE VALVES WITH NON RISING STEM AND MECHANICAL JOINT ENDS.

10. ALL VALVES, 16-INCH AND LARGER, SHALL BE BUTTERFLY VALVES WITH MECHANICAL JOINT ENDS.

11. WATER SERVICE PIPE SHALL BE HDPE C-901 SDR-9 PIPE THAT IS C.T.S.