

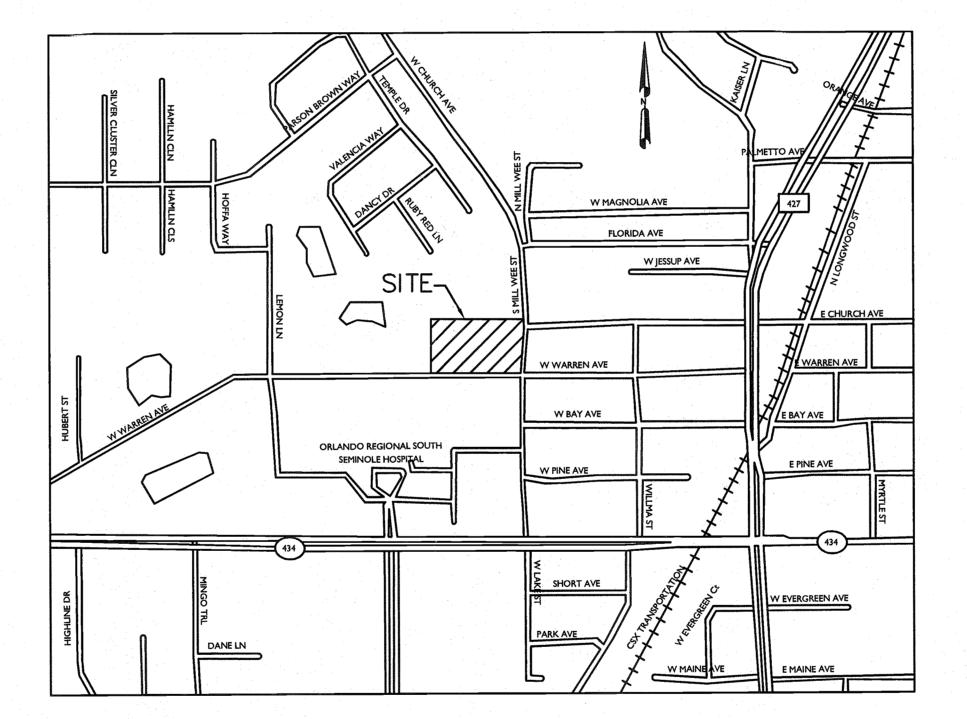
# CONSTRUCTION PLANS FOR REITER PARK FOR CITY OF LONGWOOD SEMINOLE COUNTY, FLORIDA

OCTOBER 03, 2008

### CITY OF LONGWOOD CONSTRUCTION STANDARDS & DETAILS

- 1. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE (1) COPY OF THE CONTRACT
- 2. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
- 3. THE LOCATION AND SIZE OF ALL EXISTING UTIL TIES SHOWN ON THE PLANS ARE APPROXIMATE AND ARE BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHOD AND BY HAND EXCAVATION IN COORDINATION WITH ALL UTILITY COMPANIES PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. ANY AND ALL CONFLICTS OF EXISTING UTILITIES WITH PROPOSED IMPROVEMENTS SHALL BE RESOLVED BY THE ENGINEER AND THE CITY PRIOR TO BEGINNING ANY CONSTRUCTION OPERATIONS. THIS WORK BY THE CONTRACTOR SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.
- 4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HIS COMPLETE FAMILIARITY WITH THE PROJECT SITE AND IT'S COMPONENTS TO INCLUDE SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE. BY SUBMITTAL OF A BID FOR THIS PROJECT, THE CONTRACTOR ACKNOWLEDGES HIS COMPLETE UNDERSTANDING AND RESPONSIBILITIES WITH RESPECT TO THE CONSTRUCTION ACTIVITIES REQUIRED UNDER THE SCOPE OF THIS PROJECT.
- 5. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND RESTORATION (IF DAMAGED) OF ALL EXISTING STRUCTURES WITHIN THE CONSTRUCTION LIMITS OF THE PROJECT, INCLUDING BUT NOT LIMITED TO; WALLS, FENCES, POWER POLES, MAIL BOXES, DRAINAGE STRUCTURES, LANDSCAPING, ETC.
- 6. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE FOLLOWING 48 HOURS BEFORE DIGGING:
- A. FLORIDA POWER CORPORATION
- B. SPRINT TELEPHONE
- C. TIME WARNER CABLE TV
  D. SUNSHINE STATE ONE CALL OF FLORIDA INC.
- E. CITY OF LONGWOOD
- F. ANY OTHER KNOWN UTILITY IN THE WORK AREA
- 7. THE CITY OF LONGWOOD WRITTEN SPECIFICATIONS AND STANDARD DETAILS (LATEST EDITION)
  ARE TO BE CONSIDERED PART OF THIS PROJECT AND CONSTRUCTION SHALL BE ENFORCED TO AT LEAST THESE
  MINIMUM STANDARDS.
- 8. ALL MATERIAL MUST CONFORM TO APPROVED SHOP DRAWINGS. ANY CHANGES MUST BE APPROVED BY
  THE ENGINEER AND THE CITY PRIOR TO INSTALLATION. FAILURE OF THE INSPECTOR TO CALL TO THE ATTENTION
  OF THE CONTRACTOR ANY ITEM NOT IN CONFORMANCE WITH PLANS AND SPECS SHALL NOT CONSTITUTE
  ACCEPTANCE OF THE ITEM.
- 9. CITY REPRESENTATIVES SHALL BE PRESENT DURING ALL OPERATIONS INVOLVING EXISTING UTILITIES.
- 10. MINIMUM COVER TO FINISHED GRADE OVER WA'ER MAINS SHALL BE 30 INCHES, EXCEPT UNDER PAVEMENT WHERE THE MINIMUM COVER SHALL BE 36 INCHES. MINIMUM COVER IN STATE ROADS SHALL BE 36 INCHES. MINIMUM COVER UNDER DITCH/CANAL BOTTOMS SHALL BE 24 INCHES. MAXIMUM COVER SHALL BE 48 INCHES UNLESS APPROVED BY THE CITY.
- 11. DIP SHALL BE REQUIRED IN THE FOLLOWING CIRCUMSTANCES:
- A. WITHIN 10 FEET OF SANITARY AND STORM PIPES.
- B. WITHIN 15 FEET OF STRUCTURES, CANALS OR LAKES.
- C. CROSSINGS OVER AND UNDER SEWERS, CANAL CROSSINGS, GAS AND STORM PIPES WITH LESS THAN
- 18 INCHES SEPARATION, WITH NO JOINT ALLOWED WITHIN 10 FEET OF CROSSING.
- D. BENEATH ALL PAVED AREAS, EXCLUDING DRIVEWAYS OR SIDEWALKS.

  E. WITHIN EASEMENTS.
- 12. TAPPING SLEEVES SHALL BE A MINIMUM OF 6 FEET FROM A PIPE JOINT AND SERVICE TAPS SHALL BE A MINIMUM OF 18 INCHES APART AND 18 INCHES FROM A BELL OR FITTING.
- 13. 2 INCH SCHEDULE 40 PVC CASING IS REQUIRED FOR ALL SERVICES THAT CROSS UNDER PAVEMENT.
- 14. METALLIC BACKED INDICATOR TAPE IS REQUIRED OVER ALL PVC MAINS.
- 15. ALL FIRE HYDRANTS SHALL MAINTAIN A 5 FOOT RADIUS CLEAR ZONE.
- 16. PAVEMENT REPLACEMENT, INCLUDING CURB, GUTTERS AND STRIPING SHALL OCCUR WITHIN SEVEN (7) WORKING DAYS FOLLOWING COMPLETION OF OPEN CUT WORK.
- 17. VALVES SHALL BE PROVIDED WITH A FULLY ADJUSTABLE VALVE BOX AND STEM WHERE THE CENTERLINE OF PIPE TO GRADE IS GREATER THAN FOUR (4) FEET.



LOCATION MAP

# GEOTECHNICAL ENGINEER

UNIVERSAL ENGINEERING SCIENCES 3532 MAGGIE BLVD. ORLANDO, FL. 32811 PHONE: 407-423-0504 FAX: 407-423-3106

# SURVEYOR

JOHNSTON'S SURVEYING INC. 900 SHADY LANE KISSIMMEE, FL. 34744 PHONE: 407-847-2179 FAX: 407-847-6140

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OCT 8 2008

REGULATORY
INFORMATION MGT.

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# CIVIL ENGINEER AND LANDSCAPE ARCHITECT

PROFESSIONAL DESIGN ASSOCIATES, INC.

3191 MAGUIRE BLVD. SUITE 190

ORLANDO, FL. 32803

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REGULATORY
INFORMATION AGE:

John P. Smith, P.E. #63423

04021-REITER PARK (10-06-2008)

# **GENERAL NOTES**

- WATER AND WASTEWATER SERVICE SHALL BE PROVIDED BY THE CITY OF LONGWOOD. THE WATER DISTRIBUTION SYSTEM AND WASTEWATER COLLECTION SYSTEM SHOWN ON THESE PLANS SHALL BE INSTALLED BY THE CONTRACTOR AND SHALL CONFORM TO THE CITY LONGWOOD STANDARDS.
- ALL CONSTRUCTION TO CONFORM WITH THE CITY OF LONGWOOD STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE WAIVED BY THE CITY OF LONGWOOD.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ACQUIRE THE NECL SSARY RIGHT-OF-WAY PERMIT(S) AND PROVIDE FOR THE SAFETY AND CONTROL OF LOCAL TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR WILL PROVIDE 24 HOUR NOTICE OF ANY LANE CLOSURES. ADDITIONAL INFORMATION MAY BE REQUIRED IF LANE CLOSURE DURATION'S ARE LONGER THEN DAYTIME OPERATIONS.
- 4. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT ALL REQUIRED PERMITS ARE OBTAINED AND IN-HAND BEFORE BEGINNING ANY CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING (HORIZONTALLY & VERTICALLY) ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISTRIBUTION SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. ALL UTILITIES WHICH INTERFERE WITH THE PROPOSED CONSTRUCTION SHALL BE RELOCATED BY THE RESPECTIVE UTILITY COMPANIES AND THE CONTRACTOR SHALL COOPERATE WITH THEM DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED. CALL 1-800-432-4770 TO HAVE EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
- THE LOCATIONS OF ALL EXISTING UTILITIES, STORM DRAINAGE SYSTEMS, AND TOPOGRAPHIC FEATURES SHOWN ON THE PLANS HAVE BEEN DETERMINED FROM THE BEST AVAILABLE INFORMATION AND ARE PROVIDED FOR THE CONVENIENCE OF THE CONTRACTOR. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR INACCURACY. SHOULD A DISCREPANCY ARISE BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, WHICH WOULD APPRECIABLY AFFECT THE EXECUTION OF THESE PLANS, THE CONTRACTOR WILL HALT CONSTRUCTION AND NOTIFY THE ENGINEER IMMEDIATELY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA AND SCHEDULES, AND FOR SIGNING SAID INSPECTIONS.
- 8. ALL DISTURBED AREAS NOT DESIGNED TO BE LANDSCAPED OR SODDED SHALL BE SEEDED AND MULCHED.
- 9. THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE, OR OTHERWISE DISTURB ANY MATERIAL, STRUCTURE, OR PART OF A STRUCTURE WHICH IS LOCATED OUTSIDE THE LINES, GRADES OR GRADING SECTIONS ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATION OR REMOVAL IS PROVIDED FOR IN THE CONTRACT, PLANS, OR SPECIFICATIONS.
- 10. ALL WORK AND ALL MATERIALS FURNISHED SHALL CONFORM TO THE LINES, GRADES, GRADING SECTIONS, CROSS SECTIONS, DIMENSIONS, MATERIAL REQUIREMENTS, AND TESTING REQUIREMENTS THAT ARE SPECIFIED IN THE CONTRACT, PLANS OR SPECIFICATIONS.
- 11. THE F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST REVISION) SHALL BE USED FOR DRAINAGE STRUCTURES. STATION OFFSETS ARE TO THE CENTERLINE OF THE INLET OR MANHOLE TOP.

### 12. <u>UTILITY CROSSINGS:</u>

- WHERE POTABLE WATER AND SANITARY GRAVITY SEWER MAINS OR REUSE MAINS CROSS WITH LESS THAN EIGHTEEN (18) INCHES OF VERTICAL CLEARANCE OR WHERE THE GRAVITY SEWER MAIN IS ABOVE THE WATER MAIN, THE GRAVITY SEWER MAIN SHALL BE PVC PIPE (AWWA C-900/DR18), PRESSURE TESTED TO 150 PSI, FOR A MINIMUM LENGTH OF TWENTY (20) FEET CENTERED ON THE POINT OF CROSSING. THE PIPE LENGTHS ARE TO BE CENTERED AT THE POINT OF CROSSING.
- B. A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET (EDGE TO EDGE) BETWEEN POTABLE WATER MAINS AND GRAVITY SEWER MAINS SHALL BE MAINTAINED WHEN AT ALL POSSIBLE. WHEN THE 10-FOOT HORIZONTAL SEPARATION CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE INSTALLED IN A SEPARATE TRENCH OR ON A UNDISTURBED EARTH SHELF AT LEAST 18" ABOVE THE GRAVITY SEWER. ALTERNATIVELY. THE GRAVITY SEWER MAIN SHALL BE PVC PIPE (AWWA C-900) /DR18) AND PRESSURE TESTED TO 150 PSI.
- WATER AND STORM CROSSING: SAME REQUIREMENTS AS WATER AND GRAVITY SEWER CROSSINGS EXCEPT WATER MAIN SHALL BE UPGRADED TO DUCTILE IRI)N PIPE.
- GRAVITY SEWER AND STORM CROSSING: SAME REQUIREMENTS AS WATER AND GRAVITY SEWER CROSSING EXCEPT GRAVITY SEWER MAIN SHALL BE UF GRADED TO
- WATER AND FORCE MAIN CROSSING: 18" VERTICAL SEPARATION AND 10" HORIZONTAL SEPARATION MUST BE MAINTAINED UNLESS PREVIOUSLY APPROVED BY
- WHERE WATER MAINS MUST CROSS REUSE MAINS, SANITARY GRAVITY SEWERS OR STORM SEWERS, WHEN A MINIMUM VERTICAL CLEARANCE OF 18" AND 4 MINIMUM COVER OF 36" CANNOT BE MAINTAINED, THE WATER MAIN SHALL BE CONSTRUCTED OF MECHANICAL JOINT DUCTILE IRON PIPE (DIP CLASS 51) PROVIDING A MINIMUM OF 30" COVER & 6" MINIMUM CLEARANCE BETWEEN THE WATER MAIN AND THE OTHER UTILITY (EXCLUDES FORCE MAIN). ONE FULL LENGTH OF DUCTILE IRON PIPE SHALL BE CENTERED AT THE POINT OF CROSSING. DUCTILE IRON PIPE SHALL CONTINUE UNTIL A MINIMUM OF 36" COVER CAN BE ATTAINED BY PIPE DEFLECTION. THE OTHER UTILITY (EXCLUDES FORCE MAIN) MUST BE CONSTRUCTED OF MECHANICAL JOINT DUCTILE IRON PIPE IF REUSE MAIN OR IF GRAVITY SEWER IT MUST BE CONSTRUCTED OF PVC PIPE (AWWA C-900/DR18) & PRESSURE TESTED TO 150 PSI.

### 13. WATER MAINS

- A. ALL PVC PIPE OF NOMINAL DIAMETER LESS THAN FOUR (4) INCHES WILL BE SDR 21 (200 PSI), SCH 40 OR SCH. 80. ALL PVC OF NOMINAL DIAMETER FOUR (4) THROUGH TWELVE (12) INCHES SHALL BE MANUFACTURED IN ACCORDANCE WITH AWWA STANDARD C900, LATEST EDITION. THE PVC PIPE SHALL HAVE A MINIMUM WORKING PRESSURE RATING OF 150 PSI AND SHALL HAVE A DIMENSION RATIO (DR) OF 18. PVC PIPE GREATER THAN TWELVE (12) INCHES WILL BE 3905 AND HAVE APPROPRIATE (DR) DESIGNATION.
- B. DUCTILE IRON PIPE FOR WATER MAIN FOR PIPE SIZES OF FOUR (4) THROUGH FIFTY (50) INCHES SHALL CONFORM TO ANSI/AWWA A21.51/C151. A MINIMUM OF CLASS 50 PIPE SHALL BE SUPPLIED FOR ALL SIZES OF PIPE UNLESS REQUIRED BY THE CITY OF LONGWOOD.
- C. PVC PIPE SHALL HAVE INTEGRAL BELL PUSH ON TYPE JOINTS CONFORMING TO ASTM
- D. ANY FITTINGS REQUIRED SHALL BE MECHANICAL JOINT DUCTILE IRON OR GRAY IRON CONFORMING TO ANSI/AWWA A21.10/C110, 250 PSI MINIMUM PRESSURE RATING, OR DUCTILE IRON COMPACT FITTINGS FOUR (4) THROUGH TWELVE (12) INCHES IN ACCORDANCE WITH ANSI/AWWA A21.53/C153.

- E. ALL SERVICE LINES SHALL BE 1" OR 2" POLYETHYLENE TUBING CONFORMING TO SPECIFICATIONS IN AWWA C800 AND AWWA C901
- F. CORPORATION STOPS SHALL BE 1" OR 2" BRASS, EQUIPPED WITH CONNECTIONS COMPATIBLE WITH THE POLYETHYLENE TUBING AND THREADED IN ACCORDANCE WITH SPECIFICATIONS IN AWWA C800 AND AWWA C901. CURB STOPS SHALL BE SIZED TO MATCH THE METER SIZE AND CONFORM TO THE SPECIFICATIONS IN AWWA C800 AND AWWA C901.
- G. FITTINGS SHALL BE BRASS, CAST AND MACHINED IN ACCORDANCE WITH SPECIFICATIONS IN AWWA C800 AND AWWA C901, WITH COMPATIBLE POLYETHYLENE TUBING CONNECTIONS.
- WHERE DUCTILE IRON PIPE IS REQUIRED FOR WATER MAINS, IT SHALL CONFORM TO ANSI/AWWA A21.51/C151. A MINIMUM THICKNESS OF CLASS 50 PER ANSI/AWWA SHALL BE SUPPLIED.
- I. ALL WATER MAIN FITTINGS, VALVES, RESTRAINTS, COUPLINGS, PIPE, AND IN GENERAL THOSE MATERIALS REQUIRED FOR INSTALLING THE WATER SUPPLY SYSTEM, SHALL COMPLY WITH MINIMUM MATERIAL STANDARDS, RATINGS AND CLASSIFICATIONS ESTABLISHED BY THE CITY OF LONGWOOD.
- J. INSTALL VALVE BOXES WITH ALL VALVES. VALVE BOXES UNDER THE PAVEMENT SHALL HAVE TRAFFIC BEARINGS COVERS.
- K. ALL PVC PIPE MUST BEAR THE NSF LOGO FOR POTABLE WATER USE.
- L. ALL TESTING SHALL BE IN ACCORDANCE WITH AWWA C600 OR M23 AS APPLICABLE
- M. ALL WATER MAINS AND APPURTENANCES SHALL CONFORM WITH AWWA SPECS. AND
- BACTERIOLOGICAL SAMPLE POINTS ARE TO BE PER THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION WATER DISTRIBUTION SYSTEM PERMIT CONDITIONS.
- THE WATER DISTRIBUTION SYSTEM IS SHOWN GRAPHICALLY ON THE CONSTRUCTION PLANS. IT IS THE CONTRACTORS RESPONSIBILITY TO FURNISH AND INSTALL ALL NECESSARY FITTINGS TO PROVIDE A COMPLETE AND OPERABLE SYSTEM.
- DISINFECTION OF THE WATER DISTRIBUTION SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH AWWA C651 - "DISINFECTING WATER MAINS".
- 14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN A COPY OF THE SOIL ENGINEER'S REPORT FOR THIS PROJECT FROM AND MEET THE SOIL ENGINEER'S REQUIREMENTS FOR SOIL PREPARATION ON THE SITE. CONTRACTOR'S SOILS ENGINEER SHALL CERTIFY ALL SITE, UTILITY, AND ROADWAY COMPACTION AND PAVEMENT CONSTRUCTION TO PDA. GEOTECHNICAL RECOMMENDATIONS ARE NOT THE RESPONSIBILITY OF PDA. PDA HAS RELIED ON THE REFERENCED GEOTECHNICAL REPORT IN THE PREPARATION OF THESE PLANS. ANY CONFLICT BETWEEN INFORMATION WITHIN THE REPORT AND THESE PLANS SHALL BE REPORTED TO THE ENGINEER/OWNER. PDA ASSUMES NO RESPONSIBILITY FOR THE CORRECTNESS, COMPLETENESS OR ACCURACY OF THE GEOTECHNICAL INFORMATION. WHEN THE PLANS AND/OR SPECIFICATIONS CONTAIN THE RESULTS OF A SOILS SURVEY, THE CONTRACTOR SHALL NOT CONSTRUE SUCH DATA AS A GUARANTEE OF THE DEPTH, EXTENT OF CHARACTER OF MATERIAL PRESENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE ANY NECESSARY EXAMINATION OF THE SITE AND OF ANY MATERIAL SOURCES INDICATED IN THE PLANS TO INFORM HIMSELF OF THE CONDITIONS UNDER WHICH WORK IS TO BE PERFORMED.
- 15. ALL REINFORCED CONCRETE PIPE (R.C.P.) SHALL BE MINIMUM CLASS III.

### 16. <u>SANITARY PIPE MATERIALS</u>

- A. PVC GRAVITY SEWER PIPE (4"-15"), ASTM D3034, SDR 35. UNIFORM MINIMUM "PIPE STIFFNESS" AT FIVE (5) PERCENT DEFLECTION SHALL BE 46 PSI. THE JOINTS SHALL BE INTEGRAL BELL ELASTOMERIC GASKET JOINTS MANUFACTURED IN ACCORDANCE WITH ASTM D3212 AND ASTM F477. APPLICABLE UNI-BELL PLASTIC PIPE ASSOCIATION STANDARD IS UNI-B-4. ALL PVC PIPE SHALL BEAR THE NSF-DW SEAL. THE MINIMUM STANDARD LENGTH OF THE PIPE SHALL BE THIRTEEN (13)
- B. ALL PIPE SHALL HAVE A HOMING MARK ON THE SPIGOT PROVIDED BY THE MANUFACTURER. ON FIELD CUT PIPE, CONTRACTOR SHALL PROVIDE HOMING MARK ON THE SPIGOT IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. REINFORCED CONCRETE PIPE SHALL HAVE MARKINGS INDICATING THE MINOR AXIS OF THE ELLIPTICAL REINFORCEMENT.
- C. PVC SEWER PIPE JOINTS SHALL BE FLEXIBLE ELASTOMERIC SEALS PER ASTM D3212.
- 17. MINIMUM 3' OF COVER TO BE PROVIDED OVER GRAVITY SEWER MAINS. FORCE MAINS, AND WATER MAINS.
- 18. THE CONTRACTOR IS TO MINIMIZE THE REMOVAL OF VEGETATION TO THE GREATEST EXTENT PRACTICAL.
- 19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE BUFFERS, RETENTION AND DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
- 20. THE CONTRACTOR SHALL COMPLY WITH THE LEGAL LOAD RESTRICTIONS IN HAULING OF MATERIALS IN PUBLIC ROADS BEYOND THE LIMITS OF WORK. A SPECIAL PERMIT WILL NOT RELIEVE THE CONTRACTOR OF LIABILITY FOR THE DAMAGE WHICH MAY RESULT FROM THE MOVING OF MATERIAL AND EQUIPMENT.
- 21. THE CONTRACTOR SHALL INSURE THAT PROPER SOIL DENSITIES ARE ACHIEVED FOR PLACEMENT OF ANY FOOTING SUPPORT DESCRIBED ON THESE PLANS. IT WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SUFFICIENT SOILS TESTING HAS BEEN PERFORMED PRIOR TO FINAL INSTALLATION OF IMPROVEMENTS.
- 22. DURING CONSTRUCTION, NO DIRECT DISCHARGE OF WATER TO DOWNSTREAM RECEIVING WATERS WILL BE ALLOWED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER QUALITY, AND SHALL ROUTE DISCHARGE WATER IN SUCH A MANNER AS TO ADEQUATELY REMOVE SILT PRIOR TO RUNOFF FROM THE SITE.

### 23. PAVEMENT MARKING & SIGNAGE

- A. THERMOPLASTIC TRAFFIC MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 711 OF THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION. THERMOPLASTIC TRAFFIC MARKINGS SHALL NOT BE APPLIED TO ASPHALT PAVEMENTS WITHIN 30 DAYS OF THE PLACEMENT OF ASPHALT PAVEMENT.
- B. STOP SIGNS TO BE PROVIDED AT ALL INTERSECTIONS PER FDOT INDEX No. 600 & 17302.
- C. FOR ALL SIGN DETAILS, REFER TO THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", PUBLISHED BY THE U.S. DEPARTMENT OF TRANSPORTATION. FEDERAL HIGHWAY ADMINISTRATION, (LATEST EDITION) (ANSI No. D6.1 - 1983).
- D. ALL SIGNS TO BE SINGLE MOUNTED IN ACCORDANCE WITH FDOT INDEX No. 11862 (70 MPH WIND LOADING) AND FDOT INDEX No. 17302.

24. ALL CONCRETE PIPE JOINTS TO BE WRAPPED WITH FILTER FABRIC IN ACCORDANCE WITH F.D.O.T. INDEX NO. 280

### 25. EARTHWORK

- A. IF REQUIRED, PERFORM REMEDIAL DEWATERING PRIOR TO ANY EARTHWORK OPERATIONS.
- B. STRIP THE PROPOSED CONSTRUCTION LIMITS OF ALL GRASS, ROOTS, TOP SOIL, and other deleterious materials within and 10 feet beyond the perimeter of THE PROPOSED BUILDINGS AND IN ALL PAVED AREAS. EXPECT CLEARING AND GRUBBING TO DEPTHS OF 12 INCHES. DEEPER CLEARING AND GRUBBING DEPTHS MAY BE ENCOUNTERED IN HEAVILY VEGETATED AREAS WHERE MAJOR ROOT SYSTEMS ARE ENCOUNTERED.
- C. EXCESS, UNSUITABLE, AND CLEARED OR GRUBBED MATERIAL SHALL BE REMOVED FROM THE WORK SITE AND DISPOSED OF AT LOCATIONS SECURED BY THE CONTRACTOR.
- D. SHOULD THERE BE INSUFFICIENT SATISFACTORY MATERIAL FROM THE EXCAVATIONS TO MEET THE REQUIREMENTS FOR FILL MATERIAL, BORROW SHALL BE OBTAINED FROM PITS SECURED BY THE CONTRACTOR.
- E. PROOF-ROLL THE RESULTING SUBGRADE WITH A HEAVILY LOADED, RUBBER-TIRED VEHICLE PROOF-ROLLING WILL HELP TO LOCATE ANY ZONES OF ESPECIALLY LOOSE OR SOFT SOILS NOT ENCOUNTERED IN THE SOIL TEST BORING. THEN UNDERCUT, OR OTHERWISE TREAT THESE ZONES AS RECOMMENDED BY THE ENGINEER.
- F. COMPACT THE RESULTING SUBGRADE FROM THE SURFACE BY A HEAVY VIBRATORY ROLLER UNTIL OBTAINING A MINIMUM DENSITY OF 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY (ASTM D-1557). FOR THE PROPOSED PAVEMENTS. COMPACTION SHOULD BE PERFORMED TO A DEPTH OF 2 FEET BELOW THE BOTTOM OF THE BASE COURSE AND/OR THE TOP 1 FOOT BELOW THE BEGINNING GRADE. THE FINAL 1-FOOT SHOULD BE COMPACTED TO 98 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY
- G. TEST THE SUBGRADE FOR COMPACTION AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 10.000 SQUARE FEET PER FOOT OF DEPTH IMPROVEMENT IN THE PAVEMENT AREAS. OR AT A MINIMUM OF TWO TEST LOCATIONS, WHICHEVER IS GREATER
- H. PLACE GEOTEXTILE OVER PREPARED SUBGRADE WHERE INDICATED ON PLAN AND WHERE DIRECTED BY ENGINEER.
- PLACE FILL MATERIAL. AS REQUIRED. OPTIMALLY. THE FILL SHOULD CONSIST OF "CLEAN." FINE SAND WITH LESS THAN 5% SOIL FINES. FILL MATERIALS WITH SOIL FINES CONTENTS BETWEEN 5% AND 12% ARE ALLOWED IF STRICT MOISTURE CONTROL IS EMPLOYED. PLACE FILL IN UNIFORM 10 TO 12-INCH LOOSE LIFTS AND COMPACT EACH LIFT TO A MINIMUM DENSITY OF 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY.
- PERFORM COMPLIANCE TESTS WITHIN THE FILL AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 10,000 SQUARE FEET PER LIFT IN THE PAVEMENT AREAS, OR AT A MINIMUM OF TWO TEST LOCATIONS, WHICHEVER IS GREATER.
- 26. RECOMENDED CONSTRUCTION PROCEDURES AND FOUNDATION RELATED SITE WORK FOR THE PROPOSED POND BERMS SHOULD CONSIST OF THE FOLLOWING:
  - A. THE ENTIRE CONSTRUCTION AREA(S), INCLUDING A MINIMUM MARGIN OF 3 FEET BEYOND THE PERIMETER OF THE BERM SHOULD BE CLEARED AND STRIPPED; REMOVING ALL EXSITING VEGETATION AND OTHER DELETERIOUS MATERIAL.
  - B. THE STRIPPED AREA SHOULD BE LEVELED AND PROOF-ROLLED BY MEANS OF A LARGE SELF-PROPELLED VIBRATORY ROLLER WHICH IS CAPABLE OF EXERTING A MINIMUM IMPACT ENERGY OF 20,000 POUNDS (i.e., DYNAPC CA-15 OR EQUIVALENT).
  - C. UPON APPROVAL BY THE GEOTECHNICAL ENGINEER AND / OR HIS DESIGNATED REPRESENTATIVE. THE PROOF-ROLLED SURFACE MAY BE FILLED WITH RELATIVELY CLEAN SANDS (LESS THAN 15 PERCENT FINES PASSING THE U.S. No. 200 SIEVE), AND PLACED IN LEVEL LIFTS NOT TO EXCEED 12 INCHES LOOSE AND COMPACTED AS OUTLINED BELOW.
  - D. A SUFFICIENT NUMBER OF OVERLAPPING PASSES SHOULD BE MADE BY THE VIBRATORY ROLLER ACROSS THE FILLED AREA IN ORDER TO COMPACT THE FILL SOIL TO A MINIMUM DENSITY EQUIVALENT TO 95 PERCENT OF THE SOIL'S MAXIMUM MODIFIED PROCTOR DENSIT VALUE (ASTM D-1557).
  - E. ONCE THE BERMS HAVE BEEN FILLED AND COMPACTED TO THEIR DESIGN ELEVATION / GRADE, APPROPRIATE EROSION CONTROL SHALL BE PROVIDED.

## TRENCHING NOTES

THE MINIMUM WIDTH OF THE TRENCH SHALL BE EQUAL TO THE OUTSIDE DIAMETER OF THE PIPE AT THE JOINT PLUS 8 INCHES FOR UN-SHEETED TRENCH, OR 12 INCHES FOR THE SHEETED TRENCH, AND THE MAXIMUM WIDTH OF TRENCH, MEASURED AT THE TOP OF THE PIPE, SHALL NOT EXCEED THE OUTSIDE PIPE DIAMETER PLUS 2 FEET, UNLESS OTHERWISE SHOWN ON THE DRAWING DETAILS, OR APPROVED BY THE UTILITY DIRECTOR.

B. UTILITY BEDDING

- i. CLASS B (MINIMUM UTILITY BEDDING): THE BOTTOM OF THE TRENCH SHALL BE SHAPED TO PROVIDE A FIRM BEDDING FOR THE PIPE. THE PIPE SHALL BE FIRMLY BEDDED IN UNDISTURBED FIRM SOIL, OR HAND SHAPED UNYIELDING MATERIAL. THE BEDDING SHALL BE SHAPED SO THAT THE PIPE WILL BE CONTINUOUS THEREWIT FOR ITS FULL LENGTH.
- ii. Class a (special utility bedding): should special bedding be required DUE TO DEPT OF COVER, IMPACT LOADING, OR OTHER CONDITIONS, "CLASS A" BEDDING SHALL BE INSTALLED.

C. UNSUITABLE MATERIAL

BELOW TRENCH GRADE SOIL UNSUITABLE FOR A PROPER FOUNDATION ENCOUNTERED AT OR BELOW TRENCH GRADE, SUCH AS MUCK OR OTHER DELETERIOUS MATERIAL, SHALL BE REMOVED FOR THE FULL WIDTH OF THE TRENCH AND TO THE DEPTHREQUIRED TO REACH SUITABLE FOUNDATION MATERIAL

D. EXTRA UTILITY—BEDDING MATERIAL WHEN ROCK OR OTHER NON-CUSHIONING MATERIAL IS ENCOUNTERED AT TRENCH

GRADE, EXCAVATION SHALL BE EXTENDED TO 6 INCHES BELOW THE OUTSIDE OF THE BOTTOM OF THE UTILITY, AND A CUSHION OF SAND SHALL BE PROVIDED. E. SHEETING AND BRACING

IN ORDER TO PREVENT DAMAGE TO PROPERTY, INJURY TO PERSONS, EROSION, CAVE-INS, OR EXCESSIVE TRENCH WIDTHS, ADEQUATE SHEETING AND BRACING SHALL BE PROVIDED IN ACCORDANCE WITH STANDARD PRACTICE.

F. EXCAVATED MATERIAL

EXCAVATED MATERIAL TO BE USED FOR BACKFILL SHALL BE NEATLY DEPOSITED AT THE SIDES OF THE TRENCH WHERE SPACE IS AVAILABLE. WHERE STOCKPILING OF EXCAVATED MATERIAL IS REQUIRED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING THE SITES TO BE USED.

G. DEWATERING

UTILITIES SHALL BE LAID "IN THE DRY" UNLESS OTHERWISE APPROVED. DEWATERING SYSTEM SHALL B UTILIZED IN ACCORDANCE WITH GOOD STANDARD PRACTICE AND MUST BE EFFICIENT ENOUGH TO LOWER THE WATER LEVEL IN ADVANCE OF THE EXCAVATION AND MAINTAIN IT CONTINUOUSLY TO KEEP THE TRENCH BOTTOM AND SIDES FIRM AND DRY.

H. OBSTRUCTIONS

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ACQUAINT HIMSELF WITH ALL EXISTING CONDITIONS AND TO LOCATE ALL STRUCTURES AND UTILITIES ALONG THE PROPOSED UTILITY ALIGNMENT IN ORDER TO AVOID CONFLICTS. WHERE ACTUAL CONFLICTS ARE UNAVOIDABLE, WORK SHALL BE COORDINATED WITH THE FACILITY OWNER AND PERFORMED SO AS TO CAUSE AS LITTLE INTERFERENCE. AS POSSIBLE WITH THE SERVICE RENDERED BY THE FACILITY DISTURBED.

I. BACKFILL

- i. BACKFILL MATERIAL SHALL BE CLEAN EARTH FILLCOMPOSED OF SAND, SAND AND ROCK, CRUSHED ROCK, OR AN APPROVED COMBINATION THEREOF.
- ii. WHEN TRENCHES ARE CUT IN PAVEMENTS OR AREAS TO BE PAVED, COMPACTION AS DETERMINED BY AASHO SPECIFICATION T-180, SHALL BE EQUAL TO 98 PERCENT OF MAXIMUM DENSITY, WITH COMPACTION IN OTHER AREAS NOT LESS THAN 95 PERCENT OF MAXIMUM DENSITY.
- iii. IF, IN THE OPINION OF THE UTILITY DIRECTOR, DENSITIES ARE QUESTIONABLE, A TESTING LABORATORY APPROVED BE THE UTILITY DIRECTOR AT THE EXPENSE OF THE CONTRACTOR SHAL MAKE DENSITY TESTS FOR DETERMINATION OF THE ABOVE-SPECIFIED COMPACTION. THE UTILITY DIRECTOR WILL DETERMINE TEST LOCATIONS.
- iv. PROTECTIVE CONCRETE SLABS SHALL BE INSTALLED OVER THE TOP OF TRENCHES, WHERE REQUIRED, TO PROTECT THE INSTALLED PIPE AGAINST EXCESSIVE LOADS.
- v. EXISTING SIDEWALKS AND DRIVEWAYS REMOVED, DISTURBED, OR DESTROYED BY

CONSTRUCTION, SHALL BE REPLACED OR REPAIRED. L. ROADWAY AND PAVEMENT RESTORATION

- i. PAVEMENT OR ROADWAY SURFACES CUT OR DAMAGED SHALL BE REPLACED BY THE CONTRACTOR IN EQUAL OR BETTER CONDITION THAN THE ORIGINAL, INCLUDING STABILIZATION, BASE COURSE, SURFACE COURSE, CURB AND GUTTER, OR OTHER APPURTENANCES. THE CONTRACTOR SHALL OBTAIN THE NECESSARY PERMITS AND ALL APPLICABLE AUTHORIZATIONS FROM THE ROPER AGENCIES PRIOR TO ANY ROADWORK. ADDITIONALLY, THE CONTRACTOR SHALL PROVIDE ADVANCE NOTICE TO THE APPROPRIATE AUTHORITY, AS REQUIRED, PRIOR TO CONSTRUCTION OPERATIONS.
- ii. RESTORATION SHALL BE IN ACCORDANCE WITH REQUIREMENTS SET FORTH BY THE CITY ENGINEER OR APPROVED EQUAL.
- iii. WHERE EXISTING PAVEMENT IS REMOVED, THE SURFACING SHALL BE MECHANICALLY SAW CUT PRIOR TO TRENCH EXCAVATION, LEAVING A UNIFORM AND STRAIGHT EDGE, WITH MINIMUM DISTURBANCE TO THE REMAINING ADJACENT SURFACING.
- iv. IMMEDIATELY FOLLOWING THE SPECIFIED BACKFILLING AND COMPACTION, A TEMPORARY SAND SEAL COAT SURFACE SHALL BE APPLIED TO THE CUT AREAS. THIS TEMPORARY SURFACING SHALL PROVIDE A SMOOTH TRAFFIC SURFACE WITH THE EXISTING ROADWAY AND SHALL BE MAINTAINED UNTIL FINAL RESTORATION.
- M. PROTECTION AND RESTORATION OF PROPERTY DURING THE COURSE OF CONSTRUCTION, THE CONTRACTOR SHALL TAKE SPECIAL CARE AND PROVIDE ADEQUATE PROTECTION IN ORDER TO MINIMIZE DAMAGE TO VEGETATION, SURFACE AREAS, AND STRUCTURES WITHIN THE CONSTRUCTION OF RIGHT-OF-WAY, EASEMENT OR SITE, AND TAKE FULL RESPONSIBILITY FOR THE REPLACEMENT OR REPAIR

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