

Construction Plans and Specifications Of **CITY OF PORT ST. LUCIE SAGAMORE BASIN STA-2 EAST** For PORT ST. LUCIE, FL Lying In Section 20, Township 36 S., Range 40 E. **St. Lucie County, Florida**



Site Map N.T.S.





SHEET INDEX

	SHEET NUMBER	SHEET TITLE/DESCRIPTION
	1	COVER
Ear	2	CLEARING AND GRUBBING / EROSION CONTROL PLAN STA-2 EAST
B	3	SITE PLAN STA-2 EAST
GN	4	SECTIONS EAST
DON	5	MISCELLANEOUS DETAILS STA-2 EAST
	6	DETAILS, CROSS - SECTION, & WEIR SECTION STA-2 EAST
	7	QUANTITIES
DR	8	GENERAL NOTES STA-2 EAST
	9	SURVEY
	BID 8/19/	SET 2020 Always call 811 two full business days before you dig
	Project No. 1682	2.4 SAGAMORE BASIN STA-2 EAST















AND ADEQUATE LONGITUDINAL SUPPORT UNDER THE PIPE, THEN A MINIMUM COMPACTED

4. THE CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF THE FLORIDA TRENCH SAFETY ACT.





CPSL Sagamore Basin Stormwater Treatment Area 2 - East

This item includes all equipment, materials, labor, supervision, and all
St. Lucie, FL 34987. The STA construction and pipe replacement w
embankment. All work for CPSL Sagamore Basin Project as depict
mobilization, demobilization, dewatering, coatings, connections, restor
functioning system.

No.	FDOT Pay Item	Item Description	Unit	Quantity	Unit Cost	ltem Cost
		GENERAL	ITEMS			
1	999-1	Mobilization (Video)	LS	1		\$-
2	999-2	Dewatering	LS	1		\$ -
3	999-3	Erosion Control	LS	1		\$-
4	104 11	Turbidity Barrier	LF	80		\$-
5	104-13-1	Staked Silt Fence, Type III	LF	3,187		\$ -
6	104-15	Stabilized Construction Entrance/Sweeping/15" HDPE	LS	1		\$-
7	199-1	Survey Staking & As-Builts	LS	1		\$ -
8	999-4	Restore Residential Fencing / Landscaping	LS	1		\$-
9	110-1-1	Clearing & Grubbing / Demolition / Plug Pipes	AC	5.09		\$-
		SUBTOTAL				\$-
		DRAINA	GE			
10	120-1	Regular Excavation (10% Contingency)	CY	56,100		\$-
11	120-6	Embankment (Swale Regrading - Use Onsite Material)	CY	60		\$-
12	455-33-3	Sheet Pile Weir	SF	660		\$-
13	400-2-2	Concrete Cap (Class I)	CY	15		\$ -
14	530-3-3	Riprap, Bank and Shore	TN	277		\$-
15	425-1-572	DT Bot Type G Inlet < 10' (Steel Grate - Galv)	EA	2		\$-
16	430-75-18	Pipe Culvert 18" HDPE		229		\$ -
17	999-5	Concrete Jacket		4		\$-
18	999-6	Concrete Pad (4" Thick)		18		\$ -
19	430-75-230	Pipe Culvert, 29" x 45" ERCP		461		\$-
20	430-982-38	Mitered End Section, 18" Round	EA	5		\$-
21	999-7	Concrete Endwall		2		\$ -
22	999-8	Utility Adjustment	ALLOW	2		\$ -
		SUBTOTAL				\$-
		ROADW	AY		•	·
23	999-9	Open / Cut Restore Asphalt	SY	46		\$-
24	327-70-1	Mill and Overlay Asphalt	SY	183		\$ -
25	999-10	Street Signage and Pavement Markings	LS	1		\$ -
26	999-10	ADA Mats	SF	40		\$ -
27	522-1	Concrete Sidewalk, 4" Thick	SY	1,709		\$ -
		SUBTOTAL				\$-
		PLANTING & G	RASSING	6		·
28	570-1-2A	Performance Turf (Bahia Sod - Includes Pinning)	SY	16,000		-
		SUBTOTAL				-

NOTES:

430 - PIPES: THE COST OF PIPE WILL INCLUDE REMOVAL/DISPOSAL/GROUT OF EXIST. PIPE & REPLACEMENT OF PIPE/BACKFILL/MATERIAL/OVERLAY/ETC. PRICE TO INCLUDE REMOVE/REINSTALL FENCES TO BUILD LINES.

425 - INLETS: THE COST OF INLET WILL INCLUDE WEEP HOLE/SUMPS AND REMOVAL/DISPOSAL OF EXISTING INLET AND REPLACEMENT INLETS/MANHOLES/ETC.

999-3 - EROSION CONTROL: LUMP SUM TO INCLUDE PERMITTING/MONITORING/INLET PROTECTION. THE LENGTH OF SILT FENCE AND TURBIDITY BARRIER TO BE SEPARATE.

City of Port St. Lucie, FL

Bid Form - 8/19/20

ll other work necessary for the pipe replacements and resurfacing for CPSL Sagamore Basin Project located in Port work shall include but is not limited to grading, installation of drainage structures and pipes, excavation and icted on the Construction Drawings; Sheets 1-9. This item shall include general conditions, bonds, indemnification, oration, testing, record drawings, owner training, and all other necessary items to provide a complete and fully

TOTAL \$ -	TOTAL	\$	-
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UII	LITY STATU	US REPORT	
CP	SL - Saze	amore STA	
	CAPTEC Proje	ect #1682.4	
Sunshine	One Call Desig	n Ticket #338706493	
SUBMITTED TO: (Utility Company or Govt. Agency, Contact Person & Address)	DATE SUBMITTED:	RESPONSE DATE /RESPONDENT'S NAME	ITEMS SUBMITTED, COMMENTS
LORIDA POWER & LIGHT rmlight Marjan rmlight.marjan@fpl.com	12/4/17 email	Follow-up / no response	site plan / location map
.T&T 1ark Gutierrez 1ark.gutierrez@att.com	12/4/17 email	Follow-up / no response	site plan / location map
OMCAST nthony Springsteel nthony_springsteel@cable.comcast.com	12/4/17 email	Rcvd markups 12/8 (Rick Johnson)	site plan / location map
LORIDA CITY GAS on Muller muller@agIresources.com	12/4/17 email	No conflicts 12/4	site plan / location map
C ITY OF PORT ST. LUCIE TRAFFIC aul Johnson johnson@cityofpsl.com	12/4/17 email	No conflicts 12/8	site plan / location map
CITY OF PORT ST. LUCIE UTILITIES	12/4/17 email	Rcvd markups 12/11	site plan / location map
P:\1600\1682.4 - CPSL Sagamore Basin STA\utl	locates\Utility Status	Report.doc	
P:\1600\1682.4 - CPSL Sagamore Basin STA\utl	locates\Utility Status	Report.doc	





A. GENERAL

1. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGE OR DEVIATIONS FROM THE DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER AND THE CITY OF PORT ST. LUCIE.

2. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS

3. THE LOCATION AND SIZE OF ALL EXISTING UTILITIES SHOWN ON THE PLANS ARE APPROXIMATE AND BASED ON THE BEST AVAILABLE INFORMATION. ADDITIONAL UTILITIES MAY EXIST WHICH ARE NOT SHOWN ON THE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UTILITIES BY ELECTRONIC METHODS 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 OWNER 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. THE CONTRACTOR SHALL MAINTAIN ALL WATER SUPPLY AND SANITARY SEWER SERVICE THROUGHOUT CONSTRUCTION OF THIS PROJECT. THE CONTRACTOR SHALL MAINTAIN EXISTING SERVICES UNTIL THE NEW LINES HAVE BEEN APPROVED BY THE CITY OF PORT ST. LUCIE UTILITY DEPARTMENT.

5. PROJECT SUPERINTENDENT: THE CONTRACTOR SHALL PROVIDE A QUALIFIED SUPERINTENDENT TO REMAIN ON THE JOB SITE AT ALL TIMES WHEN WORK IS BEING PERFORMED. THE SUPERINTENDENT SHALL BE PRESENT AT THE PRE-CONSTRUCTION MEETING. THE CONTRACTOR SHALL NOTIFY THE LOCAL UTILITY COMPANY BY LETTER PRIOR TO THE PRECONSTRUCTION MEETING APPOINTING THE SUPERINTENDENT FOR THIS PROJECT INCLUDING A FORMAL RESUME SHOWING QUALIFICATIONS.

6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE HIS/HER COMPLETE FAMILIARITY WITH THE PROJECT SITE AND COMPONENTS TO INCLUDE SUBSURFACE CONDITIONS OF SOIL AND GROUNDWATER TABLE. BY SUBMITTAL OF A BID FOR THIS PROJECT, THE CONTRACTOR ACKNOWLEDGES HIS/HER COMPLETE UNDERSTANDING AND RESPONSIBILITIES WITH RESPECT TO THE CONSTRUCTION ACTIVITIES REQUIRED UNDER THE SCOPE OF THIS PROJECT.

7. THE "TRENCH SAFETY ACT" SHALL BE INCORPORATED INTO THIS CONTRACT AS ENHANCED BY THE LEGISLATURE OF THE STATE OF FLORIDA IN EFFECT SINCE OCTOBER 1, 1990.

8. THE CONTRACTOR SHALL PREPARE A PLAN SHOWING THE SCHEDULE OF WORK, INCLUDING A HIGHLIGHTED PLAN SHOWING THE ORDER OF CONSTRUCTION THAT WILL FACILITATE MAINTAINING EXISTING SERVICES DURING CONSTRUCTION. THIS PLAN SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION MAINTENANCE OF TRAFFIC AND STAGING PLAN.

9. ALL CONSTRUCTION IS TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, CITY OF PORT ST. LUCIE STANDARDS AND CITY OF PORT ST. LUCIE UTILITY DEPARTMENT STANDARDS.

10. TELEPHONE, POWER, CABLE, WATER, SEWER, AND GAS LOCATIONS SHOWN ARE TAKEN FROM INFORMATION PROVIDED BY THAT UTILITY COMPANY. THESE LOCATIONS HAVE NOT BEEN VERIFIED IN THE FIELD. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITY LOCATIONS PRIOR TO CONSTRUCTION. THE CONTRACTOR IS ALSO RESPONSIBLE TO EXPOSE ALL CROSSING WITH BELLSOUTH, CABLES/CATV AND FLORIDA POWER AND LIGHT ELECTRIC CONDUITS PRIOR TO BEGINNING CONSTRUCTION AND DELIVERY OF PIPE. THE CONTRACTOR IS TO USE EXTREME CAUTION WITHIN THE VICINITY OF PRIVATE UTILITY FACILITIES. THE CONTRACTOR WILL REQUEST A PRIVATE UTILITY REPRESENTATIVES PRESENCE DURING CONSTRUCTION IN THE VICINITY OF THEIR FACILITIES. A PROFILE OF THE PRIVATE UTILITY FACILITIES ARE NOT PROVIDED IN THESE DRAWINGS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE PRIVATE UTILITIES AND OBTAINING THE APPROXIMATE LOCATION OF THESE FACILITIES.

11. ANY NGVD 29 AND NAVD 88 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHOULD NOTIFY,

GEODETIC INFORMATION CENTER ATTN: M/CG - 162 6001 EXECUTIVE BOULEVARD ROCKVILLE, MD 20852 TELEPHONE: (301) 443-8319

CITY OF PORT SAINT LUCIE ENGINEERING DEPARTMENT ATTN: MARK MAINTENANCE CENTER 121 SW PORT SAINT LUCIE BOULEVARD PORT SAINT LUCIE, FL 34984-5099 TELEPHONE: (772) 871-5175

12. THE CONTRACTOR IS TO NOTIFY THE LOCAL UTILITY COMPANY AND ALL UTILITY COMPANIES FOR PRE-CONSTRUCTION MEETINGS.

13. BENCH MARK DATA IS NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD-'88). SEE SURVEYOR'S NOTES FOR ADDITIONAL INFORMATION. 14. SHOP DRAWINGS ARE REQUIRED ON ALL CONSTRUCTION ITEMS. THE ENGINEER REQUIRES FIVE (5) DAYS PRIOR NOTICE TO REVIEW SHOW

DRAWINGS.

15. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF THE LOCAL UTILITY COMPANY UTILITIES MINIMUM DESIGN AND CONSTRUCTION STANDARDS, ONE COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS AND SPECIAL PROVISION, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.

16. CONTRACTOR TO UTILIZE "APPROVED CONSTRUCTION PLANS" ONLY FOR CONSTRUCTION.

17. CONTRACTOR TO PROVIDE SITE PLAN AS-BUILTS TO THE CITY OF PORT ST. LUCIE PRIOR TO CERTIFICATE OF OCCUPANCY.

18. IF HISTORICAL OR ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED ON SITE, THE CONTRACTOR WILL IMMEDIATELY NOTIFY THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT

19. AS-BUILT RECORD DRAWINGS: UPON COMPLETION OF THE WORK, BUT PRIOR TO SUBMITTAL OF REQUEST FOR FINAL PAYMENT OR FINAL ACCEPTANCE, THE CONTRACTOR OR DEVELOPER'S ENGINEER SHALL OBTAIN AND SUBMIT RECORD INFORMATION CERTIFIED BY A FLORIDA PROFESSIONAL SURVEYOR AND MAPPER PREPARED IN ACCORDANCE WITH THE CITY OF PORT ST. LUCIE UTILITY DEPARTMENT STANDARDS. TWO (2) PAPER PRINTS OF THE PLAN SHEETS, PROFILES, DETAILS AND LIFT STATION SHALL BE PROVIDED. THE PRINT SHALL BE SIGNED AND SEALED BY THE FLORIDA PROFESSIONAL SURVEYOR AND MAPPER AND THE FLORIDA PROFESSIONAL ENGINEER RESPONSIBLE FOR CERTIFYING THE PROJECT. ALL SHEETS MUST INCLUDE THE VERTICAL DATUM AND HORIZONTAL DATUM USED IN EASILY READABLE PRINT.

THREE (3) ELECTRONIC RECORD DRAWING FILES SHALL ALSO BE PROVIDED AS FOLLOWS:

ONE (1) DIGITAL RECORD DRAWING CAD FILE SAVED IN THE ORIGINAL FORMAT AS DESIGNED. BUT BEING AUTOCAD VERSION 2004 OR NEWER. ONE (1) DIGITAL RECORD DRAWING SAVED IN DWF FORMAT AS AN EXACT REPRODUCTION OF THE SIGNED AND SEALED RECORD DRAWING ON PAPER, WITHOUT SIGNATURE OR SEAL WITH A RESOLUTION OF 300 DOTS PER INCH (DPI). ONE (1) DIGITAL RECORD DRAWING SAVED IN PDF FORMAT AS AN EXACT REPRODUCTION OF THE SIGNED AND SEALED RECORD DRAWING ON PAPER, WITHOUT SIGNATURE OR SEAL WITH A RESOLUTION OF 300 DOTS PER INCH DPI).

ALL RECORD DRAWING INFORMATION SHALL ACCURATELY DEPICT ALL SURVEYED INFORMATION WITH ALL HORIZONTAL VECTOR INFORMATION BEING SHOWN IN THE NORTH AMERICAN DATUM OF 1983 (NAD83) AND IN THE FLORIDA EAST ZONE STATE PLANE COORDINATE SYSTEM OR THE LATEST NGS ADOPTED DATUM USING U.S. SURVEY FEET AS THE UNIT OF MEASUREMENT.

CAD FILES: THE DIGITAL RECORD DRAWING CAD FILE SHALL FOLLOW THESE GENERAL STANDARDS FOR INCLUSION IN THE UTILITY'S GEOGRAPHIC INFORMATION SYSTEM (GIS): ALL RECORD DRAWING PIPING INFORMATION SHALL BE PLACED ON SEPARATE LAYERS BY PIPING TYPE, DIAMETER AND MATERIAL. ALL RECORD DRAWING FIXTURE INFORMATION (FIRE HYDRANTS, VALVES, METERS, REDUCERS, TEES, WYES, CROSSES, CAPS, ETC.) SHALL BE PLACED ON SEPARATE LAYERS BY THE PIPING TYPE THEY ARE ATTACHED TO. ALL PIPING SHALL BE DRAFTED AS POLYLINES; SEPARATED ONLY AT JUNCTIONS OR CHANGES IN PIPE DIAMETER. ALL PIPING POLYLINES SHALL SNAP TO ONE ANOTHER AT EVERY JUNCTION AND CHANGE IN PIPE DIAMETER. A TEMPLATE FILE SHALL BE PROVIDED TO THE UTILITY DEPARTMENT WHICH CLEARLY DEPICTS RECORD DRAWING LAYERS AND BLOCKS TO BE USED IN FINAL RECORD DRAWING SUBMITTALS. ALL RECORD DRAWING CAD FILES SHALL ADHERE TO THE LAYER AND BLOCK STRUCTURE SUBMITTED IN THE TEMPLATE FILE.

B. STORM SEWER SYSTEM INSTALLATION

1. SEWER SHALL BE LAID ACCURATELY TO BOTH LINE AND GRADE. THE LOCAL UTILITY COMPANY WILL GENERALLY NOT ACCEPT ANY LINE LAID WITH A SLOPE VARYING BY MORE THAN 10% OF ITS DESIGN SLOPE, ESPECIALLY FOR LINES LAID A MINIMUM GRADIENTS. FOR SPECIFIC INSTANCE, THE MINIMUM ACCEPTABLE SLOPE ON AN EIGHT INCH (8") LINE SHALL BE 0.36% IF THE DESIGN CALLED FOR IS 0.40%. THE LOCAL UTILITY COMPANY RESERVES THE RIGHT TO INDEPENDENTLY VERIFY QUESTIONABLE SURVEY RESULTS. VISIBLE LEAKAGE, DEFLECTIONS, HORIZONTAL MISALIGNMENT, SIGNIFICANT BOWING, NON-CONSTANT SLOPES BETWEEN MANHOLE AND SAGGING JOINT SHALL BE GROUNDS FOR REJECTION OF LINES.

2. ALL EXISTING LINES THAT ARE ABANDONED SHALL BE CUT, PLUGGED, AND GROUTED, OR REMOVED AND DISPOSED OF PROPERLY BY THE CONTRACTOR.

3. TRENCHES AND EXCAVATIONS SHOULD BE KEPT DRY WHILE WORK IS IN PROGRESS. EXCAVATED MATERIALS, SUCH AS BOULDERS AND LOGS THAT ARE NOT SUITABLE FOR BACKFILL, SHOULD BE REMOVED FROM SITE. THE PIPE BARREL SHALL BE UNIFORMLY SUPPORTED ALONG ITS ENTIRE LENGTH ON UNDISTURBED SOIL OR BEDDING MATERIAL. PROPER BEDDING SHOULD STILL BE SUPPLIED IF THE EXISTING MATERIAL INCLUDES ROCK, ORGANIC MATTER, OR OTHER SHARP OR UNSTABLE MATERIAL.

MANHOLES

1. MANHOLES SHALL BE SET ACCORDING TO CONSTRUCTION PLANS AND SHALL BE PRECAST IN ACCORDANCE WITH APPROVED SHOP DRAWINGS. THE MANHOLE INVERT SHALL BE CAREFULLY SHAPED TO CONFORM TO THE PIPE FLOW CHANNEL. FLOW CHANNELS WITHIN THE MANHOLES INVOLVING CHANGES OF DIRECTION OR SIDE DROPS SHALL SMOOTHLY DIRECT THE FLOW IN ACCORDANCE WITH DETAIL DRAWINGS. ALL CONCRETE IRREGULARITIES SHALL BE PLASTERED WITH CEMENT MORTAR IN SUCH A MATTER TO PROVIDE NEAT AND WATER TIGHT PERFORMANCE.

2. MANHOLE RIM ELEVATION SHALL BE SET AT 0.25 FEET ABOVE FINISHED GRADE IN UNPAVED AREAS AND FLUSH WITH PAVEMENT IN PAVED AREAS. WHEN CONFLICTS EXISTS BETWEEN ELEVATIONS ON PLANS AND THE FIELD CONDITIONS, THE CONTRACTOR IS TO NOTIFY THE LOCAL UTILITY COMPANY.

3. MANHOLES SHALL BE CORE-DRILLED TO PROVIDE PIPE OPENINGS WHEN PRECAST HOLES ARE NOT AVAILABLE.

4. RAM-NEK OR EQUIVALENT SHALL BE USED AT ALL RISER JOINTS. ALL CONNECTIONS OF PVC SEWER PIPE TO MANHOLES HALL BE MADE WITH ASBESTOS-CEMENT MANHOLE COUPLINGS OR PRECAST RUBBER BOOT (SHOP DRAWINGS REQUIRED).

STORM SEWER NOTES

1. ALL DISTURBED OUTFALL DRAINAGE AREAS SHALL BE SODDED UPON COMPLETION OF GRADING AFTER AS- BUILT GRADE ELEVATIONS ARE APPROVED BY THE ENGINEER.

2. PRIOR TO FINAL PAYMENT OF RETENTION, DETENTION, AND DRAINAGE DITCH QUANTITIES, ALL SLOPES AND SWALES SHALL BE SODDED TO AVOID EROSION.

3. BACKFILL TO BE COMPACTED IN NO GREATER THAN ONE (1) FOOT LIFTS TO THE DENSITY OF THE UNDISTURBED ADJACENT SOILS.

4. THERE IS TO BE NO OFF-SITE HAULING WITHOUT PRIOR APPROVAL AND ALL EXCAVATED MATERIAL SHALL BE USED ON-SITE.

5. THE CONTRACTOR SHALL CONSTRUCT THE STORMWATER MANAGEMENT SYSTEM IN A MANNER SO AS TO MINIMIZE ANY ADVERSE IMPACTS OF THE WORKS ON FISH, WILDLIFE, NATURAL ENVIRONMENTAL VALUES AND WATER QUALITY ON OR OFF-SITE. THE CONTRACTOR SHALL INSTITUTE NECESSARY MEASURES DURING THE CONSTRUCTION PERIOD, INCLUDING FULL COMPACTION OF ANY FILL MATERIAL PLACED AROUND NEWLY INSTALLED STRUCTURES TO REDUCE EROSION TURBIDITY, NUTRIENT LOADING AND SEDIMENTATION IN THE RECEIVING WATERS.

6. WITHIN THIRTY (30) DAYS AFTER COMPLETION OF CONSTRUCTION OF THE SURFACE WATER MANAGEMENT SYSTEM, THE CONTRACTOR SHALL ASSIST THE DESIGN ENGINEER TO PROVIDE A WRITTEN STATEMENT OF COMPLETION AND CERTIFICATION BY A FLORIDA PROFESSIONAL ENGINEER. THESE STATEMENTS MUST SPECIFY THE ACTUAL DATE OF CONSTRUCTION COMPLETION AND MUST CERTIFY THAT ALL FACILITIES HAVE BEEN CONSTRUCTED IN SUBSTANTIAL CONFORMANCE WITH THE PLANS AND SPECIFICATIONS. THE CONSTRUCTION COMPLETION CERTIFICATION MUST INCLUDE, AT A MINIMUM EXISTING ELEVATIONS, LOCATIONS AND DIMENSIONS OF THE COMPONENTS OF THE WATER MANAGEMENT FACILITIES. ADDITIONALLY, IF DEVIATIONS FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BY ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. SEE AS-BUILT REQUIREMENTS.

7. A STABLE PERMANENT AND ACCESSIBLE ELEVATION REFERENCE SHALL BE ESTABLISHED ON OR WITHIN ONE HUNDRED FEET (100') OF ALL PERMITTED DISCHARGE STRUCTURES.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION OR SHOALING OF THE WATER QUALITY MANAGEMENT SYSTEM.

LEAKAGE TEST - LOW-PRESSURE AIR METHOD

1. TEST PROCEDURE: THE FOLLOWING STEPS SHALL BE USED IN MAKING EACH TEST:

a) THE SELECTION OF SEWER LINE TO BE TESTED SHALL BE FLUSHED AND CLEANED PRIOR TO CONDUCTING THE LOW-PRESSURE AIR TEST TO CLEAN OUT ANY DEBRIS, WET THE PIPE, AND PRODUCE MORE CONSISTENT RESULTS.

b) ISOLATE THE SECTION OF SEWER LINE TO BE TESTED BY MEANS OF INFLATABLE STOPPERS OR OTHER SUITABLE TEST PLUGS. ONE OF THE PLUGS SHALL HAVE AN INLET TAP OR OTHER PROVISION FOR CONNECTING A HOSE TO A PORTABLE AIR SOURCE.

c) IF THE TEST SECTION IS BELOW THE GROUNDWATER LEVEL, DETERMINE THE HEIGHT OF THE GROUNDWATER ABOVE THE SPRINGLINE OF THE PIPE AT EACH END OF THE TEST SECTION AND COMPUTE THE AVERAGE. FOR EVERY FOOT OF GROUNDWATER ABOVE THE PIPE SPRINGLINE, INCREASE THE GAUGE TEST PRESSURE BY 0 43 POUNDS PER SQUARE INCH

d) CONNECT THE AIR HOSE TO THE INLET TAP AND A PORTABLE AIR SOURCE. THE AIR EQUIPMENT SHALL CONSIST OF NECESSARY VALVES AND PRESSURE GAUGES TO CONTROL THE RATE AT WHICH AIR FLOWS INTO THE TEST SECTION AND TO ENABLE MONITORING OF THE AIR PRESSURE WITHIN THE TEST SECTION. THE TESTING APPARATUS SHALL BE EQUIPPED WITH A PRESSURE RELIEF DEVICE TO PREVENT THE POSSIBILITY OF LOADING THE TEST SECTION WITH THE FULL CAPACITY OF THE COMPRESSOR.

e) ADD AIR SLOWLY TO THE TEST SECTION UNTIL THE PRESSURE INSIDE THE PIPE IS RAISED TO 4.0 PSIG GREATER THAN THE AVERAGE BACK PRESSURES OF ANY GROUNDWATER THAT MAY BE OVER THE PIPE.

f) AFTER A PRESSURE OF 4.0 PSIG IS OBTAINED, REGULATE THE AIR SUPPLY SO THAT THE PRESSURE IS MAINTAINED BETWEEN 3.5 AND 4.0 PSIG (ABOVE THE AVERAGE GROUNDWATER BACK PRESSURE) FOR A PERIOD OF TWO MINUTES TO ALLOW THE AIR TEMPERATURE TO STABILIZE IN EQUILIBRIUM WITH THE TEMPERATURE OF THE PIPE WALLS.

a) DETERMINE THE RATE OF AIR LOSS BY THE TIME PRESSURE-DROP METHOD. AFTER THE TWO-MINUTE AIR STABILIZATION PERIOD. DISCONNECT THE AIR SUPPLY AND ADJUST THE PRESSURE TO 3.5 PSIG ABOVE THE AVERAGE GROUNDWATER BACK PRESSURE. THE TIME REQUIRED FOR THE TEST PRESSURE TO DROP FROM 3.5 PSIG TO 2.5 PSIG SHALL BE DETERMINED BY MEANS OF A STOPWATCH. THIS TIME INTERVAL WILL BE COMPARED TO THE REQUIRED TIME IN THE TABLES TO DETERMINE IF THE RATE OF AIR LOSS IS WITHIN THE ALLOWABLE TIME LIMIT. IF THE TIME IS EQUAL TO OR GREATER THAN THE TIMES INDICATED IN THE TABLES, THE PIPELINE SHALL BE DEEMED ACCEPTABLE.

C. SOIL EROSION PLAN

1. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A SPECIFIC SOIL EROSION PLAN. IN GENERAL, THE SOIL EROSION PLAN SHALL REQUIRE THAT ALL ON-SITE SOILS WILL REMAIN ON-SITE AND WILL NOT ERODE INTO THE ADJACENT ROADSIDE SWALES, ADJACENT PROPERTIES, OR RETENTION DITCHES. ALL EXISTING SWALES SHALL REMAIN SODDED DURING CONSTRUCTION. THE CONTRACTOR SHALL SCARIFY ONLY AS NECESSARY TO CONSTRUCT THE PROJECT. THE CONTRACTOR SHALL SCARIFY AREAS TO PLACE VARIOUS PIPE WORK. AFTER PLACEMENT OF THE PIPE. THESE TRENCHES SHALL BE BACKFILLED AND COMPACTED TO A 98% DENSITY. PRIOR TO DISCHARGE FROM THE SITE, SILTATION BARRIERS AND HAY BALES SHALL BE UTILIZED AS PER FLORIDA DEPARTMENT OF TRANSPORTATION INDEX 102 TO AVOID FILLING THESE AREAS. UPON COMPLETION OF THE SITE WORK, ALL AREAS SHALL BE SODDED WITHIN SEVEN DAYS TO AVOID EROSION. CONTRACTOR IS REQUIRED TO COMPLY WITH ALL STATE WATER QUALITY CRITERIA, SPECIFICALLY, NO OFF-SITE DISCHARGES WILL BE ALLOWED WHICH EXCEED THE STATE TURBIDITY CRITERIA.

2. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IN ACCORDANCE WITH THE GUIDELINES AND SPECIFICATIONS IN CHAPTER 6 OF THE FLORIDA LAND DEVELOPMENT MANUAL: A GUIDE TO SOUND LAND AND WATER MANAGEMENT (FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION, 1988).

D. LOCAL PUBLIC WORKS DEPARTMENT CONSTRUCTION FIELD OBSERVATIONS

1. UTILITIES: * PIPE LAYING WITHIN PUBLIC RIGHT-OF-WAY * JACK AND BORING WITHIN PUBLIC RIGHT-OF-WAY.

* RESTORATION OF RIGHT-OF-WAY.

2. TESTING:

* FLORIDA BEARING VALUE TEST RESULTS. * COMPACTION TEST.

* BASE MATERIAL TEST RESULTS * ASPHALT TEST RESULTS. * COMPACTION TEST REQUIRED BENEATH ALL MANHOLES.

3. WATER AND SEWER:

* DEPARTMENT OF ENVIRONMENTAL PROTECTION CERTIFICATION FOR BOTH WATER AND SEWER (OPERATION AND MAINTENANCE) IF APPLICABLE. * HEALTH DEPARTMENT CERTIFICATION, IF APPLICABLE.

* BACTERIOLOGICAL FOR WATER MAINS. * UTILITY ACCEPTANCE FOR OPERATION AND MAINTENANCE, IF APPLICABLE.

4. CERTIFICATION AND RECORD DRAWINGS:

* SEALED CERTIFICATION BY THE LOCAL UTILITY COMPANY FOR COMPLIANCE WITH APPROVED PLANS AND SPECIFICATIONS ALONG WITH RECORD DRAWINGS FOR THE PROJECT.

E. PAVING, GRADING AND DRAINAGE NOTES

1. ALL UNSUITABLE MATERIALS, SUCH AS MUCK, ORGANIC MATERIAL AND OTHER DELETERIOUS MATERIAL AS CLASSIFIED BY AASHTO M 145, FOUND WITHIN THE ROAD AND PARKING LOT AREAS SHALL BE REMOVED DOWN TO ROCK OR SUITABLE MATERIAL AND REPLACED WITH THE SPECIFIED FILL MATERIAL IN MAXIMUM 12" LIFTS COMPACTED TO NOT LESS THAN 100% MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE IN ACCORDANCE WITH AASHTO T-99. THICKNESS OF LAYERS MAY BE INCREASED, PROVIDED THAT THE EQUIPMENT AND METHODS USED ARE PROVEN BY FIELD DENSITY TESTING AND CAPABLE OF COMPACTING THICK LAYERS TO SPECIFIED DENSITIES.

2. ALL AREAS SHALL BE CLEARED AND GRUBBED PRIOR TO CONSTRUCTION. THIS SHALL BE CONSISTENT FOR THE COMPLETE REMOVAL AND DISPOSAL OF ALL TREES, BRUSH, STUMPS, GRASS, WEEDS, RUBBISH, AND ALL OTHER OBSTRUCTIONS RESTING ON, OR PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND TO A PROTRUDING THROUGH THE SURFACE OF THE EXISTING GROUND TO A DEPTH OF ONE FOOT (1'). ITEMS DESIGNATED TO REMAIN, TO BE RELOCATED, OR TO BE ADJUSTED SHALL BE SO DESIGNATED ON THE DRAWINGS.

3. FILL MATERIAL SHALL BE CLASSIFIED AS A-1, A-3, OR A-2-4 IN ACCORDANCE WITH AASHTO M-145 AND SHALL BE FREE FROM VEGETATION AND ORGANIC MATERIAL. NOT MORE THAN 12% BY WEIGHT OF FILL MATERIAL SHALL PASS THE NO. 20 SIEVE.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED MATERIAL TEST RESULTS TO THE ENGINEER OF THE RECORD PRIOR TO THE RELEASE OF FINAL CERTIFICATION BY THE ENGINEER. TEST RESULTS MUST INCLUDE, BUT MAY NOT BE LIMITED TO, DENSITIES FOR SUBGRADE AND BASE DENSITIES AT UTILITY CROSSINGS, MANHOLES, INLETS, AND STRUCTURES. TEST SHALL INCLUDE ASPHALT GRADATION REPORTS, CONCRETE CYLINDERS, ETC.

5. ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION TO PREVENT SILTATION IN THE DRAINAGE SYSTEMS BY WAY OF TEMPORARY PLUGS AND PLYWOOD OR PLASTIC COVERS OVER THE INLETS. THE ENTIRE DRAINAGE SYSTEMS SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.

6. WHERE NEW ASPHALT MEETS EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE SAWCUT TO PROVIDE A STRAIGHT EVEN LINE. PRIOR TO REMOVING CURB OR GUTTER, THE ADJACENT ASPHALT SHALL BE SAWCUT TO PROVIDE A STRAIGHT EVEN LINE.

7. ALL PROPOSED ELEVATIONS REFER TO FINISHED GRADES.

8. SITE GRADING ELEVATIONS SHALL BE AT THE REQUIRED ELEVATION AND ALL AREAS SHALL BE GRADED TO DRAIN.

9. CONCRETE AND ASPHALT SHALL BE AS DESIGNATED ON THE DRAWINGS. ALL CONCRETE FOR CURBING, SIDEWALKS AND DUMPSTER PADS SHALL BE A MINIMUM 3 000 PSI

11. THE CONCRETE SIDEWALKS SHALL BE 4" THICK ON COMPACTED SUBGRADE, WITH 1/2" EXPANSION JOINTS PLACED AT A MAXIMUM OF 75%. CRACK CONTROL JOINTS SHALL BE 5' ON CENTER. ALL CONCRETE SIDEWALKS SHALL BE 7 INCHES THICK ACROSS DRIVEWAYS. 12. PIPE SPECIFICATIONS: THE MATERIAL TYPE SHALL BE HDPE (SECTION 948 OF THE FDOT STANDARD SPECIFICATIONS).

13 CONCRETE PAVEMENT

* SURFACE COURSE - NON-REINFORCED CLASS II CEMENT CONCRETE A MINIMUM THICKNESS OF FIVE (5) INCHES, HAVING A TWENTY-EIGHT (28) DAY COMPRESSIVE STRENGTH OF 3,000 P.S.I. * FORMED OR SAWED JOINTS SHALL BE ONE-EIGHTH OF AN INCH (1/8") TO ONE-FOURTH (1/4") OF THE SLAB THICKNESS. JOINTS SHALL NORMALLY BE SPACED FIFTEEN FEET (15') TO EIGHTEEN FEET (18'). EXCEPT FOR SPECIAL JOINT PATTERNS IN RADIOS AND CORNERS (400 SQ. FEET MAXIMUM). * ALL SURFACES SHALL BE COARSE BROOM FINISHED TO PROVIDE A NON-SKID SURFACE. SPECIAL ADMIXTURES OR CURING COMPOUNDS SHALL BE APPLIED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

14. PAVING BASE BOTTOM OF PAVEMENT MUST BE MAINTAINED.

* AFTER CLEARING AND PROOF-ROLLING THE SITE SURFACE AS PREVIOUSLY RECOMMENDED, THE SUPERFICIAL SOILS SHOULD BE SUITABLE TO SUPPORT THE PAVEMENT SECTIONS. THE SUBGRADE MATERIAL SHOULD BE COMPACTED TO A DRY DENSITY OF 98% OF THE MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180) MAXIMUM DRY DENSITY OF THE COMPACTED SOIL TO A DEPTH OF ONE FOOT BELOW THE SURFACE.

MAXIMUM DRY DENSITY.

F. STANDARD SEPARATION FOR WATER / SEWER CONFLICTS

1 SANITARY SEWERS FORCE MAIN AND STORM SEWERS SHOULD ALWAYS CROSS UNDER WATER MAIN SANITARY SEWERS FORCE MAINS AND STORM SEWERS CROSSING WATERMAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL DISTANCE OF EIGHTEEN INCHES (18") BETWEEN THE INVERT OF THE UPPER PIPE AND THE CROWN OF THE LOWER PIPE WHENEVER POSSIBLE. WHERE SANITARY SEWERS, FORCE MAINS, AND STORM SEWERS MUST CROSS A WATER MAIN WITH LESS THAN EIGHTEEN INCHES (18") VERTICAL DISTANCE. BOTH THE SEWER AND THE WATER MAIN SHALL BE CONSTRUCTED OF THE DUCTILE IRON PIPE (DIP) AT THE CROSSING (DIP IS NOT REQUIRED FOR STORM SEWERS IF IT IS NOT AVAILABLE IN THE SIZE PROPOSED). SUFFICIENT LENGTHS OF DIP MUST BE USED TO PROVIDE A MINIMUM SEPARATION OF TEN FEET (10') BETWEEN ANY TWO JOINTS. ALL JOINTS ON THE WATER MAIN WITHIN TWENTY FEET (20') OF THE CROSSING MUST BE LEAK-FREE AND MECHANICALLY RESTRAINED. ALL CROSSINGS SHALL BE ARRANGED SO THAT THE SEWER PIPE JOINTS AND THE WATER MAIN PIPE JOINTS ARE EQUIDISTANT FROM THE POINT OF INTERSECTION (PIPES CENTERED ON THE CROSSING). WHERE A NEW PIPE CONFLICTS WITH AN EXISTING PIPE, THE NEW PIPE SHALL BE CONSTRUCTED OF DIP AND THE CROSSING SHALL BE ARRANGED TO MEET THE REQUIREMENTS ABOVE.

2. A MINIMUM TEN-FOOT (10') HORIZONTAL SEPARATION SHALL BE MAINTAINED BETWEEN ANY TYPE OF SEWER AND WATER MAIN IN PARALLEL INSTALLATIONS WHENEVER POSSIBLE. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A TEN-FOOT (10') HORIZONTAL SEPARATION, THE WATER MAIN MUST BE LAID IN A SEPARATE TRENCH OR AN UNDISTURBED EARTH SHELF LOCATED ON ONE SIDE OF THE SEWER OR FORCEMAIN AT SUCH AN ELEVATION THAT THE BOTTOM OF THE WATER MAIN IS AT LEAST EIGHTEEN INCHES (18") ABOVE THE TOP OF THE SEWER. WERE IT IS NOT POSSIBLE TO MAINTAIN A VERTICAL DISTANCE OF EIGHTEEN INCHES (18") IN PARALLEL INSTALLATIONS. THE WATER MAIN SHALL BE CONSTRUCTED OF DIP AND THE SEWER OR THE FORCEMAIN SHALL BE CONSTRUCTED OF DIP (IF AVAILABLE IN THE SIZE PROPOSED) WITH A MINIMUM VERTICAL DISTANCE OF SIX INCHES (6"). THE WATER MAIN SHOULD BE LOCATED AS FAR APART AS POSSIBLE FROM JOINTS ON THE SEWER OR FORCEMAIN (STAGGERED JOINTS).

ALL DIP SHALL BE CLASS 50 OR HIGHER, ADEQUATE PROTECTIVE MEASURES AGAINST CORROSION SHALL BE USED.

4. MAXIMUM OBTAINABLE SEPARATION OF RECLAIMED WATER LINES AND DOMESTIC WATER LINES SHALL BE MAINTAINED. A MINIMUM HORIZONTAL SEPARATION OF FIVE-FOOT (CENTER TO CENTER) OR THREE-FOOT (OUTSIDE TO OUTSIDE), SHALL BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND EITHER POTABLE WATER MAINS OR SEWAGE COLLECTION LINES. A MINIMUM VERTICAL CLEARANCE OF 18 INCHES MUST BE MAINTAINED BETWEEN RECLAIMED WATER LINES AND POTABLE WATER MAINS OR SEWAGE COLLECTION LINES AT CROSSINGS PROVISIONS OF FAC RULE 17-604 AND TEN STATE STANDARDS.

G. SOIL RECOMMENDATION AND REQUIREMENTS

1. STRIPPING AND GRUBBING * THE "FOOT PRINTS" OF THE PROPOSED BUILDING AND PAVED AREAS, PLUS A MINIMUM MARGIN OF FIVE FEET, SHOULD BE STRIPPED OF ALL SURFACE VEGETATION, STUMPS, DEBRIS, OR OTHER DELETERIOUS MATERIALS AS ENCOUNTERED TO AN APPROXIMATE DEPTH OF TWELVE INCHES (12"). DURING THE GRUBBING OPERATION. ROOTS WITH A DIAMETER GREATER THAN 1/2 INCH, OR SMALL ROOTS IN A DENSE STATE, SHOULD BE GRUBBED AND COMPLETELY REMOVED. * PROOF-ROLLING THE CLEARED SURFACE IS RECOMMENDED TO LOCATE ANY UNFORESEEN SOFT AREAS OR UNSUITABLE SURFACE OR LOOSE TO LOOSE FINE SAND SOILS WITHIN THE TOP 3 TO 4 FEET, AND TO PREPARE THE EXISTING SURFACE FOR THE ADDITION OF THE FILL SOILS (AS REQUIRED). THE PROOF-ROLLING OF THE BUILDING AREAS SHOULD CONSIST OF AT LEAST 10 COVERAGES OF A SELF-PROPELLED VIBRATORY COMPACTOR CAPABLE OF DELIVERING A MINIMUM IMPACT FORCE OF 35.000 POUNDS PER DRUM TO THE SOILS. ONE COVERAGE CONSISTS OF PARALLEL PASSES OF THE VIBRATORY ROLLER TRAVELING AT "WALKING SPEED." EACH PASS SHOULD OVERLAP THE PRECEDING PASS BY 30% TO INSURE COMPLETE COVERAGE. SUBSEQUENT COVERAGES SHOULD BE CONDUCTED IN A DIRECTION PERPENDICULAR TO THE PRECEDING COVERAGE. IN AREAS THAT CONTINUE TO "YIELD" REMOVE ALL DELETERIOUS MATERIAL AND REPLACE WITH A CLEAN, COMPACTED SAND BACKFILL. THE PROOF ROLLING SHOULD PRODUCE A DENSITY EQUIVALENT TO 98% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DRY DENSITY VALUE FOR A DEPTH OF 3 FEET IN THE BUILDING AREAS. ADDITIONAL PASSES MAY BE REQUIRED IF THESE MINIMUM DENSITY REQUIREMENTS ARE ACHIEVED.

2. FILL REPLACEMENTS: AASHTO T-180 (ASTM D-1557).

3. EXCAVATION AND BACKFILLING:

* BACKFILL SHALL BE UNIFORM FREE DRAINING GRANULAR SOIL (CLEAN SAND) AND BE PLACED IN LAYERS NOT TO EXCEED 15 INCHES LOOSE MEASURE. SUFFICIENT COMPACTIVE EFFORT SHOULD BE APPLIED TO EACH LAYER TO OBTAIN A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY FOR THE ENTIRE DEPTH OF THE FILL AS DETERMINED BY AASHTO T-180 (ASTM D-1557). THE EXCAVATED SURFACE AND EACH LAYER OF BACKFILL SHOULD BE COMPACTED WITH A SELF-PROPELLED STEEL DRUM VIBRATORY ROLLER HAVING A MINIMUM TOTAL APPLIED FORCE OF 10 TONS.

4. GROUNDWATER: * HEAVY RAINFALL AND/OR A HIGH WATER TABLE MAY OCCUR BEFORE THE EARTHWORK COMMENCES, OR DURING THE EARTHWORK OPERATION. WHEN THESE CONDITIONS OCCUR AND THE SITE PREPARATION CANNOT BE ACHIEVED AS SPECIFIED. AN EXCAVATION OF THE EXISTING CONDITIONS SHOULD BE CONDUCTED AND THE SPECIFICATIONS REVISED ACCORDINGLY.

5. WHERE VIBRATORY EQUIPMENT MAY AFFECT ADJACENT STRUCTURES: * WHERE THERE IS EXISTING STRUCTURES ADJACENT TO THE SITE THAT MAY BE AFFECTED BY THE SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT. DENSIFICATION MUST BE PERFORMED USING EQUIPMENT THAT WILL SATISFY THE REQUIRED DENSIFICATION WITHOUT THE RISK OF DAMAGE TO THE EXISTING STRUCTURES. * LOADER AND HEAVY PLACE COMPACTORS ARE TWO TYPES OF EQUIPMENT THAT HAVE BEEN USED SUCCESSFULLY. DENSIFICATION PROCEDURES MUST COMPLY

WITH THE CAPABILITY OF THE EQUIPMENT UTILIZED. 6. ALTERNATIVE TO SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT: * WHEN SELF-PROPELLED STEEL DRUM VIBRATORY EQUIPMENT CANNOT BE USED AS SPECIFIED, VIBRATORY PLATE COMPACTORS MAY BE USED. WHEN THIS

7. PAVING AREAS SUITABLE FILL MATERIAL AND THE COMPACTION OF FILL SOILS: * ALL FILL MATERIAL SHOULD BE FREE OF ORGANIC MATERIALS, SUCH AS ROOTS AND VEGETATION AS A GENERAL GUIDE TO AID THE CONTRACTOR, USE FILLINGS WITH 3 TO 12 PERCENT BY DRY WEIGHT OF MATERIAL PASSING THE U.S. STANDARDS NO. 200 SIEVE SIZE. WITH PROPER MOISTURE CONTROL, THESE SOILS SHOULD DENSIFY USING VIBRATORY COMPACTION METHODS. SOILS WITH MORE THAN 12% PASSING THE NO. 200 SIEVE WILL BE MORE DIFFICULT TO COMPACT * ALL STRUCTURAL FILL SHOULD BE PLACED IN LEVEL LIFTS NOT TO EXCEED 12 INCHES IN UNCOMPACTED THICKNESS. EACH LIFT SHOULD BE COMPACTED Y A SELF-PROPELLED VIBRATORY COMPACTOR TO AT LEAST 98% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DRY DENSITY VALUE. THE FILLING AND COMPACTION OPERATIONS SHOULD CONTINUE IN LIFTS UNTIL THE DESIRED ELEVATION(S) IS ACHIEVED. IF HAND-HELD COMPACTION EQUIPMENT IS USED, REDUCE THE LIFT THICKNESS TO 6 INCHES.

8. ALL IMPORTED FILL SHALL HAVE RADIUM 226 CONTENT LESS THAN 1.0 PCI PER GRAM. **H. STANDARD SPECIFICATIONS**

1. THE PLANS SET FORTH IN THESE SHEETS SHALL COMPLY WITH THE FDOT DESIGN CRITERIA SET FORTH IN THE FDOT STANDARD SPECIFICATIONS, ROADSIDE DESIGN GUIDE, THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR: DESIGN, CONSTRUCTION, AND MAINTENANCE OF STANDARD STREETS (FLORIDA GREEN BOOK), SFWMD STANDARDS, FDOT STANDARDS, US ACOE STADARDS, AND THE CITY OF PSL ENGINEERING UTILITY STANDARDS.

ENGI	NEER C	F RECC	RD INS		
	F.f	DEN			
	MAX. S	PACING	MAX. SI		
	LINEAR FEET	SQUARE FEET	LINEAR FEET		
COMPACTED OR STABILIZED GRADE	200	5,000	200		
ROCK BASE			300		
SHELL ROCK			300		
ASPHALT					
ALL TESTING SHALL BE TAKEN IN A STAGGERE THE LEFT EDGE OF THE ITEM TESTED, TO THE (

10. PLASTIC FILTER FABRIC SHALL BE MIRAFI, TYPAR OR EQUAL, CONFORMING TO SECTION 985 OF THE FDOT STANDARD SPECIFICATIONS.

* SURFACE DENSIFICATION BY COMPACTING THE CLEARED AND GRUBBED GROUND SURFACE WITH CONVENTIONAL COMPACTION EQUIPMENT IS ANTICIPATED TO PREPARE THE EXISTING FOUNDATION SOILS. ADEQUATE SEPARATION BETWEEN THE ESTIMATED NORMAL SEASONAL HIGH WATER GROUNDWATER LEVEL AND THE

* THE SUBBASE MATERIAL TO A DEPTH OF SIX INCHES SHOULD BE COMPACTED TO AT LEAST 98 PERCENT OF ITS MODIFIED PROCTOR (ASTM D-1557 OR AASHTO T-180)

* FILL SHOULD BE A UNIFORM FREE DRAINING GRANULAR SOIL (CLEAN SAND) AND BE PLACED IN LAYERS NOT TO EXCEED 12 INCHES LOOSE MEASURE AND COMPACTED AS OUTLINED ABOVE. SUFFICIENT COMPACTIVE EFFORT SHOULD BE APPLIED TO OBTAIN A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY

WHERE EXCAVATION AND BACKFILLING ARE REQUIRED, THE SOILS SHOULD BE REMOVED TO THE SPECIFIED DEPTH. SUFFICIENT COMPACTIVE EFFORT MUST THEN BE APPLIED TO THE EXCAVATED SURFACE TO OBTAIN A MINIMUM OF 98% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY AASHTO T-180 (ASTM D-1557).

CONDITION OCCURS. THE OVERALL DENSIFICATION PROCEDURE MUST BE REVISED TO COMPLY WITH THE CAPABILITY OF THE EQUIPMENT EMPLOYED. IN GENERAL. SMALL PLATE COMPACTORS WILL BE EFFECTIVE TO A MAXIMUM DEPTH OF 6 TO 8 INCHES.

SPECTION REQUIREMENTS							
SITY	L.B.	R.	THICKNESS				
PACING	MAX. SPACING		MAX. SPACING				
SQUARE FEET	LINEAR FEET	SQUARE FEET	LINEAR FEET	SQUARE FEET			
5,000 200 5,000 300 10,000							
10,000	300	10,000	300	10,000			
10,000			300	10,000			
			PER INSP.	PER INSP.			
D SAMPLING PATTERN FROM A POINT 12" INSIDE CENTER, TO A POINT INSIDE OF THE RIGHT EDGE							

ENGINEER OF RECORD INSPECTION REQUIREMENTS CONTRACTOR TO CALL CONTRACT ENGINEER OF RECORD 48 HOURS ADVANCE FOR FOLLOWING INSPECTIONS: 1 PRECONSTRUCTION MEETING 2. DRAINAGE PIPE (UNCOVERED) 3. GRADING ROUGH

4. GRADING FINAL 5. PLANTING

6. FINAL



C ENGINEERING, INC. SHALL BE WITHOUT LIABILITY TO CAPTEC ENGINEERING, INC.		al n.w. Flagler Ave. Stuart, Florida 3494 Phone: (772) 692-4344 Fax: (772) 692-4341 Fax: (772) 692-641 Fax: (772)					UIVII ENGINEERING PROTESSIONAIS No. EB-0007657			
IN AUTHORIZATION AND ADOPTION BY CAPTE	DATE: 8/19/2020			DESIGNED BY: RRK	CHECKED BY: JWC	BRO IECT No. 1682 4		HORZ. SCALE: N/A	VERT. SCALE: N/A	1682.4-07_GENERAL NOTES
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RPOSE AND CLIENT FOR WHICH IT WAS	SCALE			0			ORIGINAL DRAWING.	ADJUST ALL SCALED	DIMENSIONS	
RESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PUR			SAGAMORE RASIN		PORT ST. LUCIE, FL		GENERAL NOTES		STA-2 EAST	
ENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRE		JO 3 10	SE 01 Stua	PH N.V art, P.E.	W. (V. F Flo No	CAl lag rida . 37	PR ler 763	A, I Av 199 8	P.E. e. 4	

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ELEVATIONS SHOWN ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)

SURVEYOR'S NOTES

- I. HORIZONTAL RELATIONSHIPS, AS SHOWN HEREON, ARE BASED ON THE FLORIDA STATE PLANE COORDINATE GRID, EAST ZONE, USING THE NORTH AMERICAN DATUM OF 1983 WITH THE 2011 ADJUSTMENT (NSRS 2011).
- 2. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88) AND REFERENCE PORT ST. LUCIE, FLORIDA CONTROL POINT "PLS BM 6007", HAVING AN ELEVATION OF 13.76 FEET.
- THE CENTERLINE OF NW FLORESTA DRIVE, IS ASSUMED TO BEAR SOUTH 88° 36' 43" EAST AND ALL OTHER BEARINGS SHOWN HEREON ARE RELATIVE THERETO.
- 4. UNDERGROUND IMPROVEMENTS, IF ANY, WERE NOT LOCATED EXCEPT AS SHOWN.
- 5. FIELD SURVEY LAST CONDUCTED ON OCTOBER 25, 2017.
- 6. SYMBOLS SHOWN HEREON ARE NOT TO SCALE.
- . THERE MAY BE ADDITIONAL RESTRICTIONS, ENCUMBRANCES OR OTHER MATTERS THAT MAY AFFECT THIS PROPERTY THAT MAY OR MAY NOT BE RECORDED IN THE PUBLIC RECORDS THAT ARE NOT SHOWN ON THIS SURVEY.





SURVEYOR'S CERTIFICATION

(THIS SURVEY IS NOT VALID WITHOUT THE ORIGINAL SIGNATURE AND RAISED EMBOSSED SEAL OF GREGORY S. FLEMING, FLORIDA PROFESSIONAL SURVEYOR AND MAPPER.)

I HEREBY CERTIFY THAT THE BOUNDARY AND TOPOGRAPHIC SURVEY OF THE PROPERTY SHOWN AND DESCRIBED HEREON WAS COMPLETED UNDER MY DIRECTION AND SAID SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

I FURTHER CERTIFY THAT THIS BOUNDARY AND TOPOGRAPHIC SURVEY MEETS THE STANDARDS OF PRACTICE FOR SURVEYS SET FORTH BY THE FLORIDA BOARD OF LAND SURVEYORS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 FLORIDA STATE STATUTES. NO SEARCH OF THE PUBLIC RECORDS HAS BEEN MADE BY THIS OFFICE. THIS SURVEY IS BASED ON INFORMATION FURNISHED BY CLIENT OR CLIENT'S REPRESENTATIVE

NORTHSTAR GEOMATICS, INC.

DATE OF SURVEY

GREGORY S. FLEMING PROFESSIONAL SURVEYOR & MAPPER FLORIDA CERTIFICATION NO. 4350

BOUNDARY & TOPOGRAPHIC SURVEY FOR BAGE DATE UNIZOIT DATE UNIZOIT BOUNDARY & TOPOGRAPHIC SURVEY FOR SAGAMORE BASIN STA #2 DATE UNIZOIT SAGAMORE BASIN STA #2 DATE UNIZOIT PORT ST. LUCIE - SECTION 25 PORT ST. LUCIE, FLORIDA PORT ST. LUCIE, FLORIDA CHECKED BY CSTE			617 NE BAKER ROAD, STUART, FLORIDA 34994 PO BOX 2371, STUART, FLORIDA 34995 (772)781-6400 (772)781-6462 FAX LICENSED BUSINESS NO. 7217
BOUNDARY & TOPOGRAPHIC SURVEY FOR SAGAMORE BASIN STA #2 Date II/1/2017 SAGAMORE BASIN STA #2 ECLE #1.5407 ECLE #1.5407 PORT ST. LUCIE - SECTION 25 PORT ST. LUCIE, FLORIDA EPECKED BY GSF	DATE REVISIONS		
BOUNDARY & TOPOGRAPHIC SURVEY FOR SAGAMORE BASIN STA #2 PORT ST. LUCIE - SECTION 25 PORT ST. LUCIE, FLORIDA		DATE II///2017 SCALE I''=4.0'	FIELD BK. 509 DWNG. BY JHY CHECKED BY GSF
	BOUNDARY & TOPOGRAPHIC SURVEY FOR	SAGAMORE BASIN STA #2	PORT ST. LUCIE - SECTION 25 PORT ST. LUCIE, FLORIDA

17-045