

# JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS

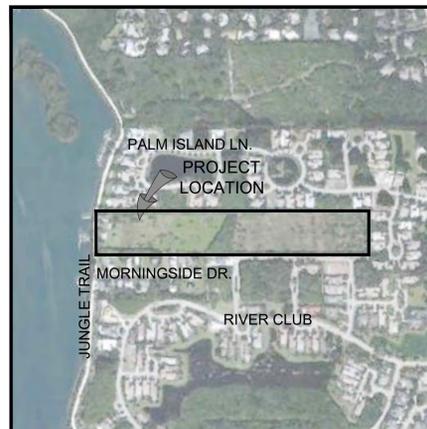
## PHASE 1

SECTION 36, TOWNSHIP 31S, RANGE 39E  
INDIAN RIVER COUNTY, FLORIDA

OCTOBER 2018



VICINITY MAP



LOCATION MAP

### OWNER / APPLICANT



INDIAN RIVER COUNTY PARKS DIVISION

5500 77th STREET  
VERO BEACH, FLORIDA 32967  
PHONE: 772-226-1873

### ENGINEER



MOIA BOWLES VILLAMIZAR & ASSOCIATES  
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### SURVEYOR

**CAI** Serving Florida Since 1911 CARTER ASSOCIATES, INC.  
CONSULTING ENGINEERS AND LAND SURVEYORS  
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AARON G. STANTON  
FL P.E. #72460 DATE:

PROJECT: 17-0133

SHEET

C1

OF 17

**CONSTRUCTION NOTES:**

- THE CONTRACTOR IS ADVISED TO THOROUGHLY REVIEW THIS PLAN PACKAGE SO AS TO BE TOTALLY PREPARED TO PRESENT HIS BID PRICES IN THE CONTRACT DOCUMENTS. THE PLAN PACKAGE SUFFICIENTLY DELINEATES THE SCOPE AND INTENT OF THE ROADWAY WORK TO BE ACCOMPLISHED. IT WILL, THEREFORE, BE INCUMBENT ON THE CONTRACTOR TO ADJUST HIS BID DOLLARS TO REFLECT ANY AND ALL ITEMS WHICH MAY NOT BE CLEARLY OUTLINED OR THOSE ITEMS WHICH MAY NOT BE INDICATED BUT WHICH ARE NECESSARY FOR THE SUCCESSFUL COMPLETION OF THIS PROJECT WITHOUT ADDITIONAL COSTS TO THE OWNER.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH INDIAN RIVER COUNTY AND FDOT STANDARDS AND SPECIFICATIONS.
- THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON AVAILABLE RECORDS AND IS NOT GUARANTEED TO BE ACCURATE OR ALL INCLUSIVE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO AND IS RESPONSIBLE FOR THE COORDINATION OF UTILITY RELOCATION.
- CONTRACTOR SHALL LOCATE ALL EXISTING UTILITIES IN THE FIELD WITH UTILITY OWNERS REPRESENTATIVE PRIOR TO CONSTRUCTION UTILITY OWNERS:
 

AT&T (888) 944-0447	FLORIDA POWER & LIGHT 3301 ORANGE AVENUE FORT PIERCE, FL 34947 (800) 343-7941	CITY OF VERO BEACH 17 17TH STREET PO BOX 1389 VERO BEACH, FL 32961 TODD YOUNG (772) 978-2509
COMCAST CABLE (800) 289-8849		
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY ALL UTILITY COMPANIES A MINIMUM OF TWO WORKING DAYS PRIOR TO EXCAVATION, AS REQUIRED BY THE UNDERGROUND FACILITY DAMAGE PREVENTION AND SAFETY ACT. NOTIFY SUNSHINE AT 811.
- UTILITIES ARE TO BE ADJUSTED BY UTILITY OWNER OR AS DIRECTED BY THE ENGINEER.
- SURFACE INFORMATION SHOWN ON THESE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED AND IS NOT TO BE CONSTRUED AS PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INQUIRE OF THE ENGINEER IF ADDITIONAL INFORMATION IS AVAILABLE, TO MAKE ARRANGEMENTS TO REVIEW SAME PRIOR TO BIDDING, AND IS TO MAKE HIS OWN DETERMINATION AS TO ALL SUBSURFACE CONDITIONS.
- CONTRACTOR SHALL NOTIFY THE ENGINEER IF SOIL OR SUBSURFACE CONDITIONS UNSUITABLE FOR CONSTRUCTION ARE ENCOUNTERED.
- ALL EXCAVATED SOILS DEEMED SUITABLE AS FILL MATERIAL AS DETERMINED BY THE ENGINEER SHALL BE UTILIZED ON SITE BY THE CONTRACTOR AT HIS OWN EXPENSE. THE EXACT LOCATION OF DELIVERY ON SITE SHALL BE DETERMINED BY THE ENGINEER. ALL EXCAVATED SOILS DEEMED UNSUITABLE SHALL BE DISPOSED OF BY THE CONTRACTOR AT HIS OWN EXPENSE.
- ITEM IN CONFLICT WITH DESIGN SUCH AS EXISTING CURBS AND GUTTERS, SIDEWALKS, DRAINAGE STRUCTURES, PAVEMENT AND EXCESS EXCAVATIONS ARE TO BE REMOVED BY THE CONTRACTOR AND DISPOSED OF IN A LEGAL AND PROPER MANNER AWAY FROM THE JOB SITE AT HIS OWN EXPENSE.
- IT SHOULD BE NOTED THAT THE OCCUPATIONAL SAFETY AND HEALTH ACT PROHIBITS THE OPERATING OF EQUIPMENT OR MACHINES CLOSER THAN TEN (10) FEET TO ENERGIZED ELECTRIC LINES RATES AT FIFTY KILOVOLTS OR BELOW. ALSO, NO EXCAVATION IS PERMITTED WITHIN FIVE (5) FEET OF POWER POLE FACILITIES.
- ALL IRONS AND MONUMENTS (P R M 'S) SHOWN ON PLANS, OR FOUND, SHALL BE PRESERVED. THOSE SHOWN IN PROPOSED PAVEMENT SHALL BE PROTECTED WITH A CAST IRON VALVE BOX.
- ANY PUBLIC LAND CORNERS WITHIN THE LIMITS OF CONSTRUCTION ARE TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED OR DISTURBED, THE CONTRACTOR WILL NOTIFY THE ENGINEER.
- ALL EXISTING TREES WITHIN THE RIGHT OF WAY ARE TO BE REMOVED AS CLEARING AND GRUBBING UNLESS OTHERWISE NOTED.
- WHEN REFERENCED TO, FDOT REFERS TO FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS, CURRENT EDITION.
- THE CONTRACTOR SHALL RESTORE ALL AREAS DISTURBED BY CONSTRUCTION TO A CONDITION EQUAL TO, OR BETTER THAN, THAT NOW EXISTING.
- BACKFILL, GRADE AND SOD AS REQUIRED AROUND ALL NEW CONSTRUCTION AND ALL DEVELOPED LOTS TO PREVENT EROSION. SEED AND MULCH WILL ONLY BE ALLOWED TO RESTORE UNDEVELOPED LOTS AFFECTED BY CONSTRUCTION OR AS DIRECTED BY THE ENGINEER.
- SODDING TO BE USED AT LOCATIONS AS DIRECTED BY THE ENGINEER.
- PROPERTY OWNERS AND BUSINESSES WITHIN THE AREA OF CONSTRUCTION SHALL BE GIVEN ACCESS TO THEIR PROPERTY AT ALL TIMES DURING THE PERIOD OF CONSTRUCTION.
- ALL MAILBOXES SHALL BE RELOCATED BY THE CONTRACTOR AS DIRECTED BY THE U.S. POSTAL MAIL CARRIER.
- THE CONTRACTOR SHALL REMOVE, COVER OR OBLITERATE EXISTING ROADWAY SIGNS AND PAVEMENT MARKINGS THAT CONFLICT WITH THE CONSTRUCTION TRAFFIC CONTROL PLANS.
- CONTRACTOR TO PROTECT ALL SPRINKLER HEADS NOT IN CONFLICT WITH DESIGN AND RELOCATE ALL THOSE WHICH ARE IN CONFLICT TO A LOCATION DETERMINED IN FIELD.
- SOD TWO (2) FEET MINIMUM ALONG SIDE PROPOSED EDGE OF PAVEMENT.
- THE CONTRACTOR IS REQUIRED TO PERFORM HIS WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE VARIOUS PERMITS WHICH WILL BE OBTAINED PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE ANY TEMPORARY DRAINAGE MEASURES AS REQUIRED TO ADEQUATELY DRAIN THE PROJECT AND ANY TEMPORARILY TRAVELED ROADWAYS. TEMPORARY DRAINAGE DESIGN, CONSTRUCTION AND MAINTENANCE IS THE CONTRACTOR'S RESPONSIBILITY; HOWEVER, ALL SUCH MEASURES MUST BE APPROVED BY THE ENGINEER.
- THE EXISTING SIDEWALK SHALL NOT BE DISTURBED UNLESS OTHERWISE NOTED.
- GRADES SHOWN ARE FINISHED GRADES.
- SAWCUT CONCRETE OR ASPHALT DRIVEWAYS AS REQUIRED FOR REPLACEMENT.
- ALL ABANDONED UTILITIES (INCLUDING PIPES, CABLES AND STRUCTURES) FOUND IN THE RIGHT OF WAY AND NOT SHOWN ON THE PLANS, ARE TO BE REMOVED AND PROPERLY DISPOSED OF AT THE EXPENSE OF THE CONTRACTOR. THIS INCLUDES ALL EXOTIC PIPES LIKE ASBESTOS-CEMENT PIPE. COST TO BE INCLUDED IN CLEARING AND GRUBBING ITEM.
- DRIVEWAY LOCATIONS AND WIDTHS ARE APPROXIMATE AND ARE TO BE ADJUSTED AS NECESSARY OR AS DIRECTED BY THE ENGINEER.
- BENCHMARK DATUM IN N.A.D. 1988.
- BACKFILL AND SOD AS REQUIRED BEYOND RIGHT OF WAY LINES ON INDIVIDUAL LOTS TO MAINTAIN POSITIVE DRAINAGE FLOW INTO CURB AND GUTTER.
- GRADE AND SOD SWALES TEN (10) FEET FROM PROPOSED DITCH BOTTOM INLETS AND MITERED END SECTIONS ON SIDE STREETS AS REQUIRED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN  $\pm$  (BASELINE) AND  $\pm$  (CENTERLINE) CONSTRUCTION THROUGHOUT THE PROJECT.
- THE CONTRACTOR SHALL SUBMIT A CONSTRUCTION SCHEDULE (SEQUENCE OF OPERATIONS) PRIOR TO THE PRE-CONSTRUCTION MEETING.
- THE CONTRACTOR SHALL REMOVE DRIVEWAY APRONS AND DRIVEWAY CULVERTS AND SHALL MAINTAIN ROUGH GRADE FOR UTILITY MODIFICATIONS.
- ALL EXISTING SWALES SHALL BE PROTECTED BY THE CONTRACTOR. ANY DAMAGE TO THE SWALE LINE SHALL BE CORRECTED BY THE CONTRACTOR AT HIS OWN EXPENSE.
- PAYMENT FOR INCIDENTAL ITEMS NOT SPECIFICALLY COVERED IN THE INDIVIDUAL BID ITEMS SHALL BE INCLUDED IN THE CONTRACT PRICES FOR BID ITEMS.
- MAINTAIN A MINIMUM OF ONE (1) FOOT CLEARANCE BETWEEN POWER POLE AND EDGE OF SIDEWALK.
- WHEN ALL OTHER PERMANENT CONSTRUCTION IS COMPLETE, THE FINAL SURFACE COURSE SHALL BE PLACED.
- CONSTRUCTION OPERATIONS FOR PLACEMENT OF THE FINAL SURFACE COURSE SHALL BE LIMITED TO A DISTANCE, AS DIRECTED BY THE ENGINEER, THE CONTRACTOR CAN COMPLETE IN ONE (1) DAY.
- THE CONTRACTOR SHALL IMPLEMENT TEMPORARY PAVEMENT MARKINGS UNTIL THE FINAL SURFACE COURSE HAS CURED (MINIMUM THIRTY (30) DAYS AFTER FINAL SURFACE COURSE PLACEMENT). ANY TEMPORARY PAINTED MARKINGS PLACED ON THE FINAL.
- PAVEMENT TRANSITION SHALL BE MADE IN ACCORDANCE WITH PAVEMENT TRANSITION DETAIL.

**ROADWAY SPECIFICATIONS**

**GENERAL**

IT IS INTENDED THAT THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" MOST CURRENT EDITION BE USED WHERE APPLICABLE FOR VARIOUS WORK, AND THAT WHERE SUCH WORDING THEREIN REFERS TO THE STATE OF FLORIDA AND ITS DEPARTMENT OF TRANSPORTATION AND PERSONNEL, SUCH WORDING IS INTENDED TO BE REPLACED WITH THAT WORDING WHICH WOULD PROVIDE PROPER TERMINOLOGY, THEREBY MAKING SUCH "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS THE "STANDARD SPECIFICATIONS" FOR THIS PROJECT.

IF WITHIN THAT PARTICULAR SECTION ANOTHER SECTION, ARTICLE OR PARAGRAPH IS REFERRED TO, IT SHALL BE A PART OF THE STANDARD SPECIFICATIONS ALSO.

ALL WORK SHALL BE IN WORKMANLIKE MANNER AND SHALL CONFORM WITH ALL APPLICABLE CITY, COUNTY, STATE AND FEDERAL REGULATIONS AND/OR CODES. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND LICENSES REQUIRED TO BEGIN WORK.

THE CONTRACTOR SHALL GIVE THE ENGINEER 24 HOURS NOTICE PRIOR TO REQUESTING INSPECTIONS AND SHALL SUPPLY ALL EQUIPMENT NECESSARY TO PROPERLY TEST AND INSPECT THE COMPLETED WORK.

THE CONTRACTOR SHALL GUARANTEE ALL WORK AND MATERIALS FOR A PERIOD OF TWO YEARS FROM THE DATE OF PROJECT ACCEPTANCE, DURING WHICH ALL FAULTY CONSTRUCTION AND/OR MATERIALS SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE.

**GRADING**

THE CONTRACTOR SHALL PERFORM ALL GRADING NECESSARY TO ACHIEVE THE PROPOSED PLAN GRADES INCLUDING TYPICAL SECTIONS.

ALL WORK SHALL BE IN ACCORDANCE WITH SECTION 120 OF THE STANDARD SPECIFICATIONS.

**STAKING**

CONSTRUCTION STAKING WILL BE PERFORMED BY THE CONTRACTOR.

**STABILIZING**

STABILIZED SUBGRADE SHALL BE CONSTRUCTED TO THE FLORIDA BEARING VALUE AS PER PLAN FOR THE DEPTH AND LIMITS SHOWN ON THE PLAN, AND IN ACCORDANCE WITH SECTION 160 OF THE STANDARD SPECIFICATIONS.

(TYPE C STABILIZATION). ALL STABILIZED AREAS SHALL BE COMPACTED TO AT LEAST 98% OF THE MAXIMUM DENSITY AS DETERMINED BY AASHTO T-180.

**RECLAIMED ASPHALT PAVEMENT (MILLINGS):**

THE MILLINGS DRIVEWAY AND PARKING LOT SHALL BE CONSTRUCTED IN ACCORDANCE WITH SECTION 283 OF THE STANDARD SPECIFICATIONS. THE MILLINGS SHALL BE COMPACTED TO A DENSITY OF NOT LESS THAN 95% OF MAXIMUM DENSITY AS DETERMINED BY FM 1-1180.

**TESTING**

THE COUNTY SHALL RETAIN THE SERVICES OF AN APPROVED INDEPENDENT TESTING LABORATORY TO CONDUCT ALL REQUIRED TESTS ON SUBGRADE, BASE AND SURFACE COURSE MATERIALS. TEST RESULTS MUST BE SUBMITTED PRIOR TO ANY REQUEST FOR PAYMENT ON THE ABOVE ITEMS.

THE SCHEDULE FOR TESTING OF THE ROAD CONSTRUCTION SHALL BE AS FOLLOWS:

- SUBGRADE
  - FLORIDA BEARING VALUE TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET, OR CLOSER AS MIGHT BE NECESSARY IN THE EVENT OF VARIATIONS IN SUBSOIL CONDITIONS.
  - DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 200 FEET OR CLOSER AS MIGHT BE NECESSARY.
- BASE:
  - DENSITY TESTS SHALL BE TAKEN AT INTERVALS OF NOT MORE THAN 500 FEET OR CLOSER AS MIGHT BE NECESSARY.

ALL TESTING SHALL BE TAKEN IN A STAGGERED SAMPLING PATTERN FROM A POINT 1 1/2 INCHES INSIDE THE LEFT EDGE, TO THE CENTER, TO A POINT 12 INCHES INSIDE THE RIGHT EDGE OF THE ITEM TESTED.

IF ANY TEST INDICATES THAT THE WORK DOES NOT MEET THE SPECIFICATIONS, I.E. "FAILS", THE SUBSTANDARD AREA SHALL BE REWORKED OR CORRECTED AND RETESTED, AT THE CONTRACTOR'S EXPENSE, UNTIL THE PROVISIONS OF THESE SPECIFICATIONS ARE MET.

ALL PASSING TESTS SHALL BE PAID FOR BY THE COUNTY. ALL FAILING TESTS SHALL BE PAID FOR BY THE CONTRACTOR.

**CLEAN-UP**

THE CONTRACTOR MUST PROVIDE CLEAN-UP OF EXCESS CONSTRUCTION MATERIAL UPON COMPLETION OF THE PROJECT. THE SITE MUST BE LEFT IN A NEAT, CLEAN, GRADED CONDITION.

**DRAINAGE SPECIFICATIONS**

STORM INLETS AND MANHOLES SHALL BE CONSTRUCTED IN GENERAL ACCORDANCE WITH SECTION 425 OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION.

CONCRETE SHALL HAVE A MINIMUM 28-DAY STRENGTH OF 3000 PSI.

ALL REINFORCING STEEL TO BE ASTM A 615-72 GRADE 40, FYP = 40,000 PSI, AND SHALL BE HANDLED AND PLACED IN ACCORDANCE WITH ACI 318-71.

PRECAST CONCRETE MANHOLES AND STORM INLETS MAY BE USED UPON THE ENGINEER'S APPROVAL OF THE MANUFACTURER'S SHOP DRAWINGS.

STORM SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH SECTION 430 AND RELATED SECTIONS OF THE STANDARD SPECIFICATIONS OF THE FLORIDA DEPARTMENT OF TRANSPORTATION.

**CONCRETE**

UNLESS OTHERWISE SPECIFIED OR INDICATED, ALL FIBER-MESH CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS OF 3000 PSI. ALL WORK SHALL COMPLY WITH THE CURRENT EDITION OF THE AMERICAN CONCRETE INSTITUTE (ACI) BUILDING CODE AND THE APPLICABLE BUILDING CODES HAVING JURISDICTION IN THE AREA.

**CULVERT PIPES**

REINFORCED CONCRETE PIPE (R.C.P.) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS.

**PRECAST CONCRETE DRAINAGE PRODUCTS**

ALL PRECAST CONCRETE DRAINAGE PRODUCTS (INCLUDING BUT NOT LIMITED TO ROUND CONC. PIPE, ELLIPTICAL CONC. PIPE, UNDERDRAINS, MANHOLES, INLETS, ENDWALLS, JUNCTION BOXES, THREE SIDED CONC. CULVERTS, AND CONC. BOX CULVERTS) SHALL BE IN ACCORDANCE WITH SECTION 449 OF THE STANDARD SPECIFICATIONS.

**RECORD DRAWINGS**

CONTRACTOR SHALL KEEP AND MAINTAIN RECORD DRAWINGS ON THE PROJECT SITE AT ALL TIMES WHICH SHALL BE ANNOTATED BY THE CONTRACTOR DEPICTING ANY CHANGES MADE IN THE FIELD WHICH DIFFER FROM THE CONTRACT DRAWINGS. RECORD DRAWINGS SHALL INCLUDE, BUT NOT LIMITED TO, INVERT AND TOP ELEVATIONS OF CULVERTS AND INLET STRUCTURES. CONTRACTOR SHALL SUBMIT COMPLETE AND FINAL RECORD DRAWINGS TO ENGINEER UPON COMPLETION OF PROJECT AND PRIOR TO FINAL INSPECTION AND FINAL PAYMENT.

**DRAINAGE SPECIFICATIONS (CONTINUED)**

**INSPECTION**

MINIMUM CONSTRUCTION INSPECTION CHECKPOINTS

THE ENGINEER SHALL BE NOTIFIED:

- PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS.
- PRIOR TO BACKFILLING ANY PIPE TRENCHES.
- UPON COMPLETION OF SUBGRADE GRADING AND COMPACTION.
- UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL.
- UPON COMPLETION OF GRADING AND COMPACTION OF THE BASE MATERIAL AND PRIOR TO PRIMING.
- IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.
- UPON COMPLETION OF CONSTRUCTION.

**CONSTRUCTION IN STREETS AND ROAD RIGHT-OF-WAYS**

- OPEN ROAD CUTS REQUIRES PRIOR APPROVAL OF THE CITY, COUNTY, STATE OR ANY OTHER AGENCY WHICH MAY HAVE JURISDICTION.
- ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS.
- ALL AREAS IN EXISTING RIGHT-OF-WAYS DISTURBED BY CONSTRUCTION SHALL RECEIVE SOLID SOD.
- STREET RESTORATION TO BE DONE AS PER INDIAN RIVER COUNTY STANDARDS.
- THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE STATE, COUNTY AND CITY AUTHORITIES REGARDING CLOSING OR RESTRICTING THE USE OF PUBLIC STREETS OR HIGHWAYS.
- TRAFFIC CONTROL ON ALL COUNTY AND STATE HIGHWAY RIGHT-OF-WAYS SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION.

**GENERAL NOTES:**

- CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
- ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCING WORK.
- CONTRACTOR SHALL OBTAIN COPIES OF ALL REQUIRED PERMITS BEFORE COMMENCING WORK. CONTRACTOR SHALL FAMILIARIZE HIMSELF OF ALL PERMIT CONDITIONS AND PERFORM ALL WORK AN ACCORDANCE WITH ALL SAID CONDITIONS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE FOR CONSTRUCTION OPERATIONS.
- NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER.
- ALL SUBDIVISION CONSTRUCTION SHALL BE COMPLETED IN ACCORDANCE WITH THE APPLICABLE INDIAN RIVER COUNTY ORDINANCES.
- CONTRACTOR SHALL SUPPLY DENSITY TESTS TO ENGINEER ON ALL SUB-GRADE AND BASE. TESTS SHALL BE PREPARED PER AASHTO T-180 METHOD.
- SLOPE GRADES FROM ELEVATIONS SHOWN TO EXISTING GRADE AT PROPERTY LINE. MAXIMUM SLOPE 3:1.
- ENGINEER SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE FOR ANY INSPECTION.
- ALL TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH M.U.T.C.D. STANDARDS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION", LATEST EDITION.
- THE PRESENCE OF GROUNDWATER SHOULD BE ANTICIPATED ON THIS PROJECT. CONTRACTORS BID SHALL INCLUDE CONSIDERATION FOR ADDRESSING THIS ISSUE.
- ALL INLETS SHALL HAVE A 6" MIN. SUMP BELOW LOWEST INVERT.
- EROSION CONTROL FENCING MUST BE IN PLACE PRIOR TO GRADING.
- PIPE LENGTHS AND SLOPES SHOWN ARE APPROXIMATE.
- IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
- ALL STORM PIPE ENTERING STRUCTURES SHALL BE GROUTED TO ASSURE CONNECTION AT STRUCTURE IS WATER TIGHT.
- CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS.
- THIS PLAN CONTEMPLATES ACCESS CONNECTIONS TO ADJACENT ROADS AS SHOWN.
- FILL MATERIAL MAY NOT BE STOCKPILED HIGHER THAN SIX (6) VERTICAL FEET ONSITE PER INDIAN RIVER COUNTY CODE.
- DIMENSIONS SHOWN ARE TO EDGE OF GUTTER OR PAVEMENT. RADI SHOWN ARE TO FACE OF CURB.
- ALL SIGNS SHALL BE MUTCD STANDARD.
- ALL PAVEMENT MARKINGS, EXCEPT PARKING STALL STRIPING, SHALL BE THERMOPLASTIC PER INDIAN RIVER COUNTY REQUIREMENTS.
- THE USES PROPOSED AS PART OF THIS PLAN DO NOT REQUIRE A SUBMITTAL OF A RISK MANAGEMENT PLAN PURSUANT TO U.S. ENVIRONMENTAL PROTECTION AGENCY (EPA) REGULATIONS AND SHALL NOT EXCEED THE EPA'S RMP THRESHOLD QUANTITIES OF LISTED SUBSTANCES.
- WATER FOR FIRE FIGHTING PURPOSES SHALL BE INDICATED WITH A BLUE ROADWAY REFLECTOR, PLACE ONE FOOT OFF OF THE CENTERLINE OF THE ROAD FACING THE FIRE HYDRANT. THIS INCLUDES NEW AND EXISTING SOURCES.
- REGARDLESS OF PRIVATE OR PUBLIC DEDICATIONS, THERE SHALL BE NO UTILITY CONNECTIONS, METER BOXES OR VALVE BOXES IN EXISTING OR PROPOSED SIDEWALK OR DRIVEWAY AREAS.
- CONTRACTOR SHALL ADJUST INLET/STRUCTURE OR CONNECTION LOCATION AS REQUIRED TO ENSURE PROPOSED STRUCTURES AND PIPES ARE IN PROPER ALIGNMENT AND MATCH SLOPE OF EXISTING PIPES OR CONNECTIONS.
- ANY STATE AND FEDERAL PERMITS THAT MAY BE REQUIRED AS A RESULT OF LAND CLEARING AND LANDSCAPING ACTIVITIES ARE THE RESPONSIBILITY OF THE CONTRACTOR.
- CONTRACTOR IS RESPONSIBLE TO PROTECT AND/OR REPLACE ALL SURVEY MONUMENTATION BY A LICENSED SURVEYOR IN THE STATE OF FLORIDA.

**TECHNICAL SPECIFICATIONS**

**MATERIALS**

**A.) DRAINAGE PIPING:**

- MINIMUM SIZED PIPING SHALL BE 15" OR EQUIVALENT ELLIPTICAL SIZE AND 18" MINIMUM ON COLLECTOR ROADS, UNLESS OTHERWISE NOTED.
- ALL STORM PIPING SHALL MEET MANUFACTURER'S SPECIFICATIONS. CONTRACTOR TO COORDINATE WITH MANUFACTURER TO ENSURE PROPOSED PIPING DOES NOT REQUIRE ADDITIONAL INSTALLATION MATERIALS, INCLUDING BUT NOT LIMITED TO, STRAPPING, ANCHORING, BUOYANCY, ETC.
- ALL JOINTS SHALL BE WRAPPED WITH FILTER FABRIC.
- SAFETY BARS SHALL BE PLACED ON PIPE AND MITERED END SECTIONS WHERE DETERMINED NECESSARY.
- OUTFALL END RUN TO DITCHES SHALL HAVE A MITERED END SECTION WITH SAFETY BARS TO MATCH EXISTING DITCH BANK SLOPE WITH APPROPRIATE EROSION CONTROL MEASURES UNLESS OTHERWISE NOTED.

**B.) DRAINAGE STRUCTURES:**

- ALL DRAINAGE STRUCTURES SHALL MEET SPECIFIC PLANNED USE AS DETERMINED BY THE DESIGN ENGINEER AND THE LOCAL GOVERNING AGENCY.
- ALL CATCH BASINS, INLETS OR MANHOLE STRUCTURES SHALL BE OF PRECAST REINFORCED TYPE PURSUANT TO FDOT DESIGN STANDARDS, LATEST EDITION, UNLESS OTHERWISE APPROVED.
- ALL STRUCTURES SHALL BE FREE OF DEFECTS SUCH AS CRACKING, HONEY COMBS AND EXPOSED STEEL REINFORCING INCLUDING BLEED THROUGH.
- SHOP DRAWINGS SHALL BE SUBMITTED BEFORE ORDERING MATERIAL FOR PLANNED PROJECT. CORRESPONDING SHALL BE BETWEEN THE DESIGN ENGINEER AND THE LOCAL GOVERNING AGENCY AND IS THE RESPONSIBILITY OF THE CONTRACTOR.

**C.) OUTFALL SPECIFICATIONS:**

- OUTFALL STRUCTURES SHALL INCLUDE ALUMINUM SKIMMERS, WEIR DEVICES, WEEP HOLES AND DRAW DOWN SYSTEMS AS DETERMINED BY DESIGN ENGINEER AND THE LOCAL GOVERNING AGENCY AS REQUIRED.
- HARDWARE TO ATTACH DEVICES TO OUTFALL STRUCTURES SHALL BE STAINLESS STEEL MATERIAL.
- CONTRACTOR WILL BE RESPONSIBLE FOR MEETING ALL PERMIT REQUIREMENTS FOR OUTFALL PIPE INTO JURISDICTIONAL CANAL, OR ANY OTHER WATER BODY. TO ENSURE PROPER CONSTRUCTION MEANS AND METHODS PROPOSED ARE ACCEPTABLE, IT IS RECOMMENDED THIS COORDINATION IS DONE PRIOR TO CONTRACTOR'S PRICING.

**D.) MANHOLE COVERS & GRATES:**

- MANHOLE FRAMES, COVERS AND GRATES SHALL MEET SPECIFIC PLANNED USE AS DETERMINED BY DESIGN ENGINEER AND THE LOCAL GOVERNING AGENCY.
- MANHOLE FRAMES AND COVERS SHALL BE OF CAST IRON MATERIALS, UNLESS OTHERWISE NOTED, AND BE FREE FROM CRACKS, HOLES OR COLD SHUTS. FRAMES AND COVERS SHALL CONFORM TO A MINIMUM STANDARD OF USF 1260 SERIES OR EQUIVALENT WITH COVERS STATING "STORM SEWER."
- FRAMES AND GRATES SHALL BE OF CAST IRON MATERIALS, UNLESS OTHERWISE NOTED, AND BE FREE FROM CRACKS, HOLES AND COLD SHUTS. FRAMES AND GRATES SHALL CONFORM TO A MINIMUM STANDARD OF USF 4160-6210 OR EQUIVALENT.

DATE	REVISIONS
10-28-2018	1
09-11-2018	2
08-09-2018	3
03-22-2018	4
11-21-2018	5
10-17-2018	6

JOB NO.	17-0133
DESIGNED	ND
DRAWN	RT
DATE	03--22--2018
CHECKED	AS
DATE ISSUED	10/28/2019

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**GENERAL NOTES**

**JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1**



LEGEND	
	WATER METER
	ANCHOR & GUY WIRE
	SIGN
	DRAINAGE CATCH BASIN
	SANITARY SEWER MANHOLE
	WATER VALVE
	FIRE HYDRANT
	UTILITY POLE
	OBSERVED DATA
	PLAT DATA
	CALCULATED DATA
	DEED DATA
	EXISTING IRRIGATION WELL
	TELEPHONE/CATV RISER
	SANITARY CLEAN-OUT
	YARD LIGHT
	WATER SERVICE
	LIGHT POLE
	BELL SOUTH RISER
	TEMPORARY BENCH MARK
	N.A.V.D. NORTH AMERICAN VERTICAL DATUM ELEVATION
	EXISTING SPOT ELEVATION
	10" x 10" CONCRETE PILING
	8" x 10" WOOD PILING
	6" x 8" PVC PILING
	FLAG POLE
	ELECTRICAL RISER
	MAIL RECEPTACLE
	ELECTRICAL METER
	FULL BOX
	EDGE OF PAVEMENT
	RIGHT OF WAY
	INDIAN RIVER FARMS WATER CONTROL DISTRICT R.O.W.
	INDIAN RIVER FARMS COMPANY SUBDIVISION R.O.W.
	C.B.S. CONCRETE BLOCK STRUCTURE
	L.P. LIQUID PROPANE
	S.W. SWALE
	PVC POLYVINYL CHLORIDE PIPE
	RCP REINFORCED CONCRETE PIPE
	CMP CORRUGATED METAL PIPE
	ADS ADVANCED DRAINAGE SYSTEM
	CAP CORRUGATED ALUMINUM PIPE
	P.B. PLAT BOOK
	PAGE
	I.R.C., FL. INDIAN RIVER COUNTY, FLORIDA FINISH FLOOR ELEVATION
	S.R.C. SET 1/2" DIAMETER X 18" LONG REBAR/CAP STAMPED "CARTER ASSOC."
	S.R.W.C. SET 1/2" DIAMETER X 18" LONG REBAR/CAP STAMPED "WITCOR, LB.205"
	OVERHEAD ELECTRIC
	EXISTING TOP OF BANK
	EXISTING TOE OF SLOPE
	EXISTING FENCE LINE
	EXISTING TREE/VEGETATION LINE
	OAK TREE W/SIZE
	MANGROVE TREE LINE
	COCONUT PALM
	CABBAGE PALM
	CABBAGE PALM
	ROYAL PALM
	NORFOLK ISLAND PINE
	WASHINGTON PALM
	EXISTING WETLAND LINE
	EXISTING WETLAND

DESCRIPTION AS FURNISHED BY CLIENT:  
 THE NORTH 16.5 ACRES OF THE SOUTH 33 ACRES OF GOVERNMENT LOTS 8 & 9, SECTION 36, TOWNSHIP 31 SOUTH, RANGE 39 EAST, ALL LYING AND BEING IN INDIAN RIVER COUNTY, FLORIDA, LESS RIGHT OF WAY FOR JUNGLE TRAIL SURVEY BASELINE PER MAINTENANCE MAP AS RECORDED IN PLAT BOOK 9, PAGE 40, PUBLIC RECORDS OF INDIAN RIVER COUNTY, FLORIDA.  
 CONTAINING: 699,307 SQUARE FEET / 16.05 ACRES

- SURVEYOR'S GENERAL NOTES AND REPORT:
- UNLESS IT BEARS THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER, THIS DRAWING, SKETCH, PLAT OR MAP IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT VALID.
  - THE LAST DAY OF FIELD WORK PERFORMED FOR THE INITIAL SURVEY EFFORT WAS JUNE 7, 2017. SUBSEQUENT ADDITIONS, DELETIONS AND/OR UPDATES, IF ANY, ARE REFLECTED IN THE DRAWING REVISIONS.
  - BEARINGS SHOWN HEREON ARE BASED UPON THE NORTH AMERICAN DATUM OF 1983, ADJUSTMENT OF 2011, AND ARE PROJECTED IN THE FLORIDA STATE PLANE COORDINATE SYSTEM, FLORIDA EAST ZONE (901) AND ARE REFERENCED TO THE ESTABLISHED AND MONUMENTED LINE SHOWN HEREON LABELED AS THE BEARING BASIS.
  - UNLESS A DIFFERENCE IS SHOWN, OBSERVED AND RECORD DIMENSIONS ARE THE SAME. ALL DIMENSIONS SHOWN HEREON ARE DISPLAYED IN U.S. SURVEY FEET AND DECIMAL PARTS THEREOF.
  - THE BOUNDARY DETERMINATION AND DELINEATION SHOWN ON THIS MAP OF SURVEY WAS BASED UPON THE PROFESSIONAL OPINION OF THE REGISTERED SURVEYOR PURSUANT TO NORMAL PRINCIPLES AND PRACTICES OF LAND SURVEYING AND IS NOT INTENDED TO IMPLY OR DETERMINE OWNERSHIP. THIS SURVEY DOES NOT INTEND TO DELINEATE LOCAL AREAS OF CONCERN OR ANY OTHER JURISDICTIONAL DETERMINATION.
  - THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE BENEFIT AND USE OF THE PERSONS AND/OR ENTITIES NAMED HEREON FOR THE PURPOSES IDENTIFIED HEREON ONLY. UNLESS OTHERWISE STATED, CERTIFICATION OF THIS SURVEY MAP APPLIES ONLY TO THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5117 FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES. THE CERTIFICATION IN NO WAY CONSTITUTES NEITHER GUARANTEE NOR WARRANTY TO ANY OTHER INFORMATION NOT SHOWN HEREON. ADDITIONS, DELETIONS OR REVISIONS TO THIS DRAWING BY OTHERS ARE NOT PERMITTED AND THIS SURVEY MAY NOT BE TRANSFERRED WITHOUT THE EXPRESSED WRITTEN PERMISSION OF THE SIGNING SURVEYOR. THIS SURVEY IS NOT VALID FOR ANY OTHER PURPOSE OTHER THAN INTENDED BY THE SIGNING SURVEYOR.
  - THE LEGAL DESCRIPTION AND MATTERS OF PUBLIC RECORD ARE FURNISHED BY THE CLIENT. THIS PROPERTY(S) WAS NOT ABSTRACTED OR RESEARCHED BY THIS OFFICE FOR ENCUMBRANCES OF RECORD. THE HEREON DESCRIBED PROPERTY IS SUBJECT TO RESTRICTIONS, RESERVATIONS, EASEMENTS AND RIGHTS-OF-WAY OF RECORD, IF ANY. MATTERS OF RECORD NOT BROUGHT TO THE SURVEYOR'S ATTENTION BY THE CLIENT, THEIR AGENT OR AS DISCLOSED BY A FURNISHED TITLE INSURANCE POLICY WERE NOT INCLUDED. NO INVESTIGATION WAS MADE BY THIS OFFICE INTO THE VALIDITY OF ANY EASEMENTS CITED IN THE LEGAL DESCRIPTION OR FOR ANY ENCUMBRANCES NOT OF RECORD IN THE INFORMATION FURNISHED BY THE CLIENT. NO TITLE COMMITMENT OR ABSTRACT WAS FURNISHED FOR THE PREPARATION OF THIS SURVEY.
  - THE EXPECTED USE OF THE LAND, AS CLASSIFIED IN THE STANDARDS OF PRACTICE (5117 F.A.C.) IS SUBURBAN. THE MINIMUM RELATIVE DISTANCE ACCURACY OF BOUNDARIES FOR THIS TYPE OF SURVEY IS 1 FOOT IN 7,500 FEET. THIS SURVEY MEETS OR EXCEEDS THE STATED ACCURACY REQUIREMENT.
  - WITH EXCEPTION TO WHAT HAS BEEN FIELD LOCATED AND SHOWN ON THIS SURVEY, THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN HEREON COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. SUBSURFACE AND/OR AERIAL ENCROACHMENTS, IF ANY, WERE NOT LOCATED AND/OR DEPICTED ON THIS SURVEY UNLESS NOTED OR IDENTIFIED.
  - THE HEREON DESCRIBED PROPERTY APPEARS TO LIE WITHIN FLOOD ZONE AE, SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, BASE FLOOD ELEVATIONS DETERMINED, ELEVATIONS 6 N.A.V.D. 1988 AND 7 N.A.V.D. 1988 AS SHOWN ON FLOOD INSURANCE RATE MAP (FIRM) NUMBER 2204100232, COMMUNITY NUMBER 120121, PANEL 0232, SUFFIX "H" MAP REVISED DATE DECEMBER 4, 2012, MAP INDEX DATE DECEMBER 4, 2012.
  - TREE LOCATIONS, IF SHOWN HEREON ARE GENERALLY ACCURATE TO 1/2 THE DIAMETER OF THAT PARTICULAR TREE. THE DIAMETER IS DISPLAYED IN INCHES MEASURED AT BREAST HEIGHT, ONLY TREES WITH A BREAST HEIGHT DIAMETER OF 4" OR LARGER OR WITH 10 FEET OF CLEAR TRUNK WERE FIELD LOCATED.
  - DIGITAL FILE DRAWING DISCLAIMER: THIS DRAWING, MAP, PLAT OR SKETCH IS PROVIDED SOLELY FOR THE CONVENIENCE OF THE CLIENT; CARTER ASSOCIATES INC. MAKES NO REPRESENTATIONS OR WARRANTIES, EITHER EXPRESS OR IMPLIED, AS TO ITS SUITABILITY FOR ANY SPECIFIC PURPOSE. WHILE WE BELIEVE THIS DRAWING FILE TO BE ACCURATE AT THE TIME OF RETRIEVAL, THIS MAP AND ITS CONTENTS CAN BE EASILY ALTERED OR CORRUPTED EITHER PURPOSELY OR INADVERTENTLY THROUGH ANY NUMBER OF SOURCES. FOR THIS REASON, CARTER ASSOCIATES INC., ITS OFFICERS, DIRECTORS AND EMPLOYEES SHALL BE INDEMNIFIED AND HELD HARMLESS FROM ANY AND ALL LIABILITY THAT MAY ARISE OR RESULT FROM THE USE OF THIS DRAWING, MAP, PLAT OR SKETCH BY ANY FIRM, EMPLOYEE, AGENTS OR SUB-CONTRACTORS. OPENING AND/OR USING THE FILE PROVIDED HEREIN CONSTITUTES ACCEPTANCE OF THE PROVISIONS STATED HEREON. ORIGINAL SIGNED AND SEALED HARD COPIES OF THIS MAP, SKETCH, PLAT OR SKETCH MAY ONLY BE OBTAINED THROUGH: CARTER ASSOCIATES INC., 1708 21ST ST., VERO BEACH, FL 32960-3472, TELEPHONE: 1-772-562-4191 OR FAX: 1-772-562-7180
  - THIS SURVEY CONSISTS OF 4 SHEETS AND SHALL NOT BE CONSIDERED COMPLETE AND/OR VALID UNLESS ALL SHEETS ARE PRESENT.

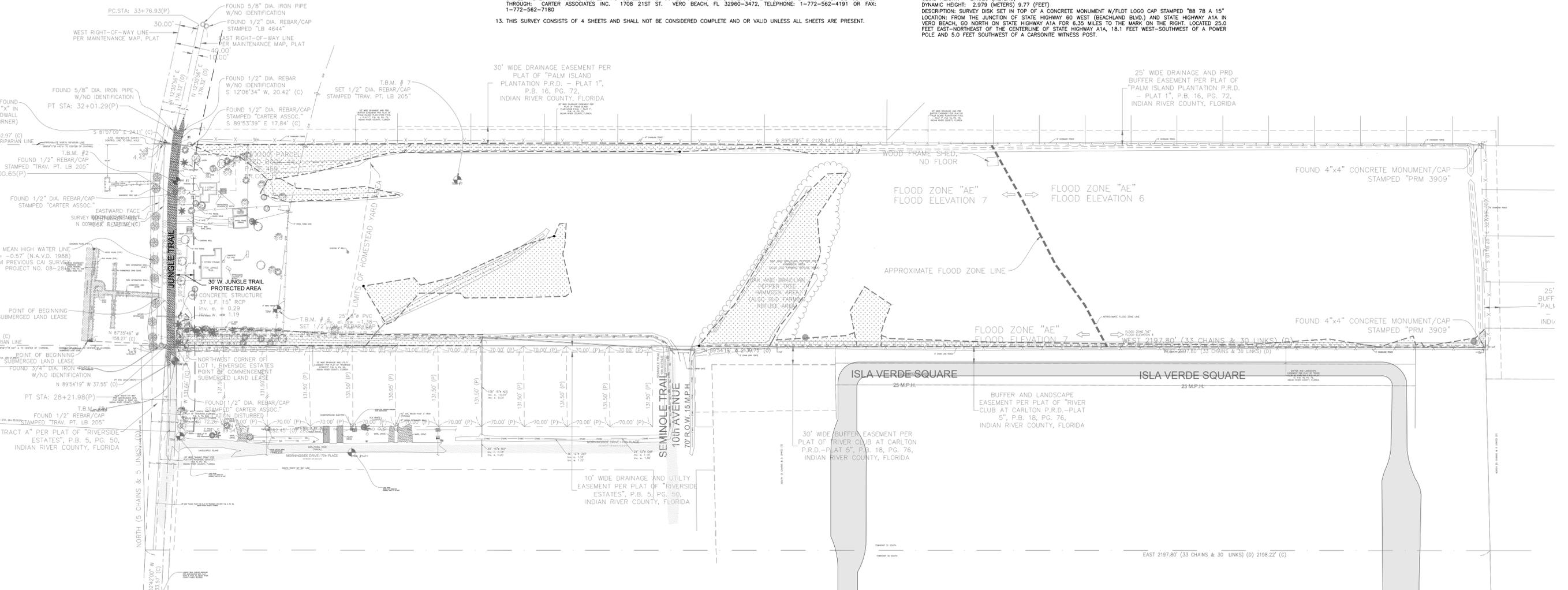
- SURVEYOR'S GLOBAL POSITIONING SYSTEM (G.P.S.) NOTES:
- G.P.S. SURVEY METHOD: REAL TIME KINEMATIC (RTK)
  - G.P.S. RECEIVER TYPE: DUAL FREQUENCY LEICA GS 14 / CS 15 GPS/GLONASS GNSS (GLOBAL NAVIGATION SATELLITE SYSTEM), SBAS, CODE AND PHASE (L1 AND L2)
  - THE ORIGINAL GPS RTK MEASUREMENTS BEGAN MAY 30, 2017 AND WERE COMPLETED ON JUNE 7, 2017. TWO LEICA DUAL FREQUENCY GPS RECEIVERS EQUIPPED WITH RT-SKI (REAL TIME MEASUREMENT CAPABILITIES) WERE USED TO GATHER GPS DATA. TYPICALLY A BASE RECEIVER IS SET UP ON AN ESTABLISHED CONTROL STATION WHILE A ROVING RECEIVER LOCATES EXISTING MONUMENTS, IMPROVEMENTS AND/OR TOPOGRAPHIC DATA AND CONTROL THROUGHOUT THE PROJECT AREA. REAL-TIME COORDINATE COMPUTATIONS AND PRECISION INFORMATION ARE DETERMINED VIA RADIO / MODEM LINK WITH THE BASE STATION AND RECORDED AS THREE DIMENSIONAL (3D) POSITIONS.
  - G.P.S. SURVEY MEASUREMENTS WERE PROCESSED AND ADJUSTED USING LEICA INFINITY, VERSION 2.1.0
  - THE HORIZONTAL TARGET ACCURACY FOR THIS SURVEY IS AS FOLLOWS:  
 HORIZONTAL: 8MM + 1PPM (RMS)  
 VERTICAL: 15MM + 1PPM (RMS).
  - HORIZONTAL POSITIONS OF SITE CONTROL WERE ESTABLISHED UTILIZING THE FDOT FPRN "MAX" NETWORK CORRECTION. LOCAL SITE CONTROL VALUES ARE NETWORK CORRECTED (ADJUSTED) POSITIONS.

TEMPORARY BENCHMARK(S):  
 TBM #2 FOUND 1/2" DIA. REBAR/CAP STAMPED "TRAV. PT. LB 205"  
 N 12369116.29  
 E 852366.09  
 EL. 2.37' N.A.V.D. 1988  
 TBM #5 FOUND 1/2" DIA. REBAR/CAP STAMPED "TRAV. PT. LB 205"  
 N 1236621.01  
 E 852368.68  
 EL. 2.23' N.A.V.D. 1988  
 TBM #6 FOUND 1/2" DIA. REBAR/CAP STAMPED "TRAV. PT. LB 205"  
 N 1236707.50  
 E 852530.57  
 EL. 1.31' N.A.V.D. 1988  
 TBM #7 FOUND 1/2" DIA. REBAR/CAP STAMPED "TRAV. PT. LB 205"  
 N 1236917.76  
 E 852825.26  
 EL. 1.69' N.A.V.D. 1988

REFERENCES:  
 SKETCH OF SURVEY BOUNDARY & IMPROVEMENTS BY CAI, PROJ. 08-281S, DWG. NO. 18523-C  
 SPECIFIC PURPOSE SURVEY BY CAI, PROJ. 00-520S, DWG. NO. 15881 C, PROJECT # 00-520S, F.B. 563, PG. 65, DATE: 8/2/00.  
 MAINTENANCE MAP, INDIAN RIVER COUNTY ROAD & BRIDGE DEPARTMENT, JUNGLE TRAIL, DATE: 30th JULY, 1976 RECORDED IN PLAT BOOK 9, PAGE 40  
 C.A.I. DWG # 16601-B, PROJECT #02-547, F.B. 626, PG. 34  
 C.A.I. DWG # 17932-C, PROJECT #05-412S, F.B. 678, PG. 69+  
 C.A.I. DWG # 16289-B, PROJECT #01-694S, F.B. 608, PG. 36+  
 C.A.I. DWG # 18497-C, PROJECT #08-255S, F.B. 729, PG. 1+

CERTIFIED TO:  
 INDIAN RIVER COUNTY  
 MBV ENGINEERING, INC.

DATE	REVISIONS
10-28-2019	CONSTRUCTIBILITY REVIEW
09-11-2019	L.S. TO STEP SYSTEM
08-09-2019	FORCE MAIN
03-22-2019	PHASING COORDINATION
11-21-2018	15' UTO CITY OF VERO BEACH
10-31-2018	PER COVUT BUT DEPT
10-17-2018	PER COVIB AND IRC COMMENTS



**OVERALL EXISTING CONDITIONS PLAN**

SCALE: 1" = 80'

GRAPHIC SCALE  
 0 80 160  
 (IN FEET)  
 1 inch = 80 ft.

72 HOURS BEFORE DIGGING  
 CALL TOLL FREE  
**811**  
 Know what's below.  
 Call before you dig.

AARON G. STANTON  
 LICENSE No. 72460  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

AARON G. STANTON  
 FL. P.E. #72460 DATE:

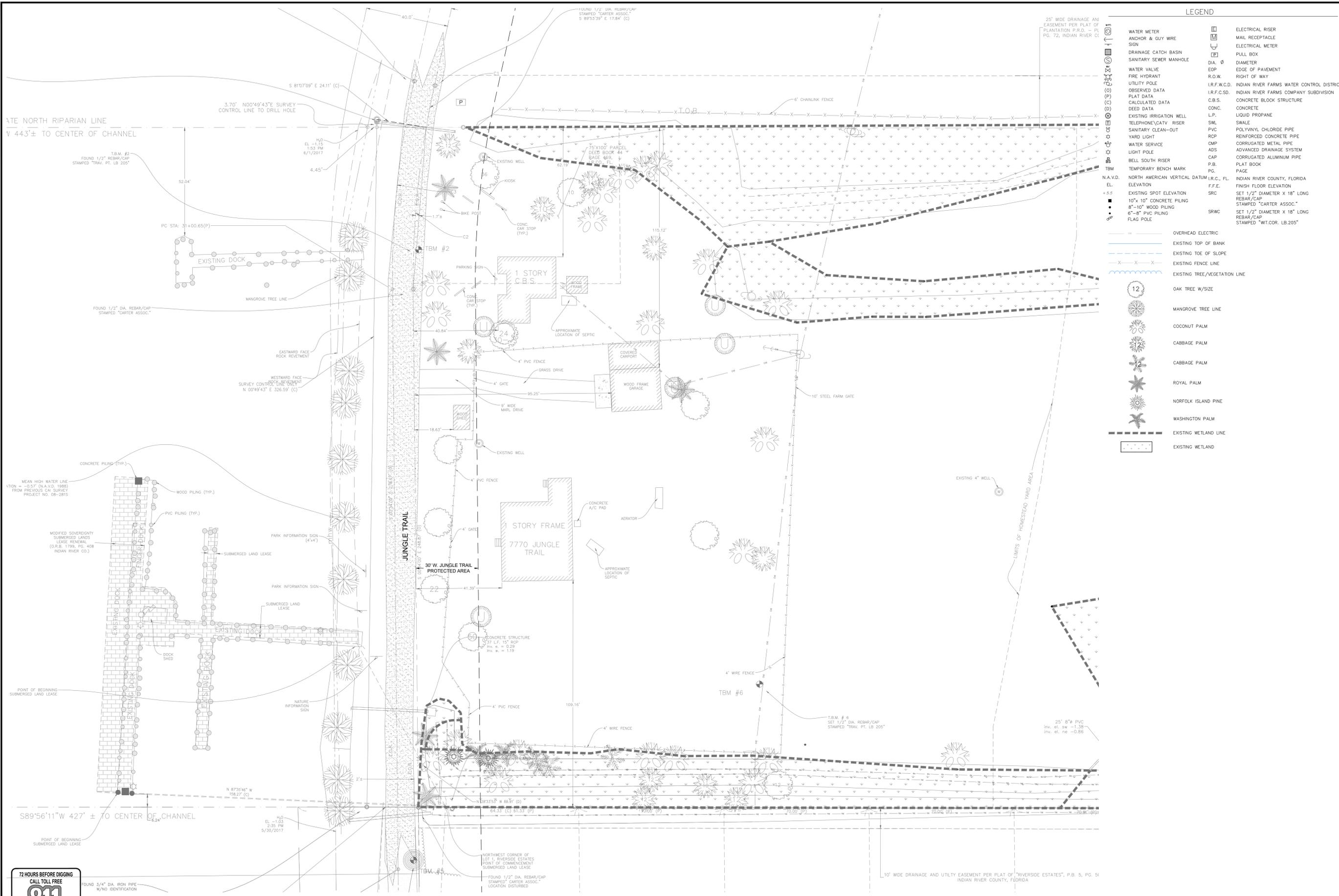
SHEET  
**C3**  
 OF 17  
 17-0133

**MBV ENGINEERING, INC.**  
 MOA BOWLES VILLALBAZ & ASSOCIATES  
 CIVIL ENGINEERING CA #3728  
 VERO BEACH, FL 32909  
 1815 20TH STREET  
 VERO BEACH, FL 32909  
 TEL: (772) 775-3411  
 FAX: (772) 775-3411

OVERALL EXISTING CONDITIONS

JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1

FLORIDA INDIAN RIVER COUNTY



LEGEND	
	WATER METER
	ANCHOR & GUY WIRE SIGN
	DRAINAGE CATCH BASIN
	SANITARY SEWER MANHOLE
	WATER VALVE
	FIRE HYDRANT
	UTILITY POLE
	OBSERVED DATA
	FLAT DATA
	CALCULATED DATA
	DEED DATA
	EXISTING IRRIGATION WELL
	TELEPHONE/CATV RISER
	SANITARY CLEAN-OUT
	YARD LIGHT
	WATER SERVICE
	LIGHT POLE
	BELL SOUTH RISER
	TEMPORARY BENCH MARK
	N.A.V.D. ELEVATION
	EXISTING SPOT ELEVATION
	10'x 10' CONCRETE PILING
	8'x 10' WOOD PILING
	6'x 8' PVC PILING
	FLAG POLE
	OVERHEAD ELECTRIC
	EXISTING TOP OF BANK
	EXISTING TOE OF SLOPE
	EXISTING FENCE LINE
	EXISTING TREE/VEGETATION LINE
	OAK TREE W/SIZE
	MANGROVE TREE LINE
	COCONUT PALM
	CABBAGE PALM
	CABBAGE PALM
	ROYAL PALM
	NORFOLK ISLAND PINE
	WASHINGTON PALM
	EXISTING WETLAND LINE
	EXISTING WETLAND

DATE	REVISIONS
10-28-2018	CONSTRUCTIBILITY REVIEW
09-11-2019	L.S. TO STEP SYSTEM
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11-21-2018	15' TO CITY OF VERO BEACH
10-31-2018	PER CIVIL UTIL DEPT
10-17-2018	PER CIVIL AND IRC COMMENTS

**MBV ENGINEERING, INC.**  
 WOKA DOMILES WILLIAMS & ASSOCIATES  
 ENGINEERING & CA #3728  
 1830 - 20TH STREET  
 VERO BEACH, FL 32960  
 TEL: (772) 778-3817  
 FL. PERCE. FL. - PH (772) 468-9055

EXISTING CONDITIONS -  
 PHASE 1

JONES PIER WETLAND  
 RESTORATION AND  
 CONSERVATION IMPROVEMENTS  
 PHASE 1

AARON G. STANTON  
 LICENSE  
 No. 72460  
 STATE OF  
 FLORIDA  
 PROFESSIONAL ENGINEER

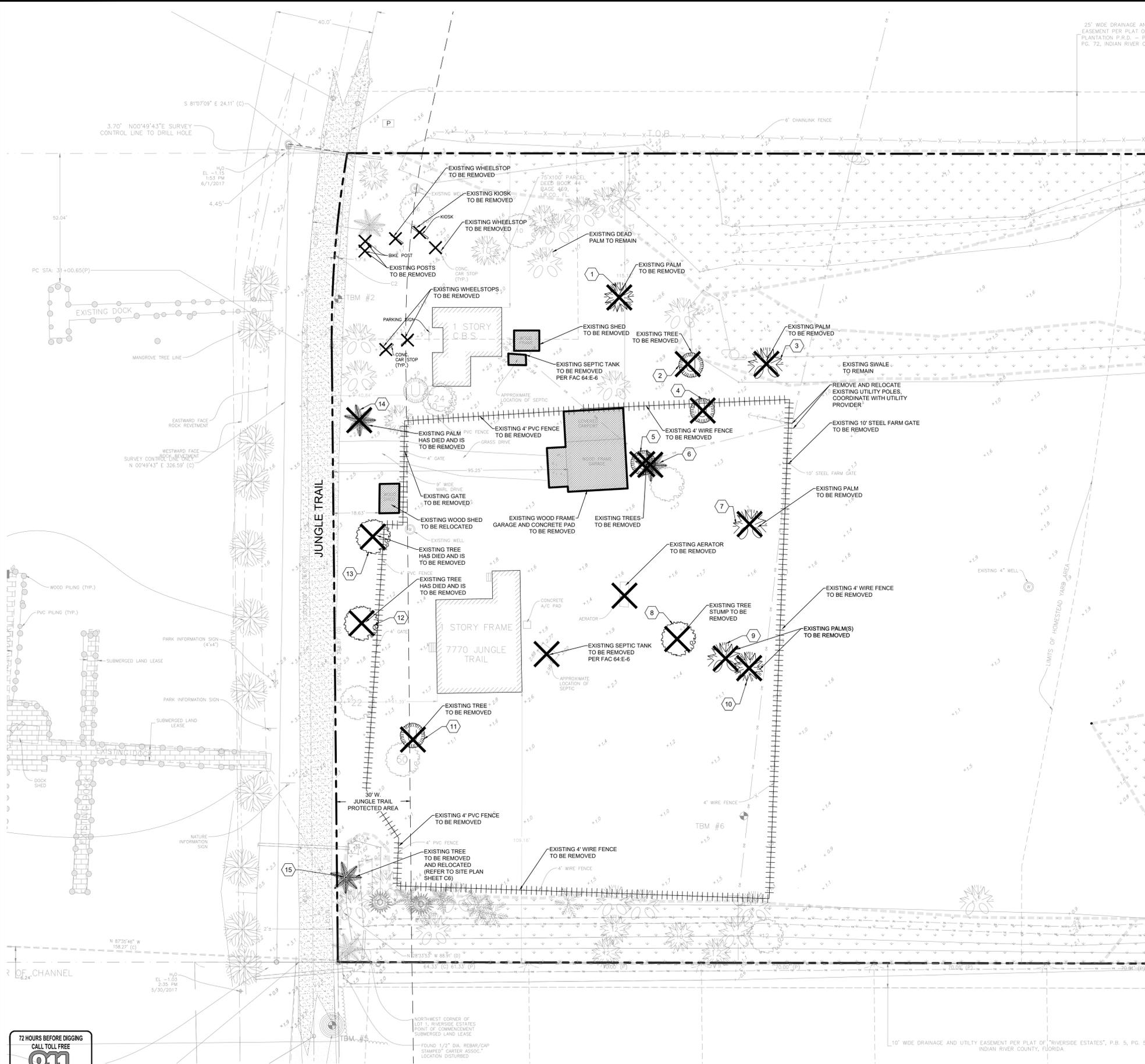
SHEET  
**C3A**  
 OF 17  
 17-0133



**EXISTING CONDITIONS PLAN - PHASE 1**

SCALE: 1" = 20'

GRAPHIC SCALE  
 0 20 40  
 (IN FEET)  
 1 inch = 20 ft.



**LEGEND**

- EXISTING TREE/SITE FEATURE TO BE REMOVED
- EXISTING FENCE TO BE REMOVED
- EXISTING BUILDINGS, SHEDS, COVERED CONCRETE TO BE REMOVED
- EXISTING ASPHALT, CONCRETE, GRAVEL TO BE REMOVED
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE

**EXISTING TREE LEGEND**

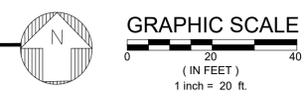
- EXISTING TREE/VEGETATION LINE
- OAK TREE W/SIZE
- MANGROVE TREE LINE
- COCONUT PALM
- CABBAGE PALM W/SIZE
- CABBAGE PALM W/SIZE
- ROYAL PALM
- NORFOLK ISLAND PINE
- WASHINGTON PALM
- EXOTIC TREE
- EXISTING WETLAND LINE
- EXISTING TOE OF SLOPE

**EXISTING TREE INVENTORY**

TREE #	TYPE	SIZE	ACTION	PROTECTED TREE	MITIGATION REQUIRED
1	CABBAGE PALM	10' CT	TO BE REMOVED	YES	YES
2	EXOTIC	-	TO BE REMOVED	-	-
3	COCONUT PALM	10' CT	TO BE REMOVED	YES	NO
4	EXOTIC	-	TO BE REMOVED	-	-
5	EXOTIC	-	TO BE REMOVED	-	-
6	ROYAL PALM	10' CT	TO BE REMOVED	YES	NO
7	COCONUT PALM	10' CT	TO BE REMOVED	YES	NO
8	DEAD/ STUMP	-	TO BE REMOVED	-	-
9	COCONUT PALM	10' CT	TO BE REMOVED	YES	NO
10	CABBAGE PALM	10' CT	TO BE REMOVED	YES	YES
11	EXOTIC	-	TO BE REMOVED	-	-
12	OAK DEAD	-	TO BE REMOVED	-	-
13	OAK DEAD	-	TO BE REMOVED	-	-
14	ROYAL PALM DEAD	10' CT	TO BE REMOVED	YES	NO
15	ROYAL PALM	-	TO BE RELOCATED	YES	NO

**DEMOLITION PLAN**

SCALE: 1" = 20'



<p>CONSTRUCTIBILITY REVIEW 10-28-2019</p> <p>L.S. TO STEP SYSTEM 09-11-2019</p> <p>FORCE MAIN 09-09-2019</p> <p>PHASING COORDINATION 03-22-2019</p> <p>15' UTO CITY OF VERO BEACH 11-21-2018</p> <p>PER COVIB UTIL DEPT 10-31-2018</p> <p>PER COVIB AND IRC COMMENTS 10-17-2018</p>	<p>DESIGNED ND</p> <p>DRAWN RT</p> <p>DATE 03--22--2018</p> <p>CHECKED AS</p> <p>DATE ISSUED 10/28/2019</p>	<p>17-0133</p> <p>17-0133</p>	<p>DATE</p>	<p><b>DEMOLITION PLAN</b></p>	<p>FLORIDA</p>
<p><b>JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1</b></p>					
<p><b>INDIAN RIVER COUNTY</b></p>					
<p>AARON G. STANTON FL. P.E. #72460 DATE:</p>					
<p>SHEET <b>C4</b> OF 17 17-0133</p>					

**SITE INFORMATION**  
**SITE ADDRESS**  
 7770 JUNGLE TRAIL  
 VERO BEACH, FLORIDA 32963

**OWNER/APPLICANT**  
 INDIAN RIVER COUNTY PARKS DIVISION  
 5500 77TH STREET  
 VERO BEACH, FLORIDA 32967  
 PHONE: (772) 589-9223

**ENGINEER**  
 MBV ENGINEERING, INC.  
 1835 20TH STREET  
 VERO BEACH, FLORIDA 32960  
 PHONE: (772) 569-0035

**SURVEYOR**  
 CARTER ASSOCIATES, INC.  
 1708 21st STREET  
 VERO BEACH, FLORIDA 32960  
 PHONE: (772) 562-4191

**TAX PARCEL I.D. NUMBER(S)**  
 31-39-36-0000-0080-0004.0

**ZONING LAND USE**  
 CON-1 HISTORIC AND CONSERVATION EDUCATION 911.12(4)

**EXISTING SITE DATA**

OVERALL SITE AREA	= 699,307 SF	= 16.05 AC	= 100.00 %
WETLAND AREA	= 95,849 SF	= 2.21 AC	= 13.76 %
PHASE 1			
PHASE 1 SITE AREA	= 61,958 SF	= 1.42 AC	= 100.0 %
EXISTING BUILDINGS	= 3,089 SF	= 0.07 AC	= 0.44 %
EXISTING CONC.	= 123 SF	= 0.00 AC	= 0.00 %
PHASE 1 TOTAL IMPERVIOUS AREA	= 3,211 SF	= 0.07 AC	= 4.93 %
PHASE 1 TOTAL OPEN AREA	= 58,747 SF	= 1.35 AC	= 95.07 %
PHASE 2			
PHASE 2 SITE AREA (FUTURE)	= 637,349 SF	= 14.63 AC	= 100.0 %

**PROPOSED SITE DATA**

OVERALL SITE AREA	= 699,307 SF	= 16.05 AC	= 100.0 %
WETLAND AREA	= 95,849 SF	= 2.21 AC	= 13.76 %
PHASE 1			
PHASE 1 SITE AREA	= 61,958 SF	= 1.42 AC	= 100.0 %
EXISTING BUILDINGS	= 2,126 SF	= 0.05 AC	= 3.5 %
PROPOSED BUILDING AREA	= 1,135 SF	= 0.03 AC	= 2.1 %
PROPOSED CONCRETE AREA	= 1,040 SF	= 0.02 AC	= 1.4 %
PROPOSED STABILIZED DRIVE AREA	= 12,563 SF	= 0.29 AC	= 20.4 %
PROPOSED WOOD DECKS/RAMPS	= 428 SF	= 0.01 AC	= 0.8 %
PHASE 1 TOTAL IMPERVIOUS AREA	= 17,292 SF	= 0.40 AC	= 28.2 %
PHASE 1 TOTAL OPEN AREA	= 44,666 SF	= 1.02 AC	= 71.8 %
PHASE 2			
PHASE 2 SITE AREA (FUTURE)	= 637,349 SF	= 14.63 AC	= 100.0 %
STABILIZED WALKING TRAIL (CONSTRUCTED IN PHASE 1)	= 33,069 SF	= 0.76 AC	= 5.2 %

**PARKING DATA**

PARKING REQUIRED:  
 TWO (2) SPACES PER GROSS ACRE FOR EACH ACRE OF OPEN SPACE GENERATING USER PARKING DEMAND.

PHASE 1 AREA (1.42 AC) PLUS TRAIL AREA (0.76 AC) PLUS COMMUNITY GARDEN AREA (3.02 AC) MINUS WETLAND AREA (0.12 AC) = 5.08 AC

5.08 AC x 2 SPACES PER ACRE = 10.16 SPACES = 11 SPACES REQUIRED

PARKING PROVIDED = 24 SPACES (22 STANDARD, 2 HANDICAPPED)

**PERMITS REQUIRED**

ST. JOHN'S RIVER WMD ENVIRONMENTAL RESOURCE STORMWATER PERMIT  
 CITY OF VERO BEACH UTILITIES APPROVAL  
 INDIAN RIVER COUNTY SITE PLAN APPROVAL  
 INDIAN RIVER COUNTY TREE REMOVAL PERMIT  
 INDIAN RIVER COUNTY STORMWATER PERMIT  
 INDIAN RIVER COUNTY LAND CLEARING PERMIT  
 INDIAN RIVER COUNTY WETLAND PERMIT  
 INDIAN RIVER COUNTY CONCURRENCY APPLICATION  
 FDEP WATER PERMIT  
 FDEP SEWER PERMIT  
 FDEP NPDES NOTICE OF INTENT

**FLOOD ZONE**

THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE 'AE' ELEVATION 7' NAVD AND ELEVATION 6' NAVD, PER FLOOD INSURANCE RATE MAP #12061C0232 H, DATED DEC. 4TH, 2012.

**WASTEWATER SOURCE**

CITY OF VERO BEACH UTILITIES

**POTABLE WATER SOURCE**

CITY OF VERO BEACH UTILITIES

**TRAFFIC STATEMENT**

PER ITE, 10TH EDITION: RECREATIONAL COUNTY PARK (412)  
 2.28 TRIPS/1 ACRE = 2.28 TRIPS/ACRE \* 1.16.05 ACRES = 37 TRIPS

**CONSTRUCTION SCHEDULE**

PHASE 1:  
 BEGIN CONSTRUCTION AUGUST 2019  
 END CONSTRUCTION AUGUST 2020

PHASE 2:  
 BEGIN CONSTRUCTION AUGUST 2019  
 END CONSTRUCTION AUGUST 2020

**LEGAL DESCRIPTION**

DESCRIPTION AS FURNISHED BY CLIENT:  
 "THE NORTH 16.5 ACRES OF THE SOUTH 33 ACRES OF GOVERNMENT LOTS 8 & 9, SECTION 36, TOWNSHIP 31 SOUTH, RANGE 30 EAST, ALL LYING AND BEING IN INDIAN RIVER COUNTY, FLORIDA, LESS RIGHT OF WAY FOR JUNGLE TRAIL SURVEY BASELINE PER MAINTENANCE MAP AS RECORDED IN PLAT BOOK 9, PAGE 40, PUBLIC RECORDS OF INDIAN RIVER COUNTY, FLORIDA."

CONTAINING: 699,307 SQUARE FEET / 16.05 ACRES

**LAND CLEARING NOTE**

ALL NUISANCE EXOTIC VEGETATION EXISTING WITHIN DEVELOPMENT PROJECT SITE PROPERTY MUST BE REMOVED IN CONJUNCTION WITH SITE DEVELOPMENT [929.08].

**SOLID WASTE DISPOSAL NOTE**

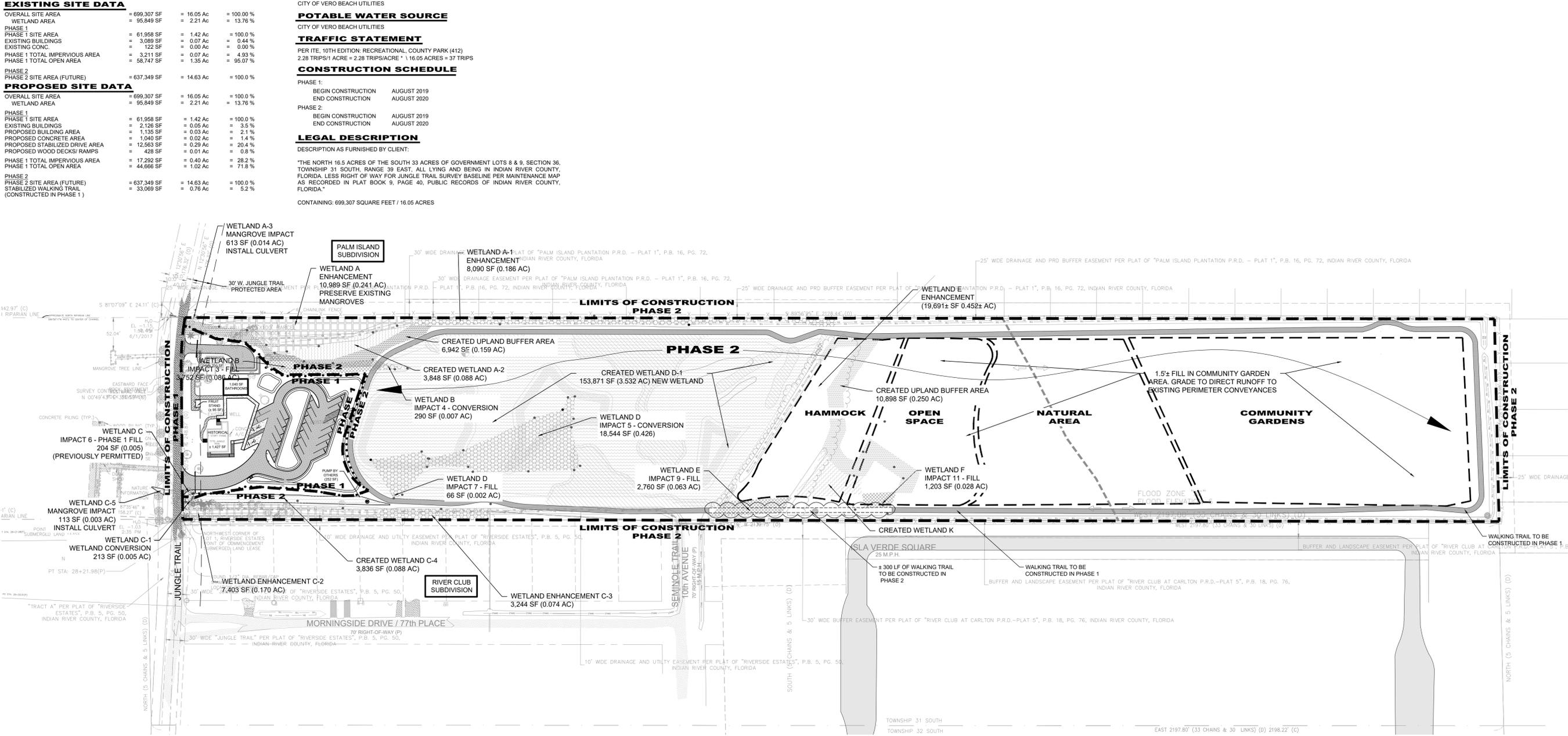
TRASH WILL BE COLLECTED IN TRASH BINS THROUGHOUT THE SITE AND WILL BE COLLECTED AND MAINTAINED BY THE INDIAN RIVER COUNTY PARKS DEPARTMENT.

**BUILDING HEIGHT NOTE**

EXISTING NORTH BUILDING HEIGHT = ± 8.0'  
 PROPOSED PAVILION HEIGHT = ± 10.0'  
 PROPOSED FRUIT STAND HEIGHT = ± 8.0'  
 EXISTING HOMESTEAD (TO BE CONVERTED TO A MUSEUM) = ± 8.0'  
 \* FROM FLOOR TO ROOF

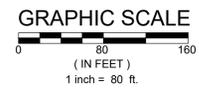
**LEGEND**

- PROPOSED ASPHALT MILLINGS DRIVEWAY/PARKING LOT
- PROPOSED WALKING PATH
- PROPOSED MARL WALKING PATH BETWEEN BUILDINGS
- PROPOSED CONCRETE
- CREATED UPLAND BUFFER AREA
- CREATED WETLAND AREA
- CONVERTED TO WETLAND AREA
- ENHANCED WETLAND AREA
- FILLED WETLAND AREA
- PHASE LINE



**OVERALL SITE PLAN**

SCALE: 1" = 80'



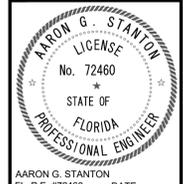
JOB NO.	CONSTRUCTION REVIEW	DESIGNED	DRAWN	DATE	CHECKED	DATE	ISSUED	REVISIONS
17-0133	ND	ND	RT	03-22-2018	AS	10/28/2019		
0	CONSTRUCTIBILITY REVIEW							
1	L.S. TO STEP SYSTEM							
2	FORCE MAIN							
3	PHASING COORDINATION							
4	PER CIVIL UTIL DEPT							
5	PER CIVIL AND IRC COMMENTS							

**MBV ENGINEERING, INC.**  
 ENGINEERING & ASSOCIATES  
 WORKS BOWLES WILLIAMS & ASSOCIATES  
 1835 20TH STREET  
 VERO BEACH, FL 32960  
 PHONE: (772) 772-3817  
 FAX: (772) 772-3817  
 MICHIGAN: FL - PH (313) 253-1510  
 MISSOURI: FL - PH (772) 468-9055

**OVERALL SITE PLAN**

**JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1**

FLORIDA  
 INDIAN RIVER COUNTY



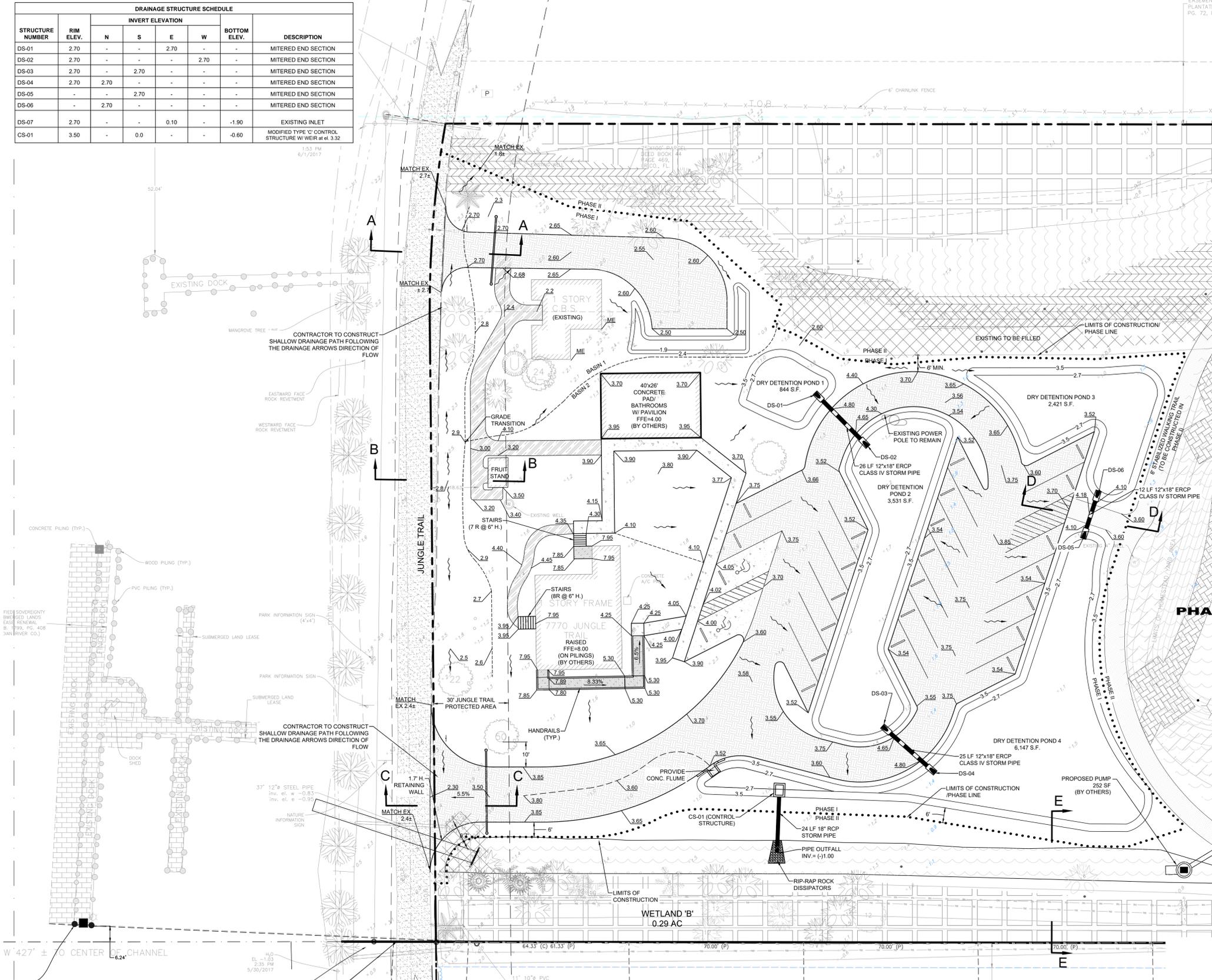
AARON G. STANTON  
 FL P.E. #72460  
 SHEET  
**C5**  
 OF 17  
 17-0133



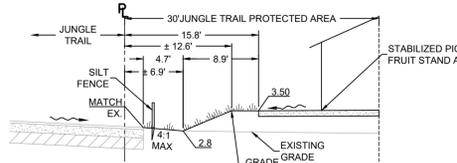
STRUCTURE NUMBER	RIM ELEV.	INVERT ELEVATION				BOTTOM ELEV.	DESCRIPTION
		N	S	E	W		
DS-01	2.70	-	-	2.70	-	-	MITERED END SECTION
DS-02	2.70	-	-	-	2.70	-	MITERED END SECTION
DS-03	2.70	-	2.70	-	-	-	MITERED END SECTION
DS-04	2.70	2.70	-	-	-	-	MITERED END SECTION
DS-05	-	-	2.70	-	-	-	MITERED END SECTION
DS-06	-	2.70	-	-	-	-	MITERED END SECTION
DS-07	2.70	-	-	0.10	-	-1.90	EXISTING INLET
CS-01	3.50	-	0.0	-	-	-0.60	MODIFIED TYPE 'C' CONTROL STRUCTURE W/ WEIR at el. 3.32

**LEGEND**

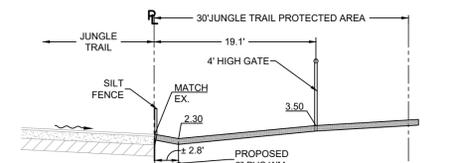
- PROPOSED ASPHALT MILLINGS DRIVEWAY & PARKING LOT
- PROPOSED WALKING PATH
- PROPOSED MARL WALK PATH BETW. BLDGS.
- PROPOSED CONCRETE
- CREATED UPLAND BUFFER AREA
- CREATED WETLAND AREA
- CONVERTED TO WETLAND AREA
- ENHANCED WETLAND AREA
- FILLED WETLAND AREA
- EXISTING ELEVATION
- PROPOSED ELEVATION
- DRAINAGE FLOW PATTERN
- OAK TREE W/SIZE
- MANGROVE TREE LINE
- COCONUT PALM
- CABBAGE PALM
- CABBAGE PALM
- ROYAL PALM
- NORFOLK ISLAND PINE
- WASHINGTON PALM
- LIMITS OF CONSTRUCTION PHASE LINE



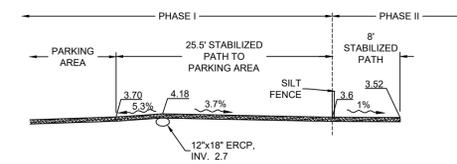
**SECTION A-A**  
N.T.S.



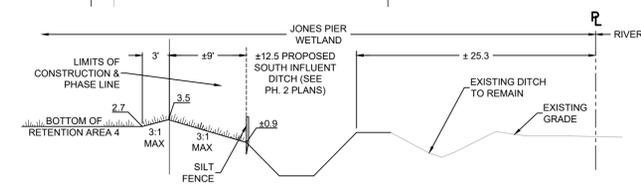
**SECTION B-B**  
N.T.S.



**SECTION C-C**  
N.T.S.



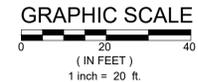
**SECTION D-D**  
N.T.S.



**SECTION E-E**  
N.T.S.

**PHASE I PAVING, GRADING AND DRAINAGE PLAN**

SCALE: 1" = 20'

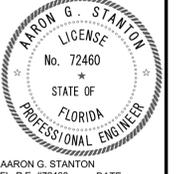


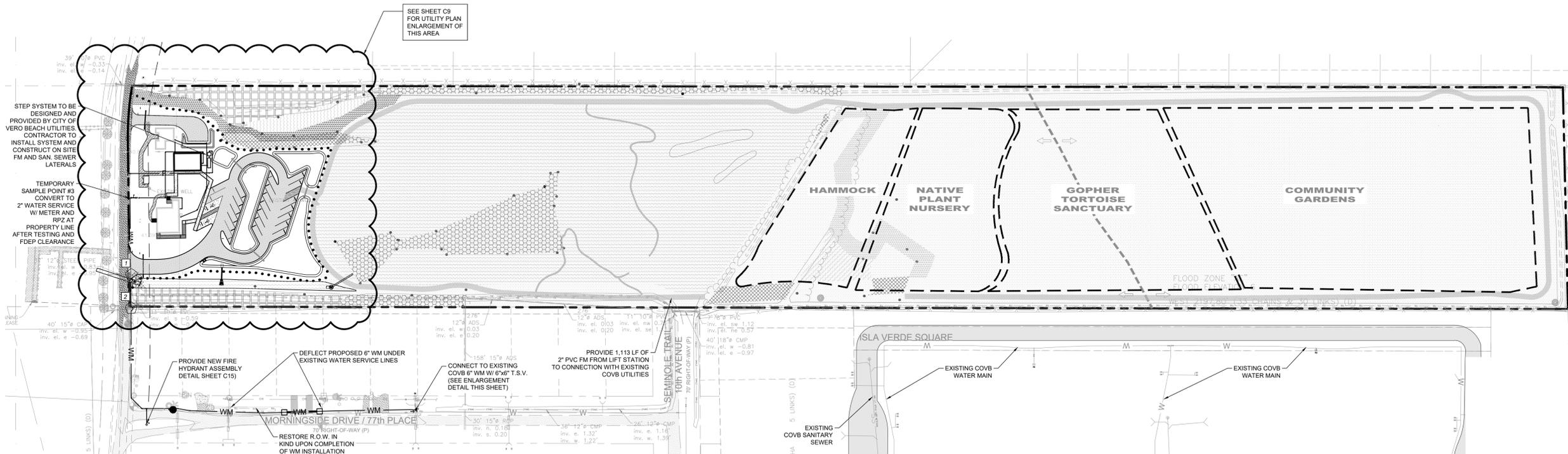
DATE	REVISIONS
10-28-2018	CONSTRUCTIBILITY REVIEW
09-11-2019	L.S. TO STEP SYSTEM
09-09-2019	FORCE MAIN
03-22-2019	PHASING COORDINATION
11-21-2018	15' UTO TO CITY OF VERO BEACH
10-31-2018	2. PER CIVIL UTIL DEPT
10-17-2018	1. PER CIVIL AND IRC COMMENTS

**MBV ENGINEERING, INC.**  
 WORKS: DOMILES WILLIAMS & ASSOCIATES  
 ENGINEERING & ASSOCIATES  
 1830 - 20TH STREET  
 VERO BEACH, FL 32960  
 TEL: (772) 772-3817  
 FAX: (772) 772-3817

PHASE 1 PAVING, GRADING AND DRAINAGE PLAN

JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1

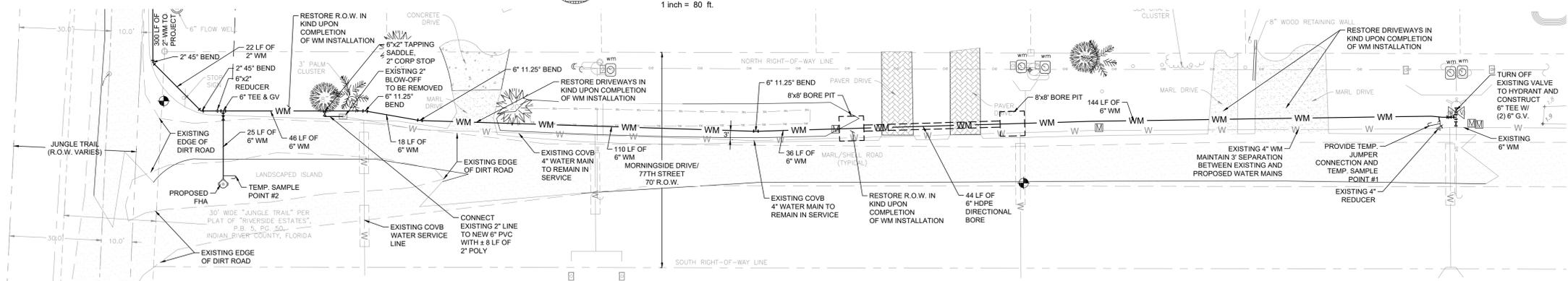
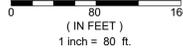




**OVERALL UTILITY PLAN**

SCALE: 1" = 80'

**GRAPHIC SCALE**



**WATER MAIN DETAIL AT FIRE HYDRANT**

SCALE: 1" = 20'

CONFLICT TABLE						
CONFLICT NUMBER	GROUND ELEV.	UPPER PIPE	UPPER PIPE BOTTOM	LOWER PIPE	LOWER PIPE TOP	SEPARATION
1	2.60	EX. 12" STORM	(-)0.89	2" WM	(-)2.39	1.50
2	2.40	EX. 15" STORM	(-)0.75	2" WM	(-)2.25	1.50

**LEGEND**

- PROPOSED ASPHALT MILLINGS DRIVEWAY & PARKING LOT
- PROPOSED CONCRETE
- PROP. MARL WALKING PATH BETW. BLDGS.
- CREATED UPLAND BUFFER AREA
- CREATED WETLAND AREA
- CONVERTED TO WETLAND AREA
- ENHANCED WETLAND AREA
- FILLED WETLAND AREA
- EXISTING WATER MAIN
- EXISTING SANITARY SEWER
- EXISTING FORCE MAIN
- PROPOSED WATER MAIN
- PROPOSED FORCE MAIN
- UTILITY CONFLICT (SEE TABLE)
- WETLAND LINE
- LIMITS OF CONSTRUCTION/ PHASE LINE

**FDEP SEPARATION CRITERIA:**

- (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, STORM WATER 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 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 381.006(2), F.S., AND RULE 64E-6.002, F.A.C.
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- (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 SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES 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 STORM WATER 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 THE WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER 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 INTO 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 INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.
- (4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER FORCE MAINS, RECLAIMED WATER PIPELINES, 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, STORM WATER 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 381.006(2), F.S., AND RULE 64E-6.002, F.A.C.

JOB NO.	DESIGNED	DRAWN	DATE	CHECKED	DATE ISSUED
17-0133	ND	RT	03-22-2018	AS	10/28/2019

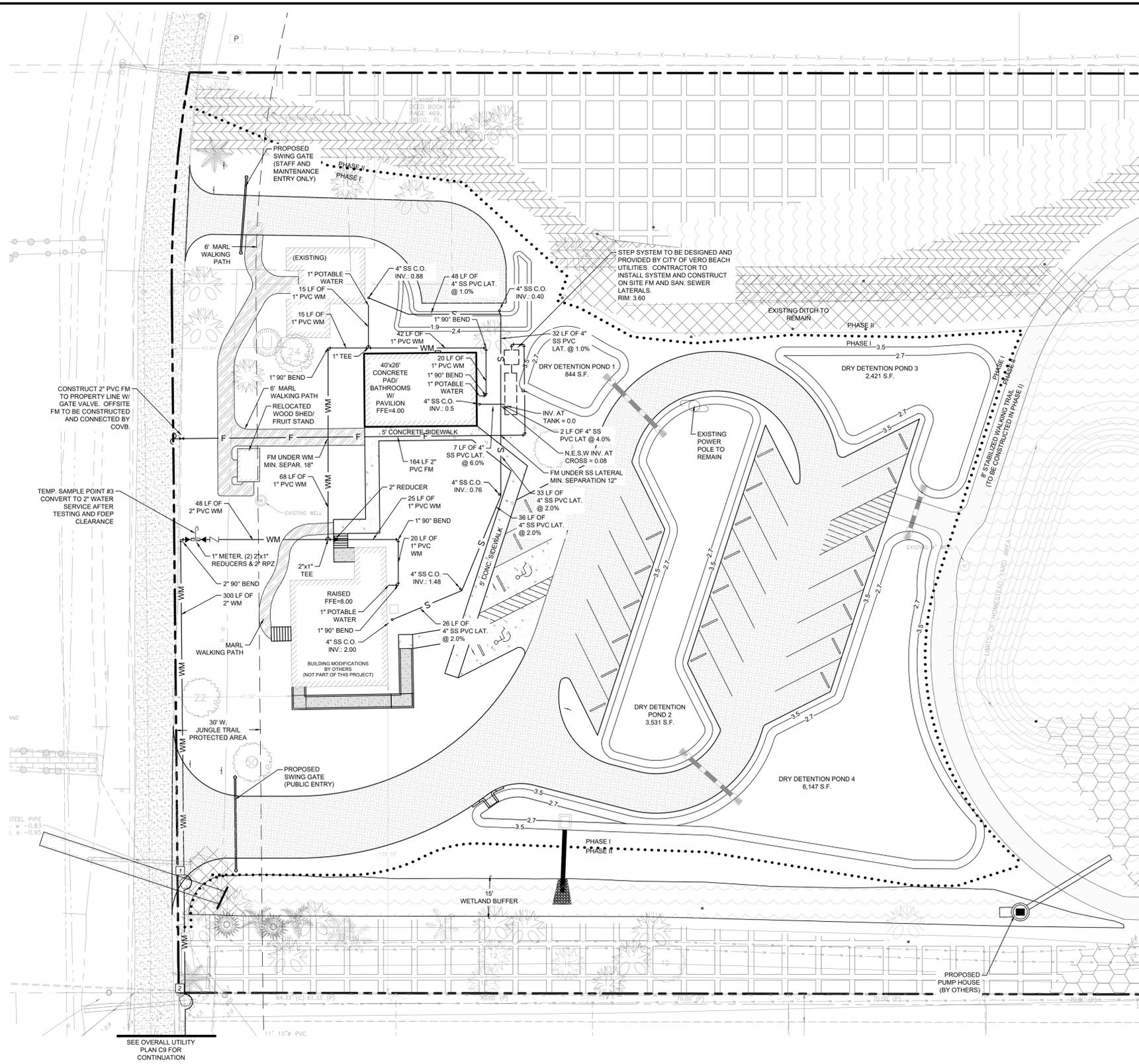
**MBV ENGINEERING, INC.**  
 WORKS: BOBILES WILLIAMS & ASSOCIATES  
 ENGINEERING CA #3728  
 1830 - 20TH STREET  
 VERO BEACH, FL 32960  
 FL. P.E. #72460  
 TEL: (772) 772-3817  
 MELBOURNE, FL - PH: (321) 253-1500  
 FT. PIERCE, FL - PH: (772) 468-9005

**OVERALL UTILITY PLAN**

**JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1**

AARON G. STANTON  
 LICENSE No. 72460  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER





**FDEP SEPARATION CRITERIA:**

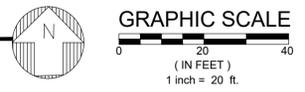
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**LEGEND**

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- PROPOSED WALKING PATH
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- EXISTING SANITARY SEWER
- EXISTING FORCE MAIN
- PROPOSED WATER MAIN
- PROPOSED WATER MAIN
- UTILITY CONFLICT (SEE TABLE)
- LIMITS OF CONSTRUCTION/ PHASE LINE

**UTILITY PLAN ENLARGEMENT**

SCALE: 1" = 20'



CONFLICT TABLE					
CONFLICT NUMBER	GROUND ELEV.	UPPER PIPE	UPPER PIPE BOTTOM	LOWER PIPE TOP	SEPARATION
1	2.60	EX. 12" STORM	(-)0.89	2" WM	(-)2.39
2	2.40	EX. 15" STORM	(-)0.75	2" WM	(-)2.25



**REVISIONS**

NO.	DATE	DESCRIPTION
1	10-17-2018	PER CIVIL DEPT
2	11-21-2018	PER CIVIL DEPT
3	03-22-2018	PER CIVIL DEPT
4	09-09-2019	PHASING COORDINATION
5	09-11-2019	L.S. TO STEP SYSTEM
6	10-28-2019	CONSTRUCTIBILITY REVIEW

**DATE ISSUED:** 10/28/2019

**DESIGNED:** ND

**DRAWN:** RT

**CHECKED:** AS

**DATE:** 03-22-2018

**JOB NO.:** 17-0133

**CONTRACT:** 17-0133

**PROJECT:** JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1

**CLIENT:** INDIAN RIVER COUNTY

**LOCATION:** FLORIDA

**SCALE:** 1" = 20'

**PROJECT NO.:** 17-0133

**DATE:** 10/28/2019

**ISSUED BY:** AS

**DATE:** 10/28/2019

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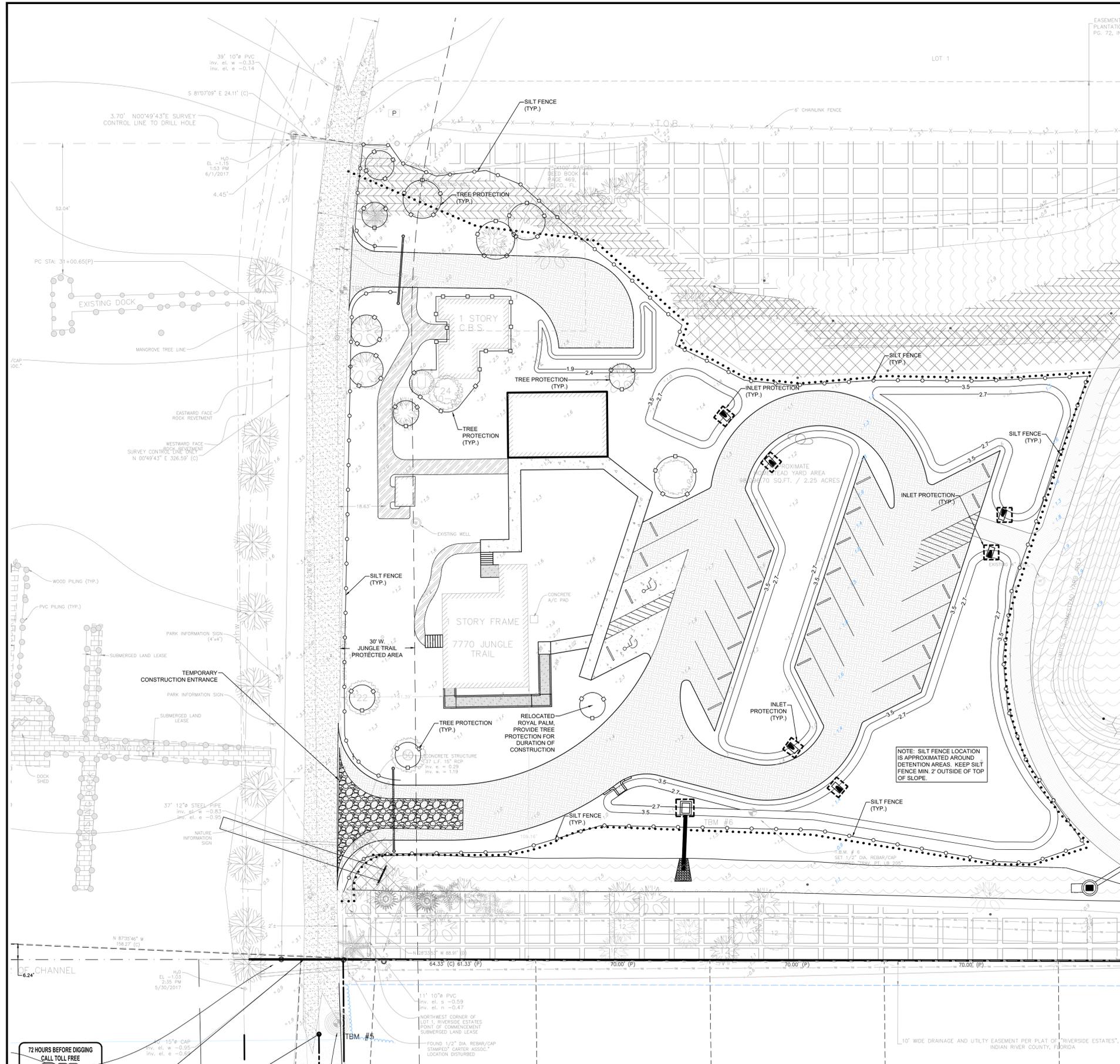
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**LEGEND**

- SILT FENCE
- TREE PROTECTION FENCE/ORANGE BARRICADE FENCE
- INLET PROTECTION
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- PROPOSED ASPHALT MILLINGS
- PROPOSED CONCRETE
- PROPOSED MARL WALKING PATH BETWEEN BUILDINGS
- EXISTING JUNGLE TRAIL
- LIMITS OF CONSTRUCTION/ PHASE LINE

**EROSION AND SEDIMENTATION CONTROL NOTES**

CONSTRUCTION ACTIVITIES CAN RESULT IN THE GENERATION OF SIGNIFICANT AMOUNTS OF POLLUTANTS WHICH MAY REACH SURFACE OR GROUND WATERS. ONE OF THE PRIMARY POLLUTANTS OF SURFACE WATERS IS SEDIMENT DUE TO EROSION. EXCESSIVE QUANTITIES OF SEDIMENT WHICH REACH WATER BODIES OF FLOOD PLAINS HAVE BEEN SHOWN TO ADVERSELY AFFECT THEIR PHYSICAL, BIOLOGICAL AND CHEMICAL PROPERTIES. TRANSPORTED SEDIMENT CAN OBSTRUCT STREAM CHANNELS, REDUCE HYDRAULIC CAPACITY OF WATER BODIES OF FLOOD PLAINS, REDUCE THE DESIGN CAPACITY OF CULVERTS AND OTHER WORKS, AND ELIMINATE BENTHIC INVERTEBRATES AND FISH SPAWNING SUBSTRATES BY SILTATION. EXCESSIVE SUSPENDED SEDIMENTS REDUCE LIGHT PENETRATION AND THEREFORE, REDUCE PRIMARY PRODUCTIVITY.

**MINIMUM STANDARDS**

1. SEDIMENT BASIN AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UNSLOPE LAND DISTURBANCE TAKES PLACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
3. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.
4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
6. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
7. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FROM THE LAND-DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DESIGN SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.
8. AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
9. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE DRAIN STRUCTURE.
10. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
11. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-ADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
12. BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
13. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENVOACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED WITH NONERODIBLE COVER MATERIALS.
14. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
16. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
17. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA.
  - A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
  - B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
  - C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
  - D. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
18. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE, WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, IN THE OPINION OF THE REVIEWER. DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
20. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DISPOSITION AND EROSION.
21. PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.
22. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 104 AND 105 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.
23. THE REVIEWER MAY APPROVE MODIFICATIONS OR ALTER PLANS TO THESE EROSION CONTROL CRITERIA DUE TO SITE SPECIFIC CONDITIONS.

**SEE SHEET C12 FOR EROSION CONTROL DETAILS**

NO.	REVISIONS	DATE
1	PER CIVIL AND IRC COMMENTS	10-17-2018
2	PER CIVIL AND IRC COMMENTS	10-17-2018
3	PER CIVIL AND IRC COMMENTS	10-17-2018
4	PHASING COORDINATION	03-22-2019
5	FORCE MAIN	09-09-2019
6	L.S. TO STEP SYSTEM	09-11-2019
7	CONSTRUCTIBILITY REVIEW	10-28-2019

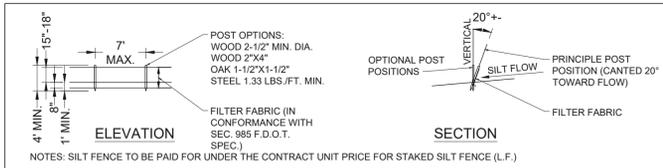
**EMBV ENGINEERING, INC.**  
 WOODS BOWLES WILLIAMS & ASSOCIATES  
 ENGINEERING & ASSOCIATES  
 1830 S. US HWY 1, SUITE 201H, STREET  
 VERO BEACH, FL 32960  
 PHONE: (772) 771-3817  
 FAX: (772) 771-3817  
 MEASUREMENT: E. - PH. (321) 253-1500  
 FT. PIERCE, FL. - PH. (772) 468-9005

**EROSION CONTROL PLAN**

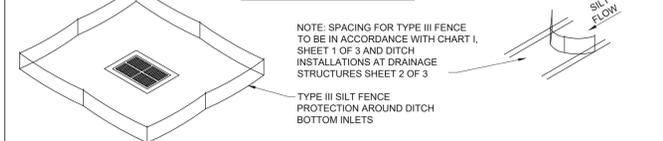
**JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1**

AARON G. STANTON  
 LICENSE No. 72460  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

72 HOURS BEFORE DIGGING  
 CALL TOLL FREE  
**811**  
 Know what's below.  
 Call before you dig.



**TYPE III SILT FENCE**



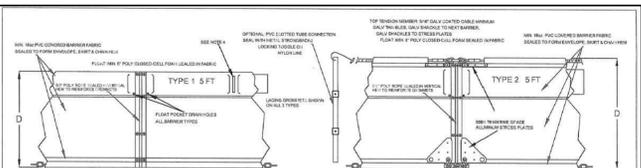
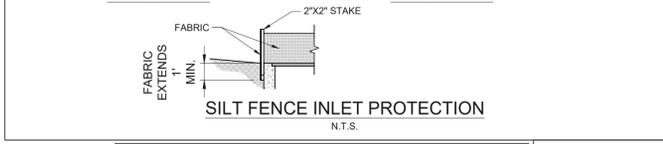
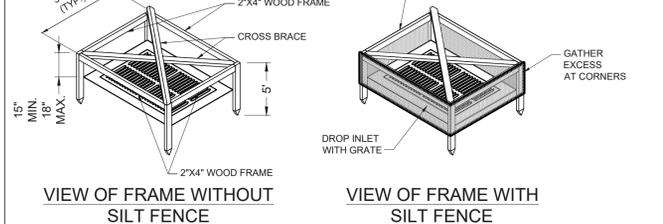
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

**SILT FENCE APPLICATIONS**

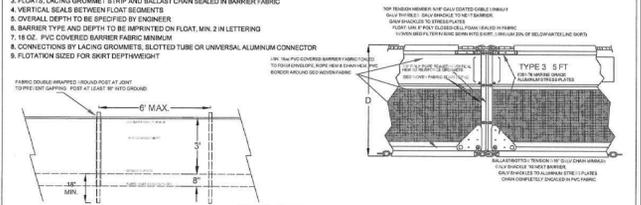
- NOTES:
- SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
  - INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. IF MAXIMUM RECOMMENDED STORAGE HEIGHT.
  - REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.



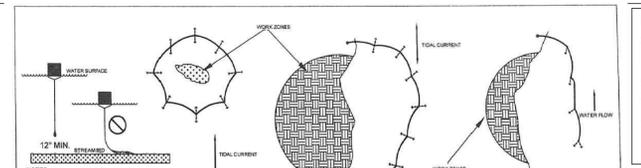
**TYPE IV SILT FENCE**



**TURBIDITY BARRIERS**

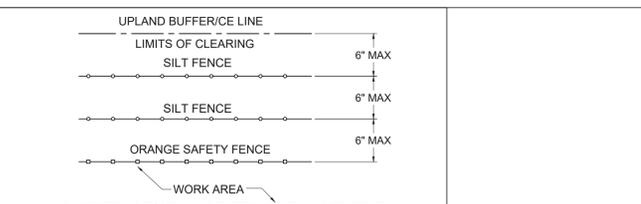


**TURBIDITY BARRIERS**

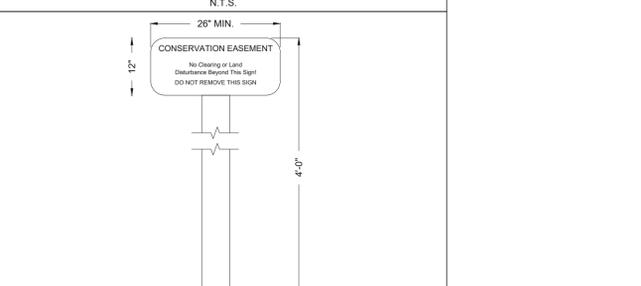


**TURBIDITY BARRIERS**

**TURBIDITY BARRIER APPLICATIONS**



**SILT FENCE/ORANGE FENCE PLACEMENT DETAIL AROUND WETLANDS**



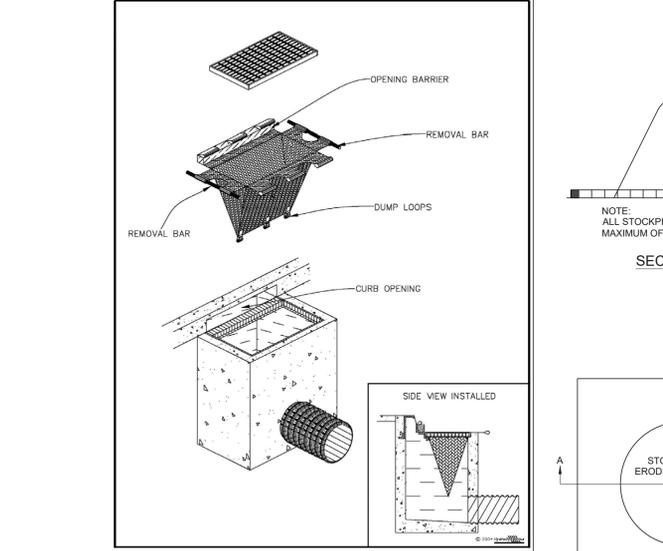
**CONSERVATION EASEMENT SIGN**

**EROSION AND SEDIMENTATION CONTROL NOTES**

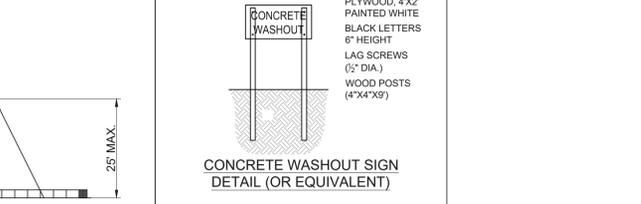
CONSTRUCTION ACTIVITIES CAN RESULT IN THE GENERATION OF SIGNIFICANT AMOUNTS OF POLLUTANTS WHICH MAY REACH SURFACE OR GROUND WATERS. ONE OF THE PRIMARY POLLUTANTS OF SURFACE WATERS IS SEDIMENT DUE TO EROSION. EXCESSIVE QUANTITIES OF SEDIMENT WHICH REACH WATER BODIES OF FLOOD PLAINS HAVE BEEN SHOWN TO ADVERSELY AFFECT THEIR PHYSICAL, BIOLOGICAL AND CHEMICAL PROPERTIES. TRANSPORTED SEDIMENT CAN OBSTRUCT STREAM CHANNELS, REDUCE HYDRAULIC CAPACITY OF WATER BODIES OF FLOOD PLAINS, REDUCE THE DESIGN CAPACITY OF CULVERTS AND OTHER WORKS, AND ELIMINATE BENTHIC INVERTEBRATES AND FISH SPANNING SUBSTRATES BY SILTATION. EXCESSIVE SUSPENDED SEDIMENTS REDUCE LIGHT PENETRATION AND THEREFORE, REDUCE PRIMARY PRODUCTIVITY.

**MINIMUM STANDARDS**

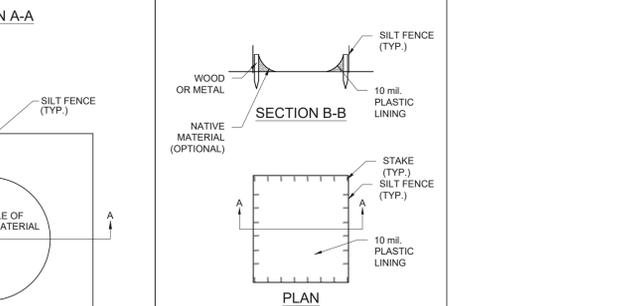
- SEDIMENT BASIN AND TRAPS, PERMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UNSLOPE LAND DISTURBANCE TAKES PLACE.
- ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL OR BALANCE OF SITE. PERMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
- PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.
- DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
- A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
- STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
- SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FROM THE LAND-DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DESIGN SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.
- AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
- CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
- WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
- SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
- BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
- WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND CORKERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
- WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
- THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
- PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
- UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
  - NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
  - EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
  - EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
  - RESTALLATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
- WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
- ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, IN THE OPINION OF THE REVIEWER. DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
- PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DISPOSITION AND EROSION.
- PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.
- EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 104 AND 105 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.
- THE REVIEWER MAY APPROVE MODIFICATIONS OR ALTER PLANS TO THESE EROSION CONTROL CRITERIA DUE TO SITE SPECIFIC CONDITIONS.



**INLET INSERT SEDIMENT CONTAINMENT SYSTEM**



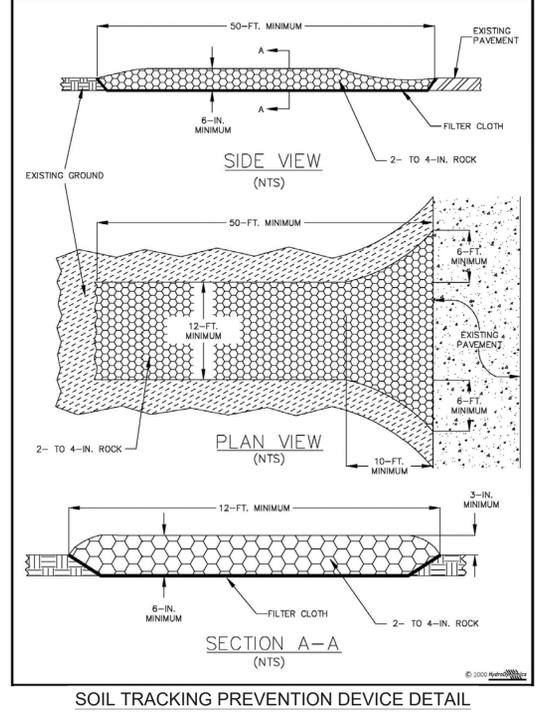
**CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)**



**TYPE "ABOVE GRADE" WITH SILT FENCE**



**SEDIMENT CONTROL DETAIL FOR STOCKPILING OF ERODIBLE MATERIAL**



**SOIL TRACKING PREVENTION DEVICE DETAIL**



NO.	DESCRIPTION	DATE
1	CONSTRUCTIBILITY REVIEW	10-28-2019
2	L.S. TO STEP SYSTEM	09-11-2019
3	FORCE MAIN	08-09-2019
4	PHASING COORDINATION	03-22-2019
5	1\"/>	
6	PER COVB UTIL DEPT	11-21-2018
7	PER COVB AND IRC COMMENTS	10-31-2018
8		10-17-2018

NO.	DESCRIPTION	DATE
1	ISSUED	10/28/2019

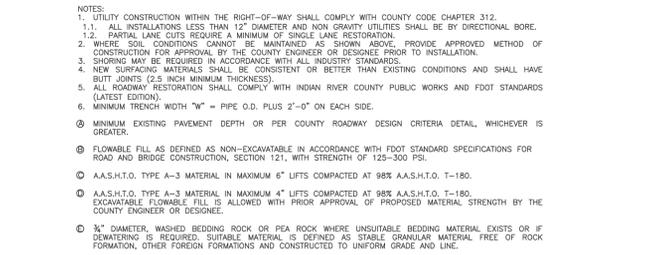
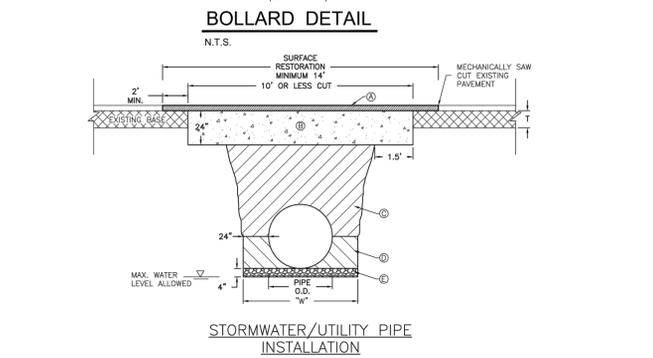
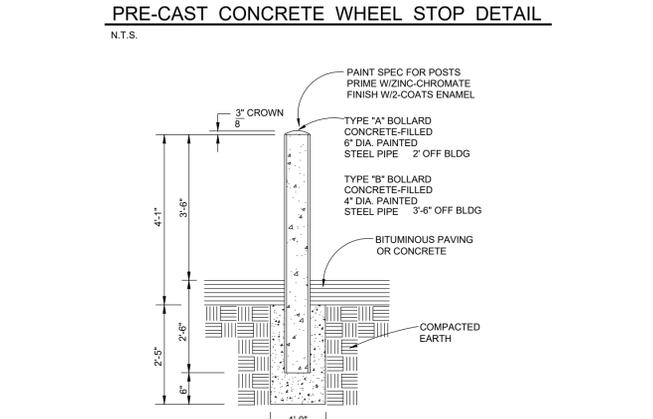
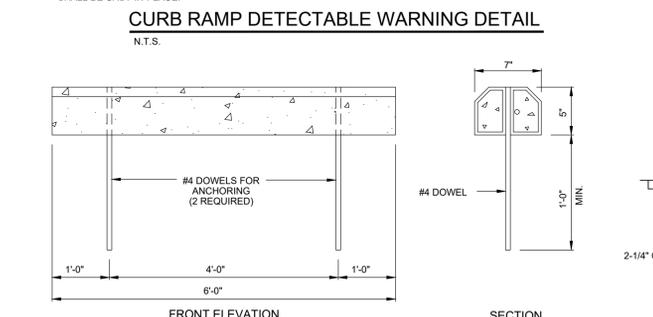
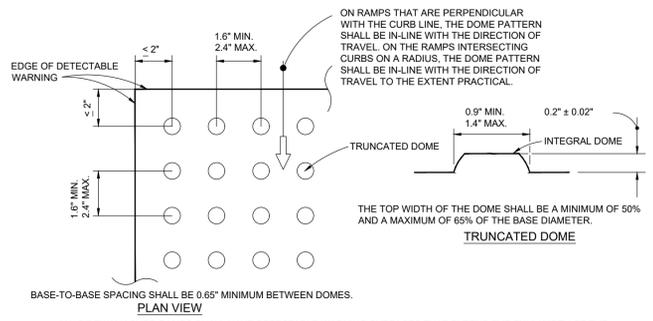
**JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1**

INDIAN RIVER COUNTY, FLORIDA

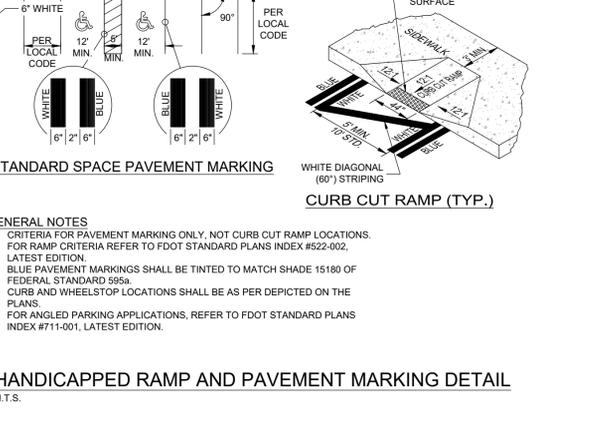
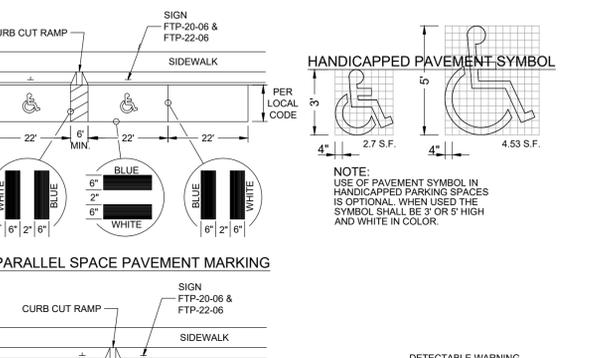
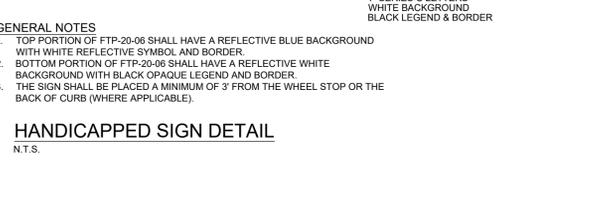
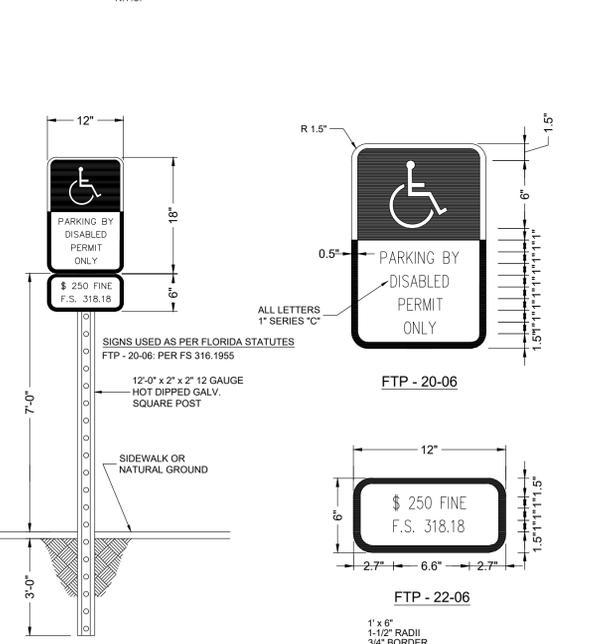
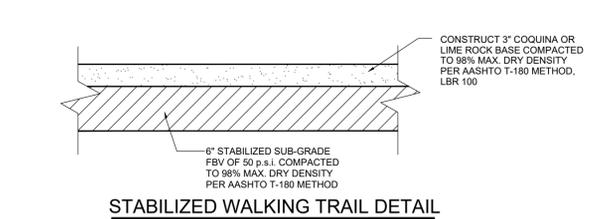
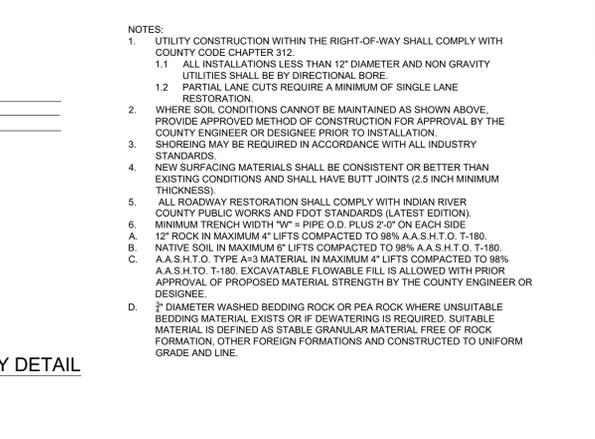
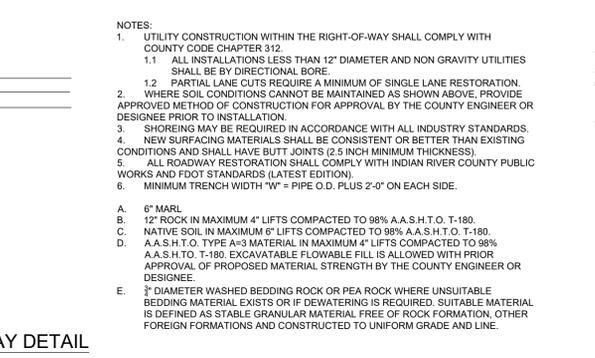
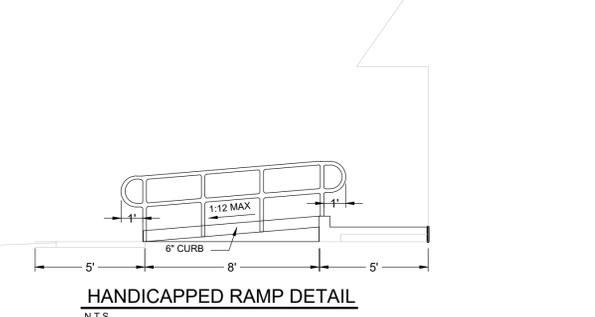
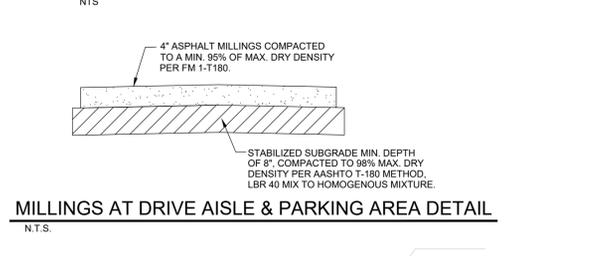
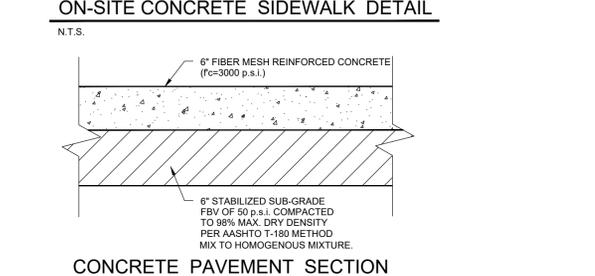
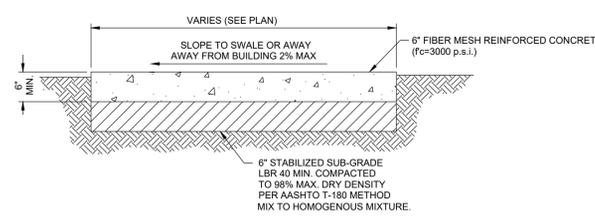
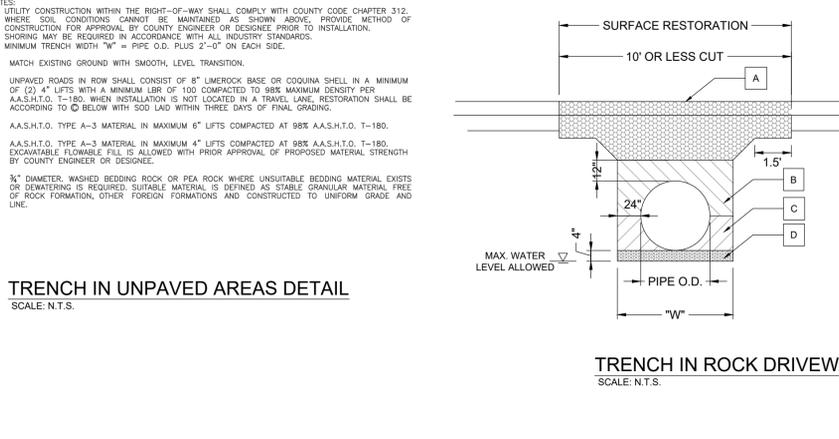
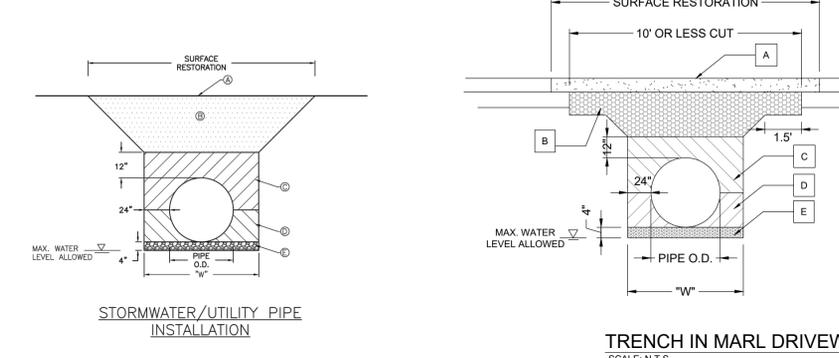
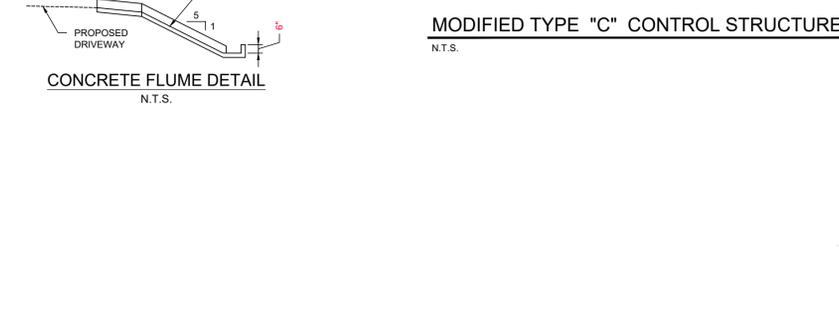
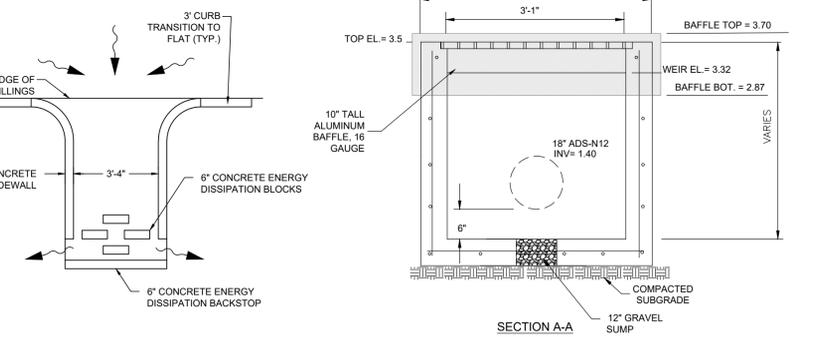
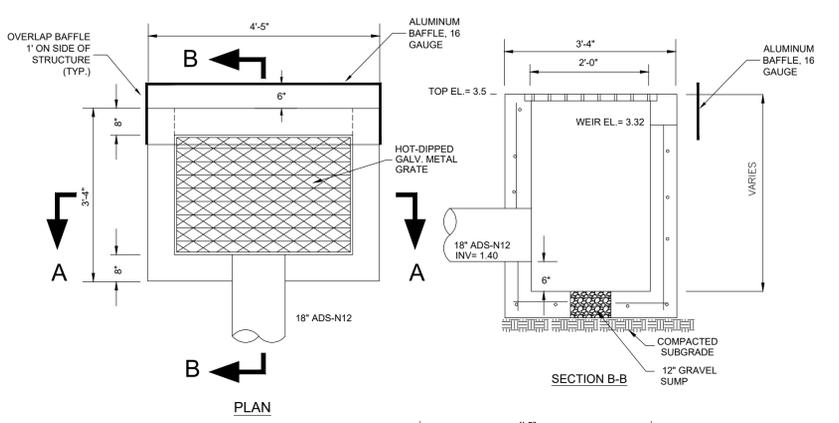
**AARON G. STANTON**  
No. 72460  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

AARON G. STANTON  
FL. P.E. #72460 DATE: \_\_\_\_\_

SHEET **C12** OF 17  
17-0133



72 HOURS BEFORE DIGGING CALL TOLL FREE **811** Know what's below. Call before you dig.



NO.	REVISIONS	DATE
1	PER CIVIL AND IRC COMMENTS	10-17-2018
2	PER CIVIL UTIL DEPT	11-21-2018
3	15' U TO CITY OF VERO BEACH	10-31-2018
4	PHASING COORDINATION	09-22-2019
5	FORCE MAIN	09-09-2019
6	L.S. TO STEP SYSTEM	09-11-2019
7	CONSTRUCTIBILITY REVIEW	10-28-2019

JOB NO.	DESIGNED	DRAWN	DATE	CHECKED	DATE ISSUED
17-0133	ND	RT	03-22-2018	AS	10/28/2019

**MBV ENGINEERING, INC.**  
MOHA BOWLES VILLAMIZAR & ASSOCIATES  
CIVIL & MECHANICAL ENGINEERING CA #3728  
VERO BEACH, FL 32909  
1085 30TH STREET  
VERO BEACH, FL 32909  
TEL: (772) 776-3411  
FAX: (772) 776-3411

GENERAL DETAILS

JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1

FLORIDA

AARON G. STANTON  
LICENSE No. 72460  
STATE OF FLORIDA  
PROFESSIONAL ENGINEER

AARON G. STANTON  
FL. P.E. #72460 DATE:

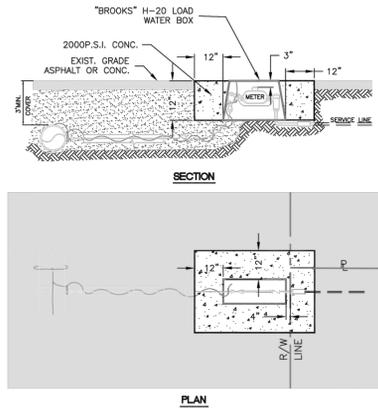
SHEET

**C13**

OF 17

17-0133





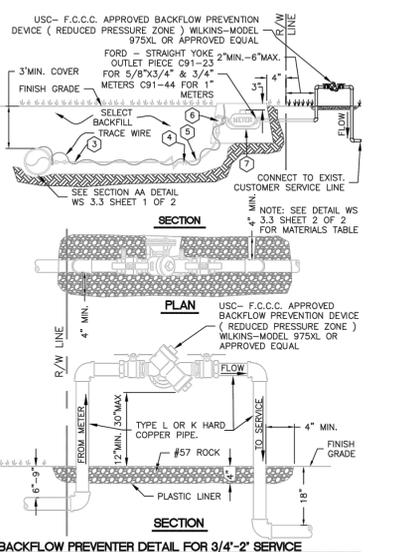
POTABLE WATER SERVICE DETAIL FOR 5/8" X 3/4" - 2" METERS  
N.T.S.

**MATERIALS TABLE - POTABLE WATER SERVICE DETAIL FOR 5/8" X 3/4" - 2" METERS**

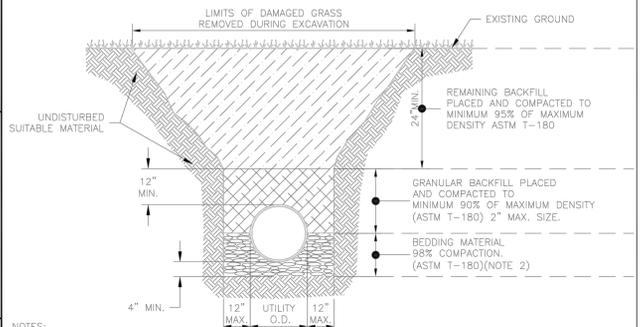
SERVICE/COMPONENT	1	2	3	4	5	6	7	8	9	10	11
FORD-BRASS TAPPING SADDLE OR TEE	1" 571-591 OR 2028										
FORD-BRASS BALL/LOOP COUP. STOP	FB1100-40NL										
POLY-ETHYLENE	1" BLACK										
FORD-BRASS 1" BRANCH VALVE	N/A										
POLY-ETHYLENE	N/A										
FORD-BRASS ANGLE YOE VALVE	N/A										
FORD METER YOE	AV94-324WNL 1"5/8"CTS										
FORD CHECK VALVE	Y502	Y503	Y504	Y505	Y506	Y507	Y508	Y509	Y510	Y511	Y512
FORD-BRASS VALVE	3/4" H2021-333NL										
BRASS STEEL JOINT PIP. SLEEVE	1" STREET ELL MPT X FIFT										
BRASS OR PVC SPOOL PIECES	TO MATCH EXISTING										
COMPRESSION FITTING OR CLIE JOINT PVC SLEEVE	TO MATCH EXISTING										



POTABLE WATER SERVICE DETAIL FOR 5/8" X 3/4" - 2" METERS  
N.T.S.

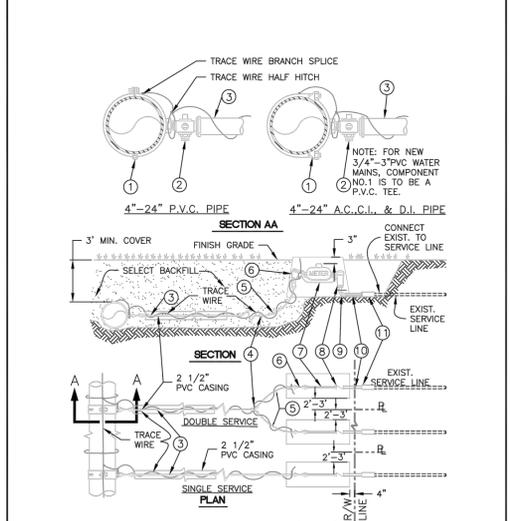


BACKFLOW PREVENTER DETAIL FOR 3/4" - 2" SERVICE  
N.T.S.



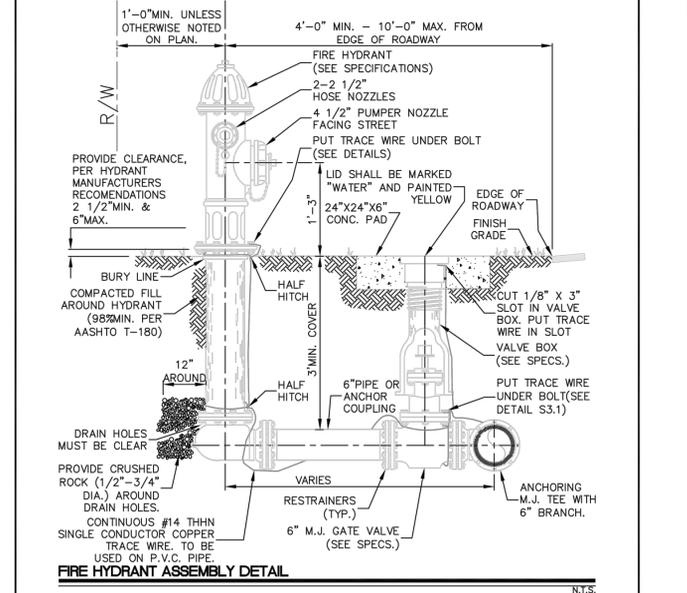
NOTES:  
 1. BEDDING SHALL CONSIST OF IN-SITU GRANULAR MATERIAL OR WASHED AND GRADED LIMEROCK #8 SIZING. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.  
 2. THE PIPE SHALL BE FULLY SUPPORTED FOR ITS ENTIRE LENGTH WITH APPROPRIATE COMPACTION UNDER THE PIPE HAUNCHES.  
 3. THE PIPE SHALL BE PLACED IN A DRY TRENCH.  
 4. BACKFILL SHALL BE FREE OF UNSUITABLE MATERIAL SUCH AS LARGE ROCK, MUCK, AND DEBRIS.  
**TYPICAL SECTION GRASS RESTORATION DETAIL**  
 (FOR EXCAVATION ACROSS GRASS AREAS)  
 N.T.S.

CITY OF VERO BEACH WATER AND SEWER DEPARTMENT ENGINEERING DIVISION  
 POTABLE WATER SERVICE H-20 LOAD BOX DETAIL  
 DATE: 11/16/90  
 DRAWN BY: T.A.Y.  
 APPR: CCBOX  
 REV: 9/06/2013  
 WS 33  
 PAGE 1 OF 1



POTABLE WATER SERVICE DETAIL FOR 5/8" X 3/4" - 2" METERS  
N.T.S.

CITY OF VERO BEACH WATER AND SEWER DEPARTMENT ENGINEERING DIVISION  
 POTABLE WATER SERVICE DETAIL FOR 5/8" X 3/4" - 2" METERS  
 DATE: 11/16/90  
 DRAWN BY: T.A.Y.  
 APPR: WS 33  
 REV: 8/20/2013  
 WS 33  
 PAGE 1 OF 1



FIRE HYDRANT ASSEMBLY DETAIL  
N.T.S.

CITY OF VERO BEACH WATER AND SEWER DEPARTMENT ENGINEERING DIVISION  
 FIRE HYDRANT ASSEMBLY DETAIL  
 DATE: 5/22/87  
 DRAWN BY: T.A.Y.  
 APPR: WS 23  
 REV: 8/16/2013  
 WS 23  
 PAGE 1 OF 1

CITY OF VERO BEACH WATER AND SEWER DEPARTMENT ENGINEERING DIVISION  
 BACKFLOW PREVENTER DETAIL FOR 3/4" - 2" SERVICE  
 DATE: 12/16/85  
 DRAWN BY: T.A.Y.  
 APPR: WS 61  
 REV: 9/06/2013  
 WS 61  
 PAGE 1 OF 1

CITY OF VERO BEACH WATER AND SEWER DEPARTMENT ENGINEERING DIVISION  
 TYPICAL SECTION GRASS RESTORATION DETAIL  
 DATE: 4/8/01  
 DRAWN BY: T.A.Y.  
 APPR: WS 61  
 REV: 5/23/07  
 WS 61  
 PAGE 1 OF 1

**REVISIONS**

NO.	DATE	DESCRIPTION
1	10-17-2018	PER COVB AND IRC COMMENTS
2	11-21-2018	PER CITY OF VERO BEACH
3	03-22-2019	PHASING COORDINATION
4	09-09-2019	FORCE MAIN
5	09-11-2019	L.S. TO STEP SYSTEM
6	10-28-2019	CONSTRUCTIBILITY REVIEW

DATE ISSUED: 10/28/2019  
 JOB NO. 17-0133  
 DESIGNED: ND  
 DRAWN: RT  
 CHECKED: AS  
 DATE: 03-22-2018  
 PER COVB AND IRC COMMENTS

**MBV ENGINEERING, INC.**  
 MOA BOWLES-VILLAMIZAR & ASSOCIATES  
 CIVIL & MECHANICAL ENGINEERING  
 1015 30TH STREET  
 VERO BEACH, FL 33460  
 TEL: 888-888-8888  
 FAX: (888) 888-8888

COVB STANDARD UTILITY DETAILS

JONES PIER WETLAND RESTORATION AND CONSERVATION IMPROVEMENTS PHASE 1  
 INDIAN RIVER COUNTY, FLORIDA

AARON G. STANTON  
 LICENSE No. 72460  
 STATE OF FLORIDA  
 PROFESSIONAL ENGINEER

AARON G. STANTON  
 FL P.E. #72460  
 DATE: \_\_\_\_\_

SHEET  
**C15**  
 OF 17  
 17-0133



