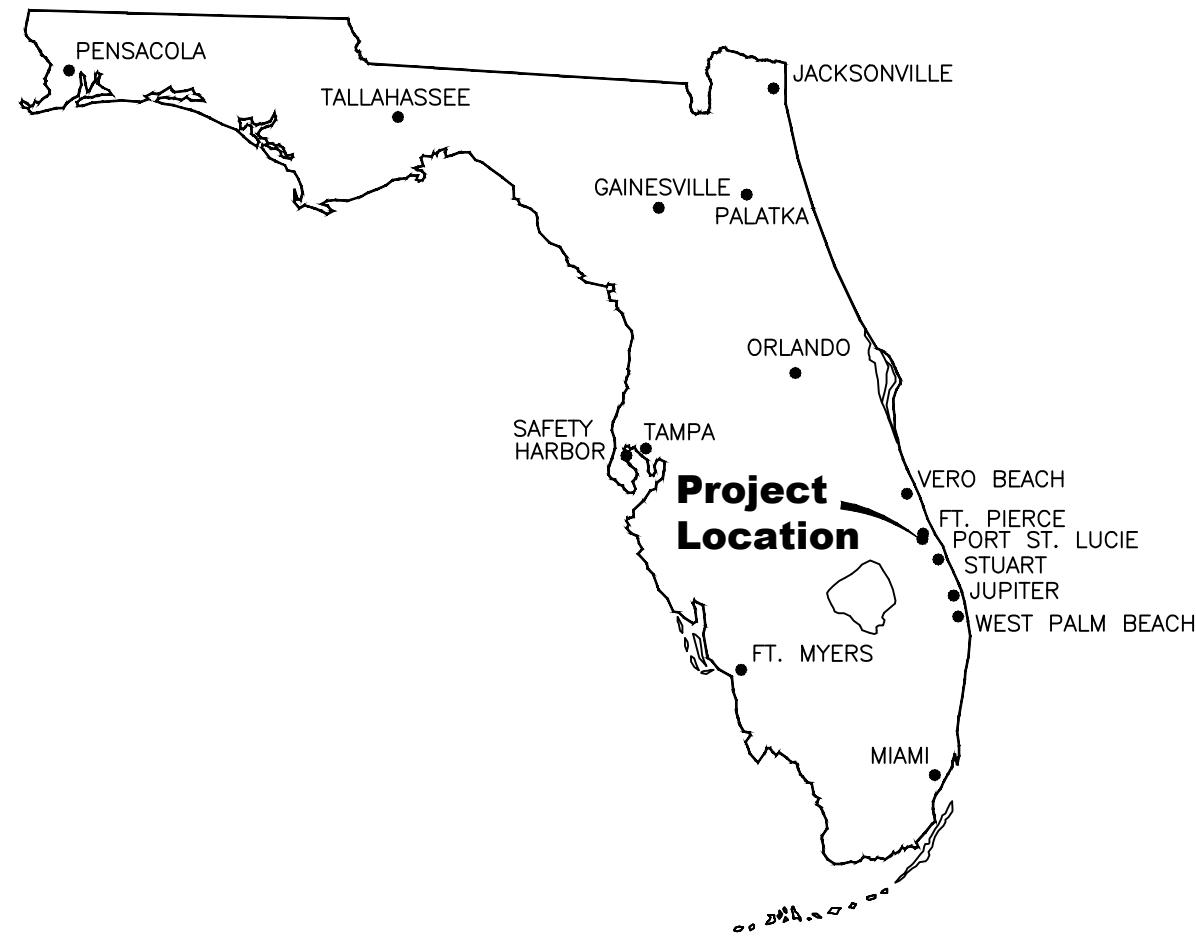




Construction Plans and Specifications Of McCARTY RANCH EXTENSION WATER QUALITY RESTORATION PROJECT - AREA 4

For City of Port St. Lucie Lying In Secs. 25-27 & 34-36, Twp. 37 S., Rng. 38 E. St. Lucie County, Florida



LOCATION MAP

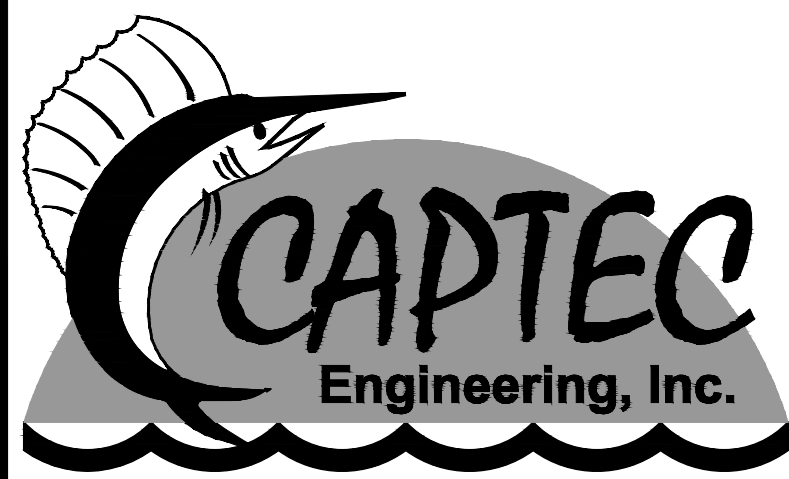
NOTES:
THESE PLANS ARE IN ENGLISH UNITS
ALL ELEVATIONS HEREIN REFERENCE N.A.V.D.
1988 DATUM. ADD 1.489 FEET TO CONVERT TO
N.G.V.D. 1929 DATUM. ALL CONSTRUCTION IS TO
BE IN ACCORDANCE WITH FLORIDA DEPARTMENT
OF TRANSPORTATION STANDARDS AND
SPECIFICATIONS, 2019 EDITION.

CLIENT

**CITY OF PORT ST. LUCIE
UTILITY SYSTEMS DEPARTMENT
JOHN EASON, P.E., PROJECT MANAGER
900 SE OGDEN LANE
PORT ST. LUCIE, FL 34983
PHONE: (772) 873-6487**

ENGINEER

**JOSEPH W. CAPRA, P.E.
CAPTEC ENGINEERING, INC.
301 N.W. FLAGLER AVENUE
STUART, FLORIDA 34994
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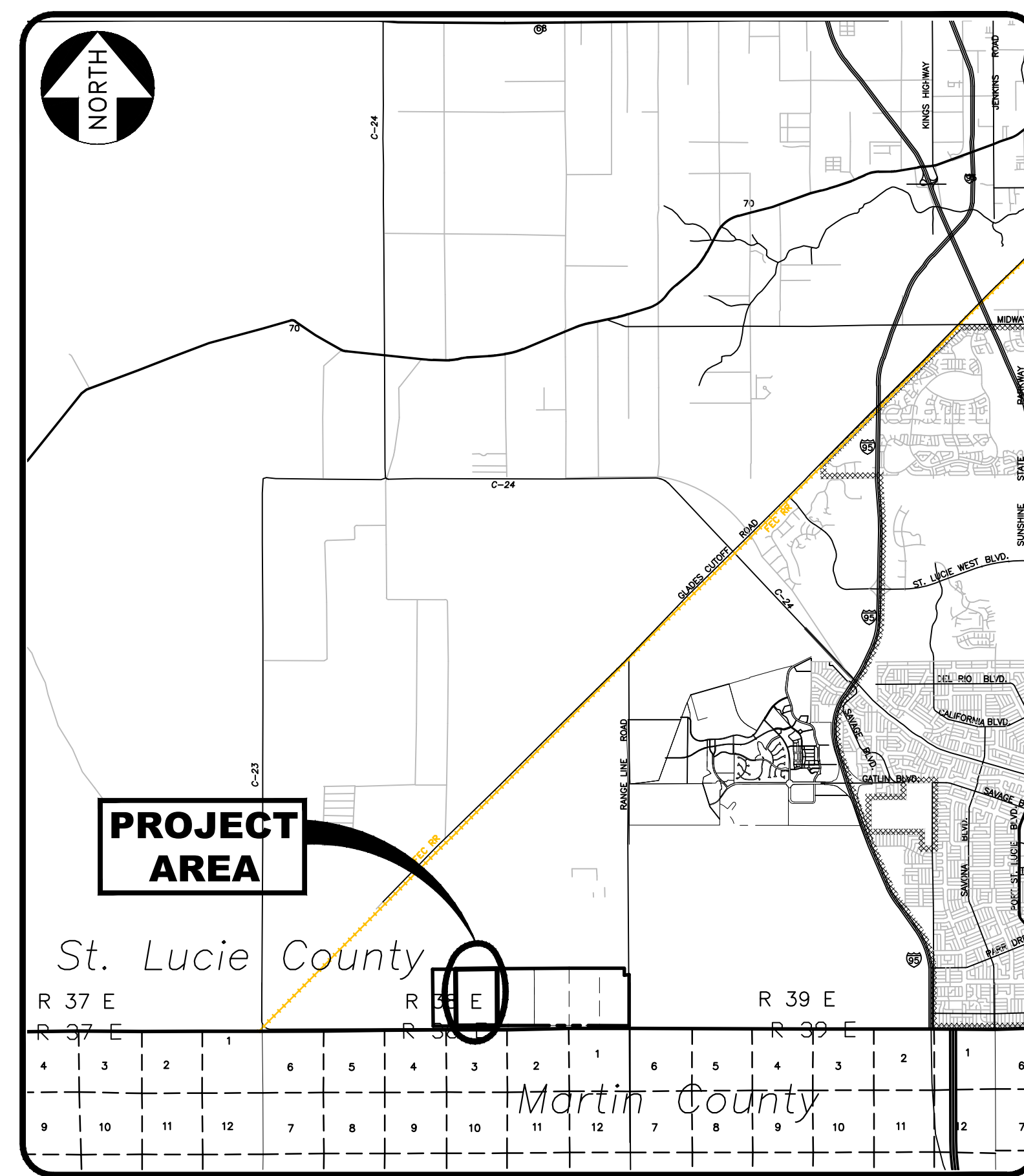


Civil Engineering
Professionals

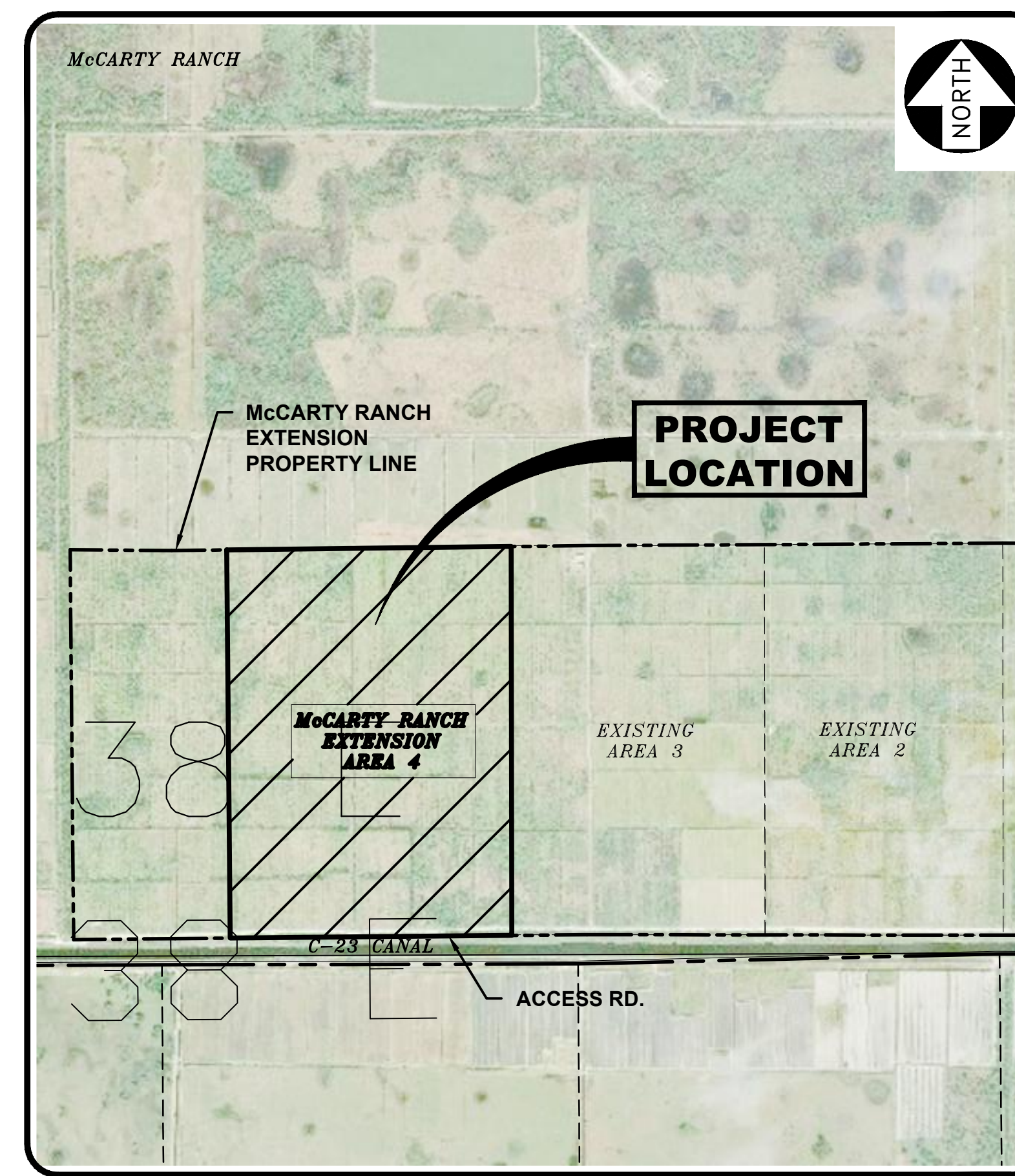
Civil Engineering Professionals

Engineering Business
No. EB-0007657

301 N.W. Flagler Avenue
Stuart, Florida 34994
Phone: (772) 692-4344
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Vicinity Map
N.T.S.



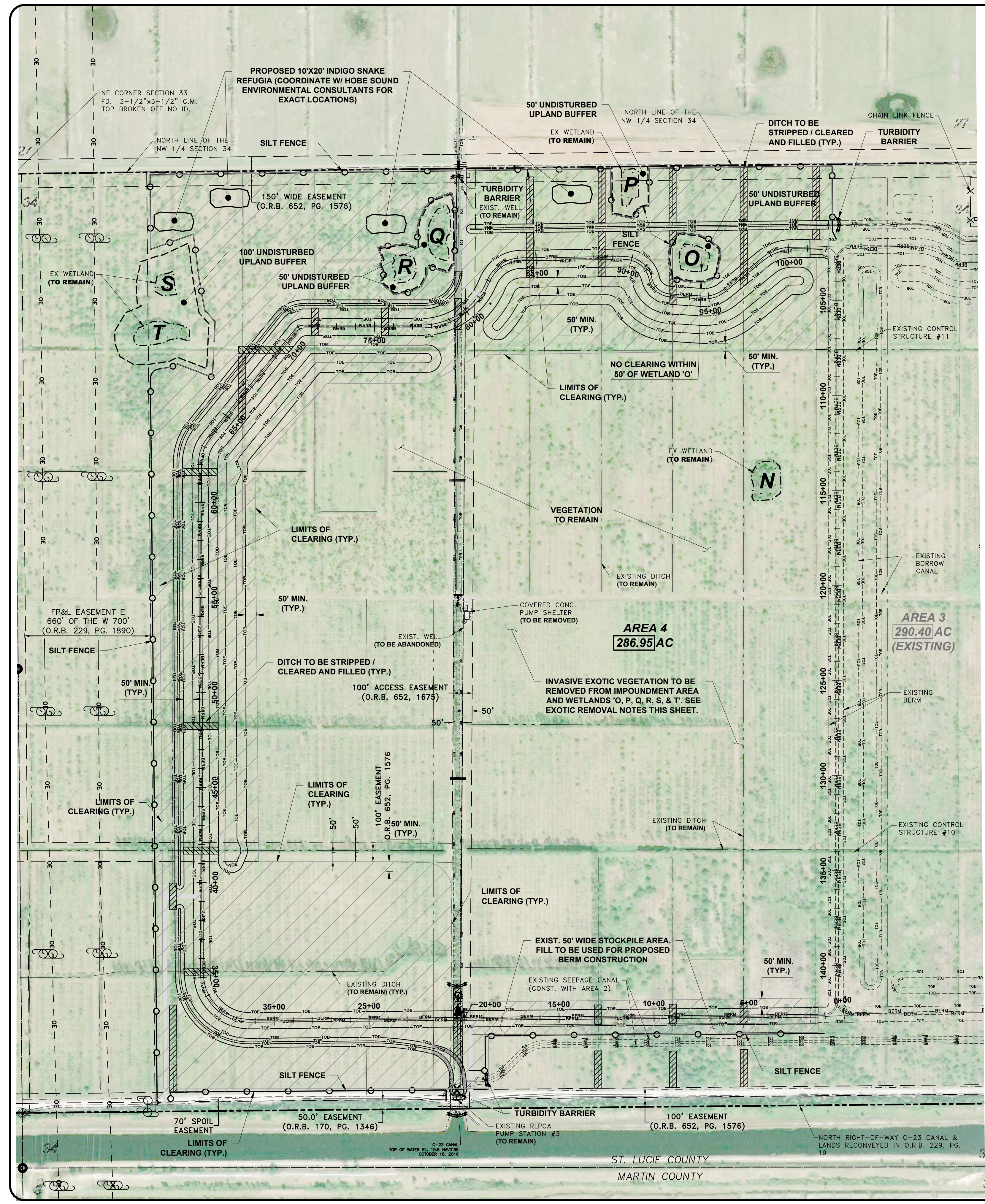
Site Map
N.T.S.

SHEET INDEX

SHEET NUMBER	SHEET TITLE/DESCRIPTION
1	COVER
2	OVERALL SITE PLAN
3	CLEARING, STORMWATER POLLUTION PREVENTION PLAN
4	SITE PLAN
5	CROSS SECTIONS, SHEET 1 OF 2
6	CROSS SECTIONS, SHEET 2 OF 2
7	PUMP STATION PIPING PLAN
8	DETAILS
9	GENERAL NOTES 1
10	GENERAL NOTES 2

BID SET
DATE: 4/6/21





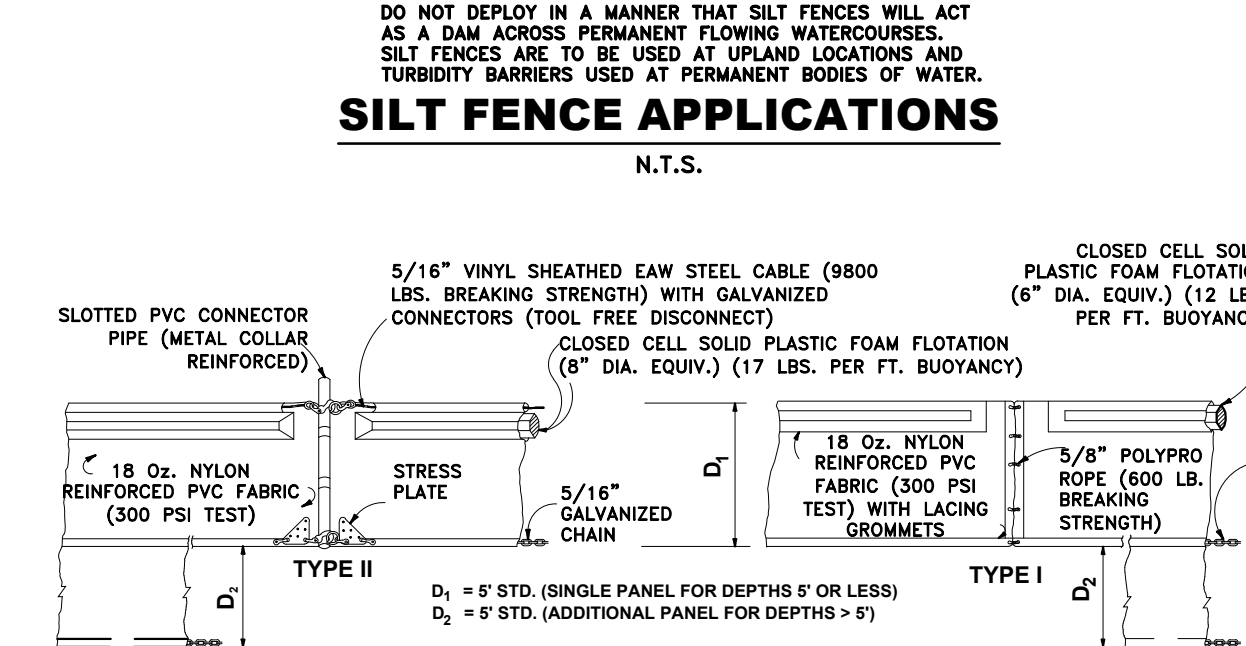
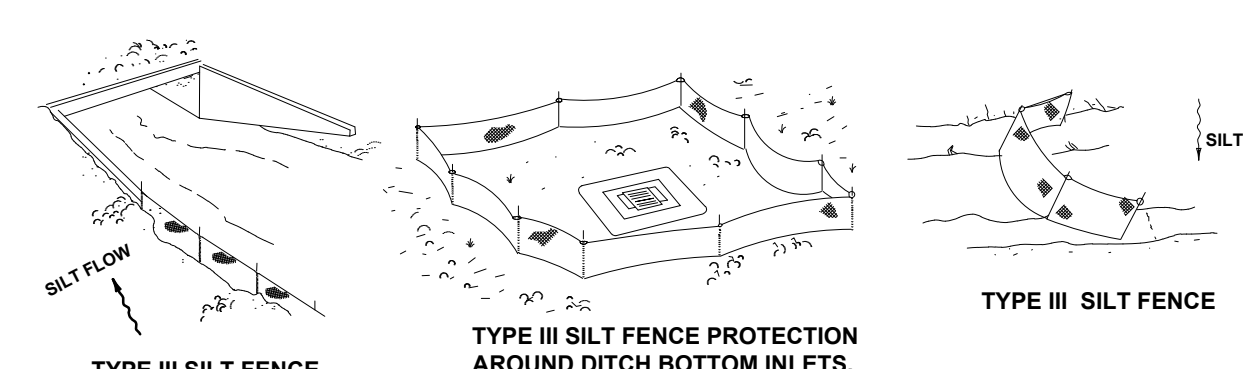
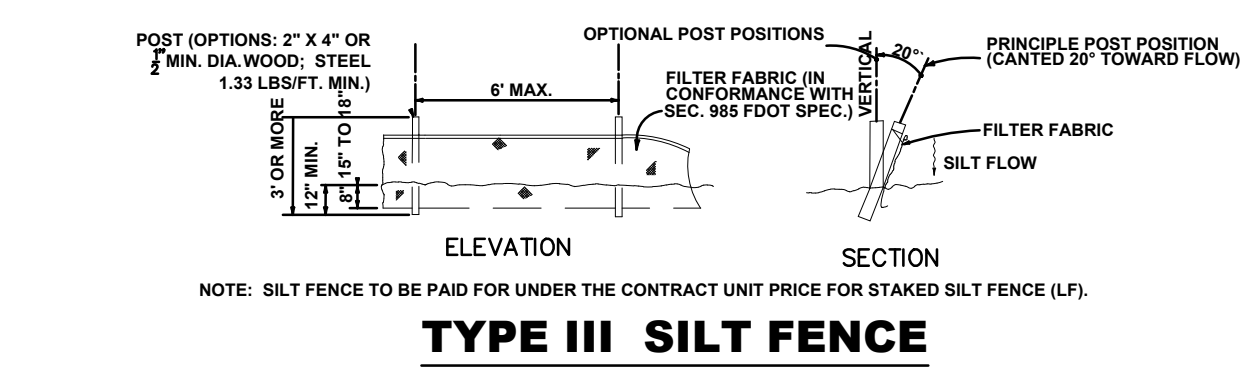
LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SECTION LINE
- TURBIDITY BARRIER
- EX DITCH CENTERLINE
- EX POWER POLE
- TEMPORARY BENCHMARK
- LIMITS OF CLEARING APPROX. 141 ACRES
- AREA WITHIN BERMS
- SILT FENCE
- UNDISTURBED WETLAND BUFFER (TYP)
- WETLAND LIMITS
- WELL LOCATION
- EXISTING DITCH TO BE DEMUCKED AND BACKFILLED FOR BERM CONSTRUCTION

GRAPHIC SCALE
SCALE: 1" = 300'

- GENERAL NOTES**
- UNLESS DENOTED AS CLEARING/GRUBBING THE VEGETATION WITHIN THE IMPOUNDMENT AREAS WILL TYPICALLY NOT BE REMOVED OR ADJUSTED EXCEPT FOR WOODY CATEGORY 1 EXOTIC VEGETATION. THIS AREA WILL BE FLOODED AND VEGETATION WILL REMAIN.
 - ALL WOODY CATEGORY 1 INVASIVE EXOTIC VEGETATION TO BE ERADICATED FROM INSIDE THE IMPOUNDMENT AREAS AND FROM INSIDE THE LIMITS OF WETLAND O, P, Q, R, S & T. THIS INCLUDES BUT IS NOT LIMITED TO BRAZILIAN PEPPER, PERUVIAN PRIMROSE WILLOW, DOWNY ROSE MYRTLE, AND EUCALYPTUS. THIS SHALL BE ACCOMPLISHED BY PULCHING OVER THE TREES AND SHRUBS AND BURNING THEM ONSITE. REMOVAL OF EXOTICS MAY BE COMPLETED BY HAND REMOVAL OR MECHANICALLY AS LONG AS EQUIPMENT IS MINIMALLY INVASIVE AND IS APPROVED BY THE PROJECT ENVIRONMENTAL CONSULTANT.
 - ERADICATION OF EXOTICS SHALL BE COMPLETED DURING CLEARING ACTIVITIES AS EXPEDITIOUS AS POSSIBLE.
- EXOTIC REMOVAL NOTES**
- DITCHES TO BE FILLED SHOULD BE STRIPPED AND CLEANED OF ALL SURFACE VEGETATION, STUMPS, DEBRIS, ORGANIC TOPSOIL, MUCK, SOFT SEDIMENT, LOOSE SOIL, OR OTHER DELETERIOUS MATERIAL, AS ENCOUNTERED.
 - EXCAVATED UNSUITABLE MATERIAL MAY NOT BE USED AS FILL OR BACKFILL MATERIAL.
 - STRIPPING AND CLEANING OF DITCHES UNDER PROPOSED BERMS MUST BE EXTENDED A MINIMUM OF 10' BEYOND TOE OF BERM.
 - FILL MUST BE PLACED IN INDIVIDUAL LIFTS NOT EXCEEDING 12" AND COMPACTED TO 98% OF MODIFIED PROCTOR, MAXIMUM DRY DENSITY VALUE.
 - REFER TO SUBSURFACE SOIL EXPLORATION, McCARTY RANCH WATER FARMING AREA 4, BY ARDAMAN & ASSOCIATES (2/6/20).
- CLEARING NOTES**
- CLEARED AREA OUTSIDE OF BERM TO BE LEVELED FOR MAINTENANCE.
 - UNLESS OTHERWISE NOTED, ALL EXISTING CULVERTS WITHIN THE LIMITS OF CLEARING WILL BE REMOVED AND DISPOSED OF BY CONTRACTOR. THIS ITEM TO BE PAID UNDER THE DEMOLITION ITEM.
 - CONTRACTOR SHOULD BE AWARE THAT THERE ARE NUMEROUS UNMARKED IRRIGATION PIPES THROUGHOUT THE SITE. ANY DEBRIS THAT IS EXCAVATED WITH THE BORROW MATERIAL NEEDS TO BE FULLY REMOVED BY HAND OR OTHER METHODS. OTHERWISE, THE EMBANKMENT LIFTS WILL NOT BE TESTED AND ACCEPTED.
 - STRIPPINGS AND MUCK MATERIAL TO BE DISPOSED OF INSIDE THE IMPOUNDMENT AND SPREAD EVENLY SO THAT THE MOUND OF MATERIAL WILL LIE BELOW THE PROPOSED WATER ELEVATION OF 32.00 NAVD.
 - ALL CLEARING ACTIVITIES MUST BE MONITORED BY THE PROJECT ENVIRONMENTAL CONSULTANT TO PROTECT THE ENDANGERED EASTERN INDIGO SNAKE.
- SOIL EROSION NOTES**
- 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 SWALES, ADJACENT PROPERTIES, OR RETENTION DITCHES. ALL EXIST. SWALES SHALL REMAIN SODDED/SEEDED & MULCHED (STABILIZED) DURING CONSTRUCTION. THE CONTRACTOR SHALL SCARIFY ONLY AS NECESSARY TO CONSTRUCT THE PROJECT. SILTATION BARRIERS AND HAY BALES SHALL BE UTILIZED AS PER PROVIDED DETAILS. UPON COMPLETION OF THE SITE WORK, ALL AREAS SHALL BE SODDED/SEEDED & MULCHED (STABILIZED) 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.
 - 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).
 - 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.

- EXISTING DITCH FILL NOTES**
- DITCHES TO BE FILLED SHOULD BE STRIPPED AND CLEANED OF ALL SURFACE VEGETATION, STUMPS, DEBRIS, ORGANIC TOPSOIL, MUCK, SOFT SEDIMENT, LOOSE SOIL, OR OTHER DELETERIOUS MATERIAL, AS ENCOUNTERED.
 - EXCAVATED UNSUITABLE MATERIAL MAY NOT BE USED AS FILL OR BACKFILL MATERIAL.
 - STRIPPING AND CLEANING OF DITCHES UNDER PROPOSED BERMS MUST BE EXTENDED A MINIMUM OF 10' BEYOND TOE OF BERM.
 - FILL MUST BE PLACED IN INDIVIDUAL LIFTS NOT EXCEEDING 12" AND COMPACTED TO 98% OF MODIFIED PROCTOR, MAXIMUM DRY DENSITY VALUE.
 - REFER TO SUBSURFACE SOIL EXPLORATION, McCARTY RANCH WATER FARMING AREA 4, BY ARDAMAN & ASSOCIATES (2/6/20).



NOTICE: COMPONENTS OF TYPES I AND II MAY BE SIMILAR OR IDENTICAL TO PROPRIETARY DESIGNS OF THE DESIGNER. THE USER SHALL BE THE SOLE RESPONSIBILITY OF THE USER. SUBSTITUTIONS FOR TYPES I AND II SHALL BE AS APPROVED BY THE ENGINEER.

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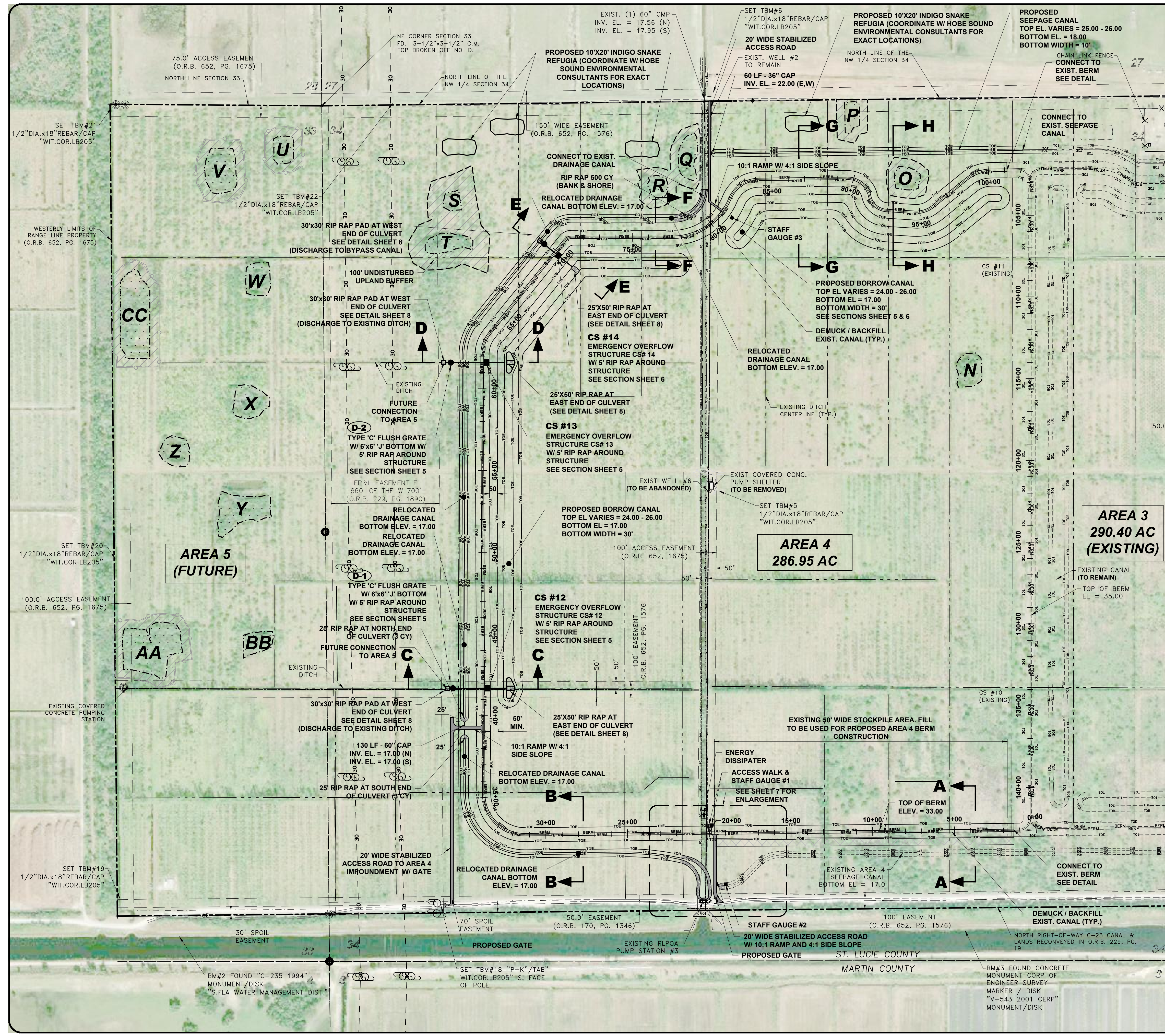
DATE:	4/7/20
DRAWN BY:	MOR
DESIGNED BY:	T.L.A.
CHECKED BY:	J.W.C.
PROJECT NO.:	1682.2-4
HOOR SCALE:	1" = 300'
VERT. SCALE:	N/A
CADD FILE:	Clearing

NO.	DATE	BY	REVISIONS
1	4/6/21	T.L.A.	BID SET

SCALE VERIFICATION
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SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED ACCORDINGLY.

McCARTY RANCH EXTENSION WATER QUALITY RESTORATION PROJECT - AREA 4
City of Port St. Lucie, Florida
CLEARING, STORMWATER POLLUTION PREVENTION PLAN

Joseph W. Capra, P.E.
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638



GRAPHIC SCALE
300 0 150 300 600

LEGEND

- PROPERTY LINE
- - - EASEMENT LINE
- - - SECTION LINE
- CONST. BERM
- CONST. TOP OF BANK
- CONST. TOE OF SLOPE
- - - EX DITCH CENTERLINE
- EX POWER POLE
- CONST. CONTROL STRUCTURE
- EMERGENCY OVERFLOW CONNECTION - SEE DETAIL
- EX PUMP STATION
- PUMP STATION
- EXISTING AREA 2 CONTROL STRUCTURE/ EMERGENCY OVERFLOW CONNECTION
- ▨ AREA WITHIN BERMS
- ▨ UNDISTURBED WETLAND BUFFER (50' TYP. UNLESS OTHERWISE STATED)
- ▨ WETLAND LIMITS
- ▨ EXISTING STOCKPILE AREA
- ▨ EXISTING DITCH/CANAL TO BE DEMUCKED AND BACKFILLED / APPROXIMATE LOCATION OF UNSUITABLE MATERIAL

SCALE VERIFICATION

1
0 1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED ACCORDINGLY.

PLAN VIEW
N.T.S.

TYPICAL BERM TIE-IN DETAIL
N.T.S.

NOTES:

- THE FOOTPRINT OF THE PROPOSED LEVEE AND THE EXISTING LEVEE BANKS AT THE TIE-IN LOCATIONS SHOULD BE STRIPPED AND CLEANED OF ALL SURFACE VEGETATION, SOIL, LOOSE SOILS OR OTHER DELETERIOUS MATERIALS AS ENCOUNTERED.
- THE EXTENT OF STRIPPING AND CLEANING MUST BE DETERMINED BY VISUAL OBSERVATION, PROBING, AND JUDGMENT DURING THE EARTHWORK OPERATION.
- THE MEANS AND METHODS SHOULD BE THE RESPONSIBILITY OF THE CONTRACTOR, BUT MUST PROVIDE PROTECTION OF THE EXPOSED AREAS FROM EROSION AND PREVENT SLOUGHING.
- CONSTRUCTION WILL REQUIRE THE SLOPES TO BE CUT INTO THE EXISTING LEVEE SOILS ON THE ADJACENT AREA 3 WATER FARM.
- COMPACTION TESTING OF THE EXISTING LEVEE SLOPES' SOILS IS NOT REQUIRED, BUT THE SLOPES SHOULD BE EVALUATED TO VERIFY A FIRM CONDITION BY PROBING WITH A HAND-HELD PENETROMETER.
- AT THE TIE-IN LOCATIONS, THE FIRST LIFT OF FILL CAN BE PLACED FOLLOWING INSPECTION AND APPROVAL OF THE STRIPPING/CLEANING OPERATIONS.
- THE LIFT SHOULD BE BENCHED AND RAMPED AS NECESSARY TO ACCOMMODATE A HEAVY VIBRATORY ROLLER.
- RECOMMENDED FILL WITH NO MORE THAN 12 PERCENT FINES (UNIFIED SOIL CLASSIFICATIONS SP OR SP-SM) FREE OF ORGANIC MATERIALS, SUCH AS TOPSOIL, ROOTS, AND VEGETATION.
- ALL FILL TO BE PLACED IN LEVEL "BENCHED" LIFTS NOT TO EXCEED 12" IN UNCOMPACTED THICKNESS.
- EACH "BENCHED" LIFT SHOULD BE "KEYED" INTO THE FIRM EXISTING LEVEE SOILS AND COMPACTED BY SUITABLE COMPACTION EQUIPMENT TO ACHIEVE AT LEAST 95% OF THE MODIFIED PROCTOR (ASTM D-1557) MAXIMUM DENSITY VALUE. (CONTINUE LIFTS UNTIL DESIRED ELEVATION IS ACHIEVED)
- IF HAND-HELD COMPACTION IS USED, THE LIFT THICKNESS SHOULD BE REDUCED TO 6".
- MATERIAL TO BE COMPACTED SHOULD BE CONDITIONED TO NEAR OPTIMUM MOISTURE CONTENT TO OBTAIN THE REQUIRED DENSITY.
- WETTING OR DRYING OF THE MATERIAL AND ADDITIONAL WORKING TO SECURE UNIFORM MOISTURE CONTENT REQUIRED FOR COMPACTION SHOULD BE PERFORMED.
- LIFTS SHOULD BE HORIZONTALLY OVER-FILLED SLIGHTLY BEYOND THE DESIRED GEOMETRY SO THAT THE UNSUPPORTED PORTION ALONG THE LEVEE SIDE THAT CANNOT BE COMPACTED WITH THE ROLLER CAN BE SCRAPPED OFF DURING FINAL GRADING OF THE SLOPE, RESULTING IN WELL COMPACTED SOILS PRESENT WITHIN THE FINISHED LEVEE.

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Engineering Business No. EP0606067

DATE:	4/7/20
DRAWN BY:	MDR
DESIGNED BY:	TLA
CHECKED BY:	JWC
PROJECT NO.:	1682.2-4
HOOR. SCALE:	1" = 300'
VERT. SCALE:	N/A
CADD FILE:	Clearing

NO.	DATE	BY	REVISIONS
1	4/6/21	TLA	BID SET

SITE PLAN

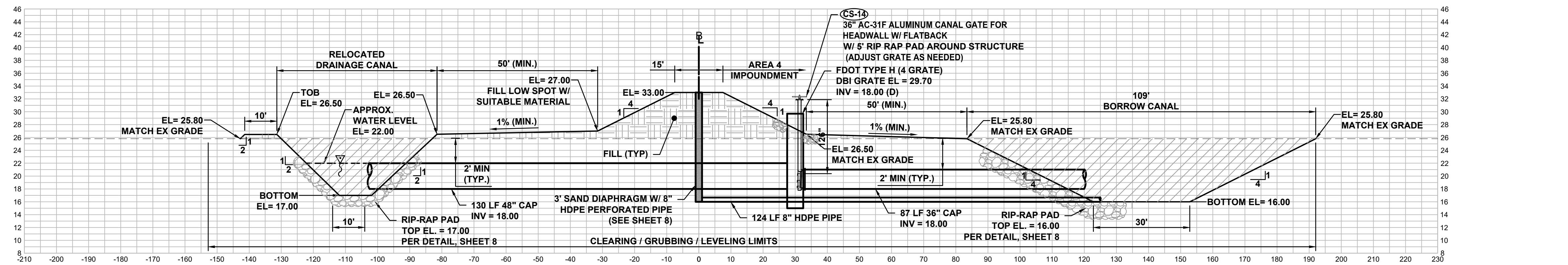
MCCARTY RANCH EXTENSION WATER QUALITY RESTORATION PROJECT - AREA 4
City of Port St. Lucie, Florida

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P.E. No. 37638

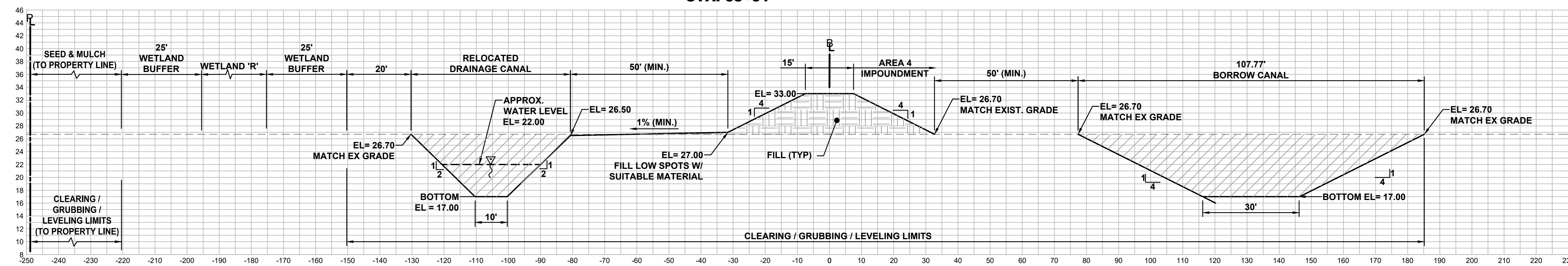
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JOB No.: 1682.2-4
SHEET 04 OF 10

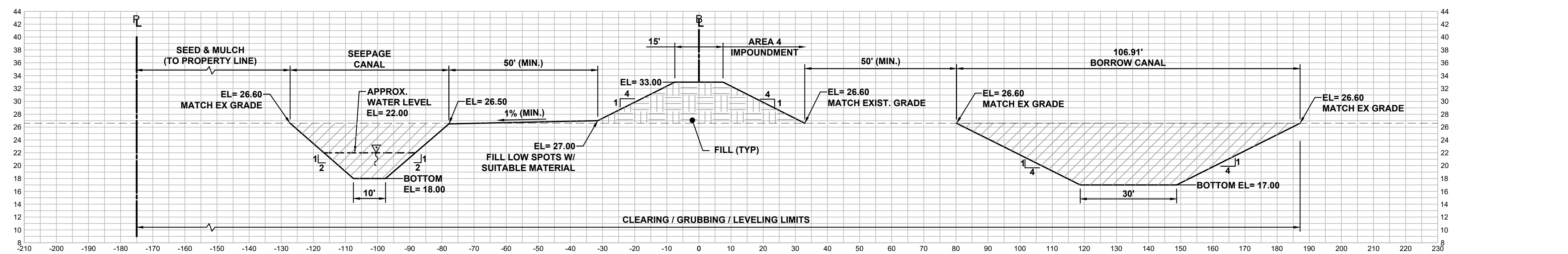
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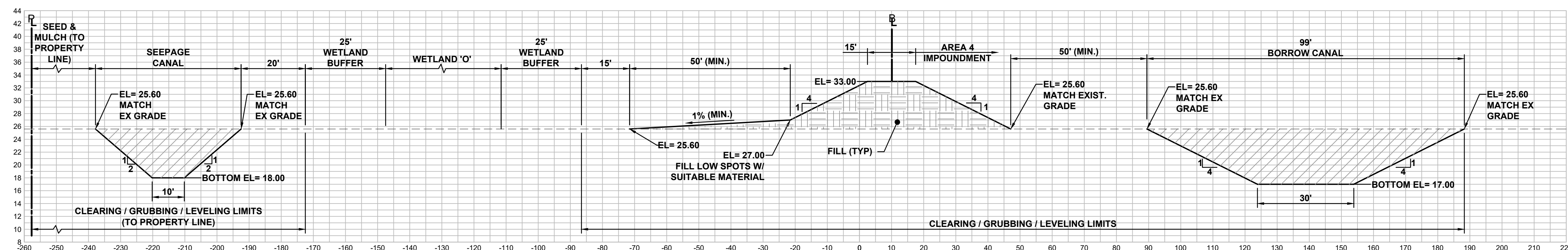
**SECTION E-E (WEST BERM)
STA. 68+51**



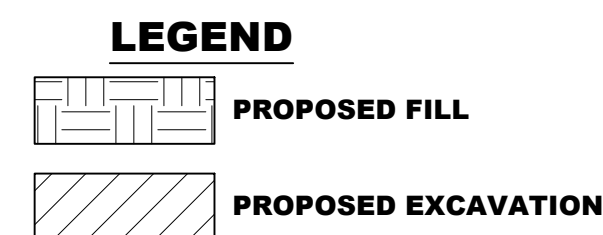
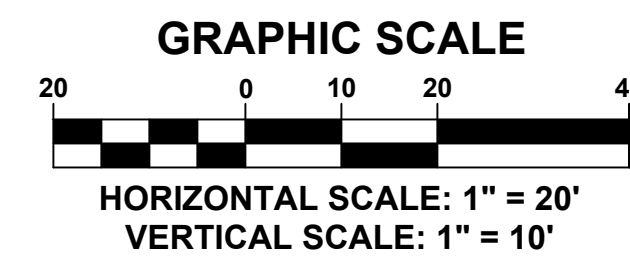
**SECTION F-F (NORTH BERM)
STA. 76+62**



**SECTION G-G (NORTH BERM)
STA. 86+60**



**SECTION H-H (NORTH BERM)
STA. 94+16**



- NOTES:**
1. ALL DISTURBED AREAS TO BE STABILIZED WITH SOD, HYDROSEED, OR SEED/MULCH.
 2. FILL MATERIAL TO BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY PER AASHTO T-180.
 3. DEPTH, WIDTH, AND SIDE SLOPES OF BORROW CANALS VARIES AND SHALL BE BASED ON AMOUNT OF FILL NEEDED TO CONSTRUCT BERM. DISTANCE BETWEEN BORROW CANAL AND BERM IS 50' MIN.
 4. CONTRACTOR TO REFER TO SHEET 3 FOR LIMITS OF CLEARING.
 5. CONTRACTOR TO BUILD BERM / EARTHWORK / DEMUCKING / DEWATERING / STABILIZATION IN CONFORMANCE WITH NOTES ON SHEETS 9 & 10.
 6. ALL AREAS WITHIN THE AREA 4 IMPOUNDMENT WILL BE REMOVED OF EXOTICS.

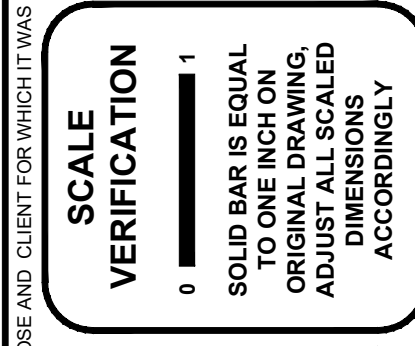
CAPTEC Engineering, Inc.
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Professional Seal: No. EB-0007657

DATE:	4/7/20
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DESIGNED BY:	TLA
CHECKED BY:	JWC
PROJECT NO.:	1682.2-4
HORIZ. SCALE:	1" = 20'
VERT. SCALE:	1" = 10'
CADD FILE:	Clearing

NO.	DATE	BY	REVISIONS
1	4/6/21	TLA	BID SET



**MCCARTY RANCH EXTENSION
WATER QUALITY RESTORATION
PROJECT - AREA 4**
City of Port St. Lucie, Florida

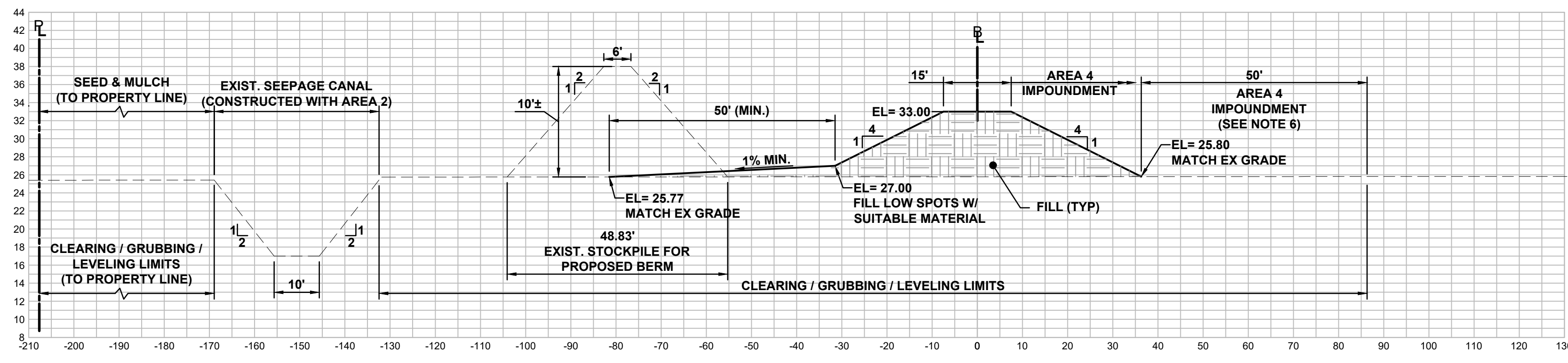
**CROSS SECTIONS
SHEET 2 OF 2**

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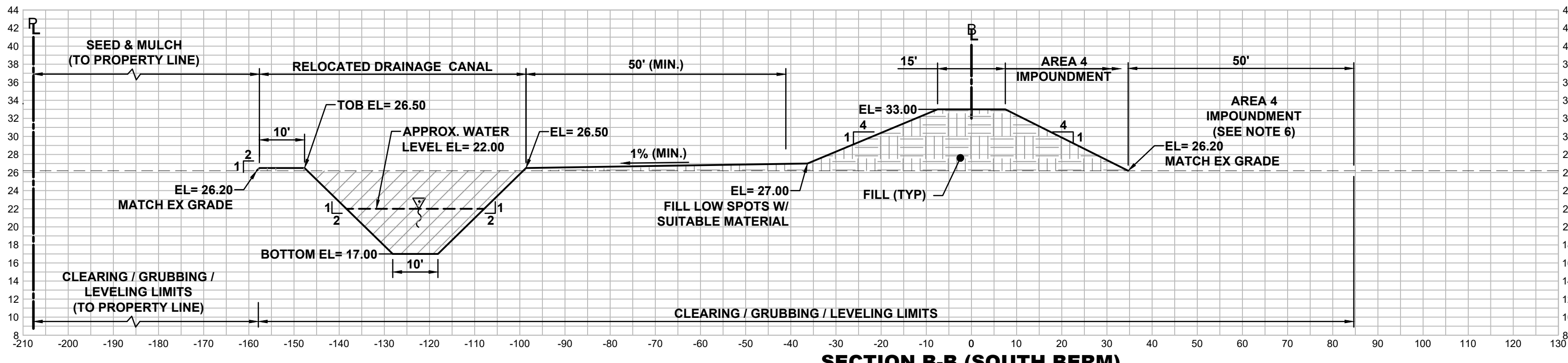
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JOB No.: **1682.2-4**
SHEET
06 OF **10**

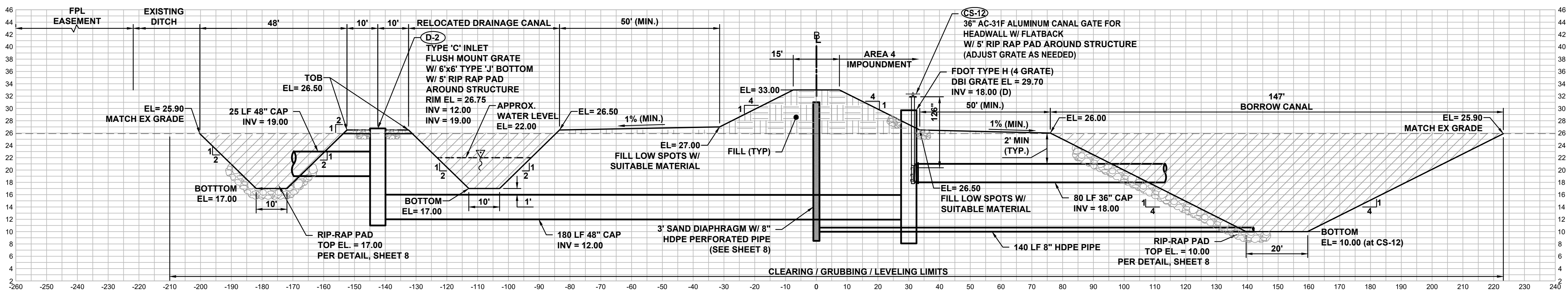
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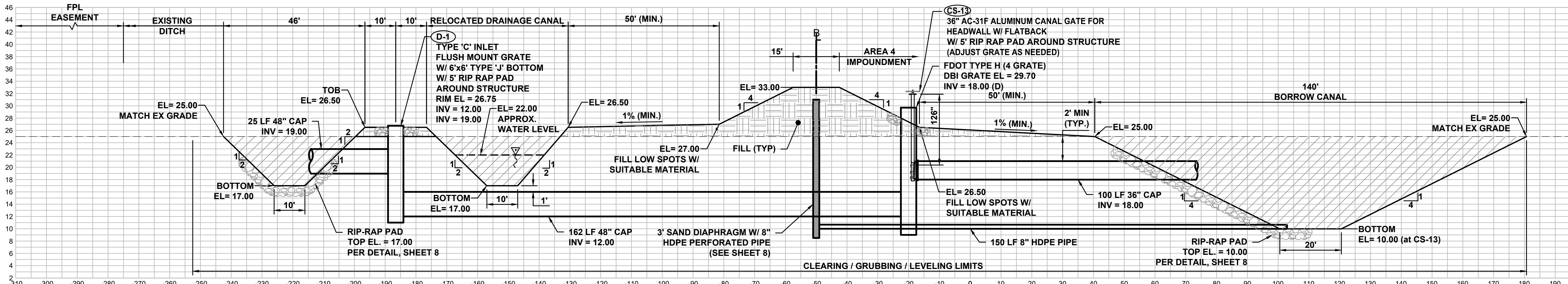
**SECTION A-A (SOUTH BERM)
STA. 04+28**



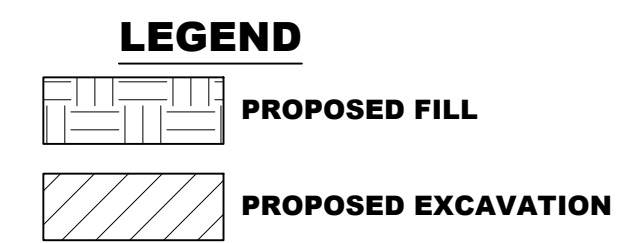
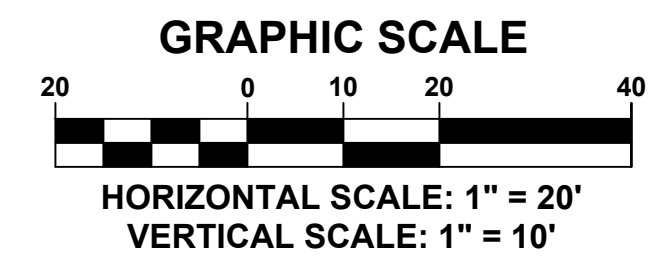
**SECTION B-B (SOUTH BERM)
STA. 28+25**



**SECTION C-C (WEST BERM)
STA. 41+68**



**SECTION D-D (WEST BERM)
STA. 61+61**



- NOTES:**
1. ALL DISTURBED AREAS TO BE STABILIZED WITH SOD, HYDROSEED, OR SEED/MULCH.
 2. FILL MATERIAL TO BE COMPACTED TO 98% OF THE MAXIMUM DRY DENSITY PER AASHTO T-180.
 3. DEPTH, WIDTH, AND SIDE SLOPES OF BORROW CANALS VARIES AND SHALL BE BASED ON AMOUNT OF FILL NEEDED TO CONSTRUCT BERM. DISTANCE BETWEEN BORROW CANAL AND BERM IS 50' MIN.
 4. CONTRACTOR TO REFER TO SHEET 3 FOR LIMITS OF CLEARING.
 5. CONTRACTOR TO BUILD BERM / EARTHWORK / DEMUCKING / DEWATERING / STABILIZATION IN CONFORMANCE WITH NOTES ON SHEETS 9 & 10.
 6. ALL AREAS WITHIN THE AREA 4 IMPOUNDMENT WILL BE REMOVED OF EXOTICS.

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DESIGNED BY:	TLA
CHECKED BY:	JWC
PROJECT NO.:	1682.2-4
HOOR. SCALE:	1" = 20'
VERT. SCALE:	1" = 10'
CADD FILE:	Clearing

NO.	DATE	BY	REVISIONS
1	4/6/21	TLA	BID SET

SCALE VERIFICATION
1
0
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED ACCORDINGLY.

MCCARTY RANCH EXTENSION WATER QUALITY RESTORATION PROJECT - AREA 4
City of Port St. Lucie, Florida

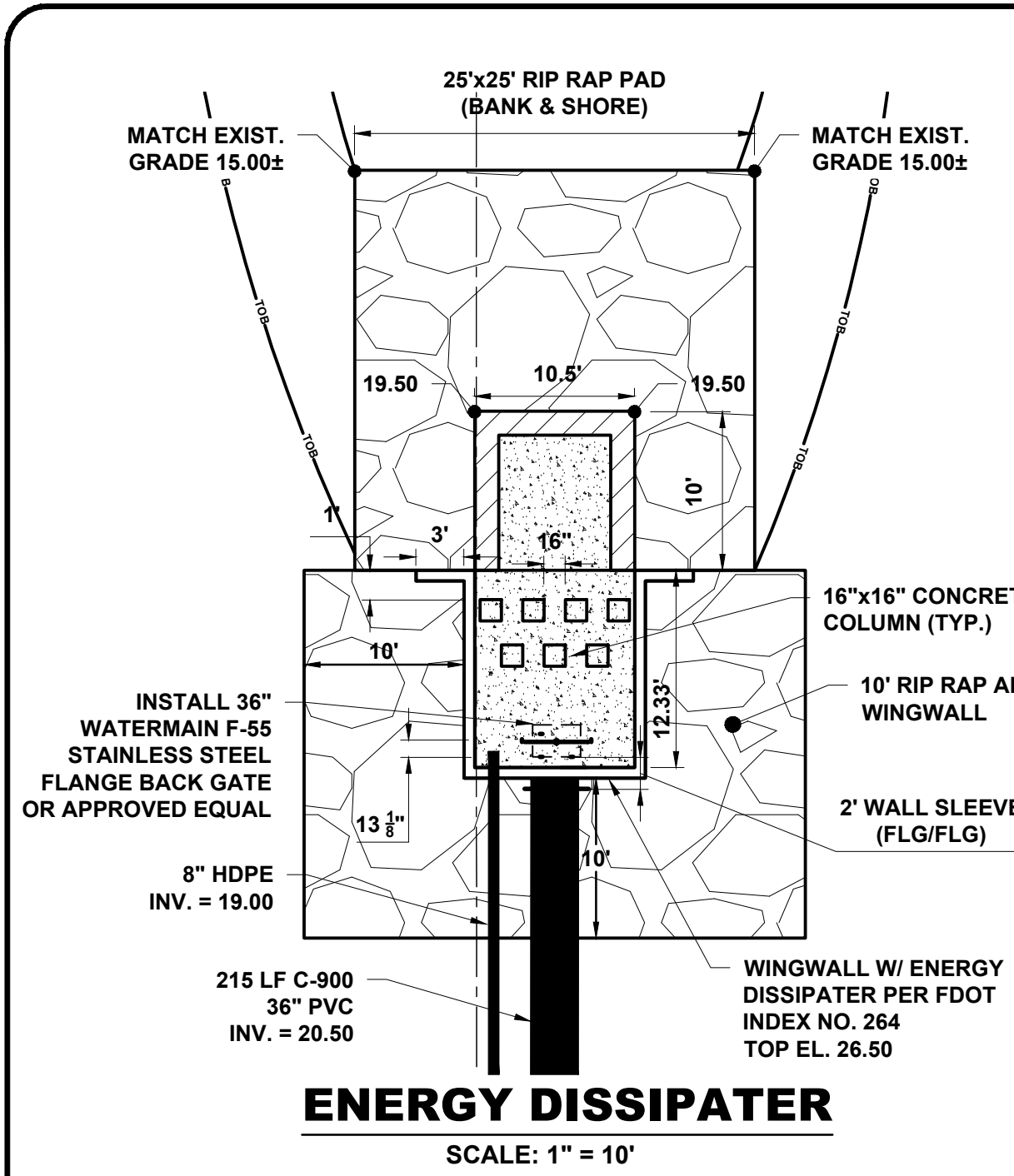
CROSS SECTIONS SHEET 1 OF 2

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P.E. No. 37638

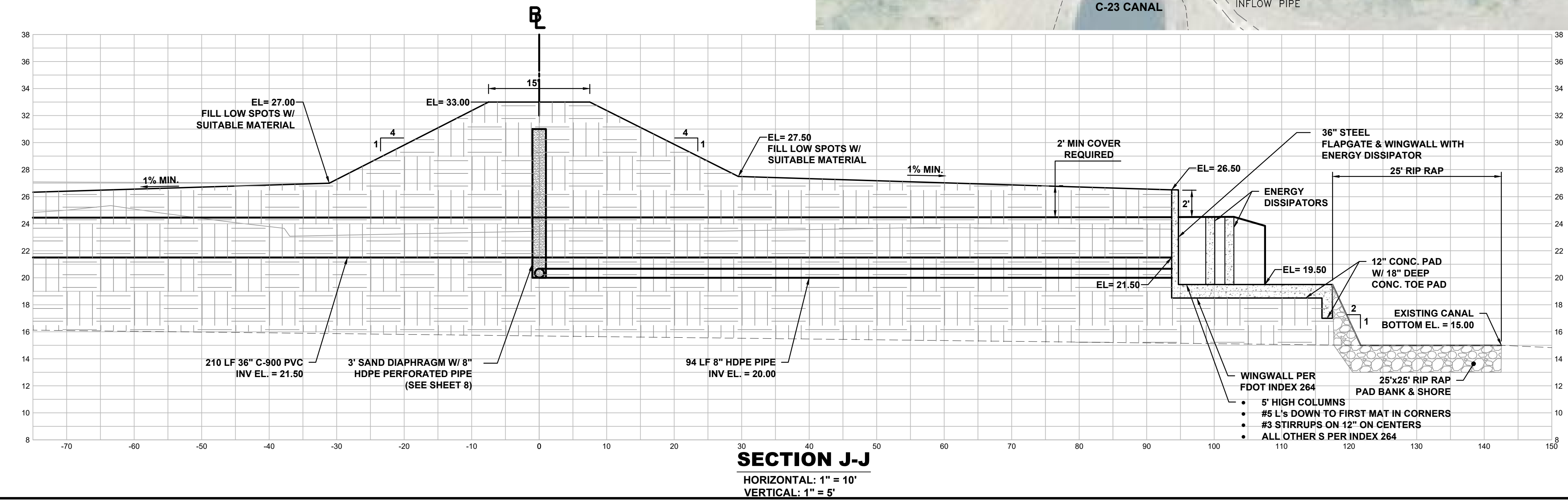
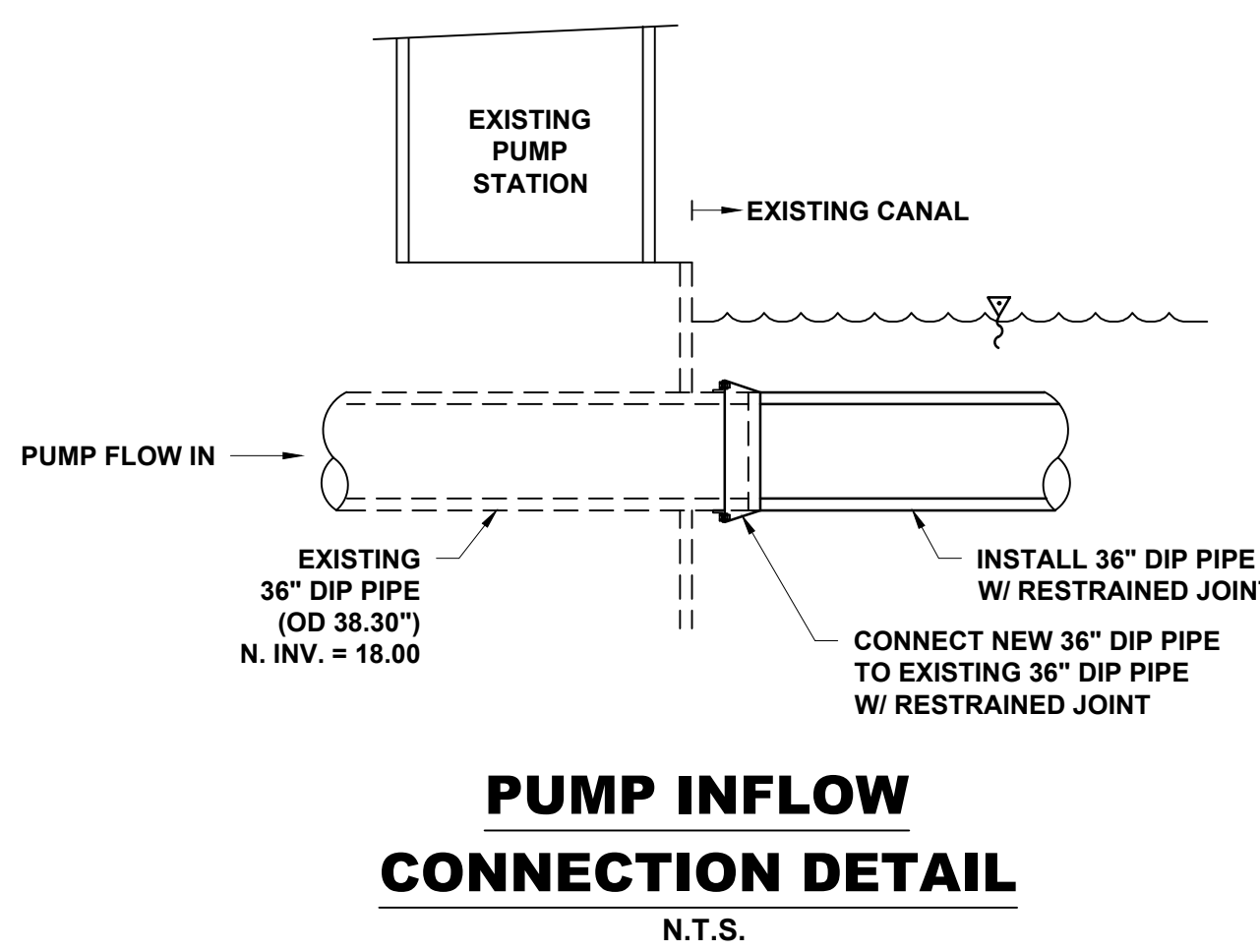
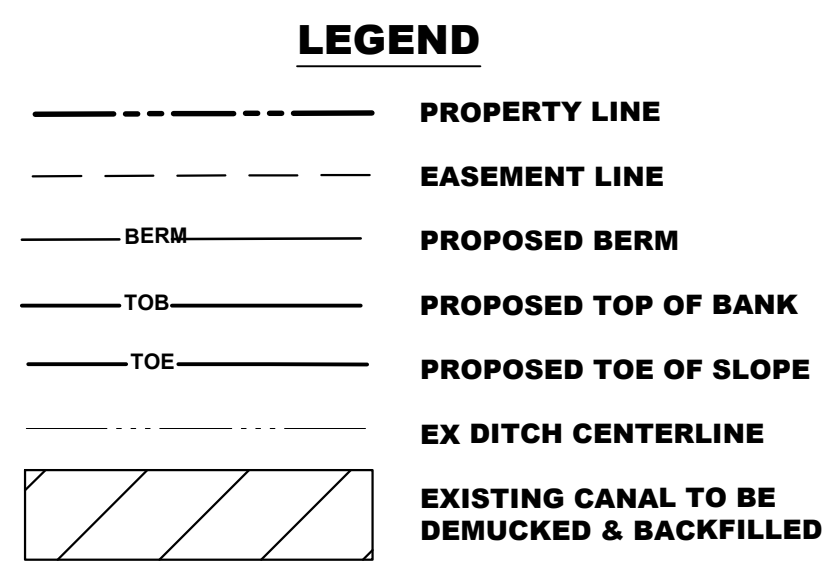
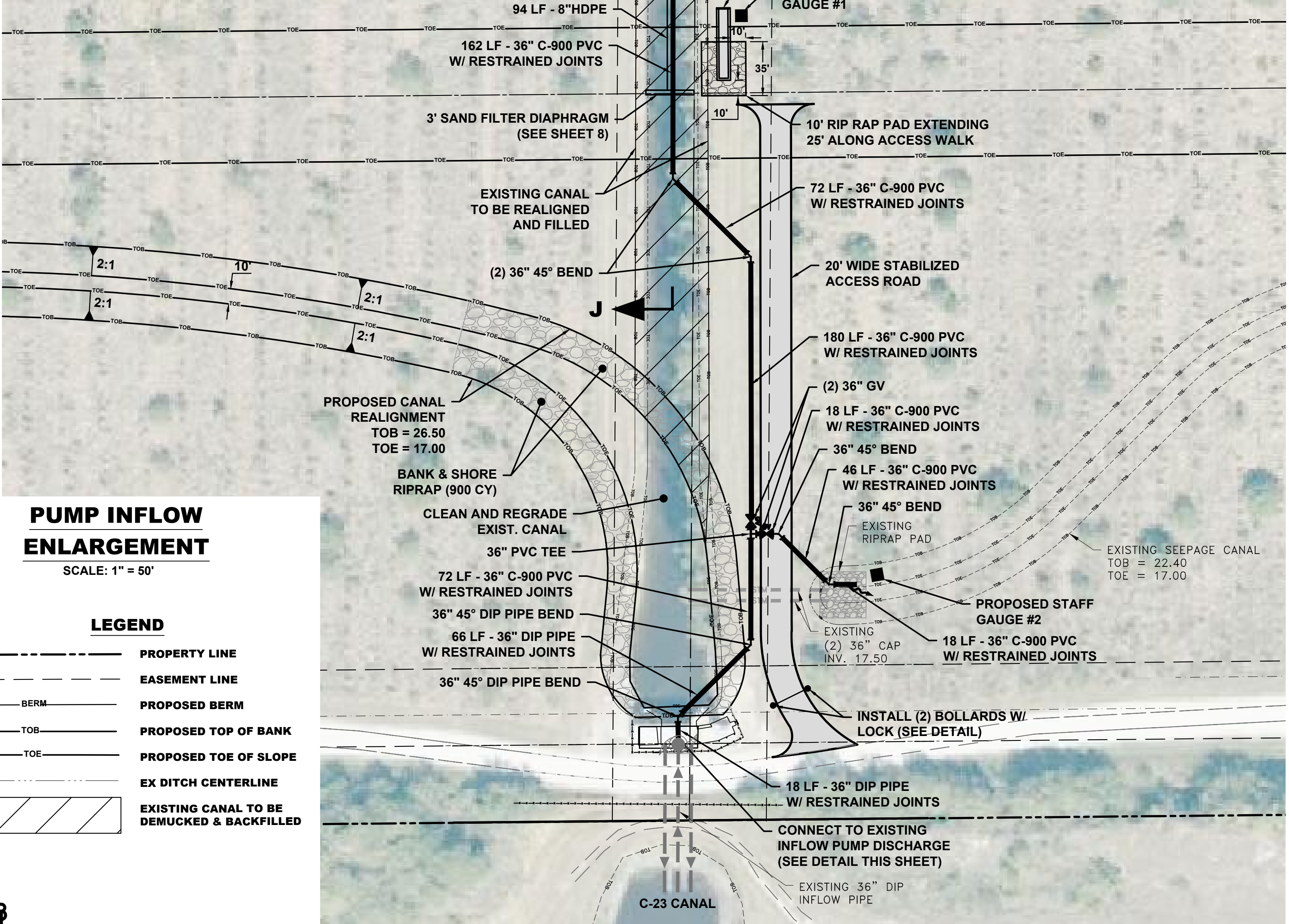
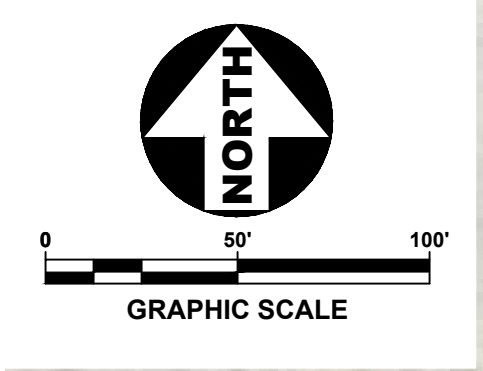
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JOB No.: **1682.2-4**
SHEET
05 OF **10**

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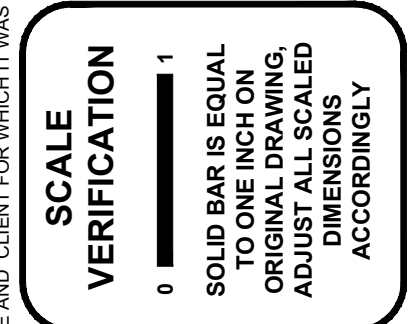
- ENERGY DISSIPATER NOTES**
1. CHAMFER ALL EXPOSED EDGES 3/4".
 2. CONCRETE SHALL BE CLASS I, EXCEPT ASTM C478 (4000 psi) CONCRETE MAY BE SUBSTITUTED FOR PRECAST ITEMS MANUFACTURED IN PLANTS MEETING THE REQUIREMENTS OF SECTION 449 OF THE SPECIFICATIONS.
 3. REINFORCING STEEL SHALL HAVE 2" MIN. COVER.
 4. ENDWALL TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR CLASS I CONCRETE (ENDWALLS), CY AND REINFORCING STEEL (ROADWAY), LB. RIPRAP TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR RIP RAP BANK & SHORE CY. COST OF FILTER FABRIC / BEDDING STONE TO BE INCLUDED IN THE CONTRACT UNIT PRICE FOR RIPRAP.
 5. FENCING, WHEN CALLED FOR IN THE PLANS, TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR FENCING, TYPE B, L.F. SEE INDEX NO. 802 FOR DETAILS OF TYPE B FENCING.



DATE: 4/7/20
DRAWN BY: MDR
DESIGNED BY: TLA
CHECKED BY: JWC
PROJECT NO.: 1682.2-4
JOB NO.: 07 OF 10
VERT. SCALE: AS NOTED
CADD FILE: Clearing

CAPTEC
Engineering, Inc.
Civil Engineering Professionals
No. E6060607

NO.	DATE	BY	REVISIONS
1	4/6/21	TLA	BID SET



MCCARTY RANCH EXTENSION
WATER QUALITY RESTORATION
PROJECT - AREA 4
City of Port St. Lucie, Florida

PUMP STATION PIPING PLAN

Joseph W. Capra, P.E.
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date: _____

JOB No.: 1682.2-4
SHEET
07 OF 10

P:\100010012-4\MCCarty_Ranch_Ext_Area_4\Engineering\4-26-21\1682.2-4-05-SECTION05-001.dwg, 4/20/21 1:50:58 PM, mdr@captec.com, CAPTEC Engineering, Inc. Checked and Reviewed by _____

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STORM SEWER NOTES

- ALL DISTURBED OUTFALL DRAINAGE AREAS SHALL BE STABILIZED UPON COMPLETION OF GRADING AFTER AS-BUILT GRADE ELEVATIONS ARE APPROVED BY THE ENGINEER.
- PRIOR TO FINAL PAYMENT, ALL SLOPES AND SWALES SHALL BE STABILIZED TO AVOID EROSION.
- THERE IS TO BE NO OFF-SITE HAULING WITHOUT PRIOR APPROVAL AND ALL EXCAVATED MATERIAL SHALL BE USED ON-SITE.
- THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED PROJECT 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.
- 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 SURFACE WATER MANAGEMENT FACILITIES. ADDITIONALLY, IF DEVIATIONS FROM THE APPROVED DRAWINGS ARE DISCOVERED DURING THE CERTIFICATION PROCESS, THE CERTIFICATION MUST BE ACCOMPANIED BY A COPY OF THE APPROVED PERMIT DRAWINGS WITH DEVIATIONS NOTED. SEE ALSO AS-BUILT REQUIREMENTS.
- A STABLE PERMANENT AND ACCESSIBLE ELEVATION REFERENCE SHALL BE ESTABLISHED ON OR WITHIN ONE HUNDRED (100) FEET OF ALL PERMITTED DISCHARGE STRUCTURES NO LATER THAN THE SUBMISSION OF THE CERTIFICATION TO THE WATER MANAGEMENT DISTRICT. THE LOCATION OF THE ELEVATION REFERENCE MUST BE NOTED ON OR WITHIN THE CERTIFICATION REPORT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CORRECTION OF ANY EROSION OR SHOALING OF THE WATER QUALITY MANAGEMENT SYSTEM.
- INLETS (425/430); INCLUDES THE LIST OF MATERIALS/INSTALLATION/DEWATERING STABILIZATION/AS-BUILT SURVEYING/TESTING. ALL STRUCTURES WILL REQUIRE THREE (3) COMPACTION TESTS AT DIFFERENT LOCATIONS AND UNDER STRUCTURES.
- PIPE CULVERTS AND STORM SEWERS SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SECTION 430 FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
- HDPE (HIGH DENSITY POLYETHYLENE) CULVERT SHALL BE N-12 INSTALLED PER MANUFACTURER RECOMMENDATIONS. MANUFACTURER IS ADS (ADVANCED DRAINAGE SYSTEMS, INC.) AIR ENTRENCHED PIPE.
- REINFORCED CONCRETE PIPE SHALL BE ASTM C-76 CLASS III IN ACCORDANCE WITH SECTION 941 OF THE FDOT STANDARD SPECIFICATIONS.
- POLYVINYL CHLORIDE (PVC) PIPE SHALL BE DR-18 MANUFACTURED TO DUCTILE IRON PIPE OUTSIDE DIMENSIONS AND IN COMPLIANCE WITH AWWA C905. THE PIPE SHALL BE BLUE IN COLOR AND SHALL CONFORM TO PSL USD UTILITY STANDARDS MANUAL (2019 EDITION).
- THE CONTRACTOR SHALL WRAP ALL STORM PIPE JOINTS. CONSTRUCTION SHALL BE PER F.D.O.T. INDEX NO. 280 WITH WOVEN GEOTEXTILE TYPE D-3 (F.D.O.T. INDEX NO. 199), SECURED W/STRAPPING. ALL JOINTS SHALL BE WRAPPED FOR A MINIMUM OF 18 INCHES FROM THE BAND OR JOINT OR BELL AND SPIGOT AS APPLICABLE.
- CULVERT LEGEND:
RCP - REINFORCED CONCRETE PIPE
CAP - CORRUGATED ALUMINUM PIPE
ERCP - ELLIPTICAL REINFORCED CONCRETE PIPE
MES - MITERED END SECTION

PERFORMANCE TURF (HYDROSEED)

- INCORPORATE TURF INSTALLATION INTO THE PROJECT AT THE EARLIEST PRACTICAL TIME.
- IF PEST PLANTS AND/OR NOXIOUS WEEDS MANIFEST THEMSELVES WITHIN 30 DAYS OF PLACEMENT OF THE HYDROSEED DURING THE MONTHS APRIL THROUGH OCTOBER, WITHIN 60 DAYS OF PLACEMENT OF THE HYDROSEED DURING THE MONTHS OF NOVEMBER THROUGH MARCH TREAT AFFECTED AREAS BY MEANS ACCEPTABLE TO THE CITY AT NO EXPENSE TO THE CITY.
- USE EQUIPMENT SPECIFICALLY DESIGNED FOR MIXING THE MULCH, SEED, FERTILIZER, TACKIFIER AND DYE, AND APPLYING THE SLURRY UNIFORMLY OVER THE AREAS TO BE HYDROSEEDED. USE MULCH THAT DOES NOT CONTAIN REPROCESSED WOOD OR PAPER FIBERS. ENSURE THAT 50% OF THE FIBERS WILL BE RETAINED ON A TWENTY-FIVE MESH SCREEN. MIX FERTILIZER AS REQUIRED INTO THE HYDROSEEDING SLURRY. ENSURE THAT THE DYE DOES NOT CONTAIN GROWTH OR GERMINATION INHIBITING CHEMICALS. WHEN POLYACRYLAMIDE IS USED AS PART OF HYDROSEEDING MIX, ONLY ANIONIC POLYMER FORMULATION WITH FREE ACRYLAMIDE MONOMER RESIDUAL CONTENT OF LESS THAN 0.05% IS ALLOWED. CATIONIC POLYACRYLAMIDE SHALL NOT BE USED IN ANY CONCENTRATION. DO NOT SPRAY POLYACRYLAMIDE-CONTAINING MIXTURES ONTO PAVEMENT. THESE MAY INCLUDE TACKIFIERS, FLOCCULANTS OR MOISTURE-HOLDING COMPOUNDS.
- MEET THE MINIMUM PHYSICAL AND PERFORMANCE CRITERIA OF THIS SPECIFICATION FOR USE OF BFM IN HYDROSEEDING OPERATIONS OR TEMPORARY NON-VEGETATIVE EROSION AND SEDIMENT CONTROL METHODS. PROVIDE EVIDENCE OF PRODUCT PERFORMANCE TESTING, MANUFACTURER'S CERTIFICATION OF TRAINING AND MATERIAL SAMPLES TO THE ENGINEER AT LEAST SEVEN CALENDAR DAYS PRIOR TO INSTALLATION. PROVIDE DOCUMENTATION TO THE ENGINEER OF MANUFACTURER'S TESTING AT AN INDEPENDENT LABORATORY; DEMONSTRATING SUPERIOR PERFORMANCE OF BFM AS MEASURED BY REDUCED WATER RUNOFF, REDUCED SOIL LOSS AND FASTER SEED GERMINATION IN COMPARISON TO EROSION CONTROL BLANKETS. USE ONLY BFMS THAT CONTAIN ALL COMPONENTS PRE-PACKAGED BY THE MANUFACTURER TO ASSURE MATERIAL PERFORMANCE. DELIVER MATERIALS IN UV AND WEATHER RESISTANT FACTORY LABELED PACKAGING. STORE AND HANDLE PRODUCTS IN STRICT COMPLIANCE WITH THE MANUFACTURER'S DIRECTIONS. WHEN POLYACRYLAMIDE IS USED AS PART OF HYDROSEEDING MIX, ONLY ANIONIC POLYMER FORMULATION WITH FREE ACRYLAMIDE MONOMER RESIDUAL CONTENT OF LESS THAN 0.05% IS ALLOWED. CATIONIC

POLYACRYLAMIDE SHALL NOT BE USED IN ANY CONCENTRATION. DO NOT SPRAY POLYACRYLAMIDE-CONTAINING MIXTURES ONTO PAVEMENT. THESE MAY INCLUDE TACKIFIERS, FLOCCULANTS OR MOISTURE-HOLDING COMPOUNDS. MEET THE FOLLOWING REQUIREMENTS AFTER APPLICATION OF THE FORMED MATRIX: ENSURE THAT THE TACKIFIER DOES NOT DISSOLVE OR DISPERSE UPON REWETTING. ENSURE THAT THE MATRIX HAS NO GAPS BETWEEN THE PRODUCT AND THE SOIL AND THAT IT PROVIDES 100% COVERAGE OF ALL DISTURBED SOIL AREAS AFTER APPLICATION. ENSURE THAT THE MATRIX HAS NO GERMINATION OR GROWTH INHIBITING PROPERTIES AND DOES NOT FORM A WATER-REPELLING CRUST. ENSURE THAT THE MATRIX IS COMPRISED OF MATERIALS THAT ARE 100% BIODEGRADABLE AND 100% BENEFICIAL TO PLANT GROWTH. MIX AND APPLY THE BFM IN STRICT COMPLIANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. APPLY THE BFM TO GEOTECHNICALLY STABLE SLOPES AT THE MANUFACTURER'S RECOMMENDED RATES. DEGRADATION OF BFM WILL OCCUR NATURALLY BECAUSE OF CHEMICAL AND BIOLOGICAL HYDROLYSIS, UV EXPOSURE AND TEMPERATURE FLUCTUATIONS. RE-APPLICATION, AS DETERMINED BY THE ENGINEER, WILL BE REQUIRED IF BFM-TREATED SOILS ARE DISTURBED OR WATER QUALITY OR TURBIDITY TESTS SHOW THE NEED FOR AN ADDITIONAL APPLICATION. THE WORK AND MATERIALS FOR RE-APPLICATION WILL BE PAID FOR AS UNFORESEEABLE WORK.

- WATER ALL AREAS AS NECESSARY TO PRODUCE A HEALTHY AND VIGOROUS STAND OF TURF.
- FERTILIZE AS NECESSARY TO PRODUCE A HEALTHY AND VIGOROUS STAND OF TURF. REFER TO SECTION 982 OF THE FDOT SPECIFICATIONS FOR FERTILIZER RATES.
- PERFORM ALL WORK NECESSARY, INCLUDING WATERING AND FERTILIZING, TO SUSTAIN AN ESTABLISHED TURF UNTIL FINAL ACCEPTANCE, AT NO ADDITIONAL EXPENSE TO THE CITY. PROVIDE THE FILLING, LEVELING, AND REPAIRING OF ANY WASHED OR ERODED AREAS, AS MAY BE NECESSARY. ESTABLISHED TURF IS DEFINED AS FOLLOWS: ESTABLISHED ROOT SYSTEM (LEAF BLADES BREAK BEFORE SEEDLINGS OR SOD CAN BE PULLED FROM THE SOIL BY HAND). NO BARE SPOTS LARGER THAN ONE SQUARE FOOT. NO CONTINUOUS STREAKS RUNNING PERPENDICULAR TO THE FACE OF THE SLOPE. NO BARE AREAS COMPRISING MORE THAN 1% OF ANY GIVEN 1,000 SQUARE FOOT AREA. NO DEFORMATION OF THE TURF AREAS CAUSED BY MOWING OR OTHER CONTRACTOR EQUIPMENT. MONITOR TURF AREAS AND REMOVE ALL COMPETING VEGETATION, PEST PLANTS, AND NOXIOUS WEEDS (AS LISTED BY THE FLORIDA EXOTIC PEST PLANT COUNCIL, CATEGORY 1 "LIST OF INVASIVE SPECIES", CURRENT EDITION, WWW.FLEPPC.ORG). REMOVE SUCH VEGETATION REGULARLY BY MANUAL, MECHANICAL, OR CHEMICAL CONTROL MEANS, AS NECESSARY. WHEN SELECTING HERBICIDES, PAY PARTICULAR ATTENTION TO ENSURE USE OF CHEMICALS THAT WILL NOT HARM DESIRED TURF. USE HERBICIDES IN ACCORDANCE WITH FDOT SPECIFICATION SECTION 7-1.7.

EXCAVATION FOR STRUCTURES AND PIPES

- EARTHWORK AND RELATED OPERATIONS PERFORMED ON STRUCTURES AND PIPES SHALL BE CONDUCTED IN ACCORDANCE WITH SECTIONS 125 AND OTHER APPLICABLE SECTIONS OF THE F.D.O.T. STANDARD SPECIFICATIONS FOR ROADWAY AND BRIDGE CONSTRUCTION (LATEST EDITION) UNLESS OTHERWISE SHOWN ON THE PLANS.
- REMOVAL OF UNSUITABLE, ORGANIC OR PLASTIC MATERIAL SHALL BE PERFORMED AT THE DIRECTION OF THE ENGINEER UNLESS OTHERWISE SHOWN ON THE PLANS.
- UTILIZATION OF MATERIALS WITHIN THE WORK LIMITS SHALL BE AS DIRECTED BY THE ENGINEER UNLESS OTHERWISE SHOWN ON THE PLANS.

PIPE AND STRUCTURE BACKFILL

- IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE IF EXCAVATED SOILS MEET THE REQUIREMENTS OF THE PROJECT PLANS AND SPECIFICATIONS RELATIVE TO MATERIAL CLASSIFICATION. PIPE AND STRUCTURE BACKFILL MATERIAL SHALL BE LIMITED TO MATERIAL CLASSIFIED AS A-1, A-3 AND A-2-4 IN ACCORDANCE WITH AASHTO M-145 AND SHALL BE COMPACTED IN ACCORDANCE WITH F.D.O.T. SECTION 125 REQUIREMENTS.
- IF THE BACKFILL MATERIAL IS CLASSIFIED AS A-2-4 BASED ON AASHTO M 145 CRITERIA, THE MAXIMUM PERMISSIBLE MOISTURE CONTENT SHALL BE 2 PERCENT ABOVE THE OPTIMUM MOISTURE CONTENT.

RELOCATION OF EXISTING FACILITIES

RELOCATION OF EXISTING FACILITIES SHALL CONFORM TO THE DESIGN AND CONSTRUCTION STANDARDS OF PSLUSD UTILITY STANDARDS MANUAL (2019 EDITION). ALL MATERIALS USED IN CONSTRUCTION SHALL BE ON THE PSLUSD QUALIFIED PRODUCTS LIST (QPL). DESIGN FOR RELOCATION OF EXISTING FACILITIES MUST PROVIDE FOR CONTINUITY OF SERVICE TO EXISTING CUSTOMERS AS WELL AS VERIFICATION THAT THE RELOCATED FACILITIES WILL NOT CAUSE ADDITIONAL OPERATIONAL AND MAINTENANCE EXPENSE TO PSLUSD.

CLEAN-UP

- THE CONTRACTOR SHALL MAINTAIN THE JOB SITE IN A NEAT CONDITION AT ALL TIMES AND SHALL RESTORE/REPAIR ALL DRIVEWAYS, SIDEWALKS, UTILITIES, LANDSCAPING, IRRIGATION SYSTEMS, ETC., AFFECTED BY CONSTRUCTION ACTIVITIES.
- THE CONTRACTOR SHALL REMOVE ALL EXCESS MATERIALS, DEBRIS, EQUIPMENT, ETC., FROM THE JOBSITE IMMEDIATELY AFTER COMPLETION OF CONSTRUCTION OPERATIONS.
- FOR FURTHER SITE MAINTENANCE REQUIREMENTS THE CONTRACTOR IS REFERRED TO THE "AGREEMENT BETWEEN OWNER AND CONTRACTOR."
- UNLESS OTHERWISE SPECIFIED OR NOTED; ALL DISTURBED AREAS TO BE RESTORED BY CONTRACTOR TO PRE-CONSTRUCTION CONDITION OR BETTER PRIOR TO ACCEPTANCE BY THE CITY OF PORT SAINT LUCIE.

RIP RAP

- ALL RIP RAP SHALL BE DITCH LINING RIP RAP EXCEPT AS NOTED ON PLANS. BANK & SHORE RIP RAP SHALL BE USED AT THE PUMP DISCHARGE LOCATIONS.
- DITCH LINING ROCK SHALL BE 12" TO 18" LOCAL COQUINA BOULDERS (160 LB/CF) PLACED IN A 24" AVERAGE THICKNESS UNLESS OTHERWISE NOTED ON PLANS. ROCK SHALL BE UNDERLAIN WITH FILTER FABRIC TOED 12" INTO GROUND AT PERIMETER OF RIPRAP MAT. THE STONES SHALL BE GRADED IN SIZE TO PRODUCE A REASONABLY DENSE MASS. RIPRAP SHALL CONSIST OF DENSE, NATURAL ROCK FRAGMENTS. STONE SHALL BE RESISTANT TO WEATHERING AND TO WATER ACTION; FREE FROM OVERBURDEN, SPOIL, SHALE AND ORGANIC MATERIAL; AND SHALL MEET THE GRADATION REQUIREMENTS SPECIFIED. SHALE AND STONE WITH SHALE SEAMS ARE NOT ACCEPTABLE.

- ROCK SHALL CONSIST OF DURABLE, SOUND, HARD, ANGULAR ROCK MEETING THE FOLLOWING REQUIREMENTS FOR DURABILITY ABSORPTION RATIO, SOUNDNESS TEST AND ABRASION TEST:

RATIO ACCEPTABILITY
GREATER THAN 23 PASSES
10 TO 23 PASSES ONLY IF DURABILITY INDEX IS 52 OR GREATER
LESS THAN 10 FAILS

DURABILITY INDEX (COARSE)
DURABILITY ABSORPTION RATIO % = ABSORPTION + 1

- THE DURABILITY INDEX AND PERCENT ABSORPTION SHALL BE DETERMINED BY AASHTO T-210 AND AASHTO T-85, RESPECTIVELY.
- ROCK RIPRAP SHALL HAVE LESS THAN 10 PERCENT LOSS OF WEIGHT AFTER FIVE CYCLES, WHEN TESTED PER ASTM C-535.
- RIPRAP STONE OR ROCK SHALL HAVE A WEAR NOT GREATER THAN 40 PERCENT, WHEN TESTED PER ASTM C-88.
- NEITHER THE BREADTH NOR THICKNESS OF ANY PIECE OF RIPRAP SHALL BE LESS THAN ONE-THIRD ITS LENGTH. MATERIAL SHALL BE OF SHAPES THAT WILL FORM A STABLE PROTECTION STRUCTURE OF REQUIRED DEPTH AS SHOWN. ROUNDED BOULDERS OR COBBLES SHALL NOT BE USED.

ENGINEERING DEPARTMENT CONSTRUCTION FIELD OBSERVATIONS

- UTILITIES / DRAINAGE PIPE / PAVEMENT REPLACEMENT
* PIPE LAYING WITHIN SITE
* JACK AND BORING WITHIN PUBLIC RIGHT OF WAY
* RESTORATION OF RIGHT OF WAY - SUBGRADE, BASE, & ASPHALT
- TESTING:
* FLORIDA BEARING VALUE TEST RESULTS
* COMPACTION TESTS
* BASE MATERIAL TESTS
* ASPHALT TEST RESULTS
* COMPACTION TESTS REQUIRED BENEATH ALL MANHOLES
- 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
* SEE AS-BUILT NOTES

REPORTS

THE FOLLOWING REPORTS ARE HEREBY INCORPORATED INTO THE PLANS BY REFERENCE:

ARDAMAN AND ASSOCIATES, INC.
2200 NORTH FLORIDA MANGO ROAD, SUITE 101,
WEST PALM BEACH, FLORIDA 33409
PHONE (561) 687-8200

- SUBSURFACE SOIL EXPLORATION
MCCARTY RANCH WATER FARMING AREA 4
RANGELINE ROAD
ST. LUCIE COUNTY, FLORIDA (2-6-20)
- GROUNDWATER MODELING SERVICES FOR
MCCARTY RANCH EXTENSION AREA 4 WATER FARM,
CITY OF PORT ST. LUCIE, FLORIDA (2-21-20)

HOBE SOUND ENVIRONMENTAL CONSULTANTS, INC.
9512 SE BRIDGE ROAD
HOBE SOUND, FL 33455
(772)545-3676, CELL: (772) 260-0857

- McCARTY RANCH EXTENSION
WATER QUALITY RESTORATION PROJECT AREAS 3-6
PORT SAINT LUCIE, FLORIDA
ENVIRONMENTAL SITE ASSESSMENT (REVISED 4-2019)
- McCARTY RANCH EXTENSION
WATER QUALITY RESTORATION PROJECT
PORT SAINT LUCIE, FLORIDA
EASTERN INDIGO SNAKE PROTECTION PLAN (2-21-20)

PERMITS

SFWM CONCEPTUAL PERMIT
PERMIT NO. 56-00074-S
APRIL 30, 2019 (EXPIRES APRIL 30, 2039)

SFWM ENVIRONMENTAL RESOURCE PERMIT - AREA 4
PERMIT NO. 56-104138-P
DECEMBER 18, 2020 (EXPIRES DEC. 18, 2025)

ARMY CORPS OF ENGINEERS
PERMIT NO. SAJ-2016-03400 (SP-KDS)
JUNE 24, 2019 (EXPIRES JUNE 24, 2024)

301 NW Flagler Ave.
Stuart, Florida 34994
Phone: (772) 692-4344
Fax: (772) 692-4341

CAPTEC
Engineering, Inc.

Civil Engineering Professionals
No. EB-0001607

DATE:	4/7/20
DRAWN BY:	MDR
DESIGNED BY:	TLA
CHECKED BY:	JWC
PROJECT NO.:	1682.2-4
NO. SCALE:	N/A
VERT. SCALE:	N/A
CADD FILE:	Gen Notes

NO.	DATE	BY	REVISIONS
1	4/6/21	TLA	BID SET

SCALE VERIFICATION

1
SOLID BAR IS EQUAL TO ONE INCH ON ORIGINAL DRAWING. ADJUST ALL SCALED ACCORDINGLY.

MCCARTY RANCH EXTENSION WATER QUALITY RESTORATION PROJECT - AREA 4
City of Port St. Lucie, Florida

GENERAL NOTES - 2

Joseph W. Capra, P.E.
301 N.W. Flagler Ave.
Stuart, Florida 34994
P.E. No. 37638

Printed Date:

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