PERMITTING PLANS

FOR

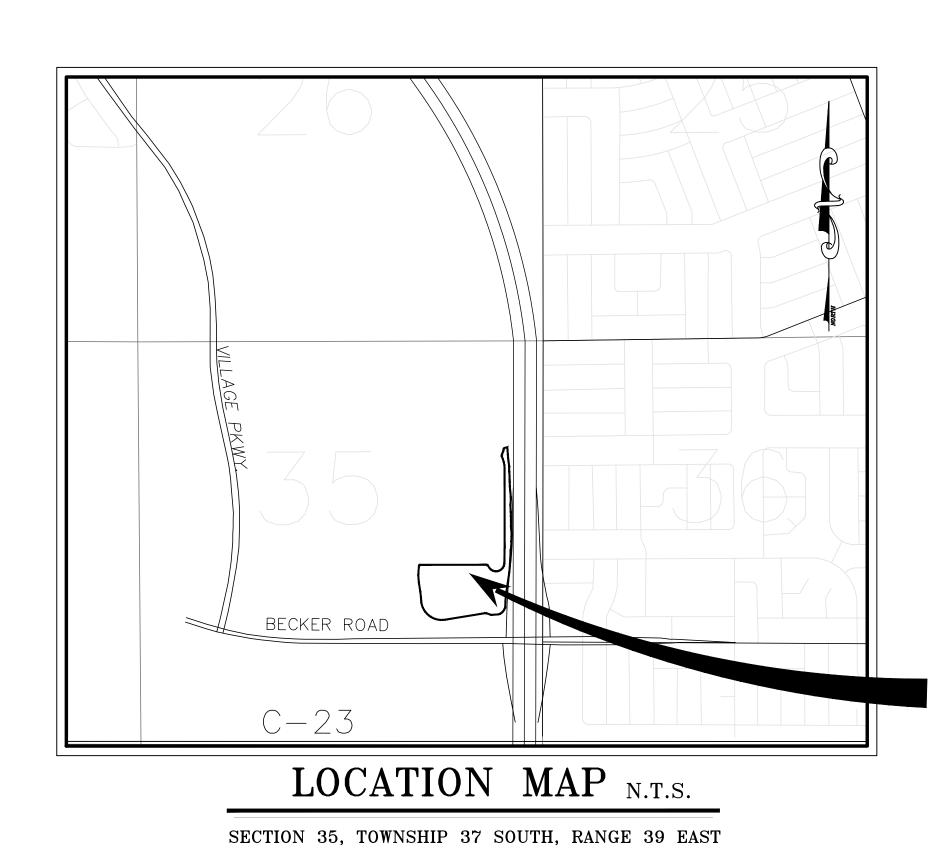
# DUDA CANAL EXPANSION - PHASE 1

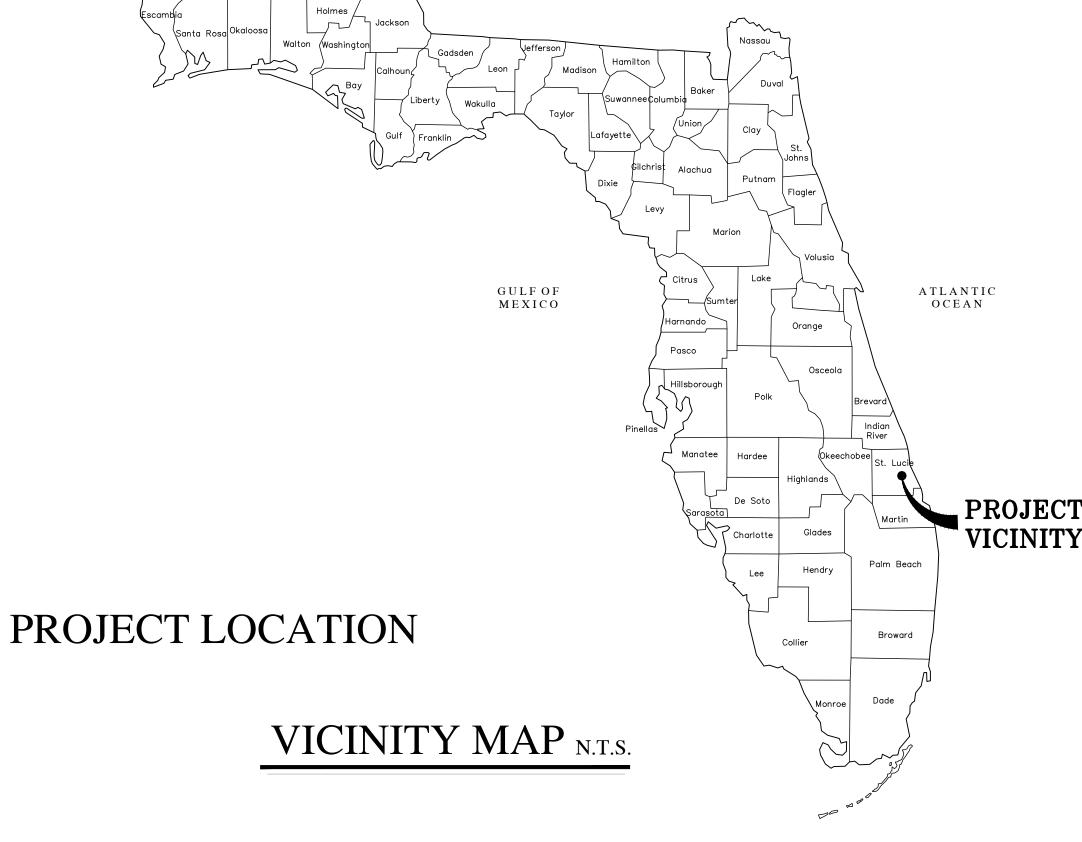
IN

SECTION 35, TOWNSHIP 37 SOUTH, RANGE 39 EAST CITY OF PORT ST. LUCIE, FLORIDA

PREPARED FOR

ARCO/MURRAY





	INDEX TO SHEETS
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	CANAL EXPANSION PLAN
3	CROSS SECTIONS & DETAILS
4	STORMWATER POLLUTION PREVENTION PLAN
5	STORMWATER POLLUTION PREVENTION DETAILS
6	SPECIFICATIONS
7	DEWATERING PLAN

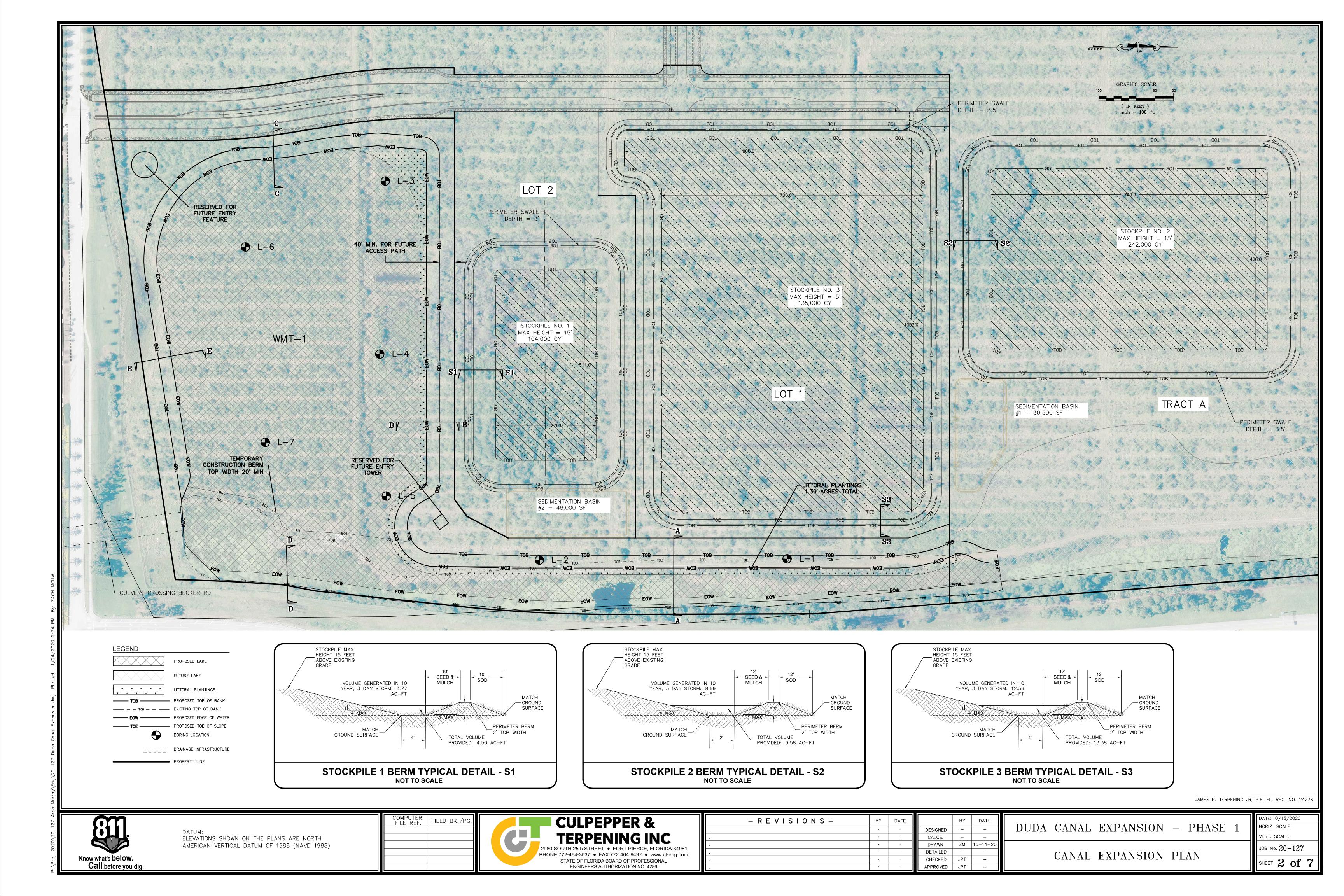
DATE ISSUED: 11/19/20

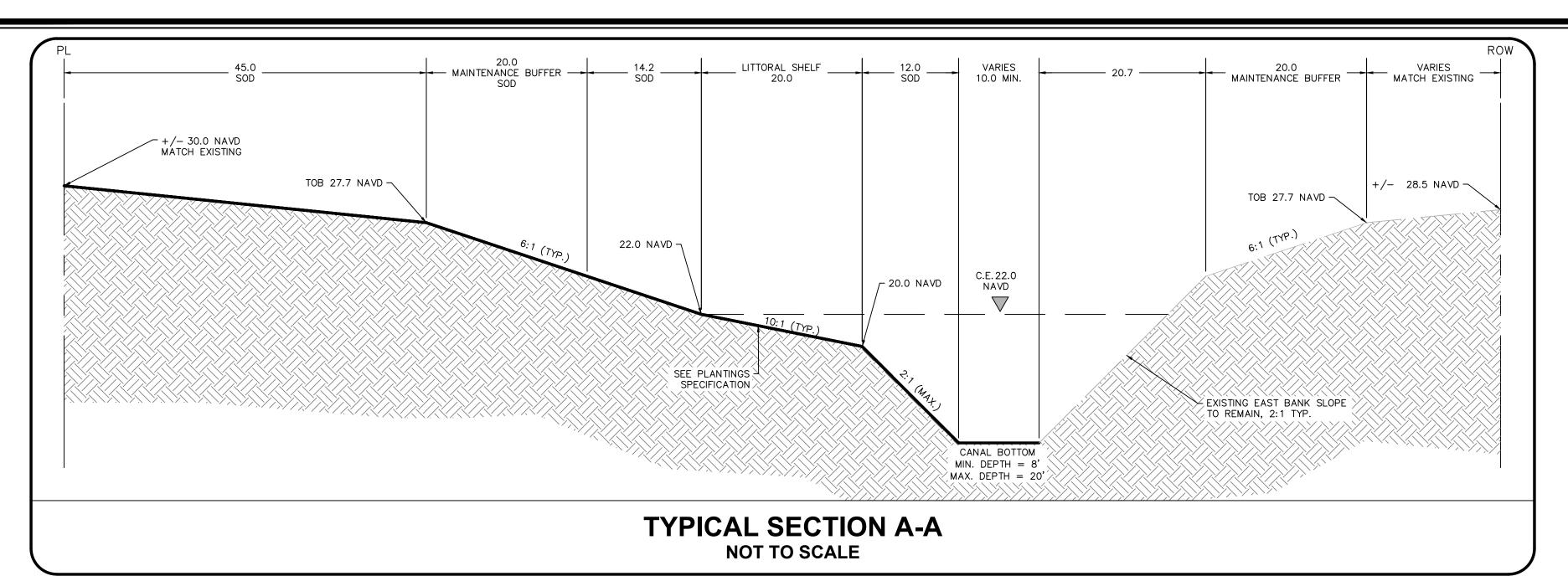
REVISIONS					
SHEET NO.	DATE				

Know what's below.
Call before you dig.

CULPEPPER &
TERPENING INC
2980 SOUTH 25th STREET • FORT PIERCE, FLORIDA 34981
PHONE 772-464-3537 • FAX 772-464-9497 • www.ct-eng.com
STATE OF FLORIDA BOARD OF PROFESSIONAL
ENGINEERS AUTHORIZATION NO. 4286

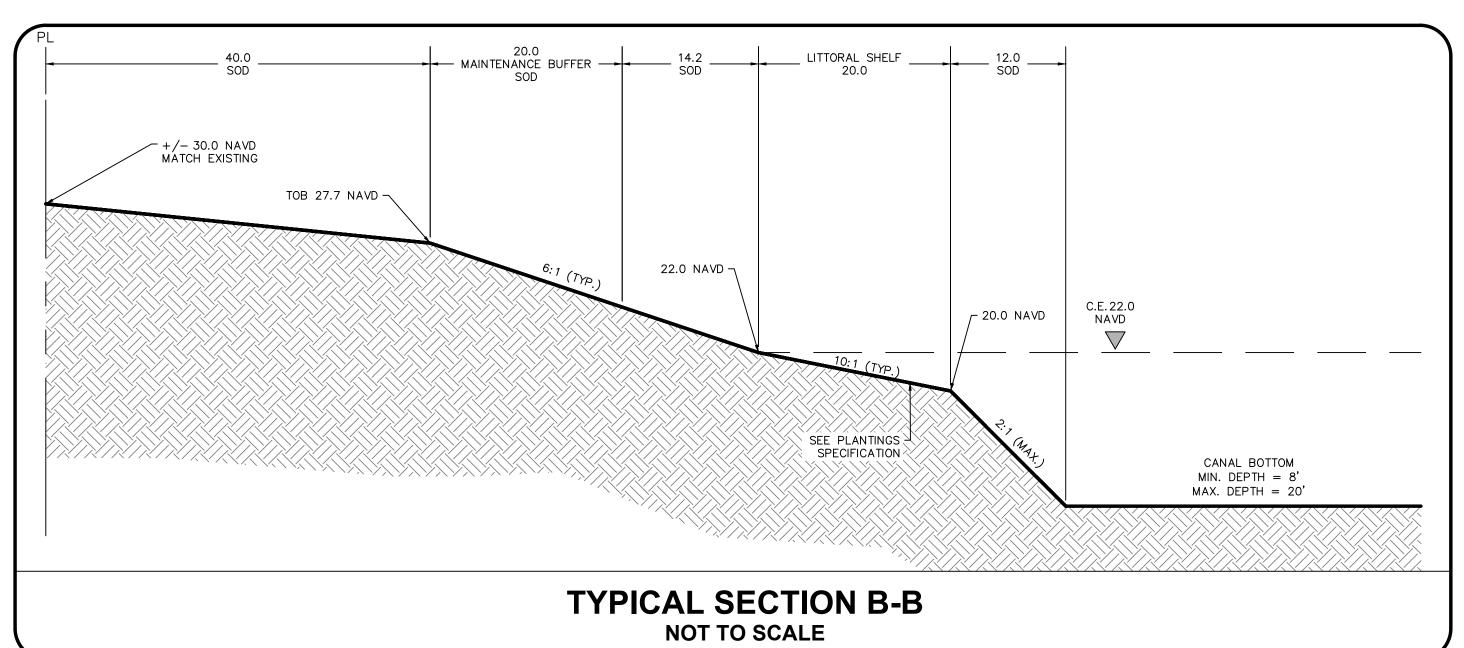
JAMES P. TERPENING JR, P.E. FL. REG. NO. 24276

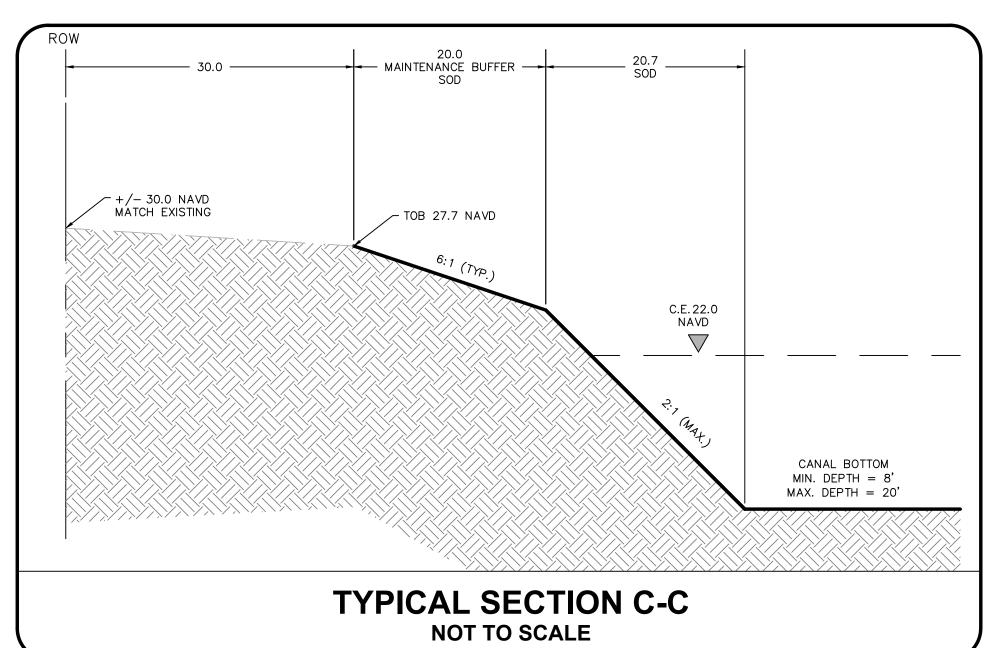


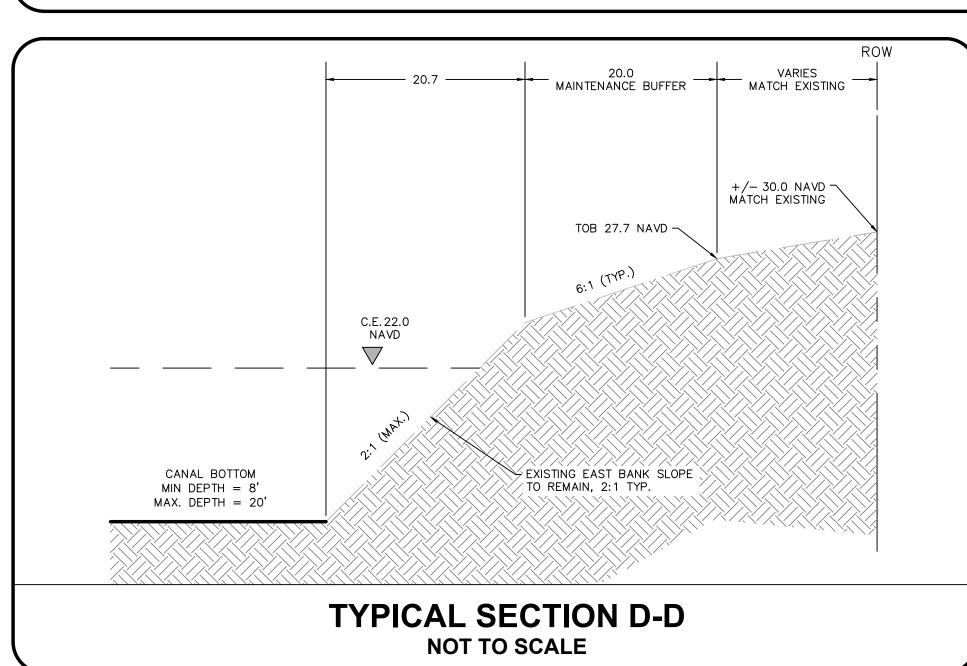


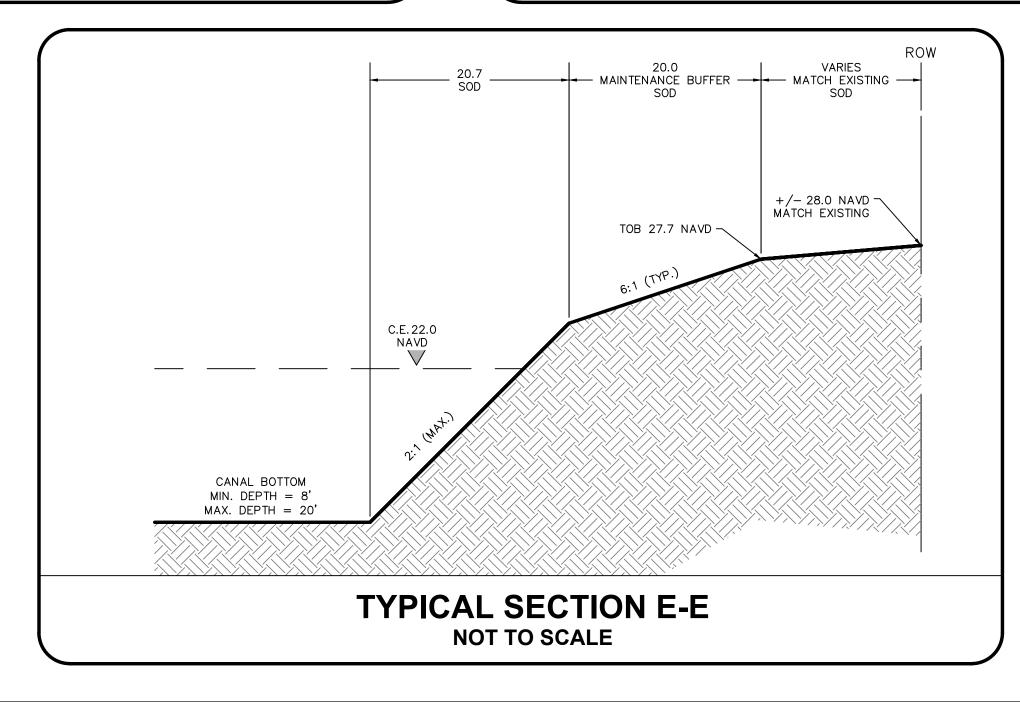
## PHASING PLAN

- A. DUDA LITTORAL SHELVES SHALL BE CONSTRUCTED DURING THE DRY PERIOD.
- B. DUDA LAKE SHALL BE ISOLATED FROM THE EXISTING DUDA CANA BY A BERM WITH A TOP WIDTH OF 20 FEET.
- C. REMOVAL OF THE DUDA BERM SHALL OCCUR ONLY AFTER COMPLETION AND STABILIZATION OF BOTH THE DUDA LAKE AND DUDA LITTORAL SHELVES.





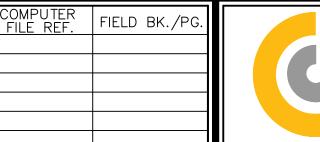




JAMES P. TERPENING JR, P.E. FL. REG. NO. 24276



DATUM: ELEVATIONS SHOWN ON THE PLANS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988)



CULPEPPER &
TERPENING INC
2980 SOUTH 25th STREET • FORT PIERCE, FLORIDA 34981
PHONE 772-464-3537 • FAX 772-464-9497 • www.ct-eng.con
STATE OF FLORIDA BOARD OF PROFESSIONAL
ENGINEERS AUTHORIZATION NO. 4286

- REVISIONS -	BY	DATE		BY	DATE
	•	•	DESIGNED	-	_
	•	•	CALCS.	_	_
	•	•	DRAWN	ZM	10-14-2
	•	•	DETAILED	_	_
		•	CHECKED	JPT	_
			APPROVED	JPT	_

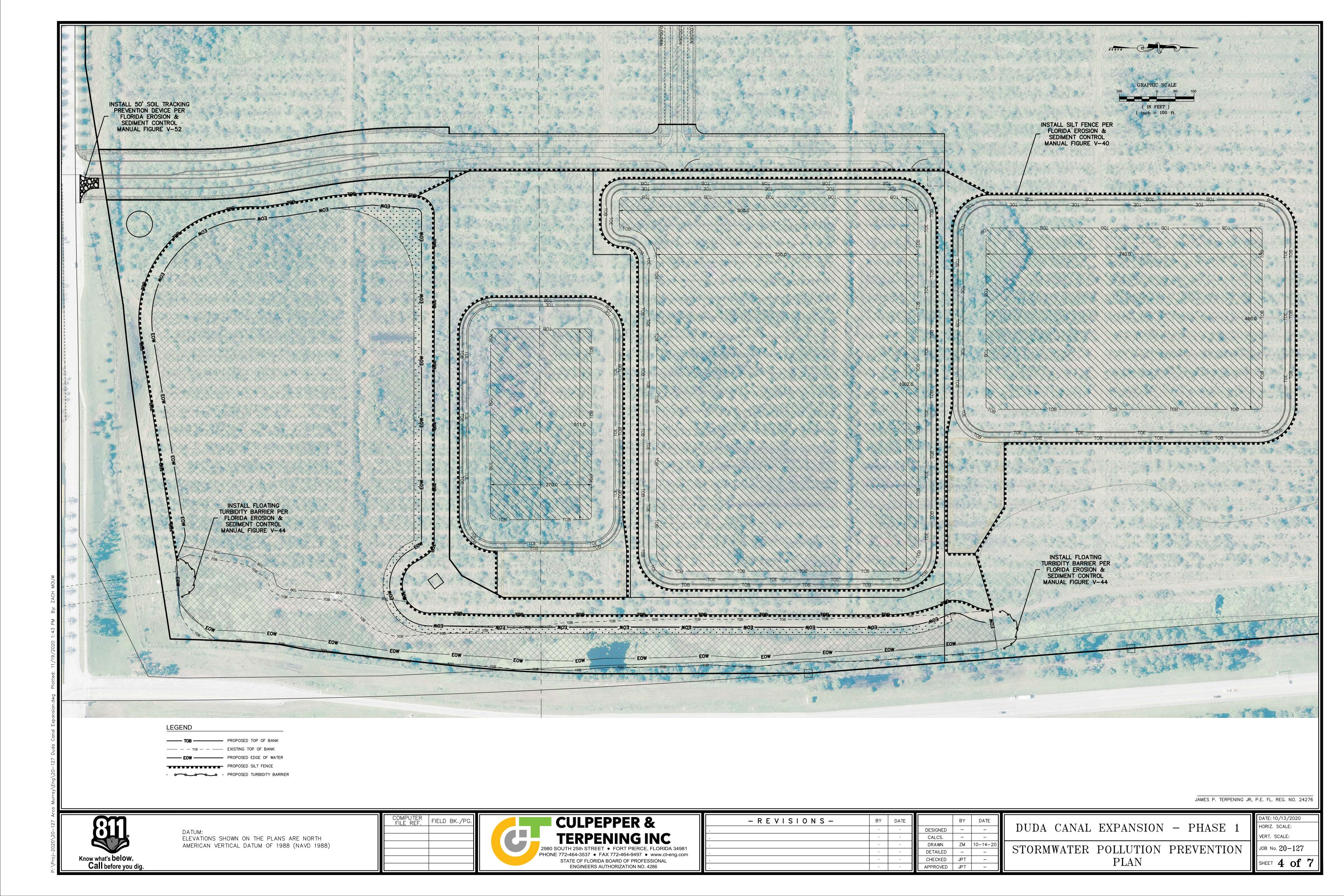
DUDA CANAL EXPANSION - PHASE 1

CROSS SECTIONS & DETAILS

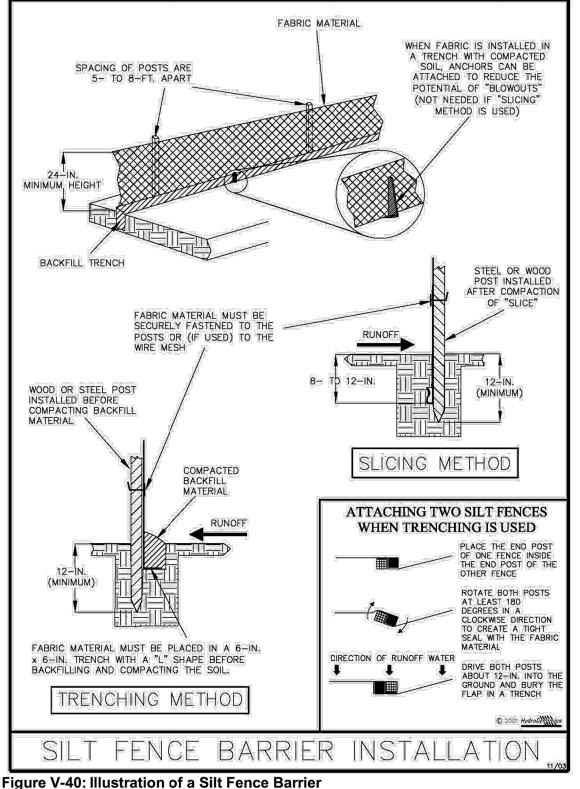
DATE: 10/13/2020
HORIZ. SCALE:
VERT. SCALE:

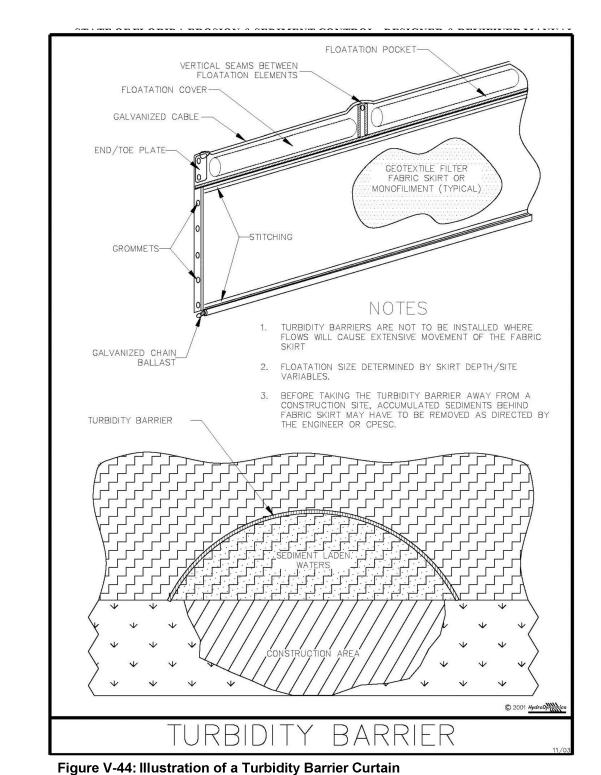
JOB No. 20-127

SHEET **3** of **7** 



# STATE OF FLORIDA EROSION & SEDIMENT CONTROL - DESIGNER & REVIEWER MANUAI





#### STATE OF FLORIDA EROSION & SEDIMENT CONTROL - DESIGNER & REVIEWER MANUAL

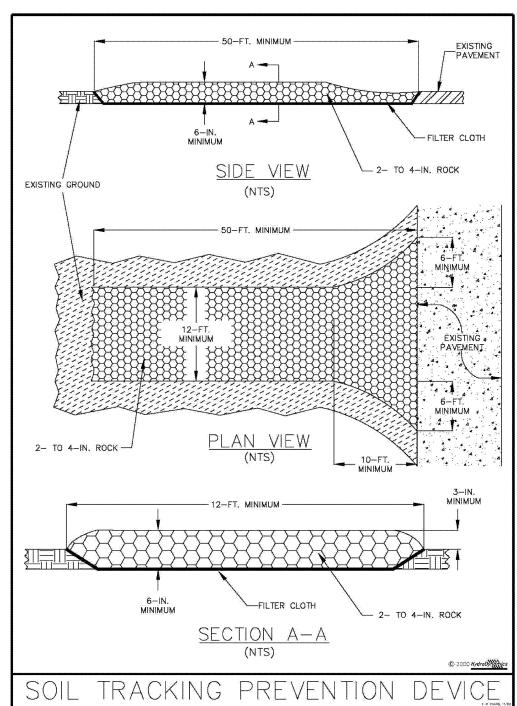
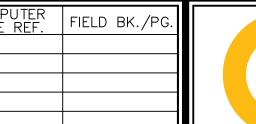


Figure V-52: Illustration of a Soil Tracking Prevention Device

JAMES P. TERPENING JR, P.E. FL. REG. NO. 24276



DATUM: ELEVATIONS SHOWN ON THE PLANS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988)





- REVISIONS -	BY	DATE		BY	DATE	
	•	•	DESIGNED	_	_	I
	•	•	CALCS.	1	_	
	•	•	DRAWN	ZM	10-14-20	Iſ
	•	•	DETAILED	_	_	
	•	•	CHECKED	JPT	_	
	•		APPROVED	JPT	_	

Date

DUDA CANAL EXPANSION - PHASE 1

STORMWATER POLLUTION PREVENTION DETIALS

ATE: 10/13/2020 HORIZ. SCALE: VERT. SCALE: OB No. 20-127SHEET **5** of **7** 

- A. Mobilization: Mobilization shall meet the requirements of FDOT Section 101. This work shall include, but is not limited to, operations necessary for the movement of personnel, equipment, supplies, and incidentals to the project site, and for the establishment of temporary offices, buildings, safety equipment and first aid supplies, sanitary and other facilities, as required by State and local laws and regulations. the costs of bonds and any required insurance, and any other preconstruction expense necessary for the start of work, excluding the cost of construction materials, shall also be included in this section. This section also includes any and all work related to the final cleanup.
- B. Construction Surveying: The Owner shall provide horizontal control consisting of four control points. The Owner shall also provide vertical benchmarks as shown on the plans. This control shall be provided one time only. The Contractor is responsible for all other construction surveying. The Contractor is responsible to protect these reference points and the construction staking throughout the job. The Contractor shall bear the cost of any necessary restaking.
- C. Soil Testing: Soil Testing shall be performed by a certified testing laboratory. The contractor shall be responsible for payment of any failed tests and inspections.

#### EARTHWORK AND GRADING

Materials and construction methods for earthwork, excavation, embankment and grading shall meet the requirements of FDOT Section 120 and shall be performed to achieve final grades, elevations and typical sections as shown on the plans for the proposed work.

- A. Clearing and Grubbing: Clearing and grubbing shall meet the requirements of FDOT Section 110 and shall be performed within the limits of the project work. This work shall include, but is not limited to, the removal of existing trees, brush stumps, roots and other objectionable material to a depth of 18 inches below the natural ground or design grade, whichever is lower. The areas to be cleared and grubbed generally consist of rights—of—way, utility easements, water management tracts, and portions of the lots as detailed on the plans. The Contractor shall confirm with the Owner the removal of any trees for possible preservation. All material shall be removed from the site of the project and shall be disposed of in accordance with local, regional, State and Federal laws, regulations and ordinances.
- B. Rough Grade: The Contractor shall grade the rights—of—way and lots to meet the requirements of FDOT Sections 110 and 120 and shall conform to the lines, grades, and typical sections as shown on the plans.
- C. Fine Grade: The Contractor shall fine grade the roadway to meet the requirements of FDOT Sections 110 and 120 and shall conform to the lines, grades and typical sections as shown on the
- D. Sod: Sod shall meet the requirements of FDOT Section 570, 575, and 981 and shall be placed adjacent to the curbing for a minimum width of 24 inches.
- E. Seed and Mulch: Seed and mulch shall meet the requirements of FDOT Sections 570, 575, and 981 and shall be placed in all disturbed areas not otherwise addressed in plans provided by the owner.

#### GENERAL NOTES

- 1. Grassing shall be furnished and installed in conformance with the approved landscape plan. All disturbed areas not shown to be planted, mulched, etc. shall be sodded.
- 2. Sod shall be placed such that the top of the grass is at the same elevation as the top of adjacent finish
- 3. The location of existing utilities shown is approximate only and must be field verified by the Contractor prior to
- 4. These plans shall not be used for construction unless they are marked "Approved for Construction" in the title
- Contractor to obtain and review all permits prior to starting construction
- Drawing scale may change due to reproduction
- Maintenance of traffic must be in conformance with FDOT Specifications. All nuisance exotic vegetation on—site must be removed in conjunction with site development.
- Drawing scale may change due to reproduction. 10. It is the contractor's responsibility to ascertain the exact locations, size, and condition of all existing
- underground utilities whether shown or not, prior to construction. Contractor shall notify all utility companies prior to construction and notify engineer prior of any deviation from what is shown on the plan.
- 11. All pipe lengths and centerline slope lengths shown on the drawing are scaled distances measured from center of structures). Contractor shall confirm all measurements in the field and notify engineer in writing of any discrepancies with the drawing prior to performing the work. All quantities shall be paid on the basis of field measurements of completed work.

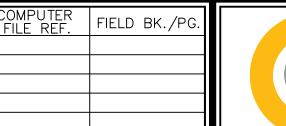
### LITTORAL PLANTINGS NOTES

- 1. The work in phase 1 includes regrading of the western Duda Canal bank to form a total of 1.39 acres of new littoral area by sloping the soils at slopes no steeper than 6:1 (target 10:1) for a horizontal width of 20 feet, and approximate depth of two feet below the canal control elevation. The littoral areas will be covered by approximately four inches of seed source muck soils excavated from wetlands or lateral ditches scheduled to be
- 2. The contractor shall furnish all labor, materials, equipment, and incidentals necessary for the Southern Grove Duda Canal Littoral Area Project, including, but not limited to maintenance of traffic, erosion and sediment control, maintaining drainage patterns, and transporting/placing seed source muck soils for the construction of the proposed littoral area.
- 3. Contractor is responsible for removal of Category I and II invasive exotic vegetation within the project area with the exception of Bermuda and Bahia grasses. All disturbed areas are to be vegetated in accordance with City of Port St. Lucie requirements.

JAMES P. TERPENING JR, P.E. FL. REG. NO. 24276



DATUM: ELEVATIONS SHOWN ON THE PLANS ARE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 1988)

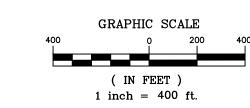


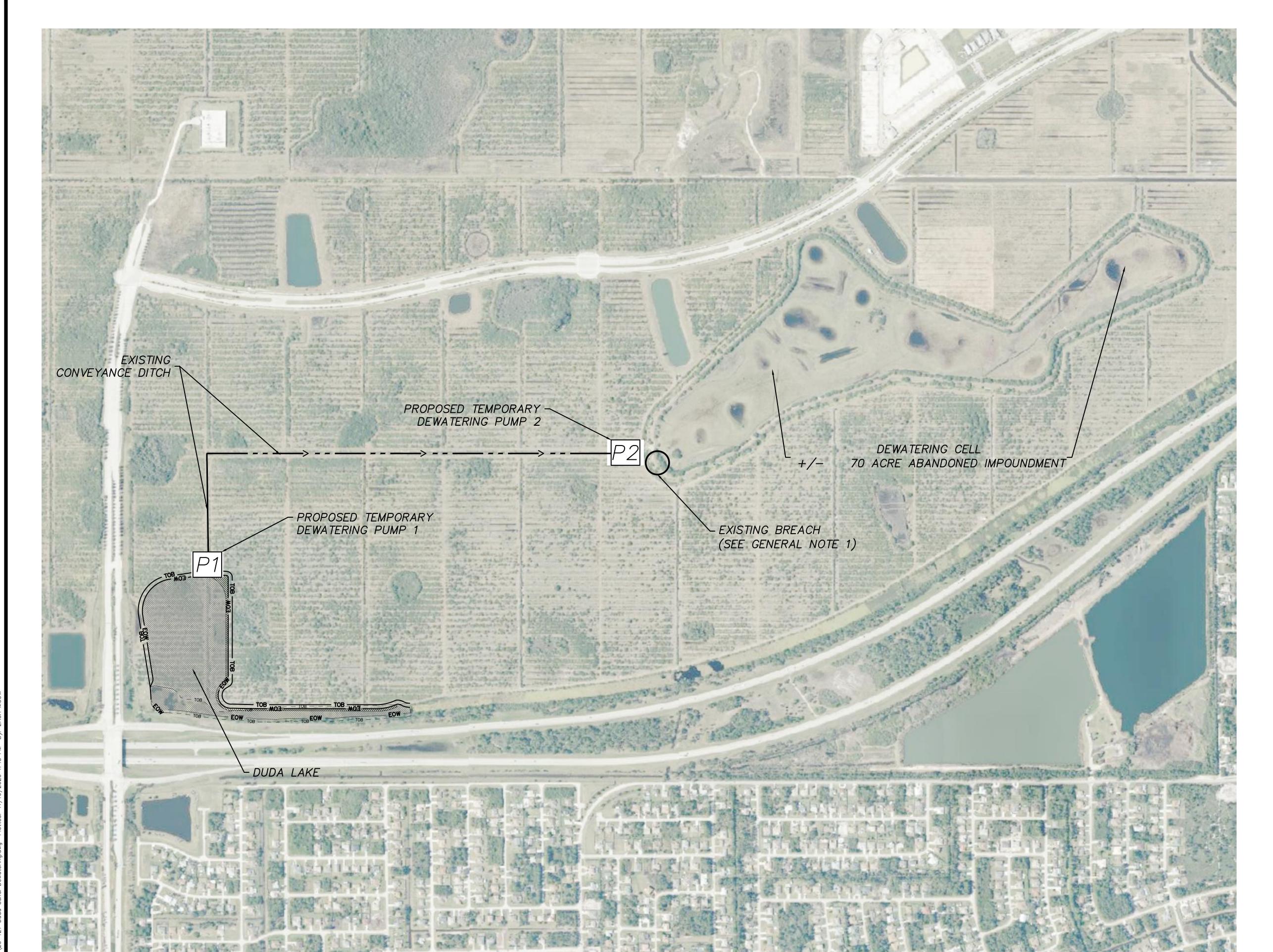


- REVISIONS -	BY	DATE		BY	DATE
	•	•	DESIGNED	_	_
	•	•	CALCS.	-	_
	•	•	DRAWN	ZM	10-14-20
	•	•	DETAILED	_	-
	•	•	CHECKED	JPT	_
		•	APPROVED	JPT	_

SHEET 6 of 7

SPECIFICATIONS





DEWATERING NOTES:

- 1. DEWATERING ACTIVITIES ARE LIMITED TO 1,080,000 GPD MAXIMUM DISCHARGE.
- 2. THE CONTRACTOR IS NOT LIMITED TO THE NUMBER OF PUMPING OPERATIONS RUNNING AT ONE TIME, BUT IS LIMITED TO THE TOTAL DAILY DEWATERING DISCHARGES AS LISTED ABOVE.
- 3. THE CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING THE METHODS OF DEWATERING AND DISCHARGE MANAGEMENT.
- 4. THE DEWATERING SEQUENCING SHALL BE DETERMINED BY THE CONTRACTOR BASED ON THE CONTRACTORS CONSTRUCTION SCHEDULE.
- 5. DEWATERING SHALL BE PREFORMED BASED ON THE PERMIT ISSUED BY SOUTH FLORIDA WATER MANAGEMENT DISTRICT.
- 6. THE SEASONAL HIGH-WATER TABLE IS ASSUMED TO BE APPROXIMATELY 21.0 FEET NAVD.
- 7. DISCHARGE OF DEWATERING SHALL BE CONTROLLED TO ENSURE NO EROSION AT THE DISCHARGE POINT OCCURS.
- 8. IF THE WATER QUALITY MONITORING OF THE DISCHARGE POINT IS DETERMINED TO BE 29 NTU'S ABOVE BACKGROUND LEVEL THEN DEWATERING SHALL CEASE AND CORRECTIVE MEASURES IMPLEMENTED.
- 9. THE CONTRACTOR SHALL OBSERVE DAILY DEWATERING DISCHARGES TO OBSERVE THE PRESENTS OF TURBIDITY, CHEMICAL ODORS, OILS, OR OTHER EVIDENCE OF CONTAMINATION.
- 10. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A DAILY LOG ON SITE DURING THE DEWATERING RECORDING THE TIME AND DATE OF THE DAILY INSPECTIONS, THE DAILY PUMPING RATES AND PUMP RUN LOGS.
- 11. IF CONTAMINATION WAS OBSERVED DURING THE DAILY INSPECTIONS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE PROJECT MANAGER.
- WATER QUALITY MONITORING NOTES:
- 1. WATER QUALITY MONITORING FOR TURBIDITY SHALL BE TAKEN TWICE DAILY DURING THE DEWATERING OPERATION
- 2.TURBIDITY SHALL BE EXPRESSED IN
- NEPHELOMETRIC TURBIDITY UNITS (NTU). 3. BACKGROUND SAMPLES SHALL BE TAKEN 200 FEET UPSTREAM OF THE DEWATERING DISCHARGE POINT TO DETERMINE THE BACKGROUND WATER
- QUALITY. 4. DAILY SAMPLES SHALL BE TAKEN AT THE DISCHARGE POINT WITH AT LEAST 4 HOURS BETWEEN SAMPLES.
- 5. DAILY SAMPLES SHALL COMMENCE ON THE FIRST DAY OF DEWATERING AND TERMINATE UPON COMPLETION OF THE DEWATERING ACTIVITIES.
- 6. THE DAILY SAMPLES MUST DEMONSTRATE THAT THE COMPLIANCE TURBIDITY SAMPLES ARE LESS THAN 29 NTU ABOVE THE BACKGROUND SAMPLES NTU LEVEL.
- 7. A WATER QUALITY MONITORING LOG SHALL BE MAINTAINED ON SITE. THE LOG SHALL INCLUDE THE DAILY MONITORING REPORTS.
- 8. THE MONITORING REPORTS SHALL INCLUDE THE FOLLOWING INFORMATION:
- a. THE DEWATERING PERMIT NUMBER; b.THE DAY AND TIME OF WHEN THE SAMPLE
- WAS TAKEN; c. THE DEPTH OF THE WATER BODY
- d. THE DEPTH OF THE SAMPLE; AND
- e. ANTECEDENT WEATHER CONDITIONS.

#### GENERAL NOTES:

1. CONTRACTOR TO REPAIR EXISTING BREACH IN THE ABANDONED IMPOUNDMENT. UPON COMPLETION OF DEWATERING ACTIVITIES THE REPAIR IS TO BE REMOVED AND THE BREACH IS TO BE LEFT OPENED.

JAMES P. TERPENING JR, P.E. FL. REG. NO. 24276

**CULPEPPER &** FIELD BK./I **TERPENING INC** 2980 SOUTH 25th STREET • FORT PIERCE, FLORIDA 34981 PHONE 772-464-3537 • FAX 772-464-9497 • www.ct-eng.com STATE OF FLORIDA BOARD OF PROFESSIONAL ENGINEERS AUTHORIZATION NO. 4286

- REVISIONS -	BY	DATE		BY	DATE
	•	•	DESIGNED	_	_
			CALCS.	_	-
	•	•	DRAWN	ZM	10-14-20
	•	•	DETAILED	ZM	-
			CHECKED	_	-
			APPROVED	JPT	_

DUDA CANAL EXPANSION - PHASE 1

DEWATERING PLAN

HORIZ. SCALE: 1"=400' VERT. SCALE: NA JOB No. 20 - 127SHEET **7** of **7**