GMAwater *Technical Memorandum*

Date: September 18, 2026
Subject: Southland Water Project

Project Description

The purpose of this application is to obtain a water use permit for dewatering to facilitate mining and mitigation at the Southland Water Project (project). Dewatering will be required for construction of the process water and tailings settlement stormwater storage areas and mitigation area as shown in Exhibits 1 and 2.

Operating Plan

Dewatering will occur in two phases at the project site:

1. Pumping will occur via three via surface water pumps to facilitate project construction of the process water and tailings settlement stormwater storage areas. The maximum extent of dewatering activities will reduce the water table from a normal elevation of 8 feet North American Vertical Datum (NAVD) to the bottom elevation of the process water pond of -2 feet NAVD.
2. Pumping will occur via one surface water pump to facilitate project construction of the mitigation area. The maximum extent of dewatering activities will reduce the water table from a normal elevation of 8 feet NAVD to the bottom elevation of 4 feet NAVD for the mitigation area.

All dewatering effluent will be maintained within the project boundary and routed to interior canals.

Projected Water Use Demands

Maximum month and annual allocations are not specified for dewatering permits (Subsection 2.3.2.B.2 of the Applicant's Handbook for Water Use Permit Applications within the South Florida Water Management District [AH]); however, the estimated dewatering volumes are provided based on project design. The derivation of the Sichardt empirical equation, used for radius of influence, produces inaccurate results for dewatering volumes at this scale.

Withdrawals are estimated based on pump specifications at 45.36 million gallons per day (MGD) for the process water and tailings settlement stormwater storage areas. The project schedule, included as Exhibit 3, shows site activities require continuous dewatering extending from September 2026 to May 2039. Withdrawals for this portion of the project are estimated at 16,556.4 million gallons per year (MGY).

Withdrawals are estimated based on pump specifications at 15.12 MGD for the mitigation area. The project schedule, included as Exhibit 3, shows site activities require continuous dewatering extending for 60 days. Withdrawals for the project are estimated at 907.2 MGY.

Impact Evaluation

The Permittee estimated the areal extent of the drawdown for the proposed dewatering, as required in Subsection 2.3.2.B.2.h of the AH using Sichardt's empirical equation. The closest aquifer performance test found in SFWMD's database is located approximately 14 miles away Therefore, aquifer parameters for the project were obtained from a series of on-site borehole tests used to calculate hydraulic conductivity associated with the adjacent CEPP New Waters EAA A-2 Stormwater Treatment Area (STA) authorized in permit 50-12142-W. The modeling data are consistent with the criteria for basic analytic impact assessments set forth in Subsection 3.1.2 of the AH. Exhibits 4-1 and 4-2 show the results from the Sichardt empirical equation. The aerial extent of the radius of influence is shown on Exhibits 5-1 and 5-2. Please note that the impact evaluation does not account for the installation of soil bentonite cut-off walls to be installed within embankments of the process water and tailings settlement stormwater storage areas.

Water Resource Impact Evaluation

Water Table Aquifer

Water Resource Availability

The land surface elevation at the Project is approximately 8 feet NAVD. The base of the surficial aquifer system in the vicinity of the Project is at approximately -200 feet NAVD (USGS WRIR 86-4067). Water levels onsite have been measured in at or near land surface and are estimated at 8 ft NAVD. The maximum extent of dewatering is to a depth of -2 ft NAVD. Dewatering will temporarily lower the water table elevations in portions of the property and all effluent will be returned to onsite canals. Therefore, the potential for harm to occur to water resource availability as a result of the withdrawal of the recommended allocation is considered minimal.

Existing Legal Users

The project is surrounded by agricultural users who primarily rely on operation of the surrounding Central and Southern Florida Flood Control Project (C&SF system) canals. The A-2 STA complex is located south of the project. Dewatering will temporarily lower the water table elevations in portions of the property and all effluent will be returned to onsite canals. Furthermore, the A-2 STA complex is hydraulically separated from the project A-2 STA Seepage Canal and A-2 STA Inflow/Outflow Canal. Therefore, the potential for harm to occur to existing legal users of the SAS as a result of the withdrawal of the recommended allocation is considered minimal.

Existing Off Site Land Uses

Land uses that are dependent upon water being on or near land surface and that existed prior to this application are protected from harm. The area is surrounded by agricultural land and the A-2 STA complex. Dewatering effluent will be maintained onsite. Furthermore, the A-2 STA complex is hydraulically separated from the project A-2 STA Seepage Canal and A-2 STA Inflow/Outflow Canal. Therefore, pursuant to Subsection 3.6.2 of the AH, the use is not expected to result in significant reduction in water levels on the property of an existing off-site land use to the extent that: the designed function of a water body and related surface water management improvements are damaged (not including aesthetic values); damage to agriculture, including

damage resulting from reduction in soil moisture resulting from water use, or land collapse or subsidence caused by reduction in water levels associated with water use for dewatering activities.

Migration of Saline Water

The SAS is fresh in the project area and isolated from deeper sources of saline water found within the Floridan aquifer system, by several interlayered low permeability confining units and aquifers. The nearest source of saline surface water, the tidal waters of the Lake Worth Lagoon (where the 250 milligram per liter isochlor within the SAS is also bounded), is located approximately 42 miles east of the project (Saltwater Interface Monitoring and Mapping Program, District Technical Publication WS-67). All work will be completed within shallow, freshwater portions of the aquifer and held onsite. Therefore, the potential for saline intrusion or upconing to occur as a result of the project is considered minimal.

Wetland Environments

The surrounding area consists almost exclusively of agricultural lands. SFWMD land use coverage appears to depict a linear wetland features west of the Project (Exhibit 5-1). A review of aerial photos shows that these features appear to be an open water canal. The A-2 STA complex is under construction to the south. Mitigation area dewatering is short-term and the A-2 STA complex is hydraulically separated from the project A-2 STA Seepage Canal and A-2 STA Inflow/Outflow Canal. Furthermore, water levels are controlled by operation of the C&SF system and all effluent will be held onsite. Based upon application of the narrative standard that the hydrologic alteration of the water use shall not adversely impact the values of wetland functions so as to cause harm to the abundance, diversity and habitat of fish, wildlife and listed species, the potential for harm to occur to wetlands as a result of the withdrawal of the requested allocation is not anticipated.

Source of Pollution

There are no contaminated sites identified by the Florida Department of Environmental Protection (FDEP) within the radius of influence (Exhibits 5-1 and 5-2). The closest site identified is ERIC_6694, located west of the project. ERIC_6694 is one of several sites with this identification number. Each was the site of soil contamination related to historic operations where successful excavations of contaminated material were performed. FDEP issued Site Rehabilitation Completion Reports with Restrictive Covenants that prevent future digging and certain land uses. Therefore, the potential for movement of contaminants, if present, from known pollution sources to occur as a result of the withdrawal of the requested allocation is considered not anticipated.

<u>Regional Issues</u>

Use of Surface Water from the Lake Okeechobee Basin

Pursuant to Subsection 3.2.1.F.1 of AH, the Lake Okeechobee Service Area Water Availability restricted allocation rules do not apply to dewatering withdrawals. Therefore, the dewatering activities with the Project will not affect Lake Okeechobee waterbodies.

Legal Control and Land Use

Records from the Palm Beach County Property Appraiser demonstrate that the Permittee maintains legal control over the Project site (Subsection 2.1.1 of the AH). All withdrawal facilities are located on property owned by the Permittee (Subsection 2.1.2 of the AH). The water allocation requested to meet construction demands is compatible with the land use category at this site (Subsection 2.1.4. of the AH).

Permit Duration

In accordance with Subsection 1.5.2.A.2 of the AH, a water use permit duration can be issued for the time period for which the water will be needed to meet the projected demands and during which the conditions for issuance will be met. The Permittee has demonstrated water use demands for through 2039; therefore, the applicant requests a water use permit expiration date of December 31, 2039.

Professional Certification

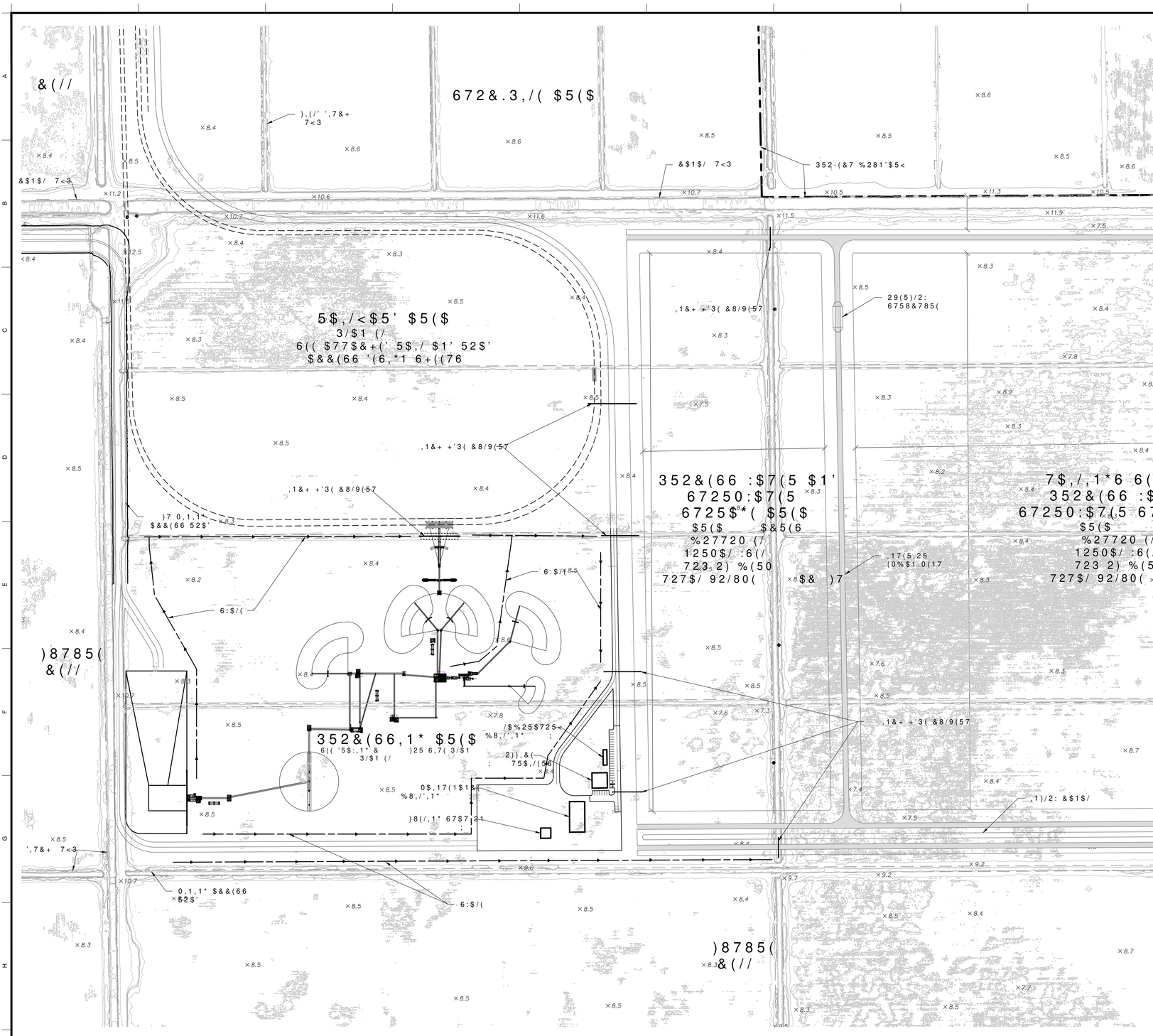
In accordance with Chapter 492, Florida Statutes, I, Steven J. Memberg, P.G. #2251, certify that I currently hold an active license in the state of Florida and certify that this technical memorandum was prepared by me or under my responsible charge.



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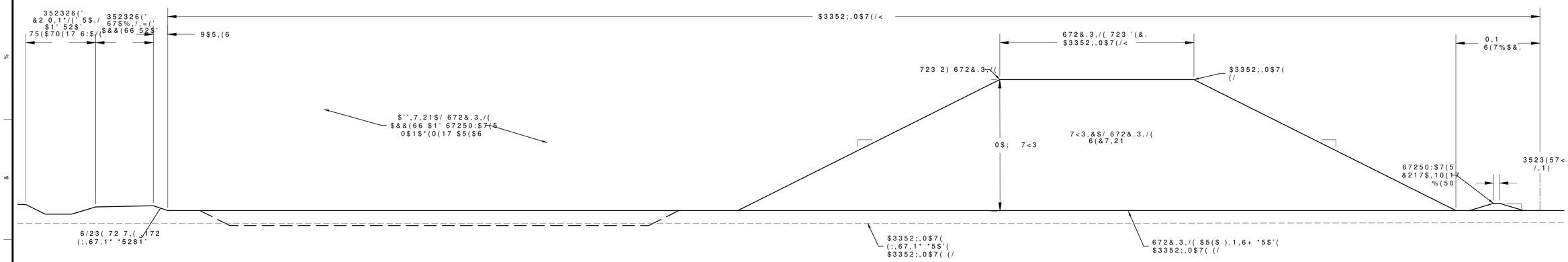
Steven J. Memberg, P.G.
Professional Geologist
Florida License PG2251

Exhibit 1



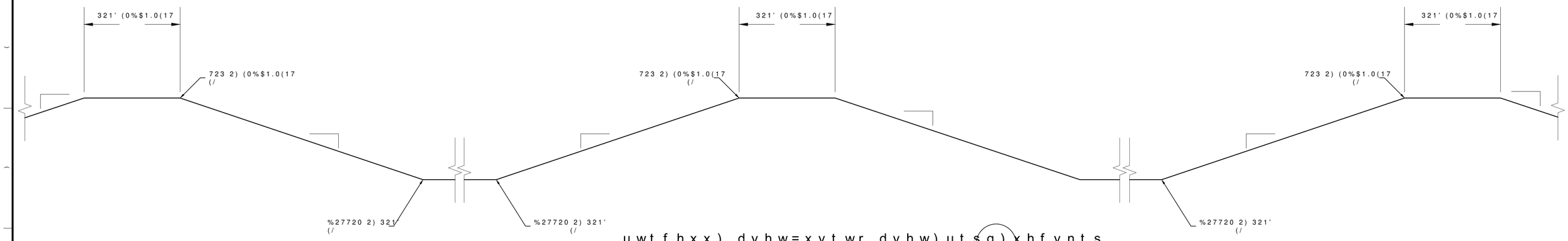
Always call 811 two full business days before you dig to have underground utilities located and marked.

Sunshine811.com



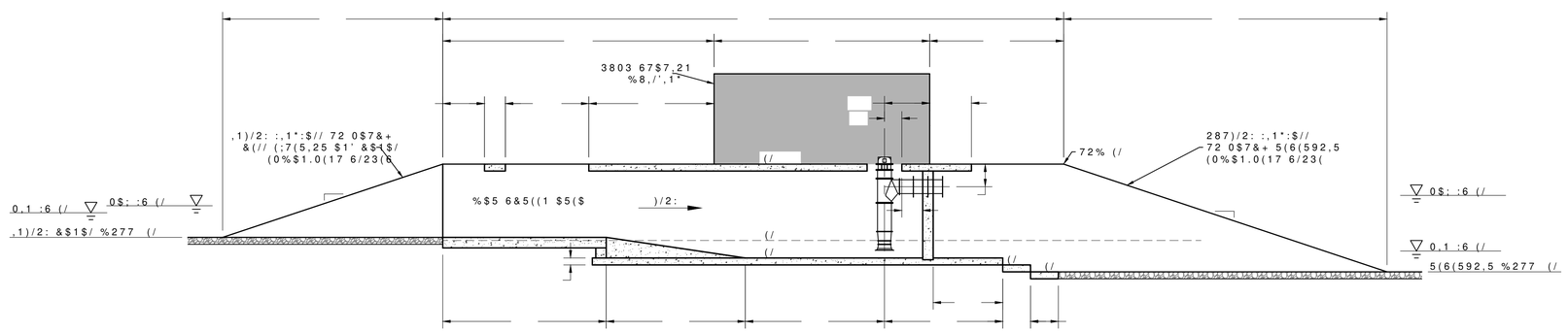
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Always call 811 two full business days before you dig to have underground utilities located and marked.

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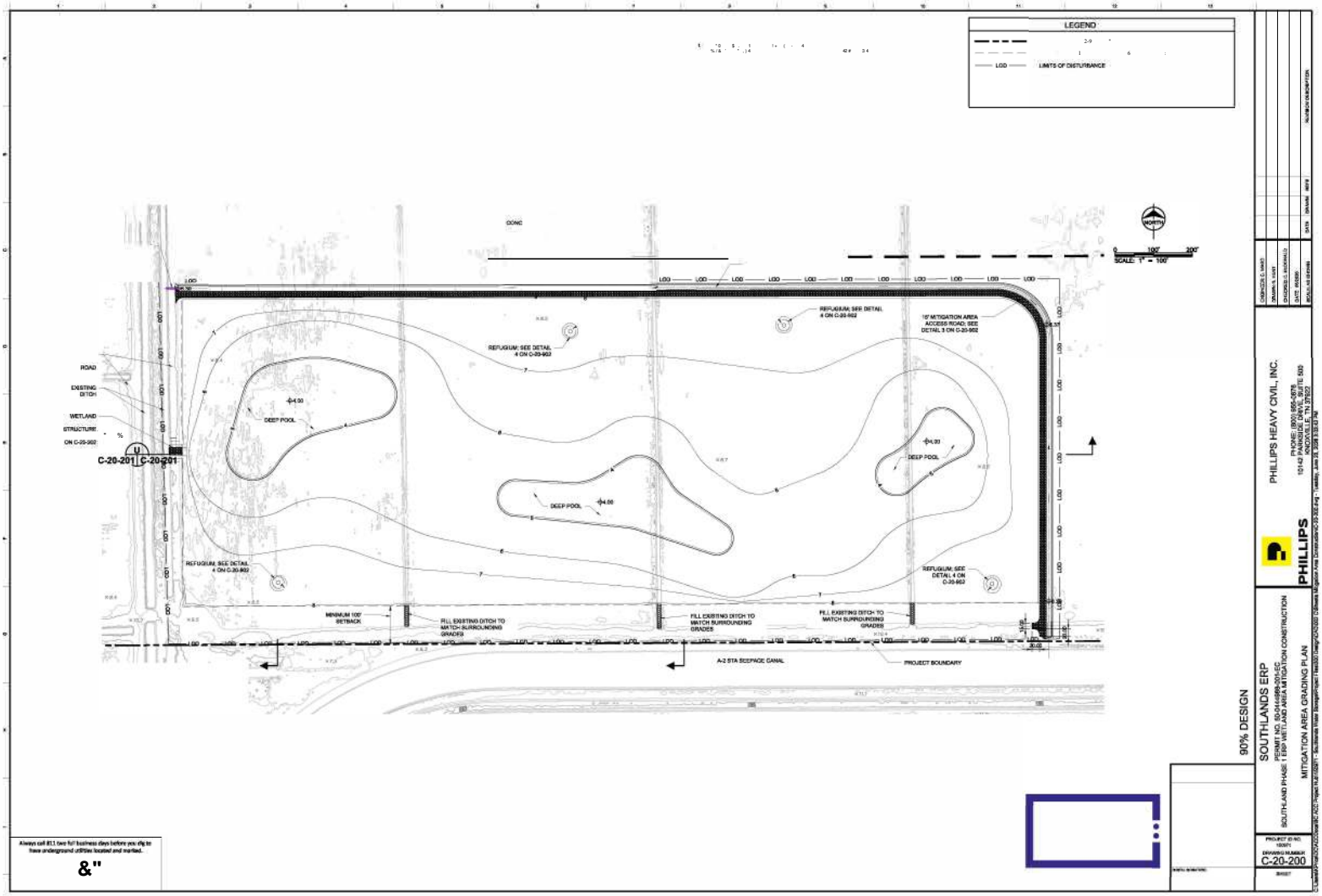
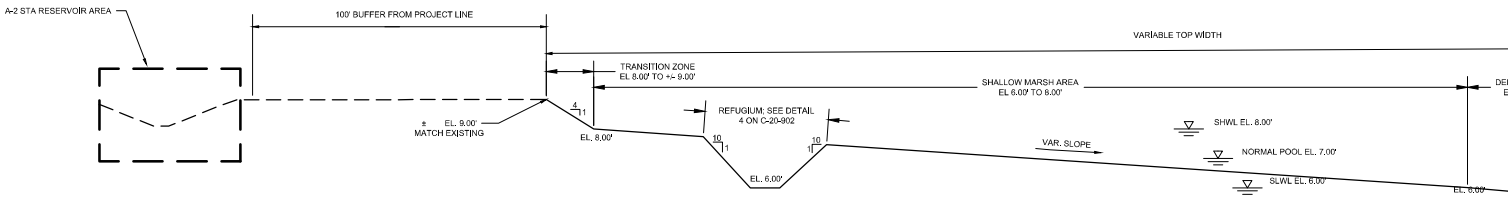

LEGEND
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LIMITS OF DISTURBANCE
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SCALE: 1" = 100'
CONC
ROAD
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WETLAND
STRUCTURE ON C-20-902
C-20-201
C-20-201
REFUGIUM; SEE DETAIL 4 ON C-20-902
REFUGIUM; SEE DETAIL 4 ON C-20-902
10' MITIGATION AREA ACCESS ROAD; SEE DETAIL 3 ON C-20-902
DEEP POOL
DEEP POOL
DEEP POOL
REFUGIUM; SEE DETAIL 4 ON C-20-902
REFUGIUM; SEE DETAIL 4 ON C-20-903
MINIMUM 100' SETBACK
FILL EXISTING DITCH TO MATCH SURROUNDING GRADES
FILL EXISTING DITCH TO MATCH SURROUNDING GRADES
FILL EXISTING DITCH TO MATCH SURROUNDING GRADES
A-2 STA SCEPACE CANAL
PROJECT BOUNDARY
PHILLIPS HEAVY CIVIL, INC.
PHILLIPS
90% DESIGN
SOUTHLANDS ERP
SOUTHLAND PHASE 1 ERP WETLAND AREA MITIGATION CONSTRUCTION
MITIGATION AREA GRADING PLAN
C-20-200

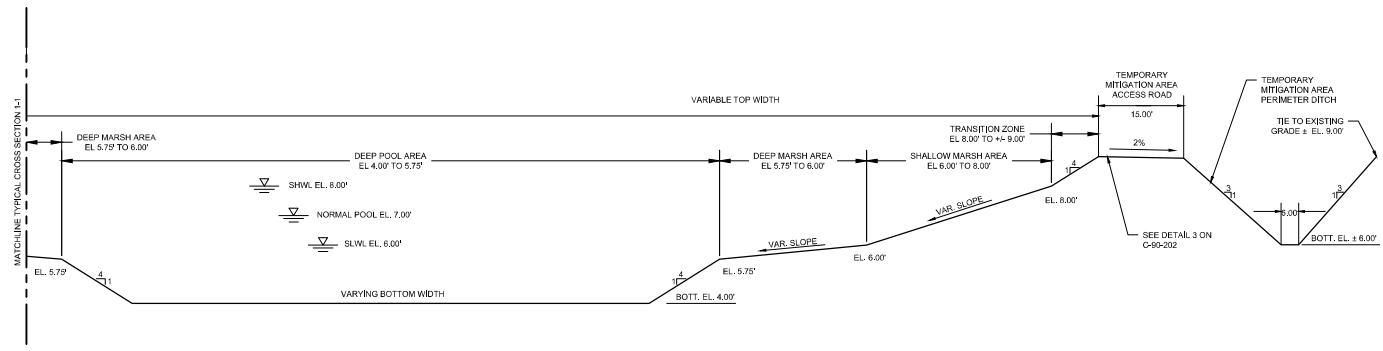
Exhibit 2-



TYPICAL SECTION ACROSS MARSH 1-1 (V)

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C-20-200 | C-20-202



TYPICAL SECTION ACROSS MARSH 1-2 (V)

NOT TO SCALE

C-20-200 | C-20-202

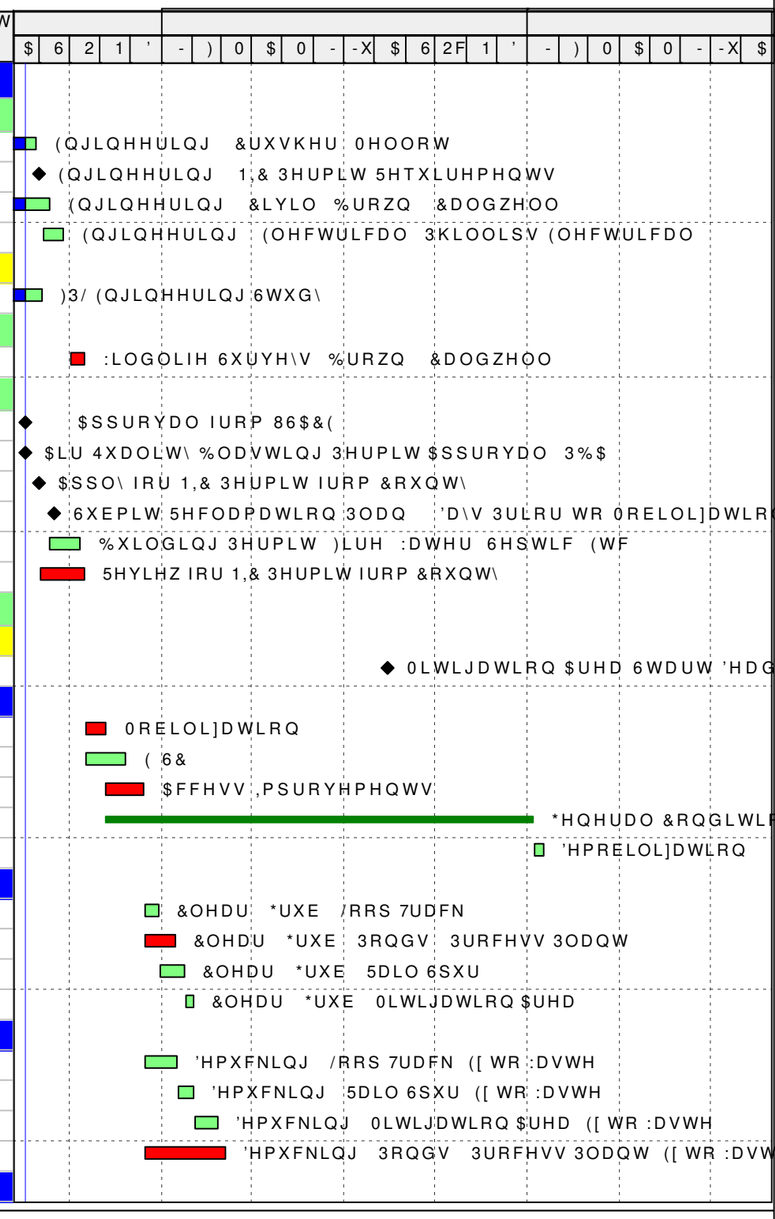
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6RXWKODQG 6XPPDU\ 6FKHGXOH

PHILLIPS HEAVY CIVIL

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$	*HQHUDO &RQGLWLRQV			1RY	-DQ	1RY	-XQ		6RXWKODQG 'D	
$	'HPRELOL]DWLRQ			-DQ	-DQ	-XQ	-XQ		6RXWKODQG 'D	
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$	&OHDU *UXE 3RQGV 3URFHVV 3ODQ			'HF	-DQ	'HF	-DQ		6RXWKODQG 'D	
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Exhibit 3-1

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PHILLIPS HEAVY CIVIL

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$FWLYLW\ ,'	$FWLYLW\ 1DPH	2'	5'	6WDUW	)LQLVK	/DWH 6	/DWH)L	7RW)OF	&DOH	4XDQW
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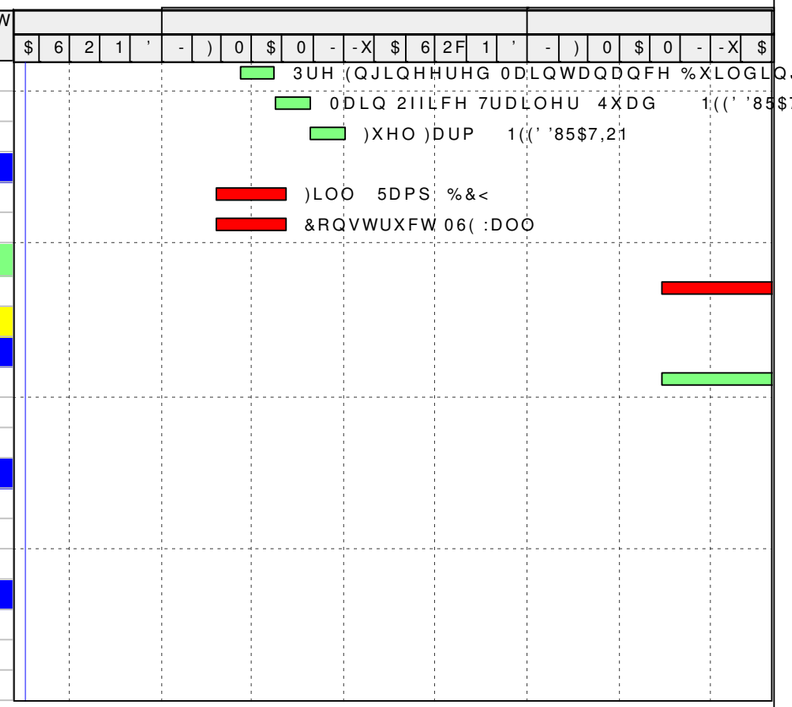
Exhibit 3-

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PHILLIPS HEAVY CIVIL

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$	&RQVWUXFW 06(:DOO			)HE	0D\	)HE	0D\		6RXWKODQG 'D	
0LQLQJ 3URFHVVLQJ										
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&HOO										
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$	&HOO 0LQLQJ			6HS	0D\	-XO	$SU		6RXWKODQG 'D	
$	&HOO 3URFHVVLQJ			-XO	$SU	-XO	$SU		6RXWKODQG 'D	
&HOO										
$	&HOO 6WULSSLQJ %ODVWLQJ 3UHS			-DQ	2FW	'HF	6HS		6RXWKODQG 'D	
$	&HOO 0LQLQJ			0D\	0DU	$SU	-DQ		6RXWKODQG 'D	
$	&HOO 3URFHVVLQJ			$SU	-DQ	$SU	-DQ		6RXWKODQG 'D	
&HOO										
$	&HOO 6WULSSLQJ %ODVWLQJ 3UH[			1RY	$XJ	6HS	-XQ		6RXWKODQG 'D	
$	&HOO 0LQLQJ			0DU	$XJ	-DQ	-XQ		6RXWKODQG 'D	
$	&HOO 3URFHVVLQJ			-DQ	-XQ	-DQ	-XQ		6RXWKODQG 'D	



5HPDLQLQJ /HYHO RI :RUN &ULWLFDO 5HPDLQLQJ :RUN

$FWXDO /HYHO RI :RUN 5HPDLQLQJ :RUN ◆ 0LOHVWRQH

3DJH RI

˘ 2UDFOH &RUSRUDWLRQ

Exhibit 3-

Excavation

Assume L' x W ' De-Watering (MUST PUT IN excav DIMENSIONS)

PROJECT Name:					
Aquifer thickness:	200	feet	(a)	60.957	meters
Aquifer Kh	20	feet/day	(a)	7.056E-05	met/sec
Excavation Trench:					
Length	2950	feet	(b)	899.116	meters
Width	2200	feet	(b)	670.527	meters
Dewater depth	10	feet	(c)	3.048	meters

R_o = 3000(H-h)sqrt(K)

aquifer thickness	H	60.957	meters
dewater thickness	h	57.909	meters

R_o	76.80	meters	252.0	feet

r_e = sqrt((L x W)/ pie)

r_e	438.069	meters	1437.31	feet

Total R: 1689 feet

Exhibit

Mitigation

Assume L' x W ' De-Watering (MUST PUT IN excav DIMENSIONS)

$R_o = 3000(H-h)\sqrt{K}$

Total R:	

Exhibit

Exhibit