April 24, 2023

South Florida Water Management District
Office of General Counsel
3301 Gun Club Road
West Palm Beach, Florida 33406

RE: FPL Miami-Dade Clean Water Recovery Center Project
Turkey Point Conditions of Certification (PA03-45G)
Post-Certification Submittal for Dewatering Compliance Determination – Phase 1 Waterline

To Whom It May Concern:

Florida Power & Light Company (FPL) is pleased to submit the enclosed post-certification submittal for dewatering in accordance with Section A, Condition XXI and Section B, Condition III.C.7 of the Turkey Point Conditions of Certification (PA03-45G) for the FPL Miami-Dade Clean Water Recovery Center (CWRC) Project. Section B, Condition III.C.7 states,

> *"Prior to the commencement of construction of those portions of the project which involve dewatering activities, the Licensee shall submit a detailed plan for the proposed dewatering activities to the SFWMD for a determination of compliance with the non-procedural requirements of Chapters 40E-2 and 40E-3, F.A.C., in effect at the time of submittal..."*

The enclosed dewatering plan is for Phase 1 of the CWRC waterline (central and southern portion of the waterline, see Figure 1) and replaces the dewatering plan previously submitted on December 12, 2022, which was approved by SFWMD on January 11, 2023. Dewatering associated with construction of the remainder of the waterline will be addressed in another submittal.

If you have any comments or questions regarding the attached application, please feel free to contact me.

Sincerely,

Danielle Hall
Senior Project Manager
Danielle.Hall@fpl.com
(904) 439-9183

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April 24, 2023

Mr. Marsel Fakhrutdinov, P.E.
Miami-Dade County Department of Regulatory and Economic Resources
Environmental Resources Management
Water Control Section
701 NW 1st Court, 6th Floor
Miami, FL 33136-3912

Subject: **FPL Miami-Dade Clean Water Recovery Center**
(42-inch Pipeline from Survey Station 170+00 through 432+89)
Turkey Point Conditions of Certification (PA03-45G)
Post-Certification Submittal for Dewatering Compliance Determination

Dear Mr. Fakhrutdinov,

On behalf of Giannetti Contracting Corp., Tierra Group proposes a dewatering plan to install a pipeline between the South District Wastewater Treatment Plant (Latitude 25°32'56.36" North /Longitude 80°20'48.07" West) and Turkey Point (Latitude 25°26'14.32" North/ Longitude 80°20'2.33" West) in Miami-Dade County, Florida. The project location is shown in **Figure 1**.

1.0 Project Description

Dewatering is necessary to install an eight-mile long, 42" pipeline in Miami-Dade County. This application addresses the central and southern two-thirds of the project, while the northern third will be addressed under separate cover.

Trenching begins at Survey Station 170+00, approximately 100 feet west of the L-31E Canal, and continues south for 5,400 feet to Station 224+00, where a directional bore will run south beneath the Military (G-95) Canal, resurfacing at Station 234+80. From Station 234+80, trench runs south for 3,120 feet to Station 266+00 near SW 312th Street, where a directional bore will run south beneath a lateral spur of the L-31E Canal, resurfacing at Station 275+20.

From Station 275+20, trench continues south for 1,840 feet to STA 293+60, where a directional bore will run south beneath the C-103 Canal, resurfacing at Station 304+40. From Station 304+40, trench runs south 1,680 feet to Station 321+20, where a directional bore will run south beneath the North Canal and Canal L-31E, resurfacing at Station 333+20. From Station 333+20, trench runs south-southeast for 9,320 feet to Station 426+60, where it turns east and continues for 640 feet, terminating at the Turkey Point plant.

The total excavated trench length is approximately 22,000 feet across 550 trench sections. The pipeline will be placed within 6.0-foot wide by 40-foot-long linear trench segments; installation of five sections is planned for completion each day. The site plan and dewatering locations with subsurface profiles are shown in FPL Site Drawings *Miami-Dade Clean Water Recovery Center, Offsite 42" Reuse Pipeline – SDWWTP to Turkey Point, Drawing Numbers 3629 through 3655,* annotated by Tierra Group included as **Figure 2**.

2.0 Estimation of the Dewatering Radius of Influence & Maximum Flow Rate

Tierra Group used Sichardt's Equation to calculate the dewatering groundwater volume of the central portion of the project based on the hydraulic conductivity (K = 36.9 feet/day or 0.000130 meters/second) and aquifer depth (H = 150 feet). Dewatering volume of the southern portion of the project was calculated using Sichardt's Equation based on the hydraulic conductivity (K = 101.8 feet/day or 0.000359 meters/second) and aquifer depth (H = 160 feet).

The K values are referenced from *Geotechnical Data Report, Miami-Dade Clean Water Recovery Center Pipeline*, prepared March 2023 by Blascom Engineering, Inc. Aquifer depths were referenced from *United States Geological Survey: Water-Resources Investigations Report 90-4108, Hydrogeology of the Surficial Aquifer System*, Dade County, Florida, 1991. Select pages of the referenced documents are provided in **Attachment A**.

The calculated maximum radius of influence (ROI) and dewatering flow rate are 560 feet and 1,206 gallons per minute (gpm), respectively. The estimated maximum daily dewatering pumpage calculated using Sichardt's Equation is 673,695 gallons per day for the proposed production rate of 5 sections per day. The variables and supporting calculations for these values are provided in **Attachment A**.

3.0 Contaminated Facilities File Review

Environmental records from the Florida Department of Environmental Protection (FDEP) and Miami-Dade County Department of Regulatory and Economic Resources (RER) indicate no contaminated facilities are within the radius of influence (560 feet) of proposed trenching activities, as shown in **Figure 3**.

4.0 Dewatering Plan

Ground surface elevation at the proposed dewatering site varies with a maximum elevation of +6.0 feet relative to the North American Vertical Datum of 1988 (NAVD). Average groundwater elevation at the dewatering site varies between -0.3 and -0.4 feet NAVD; the maximum bottom elevation of the trenches is -11.2 feet NAVD.

Dewatering fluids will be pumped from the excavation trenches using a self-priming six-inch (6") vacuum pump, or equivalent, to a nominal 40' wide by 400' long, above-grade infiltration basin using soil excavated from the trenches. The basin will be initially constructed adjacent to the trench line but as the trenching proceeds the basin will be constructed over the backfilled trenches to minimize the disturbed area. The footprint of the basin will move forward as the trenching work proceeds.

The basin walls will be covered with polyethylene sheeting to prevent lateral migration and will be further protected by silt fencing. Turbidity curtains will be installed spaced 100' apart, as shown in **Figure 4**. Infiltration trench size requirements, and associated infiltration basin area requirements, derived using the *Florida Department of Transportation (FDOT) Drainage Handbook Exfiltration Systems* (February 2012), are included in **Attachment A**.

Trench boxes will be employed during trench work to comply with OSHA requirements. The trench boxes will also reduce potential localized exfiltration from the L-31E Canal. Additionally, the positive elevation head differential infiltration of the basin will further reduce potential exfiltration from the L-31E Canal via recharge into the subsurface aquifer.

During the initial project start up, and where direct borings under canals exit and trenching begins again to allow construction of a new infiltration basin, the effluent will be pumped through an 18,000-gallon sedimentation weir tank prior to discharge into two-foot diameter temporary drainage wells installed in the project area and located to minimize disruption to active trench dewatering. The capacity of temporary drainage wells is 495 gallons per minute per foot of head. Temporary well specifications are included in **Figure 5**. Well locations, shown in **Figure 2** are contingent on underground and overhead utility clearance.

Dewatering assumptions are based on the time to dig, dewater, and install subsurface infrastructure during daylight working hours. Dewatering duration for this portion of the pipeline project is estimated at ten (10) hours per day for one hundred and thirty-eight (138) working days based on a planned production rate of 200 linear feet per day with a 1.25 Factor of Safety added to account for weather delays, equipment breakdowns, and other unforeseen circumstances.

4.1 Soil and Sediment Management Plan

Excavated soil from open trenches will be segregated as needed to ensure compliance and used to create a temporary berm around the infiltration basin. Upon completion of pipeline section installation, stockpiled soil will be returned to the trenches as backfill. Excess spoil will be properly disposed of offsite.

Dewatering fluids discharged to a temporary well will initially be processed through weir sedimentation tanks to allow sediment to settle from the effluent prior to discharge. Accumulated sediment removed from the tanks will be returned to the excavation from which it originated or be properly disposed offsite. Turbidity control includes the provision of turbidity curtains and a sedimentation weir tank; particle settling calculations are included in **Attachment A**. Pump and sedimentation tank specification data are included in **Attachment B.**

4.2 Stormwater Management

The intent is to pump dewatering effluent from excavation trenches into an infiltration basin where the effluent will surcharge into the subsurface aquifer. The infiltration basin will be constructed, expanded upon, then deconstructed and removed as the piping moves down the installation route.

The project has developed a SWPPP in accordance with the provisions of F.A.C. Section 62-621.300(4), which is included in **Attachment C**. Silt fencing and other stormwater management features are detailed in **Figure 4** and the SWPPP. Best Management Practices (BMPs) to control sedimentation and stormwater pollution runoff will be observed during dewatering operations. Existing catch basins and accessible drainage entry points at the site will be protected with curb barriers, including hay bales wrapped in silt filter fabric and/or booms, to deter sediment in stormwater from entry into the existing roadway drainage system.

Temporary grade changes and surface flow restrictions will occur during the project but no grading work that permanently changes the existing grade or surface drainage flow will be performed. No discharge to surface waters will occur, therefore the provisions of *F.A.C. Section 62-621.300 – Permits*, are not applicable.

5.0 Authorization to Perform Work

Wetland impacts associated with the project are authorized via USACE Permit SAJ-2004-00813. Additionally, the Site Certification (PA 03-45G) is the comprehensive state and local agency approval for the project. Select pages of PA 03-45G are included in **Attachment D**.

6.0 Conclusion

The proposed dewatering activities are necessary to lower natural groundwater elevation to install a Clean Water Recovery Center project reclaimed water pipeline between the SDWWTP and Turkey Point in Miami-Dade County, Florida. The installation is required to provide a primary source of cooling water for the FPL natural gas power plant at Turkey Point.

The nearest contaminated facility to the FPL project is outside the radius of influence of proposed dewatering activities. Accordingly, Tierra Group concludes that the project, with maximum ROI of 560 feet, maximum flow rate of 1,206 gpm, and daily maximum pumping of 673,695 gallons/day, is temporary in nature and should not adversely impact the shallow groundwater aquifer nor cause an influence on residual contamination in the vicinity.

Contact information for the entity assuming responsibility for the conditions of the permit is:

Giannetti Contracting Corp.
Attn: Bob Henning
1801 NW 18th St
Pompano Beach, FL 33069
Bob@giannetticorp.com

If additional information is required to expedite the review and approval of dewatering activities, please contact Scott Zednek or Laurie Sheldon at (954) 202-9226 with any questions.

Respectfully,

Robert L Vinson III

Digitally signed by Robert L Vinson III
Date: 2023.04.24 11:34:08 -05'00'

Robert L. Vinson III, P.E.
Senior Project Engineer

Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

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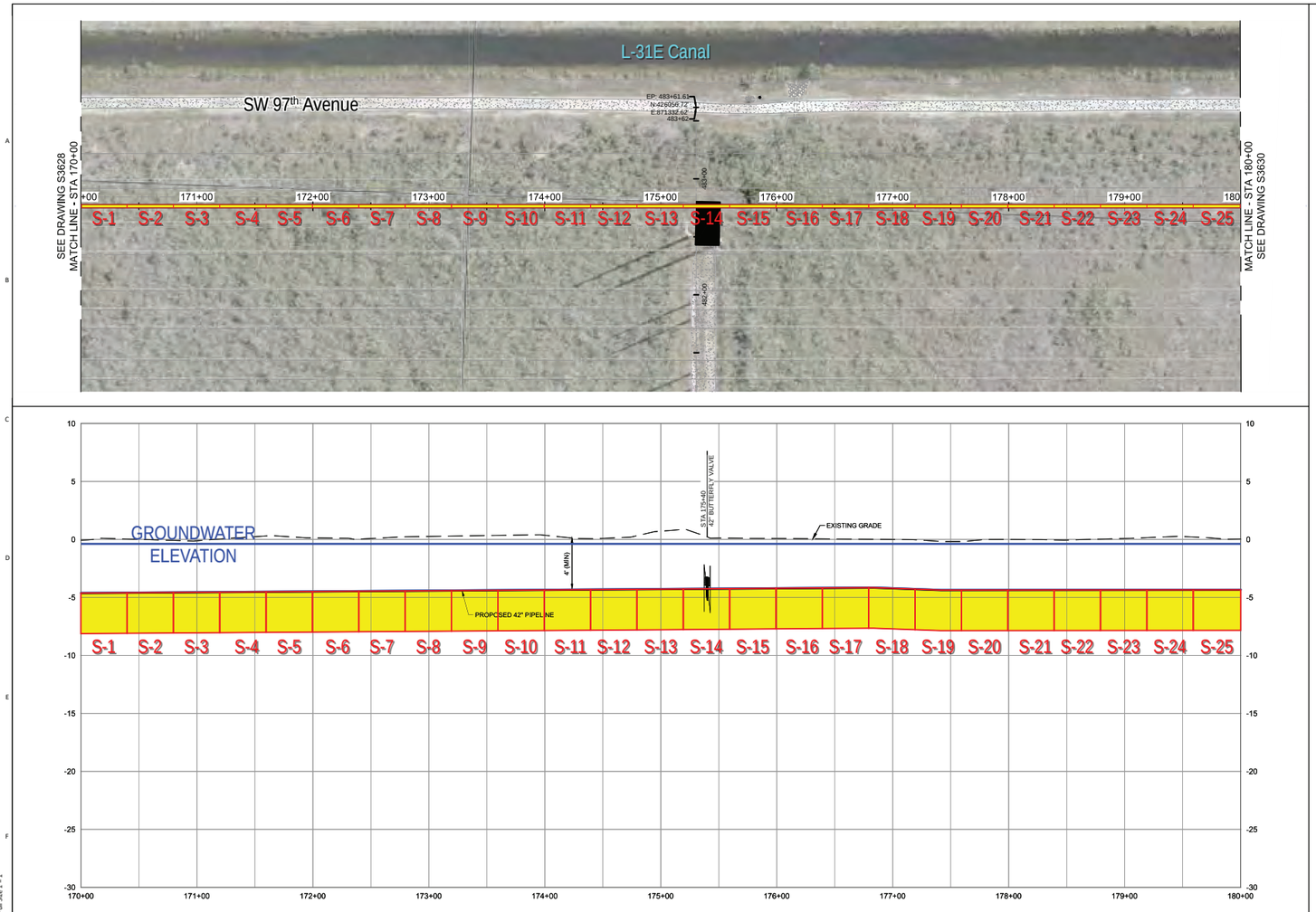
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FIGURES



TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.
	FIGURE 1 - PROJECT LOCATION MAP	SCALE: APPROX. 1" = 1 Mile (0' 2,640' 5,280')	DATE: 3/10/2023 / DRAWN BY: LS

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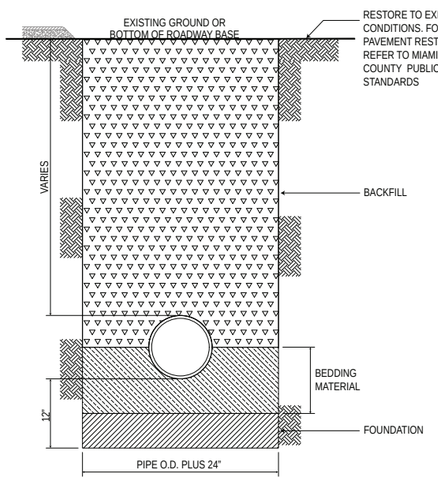
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 1 OF 27

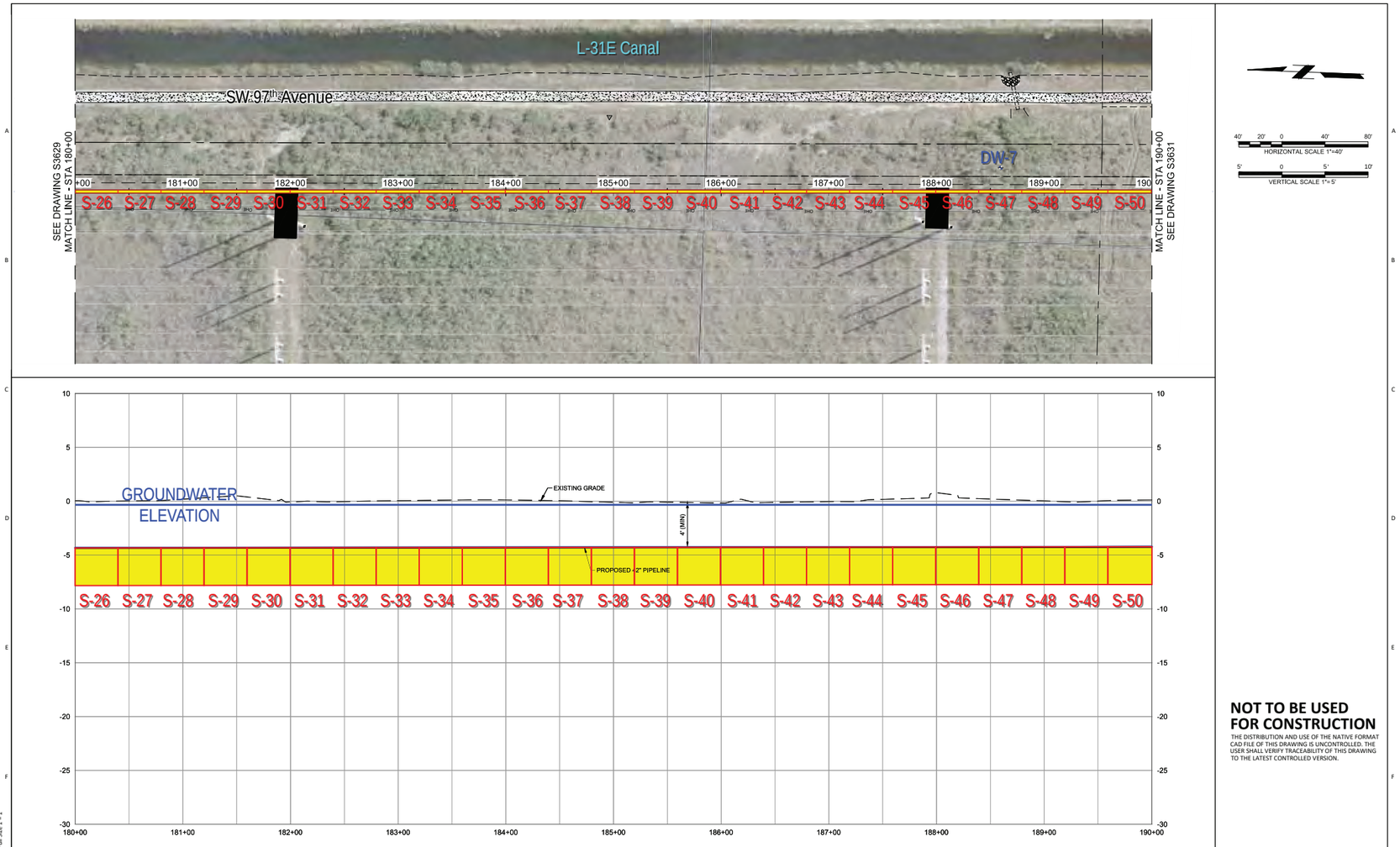
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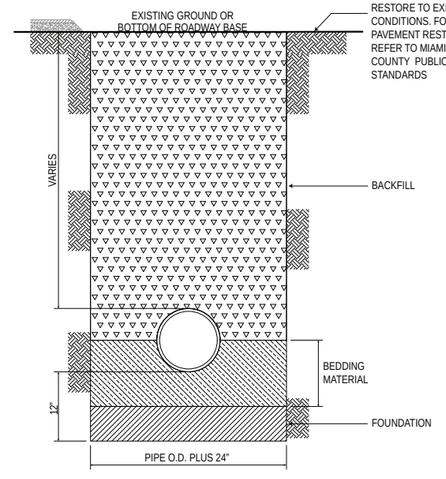
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

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DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 2 OF 27

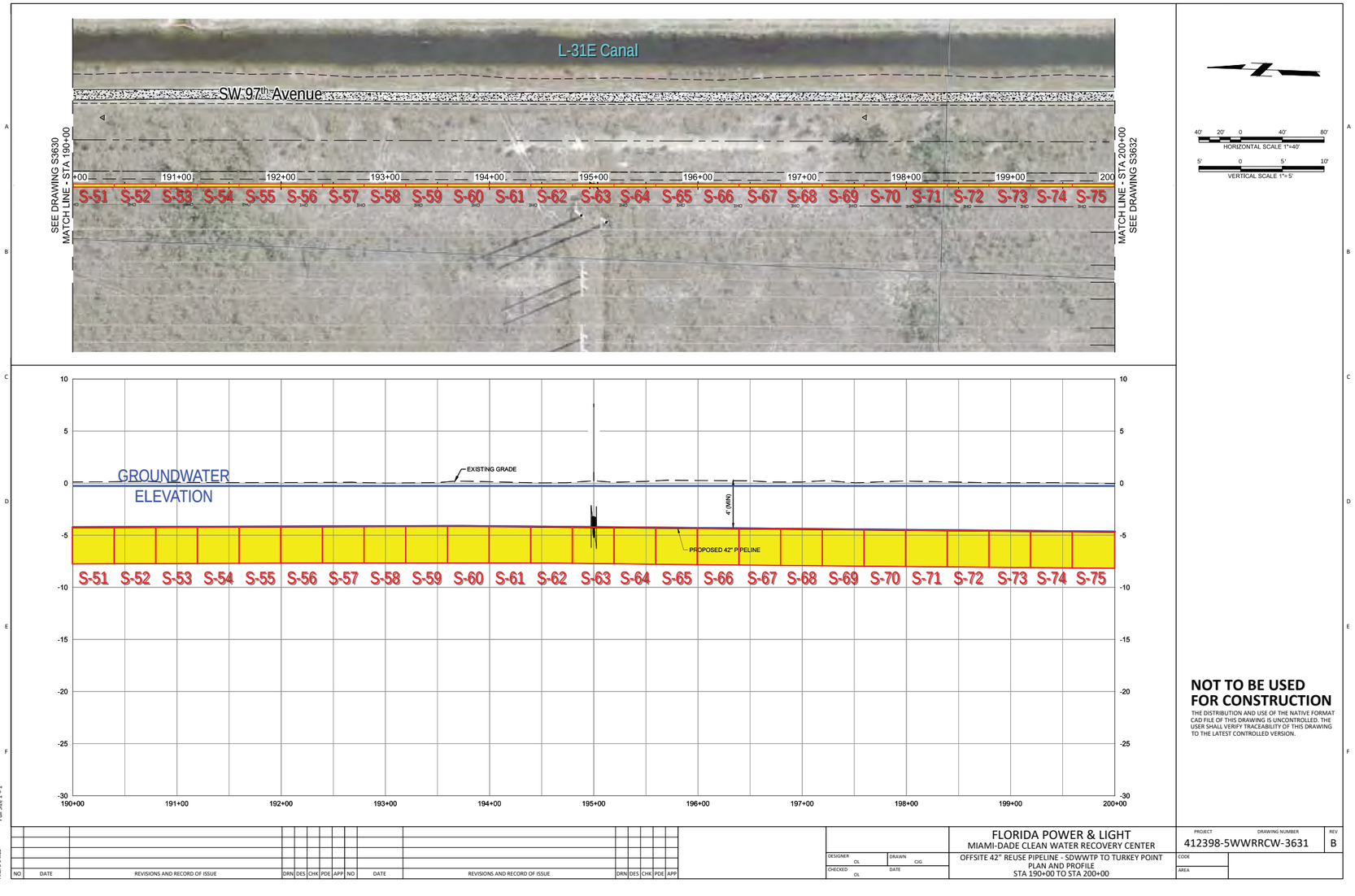
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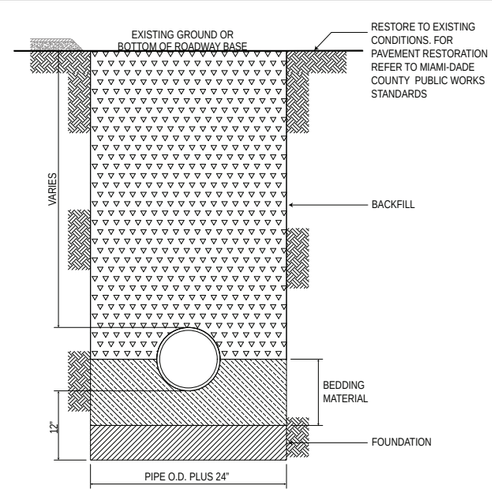
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

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FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 3 OF 27

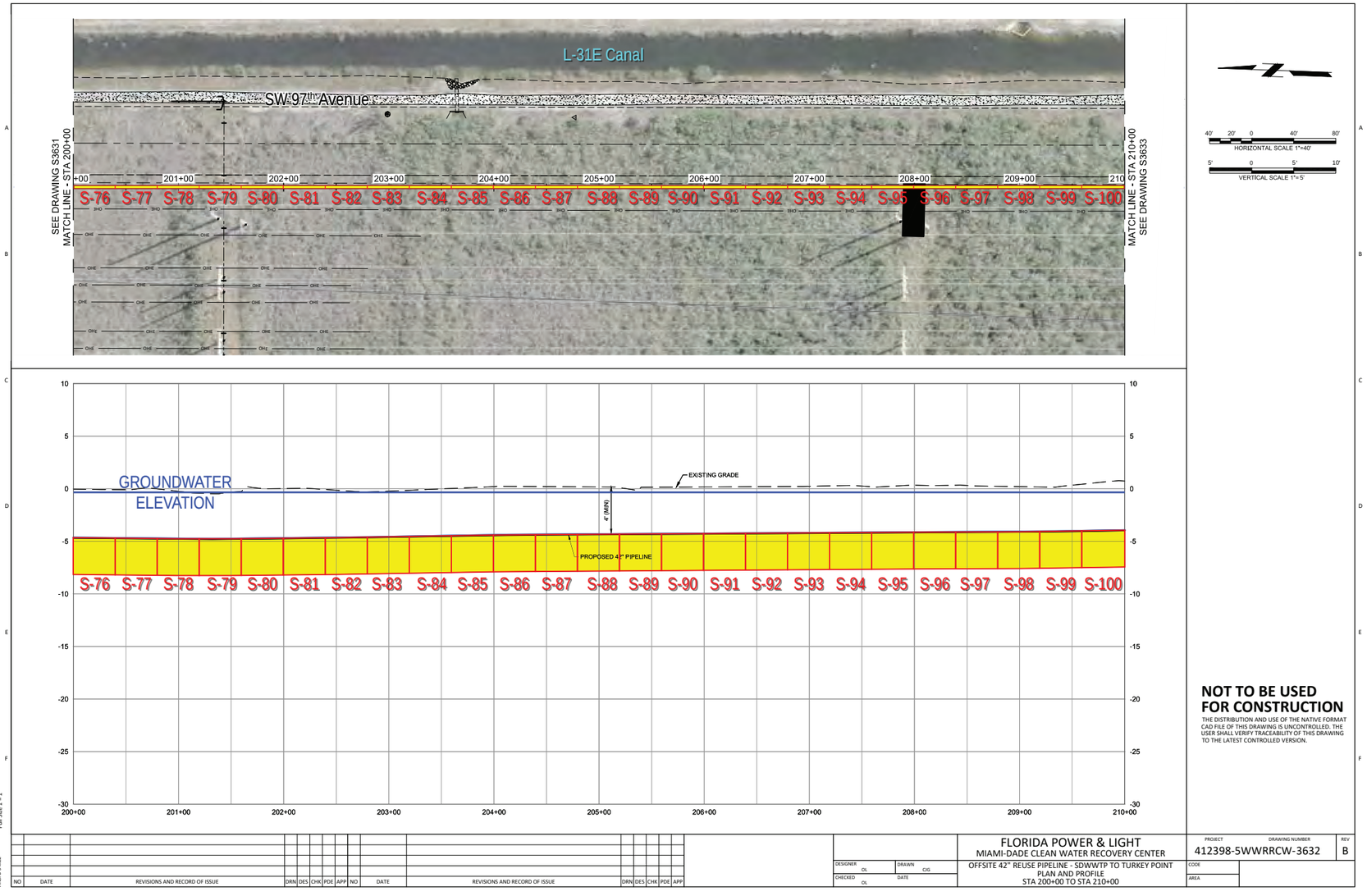
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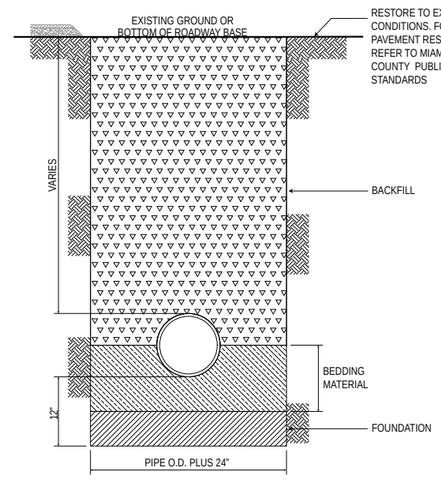
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

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FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 4 OF 27

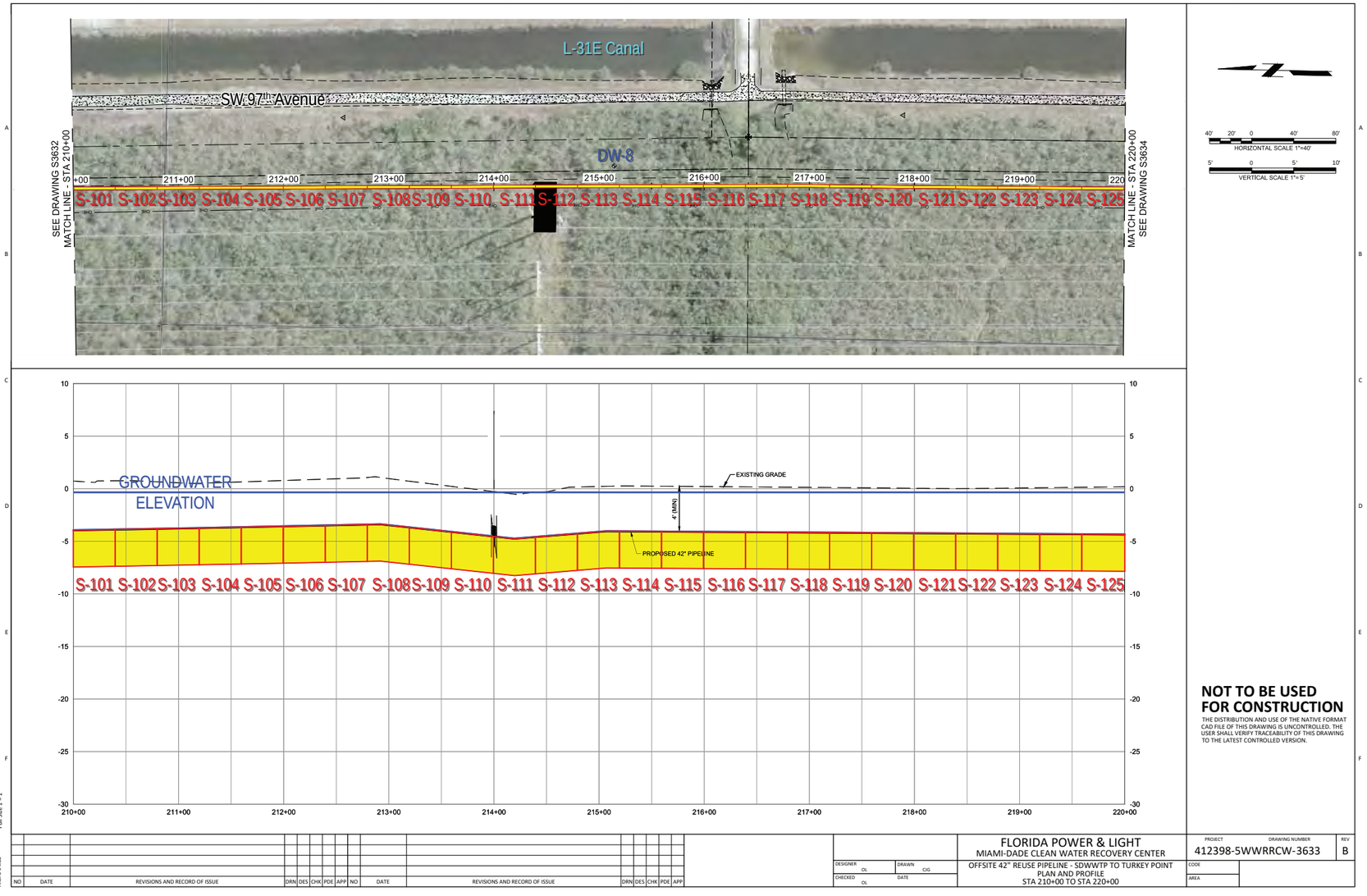
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Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

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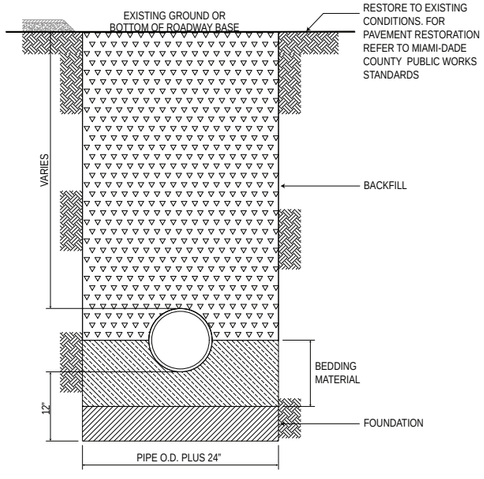
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

Know what's below. Call before you dig. 811

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 5 OF 27

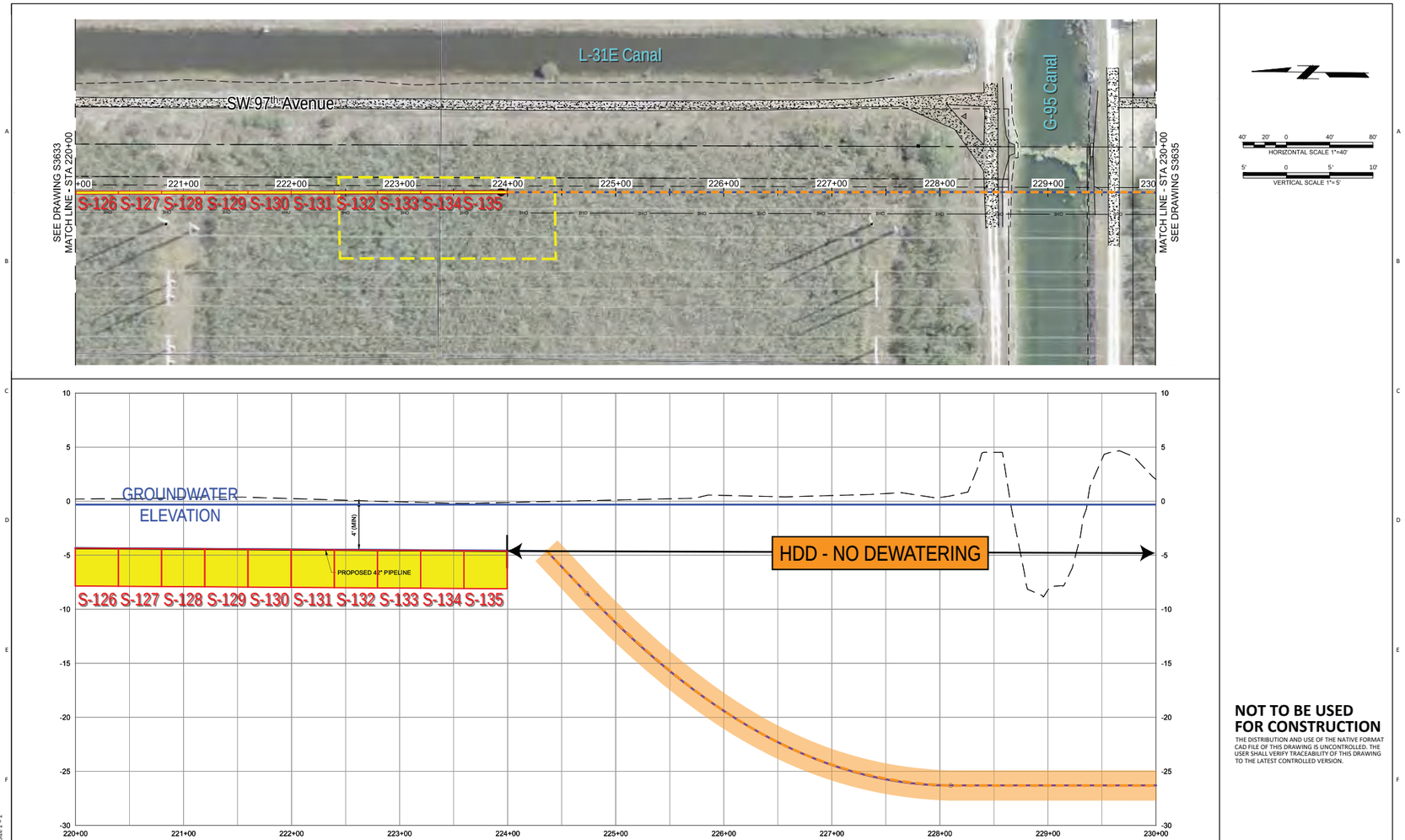
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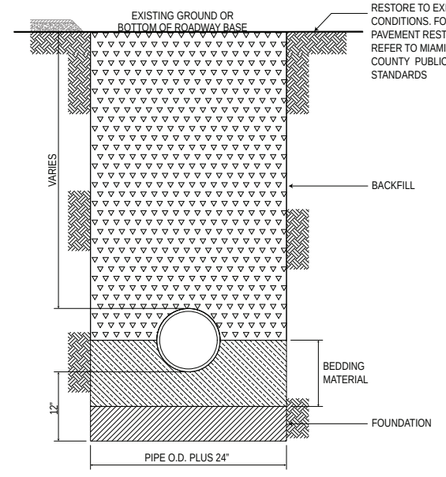
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NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP

DESIGNER OL	DRAWN CJG	FLORIDA POWER & LIGHT MIAMI-DADE CLEAN WATER RECOVERY CENTER	PROJECT 412398-5WWRRCW-3634 / DRAWING NUMBER / REV B
CHECKED OL	DATE	OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT PLAN AND PROFILE STA 220+00 TO STA 230+00	CODE AREA



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions

PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 6 OF 27

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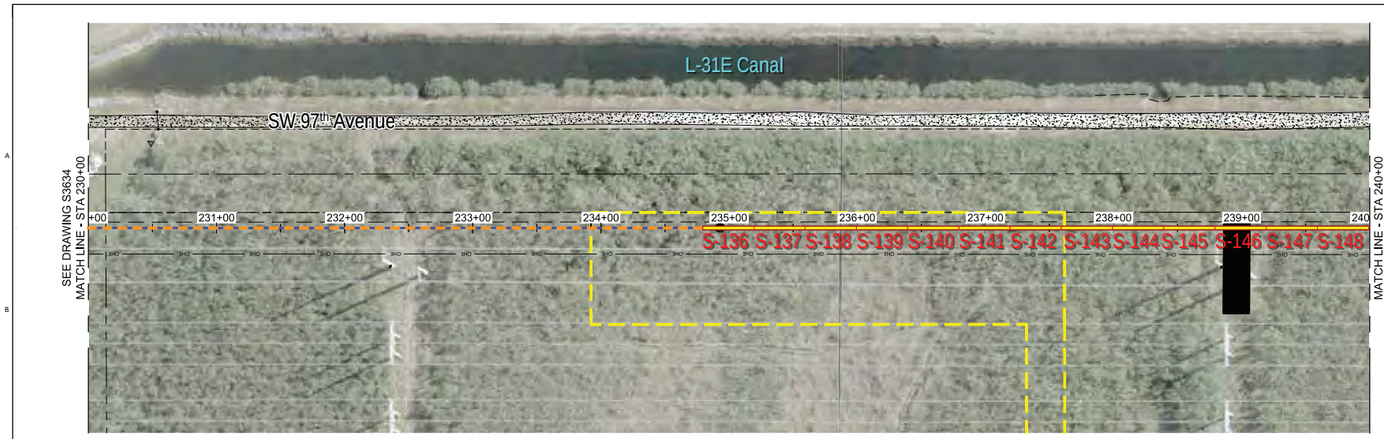
Robert L Vinson III

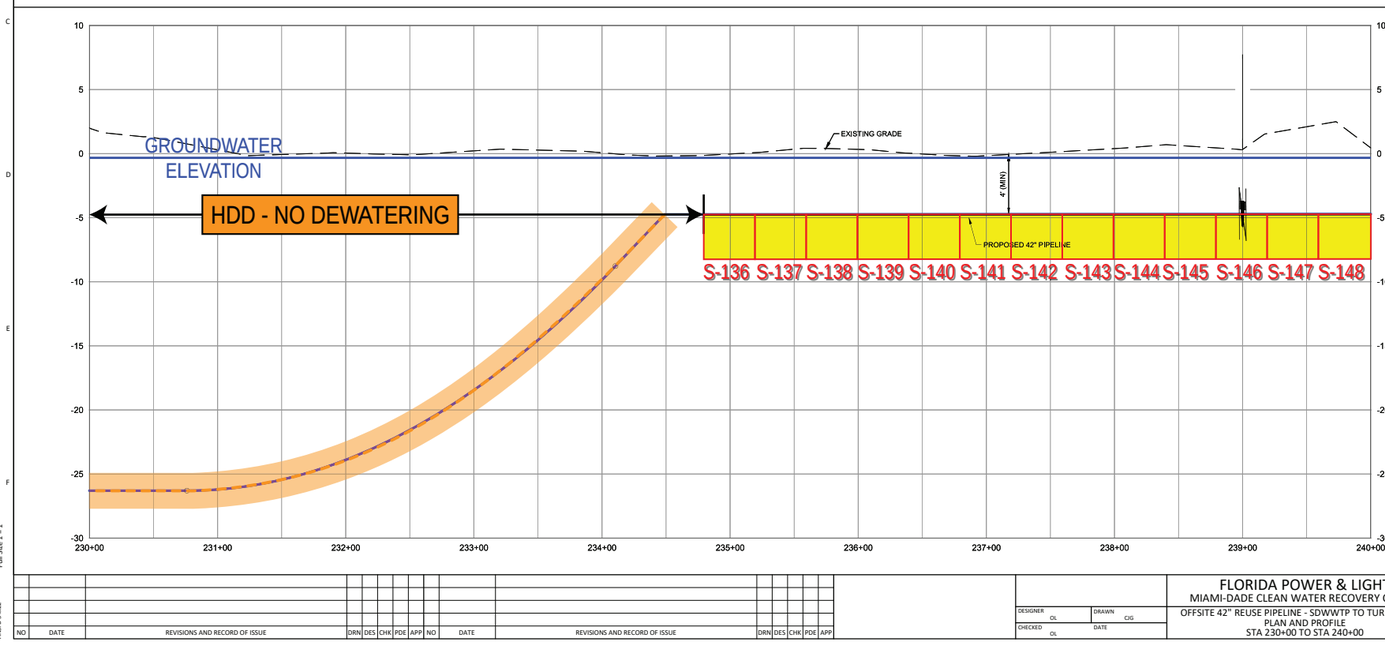
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40' 20' 0 40' 80'
HORIZONTAL SCALE 1"=40'

5' 0 5' 10'
VERTICAL SCALE 1"= 5'

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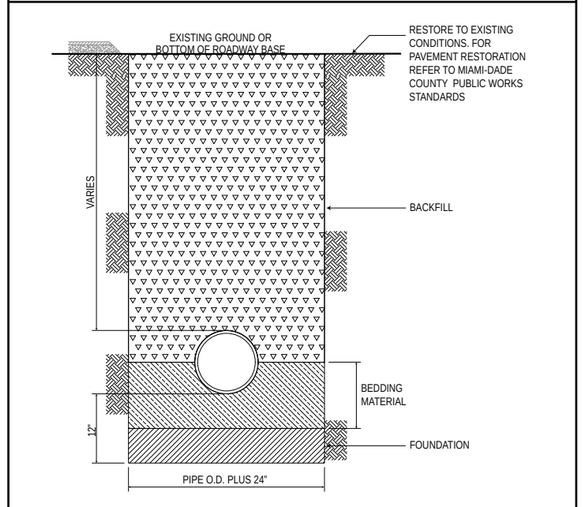
DESIGNER	DRAWN
OL	CJG
CHECKED	DATE
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 230+00 TO STA 240+00

PROJECT	DRAWING NUMBER	REV
412398-5	WWRRCW-3635	B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 7 OF 27

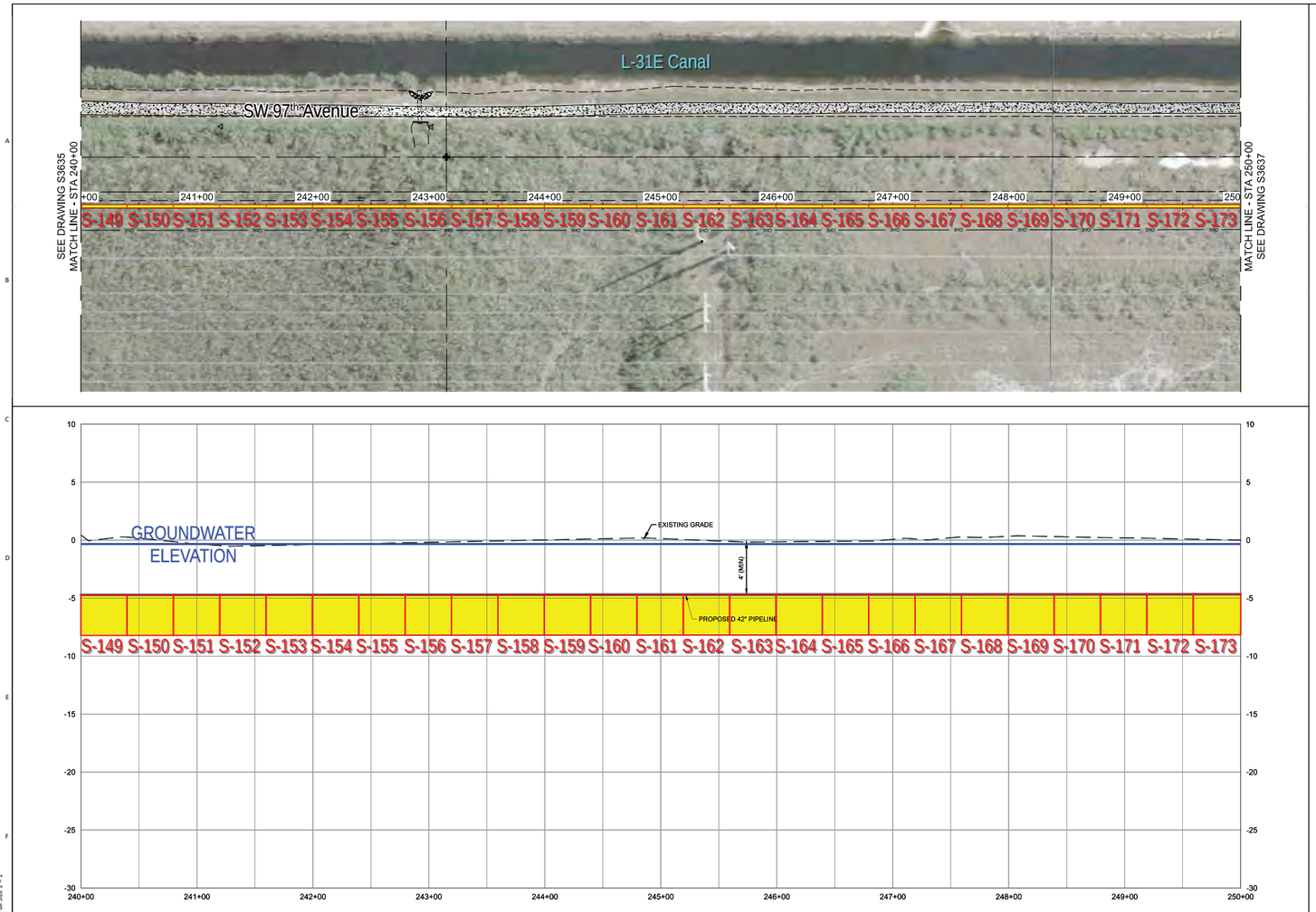
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40' 20' 0 40' 80'
HORIZONTAL SCALE 1"=40'

5' 0 5' 10'
VERTICAL SCALE 1"= 5'

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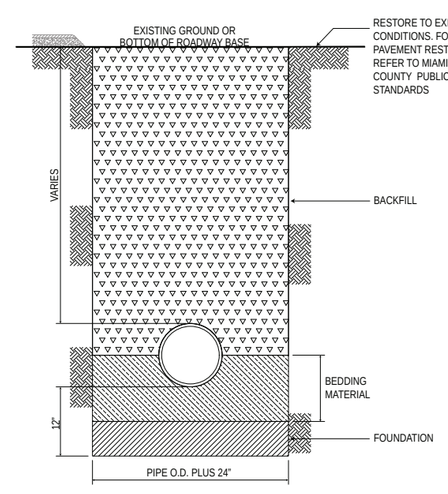
FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 240+00 TO STA 250+00

DESIGNER OL | DRAWN CJG | CHECKED OL | DATE

PROJECT 412398-5WWRRCW-3636 | DRAWING NUMBER | REV B
CODE | AREA



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions

PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 8 OF 27

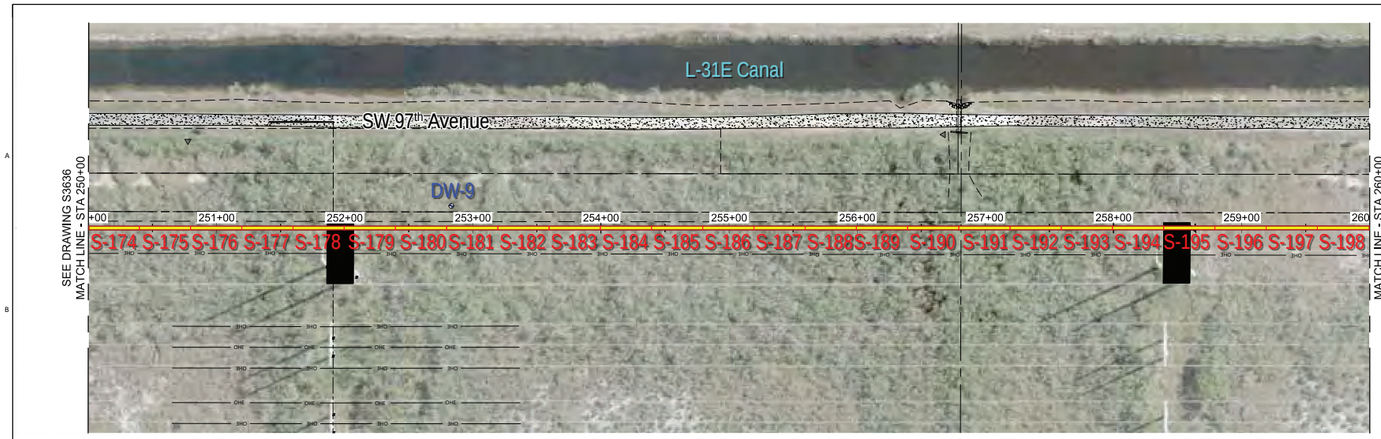
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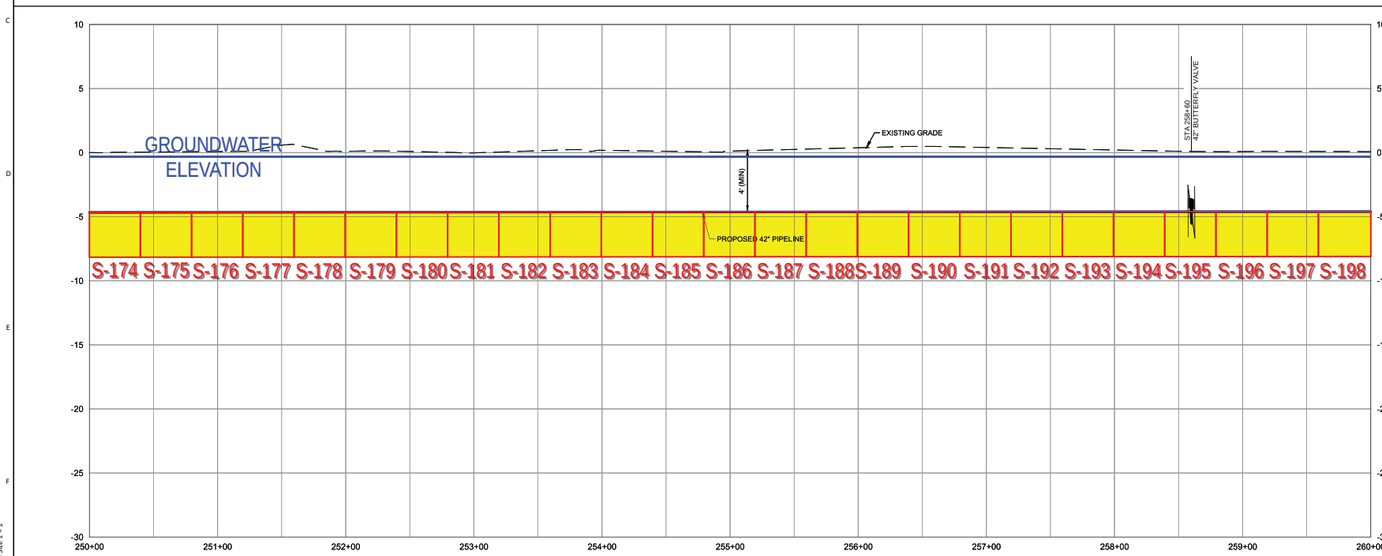
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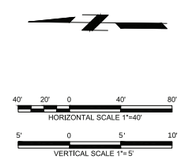
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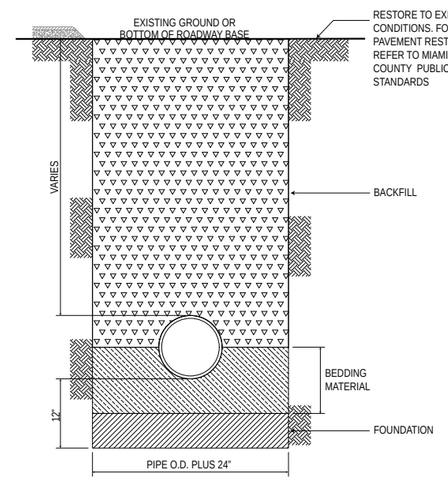
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DESIGNER OL	DRAWN CJG	FLORIDA POWER & LIGHT MIAMI-DADE CLEAN WATER RECOVERY CENTER	PROJECT 412398-5WWRRCW-3637 / DRAWING NUMBER / REV B
CHECKED OL	DATE	OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT PLAN AND PROFILE STA 250+00 TO STA 260+00	CODE / AREA

MicroStation v10.15.0.74
Full Size 1 = 1
gb1104520
AMD 0 14x22



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions

PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 9 OF 27

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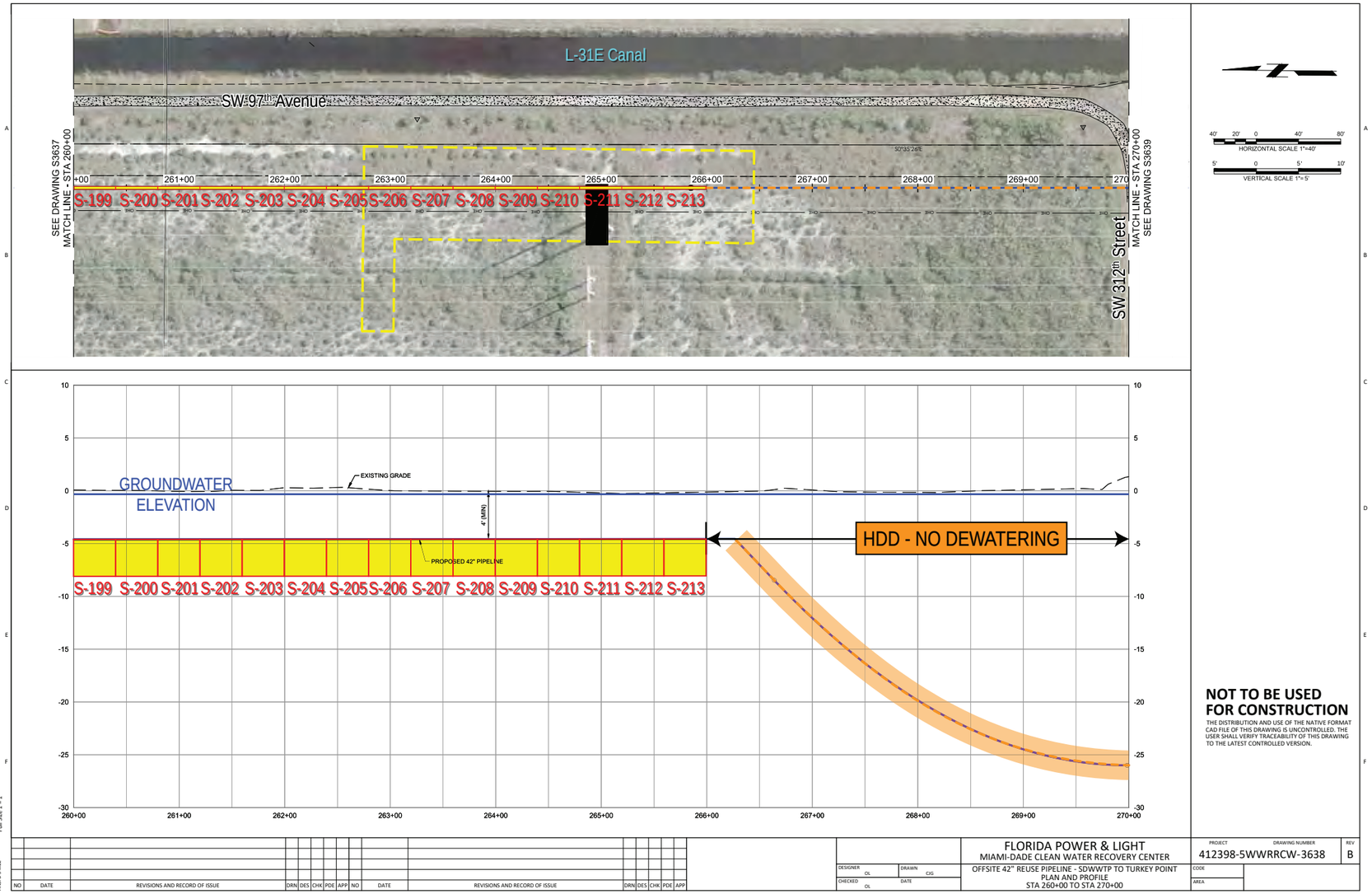
Robert L Vinson III

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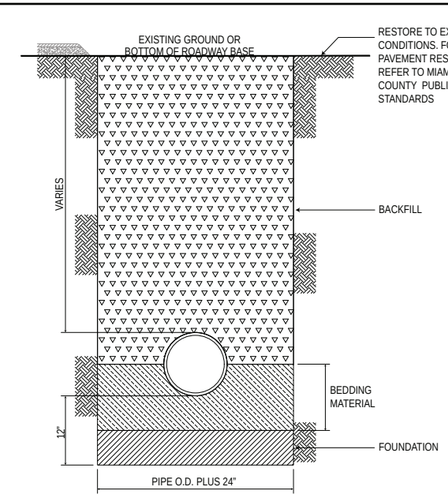
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OL	CJG
CHECKED	DATE
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 260+00 TO STA 270+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3638		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions

PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 10 OF 27

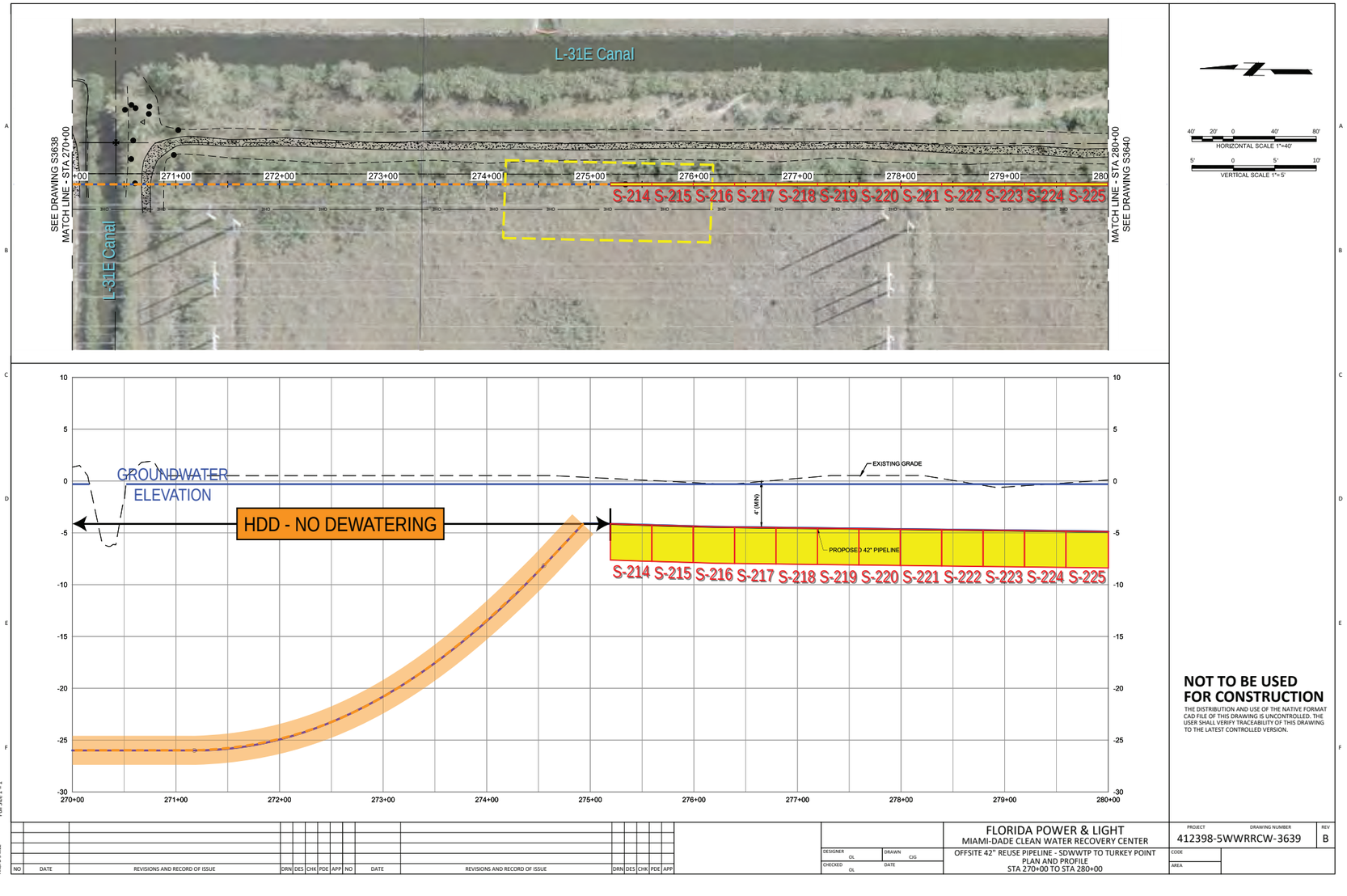
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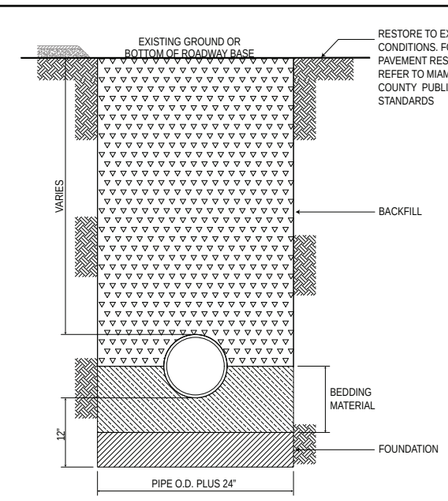
DESIGNER OL	DRAWN CJG	FLORIDA POWER & LIGHT MIAMI-DADE CLEAN WATER RECOVERY CENTER
CHECKED OL	DATE	OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT PLAN AND PROFILE STA 270+00 TO STA 280+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3639		B
CODE		
AREA		

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Full Size 1 = 1
gta10920
ANSI D 14x22



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

811 Know what's below. Call before you dig.

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions

PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 11 OF 27

O: (954) 202 9226 ‖ **E:** ADMIN@TIERRASOLUTIONS.COM ‖ WWW.TIERRASOLUTIONS.COM

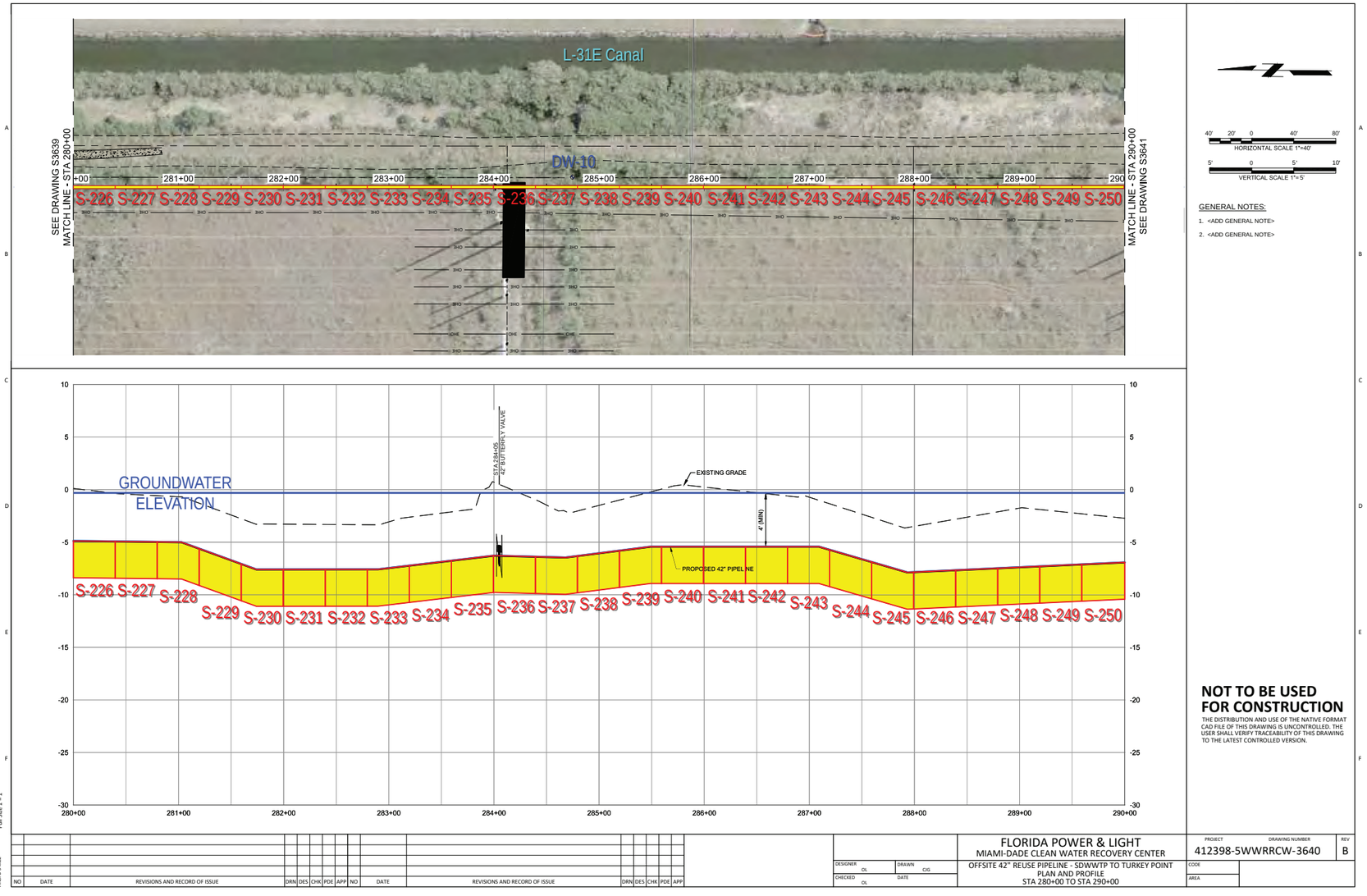
Robert L Vinson III

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VERTICAL SCALE 1"= 5'

GENERAL NOTES:

1. <ADD GENERAL NOTE>
2. <ADD GENERAL NOTE>

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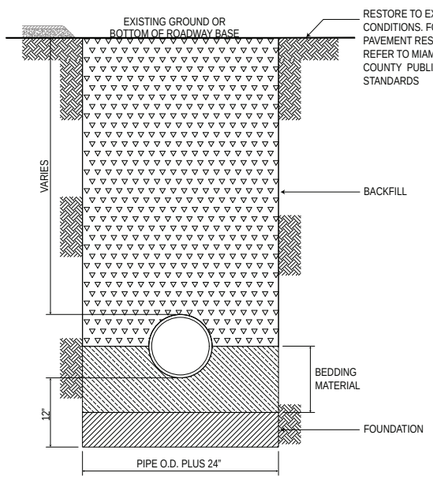
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OL	CJG
CHECKED	DATE
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 280+00 TO STA 290+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3640		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

811 Know what's below. Call before you dig.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 12 OF 27

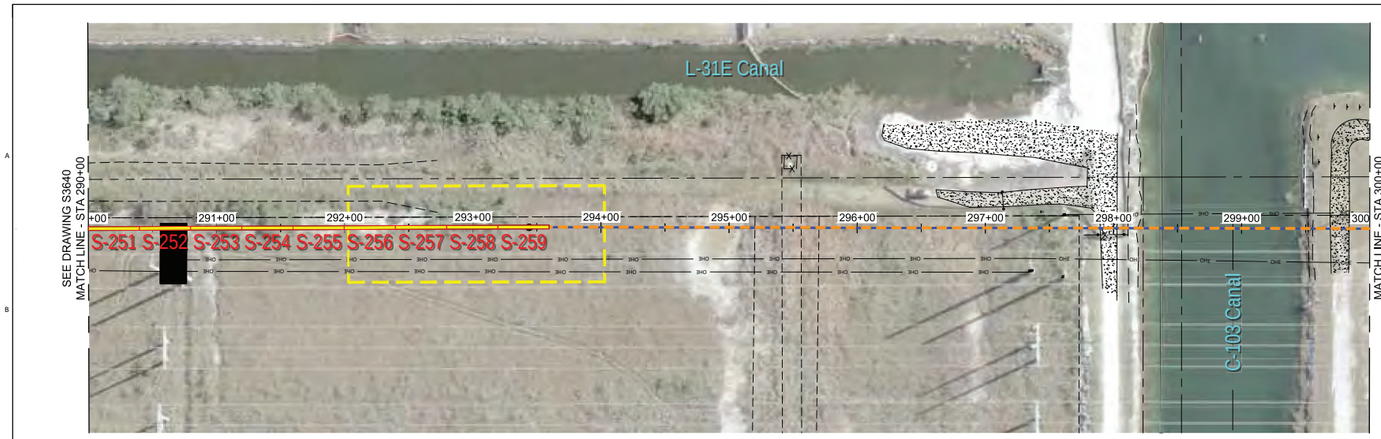
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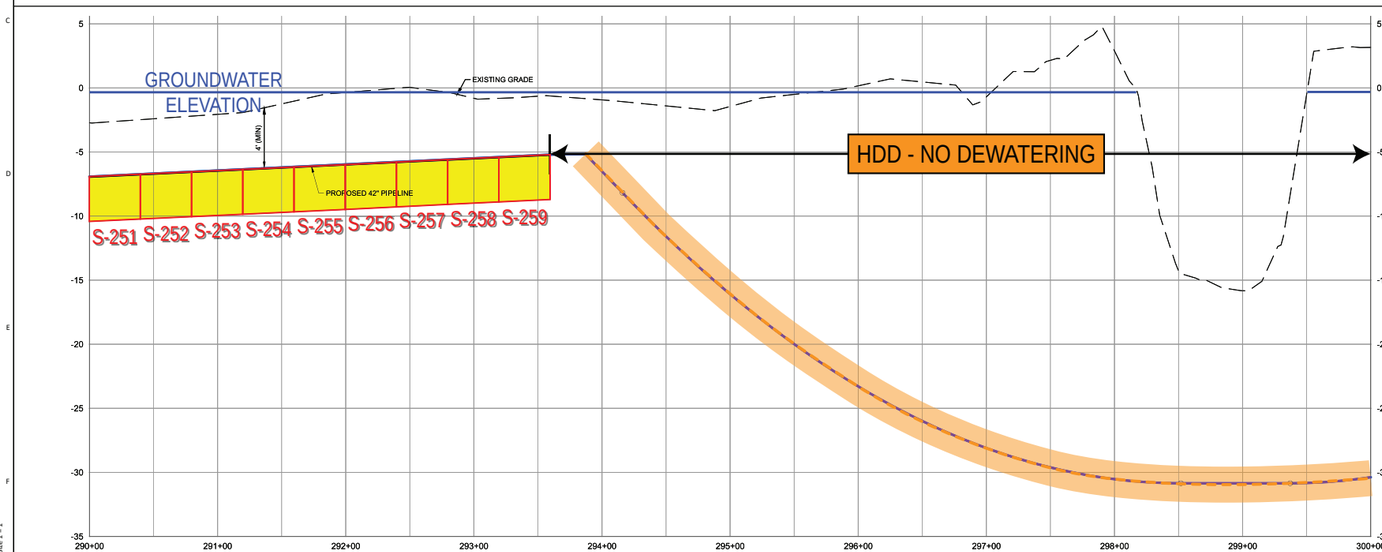
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DRAWN	CJG
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 290+00 TO STA 300+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3641		B
CODE		
AREA		



PROJECT LOCATION MAP

TYPICAL TRENCH DETAIL

Know what's below. Call before you dig. 811

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 13 OF 27

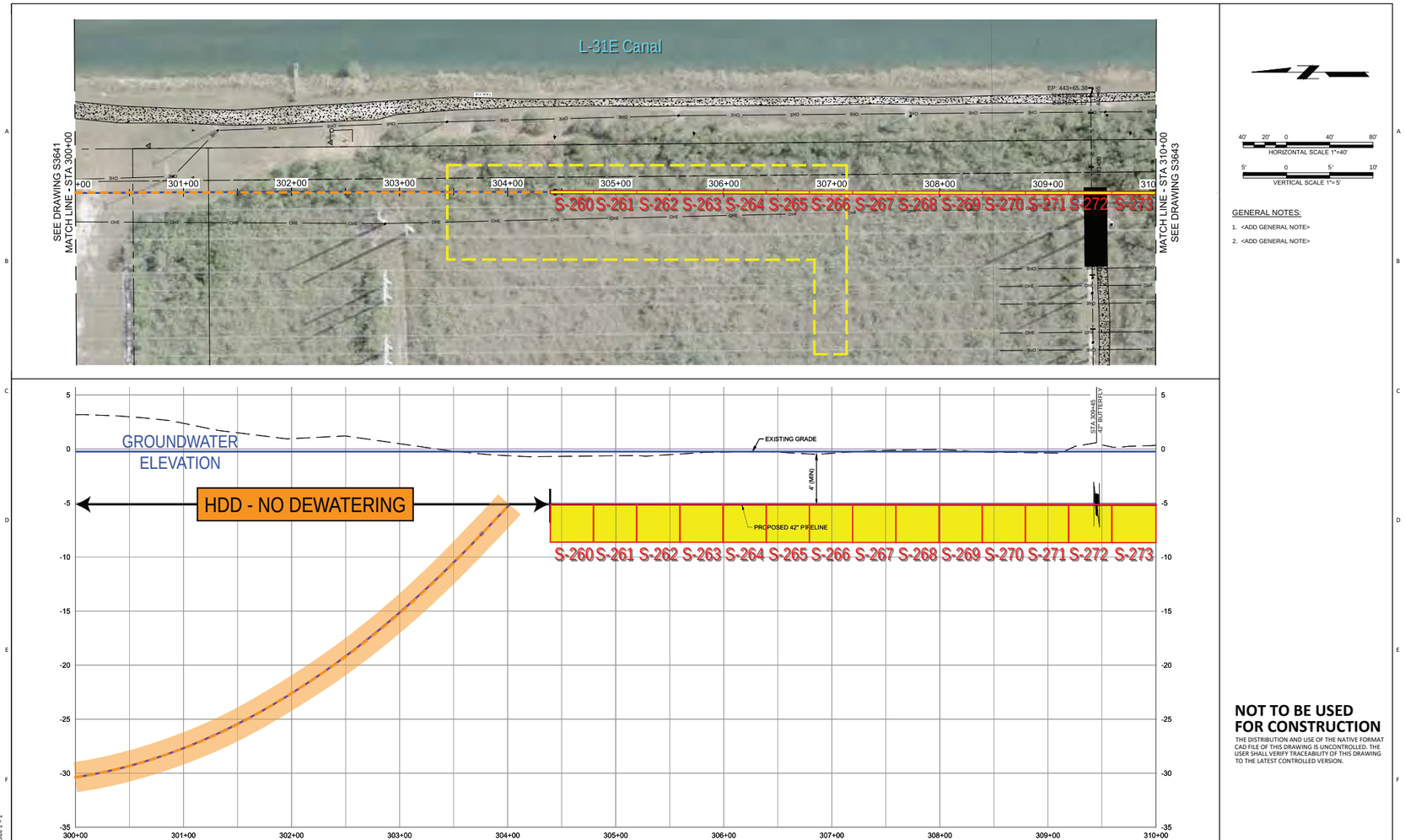
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HORIZONTAL SCALE 1"=40'

5' 0 5' 10'
VERTICAL SCALE 1"= 5'

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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 300+00 TO STA 310+00

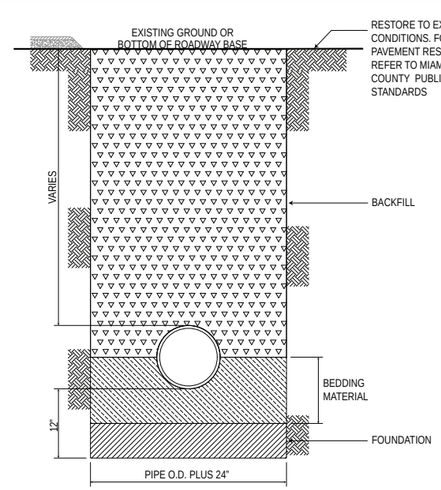
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412398-5WWRRCW-3642	B	

CODE
AREA

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Full Size 1 = 1
gbi104920
ANSI D 34x22



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 14 OF 27

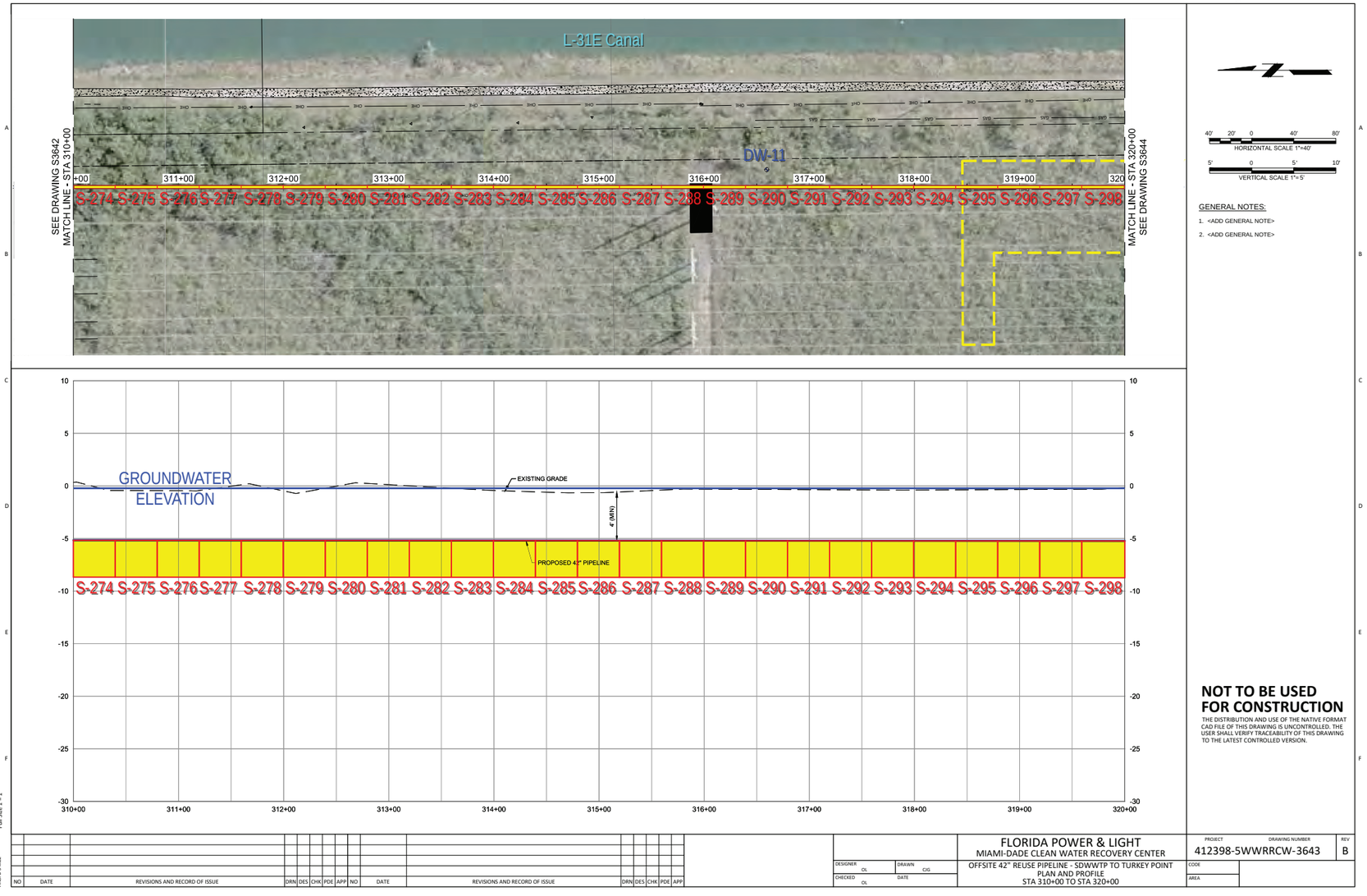
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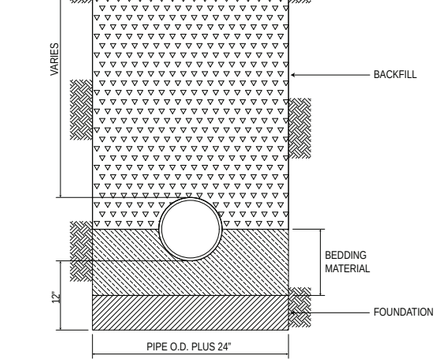
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FLORIDA POWER & LIGHT
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OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 310+00 TO STA 320+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3643		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 15 OF 27

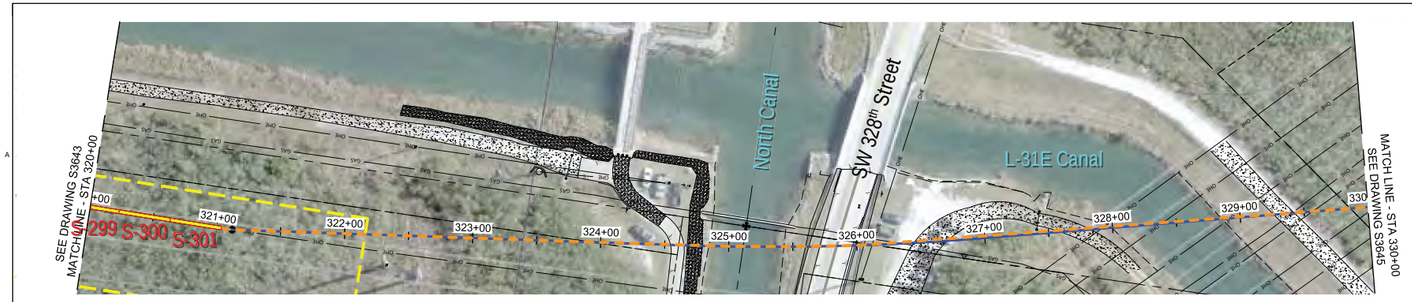
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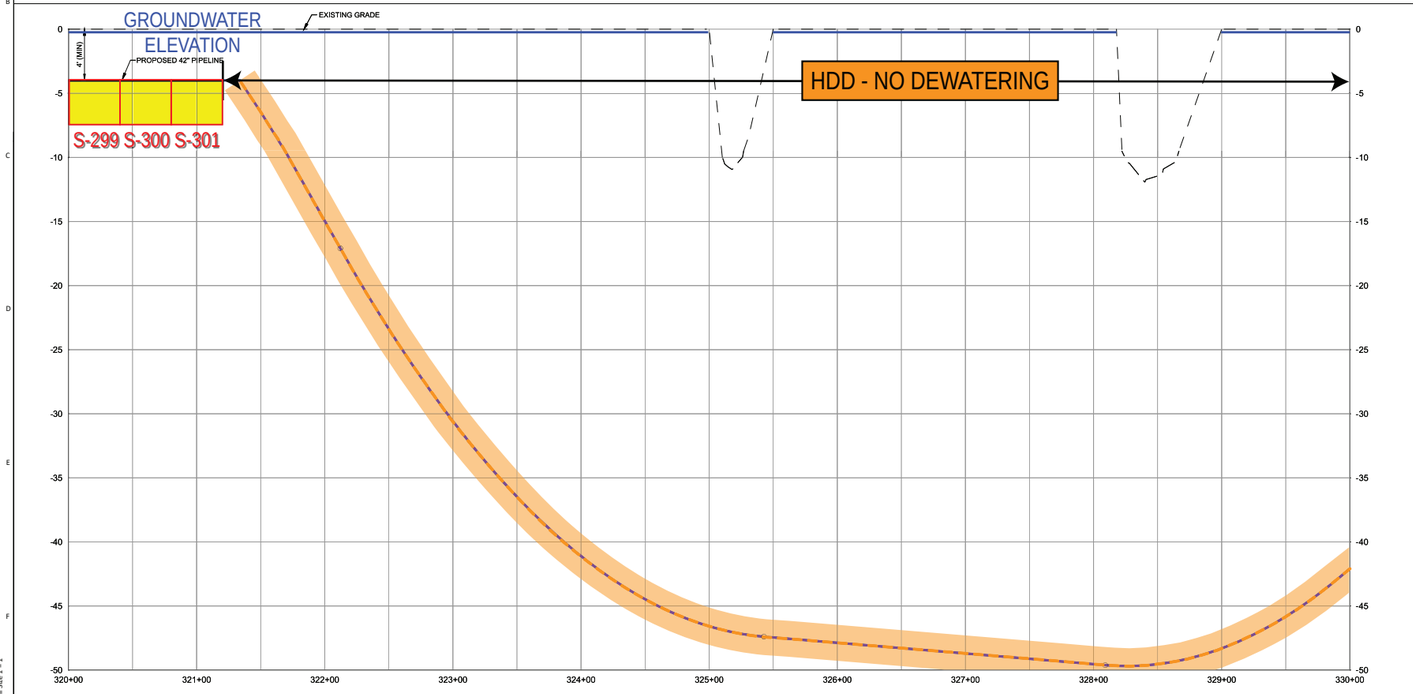
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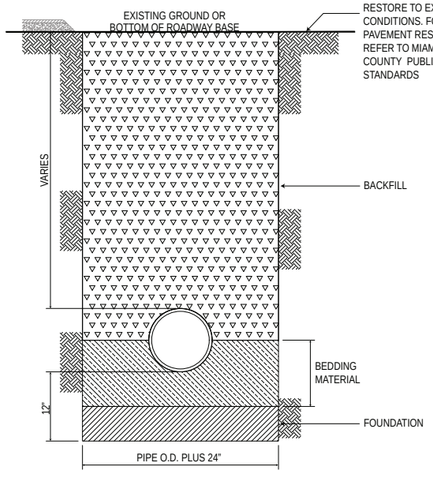
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PLAN AND PROFILE
STA 320+00 TO STA 330+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3644		B
CODE		
AREA		

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Full Size 1 = 1
gs104920
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 16 OF 27

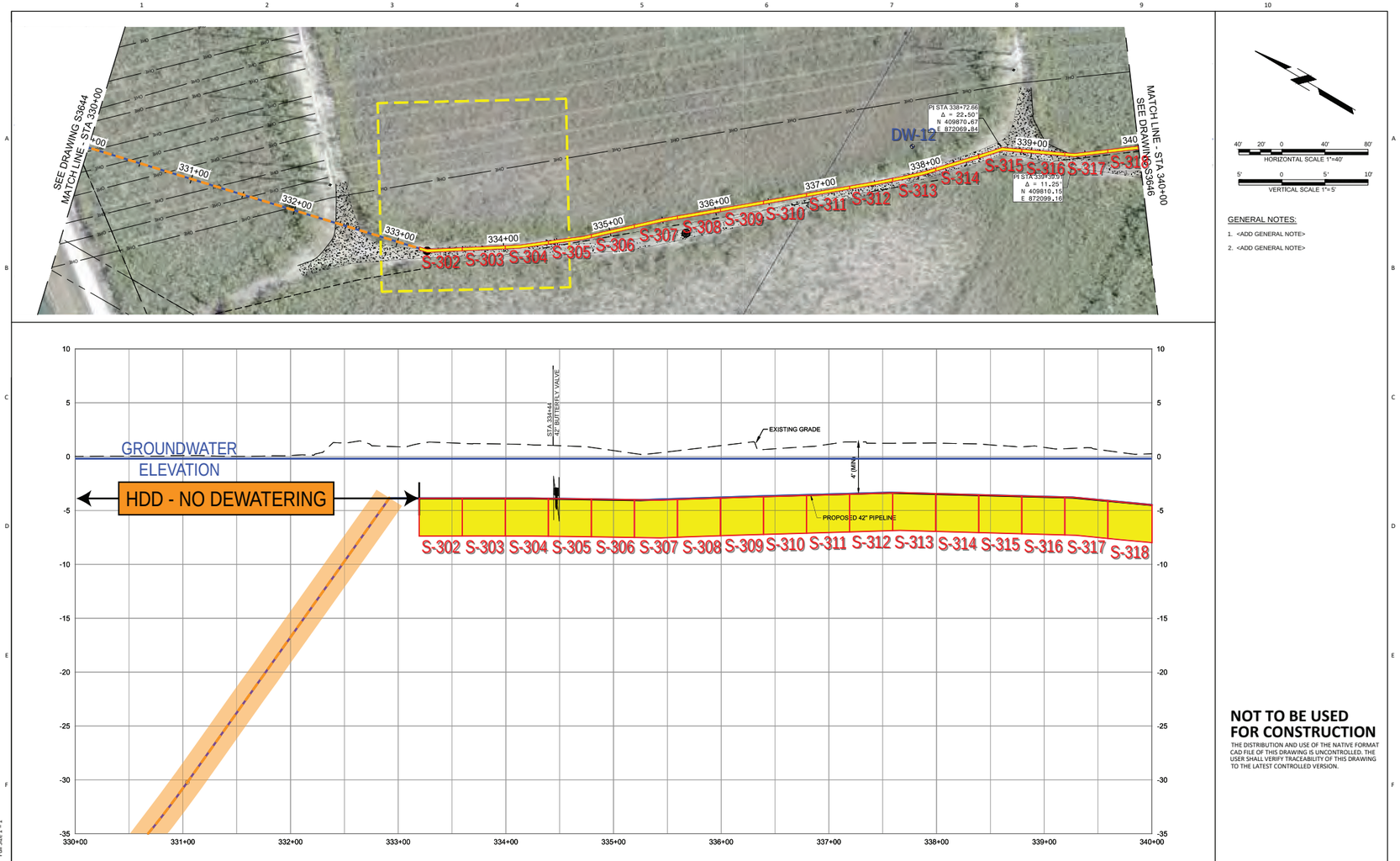
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 330+00 TO STA 340+00

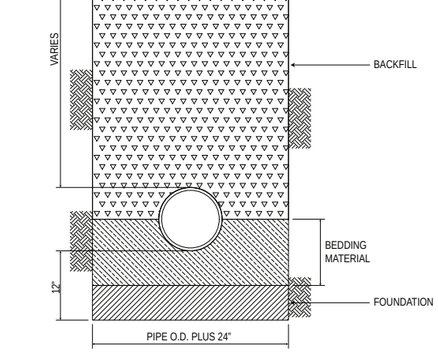
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412398-5WWRRCW-3645		B
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AREA		

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Full Size 1 = 1

gbi104920
ANSI D 34x22



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 17 OF 27

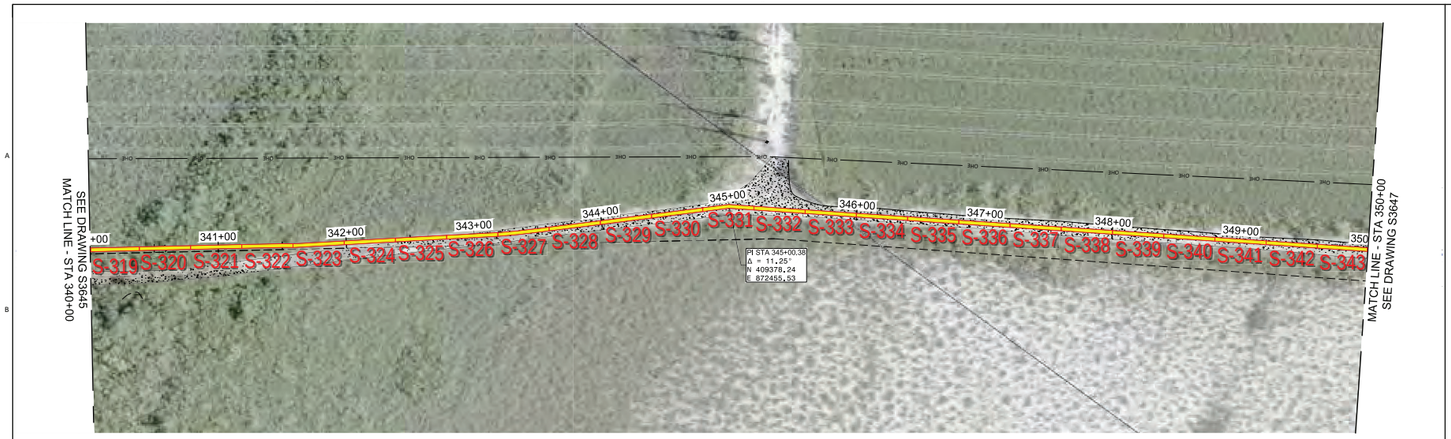
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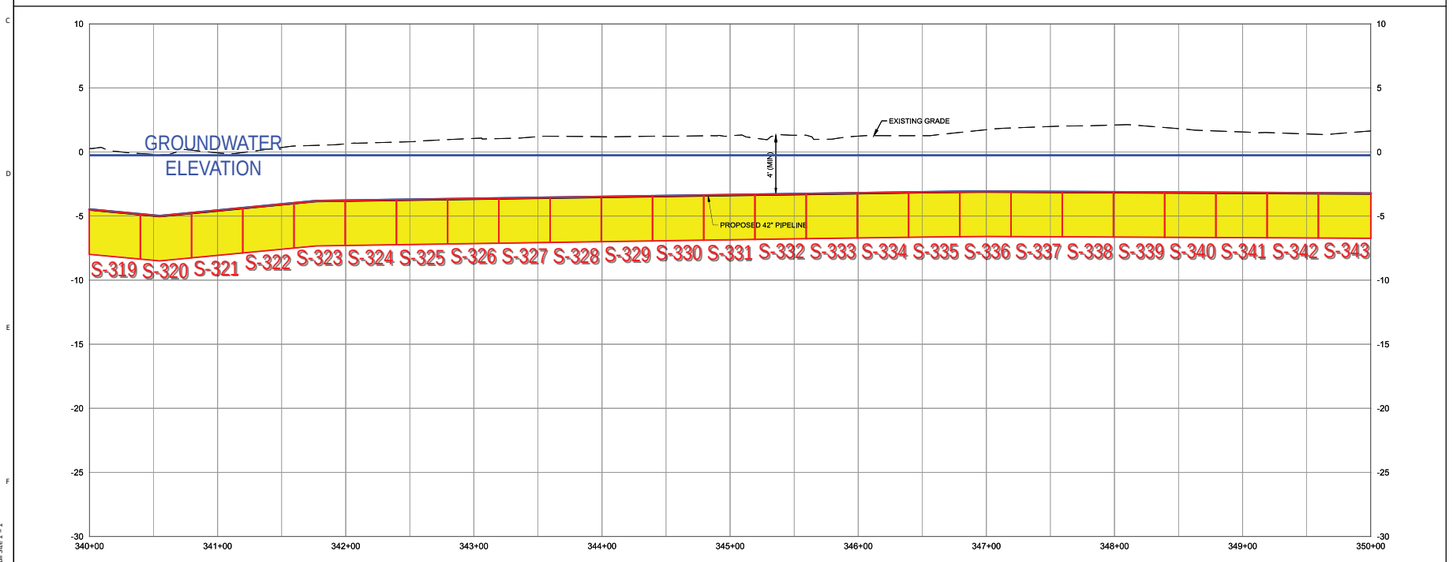
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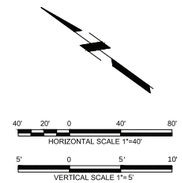
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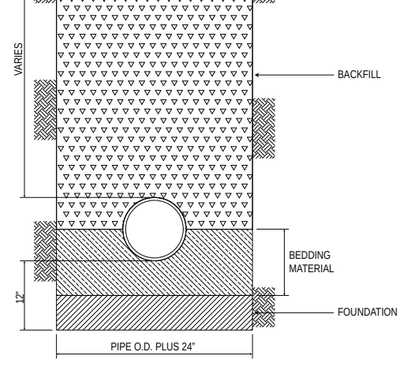
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CHECKED OL	DATE	OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT PLAN AND PROFILE STA 340+00 TO STA 350+00	CODE AREA

MicroStation v10.15.0.74
Full Size 1 = 1
gb3104520
AMO 0 14x22



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

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DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 18 OF 27

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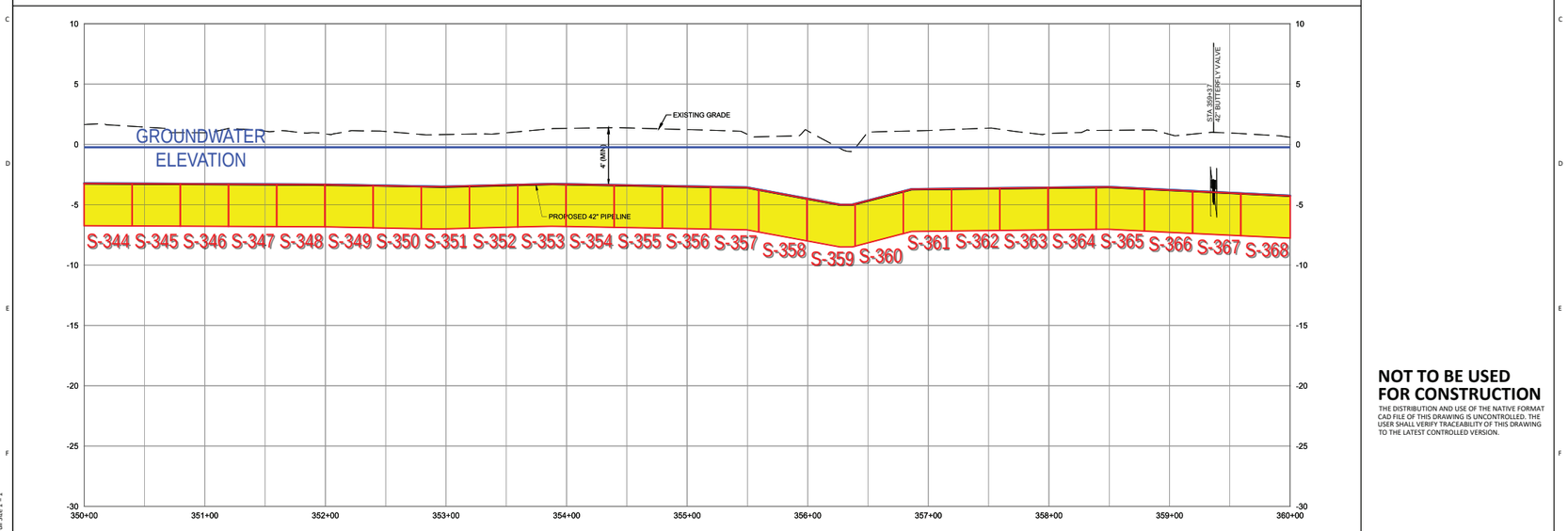
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 350+00 TO STA 360+00

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PROJECT 412398-5WWRRCW-3647 | DRAWING NUMBER | REV B
CODE | AREA

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Full Size 1 = 1
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AMD 034422



PROJECT LOCATION MAP

TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 19 OF 27

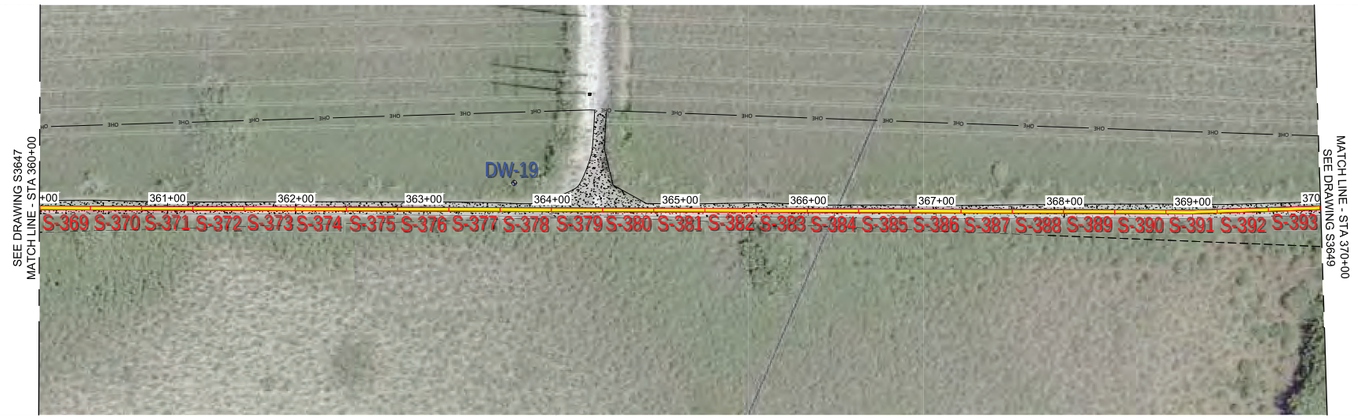
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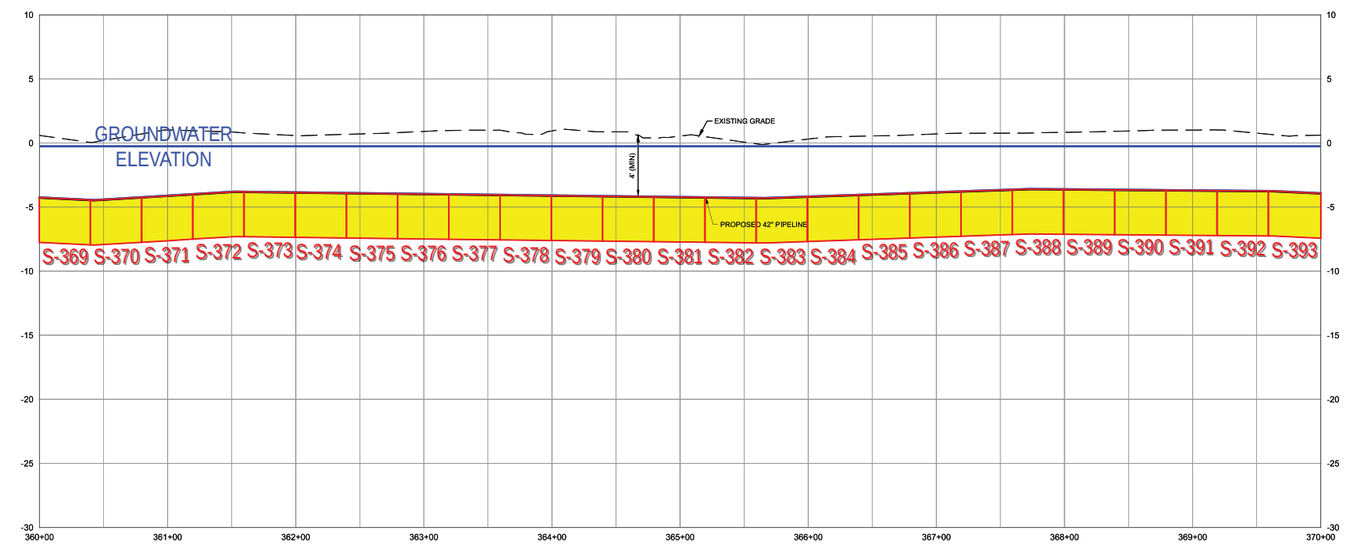
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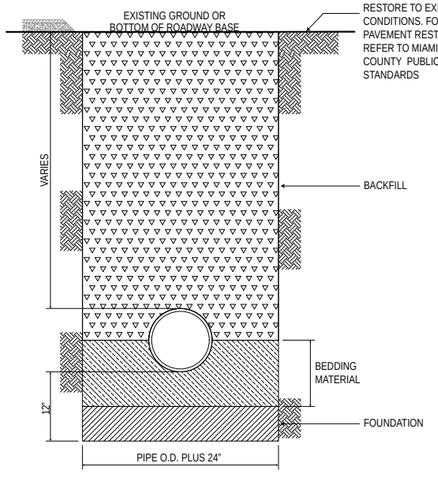
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 360+00 TO STA 370+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3648		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

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DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 20 OF 27

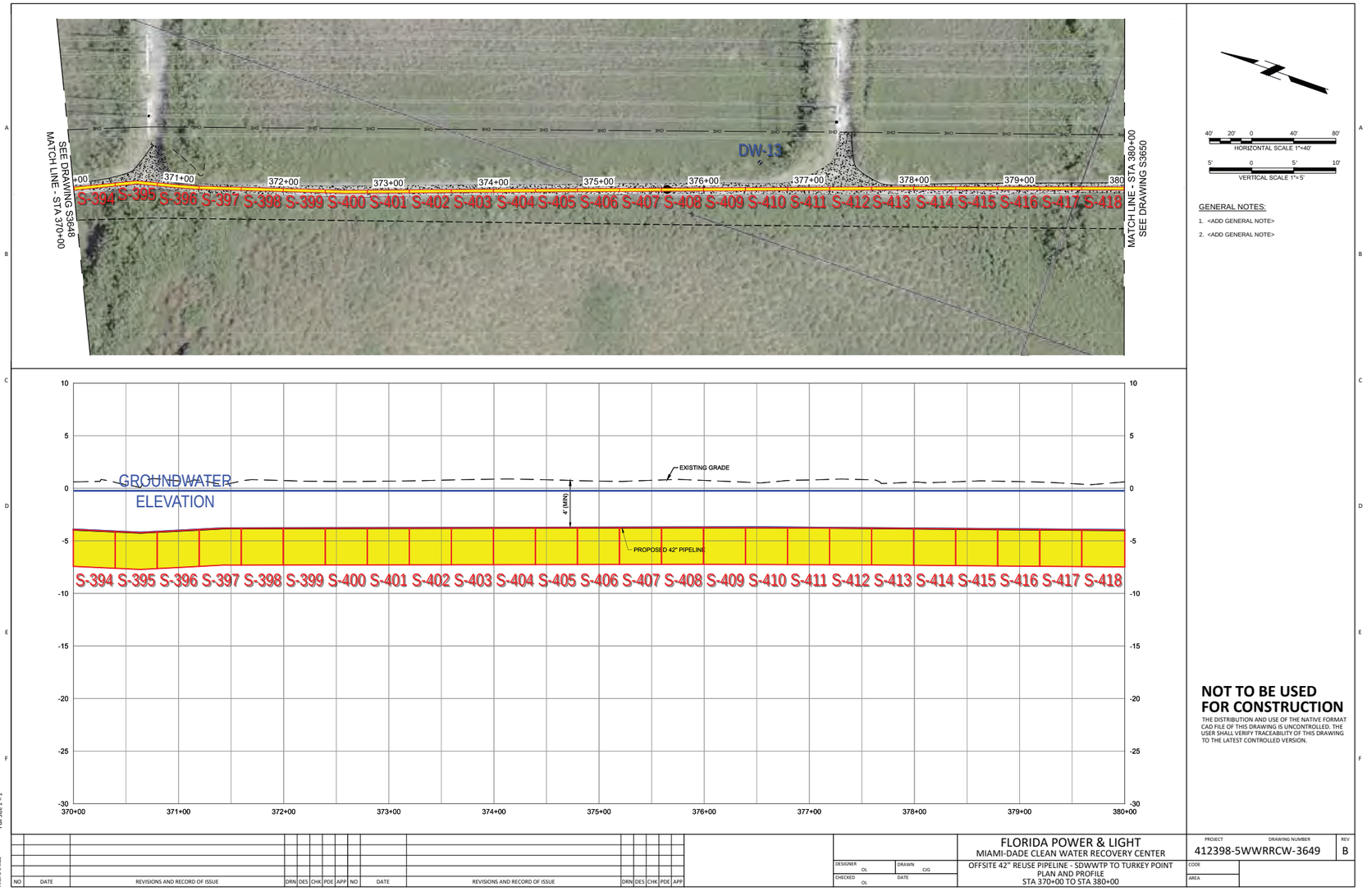
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40' 20' 0 40' 80'
HORIZONTAL SCALE 1"=40'

5' 0 5' 10'
VERTICAL SCALE 1"=5'

GENERAL NOTES:

1. <ADD GENERAL NOTE>
2. <ADD GENERAL NOTE>

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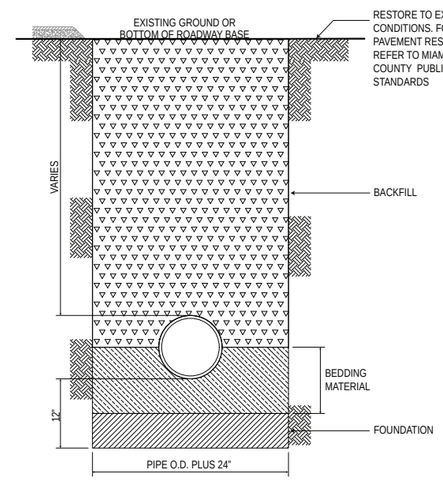
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 370+00 TO STA 380+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3649		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

TIERRA GROUP™ Assured Geoscience Solutions

PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 21 OF 27

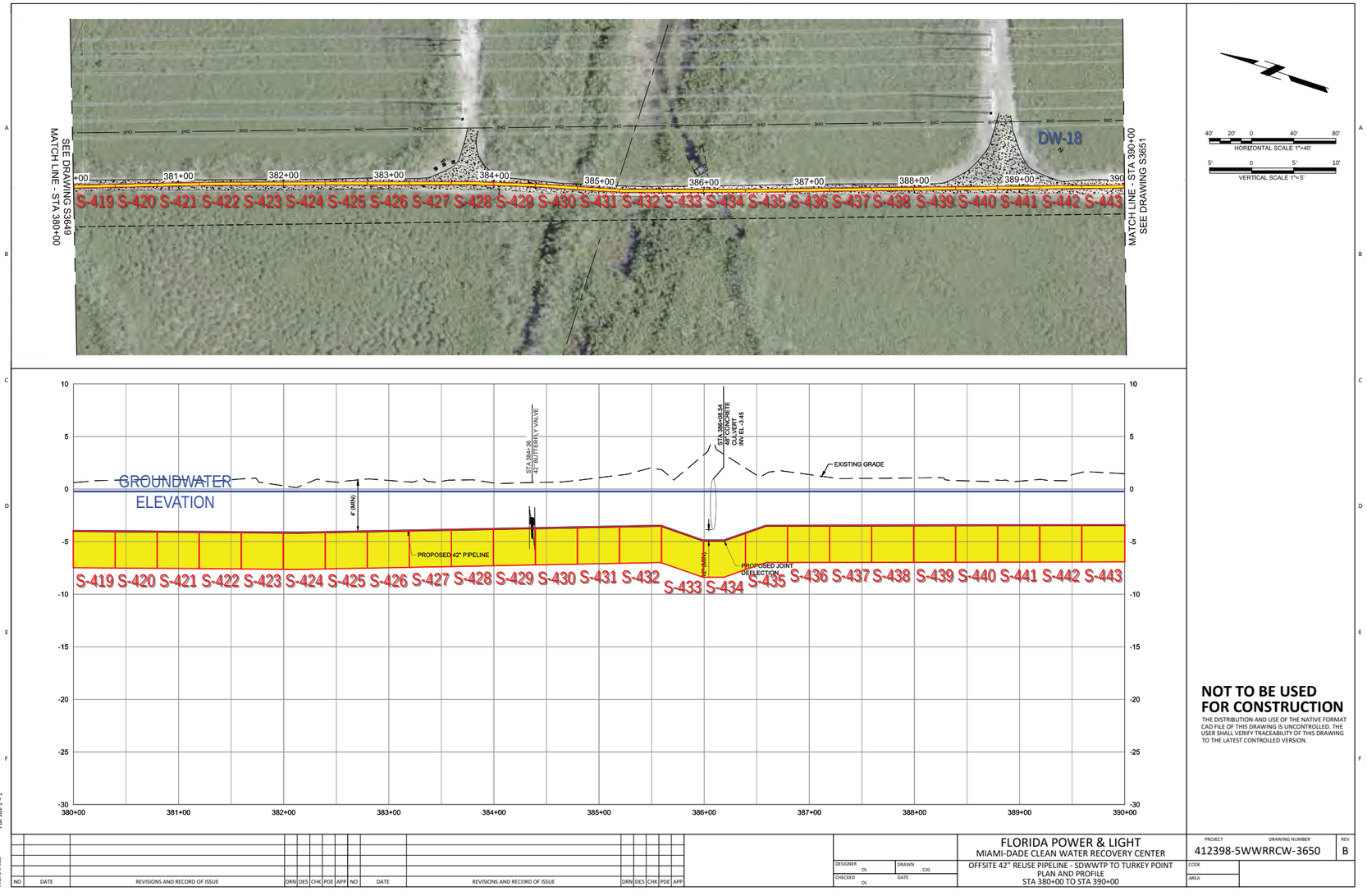
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5' 0 5' 10'
VERTICAL SCALE 1"= 5'

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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 380+00 TO STA 390+00

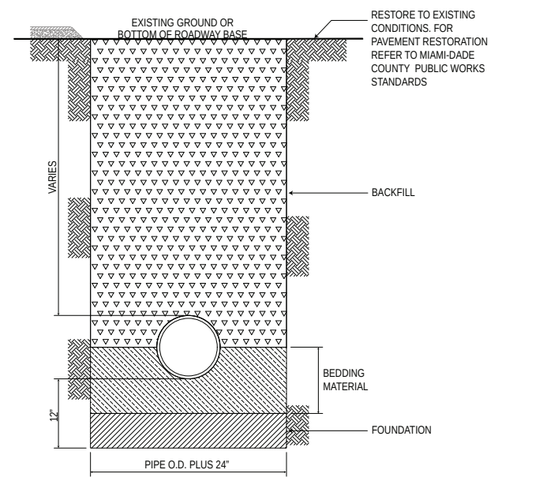
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PROJECT 412398-5WWRRCW-3650 | DRAWING NUMBER | REV B
CODE | AREA

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Full Size 1 = 1
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Add) 0 14x22



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 22 OF 27

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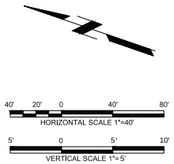
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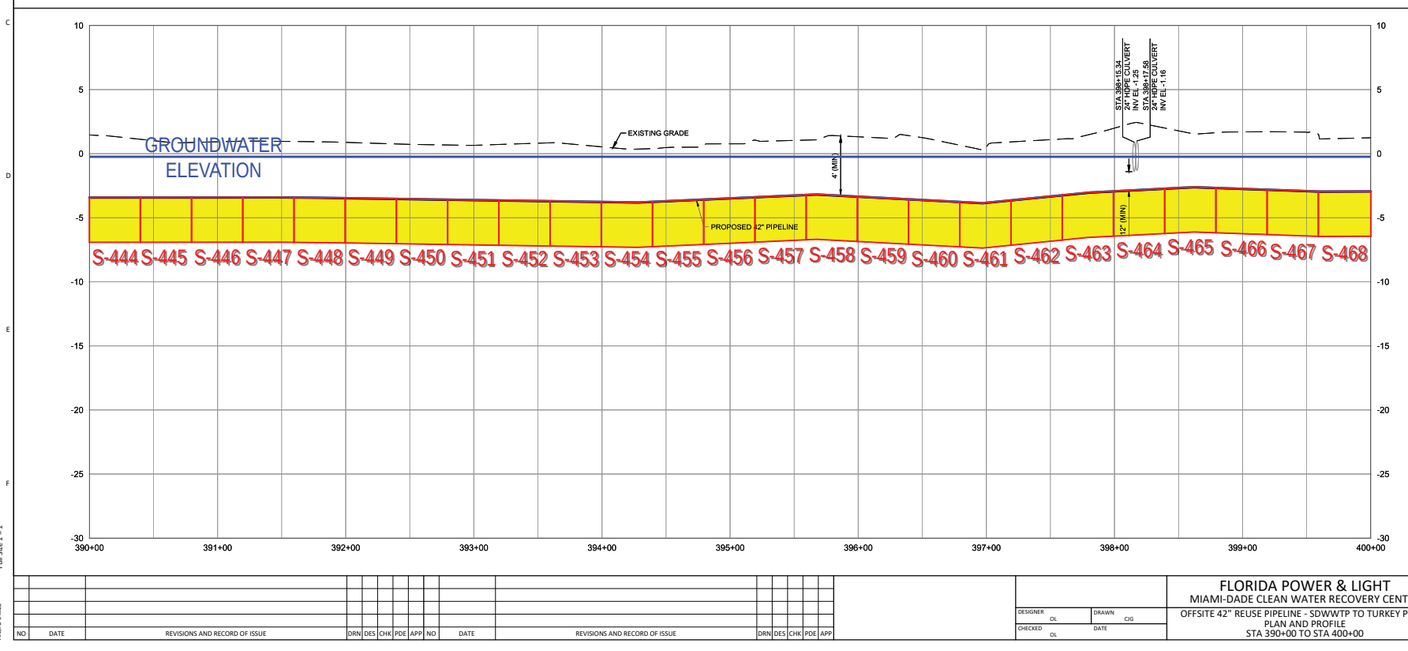
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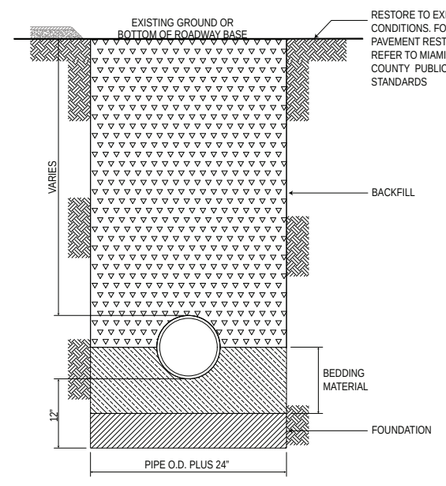
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 390+00 TO STA 400+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3651		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

811 Know what's below. Call before you dig.

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 23 OF 27

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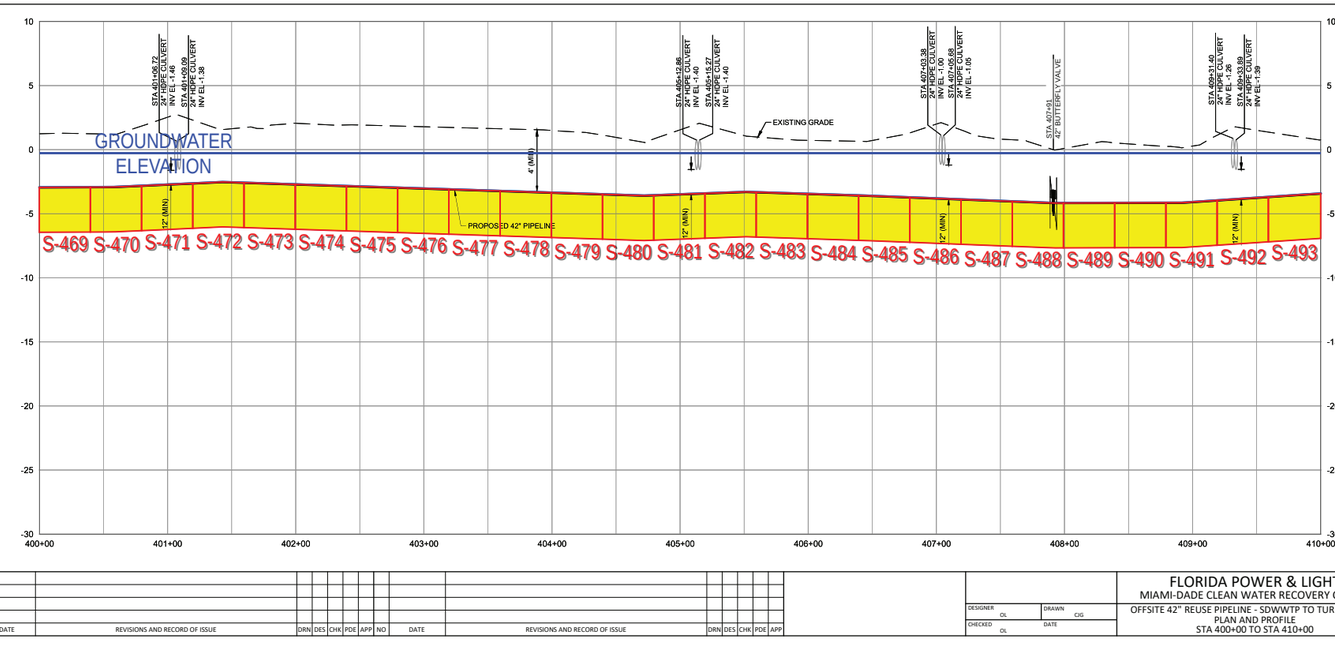
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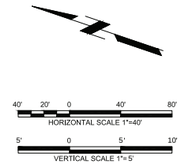
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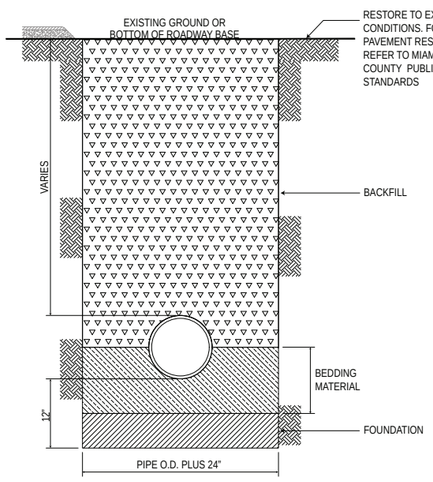
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FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT
PLAN AND PROFILE
STA 400+00 TO STA 410+00

PROJECT	DRAWING NUMBER	REV
412398-5WWRRCW-3652		B
CODE		
AREA		



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

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DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 24 OF 27

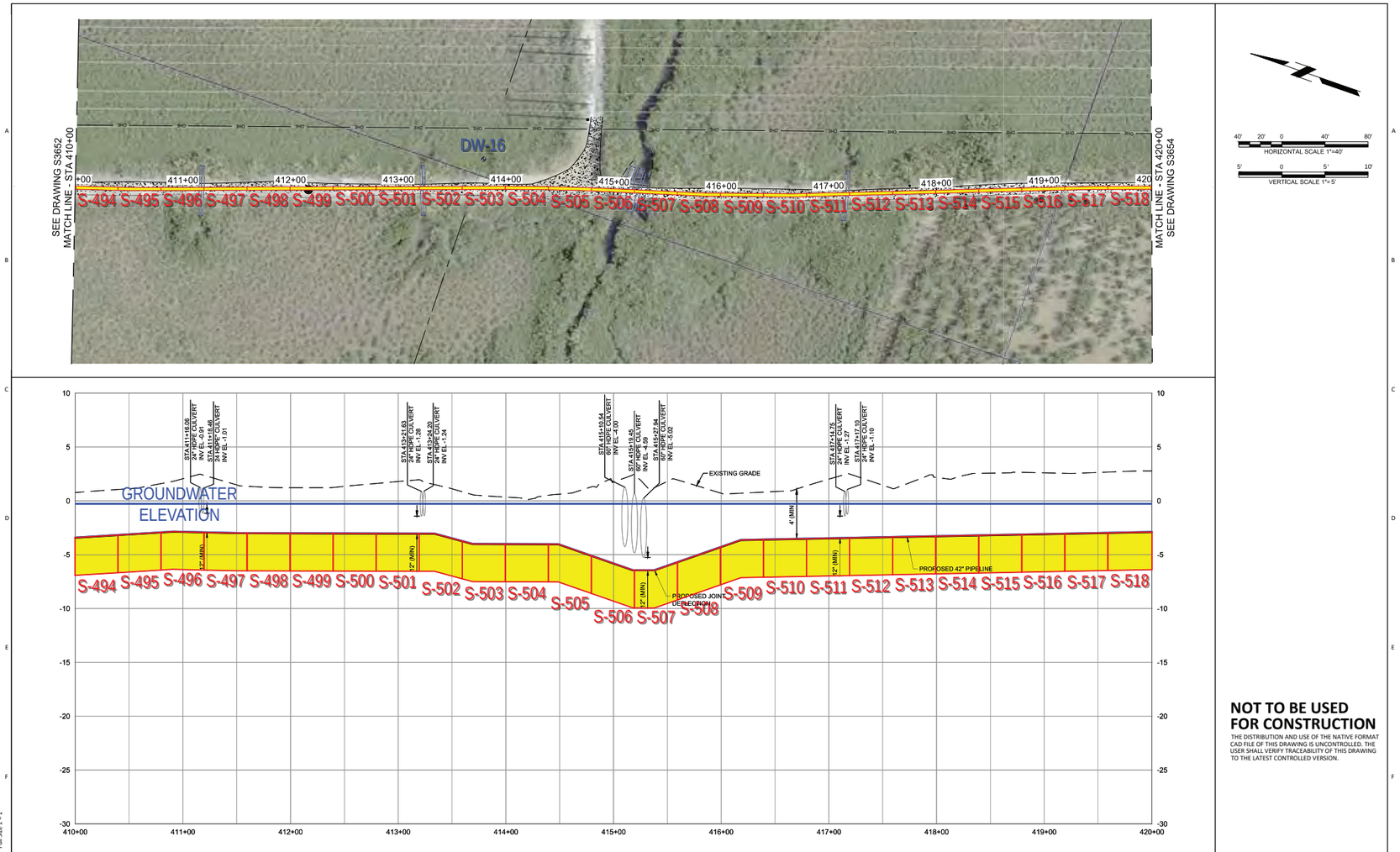
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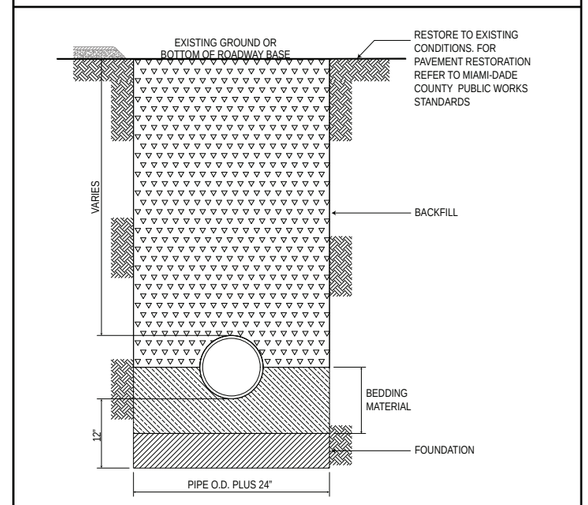
FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 410+00 TO STA 420+00

PROJECT 412398-5WWRRCW-3653 | REV B
CODE
AREA

MicroStation v10.15.0.74
Full Size 1 = 1
gbs10920
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PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

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PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 25 OF 27

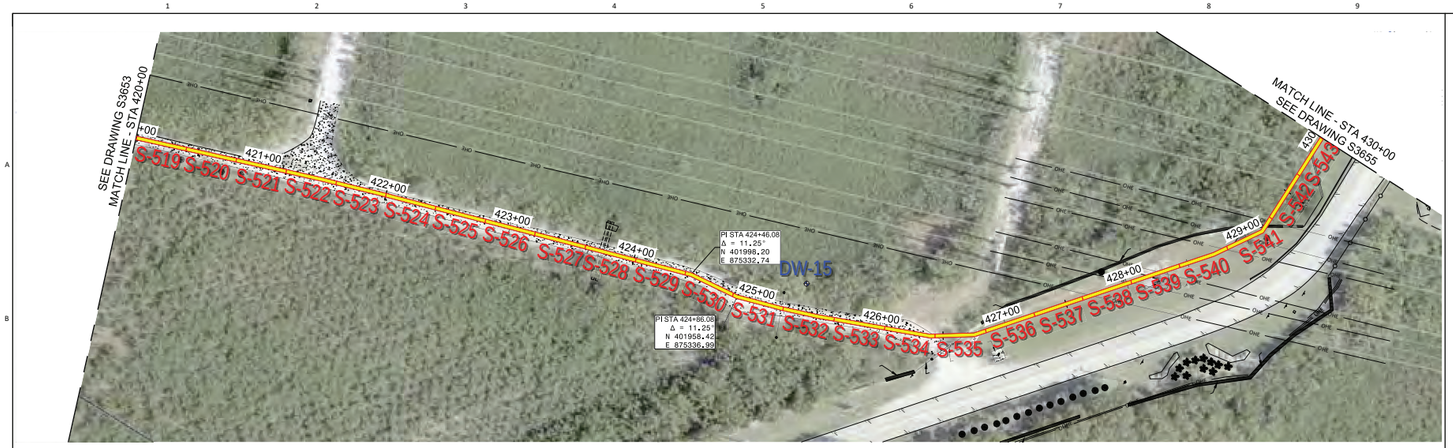
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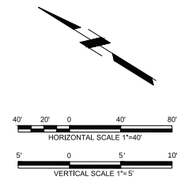
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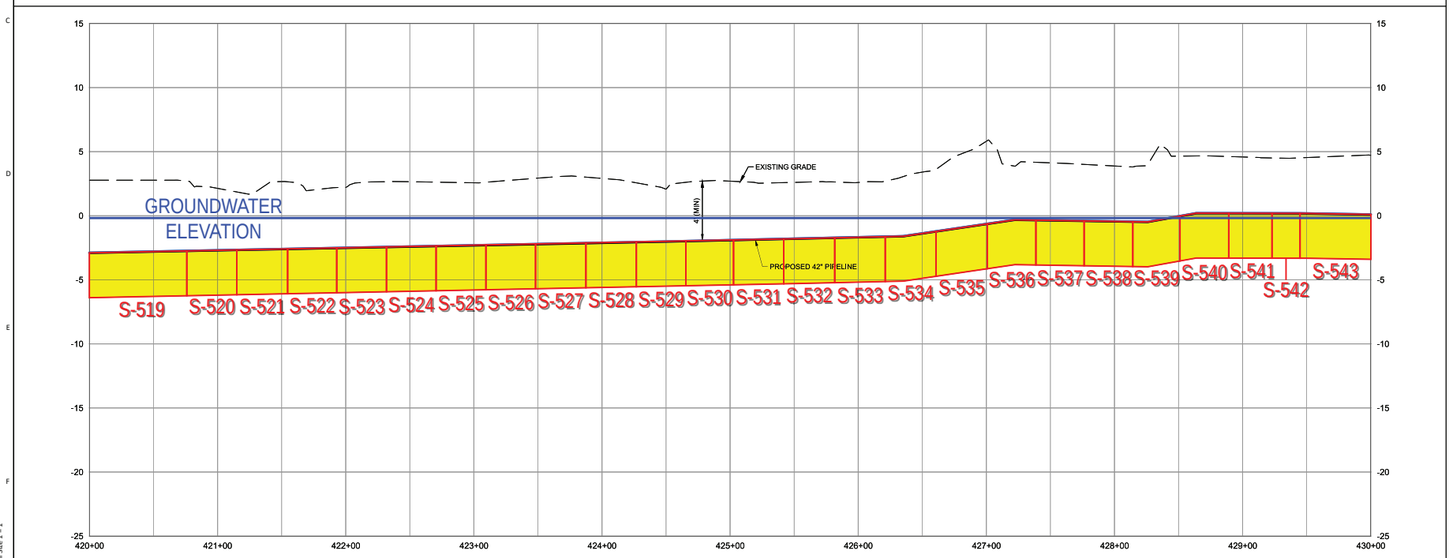
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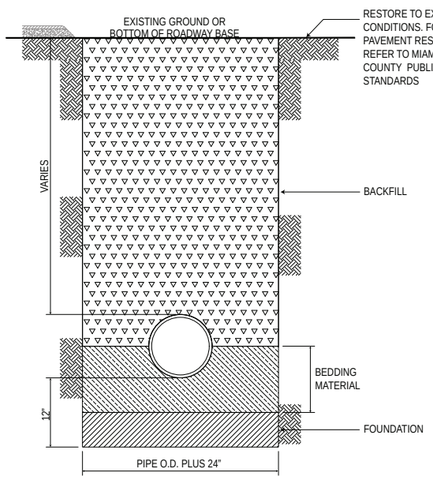
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CHECKED OL	DATE	OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT PLAN AND PROFILE STA 420+00 TO STA 430+00	CODE / AREA



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 26 OF 27

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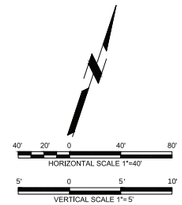
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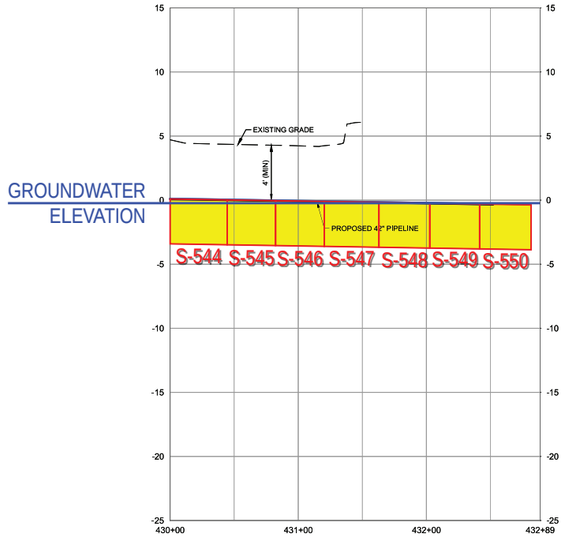
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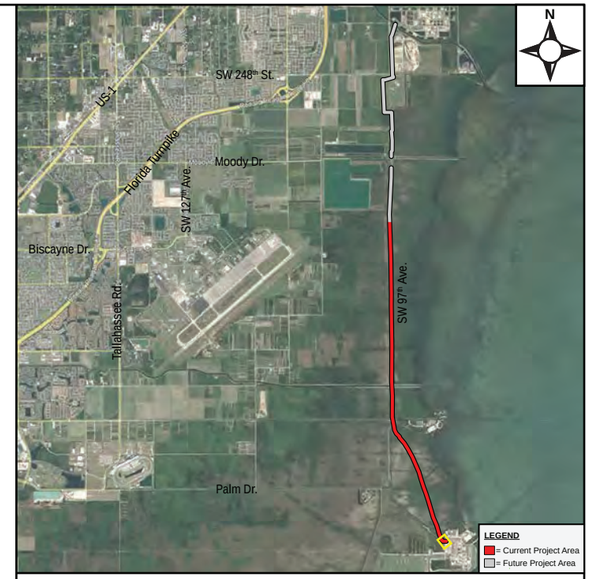
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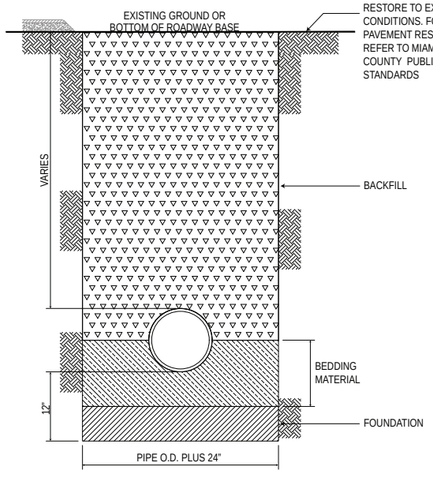
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CHECKED OL	DATE	OFFSITE 42" REUSE PIPELINE - SDW/WTP TO TURKEY POINT PLAN AND PROFILE STA 430+00 TO STA 432+52	CODE / AREA



PROJECT LOCATION MAP



TYPICAL TRENCH DETAIL

PROJECT GENERAL NOTES: Maximum Daily Pumpage: 673,695 US Gallons/day Maximum Dewatering Depth: -11.2' NAVD

DEWATERING SAFETY NOTE: FINAL PLACEMENT OF TEMPORARY WEIR TANKS, WELLS, PUMP SYSTEM, AND HOSE ROUTING IS ALWAYS SUBJECT TO UTILITY CONFLICT AND SUBSURFACE GEOLOGY. LOCATE/SOFT DIGGING ARE REQUIRED TO ENSURE SAFE INSTALLATION AND OPERATION OF SYSTEM AND COMPLIANCE WITH OTHER SITE SAFETY CONSIDERATIONS.

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PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
FIGURE 2 - DEWATERING PLAN	PROJECT NO. 18374	DRAWN BY: LS 3/10/23	SHEET 27 OF 27

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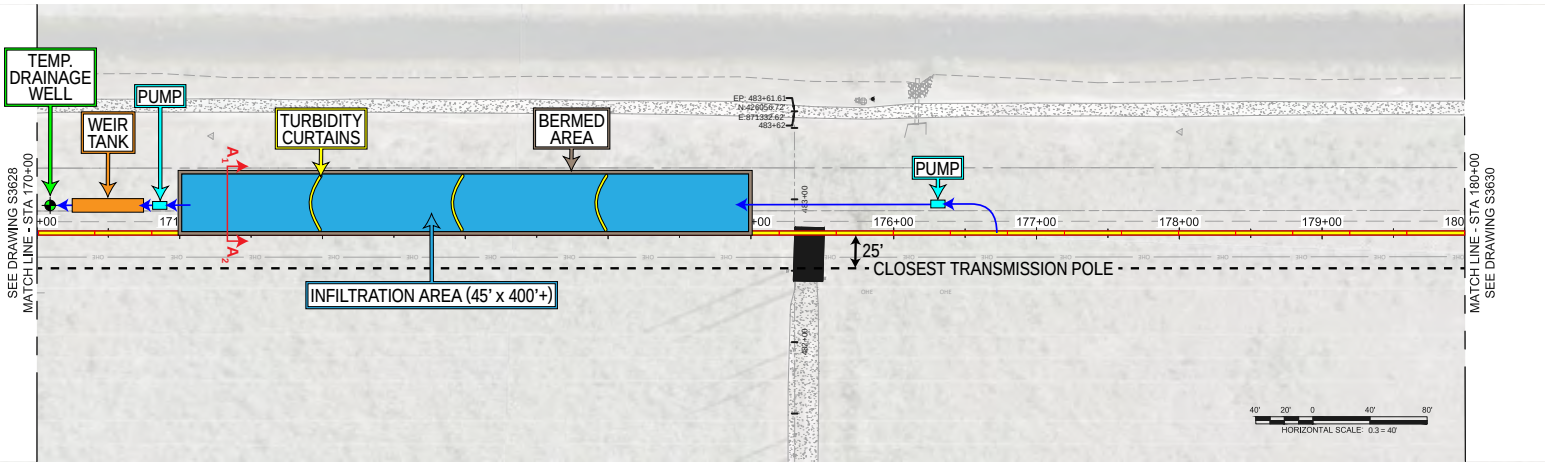
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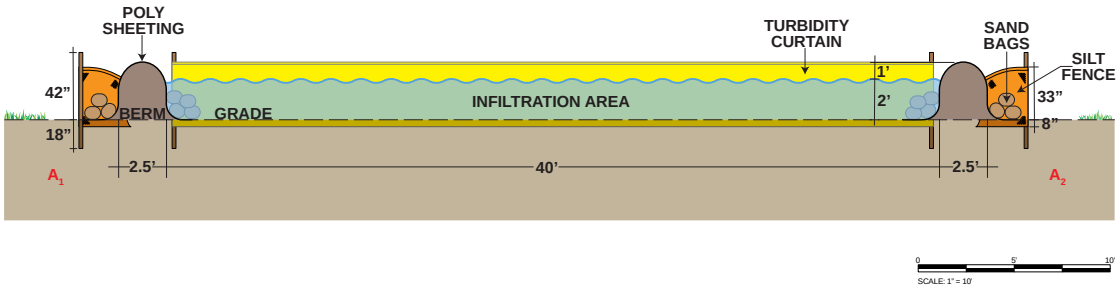
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TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 3 - CONTAMINATION MAP	SCALE: APPROX. 1" = 1 Mile 0' 2,640' 5,280'	DATE: 3/10/2023	DRAWN BY: LS

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NO	DATE	REVISIONS AND RECORD OF ISSUE	DRN	DES	CHK	PDE	APP

DESIGNER OL | DRAWN CJG | CHECKED OL | DATE

FLORIDA POWER & LIGHT
MIAMI-DADE CLEAN WATER RECOVERY CENTER
OFFSITE 42" REUSE PIPELINE - SDWWTP TO TURKEY POINT
PLAN AND PROFILE
STA 170+00 TO STA 180+00

PROJECT 412398-5WWRRCW-3629 | DRAWING NUMBER | REV B
CODE | AREA

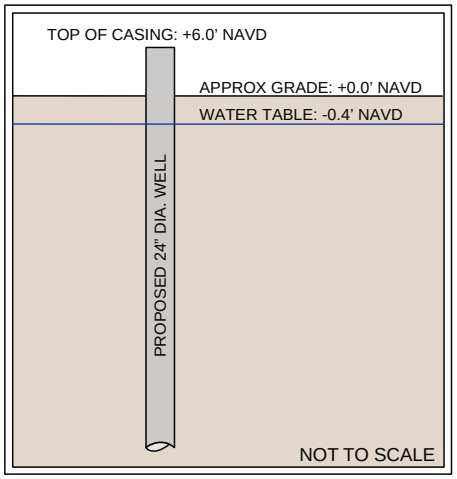
TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE	CLIENT: GIANNETTI CONTRACTING CORP.	SHEET 1 OF 1
	FIGURE 4 - TYPICAL SYSTEM LAYOUT	SCALE: AS INDICATED / DATE: 4/5/2023	DRAWN BY: LS

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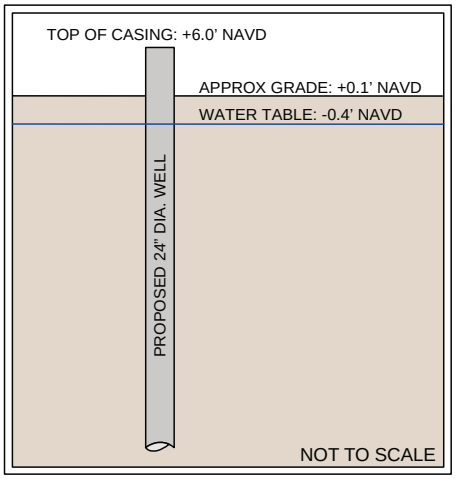
PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-7	25°30'2.22" N	80°20'51.65" W	106' +/-	56' +/-	24"
DW-8	25°29'36.02" N	80°20'50.85" W	106' +/-	56' +/-	24"

DW-7 DETAIL



DW-8 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-7	DW-8
AVAILABLE HEAD	6 - (-0.4 + 1.0*) = 5.4 FT	6 - (-0.4 + 1.0*) = 5.4 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT	495 GPM/FT
ESTIMATED CAPACITY	5.4 FT x 495 GPM = 2,673 GPM	5.4 FT x 495 GPM = 2,673 GPM
CAPACITY W/ SAFETY FACTOR	2,673 GPM / 1.5 = 1,782 GPM PER WELL	2,673 GPM / 1.5 = 1,782 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,782 GPM > 1,206 GPM	1,782 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

NOTES:
1. DEWATERING WELLS SHALL BE PLUGGED AND ABANDONED WHEN THEY NO LONGER PERFORM THEIR INTENDED PURPOSE.
2. PLUGGING AND ABANDONMENT PLAN SHALL BE SUBMITTED TO FDEP WITH THE CONSTRUCTION PERMIT APPLICATION IN ACCORDANCE WITH CHAPTER 62-528 F.A.C.

Robert L Vinson III

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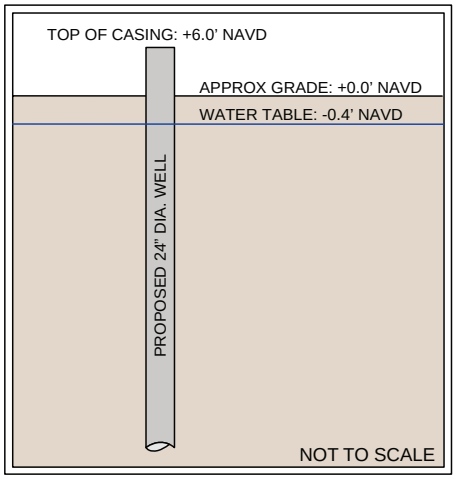
TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 1 OF 7

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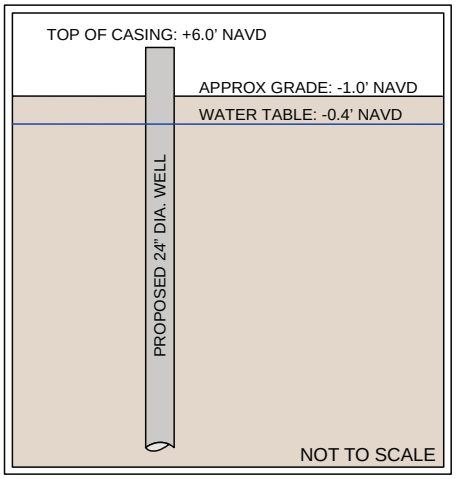
PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-9	25°28'58.75" N	80°20'50.55" W	106' +/-	56' +/-	24"
DW-10	25°28'26.87" N	80°20'50.73" W	106' +/-	56' +/-	24"

DW-9 DETAIL



DW-10 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-9	DW-10
AVAILABLE HEAD	6 - (-0.4 + 1.0*) = 5.4 FT	6 - (-0.4 + 1.0*) = 5.4 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT	495 GPM/FT
ESTIMATED CAPACITY	5.4 FT x 495 GPM = 2,673 GPM	5.4 FT x 495 GPM = 2,673 GPM
CAPACITY W/ SAFETY FACTOR	2,673 GPM / 1.5 = 1,782 GPM PER WELL	2,673 GPM / 1.5 = 1,782 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,782 GPM > 1,206 GPM	1,782 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

NOTES:
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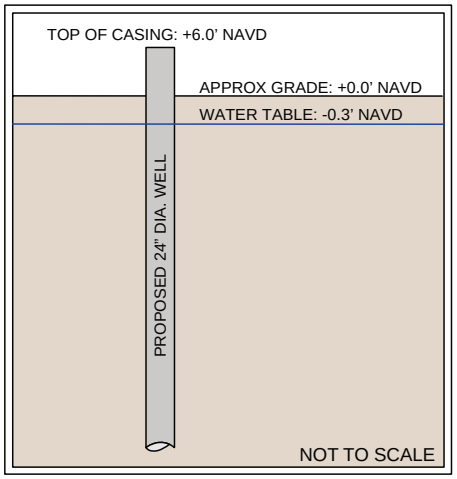
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TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 2 OF 7

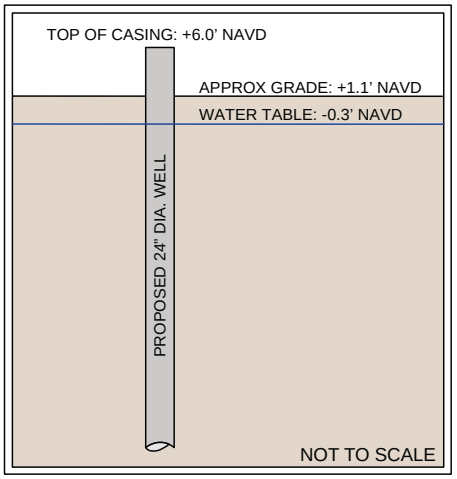
PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-11	25°27'55.49" N	80°20'50.36" W	106' +/-	56' +/-	24"
DW-12	25°27'35.87" N	80°20'44.63" W	106' +/-	56' +/-	24"

DW-11 DETAIL



DW-12 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-11	DW-12
AVAILABLE HEAD	6 - (-0.3 + 1.0*) = 5.3 FT	6 - (-0.3 + 1.0*) = 5.3 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT	495 GPM/FT
ESTIMATED CAPACITY	5.3 FT x 495 GPM = 2,623.5 GPM	5.3 FT x 495 GPM = 2,623.5 GPM
CAPACITY W/ SAFETY FACTOR	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,749 GPM > 1,206 GPM	1,749 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

NOTES:
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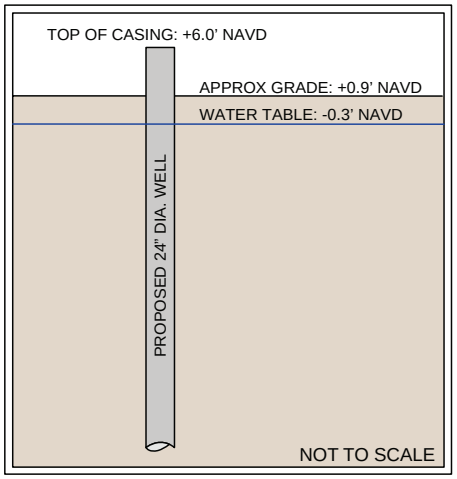
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TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 3 OF 7

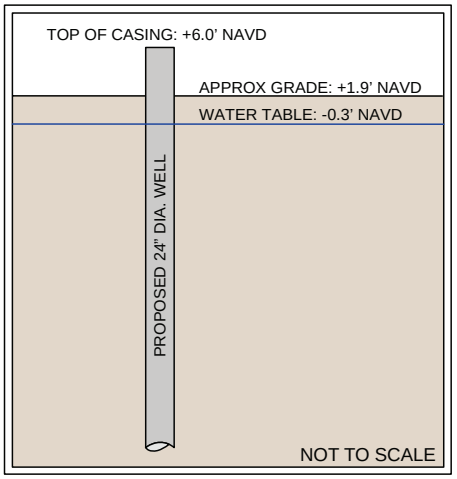
PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-13	25°27'1.95" N	80°20'25.25" W	106' +/-	56' +/-	24"
DW-14	25°26'39.41" N	80°20'17.07" W	106' +/-	56' +/-	24"

DW-13 DETAIL



DW-14 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-13	DW-14
AVAILABLE HEAD	6 - (-0.3 + 1.0*) = 5.3 FT	6 - (-0.3 + 1.0*) = 5.3 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT	495 GPM/FT
ESTIMATED CAPACITY	5.3 FT x 495 GPM = 2,623.5 GPM	5.3 FT x 495 GPM = 2,623.5 GPM
CAPACITY W/ SAFETY FACTOR	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,749 GPM > 1,206 GPM	1,749 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

NOTES:
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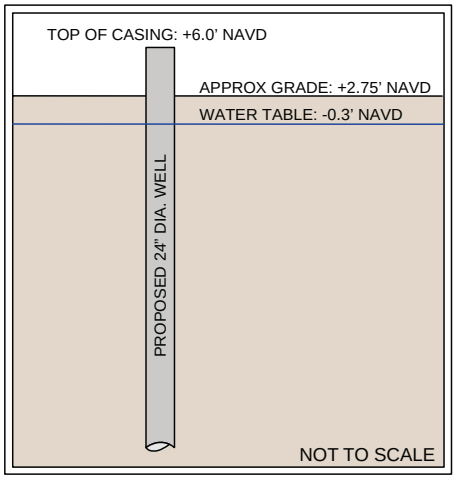
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TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 4 OF 7

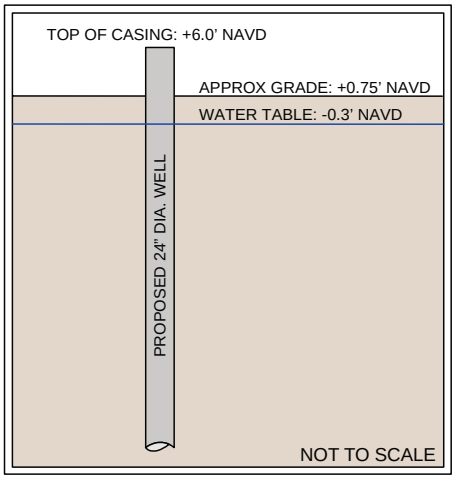
PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-15	25°26'15.99" N	80°20'8.65" W	106' +/-	56' +/-	24"
DW-16	25°26'26.90" N	80°20'12.47" W	106' +/-	56' +/-	24"

DW-15 DETAIL



DW-16 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-15	DW-16
AVAILABLE HEAD	6 - (-0.3 + 1.0*) = 5.3 FT	6 - (-0.3 + 1.0*) = 5.3 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT	495 GPM/FT
ESTIMATED CAPACITY	5.3 FT x 495 GPM = 2,623.5 GPM	5.3 FT x 495 GPM = 2,623.5 GPM
CAPACITY W/ SAFETY FACTOR	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,749 GPM > 1,206 GPM	1,749 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

NOTES:
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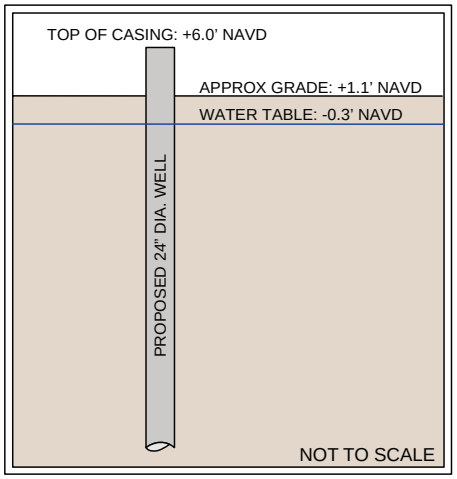
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TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 5 OF 7

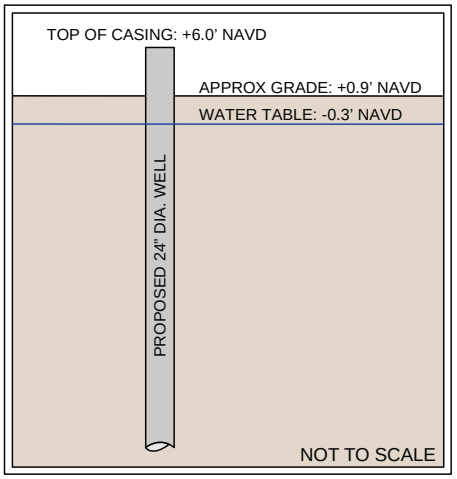
PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-17	25°27'25.54" N	80°20'36.50" W	106' +/-	56' +/-	24"
DW-18	25°26'50.09" N	80°20'20.90" W	106' +/-	56' +/-	24"

DW-17 DETAIL



DW-18 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-17	DW-18
AVAILABLE HEAD	6 - (-0.3 + 1.0*) = 5.3 FT	6 - (-0.3 + 1.0*) = 5.3 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT	495 GPM/FT
ESTIMATED CAPACITY	5.3 FT x 495 GPM = 2,623.5 GPM	5.3 FT x 495 GPM = 2,623.5 GPM
CAPACITY W/ SAFETY FACTOR	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,749 GPM > 1,206 GPM	1,749 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

NOTES:
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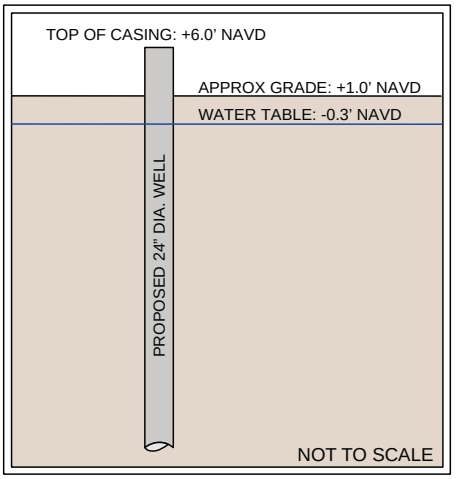
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	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 6 OF 7

PROPOSED TEMPORARY DEWATERING WELLS

NAME	LATITUDE	LONGITUDE	PROPOSED TOTAL DEPTH	PROPOSED CASING DEPTH	WELL DIAMETER
DW-19	25°27'14.10" N	80°20'30.41" W	106' +/-	56' +/-	24"

DW-19 DETAIL



TEMPORARY DEWATERING WELL CAPACITY CALCULATIONS

	DW-19
AVAILABLE HEAD	6 - (-0.3 + 1.0*) = 5.3 FT
DESIGN-SPECIFIC CAPACITY	495 GPM/FT
ESTIMATED CAPACITY	5.3 FT x 495 GPM = 2,623.5 GPM
CAPACITY W/ SAFETY FACTOR	2,623.5 GPM / 1.5 = 1,749 GPM PER WELL
EST. CAPACITY vs. MAX. GPM**	1,749 GPM > 1,206 GPM

*DENSITY CORRECTION

**PER DEWATERING CALCULATIONS (ATTACHMENT A)

TEMPORARY DEWATERING WELL SPECIFICATIONS

CLASS V INJECTION WELL TYPE	GROUP 6 - DRAINAGE WELL FOR TEMPORARY DEWATERING
DISCHARGE TYPE	TEMPORARY DEWATERING DISCHARGE
CASING TYPE	STEEL
MAX. DISCHARGE VOLUME**	1,206 GPM
PROPOSED PRE-TREATMENT	40' X 400' INFILTRATION BASIN AND ONE (1) 18,000 GALLON SEDIMENTATION WEIR TANK

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TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE		CLIENT: GIANNETTI CONTRACTING CORP.	
	FIGURE 5 - TEMP. DEWATERING WELL DETAILS	DRAWN BY: LS	DATE: 4/17/2023	SHEET 7 OF 7

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ATTACHMENT A

Sedimentation Analysis
FPL CWRC Pipeline
Miami-Dade County, FL

Particle Settling Analysis Using Stoke's Law

ASTM Soil Classification	Particle Size(s) of Concern			Particle Properties				Particle Settling Velocity	
	microns	mm	Seive Size	Particle Size (mm)	Particle Density (kg/m^3)	Fluid Density (kg/m^3)	Fluid Viscosity (Pa s)	V_p (m/s)	V_p (f/s)
Fine Sand	**75**	0.075	**200**	0.075	2600	1000	0.001	0.00467500	0.015339
Silt	**74**	0.074		0.074	2600	1000	0.001	0.00456300	0.014971
	55	0.055		0.055	2600	1000	0.001	0.00263780	0.008655
	40	0.04		0.04	2600	1000	0.001	0.00139520	0.004578
	25	0.025		0.025	2600	1000	0.001	0.00054500	0.001788
Clay	**5**	0.005		0.005	2600	1000	0.001	0.00002180	0.000072
	1	0.001		0.001	2600	1000	0.001	0.00000087	0.000003

Particle Settling Velocity Calculator:
http://www.filtration-and-separation.com/settling/settling.htm

Sedimentation Analysis
Basin Size (gallons): 32,000

Pumping Rates (gpm)	Infiltration Basin Specs				Detention Time (min)	Overflow Velocity (V_0) (fps)	$V_p >= V_0$ (YES = +, NO = -)					
	Capacity (V) (gal)	Width (ft)	Height (ft)	Length (ft)			75 microns	74 microns	55 microns	40 microns	25 microns	5 microns
1300	32,000	40.0	2.0	400.0	25	0.000181038	+	+	+	+	+	-
1206	32,000	40.0	2.0	400.0	27	0.000167948	+	+	+	+	+	-
1200	32,000	40.0	2.0	400.0	27	0.000167112	+	+	+	+	+	-
1100	32,000	40.0	2.0	400.0	29	0.000153186	+	+	+	+	+	-
1000	32,000	40.0	2.0	400.0	32	0.00013926	+	+	+	+	+	-
900	32,000	40.0	2.0	400.0	36	0.000125334	+	+	+	+	+	-
800	32,000	40.0	2.0	400.0	40	0.000111408	+	+	+	+	+	-
700	32,000	40.0	2.0	400.0	46	9.74822E-05	+	+	+	+	+	-
681	32,000	40.0	2.0	400.0	47	9.48362E-05	+	+	+	+	+	-
600	32,000	40.0	2.0	400.0	53	8.35561E-05	+	+	+	+	+	-

where :
Maximum Project Flow Rate = 1,206 gpm
Average Project Flow Rate = 681 gpm

Detention Time = V/Q
Overflow Velocity = $$\frac{Q}{A_s} = \frac{Q\ (gpm)}{W(ft) \times L(ft) \times 7.48 \frac{gal}{ft^3} \times 60 \frac{seg}{min}}$$

The calculations presented are deemed appropriate and in accordance with State of Florida Rules and Regulation as certified by a registered Professional Engineer authorized by Chapter 471, Florida Statutes and defined by the Florida State Board of Professional Engineering. To the best of my knowledge, all information summarized in this report is true, accurate, complete, and in accordance with applicable State of Florida Rules and Regulations.

Reviewed and Approved by:
Robert L Vinson III
Digitally signed by Robert L Vinson III
Date: 2023.04.24 11:16:53 -05'00'
Robert L. Vinson III, P.E.
License No. 53438

Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

This item has been electronically signed and sealed by Robert L. Vinson III, PE, on the date of this document using an SHA authentication code.

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Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Rectangular Excavation

1. $Radius\ of\ Influence\ (m) = 3000 \times Drawdown\ (m) \times \sqrt{Hydraulic\ Conductivity\ (\frac{m}{s})}$

2. $Effective\ Radius\ (m) = \sqrt{\frac{Excavation\ Width\ (m) \times Excavation\ Length\ (m)}{\pi}}$

3. $Flow\ Rate\ (^{m^3}/_{S}) = \frac{\pi \times Hydraulic\ Conductivity\ \left(\frac{m}{s}\right) \times [H(m)^2 - h(m)^2]}{\left[Ln\left(Radius\ of\ Influence\ (m)\right) - Ln(Effective\ Radius\ (m))\right]}$

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
1	S-1	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-2	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-3	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-4	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-5	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-6	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-7	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-8	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
1	S-9	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-10	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-11	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-12	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-13	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-14	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-15	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-16	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-17	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
1	S-18	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-19	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-20	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-21	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-22	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-23	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-24	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
1	S-25	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-26	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-27	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-28	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-29	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-30	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-31	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-32	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-33	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
2	S-34	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-35	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-36	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-37	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-38	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-39	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-40	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-41	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-42	-0.40	-7.95	7.55	150.00	45.72	142.45	43.42	36.90	0.000130	258.42	78.77	6.00	1.83	40.00	12.19	8.74	2.66	267.17	81.43	392.45	47,094
2	S-43	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
2	S-44	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
2	S-45	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
2	S-46	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
2	S-47	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
2	S-48	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
2	S-49	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
2	S-50	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-51	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-52	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-53	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-54	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-55	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-56	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-57	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-58	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
3	S-59	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-60	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-61	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-62	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-63	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-64	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-65	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-66	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
3	S-67	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-68	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-69	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-70	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-71	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-72	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-73	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-74	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
3	S-75	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
4	S-76	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
4	S-77	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
4	S-78	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
4	S-79	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
4	S-80	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
4	S-81	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
4	S-82	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
4	S-83	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
4	S-84	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
4	S-85	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
4	S-86	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
4	S-87	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
4	S-88	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
4	S-89	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
4	S-90	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
4	S-91	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031
4	S-92	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
4	S-93	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031
4	S-94	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031
4	S-95	-0.40	-7.60	7.20	150.00	45.72	142.80	43.53	36.90	0.000130	246.44	75.12	6.00	1.83	40.00	12.19	8.74	2.66	255.19	77.78	380.03	45,604
4	S-96	-0.40	-7.60	7.20	150.00	45.72	142.80	43.53	36.90	0.000130	246.44	75.12	6.00	1.83	40.00	12.19	8.74	2.66	255.19	77.78	380.03	45,604
4	S-97	-0.40	-7.60	7.20	150.00	45.72	142.80	43.53	36.90	0.000130	246.44	75.12	6.00	1.83	40.00	12.19	8.74	2.66	255.19	77.78	380.03	45,604
4	S-98	-0.40	-7.50	7.10	150.00	45.72	142.90	43.56	36.90	0.000130	243.02	74.07	6.00	1.83	40.00	12.19	8.74	2.66	251.76	76.74	376.46	45,175
4	S-99	-0.40	-7.50	7.10	150.00	45.72	142.90	43.56	36.90	0.000130	243.02	74.07	6.00	1.83	40.00	12.19	8.74	2.66	251.76	76.74	376.46	45,175
4	S-100	-0.40	-7.50	7.10	150.00	45.72	142.90	43.56	36.90	0.000130	243.02	74.07	6.00	1.83	40.00	12.19	8.74	2.66	251.76	76.74	376.46	45,175
5	S-101	-0.40	-7.50	7.10	150.00	45.72	142.90	43.56	36.90	0.000130	243.02	74.07	6.00	1.83	40.00	12.19	8.74	2.66	251.76	76.74	376.46	45,175
5	S-102	-0.40	-7.40	7.00	150.00	45.72	143.00	43.59	36.90	0.000130	239.60	73.03	6.00	1.83	40.00	12.19	8.74	2.66	248.34	75.69	372.88	44,745
5	S-103	-0.40	-7.30	6.90	150.00	45.72	143.10	43.62	36.90	0.000130	236.18	71.99	6.00	1.83	40.00	12.19	8.74	2.66	244.92	74.65	369.28	44,313
5	S-104	-0.40	-7.20	6.80	150.00	45.72	143.20	43.65	36.90	0.000130	232.75	70.94	6.00	1.83	40.00	12.19	8.74	2.66	241.49	73.61	365.67	43,881
5	S-105	-0.40	-7.10	6.70	150.00	45.72	143.30	43.68	36.90	0.000130	229.33	69.90	6.00	1.83	40.00	12.19	8.74	2.66	238.07	72.56	362.05	43,446
5	S-106	-0.40	-7.00	6.60	150.00	45.72	143.40	43.71	36.90	0.000130	225.91	68.86	6.00	1.83	40.00	12.19	8.74	2.66	234.65	71.52	358.42	43,010
5	S-107	-0.40	-7.00	6.60	150.00	45.72	143.40	43.71	36.90	0.000130	225.91	68.86	6.00	1.83	40.00	12.19	8.74	2.66	234.65	71.52	358.42	43,010
5	S-108	-0.40	-7.00	6.60	150.00	45.72	143.40	43.71	36.90	0.000130	225.91	68.86	6.00	1.83	40.00	12.19	8.74	2.66	234.65	71.52	358.42	43,010
5	S-109	-0.40	-7.50	7.10	150.00	45.72	142.90	43.56	36.90	0.000130	243.02	74.07	6.00	1.83	40.00	12.19	8.74	2.66	251.76	76.74	376.46	45,175
5	S-110	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
5	S-111	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
5	S-112	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
5	S-113	-0.40	-7.60	7.20	150.00	45.72	142.80	43.53	36.90	0.000130	246.44	75.12	6.00	1.83	40.00	12.19	8.74	2.66	255.19	77.78	380.03	45,604
5	S-114	-0.40	-7.60	7.20	150.00	45.72	142.80	43.53	36.90	0.000130	246.44	75.12	6.00	1.83	40.00	12.19	8.74	2.66	255.19	77.78	380.03	45,604
5	S-115	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031
5	S-116	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031
5	S-117	-0.40	-7.70	7.30	150.00	45.72	142.70	43.49	36.90	0.000130	249.87	76.16	6.00	1.83	40.00	12.19	8.74	2.66	258.61	78.82	383.60	46,031
5	S-118	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
5	S-119	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
5	S-120	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
5	S-121	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
5	S-122	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
5	S-123	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
5	S-124	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
5	S-125	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
6	S-126	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
6	S-127	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
6	S-128	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
6	S-129	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
6	S-130	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
6	S-131	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
6	S-132	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
6	S-133	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
6	S-134	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
6	S-135	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-136	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-137	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-138	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-139	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-140	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
7	S-141	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-142	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-143	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-144	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-145	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-146	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-147	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
7	S-148	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-149	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-150	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-151	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-152	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-153	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-154	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-155	-0.40	-8.10	7.70	150.00	45.72	142.30	43.37	36.90	0.000130	263.56	80.33	6.00	1.83	40.00	12.19	8.74	2.66	272.30	83.00	397.73	47,728
8	S-156	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-157	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-158	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-159	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-160	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-161	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-162	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-163	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-164	-0.40	-8.07	7.67	150.00	45.72	142.33	43.38	36.90	0.000130	262.53	80.02	6.00	1.83	40.00	12.19	8.74	2.66	271.27	82.68	396.68	47,601
8	S-165	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-166	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-167	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-168	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-169	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-170	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-171	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-172	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
8	S-173	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-174	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-175	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-176	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-177	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-178	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-179	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-180	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-181	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-182	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-183	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-184	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-185	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-186	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-187	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-188	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
9	S-189	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-190	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-191	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-192	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-193	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-194	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-195	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-196	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-197	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
9	S-198	-0.40	-8.05	7.65	150.00	45.72	142.35	43.39	36.90	0.000130	261.85	79.81	6.00	1.83	40.00	12.19	8.74	2.66	270.59	82.48	395.98	47,517
10	S-199	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-200	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-201	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-202	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-203	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-204	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-205	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-206	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-207	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-208	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-209	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-210	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-211	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-212	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
10	S-213	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-214	-0.40	-7.80	7.40	150.00	45.72	142.60	43.46	36.90	0.000130	253.29	77.20	6.00	1.83	40.00	12.19	8.74	2.66	262.03	79.87	387.15	46,458
11	S-215	-0.40	-7.90	7.50	150.00	45.72	142.50	43.43	36.90	0.000130	256.71	78.25	6.00	1.83	40.00	12.19	8.74	2.66	265.45	80.91	390.69	46,882
11	S-216	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-217	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-218	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-219	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-220	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-221	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-222	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-223	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-224	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
11	S-225	-0.40	-8.00	7.60	150.00	45.72	142.40	43.40	36.90	0.000130	260.13	79.29	6.00	1.83	40.00	12.19	8.74	2.66	268.88	81.95	394.22	47,306
12	S-226	-0.40	-8.20	7.80	150.00	45.72	142.20	43.34	36.90	0.000130	266.98	81.38	6.00	1.83	40.00	12.19	8.74	2.66	275.72	84.04	401.24	48,149
12	S-227	-0.40	-8.20	7.80	150.00	45.72	142.20	43.34	36.90	0.000130	266.98	81.38	6.00	1.83	40.00	12.19	8.74	2.66	275.72	84.04	401.24	48,149
12	S-228	-0.40	-9.00	8.60	150.00	45.72	141.40	43.10	36.90	0.000130	294.36	89.72	6.00	1.83	40.00	12.19	8.74	2.66	303.11	92.39	428.93	51,472
12	S-229	-0.40	-10.50	10.10	150.00	45.72	139.90	42.64	36.90	0.000130	345.71	105.37	6.00	1.83	40.00	12.19	8.74	2.66	354.45	108.04	479.24	57,509
12	S-230	-0.40	-11.00	10.60	150.00	45.72	139.40	42.49	36.90	0.000130	362.82	110.59	6.00	1.83	40.00	12.19	8.74	2.66	371.56	113.25	495.59	59,471
12	S-231	-0.40	-11.00	10.60	150.00	45.72	139.40	42.49	36.90	0.000130	362.82	110.59	6.00	1.83	40.00	12.19	8.74	2.66	371.56	113.25	495.59	59,471
12	S-232	-0.40	-11.00	10.60	150.00	45.72	139.40	42.49	36.90	0.000130	362.82	110.59	6.00	1.83	40.00	12.19	8.74	2.66	371.56	113.25	495.59	59,471
12	S-233	-0.40	-11.00	10.60	150.00	45.72	139.40	42.49	36.90	0.000130	362.82	110.59	6.00	1.83	40.00	12.19	8.74	2.66	371.56	113.25	495.59	59,471
12	S-234	-0.40	-10.25	9.85	150.00	45.72	140.15	42.72	36.90	0.000130	337.15	102.76	6.00	1.83	40.00	12.19	8.74	2.66	345.89	105.43	470.99	56,519
12	S-235	-0.40	-9.75	9.35	150.00	45.72	140.65	42.87	36.90	0.000130	320.03	97.55	6.00	1.83	40.00	12.19	8.74	2.66	328.78	100.21	454.34	54,520
12	S-236	-0.40	-10.00	9.60	150.00	45.72	140.40	42.79	36.90	0.000130	328.59	100.15	6.00	1.83	40.00	12.19	8.74	2.66	337.33	102.82	462.69	55,523

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
12	S-237	-0.40	-10.00	9.60	150.00	45.72	140.40	42.79	36.90	0.000130	328.59	100.15	6.00	1.83	40.00	12.19	8.74	2.66	337.33	102.82	462.69	55,523
12	S-238	-0.40	-9.20	8.80	150.00	45.72	141.20	43.04	36.90	0.000130	301.21	91.81	6.00	1.83	40.00	12.19	8.74	2.66	309.95	94.47	435.76	52,291
12	S-239	-0.40	-9.00	8.60	150.00	45.72	141.40	43.10	36.90	0.000130	294.36	89.72	6.00	1.83	40.00	12.19	8.74	2.66	303.11	92.39	428.93	51,472
12	S-240	-0.40	-9.00	8.60	150.00	45.72	141.40	43.10	36.90	0.000130	294.36	89.72	6.00	1.83	40.00	12.19	8.74	2.66	303.11	92.39	428.93	51,472
12	S-241	-0.40	-9.00	8.60	150.00	45.72	141.40	43.10	36.90	0.000130	294.36	89.72	6.00	1.83	40.00	12.19	8.74	2.66	303.11	92.39	428.93	51,472
12	S-242	-0.40	-9.00	8.60	150.00	45.72	141.40	43.10	36.90	0.000130	294.36	89.72	6.00	1.83	40.00	12.19	8.74	2.66	303.11	92.39	428.93	51,472
12	S-243	-0.40	-9.20	8.80	150.00	45.72	141.20	43.04	36.90	0.000130	301.21	91.81	6.00	1.83	40.00	12.19	8.74	2.66	309.95	94.47	435.76	52,291
12	S-244	-0.40	-10.20	9.80	150.00	45.72	140.20	42.73	36.90	0.000130	335.44	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.18	104.91	469.34	56,321
12	S-245	-0.40	-11.20	10.80	150.00	45.72	139.20	42.43	36.90	0.000130	369.67	112.67	6.00	1.83	40.00	12.19	8.74	2.66	378.41	115.34	502.07	60,249
12	S-246	-0.40	-11.20	10.80	150.00	45.72	139.20	42.43	36.90	0.000130	369.67	112.67	6.00	1.83	40.00	12.19	8.74	2.66	378.41	115.34	502.07	60,249
12	S-247	-0.40	-11.00	10.60	150.00	45.72	139.40	42.49	36.90	0.000130	362.82	110.59	6.00	1.83	40.00	12.19	8.74	2.66	371.56	113.25	495.59	59,471
12	S-248	-0.40	-10.80	10.40	150.00	45.72	139.60	42.55	36.90	0.000130	355.97	108.50	6.00	1.83	40.00	12.19	8.74	2.66	364.72	111.17	489.08	58,689
12	S-249	-0.40	-10.60	10.20	150.00	45.72	139.80	42.61	36.90	0.000130	349.13	106.41	6.00	1.83	40.00	12.19	8.74	2.66	357.87	109.08	482.53	57,903
12	S-250	-0.40	-10.40	10.00	150.00	45.72	140.00	42.67	36.90	0.000130	342.28	104.33	6.00	1.83	40.00	12.19	8.74	2.66	351.03	106.99	475.95	57,114
13	S-251	-0.40	-10.50	10.10	150.00	45.72	139.90	42.64	36.90	0.000130	345.71	105.37	6.00	1.83	40.00	12.19	8.74	2.66	354.45	108.04	479.24	57,509
13	S-252	-0.40	-10.20	9.80	150.00	45.72	140.20	42.73	36.90	0.000130	335.44	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.18	104.91	469.34	56,321
13	S-253	-0.40	-10.00	9.60	150.00	45.72	140.40	42.79	36.90	0.000130	328.59	100.15	6.00	1.83	40.00	12.19	8.74	2.66	337.33	102.82	462.69	55,523
13	S-254	-0.40	-9.90	9.50	150.00	45.72	140.50	42.82	36.90	0.000130	325.17	99.11	6.00	1.83	40.00	12.19	8.74	2.66	333.91	101.78	459.36	55,123
13	S-255	-0.40	-9.70	9.30	150.00	45.72	140.70	42.89	36.90	0.000130	318.32	97.02	6.00	1.83	40.00	12.19	8.74	2.66	327.07	99.69	452.66	54,319
13	S-256	-0.40	-9.50	9.10	150.00	45.72	140.90	42.95	36.90	0.000130	311.48	94.94	6.00	1.83	40.00	12.19	8.74	2.66	320.22	97.60	445.93	53,511
13	S-257	-0.40	-9.20	8.80	150.00	45.72	141.20	43.04	36.90	0.000130	301.21	91.81	6.00	1.83	40.00	12.19	8.74	2.66	309.95	94.47	435.76	52,291
13	S-258	-0.40	-9.00	8.60	150.00	45.72	141.40	43.10	36.90	0.000130	294.36	89.72	6.00	1.83	40.00	12.19	8.74	2.66	303.11	92.39	428.93	51,472
13	S-259	-0.40	-8.90	8.50	150.00	45.72	141.50	43.13	36.90	0.000130	290.94	88.68	6.00	1.83	40.00	12.19	8.74	2.66	299.68	91.34	425.51	51,061
14	S-260	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-261	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-262	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-263	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-264	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-265	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-266	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-267	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-268	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-269	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-270	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-271	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-272	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
14	S-273	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-274	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-275	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-276	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-277	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-278	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-279	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-280	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-281	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-282	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-283	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-284	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
15	S-285	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-286	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-287	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-288	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-289	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-290	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-291	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-292	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-293	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-294	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-295	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-296	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-297	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
15	S-298	-0.30	-8.60	8.30	160.00	48.77	151.70	46.24	101.80	0.000359	471.87	143.83	6.00	1.83	40.00	12.19	8.74	2.66	480.61	146.49	1077.09	129,251
16	S-299	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
16	S-300	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
16	S-301	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
17	S-302	-0.30	-7.25	6.95	160.00	48.77	153.05	46.65	101.80	0.000359	395.12	120.43	6.00	1.83	40.00	12.19	8.74	2.66	403.86	123.10	948.00	113,760
17	S-303	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345
17	S-304	-0.30	-7.35	7.05	160.00	48.77	152.95	46.62	101.80	0.000359	400.81	122.17	6.00	1.83	40.00	12.19	8.74	2.66	409.55	124.83	957.74	114,929
17	S-305	-0.30	-7.40	7.10	160.00	48.77	152.90	46.60	101.80	0.000359	403.65	123.03	6.00	1.83	40.00	12.19	8.74	2.66	412.39	125.70	962.60	115,512
17	S-306	-0.30	-7.45	7.15	160.00	48.77	152.85	46.59	101.80	0.000359	406.49	123.90	6.00	1.83	40.00	12.19	8.74	2.66	415.23	126.56	967.45	116,095
17	S-307	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
17	S-308	-0.30	-7.40	7.10	160.00	48.77	152.90	46.60	101.80	0.000359	403.65	123.03	6.00	1.83	40.00	12.19	8.74	2.66	412.39	125.70	962.60	115,512
17	S-309	-0.30	-7.25	6.95	160.00	48.77	153.05	46.65	101.80	0.000359	395.12	120.43	6.00	1.83	40.00	12.19	8.74	2.66	403.86	123.10	948.00	113,760
17	S-310	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
17	S-311	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
17	S-312	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
17	S-313	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
17	S-314	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
17	S-315	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
17	S-316	-0.30	-7.25	6.95	160.00	48.77	153.05	46.65	101.80	0.000359	395.12	120.43	6.00	1.83	40.00	12.19	8.74	2.66	403.86	123.10	948.00	113,760
17	S-317	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
17	S-318	-0.30	-8.00	7.70	160.00	48.77	152.30	46.42	101.80	0.000359	437.76	133.43	6.00	1.83	40.00	12.19	8.74	2.66	446.50	136.09	1020.35	122,442
18	S-319	-0.30	-8.25	7.95	160.00	48.77	152.05	46.34	101.80	0.000359	451.97	137.76	6.00	1.83	40.00	12.19	8.74	2.66	460.72	140.43	1044.11	125,293
18	S-320	-0.30	-8.50	8.20	160.00	48.77	151.80	46.27	101.80	0.000359	466.19	142.09	6.00	1.83	40.00	12.19	8.74	2.66	474.93	144.76	1067.70	128,124
18	S-321	-0.30	-8.25	7.95	160.00	48.77	152.05	46.34	101.80	0.000359	451.97	137.76	6.00	1.83	40.00	12.19	8.74	2.66	460.72	140.43	1044.11	125,293
18	S-322	-0.30	-7.90	7.60	160.00	48.77	152.40	46.45	101.80	0.000359	432.08	131.70	6.00	1.83	40.00	12.19	8.74	2.66	440.82	134.36	1010.79	121,295
18	S-323	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
18	S-324	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
18	S-325	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
18	S-326	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
18	S-327	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
18	S-328	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
18	S-329	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
18	S-330	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
18	S-331	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
18	S-332	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
18	S-333	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
18	S-334	-0.30	-6.75	6.45	160.00	48.77	153.55	46.80	101.80	0.000359	366.70	111.77	6.00	1.83	40.00	12.19	8.74	2.66	375.44	114.43	898.81	107,857
18	S-335	-0.30	-6.60	6.30	160.00	48.77	153.70	46.85	101.80	0.000359	358.17	109.17	6.00	1.83	40.00	12.19	8.74	2.66	366.91	111.83	883.90	106,067
18	S-336	-0.30	-6.60	6.30	160.00	48.77	153.70	46.85	101.80	0.000359	358.17	109.17	6.00	1.83	40.00	12.19	8.74	2.66	366.91	111.83	883.90	106,067
18	S-337	-0.30	-6.70	6.40	160.00	48.77	153.60	46.82	101.80	0.000359	363.85	110.90	6.00	1.83	40.00	12.19	8.74	2.66	372.60	113.57	893.85	107,262
18	S-338	-0.30	-6.70	6.40	160.00	48.77	153.60	46.82	101.80	0.000359	363.85	110.90	6.00	1.83	40.00	12.19	8.74	2.66	372.60	113.57	893.85	107,262
18	S-339	-0.30	-6.75	6.45	160.00	48.77	153.55	46.80	101.80	0.000359	366.70	111.77	6.00	1.83	40.00	12.19	8.74	2.66	375.44	114.43	898.81	107,857
18	S-340	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
18	S-341	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
18	S-342	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
18	S-343	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
19	S-344	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
19	S-345	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
19	S-346	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
19	S-347	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
19	S-348	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
19	S-349	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
19	S-350	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
19	S-351	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
19	S-352	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
19	S-353	-0.30	-7.15	6.85	160.00	48.77	153.15	46.68	101.80	0.000359	389.44	118.70	6.00	1.83	40.00	12.19	8.74	2.66	398.18	121.36	938.23	112,587
19	S-354	-0.30	-7.15	6.85	160.00	48.77	153.15	46.68	101.80	0.000359	389.44	118.70	6.00	1.83	40.00	12.19	8.74	2.66	398.18	121.36	938.23	112,587
19	S-355	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
19	S-356	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
19	S-357	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
19	S-358	-0.30	-8.00	7.70	160.00	48.77	152.30	46.42	101.80	0.000359	437.76	133.43	6.00	1.83	40.00	12.19	8.74	2.66	446.50	136.09	1020.35	122,442
19	S-359	-0.30	-8.50	8.20	160.00	48.77	151.80	46.27	101.80	0.000359	466.19	142.09	6.00	1.83	40.00	12.19	8.74	2.66	474.93	144.76	1067.70	128,124
19	S-360	-0.30	-8.30	8.00	160.00	48.77	152.00	46.33	101.80	0.000359	454.82	138.63	6.00	1.83	40.00	12.19	8.74	2.66	463.56	141.29	1048.84	125,861
19	S-361	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
19	S-362	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
19	S-363	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
19	S-364	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
19	S-365	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
19	S-366	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
19	S-367	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
19	S-368	-0.30	-7.80	7.50	160.00	48.77	152.50	46.48	101.80	0.000359	426.39	129.96	6.00	1.83	40.00	12.19	8.74	2.66	435.13	132.63	1001.21	120,146
20	S-369	-0.30	-7.90	7.60	160.00	48.77	152.40	46.45	101.80	0.000359	432.08	131.70	6.00	1.83	40.00	12.19	8.74	2.66	440.82	134.36	1010.79	121,295
20	S-370	-0.30	-7.90	7.60	160.00	48.77	152.40	46.45	101.80	0.000359	432.08	131.70	6.00	1.83	40.00	12.19	8.74	2.66	440.82	134.36	1010.79	121,295
20	S-371	-0.30	-7.80	7.50	160.00	48.77	152.50	46.48	101.80	0.000359	426.39	129.96	6.00	1.83	40.00	12.19	8.74	2.66	435.13	132.63	1001.21	120,146
20	S-372	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
20	S-373	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
20	S-374	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
20	S-375	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345
20	S-376	-0.30	-7.40	7.10	160.00	48.77	152.90	46.60	101.80	0.000359	403.65	123.03	6.00	1.83	40.00	12.19	8.74	2.66	412.39	125.70	962.60	115,512
20	S-377	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
20	S-378	-0.30	-7.60	7.30	160.00	48.77	152.70	46.54	101.80	0.000359	415.02	126.50	6.00	1.83	40.00	12.19	8.74	2.66	423.76	129.16	981.97	117,836
20	S-379	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
20	S-380	-0.30	-7.75	7.45	160.00	48.77	152.55	46.50	101.80	0.000359	423.55	129.10	6.00	1.83	40.00	12.19	8.74	2.66	432.29	131.76	996.41	119,570

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
20	S-381	-0.30	-7.80	7.50	160.00	48.77	152.50	46.48	101.80	0.000359	426.39	129.96	6.00	1.83	40.00	12.19	8.74	2.66	435.13	132.63	1001.21	120,146
20	S-382	-0.30	-7.85	7.55	160.00	48.77	152.45	46.47	101.80	0.000359	429.23	130.83	6.00	1.83	40.00	12.19	8.74	2.66	437.98	133.49	1006.01	120,721
20	S-383	-0.30	-7.90	7.60	160.00	48.77	152.40	46.45	101.80	0.000359	432.08	131.70	6.00	1.83	40.00	12.19	8.74	2.66	440.82	134.36	1010.79	121,295
20	S-384	-0.30	-7.75	7.45	160.00	48.77	152.55	46.50	101.80	0.000359	423.55	129.10	6.00	1.83	40.00	12.19	8.74	2.66	432.29	131.76	996.41	119,570
20	S-385	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
20	S-386	-0.30	-7.25	6.95	160.00	48.77	153.05	46.65	101.80	0.000359	395.12	120.43	6.00	1.83	40.00	12.19	8.74	2.66	403.86	123.10	948.00	113,760
20	S-387	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
20	S-388	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
20	S-389	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
20	S-390	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
20	S-391	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
20	S-392	-0.30	-7.15	6.85	160.00	48.77	153.15	46.68	101.80	0.000359	389.44	118.70	6.00	1.83	40.00	12.19	8.74	2.66	398.18	121.36	938.23	112,587
20	S-393	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
21	S-394	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
21	S-395	-0.30	-7.75	7.45	160.00	48.77	152.55	46.50	101.80	0.000359	423.55	129.10	6.00	1.83	40.00	12.19	8.74	2.66	432.29	131.76	996.41	119,570
21	S-396	-0.30	-7.60	7.30	160.00	48.77	152.70	46.54	101.80	0.000359	415.02	126.50	6.00	1.83	40.00	12.19	8.74	2.66	423.76	129.16	981.97	117,836
21	S-397	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345
21	S-398	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-399	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-400	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-401	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-402	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-403	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-404	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-405	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
21	S-406	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
21	S-407	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
21	S-408	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
21	S-409	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-410	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
21	S-411	-0.30	-7.15	6.85	160.00	48.77	153.15	46.68	101.80	0.000359	389.44	118.70	6.00	1.83	40.00	12.19	8.74	2.66	398.18	121.36	938.23	112,587
21	S-412	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
21	S-413	-0.30	-7.25	6.95	160.00	48.77	153.05	46.65	101.80	0.000359	395.12	120.43	6.00	1.83	40.00	12.19	8.74	2.66	403.86	123.10	948.00	113,760
21	S-414	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345
21	S-415	-0.30	-7.35	7.05	160.00	48.77	152.95	46.62	101.80	0.000359	400.81	122.17	6.00	1.83	40.00	12.19	8.74	2.66	409.55	124.83	957.74	114,929
21	S-416	-0.30	-7.40	7.10	160.00	48.77	152.90	46.60	101.80	0.000359	403.65	123.03	6.00	1.83	40.00	12.19	8.74	2.66	412.39	125.70	962.60	115,512
21	S-417	-0.30	-7.45	7.15	160.00	48.77	152.85	46.59	101.80	0.000359	406.49	123.90	6.00	1.83	40.00	12.19	8.74	2.66	415.23	126.56	967.45	116,095
21	S-418	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
22	S-419	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
22	S-420	-0.30	-7.60	7.30	160.00	48.77	152.70	46.54	101.80	0.000359	415.02	126.50	6.00	1.83	40.00	12.19	8.74	2.66	423.76	129.16	981.97	117,836
22	S-421	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
22	S-422	-0.30	-7.75	7.45	160.00	48.77	152.55	46.50	101.80	0.000359	423.55	129.10	6.00	1.83	40.00	12.19	8.74	2.66	432.29	131.76	996.41	119,570
22	S-423	-0.30	-7.75	7.45	160.00	48.77	152.55	46.50	101.80	0.000359	423.55	129.10	6.00	1.83	40.00	12.19	8.74	2.66	432.29	131.76	996.41	119,570
22	S-424	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
22	S-425	-0.30	-7.60	7.30	160.00	48.77	152.70	46.54	101.80	0.000359	415.02	126.50	6.00	1.83	40.00	12.19	8.74	2.66	423.76	129.16	981.97	117,836
22	S-426	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
22	S-427	-0.30	-7.40	7.10	160.00	48.77	152.90	46.60	101.80	0.000359	403.65	123.03	6.00	1.83	40.00	12.19	8.74	2.66	412.39	125.70	962.60	115,512
22	S-428	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
22	S-429	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
22	S-430	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
22	S-431	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
22	S-432	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
22	S-433	-0.30	-8.30	8.00	160.00	48.77	152.00	46.33	101.80	0.000359	454.82	138.63	6.00	1.83	40.00	12.19	8.74	2.66	463.56	141.29	1048.84	125,861
22	S-434	-0.30	-8.30	8.00	160.00	48.77	152.00	46.33	101.80	0.000359	454.82	138.63	6.00	1.83	40.00	12.19	8.74	2.66	463.56	141.29	1048.84	125,861
22	S-435	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
22	S-436	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
22	S-437	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
22	S-438	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
22	S-439	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
22	S-440	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
22	S-441	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
22	S-442	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
22	S-443	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
23	S-444	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
23	S-445	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
23	S-446	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
23	S-447	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
23	S-448	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
23	S-449	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
23	S-450	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
23	S-451	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
23	S-452	-0.30	-7.15	6.85	160.00	48.77	153.15	46.68	101.80	0.000359	389.44	118.70	6.00	1.83	40.00	12.19	8.74	2.66	398.18	121.36	938.23	112,587
23	S-453	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
23	S-454	-0.30	-7.25	6.95	160.00	48.77	153.05	46.65	101.80	0.000359	395.12	120.43	6.00	1.83	40.00	12.19	8.74	2.66	403.86	123.10	948.00	113,760
23	S-455	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
23	S-456	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
23	S-457	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
23	S-458	-0.30	-6.70	6.40	160.00	48.77	153.60	46.82	101.80	0.000359	363.85	110.90	6.00	1.83	40.00	12.19	8.74	2.66	372.60	113.57	893.85	107,262
23	S-459	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
23	S-460	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
23	S-461	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
23	S-462	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
23	S-463	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
23	S-464	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
23	S-465	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
23	S-466	-0.30	-6.10	5.80	160.00	48.77	154.20	47.00	101.80	0.000359	329.74	100.51	6.00	1.83	40.00	12.19	8.74	2.66	338.48	103.17	833.61	100,033
23	S-467	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
23	S-468	-0.30	-6.30	6.00	160.00	48.77	154.00	46.94	101.80	0.000359	341.11	103.97	6.00	1.83	40.00	12.19	8.74	2.66	349.85	106.64	853.83	102,460
24	S-469	-0.30	-6.30	6.00	160.00	48.77	154.00	46.94	101.80	0.000359	341.11	103.97	6.00	1.83	40.00	12.19	8.74	2.66	349.85	106.64	853.83	102,460
24	S-470	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
24	S-471	-0.30	-6.10	5.80	160.00	48.77	154.20	47.00	101.80	0.000359	329.74	100.51	6.00	1.83	40.00	12.19	8.74	2.66	338.48	103.17	833.61	100,033
24	S-472	-0.30	-6.00	5.70	160.00	48.77	154.30	47.03	101.80	0.000359	324.06	98.77	6.00	1.83	40.00	12.19	8.74	2.66	332.80	101.44	823.44	98,813
24	S-473	-0.30	-6.10	5.80	160.00	48.77	154.20	47.00	101.80	0.000359	329.74	100.51	6.00	1.83	40.00	12.19	8.74	2.66	338.48	103.17	833.61	100,033
24	S-474	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
24	S-475	-0.30	-6.30	6.00	160.00	48.77	154.00	46.94	101.80	0.000359	341.11	103.97	6.00	1.83	40.00	12.19	8.74	2.66	349.85	106.64	853.83	102,460
24	S-476	-0.30	-6.60	6.30	160.00	48.77	153.70	46.85	101.80	0.000359	358.17	109.17	6.00	1.83	40.00	12.19	8.74	2.66	366.91	111.83	883.90	106,067

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
24	S-477	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
24	S-478	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
24	S-479	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
24	S-480	-0.30	-7.05	6.75	160.00	48.77	153.25	46.71	101.80	0.000359	383.75	116.97	6.00	1.83	40.00	12.19	8.74	2.66	392.49	119.63	928.42	111,410
24	S-481	-0.30	-6.95	6.65	160.00	48.77	153.35	46.74	101.80	0.000359	378.07	115.23	6.00	1.83	40.00	12.19	8.74	2.66	386.81	117.90	918.58	110,230
24	S-482	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
24	S-483	-0.30	-6.85	6.55	160.00	48.77	153.45	46.77	101.80	0.000359	372.38	113.50	6.00	1.83	40.00	12.19	8.74	2.66	381.12	116.17	908.71	109,046
24	S-484	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
24	S-485	-0.30	-7.10	6.80	160.00	48.77	153.20	46.70	101.80	0.000359	386.59	117.83	6.00	1.83	40.00	12.19	8.74	2.66	395.34	120.50	933.33	111,999
24	S-486	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345
24	S-487	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
24	S-488	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
24	S-489	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
24	S-490	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
24	S-491	-0.30	-7.70	7.40	160.00	48.77	152.60	46.51	101.80	0.000359	420.70	128.23	6.00	1.83	40.00	12.19	8.74	2.66	429.45	130.90	991.60	118,993
24	S-492	-0.30	-7.30	7.00	160.00	48.77	153.00	46.63	101.80	0.000359	397.96	121.30	6.00	1.83	40.00	12.19	8.74	2.66	406.71	123.96	952.87	114,345
24	S-493	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
25	S-494	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
25	S-495	-0.30	-6.70	6.40	160.00	48.77	153.60	46.82	101.80	0.000359	363.85	110.90	6.00	1.83	40.00	12.19	8.74	2.66	372.60	113.57	893.85	107,262
25	S-496	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
25	S-497	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
25	S-498	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
25	S-499	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
25	S-500	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
25	S-501	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
25	S-502	-0.30	-7.20	6.90	160.00	48.77	153.10	46.66	101.80	0.000359	392.28	119.57	6.00	1.83	40.00	12.19	8.74	2.66	401.02	122.23	943.12	113,174
25	S-503	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
25	S-504	-0.30	-7.50	7.20	160.00	48.77	152.80	46.57	101.80	0.000359	409.33	124.77	6.00	1.83	40.00	12.19	8.74	2.66	418.08	127.43	972.30	116,676
25	S-505	-0.30	-8.50	8.20	160.00	48.77	151.80	46.27	101.80	0.000359	466.19	142.09	6.00	1.83	40.00	12.19	8.74	2.66	474.93	144.76	1067.70	128,124
25	S-506	-0.30	-10.00	9.70	160.00	48.77	150.30	45.81	101.80	0.000359	551.46	168.09	6.00	1.83	40.00	12.19	8.74	2.66	**560.21**	170.75	**1205.98**	**144,718**
25	S-507	-0.30	-10.00	9.70	160.00	48.77	150.30	45.81	101.80	0.000359	551.46	168.09	6.00	1.83	40.00	12.19	8.74	2.66	**560.21**	170.75	**1205.98**	**144,718**
25	S-508	-0.30	-9.10	8.80	160.00	48.77	151.20	46.09	101.80	0.000359	500.30	152.49	6.00	1.83	40.00	12.19	8.74	2.66	509.04	155.16	1123.66	134,840
25	S-509	-0.30	-7.90	7.60	160.00	48.77	152.40	46.45	101.80	0.000359	432.08	131.70	6.00	1.83	40.00	12.19	8.74	2.66	440.82	134.36	1010.79	121,295
25	S-510	-0.30	-7.00	6.70	160.00	48.77	153.30	46.73	101.80	0.000359	380.91	116.10	6.00	1.83	40.00	12.19	8.74	2.66	389.65	118.77	923.51	110,821
25	S-511	-0.30	-6.90	6.60	160.00	48.77	153.40	46.76	101.80	0.000359	375.22	114.37	6.00	1.83	40.00	12.19	8.74	2.66	383.97	117.03	913.65	109,638
25	S-512	-0.30	-6.80	6.50	160.00	48.77	153.50	46.79	101.80	0.000359	369.54	112.64	6.00	1.83	40.00	12.19	8.74	2.66	378.28	115.30	903.77	108,452
25	S-513	-0.30	-6.70	6.40	160.00	48.77	153.60	46.82	101.80	0.000359	363.85	110.90	6.00	1.83	40.00	12.19	8.74	2.66	372.60	113.57	893.85	107,262
25	S-514	-0.30	-6.60	6.30	160.00	48.77	153.70	46.85	101.80	0.000359	358.17	109.17	6.00	1.83	40.00	12.19	8.74	2.66	366.91	111.83	883.90	106,067
25	S-515	-0.30	-6.50	6.20	160.00	48.77	153.80	46.88	101.80	0.000359	352.48	107.44	6.00	1.83	40.00	12.19	8.74	2.66	361.23	110.10	873.91	104,869
25	S-516	-0.30	-6.40	6.10	160.00	48.77	153.90	46.91	101.80	0.000359	346.80	105.70	6.00	1.83	40.00	12.19	8.74	2.66	355.54	108.37	863.89	103,666
25	S-517	-0.30	-6.30	6.00	160.00	48.77	154.00	46.94	101.80	0.000359	341.11	103.97	6.00	1.83	40.00	12.19	8.74	2.66	349.85	106.64	853.83	102,460
25	S-518	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
26	S-519	-0.30	-6.20	5.90	160.00	48.77	154.10	46.97	101.80	0.000359	335.43	102.24	6.00	1.83	40.00	12.19	8.74	2.66	344.17	104.90	843.74	101,249
26	S-520	-0.30	-6.15	5.85	160.00	48.77	154.15	46.98	101.80	0.000359	332.58	101.37	6.00	1.83	40.00	12.19	8.74	2.66	341.33	104.04	838.68	100,641
26	S-521	-0.30	-6.05	5.75	160.00	48.77	154.25	47.02	101.80	0.000359	326.90	99.64	6.00	1.83	40.00	12.19	8.74	2.66	335.64	102.30	828.53	99,424
26	S-522	-0.30	-6.00	5.70	160.00	48.77	154.30	47.03	101.80	0.000359	324.06	98.77	6.00	1.83	40.00	12.19	8.74	2.66	332.80	101.44	823.44	98,813
26	S-523	-0.30	-5.90	5.60	160.00	48.77	154.40	47.06	101.80	0.000359	318.37	97.04	6.00	1.83	40.00	12.19	8.74	2.66	327.11	99.70	813.24	97,588
26	S-524	-0.30	-5.85	5.55	160.00	48.77	154.45	47.08	101.80	0.000359	315.53	96.17	6.00	1.83	40.00	12.19	8.74	2.66	324.27	98.84	808.12	96,974

Dewatering Calculations - Sichardt's Equation
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation[1] (ft)	Exc. Bottom Elevation[2] (ft)	Drawdown (ft)	Aquifer Head[3] (H) (ft)	Aquifer Head (H) (m)	Dewatered Aquifer Head (h) (ft)	Dewatered Aquifer Head (h) (m)	Hydraulic Conductivity[4] (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Radius of Influence (ROI) (ft)	Radius of Influence (ROI) (m)	Excavation Width[5] (ft)	Excavation Width (m)	Excavation Length[5] (ft)	Excavation Length (m)	Effective Radius (r_e) (ft)	Effective Radius (r_e) (m)	Total Radius of Influence (ft)	Total Radius of Influence (m)	Flow Rate (gpm)	Section Pumpage (gallons)
26	S-525	-0.30	-5.80	5.50	160.00	48.77	154.50	47.09	101.80	0.000359	312.69	95.31	6.00	1.83	40.00	12.19	8.74	2.66	321.43	97.97	802.99	96,359
26	S-526	-0.30	-5.70	5.40	160.00	48.77	154.60	47.12	101.80	0.000359	307.00	93.57	6.00	1.83	40.00	12.19	8.74	2.66	315.74	96.24	792.71	95,125
26	S-527	-0.30	-5.60	5.30	160.00	48.77	154.70	47.15	101.80	0.000359	301.32	91.84	6.00	1.83	40.00	12.19	8.74	2.66	310.06	94.51	782.39	93,887
26	S-528	-0.30	-5.50	5.20	160.00	48.77	154.80	47.18	101.80	0.000359	295.63	90.11	6.00	1.83	40.00	12.19	8.74	2.66	304.37	92.77	772.02	92,643
26	S-529	-0.30	-5.45	5.15	160.00	48.77	154.85	47.20	101.80	0.000359	292.79	89.24	6.00	1.83	40.00	12.19	8.74	2.66	301.53	91.91	766.83	92,019
26	S-530	-0.30	-5.40	5.10	160.00	48.77	154.90	47.21	101.80	0.000359	289.95	88.38	6.00	1.83	40.00	12.19	8.74	2.66	298.69	91.04	761.62	91,394
26	S-531	-0.30	-5.30	5.00	160.00	48.77	155.00	47.24	101.80	0.000359	284.26	86.64	6.00	1.83	40.00	12.19	8.74	2.66	293.00	89.31	751.17	90,140
26	S-532	-0.30	-5.20	4.90	160.00	48.77	155.10	47.27	101.80	0.000359	278.57	84.91	6.00	1.83	40.00	12.19	8.74	2.66	287.32	87.57	740.68	88,881
26	S-533	-0.30	-5.10	4.80	160.00	48.77	155.20	47.30	101.80	0.000359	272.89	83.18	6.00	1.83	40.00	12.19	8.74	2.66	281.63	85.84	730.14	87,617
26	S-534	-0.30	-4.90	4.60	160.00	48.77	155.40	47.37	101.80	0.000359	261.52	79.71	6.00	1.83	40.00	12.19	8.74	2.66	270.26	82.38	708.93	85,072
26	S-535	-0.30	-4.80	4.50	160.00	48.77	155.50	47.40	101.80	0.000359	255.83	77.98	6.00	1.83	40.00	12.19	8.74	2.66	264.58	80.64	698.26	83,791
26	S-536	-0.30	-4.10	3.80	160.00	48.77	156.20	47.61	101.80	0.000359	216.04	65.85	6.00	1.83	40.00	12.19	8.74	2.66	224.78	68.51	622.10	74,652
26	S-537	-0.30	-4.00	3.70	160.00	48.77	156.30	47.64	101.80	0.000359	210.35	64.12	6.00	1.83	40.00	12.19	8.74	2.66	219.10	66.78	611.00	73,320
26	S-538	-0.30	-4.00	3.70	160.00	48.77	156.30	47.64	101.80	0.000359	210.35	64.12	6.00	1.83	40.00	12.19	8.74	2.66	219.10	66.78	611.00	73,320
26	S-539	-0.30	-4.00	3.70	160.00	48.77	156.30	47.64	101.80	0.000359	210.35	64.12	6.00	1.83	40.00	12.19	8.74	2.66	219.10	66.78	611.00	73,320
26	S-540	-0.30	-3.50	3.20	160.00	48.77	156.80	47.79	101.80	0.000359	181.93	55.45	6.00	1.83	40.00	12.19	8.74	2.66	190.67	58.12	554.58	66,550
26	S-541	-0.30	-3.30	3.00	160.00	48.77	157.00	47.85	101.80	0.000359	170.56	51.99	6.00	1.83	40.00	12.19	8.74	2.66	179.30	54.65	531.55	63,786
26	S-542	-0.30	-3.30	3.00	160.00	48.77	157.00	47.85	101.80	0.000359	170.56	51.99	6.00	1.83	40.00	12.19	8.74	2.66	179.30	54.65	531.55	63,786
26	S-543	-0.30	-3.40	3.10	160.00	48.77	156.90	47.82	101.80	0.000359	176.24	53.72	6.00	1.83	40.00	12.19	8.74	2.66	184.98	56.38	543.10	65,172
27	S-544	-0.30	-3.40	3.10	160.00	48.77	156.90	47.82	101.80	0.000359	176.24	53.72	6.00	1.83	40.00	12.19	8.74	2.66	184.98	56.38	543.10	65,172
27	S-545	-0.30	-3.45	3.15	160.00	48.77	156.85	47.81	101.80	0.000359	179.08	54.58	6.00	1.83	40.00	12.19	8.74	2.66	187.83	57.25	548.85	65,862
27	S-546	-0.30	-3.50	3.20	160.00	48.77	156.80	47.79	101.80	0.000359	181.93	55.45	6.00	1.83	40.00	12.19	8.74	2.66	190.67	58.12	554.58	66,550
27	S-547	-0.30	-3.60	3.30	160.00	48.77	156.70	47.76	101.80	0.000359	187.61	57.18	6.00	1.83	40.00	12.19	8.74	2.66	196.35	59.85	566.00	67,919
27	S-548	-0.30	-3.70	3.40	160.00	48.77	156.60	47.73	101.80	0.000359	193.30	58.92	6.00	1.83	40.00	12.19	8.74	2.66	202.04	61.58	577.34	69,281
27	S-549	-0.30	-3.80	3.50	160.00	48.77	156.50	47.70	101.80	0.000359	198.98	60.65	6.00	1.83	40.00	12.19	8.74	2.66	207.72	63.31	588.62	70,635
27	S-550	-0.30	-3.90	3.60	160.00	48.77	156.40	47.67	101.80	0.000359	204.67	62.38	6.00	1.83	40.00	12.19	8.74	2.66	213.41	65.05	599.84	71,981
PROJECT TOTALS															*22,000.00*	*6,705.60*						*44,956,033*

TABLE NOTES:

NAVD: North American Vertical Datum of 1988

[1,4] Groundwater elevation and hydraulic conductivity referenced from *Geotechnical Data Report, Miami-Dade Clean Water Recovery Center Pipeline,* prepared March 2023 by Blascom Engineering, Inc.

[2] Maximum excavation/ dewatering depth is -11.2 ft relative to NAVD

[3] Aquifer Head (H) determined from *United States Geological Survey: Water-Resources Investigations Report 90-4108 Hydrology of the Surficial Aquifer System, Dade County, Florida, 1991.*

[5] Conventional trench excavations are 6.0 ft. wide and 40.0 ft. long.

Bold Values: Maximum values for the radius of influence (ROI), dewatering flow rate, and daily dewatering pumpage.

DEWATERING SUMMARY :

*Average section pumpage :	0.082	MG
*Maximum section pumpage :	0.145	MG
*Average daily pumpage:	0.409	MGD
*Maximum daily pumpage :	0.674	MGD
**Project pumpage :	56.399	MG
***Dewatering duration:	138	Days

*Estimated project construction rate is five (5) sections per day.

**Totals may differ due to potential variability of hydrogeologic conditions.

*** Dewatering duration of 110 days plus a 1.25 safety factor.

The calculations presented are deemed appropriate and in accordance with State of Florida Rules and Regulation as certified by a registered Professional Engineer authorized by Chapter 471, Florida Statutes and defined by the Florida State Board of Professional Engineering.
To the best of my knowledge, all information summarized in this report is true, accurate, complete, and in accordance with applicable State of Florida Rules and Regulations.

Reviewed and Approved by:

Robert L Vinson III
Digitally signed by Robert L Vinson III
Date: 2023.04.20 15:40:03 -05'00'

Robert L. Vinson III, P.E.
License No. 53438

Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

This item has been electronically signed and sealed by Robert L. Vinson III, PE, on the date of this document using an SHA authentication code.

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Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

SFWMD Permit Application Manual, Volume IV, FDOT Drainage Handbook Exfiltration Systems 2007

NOTE:
(1) This method calculates the required length of infiltration trench based on one-hour of infiltration. Therefore, the volume used in this equation is the sum of the initial open hole water volume and the dewatering effluent generated in one hour.
(2) Existing grade elevations per North American Vertical Datum of 1988.
(3) Use L2 when saturated depth of trench is greater than non-saturated depth or the trench width is greater than 2 times trench depth

1. $Radius\ of\ Influence\ (m) = 3000 \times Drawdown\ (m) \times \sqrt{Hydraulic\ Conductivity\ (\frac{m}{s})}$

2. $Effective\ Radius\ (m) = \sqrt{\frac{Excavation\ Width\ (m) \times Excavation\ Length\ (m)}{\pi}}$

3. $Flow\ Rate\ ({m^3}/{s}) = \frac{\pi \times Hydraulic\ Conductivity\ \left(\frac{m}{s}\right) \times [H(m)^2 - h(m)^2]}{\left[Ln\left(Radius\ of\ Influence\ (m)\right) - Ln(Effective\ Radius\ (m))\right]}$

$L = Length\ of\ Trench\ (feet)$
$V = Volume\ Treated\ (acre-inches)$
$W = Trench\ Width\ (feet)$
$K = Hydraulic\ Conductivity\ (cfs/ft^2 - ft\ head)$
$H_2 = H_{eff} = Depth\ to\ Water\ Table\ (feet)$
$D_U = Non-Saturated\ Trench\ Depth\ (feet)$
$D_S = Saturated\ Trench\ Depth\ (feet)$

$$L = \frac{V}{K\left(H_2 W + 2H_2 D_U - {D_U}^2 + 2H_2 D_S\right) + (1.39 \times 10^{-4}) W D_U}$$

$$L_2 = \frac{V}{K\left(2H_{eff} D_U - {D_U}^2 + 2H_{eff} D_S\right) + (1.39 \times 10^{-4}) W D_U}$$

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
1	S-01	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
1	S-02	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
1	S-03	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
1	S-04	-0.40	0.30	0.70	-8.10	7.70	8.40	0.70	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	122.22	162.84	163.00
1	S-05	-0.40	0.30	0.70	-8.10	7.70	8.40	0.70	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	122.22	162.84	163.00
1	S-06	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
1	S-07	-0.40	0.50	0.90	-8.10	7.70	8.60	0.90	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	94.28	125.27	126.00
1	S-08	-0.40	0.50	0.90	-8.10	7.70	8.60	0.90	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	94.28	125.27	126.00
1	S-09	-0.40	0.50	0.90	-8.05	7.65	8.55	0.90	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	94.25	125.40	126.00
1	S-10	-0.40	0.50	0.90	-8.05	7.65	8.55	0.90	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	94.25	125.40	126.00
1	S-11	-0.40	0.50	0.90	-8.05	7.65	8.55	0.90	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	94.25	125.40	126.00
1	S-12	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
1	S-13	-0.40	1.00	1.40	-8.05	7.65	9.05	1.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	59.36	78.45	79.00
1	S-14	-0.40	1.00	1.40	-8.05	7.65	9.05	1.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	59.36	78.45	79.00
1	S-15	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
1	S-16	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
1	S-17	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
1	S-18	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
1	S-19	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
1	S-20	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
1	S-21	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
1	S-22	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
1	S-23	-0.40	0.30	0.70	-8.00	7.60	8.30	0.70	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	122.15	163.21	164.00
1	S-24	-0.40	0.30	0.70	-8.00	7.60	8.30	0.70	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	122.15	163.21	164.00
1	S-25	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-26	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-27	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-28	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-29	-0.40	0.50	0.90	-8.00	7.60	8.50	0.90	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	94.22	125.53	126.00
2	S-30	-0.40	0.50	0.90	-8.00	7.60	8.50	0.90	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	94.22	125.53	126.00
2	S-31	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-32	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-33	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
2	S-34	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
2	S-35	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-36	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-37	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-38	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-39	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-40	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-41	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-42	-0.40	0.00	0.40	-7.95	7.55	7.95	0.40	7.55	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	392.5	23,547.1	0.87	216.44	290.85	291.00
2	S-43	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
2	S-44	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
2	S-45	-0.40	0.50	0.90	-7.90	7.50	8.40	0.90	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	94.16	125.80	126.00
2	S-46	-0.40	0.75	1.15	-7.90	7.50	8.65	1.15	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	72.92	97.09	98.00
2	S-47	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
2	S-48	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
2	S-49	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
2	S-50	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-51	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-52	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-53	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-54	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-55	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-56	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-57	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-58	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
3	S-59	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
3	S-60	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
3	S-61	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
3	S-62	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
3	S-63	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
3	S-64	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
3	S-65	-0.40	0.20	0.60	-8.00	7.60	8.20	0.60	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	143.11	191.48	192.00
3	S-66	-0.40	0.20	0.60	-8.00	7.60	8.20	0.60	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	143.11	191.48	192.00
3	S-67	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
3	S-68	-0.40	0.10	0.50	-8.10	7.70	8.20	0.50	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	172.54	230.53	231.00
3	S-69	-0.40	0.10	0.50	-8.10	7.70	8.20	0.50	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	172.54	230.53	231.00
3	S-70	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
3	S-71	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
3	S-72	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
3	S-73	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
3	S-74	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
3	S-75	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
4	S-76	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
4	S-77	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
4	S-78	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
4	S-79	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
4	S-80	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
4	S-81	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
4	S-82	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
4	S-83	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
4	S-84	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
4	S-85	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
4	S-86	-0.40	0.10	0.50	-7.90	7.50	8.00	0.50	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	172.38	231.64	232.00
4	S-87	-0.40	0.10	0.50	-7.80	7.40	7.90	0.50	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	172.28	232.20	233.00
4	S-88	-0.40	0.10	0.50	-7.80	7.40	7.90	0.50	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	172.28	232.20	233.00
4	S-89	-0.40	0.00	0.40	-7.80	7.40	7.80	0.40	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	216.28	291.94	292.00
4	S-90	-0.40	0.10	0.50	-7.80	7.40	7.90	0.50	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	172.28	232.20	233.00
4	S-91	-0.40	0.10	0.50	-7.70	7.30	7.80	0.50	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	172.18	232.77	233.00
4	S-92	-0.40	0.10	0.50	-7.70	7.30	7.80	0.50	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	172.18	232.77	233.00
4	S-93	-0.40	0.10	0.50	-7.70	7.30	7.80	0.50	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	172.18	232.77	233.00
4	S-94	-0.40	0.10	0.50	-7.70	7.30	7.80	0.50	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	172.18	232.77	233.00
4	S-95	-0.40	0.10	0.50	-7.60	7.20	7.70	0.50	7.20	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	380.0	22,802.0	0.84	172.08	233.34	234.00
4	S-96	-0.40	0.10	0.50	-7.60	7.20	7.70	0.50	7.20	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	380.0	22,802.0	0.84	172.08	233.34	234.00
4	S-97	-0.40	0.10	0.50	-7.60	7.20	7.70	0.50	7.20	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	380.0	22,802.0	0.84	172.08	233.34	234.00
4	S-98	-0.40	0.10	0.50	-7.50	7.10	7.60	0.50	7.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	376.5	22,587.6	0.83	171.96	233.92	234.00
4	S-99	-0.40	0.10	0.50	-7.50	7.10	7.60	0.50	7.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	376.5	22,587.6	0.83	171.96	233.92	234.00
4	S-100	-0.40	0.80	1.20	-7.50	7.10	8.30	1.20	7.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	376.5	22,587.6	0.83	69.50	93.54	94.00
5	S-101	-0.40	0.75	1.15	-7.50	7.10	8.25	1.15	7.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	376.5	22,587.6	0.83	72.68	97.89	98.00
5	S-102	-0.40	0.75	1.15	-7.40	7.00	8.15	1.15	7.00	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	372.9	22,372.5	0.82	72.61	98.09	99.00
5	S-103	-0.40	0.50	0.90	-7.30	6.90	7.80	0.90	6.90	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	369.3	22,156.7	0.82	93.71	127.48	128.00
5	S-104	-0.40	0.50	0.90	-7.20	6.80	7.70	0.90	6.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	365.7	21,940.3	0.81	93.62	127.77	128.00
5	S-105	-0.40	0.75	1.15	-7.10	6.70	7.85	1.15	6.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	362.1	21,723.0	0.80	72.38	98.70	99.00
5	S-106	-0.40	1.00	1.40	-7.00	6.60	8.00	1.40	6.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	358.4	21,505.1	0.79	58.73	80.02	81.00
5	S-107	-0.40	1.00	1.40	-7.00	6.60	8.00	1.40	6.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	358.4	21,505.1	0.79	58.73	80.02	81.00
5	S-108	-0.40	1.10	1.50	-7.00	6.60	8.10	1.50	6.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	358.4	21,505.1	0.79	54.57	74.24	75.00
5	S-109	-0.40	0.75	1.15	-7.50	7.10	8.25	1.15	7.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	376.5	22,587.6	0.83	72.68	97.89	98.00
5	S-110	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
5	S-111	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
5	S-112	-0.40	0.00	0.40	-7.80	7.40	7.80	0.40	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	216.28	291.94	292.00
5	S-113	-0.40	0.10	0.50	-7.60	7.20	7.70	0.50	7.20	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	380.0	22,802.0	0.84	172.08	233.34	234.00
5	S-114	-0.40	0.10	0.50	-7.60	7.20	7.70	0.50	7.20	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	380.0	22,802.0	0.84	172.08	233.34	234.00
5	S-115	-0.40	0.10	0.50	-7.70	7.30	7.80	0.50	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	172.18	232.77	233.00
5	S-116	-0.40	0.10	0.50	-7.70	7.30	7.80	0.50	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	172.18	232.77	233.00
5	S-117	-0.40	0.00	0.40	-7.70	7.30	7.70	0.40	7.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	383.6	23,015.7	0.85	216.17	292.67	293.00
5	S-118	-0.40	0.00	0.40	-7.80	7.40	7.80	0.40	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	216.28	291.94	292.00
5	S-119	-0.40	0.00	0.40	-7.80	7.40	7.80	0.40	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	216.28	291.94	292.00
5	S-120	-0.40	0.00	0.40	-7.80	7.40	7.80	0.40	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	216.28	291.94	292.00
5	S-121	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
5	S-122	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
5	S-123	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
5	S-124	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
5	S-125	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
6	S-126	-0.40	0.10	0.50	-7.90	7.50	8.00	0.50	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	172.38	231.64	232.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
6	S-127	-0.40	0.10	0.50	-7.90	7.50	8.00	0.50	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	172.38	231.64	232.00
6	S-128	-0.40	0.20	0.60	-7.90	7.50	8.10	0.60	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	143.04	191.93	192.00
6	S-129	-0.40	0.30	0.70	-8.00	7.60	8.30	0.70	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	122.15	163.21	164.00
6	S-130	-0.40	0.20	0.60	-8.00	7.60	8.20	0.60	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	143.11	191.48	192.00
6	S-131	-0.40	0.10	0.50	-8.00	7.60	8.10	0.50	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	172.46	231.08	232.00
6	S-132	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
6	S-133	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
6	S-134	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
6	S-135	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
7	S-136	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
7	S-137	-0.40	0.20	0.60	-8.10	7.70	8.30	0.60	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	143.18	191.04	192.00
7	S-138	-0.40	0.30	0.70	-8.10	7.70	8.40	0.70	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	122.22	162.84	163.00
7	S-139	-0.40	0.20	0.60	-8.10	7.70	8.30	0.60	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	143.18	191.04	192.00
7	S-140	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
7	S-141	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
7	S-142	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
7	S-143	-0.40	0.30	0.70	-8.10	7.70	8.40	0.70	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	122.22	162.84	163.00
7	S-144	-0.40	0.75	1.15	-8.10	7.70	8.85	1.15	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	73.03	96.71	97.00
7	S-145	-0.40	0.75	1.15	-8.10	7.70	8.85	1.15	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	73.03	96.71	97.00
7	S-146	-0.40	0.25	0.65	-8.10	7.70	8.35	0.65	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	131.89	175.85	176.00
7	S-147	-0.40	2.00	2.40	-8.10	7.70	10.10	2.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	33.29	43.41	44.00
7	S-148	-0.40	2.50	2.90	-8.10	7.70	10.60	2.90	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	27.03	35.04	36.00
8	S-149	-0.40	0.10	0.50	-8.10	7.70	8.20	0.50	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	172.54	230.53	231.00
8	S-150	-0.40	0.10	0.50	-8.10	7.70	8.20	0.50	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	172.54	230.53	231.00
8	S-151	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
8	S-152	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
8	S-153	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
8	S-154	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
8	S-155	-0.40	0.00	0.40	-8.10	7.70	8.10	0.40	7.70	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	397.7	23,864.0	0.88	216.59	289.79	290.00
8	S-156	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-157	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-158	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-159	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-160	-0.40	0.10	0.50	-8.07	7.67	8.17	0.50	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	172.52	230.69	231.00
8	S-161	-0.40	0.10	0.50	-8.07	7.67	8.17	0.50	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	172.52	230.69	231.00
8	S-162	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-163	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-164	-0.40	0.00	0.40	-8.07	7.67	8.07	0.40	7.67	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.7	23,800.7	0.88	216.56	290.00	290.00
8	S-165	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
8	S-166	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
8	S-167	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
8	S-168	-0.40	0.30	0.70	-8.05	7.65	8.35	0.70	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	122.19	163.02	164.00
8	S-169	-0.40	0.30	0.70	-8.05	7.65	8.35	0.70	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	122.19	163.02	164.00
8	S-170	-0.40	0.20	0.60	-8.05	7.65	8.25	0.60	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	143.15	191.26	192.00
8	S-171	-0.40	0.10	0.50	-8.05	7.65	8.15	0.50	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	172.50	230.80	231.00
8	S-172	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
8	S-173	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-174	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-175	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-176	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-177	-0.40	0.50	0.90	-8.05	7.65	8.55	0.90	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	94.25	125.40	126.00
9	S-178	-0.40	0.30	0.70	-8.05	7.65	8.35	0.70	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	122.19	163.02	164.00
9	S-179	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-180	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-181	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-182	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-183	-0.40	0.10	0.50	-8.05	7.65	8.15	0.50	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	172.50	230.80	231.00
9	S-184	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-185	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-186	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-187	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-188	-0.40	0.10	0.50	-8.05	7.65	8.15	0.50	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	172.50	230.80	231.00
9	S-189	-0.40	0.20	0.60	-8.05	7.65	8.25	0.60	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	143.15	191.26	192.00
9	S-190	-0.40	0.30	0.70	-8.05	7.65	8.35	0.70	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	122.19	163.02	164.00
9	S-191	-0.40	0.30	0.70	-8.05	7.65	8.35	0.70	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	122.19	163.02	164.00
9	S-192	-0.40	0.20	0.60	-8.05	7.65	8.25	0.60	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	143.15	191.26	192.00
9	S-193	-0.40	0.10	0.50	-8.05	7.65	8.15	0.50	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	172.50	230.80	231.00
9	S-194	-0.40	0.10	0.50	-8.05	7.65	8.15	0.50	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	172.50	230.80	231.00
9	S-195	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-196	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-197	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
9	S-198	-0.40	0.00	0.40	-8.05	7.65	8.05	0.40	7.65	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	396.0	23,758.5	0.88	216.54	290.14	291.00
10	S-199	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-200	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-201	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-202	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-203	-0.40	0.10	0.50	-8.00	7.60	8.10	0.50	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	172.46	231.08	232.00
10	S-204	-0.40	0.10	0.50	-8.00	7.60	8.10	0.50	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	172.46	231.08	232.00
10	S-205	-0.40	0.10	0.50	-8.00	7.60	8.10	0.50	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	172.46	231.08	232.00
10	S-206	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-207	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-208	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-209	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-210	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-211	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-212	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
10	S-213	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
11	S-214	-0.40	0.10	0.50	-7.80	7.40	7.90	0.50	7.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	387.1	23,228.8	0.86	172.28	232.20	233.00
11	S-215	-0.40	0.00	0.40	-7.90	7.50	7.90	0.40	7.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	390.7	23,441.2	0.86	216.39	291.21	292.00
11	S-216	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
11	S-217	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
11	S-218	-0.40	0.20	0.60	-8.00	7.60	8.20	0.60	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	143.11	191.48	192.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
11	S-219	-0.40	0.50	0.90	-8.00	7.60	8.50	0.90	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	94.22	125.53	126.00
11	S-220	-0.40	0.50	0.90	-8.00	7.60	8.50	0.90	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	94.22	125.53	126.00
11	S-221	-0.40	0.50	0.90	-8.00	7.60	8.50	0.90	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	94.22	125.53	126.00
11	S-222	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
11	S-223	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
11	S-224	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
11	S-225	-0.40	0.00	0.40	-8.00	7.60	8.00	0.40	7.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	394.2	23,652.9	0.87	216.49	290.50	291.00
12	S-226	-0.40	0.00	0.40	-8.20	7.80	8.20	0.40	7.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	401.2	24,074.4	0.89	216.67	289.08	290.00
12	S-227	-0.40	**-0.30**	0.10	-8.20	7.80	7.90	0.10	7.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	401.2	24,074.4	0.89	877.68	1175.99	**0.00**
12	S-228	-0.40	**-0.50**	-0.10	-9.00	8.60	8.50	-0.10	8.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	428.9	25,736.0	0.95	-885.82	-1164.78	**0.00**
12	S-229	-0.40	**-1.20**	-0.80	-10.50	10.10	9.30	-0.80	10.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	479.2	28,754.6	1.06	-113.31	-145.15	**0.00**
12	S-230	-0.40	**-3.00**	-2.60	-11.00	10.60	8.00	-2.60	10.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	495.6	29,735.4	1.10	-37.14	-47.98	**0.00**
12	S-231	-0.40	**-3.20**	-2.80	-11.00	10.60	7.80	-2.80	10.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	495.6	29,735.4	1.10	-34.75	-44.99	**0.00**
12	S-232	-0.40	**-3.20**	-2.80	-11.00	10.60	7.80	-2.80	10.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	495.6	29,735.4	1.10	-34.75	-44.99	**0.00**
12	S-233	-0.40	**-3.00**	-2.60	-11.00	10.60	8.00	-2.60	10.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	495.6	29,735.4	1.10	-37.14	-47.98	**0.00**
12	S-234	-0.40	**-2.10**	-1.70	-10.25	9.85	8.15	-1.70	9.85	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	471.0	28,259.7	1.04	-55.23	-71.84	**0.00**
12	S-235	-0.40	**-1.00**	-0.60	-9.75	9.35	8.75	-0.60	9.35	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	454.3	27,260.2	1.00	-150.38	-195.37	**0.00**
12	S-236	-0.40	**-0.50**	-0.10	-10.00	9.60	9.50	-0.10	9.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	462.7	27,761.6	1.02	-884.89	-1137.09	**0.00**
12	S-237	-0.40	**-1.00**	-0.60	-10.00	9.60	9.00	-0.60	9.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	462.7	27,761.6	1.02	-150.26	-194.13	**0.00**
12	S-238	-0.40	**-1.10**	-0.70	-9.20	8.80	8.10	-0.70	8.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	435.8	26,145.5	0.96	-129.59	-170.84	**0.00**
12	S-239	-0.40	0.00	0.40	-9.00	8.60	9.00	0.40	8.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	428.9	25,736.0	0.95	217.12	283.75	284.00
12	S-240	-0.40	0.50	0.90	-9.00	8.60	9.50	0.90	8.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	428.9	25,736.0	0.95	94.65	122.97	123.00
12	S-241	-0.40	0.25	0.65	-9.00	8.60	9.25	0.65	8.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	428.9	25,736.0	0.95	132.32	172.41	173.00
12	S-242	-0.40	**-0.10**	0.30	-9.00	8.60	8.90	0.30	8.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	428.9	25,736.0	0.95	290.63	380.28	**0.00**
12	S-243	-0.40	**-0.50**	-0.10	-9.20	8.80	8.70	-0.10	8.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	435.8	26,145.5	0.96	-885.77	-1158.98	**0.00**
12	S-244	-0.40	**-1.40**	-1.00	-10.20	9.80	8.80	-1.00	9.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	469.3	28,160.3	1.04	-91.45	-118.15	**0.00**
12	S-245	-0.40	**-2.70**	-2.30	-11.20	10.80	8.50	-2.30	10.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	502.1	30,124.3	1.11	-41.44	-53.14	**0.00**
12	S-246	-0.40	**-3.00**	-2.60	-11.20	10.80	8.20	-2.60	10.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	502.1	30,124.3	1.11	-37.07	-47.68	**0.00**
12	S-247	-0.40	**-2.10**	-1.70	-11.00	10.60	8.90	-1.70	10.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	495.6	29,735.4	1.10	-54.94	-70.31	**0.00**
12	S-248	-0.40	**-1.90**	-1.50	-10.80	10.40	8.90	-1.50	10.40	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	489.1	29,344.5	1.08	-61.90	-79.37	**0.00**
12	S-249	-0.40	**-2.00**	-1.60	-10.60	10.20	8.60	-1.60	10.20	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	482.5	28,951.7	1.07	-58.32	-75.19	**0.00**
12	S-250	-0.40	**-2.30**	-1.90	-10.40	10.00	8.10	-1.90	10.00	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	476.0	28,557.0	1.05	-49.75	-64.63	**0.00**
13	S-251	-0.40	**-2.50**	-2.10	-10.50	10.10	8.00	-2.10	10.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	479.2	28,754.6	1.06	-45.32	-58.88	**0.00**
13	S-252	-0.40	**-2.20**	-1.80	-10.20	9.80	8.00	-1.80	9.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	469.3	28,160.3	1.04	-52.38	-68.30	**0.00**
13	S-253	-0.40	**-2.00**	-1.60	-10.00	9.60	8.00	-1.60	9.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	462.7	27,761.6	1.02	-58.55	-76.52	**0.00**
13	S-254	-0.40	**-1.50**	-1.10	-9.90	9.50	8.40	-1.10	9.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	459.4	27,561.4	1.02	-83.57	-108.83	**0.00**
13	S-255	-0.40	**-0.60**	-0.20	-9.70	9.30	9.10	-0.20	9.30	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	452.7	27,159.6	1.00	-444.35	-575.35	**0.00**
13	S-256	-0.40	0.00	0.40	-9.50	9.10	9.50	0.40	9.10	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	445.9	26,755.6	0.99	217.22	280.64	281.00
13	S-257	-0.40	0.00	0.40	-9.20	8.80	9.20	0.40	8.80	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	435.8	26,145.5	0.96	217.18	282.48	283.00
13	S-258	-0.40	**-0.50**	-0.10	-9.00	8.60	8.50	-0.10	8.60	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	428.9	25,736.0	0.95	-885.82	-1164.78	**0.00**
13	S-259	-0.40	**-0.70**	-0.30	-8.90	8.50	8.20	-0.30	8.50	36.90	0.000130	0.000427	6.00	1.83	40.00	12.19	425.5	25,530.4	0.94	-297.67	-393.42	**0.00**
14	S-260	-0.30	**-0.60**	-0.30	-8.60	8.30	8.00	-0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	-292.65	-395.89	**0.00**
14	S-261	-0.30	**-0.60**	-0.30	-8.60	8.30	8.00	-0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	-292.65	-395.89	**0.00**
14	S-262	-0.30	**-0.60**	-0.30	-8.60	8.30	8.00	-0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	-292.65	-395.89	**0.00**
14	S-263	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-264	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
14	S-265	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-266	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-267	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-268	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-269	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-270	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-271	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
14	S-272	-0.30	1.00	1.30	-8.60	8.30	9.60	1.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	63.14	83.50	84.00
14	S-273	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-274	-0.30	0.30	0.60	-8.60	8.30	8.90	0.60	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	140.82	188.00	188.00
15	S-275	-0.30	**-0.10**	0.20	-8.60	8.30	8.50	0.20	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	429.63	576.87	**0.00**
15	S-276	-0.30	**-0.10**	0.20	-8.60	8.30	8.50	0.20	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	429.63	576.87	**0.00**
15	S-277	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-278	-0.30	0.20	0.50	-8.60	8.30	8.80	0.50	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	169.69	226.86	227.00
15	S-279	-0.30	**-0.20**	0.10	-8.60	8.30	8.40	0.10	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	862.94	1160.37	**0.00**
15	S-280	-0.30	0.30	0.60	-8.60	8.30	8.90	0.60	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	140.82	188.00	188.00
15	S-281	-0.30	0.30	0.60	-8.60	8.30	8.90	0.60	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	140.82	188.00	188.00
15	S-282	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-283	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-284	-0.30	**-0.20**	0.10	-8.60	8.30	8.40	0.10	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	862.94	1160.37	**0.00**
15	S-285	-0.30	**-0.20**	0.10	-8.60	8.30	8.40	0.10	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	862.94	1160.37	**0.00**
15	S-286	-0.30	**-0.20**	0.10	-8.60	8.30	8.40	0.10	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	862.94	1160.37	**0.00**
15	S-287	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-288	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-289	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-290	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-291	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-292	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-293	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-294	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-295	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-296	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-297	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
15	S-298	-0.30	0.00	0.30	-8.60	8.30	8.60	0.30	8.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1077.1	64,625.4	2.38	285.21	382.40	383.00
16	S-299	-0.30	0.00	0.30	-7.50	7.20	7.50	0.30	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	283.92	394.48	395.00
16	S-300	-0.30	0.00	0.30	-7.50	7.20	7.50	0.30	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	283.92	394.48	395.00
16	S-301	-0.30	0.00	0.30	-7.50	7.20	7.50	0.30	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	283.92	394.48	395.00
17	S-302	-0.30	1.25	1.55	-7.25	6.95	8.50	1.55	6.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	948.0	56,879.9	2.09	51.77	70.99	71.00
17	S-303	-0.30	1.15	1.45	-7.30	7.00	8.45	1.45	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	55.62	76.27	77.00
17	S-304	-0.30	1.00	1.30	-7.35	7.05	8.35	1.30	7.05	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	957.7	57,464.5	2.12	62.50	85.77	86.00
17	S-305	-0.30	1.00	1.30	-7.40	7.10	8.40	1.30	7.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	962.6	57,756.1	2.13	62.53	85.68	86.00
17	S-306	-0.30	0.90	1.20	-7.45	7.15	8.35	1.20	7.15	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	967.5	58,047.3	2.14	68.08	93.29	94.00
17	S-307	-0.30	0.50	0.80	-7.50	7.20	8.00	0.80	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	104.04	143.28	144.00
17	S-308	-0.30	1.00	1.30	-7.40	7.10	8.40	1.30	7.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	962.6	57,756.1	2.13	62.53	85.68	86.00
17	S-309	-0.30	1.30	1.60	-7.25	6.95	8.55	1.60	6.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	948.0	56,879.9	2.09	50.03	68.56	69.00
17	S-310	-0.30	1.00	1.30	-7.10	6.80	8.10	1.30	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	62.31	86.27	87.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
17	S-311	-0.30	1.30	1.60	-7.00	6.70	8.30	1.60	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	49.86	68.91	69.00
17	S-312	-0.30	1.30	1.60	-6.90	6.60	8.20	1.60	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	49.79	69.06	70.00
17	S-313	-0.30	1.10	1.40	-6.80	6.50	7.90	1.40	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	57.36	80.13	81.00
17	S-314	-0.30	1.10	1.40	-6.80	6.50	7.90	1.40	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	57.36	80.13	81.00
17	S-315	-0.30	1.00	1.30	-7.10	6.80	8.10	1.30	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	62.31	86.27	87.00
17	S-316	-0.30	1.00	1.30	-7.25	6.95	8.25	1.30	6.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	948.0	56,879.9	2.09	62.42	85.97	86.00
17	S-317	-0.30	0.90	1.20	-7.50	7.20	8.40	1.20	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	68.12	93.18	94.00
17	S-318	-0.30	0.75	1.05	-8.00	7.70	8.75	1.05	7.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1020.3	61,220.8	2.25	78.70	106.21	107.00
18	S-319	-0.30	0.50	0.80	-8.25	7.95	8.75	0.80	7.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1044.1	62,646.4	2.31	104.56	140.60	141.00
18	S-320	-0.30	0.00	0.30	-8.50	8.20	8.50	0.30	8.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1067.7	64,062.0	2.36	285.14	383.42	384.00
18	S-321	-0.30	0.50	0.80	-8.25	7.95	8.75	0.80	7.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1044.1	62,646.4	2.31	104.56	140.60	141.00
18	S-322	-0.30	0.00	0.30	-7.90	7.60	7.90	0.30	7.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1010.8	60,647.7	2.23	284.53	389.86	390.00
18	S-323	-0.30	0.50	0.80	-7.50	7.20	8.00	0.80	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	104.04	143.28	144.00
18	S-324	-0.30	0.75	1.05	-7.20	6.90	7.95	1.05	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	78.14	108.27	109.00
18	S-325	-0.30	1.00	1.30	-7.10	6.80	8.10	1.30	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	62.31	86.27	87.00
18	S-326	-0.30	1.00	1.30	-7.05	6.75	8.05	1.30	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	62.27	86.37	87.00
18	S-327	-0.30	1.00	1.30	-7.00	6.70	8.00	1.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	62.23	86.47	87.00
18	S-328	-0.30	1.10	1.40	-7.00	6.70	8.10	1.40	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	57.52	79.77	80.00
18	S-329	-0.30	1.10	1.40	-6.95	6.65	8.05	1.40	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	57.48	79.86	80.00
18	S-330	-0.30	1.10	1.40	-6.95	6.65	8.05	1.40	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	57.48	79.86	80.00
18	S-331	-0.30	1.10	1.40	-6.95	6.65	8.05	1.40	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	57.48	79.86	80.00
18	S-332	-0.30	1.10	1.40	-6.90	6.60	8.00	1.40	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	57.44	79.95	80.00
18	S-333	-0.30	1.10	1.40	-6.90	6.60	8.00	1.40	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	57.44	79.95	80.00
18	S-334	-0.30	1.10	1.40	-6.75	6.45	7.85	1.40	6.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	898.8	53,928.7	1.99	57.31	80.23	81.00
18	S-335	-0.30	1.50	1.80	-6.60	6.30	8.10	1.80	6.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	883.9	53,033.7	1.95	43.63	60.96	61.00
18	S-336	-0.30	1.90	2.20	-6.60	6.30	8.50	2.20	6.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	883.9	53,033.7	1.95	35.03	48.59	49.00
18	S-337	-0.30	2.00	2.30	-6.70	6.40	8.70	2.30	6.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	893.8	53,630.9	1.98	33.42	46.11	47.00
18	S-338	-0.30	2.00	2.30	-6.70	6.40	8.70	2.30	6.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	893.8	53,630.9	1.98	33.42	46.11	47.00
18	S-339	-0.30	2.10	2.40	-6.75	6.45	8.85	2.40	6.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	898.8	53,928.7	1.99	31.91	43.87	44.00
18	S-340	-0.30	1.60	1.90	-6.80	6.50	8.40	1.90	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	41.28	57.15	58.00
18	S-341	-0.30	1.50	1.80	-6.80	6.50	8.30	1.80	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	43.78	60.72	61.00
18	S-342	-0.30	1.40	1.70	-6.90	6.60	8.30	1.70	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	46.65	64.58	65.00
18	S-343	-0.30	1.50	1.80	-6.90	6.60	8.40	1.80	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	43.85	60.60	61.00
19	S-344	-0.30	1.80	2.10	-6.90	6.60	8.70	2.10	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	37.07	50.97	51.00
19	S-345	-0.30	1.50	1.80	-6.90	6.60	8.40	1.80	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	43.85	60.60	61.00
19	S-346	-0.30	1.00	1.30	-6.90	6.60	7.90	1.30	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	62.15	86.67	87.00
19	S-347	-0.30	1.10	1.40	-6.95	6.65	8.05	1.40	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	57.48	79.86	80.00
19	S-348	-0.30	1.00	1.30	-6.95	6.65	7.95	1.30	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	62.19	86.57	87.00
19	S-349	-0.30	1.00	1.30	-6.95	6.65	7.95	1.30	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	62.19	86.57	87.00
19	S-350	-0.30	1.00	1.30	-7.00	6.70	8.00	1.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	62.23	86.47	87.00
19	S-351	-0.30	0.90	1.20	-7.00	6.70	7.90	1.20	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	67.73	94.28	95.00
19	S-352	-0.30	1.00	1.30	-7.10	6.80	8.10	1.30	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	62.31	86.27	87.00
19	S-353	-0.30	1.20	1.50	-7.15	6.85	8.35	1.50	6.85	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	938.2	56,293.5	2.07	53.54	73.74	74.00
19	S-354	-0.30	1.20	1.50	-7.15	6.85	8.35	1.50	6.85	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	938.2	56,293.5	2.07	53.54	73.74	74.00
19	S-355	-0.30	1.20	1.50	-7.00	6.70	8.20	1.50	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	53.43	73.98	74.00
19	S-356	-0.30	1.20	1.50	-7.00	6.70	8.20	1.50	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	53.43	73.98	74.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
19	S-357	-0.30	1.10	1.40	-7.20	6.90	8.30	1.40	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	57.67	79.42	80.00
19	S-358	-0.30	1.10	1.40	-8.00	7.70	9.10	1.40	7.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1020.3	61,220.8	2.25	58.14	78.07	79.00
19	S-359	-0.30	1.00	1.30	-8.50	8.20	9.50	1.30	8.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1067.7	64,062.0	2.36	63.11	83.67	84.00
19	S-360	-0.30	1.00	1.30	-8.30	8.00	9.30	1.30	8.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1048.8	62,930.3	2.32	63.02	84.02	85.00
19	S-361	-0.30	1.10	1.40	-7.20	6.90	8.30	1.40	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	57.67	79.42	80.00
19	S-362	-0.30	0.90	1.20	-7.10	6.80	8.00	1.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	67.82	94.06	95.00
19	S-363	-0.30	0.90	1.20	-7.00	6.70	7.90	1.20	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	67.73	94.28	95.00
19	S-364	-0.30	1.00	1.30	-7.00	6.70	8.00	1.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	62.23	86.47	87.00
19	S-365	-0.30	1.10	1.40	-7.10	6.80	8.20	1.40	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	57.59	79.59	80.00
19	S-366	-0.30	1.00	1.30	-7.20	6.90	8.20	1.30	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	62.39	86.07	87.00
19	S-367	-0.30	1.00	1.30	-7.50	7.20	8.50	1.30	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	62.60	85.49	86.00
19	S-368	-0.30	0.80	1.10	-7.80	7.50	8.60	1.10	7.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1001.2	60,072.9	2.21	74.84	101.56	102.00
20	S-369	-0.30	0.50	0.80	-7.90	7.60	8.40	0.80	7.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1010.8	60,647.7	2.23	104.35	141.82	142.00
20	S-370	-0.30	0.50	0.80	-7.90	7.60	8.40	0.80	7.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1010.8	60,647.7	2.23	104.35	141.82	142.00
20	S-371	-0.30	1.00	1.30	-7.80	7.50	8.80	1.30	7.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1001.2	60,072.9	2.21	62.78	84.92	85.00
20	S-372	-0.30	0.75	1.05	-7.50	7.20	8.25	1.05	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	78.37	107.48	108.00
20	S-373	-0.30	0.60	0.90	-7.10	6.80	7.70	0.90	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	91.70	127.88	128.00
20	S-374	-0.30	0.70	1.00	-7.20	6.90	7.90	1.00	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	82.24	114.05	115.00
20	S-375	-0.30	0.80	1.10	-7.30	7.00	8.10	1.10	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	74.49	102.77	103.00
20	S-376	-0.30	0.90	1.20	-7.40	7.10	8.30	1.20	7.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	962.6	57,756.1	2.13	68.05	93.39	94.00
20	S-377	-0.30	1.00	1.30	-7.50	7.20	8.50	1.30	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	62.60	85.49	86.00
20	S-378	-0.30	1.00	1.30	-7.60	7.30	8.60	1.30	7.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	982.0	58,918.0	2.17	62.66	85.30	86.00
20	S-379	-0.30	1.00	1.30	-7.70	7.40	8.70	1.30	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	62.72	85.11	86.00
20	S-380	-0.30	1.00	1.30	-7.75	7.45	8.75	1.30	7.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	996.4	59,784.8	2.20	62.75	85.02	86.00
20	S-381	-0.30	0.75	1.05	-7.80	7.50	8.55	1.05	7.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1001.2	60,072.9	2.21	78.58	106.71	107.00
20	S-382	-0.30	0.75	1.05	-7.85	7.55	8.60	1.05	7.55	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1006.0	60,360.5	2.22	78.61	106.59	107.00
20	S-383	-0.30	0.50	0.80	-7.90	7.60	8.40	0.80	7.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1010.8	60,647.7	2.23	104.35	141.82	142.00
20	S-384	-0.30	0.50	0.80	-7.75	7.45	8.25	0.80	7.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	996.4	59,784.8	2.20	104.24	142.36	143.00
20	S-385	-0.30	0.60	0.90	-7.50	7.20	8.10	0.90	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	92.06	126.56	127.00
20	S-386	-0.30	0.70	1.00	-7.25	6.95	7.95	1.00	6.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	948.0	56,879.9	2.09	82.28	113.91	114.00
20	S-387	-0.30	0.70	1.00	-7.10	6.80	7.80	1.00	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	82.15	114.34	115.00
20	S-388	-0.30	0.80	1.10	-7.00	6.70	7.80	1.10	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	74.24	103.53	104.00
20	S-389	-0.30	0.90	1.20	-7.00	6.70	7.90	1.20	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	67.73	94.28	95.00
20	S-390	-0.30	1.00	1.30	-7.05	6.75	8.05	1.30	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	62.27	86.37	87.00
20	S-391	-0.30	1.00	1.30	-7.10	6.80	8.10	1.30	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	62.31	86.27	87.00
20	S-392	-0.30	1.00	1.30	-7.15	6.85	8.15	1.30	6.85	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	938.2	56,293.5	2.07	62.35	86.17	87.00
20	S-393	-0.30	0.75	1.05	-7.20	6.90	7.95	1.05	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	78.14	108.27	109.00
21	S-394	-0.30	0.90	1.20	-7.50	7.20	8.40	1.20	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	68.12	93.18	94.00
21	S-395	-0.30	0.90	1.20	-7.75	7.45	8.65	1.20	7.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	996.4	59,784.8	2.20	68.28	92.65	93.00
21	S-396	-0.30	0.80	1.10	-7.60	7.30	8.40	1.10	7.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	982.0	58,918.0	2.17	74.71	102.03	103.00
21	S-397	-0.30	0.70	1.00	-7.30	7.00	8.00	1.00	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	82.32	113.76	114.00
21	S-398	-0.30	0.90	1.20	-7.10	6.80	8.00	1.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	67.82	94.06	95.00
21	S-399	-0.30	0.80	1.10	-7.10	6.80	7.90	1.10	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	74.33	103.27	104.00
21	S-400	-0.30	0.80	1.10	-7.10	6.80	7.90	1.10	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	74.33	103.27	104.00
21	S-401	-0.30	0.80	1.10	-7.10	6.80	7.90	1.10	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	74.33	103.27	104.00
21	S-402	-0.30	0.90	1.20	-7.10	6.80	8.00	1.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	67.82	94.06	95.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
21	S-403	-0.30	0.90	1.20	-7.10	6.80	8.00	1.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	67.82	94.06	95.00
21	S-404	-0.30	0.90	1.20	-7.10	6.80	8.00	1.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	67.82	94.06	95.00
21	S-405	-0.30	0.80	1.10	-7.05	6.75	7.85	1.10	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	74.28	103.40	104.00
21	S-406	-0.30	0.80	1.10	-7.05	6.75	7.85	1.10	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	74.28	103.40	104.00
21	S-407	-0.30	0.80	1.10	-7.05	6.75	7.85	1.10	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	74.28	103.40	104.00
21	S-408	-0.30	0.90	1.20	-7.05	6.75	7.95	1.20	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	67.78	94.17	95.00
21	S-409	-0.30	0.80	1.10	-7.10	6.80	7.90	1.10	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	74.33	103.27	104.00
21	S-410	-0.30	0.90	1.20	-7.10	6.80	8.00	1.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	67.82	94.06	95.00
21	S-411	-0.30	0.90	1.20	-7.15	6.85	8.05	1.20	6.85	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	938.2	56,293.5	2.07	67.86	93.94	94.00
21	S-412	-0.30	0.90	1.20	-7.20	6.90	8.10	1.20	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	67.90	93.83	94.00
21	S-413	-0.30	0.90	1.20	-7.25	6.95	8.15	1.20	6.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	948.0	56,879.9	2.09	67.94	93.72	94.00
21	S-414	-0.30	0.70	1.00	-7.30	7.00	8.00	1.00	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	82.32	113.76	114.00
21	S-415	-0.30	0.80	1.10	-7.35	7.05	8.15	1.10	7.05	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	957.7	57,464.5	2.12	74.53	102.64	103.00
21	S-416	-0.30	0.70	1.00	-7.40	7.10	8.10	1.00	7.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	962.6	57,756.1	2.13	82.40	113.48	114.00
21	S-417	-0.30	0.70	1.00	-7.45	7.15	8.15	1.00	7.15	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	967.5	58,047.3	2.14	82.44	113.34	114.00
21	S-418	-0.30	0.60	0.90	-7.50	7.20	8.10	0.90	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	92.06	126.56	127.00
22	S-419	-0.30	0.90	1.20	-7.50	7.20	8.40	1.20	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	68.12	93.18	94.00
22	S-420	-0.30	0.90	1.20	-7.60	7.30	8.50	1.20	7.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	982.0	58,918.0	2.17	68.18	92.96	93.00
22	S-421	-0.30	0.80	1.10	-7.70	7.40	8.50	1.10	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	74.78	101.79	102.00
22	S-422	-0.30	1.00	1.30	-7.75	7.45	8.75	1.30	7.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	996.4	59,784.8	2.20	62.75	85.02	86.00
22	S-423	-0.30	1.00	1.30	-7.75	7.45	8.75	1.30	7.45	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	996.4	59,784.8	2.20	62.75	85.02	86.00
22	S-424	-0.30	0.95	1.25	-7.70	7.40	8.65	1.25	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	65.37	88.78	89.00
22	S-425	-0.30	1.00	1.30	-7.60	7.30	8.60	1.30	7.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	982.0	58,918.0	2.17	62.66	85.30	86.00
22	S-426	-0.30	1.00	1.30	-7.50	7.20	8.50	1.30	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	62.60	85.49	86.00
22	S-427	-0.30	1.00	1.30	-7.40	7.10	8.40	1.30	7.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	962.6	57,756.1	2.13	62.53	85.68	86.00
22	S-428	-0.30	0.90	1.20	-7.30	7.00	8.20	1.20	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	67.97	93.61	94.00
22	S-429	-0.30	0.60	0.90	-7.20	6.90	7.80	0.90	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	91.80	127.55	128.00
22	S-430	-0.30	0.80	1.10	-7.10	6.80	7.90	1.10	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	74.33	103.27	104.00
22	S-431	-0.30	1.20	1.50	-7.00	6.70	8.20	1.50	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	53.43	73.98	74.00
22	S-432	-0.30	2.00	2.30	-7.00	6.70	9.00	2.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	33.60	45.89	46.00
22	S-433	-0.30	4.00	4.30	-8.30	8.00	12.30	4.30	8.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1048.8	62,930.3	2.32	16.94	21.77	22.00
22	S-434	-0.30	4.00	4.30	-8.30	8.00	12.30	4.30	8.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1048.8	62,930.3	2.32	16.94	21.77	22.00
22	S-435	-0.30	1.80	2.10	-7.50	7.20	9.30	2.10	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	37.41	50.46	51.00
22	S-436	-0.30	1.60	1.90	-7.00	6.70	8.60	1.90	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	41.42	56.94	57.00
22	S-437	-0.30	1.00	1.30	-7.00	6.70	8.00	1.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	62.23	86.47	87.00
22	S-438	-0.30	1.00	1.30	-7.00	6.70	8.00	1.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	62.23	86.47	87.00
22	S-439	-0.30	1.00	1.30	-6.95	6.65	7.95	1.30	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	62.19	86.57	87.00
22	S-440	-0.30	0.90	1.20	-6.95	6.65	7.85	1.20	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	67.69	94.40	95.00
22	S-441	-0.30	0.90	1.20	-6.95	6.65	7.85	1.20	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	67.69	94.40	95.00
22	S-442	-0.30	0.90	1.20	-6.90	6.60	7.80	1.20	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	67.65	94.51	95.00
22	S-443	-0.30	1.60	1.90	-6.90	6.60	8.50	1.90	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	41.35	57.05	58.00
23	S-444	-0.30	1.30	1.60	-6.90	6.60	8.20	1.60	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	49.79	69.06	70.00
23	S-445	-0.30	0.90	1.20	-6.90	6.60	7.80	1.20	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	67.65	94.51	95.00
23	S-446	-0.30	0.90	1.20	-6.95	6.65	7.85	1.20	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	67.69	94.40	95.00
23	S-447	-0.30	0.90	1.20	-6.95	6.65	7.85	1.20	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	67.69	94.40	95.00
23	S-448	-0.30	0.80	1.10	-7.00	6.70	7.80	1.10	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	74.24	103.53	104.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
23	S-449	-0.30	0.80	1.10	-7.00	6.70	7.80	1.10	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	74.24	103.53	104.00
23	S-450	-0.30	0.75	1.05	-7.05	6.75	7.80	1.05	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	78.01	108.68	109.00
23	S-451	-0.30	0.75	1.05	-7.10	6.80	7.85	1.05	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	78.05	108.54	109.00
23	S-452	-0.30	0.90	1.20	-7.15	6.85	8.05	1.20	6.85	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	938.2	56,293.5	2.07	67.86	93.94	94.00
23	S-453	-0.30	0.90	1.20	-7.20	6.90	8.10	1.20	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	67.90	93.83	94.00
23	S-454	-0.30	0.50	0.80	-7.25	6.95	7.75	0.80	6.95	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	948.0	56,879.9	2.09	103.81	144.23	145.00
23	S-455	-0.30	0.80	1.10	-7.10	6.80	7.90	1.10	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	74.33	103.27	104.00
23	S-456	-0.30	0.90	1.20	-7.00	6.70	7.90	1.20	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	67.73	94.28	95.00
23	S-457	-0.30	1.00	1.30	-6.80	6.50	7.80	1.30	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	62.06	86.87	87.00
23	S-458	-0.30	1.20	1.50	-6.70	6.40	7.90	1.50	6.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	893.8	53,630.9	1.98	53.20	74.46	75.00
23	S-459	-0.30	1.30	1.60	-7.00	6.70	8.30	1.60	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	49.86	68.91	69.00
23	S-460	-0.30	1.10	1.40	-7.10	6.80	8.20	1.40	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	57.59	79.59	80.00
23	S-461	-0.30	0.90	1.20	-7.20	6.90	8.10	1.20	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	67.90	93.83	94.00
23	S-462	-0.30	1.00	1.30	-7.00	6.70	8.00	1.30	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	62.23	86.47	87.00
23	S-463	-0.30	2.00	2.30	-6.80	6.50	8.80	2.30	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	33.48	46.03	47.00
23	S-464	-0.30	2.30	2.60	-6.50	6.20	8.80	2.60	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	29.04	40.13	41.00
23	S-465	-0.30	1.60	1.90	-6.20	5.90	7.80	1.90	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	40.81	57.80	58.00
23	S-466	-0.30	1.75	2.05	-6.10	5.80	7.85	2.05	5.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	833.6	50,016.5	1.84	37.46	53.11	54.00
23	S-467	-0.30	1.75	2.05	-6.20	5.90	7.95	2.05	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	37.55	53.02	54.00
23	S-468	-0.30	1.10	1.40	-6.30	6.00	7.40	1.40	6.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	853.8	51,229.8	1.89	56.88	81.07	82.00
24	S-469	-0.30	1.10	1.40	-6.30	6.00	7.40	1.40	6.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	853.8	51,229.8	1.89	56.88	81.07	82.00
24	S-470	-0.30	1.90	2.20	-6.20	5.90	8.10	2.20	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	34.73	48.90	49.00
24	S-471	-0.30	2.75	3.05	-6.10	5.80	8.85	3.05	5.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	833.6	50,016.5	1.84	24.00	33.37	34.00
24	S-472	-0.30	2.10	2.40	-6.00	5.70	8.10	2.40	5.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	823.4	49,406.5	1.82	31.38	44.35	45.00
24	S-473	-0.30	2.00	2.30	-6.10	5.80	8.10	2.30	5.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	833.6	50,016.5	1.84	32.98	46.53	47.00
24	S-474	-0.30	2.00	2.30	-6.20	5.90	8.20	2.30	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	33.06	46.46	47.00
24	S-475	-0.30	1.90	2.20	-6.30	6.00	8.20	2.20	6.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	853.8	51,229.8	1.89	34.81	48.82	49.00
24	S-476	-0.30	1.80	2.10	-6.60	6.30	8.40	2.10	6.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	883.9	53,033.7	1.95	36.87	51.23	52.00
24	S-477	-0.30	1.70	2.00	-6.80	6.50	8.50	2.00	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	39.04	53.95	54.00
24	S-478	-0.30	1.60	1.90	-6.90	6.60	8.50	1.90	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	41.35	57.05	58.00
24	S-479	-0.30	1.50	1.80	-7.00	6.70	8.50	1.80	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	43.92	60.48	61.00
24	S-480	-0.30	1.20	1.50	-7.05	6.75	8.25	1.50	6.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	928.4	55,705.2	2.05	53.47	73.90	74.00
24	S-481	-0.30	2.00	2.30	-6.95	6.65	8.95	2.30	6.65	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	918.6	55,115.0	2.03	33.58	45.93	46.00
24	S-482	-0.30	1.90	2.20	-6.80	6.50	8.70	2.20	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	35.17	48.43	49.00
24	S-483	-0.30	1.80	2.10	-6.85	6.55	8.65	2.10	6.55	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	908.7	54,522.8	2.01	37.04	51.01	52.00
24	S-484	-0.30	1.70	2.00	-7.00	6.70	8.70	2.00	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	39.17	53.76	54.00
24	S-485	-0.30	1.90	2.20	-7.10	6.80	9.00	2.20	6.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	933.3	55,999.6	2.06	35.35	48.20	49.00
24	S-486	-0.30	2.10	2.40	-7.30	7.00	9.40	2.40	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	32.22	43.52	44.00
24	S-487	-0.30	1.50	1.80	-7.50	7.20	9.00	1.80	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	44.22	59.91	60.00
24	S-488	-0.30	0.95	1.25	-7.70	7.40	8.65	1.25	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	65.37	88.78	89.00
24	S-489	-0.30	0.70	1.00	-7.70	7.40	8.40	1.00	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	82.62	112.65	113.00
24	S-490	-0.30	0.60	0.90	-7.70	7.40	8.30	0.90	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	92.21	125.93	126.00
24	S-491	-0.30	1.10	1.40	-7.70	7.40	8.80	1.40	7.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	991.6	59,496.3	2.19	57.98	78.56	79.00
24	S-492	-0.30	1.80	2.10	-7.30	7.00	9.10	2.10	7.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	952.9	57,172.5	2.11	37.31	50.63	51.00
24	S-493	-0.30	0.95	1.25	-6.90	6.60	7.85	1.25	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	64.79	90.43	91.00
25	S-494	-0.30	1.00	1.30	-6.90	6.60	7.90	1.30	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	62.15	86.67	87.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
25	S-495	-0.30	1.50	1.80	-6.70	6.40	8.20	1.80	6.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	893.8	53,630.9	1.98	43.71	60.84	61.00
25	S-496	-0.30	2.50	2.80	-6.20	5.90	8.70	2.80	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	26.52	36.92	37.00
25	S-497	-0.30	2.30	2.60	-6.50	6.20	8.80	2.60	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	29.04	40.13	41.00
25	S-498	-0.30	1.10	1.40	-6.50	6.20	7.60	1.40	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	57.08	80.69	81.00
25	S-499	-0.30	1.10	1.40	-6.50	6.20	7.60	1.40	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	57.08	80.69	81.00
25	S-500	-0.30	1.50	1.80	-6.50	6.20	8.00	1.80	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	43.55	61.08	62.00
25	S-501	-0.30	1.90	2.20	-6.50	6.20	8.40	2.20	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	34.96	48.67	49.00
25	S-502	-0.30	1.85	2.15	-7.20	6.90	9.05	2.15	6.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	943.1	56,587.0	2.08	36.31	49.39	50.00
25	S-503	-0.30	0.75	1.05	-7.50	7.20	8.25	1.05	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	78.37	107.48	108.00
25	S-504	-0.30	0.50	0.80	-7.50	7.20	8.00	0.80	7.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	972.3	58,338.0	2.15	104.04	143.28	144.00
25	S-505	-0.30	1.00	1.30	-8.50	8.20	9.50	1.30	8.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1067.7	64,062.0	2.36	63.11	83.67	84.00
25	S-506	-0.30	2.10	2.40	-10.00	9.70	12.10	2.40	9.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1206.0	72,359.1	2.66	33.06	41.87	42.00
25	S-507	-0.30	2.20	2.50	-10.00	9.70	12.20	2.50	9.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1206.0	72,359.1	2.66	31.62	40.02	41.00
25	S-508	-0.30	2.00	2.30	-9.10	8.80	11.10	2.30	8.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1123.7	67,419.8	2.48	34.43	44.46	45.00
25	S-509	-0.30	0.85	1.15	-7.90	7.60	8.75	1.15	7.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	1010.8	60,647.7	2.23	71.49	96.63	97.00
25	S-510	-0.30	1.05	1.35	-7.00	6.70	8.05	1.35	6.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	923.5	55,410.3	2.04	59.79	82.99	83.00
25	S-511	-0.30	2.70	3.00	-6.90	6.60	9.60	3.00	6.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	913.7	54,819.2	2.02	24.93	33.78	34.00
25	S-512	-0.30	2.50	2.80	-6.80	6.50	9.30	2.80	6.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	903.8	54,226.0	2.00	26.89	36.67	37.00
25	S-513	-0.30	2.30	2.60	-6.70	6.40	9.00	2.60	6.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	893.8	53,630.9	1.98	29.16	40.03	41.00
25	S-514	-0.30	2.50	2.80	-6.60	6.30	9.10	2.80	6.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	883.9	53,033.7	1.95	26.78	36.75	37.00
25	S-515	-0.30	2.60	2.90	-6.50	6.20	9.10	2.90	6.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	873.9	52,434.5	1.93	25.68	35.30	36.00
25	S-516	-0.30	2.70	3.00	-6.40	6.10	9.10	3.00	6.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	863.9	51,833.2	1.91	24.65	33.95	34.00
25	S-517	-0.30	2.80	3.10	-6.30	6.00	9.10	3.10	6.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	853.8	51,229.8	1.89	23.69	32.68	33.00
25	S-518	-0.30	2.90	3.20	-6.20	5.90	9.10	3.20	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	22.78	31.48	32.00
26	S-519	-0.30	2.90	3.20	-6.20	5.90	9.10	3.20	5.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	843.7	50,624.3	1.86	22.78	31.48	32.00
26	S-520	-0.30	2.80	3.10	-6.15	5.85	8.95	3.10	5.85	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	838.7	50,320.7	1.85	23.59	32.72	33.00
26	S-521	-0.30	2.80	3.10	-6.05	5.75	8.85	3.10	5.75	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	828.5	49,711.8	1.83	23.52	32.74	33.00
26	S-522	-0.30	2.70	3.00	-6.00	5.70	8.70	3.00	5.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	823.4	49,406.5	1.82	24.39	34.07	35.00
26	S-523	-0.30	2.70	3.00	-5.90	5.60	8.60	3.00	5.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	813.2	48,794.2	1.80	24.32	34.10	35.00
26	S-524	-0.30	2.70	3.00	-5.85	5.55	8.55	3.00	5.55	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	808.1	48,487.2	1.79	24.28	34.12	35.00
26	S-525	-0.30	2.70	3.00	-5.80	5.50	8.50	3.00	5.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	803.0	48,179.6	1.77	24.24	34.13	35.00
26	S-526	-0.30	2.90	3.20	-5.70	5.40	8.60	3.20	5.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	792.7	47,562.6	1.75	22.43	31.59	32.00
26	S-527	-0.30	3.00	3.30	-5.60	5.30	8.60	3.30	5.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	782.4	46,943.3	1.73	21.58	30.44	31.00
26	S-528	-0.30	3.00	3.30	-5.50	5.20	8.50	3.30	5.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	772.0	46,321.4	1.71	21.50	30.45	31.00
26	S-529	-0.30	2.70	3.00	-5.45	5.15	8.15	3.00	5.15	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	766.8	46,009.6	1.69	23.96	34.22	35.00
26	S-530	-0.30	2.75	3.05	-5.40	5.10	8.15	3.05	5.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	761.6	45,697.1	1.68	23.46	33.55	34.00
26	S-531	-0.30	2.75	3.05	-5.30	5.00	8.05	3.05	5.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	751.2	45,070.2	1.66	23.38	33.57	34.00
26	S-532	-0.30	2.75	3.05	-5.20	4.90	7.95	3.05	4.90	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	740.7	44,440.7	1.64	23.29	33.59	34.00
26	S-533	-0.30	2.75	3.05	-5.10	4.80	7.85	3.05	4.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	730.1	43,808.5	1.61	23.19	33.61	34.00
26	S-534	-0.30	3.30	3.60	-4.90	4.60	8.20	3.60	4.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	708.9	42,535.9	1.57	18.93	27.34	28.00
26	S-535	-0.30	6.00	6.30	-4.80	4.50	10.80	6.30	4.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	698.3	41,895.4	1.54	9.44	12.98	10.00
26	S-536	-0.30	4.10	4.40	-4.10	3.80	8.20	4.40	3.80	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	622.1	37,326.0	1.37	14.17	20.87	15.00
26	S-537	-0.30	4.00	4.30	-4.00	3.70	8.00	4.30	3.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	611.0	36,660.0	1.35	14.48	21.48	15.00
26	S-538	-0.30	3.90	4.20	-4.00	3.70	7.90	4.20	3.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	611.0	36,660.0	1.35	14.90	22.17	15.00
26	S-539	-0.30	5.30	5.60	-4.00	3.70	9.30	5.60	3.70	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	611.0	36,660.0	1.35	10.38	14.93	11.00
26	S-540	-0.30	4.70	5.00	-3.50	3.20	8.20	5.00	3.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	554.6	33,275.0	1.23	11.49	17.18	12.00

Infiltration Calculations
FPL CWRC Pipeline, Miami-Dade County, FL

Sheet #	Excavation	GW Elevation (ft)	Grade[1]	Depth to GW (ft)	Exc. Bottom Elevation (ft)	Drawdown	Exc. Bottom from Surface (ft)	Non Saturated Trench Depth (ft)	Saturated Trench Depth (ft)	Hydraulic Conductivity (K) (ft/day)	Hydraulic Conductivity (K) (m/s)	Hydraulic Conductivity (K) (cfs/ft^2-ft head)	Excavation Width (ft)	Excavation Width (m)	Excavation Length (ft)	Excavation Length (m)	Infiltration Flow Rate (gpm)	Total Hourly Pumpage (gallons)	Total Hourly Pumpage (acre-in)	Minimum Trench Length L (ft)	Minimum Trench Length L_2 (ft)	Minimum Trench Length (ft)[2]
26	S-541	-0.30	4.60	4.90	-3.30	3.00	7.90	4.90	3.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	531.6	31,893.1	1.17	11.55	17.53	12.00
26	S-542	-0.30	4.50	4.80	-3.30	3.00	7.80	4.80	3.00	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	531.6	31,893.1	1.17	11.86	18.05	12.00
26	S-543	-0.30	4.70	5.00	-3.40	3.10	8.10	5.00	3.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	543.1	32,586.2	1.20	11.38	17.11	12.00
27	S-544	-0.30	4.70	5.00	-3.40	3.10	8.10	5.00	3.10	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	543.1	32,586.2	1.20	11.38	17.11	12.00
27	S-545	-0.30	4.40	4.70	-3.45	3.15	7.85	4.70	3.15	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	548.9	32,931.1	1.21	12.37	18.71	13.00
27	S-546	-0.30	4.20	4.50	-3.50	3.20	7.70	4.50	3.20	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	554.6	33,275.0	1.23	13.13	19.91	14.00
27	S-547	-0.30	6.00	6.30	-3.60	3.30	9.60	6.30	3.30	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	566.0	33,959.7	1.25	8.59	12.38	9.00
27	S-548	-0.30	6.00	6.30	-3.70	3.40	9.70	6.30	3.40	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	577.3	34,640.5	1.28	8.68	12.45	9.00
27	S-549	-0.30	6.00	6.30	-3.80	3.50	9.80	6.30	3.50	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	588.6	35,317.4	1.30	8.76	12.51	9.00
27	S-550	-0.30	6.00	6.30	-3.90	3.60	9.90	6.30	3.60	101.80	0.000359	0.001178	6.00	1.83	40.00	12.19	599.8	35,990.5	1.33	8.84	12.57	9.00

TABLE NOTES:

[1] **Grade values below 0.0 NAVD are indicated in RED.**

[2] **Trench lengths produced by negative grade are not available for infiltration and are shown in RED.**

The calculations presented are deemed appropriate and in accordance with State of Florida Rules and Regulation as certified by a registered Professional Engineer authorized by Chapter 471, Florida Statutes and defined by the Florida State Board of Professional Engineering.
To the best of my knowledge, all information summarized in this report is true, accurate, complete, and in accordance with applicable State of Florida Rules and Regulations.

Reviewed and Approved by:

Robert L Vinson III
Digitally signed by Robert L Vinson III
Date: 2023.04.20 15:32:39 -05'00'

Robert L. Vinson III, P.E.
License No. 53438

Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

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Dewatering Radius of Influence (Sichardt's Equation)
and Maximum Dewatering Volume (Section Pumpage)

Project: FPL CWRC Pipeline

Location: Miami-Dade County, Florida

Summary of Plan Details:

Ground surface elevation at the proposed dewatering site varies with a maximum elevation of +6.0 feet relative to the North American Vertical Datum of 1988 (NAVD). Average groundwater elevation at the dewatering site varies between -0.3 and -0.4 feet NAVD, and the maximum bottom elevation of the trenches is -11.2 feet NAVD.

Dewatering fluids will be pumped from the excavation trench using a self-priming six-inch (6") vacuum pump, or equivalent, to a 40' wide by 400' long above-grade infiltration basin with turbidity curtains spaced 100' apart, as shown in **Figure 4**. Infiltration trench size requirements derived using the *Florida Department of Transportation (FDOT) Drainage Handbook Exfiltration Systems* (February 2012), are included in **Attachment A**.

If necessary, effluent will be pumped from the infiltration basin using a four-inch (4") pump, or equivalent, through an 18,000-gallon sedimentation weir tank prior to discharge into two-foot diameter temporary drainage wells, installed within the project area and located to minimize disruption to active trench dewatering. The capacity of temporary drainage wells is approximately 500 gallons per minute per foot of head. Temporary well locations, shown in **Figure 2**, are contingent upon underground and overhead utility clearance. Turbidity control includes the provision of a sedimentation weir tank and turbidity curtains; particle settling calculations are included in **Attachment A**. Pump and sedimentation tank specification data are included as **Attachment B**.

Dewatering assumptions are based on the time to dig, dewater, and install subsurface infrastructure during daylight working hours. Dewatering duration for this portion of the pipeline project is estimated at ten (10) hours per day for one hundred and thirty-eight (138) working days based on a production rate of 200 linear feet per day. A 1.25 Factor of safety has been added to account for weather delays, equipment breakdowns, and other unforeseen circumstances.

Variable	Value	US units	Value	Metric Units
Hydraulic Conductivity (k)	101.80	feet/day	0.000359	meters/second
Aquifer Thickness (H)	160	feet	48.77	meters
Depth to Water	2.5	feet	0.76	meters
Excavation Depth	12.2	feet	3.72	meters
Open Trench Length (a)	40	feet	12.19	meters
Open Trench Width (b)	6	feet	1.83	meters
π	3.14		3.14	
Number of Extraction Points (n)	1		1	
Pumping Time per day	120	minutes	120	minutes

Example Calculations

A. Calculation of Radius of Influence (R_0) for an open hole

$R_0 = 3000*(H-h)*\sqrt{k}$

h = H - (Excavation Depth - Depth to Water) =	45.81	meters
H - h =	2.96	meters
Radius of Influence (R_0) =	168.09	meters

B. Calculation of the Effective Radius (R_e) for rectangular excavation area adjustment

$r_e = \sqrt{[(a*b)/\pi]}$

r_e =	2.66	meters

C. Calculation of the Maximum Total Influence ($R_0 + R_e$)

Maximum Total Influence = Radius of influence (A.) + Effective radius of rectangular excavation dimensions (B.)

Maximum Radius of Influence =	170.75	meters
	560.21	feet

D. Dewatering Pump Rate (q) per Extraction Point (n = 1)

$H^2 - h^2 = (n*q/\pi*k)(\ln R_o - \ln r_e)$

h = H - (Excavation Depth - Depth to Water)	45.81	meters
$H^2 - h^2$	279.63	square meters
$\pi*k$	0.001127661	meters/second
$\ln R_0 - \ln r_e$	4.14	
$(H^2 - h^2) / (\ln R_0 - \ln r_e)$	67.47	
$q = ((H^2 - h^2)*\pi k)/((\ln R_0 - \ln r_e)*n)$	0.0761	$meters^3$/second
$q = ((H^2 - h^2)*\pi k)/((\ln R_0 - \ln r_e)*n)$	1205.98	US gallons/minute
Maximum Section Pumpage for largest excavation dewatering demand (q x pumping time) =	**144,718**	US gallons/day
Maximum Daily Pumpage (5 consecutive sections with the largest dewatering demand) =	**673,695**	US gallons/day

The calculations presented are deemed appropriate and in accordance with State of Florida Rules and Regulation as certified by a registered Professional Engineer authorized by Chapter 471, Florida Statutes and defined by the Florida State Board of Professional Engineering. To the best of my knowledge, all information summarized in this report is true, accurate, complete, and in accordance with applicable State of Florida Rules and Regulations.

Reviewed and Approved by:

Robert L Vinson III
Digitally signed by Robert L Vinson III
Date: 2023.04.20 15:36:39 -05'00'

Robert L. Vinson III, P.E.
License No. 53438

Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

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Storage Calculations
FPL CWRC Pipeline
Miami-Dade County, Florida

Average grade is approximately +0.67 ft NAVD.
Average groundwater elevation is approximately -0.35 ft NAVD.
Total head of water table aquifer (H) determined from *United States Geological Survey: Water-Resources Investigations Report 90-4108 Hydrogeology of the Surficial Aquifer System, Dade County, Florida, 1991.*

Empirical Equation (FDOT Drainage Handbook Exfiltration Systems)

$$L_1 = \frac{V}{K(H_2W + 2H_2D_u - D_u^2 + 2H_2D_s) + 0.000139(W)(D_u)}$$

OR

$$L_2 = \frac{V}{K(2H_2D_u - D_u^2 + 2H_2D_s) + 0.000139(W)(D_u)}$$

L_1 = length of trench required (ft)
V = Infiltration volume per 1 hour (acre-inches)
K = hydraulic conductivity (cfs/ft^2 - ft head)
H_2 = effective head (ft)
W = width of trench (ft)
D_u = unsaturated depth of trench (ft)
D_s = saturated depth of trench (ft)

L_2 = length of trench required (ft)
V = Infiltration volume per 1 hour (acre-inches)
K = hydraulic conductivity (cfs/ft^2 - ft head)
H_2 = effective head (ft)
W = width of trench (ft)
D_u = unsaturated depth of trench (ft)
D_s = saturated depth of trench (ft)

When either unsaturated depth of trench is greater than saturated depth or the trench width is less than two times the depth, use L_1.
When either saturated depth of trench is greater than unsaturated depth or trench width is greater than two times the depth, use L_2.
If both equations apply, use the greater of these two lengths.

Infiltration Required

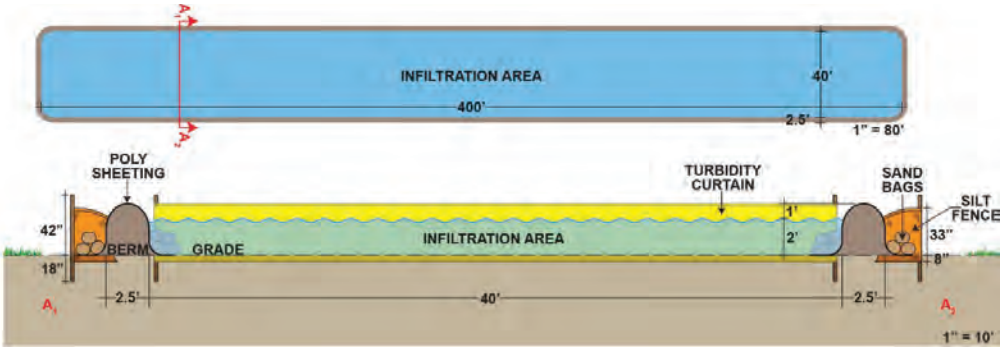
Excavation	D_u (ft)*	D_s (ft)*	W (ft)	Hydraulic Conductivity (m/s)*	Hydraulic Conductivity (cfs/ft^2-ft head)	H_2 (ft)	Maximum Volume (gallons/hr)	Volume (acre-inches)	Length of Trench (L_1) (ft)	Length of Trench (L_2) (ft)	**Total ft^2 Required**
S-149 - S-153	0.44	7.70	6.00	0.000130	0.000427	0.44	31,246.25	1.151	257	344	**2,065.0**
S-505 - S-509	1.93	8.80	6.00	0.000359	0.001178	1.93	84,153.10	3.099	52	67	**404.1**

*Calculated as the average of all 5 sections

Infiltration Available

Basin	W(ft)	L (ft)	**Total ft^2 Available**
1	40	400	**16,000**

AVAILABLE AREA > REQUIRED AREA



The calculations presented are deemed appropriate and in accordance with State of Florida Rules and Regulation as certified by a registered Professional Engineer authorized by Chapter 471, Florida Statutes and defined by the Florida State Board of Professional Engineering. To the best of my knowledge, all information summarized in this report is true, accurate, complete, and in accordance with applicable State of Florida Rules and Regulations.

Reviewed and Approved by:
Robert L Vinson III
Digitally signed by Robert L Vinson III
Date: 2023.04.20 16:00:16 -05'00'

Robert L. Vinson III, P.E.
License No. 53438

Robert L. Vinson III, Professional Engineer, State of Florida, License No. PE53438

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BLASCOM ENGINEERING

March 13, 2023

Tierra Consulting Group
1230 SW 6th Street
Pompano Beach, Florida 33069

Attn: Mr. Scott Zednek, P.G.

Re: Geotechnical Data Report
Miami-Dade Clean Water Recovery Center Pipeline
Route between SDWWTP & TP Power Plant, Homestead, FL
Tierra Consulting Project No.: 18374
Blascom Project No.: G23007

Dear Mr. Zednek:

Blascom Engineering, Inc. (Blascom) has completed the geotechnical engineering services for the above referenced project. This geotechnical data report presents the results of the subsurface field exploration and hydraulic conductivity testing. These services were performed in general accordance with our proposal No. PG23009 dated March 7, 2023.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report, please contact us.

Sincerely,
Blascom Engineering, Inc.
(Florida Registry No. 30144)

Julio B De Blas:A0141 0D0000017 81E469AB0 00002B90

Digitally signed by Julio B De Blas:A0141 0D0000017 81E469AB0 00002B90
Date: 2023.03.13 19:59:09 -04'00'

JULIO B. DE BLAS LICENSE No 64653 STATE OF FLORIDA PROFESSIONAL ENGINEER

Julio De Blas, P.E.
Senior Engineer
Florida License No. 64653

This item has been digitally signed and sealed by Julio B. de Blas, P.E. on 03/13/2023.

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Cc: Addressee (1-PDF)



MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE, ROUTE BETWEEN SDWWTP & TP POWER PLANT HOMESTEAD, FL	BLASCOM ENGINEERING	*BLASCOM ENGINEERING, INC.* *FL REGISTRY No. 30144* *BLASCOM PROJECT No.: G23007*	***SITE VICINITY MAP & FIELD TEST LOCATION PLAN***	*EXHIBIT No.:* *A-1*

BLASCOM ENGINEERING

TABLE 2: SUMMARY OF CONSTANT HEAD OPEN HOLE TEST (PERCOLATION TEST)

MIAMI-DADE CLEAN WATER RECOVERY CENTER PIPELINE
ROUTE BETWEEN SDWWTP & TP POWER PLANT, HOMESTEAD, FL
BLASCOM PROJECT NO.: G23007
TIERRA CONSULTING PROJECT NO.: 18374

TEST NO.	TEST DATE	DIAMETER, d		DEPTH OF HOLE, D_H (FT.)	DEPTH TO GROUNDWATER LEVEL BELOW GROUND SURFACE (FT.)		WATER HEAD, ΔH (FT.)	SATURATED HOLE DEPTH, D_s (FT.)	AVERAGE FLOW RATE, Q (GPM)	HYDRAULIC CONDUCTIVITY, K (CFS/FT^2-FT. HEAD)
		HOLE (IN.)	PERFORATED CASING (IN.)		PRIOR TO TEST, H_2	DURING TEST, H_I				
EX-1	3/8/2023	6	2	10	1.3	0.0	1.3	8.7	10.3	3.59E-03
EX-2	3/8/2023	6	2	10	1.4	0.0	1.4	8.6	4.0	1.30E-03
EX-3	3/8/2023	6	2	10	2.0	0.0	2.0	8.0	2.0	4.71E-04

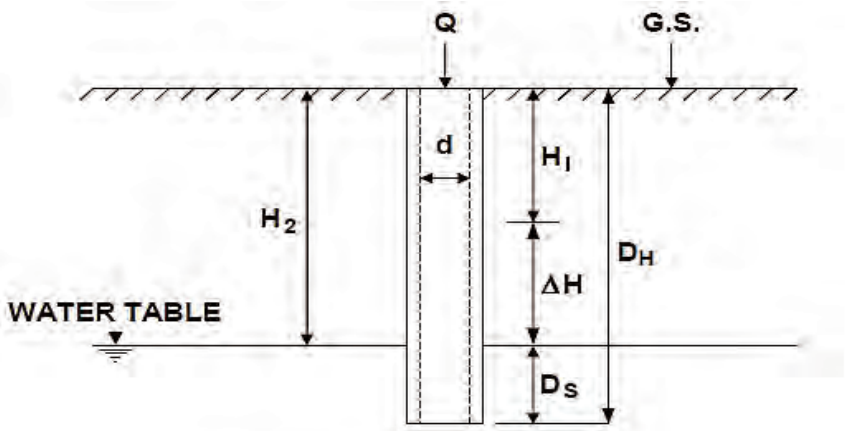
[1] The above hydraulic conductivity value is for a French drain installed to the same depth as the borehole test. The value represents an ultimate value. The designer should decide on the required factor of safety.

[2] The hydraulic conductivity value was calculated based on the South Florida Water Management District's 'Constant Head 'Open Hole' method.

[3] The diameter of the perforated casing of 2 inches was used in the computation of the hydraulic conductivity value.

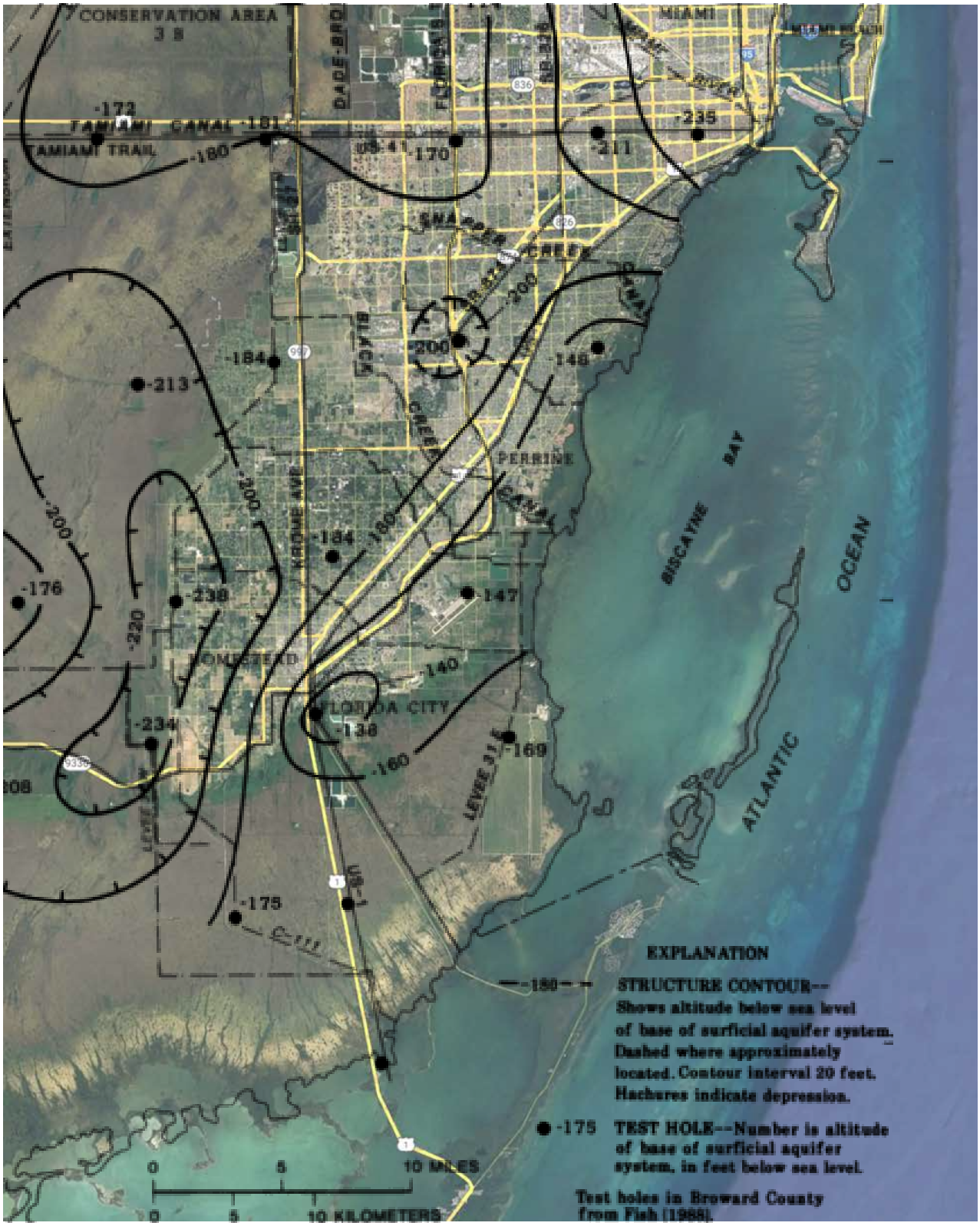
[4] Refer to Exhibit A-2 (Boring Soil Profiles) of the report for subsurface stratification information.

CONSTANT HEAD OPEN-HOLE TEST SCHEMATIC



$$K=\frac{4Q}{\pi d(2\Delta H^2+4\Delta H D_s+\Delta H d)}$$

K = HYDRAULIC CONDUCTIVITY (CFS/FT.² - FT.HEAD)
Q = "STABILIZED" FLOW RATE (CFS)
d = DIAMETER OF TEST HOLE (FEET)
H_2 = DEPTH TO WATER TABLE BEFORE TEST (FEET)
H_I = DEPTH TO WATER TABLE DURING TEST (FEET)
D_S = SATURATED HOLE DEPTH (FEET)
D_H = DEPTH OF HOLE
ΔH = WATER HEAD DURING TEST (FT.HEAD)


CONSERVATION AREA 3 B
MIAMI
TAMIAMI CANAL
TAMIAMI TRAIL
DADE-BRO
FLORIDA TPK
NW 27 AVE
US-41
SNAPPER CREEK
BLACK CREEK
KROME AVE
PERRINE
CANAL
BISCAYNE BAY
OCEAN
ATLANTIC
HOMESTEAD
FLORIDA CITY
LEVEE 31E
US-1
C-111
-172
-181
-180
-170
-235
-211
-184
-213
-200
-148
-176
-238
-147
-220
-140
-234
-138
-169
-160
-175
EXPLANATION
-180 STRUCTURE CONTOUR--Shows altitude below sea level of base of surficial aquifer system. Dashed where approximately located. Contour interval 20 feet. Hachures indicate depression.
-175 TEST HOLE--Number is altitude of base of surficial aquifer system, in feet below sea level.
Test holes in Broward County from Fish (1988).
0 5 10 MILES
0 5 10 KILOMETERS

ATTACHMENT B

PRIMERITE™ CT006

6" X 6" AUTOMATIC DRY SELF-PRIMING TRASH PUMP

MWI PUMPS
The Power to Move Water®

APPLICATIONS

Construction Dewatering

Sewage Bypass

Flood Drainage

Mining/Quarries

Municipal

General Industrial

The Primerite™ is the perfect pump for contractors, pump rental companies, mining operators and general industrial or municipal use. The pump's oil-filled bearing box and a mechanical seal in an oil bath enable it to run dry all day long for up to 24 hours, making it the right choice for handling inconsistent flows found in sewage bypass pumping and job site dewatering. This pump is completely self contained in either skid or trailer configurations with integral lifting bail, tie downs and fuel tank.

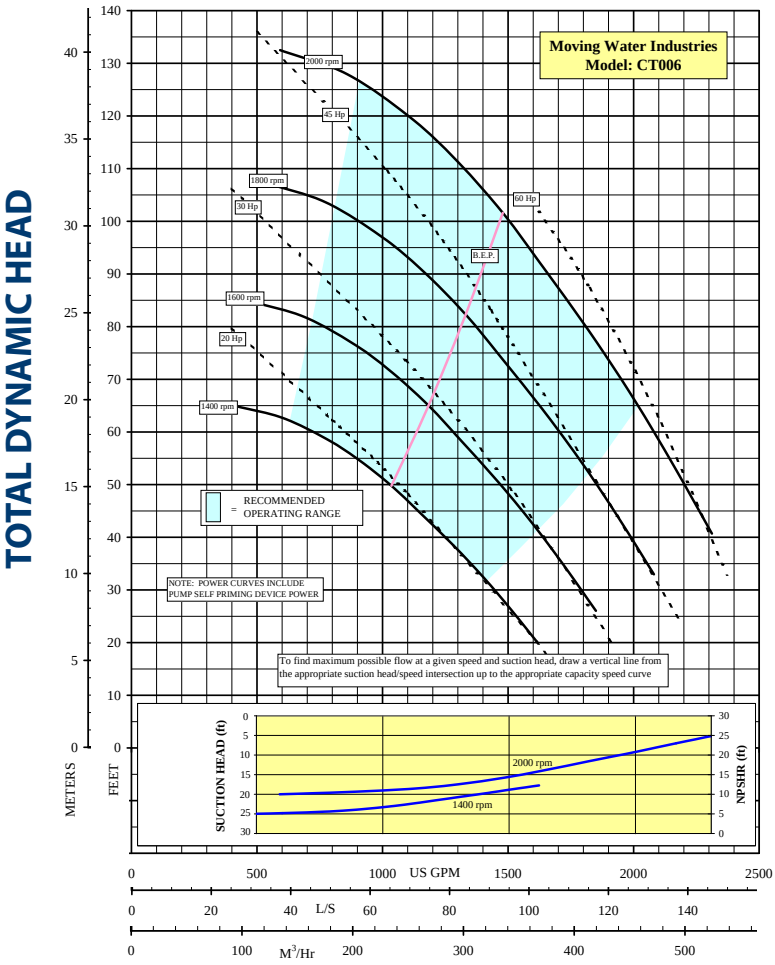
FEATURES

- Primes and reprimes automatically
- Solids handling up to 3"
- Engine driven compressor
- Vacuum and discharge pressure gauge
- Lockable fuel cap
- Forklift slots (skid models)
- Torsion bar axle
- Integral 78 fuel tank with gauge
- Skid or optional trailer-mounted
- DOT light kit available
- Hydraulic surge brakes standard, electric brakes available
- Front and rear stabilizing jacks
- 3" Lunette ring for pintle hitch – Other options available
- Lifting bail
- Volute drain
- Heavy-duty truck tie downs
- Engines – Caterpillar, Perkins, John Deere and Deutz available
- Flexible flywheel coupling
- 6" ANSI Pattern flanges – Suction and discharge
- Optional float activated, auto start/stop controls
- Manufactured in the USA

QUICK SPECIFICATIONS	
Suction connection	6" 150# ANSI B16.5
Delivery connection	6" 150# ANSI B16.5
Max capacity	2300 USGPM
Max solids handling	3.0"
Max impeller diameter	10.8"
Max head (TDH)	160'
Max operating speed	2000 RPM
Max suction lift	25'
Dimensions	65 x 93 x 132"
Sound levels w/ enclosure	67 dBA at 7M / 23'
Max fuel consumption	At 67 HP; up to 20 hr run time



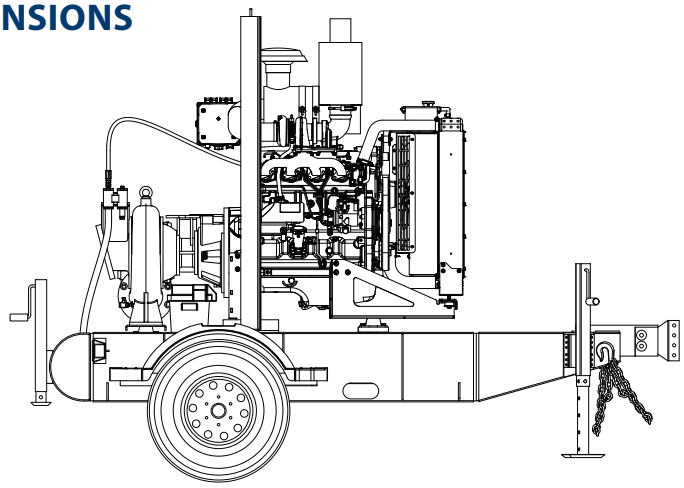
PERFORMANCE CURVE

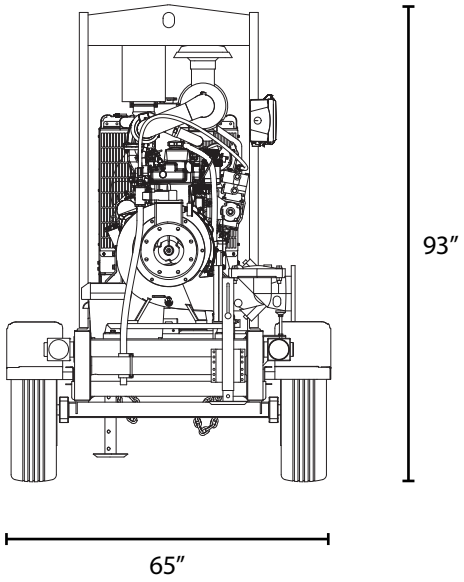


WATER FLOW

MATERIALS & SPECIFICATIONS	
Standard engine	John Deere 4045TF290
Max HP	74 HP
Fuel capacity	78 Gal
Drive type	Flywheel direct drive flexible element
Impeller	CA-40 Corrosion resistant iron/chromium alloy
Volute	Ductile cast iron ASTM A536 grade 70-50-05
Pump shaft	1045 Steel; Stainless steel option
Compressor	Engine-driven, oil lubricated and water cooled
Priming assembly	304 Stainless steel venturi
Control panel	Tach and hour meter, including shutdowns for low oil pressure, high coolant temperature, Plug-N-Play and float-ready
Discharge non-return valve	Val-matic swing flex check valve ASTM A536 grade 65-45-12
Mechanical seal	Stainless steel with silicon carbide faces; Buna elastomers
Weight of trailer mounted unit	3450 lbs (dry)

DIMENSIONS





MWI Pumps Headquarters
33 NW 2nd Street | Deerfield Beach, FL 33441
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Inquiries: 954-426-1500 | Fax: 954-426-8938 | Email: info@mwipumps.com | **mwipumps.com**

18,000 gallon weir tank

RECON OUTFITTERS
VETERAN OWNED BUSINESS

Epoxy lined smooth wall for ease of cleaning

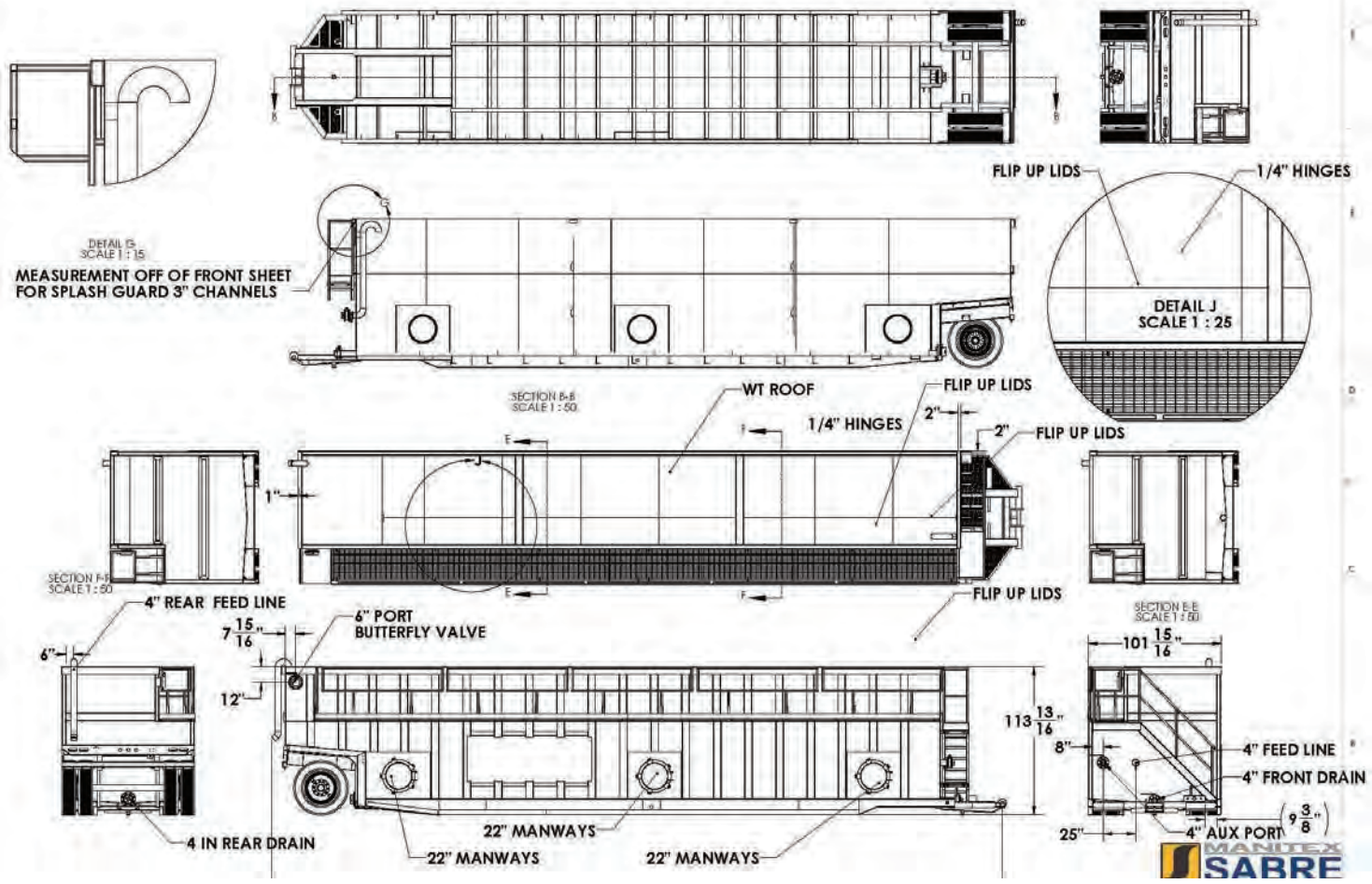
Lockable Flip-top or open top

"RECON Ready" fixed handrails

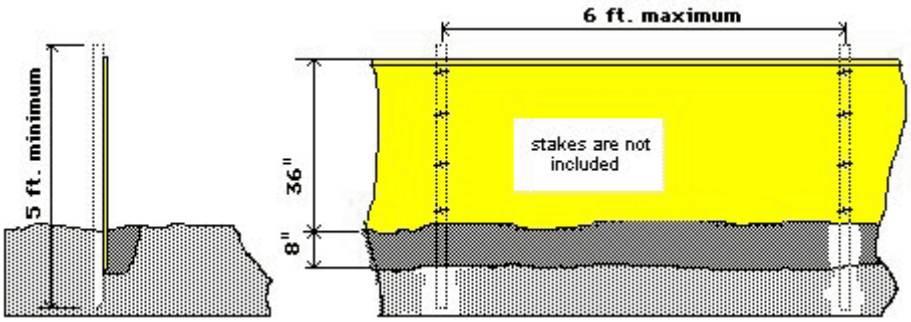
Sediment removal / oil-water separation
Floc logs to enhance sediment removal
Tank connections allow for manifolding multiple tanks together







44" STAKED TURBIDITY BARRIER

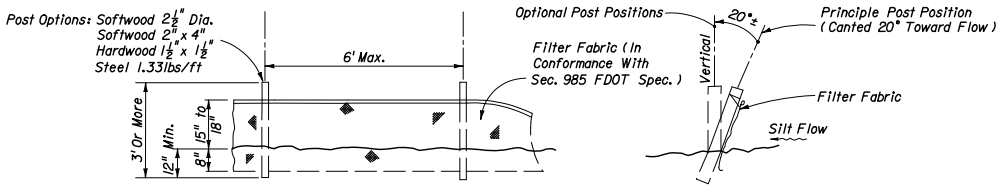


Staked Barrier

Specifications for Staked Barrier with 18oz fabric

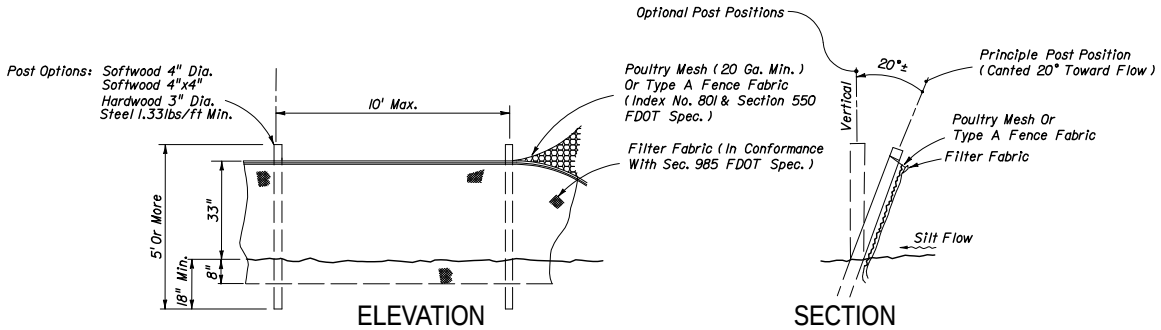
	ENGLISH	METRIC	TESTING METHOD
Weight	18 oz./yd²	610 g/m²	FS 5040 / ASTM D3776
Std. Dimensions	44 in. high x 100 ft	1.13m high x 30.5m	
Construction	9 x 9/1" by 840 x 840	4 x 4/cm by 924 x 924	
Grab Tensile	281 x 247 lbs./2"	1250 x 1100 N/5 cm	FS 5100 / ASTM D5034
Tongue Tear	51 x 45 lbs./1"	225 x 200 N/2.5 cm	FS 5134 / ASTM D2261
Adhesion	20 lbs./2"	90 N/5 cm	FS 5970 / ASTM D751
Finish	Matte		
Cold Crack	-4° F	-20° C	FS 5874 / ASTM D2136
Fire Retardant	Self Extinguishing		Pass

All seams heat sealed
Stakes are not included
Standard size: 100ft. length X 44 in.



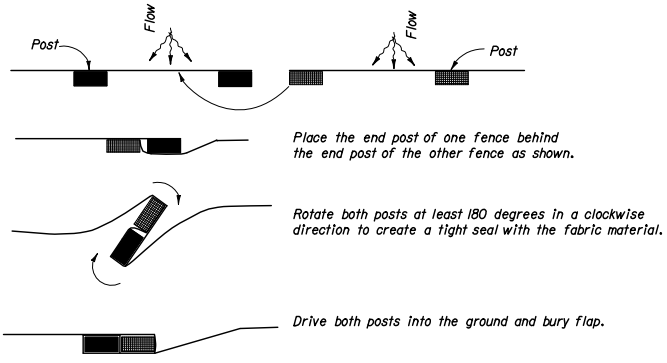
ELEVATION SECTION

TYPE III SILT FENCE



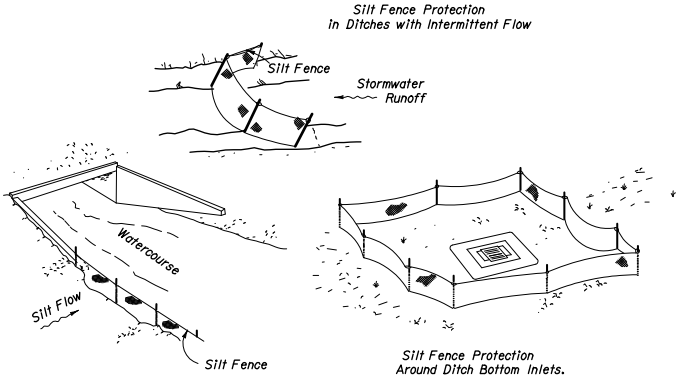
ELEVATION SECTION

TYPE IV SILT FENCE



PLAN VIEW

JOINING TWO SILT FENCES



SILT FENCE APPLICATIONS

NOTES FOR SILT FENCES

1. *Type III Silt Fence to be used at most locations.*
2. *Type IV Silt Fence to be used where large sediment loads are anticipated. Suggested use is where fill slope is 1:2 or steeper and length of slope exceeds 25 feet.*
3. *Do not construct silt fences across permanent flowing watercourses. Silt fences are to be at upland locations and turbidity barriers used at permanent bodies of water.*
4. *Where used as slope protection, Silt Fence is to be constructed on 0% longitudinal grade to avoid channelizing runoff along the length of the fence.*

TIERRA GROUP™ Assured Geoscience Solutions	PROJECT: FPL CWRC PIPELINE	CLIENT: GIANNETTI CONTRACTING CORP.	
	SEDIMENT CONTROL - SILT FENCE STANDARDS	DATE: 4/17/2023	DRAWN BY: LS

O: (954) 202 9226 E: ADMIN@TIERRACONSULTING.COM WWW.TIERRACONSULTING.COM

ATTACHMENT C

STORMWATER POLLUTION PREVENTION PLAN –

MIAMI-DADE COUNTY SOUTH DISTRICT WASTEWATER TREATMENT PLANT TO FLORIDA POWER & LIGHT CLEAN WATER RECOVERY CENTER 8-MILE RECLAIMED WATER PIPELINE PROJECT

PREPARED FOR

Overland Contracting, Inc.

JANUARY 2023

BLACK & VEATCH

SWPPP PREPARATION CERTIFICATION

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."



Signature (Operator and/or Responsible Authority) — Date: Feb 4, 2023

Gary Krage — Project Manager / AVP

Name (Operator and/or Responsible Authority) — Title

SWPPP CONTRACTOR/SUBCONTRACTOR CERTIFICATION

This SWPPP must clearly identify, for each measure identified within the SWPPP, the contractor(s) or subcontractor(s) that will implement each measure. All contractor(s) and subcontractor(s) identified in the SWPPP must sign the following certification:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

Name	Title	Company Name, Address and Phone Number	Date

ACRONYMS & ABBREVIATIONS

Acronym/Abbreviation	Definition
BMP	Best Management Practice
CWRC	Clean Water Recovery Center
DERM	Miami-Dade County Regulatory Economic Resources Department of Environmental Resources Management
FDEP	Florida Department of Environmental Protection
FPL	Florida Power & Light
Generic Permit	*NPDES Generic Permit for Stormwater Discharge from Large and Small Construction Activities*
HDD	Horizontal Directional Drill
MS4	Municipal Separate Storm Sewer System
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OCI	Overland Contracting, Inc.
Project	Miami-Dade South District Wastewater Treatment Plant to FPL Clean Water Recovery Center Reclaimed Water Pipeline
ROW	Right-of-way
SDS	Safety Data Sheet
SDWWTP	Miami Dade County South District Wastewater Treatment Plant
SFWMD	South Florida Water Management District
SWPPP	Stormwater Pollution Prevention Plan
USACE	U.S. Army Corps of Engineers

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1.0 Introduction

This Stormwater Pollution Prevention Plan (SWPPP) has been prepared to comply with the requirements identified in the Florida Department of Environmental Protection (FDEP) *National Pollutant Discharge Elimination System (NPDES) Generic Permit for Stormwater Discharge from Large and Small Construction Activities (Generic Permit),* effective 02/2015 (Appendix A). The template provided by the FDEP for SWPPP development was used as the foundation of the document.

As per the template:

- *The SWPPP shall be completed prior to the submittal of the Notice of Intent (NOI) (Appendix B) to be covered under the FDEP's Generic Permit for Stormwater Discharge from Large and Small Construction Activities.*

- *The SWPPP shall be amended whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on the potential for discharge of pollutants to surface waters of the state or a Municipal Separate Storm Sewer System (MS4). The SWPPP also shall be amended if it proves to be ineffective in significantly reducing pollutants from sources identified in Part V.D.1. of the permit. The SWPPP also shall be amended to indicate any new contractor and/or subcontractor that will implement any measure of the SWPPP. All amendments shall be signed, dated, and kept as attachments to the original SWPPP.*

2.0 Project Information

2.1 Location

Project Name and Location Information:	*Florida Power & Light Company (FPL)* *8-Mile Reclaimed Water Pipeline between the Miami Dade County South District Wastewater Treatment Plant (SDWWTP) and FPL Clean Water Recovery Center (CWRC)* *Start: 8950 SW 232nd St, Miami, FL 33190* *End: Palm Dr, Homestead, FL 33033* *The waterline corridor is approximately eight miles in length and approximately 60 feet wide. From the SDWWTP, the waterline exits south to the South Dade Landfill property underneath the Black Creek (C-1) Canal via trenchless methods. The corridor follows SW 97th Avenue south approximately 0.6 mile to the intersection with SW 248th Street/Coconut Palm Drive, crosses under SW 248th Street/Coconut Palm Drive and Goulds Canal via trenchless methods and continues approximately 0.5 mile along the western perimeter of a closed landfill (Old South Dade Landfill), then south approximately 0.25 mile through an undeveloped parcel to reach the FPL transmission line corridor at SW 261st Street. The waterline continues south within the FPL transmission line corridor approximately 6.3 miles to reach the Unit 5 Site. Along this segment, the corridor crosses the Princeton (C-102), Military, unnamed (SW 312th Street), Mowry (C-103), Homestead (North), and L31E Canals via trenchless methods. The waterline right-of-way will be located primarily within the existing transmission line right-of-way (ROW) and adjacent to existing road rights-of-way.*

A site map must be developed and must contain, at a minimum, the following information:

1. Drainage patterns,
2. Approximate slopes after major grading activities,
3. Areas of soil disturbance,
4. Outline all areas that are not to be disturbed,
5. Location of all major structural and non-structural controls,
6. The location of expected stabilization practices,
7. Wetlands and surface waters, and
8. Locations where stormwater may discharge to a surface water or MS4

The site map depicting the information listed above can be found in Appendix C. Best Management Practices Details are provided in Appendix D.

2.2 Nature of Construction

Describe the nature of the construction activities:

On the behalf of FPL, Overland Contracting Inc. (OCI) and its subconsultant Giannetti, plan to construct a 42-inch, 8-mile-long reclaimed water pipeline between SDWWTP and the FPL CWRC. Giannetti will be responsible for installing, maintaining, and removing (when appropriate) BMPs and overall implementation of this plan. OCI will be responsible for conducting inspections.

The pipeline will be constructed within a 60-foot-wide temporary construction corridor and limited additional workspace for horizontal directional drill (HDD) crossings.

Wetland impacts are permitted through the FDEP and U.S. Army Corps of Engineers (USACE) and include 0.40 acre of permanent impacts to existing jurisdictional dwarf mangrove scrub-shrub wetlands for the placement of clean fill for access manholes, isolation valves, and air release valves and a total of approximately 40.52 acres of temporary impacts to jurisdictional mangrove wetland associated with temporary trench excavation and construction matting and access areas. The approximate distance for trenching is 6.93 miles and HDD for a total of 1.27 miles.

Soil-disturbing activities will include creation of temporary construction entrances, clearing and grubbing, installation of erosion and sediment control measures, topsoil stripping and segregation, open-cut trenching, temporary trench dewatering, pipe installation, and immediate restoration. All waterbodies will be crossed using HDD.

Dewatering Approach
Dewatering will be completed incrementally, as needed, and continuously advance along the open-cut trench excavation and pipe installation at a rate of approximately 200 feet per day. The 200-foot daily pipe installations will be accomplished by continuously advancing approximately 30-foot open-cut trench sections along the path of the proposed waterline. As dewatering operations progress, up to three (3) 8- or 10-inch vacuum/sump pumps will be used for dewatering operations. The pumps will be continuously advanced forward along the planned pipe alignment as the trenching process continues and as the pipe sections are being installed. The length of the pipeline installed each day and open excavated trench segments may vary based on field conditions.

The proposed open-cut trenches will be excavated down to a depth of 9 feet and at a width of 10 feet. Continuously advancing trench segments will be maintained as field conditions allow. A temporary stockpile will be set up an appropriate distance away from the trench for soil storage. Following pipe installation, the open-cut trenches will be backfilled and compacted to original grade with previously excavated native soil and materials, as shown in the Dewatering Profile in Giannetti's Dewatering Plan (Appendix E).

HDDs will be utilized where the proposed waterline must cross existing canals. It is assumed that dewatering is not needed for HDD methods.

The dewatered volume will be pumped into nearby secondary trenches adjacent to the reclaimed

waterline. The secondary trench will be a swale and is proposed to have dimensions of up to 1,000 feet long, 4 feet wide, and 3 feet deep. It will run parallel to the reclaimed waterline. The length of the secondary trench may vary based on field conditions. Secondary trenches may be placed in forward or lagging locations along the radius of influence but staying within the ROW to minimize any detrimental effects to dewatering. Another 8- to 10-inch pump will be used to pump water from the secondary trench to a series of minimum four (4) 21,000-gallon baker/frac tanks. It is assumed that a minimum of four (4) 21,000-gallon frac tanks may be used along the project for sediment settlement; however, additional tanks may be added as needed. Frac tanks will incorporate baffles to enhance water treatment. From the frac tanks, the settled, treated water is proposed to be discharged into proposed temporary injection wells located along the reclaimed waterline. These injection wells shall be 2 feet in diameter and up to 80 feet deep. See Dewatering Plan (Appendix E) for location of deep injection wells and other dewatering information.

2.3 Construction Sequence

Describe the intended sequence of major soil disturbing activities:

<u>Pipeline</u>

The general sequence of pipeline construction activities will include the following. Note, the pipeline will be constructed in segments to limit the amount of disturbed ground at any point in time. See dewatering section above for details of segment lengths.

1. Survey the limits of the construction site.
2. Install temporary sediment controls measures and sediment tracking devices, where necessary to prevent sediment from leaving the workspace.
3. Prepare the site for construction activities.
4. Clear and remove any vegetation, where permitted.
5. Strip and stockpile topsoil for reuse.
6. Grade site.
7. String pipe along the ROW.
8. Excavate trench (topsoil segregated from subsoil).
9. Dewater pipeline in segments.
10. Lower the pipe into the trench.
11. Backfill the trench with the excavated spoil material.
12. Re-grade the ROW to pre-construction contours with topsoil to allow pre-construction vegetation community to re-establish.
13. Clean-up and remove excess materials and debris.
14. Complete final site stabilization and remove any remaining temporary erosion and sediment control measures.

2.4 Disturbance Area

Total area of the project area:	Approximately 61 acres
Total area of the site to be disturbed:	Approximately 61 acres

2.5 Soils and Stormwater Quality

Existing data describing the soil or quality of any stormwater discharge from the site:

According to the U.S. Department of Agriculture Soil Conservation Service, Dade County, Florida Soil Survey data, soils mapped within the water pipeline corridor include:

Map unit symbol	***Map unit name***	***Drainage Class***
3	*Shark Valley muck, 0 to 1 percent slopes, frequently flooded*	*Very poorly drained*
6	*Perrine marly silt loam, drained, 0 to 1 percent slopes*	*Very poorly drained*
9	*Udorthents-Water-Urban land complex, 0 to 60 percent slopes*	*Well drained*
15	*Urban land, 0 to 2 percent slopes*	---
16	*Biscayne marly silt loam, drained, 0 to 1 percent slopes*	*Very poorly drained*
31	*Trout Cove marly silt loam, tidal, 0 to 1 percent slopes*	*Very poorly drained*
32	*Keylargo muck, tidal, 0 to 1 percent slopes*	*Very poorly drained*

Surface waters will be sampled at all impacted locations prior to work to establish background levels. Stormwater discharge to offsite sources will be maintained below 29 NTU against background.

2.6 Drainage Areas and Discharge Locations

Estimate the drainage area in size for each discharge point:	*Not applicable for this project scope. No point discharges are proposed.*

Latitude and longitude of each discharge point and identify the receiving water or MS4 for each discharge point:

Not applicable, no point discharges for construction stormwater are proposed. The construction ROW traverses six drainage basins including:

- *C1-East*
- *Goulds Canal*
- *C-102 East*
- *BD-C103 East*
- *North Canal*
- *DA-4*

Water from construction dewatering activities will be pumped to a secondary trench and then a frac-tank for sediment settling prior to being discharged into a deep injection well, within the construction ROW. See Appendix E for dewatering details including locations of deep injection wells.

3.0 Best Management Practices

Give a detailed description of all controls, Best Management Practices (BMPs) and measures that will be implemented at the construction site for each activity identified in the intended sequence of major soil disturbing activities section. Provide time frames in which the control will be implemented. NOTE: All controls shall be consistent with performance standards for erosion and sediment control and stormwater treatment set forth in s. 62-40.432, F.A.C., the applicable Stormwater or Environmental Resource Permitting requirements of the Department or a Water Management District, and the guidelines contained in the Florida Development Manual: A Guide to Sound Land and Water Management (DEP, 1988) and any subsequent amendments.

3.1 Sediment Erosion Control Measures

Sediment control measures will be installed during construction to prevent runoff-induced migration of sediments. Control measures will include:

- *Silt fence barrier*
- *Soil tracking prevention device*

- *Construction limits will be surveyed and marked by stakes. Highly visible flagging tape will mark the boundaries of sensitive resource areas, waterbodies, wetlands, or areas with special requirements.*
- *Prior to initial site preparation, temporary sediment controls, such as silt fencing will be in installed where needed to protect adjacent sensitive resources (e.g., wetlands, waterbodies, etc.).*
- *Throughout all construction phases, erosion/sediment controls will be routinely inspected and maintained according to manufacturer specifications.*
- *Grading will be performed in a manner to minimize interference with existing natural drainage.*
- *During trenching, temporarily excavated soils will be stored in spoil piles within the construction ROW; the piles will be stabilized using sediment barriers, temporary seeding, mulch, or functional equivalents, where necessary.*
- *Trench dewatering (see Dewatering Plan in Appendix E for details of dewatering methods and BMPs).*
- *When backfilling, verify soils are not compacted greater than pre-construction conditions to allow for successful re-vegetation.*
- *As soon as possible after backfilling, grade the construction ROW to restore pre-construction contours and replace topsoil.*
- *Once all construction and restoration activities have been completed, construction ROW will be reseeded or re-stabilized, and temporary sediment controls will remain until vegetation growth has reached 70% cover or pre-construction vegetation coverage.*
- *No pesticides or herbicides will be used within 100 feet of a waterbody except as allowed by the FDEP.*
- *Remove and properly dispose of all construction debris.*

HDD Specific Measures

All waterbody crossings will be performed using HDD. The CWRC HDD Contingency Plan is provided as Appendix F.

Measures to Contain a Release of Drilling Fluid in a Wetland or Waterbody:

- *Install silt fence barrier around HDD entry and exit work.*
- *Have deployable turbidity booms available onsite during waterbody crossings.*
- *Have access to a wetland scientist within a two-hour drive to assess impacts and make recommendations to mitigate impacts if they occur.*
- *A sample of the drilling slurry will be collected and held for future analysis in the event that an analysis is requested by regulatory agencies.*
- *If an inadvertent release of drilling fluid occurs within a wetland, waterbody or sensitive area, appropriate regulatory agencies will be contacted in accordance with applicable regulations and requirements. Drilling fluid pressure will be reduced and operations will be suspended to assess the extent of the release and to implement necessary corrective actions.*
- *Inspection will be initiated to determine the potential movement of released drilling mud within the wetland or waterbody.*
- *The Project's drilling contractor will determine and implement modifications to the drilling technique or composition of drilling fluid (e.g., thickening of mud by increasing bentonite content) as appropriate to minimize or prevent further releases of drilling mud.*
- *The release will be evaluated to determine if containment structures, such as sediment barriers or erosion controls, are warranted and can effectively contain the release. When making this determination, the potential that placement of containment structures will cause additional adverse environmental impacts will also be considered.*
- *If accessible, the Project contractor will clean up and remove all drilling fluid from the site and dispose of it in accordance with the applicable regulations.*
- *Upon completion of the drilling operations, applicable regulatory agencies will be consulted to determine any final cleanup requirements for the inadvertent release.*

Measures to Contain a Release of Drilling Fluid on Land:

- *If a land release is detected, corrective action will be taken to contain and recover the release.*
- *If public health and safety are threatened by an inadvertent release, drilling operations will be shut down until the threat is effectively addressed or eliminated.*
- *The project's drilling contractor will determine and implement modifications to the drilling technique or composition of drilling fluid (e.g., thickening of mud by increasing bentonite content) as appropriate to minimize or prevent further releases of drilling mud.*

3.2 Stabilization Measures

Describe all temporary and permanent stabilization practices. Stabilization practices include temporary seeding, mulching, permanent seeding, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, vegetative preservations, etc.

Disturbed areas that would allow for offsite discharge will be stabilized within 7 days after construction activity has temporarily or permanently ceased, except when construction will resume within 21 days within that area. Stabilization practices may include seeding, mulching, sodding, or hydroseeding. Soil will be tested to determine the appropriate seed mix and application rates. Temporary access facilities (construction parking or staging areas, equipment laydown areas) will be surfaced with aggregate to reduce sediment tracking.

Permanent stabilization measures consist of restoring the construction ROW and other workspaces to preconstruction contours and preconstruction vegetation cover (through seeding in uplands and natural revegetation in wetlands).

3.3 Structural Controls

Describe all structural controls to be implemented to divert stormwater flow from exposed soils and structural practices to store flows, retain sediment on-site or in any other way limit stormwater runoff. These controls include silt fences, earth dikes, diversions, swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, coagulating agents and temporary or permanent sediment basins.

Silt fence barriers will be used as a structural control to prevent violations of water quality or offsite sedimentation, divert flows from exposed soils, store flows, retain sediment on site, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. See Appendix D for Silt Fence Barrier BMP, including installation and maintenance details.

Describe all sediment basins to be implemented for areas that will disturb 10 or more acres at one time. The sediment basins (or an equivalent alternative) should be able to provide 3,600 cubic feet of storage for each acre drained. Temporary sediment basins (or an equivalent alternative) are recommended for drainage areas under 10 acres.

Stormwater basins will not be used. Construction of the pipeline will occur in discrete sections; there will not be 10 acres of disturbed area at any one time.

Describe all permanent stormwater management controls such as, but not limited to, detention or retention systems or vegetated swales that will be installed during the construction process.

Permanent stormwater controls are not proposed.

4.0 Potential Pollutants

Describe in detail controls for the following potential pollutants:	
Waste disposal, this may include construction debris, chemicals, litter, and sanitary wastes:	*The contractor will maintain regulated waste disposal procedures associated with the construction activities. All construction materials and debris will be placed in a dumpster and hauled off-site to a landfill or other regulated disposal site. No materials may be buried on-site.* *<u>Sanitary Waste</u>* *A licensed sanitary waste company will collect all sanitary waste from potable units within the regulated time frame as required by local regulations. Port-o-lets will be placed away from storm sewer systems, storm inlets, surface waters, and wetlands.* *<u>Equipment and Concrete Truck Wash Areas</u>* *Large equipment and concrete trucks will be allowed to discharge wash water in the off-site laydown yard in such a manner that prevents contact with stormwater discharged from the site. A proper lined concrete washout structure will be used to collect concrete wash water. A small, vegetated berm will be constructed to contain other types of equipment wash waters. Materials collected in such areas will be disposed of in an acceptable manner.*
Offsite vehicle tracking from construction entrances/exits:	*The vehicle tracking of sediment will be reduced by installing stabilized construction road aprons. Public roads and construction access roads will be routinely inspected for excess sediment tracking, and if necessary, will be cleaned to remove excess mud, dirt, or rock tracked from the construction site.*
The proper application rates of all fertilizers, herbicides and pesticides used at the construction site:	*In the event fertilizers, herbicides and pesticides are required on the construction side, they will be applied by a State licensed applicator. Fertilizers are only to be applied at the minimum rate recommended by the manufacturer to establish and maintain vegetation.*

The storage, application, generation and migration of all toxic substances:	*No toxic substances are anticipated to be used during construction. If any toxic substances will be used, then they will be stored and handled according to their Safety Data Sheets (SDS). All toxic substance containers will be tightly sealed and properly stored to prevent leaks or spills. Storage will be in a rain protected facility. Unused paints, cleaners, or other toxic substance will be disposed of according to local and/or state regulations, or manufacturer's recommendations. All construction personnel will be instructed regarding the correct procedure for hazardous waste handling and disposal. The Construction Site Manager will be responsible for overall compliance with these procedures.*
Other:	*Test for levels of impairment performed as required by FDEP, DERM and SFWMD requirements. Analytical results shall be reviewed for compliance with these requirements. Copies of the results to be kept with the stormwater management plan.* *Section 4.0 of the SWPPP will be revised in the even that additional potential pollutants are brought to site.*

5.0 Inspections & Maintenance

Provide a detailed description of the maintenance plan for all structural and non-structural controls to assure that they remain in good and effective operating condition.

The inspection and maintenance practices that will be used to maintain erosion and sediment controls at the project area are listed below. The Stormwater Management System Weekly Inspection Form, included as Appendix G of this plan, addresses items for weekly inspection. Documentation will be retained onsite for the duration of the construction project.

- *Sediment controls will be installed at all locations as shown on SWPPP Plans. These control measures will be inspected and maintained in good working condition.*
- *All control measures will be inspected at least once each week and following any storm event of 0.50 inch or greater.*
- *All control measures will be maintained in good working order; if a repair is necessary, it will be initiated within 24 hours of report and completed within 7 days.*
- *Captured sediment will be removed from sediment barriers when it has reached one-third the height of the barrier.*
- *Silt fence will be inspected for depth of sediment, tears, to verify the fabric is securely attached to the fence posts, and to see that the fence posts are firmly trenched in the ground.*
- *Sod, temporary and permanent seeding, and plantings will be inspected for bare spots, washouts, and unhealthy growth.*
- *The Construction Site Manager will designate one or more individuals, as needed, to be responsible for inspections, maintenance, repair, and reporting activities. The selected personnel will receive instruction from the Site Manager or qualified designee.*

A signed copy of this Plan and any supporting materials must be maintained at the Project site from the date of project initiation to the date of final stabilization. All records and supporting documents will be compiled in an orderly manner and maintained for a period of three years following final site stabilization.

The generation of reports, as part of the construction process and inspection or amendment procedures, provides accurate records that can be used to evaluate the effectiveness of this Plan, and document compliance with the regulatory requirements. Changes in design or construction of the stormwater management system must be documented and included with the Plan to facilitate Plan review or evaluation

Inspections: Describe the inspection and inspection documentation procedures, as required by Part V.D.4. of the permit. Inspections must occur at least once a week and within 24 hours of the end of a storm event that is 0.50 inches or greater (see attached form).

- *The Environmental Inspector will conduct inspections of BMPs including sediment erosion control measures at least once each week and following any storm event of 0.50 inch or greater.*
- *Inspections will be recorded on inspection log (Appendix G) that will be certified by responsible authority.*
- *Inspection logs will remain onsite through construction for review by FPL or FDEP.*

Identify and describe all sources of non-stormwater discharges as allowed in Part IV.A.3. of the permit. Flows from fire-fighting activities do not have to be listed or described.

It is expected that the following non-stormwater discharges will occur onsite during the construction period:

- *Water pipeline flushings.*
- *Pavement wash waters (where no spills or leaks of toxic or hazardous materials have occurred).*
- *Vehicle and building wash waters (where no detergents have been used).*
- *Water for dust control.*
- *Firefighting waters; fire hydrant flushings.*
- *Vegetation watering; irrigation drainage.*
- *Potable water discharges.*
- *Air conditioning condensate.*

***Waters from hydrostatic testing of new water lines, gas lines, and tank flushings will be discharged to the stormwater detention pond. During these activities the storm water pond level will be monitored to assure there is no overtopping of the pond embankment.*

Appendix A. Florida Generic Permit

Appendix B. Notice of Intent

Appendix C. Site Map

Appendix D. Best Management Practice Details

Appendix E. Dewatering Plan for Giannetti Corporation FPL CWRC Project – Reclaimed Water Pipeline

Note: Submittal #1 included. To be amended as additional submittals are issued.

Appendix F. HDD Contingency Plan

Appendix G. FDEP Inspection Forms

Appendix H. Corrective Actions Log

Appendix I. Training Log

Appendix J. Record of SWPPP Revisions

Appendix K. Delegation of Authority

ATTACHMENT D

STATE OF FLORIDA

DEPARTMENT

OF

ENVIRONMENTAL PROTECTION

Conditions of Certification

Florida Power & Light Company

Turkey Point Clean Energy Center
Units 3 and 4 Nuclear Power Plant
Unit 5 Combined Cycle Plant

PA 03-45G

1/24/2022

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SECTION A: GENERAL CONDITIONS

These General Conditions shall be applicable to all areas of the certified site. Compliance with the General Conditions shall be the joint responsibility of Florida Power & Light Company (FPL) Turkey Point Clean Energy Center Nuclear Plant (Units 3 & 4) and Fossil Fuel Plant (Unit 5). Any violation of a General Condition shall be a violation by FPL.

I. SCOPE

A. Pursuant to the Florida Electrical Power Plant Siting Act (PPSA), Sections 403.501-.518, Florida Statutes (F.S.), and Chapter 62-17, Florida Administrative Code (F.A.C.), this Certification is issued to FPL as owner/operator and Licensee of the Turkey Point Clean Energy Center Units 3-5. The Department recognizes that Nuclear Units 3 & 4 and Fossil Unit 5 are under the control of different divisions of FPL. Unless otherwise specified, FPL shall be responsible for the compliance with the conditions herein. Violation of any conditions specific to Units 3, 4, or 5 shall solely affect the license of the responsible generating units. Subject to the requirements contained in these Conditions of Certification (Conditions), FPL will construct, operate, and maintain a nominal 1,150 megawatt (MW) facility (Unit 5) consisting of four 170 MW natural gas fired combustion turbines with light oil as back-up fuel, four heat recovery steam generators and one 470 MW steam turbine, and one nuclear plant consisting of two nominal 800 MW pressurized water reactors (Units 3 and 4), and Associated facilities as described in the Site Certification Application(s) (SCA). The electric generating units are located on an existing 11,000-acre site at 9700 S.W. 344 Street, Homestead, in Miami-Dade County, Florida. Unit 5 is located on approximately 90 acres and Units 3 & 4 are located on approximately 30 acres of the existing site. The UTM coordinates are: Zone 17, 567.2 km East and 2813.2 km North; Latitude: 25° 26' 09" North and Longitude: 80° 19' 52" West.

B. The certified facility includes but is not limited to the following major associated facilities:

- Unit 5 – Fossil Plant
    - Four combustion turbines
    - Four heat recovery steam generators
    - One steam turbine/electric generator to create four-on-one combined cycle unit
    - Emergency Diesel engines, generator engines, and emergency generators
    - Diesel Fire pump
    - Switchyard/substation
    - Stormwater pond
    - Cooling tower
    - Oil tanks
    - Demineralized water treatment plant
    - Administrative and storage buildings
    - Storage tanks
    - Reclaimed water treatment facility (Clean Water Recovery Center – CWRC)
    - Reclaimed waterline
    - Floridan production wells (PW-1 through PW-4)

- Units 3 & 4 – Nuclear Plant
    - Containment building
        - Two pressurized water reactors
        - Steam generators
        - Reactor coolant pumps
    - Turbine Generator building
    - Auxiliary building
        - Waste management facilities
        - Safety components
    - Fuel handling building
        - Spent fuel storage
        - New fuel storage
    - Administrative and storage buildings
    - Switchyard
    - Demineralized water treatment plant
    - Floridan production wells F-1 through F-7

C. These Conditions, unless specifically amended or modified, are binding upon the Licensee and shall apply to the construction, operation, and maintenance of the certified facility. If a conflict should occur between the design criteria of this certified facility and the Conditions, the Conditions shall prevail unless amended or modified. In any conflict between any of these Conditions, the more specific condition governs.

D. Within 60 days after completion of construction of the electrical power plant as defined by Section 403.503(14), F.S., but excluding off-site linear and non-linear Associated facilities, the Licensee shall provide to the Department in .pdf format: a survey map signed by a professional land surveyor, or acceptable equivalent documentation such as an official legal description, delineating the boundaries of the site as defined by Section 403.503(28), F.S., and an aerial photograph delineating the boundaries of the site. The survey map and aerial photograph shall be labelled as the "Site Delineation Map" and attached hereto as part of Attachment A.

E. The Licensee shall notify the Department of any change to the site boundary depicted in the Site Delineation Map in Attachment A. The notification shall be accompanied by an updated survey map or legal description and aerial photograph delineating the new boundaries of the site for review by the Department. Such changes may constitute a modification and may require additional land use and zoning reviews by the local government. If a modification is required, it will be processed pursuant to Section 403.516, F.S.

F. If both certified and uncertified facilities lie within the boundaries of the site, the Licensee shall also comply with the requirements of this paragraph. Within 60 days after completion of construction of the plant and on-site associated facilities, but excluding off-site linear and non-linear associated facilities, the Licensee shall provide to the Department in .pdf format acceptable documentation identifying the certified and non-certified facilities within the site such as an aerial photograph. Certified facilities identified within the site shall include both the certified electrical power plant's generating and its on-site certified associated facilities (including on-site linear facilities) as defined by Section 403.503(7), F.S. The document shall be

labelled as the "Certified Facilities Identification Map" and attached hereto as part of Attachment A.

G. Within 120 days after completion of construction of any certified off-site non-linear associated facilities, the Licensee shall provide to the Department in .pdf format; a survey map signed by a professional land surveyor, or acceptable equivalent documentation such as an official legal description, delineating the site boundaries for each off-site non-linear associated facility. The survey map or other documents shall be labelled as the "Delineation of the Boundaries of the Certified Off-Site Non-Linear Facilities" and attached hereto as part of Attachment A.

H. Within 180 days after completion of construction of any new off-site linear associated facilities, as defined in Section 403.503(7), F.S., the Licensee shall provide; an aerial photograph or map at a scale of at least 1:400, or acceptable equivalent documentation such as an official legal description or survey map signed by a professional land surveyor, delineating the boundaries of the certified site for the linear associated facilities, following acquisition of all necessary property interests and the corridor narrowing as described in Section 403.503(11), F.S. These documents shall be labelled as the "Delineation of Certified Off-Site Linear Facilities" and attached as part of Attachment A.

I. Following any post-certification approvals that require a change to the boundaries of the certified facilities depicted in the Delineation of Certified Off-Site Linear Facilities in Attachment A, the Licensee shall submit an updated aerial photograph, map, survey map, or legal description.

[Sections 403.511, 403.5113, F.S.; Rules 62-4.160(1), (2), and 62-17.205(2), F.A.C.]

II. APPLICABLE DEPARTMENT RULES

The construction, operation, and maintenance of the certified facility shall be in accordance with all applicable non-procedural provisions of Florida Statutes and Florida Administrative Code, including, but not limited to, the applicable non-procedural portions of the following Department regulations, except to the extent a variance, exception, exemption, or other relief is granted in the final order of certification or in a subsequent modification to the Conditions, or under a federal permit, or as otherwise provided under Chapter 403, F.S.:

Florida Administrative Code:
18-2 (Management of Uplands Vested in the Board of Trustees)
18-14 (Administrative Fines for Damaging State Lands)
18-20 (Florida Aquatic Preserves)
18-21 (Sovereignty Submerged Lands Management)
62-4 (Permits)
62-6 (Standards for Onsite Sewage Treatment And Disposal Systems)
62-17 (Electrical Power Plant Siting)
62-40 (Water Resource Implementation Rule)
62-150 (Hazardous Substance Release Notification)
62-160 (Quality Assurance)
62-204 (Air Pollution Control-General Provisions)
62-210 (Stationary Sources-General Requirements)
62-212 (Stationary Sources-Preconstruction Review)

62-213 (Operation Permits for Major Sources of Air Pollution)
62-256 (Open Burning)
62-296 (Stationary Sources-Emission Standards)
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62-302 (Surface Water Quality Standards)
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62-304 (Total Maximum Daily Loads)
62-330 (Environmental Resource Permitting)
62-340 (Delineation of the Landward Extent of Wetlands and Surface Waters)
62-342 (Mitigation Banks)
62-345 (Uniform Mitigation Assessment Method)
62-520 (Ground Water Classes, Standards, and Exemptions)
62-528 (Underground Injection Control)
62-531 (Water Well Contractor Licensing Requirements)
62-532 (Water Well Permitting and Construction Requirements)
62-550 (Drinking Water Standards, Monitoring, and Reporting)
62-555 (Permitting, Construction, Operation, and Maintenance of Public Water Systems)
62-560 (Requirements for Public Water Systems That Are Out of Compliance)
62-600 (Domestic Wastewater Facilities)
62-604 (Collection Systems and Transmission Facilities)
62-610 (Reuse of Reclaimed Water and Land Application)
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62-780 (Contaminated Site Cleanup Criteria)
62-814 (Electric and Magnetic Fields)

III. REVISIONS TO DEPARTMENT STATUTES AND RULES

A. The Licensee shall comply with rules adopted by the Department subsequent to the issuance of the Certification under the PPSA which prescribe new or stricter criteria, to the extent that the rules are applicable to electrical power plants. Except when a variance, exception,

exemption, or other relief has been granted, subsequently adopted Department rules which prescribe new or stricter criteria shall operate as automatic modifications to this Certification.

B. Upon written notification to the Department, the Licensee may choose to operate the certified electrical power plant in compliance with any rule subsequently adopted by the Department which prescribes criteria more lenient than the criteria required by the terms and conditions in the Certification which are not site-specific.

[Sections 403.511(5)(a) and (b), F.S.; Rule 62-4.160(10), F.A.C.]

IV. DEFINITIONS

Unless otherwise indicated herein, the meaning of terms used herein shall be governed by the applicable definitions contained in Chapters 253, 373, 379, and 403, F.S., and any regulation adopted pursuant thereto. In the event of any dispute over the meaning of a term used in these Conditions which is not defined in such statutes or regulations, such dispute shall be resolved by reference to the most relevant definitions contained in any other state or federal statute or regulation, or in the alternative, by the use of the commonly accepted meaning. As used herein, the following shall apply:

A. "Application" or "SCA" is defined in Section 403.503(6), F.S. For purposes of this license, "Application" shall also include materials submitted for post-certification amendments and petitions for modification to the Conditions of Certification, as well as supplemental applications.

B. "Associated facility" or "associated facilities" as defined by Section 403.503(7), F.S.

C. "Certified facility" or "certified facilities" means the certified electrical power generation facilities and all certified on- or off-site associated facilities and structures identified or described in the Application, in the final order of certification, or in a post-certification amendment or modification.

D. "DEO" means the Florida Department of Economic Opportunity.

E. "DEM" shall mean the Florida Division of Emergency Management.

F. "DEP" or "Department" means the Florida Department of Environmental Protection.

G. "DERM" shall mean the Department of Regulatory and Economic Resources Division of Environmental Resources Management of Miami-Dade County, Florida.

G. "DHR" means the Florida Department of State, Division of Historical Resources.

H. "DOT" means the Florida Department of Transportation.

I. "Emergency conditions" or "Emergency reporting" means urgent circumstances involving potential adverse consequences to human life or property as a result of weather conditions or other calamity.

J. "Feasible" or "Practicable" means reasonably achievable considering a balance of land use impacts, environmental impacts, engineering constraints, and costs.

K. "FWC" means the Florida Fish and Wildlife Conservation Commission.

L. "Licensee" means an applicant that has obtained a certification order for the subject project.

M. "NED, NWD, CD, SED, SWD, SD" shall mean the Northeast, Northwest, Central, Southeast, Southwest, and South DEP district offices, respectively.

N. "NRC" shall mean the United States Nuclear Regulatory Commission

O. "NWF, SR, SJR, SWF, or SFWMD" means the Northwest Florida, Suwannee River, St. Johns River, Southwest Florida, or South Florida Water Management District, respectively.

P. "Post-certification submittal" shall mean a submittal made by the Licensee pursuant to a Condition of certification.

Q. "Right-of-Way" or "ROW" is defined in Section 403.503(27), F.S.

R. "SCA" means the Site certification Application (i.e., the Application(s))

S. "SCO" means the Department's Siting Coordination Office.

T. "Site" is defined in Section 403.503(28), F.S.

U. "State Water Quality Standards" shall mean the numerical and narrative criteria applied to specific water uses or classifications set forth in Chapters 62-302 and 62-520, F.A.C.

V. "Surface Water Management System", "SWMS", or "System" means a stormwater management system, dam, impoundment, reservoir, appurtenant work, or works, or any combination thereof. The terms "surface water management system", "SWMS", or "system" include areas of dredging or filling, as those terms are defined in Sections 373.403(13) and (14), F.S.

W. "WASD" shall mean the Water and Sewer Department of Miami-Dade County, Florida.

X. "Wetlands" shall mean those areas meeting the definition set forth in Section 373.019(27), F.S., as delineated pursuant to Chapter 62-340, F.A.C.

V. FEDERALLY DELEGATED OR APPROVED PERMIT PROGRAMS

Subject to the Conditions set forth herein, this certification shall constitute the sole license of the state and any agency as to the approval of the location of the site and any Associated facility and the construction and operation of the electrical power plant, except for the issuance of Department Licenses required under any federally delegated or approved permit program. This certification is not a waiver of any other Department approval that may be required under federally delegated or approved programs. In the event of a conflict between the certification process and federally required procedures, the applicable federal requirements shall control.

[Sections 403.5055, 403.508(8), and 403.511(1), F.S.]

VI. DESIGN AND PERFORMANCE CRITERIA

Certification, including these conditions, is predicated upon preliminary designs, concepts, and performance criteria described in the SCA or in testimony and exhibits in support of certification. The final engineering design of the certified facilities will be consistent and in

substantial compliance with the preliminary information described in the SCA or as explained at the certification hearing (if any). Conformance to those criteria, unless specifically modified in accordance with Sections 403.516, F.S., and Rule 62-17.211, F.A.C., is binding upon the Licensee in the design, construction, operation, and maintenance of the certified facility.

[Sections 403.511(2)(a), 403.516, F.S.; Rules 62-4.160(2), and 62-17.211, F.A.C.]

VII. NOTIFICATION

A. If, for any reason, the Licensee does not comply with or will be unable to comply with any condition or limitation specified in this License, the Licensee shall provide the DEP District Office with the following information:

1. A description of and cause of noncompliance; and

2. The period of noncompliance, including dates and times; or, if not corrected, the anticipated time the noncompliance is expected to continue, and steps being taken to reduce, eliminate, and prevent recurrence of the noncompliance. The Licensee shall be responsible for any and all damages which may result and may be subject to enforcement action by the Department for penalties or for revocation of this certification.

3. All notifications which are made in writing shall additionally be provided to the SCO via email to SCO@dep.state.fl.us.

[Rule 62-4.160(8), F.A.C.]

B. The Licensee shall promptly notify the SCO in writing (email acceptable) of any previously submitted information concerning the certified facility that is later discovered to be inaccurate.

[Rule 62-4.160(15), F.A.C.]

C. Any owner or operator of a facility who has knowledge of any incident reportable to the State Watch Office regarding a certified facility shall notify the State Watch Office at (800) 320-0519 as soon as possible, but not later than 24 hours after discovery of the incident.

D. Any owner or operator of a facility who has knowledge of any reportable pollution release shall submit a Public Notice of Pollution by following the instructions at https://prodenv.dep.state.fl.us/DepPNP/user/pnpRequest, as soon as possible, but not later than 24 hours after discovery of the release.

[Section 403.077, F.S.]

E. Within 60 days after certification of a linear Associated facility the Licensee shall file a notice of the certified route with the Department's clerk (Office of General Counsel) and the clerk of the circuit court for each county through which the corridor will pass.

The notice shall consist of maps or aerial photographs in the scale of 1:24,000 which clearly show the location of the certified route and shall state that the certification of the corridor will result in the acquisition of rights-of-way within the corridor.

[Section 403.5112, F.S.]

VIII. EMERGENCY CONDITION NOTIFICATION AND RESTORATION

If the Licensee is temporarily unable to comply with any of the conditions of the License due to breakdown of equipment or destruction by hazard of fire, wind, or other cause, such as an emergency as defined by Sections 252.34(4), (7), (8), or (10), F.S., the Licensee shall immediately notify the Department. Notification shall include pertinent information as to the cause of the problem, and what steps are being taken to correct the problem and to prevent its recurrence, and where applicable, the owner's intent toward reconstruction of destroyed facilities. Such notification does not release the Licensee from any liability for failure to comply with Department rules. Any exceedances and/or violations recorded during emergency conditions shall be reported as such, but the Department acknowledges that it intends to use its enforcement discretion during this timeframe. This acknowledgement by the Department does not constitute a waiver or variance from any requirements of any federal permit. Relief from any federal agency must be separately sought.

[Rule 62-4.130, F.A.C.]

IX. CONSTRUCTION PRACTICES

A. Local Building Codes

Subject to the conditions set forth herein, this certification constitutes the sole license of the state and any agency as to the approval of the location of the site and any Associated facility and the construction and operation of any certified facility. The Licensee is not required to obtain building permits for certified facilities. However, this certification shall not affect in any way the right of any local government to charge appropriate fees or require that construction of structures used by the electrical power plant that are not an integral part of a generating plant, substation, or control center (such as, office buildings, warehouses, garages, machine shops, and recreational buildings) be in compliance with applicable building construction codes.

[Section 403.511(4), F.S.]

B. Open Burning

Prior to open burning in connection with land clearing, the Licensee shall seek authorization from the Florida Forest Service in accordance with the requirements of Chapters 62-256 and 5I-2, F.A.C.

[Chapters 5I-2 and 62-256, F.A.C.]

C. Vegetation

For areas located in any Florida Department of Transportation (DOT) ROW, Chapter 3.18 of the 2017 Florida DOT *Utility Accommodation Manual* available on the DOT website at https://www.fdot.gov/programmanagement/utilities/default.shtm shall serve as guidelines for best management practices.

D. Existing Underground Utilities

The Licensee must follow all applicable portions of the Underground Facility Damage Prevention and Safety Act, Chapter 556, F.S. The Licensee shall provide the affected local government and the SCO with copies of valid tickets obtained from Sunshine State One

Call of Florida upon request. Tickets shall be available for request until the underground work is completed for the affected area.

[Chapter 556, F.S.]

E. Electric and Magnetic Fields (EMF)

Any transmission lines and electrical substations that are associated facilities shall comply with the applicable requirements of Chapter 62-814, F.A.C.

[Chapter 62-814, F.A.C.]

F. Existing Wells

Any existing wells to be impacted in the path of construction of certified facilities that will no longer be used shall be abandoned by a licensed well contractor. All abandoned wells shall be filled and sealed in accordance with Rule 62-532.500(5), F.A.C., or with the rules of the authorizing agency, or consistent with these Conditions.

[Rules 62-532.400 and 62-532.500(5), F.A.C.]

G. Abandonment of Existing Septic Tanks

Any existing septic tanks that will no longer be used shall be abandoned in accordance with Rule 64E-6.011, F.A.C., unless these Conditions provide otherwise.

[Chapter 64E-6, F.A.C.]

H. Sanitary Wastes

Disposal of sanitary wastes from construction toilet facilities shall be in accordance with applicable regulations of the Department.

[Rule 62-6.0101, F.A.C.]

X. RIGHT OF ENTRY

A. Upon presentation of credentials or other documents as may be required by law, the Licensee shall allow authorized representatives of the Department or other agencies with jurisdiction over a portion of the certified facility, any authorized off-site mitigation/compensation area or Associated facility:

1. At reasonable times, to enter upon the certified facility in order to monitor activities within their respective jurisdictions for purposes of assessing compliance with this certification; or

2. During business hours, to enter the Licensee's premises in which records are required to be kept under this certification; and to have access to and copy any records required to be kept under this certification.

B. When requested by the Department, on its own behalf or on behalf of another agency with regulatory jurisdiction, the Licensee shall within 10 working days, or such longer period as may be mutually agreed upon by the Department and the Licensee, furnish any information required by law, which is needed to determine compliance with the certification.

[Rules 62-4.160(7)(a) and 62-4.160(15), F.A.C.]

XI. DISPUTE RESOLUTION

A. General

If a situation arises in which mutual agreement cannot be reached between the Department and the Licensee, and/or, an agency with substantive regulatory jurisdiction over a matter, the Department may act as a facilitator in an attempt to resolve the issue. If the dispute is not resolved informally in this manner, Licensee may request one or more meetings in which both Licensee and the agency with substantive regulatory jurisdiction over the matter can participate and attempt to resolve the issue informally. If, after such meetings, a mutual agreement cannot be reached between the parties, then the matter shall be referred to the Division of Administrative Hearings (DOAH) for disposition in accordance with the provisions of Chapter 120, F.S. The Licensee or the Department may request DOAH to establish an expedited schedule for processing the dispute. Any filing with DOAH shall state with particularity the specific project and geographic location to which the dispute relates. Work unrelated to the specific project and in areas other than the location to which the dispute relates will not be affected by the dispute.

B. Modifications

If written objections are filed regarding a requested modification, and the objections address only a portion of a requested modification, the Department shall issue a final order approving the portion of the modification to which no objections were filed, unless that portion of the requested modification is substantially related to or necessary to implement the portion to which written objections are filed.

C. Post-certification Submittals

If it is determined, after assessment of a post-certification submittal, that compliance with the Conditions will not be achieved for a particular portion of a submittal, the Department may make a separate assessment of other portions of the submittal, unless those portions of the submittal are substantially related to or necessary to implement that portion for which it has been determined that compliance with the Conditions will not be achieved.

[Section 120.57, F.S.; Rule 62-17.211, F.A.C.]

XII. SEVERABILITY

The provisions of this certification are severable, and if any provision of this certification or the application of any provision of this certification to any circumstance is held invalid, the remainder of the certification or the application of such provision to other circumstances shall not be affected thereby.

XIII. ENFORCEMENT

A. The terms, conditions, requirements, limitations, and restrictions set forth in these Conditions are binding and enforceable pursuant to Sections 403.141, 403.161, 403.514, 403.727, and 403.859 through 403.861, F.S., as applicable. Any noncompliance by the Licensee with these Conditions constitutes a violation of Chapter 403, F.S., and is grounds for enforcement action, which may result in license termination, license revocation, or license revision. The Licensee is placed on notice that the Department may review this certification periodically and may initiate enforcement action for any violation of these Conditions.

B. All records, notes, monitoring data, and other information relating to the construction or operation of the certified facility which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the certified facility and arising under the Florida Statutes or Department rules, subject to the restrictions in Sections 403.111 and 403.73, F.S. During enforcement actions, the retention period for all records will be extended automatically unless otherwise stipulated by the Department. Such evidence shall only be used to the extent it is consistent with the Florida Rules of Civil Procedure and appropriate evidentiary rules.

C. The specific terms of the Fifth Supplemental Agreement and the Revised Plan, referenced in Section B. Condition X. Units 3 & 4 Additional Monitoring of these Conditions of Certification, shall remain enforceable by the SFWMD by the terms of the Fifth Supplemental Agreement.

[Sections 403.121, 403.131, 403.141, 403.151, 403.161, and 403.514, F.S.; Rules 62-4.160(1) and (9), F.A.C.]

XIV. REVOCATION OR SUSPENSION

This certification shall be final unless revised, revoked or suspended pursuant to law. This certification may be suspended or revoked pursuant to Sections 403.512, F.S. This certification is valid only for the specific processes and operations identified in the SCA and approved in the final order of certification or indicated in the testimony and exhibits in support of certification or approved in a subsequent amendment or modification of the certification. Any unauthorized deviation from the approved drawings, exhibits, specifications, or conditions of this approval may constitute grounds for revocation and enforcement action by the Department. Any enforcement action, including suspension and revocation, shall only affect the portion(s) of the certified facility that are the cause of such action, and other portions of the certified facility shall remain unaffected by such action.

[Sections 403.512, F.S.; Rule 62-4.160(2), F.A.C.]

XV. REGULATORY COMPLIANCE

As provided in Sections 403.087(7) and 403.722(5), F.S., except as specifically provided in the final order of certification, a subsequent modification or amendment, or these Conditions, the issuance of this License does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor any infringement of federal, state, or local laws or regulations. This License is not a waiver of or approval of any other Department license or permit that may be required for other aspects of the certified facility that are not addressed in this License. This license does not relieve the Licensee from liability for harm or injury to human health or welfare, animal, or plant life, or public or private property caused by the construction or operation of the certified facility, or from penalties therefore.

[Rules 62-4.160(3) and (5), F.A.C.]

XVI. CIVIL AND CRIMINAL LIABILITY

Except to the extent a variance, exception, exemption, or other relief is granted in a final order of certification, in a subsequent modification to these Conditions, or as otherwise provided under Chapter 403, F.S., this certification does not relieve the Licensee from civil or

criminal penalties for noncompliance with any Condition, applicable rules or regulations of the Department, or any other state statutes or regulations which may apply.

[Sections 403.141, 403.161, and 403.511, F.S.]

XVII. USE OF STATE LANDS

A. Except as specifically provided in the final order of certification or these Conditions, the issuance of this License conveys no title to land or water, does not constitute State recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title.

B. If any portion of the certified facility is located on sovereign submerged lands, state-owned uplands, or within an aquatic preserve, then the Licensee must comply with the applicable portions of Chapters 18-2, 18-20, and 18-21, F.A.C., and Chapters 253 and 258, F.S., except as specifically provided in the final order of certification or these Conditions. If any portion of the certified facility is located on sovereign submerged lands, the Licensee must submit section F of Form 62-330.060(1), *Application for Individual and Conceptual Approval Environmental Resource Permit* (State 404 Program Permit) *and Authorization to Use State-Owned Submerged Lands* to the Department prior to construction. If any portion of the certified facility is located on state-owned uplands, the Licensee must submit an Upland Easement Application to the Department prior to construction.

C. If a portion of the certified facility is located on sovereign submerged lands or state-owned uplands owned by the Board of Trustees of the Internal Improvement Trust Fund, pursuant to Article X, Section 11 of the Florida Constitution, then the proposed activity on such lands requires a proprietary authorization. Under such circumstances, the proposed activity is not exempt from the need to obtain a proprietary authorization. Unless otherwise provided in the final order of certification or these Conditions, the Department has the responsibility to review and take action on requests for proprietary authorization in accordance with Rule 18-2.018 or 18-21.0051, F.A.C.

D. The Licensee is hereby advised that Florida law states: "A person may not commence any excavation, construction, or other activity involving the use of sovereign or other lands of the state, the title to which is vested in the Board of Trustees of the Internal Improvement Trust Fund under this chapter, until the person has received the required lease, license, easement, or other form of consent authorizing the proposed use." Pursuant to Chapter 18-14, F.A.C., if such work is done without consent, or if a person otherwise damages state land or products of state land, the Board of Trustees may levy administrative fines of up to $10,000 per offense.

E. The terms, conditions, and provisions of any required lease or easement issued by the State shall be met. Any construction activity associated with the certified facility shall not commence on sovereign submerged lands or state-owned uplands, title to which is held by the Board of Trustees of the Internal Improvement Trust Fund, until all required lease or easement documents have been executed.

[Chapters 253 and 258, F.S.; Chapters 18-2, 18-14, 18-21, 62-340, and Rules 62-330.060(1) and 62-4.160(4), F.A.C.]

XVIII. PROCEDURAL RIGHTS

Except as specified in Chapter 403, F.S., or Chapter 62-17, F.A.C., no term or condition of certification shall be interpreted to preclude the post-certification exercise by any party of whatever procedural rights it may have under Chapter 120, F.S., including those related to rule-making proceedings.

[Sections 403.511(5)(c), F.S. and Chapter 62-17, F.A.C.]

XIX. AGENCY ADDRESSES FOR POST-CERTIFICATION SUBMITTALS AND NOTICES

Where a Condition requires post-certification submittals and/or notices to be sent to a specific agency, the following agency addresses shall be used unless the Conditions specify otherwise or unless the Licensee and the Department are notified in writing of an agency's change in address for such submittals and notices:

Florida Department of Environmental Protection
Siting Coordination Office, MS 5500
2600 Blair Stone Road
Tallahassee, Florida 32399-3000
SCO@dep.state.fl.us

Florida Department of Environmental Protection
Southeast District Office
3301 Gun Club Road MSC 7210-1
West Palm Beach, Florida 33406

Florida Department of Economic Opportunity
Bureau of Community Planning and Growth
107 East Madison Street
Tallahassee, Florida 32399-2100

Florida Fish & Wildlife Conservation Commission
Conservation Planning Services
620 South Meridian Street, MS 5B5
Tallahassee, Florida 32399-1600
ConservationPlanningServices@myfwc.com

Florida Department of Transportation
District Administration
605 Suwannee Street
Tallahassee, Florida 32399-0450

Florida Department of Agriculture and Consumer Services
Office of General Counsel
407 South Calhoun Street
Tallahassee, Florida 32399-0800

South Florida Water Management District
Office of General Counsel
3301 Gun Club Road
West Palm Beach, Florida 33406
For ROW submittals: rowpermits@sfwmd.gov

Florida Department of State
Division of Historical Resources
500 South Bronough Street
Tallahassee, Florida 32399-0250

Miami-Dade County
Office of General Counsel
111 NW 1st Street
Miami, Florida 33128

[Section 403.511, F.S.]

XX. PROFESSIONAL CERTIFICATION

To ensure protection of public health, safety, and welfare, any construction, modification, or operation of an installation which may be a source of pollution, or of a public drinking water supply, shall be in accordance with sound professional engineering practices pursuant to Chapter 471, F.S.; and all final geological papers or documents involving the practice of the profession of geology shall be in accordance with sound professional geological practices pursuant to Chapter 492, F.S. Where required by Chapter 471 or 492, F.S., applicable portions of amendment requests, petitions for modifications, post certification submittals, and supporting documents which are submitted to the Department for public record shall be signed and sealed by the professional(s) who prepared or approved them.

[Rule 62-4.050, F.A.C.]

XXI. PROCEDURES FOR POST-CERTIFICATION SUBMITTALS

A. Purpose of Submittals

Conditions which provide for the post-certification submittal of information to DEP or other agencies by the Licensee are for the purpose of facilitating the agencies' monitoring of the effects arising from the location of the certified facility and the construction and maintenance of the certified facility. This monitoring is for DEP to assure, in consultation with other agencies with applicable regulatory jurisdiction, continued compliance with these Conditions, without further agency action. A submittal of information or determination of compliance pursuant to a post-certification submittal under this Condition does not provide a point of entry for a third party.

B. Filings

All post-certification submittals of information by Licensee are to be filed with the agency or office that requires the submittal pursuant to these Conditions. The SCO shall be copied on all post-certification submittals in electronic .pdf format (unless other formats are

requested), via email to SCO@dep.state.fl.us. Each submittal shall clearly identify the Certified facility name, PA#, and the Condition number(s) (i.e. Section X, Condition XX.y.(z)) requiring the submittal. As required by Section 403.5113(2), F.S., each post-certification submittal will be reviewed by each agency with regulatory authority over the matters addressed in the submittal on an expedited and priority basis.

[Section 403.5113, F.S.; Rule 62-17.191(3), F.A.C.]

C. Completeness

DEP shall review each post-certification submittal for completeness. This review may include consultation with the other agency(ies) receiving the post-certification submittal with regulatory jurisdiction over the matter addressed in the submittal. DEP's finding of completeness shall specify the area of the certified facility affected and shall not delay further processing of the post-certification submittal for non-affected areas.

If any portion of a post-certification submittal is found to be incomplete, the Licensee shall be so notified. Failure to issue such a notice within 30 days after filing of the submittal shall constitute a finding of completeness. Subsequent findings of incompleteness, if any, shall address only the newly filed information.

[Rule 62-17.191(1)(c)2., F.A.C.]

D. Interagency Meetings

DEP may conduct an interagency meeting with other agencies that received a post-certification submittal. The purpose of such an interagency meeting shall be for the agencies with regulatory jurisdiction over the matters addressed in the post-certification submittal to discuss whether compliance with these Conditions has been provided. Failure of DEP to conduct an interagency meeting or failure of any agency to attend an interagency meeting shall not be grounds for DEP to withhold a determination of compliance with these Conditions nor to delay the timeframes for review established by these Conditions. At DEP's request, a field inspection shall be conducted with the Licensee and the agency representative in conjunction with the interagency meeting.

E. Determination of Compliance

DEP, or applicable regulatory agency in consultation with DEP, shall give written notification within 90 days, to the Licensee and the other agency(ies) to which the post-certification information was submitted of DEP's determination of whether there is demonstration of compliance with these Conditions. If it is determined that compliance with the Conditions has not been provided, the Licensee shall be notified with particularity of the deficiencies and possible corrective measures suggested. Failure to notify Licensee in writing within 90 days of receipt of a complete post-certification submittal shall constitute a determination of compliance. A post-certification compliance review may be the basis for initiating modifications to the relevant Condition or to other related Conditions.

F. Commencement of Construction

If DEP does not object within the time period specified in paragraph E., above, Licensee may begin construction pursuant to the terms of these Conditions and the subsequently submitted construction details.

G. Revisions to Design Previously Reviewed for Compliance

If revisions to site-specific designs occur after submittal, the Licensee shall submit revised plans prior to construction for review in accordance with the post-certification process specified in this Condition.

[Sections 120.569, 373.413, 373.416, 403.511, F.S.; Rules 62-17.191 and 62-17.205, F.A.C.]

XXII. POST-CERTIFICATION SUBMITTAL REQUIREMENTS SUMMARY

Within 90 days after certification, and within 90 days after any subsequent modification or certification, the Licensee shall provide the SCO a complete summary of those post-certification submittals that are identified in these Conditions when due-dates for the information required of the Licensee have been identified. A summary shall be provided as a separate document for each transmission line, if any. Such submittals shall include, but are not limited to, monitoring reports, management plans, wildlife surveys, etc. The summary shall be provided to the SCO, in a sortable spreadsheet, electronically, in the format shown below or equivalent. For subsequent modifications and certifications, a "Post-Certification Submittal Requirements Summary" shall be required only for new or altered post-certification requirements.

Condition Number	Requirement and Timeframe	Due Date	Name of Agency or Agency Subunit to whom the submittal is required to be provided

[Section 403.5113, F.S.; Rule 62-17.191(3), F.A.C.]

XXIII. POST-CERTIFICATION AMENDMENTS

If, subsequent to certification, the Licensee proposes any material change to the SCA and revisions or amendments thereto, as certified, the Licensee shall submit a written request for amendment and a description of the proposed change to the SCA to the Department. Within 30 days after the receipt of a complete request for an amendment, the Department shall determine whether the proposed change to the SCA requires a modification to the Conditions.

A. If the Department concludes that the change would not require a modification to the Conditions, the Department shall provide written notification of the approval of the proposed amendment to the Licensee, all agencies, and all other parties to the certification.

B. If the Department concludes that the change would require a modification to the Conditions, the Department shall provide written notification to the Licensee that the proposed change to the SCA requires a request for modification pursuant to Section 403.516, F.S.

[Section 403.5113, F.S.]

XXIV. MODIFICATION OF CERTIFICATION

A. Pursuant to Sections 403.516(1)(a), F.S., and Rule 62-17.211, F.A.C., the Siting Board hereby delegates the authority to the Secretary of the Department of Environmental Protection who further delegates to the Siting Office the authority to modify, after notice and receipt of no objection by a party to the certification within 45 days after notice by mail to the party's last address of record, and if no other person whose substantial interests will be affected by the modification objects in writing within 30 days of public notice.

B. The Department may modify Conditions, in accordance with Section 403.516(1)(b), F.S., which are inconsistent with the terms of any subsequent and separately issued DEP permits, permit amendments, permit modifications, or permit renewals under a federally delegated or federally approved permit program. Such modification may be made without further notice if the matter has been previously noticed under the requirements for any federally delegated or approved permit program.

C. The Secretary of the Department may modify any condition of this certification except those pertaining to a change in fuel.

D. The Secretary of the Department may modify any condition of this certification if the Secretary finds that an immediate danger to the public health, safety, or welfare requires the issuance of an immediate final order temporarily modifying these Conditions of Certification. If the Secretary elects to exercise this delegated authority, the Secretary shall prepare an immediate final order that recites with particularity the facts underlying the Secretary's finding of an immediate danger to the public health, safety, or welfare. The immediate final order and the modification to the Conditions of Certification shall be effective only for so long as is necessary to address the immediate danger and shall be applicable or enjoinable from the date rendered.

E. In accordance with Section 403.516(1)(c), F.S., the Licensee may file a petition for modification with the Department, or the Department may initiate the modification upon its own initiative.

F. Any anticipated facility expansions, production increases, or process modifications which may result in new, different or increased discharge or emission of pollutants, change in fuel, or expansion in generating capacity must be reported by submission of an appropriate request for an amendment, modification, or certification.

G. In the event of a prolonged [thirty (30) days or more] equipment malfunction or shutdown of pollution control equipment, the Secretary of the Department may allow facility operation to resume and continue to take place under an immediate final order temporarily modifying these Conditions of Certification, provided that the Licensee demonstrates that such operation will be in compliance with all applicable ambient air quality standards and PSD increments, water quality standards and rules, solid waste rules, domestic wastewater rules and industrial wastewater rules. During such malfunction or shutdown, the operation of the facility shall comply with all other requirements of this certification and all applicable state and federal emission and effluent standards not affected by the malfunction or shutdown.

H. Any anticipated facility change that results in a change to the Site Delineation Map, attached hereto as part of Attachment A, may be considered a modification, and must be accompanied by a map or aerial photograph showing the proposed new boundaries of the site. Within 120 days after completion of construction of the approved facility change, the Licensee shall provide the information required by Section A. General Conditions, Condition I. Scope, paragraphs D, E, F, G, H, or I, as appropriate.

[Section 403.516, F.S.; Rule 62-17.211, F.A.C.]

XXV. COASTAL ZONE CONSISTENCY

Pursuant to Sections 373.428 and 403.511, F.S., certification of the facility constitutes the State's concurrence that the licensed activity or use is consistent with the federally approved program under the Florida Coastal Management Act.

[Sections 373.428, 380.23, and 403.511(7), F.S.]

XXVI. WATER QUALITY CERTIFICATION

Pursuant to the Operating Agreement between the Department, Water Management Districts and U.S. Army Corps of Engineers, a written final order granting 'certification' constitutes certification by the Department that the project activities comply with applicable state water quality standards.

[2012 Operating Agreement, Jacksonville District USACOE, DEP and Water Management Districts, Section II.A.1.(f)]

XXVII. TRANSFER OF CERTIFICATION

A. This certification is transferable in whole or in part, upon Department approval, to an entity determined to be able to comply with these Conditions. A transfer of certification of all or part of the certified facility may be initiated by the Licensee's filing of a Notice of Intent to Transfer Certification with the Department's SCO. The notice of intent shall: identify the intended new certification holder or Licensee; identify the current and the new entity responsible for compliance with the certification; and include a written agreement from the intended new Licensee/Transferee to abide by all Conditions, as well as, applicable laws and regulations. Upon receiving a complete notice of intent, the transfer shall be approved by the Department unless the Department objects to the transfer on the grounds that the new Licensee will be unable to comply with the Conditions, specifies in writing its reasons for its objections, and gives notice and an opportunity to petition for an administrative hearing pursuant to Section 120.57, F.S. Upon approval, the Department will initiate a modification to the Conditions to reflect the change in ownership in accordance with Rule 62-17.211, F.A.C.

B. In the event of the dissolution of the Licensee, the Department may transfer certification to successor entities which are determined to be competent to construct, operate, and maintain the certified facility in accordance with the Conditions and which are proper applicants as defined by the PPSA. Upon determination that such a successor entity complies with the requirements for transfer of certification, the Department will initiate a modification to the Conditions to reflect the change in ownership in accordance with Rule 62-17.211, F.A.C.

[Chapter 120, F.S.; Rule 62-17.211, F.A.C.]

XXVIII. LABORATORIES AND QUALITY ASSURANCE

Chemical, physical, biological, microbiological, and toxicological data collected as a requirement of these Conditions must be reliable and collected and analyzed by scientifically sound procedures. Unless otherwise specified in these Conditions, the Licensee shall adhere to the minimum field and laboratory quality assurance, methodological and reporting requirements of the Department as set forth in Chapter 62-160, F.A.C.

[Chapter 62-160, F.A.C.]

XXIX. ENVIRONMENTAL RESOURCES

A. General

1. Submittals for Construction Activities

a. Prior to the commencement of construction of new facilities and/or new Associated facilities the Licensee shall provide to the DEP SED District for review, all information necessary for a complete *Application for Individual and Conceptual Approval Environmental Resource Permit and Authorization to Use State-Owned Lands* (ERP), DEP Form 62-330.060(1), F.A.C., or other applicable ERP authorization form. A copy of the submittal shall also be provided to the SCO.

This form may: a) be submitted concurrently with a SCA; b) be submitted as part of an amendment request or a petition for modification; or c) be submitted as a post-certification submittal following approval of a Project through certification, modification, or amendment. Such ERP submittals, once received, shall be reviewed in accordance with the non-procedural standards and criteria for issuance of an ERP, including all the provisions related to reduction and elimination of impacts, conditions for issuance, additional conditions for issuance, and mitigation contained in Chapter 62-330, F.A.C., as applicable, unless otherwise stated in these Conditions. While the information is provided for review via submittal of the ERP form, consistent with Section 403.511, F.S., a separate ERP is not required for certified facilities, and therefore, a separate ERP will not be issued.

Those forms submitted as part of a SCA, an amendment, or modification, shall be processed concurrently with the respective SCA, amendment, or modification, in compliance with the applicable PPSA procedures. Those forms submitted as a post-certification submittal (after certification, modification, or amendment and prior to construction) shall be processed in accordance with Section A. General Conditions, Condition XXI., Procedures for Post-Certification Submittals. Post-certification submittal information may be submitted for discrete portions of the certified facilities for a determination of compliance with these Conditions.

No construction shall commence on a project feature, or in a particular segment of a linear facility, until the Department has determined that there is a demonstration of compliance with these Conditions. For post-certification submittal reviews, the Department's determination is governed by Section A, General Conditions, Condition XXI, Procedures for Post-Certification Submittals.

b. Concurrent with submittal of the DEP form required in subparagraph A.1.a., above, the Licensee shall submit, as applicable, a survey of wetland and surface water areas as delineated in accordance with Chapter 62-340, F.A.C., and verified by

appropriate agency staff for Department compliance review. Available DEP-approved wetland and surface water delineations within the boundaries of a certified site or a portion thereof may be used and reproduced for this delineation submittal and verification. Formal DEP-approved wetland and surface water delineations are valid only for a period of five years.

[Section 373.416, F.S.; Chapters 62-330 and 62-340, F.A.C.]

2. Construction, operation, and maintenance of the proposed project (including any access roads and structures constructed within wetlands and other surface waters, and/or Associated facilities) shall satisfy any applicable non-procedural requirements in the Department rules.

[Section 373.414(1)(a), F.S.]

3. Any delineation of the extent of a wetland or other surface water submitted as part of the DEP ERP Application Form required by subparagraph A.1.a., above, including plans or other supporting documentation, shall not be considered binding on the Department unless a specific condition of this certification or a formal wetlands jurisdictional determination under Section 373.421(2), F.S., provides otherwise.

[Sections 373.421, 403.504, F.S.]

B. Surface Water Management Systems

1. Information regarding surface water management systems (SWMS) will be reviewed for consistency with the applicable non-procedural requirements under Part IV of Chapter 373, F.S., following submittal of Form 62-330.060(1), F.A.C., to the DEP District.

2. All construction, operation, and maintenance of the SWMS(s) for the certified facilities shall be as set forth in the plans, specifications, and performance criteria contained in the SCA and other materials presented during the certification proceeding, post-certification submittals, and as otherwise approved. If specific requirements are necessary for construction, operation, and/or maintenance of an approved SWMS, those requirements shall be incorporated into a SWMS Operation and Maintenance Requirements for that system and included in Attachment B (Surface Water Management System Requirements). Any alteration or modification to the SWMS Plan or the SWMS as certified requires prior approval from the Department.

3. To allow for stabilization of all disturbed areas, prior to construction, during construction of the SWMS, and for a period of time after construction of the SWMS, the Licensee shall implement and maintain erosion and sediment control best management practices, such as silt fences, erosion control blankets, mulch, sediment traps, polyacrylamide (PAM), temporary grass seed, permanent sod, and floating turbidity screens to retain sediment on-site and to prevent violations of state water quality standards. These devices shall be installed, used, and maintained at all locations where the possibility exists of transferring suspended solids into the receiving waterbody due to the licensed work, and shall remain in place at all locations until construction in that location is completed and soils are permanently stabilized. All best management practices shall be in accordance with the guidelines and specifications described in the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual* (Florida Department of Transportation and Florida Department of Environmental Protection, by HydroDynamics Incorporated in cooperation with Stormwater Management Academy, June 2007) unless a project-specific erosion and sediment control plan is approved as part of this License. If project-specific Conditions require additional measures during any phase of

construction or operation to prevent erosion or control sediments beyond those specified in the approved erosion and sediment control plan, the Licensee shall implement additional best management practices as necessary, in accordance with the guidelines and specifications in the *State of Florida Erosion and Sediment Control Designer and Reviewer Manual*. The Licensee shall correct any erosion or shoaling that causes adverse impacts to the water resources as soon as feasible. Once project construction is complete in an area, including the re-stabilization of all side slopes, embankments, and other disturbed areas, and before conversion to the operation and maintenance phase of the SWMS, all silt screens and fences, temporary baffles, and other materials that are no longer required for erosion and sediment control shall be removed.

4. The Licensee shall complete construction of all aspects of the SWMS described in the ERP Application Form, submitted as part of a post-certification submittal, amendment, modification, or SCA including water quality treatment features, and discharge control facilities prior to use of the portion of the certified facility being served by the SWMS.

5. At least 48 hours prior to beginning the authorized activities, the Licensee shall submit to the DEP District a fully executed Form 62-330.350(1), "Construction Commencement Notice," (October 1, 2013), (http://www.flrules.org/Gateway/reference.asp?No=Ref-02505), indicating the expected start and completion dates. A copy of this form may be obtained from the Department, as described in subsection 62-330.010(5), F.A.C., and shall be submitted electronically. However, for activities involving more than one acre of construction that also require a NPDES stormwater construction general permit, submittal of the Notice of Intent to Use Generic Permit for Stormwater Discharge from Large and Small Construction Activities, DEP Form 62-621.300(4)(b), shall also serve as notice of commencement of construction and, in such a case, submittal of Form 62-330.350(1) is not required.

6. Each phase or independent portion of the approved system must be completed in accordance with the submitted DEP ERP Application Form prior to the operation of the portion of the certified facility being served by that portion or phase of the system.

7. Within 30 days, or such other date as agreed to by DEP and the Licensee, after completion of construction of any new portions of the SWMS, the Licensee shall submit to the DEP District, and copy the SCO, a written statement of completion and certification by a registered professional engineer (P.E.), or other appropriate registered professional, as authorized by law, utilizing the required "As-Built Certification and Request for Conversion to Operation Phase" (DEP Form 62-330.310(1), F.A.C.). Additionally, if deviations from the approved drawings are discovered, the As-Built Certification must be accompanied by a copy of the approved drawings with deviations noted.

8. Any substantial deviation from the approved drawings, exhibits, specifications, or Conditions, may constitute grounds for revocation or enforcement action by the Department.

9. The operation phase of any new SWMS approved by the Department shall not become effective until the Licensee has complied with the requirements of the conditions herein, the Department determines the system to be in compliance with the approved plans, and the entity approved by the Department accepts responsibility for operation and maintenance of the system.

10. The DEP District must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in off-site discharge or sediment transport into wetlands or surface waters, a written dewatering plan must be submitted to and approved by the Department prior to the dewatering event.

[Section 373.414, F.S.; Chapters 62-302, 62-330, and Rule 62-4.242, F.A.C.]

C. Wetland and Other Surface Water Impacts

1. All certified facilities shall be constructed in a manner which will eliminate or reduce adverse impacts to on-site and/or adjacent wetlands or other surface waters to the extent practicable or otherwise comply with the Department's substantive criteria for elimination or reduction of such impacts. When impacts to wetlands will occur as a result of a future amendment, modification, or certification, and cannot be practicably eliminated or reduced, the Licensee may propose, and the Department or Board shall consider, mitigation to offset otherwise such impacts under the ERP review process pursuant to subparagraph A.1., above.

2. Proposed mitigation requirements/plans submitted with the DEP ERP Application forms required in subparagraph A.1.a., above, or submitted as part of an amendment, modification, or certification, and that are deemed acceptable by DEP, shall include applicable construction conditions, success criteria, monitoring plans, and remedial actions (if applicable), and shall be incorporated into these Conditions as Attachment C (Wetland Mitigation Requirements/Plans).

[Sections 373.413, 373.414, 373.4145, 403.511, and 403.814(6), F.S.; Chapters 62-312, 62-330, 62-340, 62-342, and 62-345, F.A.C.]

XXX. THIRD PARTY IMPACTS

The Licensee is responsible for maintaining compliance with these Conditions even when third party activities authorized by the Licensee occur in or on the certified site.

[Sections 403.506(1), F.S.]

XXXI. FACILITY OPERATION

The Licensee shall properly operate and maintain the certified facility and systems of treatment and control (and related appurtenances) that are installed and used by the Licensee to achieve compliance with these Conditions, as required by the final order of certification, these Conditions, or a post-certification amendment or modification. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to achieve compliance with the final order of certification, these Conditions, or a post-certification amendment or modification. Further, the Licensee shall take all reasonable steps to minimize any adverse impact resulting from noncompliance with any limitation specified in this certification, including such accelerated or additional monitoring as necessary to determine the nature and impact of the noncomplying event.

[Rule 62-4.160(6), F.A.C.]

XXXII. RECORDS MAINTAINED AT THE FACILITY

A. These Conditions or a copy thereof shall be kept at the site.

B. The Licensee shall hold at the site, or other location designated by these Conditions, records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation required by these Conditions, copies of all reports required by these Conditions, and records of all data used to complete the SCA for this approval. These materials shall be retained at least 3 years from the date of the sample, measurement, report, or application unless otherwise specified by Department rule.

C. Records of monitoring information shall include:

1. the date, exact place, and time of sampling or measurements;
2. the person responsible for performing the sampling or measurements;
3. the dates analyses were performed;
4. the person responsible for performing the analyses;
5. the analytical techniques or methods used; and
6. the results of such analyses.

[Rules 62-4.160(12) and (14)(b), F.A.C.]

XXXIII. WATER DISCHARGES

A. Except as otherwise authorized by a permit issued by the Department under a federally approved or delegated program or to the extent a variance, exception, exemption or other relief is granted or authorized by these Conditions, the Licensee shall not discharge to surface or ground waters of the State, wastes in concentrations, which, alone or in combinations with other substances or components of discharges (whether thermal or non-thermal), are carcinogenic, mutagenic, or teratogenic to human beings (unless specific criteria are established for such components in Rule 62-520.400, F.A.C.) or are acutely toxic to indigenous species of significance to the aquatic community within surface waters affected by the ground water at the point of contact with surface waters.

B. Except as otherwise authorized by a permit issued by the Department under a federally approved or delegated program or to the extent a variance, exception, exemption, or other relief is granted or authorized by these Conditions, all discharges and activities must be conducted so as to not cause a violation of the water quality standards set forth in Chapters 62-4, 62-302, 62-520, 62-550, and 62-620, F.A.C., including the provisions of Rules 62-4.243, 62-4.244, and 62-4.246, F.A.C., the antidegradation provisions of Rules 62-4.242(1)(a), (1)(b), and 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in Rules 62-4.242(2) and (3), F.A.C.

C. Except as otherwise authorized by a permit issued by the Department under a federally approved or delegated program or to the extent a variance, exception, exemption, or other relief is granted or authorized by these Conditions, all dewatering discharges must be in compliance with Rule 62-621.300, F.A.C.

[Chapters 62-4, 62-302, 62-520, 62-550, 62-620, and 62-621, F.A.C.]

XXXIV. SOLID AND HAZARDOUS WASTE

A. Solid Waste

The Licensee shall comply with all applicable non-procedural provisions of Chapter 62-701, F.A.C., for any solid waste generated within the certified facility during construction, operation, maintenance, and closure.

[Chapter 62-701, F.A.C.]

B. Hazardous Waste, Used Oil, Petroleum Contact Water, and Spent Mercury

The Licensee shall comply with all applicable non-procedural provisions of Chapter 62-730, F.A.C., for any hazardous waste generated within the certified facility. An EPA identification number must be obtained before beginning hazardous waste activities unless the facility is a Very Small Quantity Generator (VSQG). VSQGs generate no more than 100 kg (220 lbs) of hazardous waste in any month.

The Licensee shall comply with all applicable non-procedural provisions of Chapter 62-710, F.A.C., for any used oil and used oil filters generated within the certified facility.

The Licensee shall comply with all applicable non-procedural provisions of Chapter 62-737, F.A.C., for any spent mercury-containing lamps and devices generated within the certified facility.

The Licensee shall comply with all applicable provisions of Chapter 62-740, F.A.C., for any petroleum contact water located within the certified facility.

[Chapters 62-710, 62-730, 62-737, and 62-740, F.A.C.]

C. Hazardous Substance Release Notification

1. Any owner or operator of a facility who has knowledge of any release of a hazardous substance from a certified facility in a quantity equal to or exceeding the reportable quantity in any 24-hour period shall notify the Department by calling the State Watch Office, (800) 320-0519, as soon as possible, but not later than one working day of discovery of the release.

2. Any owner or operator of a facility who has knowledge of any release of a hazardous substance from a certified facility in a quantity equal to or exceeding the reportable quantity in any 24-hour period shall notify the public by submitting a Public Notice of Pollution, https://prodenv.dep.state.fl.us/DepPNP/user/pnpRequest, as soon as possible, but not later than 24 hours after discovery of the release.

3. Releases of mixtures and solutions are subject to these notification requirements only where a component hazardous substance of the mixture or solution is released in a quantity equal to or greater than its reportable quantity.

4. Notification of the release of a reportable quantity of solid particles of antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, or zinc is not required if the mean diameter of the particles released is larger than 100 micrometers (0.004 inches).

[Chapter 62-150, F.A.C.]

D. Contaminated Site Cleanup

The Licensee shall comply with all applicable non-procedural provisions of Chapter 62-780, F.A.C., for any violations of relevant provisions of Chapters 376 or 403, F.S., that result in legal responsibility for site rehabilitation pursuant to those chapters. This responsibility for site rehabilitation does not affect any activity or discharge permitted or exempted pursuant to Chapters 376 or 403, F.S., or rules promulgated pursuant to Chapters 376 or 403, F.S.

[Chapter 62-780, F.A.C.]

XXXVI. STORAGE TANK SYSTEMS

Registration, construction, installation, operation, maintenance, repair, closure, and disposal of storage tank systems within a certified site that store regulated substances shall be in accordance with Chapters 62-761 and 62-762, F.A.C., in order to minimize the occurrence and environmental risks of releases and discharges. Mineral acid storage tank systems are subject only to Rule 62-762.891, F.A.C. Compression vessels and aboveground hazardous substance storage tank systems with individual capacities greater than 110 gallons are only subject to Rule 62-762.401, F.A.C.

A. Incident Notification Requirements.

Notification of any condition or situation indicating that a release or discharge of a regulated substance may have occurred from a storage tank system or system component shall be made to the County in writing or electronic format on either Form 62-761.900 (6) or Form 62-762.901(6), whichever is applicable, Incident Notification Form (INF), within 72 hours of discovery or before the close of the County's next business day. However, an INF is not required to be submitted if, within 72 hours or discovery, the investigation of the incident confirms that a discharge did not occur.

B. Discharge Reporting Requirements

Notification of the discovery of a discharge of a regulated substance shall be made to the County in writing or electronic format on either Form 62-761.900(1) or Form 62-762.901(1), whichever is applicable, Discharge Report Form (DRF) within 24 hours of the discovery or before the close of the County's next business day, unless the discovery is a non-petroleum, de minimis discharge referenced in Rule 62-780.550, F.A.C.; the discharge was previously reported to the appropriate County or the Department on a DRF; or the discovery is a petroleum or petroleum product de minimis discharge referenced in Rule 62-780.560(1), F.A.C. A de minimis discharge is exempt from the notification requirements as long as discharge is removed and properly treated or properly disposed, or otherwise remediated pursuant to the applicable provisions of Chapter 62-780, F.A.C.

C. Discharge Cleanup

If a discharge of a regulated substance occurs at the certified facility, actions shall be taken immediately to contain, remove, and abate the discharge under all applicable Department rules. The Licensee is advised that other federal, state, or local requirements may apply to these activities. If the contamination present is subject to the provisions of Chapter 62-780, F.A.C., corrective action, including free product recovery, shall be performed in accordance with that Chapter.

D. Out of Service and Closure Requirements

Storage tank systems shall be taken out-of-service and/or closed as necessary in accordance with Rules 62-761.800, 62-762.801, and 62-762.802, F.A.C., as applicable.

[Chapters 62-761, 62-762, and 62-780, F.A.C.]