# STORMWATER MANAGEMENT DESIGN REPORT
# SANDGATE HEALTH AND REHABILITATION

## SUBMITTED TO:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

And

City of Fort Pierce
Engineering Department
100 N. U.S. Highway 1
Fort Pierce, FL 34954

## PREPARED FOR:

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**July 2026**
**File #11738**

HASSAN KAMAL LICENSE No. 41951 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Hassan Kamal
Date: 2026.07.08 15:44:10 -04'00'

# SANDGATE HEALTH AND REHABILITATION
# STORMWATER MANAGEMENT CALCULATIONS
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# SANDGATE HEALTH AND REHABILITATION
## STORMWATER MANAGEMENT CALCULATIONS

**Project Narrative**

Sangate Health and Rehabilitation is a proposed 32,680 sf (39 bed) expansion of an existing 31,478 sf (107 bed) assisted living facility located in Ft. Pierce, Florida. The project is more specifically located south of Florida Ave, west of S 31th Street and east of S 29th Street. The 4.30-acre site will undergo 2.20 acres of disturbance for the expansion as well as proposed hardscape and landscape improvements.

In the existing condition, the expansion site is undeveloped and heavily vegetated. There is also a 1,102 sf shed and concrete driveway on the west side of the existing facility to be demolished. Stormwater from the undeveloped parcel currently sheet flows west to an existing swale along the western property boundary line heading south where it ultimately outfalls into Fort Pierce Canal No. 7.

This project proposes a 32,680 sf building expansion, a proposed parking lot with hardscape, and drainage and utility improvements, to service the site. Appendix A includes Overall Paving, Grading and Drainage Plan and Storm Sewer Basin Exhibit as described above. A dry detention pond and associated stormwater sewer systems are among the drainage improvement proposed to meet both stormwater quality and quantity.

This project shall be designed under the City of Fort Pierce and South Florida Water Management District (SFWMD) requirements. The following design information was used to prepare a design based on the Site Plan.

**Stormwater Quality**

Due to the proposed site improvements and associated impervious area, the stormwater management system has been evaluated to ensure compliance with the water quality treatment criteria of the City of Fort Pierce, SFWMD and Florida Department of Environmental Protection (FDEP). The site and ultimate outfall, Canal No.7 are within the Fivemile Creek Stream HUC-12, which is currently impaired. Because the project is upstream of impaired water, but does not contain an Outstanding Florida Water, either an 80% TN and TP reduction from the post development load before treatment and a net improvement of the impaired pollutant must occur or the percent reduction so that post-development after treatment would equal pre-development must occur, whichever is greater. BMP Train calculations for the pre and post development without treatment are summarized in the table on the next page:

| Phase: | Total Nitrogen (kg/y): | Total Phosphorus (kg/y): |
|---|---|---|
| | | |
| Pre-Development | 1.265 | 0.121 |
| Post-Development | 9.793 | 1.629 |

% TN Required = (1 – 1.265 / 9.793) x 100 = 87 % Removal
% TP Required = (1 - 0.121 / 1.629) x 100 = 93 % Removal

To achieve a 87% TN and 93% TP removal, a 2.2" retention depth over the 2.20 acres of disturbed area and site must be captured and treated by the stormwater dry pond which outfalls into the existing swale on property. This results in a required retention volume of 0.36 ac-ft (See BMP Train Results for Treatment Calculations).

BMP Train calculations for the pre and post development with treatment are summarized below:

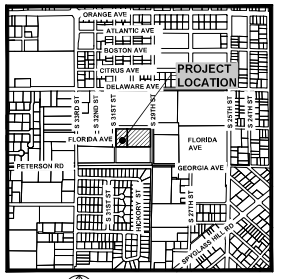
| Phase: | Total Nitrogen (kg/y): | Total Phosphorus (kg/y): |
|---|---|---|
| Pre-Development | 1.27 | 0.12 |
| Post-Development | 0.71 | 0.11 |

**Stormwater Quantity**

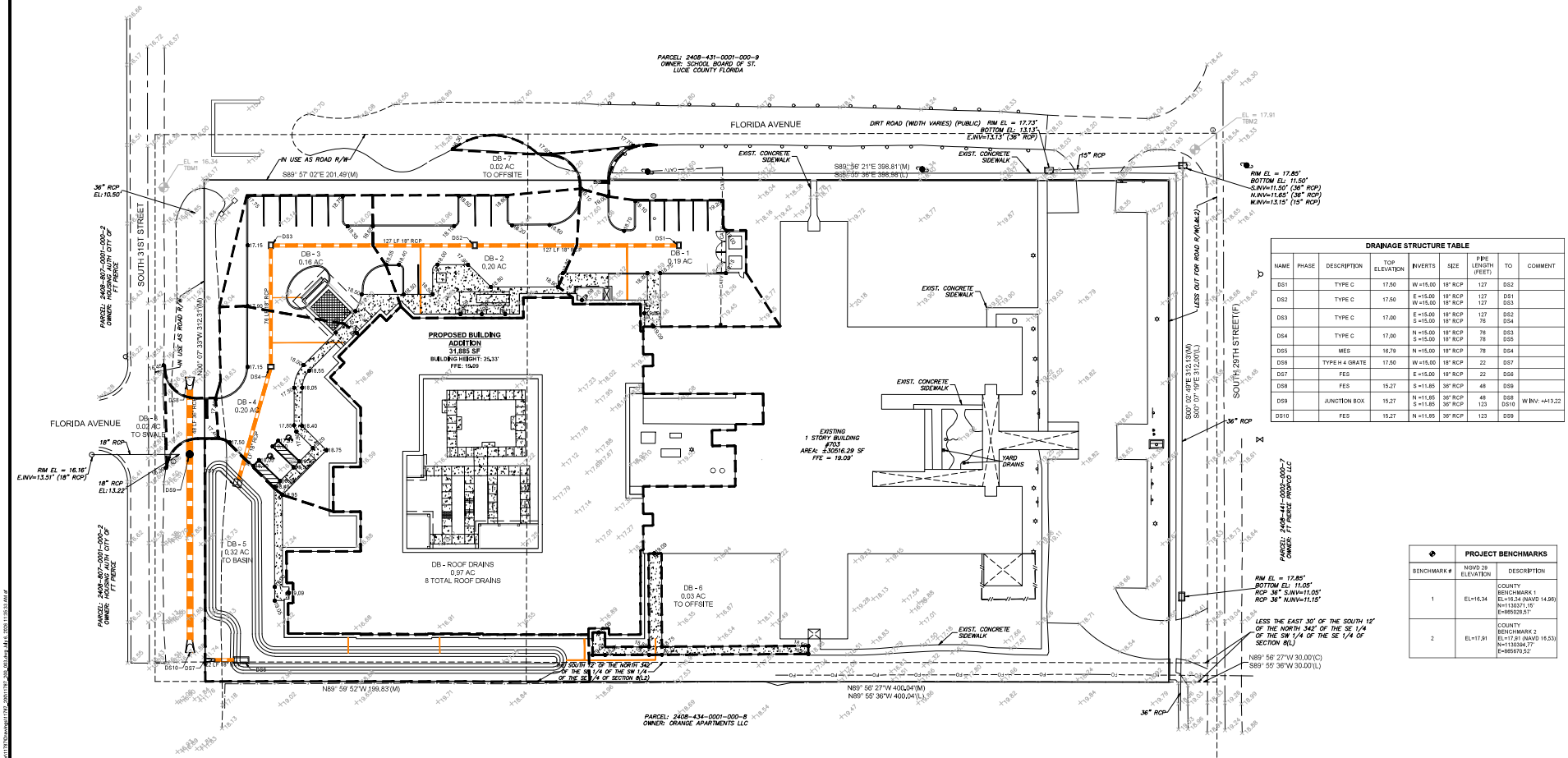
Due to the proposed site improvements, the stormwater management system has been evaluated to ensure compliance with the water quantity criteria of the SFWMD and City of Ft. Pierce. This project proposes to collect stormwater within the proposed dry detention pond and use a control structure to reduce the 25-year 3-day storm events below the pre-development condition as well as manage the 10-year 1-day storm event. The existing site currently sheet flows to the existing swale west of the site. The 10-year, 1-day and 25-year, 3-day storm events at the ultimate outfall point are 0.383 and 1.127 cfs, respectively. By capturing and routing the proposed site stormwater to the dry detention pond, the 10-year 1-day and 25-year 3-day storm events at the ultimate outfall are 0.431, and 0.263 cfs respectfully. Please see the table below summarizing events:

| Phase: | 10-year, 72 hour (cfs) | 25-year, 72 hour (cfs) |
|---|---|---|
| Pre-Development | 0.383 | 1.127 |
| Post-Development | 0.431 | 0.263 |

# APPENDIX A
# DRAINAGE BASIN EXHIBITS




LOCATION MAP
NTS




**DRAINAGE STRUCTURE TABLE**

| NAME | PHASE | DESCRIPTION | TOP ELEVATION | INVERTS | SIZE | PIPE LENGTH (FEET) | TO | COMMENT |
|---|---|---|---|---|---|---|---|---|
| DS1 | | TYPE C | 17.50 | W =15.00 | 18" RCP | 127 | DS2 | |
| DS2 | | TYPE C | 17.50 | E =15.00<br>W =15.00 | 18" RCP<br>18" RCP | 127<br>127 | DS1<br>DS3 | |
| DS3 | | TYPE C | 17.00 | E =15.00<br>S =15.00 | 18" RCP<br>18" RCP | 127<br>78 | DS2<br>DS4 | |
| DS4 | | TYPE C | 17.00 | N =15.00<br>S =15.00 | 18" RCP<br>18" RCP | 78<br>78 | DS3<br>DS5 | |
| DS5 | | MES | 16.79 | N =15.00 | 18" RCP | 78 | DS4 | |
| DS6 | | TYPE H 4 GRATE | 17.50 | W =15.00 | 18" RCP | 22 | DS7 | |
| DS7 | | FES | | E =15.00 | 18" RCP | 22 | DS6 | |
| DS8 | | FES | 15.27 | S =11.85 | 36" RCP | 48 | DS9 | |
| DS9 | | JUNCTION BOX | 15.27 | N =11.85<br>S =11.85 | 36" RCP<br>36" RCP | 48<br>123 | DS8<br>DS10 | W INV: +-13.22 |
| DS10 | | FES | 15.27 | N =11.85 | 36" RCP | 123 | DS9 | |

**PROJECT BENCHMARKS**

| BENCHMARK # | NGVD 29 ELEVATION | DESCRIPTION |
|---|---|---|
| 1 | EL=16.34 | COUNTY BENCHMARK 1 EL=16.34 (NAVD 14.96) N=1130371.15' E=865028.51' |
| 2 | EL=17.91 | COUNTY BENCHMARK 2 EL=17.91 (NAVD 15.53) N=1130394.77' E=865870.52' |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STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951


30 0 15 30
( IN FEET )
VERTICAL DATUM: NGVD

| | |
|---|---|
| DATE: | 7/6/26 |
| DESIGN/DRAWN: | HAK/AJF |

PROJECT TITLE
**SANDGATE HEALTH AND REHABILITATION**

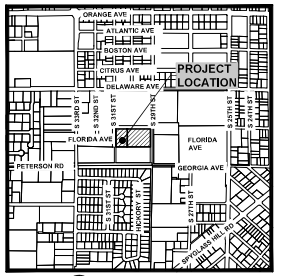
SHEET TITLE
**DRAINAGE BASIN EXHIBIT**

PROJECT NO.
11787

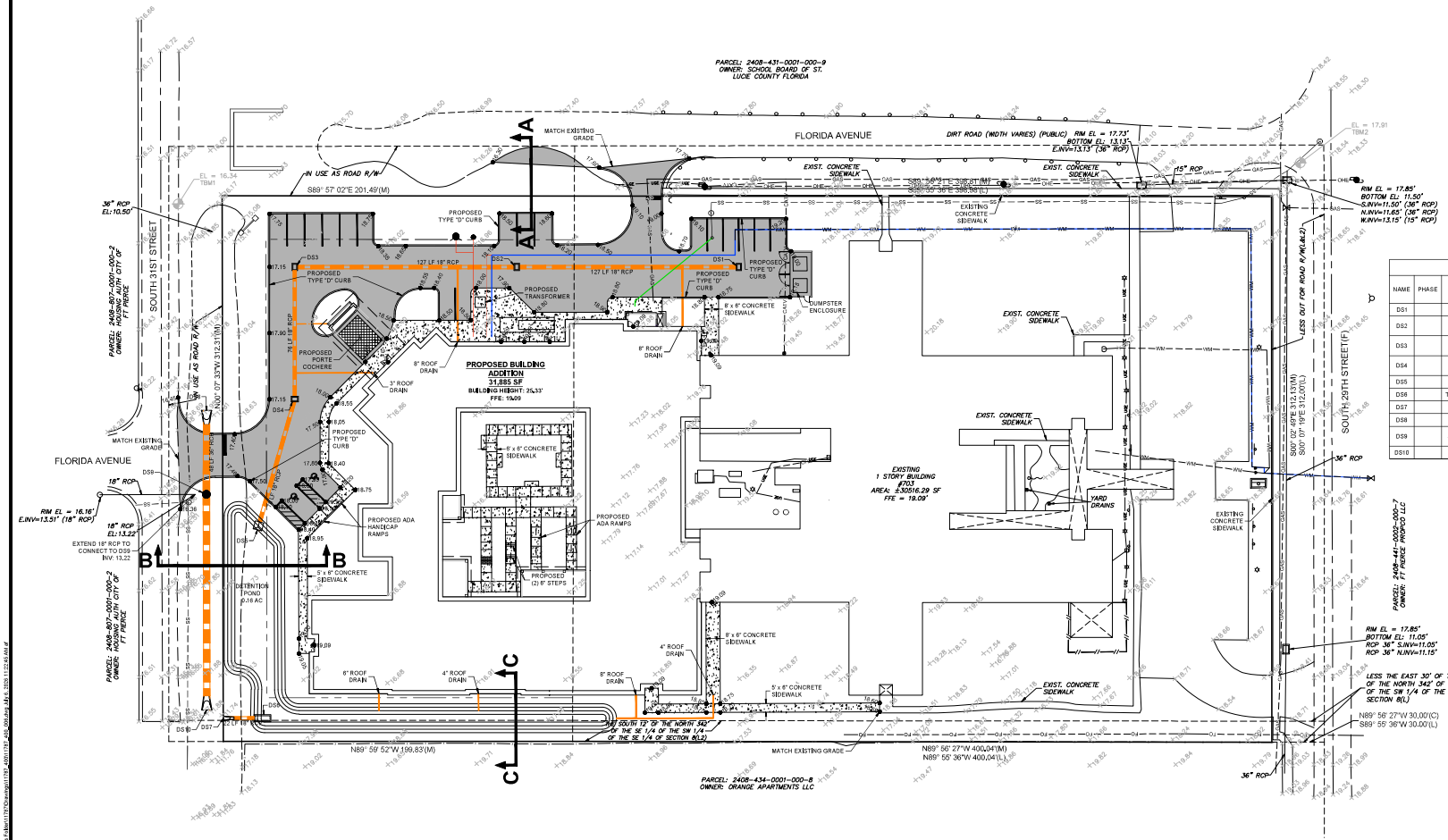
DRAWING NO.
11787_200_003

SHEET
1 of 1

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.




LOCATION MAP
NTS

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| DS3 | | TYPE C | 17.00 | E =15.00<br>S =15.00 | 18" RCP<br>18" RCP | 127<br>76 | DS2<br>DS4 | |
| DS4 | | TYPE C | 17.00 | N =15.00<br>S =15.00 | 18" RCP<br>18" RCP | 76<br>78 | DS3<br>DS5 | |
| DS5 | | MES | 16.79 | N =15.00 | 18" RCP | 78 | DS4 | |
| DS6 | | TYPE H 4 GRATE | 17.50 | W =15.00 | 18" RCP | 22 | DS7 | |
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| DS8 | | FES | 15.27 | S =11.85 | 36" RCP | 48 | DS9 | |
| DS9 | | JUNCTION BOX | 15.27 | N =11.85<br>S =11.85 | 36" RCP<br>36" RCP | 48<br>123 | DS8<br>DS10 | W.INV: +-13.22 |
| DS10 | | FES | 15.27 | N =11.85 | 36" RCP | 123 | DS9 | |

| | PROJECT BENCHMARKS | |
|---|---|---|
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30 0 15 30
(IN FEET)
VERTICAL DATUM: NGVD

DATE: 7/6/26
DESIGN/DRAWN: HA/KB

PROJECT TITLE
SANDGATE HEALTH AND REHABILITATION

SHEET TITLE
PAVING, GRADING AND DRAINAGE PLAN

PROJECT NO.
11787

DRAWING NO.
11787_400_006

SHEET
6 of 11

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

# APPENDIX B
# BMPTRAIN CALCULATIONS

# Complete Report (not including cost) Ver 4.3.5

Project: Sandgate ALF
Date: 7/6/2026 9:04:30 AM

## Site and Catchment Information

Analysis: Specified Removal Efficiency

| | |
|---|---|
| Catchment Name | Site |
| Rainfall Zone | Florida Zone 5 |
| Annual Mean Rainfall | 59.00 |

## Pre-Condition Landuse Information

| | |
|---|---|
| Landuse | Undeveloped - Ruderal/Upland Pine: TN=1.694 TP=0.162 |
| Area (acres) | 2.20 |
| Rational Coefficient (0-1) | 0.06 |
| Non DCIA Curve Number | 39.00 |
| DCIA Percent (0-100) | 5.00 |
| Nitrogen EMC (mg/l) | 1.694 |
| Phosphorus EMC (mg/l) | 0.162 |
| Runoff Volume (ac-ft/yr) | 0.606 |
| Groundwater N (kg/yr) | 0.000 |
| Groundwater P (kg/yr) | 0.000 |
| Nitrogen Loading (kg/yr) | 1.265 |
| Phosphorus Loading (kg/yr) | 0.121 |

## Post-Condition Landuse Information

| | |
|---|---|
| Landuse | Low-Intensity Commercial: TN=1.13 TP=0.188 |
| Area (acres) | 2.20 |
| Rational Coefficient (0-1) | 0.65 |
| Non DCIA Curve Number | 39.00 |
| DCIA Percent (0-100) | 80.00 |
| Wet Pond Area (ac) | 0.00 |
| Nitrogen EMC (mg/l) | 1.130 |
| Phosphorus EMC (mg/l) | 0.188 |
| Runoff Volume (ac-ft/yr) | 7.029 |
| Groundwater N (kg/yr) | 0.000 |
| Groundwater P (kg/yr) | 0.000 |

| | |
|---|---|
| Nitrogen Loading (kg/yr) | 9.793 |
| Phosphorus Loading (kg/yr) | 1.629 |

# Catchment Number: 1 Name: Site

**Project:** Sandgate ALF
**Date:** 7/6/2026

**Multiple BMP in Series Design Parameters**

BMP in Series Number: 1
BMP Type: Retention

| | |
|---|---|
| Retention Depth (in) | 2.000 |
| Retention Volume (ac-ft) | 0.367 |

BMP in Series Number: 2
BMP Type: Swale

| | |
|---|---|
| Swale Top Width for Flood Conditions - **W** (ft) | 32.000 |
| Swale Bottom Width - **B** (ft) | 10.000 |
| Swale Length - **L** (ft) | 400.000 |
| Average Impervious Length (ft) | 0.000 |
| Average Impervious Width (ft) | 0.000 |
| Average Pervious Width (ft) | 32.000 |
| Swale Slope (foot drop/foot length) - **S** | 0.100 |
| Mannings N | 0.050 |
| Soil Infiltration Rate (in/hr) | 1.500 |
| Side Slope of Swale horizontal/vertical - **Z** | 4.000 |
| Average Height of Swale Block - **H** | 0.000 |
| Length of Berm Upstream of Crest - $\mathbf{L_b}$ | 0.000 |
| Runoff Area (acres) | 0.000 |
| Number of Swale Blocks | |

BMP in Series Number: 3
BMP Type: None

BMP in Series Number: 4
BMP Type: None

**Watershed Characteristics**

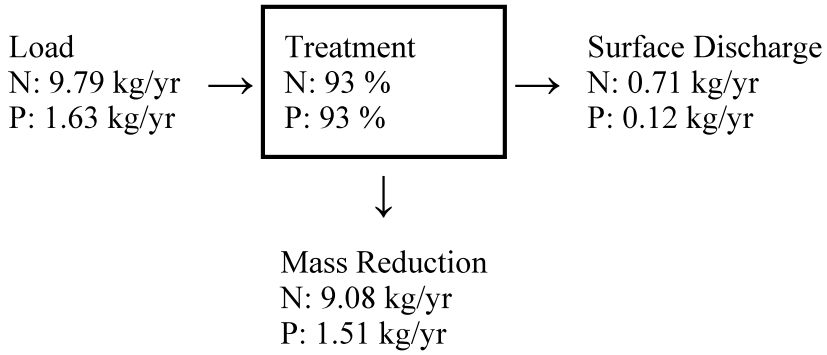
| | |
|---|---|
| Catchment Area (acres) | 2.20 |
| Contributing Area (acres) | 2.200 |
| Non-DCIA Curve Number | 39.00 |
| DCIA Percent | 80.00 |

| | |
|---|---|
| Rainfall Zone | Florida Zone 5 |
| Rainfall (in) | 59.00 |

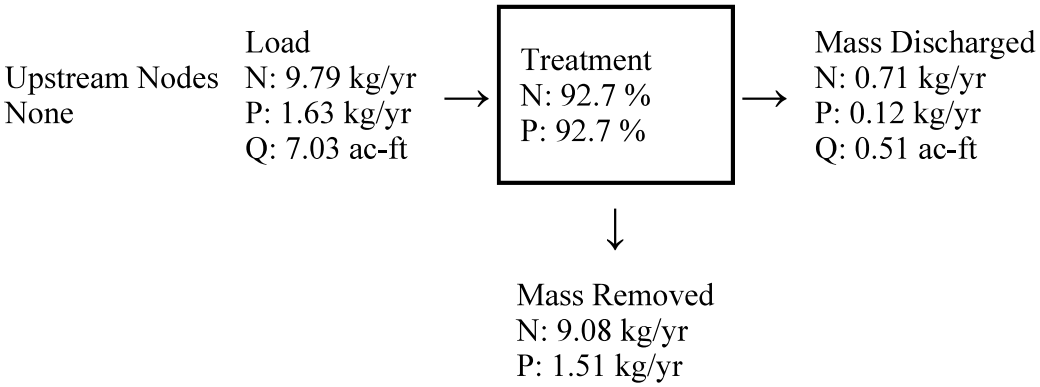
**Surface Water Discharge**

| | |
|---|---|
| Required TN Treatment Efficiency (%) | 87 |
| Provided TN Treatment Efficiency (%) | 93 |
| Required TP Treatment Efficiency (%) | 93 |
| Provided TP Treatment Efficiency (%) | 93 |

## Load for Multiple BMP in Series




**Load Diagram for Multiple BMP ( As Used In Routing)**




# Summary Treatment Report Version: 4.3.5

Project: Sandgate ALF

**Analysis Type:** Specified Removal

Date:7/6/2026

Efficiency

**BMP Types:**

Catchment 1 - (Site) Multiple BMP

Based on % removal values to the nearest percent

**Routing Summary**

Catchment 1 Routed to Outlet

Total nitrogen target removal met? **Yes**

Total phosphorus target removal met? **Yes**

# Summary Report

## Nitrogen

| **Surface Water Discharge** | | |
|---|---|---|
| Total N pre load | 1.27 kg/yr | |
| Total N post load | 9.79 kg/yr | |
| Target N load reduction | 87 % | |
| Target N discharge load | 1.27 kg/yr | |
| Percent N load reduction | 93 % | |
| Provided N discharge load | .71 kg/yr | 1.57 lb/yr |
| Provided N load removed | 9.08 kg/yr | 20.02 lb/yr |

## Phosphorus

| **Surface Water Discharge** | | |
|---|---|---|
| Total P pre load | .121 kg/yr | |
| Total P post load | 1.629 kg/yr | |
| Target P load reduction | 93 % | |
| Target P discharge load | .114 kg/yr | |
| Percent P load reduction | 93 % | |
| Provided P discharge load | .119 kg/yr | .26 lb/yr |
| Provided P load removed | 1.51 kg/yr | 3.331 lb/yr |

# APPENDIX C
# ICPR STORM WATER MODELING

## Simple Basin: DB-2

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | DS2 |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |
| Area: | 0.20000 ac |
| Curve Number: | 75.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Simple Basin: DB-3

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | DS3 |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |
| Area: | 0.16000 ac |
| Curve Number: | 75.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Simple Basin: DB-4

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | DS4 |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |

| | |
|---|---|
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |
| Area: | 0.20000 ac |
| Curve Number: | 75.0 |
| Ia/S: | 0.00 |
| % Impervious: | 80.00 |
| % DCIA: | 80.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Simple Basin: DB-5

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | Post-Swale |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |
| Area: | 0.14000 ac |
| Curve Number: | 75.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Simple Basin: DB-Roof Drains

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | Post-Detention |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |

| | |
|---|---|
| Area: | 0.98000 ac |
| Curve Number: | 98.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Simple Basin: DB1

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | DS1 |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |
| Area: | 0.19000 ac |
| Curve Number: | 75.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |
| % Direct: | 0.00 |
| Rainfall Name: | |

Comment:

## Simple Basin: Pre-Site to Swale

| | |
|---|---|
| Scenario: | Scenario1 |
| Node: | Pre-Site to Swale |
| Hydrograph Method: | NRCS Unit Hydrograph |
| Infiltration Method: | Curve Number |
| Time of Concentration: | 10.00000 min |
| Max Allowable Q: | 0.000 cfs |
| Time Shift: | 0.00000 hr |
| Unit Hydrograph: | UH484 |
| Peaking Factor: | 484.0 |
| Area: | 2.20000 ac |
| Curve Number: | 39.0 |
| Ia/S: | 0.00 |
| % Impervious: | 0.00 |
| % DCIA: | 0.00 |

% Direct: 0.00
Rainfall Name:

Comment:

## Node: DS1

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 17.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 17.000 | 0.19000 | 8276.40 |
| 17.100 | 0.19000 | 8276.40 |

Comment:

## Node: DS2

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 17.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 17.000 | 0.20000 | 8712.00 |
| 17.100 | 0.20000 | 8712.00 |

Comment:

## Node: DS3

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 17.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 17.000 | 0.16000 | 6969.60 |
| 17.100 | 0.16000 | 6969.60 |

Comment:

## Node: DS4

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 17.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 17.000 | 0.20000 | 8712.00 |
| 17.100 | 0.20000 | 8712.00 |

Comment:

## Node: Post-Detention

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 17.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 15.000 | 0.20000 | 8712.00 |
| 17.000 | 0.70000 | 30492.00 |

Comment:

## Node: Post-Swale

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 13.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 13.000 | 0.50000 | 21780.00 |
| 17.000 | 1.00000 | 43560.00 |

Comment:

## Node: Pre-Site to Swale

Scenario: Scenario1
Type: Stage/Area
Base Flow: 0.000 cfs
Initial Stage: 13.000 ft
Warning Stage: 0.000 ft
Alert Stage: 0.000 ft

| Stage [ft] | Area [ac] | Area [ft2] |
|---|---|---|
| 17.000 | 2.20000 | 95832.00 |
| 17.100 | 2.20000 | 95832.00 |

Comment:

## Pipe Link: DS1 to DS2

Scenario: Scenario1
From Node: DS1
To Node: DS2
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Length: 127.00 ft
FHWA Code: 0
Entr Loss Coef: 0
Exit Loss Coef: 0
Bend Loss Coef: 0
Bend Location: 0.00 dec
Energy Switch: Energy

| Upstream | | Downstream | |
|---|---|---|---|
| Invert: | 15.000 ft | Invert: | 15.000 ft |
| Manning's N: | 0.0130 | Manning's N: | 0.0130 |
| Geometry: Circular | | Geometry: Circular | |
| Max Depth: | 1.500 ft | Max Depth: | 1.500 ft |
| Bottom Clip | | | |
| Default: | 0.000 ft | Default: | 0.000 ft |
| Op Table: | | Op Table: | |
| Ref Node: | | Ref Node: | |
| Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Top Clip | | | |
| Default: | 0.000 ft | Default: | 0.000 ft |
| Op Table: | | Op Table: | |
| Ref Node: | | Ref Node: | |
| Manning's N: | 0.0000 | Manning's N: | 0.0000 |

Comment:

## Pipe Link: DS2 to DS3

Scenario: Scenario1
From Node: DS2
To Node: DS3
Link Count: 1

| Upstream | | Downstream | |
|---|---|---|---|
| Invert: | 15.000 ft | Invert: | 15.000 ft |
| Manning's N: | 0.0130 | Manning's N: | 0.0130 |
| Geometry: Circular | | Geometry: Circular | |
| Max Depth: | 1.500 ft | Max Depth: | 1.500 ft |

| | | | | | |
|---|---|---|---|---|---|
| Flow Direction: | Both | Bottom Clip | | | |
| Damping: | 0.0000 ft | Default: | 0.000 ft | Default: | 0.000 ft |
| Length: | 127.00 ft | Op Table: | | Op Table: | |
| FHWA Code: | 0 | Ref Node: | | Ref Node: | |
| Entr Loss Coef: | 0 | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Exit Loss Coef: | 0 | Top Clip | | | |
| Bend Loss Coef: | 0 | Default: | 0.000 ft | Default: | 0.000 ft |
| Bend Location: | 0.00 dec | Op Table: | | Op Table: | |
| Energy Switch: | Energy | Ref Node: | | Ref Node: | |
| | | Manning's N: | 0.0000 | Manning's N: | 0.0000 |

Comment:

| Pipe Link: DS3 to DS4 | | Upstream | | Downstream | |
|---|---|---|---|---|---|
| Scenario: | Scenario1 | Invert: | 15.000 ft | Invert: | 15.000 ft |
| From Node: | DS3 | Manning's N: | 0.0130 | Manning's N: | 0.0130 |
| To Node: | DS4 | Geometry: Circular | | Geometry: Circular | |
| Link Count: | 1 | Max Depth: | 1.500 ft | Max Depth: | 1.500 ft |
| Flow Direction: | Both | Bottom Clip | | | |
| Damping: | 0.0000 ft | Default: | 0.000 ft | Default: | 0.000 ft |
| Length: | 76.00 ft | Op Table: | | Op Table: | |
| FHWA Code: | 0 | Ref Node: | | Ref Node: | |
| Entr Loss Coef: | 0 | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Exit Loss Coef: | 0 | Top Clip | | | |
| Bend Loss Coef: | 0 | Default: | 0.000 ft | Default: | 0.000 ft |
| Bend Location: | 0.00 dec | Op Table: | | Op Table: | |
| Energy Switch: | Energy | Ref Node: | | Ref Node: | |
| | | Manning's N: | 0.0000 | Manning's N: | 0.0000 |

Comment:

| Pipe Link: DS4 To Dentention | | Upstream | | Downstream | |
|---|---|---|---|---|---|
| Scenario: | Scenario1 | Invert: | 15.000 ft | Invert: | 15.000 ft |
| From Node: | DS4 | Manning's N: | 0.0130 | Manning's N: | 0.0130 |
| To Node: | Post-Detention | Geometry: Circular | | Geometry: Circular | |
| Link Count: | 1 | Max Depth: | 1.500 ft | Max Depth: | 1.500 ft |
| Flow Direction: | Both | Bottom Clip | | | |
| Damping: | 0.0000 ft | Default: | 0.000 ft | Default: | 0.000 ft |
| Length: | 180.00 ft | Op Table: | | Op Table: | |
| FHWA Code: | 0 | Ref Node: | | Ref Node: | |
| Entr Loss Coef: | 0 | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Exit Loss Coef: | 0 | Top Clip | | | |
| Bend Loss Coef: | 0 | Default: | 0.000 ft | Default: | 0.000 ft |
| Bend Location: | 0.00 dec | Op Table: | | Op Table: | |
| Energy Switch: | Energy | Ref Node: | | Ref Node: | |
| | | Manning's N: | 0.0000 | Manning's N: | 0.0000 |

Comment:

| Drop Structure Link: Post-Detention to Post-Swale | | Upstream Pipe | | Downstream Pipe | |
|---|---|---|---|---|---|
| Scenario: | Scenario1 | Invert: | 15.000 ft | Invert: | 15.000 ft |
| From Node: | Post-Detention | Manning's N: | 0.0130 | Manning's N: | 0.0130 |
| To Node: | Post-Swale | Geometry: Circular | | Geometry: Circular | |
| Link Count: | 1 | Max Depth: | 1.500 ft | Max Depth: | 1.500 ft |
| Pipe Flow Direction: | Both | Bottom Clip | | | |
| Solution: | Combine | Default: | 0.000 ft | Default: | 0.000 ft |
| Increments: | 0 | Op Table: | | Op Table: | |
| Pipe Count: | 1 | Ref Node: | | Ref Node: | |
| Damping: | 0.0000 ft | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Length: | 20.00 ft | Top Clip | | | |
| FHWA Code: | 0 | Default: | 0.000 ft | Default: | 0.000 ft |
| Entr Loss Coef: | 0 | Op Table: | | Op Table: | |
| Exit Loss Coef: | 0 | Ref Node: | | Ref Node: | |
| Bend Loss Coef: | 0 | Manning's N: | 0.0000 | Manning's N: | 0.0000 |
| Bend Location: | 0.00 dec | | | | |
| Energy Switch: | Energy | | | | |

Pipe Comment:

| Weir Component | | Bottom Clip | |
|---|---|---|---|
| Weir: | 1 | Default: | 17.500 ft |
| Weir Count: | 1 | Op Table: | |
| Weir Flow Direction: | Both | Ref Node: | |
| Damping: | 0.0000 ft | Top Clip | |
| Weir Type: | Broad Crested Vertical | Default: | 18.000 ft |
| Geometry Type: | Rectangular | Op Table: | |
| Invert: | 17.500 ft | Ref Node: | |
| Control Elevation: | 17.500 ft | Discharge Coefficients | |
| Max Depth: | 1.000 ft | Weir Default: | 3.200 |
| Max Width: | 23.00 ft | Weir Table: | |
| Fillet: | 0.000 ft | Orifice Default: | 0.600 |
| | | Orifice Table: | |

Weir Comment:

Drop Structure Comment:

| Simulation: 100Y-72H | |
|---|---|
| Scenario: | Scenario1 |
| Run Date/Time: | 7/8/2026 8:42:39 AM |
| Program Version: | StormWise 4.08.03 |

| General | | | | |
|---|---|---|---|---|
| Run Mode: | Normal | | | |
| | Year | Month | Day | Hour [hr] |
| Start Time: | 0 | 0 | 0 | 0.00000 |

| | | | | |
|---|---|---|---|---|
| End Time: | 0 | 0 | 0 | 40.00000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 30.00000 | 0.05000 |
| Max Calculation Time: | | 30.00000 |

## Output Time Increments

### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.00000 | 15.00000 |

### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.00000 | 15.00000 |

### Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set: 100Y-24H
Extern Hydrograph Set: 100Y24H
Curve Number Set: CN
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMP

## Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0001 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.00000 hr
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 12.230 in
Storm Duration: 72.00000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100.00 ft2
Energy Switch (1D): Energy

Comment:

## Simulation: 10Y-24H

Scenario: Scenario1
Run Date/Time: 7/8/2026 8:42:42 AM
Program Version: StormWise 4.08.03

## General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.00000 |
| End Time: | 0 | 0 | 0 | 40.00000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 30.00000 | 0.05000 |
| Max Calculation Time: | | 30.00000 |

## Output Time Increments

### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.00000 | 10.00000 |

### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.00000 | 10.00000 |

### Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:
Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set: 010Y-24H
Extern Hydrograph Set: 10Y24H
Curve Number Set: CN
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMP

## Tolerances & Options

| | | | |
|---|---|---|---|
| Time Marching: | SAOR | IA Recovery Time: | 24.00000 hr |
| Max Iterations: | 6 | | |
| Over-Relax Weight Fact: | 0.5 dec | Ia/S: | 0.20 dec |
| dZ Tolerance: | 0.0010 ft | | |
| Max dZ: | 1.0000 ft | Smp/Man Basin Rain Opt: | Global |
| Link Optimizer Tol: | 0.0001 ft | | |
| | | Rainfall Name: | ~FLMOD |
| | | Rainfall Amount: | 6.000 in |
| | | Storm Duration: | 24.00000 hr |
| | | Dflt Damping (1D): | 0.0050 ft |
| | | Min Node Srf Area (1D): | 100.00 ft2 |
| | | Energy Switch (1D): | Energy |

Comment:

## Simulation: 25Y-72H

Scenario: Scenario1
Run Date/Time: 7/8/2026 8:42:46 AM
Program Version: StormWise 4.08.03

### General

Run Mode: Normal

| | Year | Month | Day | Hour [hr] |
|---|---|---|---|---|
| Start Time: | 0 | 0 | 0 | 0.00000 |
| End Time: | 0 | 0 | 0 | 40.00000 |

| | Hydrology [sec] | Surface Hydraulics [sec] |
|---|---|---|
| Min Calculation Time: | 30.00000 | 0.05000 |
| Max Calculation Time: | | 30.00000 |

### Output Time Increments

#### Hydrology

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.00000 | 10.00000 |

#### Surface Hydraulics

| Year | Month | Day | Hour [hr] | Time Increment [min] |
|---|---|---|---|---|
| 0 | 0 | 0 | 0.00000 | 10.00000 |

## Restart File

Save Restart: False

## Resources & Lookup Tables

### Resources

Rainfall Folder:

Unit Hydrograph Folder:

### Lookup Tables

Boundary Stage Set: 025Y-24H
Extern Hydrograph Set: 25Y24H
Curve Number Set: CN
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: IMP

## Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0001 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.00000 hr
Ia/S: 0.20 dec
Smp/Man Basin Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 9.090 in
Storm Duration: 72.00000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 100.00 ft2
Energy Switch (1D): Energy

Comment:

Simple Basin : Multi Item | (sim, name) : Runoff Summary [Scenario1]

| Sim Name | Basin Name | Max Flow [cfs] | Time to Max Flow [hrs] | Total Rainfall [in] | Total Runoff [in] | Area [ac] |
|---|---|---|---|---|---|---|
| 100Y-72H | DB-2 | 0.543 | 36.00000 | 9.49 | 6.39 | 0.20000 |
| 100Y-72H | DB-3 | 0.435 | 36.00000 | 9.49 | 6.39 | 0.16000 |
| 100Y-72H | DB-4 | 0.602 | 36.00000 | 9.49 | 8.86 | 0.20000 |
| 100Y-72H | DB-5 | 0.380 | 36.00000 | 9.49 | 6.39 | 0.14000 |
| 100Y-72H | DB-Roof Drains | 3.019 | 36.00000 | 9.49 | 9.24 | 0.98000 |
| 100Y-72H | DB1 | 0.516 | 36.00000 | 9.49 | 6.39 | 0.19000 |
| 100Y-72H | Pre-Site to Swale | 2.438 | 36.02500 | 9.49 | 1.83 | 2.20000 |
| 10Y-24H | DB-2 | 0.590 | 12.03333 | 6.00 | 3.29 | 0.20000 |
| 10Y-24H | DB-3 | 0.472 | 12.03333 | 6.00 | 3.29 | 0.16000 |
| 10Y-24H | DB-4 | 0.823 | 12.01667 | 6.00 | 5.47 | 0.20000 |
| 10Y-24H | DB-5 | 0.413 | 12.03333 | 6.00 | 3.29 | 0.14000 |
| 10Y-24H | DB-Roof Drains | 4.303 | 12.01667 | 6.00 | 5.77 | 0.98000 |
| 10Y-24H | DB1 | 0.561 | 12.03333 | 6.00 | 3.29 | 0.19000 |
| 10Y-24H | Pre-Site to Swale | 0.383 | 12.30000 | 6.00 | 0.45 | 2.20000 |
| 25Y-72H | DB-2 | 0.376 | 36.00833 | 7.05 | 4.18 | 0.20000 |
| 25Y-72H | DB-3 | 0.301 | 36.00833 | 7.05 | 4.18 | 0.16000 |
| 25Y-72H | DB-4 | 0.442 | 36.00000 | 7.05 | 6.47 | 0.20000 |
| 25Y-72H | DB-5 | 0.263 | 36.00833 | 7.05 | 4.18 | 0.14000 |
| 25Y-72H | DB-Roof Drains | 2.242 | 36.00000 | 7.05 | 6.80 | 0.98000 |
| 25Y-72H | DB1 | 0.357 | 36.00833 | 7.05 | 4.18 | 0.19000 |
| 25Y-72H | Pre-Site to Swale | 1.127 | 36.03333 | 7.05 | 0.78 | 2.20000 |

Node Max Conditions : Multi Item | (sim, name) [Scenario1]

| Sim Name | Node Name | Warning Stage [ft] | Alert Stage [ft] | Max Stage [ft] | Min/Max Delta Stage [ft] | Max Total Inflow [cfs] | Max Total Outflow [cfs] | Max Surface Area [ft2] |
|---|---|---|---|---|---|---|---|---|
| 100Y-72H | DS1 | 0.000 | 0.000 | 17.821 | 0.0001 | 0.673 | 0.000 | 8278.30 |
| 100Y-72H | DS2 | 0.000 | 0.000 | 17.822 | 0.0001 | 0.865 | 0.163 | 8715.81 |
| 100Y-72H | DS3 | 0.000 | 0.000 | 17.823 | 0.0001 | 0.894 | 0.335 | 6972.65 |
| 100Y-72H | DS4 | 0.000 | 0.000 | 17.824 | 0.0001 | 1.170 | 0.472 | 8715.84 |
| 100Y-72H | Post-Detention | 0.000 | 0.000 | 17.825 | 0.0001 | 3.019 | 0.571 | 30494.70 |
| 100Y-72H | Post-Swale | 0.000 | 0.000 | 13.146 | 0.0000 | 0.380 | 0.000 | 22576.61 |
| 100Y-72H | Pre-Site to Swale | 0.000 | 0.000 | 17.152 | 0.0000 | 2.438 | 0.000 | 95832.00 |
| 10Y-24H | DS1 | 0.000 | 0.000 | 17.492 | 0.0010 | 0.850 | 0.001 | 8278.30 |
| 10Y-24H | DS2 | 0.000 | 0.000 | 17.492 | 0.0010 | 1.186 | 0.293 | 8715.81 |
| 10Y-24H | DS3 | 0.000 | 0.000 | 17.492 | 0.0010 | 1.318 | 0.602 | 6972.65 |
| 10Y-24H | DS4 | 0.000 | 0.000 | 17.492 | 0.0010 | 1.754 | 0.850 | 8715.84 |
| 10Y-24H | Post-Detention | 0.000 | 0.000 | 17.493 | 0.0010 | 4.302 | 0.950 | 30494.70 |
| 10Y-24H | Post-Swale | 0.000 | 0.000 | 13.076 | 0.0002 | 0.413 | 0.000 | 22193.93 |
| 10Y-24H | Pre-Site to Swale | 0.000 | 0.000 | 17.037 | 0.0001 | 0.383 | 0.000 | 95832.00 |
| 25Y-72H | DS1 | 0.000 | 0.000 | 17.587 | 0.0001 | 0.489 | 0.000 | 8278.30 |
| 25Y-72H | DS2 | 0.000 | 0.000 | 17.588 | 0.0001 | 0.648 | 0.141 | 8715.81 |
| 25Y-72H | DS3 | 0.000 | 0.000 | 17.589 | 0.0001 | 0.693 | 0.289 | 6972.65 |
| 25Y-72H | DS4 | 0.000 | 0.000 | 17.590 | 0.0001 | 0.911 | 0.408 | 8715.84 |
| 25Y-72H | Post-Detention | 0.000 | 0.000 | 17.591 | 0.0001 | 2.242 | 0.474 | 30494.70 |
| 25Y-72H | Post-Swale | 0.000 | 0.000 | 13.096 | 0.0000 | 0.263 | 0.000 | 22305.02 |
| 25Y-72H | Pre-Site to Swale | 0.000 | 0.000 | 17.065 | 0.0000 | 1.127 | 0.000 | 95832.00 |

Link Min/Max Conditions : Multi Item | (sim, name) [Scenario1]

| Sim Name | Link Name | Max Flow [cfs] | Min Flow [cfs] | Min/Max Delta Flow [cfs] | Max Us Velocity [fps] | Max Ds Velocity [fps] | Max Avg Velocity [fps] |
|---|---|---|---|---|---|---|---|
| 100Y-72H | DS1 to DS2 | 0.000 | -0.163 | -0.001 | -0.092 | -0.092 | -0.092 |
| 100Y-72H | DS2 to DS3 | 0.000 | -0.335 | -0.002 | -0.189 | -0.189 | -0.189 |
| 100Y-72H | DS3 to DS4 | 0.000 | -0.472 | -0.003 | -0.267 | -0.267 | -0.267 |
| 100Y-72H | DS4 To Dentention | 0.005 | -0.571 | -0.004 | -0.323 | -0.323 | -0.323 |
| 100Y-72H | Post-Detention to Post-Swale - Pipe | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 100Y-72H | Post-Detention to Post-Swale - Weir: 1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 10Y-24H | DS1 to DS2 | 0.001 | -0.293 | -0.007 | -0.166 | -0.166 | -0.166 |
| 10Y-24H | DS2 to DS3 | 0.001 | -0.602 | -0.015 | -0.341 | -0.341 | -0.341 |
| 10Y-24H | DS3 to DS4 | 0.001 | -0.850 | -0.022 | -0.481 | -0.481 | -0.481 |
| 10Y-24H | DS4 To Dentention | 0.007 | -0.950 | -0.024 | -0.537 | -0.537 | -0.537 |
| 10Y-24H | Post-Detention to Post-Swale - Pipe | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 10Y-24H | Post-Detention to Post-Swale - Weir: 1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 25Y-72H | DS1 to DS2 | 0.000 | -0.141 | -0.001 | -0.080 | -0.080 | -0.080 |
| 25Y-72H | DS2 to DS3 | 0.000 | -0.289 | -0.002 | -0.164 | -0.164 | -0.164 |
| 25Y-72H | DS3 to DS4 | 0.000 | -0.408 | -0.003 | -0.231 | -0.231 | -0.231 |
| 25Y-72H | DS4 To Dentention | 0.004 | -0.474 | -0.003 | -0.268 | -0.268 | -0.268 |
| 25Y-72H | Post-Detention to Post-Swale - Pipe | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 25Y-72H | Post-Detention to Post-Swale - Weir: 1 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

# APPENDIX D
# GEOTECHNICAL REPORT – SUBSURFACE EXPLORATION

June 17, 2026
KSM Project No. 2603525-b

Architectural Concepts, Inc.
Kenneth L. Tobin, AIA
2401 West Bay Dr., Ste 503
Largo, FL 33770

**Re: Geotechnical Engineering Report**
**Sandgate Health and Rehabilitation Center**
**703 S. 29th Street & 702 S. 31st Street**
**Fort Pierce, St. Lucie County, Florida**

Dear Mr. Tobin:

As requested, KSM Engineering & Testing has performed a subsurface investigation at the above referenced site. Presentation of the data gathered during the investigation, together with our geotechnical related opinions, are included in this report.

## Scope of Work and Professional Service Agreement:

The scope of work for our services provided is based upon KSM Proposal No. 250872, dated November 20, 2025, which was authorized and returned to us on May 18, 2026.

## Site Description:

The two subject sites comprise approximately 4.3± acres and are located to the west of South 29th Street and to the east of South 31st Street in Fort Pierce, St Lucie County, Florida. At the time of our explorations, the developed parcel had an existing single-story structure with an approximate "footprint" of 31,915± square feet, which was reportedly built in 1980. The adjacent parcel was undeveloped and consisted mostly of dense underbrush and many trees.

## Project Description:

The following information is based on conversations with the client, our assumptions with respect to the site and the project, and on our review of the provided architectural site plan sheet, by Architectural Concepts, Inc., dated September 25, 2025. If this document has been superseded, or if any changes have been made to this plan sheet, please contact KSM to submit the current plan sheets, so we can make any adjustments and revise this report, if necessary.

Based on conversations with the client, it is our understanding that the project entails the design and construction of a 32,261± square feet, 39-bed addition. The 39-bed addition is planned to be constructed on the western side of the existing structure. KSM assumes that the anticipated loading conditions will range from 2 to 2.5 kips per linear foot along load bearing walls, and that the maximum column loads, if applicable, will be less than 50 kips per column. The development of the site will also include the construction of pavement and drainage areas, however, at the request of the client, the recommendations contained within this report are limited to the addition area only. Additionally, analyzing the existing structure was not included within the scope of our investigation.

KSM also understands that the rough graded building pad elevation will lie up to approximately 2 to 3 feet above existing grade.

At the time of this report, KSM has not been furnished with design structural loading conditions, a foundation plan, or foundation settlement tolerances. Once finalized, this information should be provided to KSM so that we may review and amend our recommendations and opinions as necessary.

## Geotechnical Scope of Service:

1. Performed our field exploration throughout the site.

2. Measured the depth to the observed groundwater level at each boring location.

3. Reviewed the soil samples and field soil boring logs in our laboratory and performed laboratory testing on selected samples.

4. Evaluated the discovered subsurface conditions and prepared this report to document our findings and summarize our conclusions and recommendations.

## Site Investigation:

Subsurface Testing – KSM's site investigation program consisted of performing the following exploration operations:

- Five (5) Standard Penetration Test (SPT) borings, which were terminated at approximate depths of 10 and 25 feet below the existing ground surface. The borings were performed within the approximate limits of the proposed addition.

- One (1) Dynamic Cone Penetrometer (DCP) sounding, which was terminated at an approximate depth of 10 feet below the existing ground surface. In addition, one (1) Hand Auger (HA) boring was performed in conjunction with the DCP sounding and terminated at an approximate depth of 6 feet below the existing ground surface. The DCP sounding and hand auger boring were performed at a location where the presence of nearby underground utilities limited access for conventional drilling equipment.

The approximate locations of the borings and sounding are presented on the attached Location Plan. These locations were determined in the field by estimating distances from existing site features and other points of reference and should be considered accurate only to the degree implied by the method of measurement used. If more accurate boring locations are required, we recommend that the locations be surveyed by a licensed surveyor.

Soil Classification – The field soil boring logs and recovered soil samples were transported to KSM's office from the project site. Following the completion of the field exploration activities, visual and tactile examination of the soil samples were performed under the supervision of a geotechnical engineer to identify the engineering classification of the soil samples that were

obtained in the field exploration. The visual classification of the samples was performed in general accordance with the current Unified Soil Classification System (ASTM D 2487).

General Soil Profile – The following table outlines the general subsurface conditions that were encountered during our investigation. For specific information at each boring and sounding location, refer to the attached boring and sounding logs.

| Generalized Soil Profile | |
|---|---|
| **Approximate Depth Below Grade (Feet)** | **Discovered Subsurface Conditions** |
| 0 to 25 | Loose to medium dense sand and slightly silty sand |

The stratification of the boring profiles represents our interpretation of the field boring logs and the laboratory test results of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

Soil Boring Sampling and Testing Methods - The Standard Penetration Test (SPT) is a widely accepted method of in-situ testing of foundation soils. In brief, a standard split barrel sampler is driven into the ground by successive blows of a hammer freely dropping on the drill rod. The number of hammer blows needed to advance the sampler for each 6-inch increment is recorded. The total number of hammer blows required to advance the sampler during the second and third 6-inch increments constitutes the N-value (blows per foot) at that depth. After driving the sampler, it is extracted from the borehole and is opened to allow visual description of the retained soil sample in the field, which is also documented on the field soil boring logs for the depth sampled.

The SPT N-value has been empirically correlated with various soil properties, allowing for an estimate of the behavior of soils under a load. The table below relates the SPT N-values to a qualitive description of soil density for cohesionless soils.

| SPT N-Value Description | |
|---|---|
| **Relative Density** | **N-Value (Safety Hammer)** |
| Very Loose | 0 – 4 |
| Loose | 4 – 10 |
| Medium Dense | 10 – 30 |
| Dense | 30 – 50 |
| Very Dense | >50 |

Hand Auger Boring – The hand auger boring was performed by manually turning and advancing a bucket auger into the ground, typically in 6-inch increments until the desired termination depth

was reached or cave-in of the borehole. Representative portions of these soil samples were sealed and transferred to our laboratory for visual classification and testing.

Dynamic Cone Penetrometer (DCP) Sounding – The DCP sounding was completed in accordance with procedures described in ASTM D6951 and related to the equivalent SPT "N"-values using the methods described in ASTM STP399.

Groundwater Depths – Following the completion of each soil boring, the groundwater was allowed to attain a stabilized level, and the approximate depth to the observed groundwater was measured from the existing ground surface and recorded on the field log. The observed groundwater levels were measured at approximate depths ranging from 4.4 to 4.6 feet below existing grade.

It should be noted that fluctuations of the groundwater table will occur between and away from our boring locations as well as due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. Therefore, groundwater levels during construction or at other times in the future may be higher or lower than the levels indicated on the boring logs.

The records of the soils encountered, the penetration resistances, DCP Sounding, and groundwater levels are documented on the attached boring logs.

All of our field explorations were performed in general accordance with applicable ASTM Standards and/or industry standards with a standard practice of care.

## Engineering Evaluation and Conclusions:

Based on the information obtained from this site investigation, we are pleased to offer the following evaluations:

Analysis and Opinions: Existing Foundation – Based on the approximate age of the existing structure, we believe the existing structure has already experienced a significant portion of the settlement it will experience during its service life. The proposed attached addition will be constructed on subgrade soils that, to the best of our knowledge, have not experienced similar loading conditions. It is especially important to follow the "Site Preparation" sections of this report, as settlement of the subsurface soils will occur in reaction to the newly applied loads from the additions. We anticipate that the effects of differential settlement will be most noticeable where the existing structure abuts the proposed additions.

Existing Footing Investigation – Performing an inspection on the existing structure's foundation system was not within our scope of work therefore, it is recommended the structural engineer of record determine if the existing foundation can adequately support the proposed loading conditions.

Foundation System Evaluation – It is our professional opinion that the proposed structure can be supported on conventional shallow foundations, provided the site is prepared, the soils are

compacted, and the foundations are designed in accordance with recommendations presented below.

The following sections provide recommendations for site preparation and provide design recommendations for the shallow foundation.

## Site Preparation:

Compaction Equipment – KSM recommends using caution with heavy vibratory equipment on this site, due to the proximity of the neighboring structures and the potential that ground vibrations created by the compaction machinery might be transmitted and cause damage to the nearby structures. In the event that the operations are found to transmit such harmful vibrations, KSM recommends that non-vibratory compaction methods be substituted to execute the recommended earthwork procedures delineated below.

Site Subgrade Preparation – KSM recommends that the site subgrade be prepared for construction of the foundations and floor slab-on-grade by improving the in-place density of the near surface soils that will support the structure within the zone where the stress from the structure will be primarily distributed. The following earthwork procedures are recommended:

1. Clearing and Grubbing – The proposed construction area, plus a minimum margin of five feet beyond the proposed limits of construction, should be prepared by removing any construction debris, including underground utilities, and organic materials including roots and surface vegetation. The roots of the trees should be removed in their entirety. Stump grinding as a means of removing the root systems is not recommended.

   All existing pipes or any collapsible or leak prone utilities shall be removed or completely filled with grout or concrete, as they might serve as conduits for subsurface erosion. Over-excavated areas resulting from the removal of underground structures and unsuitable materials should be backfilled in accordance with this report.

2. Building Pad Subgrade Compaction – The exposed surface, created in the step above, should be graded level, moisture conditioned, then proof-rolled and compacted. Sufficient passes of the roller should be made to produce an in-place dry density that equals or exceeds 95 percent of the Modified Proctor (ASTM D 1557) maximum dry density to a minimum depth of 1 foot below the exposed surface. Testing should be done to confirm that the specified level of compaction has been achieved.

   Any areas that deflect or yield during proof-rolling operations should be delineated and reviewed by the Geotechnical Engineer or their representative. In addition, excessively wet or dry material should either be removed, remediated, or moisture conditioned and recompacted.

3. Grading – Upon completion of the compaction operation, the exposed surface should be filled to produce the desired line and grades. Within 2 feet of structural components and final grades, structural fill containing less than 10% material that passes through

the U.S. Standard No. 200 sieve that is free of debris and organic material. Structural fill should be placed in level lifts not more than 12-inches in loose thickness, moisture conditioned, and compacted to attain an in-place dry density that equals or exceeds 95 percent of the Modified Proctor (ASTM D 1557) maximum dry density. Testing should be performed on each lift prior to additional lifts being placed to confirm that the specified level of compaction has been achieved.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the KSM Geotechnical Engineer, or their representative, prior to placement of additional lifts.

4. Footing Excavation and Subgrade Compaction – At the footing locations, excavate the compacted subgrade soils to the proposed design elevations. The exposed footing subgrade soils should then be compacted to attain an in-place dry density that equals or exceeds 95 percent of the Modified Proctor (ASTM D 1557) maximum dry density, to a minimum depth of 1 foot below the bottom of the footing. Testing should be done to confirm that the specified level of compaction has been achieved.

5. Utility, Foundation, Slab on Grade – Upon completion of the previous steps, the foundation forms (if used) and steel reinforcement can be installed, and the foundation concrete should be cast, as necessary. Any backfill that is placed adjacent to the foundations, as well as backfill placed in utility trench excavations within the building pad, should be likewise compacted to attain or exceed 95 percent of the Modified Proctor (ASTM D 1557) maximum dry density. Testing should be done to confirm that the specified level of compaction has been achieved.

Compaction Testing – It is KSM's recommendation that compaction tests in the excavations and footing trenches be conducted prior to placement of any backfill, steel, or concrete. The in-place density tests should be conducted at every column footing and at a frequency of one test for every 100 linear feet in the footing trench excavations. The subgrade and each lift (12-inch max loose thickness) of fill should be tested for compaction at a frequency of no less than one test per 2,500 sf of building area, per lift, with a minimum of 4 tests in each area prepared. The placement and frequency of testing can be modified at the discretion of the Geotechnical Engineer. In-place density of the compacted soil can be measured using an ASTM approved method to determine percent compaction.

Temporary Dewatering – Given the recorded depths to the groundwater levels encountered in our borings, and the expected scope of earthwork operations and utility installation, temporary dewatering may be a necessary part of the earthwork operations, particularly for utility excavations. Depending on the time of the year and final site grades, groundwater control may also be required for foundation excavations. In the event that compaction operations are performed within 2 feet of the prevailing groundwater levels, temporary dewatering may become necessary. The actual method of dewatering should be determined by the contractor. We recommend drawing down the groundwater to a level that is not less than 2 feet below the exposed bottom of excavations to avoid compaction related issues.

Excavation Stability and Protection of Adjacent Structures – It is recommended that the contractor design and execute excavations to be in compliance with OSHA standards. If required, lateral excavation support and/or underpinning the foundations of the proposed structure should be performed to protect the proposed structure from damage. Provisions for maintaining workman safety within excavations is the sole responsibility of the contractor. It is important for the contractor to take all necessary precautions to ensure that the foundations that support any adjacent structures are not undermined at any point during construction. If required, lateral excavation support and/or underpinning the foundations of the adjacent structures should be performed.

The earthwork efforts should be monitored under the direction of the KSM Geotechnical Engineer or their representative.

## Shallow Foundation:

The adoption of the following recommended design parameters are predicated on the execution of the Site Preparation recommendations given herein above, and on KSM's experience with similarly loaded structures, as stated in the "Project Description" section of this report. If the size of the designed foundations, based on the parameters provided, exceed the recommended maximum dimensions, the structural engineer should notify KSM so that we can review the design foundation and loading conditions, and provide additional site preparation recommendations, foundation recommendations, and settlement calculations, as needed.

| Design Parameters | | | |
|---|---|---|---|
| **Description** | **Isolated Footing** | **Continuous Footing** | **Monolithic Slab** |
| Estimated Allowable Bearing Pressure | 2,500 psf | 2,500 psf | 2,500 psf |
| Minimum Embedment Below Finished Grade | 16 inches | 18 inches | 18 inches |
| Minimum Width | 24 inches | 18 inches | 18 inches |
| Maximum Width | 60 inches | 30 inches | 30 inches |
| Approximate Total Settlement | < 1 inch | < 1 inch | < 1 inch |
| Approximate Differential Settlement | < ½ of an inch between similarly loaded columns | < ½ of an inch over 40 feet | < ½ of an inch over 40 feet |

Based on the expected response of the discovered subsurface conditions to applied foundation loads, KSM expects that the majority of the settlement will occur as the weight of the structure's components are applied to the foundations during construction.

It is the contractor's responsibility to maintain the integrity of foundation during construction and after, this includes, but is not limited to, ensuring that surface water runoff is diverted away from the foundation.

## Floor Slabs:

A conventional slab-on-grade ground floor can be used in the "at grade" portion of the structure. We recommend the disturbed subgrade below the floor slab be re-compacted to meet or exceed 95 percent of the Modified Proctor maximum dry density (ASTM D 1557) prior to placement of the steel and concrete. We recommend that control joints be installed in the slab at frequent intervals to reduce the potential for the development of shrinkage cracks at unintended locations in the finished floor surface.

The installation of a moisture barrier is recommended between the floor slab and the soils, to prevent moisture migration from the underlying soils, which could lead to dampness of the slab and the potential poor performance of floor finishes (carpet, tile, etc.).

## Closure:

Based upon our subsurface investigation at the above-mentioned project location, the reliance of the recommendations presented within this signed and sealed report is predicated on KSM representative's involvement in reviewing design plans and performing/monitoring construction testing services. Any design professional utilizing the information within this report are responsible for confirming the accuracy of the project information and assumptions stated in our report and that the soil parameters presented are adequate for the design of the proposed project. If additional parameters are required, KSM is to be notified so that our recommendations can be amended as required.

Standard of Care – This report has been prepared in accordance with generally accepted soil and engineering practices and is based on our evaluation of our geotechnical investigation and our stated understanding and assumptions of the proposed project. The procedural standards noted in this report are in reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgement. No warranties, either expressed or implied, are intended or made. This report does not reflect any variations which may occur between or away from the borings. If variations appear evident during the course of construction, it would be necessary to re-evaluate the recommendations of this project.

Limitations – Environmental conditions, wetland delineation, karst activity, water quality, and municipal requirements are not a part of this report.

KSM Engineering and Testing should be retained to perform and/or monitor Construction Testing services. If Client elects to not have KSM provide Construction Testing services, the Client shall indemnify and hold KSM and its consultants harmless from and against damages, losses, and judgments arising from claims by Client or any third parties.

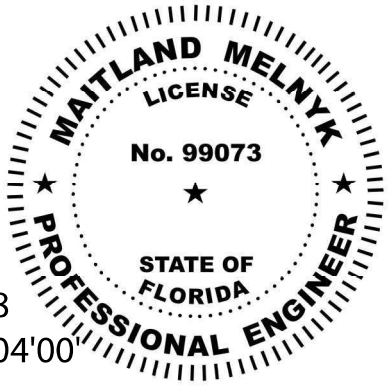
We are pleased to have been of assistance to you in this phase of your project. When we may be of further service to you or should you have any questions, please feel free to contact the office.

Respectfully,

This item has been digitally signed and sealed by Maitland Melnyk, PE on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

Digitally signed by Maitland Melnyk
Date: 2026.06.18 12:32:59 -04'00'

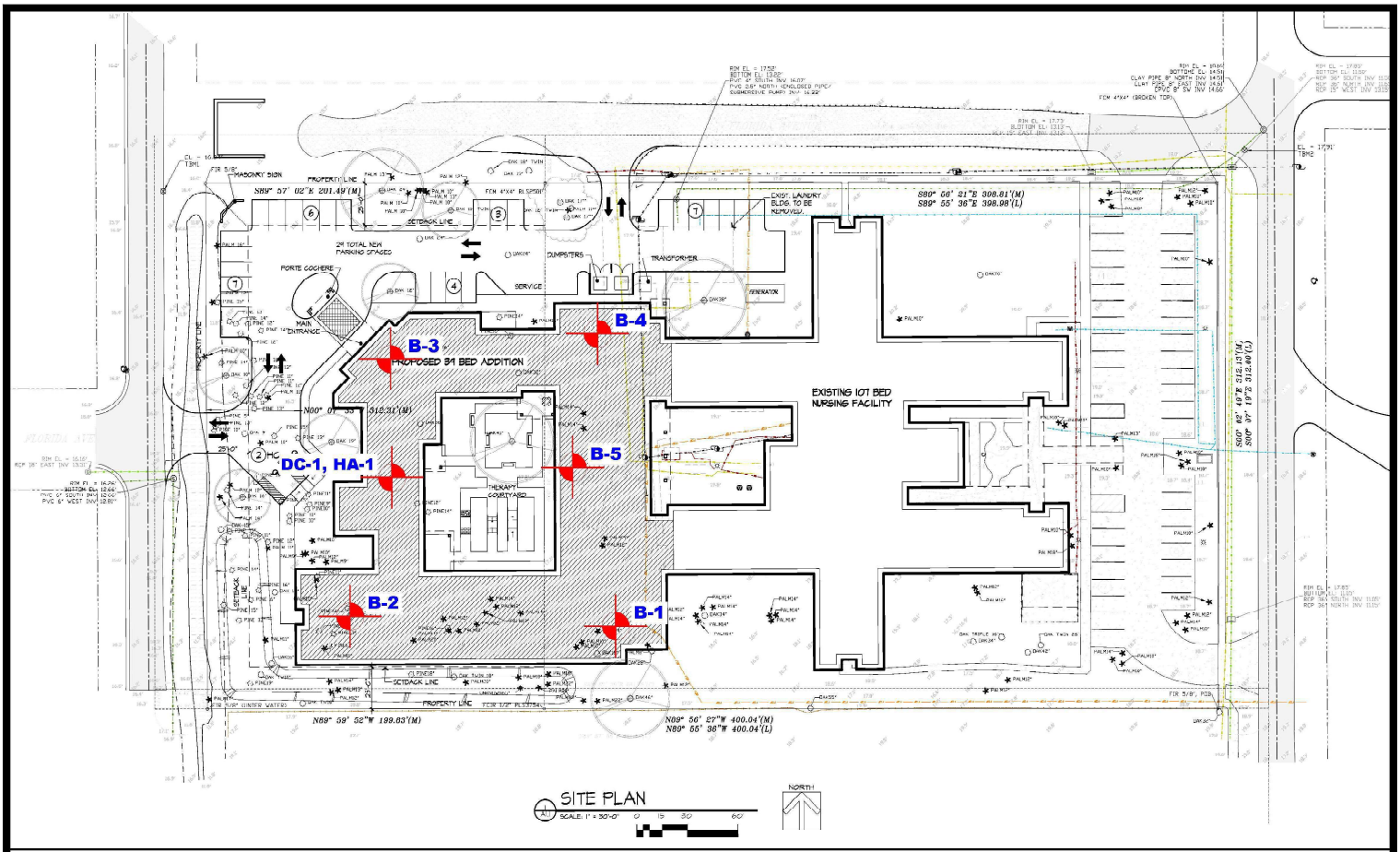



Maitland D. Melnyk, P.E.
Geotechnical Engineer
Florida Lic. No. 99073

Alexis Alba
Geotechnical Project Manager

AMA/cv/MDM

Email to: ktobin@archconcept.com; boruss@archconcept.com; AClarke@archconcept.com




**APPROXIMATE LOCATION OF SOIL TESTING**

**PROJECT:** Sandgate Health and Rehabilitation Center, 703 S. 29th Street & 702 S. 31st Street, Fort Pierce, Florida

SHEET 1 OF 1
PERMIT #: N/A
PROJECT #: 2603525-b

KSM ENGINEERING AND TESTING

DRAWN BY: C.V.
DATE: 20260610
SCALE: NOT TO SCALE

# BORING NUMBER B-1



**CLIENT** Architectural Concepts, Inc.
**PROJECT NAME** Sandgate Health and Rehabilitation Center
**PROJECT NUMBER** 2603525-b
**PROJECT LOCATION** 703 S. 29th Street & 702 S. 31st Street, Fort Pierce
**DATE STARTED** 6/5/26 **COMPLETED** 6/5/26
**GROUND ELEVATION**
**DRILLING CONTRACTOR**
**GROUND WATER LEVELS:**
**DRILLING METHOD** SPT Safety Hammer
▽ **AT TIME OF DRILLING** 4.6 ft
**LOGGED BY** BS/LD
**NOTES** See Attached Location Plan

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | BLOW COUNTS (N VALUE) | SCP VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | PERMEABILITY RATE (IN/HR) | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | Brown Sand | 1-3-3 (6) | | | | | | | | |
| | | | 3-4-5 (9) | | | | | | | | |
| 5 | | ▽ Brown Slightly Silty Sand | 5-8-6 (14) | | 14.9 | 9.3 | | | | | NP |
| | | Light Brown Sand | 3-4-4 (8) | | | | | | | | |
| | | | 3-5-4 (9) | | | | | | | | |
| 10 | | Bottom of borehole at 10.0 feet. | | | | | | | | | |

# BORING NUMBER B-2



**CLIENT** Architectural Concepts, Inc.
**PROJECT NAME** Sandgate Health and Rehabilitation Center
**PROJECT NUMBER** 2603525-b
**PROJECT LOCATION** 703 S. 29th Street & 702 S. 31st Street, Fort Pierce
**DATE STARTED** 6/5/26 **COMPLETED** 6/5/26
**GROUND ELEVATION**
**DRILLING CONTRACTOR**
**GROUND WATER LEVELS:**
**DRILLING METHOD** SPT Safety Hammer
▽ **AT TIME OF DRILLING** 4.5 ft
**LOGGED BY** BS/LD
**NOTES** See Attached Location Plan

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | BLOW COUNTS (N VALUE) | SCP VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | PERMEABILITY RATE (IN/HR) | ATTERBERG LIMITS PLASTIC LIMIT | ATTERBERG LIMITS LIQUID LIMIT | ATTERBERG LIMITS PLASTIC INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | Light Brown Sand | 3-4-6 (10) | | | | | | | | |
| | | | 6-7-7 (14) | | | | | | | | |
| 5 | | ▽ Brown Slightly Silty Sand | 6-5-6 (11) | | | | | | | | |
| | | Light Brown Sand | 4-6-7 (13) | | | | | | | | |
| | | | 7-8-7 (15) | | | | | | | | |
| 10 | | | | | | | | | | | |
| | | Dark Brown Sand | 1-3-4 (7) | | | | | | | | |
| 15 | | | | | | | | | | | |
| | | | 2-2-3 (5) | | 21.4 | 4.6 | | | | | NP |
| 20 | | | | | | | | | | | |
| | | | 3-2-3 (5) | | | | | | | | |
| 25 | | Bottom of borehole at 25.0 feet. | | | | | | | | | |

# BORING NUMBER B-3



KSM

**CLIENT** Architectural Concepts, Inc.
**PROJECT NAME** Sandgate Health and Rehabilitation Center
**PROJECT NUMBER** 2603525-b
**PROJECT LOCATION** 703 S. 29th Street & 702 S. 31st Street, Fort Pierce
**DATE STARTED** 6/5/26 **COMPLETED** 6/5/26
**GROUND ELEVATION**
**DRILLING CONTRACTOR**
**GROUND WATER LEVELS:**
**DRILLING METHOD** SPT Safety Hammer
▽ **AT TIME OF DRILLING** 4.6 ft
**LOGGED BY** BS/LD
**NOTES** See Attached Location Plan

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | BLOW COUNTS (N VALUE) | SCP VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | PERMEABILITY RATE (IN/HR) | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | Brown Sand | 2-3-5 (8) | | | | | | | | |
| | | Light Brown Sand | 3-5-6 (11) | | | | | | | | |
| 5 | | ▽ Brown Slightly Silty Sand | 5-5-7 (12) | | | | | | | | |
| | | Light Brown Sand | 5-6-6 (12) | | | | | | | | |
| | | | 3-5-6 (11) | | | | | | | | |
| 10 | | | | | | | | | | | |
| | | Dark Brown Sand | 2-2-3 (5) | | 22.3 | 4.4 | | | | | |
| 15 | | | | | | | | | | | |
| | | Brown Slightly Silty Sand | 1-3-3 (6) | | | | | | | | |
| 20 | | | | | | | | | | | |
| | | Dark Brown Slightly Silty Sand | 2-3-4 (7) | | | | | | | | |
| 25 | | | | | | | | | | | |
| | | Bottom of borehole at 25.0 feet. | | | | | | | | | |

# BORING NUMBER B-4



**CLIENT** Architectural Concepts, Inc.
**PROJECT NAME** Sandgate Health and Rehabilitation Center
**PROJECT NUMBER** 2603525-b
**PROJECT LOCATION** 703 S. 29th Street & 702 S. 31st Street, Fort Pierce
**DATE STARTED** 6/5/26 **COMPLETED** 6/5/26
**GROUND ELEVATION**
**DRILLING CONTRACTOR**
**GROUND WATER LEVELS:**
**DRILLING METHOD** SPT Safety Hammer
▽ **AT TIME OF DRILLING** 4.5 ft
**LOGGED BY** BS/LD
**NOTES** See Attached Location Plan

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | BLOW COUNTS (N VALUE) | SCP VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | PERMEABILITY RATE (IN/HR) | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | Brown Sand | 1-2-3 (5) | | 6.3 | 1.7 | | | | | |
| | | | 4-6-6 (12) | | | | | | | | |
| 5 | | ▽ Brown Slightly Silty Sand | 5-6-7 (13) | | | | | | | | |
| | | Light Brown Sand | 6-7-6 (13) | | | | | | | | |
| | | | 3-5-4 (9) | | | | | | | | |
| 10 | | Bottom of borehole at 10.0 feet. | | | | | | | | | |

# BORING NUMBER B-5



**CLIENT** Architectural Concepts, Inc.
**PROJECT NAME** Sandgate Health and Rehabilitation Center
**PROJECT NUMBER** 2603525-b
**PROJECT LOCATION** 703 S. 29th Street & 702 S. 31st Street, Fort Pierce
**DATE STARTED** 6/5/26 **COMPLETED** 6/5/26
**GROUND ELEVATION**
**DRILLING CONTRACTOR**
**GROUND WATER LEVELS:**
**DRILLING METHOD** SPT Safety Hammer
▽ **AT TIME OF DRILLING** 4.6 ft
**LOGGED BY** BS/LD
**NOTES** See Attached Location Plan

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | BLOW COUNTS (N VALUE) | SCP VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | PERMEABILITY RATE (IN/HR) | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | Brown Sand | 1-2-3 (5) | | | | | | | | |
| | | | 4-6-6 (12) | | | | | | | | |
| 5 | | ▽ Brown Slightly Silty Sand | 4-4-4 (8) | | | | | | | | |
| | | Brown Sand | 3-5-3 (8) | | | | | | | | |
| | | | 2-3-3 (6) | | | | | | | | |
| 10 | | | | | | | | | | | |
| | | Dark Brown Sand | 1-2-3 (5) | | | | | | | | |
| 15 | | | | | | | | | | | |
| | | | 2-2-3 (5) | | | | | | | | |
| 20 | | | | | | | | | | | |
| | | | 3-3-3 (6) | | 21.2 | 3.2 | | | | | |
| 25 | | Bottom of borehole at 25.0 feet. | | | | | | | | | |

# WILDCAT DYNAMIC CONE LOG



Company Name: KSM Engineering & Testing
Company Street #: 11345 Hwy. U.S. 1
Company City, State, Zip: Sebastian, Florida 32958

PROJECT NUMBER: 2603525-b
DATE STARTED: 06-05-2026
DATE COMPLETED: 06-05-2026

HOLE #: DC-1, See Loc Plan
CREW: BS/LD
PROJECT: Architectural Concepts, Inc.
ADDRESS: Sandgate Health and Rehabilitation Center
LOCATION: 703 S. 29th Street & 702 S. 31st Street, Fort Pierce

SURFACE ELEVATION: N/A
WATER ON COMPLETION:
HAMMER WEIGHT: 35 lbs.
CONE AREA: 10 sq. cm

| DEPTH | BLOWS PER 10 cm | RESISTANCE Kg/cm² | GRAPH OF CONE RESISTANCE 0 50 100 150 | N' | TESTED CONSISTENCY NON-COHESIVE | COHESIVE |
|---|---|---|---|---|---|---|
| - | 3 | 13.3 | •••• | 3 | VERY LOOSE | SOFT |
| - | 3 | 13.3 | •••• | 3 | VERY LOOSE | SOFT |
| - 1 ft | 5 | 22.2 | •••••••• | 6 | LOOSE | MEDIUM STIFF |
| - | 5 | 22.2 | •••••••• | 6 | LOOSE | MEDIUM STIFF |
| - | 7 | 31.1 | •••••••••• | 8 | LOOSE | MEDIUM STIFF |
| - 2 ft | 13 | 57.7 | •••••••••••••••••• | 16 | MEDIUM DENSE | VERY STIFF |
| - | 18 | 79.9 | •••••••••••••••••••••••••• | 22 | MEDIUM DENSE | VERY STIFF |
| - | 18 | 79.9 | •••••••••••••••••••••••••• | 22 | MEDIUM DENSE | VERY STIFF |
| - 3 ft | 15 | 66.6 | •••••••••••••••••••••• | 19 | MEDIUM DENSE | VERY STIFF |
| - 1 m | 16 | 71.0 | •••••••••••••••••••••••• | 20 | MEDIUM DENSE | VERY STIFF |
| - | 12 | 46.3 | •••••••••••••••• | 13 | MEDIUM DENSE | STIFF |
| - 4 ft | 10 | 38.6 | ••••••••••••• | 11 | MEDIUM DENSE | STIFF |
| - | 10 | 38.6 | ••••••••••••• | 11 | MEDIUM DENSE | STIFF |
| - | 10 | 38.6 | ••••••••••••• | 11 | MEDIUM DENSE | STIFF |
| - 5 ft | 11 | 42.5 | •••••••••••••• | 12 | MEDIUM DENSE | STIFF |
| - | 12 | 46.3 | •••••••••••••••• | 13 | MEDIUM DENSE | STIFF |
| - | 12 | 46.3 | •••••••••••••••• | 13 | MEDIUM DENSE | STIFF |
| - 6 ft | 11 | 42.5 | •••••••••••••• | 12 | MEDIUM DENSE | STIFF |
| - | 11 | 42.5 | •••••••••••••• | 12 | MEDIUM DENSE | STIFF |
| - 2 m | 15 | 57.9 | •••••••••••••••••• | 16 | MEDIUM DENSE | VERY STIFF |
| - 7 ft | 14 | 47.9 | ••••••••••••••••• | 13 | MEDIUM DENSE | STIFF |
| - | 12 | 41.0 | •••••••••••••• | 11 | MEDIUM DENSE | STIFF |
| - | 10 | 34.2 | •••••••••••• | 9 | LOOSE | STIFF |
| - 8 ft | 11 | 37.6 | ••••••••••••• | 10 | LOOSE | STIFF |
| - | 10 | 34.2 | •••••••••••• | 9 | LOOSE | STIFF |
| - | 9 | 30.8 | ••••••••••• | 8 | LOOSE | MEDIUM STIFF |
| - 9 ft | 11 | 37.6 | ••••••••••••• | 10 | LOOSE | STIFF |
| - | 10 | 34.2 | •••••••••••• | 9 | LOOSE | STIFF |
| - | 12 | 41.0 | •••••••••••••• | 11 | MEDIUM DENSE | STIFF |
| - 3 m 10 ft | 13 | 44.5 | •••••••••••••••• | 12 | MEDIUM DENSE | STIFF |
| - | | | | | | |
| - | | | | | | |
| - | | | | | | |
| - 11 ft | | | | | | |
| - | | | | | | |
| - | | | | | | |
| - 12 ft | | | | | | |
| - | | | | | | |
| - | | | | | | |
| - 4 m 13 ft | | | | | | |

# BORING NUMBER HA-1



**CLIENT** Architectural Concepts, Inc.
**PROJECT NAME** Sandgate Health and Rehabilitation Center
**PROJECT NUMBER** 2603525-b
**PROJECT LOCATION** 703 S. 29th Street & 702 S. 31st Street, Fort Pierce
**DATE STARTED** 6/5/26 **COMPLETED** 6/5/26
**GROUND ELEVATION**
**DRILLING CONTRACTOR**
**GROUND WATER LEVELS:**
**DRILLING METHOD** Auger Boring
▽ **AT TIME OF DRILLING** 4.4 ft
**LOGGED BY** BS/LD
**NOTES** See Attached Location Plan

| DEPTH (ft) | GRAPHIC LOG | MATERIAL DESCRIPTION | BLOW COUNTS (N VALUE) | SCP VALUE | MOISTURE CONTENT (%) | FINES CONTENT (%) | ORGANIC CONTENT (%) | PERMEABILITY RATE (IN/HR) | ATTERBERG LIMITS: PLASTIC LIMIT | ATTERBERG LIMITS: LIQUID LIMIT | ATTERBERG LIMITS: PLASTIC INDEX |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | | Brown Sand | | | | | | | | | |
| | | Light Brown Sand | | | | | | | | | |
| | | ▽ Gray Sand | | | | | | | | | |
| 5 | | | | | 19.4 | 4.1 | | | | | |
| | | Bottom of borehole at 6.0 feet. | | | | | | | | | |