



MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

GEOTECHNICAL ENGINEERING REPORT

PROPOSED LAGUNA BEACH CHAPEL
PANAMA CITY BEACH, FLORIDA

PREPARED FOR:

MR. JOHN HAAS
T&P ENTERPRISES OF BAY COUNTY, INC.
c/o GORTEMOLLER ENGINEERING, INC.
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PANAMA CITY BEACH, FLORIDA 32408

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MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING CONSULTANTS

December 16, 2024

Mr. John Haas
T&P Enterprises of Bay County, Inc.
c/o Gortemoller Engineering, Inc
708 Thomas Drive
Panama City Beach, Florida 32408

SUBJECT: Laguna Beach Chapel - Geotechnical Services
Panama City Beach, Florida
MEI Project No. M124-108-077

Dear Mr. Haas:

This letter forwards the results of our Geotechnical exploration for the proposed development. Our exploration consisted of Five (5) 40-foot deep Standard Penetration Test (SPT) borings in the proposed building area. The subsurface exploration was conducted to provide information needed in the design of an effective foundation system for the referenced development. The following report presents the results of our study as well as our evaluation and recommendations pertaining to the geotechnical aspects of the project. Upon completion of our field testing, the samples were brought back to the office for visual inspection, classification, and analysis by our engineering staff.

Project Information

The subject site is located at 20204 Front Beach Road, which is west of 15th Street and east of 16th Street in Panama City Beach, Florida. At the time of our exploration, the site was mostly clear with the exception of existing structures present in the proposed footprint on the south and east side of the site. Based on visual observations, the site appeared relatively level with less than 2 feet of grade change present.

We understand the proposed construction will consist of a new chapel with a plan area of approximately 27,600 square feet. Structural loading was provided by Mr. C. Todd Walker, P.E. with K&S Engineering, PLLC. Maximum wall loads will be 3.5 kips per linear feet and maximum isolated column loads will be 90 kips. Grading information was not available at the writing of this report. For engineering purposes, we anticipate the finished floor elevation to be within 3 feet of existing grades.

If any of the above information is incorrect, please inform Magnum Engineering, Inc. so that we can review and update our recommendations, as needed.

Subsurface Conditions

Figure #1 shows the Boring Location Plan and Figure #2 shows the Logs of Borings for Standard Penetration Test borings B-1 through B-5. The test locations were established in the field using the provided site plan, a 100-foot tape, and estimating right angles with reference to existing site landmarks. Therefore, the boring locations should be considered approximate.

Building Borings

The building borings (B-1 through B-5) generally encountered loose to very loose sands from the existing ground surface to approximately 12 feet below existing grade underlain by loose to medium dense clean fine sands and silty fine sands to roughly 18 feet below existing grade. Below 18 feet, loose to dense silty fine sands and clayey fine sands were encountered to the boring termination depth of 40 feet below existing grade.

The above subsurface descriptions are of a generalized nature, provided to highlight the major soil strata encountered. The Logs of Boring should be reviewed for specific subsurface conditions at each boring location. The stratifications shown on the Logs of Boring represent the subsurface conditions at the actual boring locations only, and variations in the subsurface conditions can and may occur between boring locations and should therefore be expected. The stratifications represent the approximate boundary between subsurface materials, and the transitions between strata may be gradual.

Please refer to the attached logs of borings presented as Figure #2 for a more detailed description of the soils encountered in our borings.

Groundwater Conditions

Groundwater was encountered from approximately 5.8 feet to 8.5 feet below existing grade at the time of drilling (November 8, 9, 2024), which was during a period of normal seasonal rainfall. Large fluctuations are possible under severe weather conditions. We recommend that the Contractor verify the actual groundwater levels at the time of construction to determine potential impacts groundwater will have on construction procedures.

CONCLUSIONS AND RECOMMENDATIONS

General

The following geotechnical related design recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions encountered. If there are any changes in these project criteria, including project location on the site, a review should be made by Magnum Engineering to determine if modifications to the recommendations are warranted.

Once final design plans and specifications are available, a general review by Magnum Engineering is recommended as a means to check that the evaluations made in preparation of this report are correct and that earthwork and foundation recommendations are properly interpreted and implemented.

Site Preparation

The site should be cleared and grubbed of surface vegetation and all existing structures including all existing underground utilities that may be in the proposed building footprint. At a minimum, it is recommended the clearing operations extend at least five feet beyond the development perimeters.

Due to the very loose sands encountered at the surface of the borings and the heavy column loads provided, we recommend undercutting the existing soils a minimum of Five (5) feet below existing grade, compacting the excavated ground surface to a minimum of 95 percent of the Modified Proctor (ASTM D-1557) maximum dry density 24 inches below the excavated subgrade level, then replace the excavated soils in level lifts, not to exceed 12 inches loose, with each lift compacted to a firm and unyielding condition and to a minimum of 95 percent of the soils Modified Proctor value, prior to placement of successive lifts.

Engineered Fill

All fill used to raise the building area to final grades should consist of sandy soils with less than 15 percent passing the No. 200 sieve. These soils should be free of rubble, organics, clay, debris and other unsuitable material. Fill should be placed in lifts on the order of 12 inches or less (in loose thickness) and compacted to 95 percent of the soil's Modified Proctor maximum dry density, per ASTM D-1557.

Foundations

With proper subgrade preparation and compaction/densification as described herein, the site soils should be capable of supporting the proposed structure on shallow foundations. The existing near surface soils and fill soils should be prepared as previously recommended to improve foundation support and reduce total and differential settlements.

Based on the anticipated construction and site preparation requirements recommended herein, it is our opinion that the building can be supported on shallow foundations designed for a **net maximum allowable bearing pressure of 1,500 pounds per square foot (psf)**. The following geotechnical related recommendations should be used for design and construction of the foundations.

- The foundation and floor slab should bear on properly improved existing subgrade or on properly placed and compacted cohesionless (sand) fill.
- The soils to a depth of one foot below the footings and floor slabs and all new fill should be compacted to 95 percent of the soil's Modified Proctor (ASTM D-1557) density.
- Exterior footings should be embedded so that the bottom of the foundation is a minimum of 18 inches below the adjacent compacted grades.
- Strip or wall footings should be a minimum of 18 inches wide and pad or column footings should be a minimum of three feet wide. The minimum footing sizes should be used regardless of whether or not the foundation loads and allowable bearing pressures dictate a smaller size.
- All footings should be constructed in a "dry" fashion.
- Structural elements should be centered on the footings such that the load is transferred evenly unless the footings are proportioned for eccentric loads.

Settlement

The settlement of shallow foundations supported on sandy soils should occur rapidly after loading. The majority of expected settlement should occur during construction as dead loads are imposed. Total settlements of footings are estimated to be less than 1 inch, with differential settlement on the order of 50 percent of the total settlements. Total and differential settlements of these magnitudes are usually considered tolerable for the anticipated construction; however, the tolerance of the proposed structures to the predicted total and differential settlements should be confirmed by the structural engineer.

Helical Piers

The installation of helical anchors may be an effective cost-effective alternative for support of the column loads in lieu of the excavation and compacting backfill. Helical anchors are installed by rotating the anchor into the ground until the recommended bearing depth and required torque based on the required anchor capacity has been achieved. We can provide contacts for specialty foundation contractors with experience in the area if this is an option.

Warranty and Limitations of Study

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties, either expressed or implied. Magnum Engineering, Inc. is not responsible for the independent conclusions, opinions or recommendations made by others based on the field exploration and laboratory test data presented in this report.

Soil conditions at other locations may differ from those encountered in the test borings, and the passage of time may cause the soils conditions to change from those described in this report.

This report is intended for use by the designers of this project. While we have no objections to it being provided for review by parties to this project, it is not a specification document and is not to be used as a part of the specifications. If desired, we can assist in the development of specifications for this project based upon our exploration.

The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or his representative is therefore considered necessary to verify the subsurface conditions and to check that the soils connected construction phases are properly carried out. If significant variations or changes are in evidence, it may be necessary to reevaluate the recommendations in this report.

Furthermore, if the project characteristics are altered significantly from those discussed in this report, if the project information contained in this report is incorrect or if additional information becomes available, a review must be made by this office to determine if any modifications in the recommendations will be necessary.

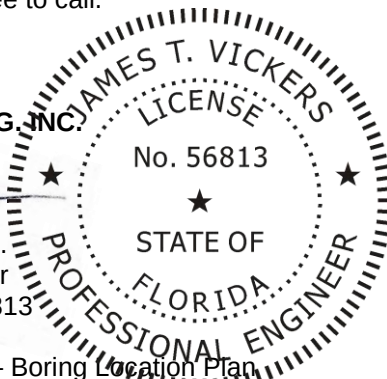
We hope this letter provides sufficient information for the present. If you have any questions or comments, please feel free to call.

Sincerely,

MAGNUM ENGINEERING, INC.

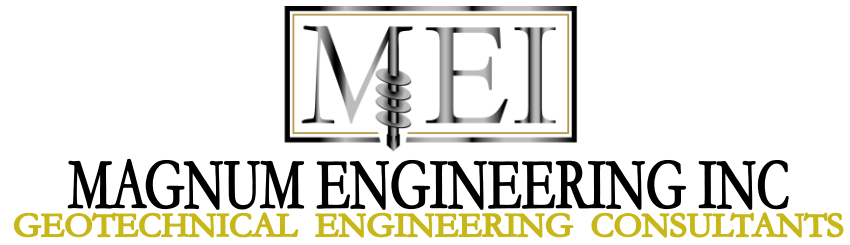
JAMES T. VICKERS, P.E.
Sr. Geotechnical Engineer
Florida Registration # 56813

Attachments: Figure #1 – Boring Location Plan
Figure #2 – Logs of Borings



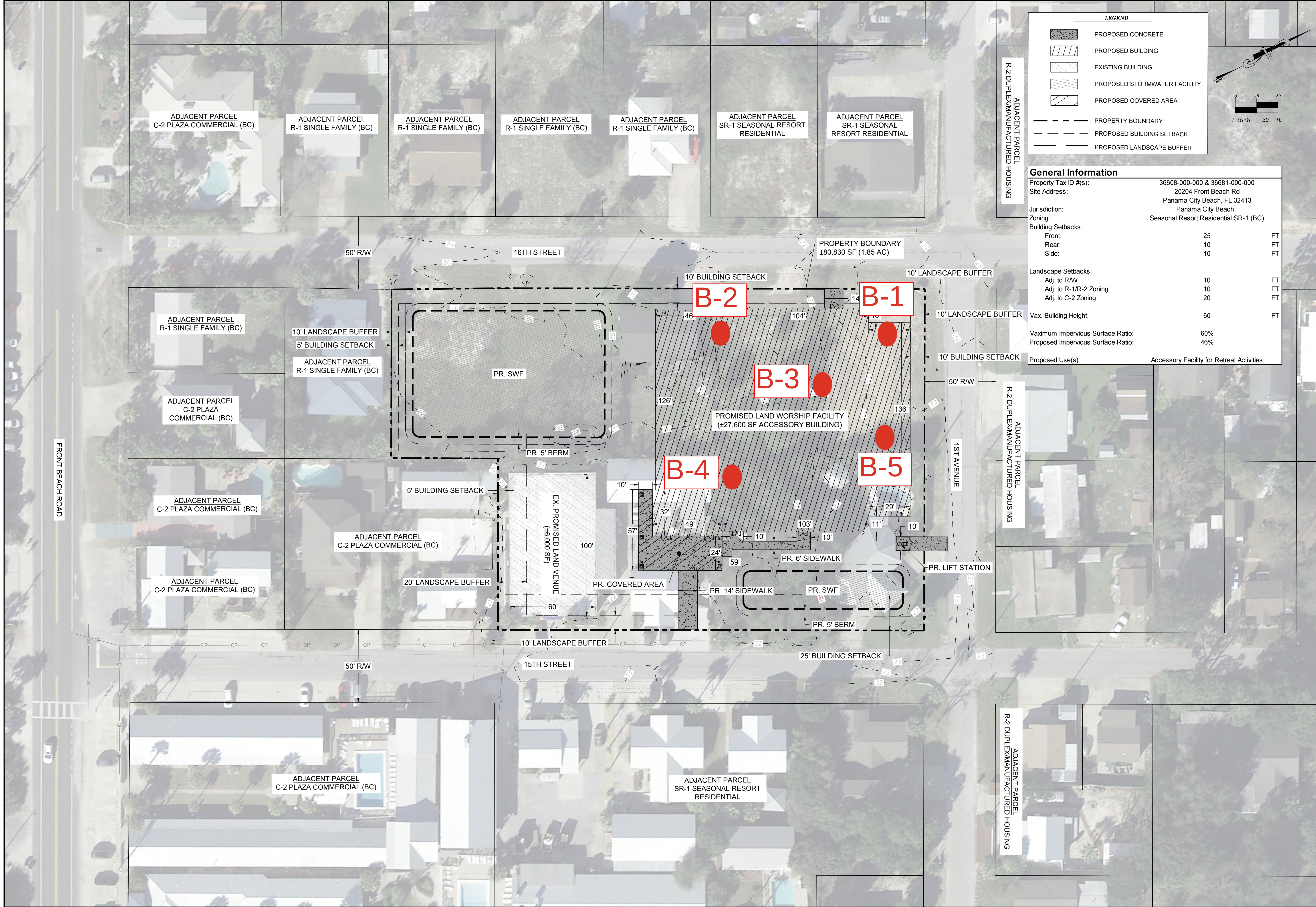
This item has been digitally signed and sealed by James T. Vickers, P.E. on 12/16/2024.

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



BORING LOCATION PLAN

FIGURE # 1

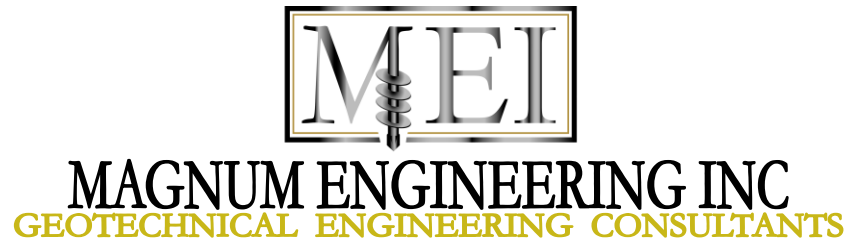


LEGEND

- PROPOSED CONCRETE
- PROPOSED BUILDING
- EXISTING BUILDING
- PROPOSED STORMWATER FACILITY
- PROPOSED COVERED AREA
- PROPERTY BOUNDARY
- PROPOSED BUILDING SETBACK
- PROPOSED LANDSCAPE BUFFER

General Information		
Property Tax ID #(s):	36608-000-000 & 36681-000-000	
Site Address:	20204 Front Beach Rd Panama City Beach, FL 32413	
Jurisdiction:	Panama City Beach	
Zoning:	Seasonal Resort Residential SR-1 (BC)	
Building Setbacks:		
Front:	25	FT
Rear:	10	FT
Side:	10	FT
Landscape Setbacks:		
Adj. to R/W	10	FT
Adj. to R-1/R-2 Zoning	10	FT
Adj. to C-2 Zoning	20	FT
Max. Building Height:	60	FT
Maximum Impervious Surface Ratio:	60%	
Proposed Impervious Surface Ratio:	46%	
Proposed Use(s)	Accessory Facility for Retreat Activities	

JOB NO. 24-009	DRAWN SRP	CHECKED BRF	DATE 10/24/2024
IF THIS LINE DOES NOT MEASURE ONE INCH IN LENGTH, THIS DRAWING IS NOT VALID.			
Conceptual Plan			
CLIENT:	PROJECT:		
Gortemoller Engineering, Inc. 708 Thomas Drive Panama City Beach, FL 32408 (850) 249-2425 Certificate of Authorization: 09505 Blake R. Furbee, P.E. P.E. License Number 88505	20204 Front Beach Road Promised Land Chapel Panama City Beach, 32413		
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15 - 23.004, F.A.C.			



LOGS OF BORINGS

FIGURE # 2



PAGE 1 OF 1

PROJECT NAME Laguna Beach Church

PROJECT LOCATION Panama City Beach, Florida

GROUND ELEVATION HOLE SIZE

GROUND WATER LEVELS:

▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 8.6 ft

CHECKED BY J. Vickers

ESTIMATED SEASONAL HIGH GWT ---

NOTES

AFTER DRILLING ---

[illegible]



CLIENT Gortemoller Engineering, Inc.

PROJECT NAME Laguna Beach Church

PROJECT NUMBER M124-108-077

PROJECT LOCATION Panama City Beach, Florida

DATE STARTED 11/8/24 **COMPLETED** 11/8/24

GROUND ELEVATION _____ **HOLE SIZE** _____

DRILLING CONTRACTOR Down Right Drillin, LLC

GROUND WATER LEVELS:

DRILLING METHOD Standard Penetration Test (SPT)

 DEPTH TO GROUNDWATER AT TIME OF DRILLING 7.2 ft

LOGGED BY J. Short **CHECKED BY** J. Vickers

ESTIMATED SEASONAL HIGH GWT ---

NOTES

AFTER DRILLING ---

[illegible]

