



MAGNUM ENGINEERING INC
GEOTECHNICAL ENGINEERING
CONSULTANTS

GEOTECHNICAL ENGINEERING REPORT

MEXICO BEACH AMPHITHEATER
MEXICO BEACH, FLORIDA

PREPARED FOR:

Mr. Curtis Flint
Anchor CEI
450 Magnolia Avenue
Panama City, Florida 32401

429 FLORIDA AVENUE
LYNN HAVEN, FLORIDA 32444
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MAGNUM ENGINEERING INC
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September 30, 2024

Mr. Curtis Flint
Anchor CEI
450 Magnolia Avenue
Panama City, Florida 32401

SUBJECT: Mexico Beach Amphitheater – Geotechnical Services
Mexico Beach, Florida
Project Number: M124-120-911

Dear Mr. Flint:

This letter forwards the results of our Geotechnical exploration for the proposed development. Our exploration consisted of Three (3) 35-feet to 50-feet deep Standard Penetration Test (SPT) borings. 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 the existing Parker Park, which is north of US Highway 98, east of North 26th Street and west of 22nd Street in Mexico Beach, Florida. The proposed amphitheater will be located near the south property line closes to W. 14th Street. At the time of our exploration, the subject site was clear with the exception of an existing metal building present and was easily accessible with our track mounted drill rig.

No structural or grading information was provided at the writing of this report. This information will be needed to provide foundation recommendations.

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

Subsurface Conditions

The soil types encountered at the specific boring locations are presented in the form of Logs of Boring, and are attached as Figure 2. The stratifications presented is based on visual examination of the recovered soil samples and the interpretation of field logs by a geotechnical engineer. Included with the profiles are the N-values for the SPT borings. The N-values have been empirically correlated with various soil properties and are considered to be indicative of the relative density of cohesionless soils and the consistency of cohesive soils. Also included with the Logs of Boring are the groundwater levels measured at the time the borings were performed.

Mexico Beach Amphitheater – Geotechnical Services
Mexico Beach, Florida
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Figure #1 show the Boring Location Plan and Figure #2 shows the Logs of Borings for Standard Penetration Test borings B-1 through B-3. The test locations were established in the field using a 100-foot tape and estimating right angles with reference to existing landmarks, thus, the test locations should be considered approximate.

The Standard Penetration Test (SPT) borings were performed in accordance with ASTM D-1586. The borings were advanced using mud-rotary techniques. Split-Spoon samples were obtained using a 2-inch O.D. split spoon sampler every two feet in the top 10 feet of the borings and every 5 feet thereafter until the boring termination depth was reached. Upon completion of our field testing, the samples were brought back to the office for visual inspection, classification, and analysis by our engineering staff.

Borings

Boring B-1 generally encountered loose slightly silty fine sands from the existing ground surface to approximately 3 ½ feet below existing grade underlain by very soft peat to roughly 4 feet below existing grade underlain by very loose slightly silty fine sands with organics to approximately 8 feet below existing grade. Below 8 feet, very soft peat was encountered to 18 ½ feet below existing grade underlain by medium dense slightly silty fine sand to roughly 23 feet below existing grade underlain by soft peat to approximately 33 ½ feet below existing grade underlain by medium dense to dense slightly silty fine sands to the boring termination depth of 50 feet below existing grade.

Boring B-2 generally encountered very loose to loose slightly silty fine sands from the existing ground surface to approximately 8 feet below existing grade underlain by very soft peat to roughly 28 feet below existing grade underlain by medium dense slightly silty fine sands to the boring termination depth of 40 feet below existing grade.

Boring B-3 generally encountered very loose slightly silty fine sands from the existing ground surface to approximately 8 feet below existing grade underlain by very soft peat to roughly 13 ½ feet below existing grade underlain by loose slightly silty fine sands to approximately 23 ½ feet below existing grade underlain by very loose slightly silty fine sands to roughly 28 ½ feet below existing grade. Below 28 ½ feet, medium dense slightly silty fine sands were encountered to the boring termination depth of 35 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 Boring presented as Figure #2 for a detailed description of the subsurface conditions encountered.

Groundwater Conditions

Groundwater was encountered between 5 ½ feet and 6 ½ feet below existing grade at the time of drilling (September 20, 2024), which was during a period of normal seasonal rainfall. Groundwater levels will fluctuate with rainfall and tidal influences and could vary several feet during typical seasonal fluctuations. Larger 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 MEI to determine if modifications to the recommendations are warranted.

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

Site Preparation

The site should be cleared and grubbed of surface vegetation. As a minimum, it is recommended the clearing operations extend at least five feet beyond the development perimeters.

Fill required to elevate existing grades to building subgrade level should consist of clean fine sands, as described below, placed in level lifts not exceeding 12 inches loose, with each lift compacted to a firm and unyielding condition and 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

Based on the very soft peat soils encountered in the soil test borings, we do not recommend supporting the proposed structure on conventional shallow foundations.

Alternatively, the proposed structure can be supported on deep pile foundations in the medium dense to dense slightly silty fine sands encountered between 28 feet to 50 feet below existing grade. Table #1 below shows allowable pile capacities for a 12-inch square pre-stressed concrete piles driven with an approved pile driving hammer. Note that the allowable pile capacities assume flooded conditions, no scour, pile butt at existing grade, and include a Factor of Safety of 2.

TABLE #1

Pile Size	Pre-drill/Jetting Depth (Below existing grade)	Embedment (Below Existing Grade)	Tension Capacity (in tons)	Compression Capacity (in tons)
12" x 12" concrete	25.0 feet	35.0 feet	8.5	26.5

Field determination of the actual pile capacities developed should be analyzed using a dynamic pile driving formula (i.e. Hiley, WAVE, Gates, etc.). This analysis requires knowledge of the piles and pile driving equipment to be used on the site.

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. MEI 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.

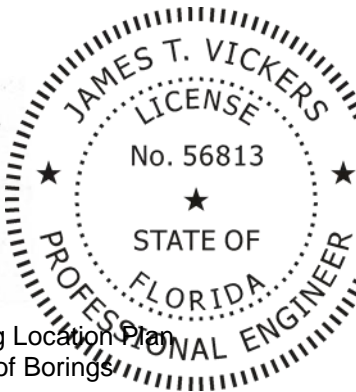
The nature and extent of variation and change in the subsurface conditions at the site may not become evident until the course of construction. Construction monitoring by the geotechnical engineer or his representative is therefore considered necessary to verify the subsurface conditions at the time of construction and to verify the recommendations made in the preparation of this report 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



James T. Vickers
Digitally signed
by James T.
Vickers
Date:
2024.09.30
11:21:12 -05'00'

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 9/30/2024.

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



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BORING LOCATION PLAN

FIGURE # 1





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LOGS OF BORINGS

FIGURE # 2



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BORING NUMBER B-1

CLIENT <u>Anchor CEI, Inc.</u>	PROJECT NAME <u>Parker Park Amphitheater</u>
PROJECT NUMBER <u>M124-120-911</u>	PROJECT LOCATION <u>Bay County, Florida</u>
DATE STARTED <u>9/20/24</u> COMPLETED <u>9/20/24</u>	GROUND ELEVATION _____ HOLE SIZE _____
DRILLING CONTRACTOR <u>GeoDrill Tech, LLC</u>	GROUND WATER LEVELS:
DRILLING METHOD <u>Standard Penetration Test (SPT)</u>	▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING <u>6.5 ft</u>
LOGGED BY <u>J. Governale</u> CHECKED BY <u>J. Vickers</u>	ESTIMATED SEASONAL HIGH GW <u>---</u>
NOTES _____	AFTER DRILLING <u>---</u>

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0												
		Brown/Gray Slightly Silty Fine SAND with Trace of Organics (SP-SM)	SS 1		1-2-3-3 (5)							
		Dark Brown PEAT (PT)	SS 2		2-1-2-1 (3)							
		Brown/Gray Slightly Silty Fine SAND with Trace of Organics (SP-SM)	SS 3		1-2-1-2 (3)							
		Brown Slightly Silty Fine SAND with Organic Lenses (SP-SM)	SS 4		1-2-3-3 (5)							
10		Dark Brown PEAT (PT)	SS 5		1-1-1-1 (2)							
			SS 6		1-1-1 (2)							
20		Gray/Brown Slightly Silty Fine SAND (SP-SM)	SS 7		6-10-11 (21)							
		Dark Brown PEAT with Wood (PT)	SS 8		1-1-1 (2)							
30			SS 9		1-1-1 (2)							
		Brown Slightly Silty Fine SAND (SP-SM)	SS 10		5-6-10 (16)							
40		Brown/Tan Slightly Silty Fine SAND (SP-SM)	SS 11		10-17-20 (37)							
			SS 12		10-12-15 (27)							
50		Boring Termination Depth at 50.0 feet.	SS 13		8-10-11 (21)							

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BORING NUMBER B-2

CLIENT Anchor CEI, Inc. PROJECT NAME Parker Park Amphitheater
 PROJECT NUMBER M124-120-911 PROJECT LOCATION Bay County, Florida
 DATE STARTED 9/20/24 COMPLETED 9/20/24 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR GeoDrill Tech, LLC GROUND WATER LEVELS:
 DRILLING METHOD Standard Penetration Test (SPT) ▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 5.5 ft
 LOGGED BY J. Governale CHECKED BY J. Vickers ESTIMATED SEASONAL HIGH GWL ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		Brown/Gray Slightly Silty Fine SAND (SP-SM)	SS 1		1-2-2-3 (4)							
		Dark Brown Silty Fine SAND with Trace of Organics (SM)	SS 2		2-2-2-2 (4)							
		Brown Slightly Silty Fine SAND (SP-SM)	SS 3		2-3-3-4 (6)							
			SS 4		5-4-6-8 (10)							
10		Dark Brown PEAT with Wood Sample #5 0-0-0-1 indicates Weight of Hammer by 0's (PT)	SS 5		0-0-0-1 (0)							
			SS 6		1-1-1 (2)							
20			SS 7		1-1-1 (2)							
			SS 8		2-1-2 (3)							
30		Brown Slightly Silty Fine SAND (SP-SM)	SS 9		5-7-9 (16)							
			SS 10		5-9-10 (19)							
40		Boring Termination Depth at 40.0 feet.	SS 11		10-7-11 (18)							

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BORING NUMBER B-3

CLIENT Anchor CEI, Inc. PROJECT NAME Parker Park Amphitheater
 PROJECT NUMBER M124-120-911 PROJECT LOCATION Bay County, Florida
 DATE STARTED 9/20/24 COMPLETED 9/20/24 GROUND ELEVATION _____ HOLE SIZE _____
 DRILLING CONTRACTOR GeoDrill Tech, LLC GROUND WATER LEVELS:
 DRILLING METHOD Standard Penetration Test (SPT) ▽ DEPTH TO GROUNDWATER AT TIME OF DRILLING 6.5 ft
 LOGGED BY J. Governale CHECKED BY J. Vickers ESTIMATED SEASONAL HIGH GWL ---
 NOTES _____ AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS			FINES CONTENT (%)
									LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX	
0		Gray/Brown Slightly Silty Fine SAND (SP-SM)	SS 1		2-2-2-2 (4)							
			SS 2		2-2-1-1 (3)							
			SS 3		1-1-1-1 (2)							
		▽ Brown Slightly Silty Fine SAND (SP-SM)	SS 4		1-1-2-2 (3)							
10		Dark Brown Peaty Fine SAND (PT)	SS 5		1-2-1-2 (3)							
		Brown/Gray Slightly Silty Fine SAND (SP-SM)	SS 6		1-4-4 (8)							
20		Gray/Tan Slightly Silty Fine SAND (SP-SM)	SS 7		3-4-4 (8)							
			SS 8		1-2-2 (4)							
30		Brown Slightly Silty Fine SAND (SP-SM)	SS 9		5-7-10 (17)							
			SS 10		7-10-13 (23)							
		Boring Termination Depth at 35.0 feet.										

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