



August 13, 2025

Mrs. Lori Rentschler, PE

Jacobs

Lori.Rentschler@jacobs.com

**Subject: Report of Geotechnical Exploration
Pensacola Beach Gateway
Escambia County, Florida
LMJ File #: 25-227**

Dear Lori:

This letter presents the results of our geotechnical exploration for the subject project. We understand that the project includes a toll-by-plate structure planned to span across the entry lanes to Pensacola Beach on Via De Luna Drive, just east of the existing toll plaza. The structure is planned to be an arch with two legs, one in the median, and one on the west side of the entry lanes. If any of this information changes or is incorrect, our office should be notified and changes in our recommendations may be needed.

Subsurface Conditions

We drilled three SPT borings near the proposed structure foundation areas to 46-56 feet. Two borings (B-1 and B-2) were drilled for a proposed sign spanning all lanes with foundations on each side. After drilling the first borings, the sign was changed to spanning the entry lanes, and we returned to the site and drilled B-3 near the current planned east foundation location. The borings were drilled in general accordance with ASTM D1586 using a truck mounted drill rig and were advanced between sampling using a “mud” jetting technique. The approximate boring locations are shown in **Figure #1**, and the boring logs are included in **Figure #2**.

The borings encountered mostly sand with some silt in the upper 33 feet over silty sand and slightly silty sand with some clay and shell to the bottom of the borings at 46-56 feet. B-1 and B-2 had traces of gravel, shell, and some pieces of what appeared to be coal and sand asphalt in the upper 3-6 feet. B-3 had some small pockets of wood and organics from 33 feet to the bottom of this boring at 56 feet. The borings were medium dense and loose in the upper 13-18 feet, dense and very dense to 33-38 feet, and erratic in density below this depth with loose and medium dense conditions to the bottom of the borings at 46-56 feet, and some very loose zones in B-1 and B-2 between 38-53 feet.

Groundwater was encountered in the borings from 4-8 feet below grade at the time of drilling. Groundwater levels will vary with the tide and changes in local rainfall and site drainage characteristics. We expect the site to flood during an extreme storm event (i.e. hurricane).

Excavations

We anticipate that sheet piles or casing will be used for foundation construction. The contractor is solely responsible for designing and constructing safe excavations that maintain stability during construction. All excavations should be constructed in accordance with the latest local, state, and federal safety regulations. We recommend that sheet piles (if applicable) be designed by a registered professional engineer licensed in the state of Florida and consider full hydrostatic pressure behind the piles and a dewatered condition in front.



Dewatering

We anticipate the bottom of the foundation to be below the groundwater table, and the contractor should determine groundwater levels at the time of construction and be prepared to dewater as needed to construct the foundation. The borings encountered conditions suitable for dewatering using well points.

Recommended Soil Parameters

Our recommended soil parameters for foundation design are shown on the boring logs (**Figure #2**) and include the angle of internal friction (ϕ) and the soil's estimated unit weight (γ) based on the SPT results, published correlations, and our experience with similar soils. Note that the unit weights provided are moist/buoyant above/near the groundwater table and buoyant below the groundwater table. These parameters can also be used for sheet pile design if applicable.

Basis of Recommendations

Recommendations rendered herein are based on assumed and/or design information available at the time of this report, the subsurface conditions encountered in the test boring, generally accepted geotechnical engineering principles and practices, and our experience with similar soil and groundwater conditions. Should final project information or existing conditions differ from the information used in this report or should any soil conditions not discussed in this report be encountered during construction, our office should be notified and retained so that this report can be modified as needed.

This report and any correspondence are intended for the exclusive use of our client for the specific application to the project discussed. LMJ is not responsible for the interpretations, conclusions, or recommendations made by others based on the information in this report.

Regardless of the care exercised in performing a Geotechnical Exploration, the possibility always exists that soil and/or groundwater conditions will differ from those encountered at the specific boring locations. In addition, construction operations may alter the soil conditions. Therefore, it is recommended that a representative from LMJ be involved during the construction phases discussed in this report.

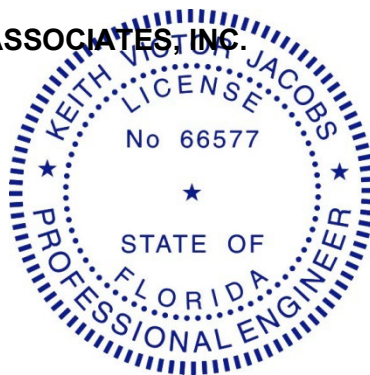
We hope this letter provides sufficient information for your current requirements. If you have any questions or comments, please feel free to give us a call.

Sincerely,

LARRY M. JACOBS AND ASSOCIATES, INC.

A handwritten signature in blue ink, appearing to read 'Keith V. Jacobs', is written over the company name.

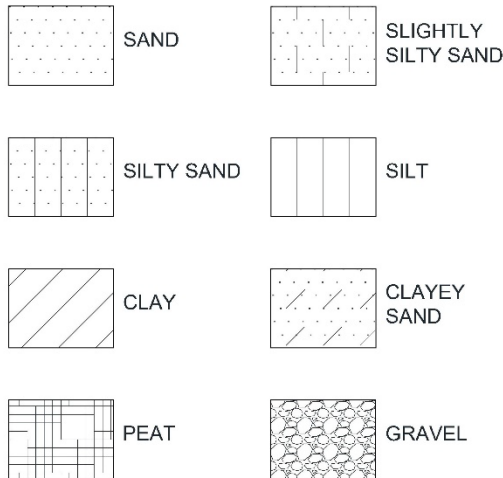
Keith V. Jacobs, PE
Principal Engineer
Florida Reg. # 66577



Attachments



LEGEND



NOTES

- 1) SPT BORINGS PERFORMED IN GENERAL ACCORDANCE WITH ASTM D1586
- 2) SUBSURFACE CONDITIONS ARE AT BORING LOCATIONS AND ACTUAL CONDITIONS BETWEEN BORINGS MAY VARY
- 3) ALL CLASSIFICATIONS ARE BASED ON VISUAL EXAMINATION UNLESS ACCOMPANIED BY LABORATORY TEST RESULTS
- 4) BOUNDARIES BETWEEN SOIL LAYERS SHOULD BE CONSIDERED APPROXIMATE AS THE ACTUAL TRANSITION MAY BE GRADUAL
- 5) DEPTH OF BORING IS BELOW EXISTING GRADE AT TIME OF DRILLING
- 6) ELEVATIONS, IF SHOWN, WERE ESTIMATED FROM PROVIDED TOPOGRAPHIC SURVEY
- 7) COLORS USED FOR BORING HATCHING MAY NOT REPRESENT THE ACTUAL SOIL COLORS

GNE

GROUNDWATER NOT ENCOUNTERED AT TIME OF DRILLING

N

STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT

N_A

STANDARD PENETRATION RESISTANCE USING AUTOHAMMER



ENCOUNTERED GROUNDWATER LEVEL



ENCOUNTERED PERCHED WATER LEVEL

50/2*

NUMBER OF BLOWS REQUIRED (50) TO ADVANCE SPLIT SPOON SAMPLER A SPECIFIC DISTANCE (2) INCHES

HW

SPLIT SPOON SAMPLE ADVANCED UNDER WEIGHT OF ROD AND HAMMER

RW

SAMPLER ADVANCED UNDER WEIGHT OF ROD

HA

HAND AUGER



SHELBY TUBE SAMPLER

W

NATURAL MOISTURE CONTENT (%)

-200

FINES PASSING #200 SIEVE (%)

O.C.

ORGANIC CONTENT (%)

LL

LIQUID LIMIT

PL

PLASTIC LIMIT

LI

LIQUIDITY INDEX

C_≈

APPROXIMATE COHESION VALUE (PSF) BASED ON POCKET PENETROMETER READINGS

K_v

SATURATED VERTICAL HYDRAULIC CONDUCTIVITY (FT/DAY)

γ_d

DRY UNIT WEIGHT (PCF)

γ_m

ESTIMATED MOIST UNIT WEIGHT (PCF)

γ_b

ESTIMATED BUOYANT UNIT WEIGHT (PCF)

φ

ESTIMATED ANGLE OF INTERNAL FRICTION (DEGREES)

SAFETY HAMMER

GRANULAR SOILS	
SPT BLOWS/FOOT (N)	RELATIVE DENSITY
0-3	VERY LOOSE
4-10	LOOSE
11-30	MEDIUM DENSE
31-50	DENSE
> 50	VERY DENSE

COHESIVE SOILS	
SPT BLOWS/FOOT (N)	RELATIVE DENSITY
0-1	VERY SOFT
2-4	SOFT
5-8	MEDIUM STIFF
9-15	STIFF
16-30	VERY STIFF
> 30	HARD

AUTOMATIC HAMMER

GRANULAR SOILS	
SPT BLOWS/FOOT (N)	RELATIVE DENSITY
0-2	VERY LOOSE
3-8	LOOSE
9-24	MEDIUM DENSE
25-40	DENSE
> 40	VERY DENSE

COHESIVE SOILS	
SPT BLOWS/FOOT (N)	RELATIVE DENSITY
<1	VERY SOFT
1-3	SOFT
4-6	MEDIUM STIFF
7-12	STIFF
13-24	VERY STIFF
> 24	HARD



STANDARD PENETRATION TEST BORING
ALL BORING LOCATIONS ARE APPROXIMATE

KEITH V. JACOBS, P.E.
P.E. LICENCE NUMBER 66577
LARRY M. JACOBS AND ASSOCIATES, INC.
328 E GADSDEN STREET
PENSACOLA, FLORIDA 32501



DRAWN BY:
GEM

CHECKED BY:
KVJ

ROAD NO.

COUNTY

FINANCIAL PROJECT ID

Escambia

SHEET TITLE:

BORING LOCATIONS

PROJECT NAME:

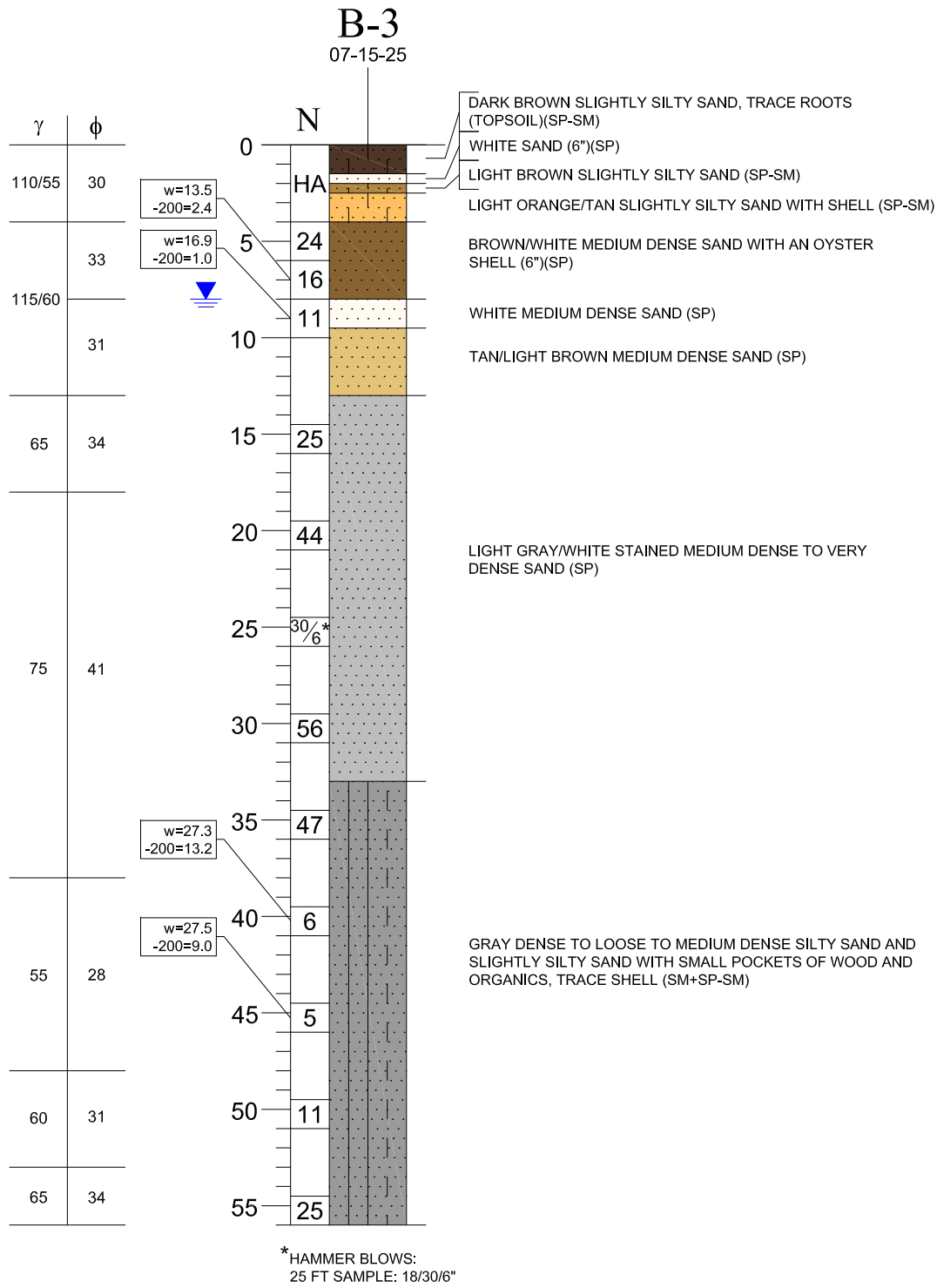
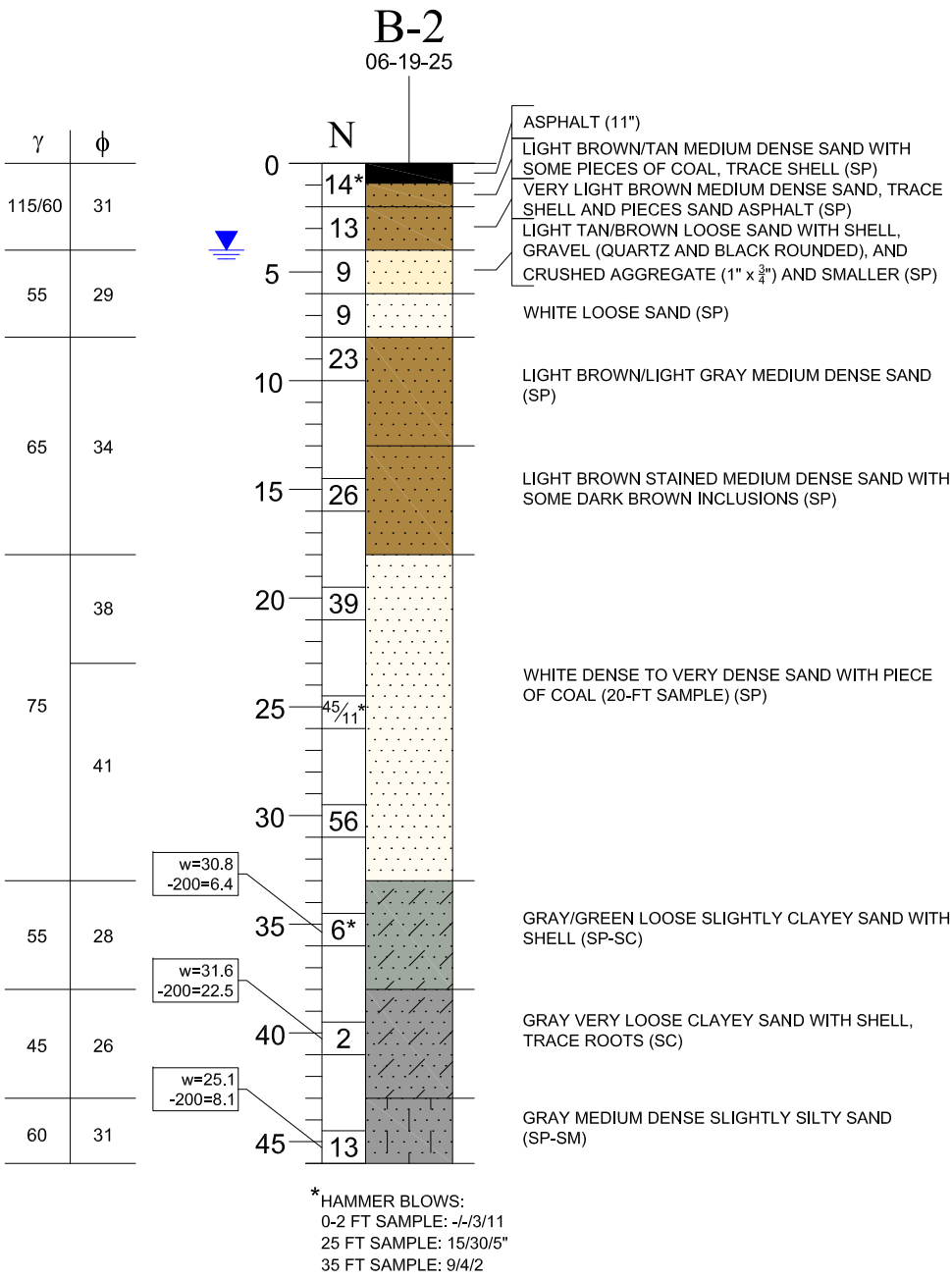
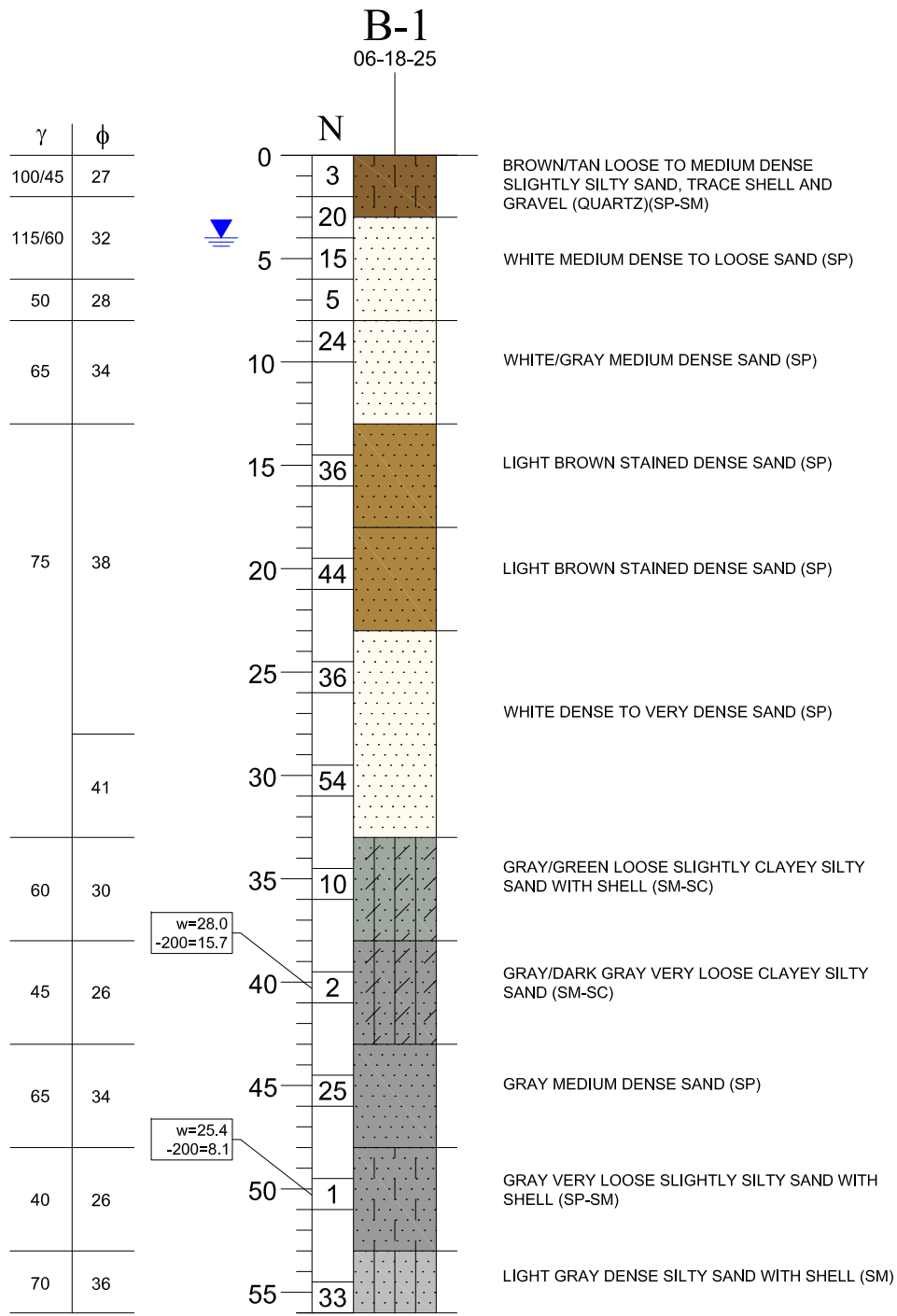
Pensacola Beach Toll Booth

REF. DWG.
NO.

25-227

FIGURE NO.

1



DEPTH (FT)	PROBE (IN)
SURFACE	4
0.5	2
1	½
1.5	1
2	1
2.5	½
3	½
3.5	1

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PENSACOLA, FLORIDA 32501



DRAWN BY: GEM			
CHECKED BY: KVJ	ROAD NO.	COUNTY Escambia	FINANCIAL PROJECT ID

SHEET TITLE: SOIL BORINGS	REF. DWG. NO. 25-227
PROJECT NAME: Pensacola Beach Toll	FIGURE NO. 2