DYNATECH ENGINEERING CORP.
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Miami, August 1, 2024

Wissam S Naamani P.E.

Digitally signed by Wissam S Naamani P.E.
Date: 2024.08.05 14:45:07 -04'00'

WISSAM SAAD NAAMANI LICENSE No. 39584 STATE OF FLORIDA PROFESSIONAL ENGINEER

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY WISSAM SAAD NAAMANI, P.E. ON THE DATE ADJACENT TO THE SEAL.

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Mr. Roney V. Mateu
MATEU ARCHITECTURE, INC.
8887 SW 131st Street
Miami, FL 33176

Re: Proposed Residence @
13125 SW 63rd Avenue
Pinecrest, FL 33156

Dear Mr. Mateu

Pursuant to your request, DYNATECH ENGINEERING CORP. (DEC) completed a Subsoil Investigation on August 1, 2024 at the above referenced project. The purpose of our investigation was to help determine the subsoil conditions relative to foundation design of the proposed structures.

A total of (3) standard penetration boring tests were performed according to ASTM-D 1586 down to an average depth of 15' below existing ground surface at the locations shown on the attached sketch only.

The following graph was developed as a general condition below existing ground surface at the time of drilling for the subject site (Subsoil conditions are non-homogenous, refer to field boring logs for exact locations and soil description. Average depths are approximate and will vary in the field):

Average Depth From	To	Description
0'-0"	**1'-0"**	**Topsoil and grass**
1'-0"	15'-0"	White sandy limerock

Groundwater was measured immediately at the completion of each boring and was found at an average depth of approximately 13' below existing ground surface at the time of drilling due to varying ground elevation. This immediate depth to groundwater level should not be relied upon alone for project design considerations. Existing ground surface elevation was not provided to us at the time of drilling. Design engineers must verify existing ground elevations as well as FEMA Flood and County highest & lowest groundwater elevation for their design. Fluctuation in water level is anticipated due to seasonal variations and run off as well as varying ground elevations construction dewatering & pumping activities in the area, king tides, flash flooding, storm surge & global warming. Site contractor must familiarize himself with site conditions in the event groundwater controls and dewatering is needed during construction. Surface flooding may result under hurricane conditions and should be taken into consideration in the design of the project. The contractor shall monitor and make sure that groundwater levels on adjacent properties are not adversely impacted due to the contractors dewatering activities. Specialty groundwater and water proofing contractors shall be consulted for all work below the groundwater level. All dewatering volume & effluent discharge must meet local, State & Federal requirements. Excavations should be kept as high as practically feasible above the groundwater level to minimize the need for construction dewatering operations.

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Re: 13125 SW 63rd Avenue, Pinecrest, FL

Based on our understanding of the proposed structure and our field boring logs; the following are our recommendations for foundations design.

A- Strip the entire construction areas of all topsoil, grass, tree stumps and construction debris down to clean granular material wherever encountered to an average depth of 1' below existing land surface (**see field boring logs**). Any underground structures, former pools, septic tanks, utilities, root systems and drainages trenches, etc…must be removed in their entirety from beneath the proposed construction area. All roots greater than one inch in diameter, or a high concentration of smaller diameter roots, must be removed prior to back filling. Clean fill can be stored for reuse pursuant to our approval. The actual depth of stripping MUST be determined in the field during the clearing and excavations.

B- Compact all construction areas with a **heavy** self-propelled roller to a minimum of 95% of ASTM D-1557 but not less than 10 passes in each direction. Localized areas of loose materials, if present, will become evident during site clearing, grubbing and proof rolling, and must be removed prior to filling operations. Backfill construction areas to required elevation using clean granular homogenous material placed in lifts not to exceed 12 inches in thickness and compact as indicated above. In areas not accessible for compaction, flowable fill shall be used.

C- After the construction area has been cleared and filled as stated above; excavate footing areas only to proper depth and recompact as indicated above. Footings must be cast as soon as possible after excavation to minimize potential damage to bearing soils from exposure to the element, construction activities and soil creep.

D- Care should be taken not use vibration in case of existing structures in the vicinity of the construction area. If vibration cannot be used for compaction, static compaction may be applied. However, in this case, the compacted layer should not exceed 6 inches in thickness.

E- All construction fill material for building pad, pipe bedding and parking areas above the water table shall consist of clean granular homogenous soil, free of organics or other deleterious material, & shall contain no more than 12% fines passing a U.S. standard #200 sieve & have a Unified Soil Classification System (USCS) designation of GP, GW, GP-GM, GW-GM, SP, or SW. No particle size greater than 3" shall be in the top 12" of the building pad.
Fill material below the water table shall consist of washed free draining gravel to about 12% above the water table. (ie: Ballast rock FDOT #57 stone or equivalent) unless dewatering is employed. When dewatering is employed, fill material shall consist of clean, granular homogenous soil, free of organics or other deleterious material, shall contain no more than 5% fines passing a US standard #200 sieve.

F- Verify all compaction efforts by taking an adequate number of field density tests in each layer of compacted material and in each footing pad but no less than 1 test every 2500 square feet.

G- Representative samples of the on-site and proposed fill material shall be collected and tested to determine the classification and compaction characteristics prior to use.

H- All Geotechnical work must be performed under the supervision of our geotechnical engineer or his representative to verify compliance with our specifications and the Florida Building Code.

I- In case of existing structures, existing footings new foundations and proposed drainage lines, provisions shall be made by the structural engineer, the civil engineer, and site contractor to protect all footings from future erosion, undermining and exposure. The geotechnical engineer shall be notified of these conditions to evaluate the applicability of his recommendations. New foundations may be designed perpendicular to existing footings to avoid the use of support of excavation (S.O.E.) and undermining of existing foundations; otherwise S.O.E. may be needed.

The above foundation recommendations being achieved and verified; it is our opinion that the proposed structures be designed for a shallow foundation system with a net static permissible soil bearing pressure not to exceed 3000 P.S.F. All footings bottom shall be based at a depth of not less than 12" below the lowest adjacent grade. Design computations for thickness shall utilize a modulus of subgrade reaction value of 250 pci & lateral earth pressure of 200 psf.

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Slabs may be designed as slabs on grade and must be provided with proper expansion and control joints as designed by the structural engineer.

The following soil parameters shall be used for retaining wall designs:

- Soil unit weight moist: 115 pcf. Submerged: 53 pcf.
- Angle of internal friction: 30°
- Earth pressure coefficient Ka: 0.33; Kp: 3.0
- Angle of wall friction: 30° for steel piles, 20° for concrete or brick walls; 15° uncoated steel.

Excavations shall not extend within 1 foot of the angle of repose, next to existing footings or structures, unless underpinned. Trenching shall be in compliance with the Florida Building Code, OSHA and Trench Safety Act. Shorings shall be designed and inspected by Florida licensed professional engineer. Excavation contractor must make provisions for hard excavation conditions. Particular attention should be paid to any deep excavations and their potential impacts on adjacent structures.

Provisions shall be made by the architect, engineer of record and contractor to address differential vibration / dynamic loading; settlements when tying in new to existing structures. Mixing of different foundation types shall not be used unless provided with expansion joints to address differential settlements and vibration transfer.

Also note that as a common engineering practice for existing and new construction; outside ground surfaces must be sloped away from the structure as to avoid water accumulation and ponding. Rain gutters shall be installed and all rain water shall be discharged over splash guards a minimum of 5 feet away from building foundations. Verify all water, sewer, plumbing, sprinkler and drainage lines are properly functioning with no leaks in the vicinity of the foundations.

An arborist must be consulted prior to any land clearing to verify compliance with local codes.

Detailed settlement analysis was beyond the scope of this report. However, we have compared the field test data obtained in this exploration with our experience with structures similar to those proposed for this report. The estimated magnitude of these settlements is less than ½ inch differential and less than 1-inch total settlements. Due to the granular nature of the subsurface materials, the foundation settlements should occur as the loads are applied and should be virtually negligible by the end of the building shell completion.

If dynamic loading is proposed (ie: parking garage, etc…) this condition MUST be brought to our attention to re-evaluate the applicability of our recommendations.

The site may have been developed in the past. The exact extent of this development is unknown; therefore, any changes in the subsurface conditions must be brought to our attention for evaluation and recommendation. Any voids created by the removal of former structures must be properly backfilled as described in our foundation recommendations.

Where impact to adjacent properties is expected due to the vicinity of the proposed construction to the existing structures; a support of excavations, settlement, vibration and dewatering monitoring plan must be developed to avoid damage and impact to adjacent sites. D.E.C. will be pleased to develop such a plan when requested.

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This report was prepared in compliance with the 2023 Florida Building Code, 8th edition. Site elevations were not provided to us for the test locations. Depths reported on the field boring logs represent the depth below existing ground surface as they existed on the date of drilling. In the event of subsequent filling, excavations or site work, the reported depths must be adjusted to represent proper depths.

The boring log (s) attached present (s) a detailed description of the soils encountered at test location (s). The soil stratification shown on the boring log (s) is based on the examination of the recovered soil samples and interpretation of the driller's field log (s). It indicates only the approximate boundaries between soil types. The actual transitions between adjacent soil types may be gradual. Regardless of the thoroughness of a geotechnical exploration there is always the possibility that conditions may be different from those of the test locations; therefore, DYNATECH ENGINEERING CORP. does not guarantee any subsoil conditions between the bore test holes. In accepting and using this report the client understands and accepts that all data from the borings are strictly for foundation analysis only and are not to be used for excavation or back filling estimates and pricing. Owner and site contractor must familiarize themselves with site conditions prior to bidding. Client recognizes that actual conditions in areas not tested by DEC may differ from those anticipated in DEC's report. Client understands and accepts that this can significantly increase the cost of construction for its future projects. Client agrees that DEC shall not be responsible or liable for any variations in the actual conditions of areas not tested by DEC. This report is not a Phase I and/or Phase II Environmental Site Assessments. As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statements, conclusions or extracts from or regarding our reports is reserved pending our written approval. The scope of services performed in the execution of this investigation may not be appropriate to satisfy the needs of other users, and use or re-use of this document or the findings, conclusions, or recommendations is at the risk of said user. Said user must contact DEC in writing to verify applicability of this report for their use. All work must be conducted under the supervision of our geotechnical engineer. The discovery of any site or subsurface conditions during construction which deviate from the information obtained from our subsoil investigation is always likely and should be reported to us for our evaluation. All work shall be conducted in compliance with the Florida Building Code FBC and OSHA workers protection rules and all applicable Federal, State, County and City rules and regulations. In the event, changes, challenges and other value engineering opportunities occur without our knowledge, our recommendations may become compromised and geotechnical related issues may be misconstrued. Therefore, all geotechnical work shall be performed under our supervision to verify compliance with the intent of our recommendations.

It has been a pleasure working with you and look forward to do so in the near future.

Sincerely yours,

Wissam

Wissam Naamani, P. E. 8-2-2024
DYNATECH ENGINEERING CORP.
Florida Reg. No. 39584
Special Inspector No. 757
Certificate of Authorization No.: CA 5491

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TEST BORING FIELD LOG

DYNATECH ENGINEERING CORP.

TEST BORING FIELD LOG

CLIENT : **MATEU ARCHITECTURE, INC.** **DATE: August 1, 2024**
PROJECT : **Proposed Residence @** **HOLE No.: B-1**
ADDRESS : 13125 SW 63rd Avenue, Pinecrest, FL **DRILLER: NV & ZG**
LOCATION : See attached sketch

Depth (ft) From - To	DESCRIPTION OF MATERIALS	Depth (ft) From - To	HAMMER BLOWS ON SAMPLER	"N"
		0-2	Hand	H
		2-4	14 12 11 13	23
0'-0" to 1'-0"	GRASS AND TOPSOIL	4-6	15 13 14 17	27
1'-0" to 15'-0"	WHITE SANDY LIMEROCK	6-8	16 18 20 19	38
		8-10	A	A
		10-12	A	A
		12-14	A	A
		14-16	A	A
		16-18		
		18-20		
		20-22		
		22-24		
		24-26		
		26-28		
		28-30		
		30-32		
		32-34		
		34-36		
		36-38		

Water Level: 13'-0" Below Existing Land Surface at time of drilling As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statement conclusions or extracts from or regarding our reports is reserved pending on our written approval. H.A.: Hand Auger; A: Hollow Stem Auger; R: Refusal., AUGER DRILLING: S: Soft, M: Medium, H: Hand, R: Refusal, V.H.: Very Hard.

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DYNATECH ENGINEERING CORP.

TEST BORING FIELD LOG

CLIENT : **MATEU ARCHITECTURE, INC.**
PROJECT : **Proposed Residence @**
ADDRESS : 13125 SW 63rd Avenue, Pinecrest, FL
LOCATION : See attached sketch

DATE: August 1, 2024
HOLE No.: B-2
DRILLER: NV & ZG

Depth (ft) From - To	DESCRIPTION OF MATERIALS	Depth (ft) From - To	HAMMER BLOWS ON SAMPLER	"N"
		0-2	Hand	H
		2-4	13 15 13 18	28
0'-0" to 1'-0"	GRASS AND TOPSOIL	4-6	16 14 13 17	27
1'-0" to 15'-0"	WHITE SANDY LIMEROCK	6-8	16 15 20 18	35
		8-10	A	A
		10-12	A	A
		12-14	A	A
		14-16	A	A
		16-18		
		18-20		
		20-22		
		22-24		
		24-26		
		26-28		
		28-30		
		30-32		
		32-34		
		34-36		
		36-38		

Water Level: 13'-6" Below Existing Land Surface at time of drilling As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statement conclusions or extracts from or regarding our reports is reserved pending on our written approval. H.A.: Hand Auger; A: Hollow Stem Auger; R: Refusal., AUGER DRILLING: S: Soft, M: Medium, H: Hand, R: Refusal, V.H.: Very Hard.

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DYNATECH ENGINEERING CORP.

TEST BORING FIELD LOG

CLIENT : **MATEU ARCHITECTURE, INC.** **DATE: August 1, 2024**
PROJECT : **Proposed Residence @** **HOLE No.: B-3**
ADDRESS : 13125 SW 63rd Avenue, Pinecrest, FL **DRILLER: NV & ZG**
LOCATION : See attached sketch

Depth (ft) From - To	DESCRIPTION OF MATERIALS	Depth (ft) From - To	HAMMER BLOWS ON SAMPLER	"N"
		0-2	Hand	H
		2-4	10 12 10 14	22
0'-0" to 1'-0"	GRASS AND TOPSOIL	4-6	13 15 15 17	30
1'-0" to 15'-0"	WHITE SANDY LIMEROCK	6-8	16 20 18 22	38
		8-10	A	A
		10-12	A	A
		12-14	A	A
		14-16	A	A
		16-18		
		18-20		
		20-22		
		22-24		
		24-26		
		26-28		
		28-30		
		30-32		
		32-34		
		34-36		
		36-38		

Water Level: 13'-0" Below Existing Land Surface at time of drilling As a mutual protection to clients, the public and ourselves, all reports are submitted as the confidential property of clients, and authorization for publication of statement conclusions or extracts from or regarding our reports is reserved pending on our written approval. H.A.: Hand Auger; A: Hollow Stem Auger; R: Refusal., AUGER DRILLING: S: Soft, M: Medium, H: Hand, R: Refusal, V.H.: Very Hard.

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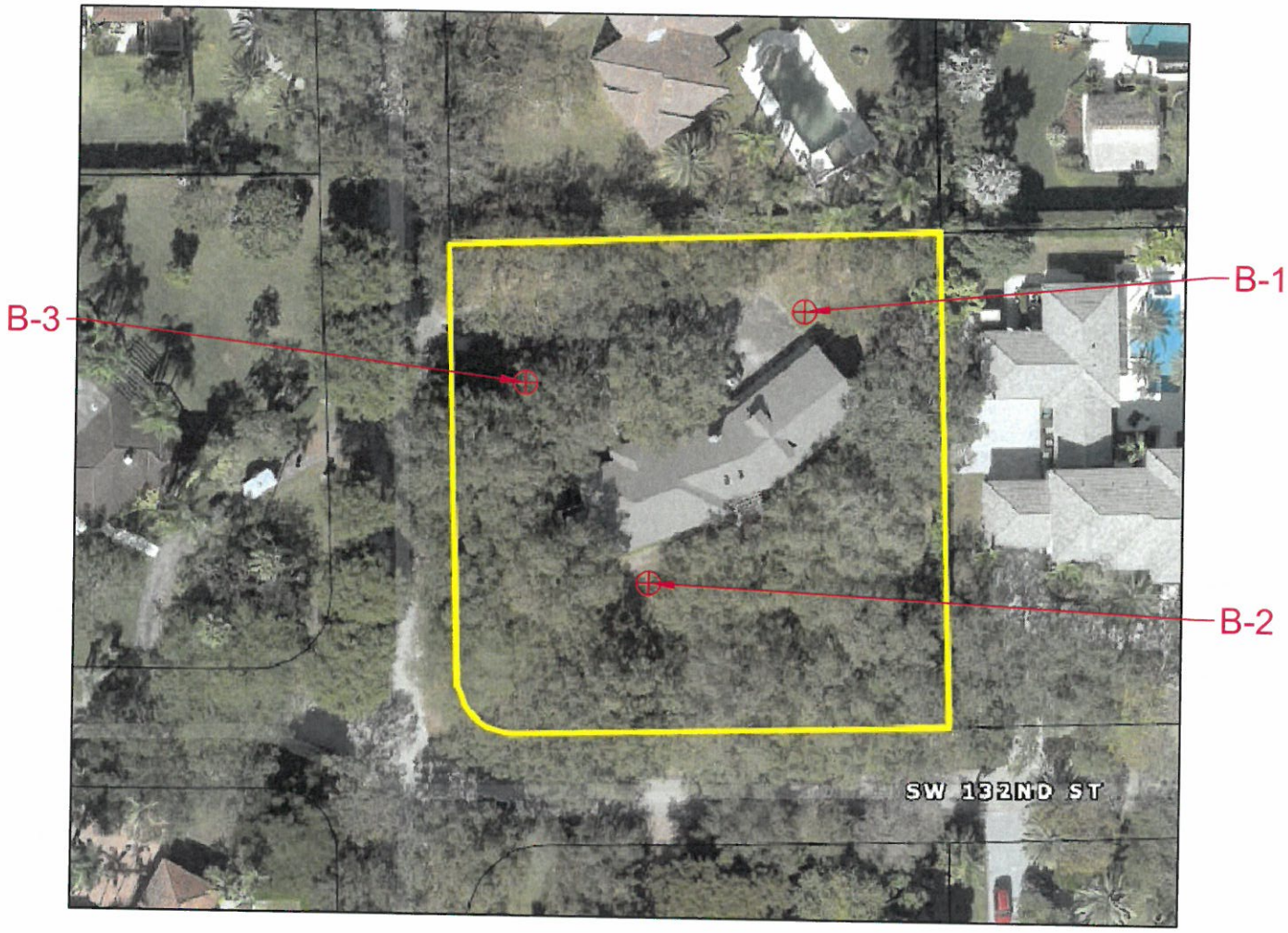
SITE PLAN

SOIL BORING TESTS



⊕ SOIL BORING TEST LOCATIONS (B#)

DATE: AUGUST 1 , 2024 CLIENT: MATEU ARCHITECTURE INC. DRAWN BY: RN DRAWING SCALE: NOT TO SCALE	PROPOSED RESIDENCE 13125 SW 63 AVENUE PINECREST, FL 33156	DYNATECH ENGINEERING CORP. 750 WEST 84TH STREET HIALEAH, FLORIDA 33014 (TEL) 305-828-7499 (FAX) 305-828-9598 EMAIL: INFO@DYNATECHENGINEERING.COM

GENERAL NOTES

Soil borings on unmarked vacant property should be considered preliminary with further boring (s) to be drilled after building pad (s) are staked out.

Soil borings on existing structures that are to be demolished should be considered preliminary and additional borings should be performed after the structure (s) has been demolished and proposed new building staked out.

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KEY CLASSIFICATIONS & SYMBOLS

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY			
	CONE PENETRATION TESTS Kg./Cm³	STANDARD PENETRATION (Blows/Ft.)	RELATIVE DENSITY
SANDS	0-16	0-4	Very Loose
	17-40	5-10	Loose
	41-80	11-20	Firm
	81-120	21-30	Very Firm
	Over 120	31-50	Dense
SILTS &	0-3	0-2	Very Loose
CLAY	4-9	3-4	Soft
	10-17	5-8	Firm
	18-31	9-15	Stiff
	32-60	16-30	Very Stiff
	Over 60	31-50	Hard

	PARTICLE SIZE
BOULDERS	➢ 12 in.
COBBLE	3 in. to 1 in.
GRAVEL	4.76 mm to 3 in.
SAND	0.07 mm to 4.67 mm
SILT	0.005 mm to 0.074 mm
CLAY	< 0.005 mm

	MODIFIERS
5%-10%	Slightly Silty or Clayey
10%-30%	Silty or Clayey
30%-50%	Very Silty or Very Clayey
0%-5%	Slight Trace
6%10%	Trace
11%-20%	Little
21%-35%	Some
>35%	Some More

	ROCK HARDNESS DESCRIPTION
Soft	Rock core. Crumbles when handled.
Medium	Can break with your hands.
Moderate Hard	Thin edges or rock core. Can be broken with fingers.
Hard	Thin edges or rock core. Can be broken with fingers.
Very Hard	Rock core. Rings when struck with hammer (cherts).