Exhibit F

Geotechnical Report

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PRELIMINARY GEOTECHNICAL INVESTIGATION

Proposed Multi-Residential Development

APN 017-391-008, -01

APN 017-393-002, -01, -02, -03, -04, -05

Channel Drive and Cabrillo Boulevard

City of Santa Barbara

California

CLIENT
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August 30, 2024
Lab No: 144911-2
File No: 24-16249-2

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INTRODUCTION

This report presents the results of a preliminary geotechnical investigation performed at Channel Drive and Cabrillo Boulevard, in the City of Santa Barbara, California. The site is currently vacant. The Accessor's Parcel Map Numbers are listed on the title page. It is proposed to build several multi-residential structures, including a common driveway. The site is generally level with gentle side slopes on the south and west sides.

SCOPE OF WORK

It is the purpose of this investigation to classify the soil disclosed by the exploratory borings and excavations by observation and tests on selected samples. In addition, this study includes laboratory tests to evaluate soil strength, the effect of moisture variation on the soil-bearing capacity, compressibility, liquefaction, and expansiveness. Based upon this information, we will provide preliminary grading and foundation recommendations for the proposed multi-residential development.

The scope of this investigation does not include the analysis of the corrosive potential of the soil, previous site construction, or analysis of geologic structures and their associated features, such as faults, fractures, bedding planes, strike and dip angles, ancient landslides, potential for earth movement in undisturbed or natural soil formations sloped or level, or other sources of potential instability which relate to the geologic conditions, as these items should be addressed by a qualified Engineering Geologist.

This exploration was conducted in accordance with presently accepted geotechnical engineering procedures currently applied in the local community in order to provide the appropriate geotechnical design characteristics of the foundations soils and of the proposed fill soils in order to properly evaluate the proposed structure with respect to differential settlement based upon the anticipated soil characteristics at the time of construction.

LIMITATIONS

This Laboratory's basic assumption is that the soil borings presented herein are representative of the entire footprint of the proposed development, however, no warranty is implied. If, during the course of construction, soil conditions are encountered which vary from those presented herein, please contact this Laboratory immediately so appropriate field modifications may be expeditiously proposed.

It is your responsibility to contact our office, providing at least 48 hours of notice for grading or footing excavation observations and testing. The observation of excavations during the construction phase represents an opportunity by our firm to either confirm soil conditions estimated by the exploratory borings or to discover soil conditions which have not been addressed. When such undisclosed conditions are encountered, opinions and recommendations addressing these conditions will be rendered at that time.

This report is considered preliminary and no person should consider the recommendations or soil conditions described herein as conclusive. The recommendations and conclusions of this report are considered preliminary until all excavations have been observed during the construction phase, after which a final report will be issued stating that the grading and foundation works accomplished and installed are appropriate for the soil conditions encountered.

FIELD INVESTIGATION

The subsurface soil conditions were explored by four (4) truck-mounted auger borings, which were drilled to depths of up to 45 feet. The locations of the borings were selected as appropriate and representative. Representative, relatively “undisturbed” tube soil samples were obtained during the drilling operation by the Modified California sampler method. Laboratory tests and analysis of representative soil samples, obtained during the drilling operation, were performed to estimate the engineering properties and determine the soil classification. The locations of the borings are shown on Plate 1; these locations are approximate and have not been located by surveyed measurements. The boring log data is presented in Appendix A, "Field Investigation", while the results of the laboratory tests are provided in Appendix B, "Laboratory Tests".

SOIL CONDITIONS

1. Groundwater was encountered in Boring No. 1 at a depth of 28 feet. It should be recognized that water table elevations, even seasonal perched water tables, might fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions, as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

2. The groundwater table at the depth of 28 feet is a perched water level since the soil samples below the perched water level were found to not be saturated.

3. The soil profile consists mostly of sandy clays, having blow counts of 30 blows per foot or more on the average; therefore, the potential for liquefaction is considered to be low.

4. The supporting soils were found to have a very low potential for expansion.

5. The results of the consolidation test indicate the supporting soil is slightly compressible and slightly sensitive to swell when subjected to increased moisture content.

6. The soil profile at this site is judged to be stiff soil corresponding to a Site Class D (not default D) as specified in Section 1613.2.2 of the 2022 California Building

Code (CBC). This estimate is based on the borings, which encountered the geologic formation known as the Older Alluvium, which is widely regarded as a Type D soil profile since the Standard Penetration Resistance typically results in blow counts having a range of between 15 to 50.

PRELIMINARY CONCLUSIONS AND RECOMMENDATIONS

It is the understanding of this Laboratory the proposed multi-residential development will include a common driveway. The residential buildings will be multi-story structures with concrete slabs-on-grade foundations. Based upon this understanding, we present the following preliminary recommendations:

GRADING

1. The area to be graded shall be cleared of surface vegetation, including roots and root structures.

2. If, during the removal and scarification process, excessive root structures are encountered, these areas shall be deep ripped in two directions to the depth of the root structure, after which the disturbed soils and the roots shall be completely removed, and the resulting cavities shall be scarified and processed to receive fill in accordance with recommendations contained in this section.

3. If, during the grading operations, previously placed undocumented fill material is encountered, this fill material shall be removed under the direction of this Laboratory prior to commencement of the filling operations.

4. The footings of the proposed structures shall be supported completely by a **uniform** thickness of non-expansive compacted soil.

5. Beneath the proposed structures and for a minimum distance of 5 feet beyond the exterior perimeters, the loose topsoil and compressible surface soils shall be removed and observed by a representative of our firm. Upon approval of excavation, the exposed ground surface shall be scarified an additional 6 to 8 inches, moistened or dried to near the optimum moisture content, and compacted to 90% of the relative compaction. We anticipate the depth of the surface soil removal to be from 24 to 48 inches below the existing grade due to the presence of some old fill. The minimum depth of removal shall be at least 12 inches below the bottom of the proposed footings.

6. The removed surface soils and/or imported approved fill may then be placed in loose lifts of approximately 6 inches, thoroughly mixed, moistened or dried to near optimum moisture content, and compacted to a minimum of 90% relative compaction.

7. Rocks greater than 6 inches in size shall be removed from the soil being spread for compaction.

8. All fill slopes which are created during the grading operation shall be properly shaped to a maximum slope angle of 3 horizontal to 1 vertical, and compacted by rolling the sheepsfoot roller or similar compaction equipment over the slope face at vertical lift intervals of 30 inches or less.

9. Import soils, if required for compacted fill, shall be granular, non-expansive soils which are equal to, or superior in quality to, the on-site soils as determined by this Laboratory prior to importation of the fill material to the site. This is not referring to retaining wall backfill. See the RETAINING WALLS section of this report for retaining wall backfill requirements.

10. The compaction standard shall be the latest adoption of the ASTM D-1557 method of compaction.

11. Positive surface drainage shall direct water away from all slopes and away from the foundation system of the proposed structure.

FOUNDATIONS

1. These recommendations assume a uniform thickness of compacted soil will support the proposed footings.

2. All continuous exterior footings for one-story portions of the structure shall extend a minimum of 18 inches and all continuous interior one-story footings shall extend a minimum distance of 12 inches below compacted ground surface.

3. Footings below two-story portions of the structure shall extend 18 inches below compacted ground surface.

4. Footings below three-story portions of the structure shall extend 24 inches below compacted ground surface.

5. All footings shall contain a minimum of two No. 4 horizontal rebar; one placed in the base and one in the stem of the footing. The Project Civil or Structural Engineer shall specify the foundation steel reinforcement.

6. Isolated piers may be utilized and shall extend a minimum of 18 inches below compacted ground surface.

7. Concrete slab-on-grade floors shall be placed over a subgrade soil conforming to the GRADING recommendations of this report.

8. As a minimum, concrete slabs on grade shall be a full 4 inches thick and shall contain No. 3 rebar spaced 24 inches on center each way. The steel reinforcement shall be placed near the center of the slab. Concrete slabs on grade shall be doweled into all adjacent footings using No. 3 rebar spaced 24 inches on center. The traditional or conventional subgrade preparation below a concrete slab-on-grade floor is some variation of the following: A minimum

4-inch coarse, washed concrete sand layer is placed over the soil subgrade. A 10-mil or heavier impervious membrane is placed over the sand layer. These concrete slab-on-grade and sand layer recommendations shall be modified and/or eliminated as needed by the designers for surcharge loads, wheel loads, concentrated loads, or for moisture control. The floor covering supplier or manufacturer should be contacted for their specifications for design features, which will result in a successful bond between the concrete slab and floor covering. Floor flatness and shrinkage crack control must be addressed by a competent contractor experienced in the skill of concrete placement. The owners or their agents shall inform those designing, building, and installing the concrete slab on grade and flooring of the performance and aesthetics expected. It is the sole purpose of the recommendations contained in this report to analyze the mechanical properties of the soil with respect to achieving a stable soil subgrade. By stable, we refer to the settlement or heave properties of the subgrade soil.

9. If footings are to be located on, adjacent to, or within 10 feet of the top of a slope, these footings shall extend to such a depth so that the horizontal distance between the bottom outside edge of the footing and the face of the adjacent slope is a minimum distance of 10 feet. The slope setback required by the CBC, Figure 1808.7.1, shall also apply.

10. This Laboratory shall be requested to inspect the footing excavation prior to placement of reinforcing steel and timber form boards.

11. Based upon compliance with the above recommendations, an allowable soil bearing value for compacted soil of 1,500 psf for 12-inch-deep footings and 2,000 psf for 18-inch-deep footings and 2,500 for 24-in-deep footings, with a one-third increase when considering wind or seismic forces, may be assumed.

12. Floor elevations located lower than the surrounding exterior grades are recommended to be protected from moisture intrusion. Please consult the building designer for details, such as waterproofing and French drains.

RETAINING WALLS

The following retaining wall recommendations assume a single wall on level ground or a slope of less than 25 degrees. If there is more than one retaining wall, creating a multilevel terraced condition, the upper footing must be at a depth that passes below a 50 percent sloping line projected up from the top of the footing of the retaining wall below.

Cantilevered - For cantilevered retaining walls, such as site walls and garden walls, which do not form part of the structure, we recommend the following:

1. The cantilevered retaining wall shall be designed assuming an active soil pressure equivalent to a fluid (EFP) whose weight is 35 pcf for level backfill conditions and 52 pcf for backfill slopes, which are constructed at an angle of up to 27 degrees. These values are based on Coulomb's Equation and the following assumed backfill soil values: internal angle of friction equal to

34 degrees, cohesion equal to 0, and a total unit weight of soil equal to 125 pcf. The EFP value does not include surcharge loads and is based on a free-draining condition. The free-draining condition must be created by placing the backfill specified in this section of the report.

2. Retaining walls may be designed using pseudostatic analyses based on a modified[1] Seed Whitman (1970) approach. The need to apply the lateral seismic load is to be determined by the Project Structural Engineer or by the building code. We have estimated the seismic earth force using the modified Seed Whitman (1970) method, assuming a horizontal peak ground acceleration of 1.046g, and assuming drained backfill conditions. The peak horizontal ground acceleration (PGA_M) was determined in accordance with Section 1803.5.12 of the 2022 CBC, Paragraph 2.2. The seismic earth resultant force (ΔP_{AE}), acting on the stem of the retaining wall, may be estimated as $\Delta P_{AE} = 31.5H^2$. The resultant force (ΔP_{AE}) may be assumed to act at 0.33H above the base of the wall[2]. $K_h = 0.701$

3. The bottom of the retaining wall footing shall extend a minimum distance of 24 inches below the lowest adjacent undisturbed natural grade or 12 inches into firm, undisturbed original ground (whichever is deeper) and shall be designed assuming an allowable soil bearing value of 2,000 psf. For footings placed on slopes, the base of the toe or keyway placed at the toe shall extend to such a depth that there exists 10 horizontal feet between the bottom of the footing and the daylight line of the adjacent slope. It should be noted the key may be placed adjacent to the downhill edge of the retaining wall footing in order to attain the recommended downhill grade footing embedment. The slope setback required by the CBC, Figure 1808.7.1, shall also apply.

4. A passive soil pressure equivalent to a fluid whose weight is 350 pcf and a coefficient of friction against sliding of 0.35 may be assumed for the footing excavation described in the recommendation above.

5. The use of equipment to compact soil within the wedge of backfill defined by a 1:1 line projected up from behind the retaining wall to the surface shall be limited to handheld rammer plate compactors, such as a Wacker BS 45Y. A string line shall be placed along the top of the wall to monitor possible rotation of the wall due to the compaction surcharge. If the wall begins to bow or lean away from the backfilling operations, the compaction process shall stop and the Geotechnical Engineer shall be notified immediately such that modified compaction recommendations can be given at that time.

6. The finish covering on the face of the wall, such as stucco or paint, may be adversely affected by moisture intrusion from the backfill through the back of the

[1] Marshal Lew and Nicolas Sitar, et al, "Seismic Earth Pressures on Deep Building Basements", SEAOC 2010 Convention Proceedings

[2] Linda Al Atik, M. ASCE and Nicholas Sitar, M. ASCE, "Seismic Earth Pressures on Cantilever Retaining Structures", Journal of Geotechnical and Geoenvironmental Engineering, October 2010

wall. To prevent this, you should consider waterproofing the back of the wall and footing. All waterproofing and application of waterproofing shall be in accordance with the specifications of the product supplier.

7. Retaining wall backfill shall be a clean, coarse sand or gravel wrapped in a filter fabric. The gravel shall be separated from adjacent native soil by a filter fabric, such as Mirafi 140N™. The retaining wall shall be serviced by appropriately placed weep holes or a perforated drain. This drainage feature must include at least 2 cubic feet of gravel wrapped in filter fabric. Lower quality native backfill material may be utilized outside the triangular wedge, which extends upwards from the inside edge of the retaining wall and is a minimum width of 60% of the wall height at ground surface. The sand between the wall and native soil shall have a Sand Equivalent of 20 or greater and an Expansion Index equal to 0. To avoid excessive amounts of sand and gravel backfill, do not allow the excavation contractor to cut a vertical excavation 2 to 4 feet beyond the back of the retaining wall footing or stem. Cut only to the point needed to install the drainpipe and slope the excavation back as specified.

8. It is assumed that the rough grade excavation behind the retaining wall is to be cut at a temporary slope angle of 1 horizontal to 1 vertical in order to comply with Cal-OSHA safety requirements.

9. All soil backfill shall be compacted to a minimum of 90% relative compaction. It should be noted, retaining walls designed assuming active soil conditions are anticipated to deflect seasonally. In addition, surface features which obtain their support from retaining wall backfill materials are anticipated to express differential movement with respect to the retaining wall as the wall may be resting upon a thinner depth of fill or undisturbed original ground, and the surface features may be resting upon a considerable thickness of compacted fill, which has settlement characteristics differing from that of original ground. The differential movement between the wall and slab patio may be undesirable. In order to hide or prevent such differential movement, an alternate design may be required, such as, but not limited to, placing a planter between the wall and slab, or connecting the slab to the wall, creating a retaining wall which is pinned at the top, not cantilevered.

Partially Restrained - For restrained or partially restrained retaining walls or cantilevered retaining walls which form a portion of the foundation system of the structure, we recommend the wall be designed as a braced wall utilizing at-rest pressures in accordance with the following recommendations:

1. The retaining wall shall be designed assuming an at-rest soil pressure equivalent to a fluid (EFP) whose weight is 60 pcf for level backfill conditions and 73 pcf for backfill slopes, which are constructed at an angle of up to 27 degrees. These values are based on the same assumed conditions stated in Recommendation No. 1 under the Cantilevered section. The at-rest condition for a level backfill is

based on the following equation: EFP=$K_0\gamma$ where K_0=1-sin ϕ, γ is the total unit weight of soil, and ϕ is the internal angle of friction.

2. The retaining wall footing shall conform to the FOUNDATIONS recommendations and may be designed assuming an allowable soil bearing value of 2,000 psf. For footings placed on or adjacent to slopes, the base of the toe or keyway placed at the toe shall extend to such a depth that there exists 10 horizontal feet between the bottom of the footing and the daylight line of the adjacent slope.

3. A passive soil pressure equivalent to a fluid whose weight is 350 pcf and a coefficient of friction against sliding of 0.35 may be assumed for the footing excavation described in the recommendation above.

4. The retaining wall shall be serviced by a perforated drain which is located a minimum of 12 inches below top of the adjacent interior concrete slab-on-grade floor.

5. Walls, foundations, and connections between walls and foundations forming interior finished rooms of the structure shall be waterproofed by the proper application of a moisture barrier. All waterproofing products should be applied in strict conformance with the manufacturer's recommendations. The selection of a waterproofing product and the observation of proper installation will not involve Pacific Materials Laboratory. We recognize the need for waterproofing; however, it is not in our purview to know the optimum product for application to the retaining wall or to confirm proper installation.

6. It is assumed that the rough grade excavation behind the retaining wall is to be cut at a temporary slope angle of 1 horizontal to 1 vertical in order to comply with Cal-OSHA safety requirements.

7. Footings located near the retaining wall stem and in the zone of the granular backfill material shall extend through the retaining wall backfill, shall be supported on the firm underlying undisturbed ground, and below a 1 horizontal to 1 vertical line projected upward from the base of the wall; whichever is deeper. As an alternative, the footing can be designed to span across the backfill area and be supported by footings able to receive the reaction load of the spanning member. This may include tying into the retaining wall for support, if that portion of the retaining wall has been designed to receive the additional load.

8. Retaining wall backfill shall include 2 cubic feet per linear foot of wall of 3/8- to 1-inch gravel placed around a 4-inch perforated rigid PVC drainpipe. The perforations of the pipe shall be placed down at the positions of 5 and 7 o'clock. A filter fabric shall separate the gravel from the other backfill soils.

9. Retaining wall backfill above the drainpipe shall be a clean, coarse sand or gravel, creating an inverted triangular wedge. Lower quality native backfill material may be utilized outside the triangular wedge which extends upwards

from the outside edge of the pipe/gravel at the base of the retaining wall and is a minimum width of 60% of the wall height at ground surface. Clean, coarse sand is acceptable when the Sand Equivalent is greater than 20 and the Expansion Index equals 0. To avoid excessive amounts of sand and gravel backfill, do not allow the excavation contractor to cut a vertical excavation 2 to 4 feet beyond the back of the retaining wall footing or stem. Cut only to the point needed to install the drainpipe and slope the excavation back as specified.

10. The use of equipment to compact soil within the wedge of backfill defined by a 1:1 line projected up from behind the retaining wall to the surface shall be limited to handheld rammer plate compactors, such as a Wacker BS 45Y. A string line shall be placed along the top of the wall to monitor possible rotation of the wall due to the compaction surcharge. If the wall begins to bow or lean away from the backfilling operations, the compaction process shall stop and the Geotechnical Engineer shall be notified immediately such that modified compaction recommendations can be given at that time.

11. The engineer designing the retaining wall shall address the following conditions:

    A. When a retaining wall is backfilled without a top restraint, such as a wood floor diaphragm, the stem of the retaining wall acts as a cantilever.

    B. Depending on the rigidity of the top restraint, the wall may act as a beam spanning between the top and bottom points, reversing the tension side of the stem to the front of the wall as opposed to the back as in the case of a cantilever condition.

    C. Structure members deflect when loaded. The users guide to the widely used computer program RetainPro recommends the deflection of the wall be checked because the program does not calculate deflection. Refer to Section 9 titled “Related Design Considerations” in the manual titled “Basics of Retaining Wall Design”, Page 50. As an estimate, the Concrete Reinforcing Steel Institute (CRSI) manual estimates concrete reinforced stems of cantilevered retaining walls will deflect a horizontal distance at the top of the wall equal to the height of the wall divided by 240. We recommend the appropriate deflection equation and values corresponding to load, condition, and material be employed to determine the deflection corresponding to the lateral loads recommended herein such that appropriate connections, tiebacks, bracing, or construction joints can be placed within the structural design to properly account for the deflection. The total deflection may not occur during the backfilling operation, but rather sometime after the frame structure is built over and adjacent to the retaining wall.

PAVEMENT

1. In the areas to be paved, we recommend the top loose surface soils be removed from below the proposed final soil subgrade elevation, moistened or dried to at or near the optimum moisture content, and compacted to 90% relative compaction with the top 9 inches being compacted to 95% relative compaction where pavement will be subject to vehicle travel or parking. The subgrade area shall be check rolled in order to detect isolated soft spots. Any areas found to be yielding under the wheel loads of the equipment shall be stabilized by removal and compaction.

2. The Class 2 aggregate base shall be recompacted to a minimum of 95% relative compaction in accordance with the ASTM D-1557 test method. Asphalt concrete shall be placed only after the Class 2 aggregate base has been demonstrated to be firm and unyielding.

3. If asphalt pavement is selected for the finished pavement surface, we recommend an R-Value of the subgrade soil be performed by this Laboratory in order to provide appropriate thickness of Class 2 aggregate base and asphalt concrete.

4. Maintenance to assist in reducing the potential for rapid deterioration of the asphalt paved areas shall include surface treatment approximately six months to one year after construction and approximately three years from the first treatment. Pavement conditions should be reviewed at least once a year for cracks, puddling of surface water, and overall appearance. If possible, this review should be done in the fall such that cracks may be repaired which may otherwise allow moisture to pass through the pavement and weaken the subgrade.

ADJACENT LOADS

Where footings are placed at varying elevations, the effect of adjacent loads may be calculated using the widely published Formulas for Stresses in Semi-infinite Elastic Foundations or the Boussinesq figures and equations for both vertical and horizontal surcharge loads.

SETTLEMENT

It is the intent of the recommendations contained in this report to achieve angular distortions[3] of approximately 1/480. A total settlement of approximately 1 inch or less is anticipated for foundations supported on the undisturbed native soil and approximately 1% to 1.5% of the fill height is the anticipated total settlement at areas where compacted fill soil is placed in accordance with the GRADING recommendations provided in this soil engineering report. The soil bearing values and estimated settlements contained in this report are preliminary and may need to be modified after the foundation and grading plans are substantially complete.

CONSTRUCTION OBSERVATION

The owner or his agent shall request the Project Geotechnical Engineer to observe all excavations prior to placement of compacted soil, gravel backfill, or rebar and concrete.

PLAN REVIEW

We request the grading and foundation plans be submitted to our office for a general review to verify substantial compliance to the recommendations contained in this report.

CLOSURE

The recommendations contained herein are for the sole use of our client and are based upon this Laboratory's understanding of the project which has been described herein. If the project scope, location, or conceptual design is subsequently altered, this Laboratory shall be requested to modify, as necessary, the recommendations contained herein as is appropriate for the new development concept. If the recommendations of this report are not implemented within one year, we recommend an update and review of the contents of this report be performed by this Laboratory.

The recommendations contained herein are based upon the assumption that Pacific Materials Laboratory shall be requested to perform the testing and observation services which will be required during the grading and foundation operations in order to verify that the actual soil conditions encountered and the construction procedures are consistent with the recommendations contained herein. If this service is performed by others, only the technical correctness of the actual analytical soil tests described here is attested to by this Laboratory.

[3] Angular distortion is the ratio of the vertical differential settlement divided by the horizontal distance over which the vertical differential is measured.

Thank you for the opportunity of providing this service. If you have any questions regarding this matter, please do not hesitate to call.

Respectfully submitted,

PACIFIC MATERIALS LABORATORY, INC.

Ronald J. Pike
Geotechnical Engineer, G. E. 2291

RJP:jb

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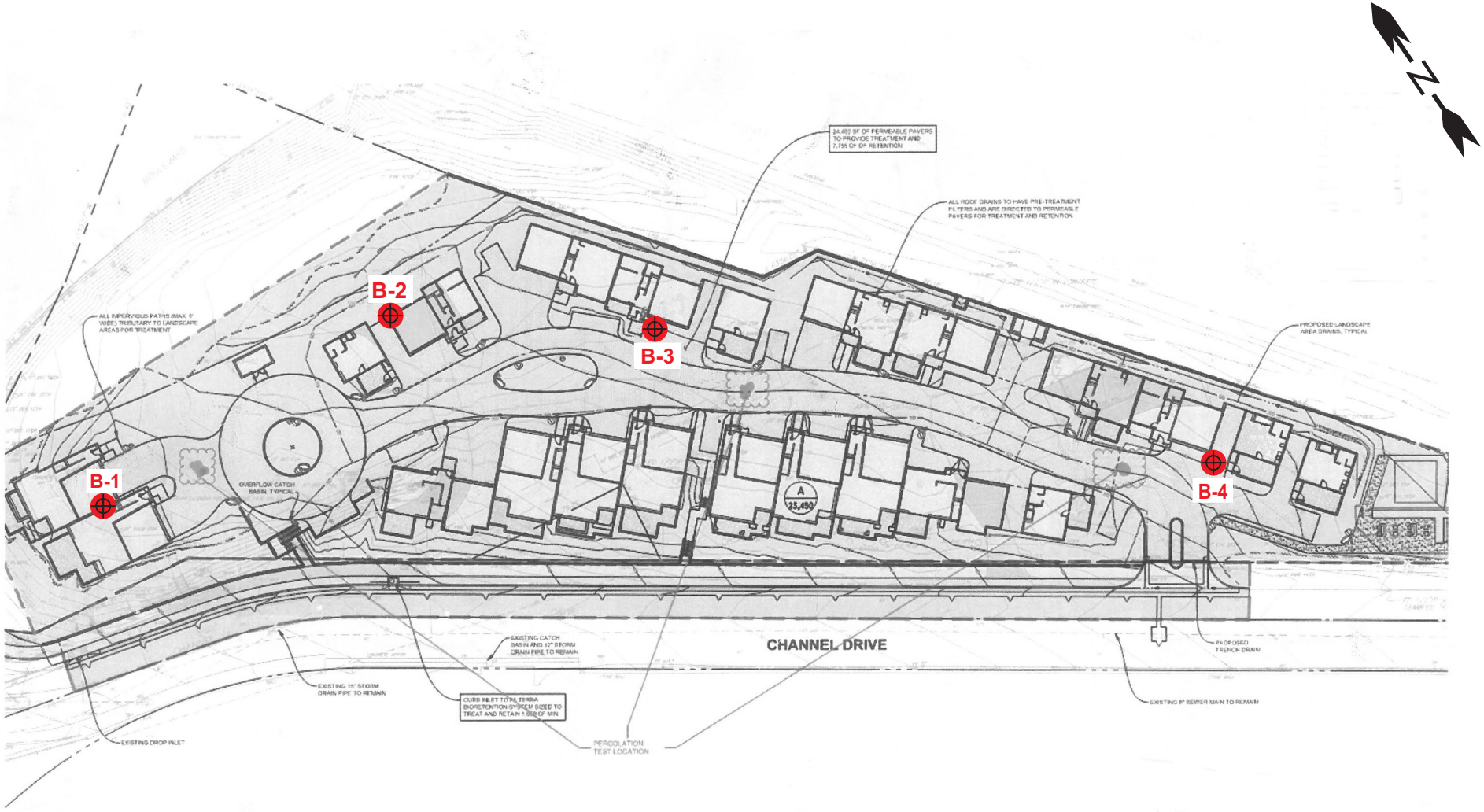

SITE PLAN

APN 017-391-008, -01
APN 017-393-002, -01, -02, -03, -04, -05
Channel Drive and Cabrillo Boulevard
Santa Barbara, California

LEGEND

TB-1 – BORING LOCATION

Pacific Materials Laboratory, Inc.

Scale: none	Plate 1 Lab No: 144911-2 File No: 24-16249-2 August 30, 2024

APPENDIX A

FIELD INVESTIGATION

August 30, 2024

Lab No: 144911-2

File No: 24-16249-2

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File No: 24-16249-2

BORING LOG DATA

BORING NO. B-1

Field Technician: Mann/Trujillo Date Drilled: 08/14/24

Blow Counts		Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
			0		Light brown sandy CLAY
59		10.7	5		
					Light brown clayey silty SAND with cobbles
					Silty, sandy CLAY
50 for 5"		9.7	10		
					Light brown clayey SAND
51		9.7	15		
					Clayey silty SAND
17		12.1	20		
					SAND
			25		
			▼		Groundwater was encountered at 28 feet 2 inches.
50 for 5"		16.6	30		
					Clayey silty SAND with sandstone cobbles
					Black CLAY
			35		
68		23.3	40		
					Sandstone bedrock
50			45		

LEGEND

■ - Modified California Sampler

Lab No: 144911-2
File No: 24-16249-2

BORING LOG DATA

BORING NO. B-2

Field Technician: Mann/Trujillo Date Drilled: 08/14/24

Blow Counts		Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
			0		Clayey SAND with pebbles/cobbles
35		8.3	5		
					Clayey SAND
30		16.3	10		
					Brown sandy CLAY
51		18.3	15		
30		15.3	20		
30		16.3	25		
			30		
			35		
			40		
			45		

LEGEND

■ - Modified California Sampler

Lab No: 144911-2
File No: 24-16249-2

BORING LOG DATA

BORING NO. B-3

Field Technician: Mann/Trujillo Date Drilled: 08/14/24

Blow Counts		Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
			0		Silty SAND with cobbles
17		9.1	5		Light brown silty CLAY
26		12.7	10		Sandy CLAY
28		14.6	15		
39		19.1	20		
24		18.5	25		
			30		
			35		
			40		
			45		

LEGEND

■ - Modified California Sampler

Lab No: 144911-2
File No: 24-16249-2

BORING LOG DATA

BORING NO. B-4

Field Technician: Mann/Trujillo Date Drilled: 08/14/24

Blow Counts		Moisture Content (%)	Depth (ft)	Soil Log	Soil Description
			0		Brown clayey silty SAND with pebbles
56		11.0	5		
		13.0			Brown sandy silty CLAY
50		14.2	10		
					Light brown clayey silty SAND
50 for 5.5"		9.5	15		
					Light SAND with sandstone fragments
50 for 5"		10.7	20		
26		10.4	25		
			30		
			35		
			40		
			45		

LEGEND

■ - Modified California Sampler

APPENDIX B

LABORATORY TESTS

August 30, 2024

Lab No: 144911-2

File No: 24-16249-2

MECHANICAL ANALYSES (Values in Percent Passing ASTM D 422)

SIEVE SIZE	B-1 @ 5'	B-3 @ 5'
1/2 Inch	92.6	100.0
3/8 Inch	90.2	100.0
No. 4	82.1	99.0
No. 8	75.6	96.3
No. 16	72.1	94.1
No. 30	69.7	90.6
No. 50	65.9	82.6
No. 100	58.8	67.5
No. 200	52.2	59.1

SAND-SILT-CLAY (By Hydrometer ASTM D 422)

SAMPLE LOCATION	DEPTH (ft.)	SAND %	SILT %	CLAY %	SOIL DESCRIPTION
B-1	5	50	24	26	Clayey SILT and SAND
B-3	5	16	44	40	Silty SAND

ATTERBERG LIMITS (ASTM D 4318)

SAMPLE LOCATION	DEPTH (ft.)	SOIL TYPE	LIQUID LIMIT	PLASTIC LIMIT	PLASTICITY INDEX
B-1	5	CL	31	14	17
B-3	5	CL	23	13	10

EXPANSION TEST (ASTM D 4829)

The Expansive Soil Index was determined by the present ASTM D 4829 Expansion Test Method. The results are tabulated below:

SAMPLE LOCATION	DEPTH (ft.)	DRY DENSITY (pcf)	MOISTURE CONTENT (%)	EXPANSION INDEX	POTENTIAL FOR EXPANSION
B-3	5	105.7	11.4	0	Very low

CONSOLIDATION TEST (ASTM D 2435)

One consolidation test was performed on a representative in-place tube soil sample in both the natural field and at increased moisture contents. The result of the consolidation test is presented graphically below.

Consolidation Test Data
'Undisturbed' Sample
Sample B-3 Depth 5'