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PRELIMINARY SUBSURFACE SOIL INVESTIGATION
CLAREMONT RANCH – FUTURE PAD SITES
SOUTHEAST CORNER OF MEADOWBROOK PARKWAY AND MARKSHEFFEL ROAD
EL PASO COUNTY, COLORADO

Prepared for:

Rockwood Homes
5436 Carvel Grove
Colorado Springs, CO 80922

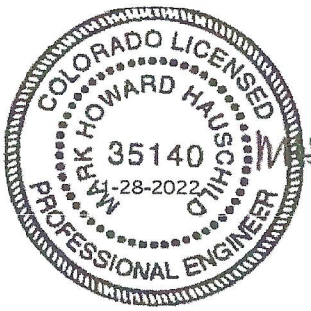
Attn: Mr. Pat Hiner

January 25, 2022

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Stuart Wood
Geologist



Reviewed by:

Mark H. Hauschild, P.E.
Senior Engineer

DPS/nds

Encl.

Entech Job No. 212763
AAprojects/2021/212763- pssi

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AND MARKSHEFFEL ROAD
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1.0 INTRODUCTION

The project consists of the development of future multi-family homes located southeast from the intersection of Marksheffel Road and Meadowbrook Parkway. Development is expected to include site grading, installation of subsurface utilities, roadways, parking, and drainage structures. The project site is located in the eastern portion of Colorado Springs in El Paso County, Colorado. The approximate location of the project site is shown on the Vicinity Map, Figure 1. The test boring locations are shown on Figure 2, the Test Boring Location map.

This report describes the subsurface investigation conducted for the site and provides preliminary recommendations for development design and construction. The Preliminary Subsurface Soil Investigation included the drilling of seven (7) test borings across the site, collecting samples of soil, and conducting a geotechnical evaluation of the investigation findings. All drilling and subsurface investigation activities were performed by Entech Engineering, Inc. (Entech). The contents of this report, including the geotechnical evaluation and recommendations, are subject to the limitations and assumptions presented in Section 15.0.

2.0 PROJECT AND SITE DESCRIPTION

The project will consist of developing the site for a multi-family residential development consisting of 10 separate units with associated site improvements. The site is located east of Marksheffel Road, and south of Meadowbrook Parkway. The site is bordered by vacant land north of Meadow Brook Parkway, Highway 24 to the southeast, Markshefffel Road to the west, and an existing residential development to the northeast. The investigation was performed by drilling at random locations staked by Entech Engineering, Inc. At the time of drilling, the site was vacant. The site has not been graded for the planned development. The site has a gradual slope to the northwest

towards the drainage basin. Vegetation consisted of native field grasses and weeds. A small drainage basin exists in the northwest corner of the property.

3.0 SUBSURFACE EXPLORATIONS AND LABORATORY TESTING

Subsurface conditions on the site were explored by drilling seven test borings at the approximate locations shown on Figure 2. The borings were drilled to depths of 20 feet below the existing ground surface (bgs). The field work was performed using a truck-mounted, continuous flight auger-drilling rig. Boring logs descriptive of the subsurface conditions encountered during drilling are presented in Appendix A. At the conclusion and subsequent to drilling, observations for groundwater levels were made in each of the test borings.

Soil samples were obtained from the borings utilizing the Standard Penetration Test (ASTM D-1586) using 2-inch O.D. split-barrel and California samplers. Results of the Standard Penetration Test (SPT) are included on the boring logs in terms of N-values expressed in blows per foot (bpf). Soil samples recovered from the borings were visually classified and recorded on the logs. The soil classifications were later verified utilizing laboratory testing and grouped by soil type. It should be understood that the soil descriptions shown on the logs may vary between boring location and sample depth. It should also be noted that the lines of stratigraphic separation shown on the logs represent approximate boundaries between soil types and the actual stratigraphic transitions may be more gradual or variable with location.

Water content testing (ASTM D-2216) was performed on the samples recovered from the borings, and the results are shown on the boring logs. Grain-Size Analysis (ASTM D-422) and Atterberg Limits testing (ASTM D-4318) were performed on selected samples to assist in classifying the materials encountered in the borings. Soluble sulfate testing was performed on select soil samples to evaluate the potential for below grade degradation of concrete due to sulfate attack. The Laboratory Testing Results are summarized on Table 1 and are presented in Appendix B.

4.0 SUBSURFACE CONDITIONS

One soil type was encountered in the test borings drilled for the subsurface investigation; Type 1: native silty to slightly silty sand (SM, SW). The soil was classified in accordance with the Unified

Soil Classification System (USCS) using the laboratory testing results and the observations made during drilling.

4.1 Soil and Rock

Soil Type 1 classified as a silty to slightly silty sand (SM, SW). The native sand was encountered in all of the test borings at depths ranging from the existing ground surface and extending to the termination of the borings (20 feet). Standard Penetration testing on the sand resulted in N-values ranging from 2 to 17 bpf, indicating very loose to medium dense states. Water content and grain size testing resulted in water contents of 3 to 11 percent, with approximately 6 to 34 percent of the soil size particles passing the No. 200 sieve. Atterberg limits testing indicated non-plastic results. Sulfate testing resulted in 0.00 to less than 0.01 percent soluble sulfate by weight, indicating a negligible potential for below grade concrete degradation due to sulfate attack.

4.2 Groundwater

Depth to groundwater was measured in each of the borings at the conclusion of, and subsequent to drilling. Groundwater was not encountered in any of the test borings. Unstable conditions should be expected if excavations approach the groundwater level. Stabilization utilizing shot rock or geo grids may be necessary. It should be noted that groundwater levels could change due to seasonal variations, changes in land runoff characteristics, and future development of nearby areas.

5.0 PRELIMINARY DEVELOPMENT CONSIDERATIONS

The following discussion is based on the subsurface conditions encountered in the test borings drilled on the site. This preliminary investigation is for the site discussed in Section 2.0 Project and Site Description. Proposed grading plans were not available at the time of the investigation. If subsurface conditions different from those described herein are encountered during construction or if the project elements change from those described, Entech Engineering, Inc. should be notified so that the evaluation and recommendations presented can be reviewed and revised if necessary.

Subsurface soil conditions encountered in the test borings drilled on the site generally consisted of native silty to slightly silty sand. N-values measured in the sand at anticipated foundation grades

generally indicated very loose to medium dense states. Removal and recompaction of loose sands is expected for the buildings. The granular soils will provide good support for pavements and structures, given completion of proper mitigation techniques.

5.1 Groundwater

Groundwater was not encountered in the test borings on this site. It is anticipated groundwater will not affect construction on this site. Development of this and adjacent properties, as wells as seasonal precipitation changes and changed in runoff may affect groundwater elevations. Frequently, groundwater levels rise following development as result of increased irrigation and decreased potential area of evaporation.

6.0 SITE GRADING

Excavation of the upper site soil materials is expected to be moderately easy with standard heavy-duty earthmoving equipment. For conditions with no groundwater seepage, cut and fill slopes no steeper than maximum 3 to 1 (horizontal to vertical, respectively) should be considered. If seepage occurs, then flatter slopes or a drain system should be considered. Recommendations may be subject to change depending upon particular field conditions.

Once final grading plans are determined, additional investigation/testing may be warranted to evaluate the mitigation required.

6.1 Stripping

Debris, topsoil and organic materials should be stripped from the ground surface of areas to be filled. Any uncontrolled fill materials should be completely penetrated and removed to native soils. The materials may be used as fill pending approval if they are free of organic material and debris. Any loose and very loose soils should be stabilized or removed to expose suitable material prior to placement of fill. Topsoil may be stored in stock piles and placed at the finished surface in landscape areas.

6.2 Fill Preparation

Surfaces which will receive fill should be scarified to depths of 8 inches, moisture conditioned to within 2 percent of optimum moisture, and compacted to minimum of 95 percent of Modified

Proctor Dry Density (ASTM D-1557). On-site suitable soils are anticipated to be used as site grading fill. The fill quality will influence the performance of foundations, slabs-on-grade, and pavements. Fill settlement can be minimized by placing thin lifts at suitable moisture content and by verification of compaction with frequent density tests.

6.3 Compaction

Overlot grading fill consisting of granular soils should be placed in lifts not to exceed 6 inches following compaction and compacted to at least 95 percent of the Maximum Dry Density determined by Modified Proctor (ASTM D-1557). The soil materials should be placed at a moisture content conducive to adequate compaction, usually within ±2 percent of optimum moisture content for cohesionless materials. Fills deeper than 10 feet in depth should be moisture conditioned as above and compacted to 98 percent of Maximum Modified Proctor Dry Density (ASTM D-1557) for granular materials. Fill placement and compaction should be observed and tested by Entech during construction to verify that adequate moisture and density has been achieved.

7.0 UNDERGROUND UTILITY CONSTRUCTION

Generally, excavation for utilities is expected to be moderately easy with standard rubber-tired equipment. Site material are acceptable for use as trench backfill.

Utilities including water and sewer lines are usually constructed beneath paved roads. Placement of fill and degree of compaction applied to trench backfill will influence performance of overlying structures including pavements. Fill placed into utility trenches should be compacted according to requirements of the local jurisdiction. Fill should be placed in horizontal lifts having compacted thickness of six inches or less and at a water content conducive adequate compaction, usually within ±2 percent of optimum water content. Typical compaction specifications would be similar to specifications in the Site Grading section. Mechanical methods should be used for fill placement; however, heavy equipment should be kept at a distance away from structures to avoid damage. No water flooding techniques of any type should be used for compaction or placement of utility trench backfill.

Trench backfill should be performed in accordance with the El Paso County specifications and requirements. Excavations and excavation shoring/bracing should be performed in accordance with OSHA guidelines.

8.0 UNDERDRAIN SYSTEM

Depending on final site grading, anticipated depths of excavations, and structure foundations relative to groundwater occurrence, an underdrain system may be considered to be included as part of sewer system design and installation. The underdrain system drain pipe shall consist of smooth wall non perforated rigid PVC pipe placed at a minimum slope of 2 percent. Shallower pipe grades can be considered for larger diameter underdrain pipes and areas to daylight the drainage systems. Concrete or clay material fill may be strategically placed at the manhole locations to slow the water flow down the trench. The underdrain below sewer should be constructed with adequate depth to allow connection of residence foundation drain systems. Drain elements should be of appropriate slopes and sizes for anticipated flows. Maintenance of the underdrain system should be anticipated. Gravity outlet should be planned such that other developments and properties are not adversely affected.

9.0 PAVEMENT CONSIDERATIONS

Materials exposed at pavement subgrade elevations will be dependent upon native and fill materials exposed at final overlot grading and the specific materials placed as fill at and near finish grade elevations. The predominate materials are generally expected to be silty to slightly silty sand. Sand materials anticipated at subgrade elevation generally would be rated as good, with AASHTO Classifications of A-1-b to A-3. Thickness of asphalt pavements to be anticipated generally range between 4 to 6 inches of asphalt overlying 6 to 8 inches of basecourse depending on specific subgrade materials and Roadway Classification of each particular street, although thicker sections may be required. Cement treated subgrade thickness of 8 to 12 inches are common. Actual thickness may exceed anticipated thickness at some areas. For specific thickness determinations, a subsurface investigation and pavement design should be completed following completion of site grading.

10.0 CONCRETE DEGRADATION DUE TO SULFATE ATTACK

Sulfate solubility testing was conducted on selected samples recovered from the test borings to evaluate the potential for sulfate attack on concrete placed below surface grade. The test results indicated less than 0.01 to 0.00 percent soluble sulfate (by weight). The test results indicate the sulfate component of the in-place soils presents a negligible exposure threat to concrete placed below the site grade. Type II cement is recommended for the on-site soils. Additional testing should be conducted following completion of overlot grading.

11.0 EXCAVATION STABILITY

Excavation walls must be properly sloped/benched or otherwise supported in order to maintain stable conditions. All excavation openings and work execution shall conform to OSHA standards as in CFR 29, Part 1926.650-652 (Subpart P).

12.0 SURFACE AND SUBSURFACE DRAINAGE

Surface drainage will influence performance of structures at the site including streets and buildings. For paved areas and other impervious surfaces, a minimum slope of 2 percent is recommended. Drainage should be planned to avoid ponding of water. Collected water and irrigation should discharge well beyond foundation backfill zones. Surface runoff should be designed to avoid sheet flow and erosion. Slopes should be protected from erosion by materials such as mulch or appropriate plants or other methods. All fills and backfills should be properly compacted. Unprotected surfaces may be subject to undesirable, heavy erosion.

13.0 WINTER CONSTRUCTION

In the event construction occurs during winter, concrete and soil materials should be protected from freezing conditions. Concrete should not be placed on frozen soil and once concrete has been placed, it should not be allowed to freeze. Similarly, once exposed, the soil subgrades should not be allowed to freeze. During grading operations and subgrade preparation, care should be taken to eliminate burial of snow, ice or frozen material within the planned construction area.

14.0 CONSTRUCTION OBSERVATIONS

It is recommended that Entech observe and document the following activities during construction.

- Overlot fill process.
- Excavated and overexcavated subgrades and subgrade preparation.
- Placement of drain systems (if installed).
- Placement/compaction of fill materials.
- Placement/compaction of utility bedding and trench backfill.

15.0 CLOSURE

The Preliminary Subsurface Soil Investigation, Geotechnical Evaluation and preliminary recommendations presented in this report are intended for use by Rockwood Homes with application to the planned development site located along Meadowbrook Parkway east of Marksheffel Road in the Claremont Ranch Subdivision in eastern Colorado Springs, Colorado. In conducting the Preliminary Subsurface Soil investigation, laboratory testing, engineering evaluation and reporting, Entech Engineering, Inc. endeavored to work in accordance with generally accepted professional geotechnical and geologic practices and principles consistent with the level of care and skill ordinarily exercised by members of the geotechnical profession currently practicing in same locality and under similar conditions. No other warranty, expressed or implied is made. Additional Subsurface Soils Investigations and testing are recommended to further evaluate the site and roadways after final development plans are prepared and after the site has been graded. During final design and/or construction, if conditions are encountered which appear different from those described in this report, Entech Engineering, Inc. requests that it be notified so that the evaluation and recommendations presented herein can be reviewed and modified as appropriate.

If there are any questions regarding the information provided herein or if Entech Engineering, Inc. can be of further assistance, please do not hesitate to contact us.

TABLE

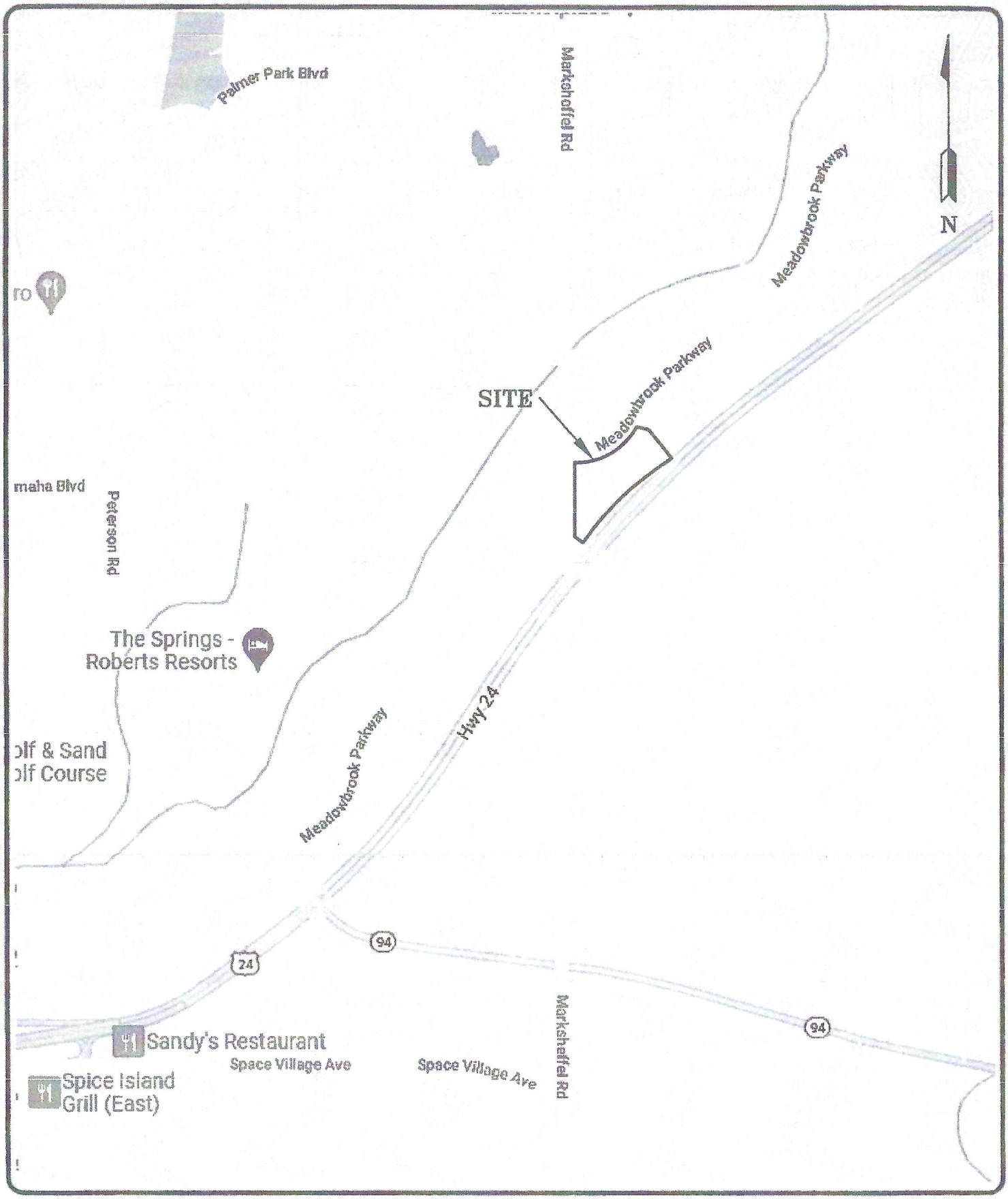
TABLE 1

SUMMARY OF LABORATORY TEST RESULTS

CLIENT ROCKWOOD HOMES
PROJECT CLAREMONT RANCH
JOB NO. 212763

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	FHA SWELL (PSF)	SWELL/ CONSOL (%)	UNIFIED CLASSIFICATION	SOIL DESCRIPTION
1	1	5			13.0						SM	SAND, SILTY
1	1	20			33.7	NV	NP	0.00			SM	SAND, SILTY
1	2	15			18.1						SM	SAND, SILTY
1	3	10			17.9	NV	NP	0.00			SM	SAND, SILTY
1	3	20			27.2						SM	SAND, SILTY
1	4	2-3			6.1			<0.01			SM-SW	SAND, SLIGHTLY SILTY
1	5	5			32.8						SM	SAND, SILTY
1	6	20			14.0			<0.01			SM	SAND, SILTY
1	7	2-3			8.3						SM-SW	SAND, SLIGHTLY SILTY

FIGURES



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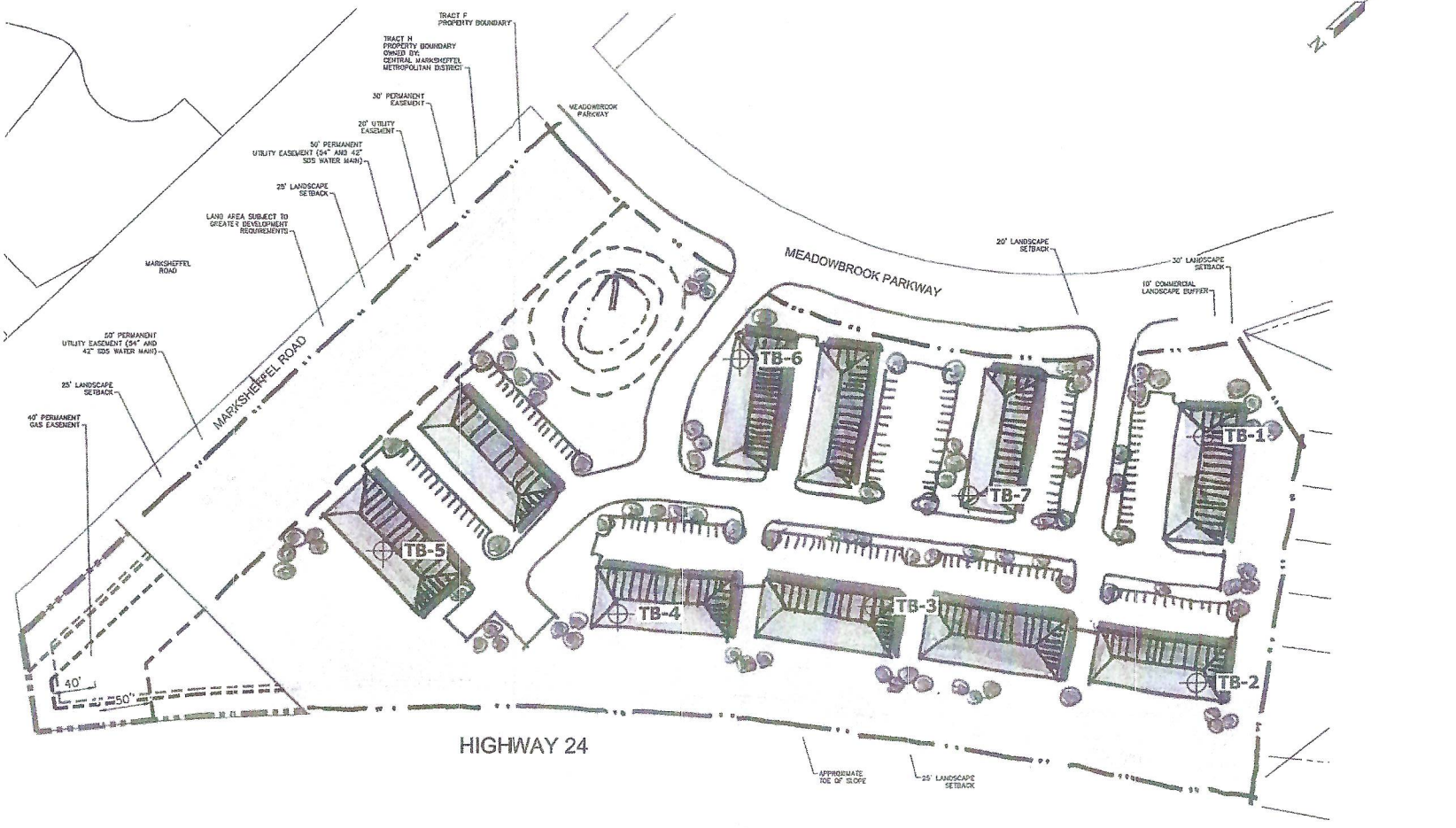
VICINITY MAP
CLAREMONT RANCH–FUTURE PADSITE
EL PASO, COUNTY
FOR: ROCKWOOD HOMES

DRAWN:	DATE:	CHECKED:	DATE:
JAC	1/10/22	DPS	1/10/22

JOB NO.: 212763

FIG NO.: 1



TB- APPROXIMATE TEST BORING LOCATION AND NUMBER

REVISION	BY

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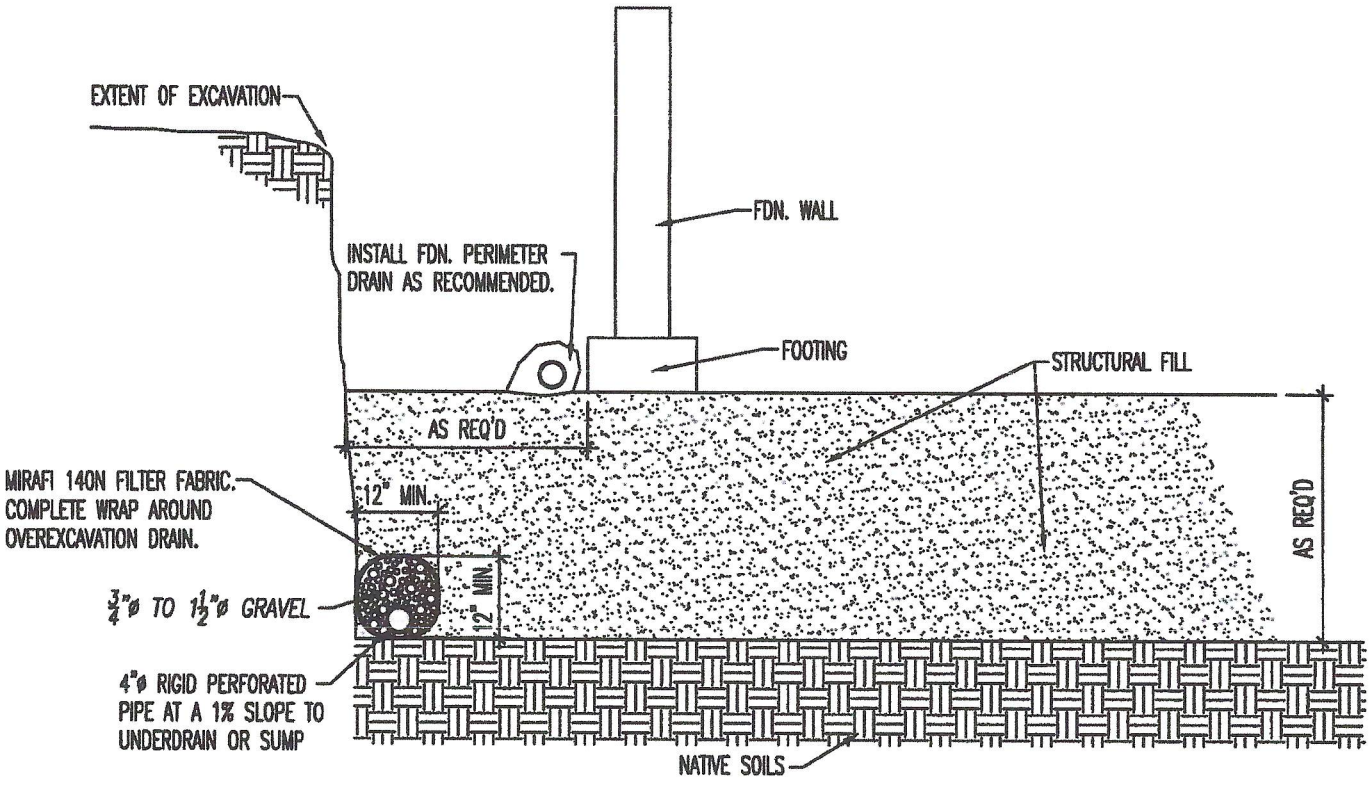
TEST BORING LOCATION MAP
CLAREMONT RANCH-FUTURE PADSITE
EL PASO, COUNTY
FOR: ROCKWOOD HOMES

DESIGN	TAC
DRAWN	TAC
CHECKED	DPS
DATE	1/10/22
SCALE	1:100
JOB NO.	2187703
FIGURE No.	2



OVEREXCAVATION DRAIN DETAIL

N.T.S.

NOTE:

EXTEND DRAIN TO SUMP AS REQ'D.

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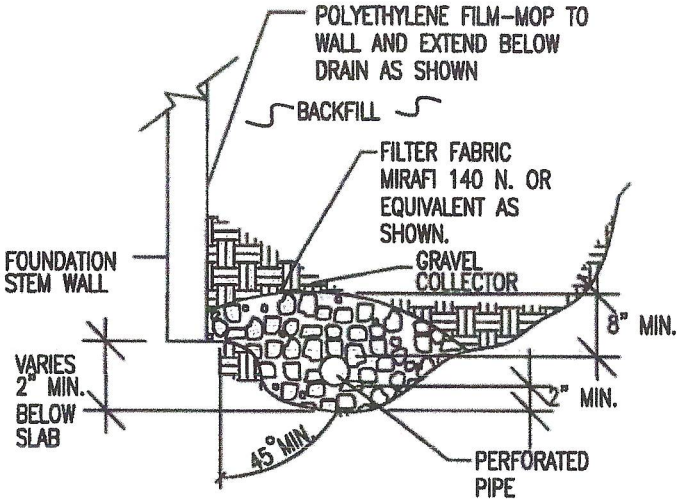
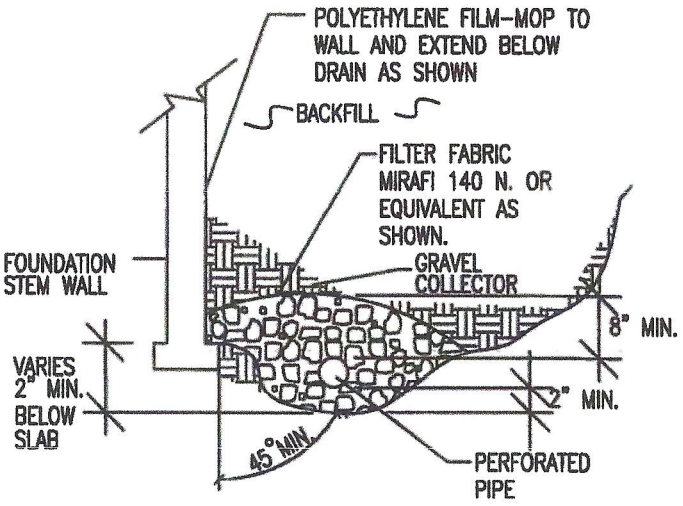
OVEREXCAVATION DRAIN DETAIL			
DRAWN:	DATE:	DESIGNED BY: D. STEGMAN	CHECKED: DS

JOB NO.: 212763

FIG. NO.: 3





NOTES:

–GRAVEL SIZE IS RELATED TO DIAMETER OF PIPE PERFORATIONS–85% GRAVEL GREATER THAN 2x PERFORATION DIAMETER.

–PIPE DIAMETER DEPENDS UPON EXPECTED SEEPAGE. 4–INCH DIAMETER IS MOST OFTEN USED.

–ALL PIPE SHALL BE PERFORATED PLASTIC. THE DISCHARGE PORTION OF THE PIPE SHOULD BE NON–PERFORATED PIPE.

–FLEXIBLE PIPE MAY BE USED UP TO 8 FEET IN DEPTH, IF SUCH PIPE IS DESIGNED TO WITHSTAND THE PRESSURES. RIGID PLASTIC PIPE WOULD OTHERWISE BE REQUIRED.

–MINIMUM GRADE FOR DRAIN PIPE TO BE 1% OR 3 INCHES OF FALL IN 25 FEET.

–DRAIN TO BE PROVIDED WITH A FREE GRAVITY OUTFALL, IF POSSIBLE. A SUMP AND PUMP MAY BE USED IF GRAVITY OUT FALL IS NOT AVAILABLE.

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PERIMETER DRAIN DETAIL

DRAWN:	DATE:	DESIGNED:	CHECKED:
			DS

JOB NO.: 212763

FIG NO.: 4

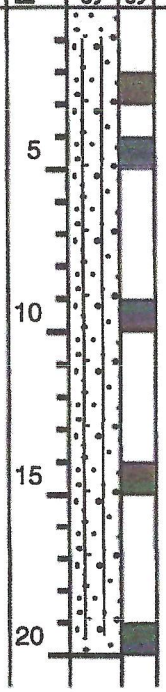
APPENDIX A: Test Boring Logs

TEST BORING NO. 1
DATE DRILLED 12/23/2021
Job # 212763

REMARKS

DRY TO 18.5', 12/28/21

SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO LOOSE, MOIST



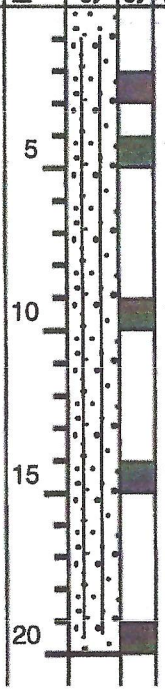
Depth (ft)	Blows per foot	Watercontent %	Soil Type
	17	5.2	1
5	7	6.5	1
10	4	7.1	1
15	7	6.2	1
20	12	11.1	1

TEST BORING NO. 2
DATE DRILLED 12/23/2021
CLIENT ROCKWOOD HOMES
LOCATION CLAREMONT RANCH

REMARKS

DRY TO 18.5', 12/28/21

SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO LOOSE, MOIST



Depth (ft)	Blows per foot	Watercontent %	Soil Type
	8	10.5	1
5	10	9.3	1
10	11	8.9	1
15	13	5.0	1
20	12	6.6	1

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TEST BORING LOG

DRAWN:	DATE:	CHECKED: SW	DATE: 1-10-22

JOB NO.: 212763
FIG NO.: A- 1

TEST BORING NO. 3
DATE DRILLED 12/23/2021
Job # 212763

REMARKS

DRY TO 19', 12/28/21

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			5	5.7	1	SAND, SILTY, FINE TO COARSE GRAINED, TAN, LOOSE TO MEDIUM DENSE, MOIST
5			5	8.1	1	
10			8	9.5	1	
15			9	10.1	1	
20			12	7.6	1	

TEST BORING NO. 4
DATE DRILLED 12/23/2021
CLIENT ROCKWOOD HOMES
LOCATION CLAREMONT RANCH

REMARKS

DRY TO 19', 12/28/21

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			12	3.6	1	SAND, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO LOOSE, MOIST
5			6	4.4	1	
10			8	4.1	1	
15			7	7.7	1	
20			10	10.3	1	

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TEST BORING LOG

DRAWN:	DATE:	CHECKED: SW	DATE: 1-10-22

JOB NO.: 212763
FIG NO.: A- 2

TEST BORING NO. 5
DATE DRILLED 12/23/2021
Job # 212763

REMARKS

DRY TO 19', 12/28/21

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO LOOSE, MOIST					
			9	5.4	1
5			7	10.6	1
10			10	9.0	1
15			13	8.9	1
20			8	7.4	1

TEST BORING NO. 6
DATE DRILLED 12/23/2021
CLIENT ROCKWOOD HOMES
LOCATION CLAREMONT RANCH

REMARKS

DRY TO 18', 12/28/21

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO LOOSE, MOIST					
			10	4.1	1
5			8	3.9	1
10			6	3.3	1
15			5	4.4	1
20			12	5.0	1

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TEST BORING LOG

DRAWN:	DATE:	CHECKED: SW	DATE: 1-10-22

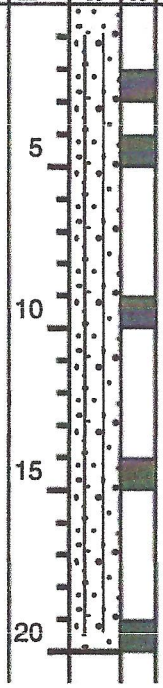
JOB NO.: 212763
FIG NO.: A- 3

TEST BORING NO.	7	TEST BORING NO.	
DATE DRILLED	12/23/2021	DATE DRILLED	
Job #	212763	CLIENT	ROCKWOOD HOMES
		LOCATION	CLAREMONT RANCH

REMARKS

DRY TO 16', 12/28/21

SAND, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN, LOOSE TO MEDIUM DENSE, MOIST



Depth (ft)	Blows per foot	Watercontent %	Soil Type
5	9	3.3	1
10	7	4.8	1
15	3	3.7	1
20	2	3.0	1
	13	7.9	1

REMARKS

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5					
10					
15					
20					

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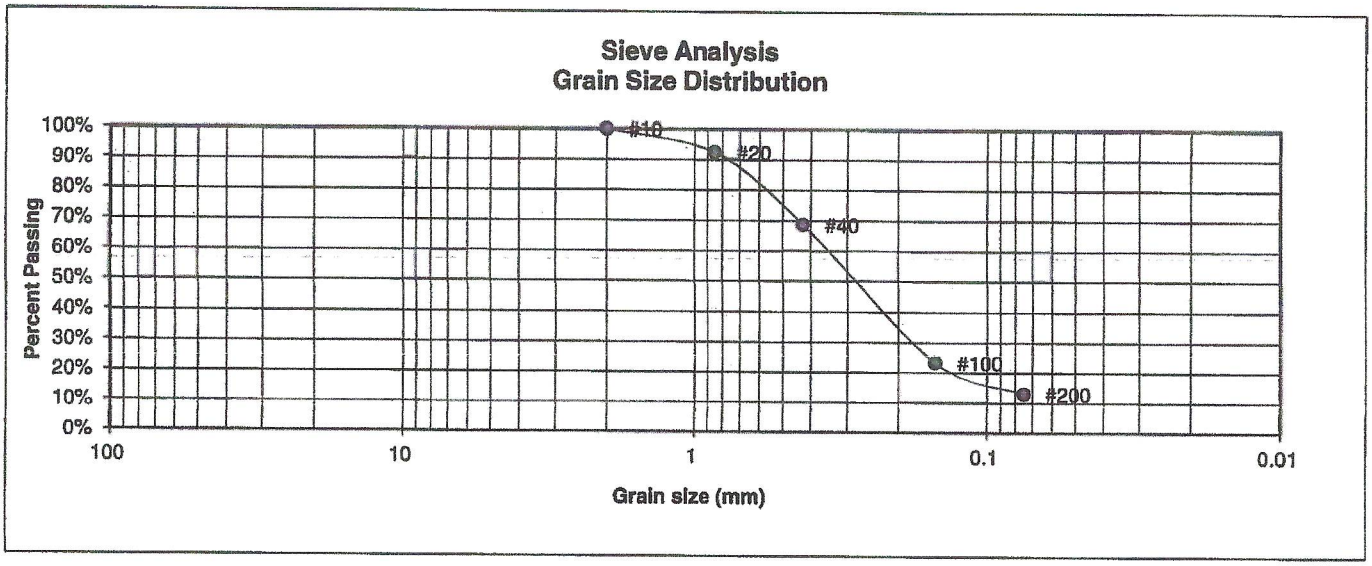
TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		DS	1/25/22

JOB NO.: 212763

FIG NO.: A- 4

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	1	JOB NO.	212763
DEPTH (FT)	5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	92.4%
40	68.6%
100	23.4%
200	13.0%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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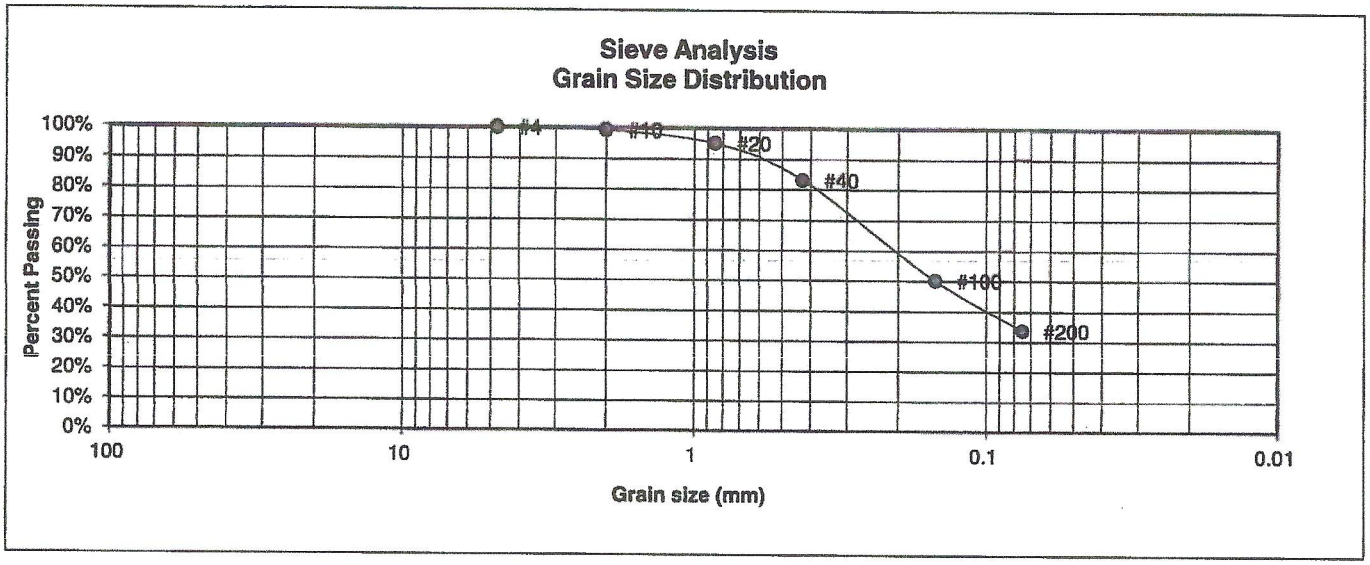
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED: SW	DATE: 1-10-22

JOB NO.: 212763

FIG NO.: B-1

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	1	JOB NO.	212763
DEPTH (FT)	20	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.3%
20	95.2%
40	83.2%
100	50.2%
200	33.7%

Atterberg Limits

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

Swell

Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	

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LABORATORY TEST RESULTS

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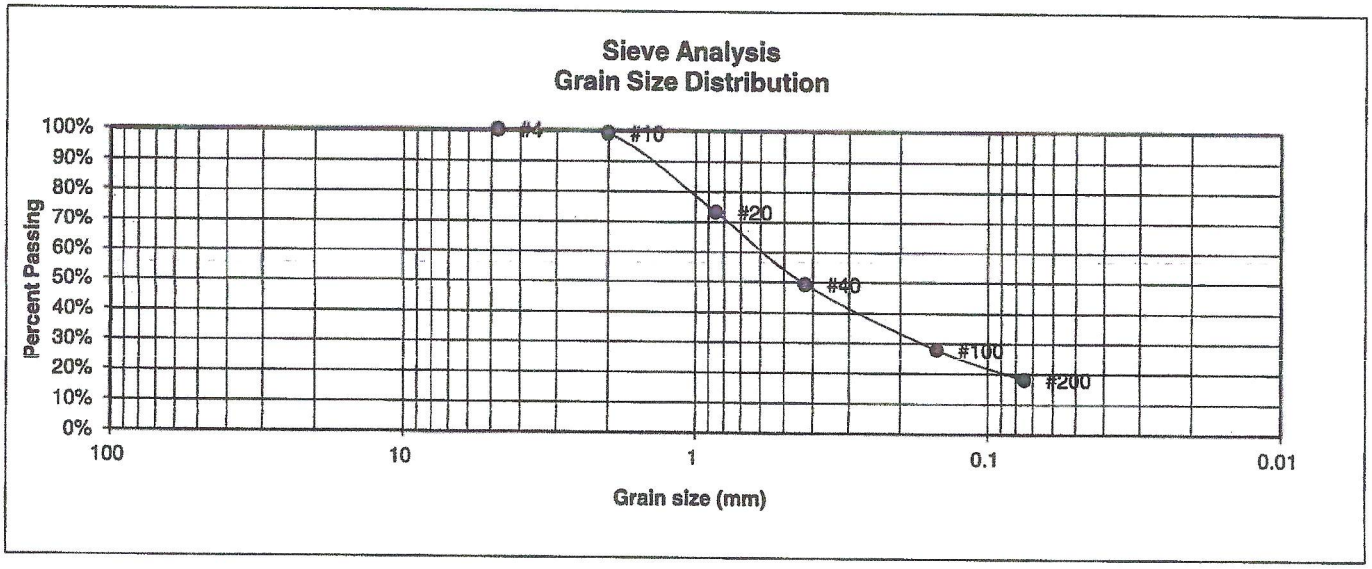
JOB NO.: 212763

FIG NO.: B-2

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	2	JOB NO.	212763
DEPTH (FT)	15	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.1%
20	73.2%
40	49.4%
100	27.9%
200	18.1%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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LABORATORY TEST RESULTS

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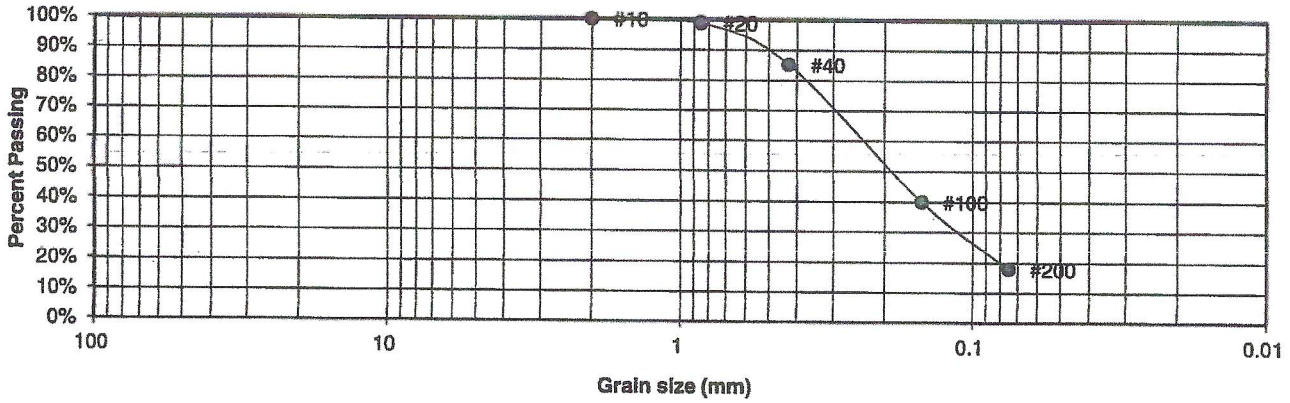
FIG NO.: B-3

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	3	JOB NO.	212763
DEPTH (FT)	10	TEST BY	BL

Sieve Analysis
Grain Size Distribution



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	98.8%
40	85.2%
100	39.9%
200	17.9%

Atterberg Limits

Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

Swell

Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	

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LABORATORY TEST RESULTS

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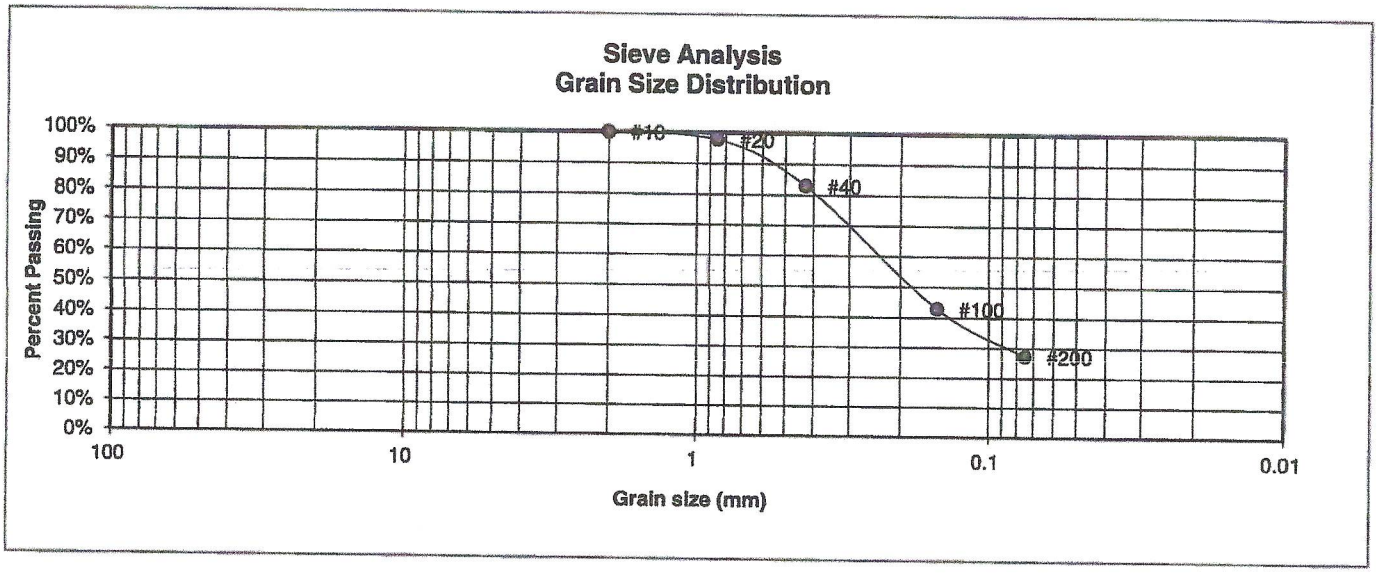
FIG NO.: B-4

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	3	JOB NO.	212763
DEPTH (FT)	20	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	97.8%
40	82.9%
100	42.9%
200	27.2%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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LABORATORY TEST RESULTS

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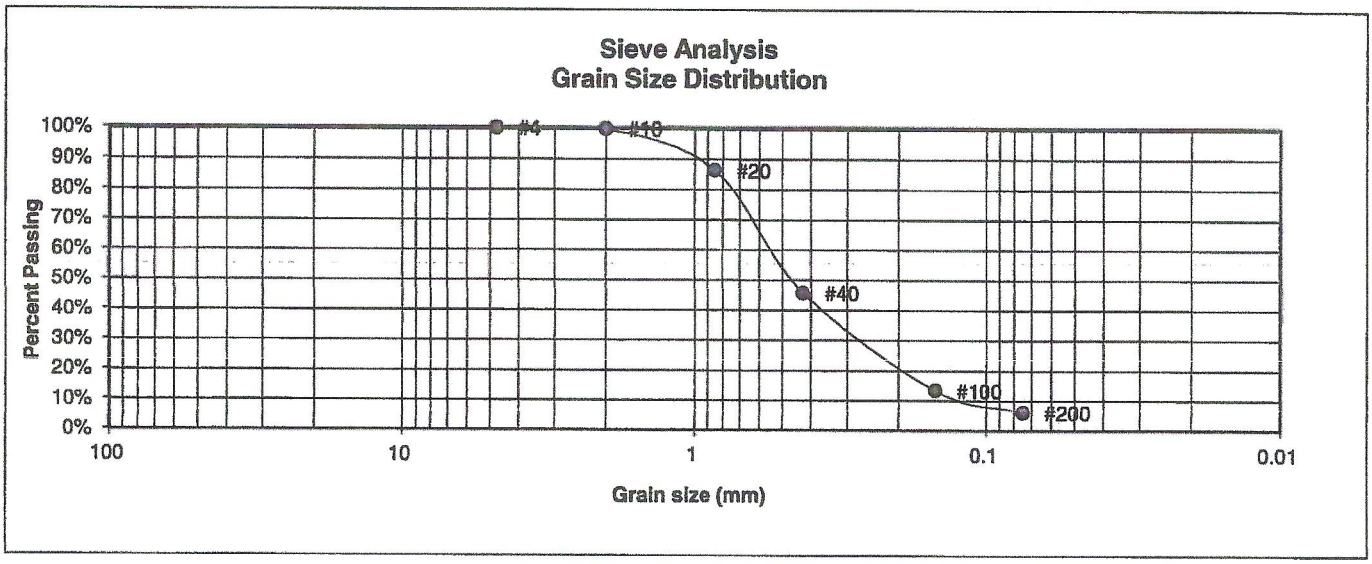
JOB NO.: 212763

FIG NO.: B-5

UNIFIED CLASSIFICATION	SM-SW	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	4	JOB NO.	212763
DEPTH (FT)	2-3	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.7%
20	86.4%
40	45.8%
100	13.3%
200	6.1%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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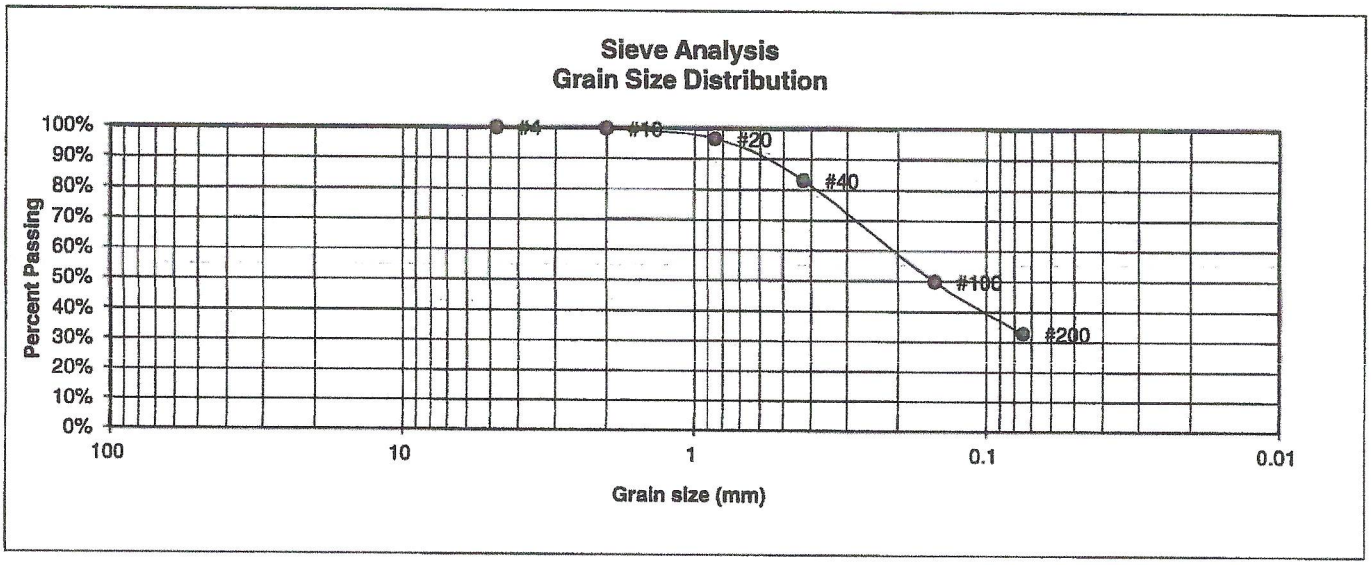
JOB NO.: 212763

FIG NO.: B-6

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	5	JOB NO.	212763
DEPTH (FT)	5	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.8%
20	96.6%
40	83.0%
100	49.8%
200	32.8%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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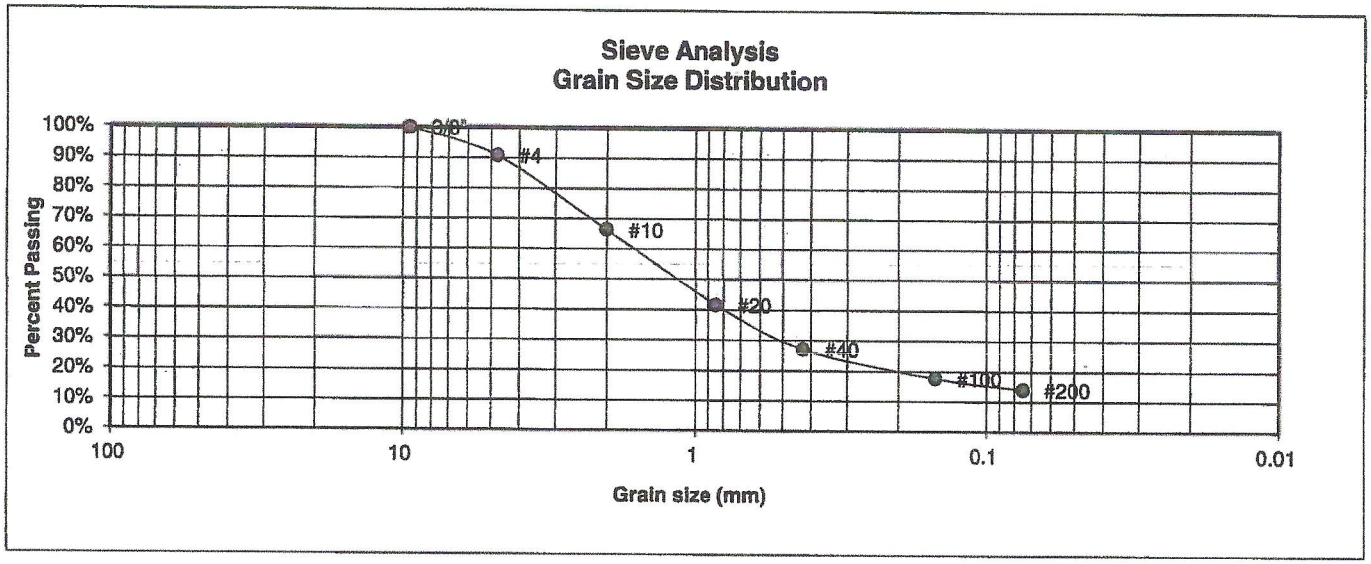
JOB NO.: 212763

FIG NO.: B-7

UNIFIED CLASSIFICATION	SM	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	6	JOB NO.	212763
DEPTH (FT)	20	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	90.8%
10	66.4%
20	41.6%
40	27.2%
100	17.7%
200	14.0%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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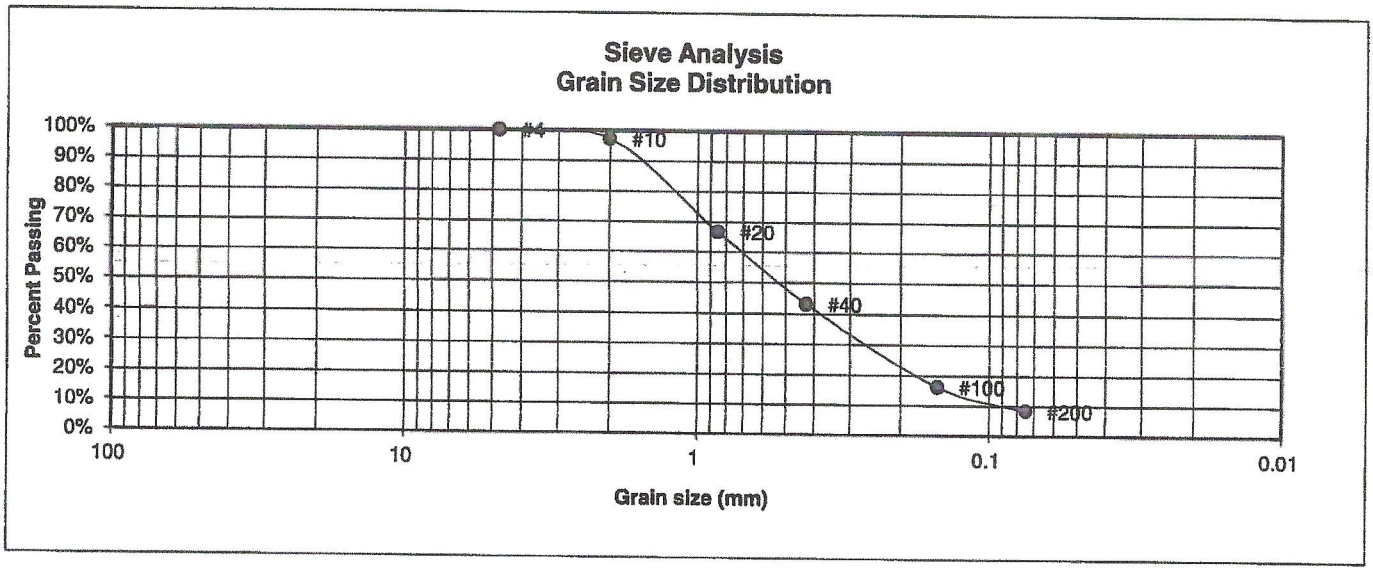
LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED: SW	DATE: 1-10-22

JOB NO.: 212763

FIG NO.: B-8

UNIFIED CLASSIFICATION	SM-SW	CLIENT	ROCKWOOD HOMES
SOIL TYPE #	1	PROJECT	CLAREMONT RANCH
TEST BORING #	7	JOB NO.	212763
DEPTH (FT)	2-3	TEST BY	BL



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	97.3%
20	66.7%
40	43.2%
100	16.2%
200	8.3%

Atterberg Limits
Plastic Limit
Liquid Limit
Plastic Index

Swell
Moisture at start
Moisture at finish
Moisture increase
Initial dry density (pcf)
Swell (psf)

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LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED: SW	DATE: 1-10-22

JOB NO.: 212763

FIG NO.: B-9

CLIENT	ROCKWOOD HOMES	JOB NO.	212763
PROJECT	CLAREMONT RANCH	DATE	1/3/2022
LOCATION	CLAREMONT RANCH	TEST BY	BL

BORING NUMBER	DEPTH, (ft)	SOIL TYPE NUMBER	UNIFIED CLASSIFICATION	WATER SOLUBLE SULFATE, (wt%)
TB-1	20	1	SM	0.00
TB-3	10	1	SM	0.00
TB-4	2-3	1	SM-SW	<0.01
TB-6	20	1	SM	<0.01

QC BLANK PASS

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LABORATORY TEST
SULFATE RESULTS

DRAWN:	DATE:	CHECKED:	DATE:
		SW	1-10-22

JOB NO.: 212763

FIG NO.: B-10