



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
PHONE (719) 531-5599
FAX (719) 531-5238

August 31, 2021

Gorilla Capital Colorado
c/o Saddlehorn Ranch, LLC
1345 High Street
Eugen, OR 97401

APPROVED
Engineering Department

07/06/2022 10:52:52 AM

dsdnijkamp

EPC Planning & Community
Development Department

Attn: John Helmick

Re: Pavement Recommendations
Saddlehorn Ranch, Filing 1, Phase 1
El Paso County, Colorado

Dear Mr. Helmick:

As requested, Entech Engineering, Inc. obtained samples of the pavement subgrade soils from the proposed roadways at the above referenced site. Laboratory testing was performed in order to determine the pavement support characteristics of the soil. This letter presents the results of the laboratory testing and pavement recommendations for the roadways.

Project Description

The project will consist of paving of the proposed Truchas Trail, Oscuro Trail, El Raiceno Trail, Del Cerro Trail, Zaragoza Trail, and Carranza Trail, Filing 1, Phase 1, subdivision in El Paso County, Colorado. Subsurface Soil Investigation and laboratory testing were performed to determine the pavement support characteristics on the soils. The general layout of the site is presented in the Test Boring Location Maps in Figures 1 and 2.

Subgrade Conditions

A total of eighteen (18) test borings were drilled along the roadways to depths of approximately 5 and 10 feet below the existing subgrade surface at the required sample frequency. At the time of our field investigation the subgrade was in good condition and adequate for vehicle traffic.

The soils at the roadway subgrade depth consisted of Soil Type 1: slightly silty to silty sand and clayey sand, and Soil Type 2: very sandy silt and very silty sand. The Test Boring Logs are presented in Appendix A. Sieve Analyses and Atterberg Limit testing were performed on subgrade soil samples obtained from the test borings for the purpose of classification. The percent passing the No. 200 sieve for the Type 1 soils ranged from approximately 8 to 32 percent. The percent passing the No. 200 sieve for the Type 2 soils ranged from 42 to 53 percent. Atterberg Testing on the Type 1 Soils resulted in Liquid Limits of No Value to 27 percent and Plastic Indexes of Non-Plastic to 8 Percent. The Type 2 soils were non-plastic.

The site soils classified as A-2-4, A-1-b, and A-4, which commonly exhibit good pavement support characteristics. Groundwater was not encountered in the test borings. Sulfate testing resulted in less than 0.01 percent soluble sulfate by weight, indicating a negligible potential for below grade concrete degradation due to sulfate attack.

Swell/Consolidation tests were not required on the Type 1 or 2 soils, due to their classification and plastic indexes. The Type 1 and Type 2 soils are anticipated to have a low expansion potential. Mitigation for expansive soils is not required on this site.

EPC Project No. SF-1912

Gorilla Capital Colorado
 c/o Saddlehorn Ranch, LLC
 Pavement Recommendations
 Saddlehorn Ranch, Filing 1, Phase 1
 El Paso County, Colorado

California Bearing Ratio (CBR) testing was performed on a representative subgrade sample of the Type 1 materials to determine the support characteristics for the roadway sections. Due to the similarity of the Type 1 and the Type 2 soils, all sections were determined using the Type 1 values. The results of the CBR testing, are presented in Appendix B and summarized as follows:

Soil Type 1 – Silty Sand

CBR 1

R @ 90% = 50.0

R @ 95% = 76.0

Classification Testing

Liquid Limit	NV
Plasticity Index	NP
Percent Passing 200	21.6
AASHTO Classification	A-2-4
Group Index	0
Unified Soils Classification	SM

Pavement Design

CBR testing was used to determine pavement sections for the roadways. Pavement sections were determined utilizing El Paso County Pavement Design Criteria Manual. All roadways in the development, as shown in the Test Boring Location Maps in Figure 1 and 2, classify as rural local roads, which used an 18k ESAL value of 36,500 for design purposes. Pavement sections were determined for an asphalt on aggregate basecourse composite section.

Design parameters used in the pavement analysis for the roadways are as follows:

<u>Reliability</u>	
Rural Local	75%
<u>Δpsi</u>	2.0
“R” Value Subgrade (Soil Type 1)	50.0
Resilient Modulus (Soil Type 1)	13,168 psi
Hot Bituminous Pavement	0.44
Aggregate Basecourse	0.11

The pavement design calculations are presented in Appendix C. Pavement section alternatives for the roadway sections are presented below. Any additional grading may result in subgrade soils with different support characteristics. The following pavement sections should be re-evaluated if additional grading is performed.

Gorilla Capital Colorado
c/o Saddlehorn Ranch, LLC
Pavement Recommendations
Saddlehorn Ranch, Filing 1, Phase 1
El Paso County, Colorado

Pavement Sections

ESAL = 13,168 – Truchas Trail, Oscuro Trail, El Raiceno Trail,
Del Cerro Trail, Zaragoza Trail, and Carranza Trail
Soil Type 1

<u>Alternative</u>	<u>Asphalt (in)</u>	<u>Basecourse (in)</u>
1. Asphalt Over Basecourse	3.0*	4.0*

*Minimum sections required per the El Paso County Engineering Criteria Manual.

Mitigation

The El Paso County Engineering Criteria Manual requires mitigation of subgrade soils that have a swell of 2.0 percent or greater with a 150 pound per square foot surcharge. None of the soil types exceeded the threshold. Mitigation of the subgrade soils is not required. Due to the clay content of the Type 2 soils, moisture-conditioning and recompaction are recommended. Personnel of Entech Engineering, Inc. should be consulted to determine the need for and extents of scarification, if required.

Roadway Construction - Asphalt on Aggregate Basecourse

Prior to placement of the asphalt, the Type 1 subgrade should be scarified, moisture conditioned, and compacted to a minimum of 95 percent of the soils maximum Modified Proctor Dry Density, ASTM D-1557 at ± 2 percent of optimum moisture content. The Type 2 soils subgrade should be scarified, moisture conditioned, and compacted to a minimum of 95% of the soils maximum Standard Proctor Dry Density, ASTM D-698 at 0 to 4 percent over optimum moisture content and properly compacted. Any loose or soft areas should be removed and replaced with suitable materials. Basecourse materials should be compacted to a minimum of 95 percent of its maximum Modified Proctor Dry Density, ASTM D-1557 at ± 2 percent of optimum moisture content. Special attention should be given to areas adjacent to manholes, inlet structures, and valves. It is noted that full-depth asphalt is currently not allowed, per El Paso County specifications

In addition to the above guidance, the asphalt, subgrade conditions, compaction of materials and roadway construction methods shall meet the El Paso County specifications.

We trust that this has provided you with the information you required. The pavement sections provided are based on general site soil types. If you have any questions or need additional information, please do not hesitate to contact us.

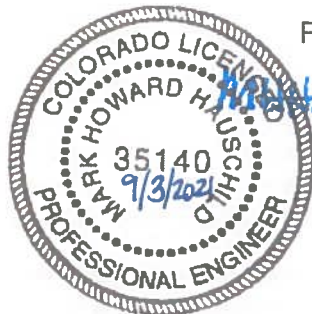
Respectfully Submitted,

ENTECH ENGINEERING, INC.



Daniel P. Stegman
DPS/jr
Encl.

Entech Job No. 211922
AAprojects/2021/211922 pr



Reviewed by:



Mark H. Hauschild, P.E.
Senior Engineer

TABLE

TABLE 1

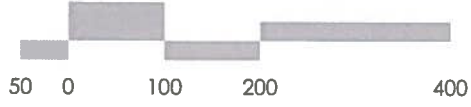
SUMMARY OF LABORATORY TEST RESULTS

CLIENT GORILLA CAPITAL
 PROJECT SADDLEHORN RANCH, F-1
 JOB NO. 211922

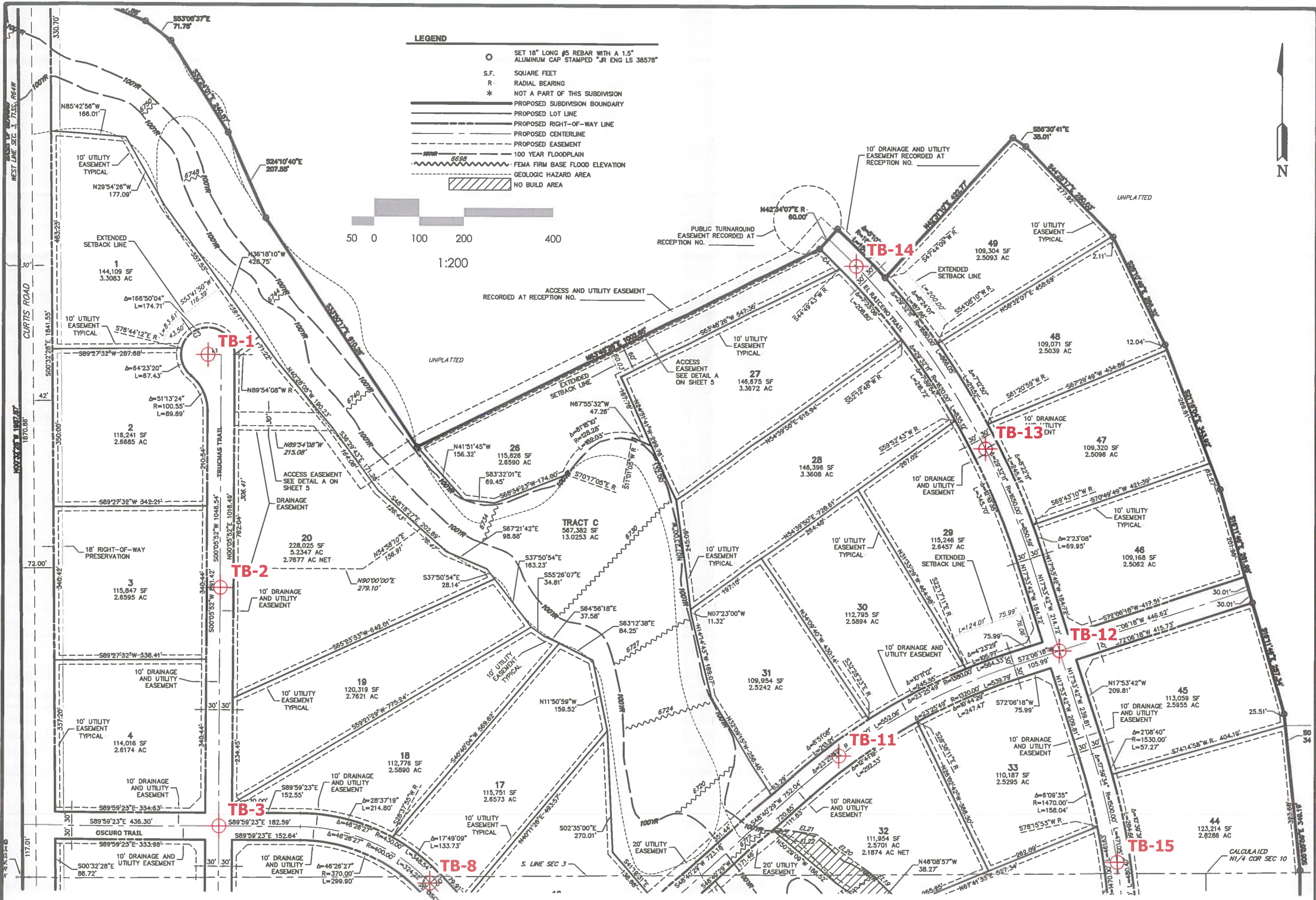
SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	AASHTO CLASS.	SWELL/ CONSOL (%)	UNIFIED CLASSIFICATION	SOIL DESCRIPTION
1, CBR	1	0-3			21.6	NV	NP		A-2-4		SM	SAND, SILTY
1	1	1-2			15.6	NV	NP		A-2-4		SM	SAND, SILTY
1	2	1-2			14.0	NV	NP		A-2-4		SM	SAND, SILTY
1	3	1-2			29.9	NV	NP		A-2-4		SM	SAND, SILTY
1	4	1-2			22.4	NV	NP	<0.01	A-2-4		SM	SAND, SILTY
1	5	1-2			16.0	NV	NP		A-2-4		SM	SAND, SILTY
1	6	1-2			14.4	NV	NP		A-2-4		SM	SAND, SILTY
1	7	1-2			32.1	NV	NP		A-2-4		SM	SAND, SILTY
1	8	1-2			10.4	NV	NP		A-1-b		SM-SW	SAND, SLIGHTLY SILTY
1	9	1-2			15.9	NV	NP	<0.01	A-2-4		SM	SAND, SILTY
1	10	1-2			15.1	NV	NP		A-2-4		SM	SAND, SILTY
1	11	1-2			23.2	NV	NP		A-2-4		SM	SAND, SILTY
1	12	1-2			10.1	NV	NP		A-1-b		SM-SW	SAND, SLIGHTLY SILTY
1	14	1-2			7.7	NV	NP		A-1-b		SM-SW	SAND, SLIGHTLY SILTY
1	15	1-2			31.2	NV	NP		A-2-4		SM	SAND, SILTY
1	17	1-2			17.7	NV	NP		A-2-4		SM	SAND, SILTY
1	18	1-2			32.4	27	8		A-2-4		SC	SAND, CLAYEY
2	13	1-2			41.9	NV	NP		A-4		SM	SAND, VERY SILTY
2	16	1-2			53.3	NV	NP		A-4		SM	SILT, VERY SANDY

FIGURES

- LEGEND**
- SET 18" LONG #5 REBAR WITH A 1.5" ALUMINUM CAP STAMPED "JR ENG LS 38578"
 - S.F. SQUARE FEET
 - R. RADIAL BEARING
 - * NOT A PART OF THIS SUBDIVISION
 - PROPOSED SUBDIVISION BOUNDARY
 - PROPOSED LOT LINE
 - PROPOSED RIGHT-OF-WAY LINE
 - PROPOSED CENTERLINE
 - - - PROPOSED EASEMENT
 - 100 YEAR FLOODPLAIN
 - FEMA FIRM BASE FLOOD ELEVATION
 - GEOLOGIC HAZARD AREA
 - ▨ NO BUILD AREA



1:200



○ TB- APPROXIMATE TEST BORING LOCATIONS AND NUMBERS

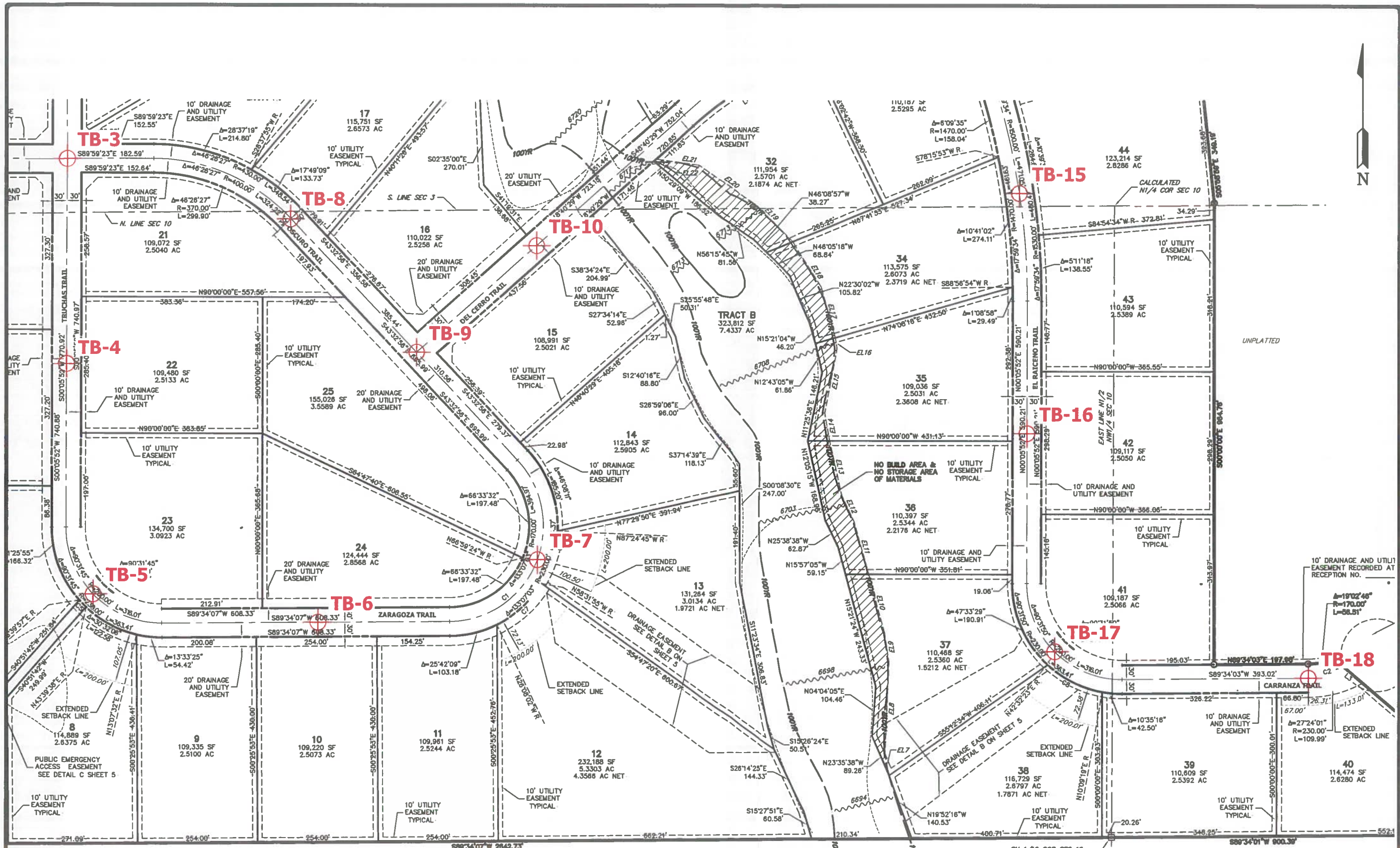
REVISION	BY

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TEST BORING LOCATION MAP
SADDLEHORN RANCH FILING NO. 1
EL PASO COUNTY, COLORADO
FOR: GORILLA CAPITAL COLORADO

DRAWN	
REPL	
CHECKED	
DPB	
DATE	8/11/21
SCALE	1:200
JOB NO.	211922
PLATE NO.	1



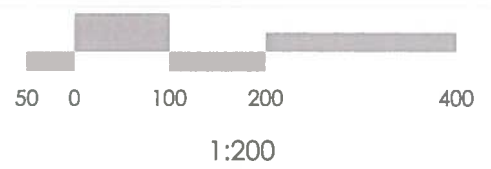
⊕ TB- APPROXIMATE TEST BORING LOCATIONS AND NUMBERS

REVISION	BY

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TEST BORING LOCATION MAP
SADDLEHORN RANCH FILING NO. 1
EL PASO COUNTY, COLORADO
FOR: GORILLA CAPITAL COLORADO

DRAWN	RPL
CHECKED	DPS
DATE	8/11/21
SCALE	1:200
JOB NO.	211822
FIGURE NO.	2



ON 1/16 COR SEC 10,
T.13S., R.64W., 6TH P.M.
NO. 6 REBAR WITH A
2-1/2" ALUMINUM CAP
STAMPED: PLS 38245

APPENDIX A: Test Boring Logs

TEST BORING NO. 1
 DATE DRILLED 7/15/2021
 Job # 211922

TEST BORING NO. 2
 DATE DRILLED 7/15/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

DRY TO 10', 7/15/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, BROWN TO TAN,
 MEDIUM DENSE TO DENSE,
 MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			27	7.5	1
5			28	5.0	1
10			45	5.8	1
15					
20					

REMARKS

DRY TO 5', 7/15/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, TAN, MEDIUM DENSE,
 MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			16	5.4	1
5			28	5.6	1
10					
15					
20					



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE:

DS

9/2/21

JOB NO:
211922

FIG NO:
A- 1

TEST BORING NO. 3
 DATE DRILLED 7/15/2021
 Job # 211922

TEST BORING NO. 4
 DATE DRILLED 7/15/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 5', 7/15/21 SAND, SILTY, FINE TO MEDIUM GRAINED, TAN, DENSE, MOIST	5			44	8.7	1	DRY TO 10', 7/15/21 SAND, SILTY, FINE TO MEDIUM GRAINED, BROWN TO TAN, MEDIUM DENSE TO DENSE, MOIST TO DRY	5			31	7.8	1
	5			31	4.3	1		5			15	1.5	1
	10							10			39	4.4	1
	15							15					
	20							20					



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE
 9/2/21

JOB NO:
 211922

FIG NO:
 A- 2

TEST BORING NO. 5
 DATE DRILLED 7/15/2021
 Job # 211922

TEST BORING NO. 6
 DATE DRILLED 7/15/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 5', 7/15/21						
SAND, SILTY, FINE TO MEDIUM GRAINED, TAN, DENSE TO MEDIUM DENSE, MOIST	5			30	8.8	1
	5			22	8.0	1
	10					
	15					
	20					

REMARKS

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 5', 7/15/21						
SAND, SILTY, FINE TO MEDIUM GRAINED, TAN, DENSE TO MEDIUM DENSE, MOIST	5			33	8.0	1
	5			29	4.7	1
	10					
	15					
	20					



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE

DS

7/15/21

JOB NO:
211922

FIG NO:
A- 3

TEST BORING NO. 7
 DATE DRILLED 7/15/2021
 Job # 211922

TEST BORING NO. 8
 DATE DRILLED 7/15/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 10', 7/15/21 SAND, SILTY, FINE TO MEDIUM GRAINED, BROWN TO TAN, MEDIUM DENSE TO DENSE, MOIST	5			13	9.7	1	DRY TO 5', 7/15/21 SAND, SLIGHTLY SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST	5			29	4.8	1
	5			24	5.4	1		5			26	9.3	1
	10			27	8.9	1		10					
	15							15					
	20							20					



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE

DS

9/2/21

JOB NO.:
211922

FIG NO.:
A- 4

TEST BORING NO. 9
 DATE DRILLED 7/27/2021
 Job # 211922

TEST BORING NO. 10
 DATE DRILLED 7/15/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

DRY TO 5', 7/27/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, TAN, MEDIUM DENSE,
 MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			14	4.4	1
5			23	6.8	1

REMARKS

DRY TO 5', 7/15/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, TAN, DENSE TO
 MEDIUM DENSE, MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			20	3.9	1
5			33	7.8	1



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE:

DS

9/2/21

JOB NO:
 211922

FIG NO:
 A- 5

TEST BORING NO. 11
 DATE DRILLED 7/15/2021
 Job # 211922

TEST BORING NO. 12
 DATE DRILLED 7/27/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

DRY TO 5', 7/15/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, TAN, DENSE TO
 MEDIUM DENSE, MOIST TO DRY

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5	[Symbol]	[Sample]	28	8.1	1
5	[Symbol]	[Sample]	31	2.5	1

REMARKS

DRY TO 5', 7/27/21
 SAND, SLIGHTLY SILTY, FINE TO
 MEDIUM GRAINED, TAN, MEDIUM
 DENSE, DRY TO MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5	[Symbol]	[Sample]	13	1.4	1
5	[Symbol]	[Sample]	12	10.8	1



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE:

DS

7/27/21

JOB NO.:
 211922

FIG NO.:
 A- 6

TEST BORING NO. 13
 DATE DRILLED 7/27/2021
 Job # 211922

TEST BORING NO. 14
 DATE DRILLED 7/27/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 5', 7/27/21 SAND, VERY SILTY, FINE GRAINED, TAN, LOOSE, MOIST	5	[Symbol]	8	8.0	2	
	5	[Symbol]	8	11.3	2	
	10					
	15					
	20					

REMARKS

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 10', 7/27/21 SAND, SLIGHTLY SILTY, FINE TO MEDIUM GRAINED, TAN, MEDIUM DENSE, DRY TO MOIST	15	[Symbol]	15	1.3	1	
	5	[Symbol]	21	3.3	1	
	10	[Symbol]	17	3.9	1	
	15					
	20					



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE:

DS

9/2/21

JOB NO.
211922

FIG NO.
A-7

TEST BORING NO. 15
 DATE DRILLED 7/27/2021
 Job # 211922

TEST BORING NO. 16
 DATE DRILLED 7/27/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

DRY TO 10', 7/27/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, TAN, MEDIUM DENSE
 TO VERY DENSE, MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			25	11.6	1
5			32	13.6	1
10			50	15.9	1
15					
20					

REMARKS

DRY TO 5', 7/27/21
 SILT, VERY SANDY, TAN,
 FIRM TO STIFF, MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			13	15.9	2
5			18	5.0	2
10					
15					
20					



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TEST BORING LOG

DRAWN:

DATE:

CHECKED:

DATE:

DS

7/27/21

JOB NO.:
 211922

FIG NO.:
 A- 8

TEST BORING NO. 17
 DATE DRILLED 7/27/2021
 Job # 211922

TEST BORING NO. 18
 DATE DRILLED 7/27/2021
 CLIENT GORILLA CAPITAL
 LOCATION SADDLEHORN RANCH, F-1

REMARKS

DRY TO 5', 7/27/21
 SAND, SILTY, FINE TO MEDIUM
 GRAINED, TAN, MEDIUM DENSE,
 MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			19	7.6	1
5			16	5.0	1
10					
15					
20					

REMARKS

DRY TO 10', 7/27/21
 SAND, CLAYEY, FINE TO MEDIUM
 GRAINED, TAN, MEDIUM DENSE
 TO DENSE, MOIST

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			19	9.6	1
5			39	9.3	1
10			10	3.0	1
15					
20					



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TEST BORING LOG

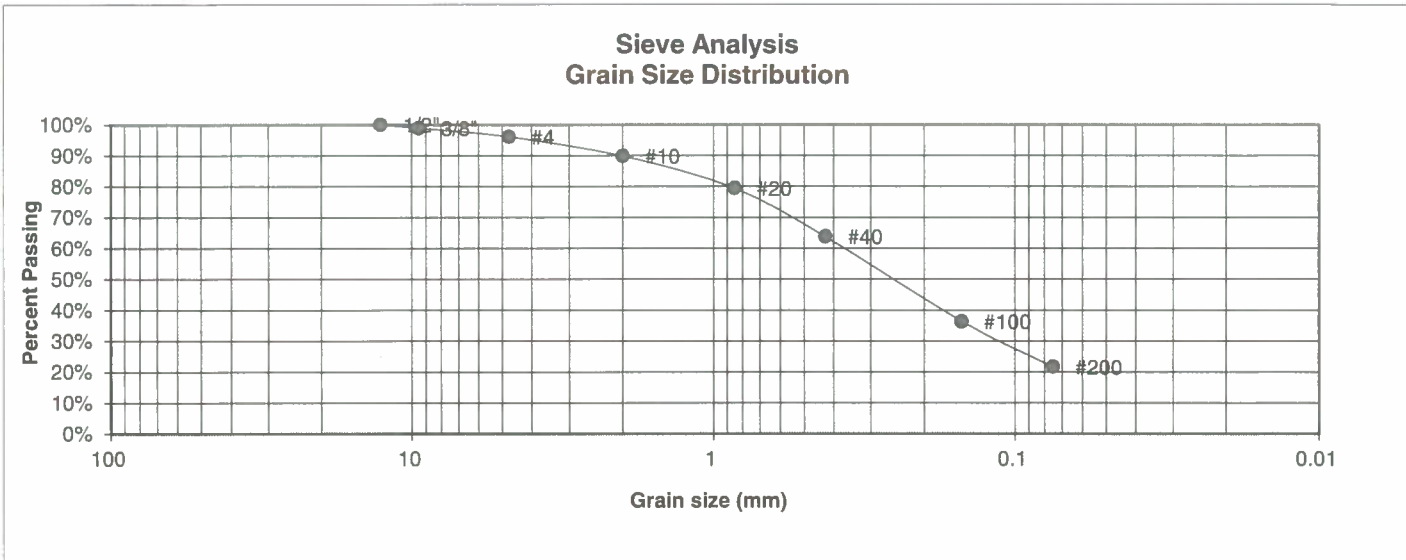
DRAWN: DATE: CHECKED: *DS* DATE: 9/2/21

JOB NO.:
 211922

FIG NO.:
 A- 9

APPENDIX B: Laboratory Test Results

UNIFIED CLASSIFICATION	SM	CLIENT	GORILLA CAPITAL
SOIL TYPE #	1, CBR	PROJECT	SADDLEHORN RANCH, F-1
TEST BORING #	1	JOB NO.	211922
DEPTH (FT)	0-3	TEST BY	BL
AASHTO CLASSIFICATION	A-2-4	GROUP INDEX	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	98.9%
4	96.1%
10	89.9%
20	79.4%
40	63.8%
100	36.3%
200	21.6%

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)	



**ENTECH
ENGINEERING, INC.**

505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED: <i>BL</i>	DATE: <i>9/12/21</i>
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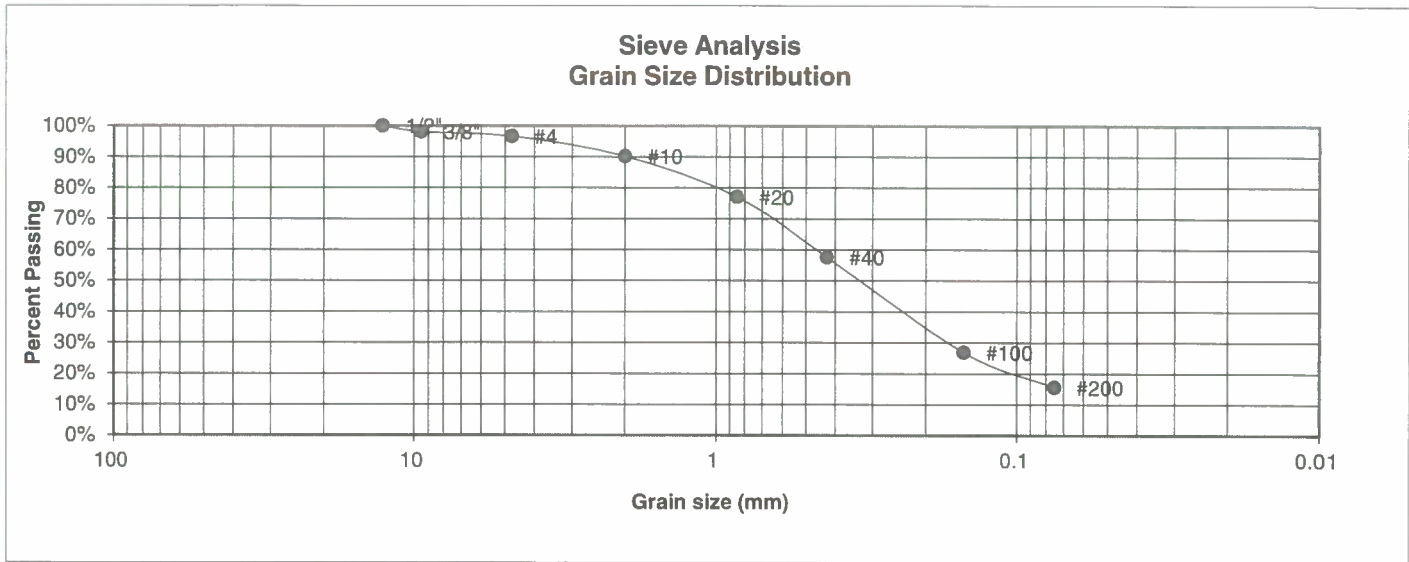
JOB NO.:

211922

FIG NO.:

B-1

UNIFIED CLASSIFICATION	SM	CLIENT	GORILLA CAPITAL
SOIL TYPE #	1	PROJECT	SADDLEHORN RANCH, F-1
TEST BORING #	1	JOB NO.	211922
DEPTH (FT)	1-2	TEST BY	BL
AASHTO CLASSIFICATION	A-2-4	GROUP INDEX	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	98.1%
4	96.6%
10	90.2%
20	77.0%
40	57.6%
100	26.8%
200	15.6%

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)	



**ENTECH
ENGINEERING, INC.**

505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>11/21/21</i>
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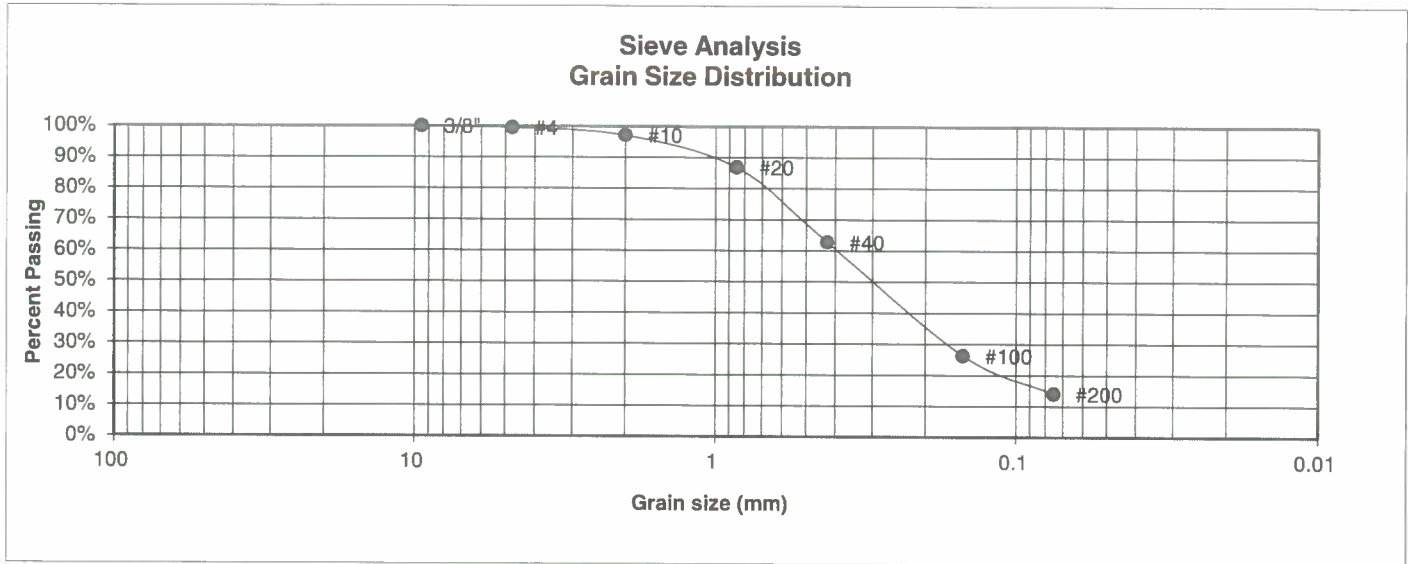
JOB NO.:

211922

FIG NO.:

B-2

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	2	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.5%
10	97.1%
20	86.8%
40	62.8%
100	26.3%
200	14.0%

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**

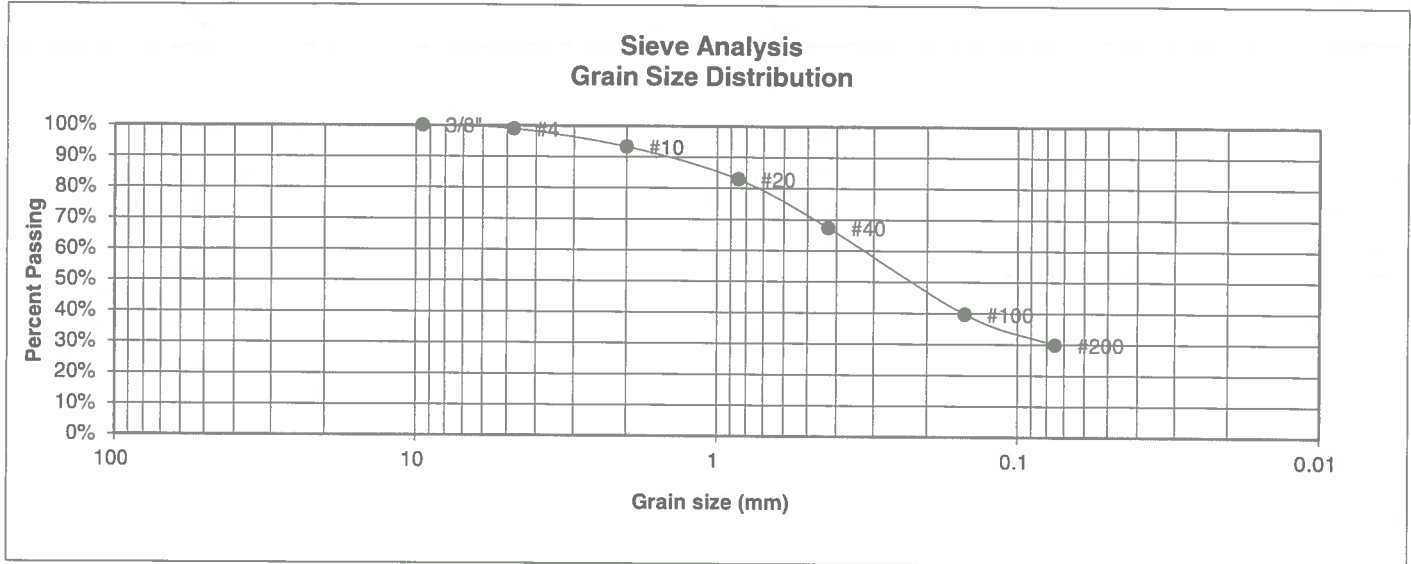
DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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JOB NO.:

211922
FIG NO.:

B-3

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	3	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	98.9%
10	93.3%
20	82.9%
40	67.3%
100	39.6%
200	29.9%

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**

DRAWN:	DATE:	CHECKED: <i>DJ</i>	DATE: <i>9/2/21</i>
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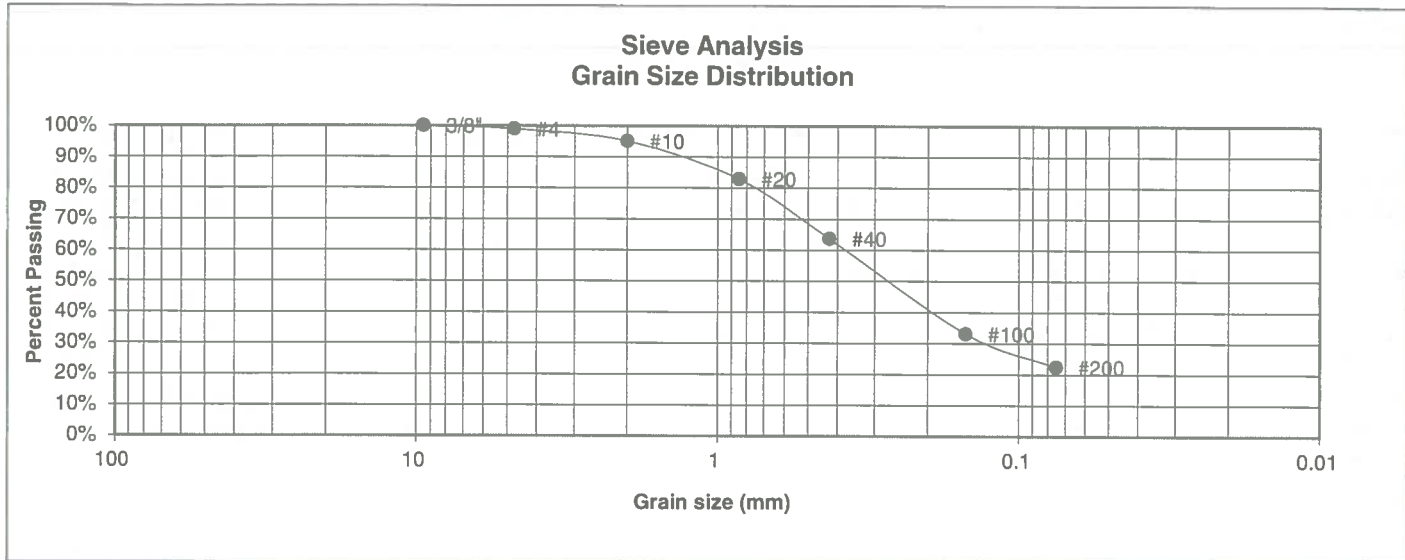
JOB NO.:

211922

FIG NO.:

B-4

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	4	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	98.9%
10	95.1%
20	82.9%
40	63.7%
100	33.1%
200	22.4%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



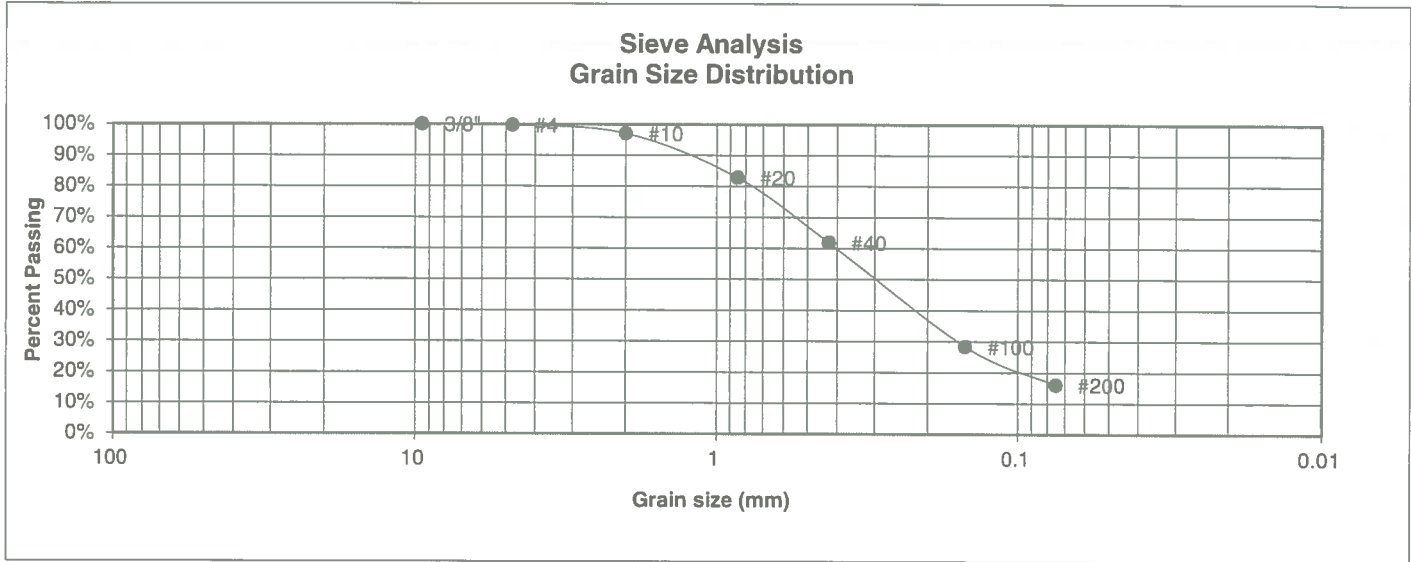
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COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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JOB NO.:
211922
FIG NO.:
85

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	5	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.7%
10	97.0%
20	82.8%
40	61.9%
100	28.3%
200	16.0%

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**

DRAWN:	DATE:	CHECKED: <i>BJ</i>	DATE: <i>9/2/21</i>
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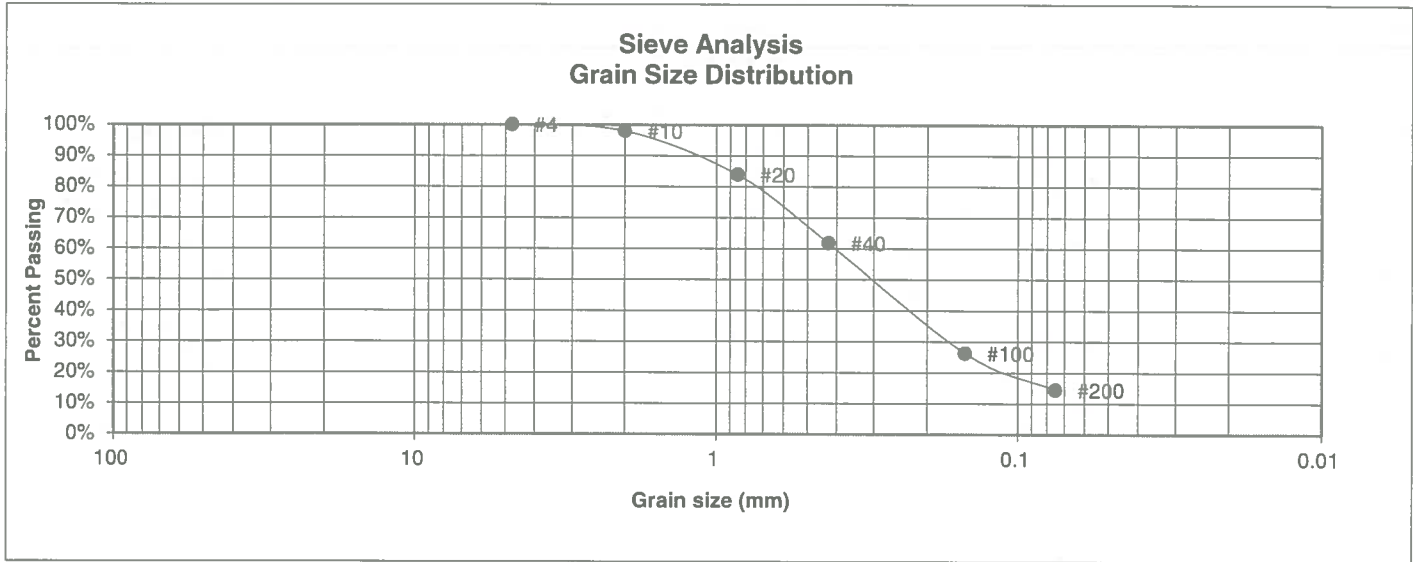
JOB NO.:

211922

FIG NO.:

B-6

UNIFIED CLASSIFICATION	SM	CLIENT	GORILLA CAPITAL
SOIL TYPE #	1	PROJECT	SADDLEHORN RANCH, F-1
TEST BORING #	6	JOB NO.	211922
DEPTH (FT)	1-2	TEST BY	BL
AASHTO CLASSIFICATION	A-2-4	GROUP INDEX	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	98.0%
20	83.9%
40	61.8%
100	26.2%
200	14.4%

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)	



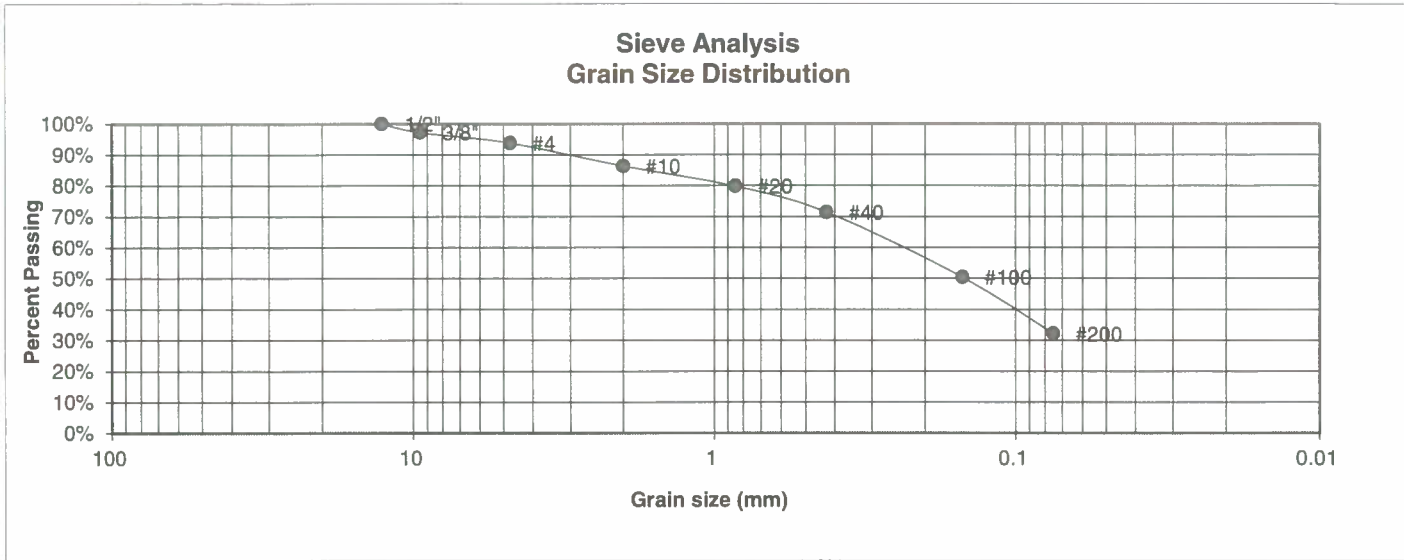
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**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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JOB NO.:
211922
FIG NO.:
B-7

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	7	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	100.0%
3/8"	97.2%
4	93.8%
10	86.3%
20	79.8%
40	71.4%
100	50.4%
200	32.1%

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**

DRAWN:	DATE:	CHECKED:	DATE:
		DS	9/2/21

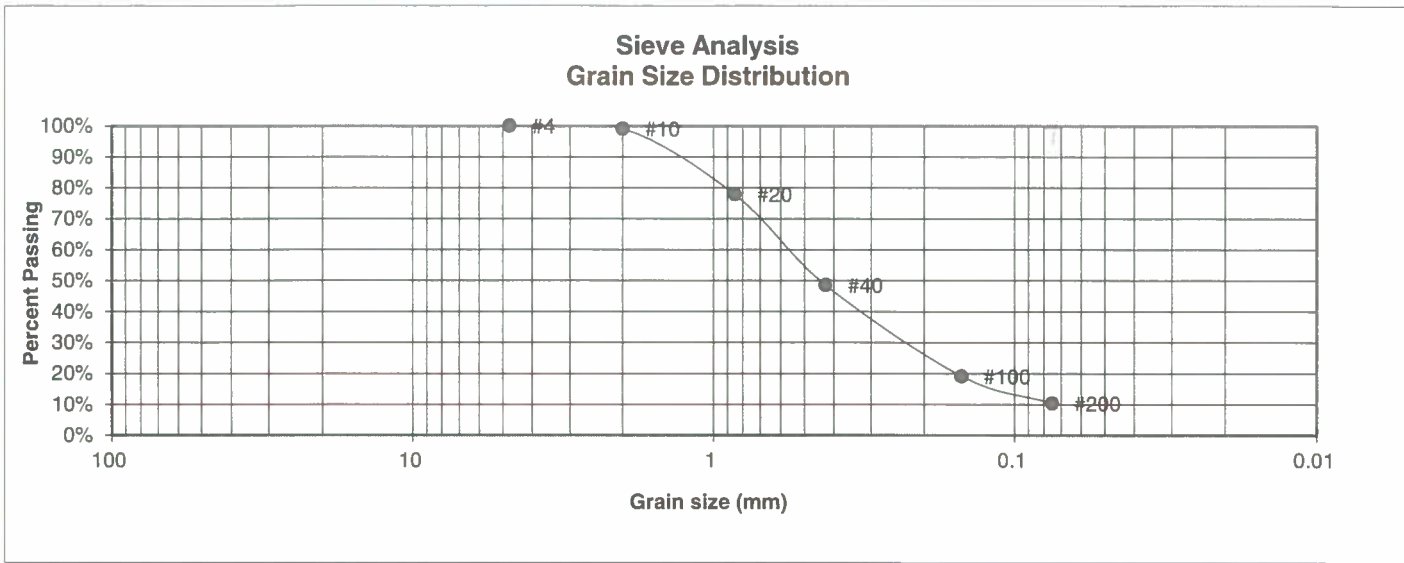
JOB NO.:

211922

FIG NO.:

B-8

UNIFIED CLASSIFICATION	SM-SW	CLIENT	GORILLA CAPITAL
SOIL TYPE #	1	PROJECT	SADDLEHORN RANCH, F-1
TEST BORING #	8	JOB NO.	211922
DEPTH (FT)	1-2	TEST BY	BL
AASHTO CLASSIFICATION	A-1-b	GROUP INDEX	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.1%
20	77.9%
40	48.5%
100	19.1%
200	10.4%

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**

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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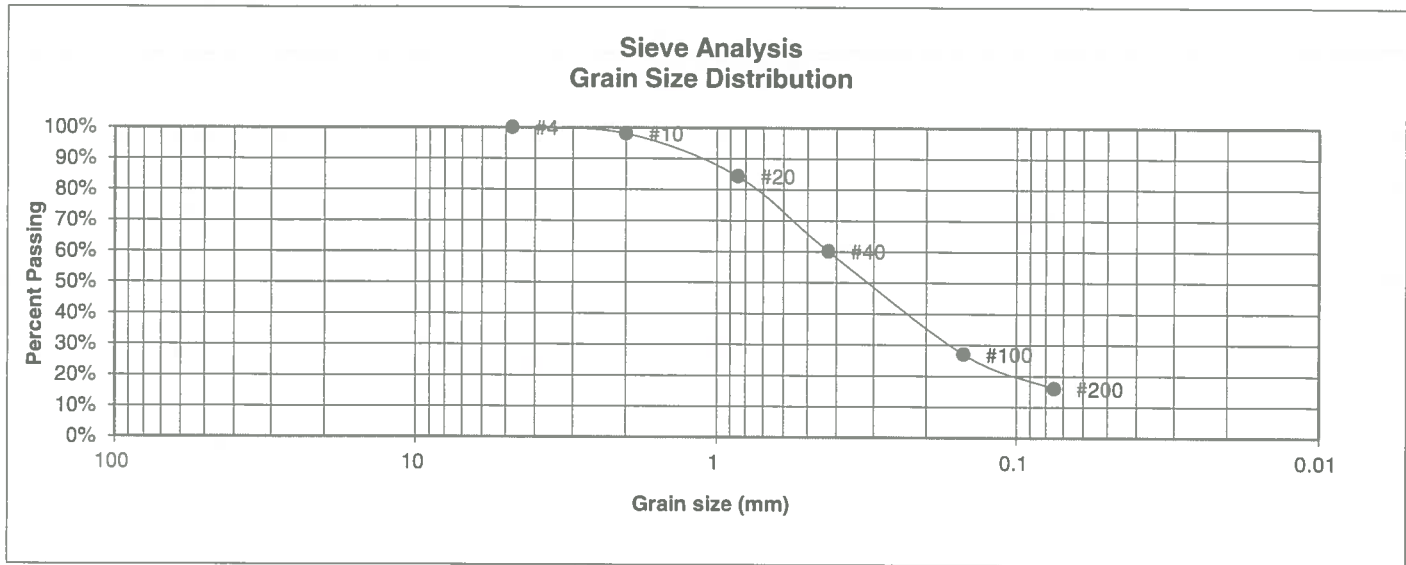
JOB NO.:

211922

FIG NO.:

B-9

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	9	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	98.0%
20	84.3%
40	60.2%
100	27.0%
200	15.9%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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**LABORATORY TEST
RESULTS**

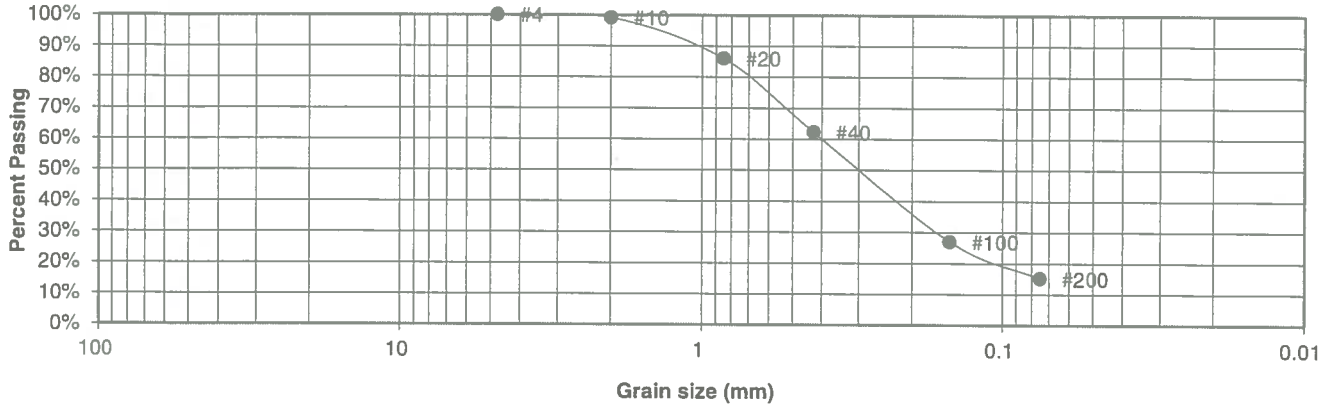
DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/11</i>
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JOB NO.:

211922
FIG NO.: *B-16*

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	10	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0

**Sieve Analysis
Grain Size Distribution**



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	99.1%
20	86.0%
40	62.2%
100	27.0%
200	15.1%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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**LABORATORY TEST
RESULTS**

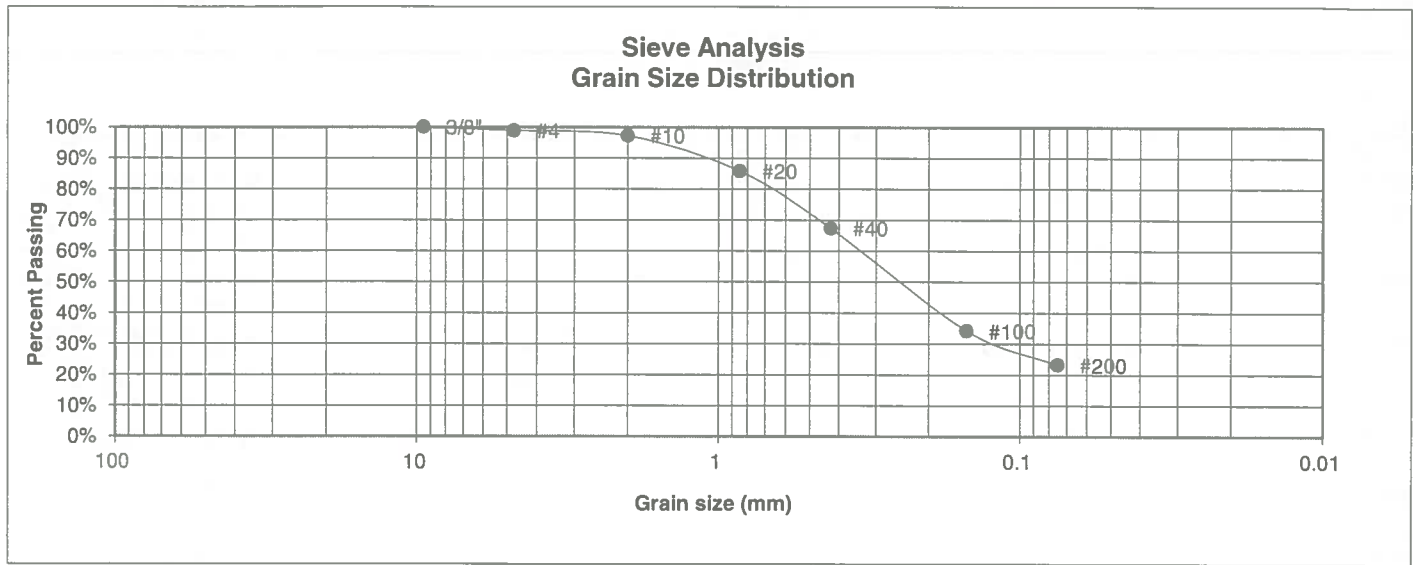
DRAWN:	DATE:	CHECKED:	DATE:
		DS	9/2/21

JOB NO.:

211922
FIG NO.:

B-11

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	11	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	98.9%
10	97.2%
20	85.8%
40	67.4%
100	34.3%
200	23.2%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



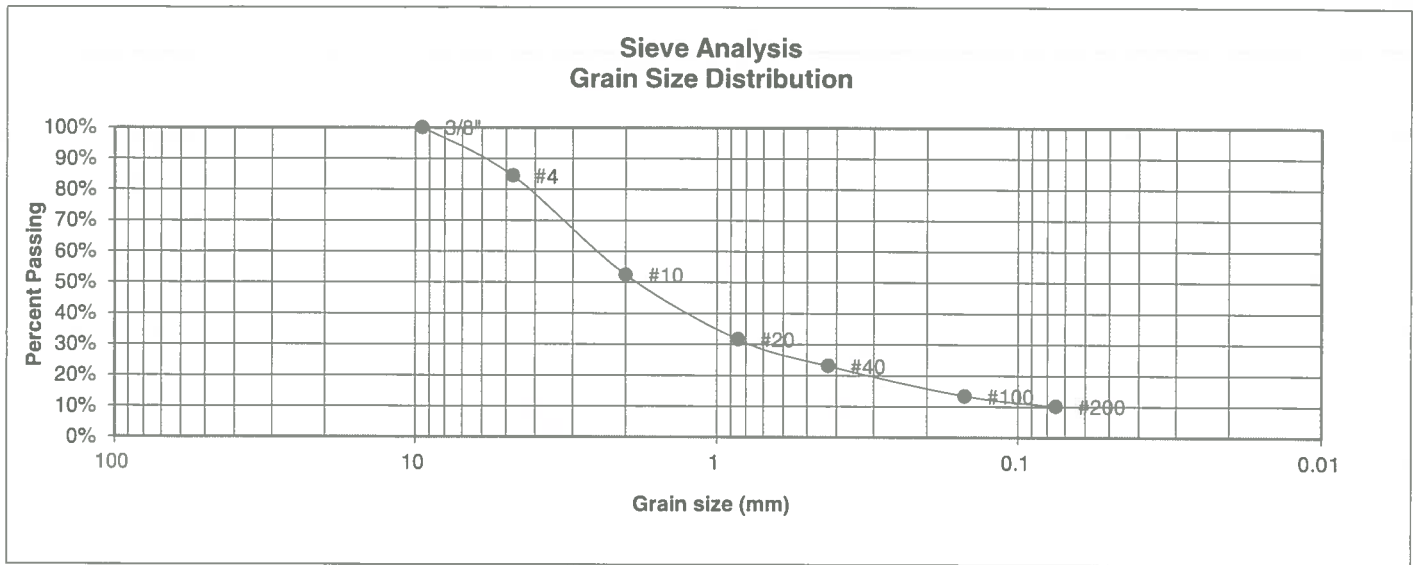
ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

LABORATORY TEST RESULTS

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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JOB NO.:
211922
FIG NO.:
8-12

<u>UNIFIED CLASSIFICATION</u>	SM-SW	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	12	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-1-b	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	84.4%
10	52.4%
20	31.6%
40	23.1%
100	13.4%
200	10.1%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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505 ELKTON DRIVE
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**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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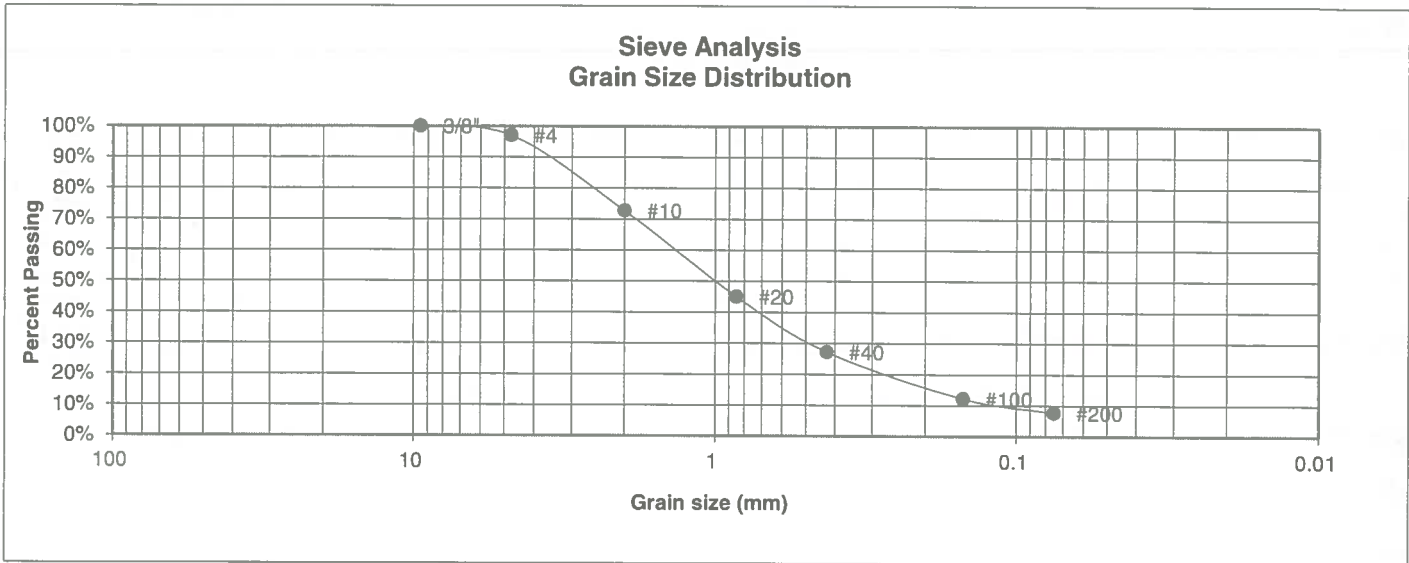
JOB NO.:

211922

FIG NO.:

B-13

<u>UNIFIED CLASSIFICATION</u>	SM-SW	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	14	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-1-b	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	97.0%
10	72.7%
20	45.0%
40	27.2%
100	12.2%
200	7.7%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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**LABORATORY TEST
RESULTS**

DRAWN:

DATE:

CHECKED:

DS

DATE:

9/2/01

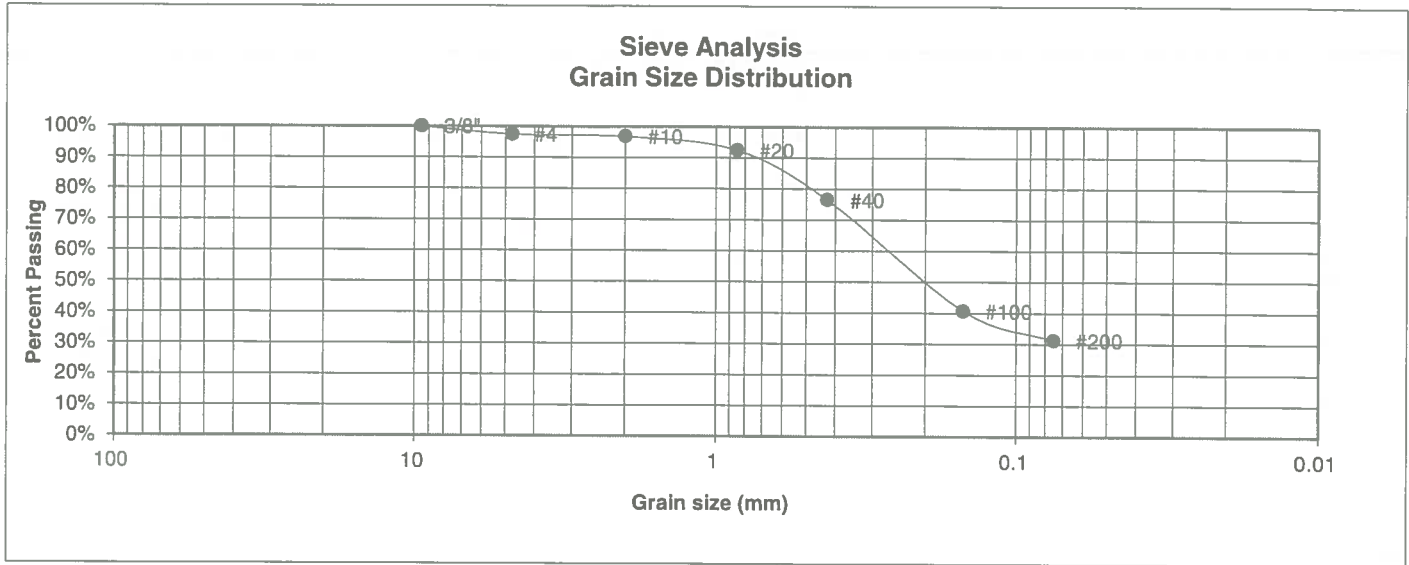
JOB NO.:

211922

FIG NO.:

8-14

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	15	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	97.4%
10	96.8%
20	92.4%
40	76.5%
100	40.7%
200	31.2%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED:	DATE:
		DS	9/2/12

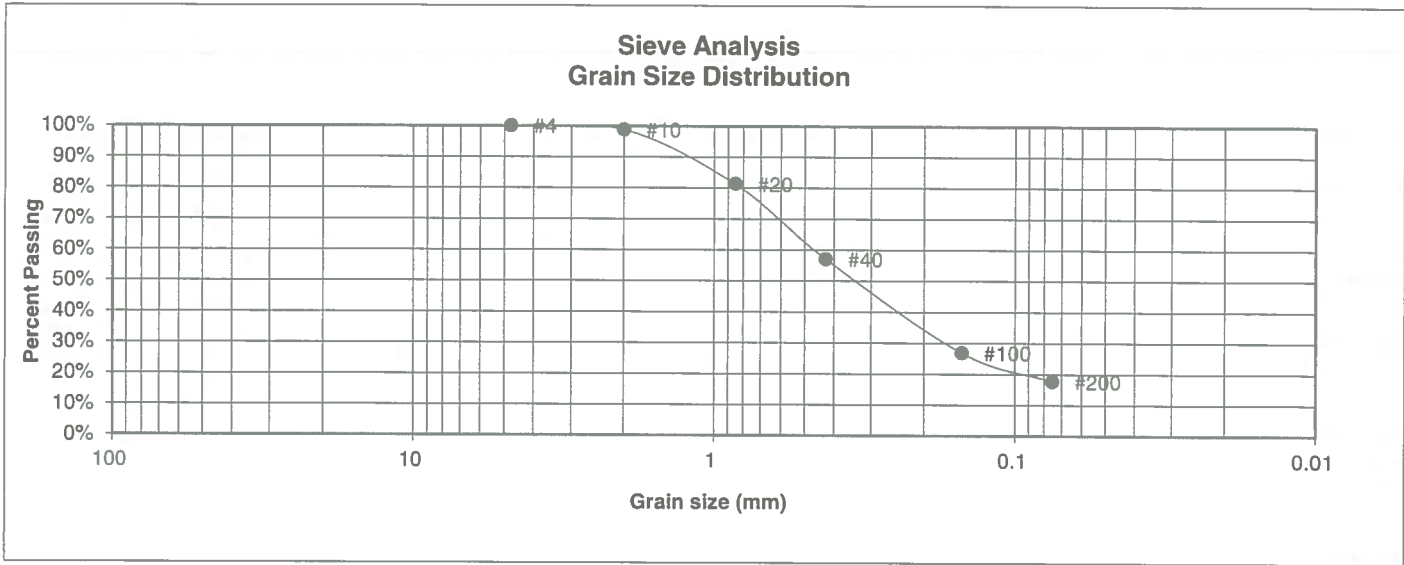
JOB NO.:

211922

FIG NO.:

8-15

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	1	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	17	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-2-4	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	98.8%
20	81.3%
40	57.1%
100	26.8%
200	17.7%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP
<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



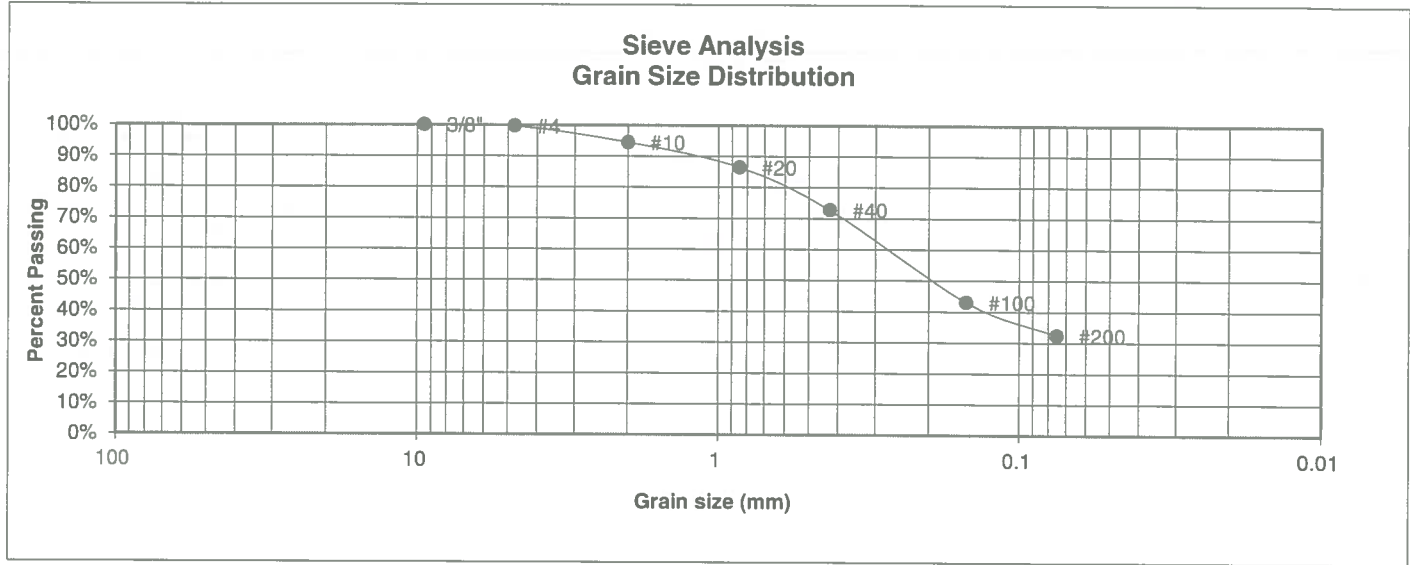
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**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED:	DATE:
		DS	9/16/21

JOB NO.:
211922
FIG NO.:
B-16

UNIFIED CLASSIFICATION	SC	CLIENT	GORILLA CAPITAL
SOIL TYPE #	1	PROJECT	SADDLEHORN RANCH, F-1
TEST BORING #	18	JOB NO.	211922
DEPTH (FT)	1-2	TEST BY	BL
AASHTO CLASSIFICATION	A-2-4	GROUP INDEX	0



U.S. Sieve #	Percent Finer
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	100.0%
4	99.7%
10	94.4%
20	86.5%
40	72.7%
100	43.0%
200	32.4%

Atterberg Limits	
Plastic Limit	19
Liquid Limit	27
Plastic Index	8
Swell	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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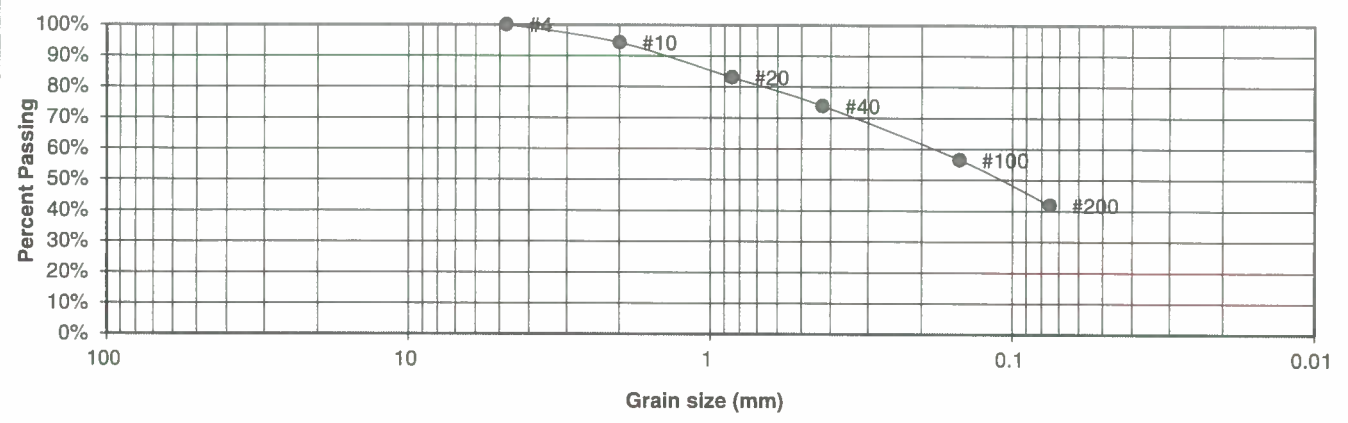
**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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JOB NO.:
211922
FIG NO.: *B-17*

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	2	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	13	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-4	<u>GROUP INDEX</u>	0

**Sieve Analysis
Grain Size Distribution**



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	100.0%
10	94.3%
20	83.1%
40	73.9%
100	56.6%
200	41.9%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



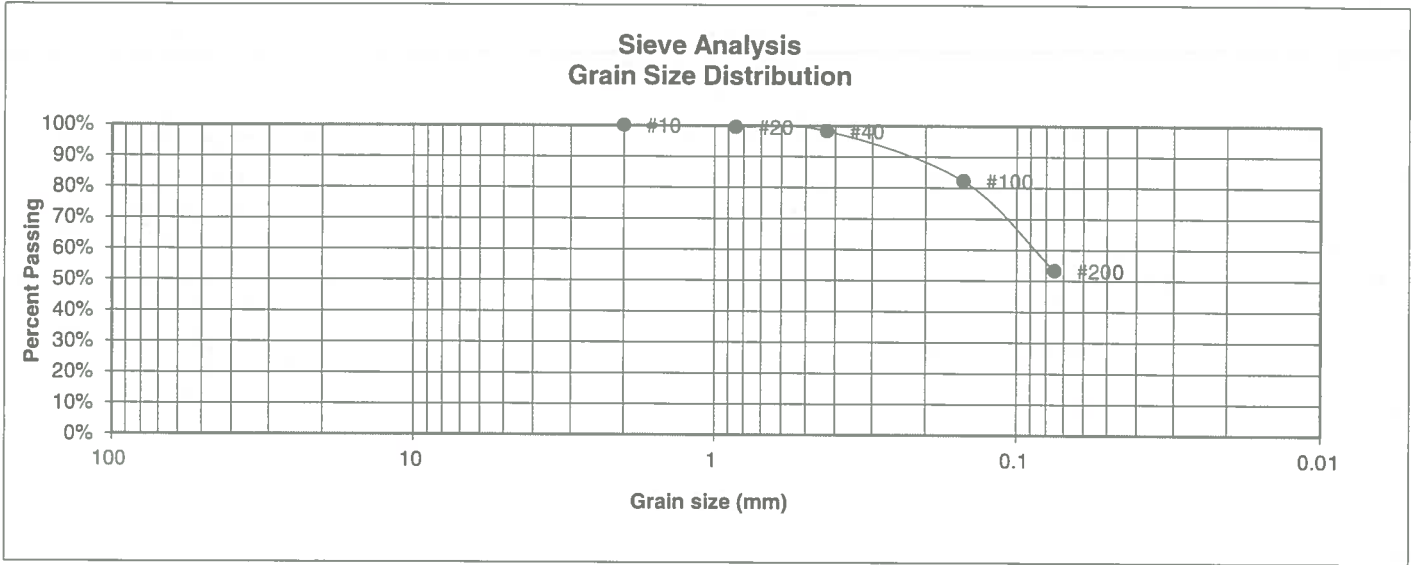
**ENTECH
ENGINEERING, INC.**
505 ELKTON DRIVE
COLORADO SPRINGS, COLORADO 80907

**LABORATORY TEST
RESULTS**

DRAWN:	DATE:	CHECKED:	DATE:
		DS	9/2/21

JOB NO.:
211922
FIG NO.:
E-18

<u>UNIFIED CLASSIFICATION</u>	SM	<u>CLIENT</u>	GORILLA CAPITAL
<u>SOIL TYPE #</u>	2	<u>PROJECT</u>	SADDLEHORN RANCH, F-1
<u>TEST BORING #</u>	16	<u>JOB NO.</u>	211922
<u>DEPTH (FT)</u>	1-2	<u>TEST BY</u>	BL
<u>AASHTO CLASSIFICATION</u>	A-4	<u>GROUP INDEX</u>	0



<u>U.S. Sieve #</u>	<u>Percent Finer</u>
3"	
1 1/2"	
3/4"	
1/2"	
3/8"	
4	
10	100.0%
20	99.5%
40	98.3%
100	82.2%
200	53.3%

<u>Atterberg Limits</u>	
Plastic Limit	NP
Liquid Limit	NV
Plastic Index	NP

<u>Swell</u>	
Moisture at start	
Moisture at finish	
Moisture increase	
Initial dry density (pcf)	
Swell (psf)	



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**LABORATORY TEST
RESULTS**

<u>DRAWN:</u>	<u>DATE:</u>	<u>CHECKED:</u> DS	<u>DATE:</u> 9/2/21
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JOB NO.:

211922

FIG NO.:

B-19

CLIENT	<u>GORILLA CAPITAL</u>	JOB NO.	<u>211922</u>
PROJECT	<u>SADDLEHORN RANCH, F-1</u>	DATE	<u>7/30/2021</u>
LOCATION	<u>SADDLEHORN RANCH, F-1</u>	TEST BY	<u>BL</u>

BORING NUMBER	DEPTH, (ft)	SOIL TYPE NUMBER	UNIFIED CLASSIFICATION	WATER SOLUBLE SULFATE, (wt%)
TB-4	1-2	1	SM	<0.01
TB-9	1-2	1	SM	<0.01

QC BLANK PASS



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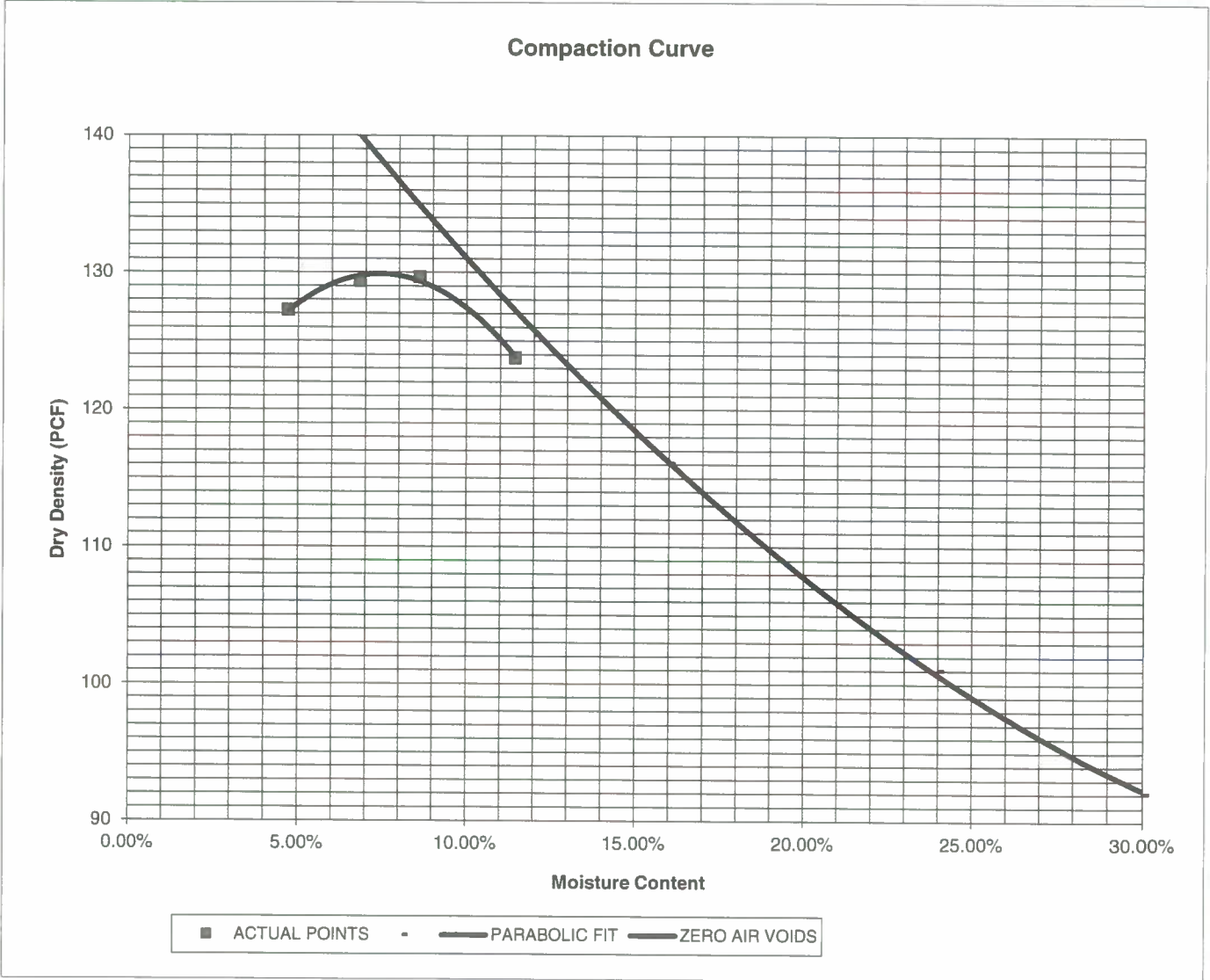
**LABORATORY TEST
SULFATE RESULTS**

DRAWN:	DATE:	CHECKED: <i>DS</i>	DATE: <i>9/2/21</i>
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JOB NO:
211922
FIG NO:
B-20

<u>PROJECT</u>	SADDLEHORN RANCH, F-1	<u>CLIENT</u>	GORILLA CAPITAL
<u>SAMPLE LOCATION</u>	TB-1 @ 0-3'	<u>JOB NO.</u>	211922
<u>SOIL DESCRIPTION</u>	SAND, SILTY, BROWN	<u>DATE</u>	07/30/21

<u>IDENTIFICATION</u>	SM	<u>COMPACTION TEST #</u>	1
<u>TEST DESIGNATION / METHOD</u>	ASTM D-1557-A	<u>TEST BY</u>	BL
<u>MAXIMUM DRY DENSITY (PCF)</u>	129.9	<u>OPTIMUM MOISTURE</u>	7.4%



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MOISTURE DENSITY RELATION

DRAWN:

DATE:

CHECKED:

DS

DATE:

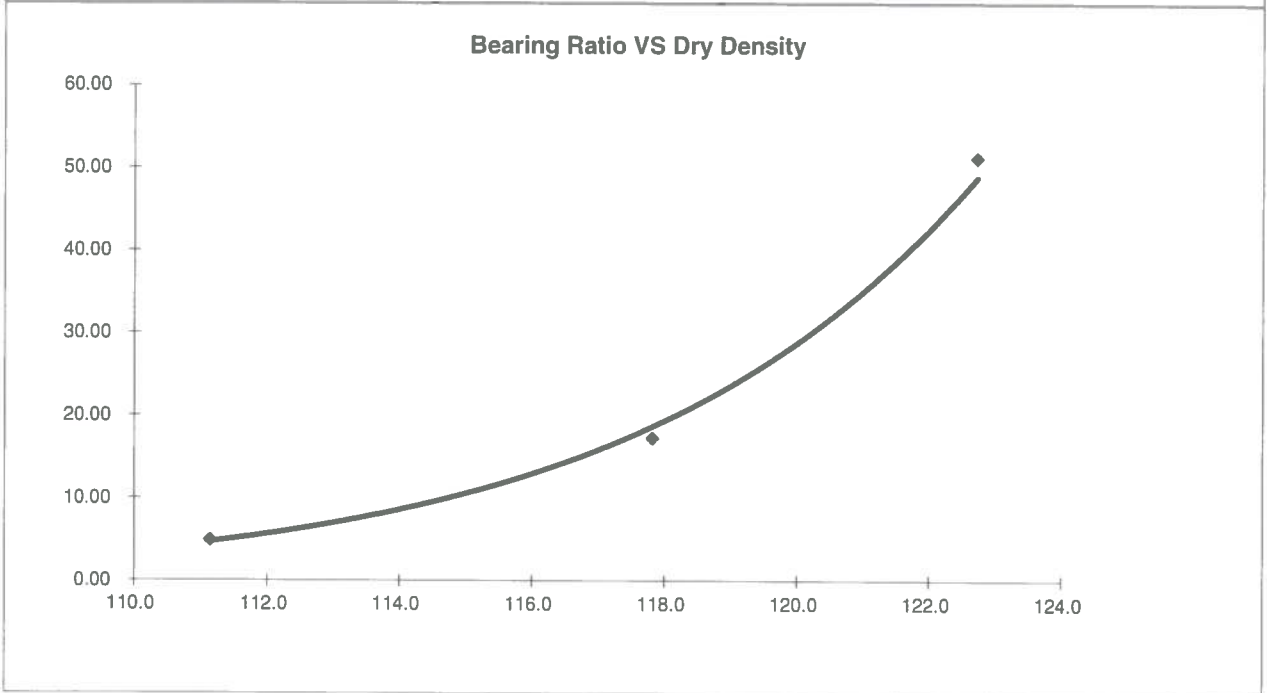
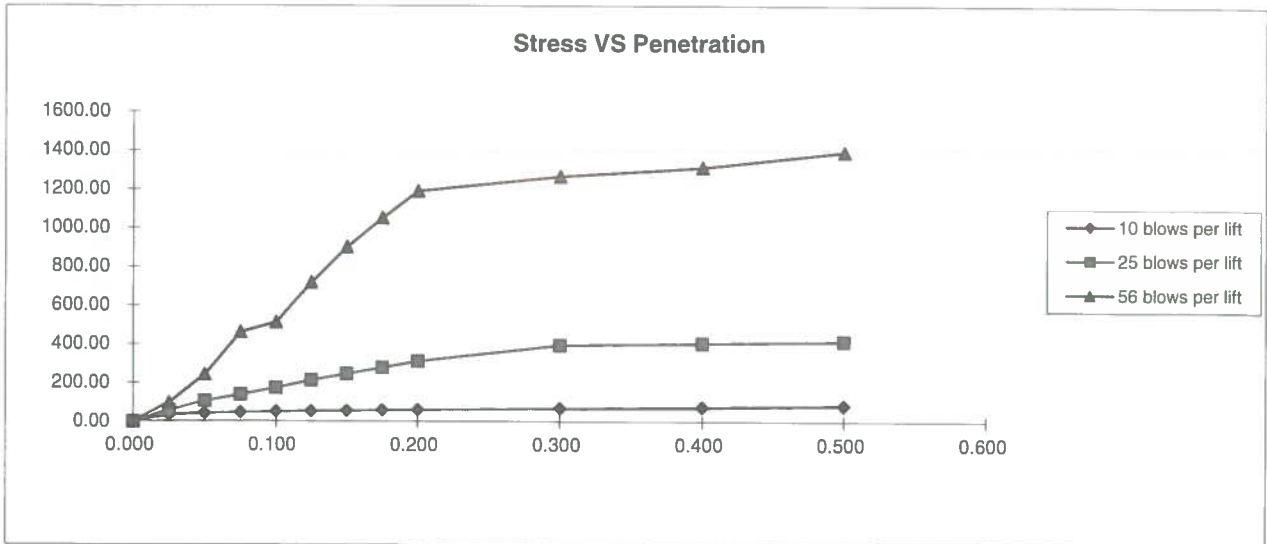
8/2/21

JOB NO.:

211922

FIG NO.:

B-21



BEARING RATIO AT 90% OF MAX	15.58 ~ R VALUE	50.00
BEARING RATIO AT 95% OF MAX	55.92 ~ R VALUE	76.00

JOB NO: 211922
SOIL TYPE: 1



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CALIFORNIA BEARING RATIO

DRAWN:

DATE:

CHECKED:

DATE:

DJ

9/2/21

JOB NO:
211922

FIG NO:
B-23

APPENDIX C: Design Calculations

FLEXIBLE PAVEMENT DESIGN

DESIGN DATA

GORILLA CAPITAL COLORADO SADDLEHORN RANCH, LLC
SADDLE HORN RANCH

Equivalent (18 kip) Single Axle Load Applications (ESAL):	ESAL (W_{18}) =	36,500
Hveem Stabilometer (R Value) Results:	R =	50
Standard Deviation	S_o =	0.44
Loss in Serviceability	$\Delta\psi$ =	2.0
Reliability	Reliability =	75
Reliability (z-statistic)	Z_R =	-0.674
Soil Resilient Modulus	M_R =	13168

Weighted Structural Number (WSN): ➔ WSN = 1.41

DESIGN TABLES AND EQUATIONS

$$S_1 = [(R - 5) / 11.29] + 3$$

$$M_R = 10^{[(S_1 + 18.72) / 6.24]}$$

$$k = M_R / 19.4$$

Where:

M_R = resilient modulus (psi)

S_1 = the soil support value

R = R-value obtained from the Hveem stabilometer

CBR = California Bearing Ratio

Reliability (%)	Z_R (z-statistic)
50	0
60	-0.253
70	-0.524
75	-0.674
80	-0.841
90	-1.282
95	-1.65
97	-1.88
98	-2.05
99	-2.33
99.9	-3.09
99.99	-3.75

$$\log_{10} W_{18} = Z_R * S_o + 9.36 * \log_{10} (SN+1) - 0.20 + \frac{\log_{10} \left[\frac{\Delta \text{PSI}}{4.2 - 1.5} \right]}{0.40 + \frac{1094}{(SN+1)^{5.19}}} + 2.32 * \log_{10} M_R - 8.07$$

Left	Right	Difference
4.56	4.56	0.0

Job No. 211922

Fig. No. C-1

DESIGN CALCULATIONS

DESIGN DATA GORILLA CAPITAL COLORADO SADDLEHORN RANCH, LLC
SADDLE HORN RANCH

Equivalent (18 kip) Single Axle Load Applications (ESAL):	ESAL = 36,500
Hveem Stabilometer (R Value) Results:	R = 50
Weighted Structural Number (WSN):	WSN = 1.41

DESIGN EQUATION

$$WSN = C_1D_1 + C_2D_2$$

$C_1 = 0.44$ Strength Coefficient - Hot Bituminous Asphalt

$C_2 = 0.11$ Strength Coefficient - Base Course

$D_1 =$ Depth of Asphalt (inches)

$D_2 =$ Depth of Base Course (inches)

FOR FULL DEPTH ASPHALT SECTION

$$D_1 = (WSN)/C_1 = 3.2 \text{ inches of Full Depth Asphalt}$$

Use 5.0 inches Full Depth

FOR ASPHALT + AGGREGATE BASE COURSE SECTION

Asphalt Thickness (t) = inches

$$D_2 = ((WSN) - (t)(C_1))/C_2 = 0.9 \text{ inches of Aggregate}$$

Base Course, use 4.0 inches

RECOMMENDED ALTERNATIVES

1. 3.0 inches of Asphalt + 4.0 inches of Aggregate Base Course, or
2. 5.0 inches of Full-Depth Asphalt

Job No. 211922

Fig. No. C-2