

October 25, 2023

TimberRidge Development Group
2138 Flying Horse Club Drive
Colorado Springs, Colorado 80921



ENTECH
ENGINEERING, INC.

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

Attn: Loren Moreland

Re: Response to PCD Engineering Review
Soil, Geology, & Geologic Hazard Study
Retreat at TimberRidge Filing No. 3
El Paso County, Colorado
Entech Job No. 221106

Ref: Entech Engineering, Inc., dated June 10, 2022, Soil, Geology, & Geologic Hazard Study, Retreat at TimberRidge, Filing No. 3, El Paso County, Colorado. Entech Job No. 221106

Colorado Geological Survey, February 2, 2023. Retreat at TimberRidge, Filing No. 3. *El Paso County, Colorado*; EPC File No. SF2241.

Dear Mr. Moreland:

This letter is written in response to the Colorado Geological Survey review comments.

CGS REVIEW COMMENTS AND ENTECH ENGINEERING, INC. RESPONSES

CGS Comment: *“Groundwater was encountered in Entech’s previous study during the preliminary plan application (Appendix D: Entech Job No. 170020) at depths of 5 to 17.5 feet below existing grades.”*

Entech Response: Previous groundwater measurements from the borings completed for Retreat at TimberRidge Filing 3 (EEI Job No. 221106), the Retreat at TimberRidge Preliminary Plan Application (EEI Job No. 170020), and Sand Creek Channel Improvements (EEI Job No. 221106) are included with this letter. The borings located within Retreat at TimberRidge Filing No. 3 consist of TB-1 – TB-3 (drilled May 13, 2022), and TB-8, 10, 11, and 12 (drilled January 12, 2017). Groundwater was encountered at 14.5 feet in TB-10 located on Lot 3, south of Sand Creek. The remaining borings within Filing No. 3 were dry.

Entech agrees with CGS *“Proposed floor levels should be at least three feet (preferably 5 feet) above maximum anticipated groundwater levels and maintained year-round to reduce the risk of water infiltration into below-grade spaces and damp, mold-conducive conditions.”* Additional site investigation will be conducted following completion of site grading, and prior to construction on the lots. Basement feasibility should be evaluated pending the results of additional site investigation. Based on the site investigation at this time it is anticipated that basement construction can be used in Filing 3.

CGS Comment: *“Entech identified areas of downslope creep but states on page 12, “It is anticipated that many of these areas will be mitigated by overlot grading.” Once final grading is completed, Entech Should review the grades to verify these areas will be mitigated. Entech’s recommendation should be incorporated into the design of foundations.*

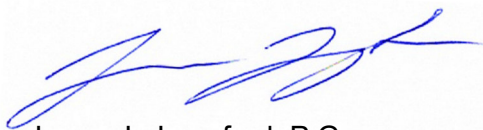
TimberRidge Development Group
Response to CGS Review
Soil, Geology, & Geologic Hazard Study
Retreat at TimberRidge, Filing No. 3
El Paso County, Colorado
Page 2

Entech Response: Entech agrees with the CGS comment and will review grades once grading is completed. Reviewing the available grading plan revised date September 21, 2023, Lots 4, and 31 – 33 that have been mapped with the potential for downslope creep will have minimal grading along the roadways. These lots will need to account for the higher lateral pressures from the downslope creep in the foundation designs. Mitigation for downslope creep will be determined for each lot as construction is performed. Lots 23 – 30 will be regraded with walkout slopes proposed.

We trust this has provided you with the information you required. In summary, based on the analysis of this site, the proposed development meets stability requirements. If you have any questions or need additional information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.



Logan L. Langford, P.G.
Geologist

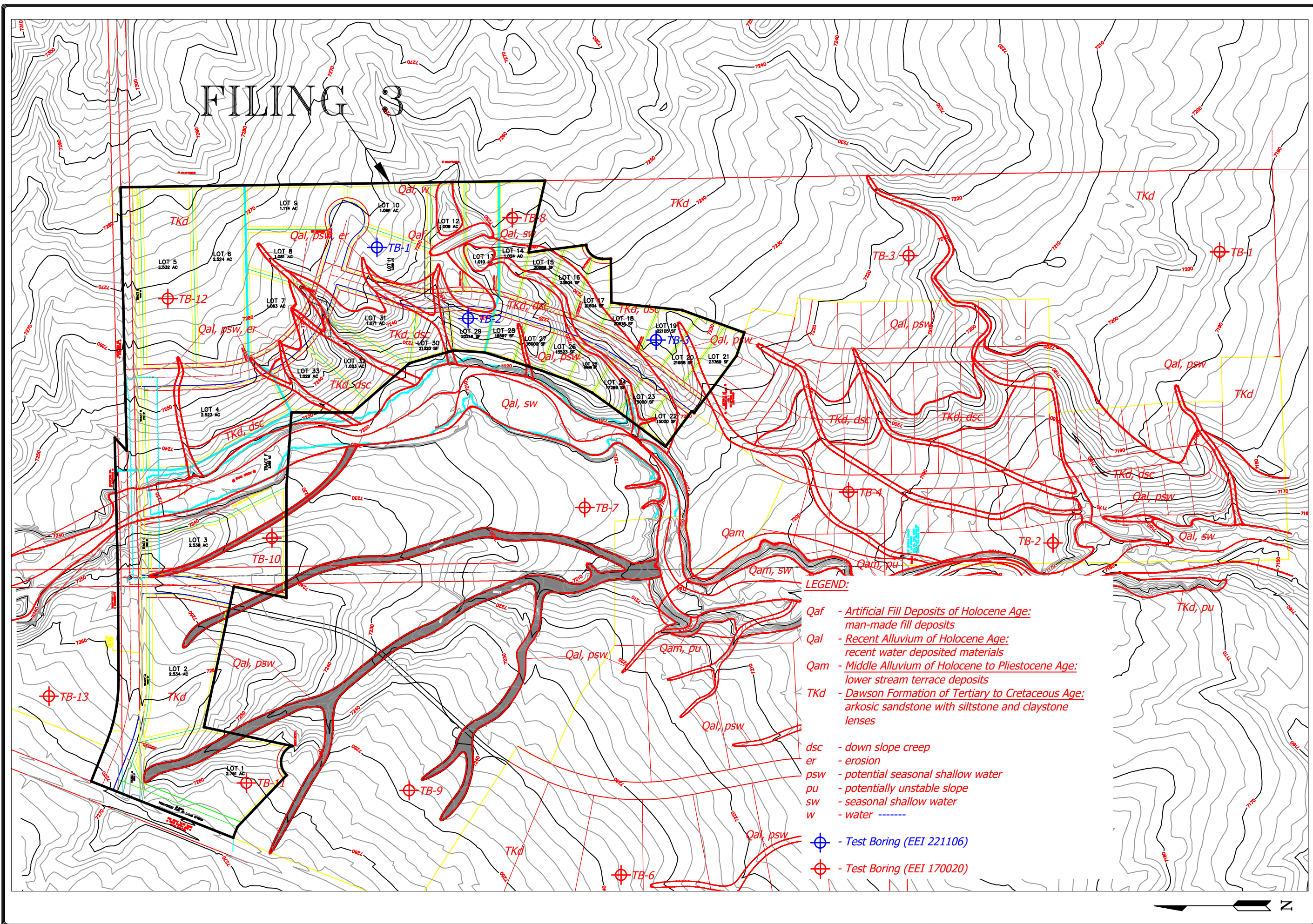
LLL



Reviewed by:



Joseph C. Goode, Jr., P.E.
President



REVISION	BY

ENTTECH
ENGINEERING, INC.
 505 ELKTON DRIVE
 COLORADO SPRINGS, CO. 80907
 (719) 531-5599

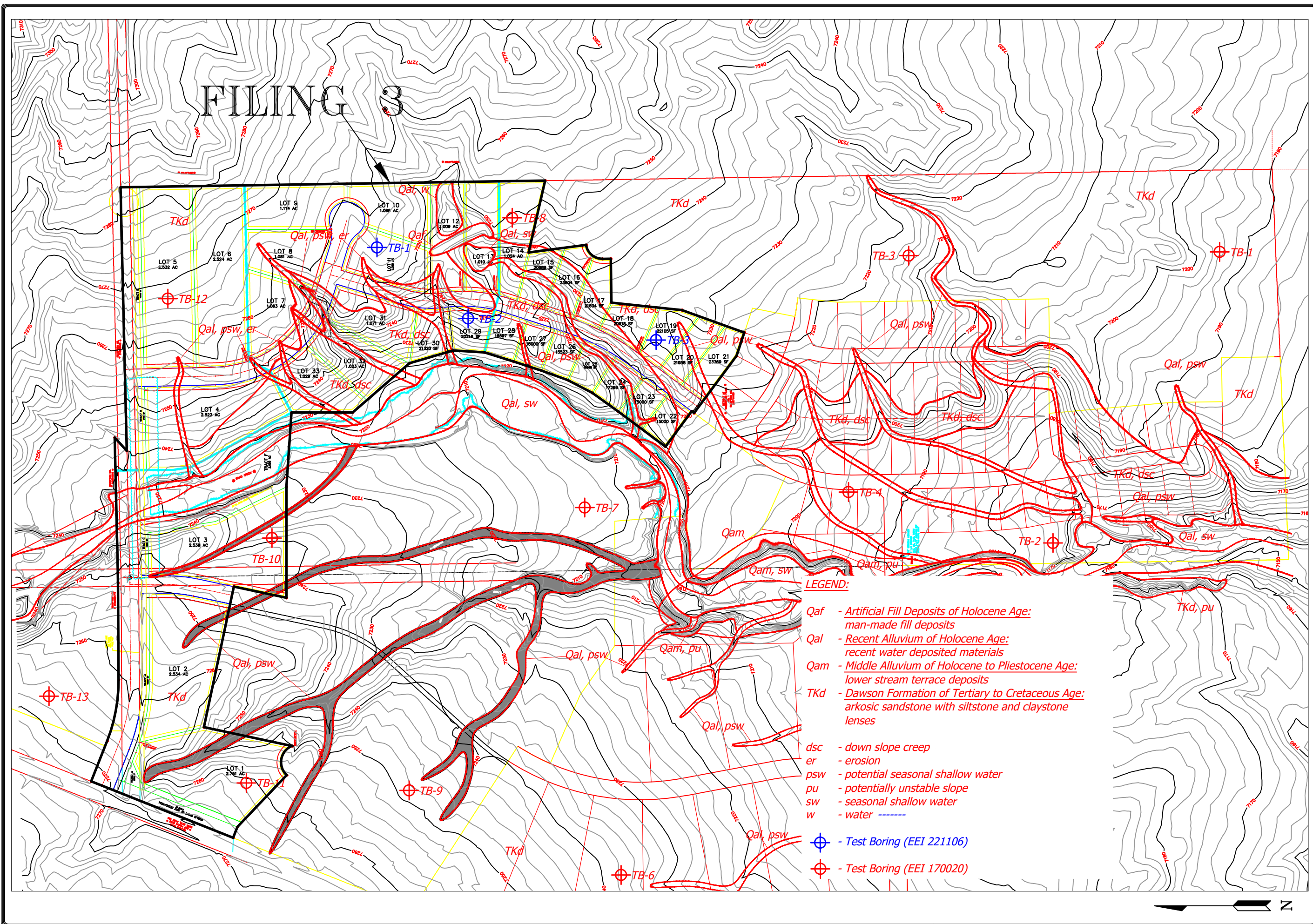
GEOLGY MAP/ENGINEERING GEOLOGY
 RETREAT AT TIMBRIDGE, FILING 3
 VOLLMER ROAD AND ARROYA LANE
 EL PASO COUNTY, CO.
 FOR: TIMBRIDGE DEVELOPMENT GROUP, LLC

DRAWN L.L.
CHECKED
DATE 6/7/22
SCALE AS SHOWN
JOB NO. 221106
FIGURE No. 6

**Entech Engineering, Inc., Soils, Geology, and Geologic Hazards
Study, Retreat at TimberRidge Filing No. 3,
Entech Job No. 221106**

TABLE 2: Summary of Depth of Bedrock and Groundwater

Test Boring No.	Depth of Bedrock (ft.)	Depth of Groundwater (ft.)
1	3	>20
2	3	>20
3	3	>20
Previous Job No. 170020		
8	1	>20
10	3	14.5
11	9	>20
12	7	>20



REVISION	BY

ENTTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907
(719) 531-5599

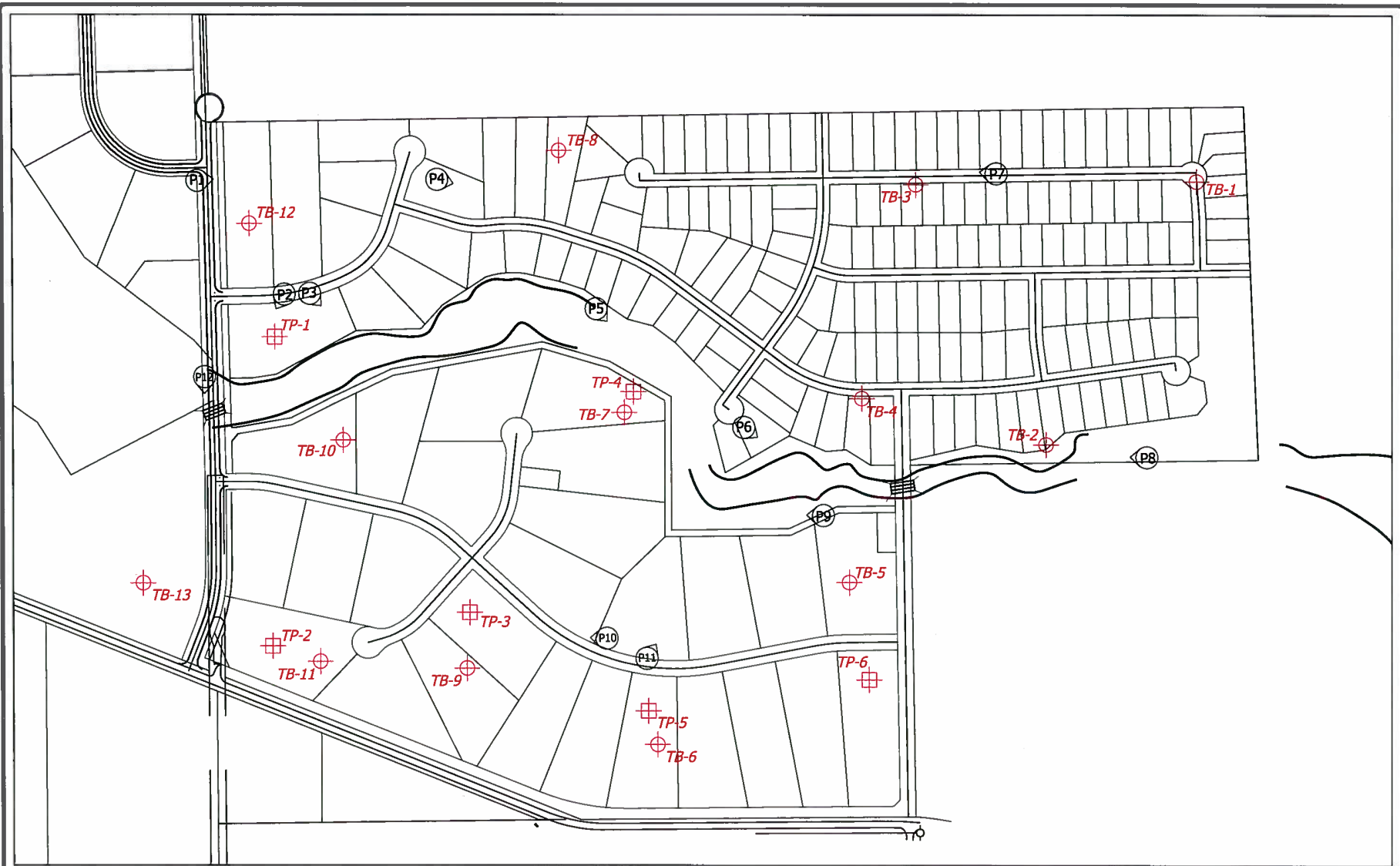
GEOLGY MAP/ENGINEERING GEOLOGY
RETREAT AT TIMBRIDGE, FILING 3
VOLLMER ROAD AND ARROYA LANE
EL PASO COUNTY, CO.
FOR: TIMBRIDGE DEVELOPMENT GROUP, LLC

DRAWN	L.L.
CHECKED	
DATE	6/7/22
SCALE	AS SHOWN
JOB NO.	221106
FIGURE No.	6

**Entech Engineering, Inc., Soils, Geology, and Geologic Hazards
Study, Retreat at TimberRidge Preliminary Plan Application,
Entech Job No. 170020**

TABLE 2**Summary of Depth to Bedrock, Groundwater**

<u>Test Boring No.</u>	<u>Depth to Bedrock (ft)</u>	<u>Depth to Groundwater (ft)</u>
1	4	Dry
2	17	5, 11
3	1	Dry
4	1	Dry
5	7	Dry
6	5	17.5
7	19	14.5
8	1	Dry
9	4	Dry
10	3	14.5
11	9	Dry
12	7	Dry
13	4	Dry



- P2 - APPROXIMATE PHOTOGRAPH LOCATION AND NUMBER
- ⊕ TB- APPROXIMATE TEST BORING LOCATION AND NUMBER
- ⊕ TP- APPROXIMATE TEST PIT LOCATION AND NUMBER

REVISION BY

ENTECH
ENGINEERING, INC.
505 ELAKTON DRIVE
COLORADO SPRINGS, CO. 80907
(719) 531-5599



SITE PLAN/TEST BORING LOCATION MAP
THREE RETREAT AT TIMBER RIDGE
VOLLMER ROAD AND ARROYA LANE
EL PASO COUNTY, CO.
FOR: ARROYA INVESTMENTS

DRAWN
TLC
CHECKED
ELL
DATE
12/1/17
SCALE
AS SHOWN
JOB NO.
170020
FIGURE NO.
4

**Entech Engineering, Inc., SSI, Sand Creek Channel
Improvements Filing No. 2, Entech Job No. 221106**

TEST BORING NO. 1
 DATE DRILLED 6/17/2022
 Job # 221106

TEST BORING NO. 2
 DATE DRILLED 6/17/2022
 CLIENT TIMBERRIDGE
 LOCATION TIMBERRIDGE, F-3, CHANNEL

REMARKS

REMARKS

WATER @ 9', 6/17/22

SAND, CLEAN TO SILTY, FINE TO COARSE GRAINED, TAN TO GRAY BROWN, MEDIUM DENSE TO LOOSE, MOIST TO WET

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			10	3.1	1
5			11	3.8	1
10			5	16.7	1
15			4	14.5	1
20			3	21.9	1



WATER @ 8', 6/17/22

SAND, CLEAN TO SILTY, FINE TO COARSE GRAINED, TAN, DRY TO WET

* - BULK SAMPLE TAKEN

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			*	1.7	1
10			*	16.7	1
15			*	18.9	1
20					



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

TEST BORING LOG

DRAWN: DATE: CHECKED: *SW* DATE: *6-24-22*

JOB NO.: 221106

FIG NO.: A- 1

TEST BORING NO. 3
 DATE DRILLED 6/17/2022
 Job # 221106

TEST BORING NO. 4
 DATE DRILLED 6/17/2022
 CLIENT TIMBERRIDGE
 LOCATION TIMBERRIDGE, F-3, CHANNEL

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 15', 6/17/22						
SAND, CLEAN TO SILTY, FINE TO COARSE GRAINED, TAN, DRY TO MOIST	5	[Symbol]		*	2.5	1
	10	[Symbol]		*	12.0	1
	15	[Symbol]		*	10.7	1
	20	[Symbol]				

* - BULK SAMPLE TAKEN

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 15', 6/17/22						
SAND, SILTY TO CLEAN, FINE TO COARSE GRAINED, TAN, LOOSE TO MEDIUM DENSE, MOIST TO WET	5	[Symbol]				
	5	[Symbol]	8		3.1	1
	5	[Symbol]	5		15.9	1
	10	[Symbol]	9		2.5	1
	15	[Symbol]	10		4.1	1
	20	[Symbol]	3		13.5	1
	25	[Symbol]	6		15.3	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, BLUE GRAY, VERY DENSE, MOIST	30	[Symbol]	50 3"		8.1	2



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

TEST BORING LOG

DRAWN:

DATE:

CHECKED: *SW*

DATE: *6-24-22*

JOB NO.:
 221106

FIG NO.:
 A- 2

TEST BORING NO. 5
 DATE DRILLED 6/17/2022
 Job # 221106

TEST BORING NO. 6
 DATE DRILLED 6/17/2022
 CLIENT TIMBERRIDGE
 LOCATION TIMBERRIDGE, F-3, CHANNEL

REMARKS

WATER @ 17', 6/17/22

SAND, SILTY TO CLEAN, FINE TO COARSE GRAINED, TAN, LOOSE TO MEDIUM DENSE, DRY TO WET

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
9			9	1.0	1
5			8	21.4	1
10			14	3.3	1
15			12	6.2	1
20			12	10.9	1
25			8	18.1	1
30			7	16.9	1
35			50 8"	11.8	2

SANDSTONE, SLIGHTLY SILTY, FINE TO COARSE GRAINED, GRAY BROWN, VERY DENSE, MOIST

REMARKS

WATER @ 15', 6/17/22

SAND, CLEAN TO SLIGHTLY SILTY, FINE TO COARSE GRAINED, TAN, LOOSE TO MEDIUM DENSE, DRY TO WET

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
7			7	2.8	1
5			11	1.7	1
10			5	3.6	1
15			8	27.4	1
20			30	11.6	2
25			50 8"	21.0	2

WEATHERED TO FORMATIONAL SANDSTONE, SILTY, FINE TO COARSE GRAINED, GRAY BROWN, DENSE TO VERY DENSE, MOIST



ENTECH
ENGINEERING, INC.

505 ELKTON DRIVE
 COLORADO SPRINGS, COLORADO 80907

TEST BORING LOG

DRAWN: DATE: CHECKED: *SW* DATE: *6-24-22*

JOB NO.:
 221106

FIG NO.:
 A-3