April 24, 2018

ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO 80907
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Tech Contractors
3575 Kenyon Street, Ste 200
San Diego, California 92110

Attn: Raul Guzman

Re: Soil, Geology and Geologic Hazard Evaluation
Windingwalk, Filings 1 and 2
Stonebridge The Enclave, Filings 4 and 5
Stapleton Drive and Eastonville Road
El Paso County, Colorado

Dear Mr. Guzman:

As requested, personnel of Entech Engineering, Inc. have investigated the above referenced site to evaluate the conditions with respect to geology and geologic hazards affecting development of the site. The subsurface soil conditions were previously investigated by Entech Engineering, Inc. in a Subsurface Soil Investigation, revised March 14, 2018 (Reference 1).

The project consists of single-family residential development on a 200–acre site. The property will be developed in several filings. The site lies in El Paso County, Colorado, approximately 3 miles north of Falcon, Colorado. The approximate location of the site is shown on the Vicinity Location Map, Figure 1.

The topography of the site is gently to moderately sloping, generally in a southeasterly direction. Minor drainage exist on the site that trend in south-southeasterly directions. One drainage northwest of the site trends in a southwesterly direction. The drainages were dry at the time of this investigation. The site lies in portions of Sections 29 and 30, Township 12 South, Range 64 West of the 6th Principal Meridian in El Paso County, Colorado. The site is currently vacant. Grading operations are currently underway. The Site Plan is presented in Figure 2.

Fifty-five test borings were drilled on the site as a part of the Subsurface Soil Investigation (Reference 1) to evaluate the subsurface soil conditions. The Test Boring Logs are included in Appendix A. Laboratory Test Results are summarized in Table 1. Information from this report was used evaluating the site.

The scope of this report will include a geologic analysis evaluation of the site utilizing published geologic data, available subsurface soils information and site-specific mapping of major geologic features, and identification of geologic hazards with respect to the development with recommended mitigation techniques. The Natural Resource Conservation Service (NRCS), previously the Soil Conservation Service (SCS) Survey was also reviewed to evaluate the site.

SOIL AND GEOLOGIC CONDITIONS

Soil Survey

The Natural Resource Conservation Service (NRCS) (Reference 2, Figure 3), previously the Soil Conservation Service (Reference 3) has mapped two soil types on the site. Complete descriptions of the soils are presented in Appendix B. In general, the soils consist of gravelly, sandy loam and sandy loam. The soils are described as follows:

Type	Description
19	Columbine gravelly sand loam, 0-3% slopes
83	Stapleton sandy loam, 3-8% slopes

Soils

The soils encountered in the test borings from Subsurface Soil Investigation (Reference 1) consisted of silty to clayey sand fill and slightly to silty and clayey native sand with layers of sandy clay overlying silty sandstone with layers of claystone and siltstone. The upper soils were encountered at loose to very dense states and moist conditions. The upper sands have low expansion potential, however, the clays, claystone and very clayey sandstone have moderate to high expansion potential.

Groundwater

Groundwater was encountered at depths ranging from 2.5 to 20.5 feet in 39 of the test borings drilled on this site (Reference 1). Areas of potentially seasonal shallow groundwater have been mapped on the site and are discussed later in this report. Fluctuations in groundwater conditions may occur due to variations in rainfall or other factors not readily apparent at this time. Isolated sand layers within the soil profile can carry water in the subsurface. Contractors should be cognizant of the potential for the occurrence of subsurface water features during construction.

Geology

Approximately 16 miles west of the site is a major structural feature known as the Rampart Range Fault. This fault marks the boundary between the Great Plains Physiographic Province and the Southern Rocky Mountain Province. The site exists within a large structural feature known as the Denver Basin. Bedrock in the area is typically gently dipping in a northwesterly direction. (Reference 4) The bedrock underlying the site consists of the Dawson Arkose Formation of Tertiary Age. The Dawson Formation typically consists of coarse-grained arkosic sandstone with interbedded layers of fine-grained sandstone, siltstone or claystone. Overlying the Dawson are deposits of alluvial, residual, and man-made soils.

The geology of the site was evaluated using the *Geologic Map of the Falcon Quadrangle,* by Morgan and White in 2012, (Reference 5, Figure 4). The geology of the site is indicated in Figure 5. Four mappable units were identified on this site which are described as follows:

Qaf **Artificial Fill of Quaternary Age:** These are man-made fill deposits associated with recent on-site grading and stockpiles.

Qal **Recent Alluvium of Quaternary Age:** These are recent stream deposits associated with the defined drainages on site. They generally consist of silty to clayey sands and may contain highly organic soil.

Qa_3 **Alluvium Three of Quaternary Age:** These are water deposited as stream terrace deposits that typically consist of silty to clayey sands and may contain clay layers. The Alluvium Three correlates with the Broadway Alluvium.

Tda **Dawson Arkose Formation of Tertiary Age:** The Dawson Formation typically consists of arkosic sandstone with interbedded fine-grained sandstone, siltstone and claystone. Overlying this formation is a variable layer of residual soil. The residual soils were derived from the in-situ weathering of the bedrock materials on-site. These soils consisted of silty sands and may contain layers of sandy clays.

ENGINEERING GEOLOGIC HAZARDS

Mapping has been performed on this site to identify areas where various geologic conditions exist of which developers should be cognizant during the planning, design and construction stages should new construction be proposed. The engineering geologic hazards identified on this site include artificial fill, potentially seasonal shallow groundwater areas, and potentially expansive and loose soils (Figure 5). Areas of shallow bedrock will also be encountered on this site. These hazards and recommended mitigation techniques are discussed as follows:

Artificial Fill

Areas of fill were mapped on the site that are associated with on-going site grading. Some areas are associated with overlot fill and are considered controlled. Other areas are associated with stockpiles that are considered uncontrolled. Other areas of fill may exist that are not mapped due to on-going site grading.

Mitigation: It is anticipated the stockpile fill will be removed during site grading. Any uncontrolled fill encountered beneath foundations should be removed and recompacted at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557.

Loose Soils

Loose soils were encountered in some of the borings drilled on site (Reference 1). Loose soils encountered beneath the foundation or floor slabs will require mitigation.

Mitigation: Should loose soils be encountered beneath foundations or floor slabs, mitigation will be necessary. Overexcavation and recompaction at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557 is a suitable mitigation, which is common in the area. An overexcavation depth of 2 to 3 feet is anticipated.

Expansive Soils

Expansive soils were encountered in some of the test borings drilled on-site. (Reference 1). These occurrences are typically sporadic; therefore, none have been indicated on the maps. These clays, if encountered beneath foundations, can cause differential movement in the structure foundation. These occurrences should be identified and dealt with on an individual basis.

Mitigation: Should expansive soils be encountered beneath the foundation, mitigation will be necessary. Mitigation of expansive soils will require special foundation design. Overexcavation and replacement with non-expansive soils at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557 is a suitable mitigation, which is common in the area. Another alternative in areas of highly expansive soils is the use of drilled pier foundation systems. Typical minimum pier depths are on the order of 20 feet or more and require penetration into the bedrock material a minimum of 4 to 6 feet, depending upon building loads. Floor slabs on expansive soils should be expected to experience movement. Overexcavation and replacement has been successful in minimizing slab movements. The use of structural floors should be considered for basement construction on highly expansive clays. Final recommendations should be determined after additional investigation of each building site.

Potentially Seasonal Shallow Groundwater Area

In these areas, we should anticipate the potential for periodically high subsurface moisture conditions and frost heave potential. In these areas, the potential exists for shallow groundwater during high moisture periods.

Mitigation: Foundations must have a minimum 30-inch depth for frost protection. In areas where high subsurface moisture conditions are anticipated periodically, subsurface perimeter drains are recommended to help prevent the intrusion of water into areas below grade. It is anticipated much of these areas would be filled during site grading further raising foundations above the groundwater level. Any grading in these areas should be done to direct surface flow around construction to avoid areas of ponded water. All organic material would be completely removed prior to fill placement. Specific recommendations concerning the affects of groundwater on site grading and construction are included in the Subsurface Soil Investigation (Reference 1).

Further investigation will be necessary to determine the groundwater depth after final grading. The site does not lie within any floodplain zones according to the Preliminary Drainage Report by Tech Contractors, March 2018 (Reference 6) and the FEMA Map No. 08041CO575F, dated March 17, 1997 (Figure 6, Reference 7). Exact locations of floodplain and specific drainage studies are beyond the scope of this report. Finished floor levels must be located a minimum of one foot above floodplain levels.

RELEVANCE OF GEOLOGIC CONDITIONS TO LAND USE PLANNING

As mentioned, the proposed development will be single-family residential. The existing geologic and engineering geologic conditions will impose some constraints on development and construction. The geologic conditions on the site include artificial fill, expansive or loose soils, and potentially seasonal shallow groundwater areas which can be satisfactorily mitigated through proper engineering design and construction practices or avoidance.

The upper granular soils encountered in the borings drilled on the site were encountered at loose, to very dense states. Loose or uncontrolled fill soils, if encountered beneath foundation or floor slabs, will require recompaction. Expansive layers may also be encountered in the soil on this site. Expansive soils, if encountered, will require special foundation design. These soils will not prohibit development.

Fill exists on this site that is associated with on-going site grading. Areas of fill other than those mapped may be encountered. It is anticipated the fill stockpiles would be removed prior to construction. Any uncontrolled fill encountered beneath foundations and floor slabs will require removal and recompaction at a minimum of 95% of its maximum Modified Proctor Dry Density, ASTM D-1557.

Areas of shallow bedrock will be encountered on this site. Shallow bedrock will likely be encountered in those areas mapped as Tda-Dawson Formation, or Soil Types 3, 4, or 5 on Figure 2. Bedrock depths are indicated on Table 2. Difficult excavation should be anticipated in areas of shallow bedrock. Higher allowable bearing capacities will also be expected in areas of shallow bedrock.

Groundwater was encountered at 2.5 to 20.5 feet in the 39 of the 55 test borings. Groundwater depths are indicated on Table 2. Areas of potentially seasonal shallow groundwater have been mapped on this site. (Figure 5) These areas can be avoided by construction or are being regraded. Specific recommendations concerning the effects of groundwater on site grading and construction are included in the Subsurface Soil Investigation (Reference 1). According to the Preliminary Drainage Report by Tech Contractors, March 2018, (Reference 6) the site should not be affected by any delineated 100-year FEMA floodplains.

In summary, the recompacted granular soils will likely provide suitable support for shallow foundations. The geologic conditions encountered on site can be mitigated with proper

engineering and construction practices. Specific recommendations have been made in the Subsurface Soil Investigation (Reference 1).

CLOSURE

It should be pointed out that because of the nature of data obtained by random sampling of such variable nonhomogeneous materials as soil and rock, it is important that we be informed of any differences observed between surface and subsurface conditions encountered in construction and those assumed in the body of this report. Construction and design personnel should be made familiar with the contents of this report. Specific site recommendations have been made in the Subsurface Soil Investigation (Reference 1). Specific construction and foundation recommendations will be provided when investigations are completed for new construction.

This report has been prepared for Tech Contractors for application to the proposed development in accordance with generally accepted geologic, soil and engineering practices. No other warranty expresses or implied is made.

We trust that this report has provided you with all the information that you required. Should you have any questions or require additional information, please do not hesitate to contact us.

Respectfully Submitted,

ENTECH ENGINEERING, INC.

Kristen A. Andrew-Hoeser, P. G.
Engineering Geologist

Reviewed by:

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

KAH/hg

Encl.Entech Job No. 171198
2MSW/ltr/2017/171198sg&ghs-final

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6. Tech Contractors. May, 2018. *Preliminary Drainage Report, Windingwalk Filings 1 and 2 at Meridian Ranch, El Paso County, Colorado.* PCD Project No. PUDSP-18-002.

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TABLES

TABLE 1

SUMMARY OF LABORATORY TEST RESULTS

CLIENT TECH CONTRACTORS
PROJECT WINDINGWALK & STONEBRIDGE
JOB NO. 171198

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	FHA SWELL (PSF)	AASHTO CLASS.	SWELL/ CONSOL (%)	UNIFIED CLASS.	SOIL DESCRIPTION
1A	36	2-3			15.3	NV	NP			A-1-b		SM	FILL, SAND, SILTY
1A	37	5			31.8				240			SC	FILL, SAND, CLAYEY
1	2	10			11.7							SM-SW	SAND, SLIGHTLY SILTY
1	4	2-3			35.5	29	9			A-5		SC	SAND, CLAYEY
1	8	2-3			6.1	NV	NP	<0.01		A-1-b		SM-SW	SAND, SLIGHTLY SILTY
1	13	2-3			38.4	28	15	<0.01		A-6		SC	SAND, CLAYEY
1	15	5			12.6							SM	SAND, SILTY
1	19	5			11.0	NV	NP	0.00		A-1-b		SM-SW	SAND, SLIGHTLY SILTY
1	30	2-3			26.9							SM	SAND, SILTY
1	34	5			13.7							SM	SAND, SILTY
1	35	2-3			28.2	NV	NP	<0.01		A-2-4		SM	SAND, SILTY
1	39	10			17.1			0.01				SM	SAND, SILTY
1	55	2-3			8.7	NV	NP	<0.01		A-1-b		SM-SW	SAND, SLIGHTLY SILTY
2	25	10			51.6	20	10	<0.01		A-4		CL	CLAY, VERY SANDY
2	3	15							1720			CL	CLAY, SANDY
2	28	2-3	22.2	101.2	53.2	30	14	<0.01		A-6	0.0	CL	CLAY, VERY SANDY
3	1	10			38.7	NV	NP	<0.01		A-4		SM	SANDSTONE, SILTY
3	3	20			29.2	36	12			A-2-6		SC	SANDSTONE, CLAYEY
3	5	5			28.7	41	14			A-2-7		SM	SANDSTONE, SILTY
3	7	20			16.9							SM	SANDSTONE, SILTY
3	9	10			27.1	NV	NP	<0.01		A-2-4		SM	SANDSTONE, SILTY
3	10	5			25.2							SM	SANDSTONE, SILTY
3	11	20	14.3	111.8	47.2	32	17	0.00		A-6	2.1	SC	SANDSTONE, VERY CLAYEY
3	12	10			15.1			0.00				SM	SANDSTONE, SILTY
3	14	15			38.2							SC	SANDSTONE, VERY CLAYEY
3	16	2-3			24.4							SM	SANDSTONE, SILTY
3	18	10			28.7							SM	SANDSTONE, SILTY
3	20	10			24.3							SM	SANDSTONE, SILTY
3	21	5			13.2							SM	SANDSTONE, SILTY
3	22	15			18.5							SM	SANDSTONE, SILTY
3	23	15	20.1	108.3	43.5						2.1	SC	SANDSTONE, VERY CLAYEY
3	29	5			15.6	NV	NP	<0.01		A-1-b		SM	SANDSTONE, SILTY
3	31	10			11.8	NV	NP	<0.01		A-1-b		SM-SW	SANDSTONE, SLIGHTLY SILTY
3	32	25			40.4	NV	NP	<0.01		A-4		SM	SANDSTONE, VERY SILTY
3	33	10			19.3							SM	SANDSTONE, SILTY
3	38	15			23.4							SM	SANDSTONE, SILTY

SOIL TYPE	TEST BORING NO.	DEPTH (FT)	WATER (%)	DRY DENSITY (PCF)	PASSING NO. 200 SIEVE (%)	LIQUID LIMIT (%)	PLASTIC INDEX (%)	SULFATE (WT %)	FHA SWELL (PSF)	AASHTO CLASS.	SWELL/ CONSOL (%)	UNIFIED CLASS.	SOIL DESCRIPTION
3	40	2-3			12.0	NV	NP			A-1-b		SM	SANDSTONE, SILTY
3	41	5			22.2							SM	SANDSTONE, SILTY
3	42	20			45.3			<0.01				SM	SANDSTONE, VERY SILTY
3	45	5			8.4	NV	NP	0.00		A-1-b		SM-SW	SANDSTONE, SLIGHTLY SILTY
3	46	2-3			41.5	33	18	<0.01		A-6		SC	SANDSTONE, VERY CLAYEY
3	47	5			15.0				30			SM	SANDSTONE, SILTY
3	48	10			11.3							SM-SW	SANDSTONE, SLIGHTLY SILTY
3	49	15			15.1							SM	SANDSTONE, SILTY
3	50	2-3			27.7							SM	SANDSTONE, SILTY
3	51	5			18.3	NV	NP	0.00		A-1-b		SM	SANDSTONE, SILTY
3	52	10			9.7							SM-SW	SANDSTONE, SLIGHTLY SILTY
3	53	15			20.2							SM	SANDSTONE, SILTY
4	6	10			66.3	21	8	<0.01		A-5		CL	CLAYSTONE, SANDY
4	24	20	10.9	117.2	64.7	29	8	<0.01		A-4	1.7	CL	CLAYSTONE, SANDY
4	26	10			65.2				2060			CL	CLAYSTONE, SANDY
4	43	10			56.5				1970			CL	CLAYSTONE, VERY SANDY
4	44	5			60.3							CL	CLAYSTONE, VERY SANDY
4	54	15			63.3	27	13	0.00		A-6		CL	CLAYSTONE, SANDY
5	2	15			85.4	40	14			A-6		ML	SILTSTONE, SANDY, CLAYEY
5	17	2-3	15.6	111.1	66.5						0.9	ML	SILTSTONE, SANDY, CLAYEY

TABLE 2: Summary of Estimated Cut/Fill, Depth to Bedrock, and Groundwater Depths

Client: Tech Contractors

Project: Windingwalk Filings 1 and 2, and Stonebridge The Enclave Filings 4 and 5

Job No: 171198

Test Boring No.	Estimated Cut/Fill (ft.)	Depths to Bedrock (ft.)[1]	Depth to Groundwater (ft.)[1]
1	+0 - 2	8	2.5
2	+0 - 2	11	10.5
3	+0 - 2	16	12
4	+8 - 10	9*	4
5	+0 - 2	4	6
6	-0 - 2	7	4
7	-0 - 2	1	8.5
8	+0 - 2	11	6
9	+2 - 4	2	11.5
10	+0 - 2	2	9
11	-2 - 4	1	15
12	-0 - 2	1	13
13	-6 - 8	6	>25
14	-10 - 12	2	20.5
15	+0 - 2	6	>20
16	-2 - 4	1	7.5
17	+0 - 2	1	9
18	-0 - 2	5	16
19	-0 - 2	8	6.5
20	+0 - 2	9	>20
21	+0 - 2	2	12.5
22	+2 - 4	2	14
23	+0 - 2	1	7.5
24	-2 - 4	1	11
25	-4 - 6	13	9
26	+0 - 2	4	7.5
27	+2 - 4	7	4
28	+0 - 2	3	11

TABLE 2: Summary of Estimated Cut/Fill, Depth to Bedrock, and Groundwater Depths continued

Client: Tech Contractors

Project: Winding Walk

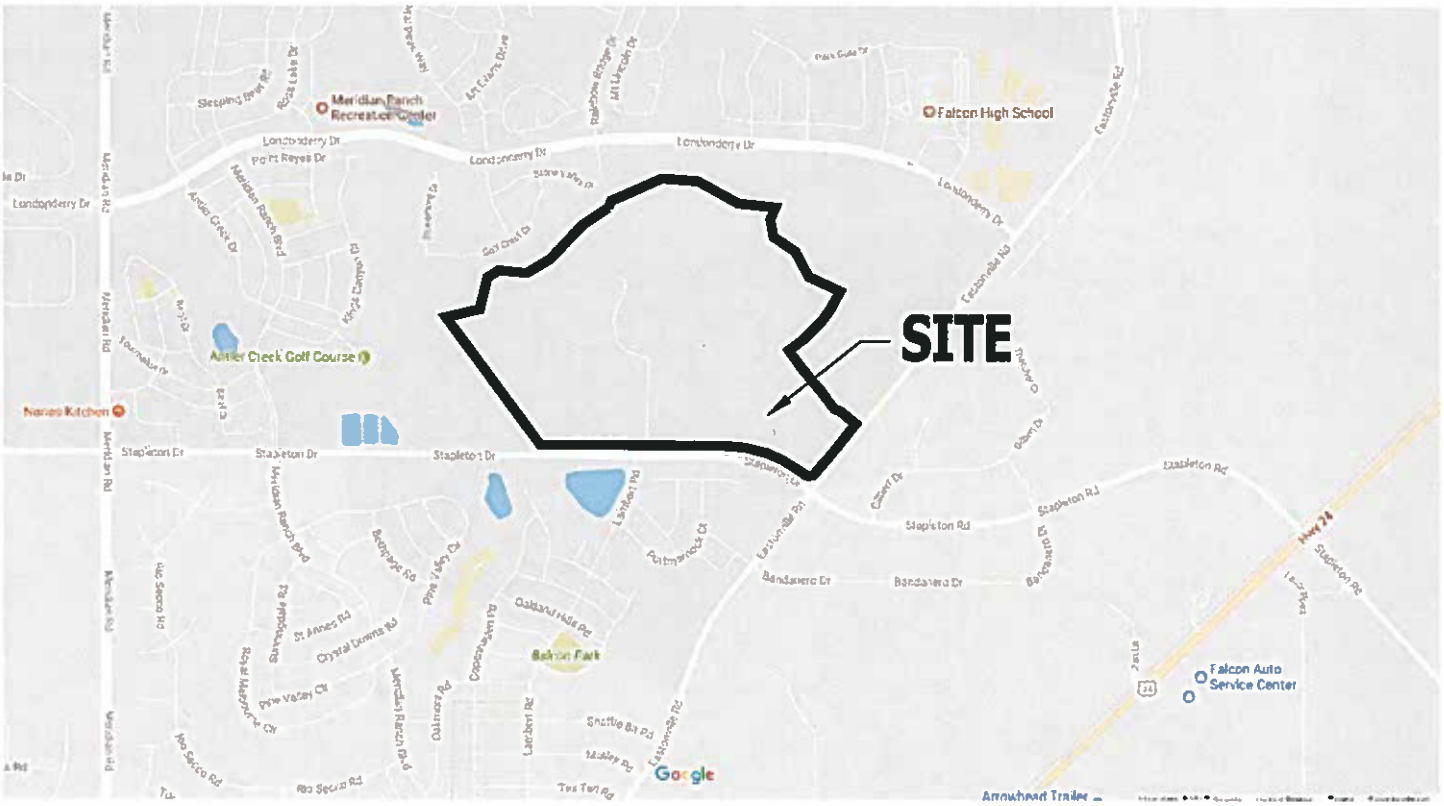
Job No: 171198

Test Boring No.	Estimated Cut/Fill (ft.)	Depths to Bedrock (ft.)[1]	Depth to Groundwater (ft.)[1]
29	+0 - 2	1	>20
30	+10 - 12	3	19
31	- 2 - 4	1	12.5
32	- 6 - 8	7	15.5
33	- 2 - 4	4	>20
34	+0 - 2	6	14.5
35	- 2 - 4	6	15
36	- 0 - 2	>20	17.5
37	- 0 - 2	14	>20
38	- 0 - 2	6	>20
39	- 0 - 2	12	6
40	+2 - 4	1	15
41	+0 - 2	1	15.5
42	+2 - 4	4	18
43	- 4 - 6	2*	>20
44	+2 - 4	1	20
45	+2 - 4	1	18
46	- 4 - 6	1	>20
47	- 2 - 4	4	>20
48	+0 - 2	1	18
49	- 2 - 4	1	>20
50	+2 - 4	1	>20
51	- 2 - 4	1	>20
52	+0 - 2	1	>20
53	- 0 - 2	1	>20
54	- 0 - 2	14	18.5
55	+0 - 2	9	>20

*Weathered Bedrock Depth

FIGURES

N

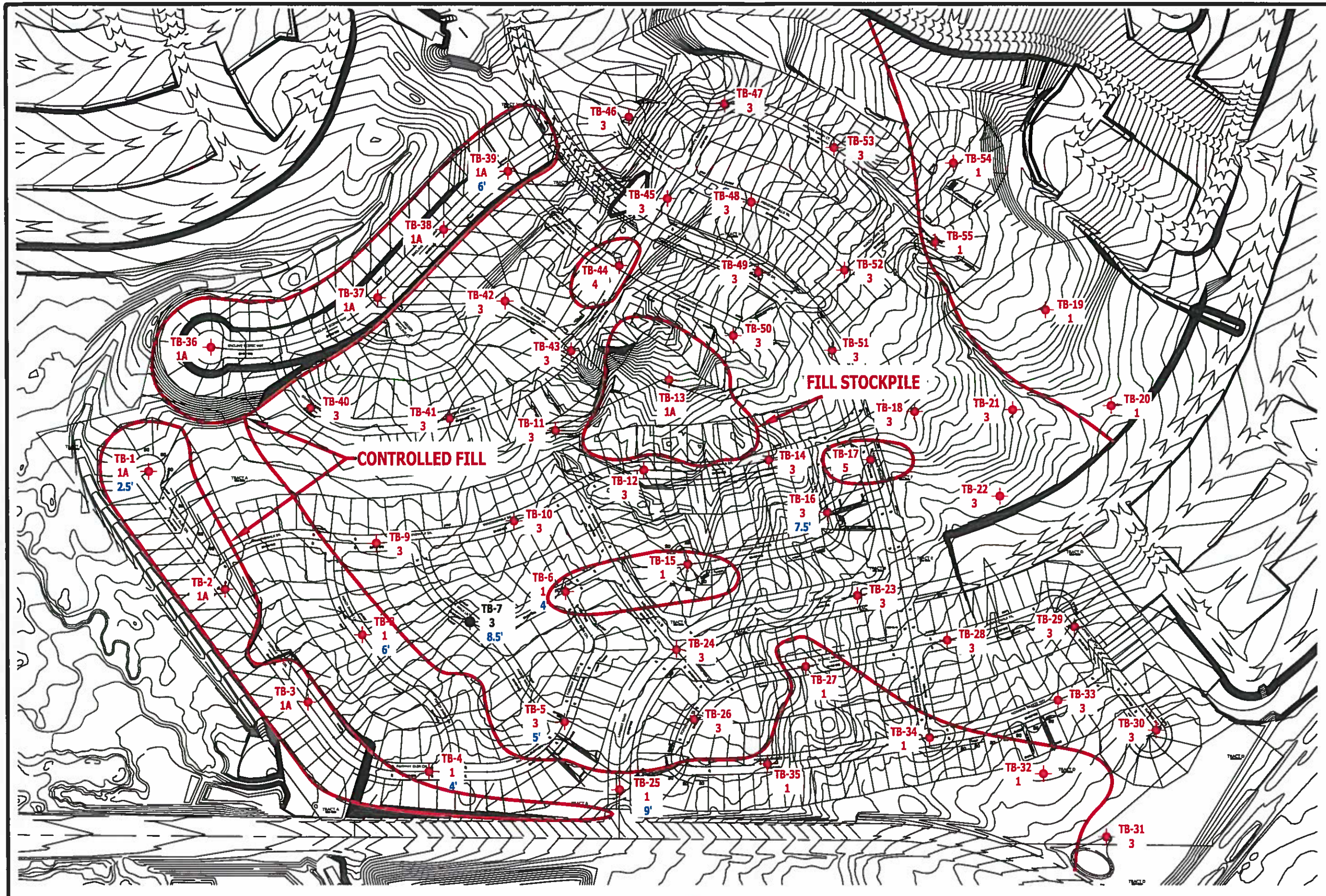


ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907 (719) 531-5599

VICINITY LOCATION MAP
WINDINGWALK FILINGS 1 AND 2, AND
STONEBRIDGE THE ENCLAVE FILINGS 4 AND 5
EL PASO COUNTY, CO
FOR: TECH CONTRACTORS

DRAWN BY:	DATE DRAWN:	DESIGNED BY:	CHECKED:
TLC	12/15/17	KAH	KAH

JOB NO.: 171198
FIG. NO.: 1



TB-2 - APPROXIMATE TEST BORING LOCATION AND NUMBER

1 - UPPER SOIL TYPE ENCOUNTERED IN THE TEST BORING

6' - DEPTH OF SHALLOW GROUNDWATER (AREAS WHERE WATER WILL LIKELY BE ENCOUNTERED AT 6' OR SHALLOWER AFTER GRADING) *TB-7 AND TB-25 ARE IN AREAS WITH POTENTIAL CUTS OF 2 TO 6'

- INDICATES APPROXIMATE DELINEATION BETWEEN SOIL TYPES

REVISION	BY

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

TEST BORING LOCATION MAP WITH SOIL MAP

WINDINGWALK FILINGS 1 AND 2, AND STONEBRIDGE THE ENCLAVE FILINGS 4 AND 5
EL PASO COUNTY, CO.
FOR: TECH CONTRACTORS

DRAWN	LLL
CHECKED	KAH
DATE	1/19/18
SCALE	AS SHOWN
JOB NO.	171198
FIGURE No.	2

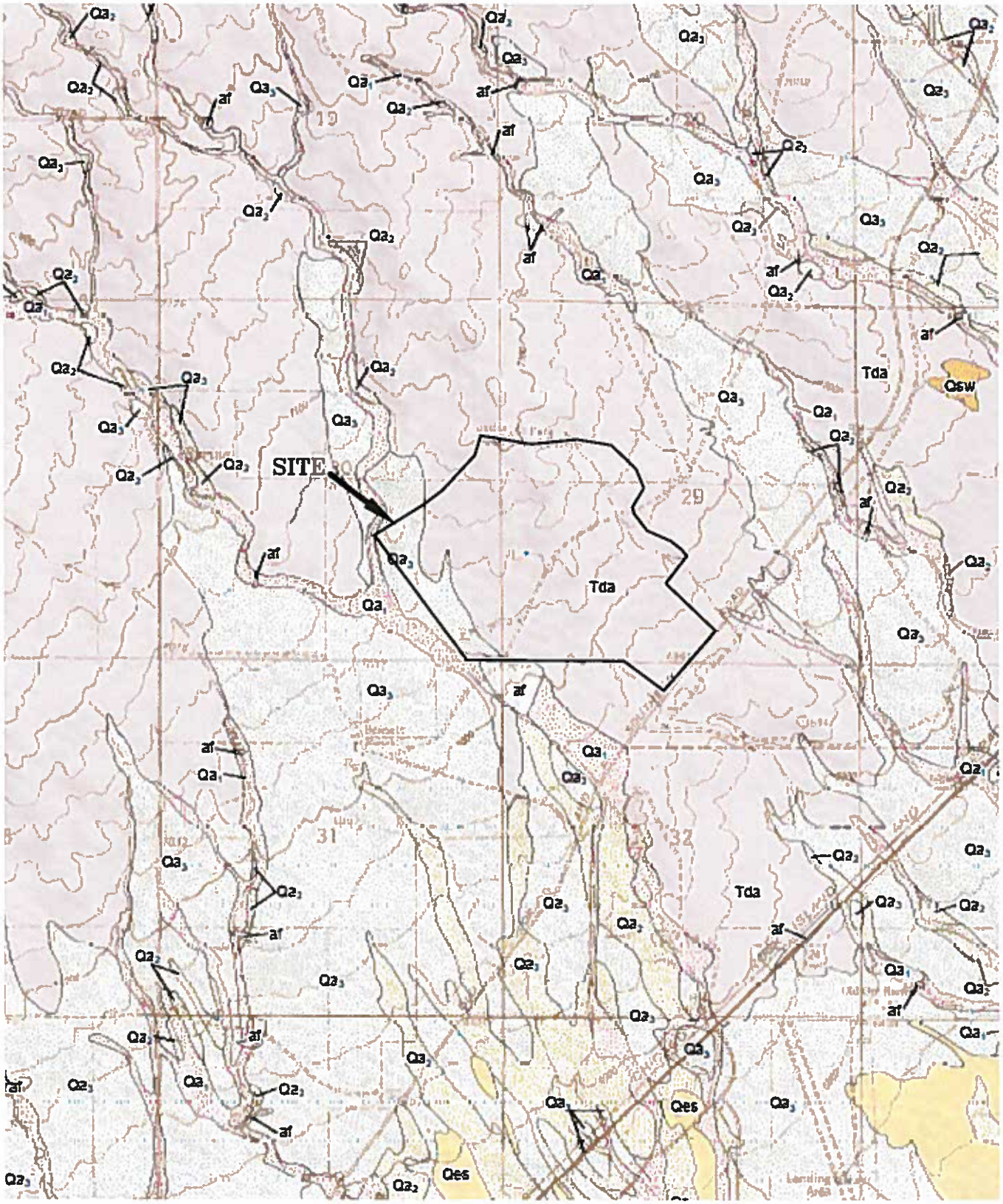
ENTECH
ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907 (719) 531-5599

SOIL SURVEY MAP
WINDING WALK FILINGS 1 AND 2 AND
STONEBRIDGE THE ENCLAVE, FILINGS 4 AND 5
EL PASO COUNTY, CO.
For: TECH CONTRACTORS

DRAWN:	DATE:	CHECKED:	DATE:
KAH	4/18/18		

JOB NO.: 171198

FIG NO.: 3



ENTECH ENGINEERING, INC.
565 ELKTON DRIVE
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FALCON GEOLOGY MAP
WINDING WALK FILINGS 1 AND 2 AND
STONEBRIDGE THE ENCLAVE, FILINGS 4 AND 5
EL PASO COUNTY, CO.
For: TECH CONTRACTORS

DRAWN:	DATE:	CHECKED:	DATE:
KAH	4/18/18		

JOB NO.: 171198

FIG NO.: 4

Qaf - **Artificial Fill Deposits of Holocene Age:** Man-made fill deposits

Qal - **Recent Alluvium of Holocene Age:** Recent water deposited materials

Qa3 - **Alluvium Three of Quaternary Age:** Recent water deposited sands and clays

Tda - **Dawson Formation of Tertiary Age:** Arkosic sandstone with interbedded siltstone and claystone

psw - potentially seasonal shallow groundwater area

N

TB-2 - APPROXIMATE TEST BORING LOCATION AND NUMBER

1 - UPPER SOIL TYPE ENCOUNTERED IN THE TEST BORING

6' - DEPTH OF SHALLOW GROUNDWATER (AREAS WHERE WATER WILL LIKELY BE ENCOUNTERED AT 6' OR SHALLOWER AFTER GRADING) *TB-7 AND TB-25 ARE IN AREAS WITH POTENTIAL CUTS OF 2 TO 6'

- INDICATES POTENTAL SHALLOW GROUNDWATER AREAS

REVISION BY

ENTECH ENGINEERING, INC.
505 ELKTON DRIVE
COLORADO SPRINGS, CO. 80907
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GEOLOGY/ENGINEERING GEOLOGY MAP
WINDINGWALK FILINGS 1 AND 2, AND
STONEBRIDGE THE ENCLAVE FILINGS 4 AND 5
EL PASO COUNTY, CO.
FOR: TECH CONTRACTORS

DRAWN	TLC
CHECKED	KAH
DATE	4/23/18
SCALE	AS SHOWN
JOB NO.	171196
FIGURE No.	5

LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

ZONE A No base flood elevations determined.

ZONE AE Base flood elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE A99 To be protected from 100-year flood by Federal flood protection system under construction; no base elevations determined.

ZONE V Coastal flood with velocity hazard (wave action); no base flood elevations determined.

ZONE VE Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

ZONE X Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

ZONE X Areas determined to be outside 500-year floodplain.

ZONE D Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS

Identified 1983 | Identified 1990 | Otherwise Protected Areas

Coastal barrier areas are normally located within or adjacent to Special Flood Hazard Areas.

Flood Boundary

Floodway Boundary

Zone D Boundary

Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.

513 — Base Flood Elevation Line; Elevation in Feet. See Map Index for Elevation Datum.

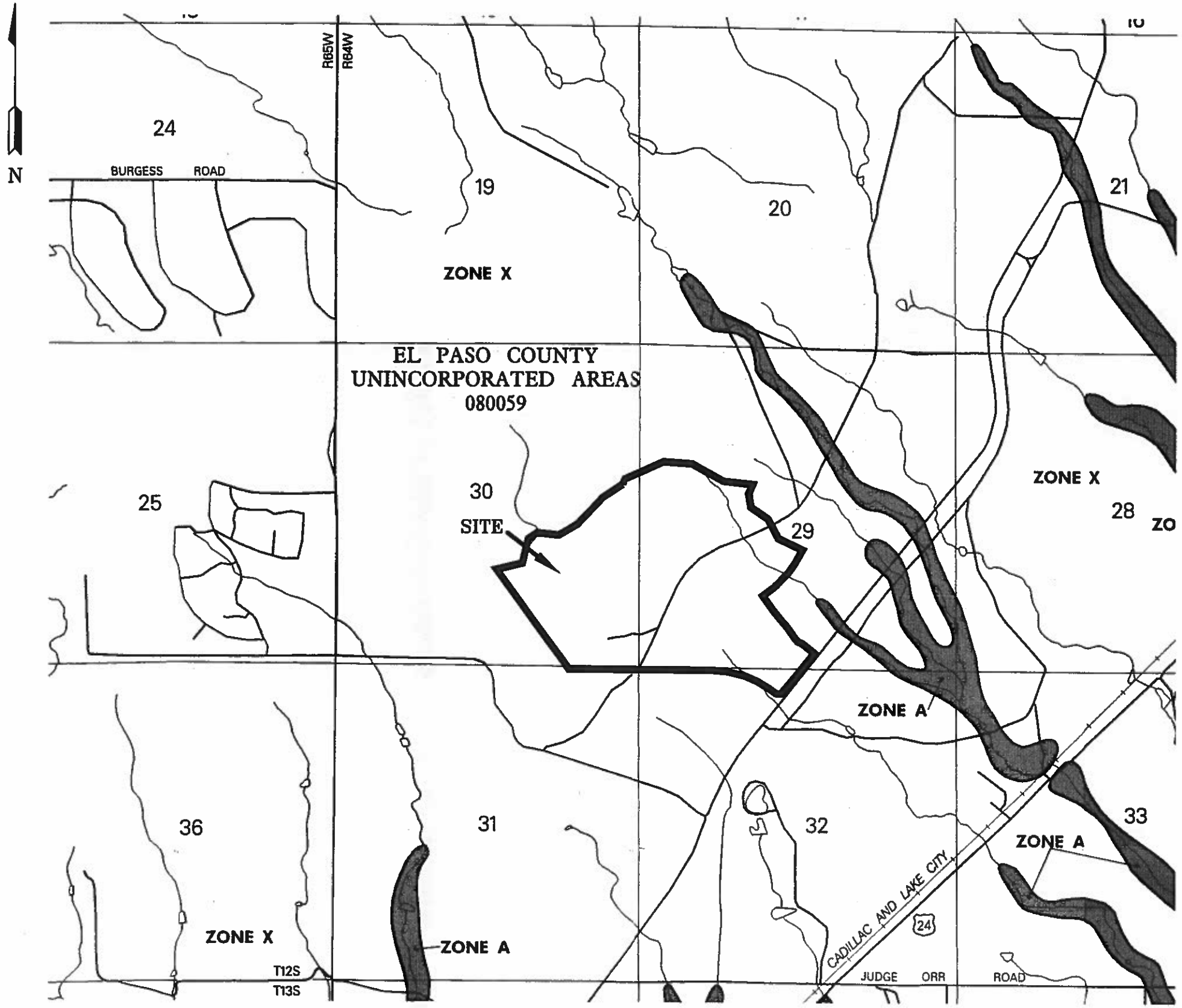
D — D — Cross Section Line

(EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone. See Map Index for Elevation Datum.

RM7 × — Elevation Reference Mark

● M2 — River Mile

97°07'30", 32°22'30" — Horizontal Coordinates Based on North American Datum of 1927 (NAD 27) Projection.



REVISION	BY

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

FLOODPLAIN MAP
WINDING WALK FILINGS 1 AND 2
AND STONEBRIDGE THE ENCLAVE,
FILINGS 4 AND 5
EL PASO COUNTY, CO.

DRAWN	KAH
CHECKED	
DATE	4/18/18
SCALE	AS SHOWN
JOB NO.	171198
FIGURE No.	6

APPENDIX A: Test Boring Logs

TEST BORING NO. 1
DATE DRILLED 8/16/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 2.5', 8/18/17						
FILL 0-3', SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST				24	10.9	1A
SAND, CLAYEY, FINE TO COARSE GRAINED, GREEN BROWN, MEDIUM DENSE, MOIST	5			18	16.4	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED WITH FINE GRAINED LENSES, GREEN BROWN, VERY DENSE, MOIST	10			50/9"	14.1	3
	15			50/10"	15.7	3
	20			50/7"	13.7	3

TEST BORING NO. 2
DATE DRILLED 8/21/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 10.5', 9/2/17						
FILL 0-4', SAND, SILTY, FINE TO COARSE GRAINED, BROWN, MEDIUM DENSE, MOIST				22	8.3	1A
SAND, SLIGHTLY SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST	5			11	8.4	1
	10			19	7.1	1
SILTSTONE, CLAYEY, SANDY, GREEN BROWN, HARD, MOIST	15			50/10"	18.8	5
	20			50/9"	14.1	5

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/9/17

JOB NO.: 171198
FIG NO.: A- 1

TEST BORING NO. 3
DATE DRILLED 8/21/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 12', 92/17						
FILL 0-5', SAND, CLAYEY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST				10	11.6	1A
	5			23	9.8	1A
SAND, SILTY TO SLIGHTLY SILTY, FINE TO COARSE GRAINED, DARK BROWN TO TAN, LOOSE, MOIST						
	10			8	3.5	1
CLAY, SANDY, DARK BROWN, VERY STIFF, MOIST	15			30	18.4	2
SANDSTONE, CLAYEY, FINE GRAINED, GREEN BROWN, VERY DENSE, MOIST						
	20			50/9"	21.3	3

TEST BORING NO. 4
DATE DRILLED 8/21/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 4', 9/2/17						
SAND, CLAYEY, FINE TO MEDIUM GRAINED, GRAY BROWN, MEDIUM DENSE, MOIST				12	23.0	1
	5			23	16.7	1
WEATHERED TO FORMATIONAL SANDSTONE, SILTY, FINE TO COARSE GRAINED, GRAY BROWN, DENSE TO VERY DENSE, MOIST	10			42	9.5	3
	15			50/9"	9.3	3
	20			50/8"	13.7	3

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE: 11/8/17

JOB NO.: 171198
FIG NO.: A- 2

TEST BORING NO. 5
DATE DRILLED 8/21/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 6', 92/17						
SAND, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, MEDIUM DENSE, MOIST				12	7.7	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, GRAY BROWN, VERY DENSE, MOIST	5			50/11"	12.7	3
CLAYSTONE, SANDY TO VERY SANDY, GRAY BROWN, HARD, MOIST	10			50/11"	16.9	4
	15			50/8"	17.4	4
	20			50/9"	13.9	4

TEST BORING NO. 6
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 4', 92/17						
SAND, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, MEDIUM DENSE, MOIST				12	5.3	1
	5			22	7.8	1
CLAYSTONE, SANDY, BROWN TO BLUE GRAY, HARD, MOIST	10			50/5"	14.9	4
	15			50/5"	12.9	4
	20			50/7"	15.8	4

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE: 11/16/17

JOB NO.: 171198
FIG NO.: A- 3

TEST BORING NO. 7
DATE DRILLED 8/21/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 8.5', 92/17						
SAND, SILTY, TAN						1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, GREEN BROWN TO TAN, VERY DENSE, MOIST TO WET				50	4.2	3
	5			50/7"	8.7	3
	10			50/6"	9.1	3
	15			50/7"	8.9	3
	20			50/7"	20.6	3

TEST BORING NO. 8
DATE DRILLED 8/25/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 6', 92/17						
SAND, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO DENSE, MOIST				20	2.1	1
	5			25	10.1	1
	10			40	11.8	1
CLAYSTONE, SANDY, GRAY BROWN, HARD, MOIST						
	15			50/10"	12.8	4
WEATHERED ZONE	20			40	16.4	4

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 4

TEST BORING NO. 9
DATE DRILLED 8/25/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 11.5', 9/2/17						
SAND, SILTY, TAN						1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST	5			50/6"	7.1	3
	10			50/10"	8.8	3
	15			50/7"	9.4	3
CLAYSTONE, SANDY, GRAY BROWN, HARD, MOIST	20			50/8"	15.9	4

TEST BORING NO. 10
DATE DRILLED 8/24/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 9', 9/2/17						
SAND, SILTY, TAN						1
SANDSTONE, SILTY, FINE TO COARSE GRAINED WITH FINE GRAINED LENSES, TAN TO GRAY BROWN, VERY DENSE, MOIST	5			50/10"	7.7	3
	10			50/8"	13.2	3
	15			50/6"	11.0	3
	20			50/7"	9.1	3

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 5

TEST BORING NO. 11
DATE DRILLED 8/24/2017
Job # 171198

REMARKS

WATER @ 15', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50 / 10"	5.4	3
5			50 / 8"	10.0	3
10			50 / 8"	7.8	3
15			50 / 7"	11.2	3
20			50 / 7"	11.4	3
25			50 / 11"	19.4	3

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

SANDSTONE, CLAYEY TO VERY CLAYEY, FINE GRAINED, TAN, VERY DENSE, MOIST

TEST BORING NO. 12
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 13', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50	9.4	3
5			50 / 7"	6.6	3
10			50 / 7"	8.2	3
15			50 / 6"	9.7	3
20			50 / 7"	10.1	3

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

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE: 11/8/17

JOB NO.: 171198
FIG NO.: A- 6

TEST BORING NO. 13
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

DRY TO 25', 8/29/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
			5	11.6	1A	FILL 0-6', SAND, CLAYEY TO VERY CLAYEY, FINE TO COARSE GRAINED, GREEN BROWN, LOOSE TO MEDIUM DENSE, MOIST
5			18	15.1	1A	SANDSTONE, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, VERY DENSE, MOIST
10			50/7"	7.0	3	
15			50/6"	7.3	3	
20			50/6"	9.6	3	SANDSTONE, SILTY, FINE GRAINED, TAN, VERY DENSE, MOIST
25			50/6"	9.4	3	

TEST BORING NO. 14
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 20.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
					1	SAND, SILTY, TAN
5			50/9"	7.2	3	SANDSTONE, CLAYEY TO VERY CLAYEY WITH SILTY LENSES, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST
10			50/8"	10.3	3	
15			50/6"	8.5	3	
20			50/8"	10.9	3	
25			50/9"	13.3	4	CLAYSTONE, SANDY, BLUE GRAY, HARD, MOIST
30			50/6"	12.8	3	SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 7

TEST BORING NO. 15
DATE DRILLED 8/21/2017
Job # 171198

REMARKS

DRY TO 20', 8/21/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST		27	5.9	1
5			24	8.6	1
	SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST				
10			50/6"	7.8	3
15			50/8"	12.0	3
20			50/7"	10.0	3

TEST BORING NO. 16
DATE DRILLED 8/25/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 7.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
	SAND, SILTY, TAN				1
	SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST		50	6.0	3
5			50/7"	5.4	3
10			50/5"	9.4	3
15			50/8"	10.7	3
20	CLAYSTONE, VERY SANDY, BLUE GRAY, HARD, MOIST		50/6"	15.2	4

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TEST BORING LOG

DRAWN:	DATE:	CHECKED: L	DATE: 11/8/17

JOB NO.: 171198
FIG NO.: A- 8

TEST BORING NO. 17
DATE DRILLED 8/30/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 9', 9/2/17						
SAND, SILTY, TAN						1
SILTSTONE, CLAYEY, SANDY, TAN, MOIST				*	14.1	5
	5			50 6"	9.3	5
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST TO WET						
	10			50 7"	7.7	3
	15			50 5"	10.9	3
	20			50 5"	13.9	3

TEST BORING NO. 18
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 16', 9/2/17						
SAND, CLAYEY, FINE TO COARSE GRAINED, BROWN, MEDIUM DENSE, MOIST						
	5			12	17.1	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST						
	10			50 8"	11.1	3
SANDSTONE, VERY CLAYEY, FINE GRAINED, TAN, VERY DENSE, MOIST						
	15			50 11"	16.0	3
SANDSTONE, SILTY, FINE TO COARSE GRAINED, BROWN, VERY DENSE, MOIST						
	20			50 5"	9.3	3
CLAYSTONE, SANDY, GREEN BROWN, HARD, MOIST						
	25			50 7"	15.3	4

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 9

TEST BORING NO. 19
DATE DRILLED 8/30/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 6.5', 9/2/17						
SAND, SLIGHTLY SILTY, FINE TO COASE GRAINED, TAN, MEDIUM DENSE, MOIST	5			22	8.2	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST	10			50/9"	7.7	3
	15			50/3"	5.7	3
SANDSTONE, SILTY, FINE GRAINED, TAN, VERY DENSE, MOIST	20			50/7"	9.4	3

TEST BORING NO. 20
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 9/2/17						
SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO DENSE, MOIST				27	3.1	1
	5			30	3.9	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST	10			50/6"	8.6	3
	15			50/6"	7.3	3
	20			50/6"	6.3	3

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/6/17

JOB NO.: 171198
FIG NO.: A- 10

TEST BORING NO. 21
DATE DRILLED 8/30/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 12.5', 9/2/17						
SAND, SILTY, TAN						1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST	5			50	9.6	3
	10			50/9"	7.2	3
	15			50/7"	8.7	3
	20			50/6"	11.5	3

TEST BORING NO. 22
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 14', 9/2/17						
SAND, SILTY, TAN						1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST TO WET	5			50/9"	9.1	3
	10			50/6"	8.4	3
	15			50/6"	8.5	3
	20			50/9"	14.9	3

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 11

TEST BORING NO. 23
DATE DRILLED 8/30/2017
Job # 171198

REMARKS

WATER @ 7.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
					1	SAND, SILTY, TAN
			*	8.5	3	SANDSTONE, CLAYEY TO VERY CLAYEY, FINE GRAINED, GREEN BROWN, VERY DENSE, MOIST
5			50 7"	8.2	3	
10			50 2"		3	
15			50 6"	17.3	3	
20			50 6"	12.4	3	CLAYSTONE, SANDY, BLUE GRAY, HARD, MOIST

TEST BORING NO. 24
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 11', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
					1	SAND, SILTY, TAN
			50 9"	8.1	3	SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST
5			50 6"	9.2	3	
10			50 8"	9.3	3	
15			50 6"	8.4	3	
20			50 6"	13.5	4	
25			50 4"	11.7	3	SANDSTONE, CLAYEY, FINE TO COARSE GRAINED, BLUE GRAY, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 12

TEST BORING NO. 25
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

WATER @ 9', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	Description
			25	14.5	1	SAND, SILTY, CLAYEY, FINE TO MEDIUM GRAINED, TAN, MEDIUM DENSE TO VERY DENSE, MOIST
5			50/9"	14.3	1	
10			32	10.7	2	CLAY, VERY SANDY, TAN, VERY STIFF, MOIST
15			50/5"	9.2	3	SANDSTONE, SILTY, FINE TO COARSE GRAINED, GRAY BROWN, VERY DENSE, MOIST
20			50/6"	13.5	3	
25			50/6"	15.4	3	
30			50/5"	12.8	3	

TEST BORING NO. 26
DATE DRILLED 8/21/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 7.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	Description
			22	4.5	1	SAND, SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST
5			50/7"	6.7	3	SANDSTONE, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, VERY DENSE, MOIST
10			50	15.3	4	CLAYSTONE, SANDY, DARK BROWN, HARD, MOIST
15			50/5"	11.0	3	SANDSTONE, CLAYEY, FINE GRAINED, GRAY BROWN, VERY DENSE, MOIST TO WET
20			50/4"	18.5	3	

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 13

TEST BORING NO. 27
DATE DRILLED 8/21/2017
Job # 171198

REMARKS

WATER @ 4', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			14	10.5	1
			10	19.5	2
5					
			50/6"	14.9	3
10					
			50/5"	17.6	3
15					
			50/5"	12.5	3
20					

SAND, CLAYEY, FINE TO COARSE GRAINED, GREEN BROWN, MEDIUM DENSE, MOIST

CLAY, SANDY, BROWN, FIRM, MOIST

SANDSTONE, CLAYEY, FINE TO COARSE GRAINED, GRAY BROWN, VERY DENSE, MOIST

TEST BORING NO. 28
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 11', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			21	17.8	2
5			50/8"	6.6	3
10			50/8"	8.2	3
15			50/10"	12.0	3
20			50/5"	8.5	3

CLAY, SANDY, TAN, STIFF, MOIST

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

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 14

TEST BORING NO. 29
DATE DRILLED 8/30/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 19.5', 9/2/17						
SAND, SILTY, TAN						1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, VERY DENSE, MOIST				*	6.9	3
	5			50 7"	10.6	3
	10			50 7"	8.6	3
	15			50 7"	8.8	3
* - BULK SAMPLE TAKEN	20			50 6"	8.3	3

TEST BORING NO. 30
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 19', 9/2/17						
SAND, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, MOIST				*	8.7	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, VERY DENSE, MOIST	5			50 10"	13.9	3
CLAYEY LENSES	10			50	15.4	3
	15			50 6"	5.9	3
* - BULK SAMPLE TAKEN	20			50 7"	9.8	3

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE: 11/8/17

JOB NO.: 171198
FIG NO.: A- 15

TEST BORING NO. 31
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

WATER @ 12.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50	4.8	3
5			50 7"	4.8	3
10			50 11"	10.6	3
15			50 10"	20.5	3
20			50 7"	14.6	3
25			50 6"	16.6	3

SAND, SILTY, TAN
SANDSTONE, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST TO WET

TEST BORING NO. 32
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 15.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			15	5.7	1
5			33	9.3	1
10			50 7"	11.7	3
15			50 9"	11.5	3
20			50 8"	17.3	3
25			50 6"	14.9	3
30			50 4"	19.2	3

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

SANDSTONE, SILTY TO VERY SILTY, FINE TO MEDIUM GRAINED, TAN, VERY DENSE, MOIST TO WET

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 16

TEST BORING NO. 33
DATE DRILLED 8/30/2017
Job # 171198

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 19.5', 9/2/17						
SAND, CLAYEY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE, MOIST				19	9.9	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST	5			50	8.9	3
	10			50/9"	8.8	3
	15			50/6"	6.2	3
	20			50/6"	7.3	3

TEST BORING NO. 34
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
WATER @ 14.5', 9/2/17						
SAND, SILTY, FINE GRAINED WITH COARSE GRAINED LENSES, TAN, MEDIUM DENSE, MOIST				*	8.8	1
	5			17	11.2	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST	10			50/8"	10.6	3
	15			50/7"	9.1	3
* - BULK SAMPLE TAKEN						
SANDSTONE, CLAYEY, FINE GRAINED, GREEN BROWN, VERY DENSE, MOIST	20			50/7"	11.9	3

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 17

TEST BORING NO. 35
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

WATER @ 15', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			15	8.7	1
			38	16.9	1
5					
			50 8"	9.3	3
10					
			50 8"	9.2	3
15					
			50 5"	9.1	3
20					
			50 9"	14.3	3
25					

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

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST TO WET

TEST BORING NO. 36
DATE DRILLED 8/16/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 17.5', 8/16/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			18	11.9	1A
5			19	8.4	1A
10			23	9.4	1A
15			22	8.5	1
20			24	9.9	1

FILL 0-14', SAND, SILTY, FINE TO COARSE GRAINED, BROWN, MEDIUM DENSE, MOIST

SAND, SILTY, FINE TO COARSE GRAINED, DARK BROWN TO GREEN BROWN, MEDIUM DENSE, MOIST TO WET

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/6/17

JOB NO.: 171198
FIG NO.: A- 18

TEST BORING NO. 37
DATE DRILLED 8/16/2017
Job # 171198

REMARKS

DRY TO 19', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			22	8.3	1A
5			28	10.7	1A
10			16	11.6	1
15			50/4"	12.0	3
20			50/4"	5.8	3

FILL 0-8', SAND, SILTY TO CLAYEY, FINE TO COARSE GRAINED, BROWN, MEDIUM DENSE, MOIST

SAND, SILTY, FINE TO COARSE GRAINED, BROWN, MEDIUM DENSE, MOIST

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

TEST BORING NO. 38
DATE DRILLED 8/16/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

DRY TO 19.5', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			34	6.3	1A
5			16	9.0	1A
10			50/5"	8.4	3
15			50/5"	9.8	3
20			50/4"	14.8	3

FILL 0-6', SAND, SILTY, FINE TO COARSE GRAINED, BROWN, DENSE TO MEDIUM DENSE, MOIST

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST TO WET

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		L	11/8/17

JOB NO.: 171198
FIG NO.: A- 19

TEST BORING NO. 39
DATE DRILLED 8/16/2017
Job # 171198

REMARKS

WATER @ 6', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
						FILL 0-7', SAND, CLAYEY TO SILTY, FINE TO COARSE GRAINED, BROWN, MEDIUM DENSE, MOIST
			21	10.8	1A	
5			15	10.2	1A	SAND, SILTY, FINE TO COARSE GRAINED, DARK BROWN, MEDIUM DENSE, MOIST
10			20	8.5	1	SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST
15			50/3"	7.1	3	
20			50/5"	14.8	3	SANDSTONE, SILTY, FINE GRAINED, TAN, VERY DENSE, MOIST

TEST BORING NO. 40
DATE DRILLED 8/16/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 15', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type	
					1	SAND, SILTY, TAN
			50/10"	6.2	3	SANDSTONE, SILTY, FINE TO COARSE GRAINED, BROWN TO GRAY BROWN, VERY DENSE, MOIST
5			50/10"	7.1	3	
10			50/7"	9.1	3	
15			50/6"	9.4	3	
20			50/6"	10.0	3	

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:

JOB NO.: 171198
FIG NO.: A- 20

TEST BORING NO. 41
DATE DRILLED 8/16/2017
Job # 171198

REMARKS

WATER @ 15.5', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50/9"	6.0	3
5			50/7"	8.1	3
10			50/7"	10.5	3
15			50/6"	8.5	3
20			50/8"	13.9	3

SAND, SILTY, TAN
SANDSTONE, SILTY, FINE TO COARSE GRAINED, BROWN, VERY DENSE, MOIST TO WET

TEST BORING NO. 42
DATE DRILLED 8/16/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 18', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			26	9.7	1
5			50	8.9	3
10			50/7"	9.1	3
15			50/7"	12.7	3
20			50/7"	8.8	3

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

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

SANDSTONE, VERY SILTY, FINE GRAINED, TAN, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
		A	11/8/17

JOB NO.: 171198
FIG NO.: A- 21

TEST BORING NO. 43
DATE DRILLED 8/16/2017
Job # 171198

REMARKS

DRY TO 18.5', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			37	8.8	3
5			50/7"	7.8	3
10			50/7"	15.3	4
15			50/6"	6.3	3
20			50/6"	8.4	3

SAND, SILTY, TAN

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

CLAYSTONE, VERY SANDY, GREEN BROWN, HARD, MOIST

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST

TEST BORING NO. 44
DATE DRILLED 8/16/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 20', 8/18/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50/9"	16.1	4
5			50/8"	10.0	4
10			50/5"	7.0	3
15			50/6"	8.4	3
20			50/6"	12.5	3

SAND, SILTY, TAN

CLAYSTONE, VERY SANDY, BLUE GRAY, HARD, MOIST

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO: 171198
FIG NO: A- 22

TEST BORING NO. 45
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

WATER @ 18', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50/10"	6.6	3
5			50/9"	5.7	3
10			50/7"	8.0	3
15			50/6"	12.2	4
20			50/9"	7.5	3

SAND, SILTY, TAN

SANDSTONE, SILTY TO SLIGHTLY SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST

CLAYSTONE, SANDY, GREEN BROWN, HARD, MOIST

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

TEST BORING NO. 46
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

DRY TO 19', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			*	9.9	3
5			50/6"	11.9	3
10			50/4"	7.4	3
15			50/6"	7.9	3
20			50/4"	9.7	3

SAND, SILTY, TAN

SANDSTONE, VERY CLAYEY, FINE GRAINED, BROWN, VERY DENSE, MOIST

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

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 23

TEST BORING NO. 47
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

DRY TO 19', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
			28	5.3	1
			50/8"	10.6	3
5					
			50/7"	5.1	3
10					
			50/5"	4.6	3
15					
			50/6"	7.7	3
20					

SAND, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, MEDIUM DENSE, MOIST

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST

TEST BORING NO. 48
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 18', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50/10"	6.7	3
5			50/6"	7.1	3
10			50/6"	6.2	3
15			50/6"	7.0	3
20			50/6"	9.0	3

SAND, SILTY, TAN SANDSTONE, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 24

TEST BORING NO. 49
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

DRY TO 20', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50/11"	7.8	3
5			50/10"	8.2	3
10			50/5"	7.1	3
15			50/8"	7.6	3
20			50/7"	12.2	3

SAND, SILTY, TAN
SANDSTONE, SILTY, FINE TO COARSE GRAINED WITH FINE GRAINED LENSES, TAN, VERY DENSE, MOIST

TEST BORING NO. 50
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

DRY TO 20', 8/29/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50/11"	4.8	3
5			50/10"	8.4	3
10			50/6"	5.2	3
15			50/6"	8.6	3
20			50/7"	8.8	3

SAND, SILTY, TAN
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/8/17

JOB NO.: 171198
FIG NO.: A- 25

TEST BORING NO. 51
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

DRY TO 18.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			50	4.6	3
5			50/9"	6.2	3
10			50/7"	5.6	3
15			50/7"	8.5	3
20			50/4"	7.6	3

SAND, SILTY, TAN
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST

TEST BORING NO. 52
DATE DRILLED 8/29/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

DRY TO 20', 8/29/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			*	10.1	3
5			50/7"	5.2	3
10			50/5"	5.2	3
15			50/6"	5.5	3
20			50/6"	9.5	3

SAND, SILTY, TAN
SANDSTONE, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN TO GREEN BROWN, VERY DENSE, MOIST

* - BULK SAMPLE TAKEN

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE: 11/8/17

JOB NO.: 171198
FIG NO.: A- 26

TEST BORING NO. 53
DATE DRILLED 8/29/2017
Job # 171198

REMARKS

DRY TO 19.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
					1
			*	20.9	3
5			50/6"	10.0	3
10			50/6"	12.3	3
15			50/7"	7.3	3
20			50/6"	7.0	3

SAND, SILTY, TAN

SANDSTONE, SILTY, FINE GRAINED, TAN, VERY DENSE, MOIST

SANDSTONE, SILTY, FINE TO COARSE GRAINED, GREEN BROWN, VERY DENSE, MOIST

* - BULK SAMPLE TAKEN

TEST BORING NO. 54
DATE DRILLED 8/30/2017
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS

WATER @ 18.5', 9/2/17

Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
5			26	4.3	1
10			43	9.4	1
15			50	11.4	4
20			50/7"	8.3	3

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

CLAYSTONE, SANDY, TAN, HARD, MOIST

SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST

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TEST BORING LOG

DRAWN:	DATE:	CHECKED:	DATE:
			11/6/17

JOB NO.: 171198
FIG NO.: A- 27

TEST BORING NO. 55
DATE DRILLED 8/30/2017
Job # 171198

TEST BORING NO.
DATE DRILLED
CLIENT TECH CONTRACTORS
LOCATION WINDINGWALK & STONEBRIDGE

REMARKS	Depth (ft)	Symbol	Samples	Blows per foot	Watercontent %	Soil Type
DRY TO 20', 9/2/17						
SAND, SLIGHTLY SILTY TO SILTY, FINE TO COARSE GRAINED, TAN, MEDIUM DENSE TO DENSE, MOIST				12	2.7	1
	5			40	6.9	1
SANDSTONE, SILTY, FINE TO COARSE GRAINED, TAN, VERY DENSE, MOIST	10			50/8'	8.4	3
	15			50/9"	8.8	3
	20			50/7"	7.0	3

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:
			11/3/17

JOB NO.: 171198
FIG NO.: A- 28

APPENDIX B: Soil Survey Descriptions

El Paso County Area, Colorado

19—Columbine gravelly sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 367p
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 50 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Columbine and similar soils: 85 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Columbine

Setting

Landform: Fan terraces, fans, flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium

Typical profile

A - 0 to 14 inches: gravelly sandy loam
C - 14 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.5 inches)

Interpretive groups

Land capability classification (irrigated): 4e
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Ecological site: Gravelly Foothill (R049BY214CO)
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls

Percent of map unit:
Landform: Swales

Hydric soil rating: Yes

Other soils

Percent of map unit:
Hydric soil rating: No

Pleasant

Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 15, Oct 10, 2017

El Paso County Area, Colorado

83—Stapleton sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 369z
Elevation: 6,500 to 7,300 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 46 to 48 degrees F
Frost-free period: 125 to 145 days
Farmland classification: Not prime farmland

Map Unit Composition

Stapleton and similar soils: 80 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stapleton

Setting

Landform: Hills
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Sandy alluvium derived from arkose

Typical profile

A - 0 to 11 inches: sandy loam
Bw - 11 to 17 inches: gravelly sandy loam
C - 17 to 60 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Ecological site: Gravelly Foothill (R049BY214CO)
Hydric soil rating: No

Minor Components

Fluvaquentic haplaquolls
Percent of map unit:
Landform: Swales
Hydric soil rating: Yes

Other soils
Percent of map unit:
Hydric soil rating: No

Pleasant
Percent of map unit:
Landform: Depressions
Hydric soil rating: Yes

Data Source Information

Soil Survey Area: El Paso County Area, Colorado
Survey Area Data: Version 15, Oct 10, 2017