Exhibit C

MPEG MILLER PACIFIC ENGINEERING GROUP

July 7, 2016
File: 2298.001altr.doc

Mr. Matt Taylor
PO Box 1480
Sebastopol, California 95473

Re: New Vineyard Development
1300 Mt. Veeder Road (APN 034-230-029)
Napa, California

Introduction

This letter summarizes the results of our Phase 1 Geotechnical Investigation for the planned new vineyard development on your property at 1300 Mt. Veeder Road in rural northwestern Napa, California. A Site Location Map is presented on Figure 1. Our work has been performed in accordance with our Agreement for Professional Engineering Services dated April 28, 2016. The purpose of our services is to evaluate site geologic conditions and provide geotechnical recommendations and criteria for use in project design and construction.

The scope of our Phase 1 services is outlined in our proposal letter dated March 11, 2016, and includes review of available regional geologic mapping and geotechnical background data, subsurface exploration with one day of exploratory test pits, laboratory testing of recovered samples, geologic hazards evaluation, and development of recommendations and criteria for site grading, drainage, and other geotechnical items. Issuance of this letter completes our Phase 1 scope of services. Future phases of work could include supplemental consultation, geotechnical plan review, and/or observation and testing during construction.

Project Description

Based on discussions with you and the project Civil Engineer, Mr. Cort Munselle of Munselle Civil Engineering, we understand that the project generally includes development of 4 new vineyard blocks within an approximately 115-acre parcel sited on a prominent northwest-trending ridgeline in the hills northwest of downtown Napa. Vineyard development will occur on a total of approximately 24.5-acres, with individual blocks ranging in size from approximately 0.5- to about 15.5-acres. The proposed development will generally require minor to moderate grading, including cuts and fills up to a few feet thick, to better “blend” site grades and accommodate vineyard avenues and other features. No new structures or terraces are planned at this time, and it is understood that new fill slopes may be considered where the cost of the fill slopes may be offset by the additional plantable acreage. An overall site plan showing the locations of the proposed vineyard blocks is presented on Figure 2, more detailed plans of each individual block are shown on Figures 3 and 4.

Regional Geology

Napa County lies within the Coast Ranges geomorphic province of California, a region characterized by active seismicity, steep, young topography, and abundant landsliding and erosion owing partly to its relatively high annual rainfall. The regional basement rock consists of sedimentary, igneous, and metamorphic rock of the Jurassic-Cretaceous age (65-190 million years ago) Franciscan Complex and marine sedimentary strata of the Great Valley Sequence, which is of similar age. Within central and northern California, the Franciscan and Great Valley rocks are locally overlain by a variety of late Cretaceous and Tertiary-age sedimentary and volcanic rocks which have been deformed by episodes of folding and faulting. The youngest geologic units in the region are Quaternary-age (last 1.8 million years) sedimentary deposits. These unconsolidated deposits partially fill many of the valleys of the region.

The project site lies in the Mayacamas Mountains, along the crest and western flank of a northwest-trending ridgeline which separates Mt. Veeder Road and Pickle Canyon to the west from Dry Creek Road and Napa Valley to the east. Regional geologic mapping indicates the site is underlain by sedimentary rocks, including sandstone, pebble conglomerate, siltstone, and shale, of the Jurassic-Cretaceous age Great Valley Sequence. Large landslides are shown underlying the westernmost portions of the parcel, while a slightly smaller slide is shown immediately downslope (east) of and adjacent to the eastern property line. Note that no vineyard development is currently planned within the mapped slide areas, and a "natural" condition is expected to remain. A regional geologic map is shown on Figure 3.

Site Reconnaissance

We performed a site reconnaissance on June 14, 2016 for observation of existing conditions and mapping of site geology. The project site is located about 6-miles northwest of downtown Napa on a prominent northwest-trending ridgeline which separates Dry Creek Road and the Napa Valley to the east from Mt. Veeder Road and Pickle Canyon to the west. The site is generally bounded to the west by Mt. Veeder Road and to the north, south, and east by vineyard/agricultural and widely-spaced single-family residential development typical of rural Napa County. The project site generally consists of steep west-facing slopes and broader, more gently sloping ridgetop areas with locally undulatory or "hummocky" topography.

As shown on Figures 2 and 3, Blocks 1 and 2 are located along the crest of the ridge, with surface elevations ranging from about +994-feet at the crest of Block 1 to about +870-feet in the lowermost portions of Block 2. Block 1 generally consists of a southeast-facing slope inclined at about 5:1 (horizontal:vertical). Block 2 generally consists of moderately-sloping terrain, with maximum slope inclinations on the order of about 4:1 (H:V).

As shown on Figures 2 and 4, Block 3 is located southwest of Blocks 1 and 2, and generally consists of a broad, relatively level area bounded to the south and west by existing graded access roads, and to the north and east by a series of apparent cut/fill pads or terraces. Elevations range between about +720- and +735-feet. Northeast-facing fill slopes along the northeast edge of the block are inclined at about 1:1 and range to about 4- or 5-feet high. These low but steep fill slopes appear many years old and are performing relatively well with no significant erosion or instability observed.

Block 4 (as shown on Figures 2 and 4) generally consists of a steeply-sloping "bowl"-shaped depression just east of the main driveway and south of the existing residence. Elevations range from about +730 in the northern part of the block to about +590-feet in the lower reaches, with slopes typically inclined between about 5:1 and 2:1. The central part of the block exhibits distinctly "hummocky" topography and well-developed, deeply-incised erosion gullies commonly associated with historic landsliding. The northern, southern, and eastern perimeter areas of the block generally consist of erosion-resistant ridgeline areas.

In all portions of the site, surface soils typically consist of medium-stiff sandy and silty clays. No rock outcrops were observed within any of the proposed vineyard development areas during our reconnaissance. However, we did observe outcrops of steeply-dipping interbedded shale and fine-grained sandstone of the Great Valley Sequence in cut slopes along the upslope (north) side of dirt road which provides access from the main driveway to the western part of Block 2.

Subsurface Exploration and Laboratory Testing

Subsurface conditions were explored at the site on June 14, 2016 with 12 test pits excavated at the approximate locations shown on Figures 3 and 4. Test pits were excavated to maximum depths between about 3- and 10-feet with a track-mounted Ingersoll-Rand Bobcat 337 mini-excavator equipped with an 18-inch bucket and “rock” teeth. Soil and rock materials encountered were logged by our Geologist, and samples collected at select locations for laboratory testing. Brief discussions of the terms and methodology used in classifying earth materials are shown on the Soil and Rock Classification Charts, Figures A-1 and A-2, respectively. Exploratory test pits logs are shown on Figures A-3 through A-14.

Disturbed samples of soil and rock materials were collected from select test pits, and laboratory testing included determination of in-situ moisture content and plasticity index in general accordance with applicable ASTM standards. Moisture content test results are presented on the test pits logs, while plasticity index results are shown on Figure A-15. The subsurface exploration and laboratory testing program is discussed in further detail in Appendix A.

Subsurface Conditions

Subsurface conditions throughout the project site generally consist of 1- to 5-feet of high-plasticity clayey colluvium over mudstone and shale bedrock of the Great Valley Sequence. As shown on Figure 4, portions of Block 4 are underlain by older (dormant) and more recent (active) landslides, with slide debris ranging up to a maximum of about 10-feet thick in Test Pit 11. Shale and mudstone bedrock underlying the site ranges from highly sheared and completely weathered to moderately hard and slightly weathered, although relatively “easy” excavation was noted within shallow bedrock at all test pits.

Groundwater was not encountered in any of our test pits. However, since pits were not left open for an extended period of time, a stabilized depth to groundwater was likely not observed. Bedrock is relatively shallow, and the overlying colluvial soils have a relatively high liquid limit. We expect that relatively shallow groundwater may exist in more level portions of the site during the winter and spring months, especially within shallow depressions and basins along the ridgeline in Block 4. Seepage may also occur along where the contact between soil and rock horizons is exposed at or near the ground surface.

Geologic Hazards Evaluation

We have considered a variety of geologic hazards which may affect the planned voineyard development and judge that the primary hazards to be considered include slope instability and erosion. Other hazards, such as seismic ground shaking, settlement, lurching and ground cracking are judged relatively insignificant with regard to the proposed work and are not discussed in detail. A brief summary of the significant hazards along with corresponding mitigation measures are presented below.

SLOPE INSTABILITY
Regional-scale geologic mapping indicates that portions of the west side of the site (generally sloping areas between Mount Veeder Road and the main access driveway) are underlain by the debris of very large active landslides. During our reconnaissance and site exploration, we noted that large portions of Block 4 are also underlain by older (apparently dormant) and smaller areas of more recent (active) landslides, which range up to about 10-feet in thickness. Additionally, one small slide was mapped in Block 2, and slopes throughout the site were noted to exhibit evidence of “slope creep”, a process in which expansive soils move slowly downslope via gravity and seasonal wetting-drying cycles.

For those portions of the property mapped as bring underlain by bedrock (Map unit KJgv as shown on Figures 3 and 4), we judge the risk of damage to improvements due to slope instability is generally low. Areas mapped as being underlain by colluvium and older slide debris (map units Qc and Qols) are judged to have moderate potential for instability, while areas shown as active landslides (map unit Qls) are judged to present a high risk of instability.

Evaluation: *Less than significant.*
Mitigation: *Where mapping indicates areas underlain by colluvium or older slide debris (map units Qc and Qols), we judge that new subsurface drainage improvements should be considered to reduce the risk of soil saturation and eventual slope instability. Where active landslides (map unit Qls) exist, a structural solution, such as an engineered buttress or new retaining structure, should be considered to reduce the risk of damage due to instability. Alternatively, if some risk of future movement (and likely distress to avenues, vine rows, irrigation facilities, etc.) is acceptable, then these areas may be developed provided new surface and subsurface drainage improvements are provided to maintain current levels of stability. If areas mapped as colluvium or slide debris are not planted and will remain in a “natural” condition, then subdrainage is not required. Additional discussion regarding site grading and drainage is provided in the Conclusions and Recommendations section of this report.*

EROSION
Surface soils across the project site generally consist of medium-stiff to stiff, high-plasticity clays, which may be prone to erosion on moderate to steep slopes. Erosion may be exacerbated or accelerated in areas subjected to concentrated surface water flow. During our site reconnaissance, we noted evidence of severe erosion, including rill and gully incision up to several feet deep, within landslide areas in Block 4. Colluvial swales in the southeastern part of Block 2 were also noted to exhibit evidence of similar rill-and-gully erosion. Therefore, we judge the risk of damage due to erosion is high.

Evaluation: *Less than significant with mitigation.*
Mitigation: *Careful attention should be paid to design of finished grades to avoid diverting surface water from natural drainage paths and avoid areas of concentrated surface water runoff. New surface and subsurface drainage improvements should be considered in erosion-prone areas. Erosion control measures implemented during and after construction should conform to the recommendations of the latest edition of the California Stormwater Quality Association (CASQA) Best Management Practices Handbook for New*

Development (2003). All disturbed areas should be seeded as soon as practical, and the site should be closely monitored throughout the winter months for signs of erosion or adverse drainage patterns. Additional discussion and recommendations for site drainage and erosion control are provided in the Conclusions and Recommendations section of this report.

Conclusions and Recommendations

Based on our subsurface exploration, laboratory testing, and review of site geologic conditions, we judge that the proposed vineyard development is feasible from a geotechnical perspective. Primary geotechnical considerations for the project will include providing adequate keyway/bench support and subdrainage for new fill slopes (if planned) and adequate drainage improvements to maintain or improve existing stability in areas underlain by thicker colluvium and older slide debris. Recommendations and criteria to address these and other geotechnical concerns are presented in the following sections.

Site Grading

Site grading for the majority of the vineyard development is anticipated to be relatively minor, consisting mainly of shallow excavations and thin fills to “smooth” grades and better blend new vineyard areas to the surrounding terrain. The steeper portions of the site, including colluvial swales in the southeast and southwest portions of Block 2, as well as the mapped slide areas within Block 1, may require more significant grading to create level vineyard avenues along the downslope edge of the new vineyard. All site grading should be performed in conformance to the following recommendations.

1. Surface Preparation – Clear all structures, trellises, over-size debris, grass, brush, roots, and other organic matter from areas where grading is planned. Any construction debris or abandoned utilities should be removed from the site. Alternatively, utilities may be abandoned in-place provided neat cement grout completely fills all voids in the conduit. All excavations for removal of existing foundations, utilities, boulders, or root balls should be backfilled with compacted fill in accordance with subsequent sections in this report.

2. Excavations – Subsurface conditions at the site generally consist of medium-stiff to stiff clayey colluviuim and slide debris over weathered and fractured mudstone bedrock. Based on our exploration, we anticipate the majority of onsite excavations may be reasonably accomplished with “traditional” equipment, such as medium-size dozers and excavators. Deeper excavations into bedrock (such as for fill slope keyways) may encounter zones of harder rock which require heavier equipment (such as large dozers) to excavate.

3. Fill Materials – Soil and rock mixtures generated from excavations in onsite3 soils may be suitable for re-use as new fill provided it can be processed to meet the specifications presented below. Cobbles and boulders larger than about 18-inches should be removed and stockpiled for rip-rap armor or other use. All fill material should consist of soil and rock mixtures that: (1) are free of organic material, and (2) have a maximum particle size of 18-inches.

4. Fill Slopes – New fill slopes, if planned, should not exceed inclinations of 2:1. Steeper fill slopes are possible, but will require internal reinforcement and must be specially designed. If steeper slopes are planned, we should be consulted to provide supplemental recommendations.

   All new fill slopes thicker than about 1-foot on slopes steeper than 3:1 (H:V), or thicker than about 4-feet on slopes steeper than 5:1, must be founded on keyways and benches excavated into competent bedrock beneath any colluvial soils or slide debris. Subdrains should be provided at minimum 10-foot vertical intervals, and discharged via solid pipe to an area unlikely to result in significant erosion. All fill slopes should be constructed in general conformance to the details shown on Figure 6.

5. Fill Compaction and Soil Ripping – Given the ultimate intended land use and limited fill thickness, we judge that relatively cursory compaction operations are sufficient for the majority of the work. Where new fill slopes are planned, fills should be compacted to a minimum of 90% relative compaction. In order to limit the potential for future erosion and slope instability, we recommend that, following rough grading, finish grading include track-walking disturbed slopes in an upslope-downslope direction. Soil ripping should be performed on a cross-slope to limit the potential for development of rill-and-gully erosion on steeper slopes. To reduce the risk of instability, we recommend soil ripping be limited to a depth of about 18-inches where slopes exceed 3:1, and a depth of about 36-inches in other areas. If sufficient water is available, a cover crop should be planted immediately following soil ripping; alternatively, erosion-control mats or jute netting may be used to limit erosion.

Geotechnical Site Drainage

Based on our reconnaissance observations, portions of Blocks 2 and 4 exhibit evidence of significant historic erosion which, if left unmitigated, could result in distress to new improvements and, ultimately, slope instability. We recommend that new "herringbone" type subsurface drainage systems be provided where new vineyard will be developed in areas underlain by colluvial soils or slide debris (map units Qc, Qols, and Qls), as shown conceptually on Figures 3 and 4. Subdrains should ideally consist of rigid perforated pipe (such as Schedule 40 or SDR-35 PVC), surrounded by ¾" drain rock, although flexible pipe may be used for perforated laterals if needed. Subdrains should discharge via rigid solid PVC pipe to a location unlikely to result in significant erosion, and should be constructed in general accordance with the details shown on Figure 7.

In addition to new subdrains, new surface drainage improvements could also be considered in Blocks 2 and 4, where historic erosion has resulted in significant rill and gully incision. In these areas, new earthen-lined v-ditches should be considered around the crest of the slope, and potentially at intermediate bench or vineyard avenue elevations, to collect and convey surface water away from erodible slopes and discharge it at an appropriate location, ideally into an established drainage channel.

Supplemental Services

If desired, we can provide supplemental services including additional consultation as final erosion control/improvement plans are being prepared. We trust that this letter contains the information you require at this time; please call us if there are any questions or if we can be of further assistance.

Yours very truly,
MILLER PACIFIC ENGINEERING GROUP

REGISTERED GEOLOGIST
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PROFESSIONAL
GEOLOGIST
EXP. 1-31-17
STATE OF CALIFORNIA

REGISTERED PROFESSIONAL ENGINEER
MICHAEL P. MORISOLI
No. 2541
Exp 12-31-16
GEOTECHNICAL
STATE OF CALIFORNIA

Mike Jewett
Engineering Geologist No. 2610
(Expires 1/31/17)

Mike Morisoli
Geotechnical Engineer No. 2541
(Expires 12/31/16)

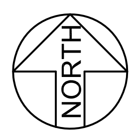
Attachments: Figures 1-7, Appendix A

cc: Mr. Cort Munselle, P.E., Munselle Civil Engineering

SITE: LATITUDE, 38.344°
LONGITUDE, -122.374°

SITE LOCATION

N.T.S.



REFERENCE: Google Earth, 2016

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FILE: 2298.001Figures.dwg

504 Redwood Blvd.
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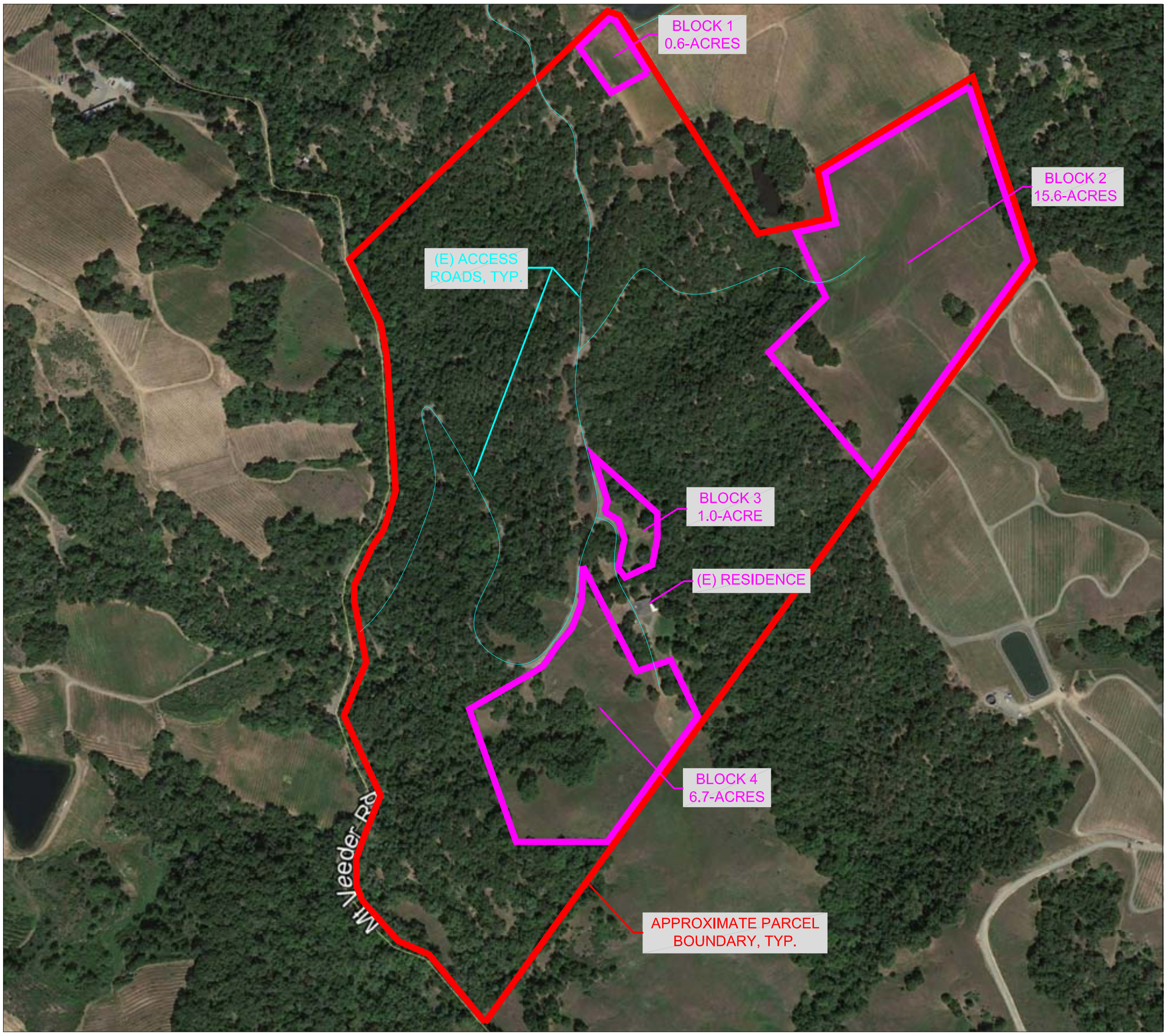
SITE LOCATION MAP

1300 Mount Veeder Road
APN 034-230-029
Napa, California

Project No. 2298.001 Date: 6-20-16

Drawn MFJ
Checked

1
FIGURE



OVERALL SITE PLAN

SCALE

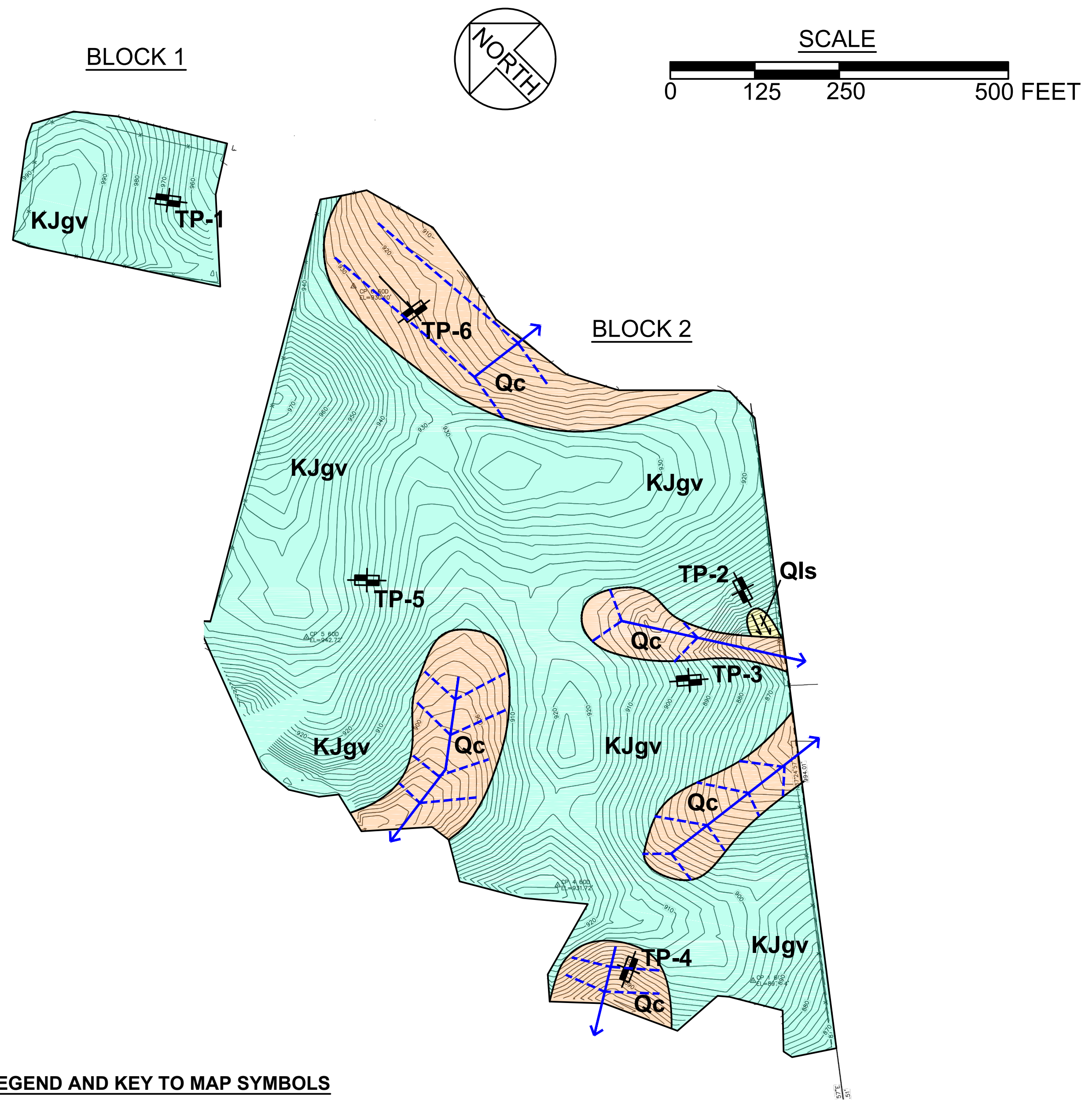
0 300 600 1,200 FEET

NORTH

NOTE: See Figures 3 and 4 for detailed site plans of individual proposed vineyard blocks.

REFERENCE: Google Earth, 2016

MPEG MILLER PACIFIC ENGINEERING GROUP	504 Redwood Blvd. Suite 220 Novato, CA 94947 T 415 / 382-3444 F 415 / 382-3450 www.millerpac.com	OVERALL SITE PLAN		
		1300 Mount Veeder Road APN 034-230-029 Napa, California	Drawn MFJ Checked	2 FIGURE
A CALIFORNIA CORPORATION, © 2016, ALL RIGHTS RESERVED FILE: 2298.001Figures.dwg		Project No. 2298.001 Date: 6-20-16		



LEGEND AND KEY TO MAP SYMBOLS

Qls	**LANDSLIDES (QUATERNARY)** Includes earth/debris flow-type slides and block slides.
Qc	**COLLUVIUM (QUATERNARY)** Unconsolidated soil and rock debris transported slowly downslope via gravity and natural weathering processes. Consists predominantly of low-plasticity clay with lesser silt, fine sand, and shale fragments. Includes zones of "slope creep" within drainages and swales.
KJgv	**GREAT VALLEY SEQUENCE (LATE JURASSIC-EARLY CRETACEOUS)** Marine sedimentary rocks, primarily composed of thick-bedded to massive mudstone and thinly-laminated shale, with lesser interbedded fine- to medium-grained sandstone and clast-supported pebble conglomerate.

GEOLOGIC CONTACT, DASHED WHERE APPROXIMATE

TEST PIT BY MILLER PACIFIC, JUNE 2016

RIGID (SOLID) PIPE

PERFORATED PIPE

REFERENCE: Applied Civil Engineering (2016), "Mt. Veeder Vineyards, Topographic Map, 034-230-29, 1300 Mt Veeder Road, Napa, California", Job No. 24-16, Sheet No. 1 of 2.

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FILE: 2298.001Figures.dwg

SITE PLAN AND GEOLOGIC MAP - BLOCKS 1 AND 2

1300 Mount Veeder Road
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Project No. 2298.001 Date: 6-20-16

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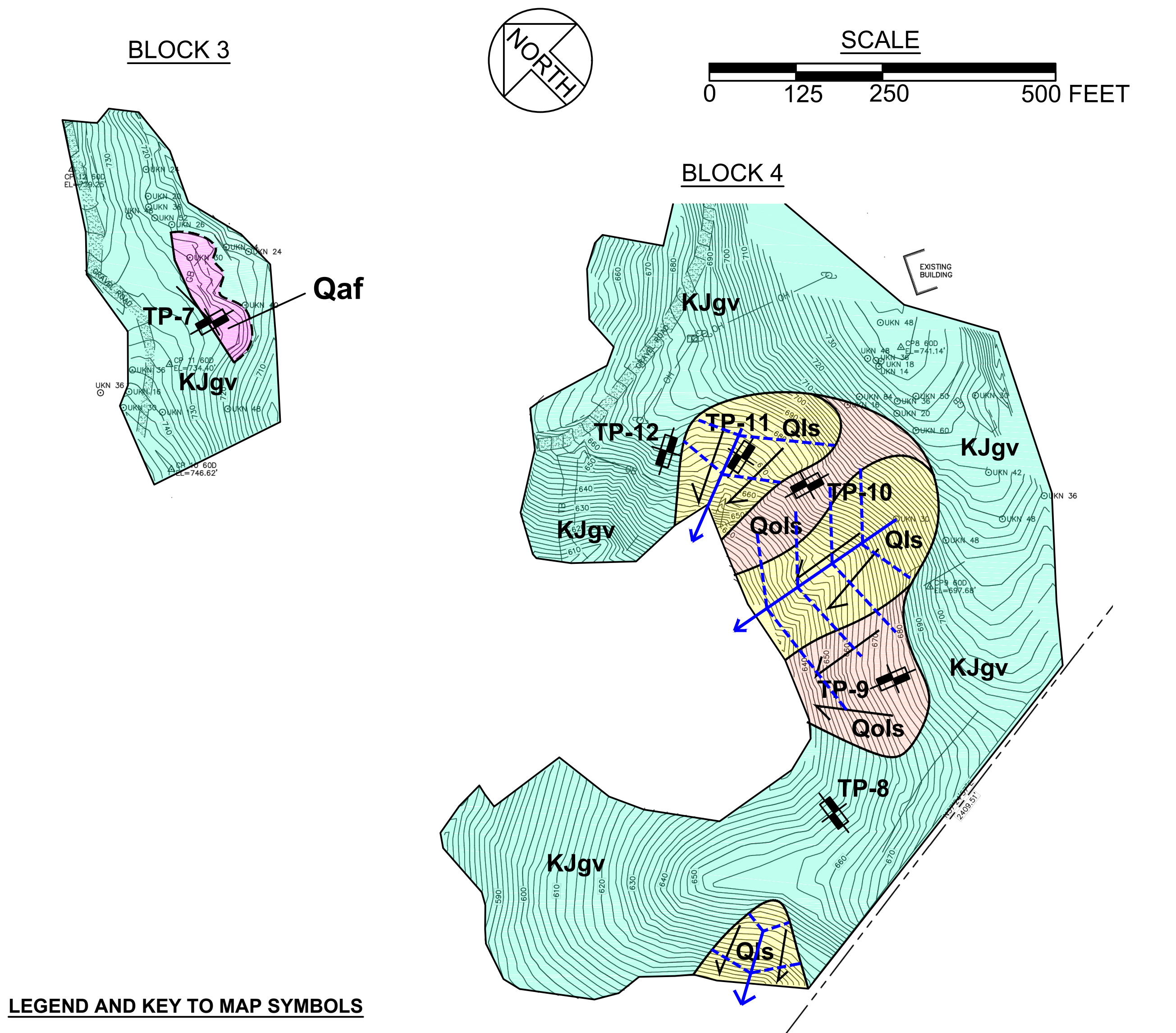
3
FIGURE



LEGEND AND KEY TO MAP SYMBOLS

Qaf	**FILL (HOLOCENE)** Soil and rock placed by man on natural surfaces. Only apparent occurrence at east edge of Block 3.
Qls	**LANDSLIDES (QUATERNARY)** Includes earth/debris flow-type slides and block slides.
Qols	**OLDER LANDSLIDES (QUATERNARY)** Includes areas of apparent historic landsliding, expressed as somewhat subdued undulatory or "hummocky" topography, which do not exhibit evidence of recent movement. Within map area, active recent slides have developed within area of interpreted older slide activity. Older slide areas appear currently dormant but are judged to have high potential for re-activation.
KJgv	**GREAT VALLEY SEQUENCE (LATE JURASSIC-EARLY CRETACEOUS)** Marine sedimentary rocks, primarily composed of thick-bedded to massive mudstone and thinly-laminated shale, with lesser interbedded fine- to medium-grained sandstone and clast-supported pebble conglomerate.

GEOLOGIC CONTACT, DASHED WHERE APPROXIMATE

TEST PIT BY MILLER PACIFIC, JUNE 2016

RIGID (SOLID) PIPE

PERFORATED PIPE

REFERENCE: Applied Civil Engineering (2016), "Mt. Veeder Vineyards, Topographic Map, 034-230-29, 1300 Mt Veeder Road, Napa, California", Job No. 24-16, Sheet No. 2 of 2.

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SITE PLAN AND GEOLOGIC MAP - BLOCKS 3 AND 4

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Napa, California

Project No. 2298.001 Date: 6-20-16

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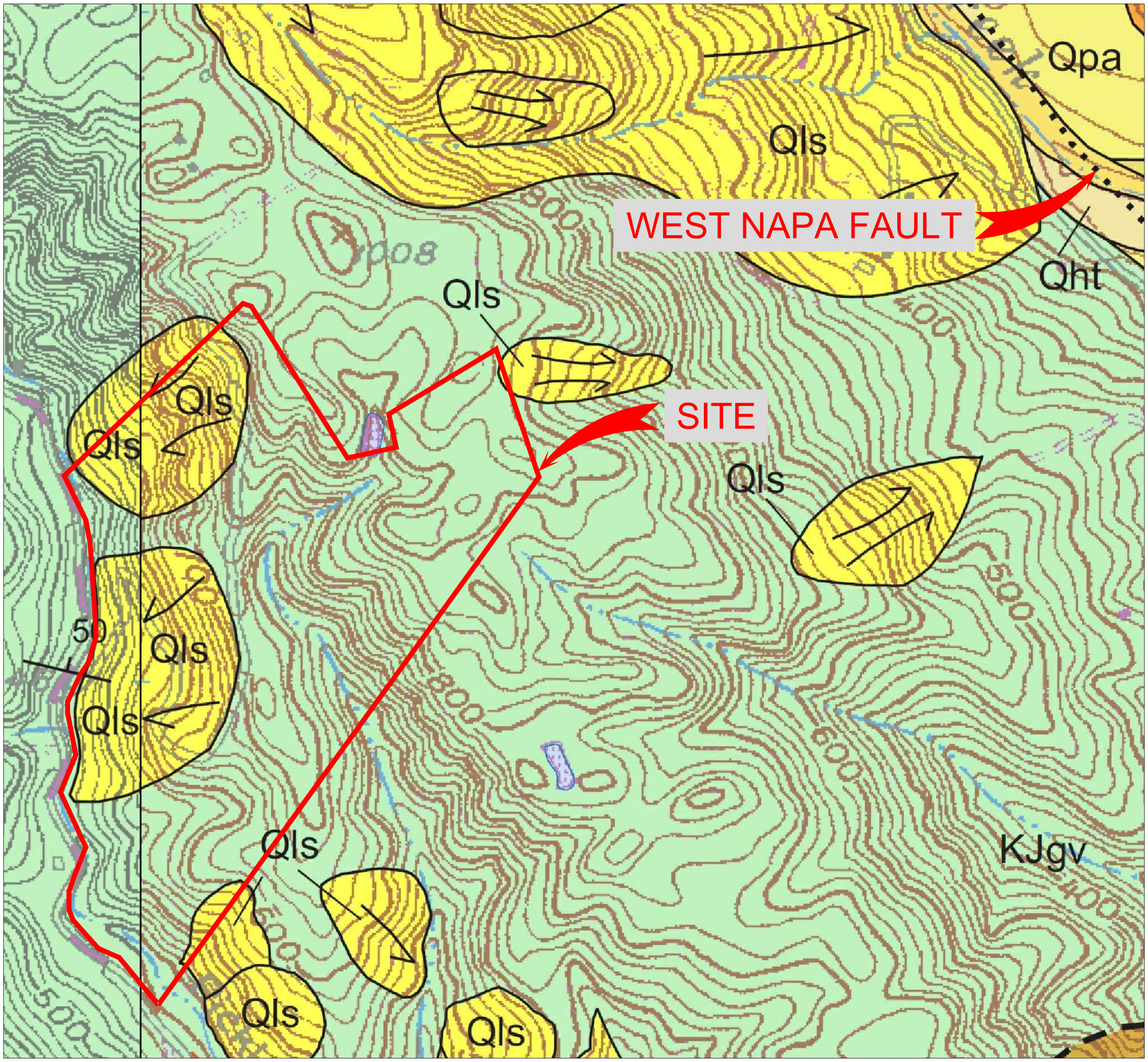
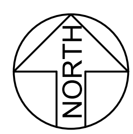
4
FIGURE



REGIONAL GEOLOGIC MAP

(NOT TO SCALE)



LEGEND

LANDSLIDE DEPOSITS (HOLOCENE AND PLEISTOCENE)
Includes debris flows and block slides.

GREAT VALLEY SEQUENCE (LATE JURASSIC-EARLY CRETACEOUS)
Sandstone, pebble conglomerate, siltstone, and shale.

Fault, solid where accurately located, dotted where concealed.

REFERENCES:

1) Clahan, et al. (2004), "Geologic Map of the Napa 7.5-Minute Quadrangle, Napa County, California: A Digital Database, Version 1.0", California Department of Conservation, California Geological Survey, Map Scale 1:24,000.

2) Wagner, et al. (2004), "Geologic Map of the Sonoma 7.5-Minute Quadrangle, Sonoma and Napa Counties, California: A Digital Database, Version 1.0", California Department of Conservation, California Geological Survey, Map Scale 1:24,000.

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FILE: 2298.001Figures

REGIONAL GEOLOGIC MAP

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Project No. 2298.001 Date: 6-21-16

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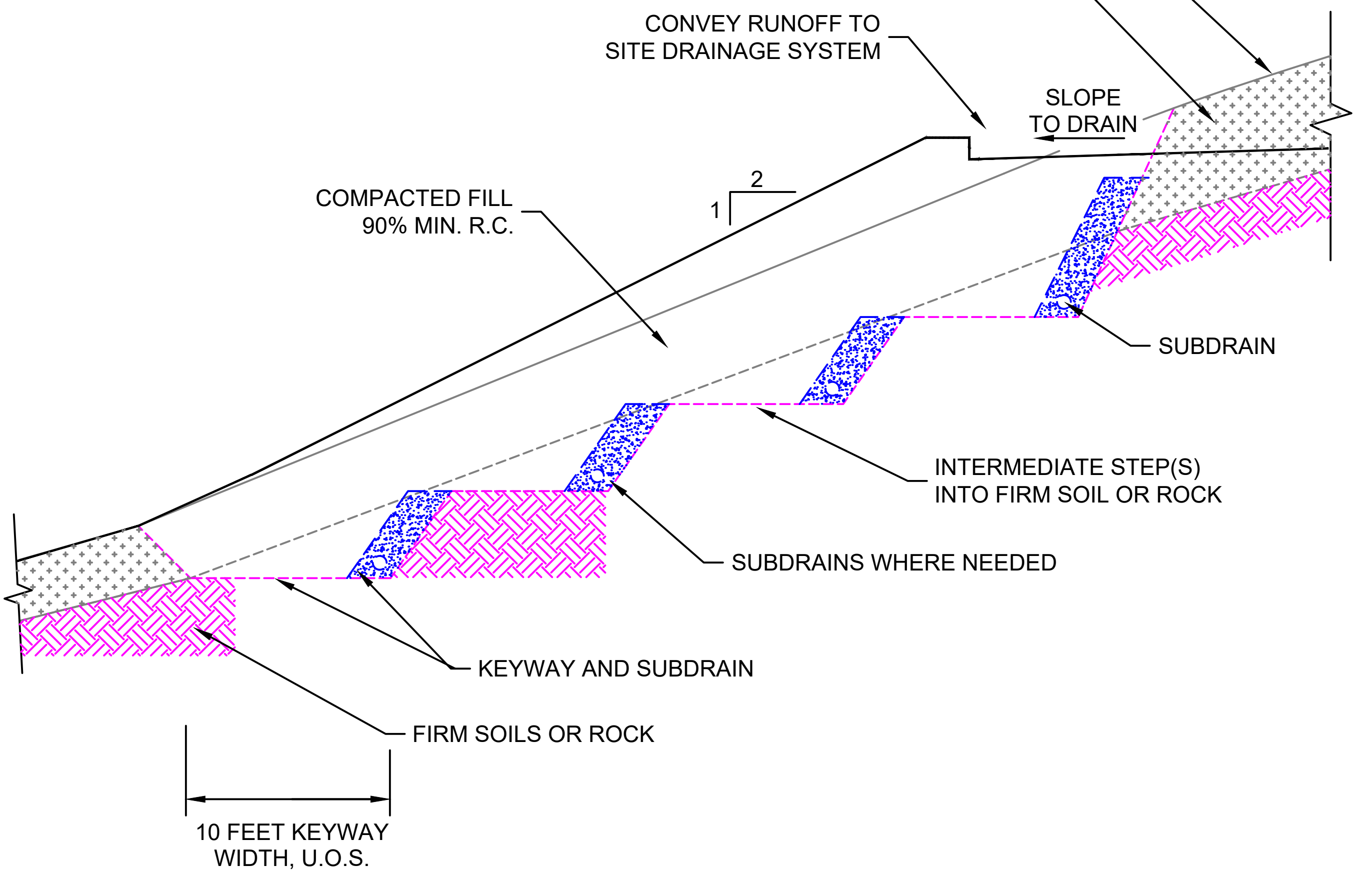
5
FIGURE



NOTES:

(1) NUMBER OF BENCHES AND WIDTH(S) MAY VARY
(2) R.C. = RELATIVE COMPACTION
(3) U.O.S. = UNLESS OTHERWISE SPECIFIED

TYPICAL HILLSIDE FILL CONSTRUCTION

(NO SCALE)

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FILE: 2298.001 Hillside.dwg

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TYPICAL HILLSIDE FILL CONSTRUCTION

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Napa, California

Project No. 2298.001 Date: 7-7-16

Designed MFJ
Drawn MMT
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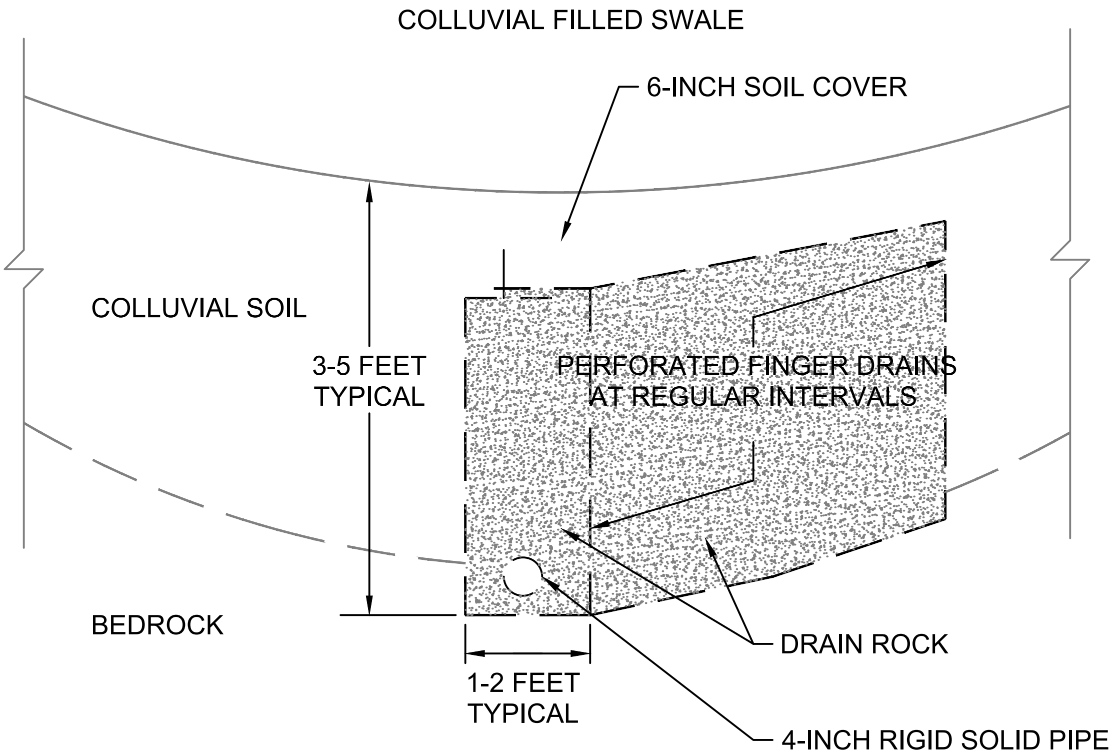
6
FIGURE



NOTES:

(1) PIPE TO BE 6-INCH DIAMETER, PERFORATIONS DOWN, S=0.02 MIN., WITH TIGHT PIPE TO GRAVITY DISCHARGE

(2) USE SWEEPS FOR ALL SUBDRAIN BENDS/ELBOWS

TYPICAL DETAIL TRENCH SUBDRAIN

(NO SCALE)

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FILE: 2298.001 Herringbone.dwg

TYPICAL DETAIL TRENCH SUBDRAIN

1300 Mount Veeder Road
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Napa, California

Project No. 2298.001 Date: 7-7-16

Designed MFJ
Drawn MMT
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7
FIGURE

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APPENDIX A

<u>SUBSURFACE EXPLORATION AND LABORATORY TESTING</u>

A. <u>Soil and Rock Classification Systems</u>

We explored subsurface conditions at the site with 12 exploratory test pits excavated on June 14, 2016. Test pits were excavated to depths between about 3.0- and 10.0-feet below the ground surface by use of an Ingersoll-Rand Bobcat 337 mini-excavator equipped with an 18-inch bucket.

The soils encountered were logged and identified by our field geologist in general accordance with ASTM Standard D 2487, "Field Identification and Description of Soils (Visual-Manual Procedure)." This standard is briefly explained on Figure A-1, Soil Classification Chart and Key to Log Symbols and Figure A-2, Rock Classification Chart. The exploratory test pits logs are presented on Figures A-3 through A-1.

B. <u>Laboratory Testing</u>

We conducted laboratory tests on selected “grab” samples to verify field identifications and to evaluate engineering properties. Samples were examined in the field, sealed to prevent moisture loss, and carefully transported to our laboratory. The following laboratory tests were conducted in in general accordance with the ASTM standard test method cited:

- Laboratory Determination of Water (Moisture Content) of Soil, Rock, and Soil-Aggregate Mixtures, ASTM D 2216;

- Amount of Materials in Soils Finer Than the No. 200 (75-µm) sieve, ASTM D 1140; and

- Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM D 4318

Moisture content and minus-200 test results are shown on the exploratory test pit logs, Figures A-3 through A-14, while plasticity index test results are presented on Figure A-15. The exploratory test pit logs, description of soils encountered and the laboratory test data reflect conditions only at the location of the excavation at the time they were excavated or retrieved. Conditions may differ at other locations and may change with the passage of time due to a variety of causes including natural weathering, climate, and changes in surface and subsurface drainage.

MAJOR DIVISIONS		SYMBOL	DESCRIPTION
COARSE GRAINED SOILS over 50% sand and gravel	CLEAN GRAVEL	GW	Well-graded gravels or gravel-sand mixtures, little or no fines
		GP	Poorly-graded gravels or gravel-sand mixtures, little or no fines
	GRAVEL with fines	GM	Silty gravels, gravel-sand-silt mixtures
		GC	Clayey gravels, gravel-sand-clay mixtures
	CLEAN SAND	SW	Well-graded sands or gravelly sands, little or no fines
		SP	Poorly-graded sands or gravelly sands, little or no fines
	SAND with fines	SM	Silty sands, sand-silt mixtures
		SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS over 50% silt and clay	SILT AND CLAY liquid limit <50%	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
		CL	Inorganic clays of low to medium plasticity, gravely clays, sandy clays, silty clays, lean clays
		OL	Organic silts and organic silt-clays of low plasticity
	SILT AND CLAY liquid limit >50%	MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
		CH	Inorganic clays of high plasticity, fat clays
		OH	Organic clays of medium to high plasticity
HIGHLY ORGANIC SOILS		PT	Peat, muck, and other highly organic soils
ROCK			Undifferentiated as to type or composition

KEY TO BORING AND TEST PIT SYMBOLS

CLASSIFICATION TESTS

AL	ATTERBERG LIMITS TEST
SA	SIEVE ANALYSIS
HYD	HYDROMETER ANALYSIS
P200	PERCENT PASSING NO. 200 SIEVE
P4	PERCENT PASSING NO. 4 SIEVE

STRENGTH TESTS

TV	FIELD TORVANE (UNDRAINED SHEAR)
UC	LABORATORY UNCONFINED COMPRESSION
TXCU	CONSOLIDATED UNDRAINED TRIAXIAL
TXUU	UNCONSOLIDATED UNDRAINED TRIAXIAL
	UC, CU, UU = 1/2 Deviator Stress

SAMPLER TYPE

- MODIFIED CALIFORNIA
- STANDARD PENETRATION TEST
- THIN-WALLED / FIXED PISTON
- HAND SAMPLER
- ROCK CORE
- X DISTURBED OR BULK SAMPLE

SAMPLER DRIVING RESISTANCE

Modified California and Standard Penetration Test samplers are driven 18 inches with a 140-pound hammer falling 30 inches per blow. Blows for the initial 6-inch drive seat the sampler. Blows for the final 12-inch drive are recorded onto the logs. Sampler refusal is defined as 50 blows during a 6-inch drive. Examples of blow records are as follows:

25	sampler driven 12 inches with 25 blows after initial 6-inch drive
85/7"	sampler driven 7 inches with 85 blows after initial 6-inch drive
50/3"	sampler driven 3 inches with 50 blows during initial 6-inch drive or beginning of final 12-inch drive

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the excavation location during the time of exploration. Subsurface rock, soil or water conditions may vary in different locations within the project site and with the passage of time. Boundaries between differing soil or rock descriptions are approximate and may indicate a gradual transition.

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FILE: 2298.001TPL.dwg

SOIL CLASSIFICATION CHART

1300 Mount Veeder Road
APN 034-230-029
Napa, California

Project No. 2298.001 Date: 6/27/16

Drawn MFJ
Checked

A-1
FIGURE

FRACTURING AND BEDDING

Fracture Classification	Spacing	Bedding Classification
Crushed	less than 3/4 inch	Laminated
Intensely fractured	3/4 to 2-1/2 inches	Very thinly bedded
Closely fractured	2-1/2 to 8 inches	Thinly bedded
Moderately fractured	8 to 24 inches	Medium bedded
Widely fractured	2 to 6 feet	Thickly bedded
Very widely fractured	greater than 6 feet	Very thickly bedded

HARDNESS

Low	Carved or gouged with a knife
Moderate	Easily scratched with a knife, friable
Hard	Difficult to scratch, knife scratch leaves dust trace
Very hard	Rock scratches metal

STRENGTH

Friable	Crumbles by rubbing with fingers
Weak	Crumbles under light hammer blows
Moderate	Indentations <1/8 inch with moderate blow with pick end of rock hammer
Strong	Withstands few heavy hammer blows, yields large fragments
Very strong	Withstands many heavy hammer blows, yields dust, small fragments

WEATHERING

Complete	Minerals decomposed to soil, but fabric and structure preserved
High	Rock decomposition, thorough discoloration, all fractures are extensively coated with clay, oxides or carbonates
Moderate	Fracture surfaces coated with weathering minerals, moderate or localized discoloration
Slight	A few stained fractures, slight discoloration, no mineral decomposition, no affect on cementation
Fresh	Rock unaffected by weathering, no change with depth, rings under hammer impact

NOTE: Test boring and test pit logs are an interpretation of conditions encountered at the location and time of exploration. Subsurface rock, soil and water conditions may differ in other locations and with the passage of time.

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ROCK CLASSIFICATION CHART

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Napa, California

Project No. 2298.001 Date: 6/28/16

Drawn MFJ
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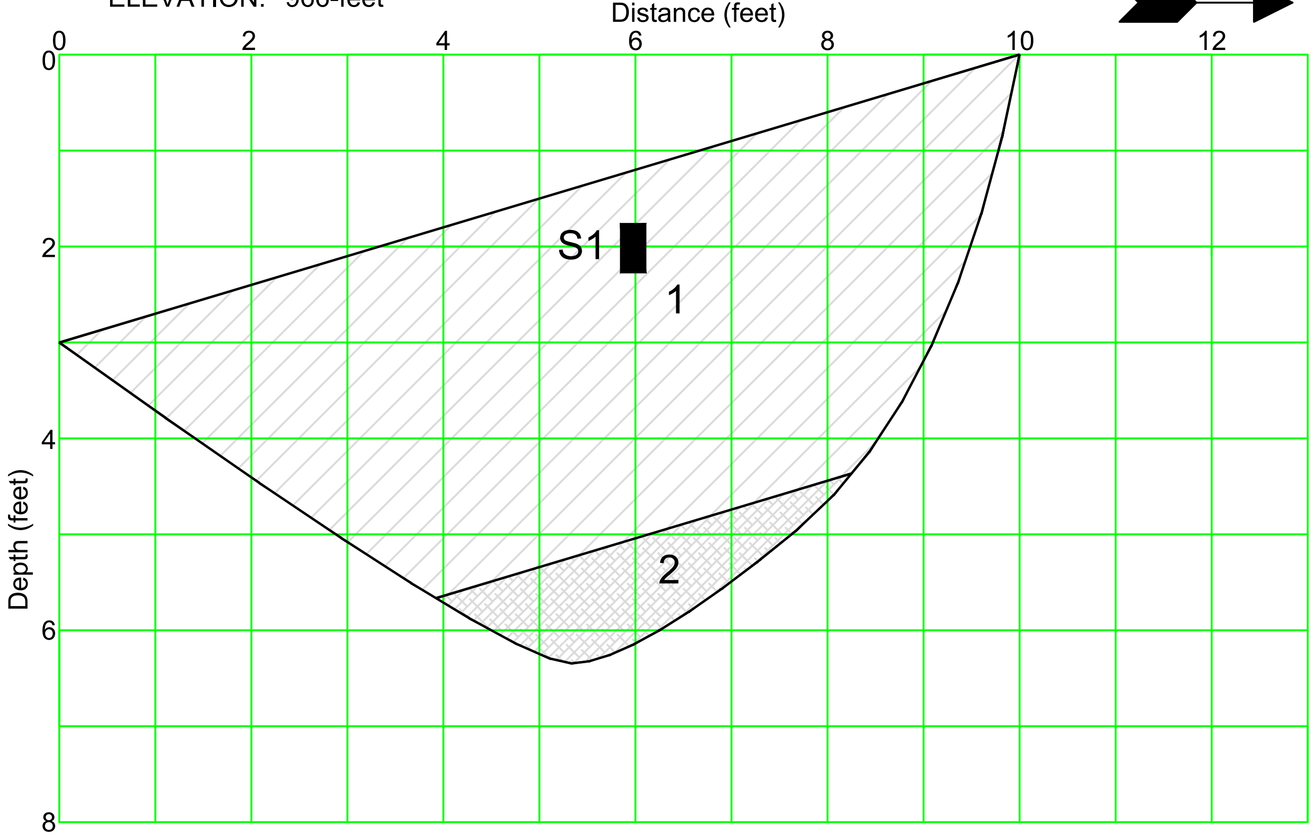
A-2
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 966-feet

TEST PIT 1

N42°W



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	15.9		

Layer	Description
1	CLAY WITH SAND (CH) Medium brown, moist, medium-stiff, high plasticity, ~15% fine sand [COLLUVIUM]
2	MUDSTONE Light gray, moderately hard, moderately strong, closely fractured, moderately weathered [BEDROCK] Easy excavation noted at maximum explored depth of 5.5-feet.

NOTES:
(1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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TEST PIT LOG

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Napa, California

Project No. 2298.001 Date: 6/28/16

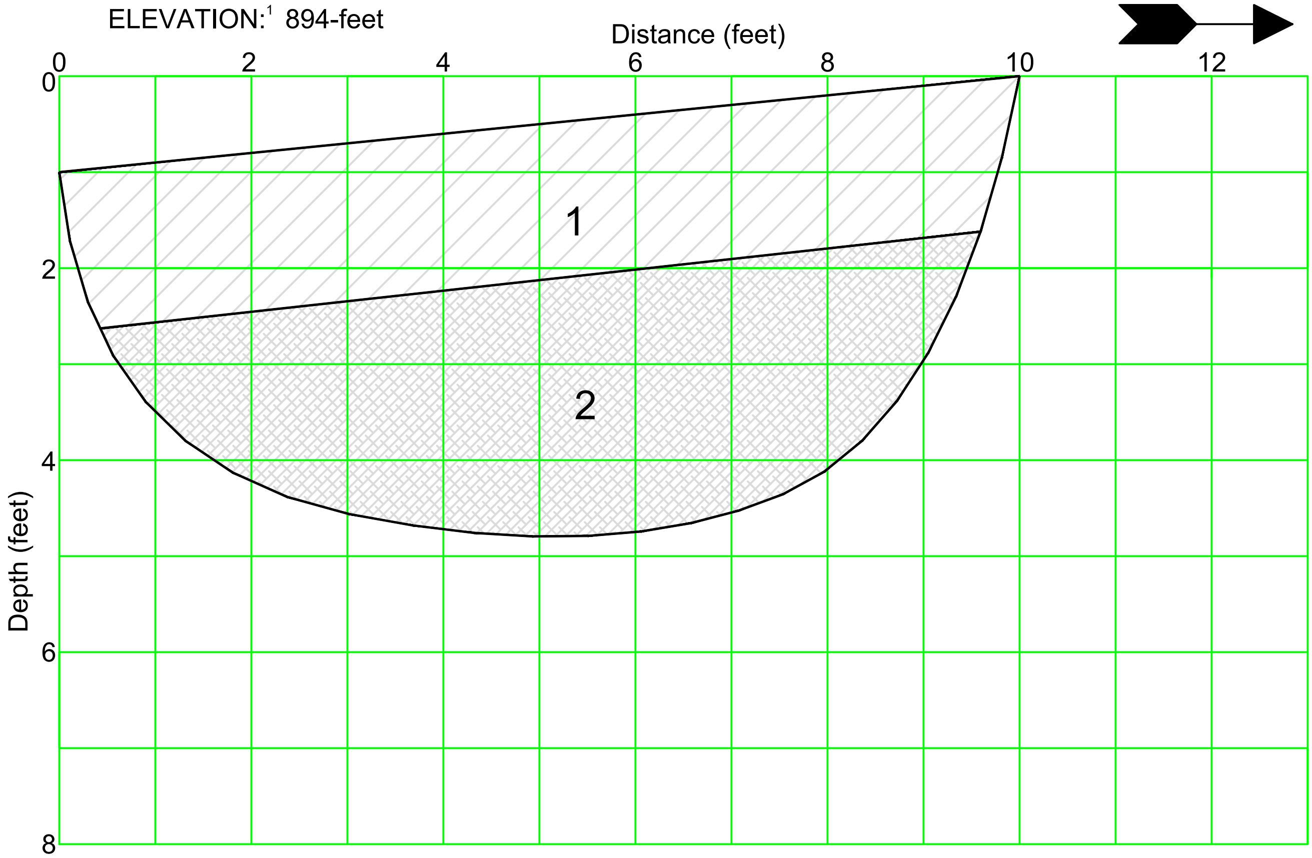
Drawn MFJ
Checked

A-3
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 894-feet

TEST PIT 2

N05°W



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)

Layer	Description
1	CLAY (CH) Light gray, dry to moist, medium stiff, high plasticity, ~10% fine sand [COLLUVIUM]
2	MUDSTONE Light gray, moderately hard, weak, intensely fractured, highly sheared, moderately weathered [BEDROCK] Easy excavation noted at maximum explored depth of 4.5-feet.

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

Drawn MFJ
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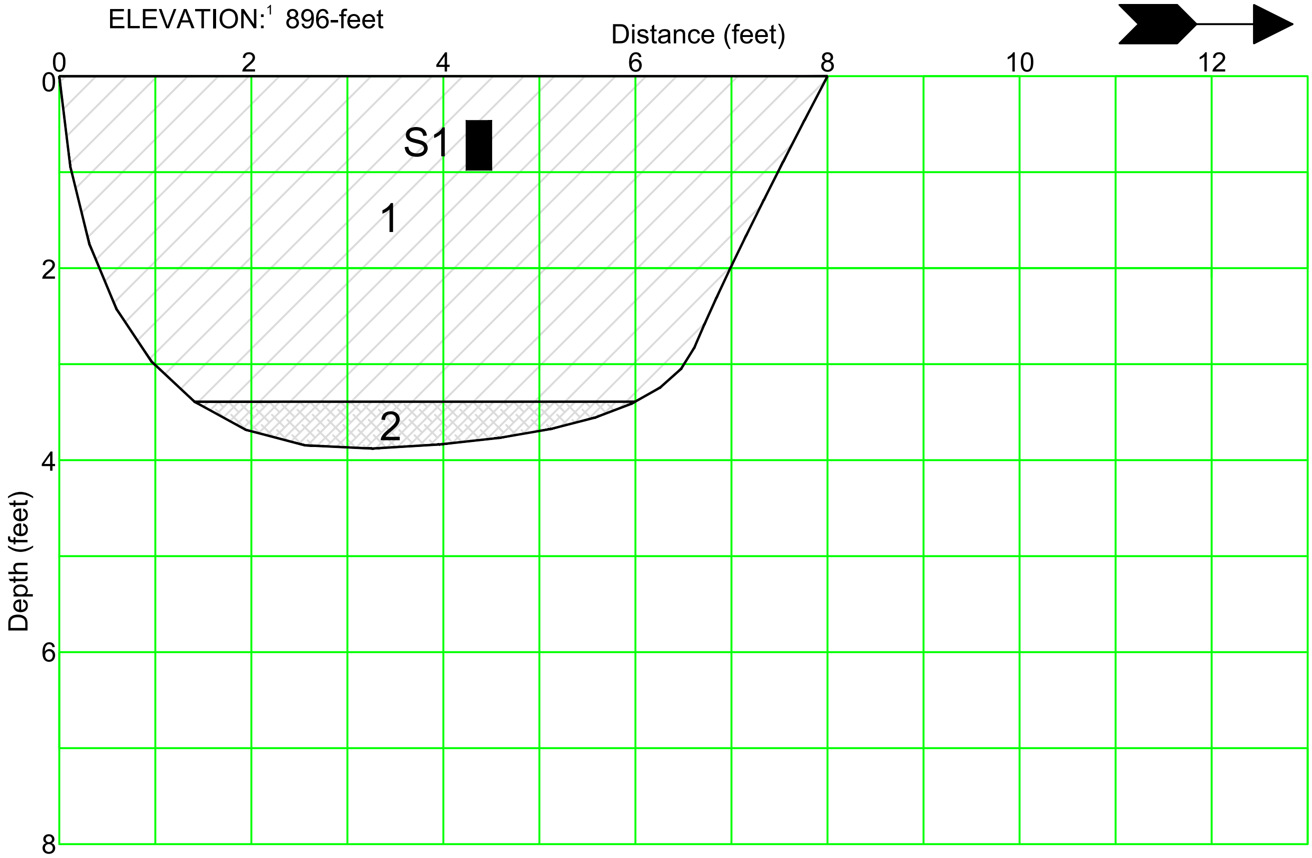
A-4
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 896-feet

TEST PIT 3

N47°W



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	19.8	45	94.9

Layer	Description
1	CLAY (CH) Dark brown, moist, medium stiff to stiff, high plasticity, ~5% fine sand [COLLUVIUM]
2	SHALE Light gray with yellow and red mottling, low hardness, friable, highly sheared, completely weathered [BEDROCK] Easy excavation noted at maximum explored depth of 3.9-feet.

NOTES:
(1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

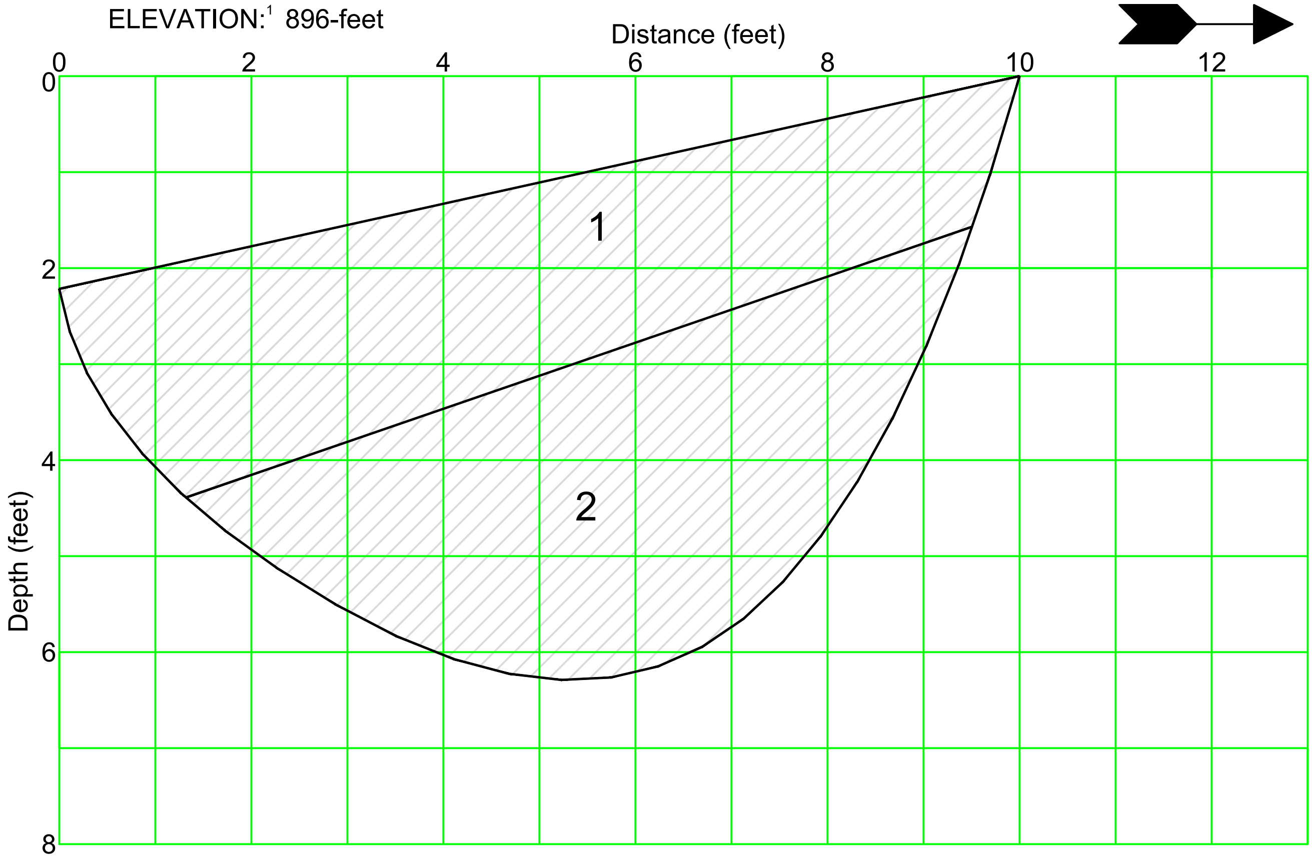
Drawn MFJ
Checked

A-5
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 896-feet

TEST PIT 4

N27°E



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)

Layer	Description
1	SILTY CLAY (CL) Dark brown, dry, medium stiff, low to medium plasticity, ~30% silt, trace fine sand [COLLUVIUM]
2	SANDY CLAY (CL) Medium brown, moist, stiff, low plasticity, ~30% fine sand [COLLUVIUM/RESIDUAL SOIL]
	Easy excavation noted at maximum explored depth of 6.3-feet.

NOTES:
(1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

Drawn MFJ
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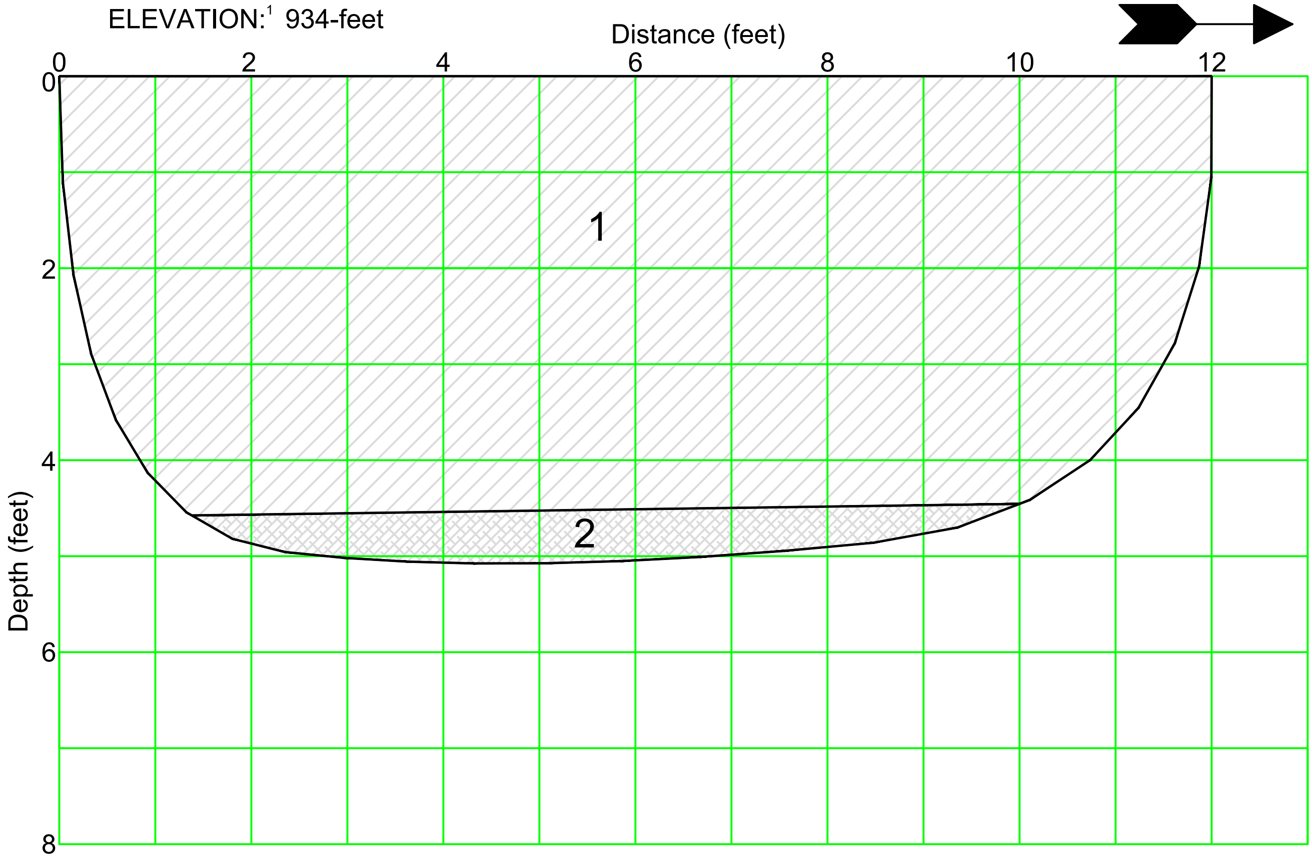
A-6
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 934-feet

TEST PIT 5

N45°W



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)

Layer	Description
1	SANDY CLAY (CL) Light gray, moist, stiff, low to medium plasticity, ~30-40% fine to coarse sand, <10% fine to coarse angular sandstone and shale fragments [COLLUVIUM]
2	SHALE Light gray, low hardness, friable, highly sheared, completely weathered with boudins/inclusions of highly weathered sandstone [BEDROCK] Easy excavation noted at maximum explored depth of 5.0-feet.

NOTES:
(1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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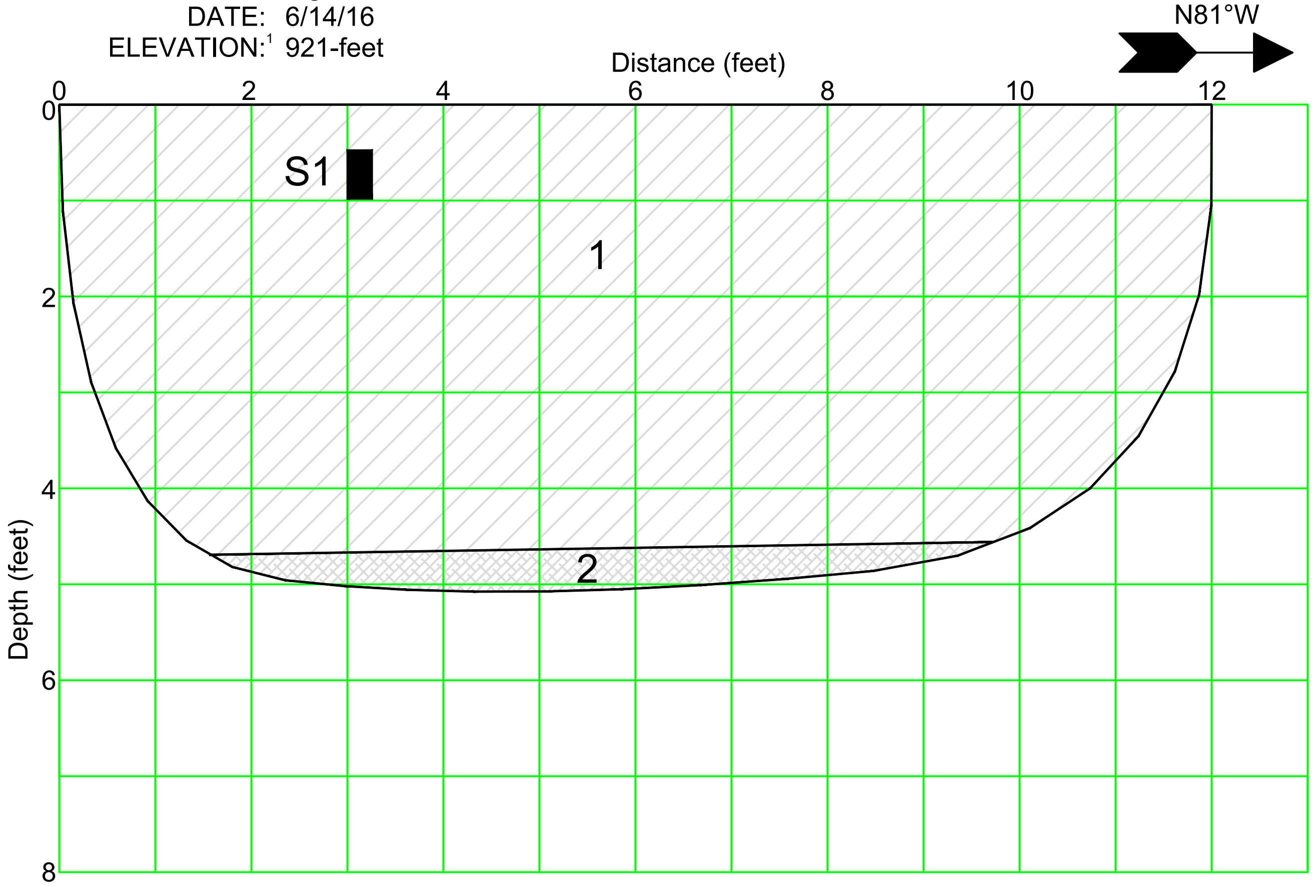
Project No. 2298.001 Date: 6/28/16

Drawn MFJ
Checked

A-7
FIGURE

TEST PIT 6

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 921-feet



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	15.1		

Layer	Description
1	SILTY CLAY (CH) Light gray, dry, stiff, high plasticity, ~30% silt [COLLUVIUM]
2	SHALE Dark gray, low to moderate hardness, weak, crushed, highly weathered, very thinly laminated [BEDROCK]
	Easy excavation noted at maximum explored depth of 5.0-feet.

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

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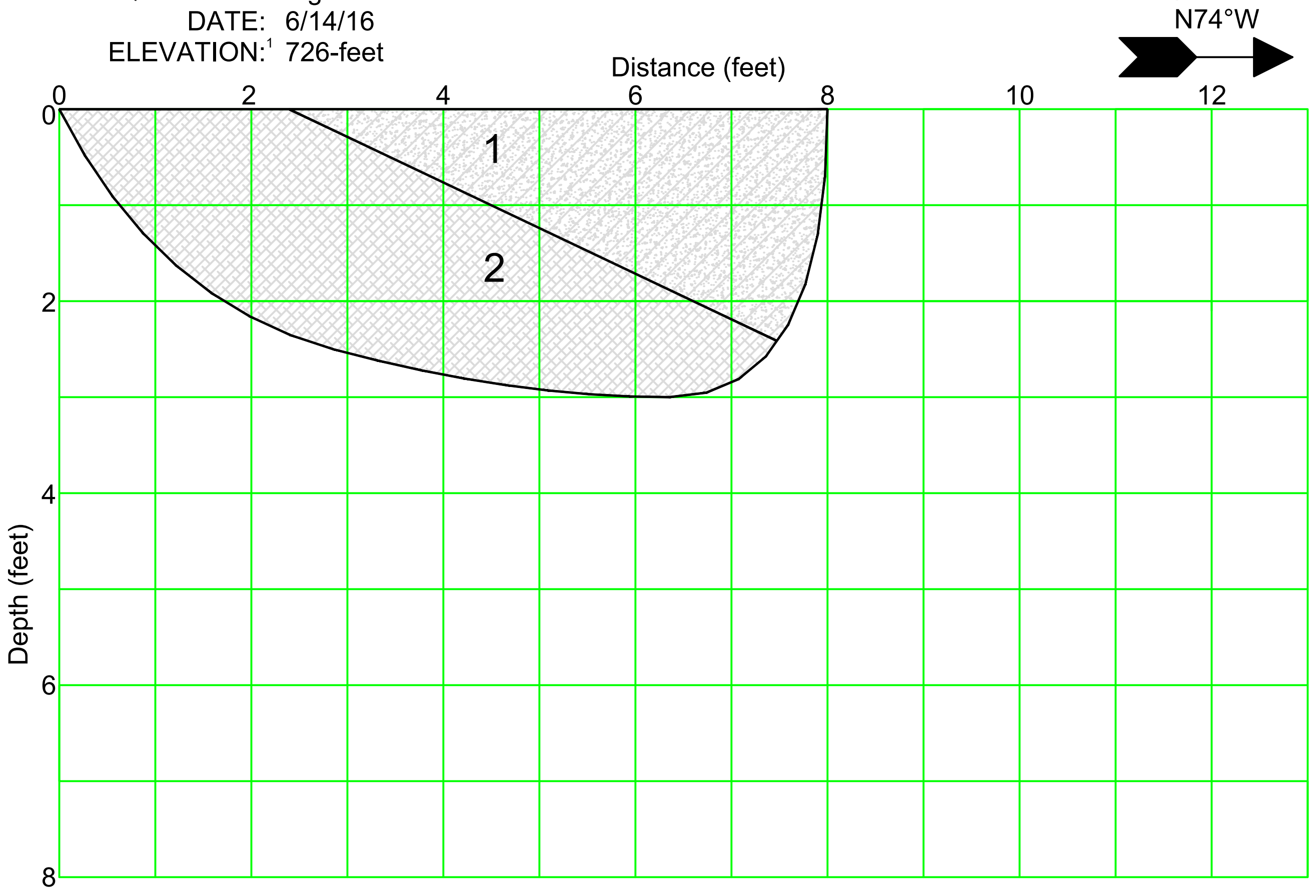
A-8
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 726-feet

TEST PIT 7



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)

Layer	Description
1	CLAYEY SAND WITH GRAVEL (SC) Dark gray to black, moist, stiff, low to medium plasticity, ~30% fine to coarse sand, ~20% fine to coarse, angular to subrounded sandstone and volcanic rock fragments [FILL]
2	MUDSTONE Medium gray, moderately hard, moderately strong, closely fractured, slightly to moderately weathered [BEDROCK] Easy excavation noted at maximum explored depth of 3.0-feet.

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

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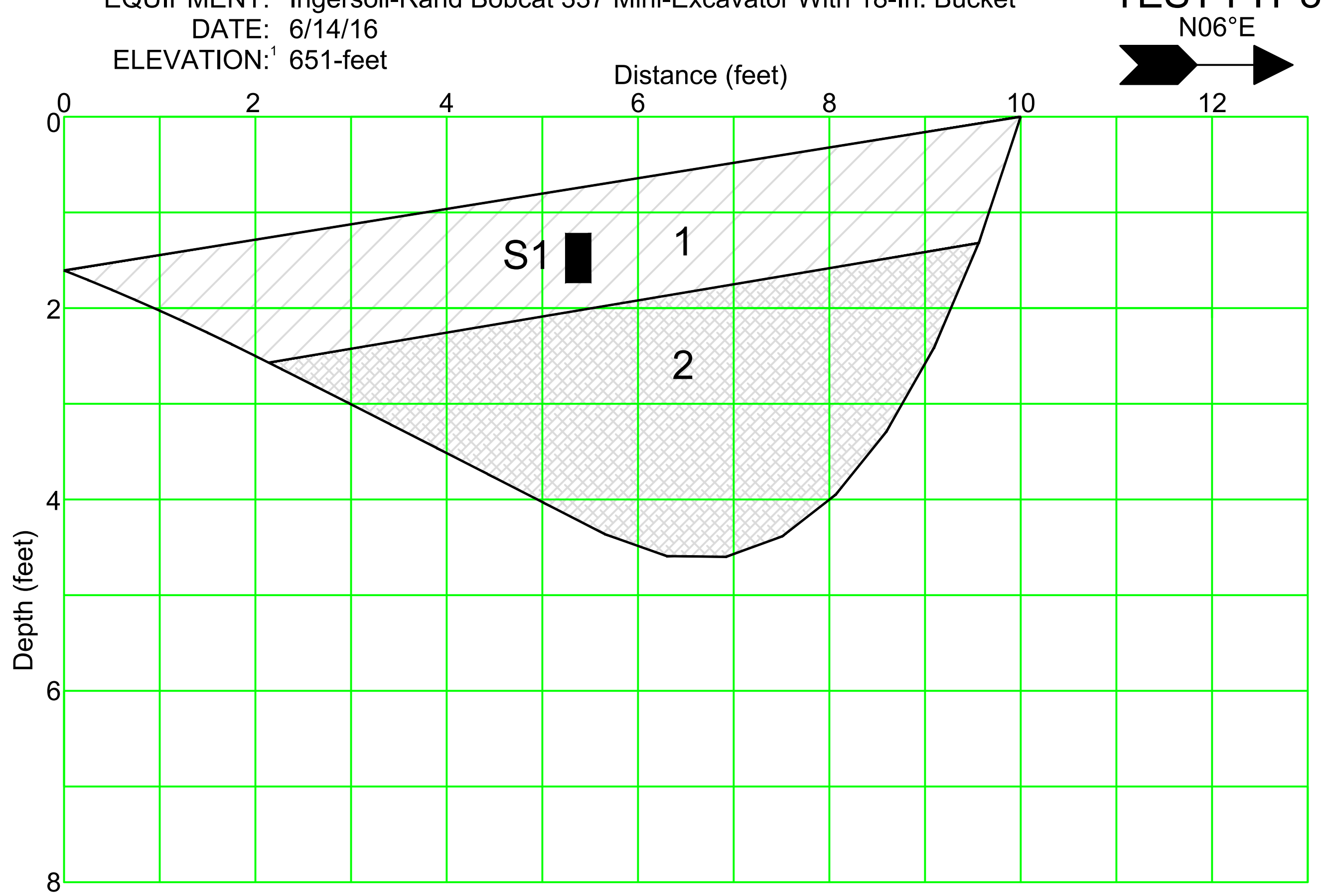
A-9
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 651-feet

TEST PIT 8



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	18.6		

Layer	Description
1	SANDY CLAY WITH GRAVEL (CH) Light gray, dry to moist, medium stiff, low to medium plasticity, ~30-40% fine to coarse sand, ~15% fine to coarse angular mudstone fragments [COLLUVIUM]
2	MUDSTONE Light gray, moderately hard, weak to moderately strong, closely fractured [BEDROCK]
	Easy excavation noted at maximum explored depth of 4.5-feet.

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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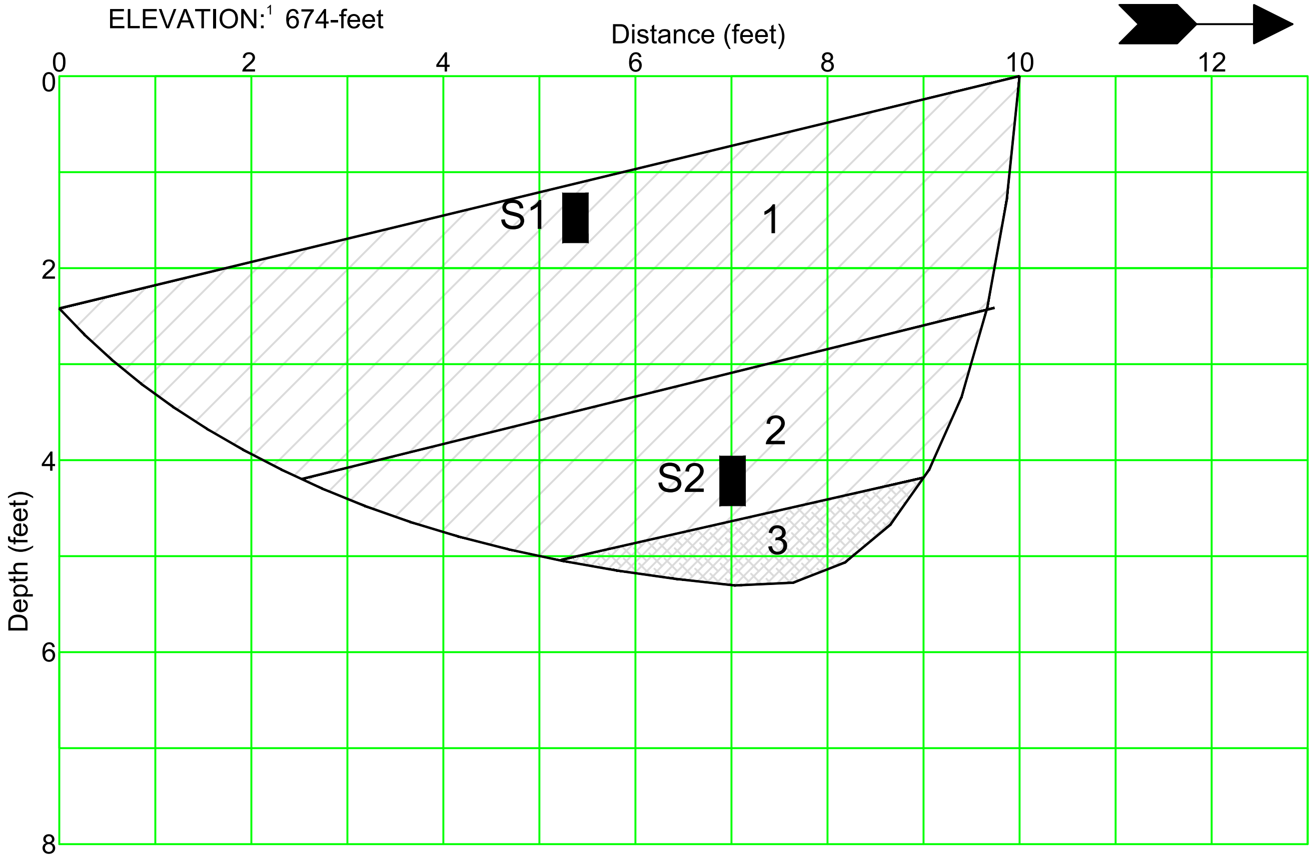
A-10
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 674-feet

TEST PIT 9

N65°E



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	12.1		
S2	21.8		

Layer	Description
1	SILTY CLAY (CH) Light gray, dry, medium stiff, high plasticity, ~30% silt, trace fine sand [SLIDE DEBRIS]
2	SANDY CLAY WITH GRAVEL (CH) Medium gray with orange mottling, moist, stiff, medium plasticity, ~30% fine to coarse sand, ~15% angular mudstone fragments [SLIDE DEBRIS]
3	MUDSTONE Light gray, weak, crushed [BEDROCK] Easy excavation noted at maximum explored depth of 5.2-feet.

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

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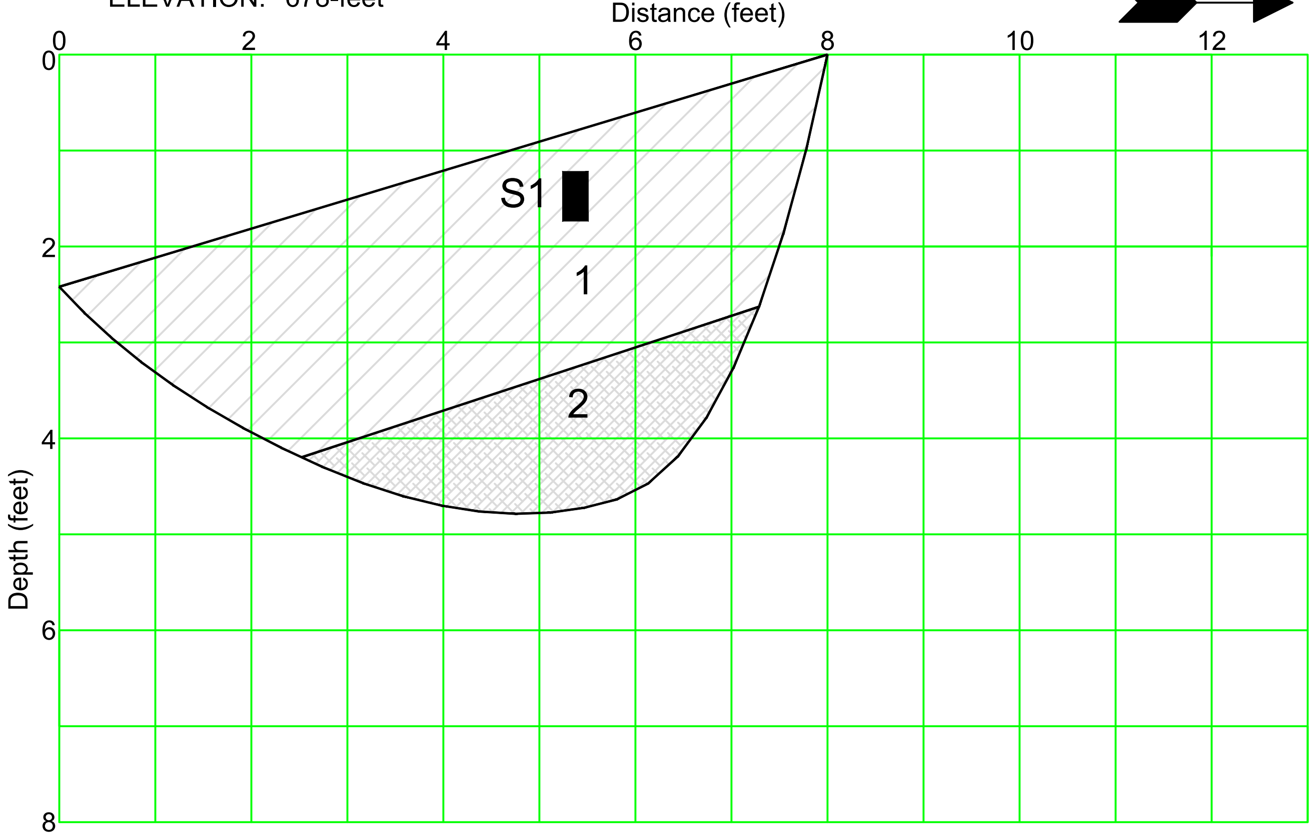
A-11
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 678-feet

TEST PIT 10

S77°E



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	19.0	33	96.1

Layer	Description
1	CLAY (CH) Light gray, dry to moist, medium stiff to stiff, high plasticity [COLLUVIUM]
2	MUDSTONE Light to medium gray with orange mottling, moderately hard, weak to moderately strong, closely fractured, fracture planes dip 67°:107° [BEDROCK] Easy excavation noted at maximum explored depth of 4.5-feet.

NOTES:
(1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

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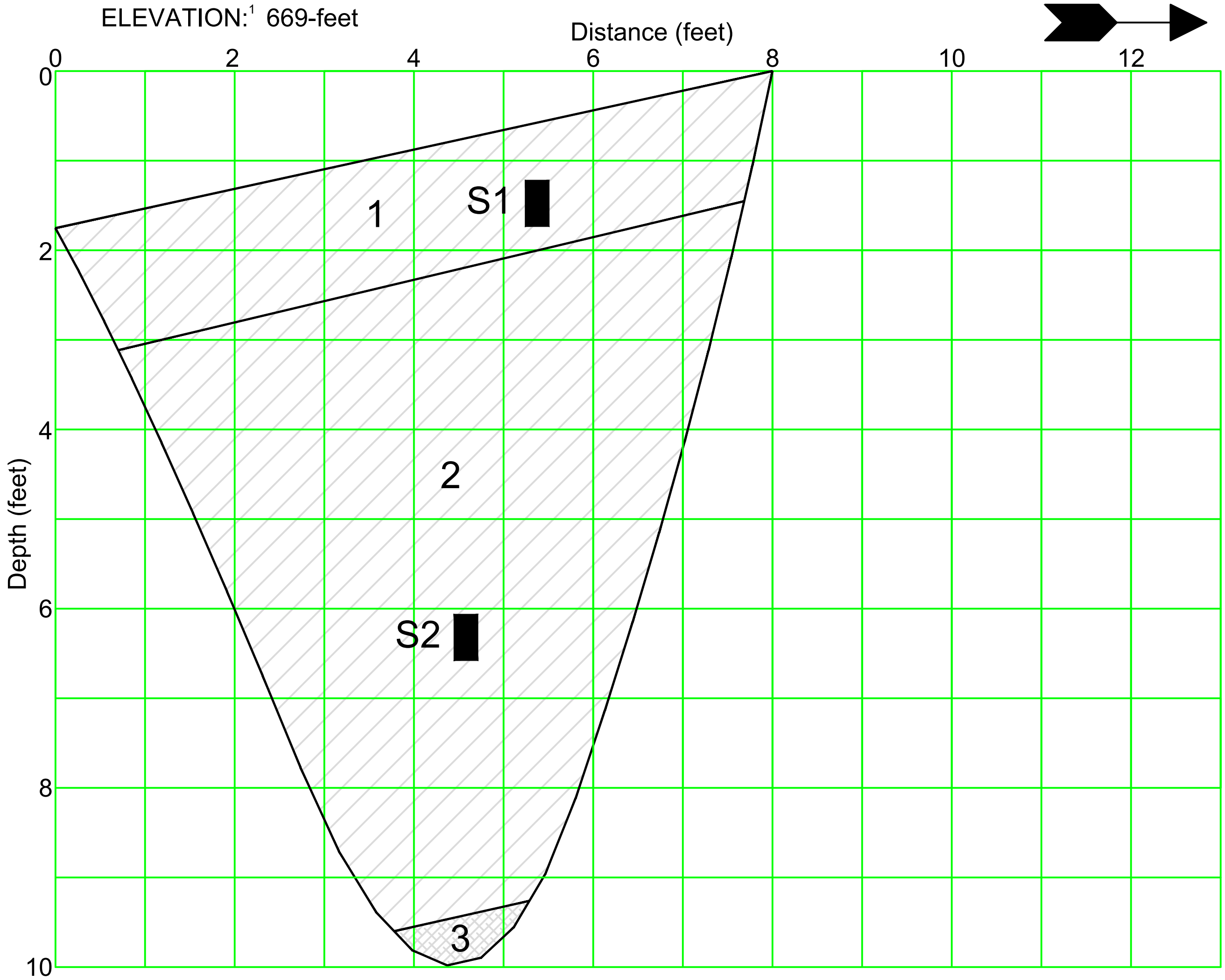
A-12
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 669-feet

TEST PIT 11

N80°E



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	12.4		
S2	14.9		

Layer	Description
1	SILTY CLAY (CH) Light gray, dry to moist, medium stiff to stiff, high plasticity [COLLUVIUM]
2	GRAVELLY CLAY (CH) Medium gray, moist, stiff, high plasticity, ~40% angular mudstone fragments to 4"+ [SLIDE DEBRIS]
3	MUDSTONE Light gray, friable, highly sheared, completely weathered [BEDROCK]

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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Project No. 2298.001 Date: 6/28/16

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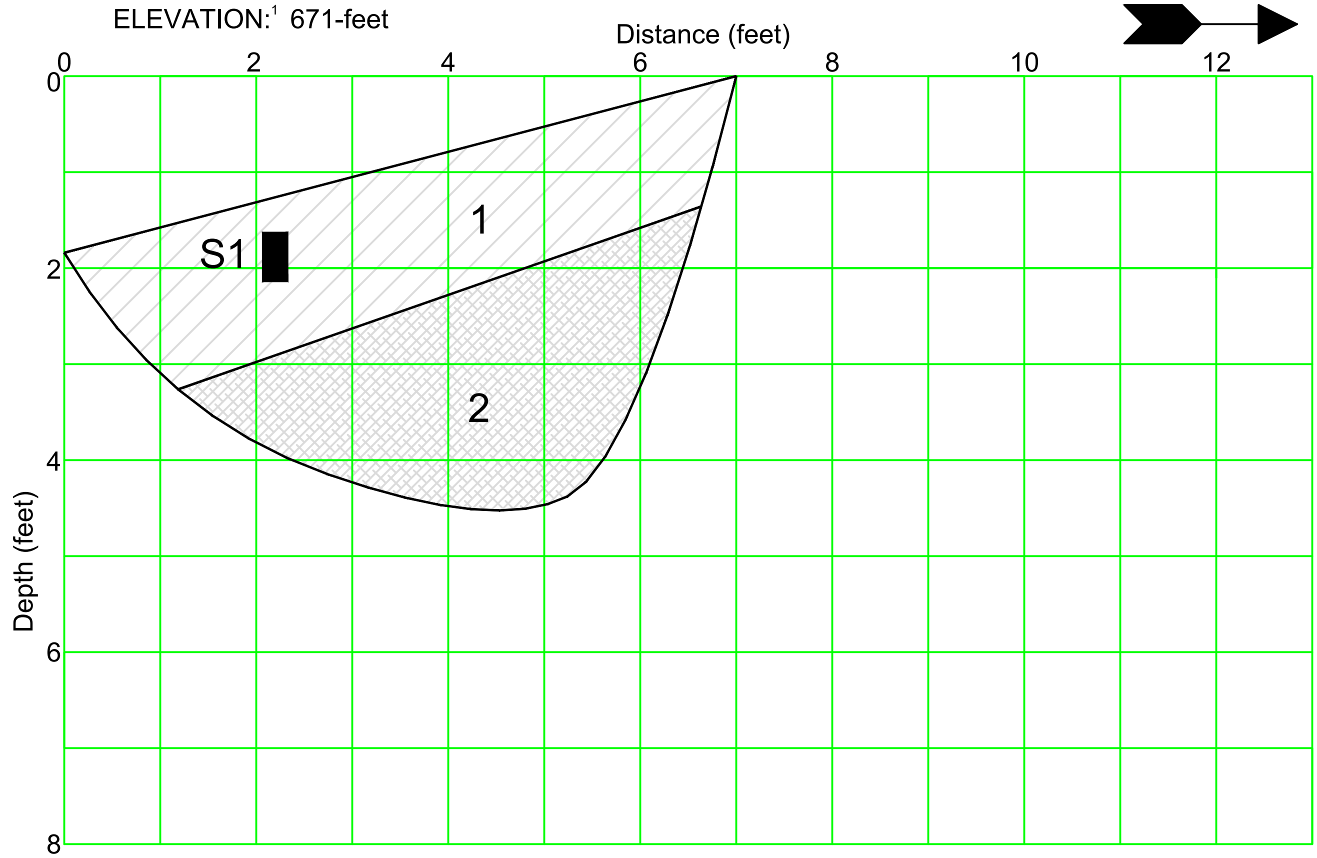
Checked

A-13
FIGURE

EQUIPMENT: Ingersoll-Rand Bobcat 337 Mini-Excavator With 18-In. Bucket
DATE: 6/14/16
ELEVATION:[1] 671-feet

TEST PIT 12

N65°E



Sample	Moisture Content (%)	Plasticity Index	Fines Content (%)
S1	13.1		

Layer	Description
1	SILTY CLAY (CH) Light gray, dry, medium stiff, high plasticity, ~30% silt [COLLUVIUM]
2	MUDSTONE Dark gray with orange mottling, moderately hard, weak to moderately strong, closely fractured, fractures dip 46°:235° [BEDROCK]
	Easy excavation noted at maximum explored depth of 4.5-feet.

NOTES: (1) REFERENCE: Topographic Map by Applied Civil Engineering (2016)
(2) METRIC EQUIVALENT DRY UNIT WEIGHT (kN/m^3) IS pcf x 0.1571
(3) METRIC EQUIVALENT STRENGTH (kPa) IS psf x 0.0479

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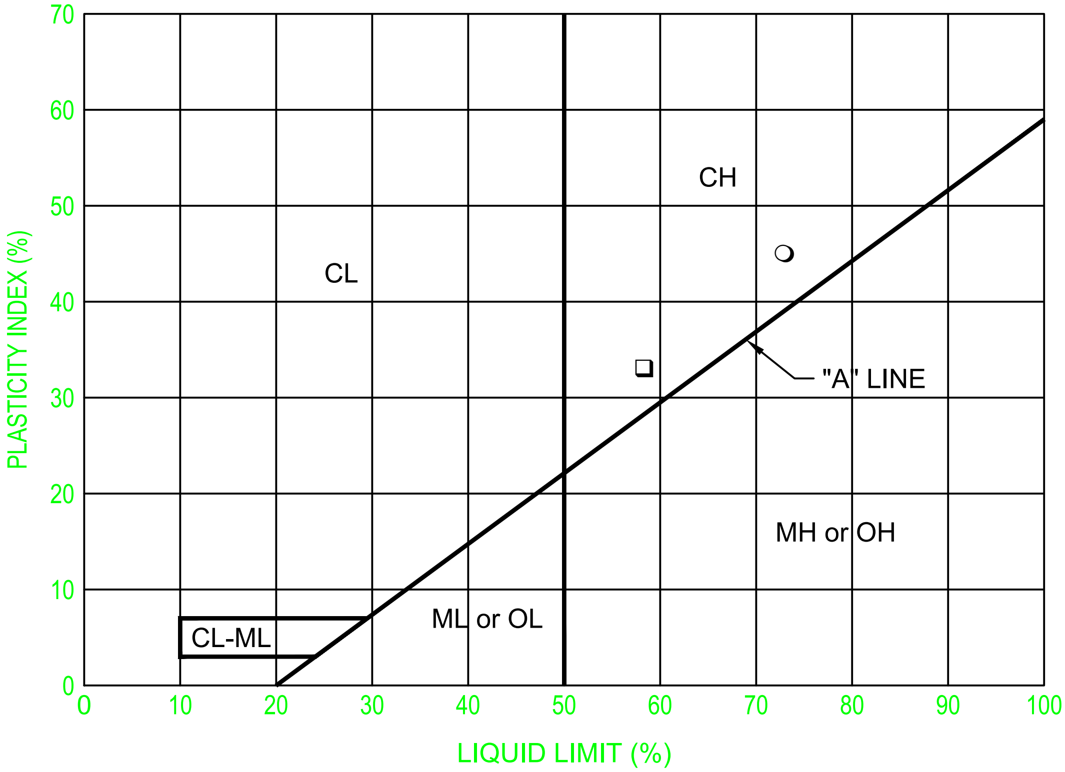
A-14
FIGURE



SYMBOL	SAMPLE SOURCE	CLASSIFICATION	LIQUID LIMIT (%)	PLASTIC LIMIT (%)	PLASTICITY INDEX (%)
❑	TEST PIT 3 6-12 Inches	CLAY (CH) Light gray	58	25	33
❍	TEST PIT 10 6-12 inches	CLAY (CH) Light gray	72	27	45

REFERENCE: Liquid Limit, Plastic Limit, and Plasticity Index of Soils, ASTM D 4318

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PLASTICITY INDEX TEST RESULTS

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A-15
FIGURE