

Appendix A

Subsurface Explorations

CONTENTS

A.1	Introduction	A-1
A.2	Test Pits	A-1
A.3	Borings.....	A-1
A.4	Soil and Rock Classification System.....	A-2
A.5	References	A-3

Figures

Figure A-1:	Soil Description and Log Key
Figure A-2:	Rock Classification and Log Key
Figure A-3:	Log of Test Pit TP-1
Figure A-4:	Log of Test Pit TP-2B
Figure A-5:	Log of Test Pit TP-3
Figure A-6:	Log of Test Pit TP-4B
Figure A-7:	Log of Test Pit TP-5
Figure A-8:	Log of Test Pit TP-6
Figure A-9:	Log of Test Pit TP-7
Figure A-10:	Log of Test Pit TP-8
Figure A-11:	Log of Boring SW-B-01
Figure A-12:	Log of Boring SW-B-02
Figure A-13:	Log of Boring SW-B-03
Figure A-14:	Log of Boring SW-B-04
Figure A-15:	Log of Boring SW-B-05
Figure A-16:	Log of Boring SW-B-06
Figure A-17:	Log of Boring SW-B-07
Figure A-18:	Log of Boring SW-B-08
Figure A-19:	Log of Boring SW-B-09
Figure A-20:	Log of Boring SW-B-10
Figure A-21:	Log of Boring SW-B-11
Figure A-22:	Log of Boring SW-B-12
Figure A-23:	Log of Boring SW-B-13

APPENDIX A: SUBSURFACE EXPLORATIONS

- Figure A-24: Log of Boring SW-B-14
- Figure A-25: Log of Boring SW-B-15
- Figure A-26: Log of Boring SW-B-16
- Figure A-27: Log of Boring SW-B-17
- Figure A-28: Log of Boring SW-B-18
- Figure A-29: Log of Boring SW-B-19
- Figure A-30: Log of Boring SW-B-20
- Figure A-31: Log of Boring SW-B-21
- Figure A-32: Log of Boring SW-B-22
- Figure A-33: Log of Boring SW-B-23
- Figure A-34: Log of Boring SW-B-24
- Figure A-35: Log of Boring SW-B-25
- Figure A-36: Log of Boring SW-B-26
- Figure A-37: Log of Boring SW-B-27
- Figure A-38: Log of Boring SW-B-28
- Figure A-39: Log of Boring SW-B-29
- Figure A-40: Log of Boring SW-B-30A
- Figure A-41: Log of Boring SW-B-30B
- Figure A-42: Log of Boring SW-B-31A
- Figure A-43: Log of Boring SW-B-31B
- Figure A-44: Log of Boring SW-B-32
- Figure A-45: Log of Boring SW-B-33
- Figure A-46: Log of Boring SW-B-34
- Figure A-47: Log of Boring SW-B-35
- Figure A-48: Log of Boring SW-B-36
- Figure A-49: Log of Boring SW-B-37
- Figure A-50: Log of Boring SW-B-38
- Figure A-51: Log of Boring SW-B-39
- Figure A-52: Log of Boring SW-B-40
- Figure A-53: Log of Boring SW-B-41
- Figure A-54: Log of Boring SW-B-42
- Figure A-55: Log of Boring SW-B-43
- Figure A-56: Log of Boring SW-B-44
- Figure A-57: Log of Boring SW-B-45
- Figure A-58: Log of Boring SW-B-46
- Figure A-59: Log of Boring SW-B-47

APPENDIX A: SUBSURFACE EXPLORATIONS

Figure A-60: Log of Boring SW-B-48

Figure A-61: Log of Boring SW-B-49

Figure A-62: Log of Boring SW-B-50

Figure A-63: Log of Boring SW-B-51

GEOVision Geophysical Services, Inc., 2018, Reds Meadow Road Improvements: Report prepared by GEOVision Geophysical Services, Inc. Corona, California, GEOVision Project No. 18419, for Shannon & Wilson, Glendale, California, November, 43 p.

A.1 INTRODUCTION

The field exploration program for the proposed Reds Meadow Road improvements consisted of 8 test pits and 51 boring locations. The test pits were excavated on May 19, 2018, and the borings were drilled from May 28 to June 3 and October 26 to November 5, 2018. The approximate test pit and boring locations are shown on the Site and Exploration Plan, Figure 2. A representative from Shannon & Wilson, Inc. (Shannon & Wilson) observed the excavating, drilling, and sampling operations; retrieved representative samples for laboratory testing; and prepared a log of each subsurface exploration. The methods used to conduct the field exploration program are described below.

A.2 TEST PITS

Eight test pits were excavated by ConSpec, Inc. of Lee Vining, California, under subcontract to Shannon & Wilson, using a CASE 590 Super N backhoe loader. Where bedrock was not encountered, the test pits were excavated into the toe of the existing slope to a depth of 5 feet. In test pits where bedrock was encountered, the excavations were terminated at depths ranging from approximately 6 inches to 4 feet.

Test pit logs are presented as Figures A-3 through A-10. The test pit logs represent our interpretation of the subsurface conditions encountered at the time of excavating. Bulk soil samples were obtained by collecting the excavation cuttings from each excavation, except TP-3 which encountered bedrock 6 inches below the existing slope. Approximately 50 to 60 pounds of cuttings were placed in a plastic bag and transported to our laboratory for further analysis and testing. The excavations were backfilled with soil cuttings and lightly compacted at the surface using the backhoe bucket and tires.

A.3 BORINGS

Forty-six borings were drilled by Geo-Ex Subsurface Exploration of Dixon, California and five borings were drilled by 2R Drilling, Inc. of Chino, California, both under subcontract to Shannon & Wilson. Truck-mounted CME 55 and CME 75 drill rigs were used. Borings SW-B-22 through SW-B-32 were drilled with the CME 55 drill rig, whereas all other borings were drilled with the CME 75 drill rig. Borings SW-B-22 through SW-B-32 were advanced to 5 feet with a 4-inch diameter solid stem auger. At locations selected for bulk sampling, a secondary boring located approximately 1 to 2 feet from the original boring was also advanced to 5 feet to collect additional bulk sample material. All other borings drilled by Geo-Ex Subsurface Exploration were advanced to 5 feet with a 6-inch diameter solid stem

auger to provide an adequate amount of material for bulk sampling, then advanced beyond 5 feet with a 4-inch diameter solid stem auger. The five borings drilled by 2R Drilling were advanced with an 8-inch diameter hollow stem auger. Borings were backfilled with cuttings and capped with concrete.

We collected disturbed samples by performing Standard Penetration Tests (SPTs), which were performed in general accordance with ASTM International (ASTM) Designation: D1586, Standard Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling. The SPT consists of driving a 2-inch outside diameter, 1.375-inch inside diameter, split-spoon sampler 18 inches with a 140-pound hammer free-falling a distance of 30 inches. An automatic hammer system was used to advance the samplers. During sampling, the Shannon & Wilson field representative recorded the number of blows for each 6-inch increment of penetration. The number of blows required for the last 12 inches of penetration is termed the Standard Penetration Resistance, or N-value. When the resistance exceeded 50 blows for 6 inches or less penetration, the test was terminated, and the number of blows and corresponding penetration were recorded. The N-value is an empirical parameter that provides a means for evaluating the relative density, or compactness, of granular soils and the consistency, or stiffness, of cohesive soils. The N-values are plotted on the individual boring logs. The split-spoon SPT sampler used during the penetration testing recovered a disturbed sample of the soil. The soil samples were field classified and recorded on boring logs, sealed in plastic jars, and returned to our laboratory for further analysis and testing.

Bulk soil samples were also obtained by collecting the drill cuttings from the upper 5 feet of select borings. Approximately 20 to 60 pounds of cuttings were placed in a plastic bag and transported to our laboratory for further analysis and testing.

A boring log is a written record of the subsurface conditions encountered in the exploration. It represents our interpretation of the subsurface conditions encountered at the time of the drilling and presents the results of laboratory testing. Our boring logs are presented as Figures A-11 through A-63.

A.4 SOIL AND ROCK CLASSIFICATION SYSTEM

During drilling and test pit excavations, the Shannon & Wilson representative collected soil/rock samples and prepared a field log of each boring and test pit. Soil classifications were based on ASTM Designation: D2487, Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System), and ASTM Designation: D2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

The system is referred to as the Unified Soil Classification System and is summarized on Figure A-1.

The Shannon & Wilson representative classified rock samples in general accordance with the International Society of Rock Mechanics (ISRM) classification method. According to this system, rocks are classified based on the stratigraphic structure, rock strength, degree of weathering, and other properties. The rock classification system is summarized on Figure A-2.

A.5 REFERENCES

- ASTM International, 2017a, Standard practice for classification of soils for engineering purposes (unified soil classification system), D2487-17: West Conshohocken, Pa., ASTM International, Annual book of standards, 10 p., available: www.astm.org.
- ASTM International, 2017b, Standard practice for description and identification of soils (visual-manual procedures), D2488-17^{e1}: West Conshohocken, Pa., ASTM International, Annual book of standards, 13 p., available: www.astm.org.
- ASTM International, 2018, Standard test method for standard penetration test (SPT) and split-barrel sampling of soils, D1586-18: West Conshohocken, Pa., ASTM International, Annual book of standards, 26 p., available: www.astm.org.

Shannon & Wilson, Inc. (S&W), uses a soil identification system modified from the Unified Soil Classification System (USCS). Elements of the USCS and other definitions are provided on this and the following pages. Soil descriptions are based on visual-manual procedures (ASTM D2488) and laboratory testing procedures (ASTM D2487), if performed.

S&W INORGANIC SOIL CONSTITUENT DEFINITIONS

CONSTITUENT ²	FINE-GRAINED SOILS (50% or more fines) ¹	COARSE-GRAINED SOILS (less than 50% fines) ¹
Major	<i>Silt, Lean Clay, Elastic Silt, or Fat Clay³</i>	<i>Sand or Gravel⁴</i>
Modifying (Secondary) Precedes major constituent	30% or more coarse-grained: <i>Sandy or Gravelly⁴</i>	More than 12% fine-grained: <i>Silty or Clayey³</i>
Minor Follows major constituent	15% to 30% coarse-grained: <i>with Sand or with Gravel⁴</i> 30% or more total coarse-grained and lesser coarse-grained constituent is 15% or more: <i>with Sand or with Gravel⁵</i>	5% to 12% fine-grained: <i>with Silt or with Clay³</i> 15% or more of a second coarse-grained constituent: <i>with Sand or with Gravel⁵</i>

¹All percentages are by weight of total specimen passing a 3-inch sieve.

²The order of terms is: *Modifying Major with Minor*.

³Determined based on behavior.

⁴Determined based on which constituent comprises a larger percentage.

⁵Whichever is the lesser constituent.

MOISTURE CONTENT TERMS

Dry	Absence of moisture, dusty, dry to the touch
Moist	Damp but no visible water
Wet	Visible free water, from below water table

STANDARD PENETRATION TEST (SPT) SPECIFICATIONS

Hammer:	140 pounds with a 30-inch free fall. Rope on 6- to 10-inch-diam. cathead 2-1/4 rope turns, > 100 rpm
	NOTE: If automatic hammers are used, blow counts shown on boring logs should be adjusted to account for efficiency of hammer.
Sampler:	10 to 30 inches long Shoe I.D. = 1.375 inches Barrel I.D. = 1.5 inches Barrel O.D. = 2 inches
N-Value:	Sum blow counts for second and third 6-inch increments. Refusal: 50 blows for 6 inches or less; 10 blows for 0 inches.
	NOTE: Penetration resistances (N-values) shown on boring logs are as recorded in the field and have not been corrected for hammer efficiency, overburden, or other factors.












PARTICLE SIZE DEFINITIONS

DESCRIPTION	SIEVE NUMBER AND/OR APPROXIMATE SIZE
FINES	< #200 (0.075 mm = 0.003 in.)
SAND Fine Medium Coarse	#200 to #40 (0.075 to 0.4 mm; 0.003 to 0.02 in.) #40 to #10 (0.4 to 2 mm; 0.02 to 0.08 in.) #10 to #4 (2 to 4.75 mm; 0.08 to 0.187 in.)
GRAVEL Fine Coarse	#4 to 3/4 in. (4.75 to 19 mm; 0.187 to 0.75 in.) 3/4 to 3 in. (19 to 76 mm)
COBBLES	3 to 12 in. (76 to 305 mm)
BOULDERS	> 12 in. (305 mm)

RELATIVE DENSITY / CONSISTENCY

COHESIONLESS SOILS		COHESIVE SOILS	
N, SPT, BLOWS/FT.	RELATIVE DENSITY	N, SPT, BLOWS/FT.	RELATIVE CONSISTENCY
< 4	Very loose	< 2	Very soft
4 - 10	Loose	2 - 4	Soft
10 - 30	Medium dense	4 - 8	Medium stiff
30 - 50	Dense	8 - 15	Stiff
> 50	Very dense	15 - 30	Very stiff
		> 30	Hard

WELL AND BACKFILL SYMBOLS

	Bentonite		Surface Cement Seal
	Cement Grout		Asphalt or Cap
	Bentonite Grout		Slough
	Bentonite Chips		Inclinometer or Non-perforated Casing
	Silica Sand		Vibrating Wire Piezometer
	Perforated or Screened Casing		

PERCENTAGES TERMS^{1, 2}

Trace	< 5%
Few	5 to 10%
Little	15 to 25%
Some	30 to 45%
Mostly	50 to 100%

¹Gravel, sand, and fines estimated by mass. Other constituents, such as organics, cobbles, and boulders, estimated by volume.

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FTFS 03S11(1)
Madera County, California

SOIL DESCRIPTION AND LOG KEY

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FIG. A-1
Sheet 1 of 3

UNIFIED SOIL CLASSIFICATION SYSTEM (USCS)
(Modified From USACE Tech Memo 3-357, ASTM D2487, and ASTM D2488)

MAJOR DIVISIONS			GROUP/GRAPHIC SYMBOL	TYPICAL IDENTIFICATIONS
COARSE-GRAINED SOILS (more than 50% retained on No. 200 sieve)	Gravels (more than 50% of coarse fraction retained on No. 4 sieve)	Gravel (less than 5% fines)	GW	Well-Graded Gravel; Well-Graded Gravel with Sand
			GP	Poorly Graded Gravel; Poorly Graded Gravel with Sand
		Silty or Clayey Gravel (more than 12% fines)	GM	Silty Gravel; Silty Gravel with Sand
			GC	Clayey Gravel; Clayey Gravel with Sand
	Sands (50% or more of coarse fraction passes the No. 4 sieve)	Sand (less than 5% fines)	SW	Well-Graded Sand; Well-Graded Sand with Gravel
			SP	Poorly Graded Sand; Poorly Graded Sand with Gravel
		Silty or Clayey Sand (more than 12% fines)	SM	Silty Sand; Silty Sand with Gravel
			SC	Clayey Sand; Clayey Sand with Gravel
FINE-GRAINED SOILS (50% or more passes the No. 200 sieve)	Silts and Clays (liquid limit less than 50)	Inorganic	ML	Silt; Silt with Sand or Gravel; Sandy or Gravelly Silt
			CL	Lean Clay; Lean Clay with Sand or Gravel; Sandy or Gravelly Lean Clay
		Organic	OL	Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
	Silts and Clays (liquid limit 50 or more)	Inorganic	MH	Elastic Silt; Elastic Silt with Sand or Gravel; Sandy or Gravelly Elastic Silt
			CH	Fat Clay; Fat Clay with Sand or Gravel; Sandy or Gravelly Fat Clay
		Organic	OH	Organic Silt or Clay; Organic Silt or Clay with Sand or Gravel; Sandy or Gravelly Organic Silt or Clay
HIGHLY-ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor		PT	Peat or other highly organic soils (see ASTM D4427)

NOTE: No. 4 size = 4.75 mm = 0.187 in.; No. 200 size = 0.075 mm = 0.003 in.

NOTES

- Dual symbols (symbols separated by a hyphen, i.e., SP-SM, Sand with Silt) are used for soils with between 5% and 12% fines or when the liquid limit and plasticity index values plot in the CL-ML area of the plasticity chart. Graphics shown on the logs for these soil types are a combination of the two graphic symbols (e.g., SP and SM).
- Borderline symbols (symbols separated by a slash, i.e., CL/ML, Lean Clay to Silt; SP-SM/SM, Sand with Silt to Silty Sand) indicate that the soil properties are close to the defining boundary between two groups.

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 AND LOG KEY**

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FIG. A-1
 Sheet 2 of 3

GRADATION TERMS

Poorly Graded	Narrow range of grain sizes present or, within the range of grain sizes present, one or more sizes are missing (Gap Graded). Meets criteria in ASTM D2487, if tested.
Well-Graded	Full range and even distribution of grain sizes present. Meets criteria in ASTM D2487, if tested.

CEMENTATION TERMS¹

Weak	Crumbles or breaks with handling or slight finger pressure.
Moderate	Crumbles or breaks with considerable finger pressure.
Strong	Will not crumble or break with finger pressure.

PLASTICITY²

DESCRIPTION	VISUAL-MANUAL CRITERIA	APPROX. PLASTICITY INDEX RANGE
Nonplastic	A 1/8-in. thread cannot be rolled at any water content.	< 4
Low	A thread can barely be rolled and a lump cannot be formed when drier than the plastic limit.	4 to 10
Medium	A thread is easy to roll and not much time is required to reach the plastic limit. The thread cannot be rerolled after reaching the plastic limit. A lump crumbles when drier than the plastic limit.	10 to 20
High	It takes considerable time rolling and kneading to reach the plastic limit. A thread can be rerolled several times after reaching the plastic limit. A lump can be formed without crumbling when drier than the plastic limit.	> 20

ADDITIONAL TERMS

Mottled	Irregular patches of different colors.
Bioturbated	Soil disturbance or mixing by plants or animals.
Diamict	Nonsorted sediment; sand and gravel in silt and/or clay matrix.
Cuttings	Material brought to surface by drilling.
Slough	Material that caved from sides of borehole.
Sheared	Disturbed texture, mix of strengths.

PARTICLE ANGULARITY AND SHAPE TERMS¹

Angular	Sharp edges and unpolished planar surfaces.
Subangular	Similar to angular, but with rounded edges.
Subrounded	Nearly planar sides with well-rounded edges.
Rounded	Smoothly curved sides with no edges.
Flat	Width/thickness ratio > 3.
Elongated	Length/width ratio > 3.

ACRONYMS AND ABBREVIATIONS

ATD	At Time of Drilling
Diam.	Diameter
Elev.	Elevation
ft.	Feet
FeO	Iron Oxide
gal.	Gallons
Horiz.	Horizontal
HSA	Hollow Stem Auger
I.D.	Inside Diameter
in.	Inches
lbs.	Pounds
MgO	Magnesium Oxide
mm	Millimeter
MnO	Manganese Oxide
NA	Not Applicable or Not Available
NP	Nonplastic
O.D.	Outside Diameter
OW	Observation Well
pcf	Pounds per Cubic Foot
PID	Photo-Ionization Detector
PMT	Pressuremeter Test
ppm	Parts per Million
psi	Pounds per Square Inch
PVC	Polyvinyl Chloride
rpm	Rotations per Minute
SPT	Standard Penetration Test
USCS	Unified Soil Classification System
q _u	Unconfined Compressive Strength
VWP	Vibrating Wire Piezometer
Vert.	Vertical
WOH	Weight of Hammer
WOR	Weight of Rods
Wt.	Weight

STRUCTURE TERMS¹

Interbedded	Alternating layers of varying material or color with layers at least 1/4-inch thick; singular: bed.
Laminated	Alternating layers of varying material or color with layers less than 1/4-inch thick; singular: lamination.
Fissured	Breaks along definite planes or fractures with little resistance.
Slickensided	Fracture planes appear polished or glossy; sometimes striated.
Blocky	Cohesive soil that can be broken down into small angular lumps that resist further breakdown.
Lensed	Inclusion of small pockets of different soils, such as small lenses of sand scattered through a mass of clay.
Homogeneous	Same color and appearance throughout.

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FIG. A-1
Sheet 3 of 3

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WEATHERING

TERM	DESCRIPTION
Fresh	No visible sign of rock material weathering
Slightly Weathered	Slight discoloration on surface
Moderately Weathered	Discoloring evident; Less than half of the rock material is decomposed
Highly Weathered	Entire rock mass discolored; More than half of the rock material is decomposed
Completely Weathered	Rock reduced to a soil with relict rock texture
Residual Soil	All rock material is converted to soil

STRENGTH

GRADE	DESCRIPTION	APPROX. UCS (psi)
R0	Extremely Weak Rock	36 to 145
R1	Very Weak Rock	145 to 700
R2	Weak Rock	700 to 3,600
R3	Medium Strong Rock	3,600 to 7,200
R4	Strong Rock	7,200 to 14,500
R5	Very Strong Rock	14,500 to 36,250
R6	Extremely Strong Rock	>36,250

JOINT ROUGHNESS COEFFICIENT (JRC)

COEFFICIENT	DESCRIPTION
14 to 20	VERY ROUGH: Near vertical edges evident
10 to 14	ROUGH: Smooth ridges, surface abrasion
6 to 10	SLIGHTLY ROUGH: Asperities on surface can be felt
2 to 6	SMOOTH: Appears and feels smooth
0 to 2	SLICKENSIDED: Visible polishing, striated surface

DISCONTINUITY DATA

SPACING	
DESCRIPTION	SPACING
Extremely Close	< 1 in
Very Close	1 to 2.5 in
Close	2.5 to 8 in
Moderate	8 to 24 in
Wide	24 in to 6 ft
Very Wide	6 to 20 ft
Extremely Wide	> 20 ft

DISCONTINUITY TERMS

FRACTURE - Collective term for any natural break excluding shears, shear zones, and faults

JOINT (JT) - Planar break with little or no displacement

FOLIATION JOINT (FJ) or BEDDING JOINT (BJ) - Joint along foliation or bedding

INCIPIENT JOINT (IJ) or INCIPIENT FRACTURE (IF) - Joint or fracture not evident until wetted and dried; breaks along existing surface

RANDOM FRACTURE (RF) - Natural, very irregular fracture that does not belong to a set

BEDDING PLANE SEPARATION or PARTING - A separation along bedding after extraction from stress relief or slaking

FRACTURE ZONE (FZ) - Planar zone of broken rock without gouge

MECHANICAL BREAK (MB) - Breaks due to drilling or handling; drilling break (DB), hammer break (HB)

SHEAR (SH) - Surface of differential movement evident by presence of slickensides, striations, or polishing

SHEAR ZONE (SZ) - Zone of gouge and rock fragments bounded by planar shear surfaces

FAULT (FT) - Shear zone of significant extent; differentiation from shear zone may be site-specific

APERTURE WIDTH

TERM	SPACING
Very Tight	<0.1mm
Tight	0.1 to 0.25mm
Partly Open	0.25 to 0.5mm
Open	0.5 to 2.5mm
Moderately Wide	2.5 to 10mm
Wide	10mm to 1cm
Very Wide	1 to 10cm
Extremely Wide	10 to 100cm
Cavernous	>1m

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ROCK CLASSIFICATION AND LOG KEY

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FIG. A-2
 Sheet 1 of 2

ROCK CLASSIFICATION SYMBOLS		
BEDROCK TYPE	GRAPHIC SYMBOL	ROCK NAME
Clastic Sedimentary Rocks		Breccia
		Conglomerate
		Sandstone
		Siltstone
		Claystone
		Shale
		Coal
Carbonate Sedimentary Rocks		Limestone
		Dolomite
		Coral
Evaporite Rocks		Gypsum
		Halite
		Calcite
Extrusive Igneous Rocks		Tuff
		Rhyolite
		Dacite
		Andesite
		Basalt
Intrusive Igneous Rocks		Granite
		Grano-diorite
		Diorite
		Gabbro
Metamorphic Rocks		Marble
		Quartzite
		Slate
		Phyllite
		Schist
		Gneiss

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ROCK CLASSIFICATION AND LOG KEY

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FIG. A-2
Sheet 2 of 2

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JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 19+90

PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-1

SOIL DESCRIPTION	Ground Water	% Water Content	Samples	Depth, Ft.	Sketch of _____ Pit Side		Road Surface Elevation: ~9114'
					Horizontal Distance in Feet	Vertical Distance in Feet	
<p>① Quaternary Talus and Slopewash (Qts) 0'-2' Loose to medium dense, Clayey Sand with Gravel (SC); moist; few cobbles; fine to coarse gravel; fine to coarse sand; roots; layers parallel to slope; cobbles oriented subparallel to slope.</p> <p>② Quaternary Talus and Slopewash (Qts) 2'-5' Medium dense to dense; yellow brown to brown; Clayey Sand with Gravel (SC); moist; trace boulders; few cobbles; fine to coarse gravel; fine to coarse sand; massive; boulders and cobbles oriented subparallel to slope.</p>							
<p>NOTES</p> <p>No groundwater observed.</p> <p>⊗ Long and short axis of clast.</p>							

FIG. A-3

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JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 28+15
PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-2B

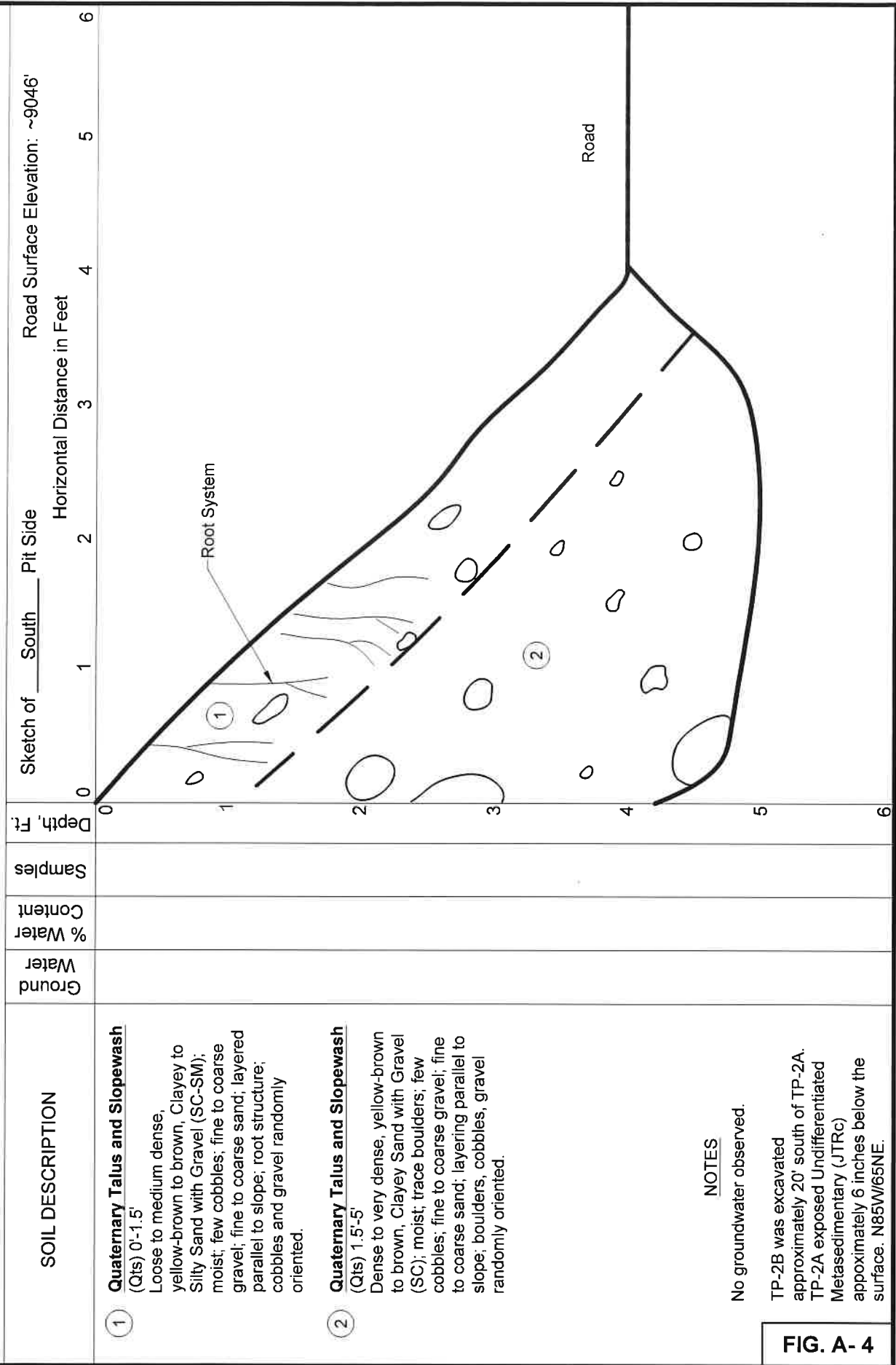


FIG. A-4

SHANNON & WILSON, INC.
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JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 45+00

PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-3

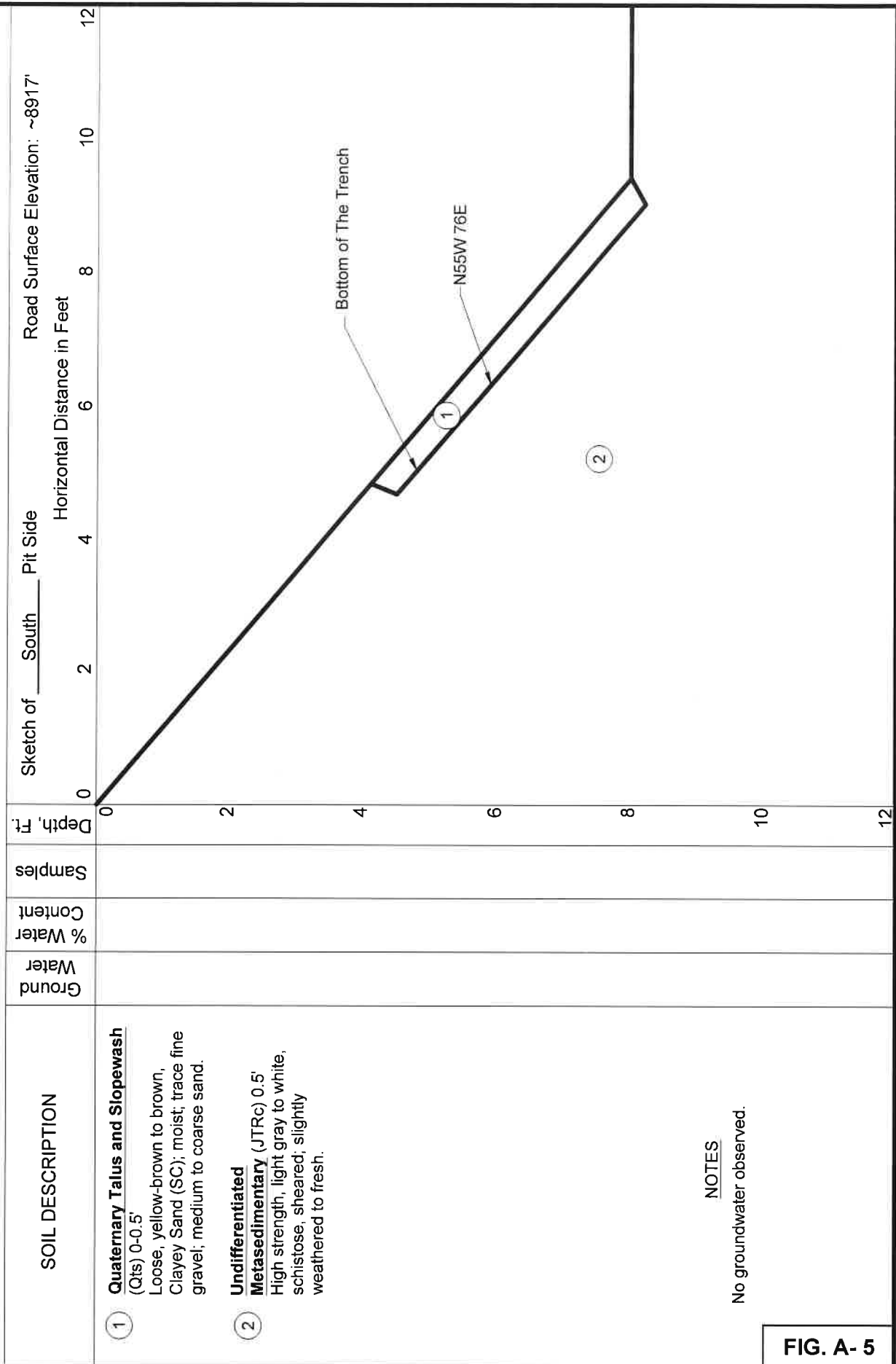


FIG. A- 5

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 88+10
PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-4B

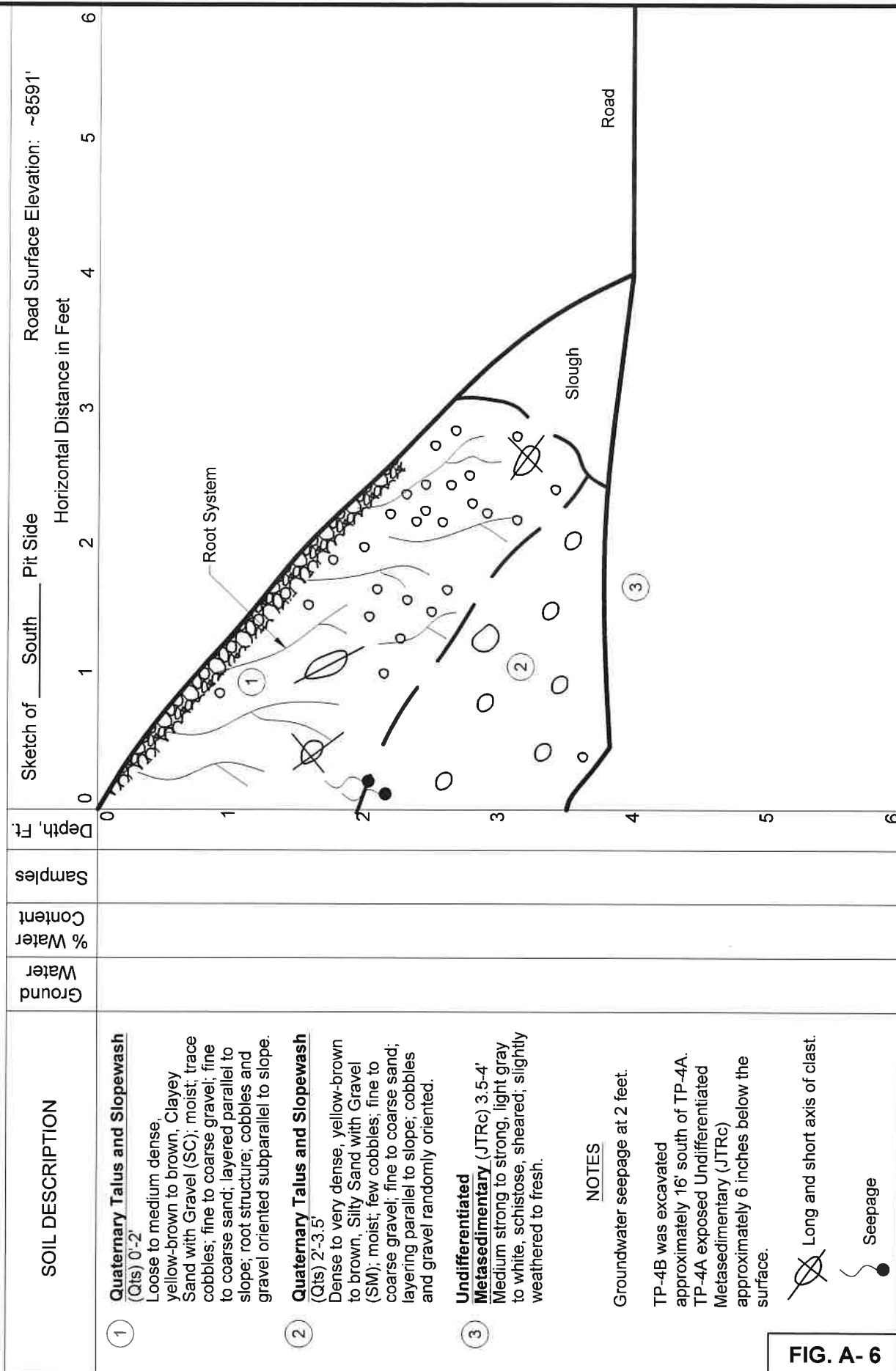


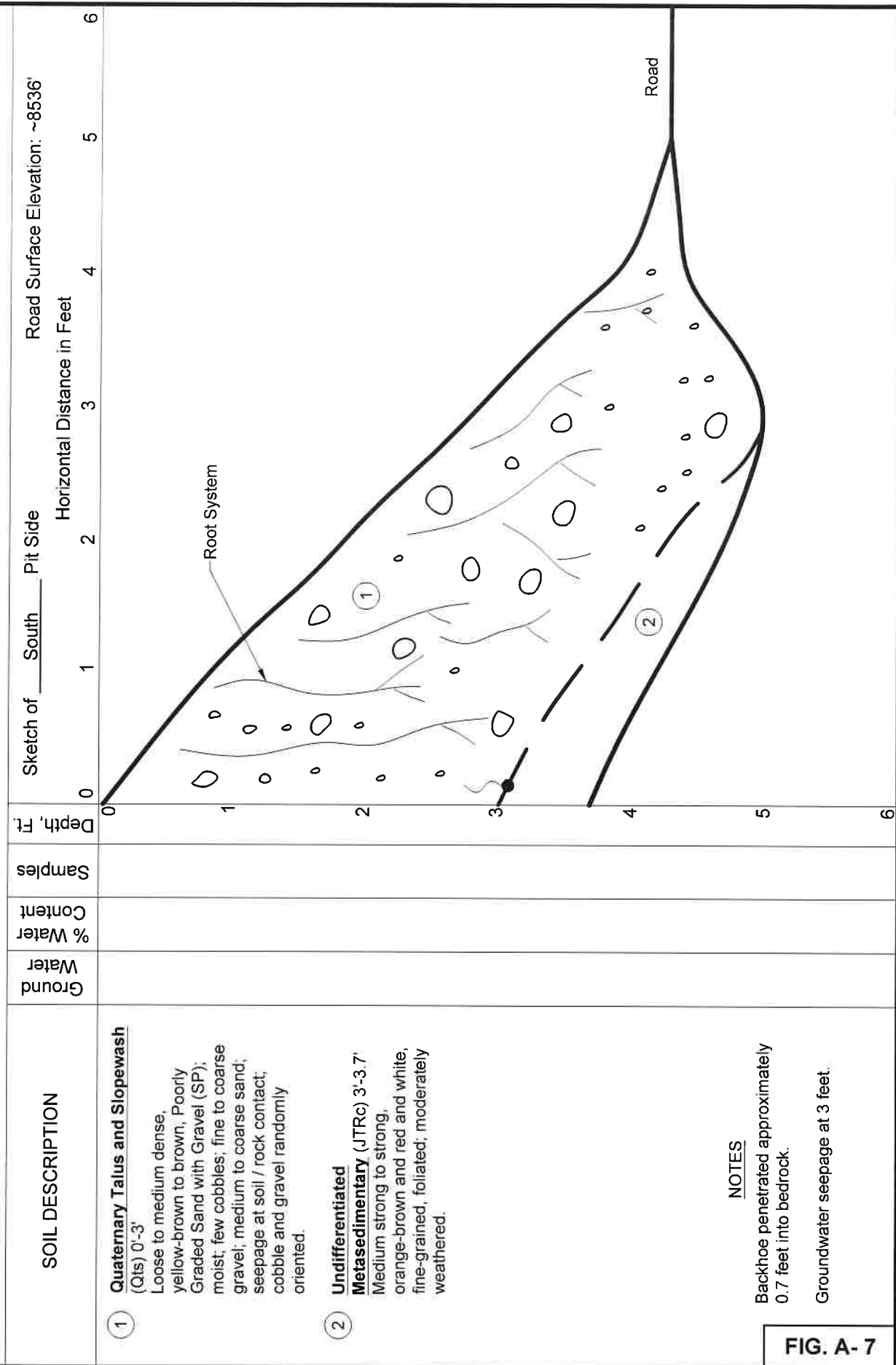
FIG. A- 6

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 101+20

PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-5



NOTES
Backhoe penetrated approximately 0.7 feet into bedrock.
Groundwater seepage at 3 feet.

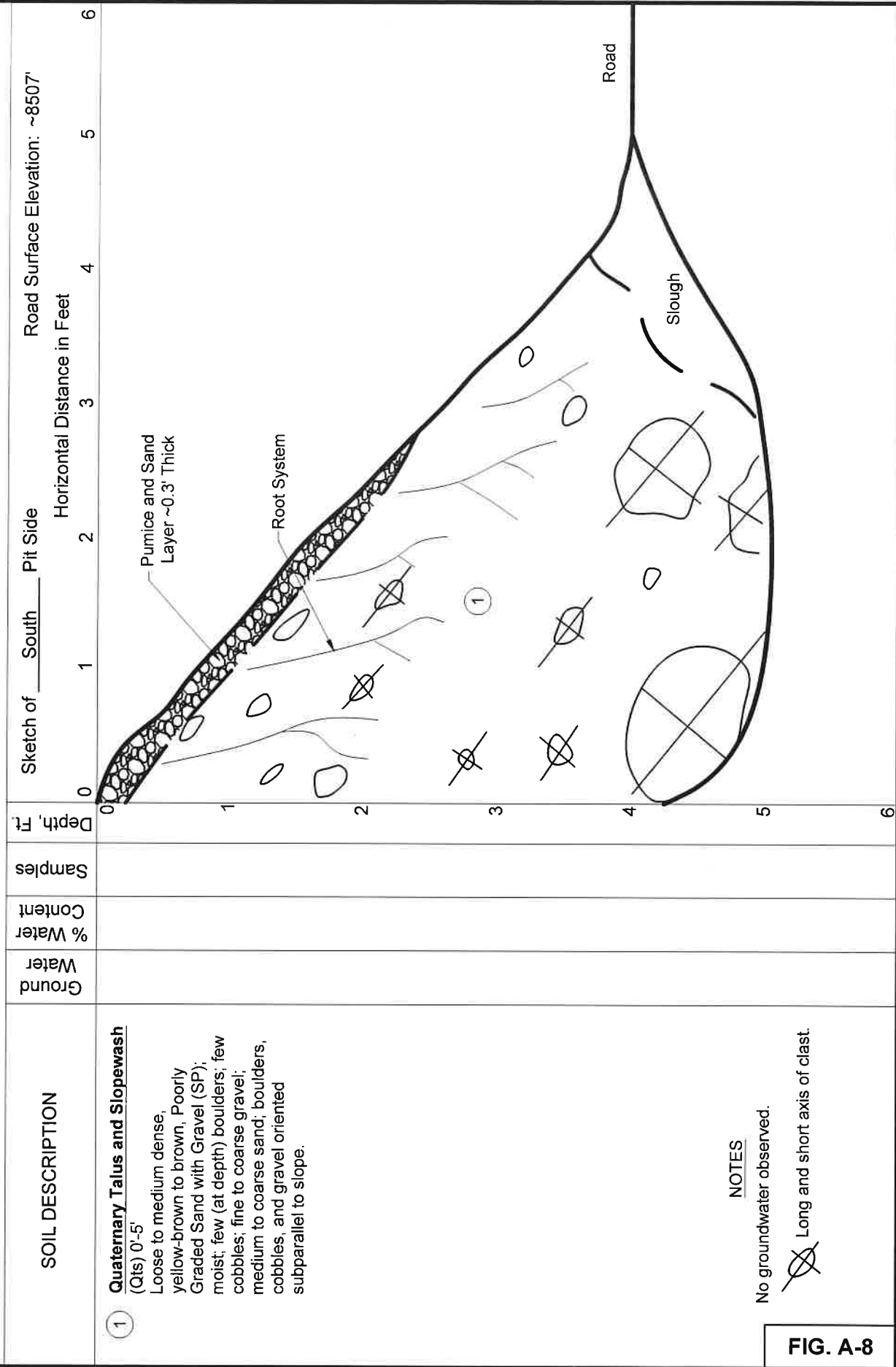
FIG. A-7

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 105+20

PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-6



NOTES

No groundwater observed.

⊗ Long and short axis of clast.

FIG. A-8

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 120+60

PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-7

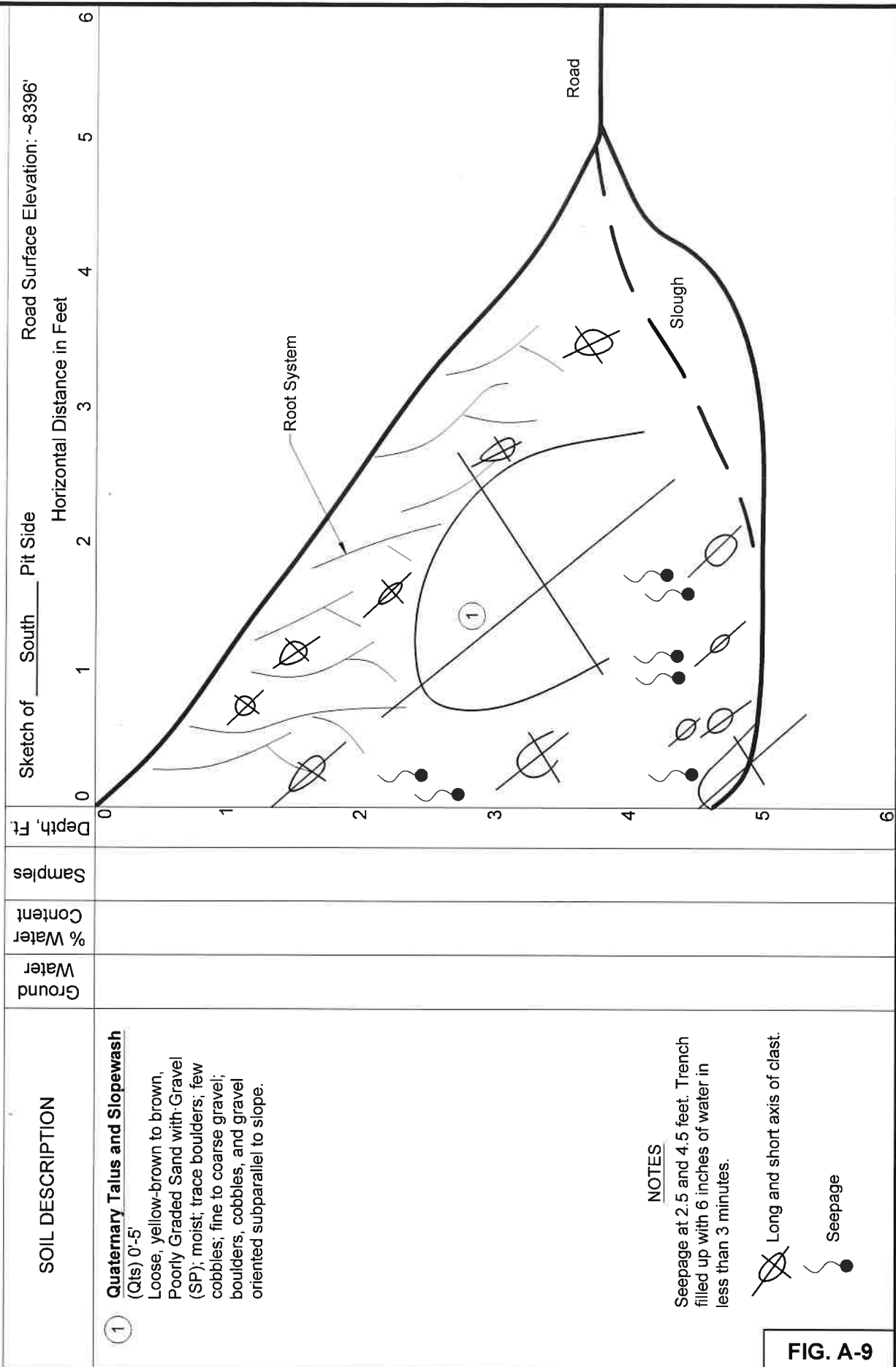
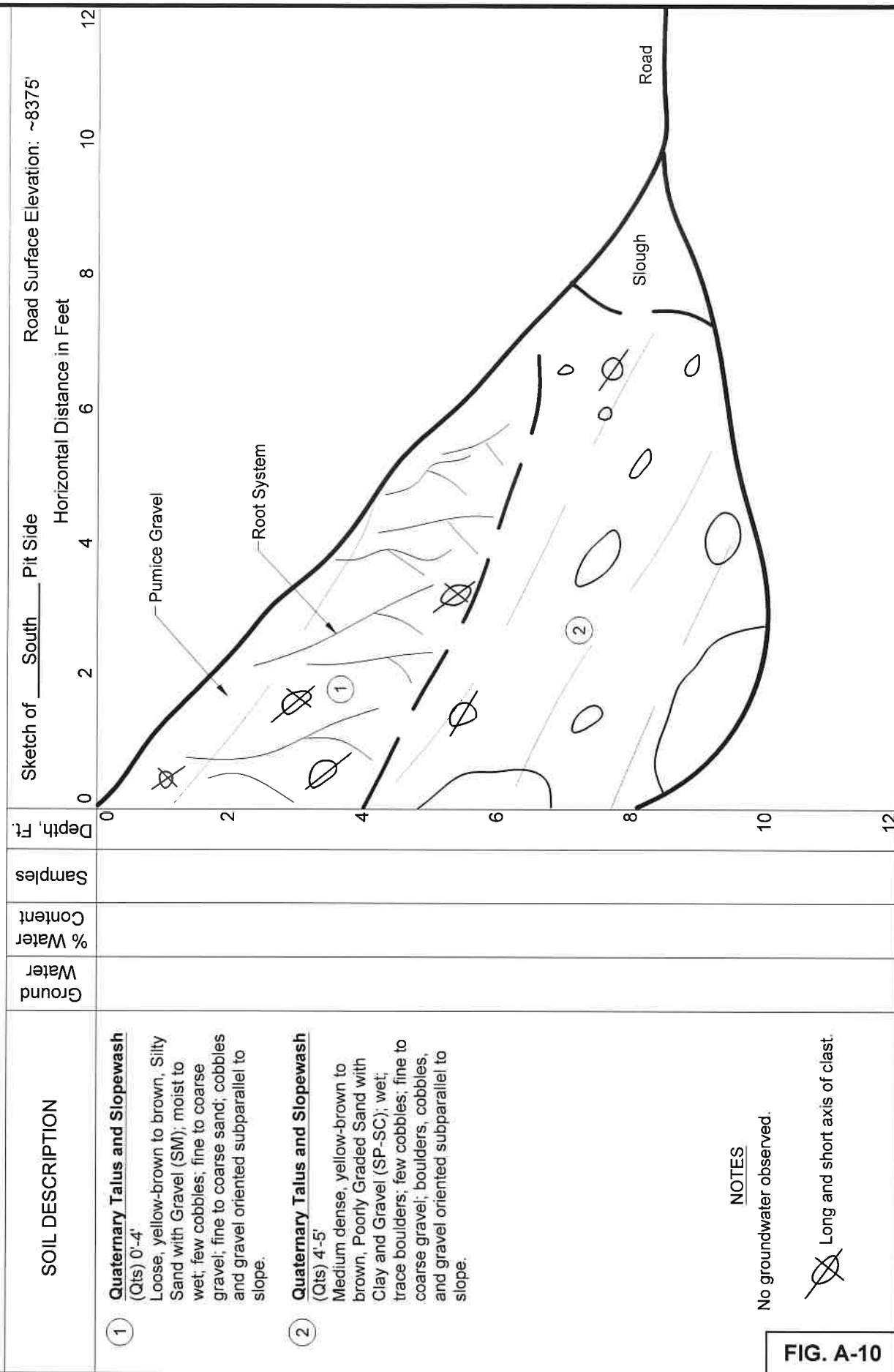


FIG. A-9

SHANNON & WILSON, INC.
Geotechnical and Environmental Consultants

JOB NO: 100062-003 DATE: 5-19-2018 LOCATION: Station 123+95
PROJECT: Red Meadow Road Improvements

LOG OF TEST PIT TP-8



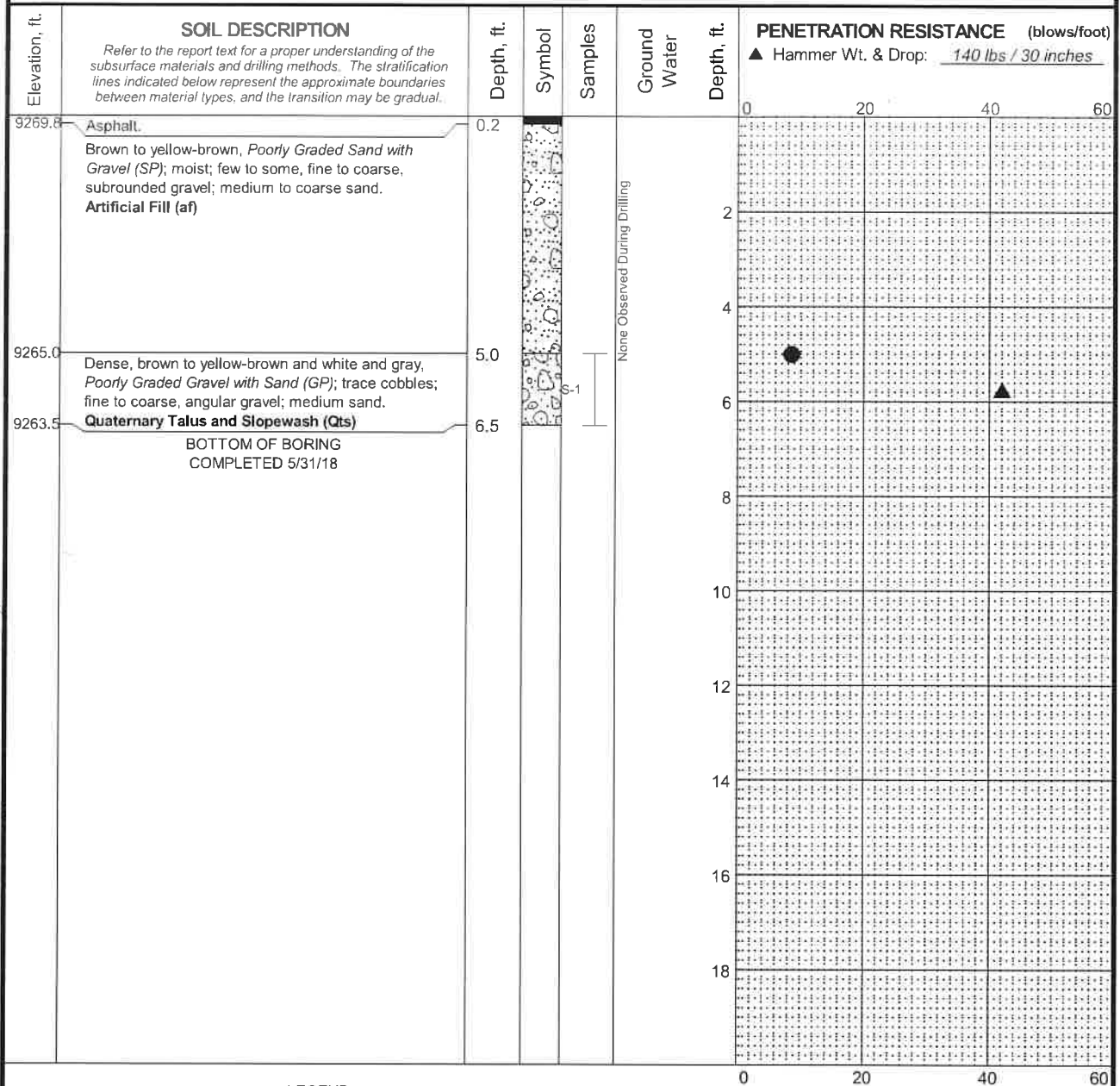
NOTES

No groundwater observed.

Long and short axis of clast.

FIG. A-10

Total Depth: 6.5 ft. Latitude: 37.65639 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 9270 ft. Longitude: -119.0613 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 215+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista



LEGEND

- * Sample Not Recovered
- I 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-01

January 2021

100062-003

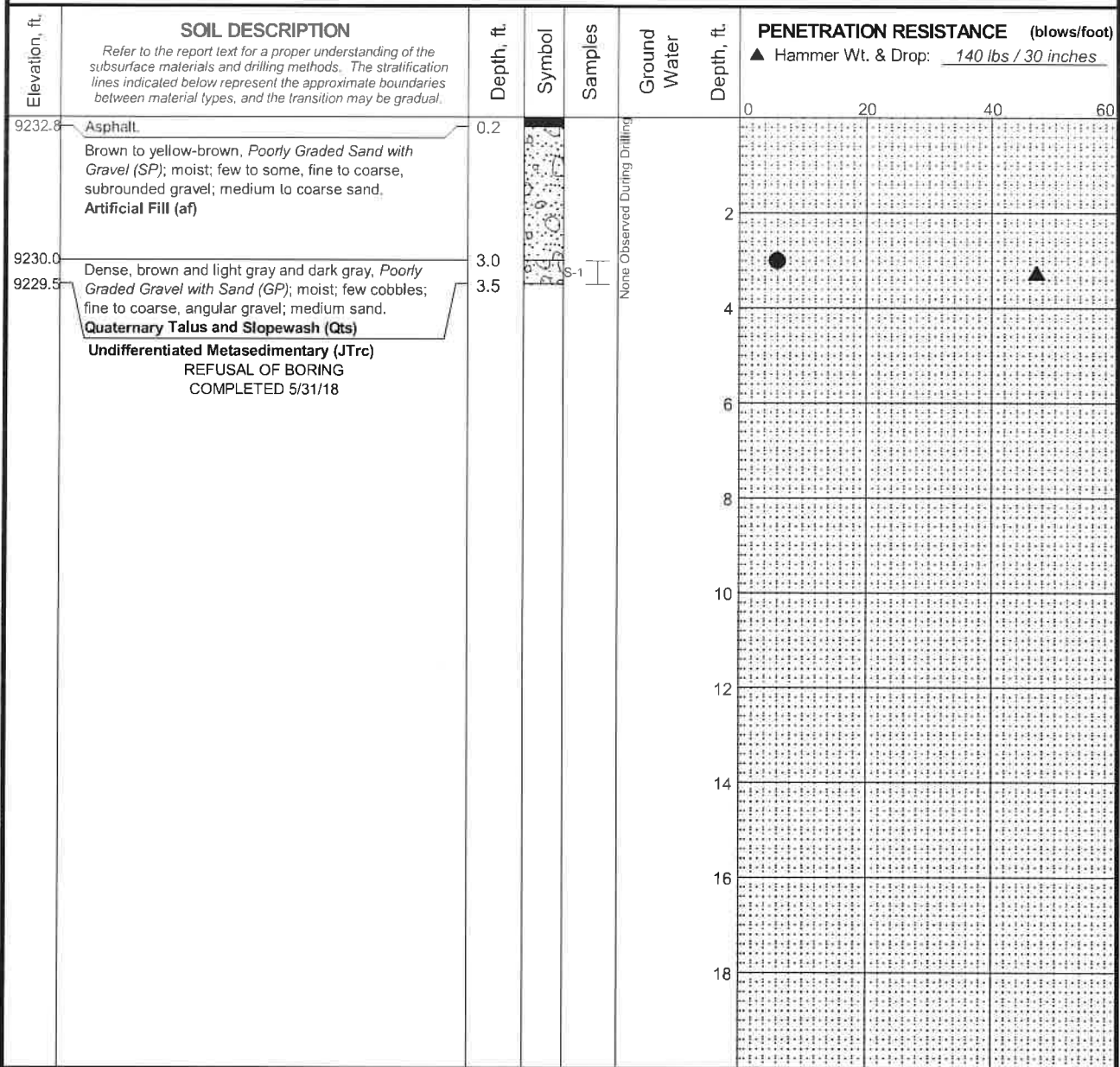
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 Geotechnical and Environmental Consultants

FIG. A-11


Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19

Total Depth: 3.5 ft. Latitude: 37.65538° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 9233 ft. Longitude: -119.0595° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 208+40 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Lookout Point Rd



LEGEND

- * Sample Not Recovered
-  2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-02

January 2021

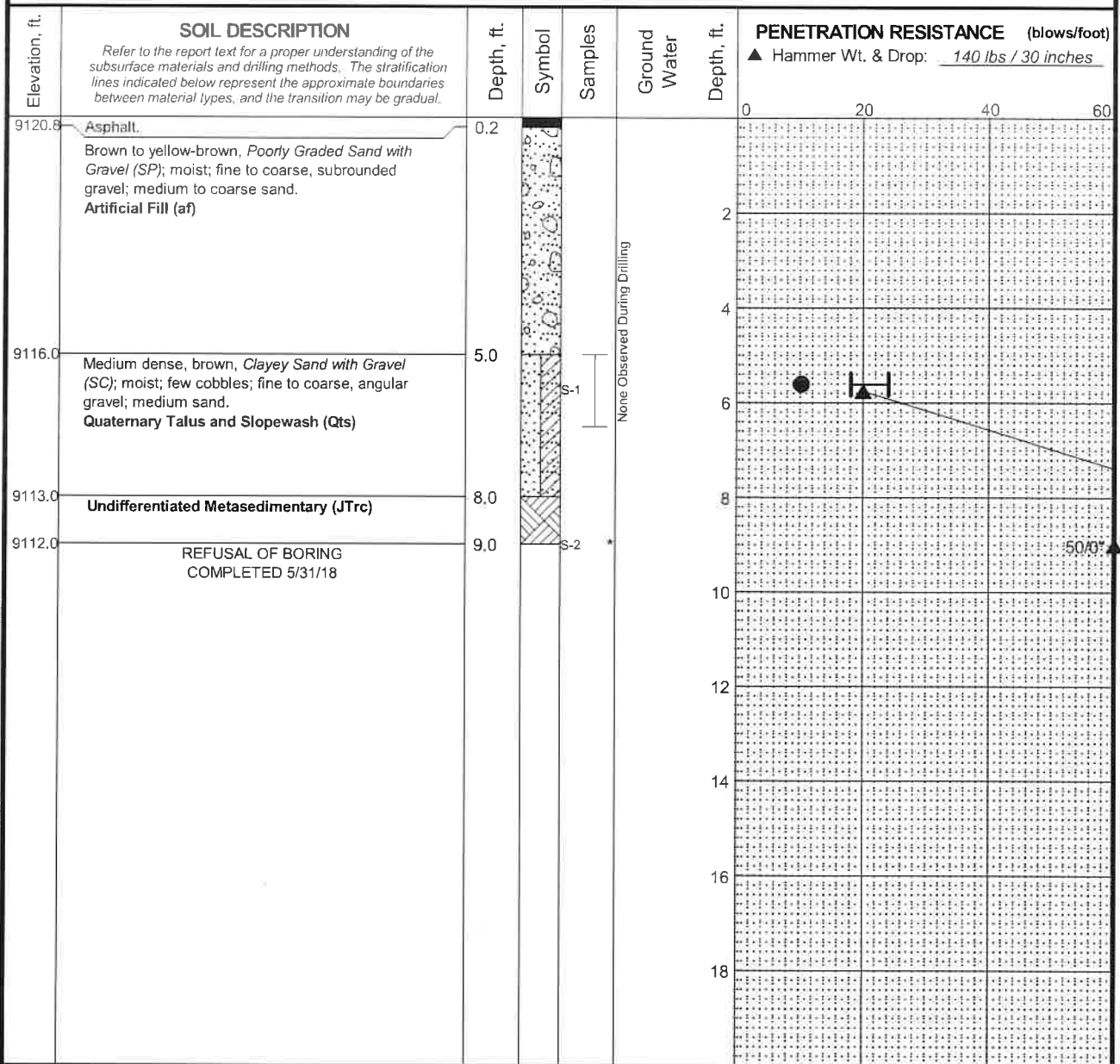
100062-003

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FIG. A-12

MASTER LOG E MC 100062.GPJ SHAN WIL_GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 9 ft. Latitude: 37.65334 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 9121 ft. Longitude: -119.0609 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 18+25 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.



Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

LEGEND
 * Sample Not Recovered
 I 2.0" O.D. Split Spoon Sample

Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)
 Natural Water Content ● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-03

January 2021

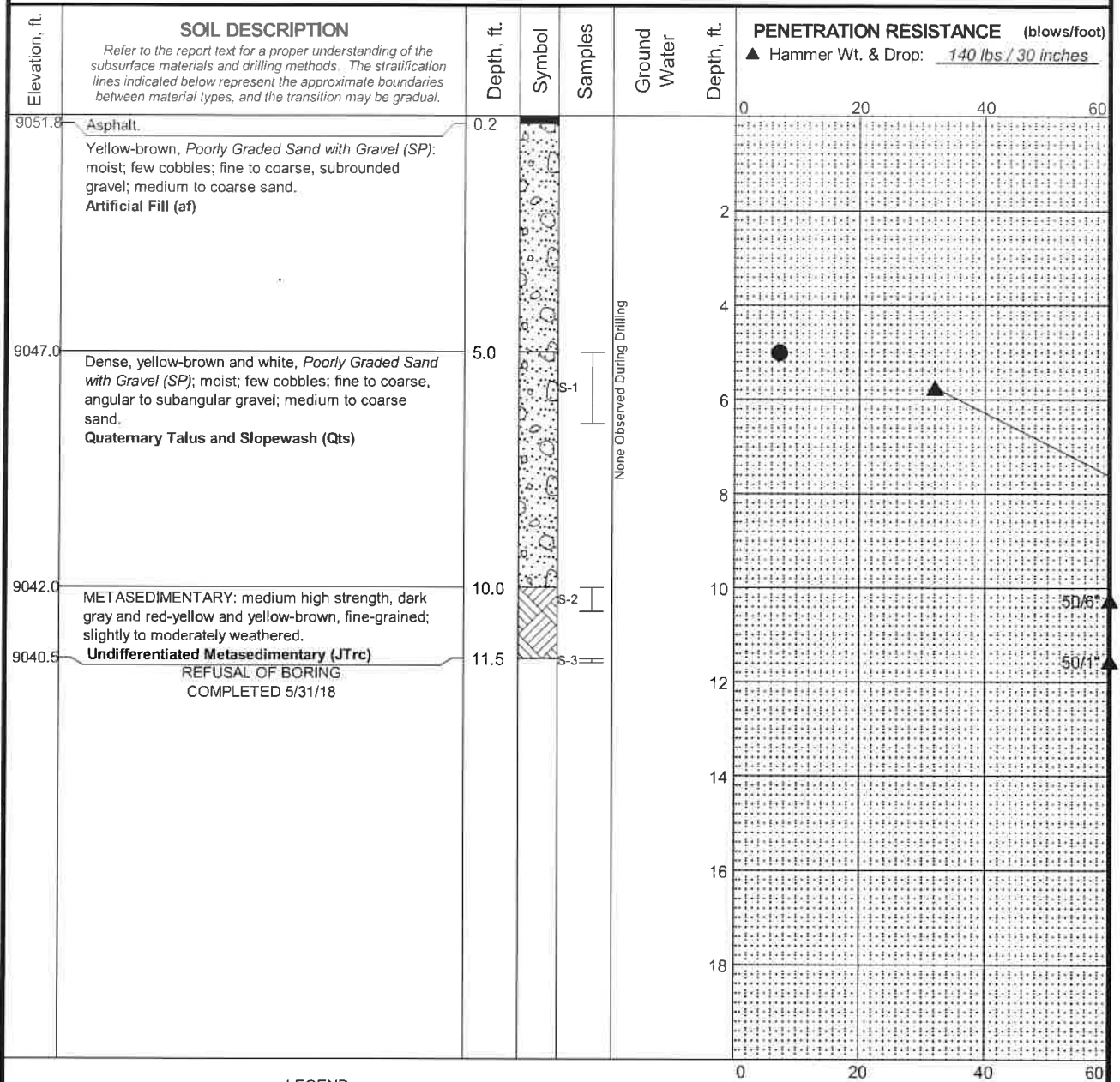
100062-003

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FIG. A-13

Total Depth: 11.6 ft. Latitude: 37.65453 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 9052 ft. Longitude: -119.0632 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 27+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.

Log: BLC Rev: BLC Typ: SDH



LEGEND

- Sample Not Recovered
- ┃ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-04

January 2021

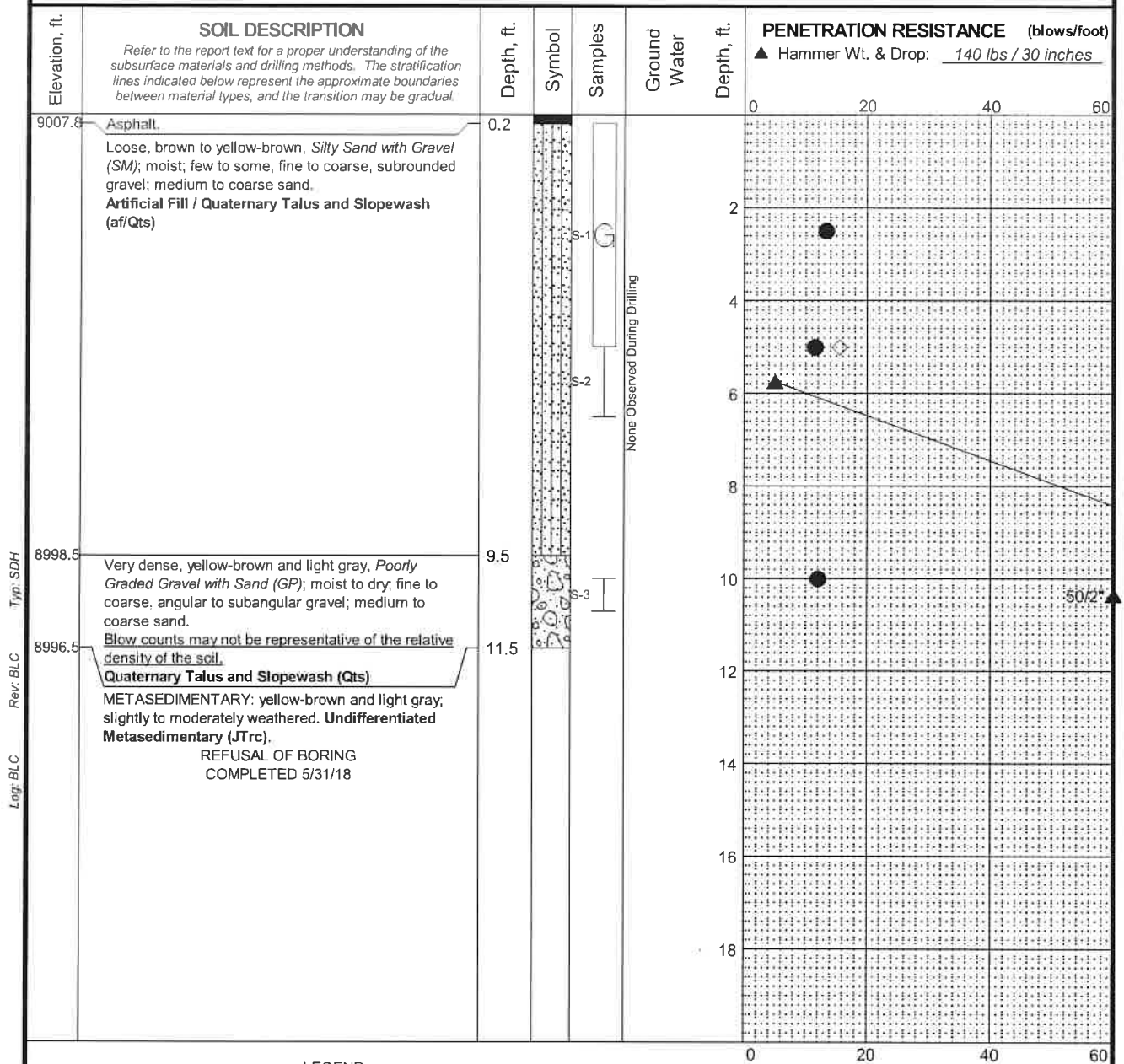
100062-003

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FIG. A-14

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19

Total Depth: 10.7 ft. Latitude: 37.65579 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~9008 ft. Longitude: -119.0637 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 32+80 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.



MASTER LOG E MC 100062.GPJ SHAN WIL_GDT 5/17/19

- LEGEND**
- * Sample Not Recovered
 - ☐ Grab Sample
 - ┃ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-05

January 2021

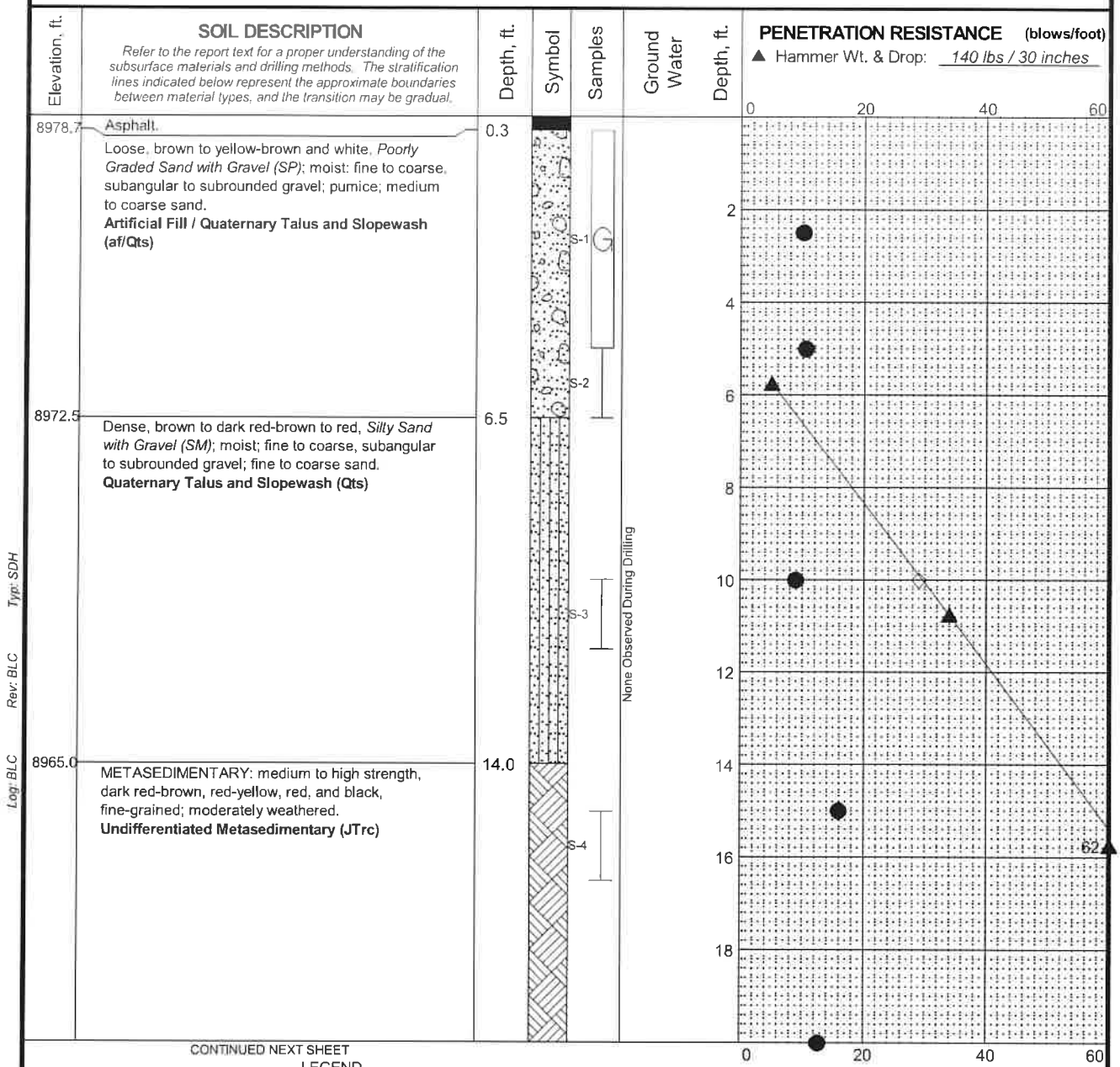
100062-003

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FIG. A-15

REV 3

Total Depth: <u>21.5 ft.</u>	Latitude: <u>37.65656 °</u>	Drilling Method: <u>Solid Auger</u>	Hole Diam.: <u>4 in.</u>
Top Elevation: <u>~ 8979 ft.</u>	Longitude: <u>-119.0640 °</u>	Drilling Company: <u>Geo-Ex</u>	Rod Diam.: <u></u>
Vert. Datum: <u>EGM96 Geoid</u>	Station: <u>36+20 ft.</u>	Drill Rig Equipment: <u>CME 75</u>	Hammer Type: <u>Automatic</u>
Horiz. Datum: <u>WGS84</u>	Offset: <u>N/A</u>	Other Comments: <u>Hole located 3.5 feet from edge of pavement.</u>	



LEGEND

- * Sample Not Recovered
- ▣ Grab Sample
- └─┘ 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)

● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-06

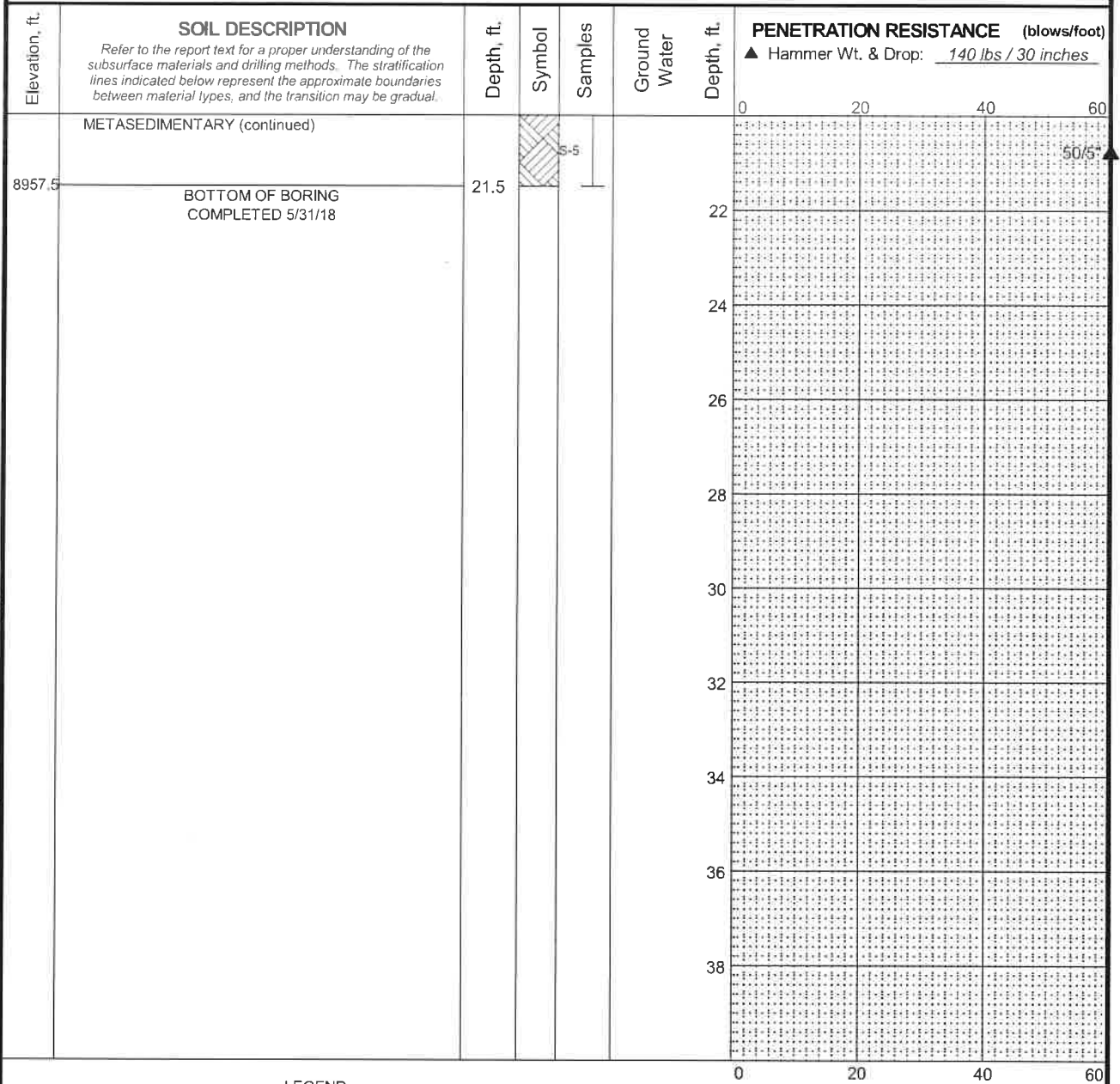
January 2021
100062-003

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FIG. A-16
Sheet 1 of 2

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth: 21.5 ft. Latitude: 37.65656 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8979 ft. Longitude: -119.0640 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 36+20 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
-  Grab Sample
-  2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-06

January 2021

100062-003

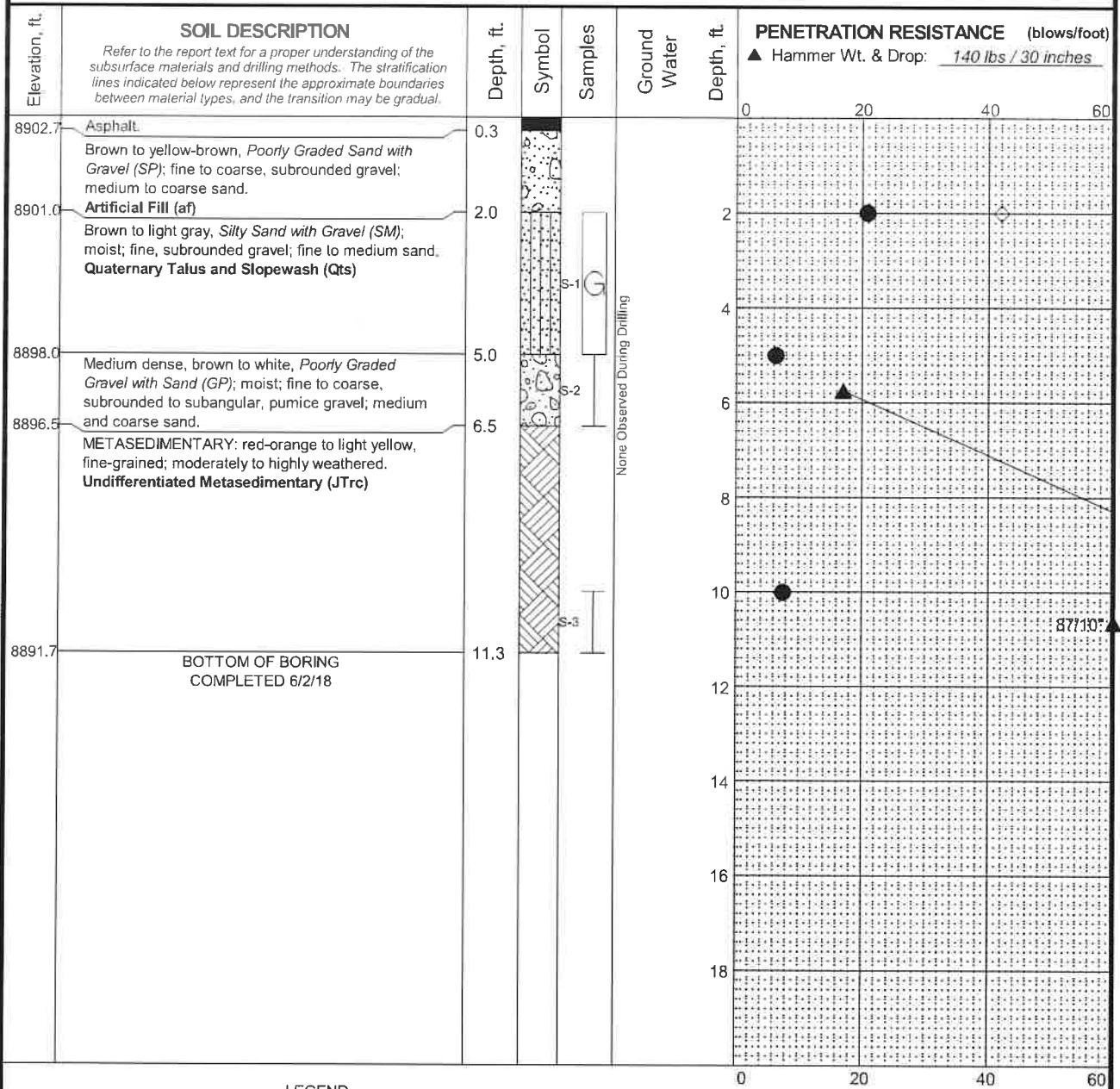
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FIG. A-16
 Sheet 2 of 2

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

REV 3

Total Depth: 11.3 ft. Latitude: 37.65952 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8903 ft. Longitude: -119.0654 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 46+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 4.0 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
- ☒ Grab Sample
- └─ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-07

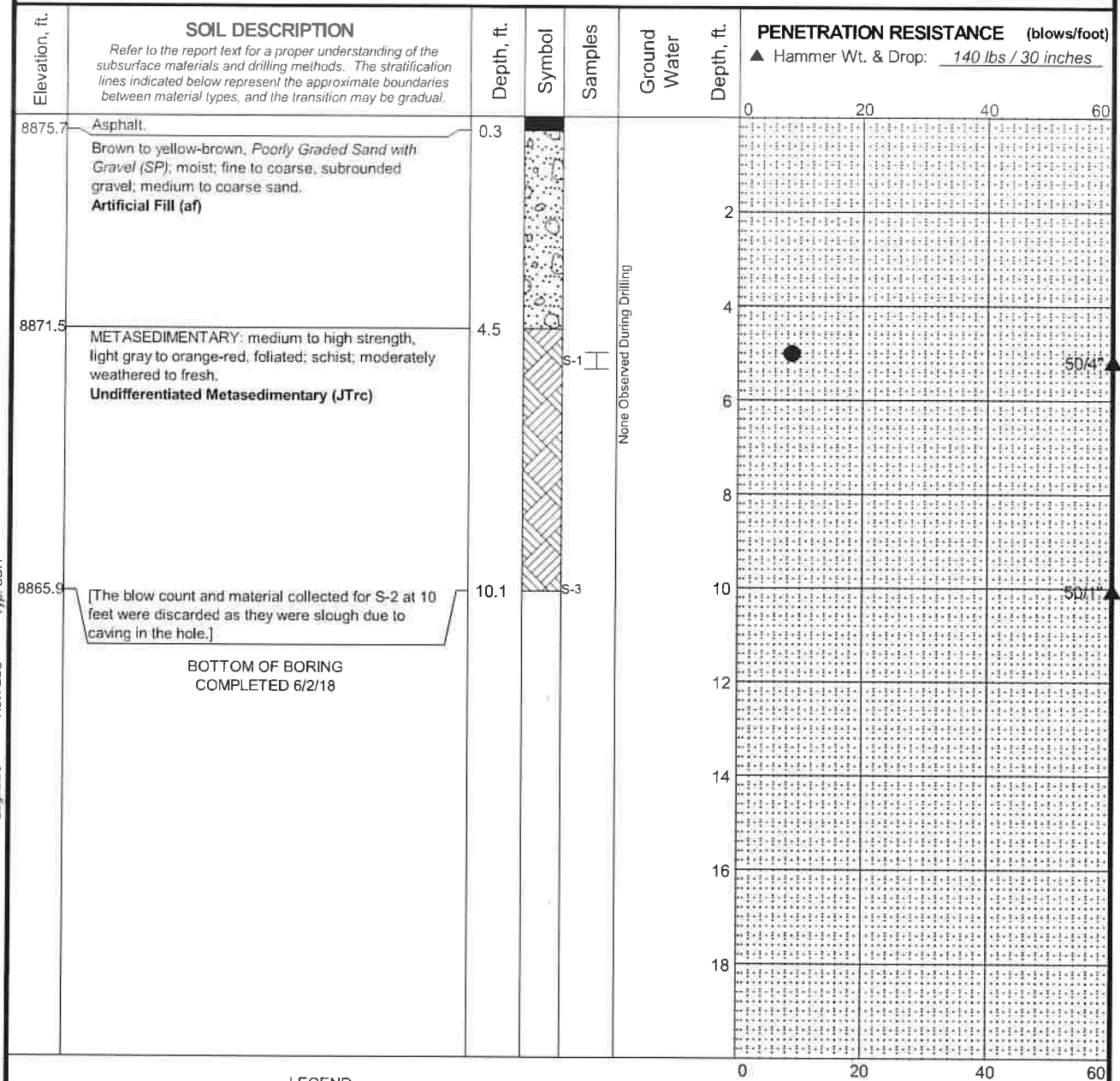
January 2021

100062-003

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FIG. A-17

Total Depth: 10.08 ft. Latitude: 37.66015 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8876 ft. Longitude: -119.0648 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 49+55 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.



Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

LEGEND

- * Sample Not Recovered
- ⊥ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-08

January 2021

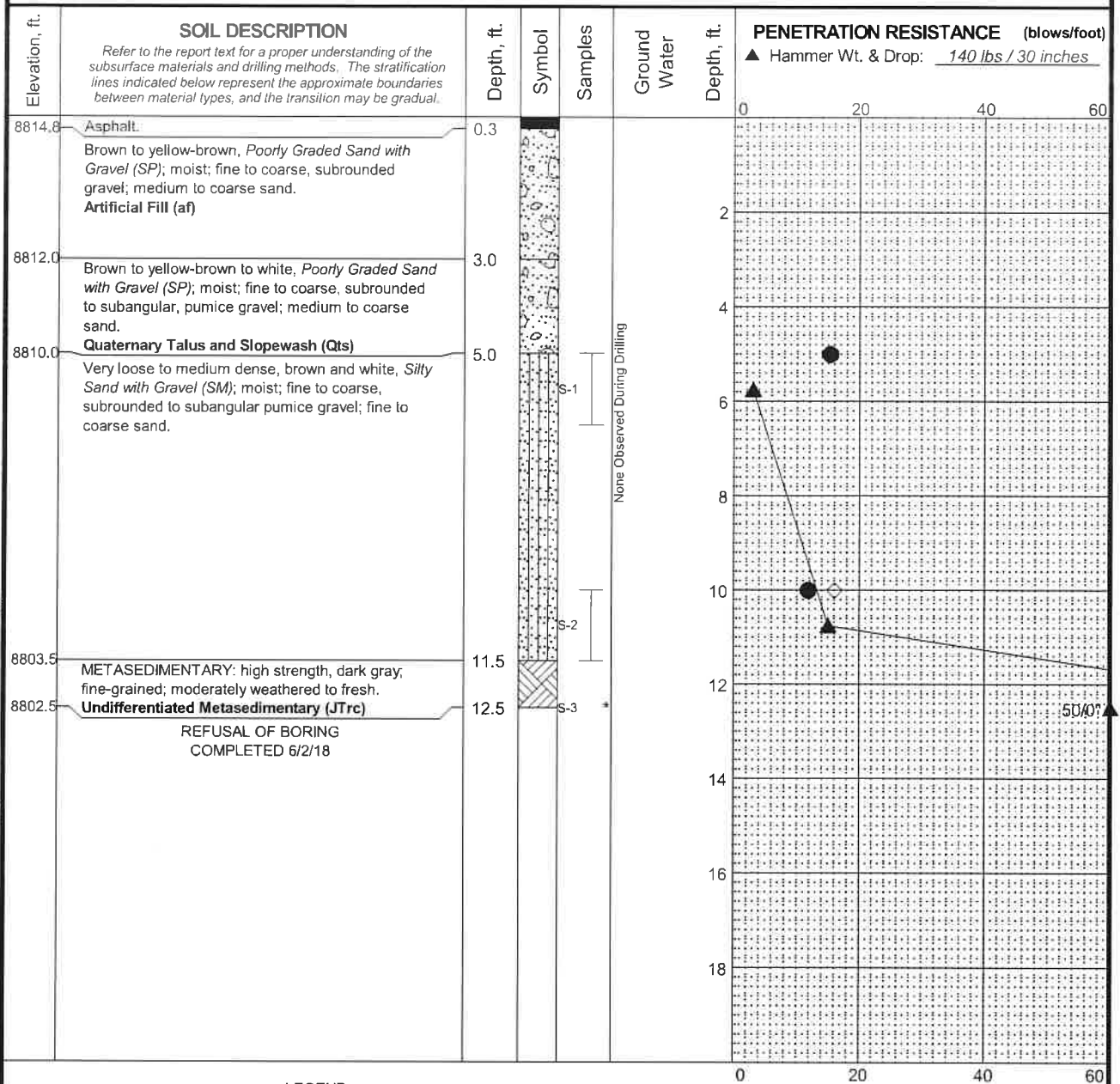
100062-003

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FIG. A-18

Total Depth: 12.5 ft. Latitude: 37.66218 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8815 ft. Longitude: -119.0645 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 56+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 4.0 feet from edge of pavement.

Log: BLC Rev: BLC Typ: SDH



LEGEND

- * Sample Not Recovered
- ┃ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-09

January 2021

100062-003

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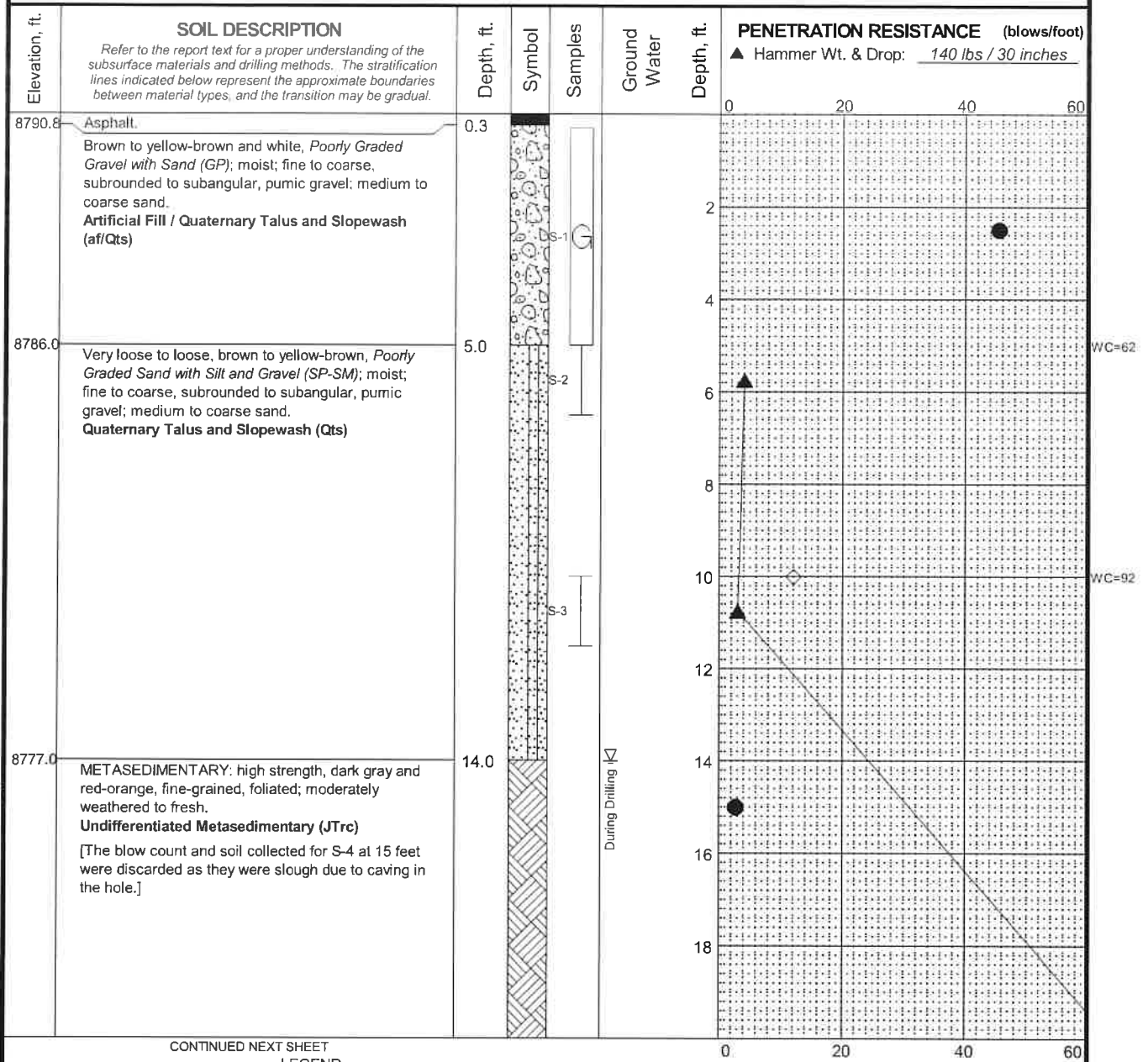
FIG. A-19

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

REV 3

Total Depth: 25.5 ft. Latitude: 37.66222 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8791 ft. Longitude: -119.0645 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 58+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 5.5 feet from edge of pavement.

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19 Log BLC Rev: BLC Typ: SDH



- LEGEND**
- * Sample Not Recovered
 - ☐ Grab Sample
 - ⊥ 2.0" O.D. Split Spoon Sample
 - ▽ Ground Water Level ATD
 - ◇ % Fines (<0.075mm)
 - % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-10

January 2021

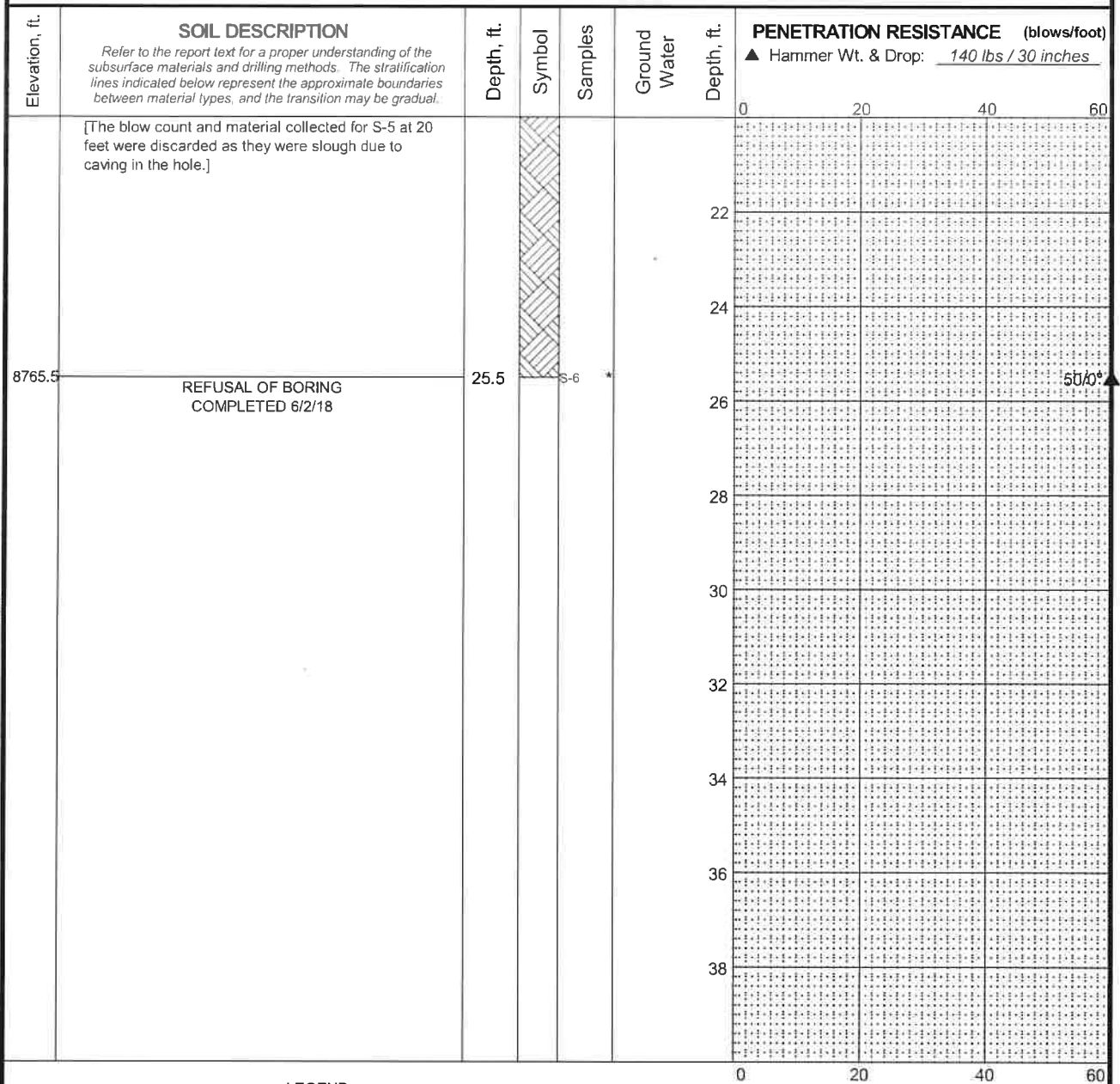
100062-003

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FIG. A-20
Sheet 1 of 2

REV 3

Total Depth: 25.5 ft. Latitude: 37.66222 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8791 ft. Longitude: -119.0645 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 58+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 5.5 feet from edge of pavement.



- LEGEND**
- * Sample Not Recovered
 - ▣ Grab Sample
 - └ 2.0" O.D. Split Spoon Sample

Ground Water Level ATD

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-10

January 2021

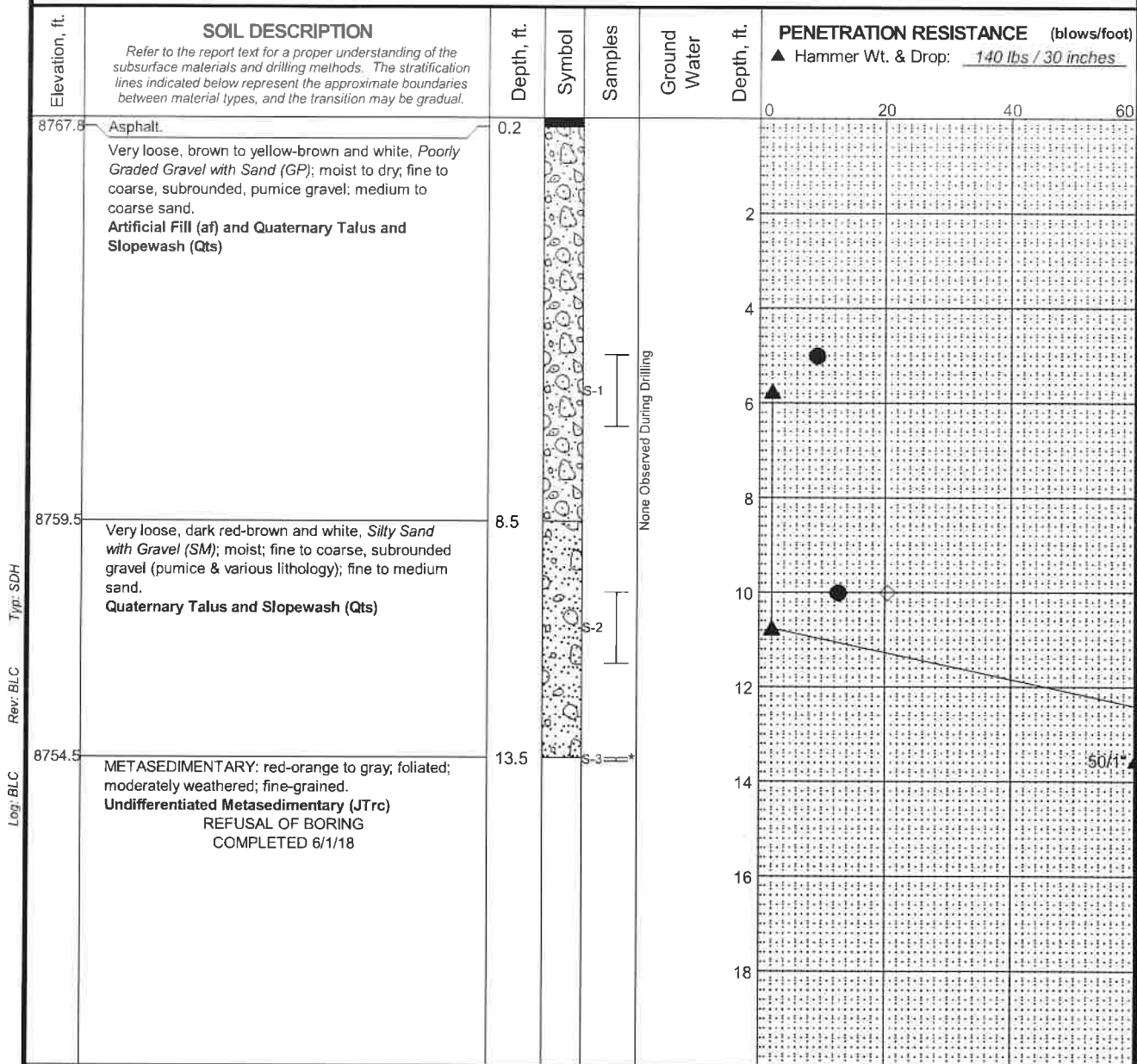
100062-003

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FIG. A-20
 Sheet 2 of 2

MASTER LOG E MC 100062.GPJ SHAN WILGDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 13.58 ft. Latitude: 37.66302 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8768 ft. Longitude: -119.0646 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 61+60 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 4.5 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
-  2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-11

January 2021

100062-003

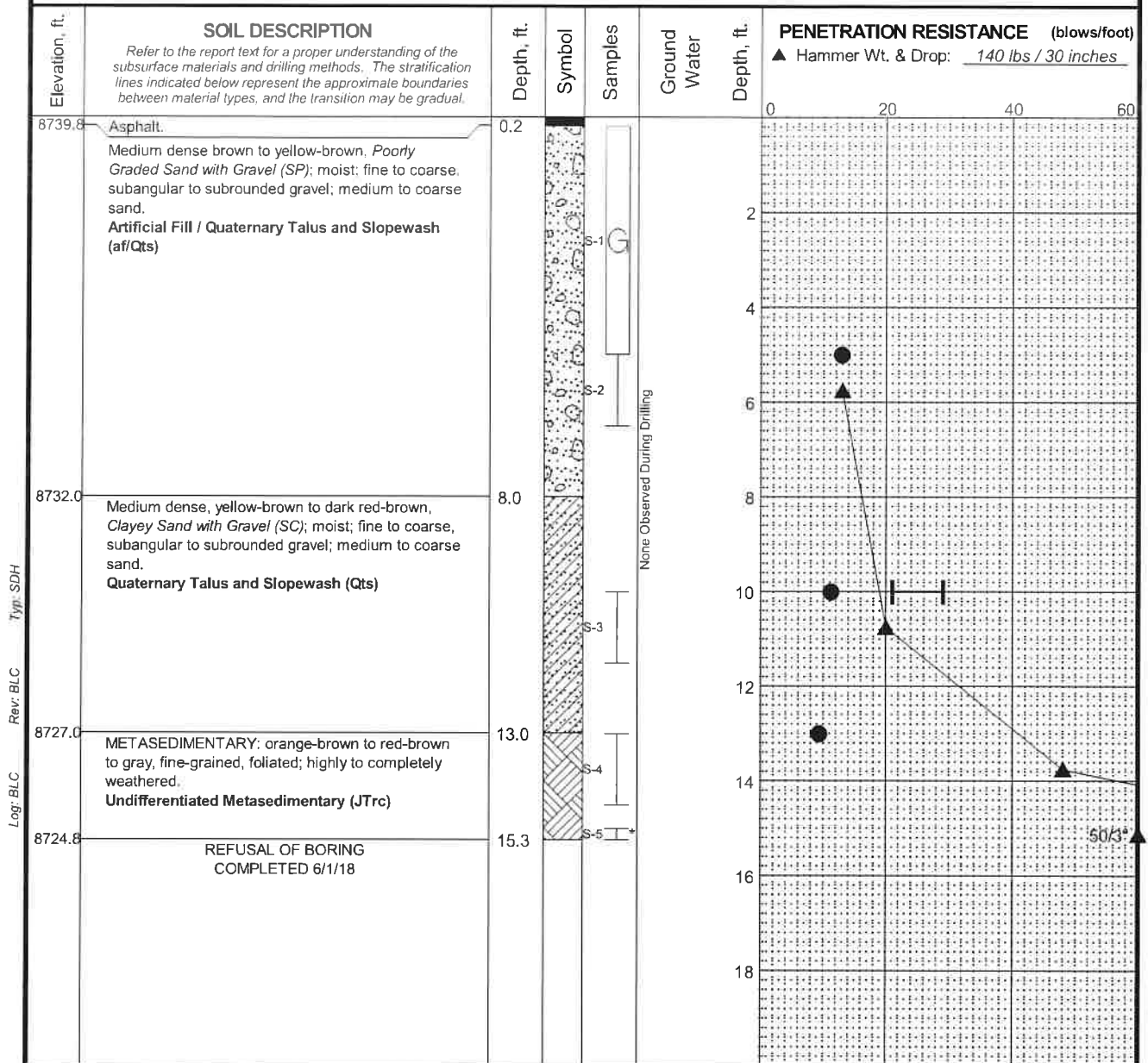
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FIG. A-21

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

REV 3

Total Depth: 15.25 ft. Latitude: 37.66472 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8740 ft. Longitude: -119.0659 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 67+80 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 2.9 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- ┌ 2.0" O.D. Split Spoon Sample

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)
 Natural Water Content ● % Water Content

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-12

January 2021

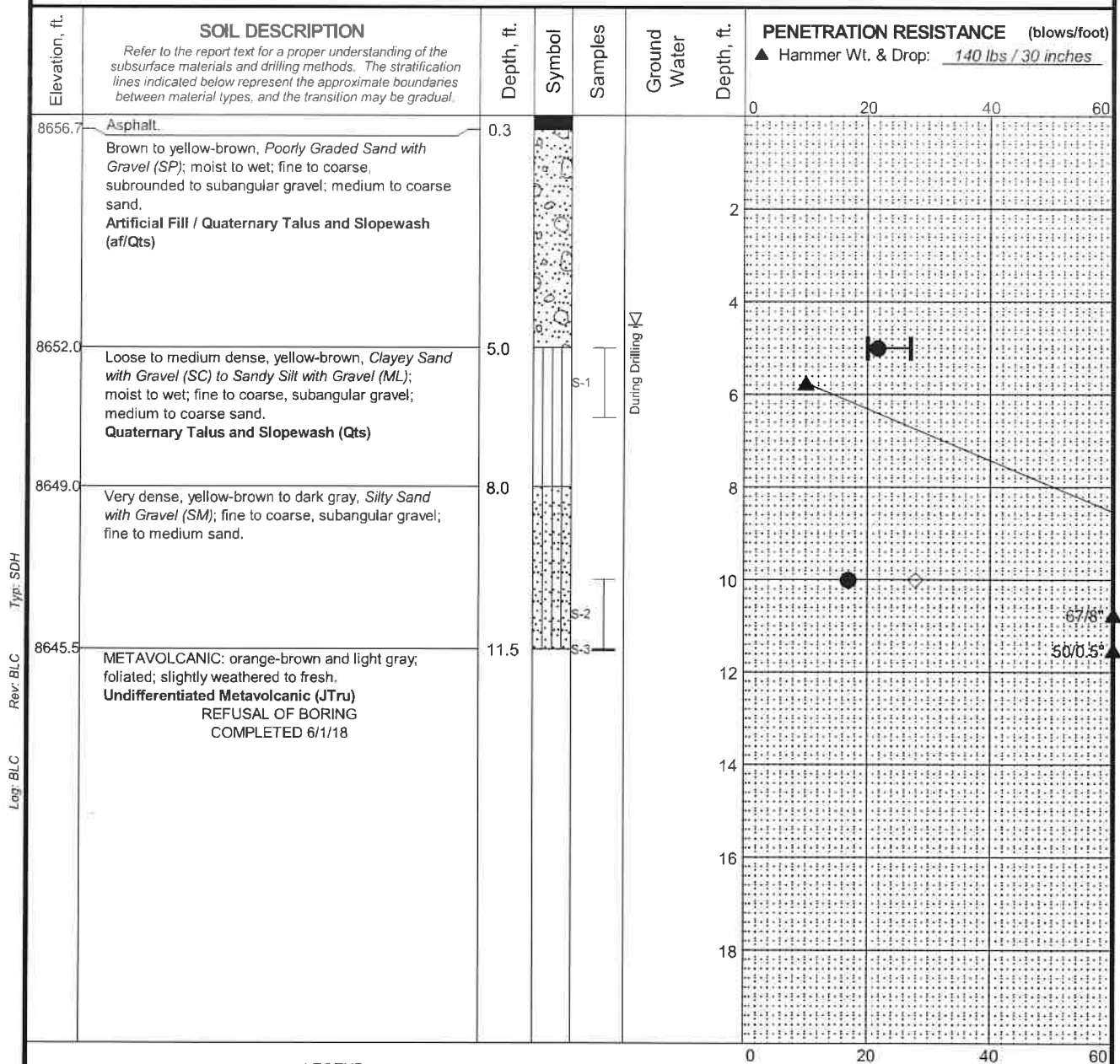
100062-003

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FIG. A-22

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth: 11.54 ft. Latitude: 37.66668 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8657 ft. Longitude: -119.0677 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 76+75 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.2 feet from edge



LEGEND

* Sample Not Recovered
 I 2.0" O.D. Split Spoon Sample
 ∇ Ground Water Level ATD
 Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)
 Natural Water Content ● % Water Content

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-13

January 2021

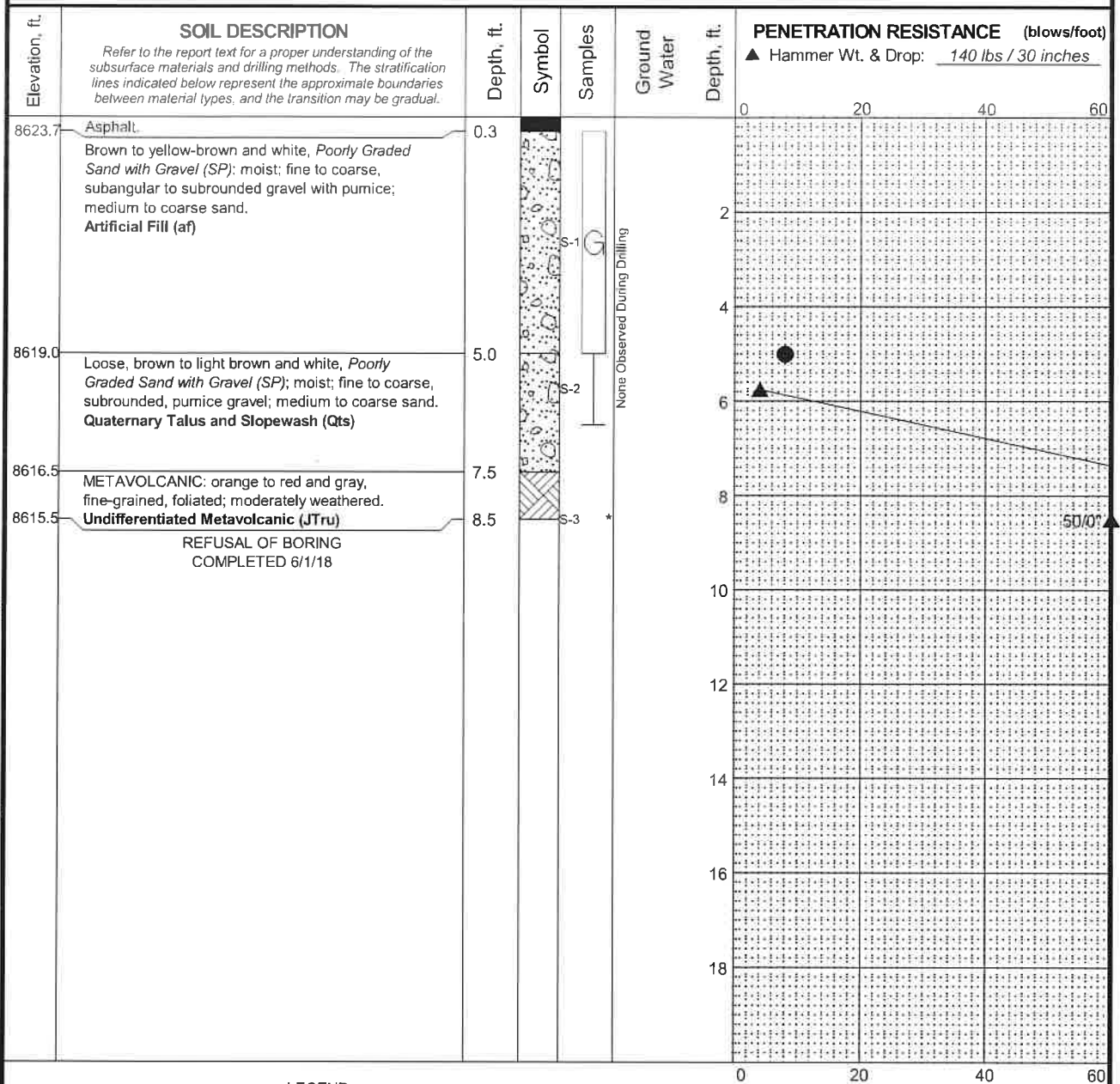
100062-003

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FIG. A-23

REV 3

Total Depth: 8.5 ft. Latitude: 37.66695 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: -8624 ft. Longitude: -119.0683 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 80+40 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 2.5 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
- ▣ Grab Sample
- └─ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-14

January 2021

100062-003

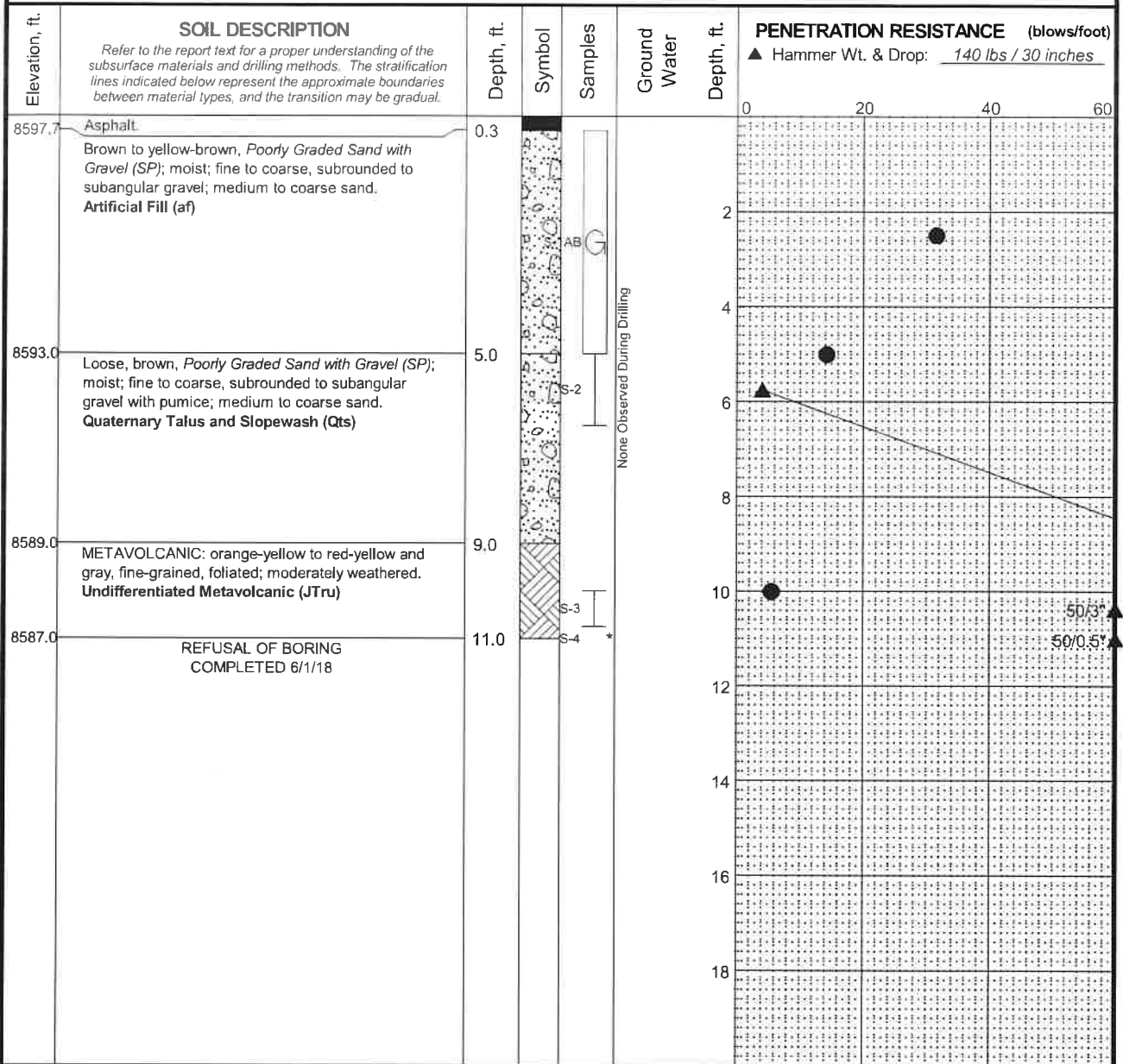
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FIG. A-24

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19 Typ: SDH Rev: BLC Log: BLC

REV 3

Total Depth: 11 ft. Latitude: 37.66854 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8598 ft. Longitude: -119.0695 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 85+90 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
- ▣ Grab Sample
- └─┘ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-15

January 2021

100062-003

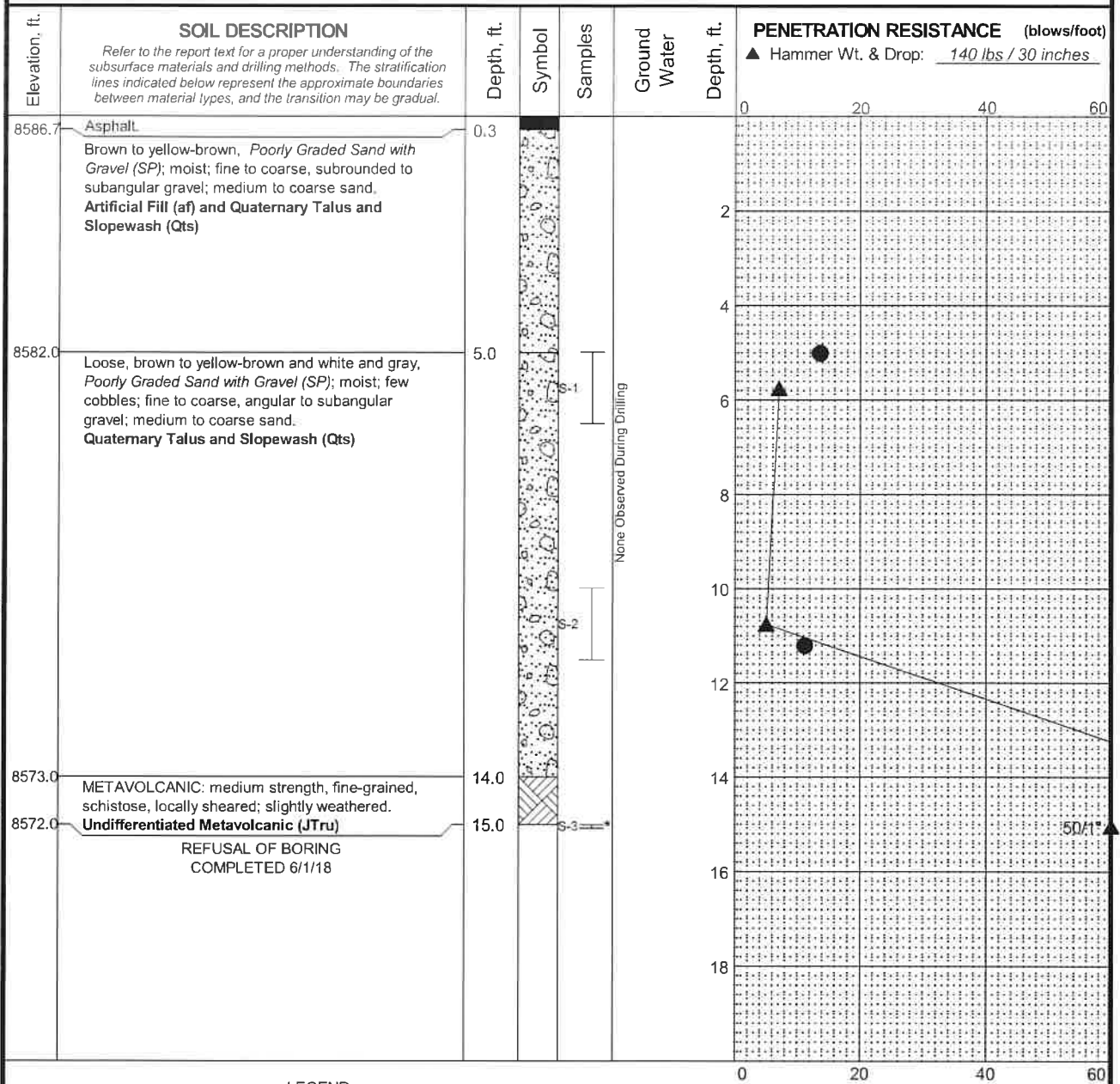
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FIG. A-25

REV 3

Total Depth: 15.08 ft. Latitude: 37.67007 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8587 ft. Longitude: -119.0696 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 92+65 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.

Typ: SDH
Rev: BLC
Log: BLC



LEGEND
 * Sample Not Recovered
 I 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)
 ● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-16

January 2021

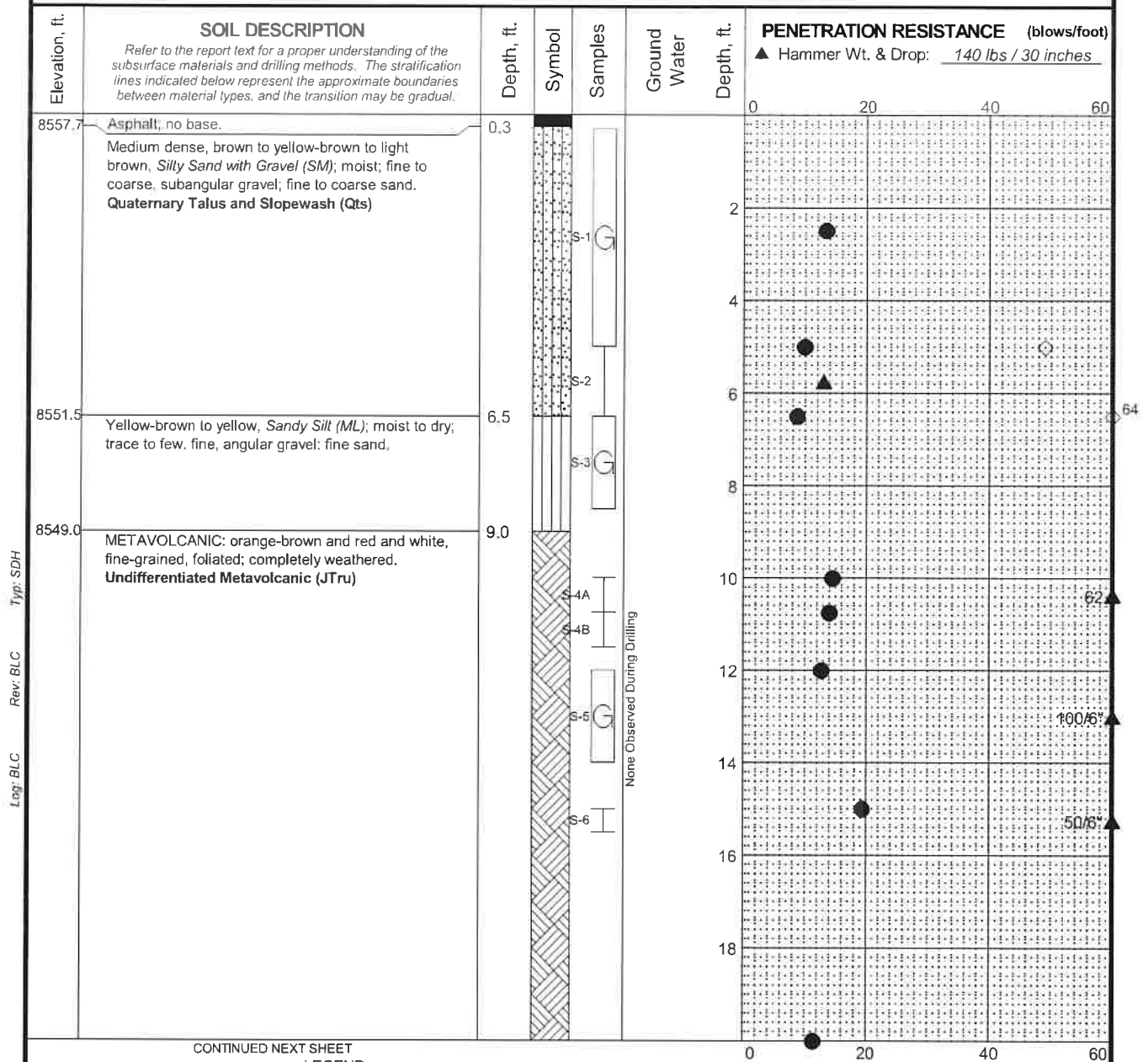
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FIG. A-26

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth: 25.25 ft. Latitude: 37.67133 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8558 ft. Longitude: -119.0690 ° Drilling Company: Geo-Ex Rod Diam.: _____
 Vert. Datum: EGM96 Geoid Station: 98+90 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 1.8 feet from edge of pavement.



CONTINUED NEXT SHEET

LEGEND

- * Sample Not Recovered
- Grab Sample
- ┳ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-17

January 2021

100062-003

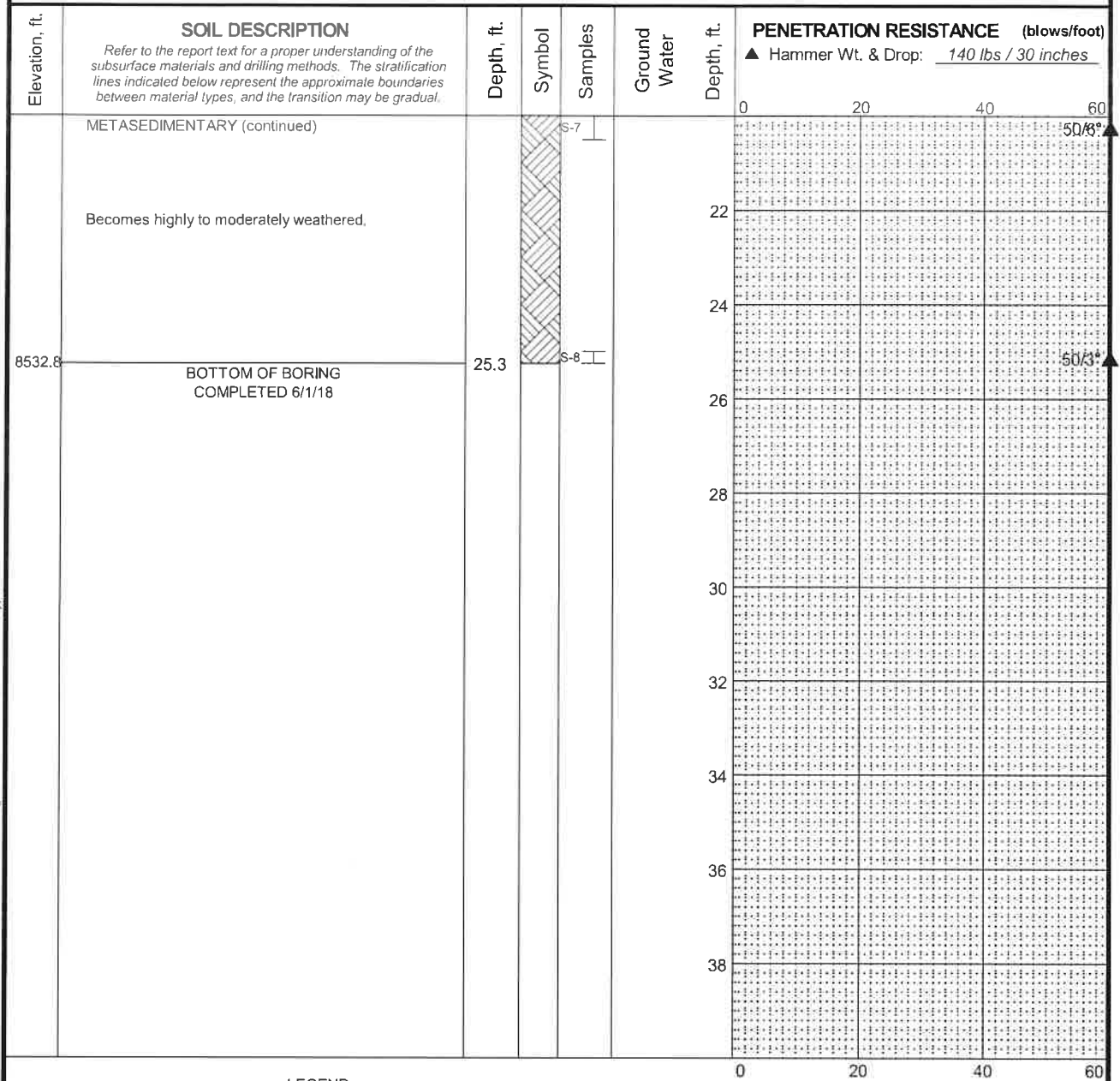
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FIG. A-27
 Sheet 1 of 2

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19

REV 3

Total Depth: 25.25 ft. Latitude: 37.67133 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8558 ft. Longitude: -119.0690 " Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 98+90 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 1.8 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
- Grab Sample
- 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-17

January 2021

100062-003

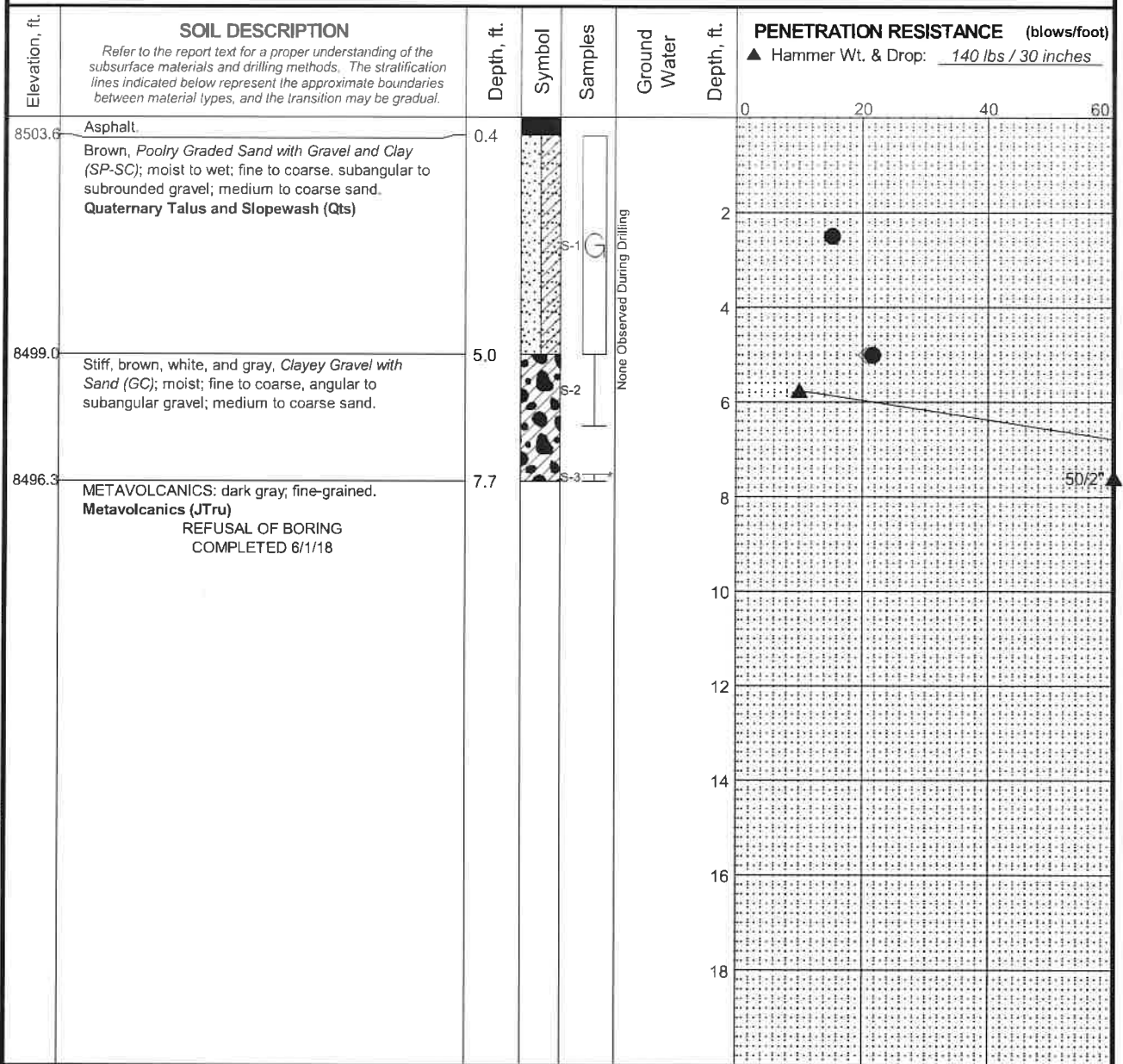
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FIG. A-27
 Sheet 2 of 2

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19 Log-BLC Rev-BLC Typ-SDH

REV 3

Total Depth: 7.667 ft. Latitude: 37.67303 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8504 ft. Longitude: -119.0700 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 105+20 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.0 feet from edge of pavement.



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- ┌ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-18

January 2021

100062-003

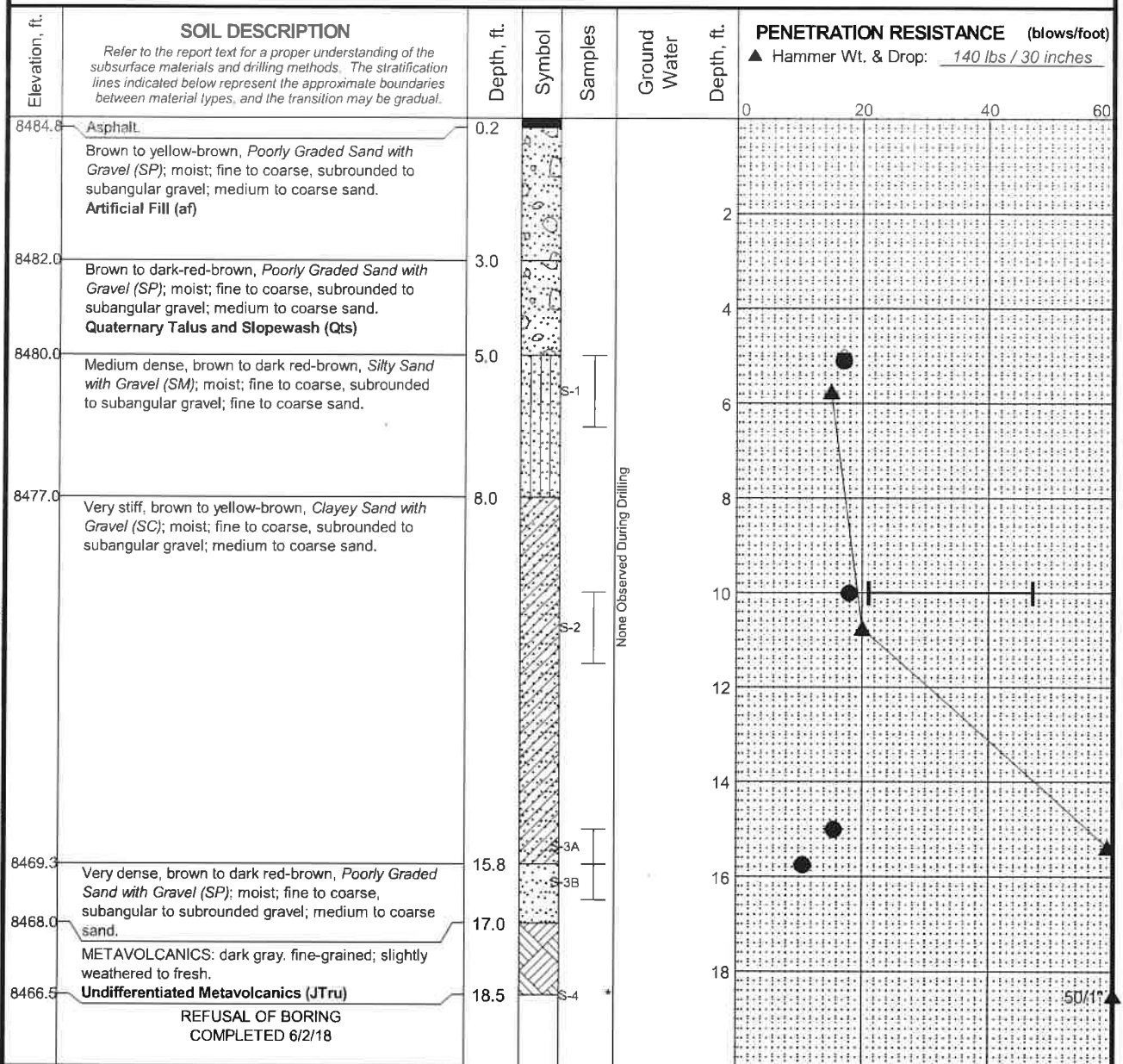
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FIG. A-28

Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth:	18.5 ft.	Latitude:	37.67407 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 8485 ft.	Longitude:	-119.0715 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	110+25 ft.	Drill Rig Equipment:	CME 75	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Hole located 3.5 feet from edge of pavement.		



Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

LEGEND

* Sample Not Recovered

┌ 2.0" O.D. Split Spoon Sample

Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)

Natural Water Content ● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-19

January 2021

100062-003

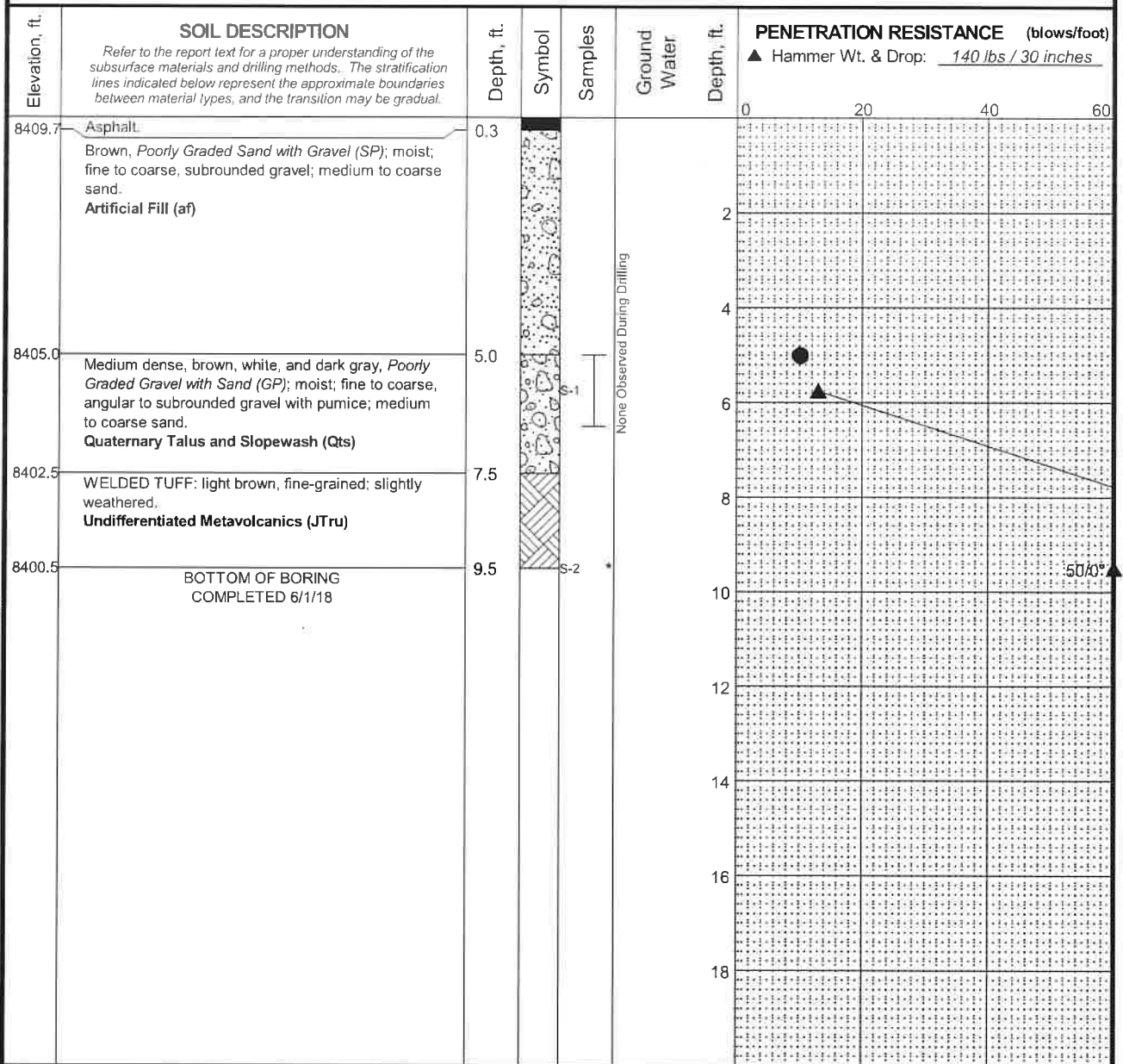
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FIG. A-29

REV 3

Total Depth: 9.5 ft. Latitude: 37.67550 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8410 ft. Longitude: -119.0733 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 118+30 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Hole located 3.5 feet from edge of pavement.

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH



LEGEND

* Sample Not Recovered
 I 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)
 ● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-20

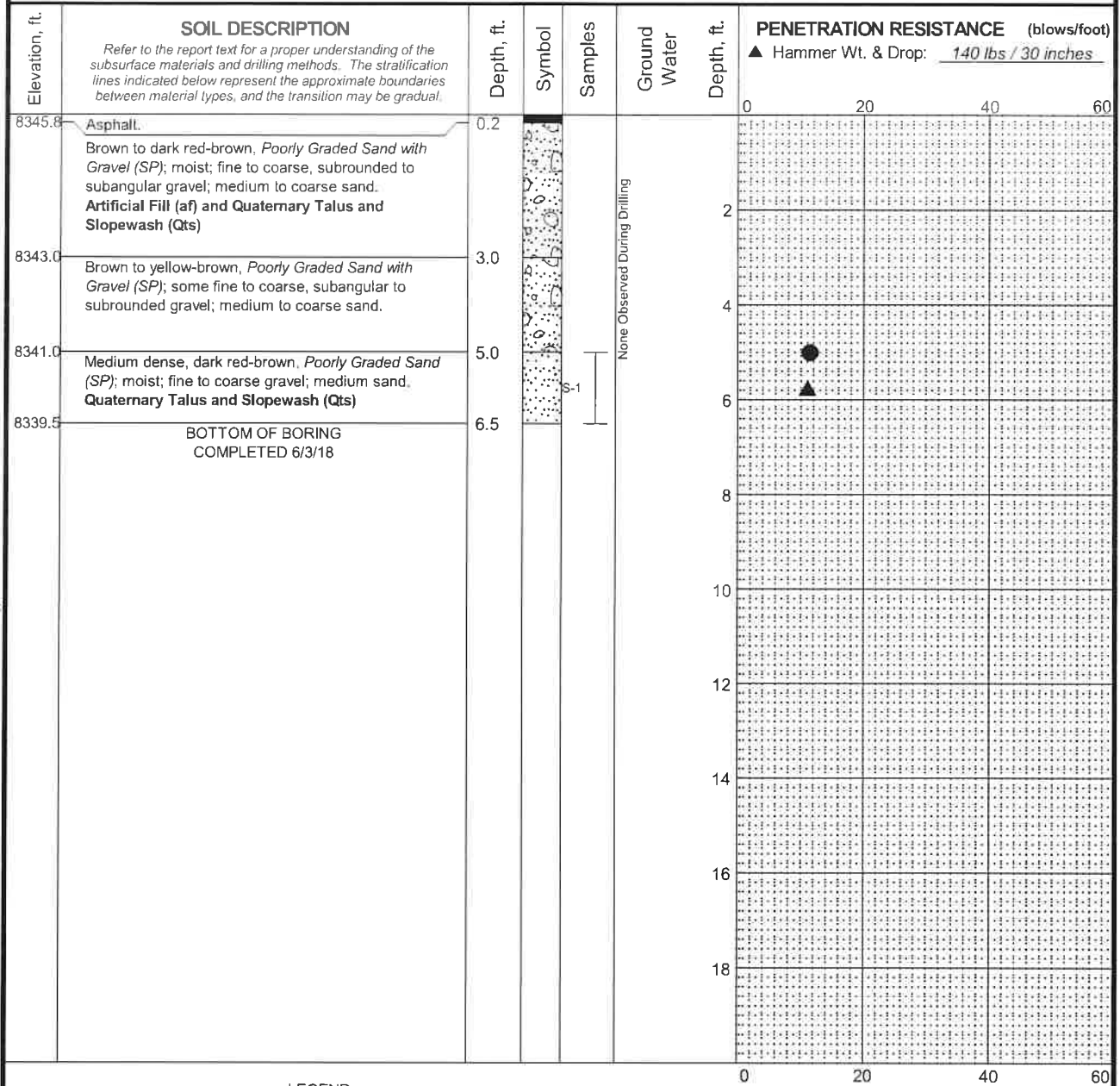
January 2021

100062-003

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FIG. A-30

Total Depth: 6.5 ft. Latitude: 37.67751 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8346 ft. Longitude: -119.0767 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 129+75 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane



Log: BLC Rev: BLC Typ: SDH

- LEGEND**
- * Sample Not Recovered
 - ┃ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-21

January 2021

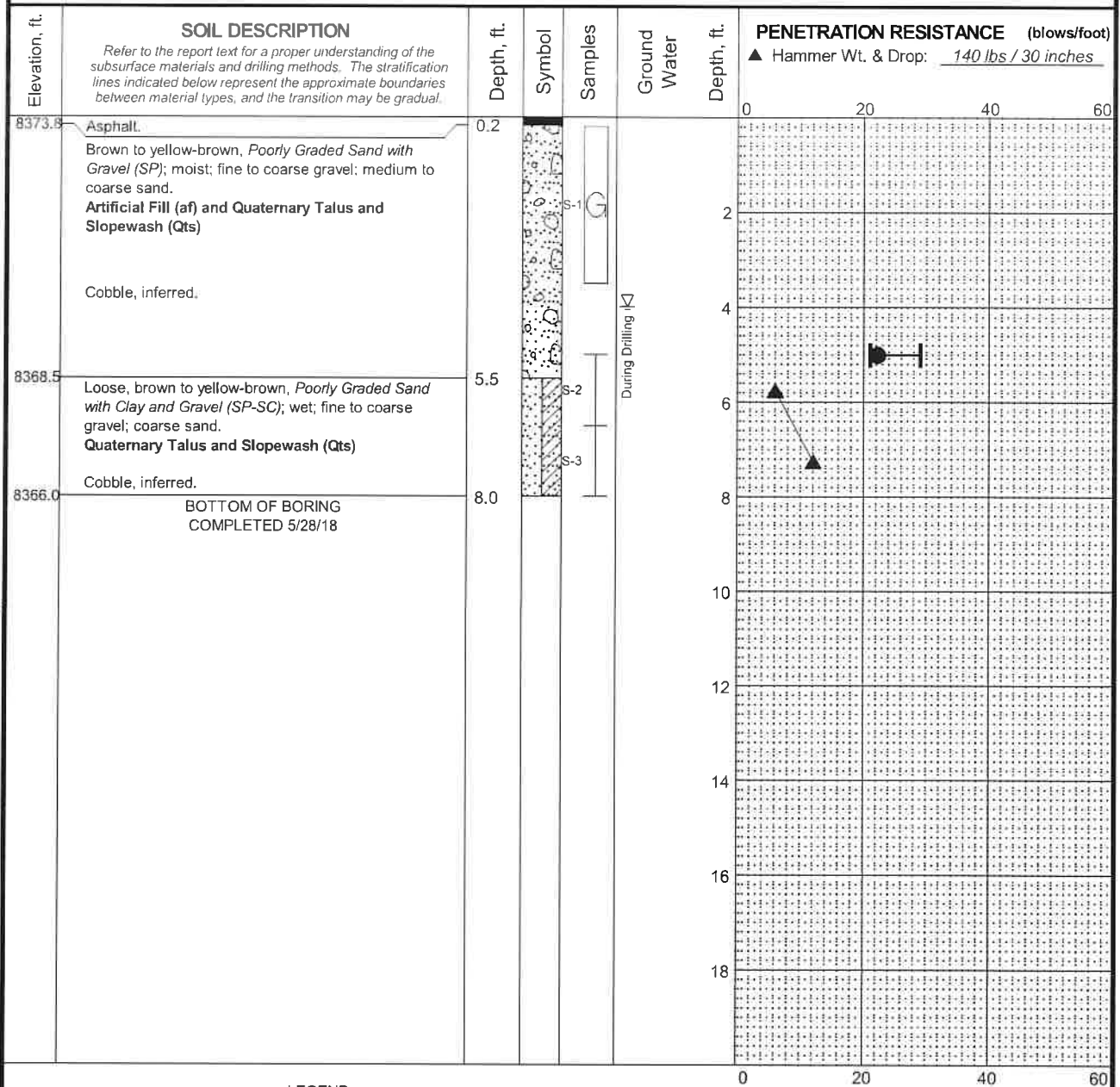
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FIG. A-31

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19

Total Depth: 8 ft. Latitude: 37.68057 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8374 ft. Longitude: -119.0793 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 502+05 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



Log: BLC Rev: BLC Typ: SDH

LEGEND

* Sample Not Recovered ▽ Ground Water Level ATD Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)
 □ Grab Sample 2.0" O.D. Split Spoon Sample Natural Water Content ● % Water Content

- NOTES**
- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 - Groundwater level, if indicated above, is for the date specified and may vary.
 - USCS designation is based on visual-manual classification and selected lab testing.
 - The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-22

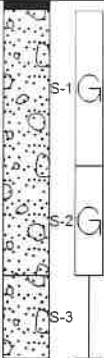
January 2021

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FIG. A-32

MASTER LOG E MC 100062.GPJ SHAN WILGDT 5/17/19

Elevation, ft.	SOIL DESCRIPTION <i>Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between material types, and the transition may be gradual.</i>	Depth, ft.	Symbol	Samples	Ground Water	Depth, ft.	PENETRATION RESISTANCE (blows/foot)				
							▲ Hammer Wt. & Drop: 140 lbs / 30 inches				
3324.8	Asphalt. Brown to yellow-brown, <i>Poorly Graded Sand with Gravel (SP)</i> ; moist to wet; fine to coarse gravel; medium to coarse sand; trace fines. Artificial Fill (af)	0.2		S-1 S-2 S-3		0 2 4 6 8 10 12 14 16 18	0 20 40 60				
3320.0	Loose, brown to dark red-brown, <i>Poorly Graded Sand with Gravel (SP)</i> ; wet; fine to coarse gravel; medium to coarse sand; trace fines.	5.0									
3318.5	<i>Quaternary Talus and Slopewash (Qts)</i> BOTTOM OF BORING COMPLETED 5/28/18	6.5									

◇ % Fines (<0.075mm)
● % Water Content

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-23

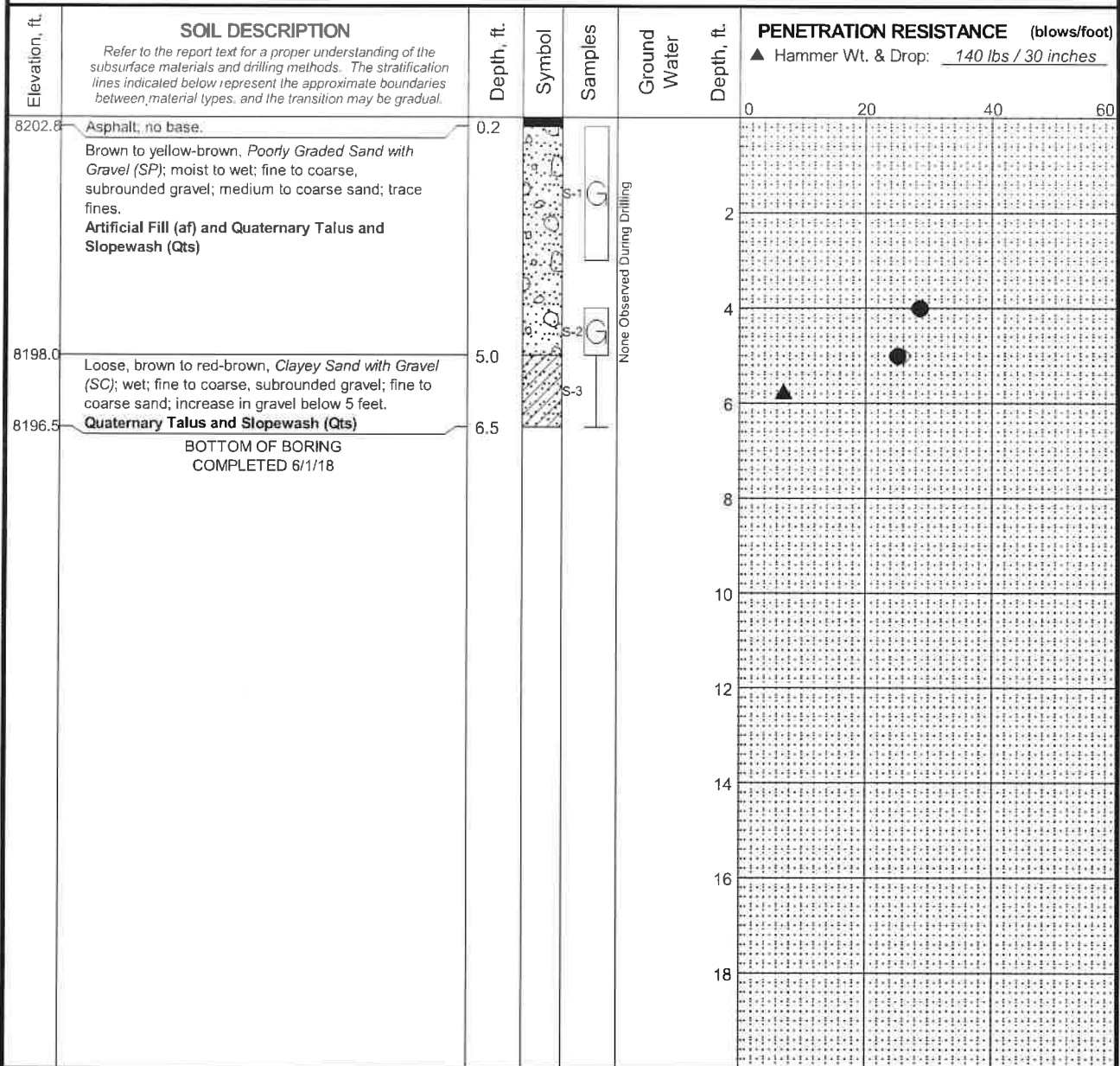
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FIG. A-33

Total Depth: 6.5 ft. Latitude: 37.67588° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8203 ft. Longitude: -119.0786° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 530+70 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL_GDT 5/17/19

LEGEND

- * Sample Not Recovered
- Grab Sample
- 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

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 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-24

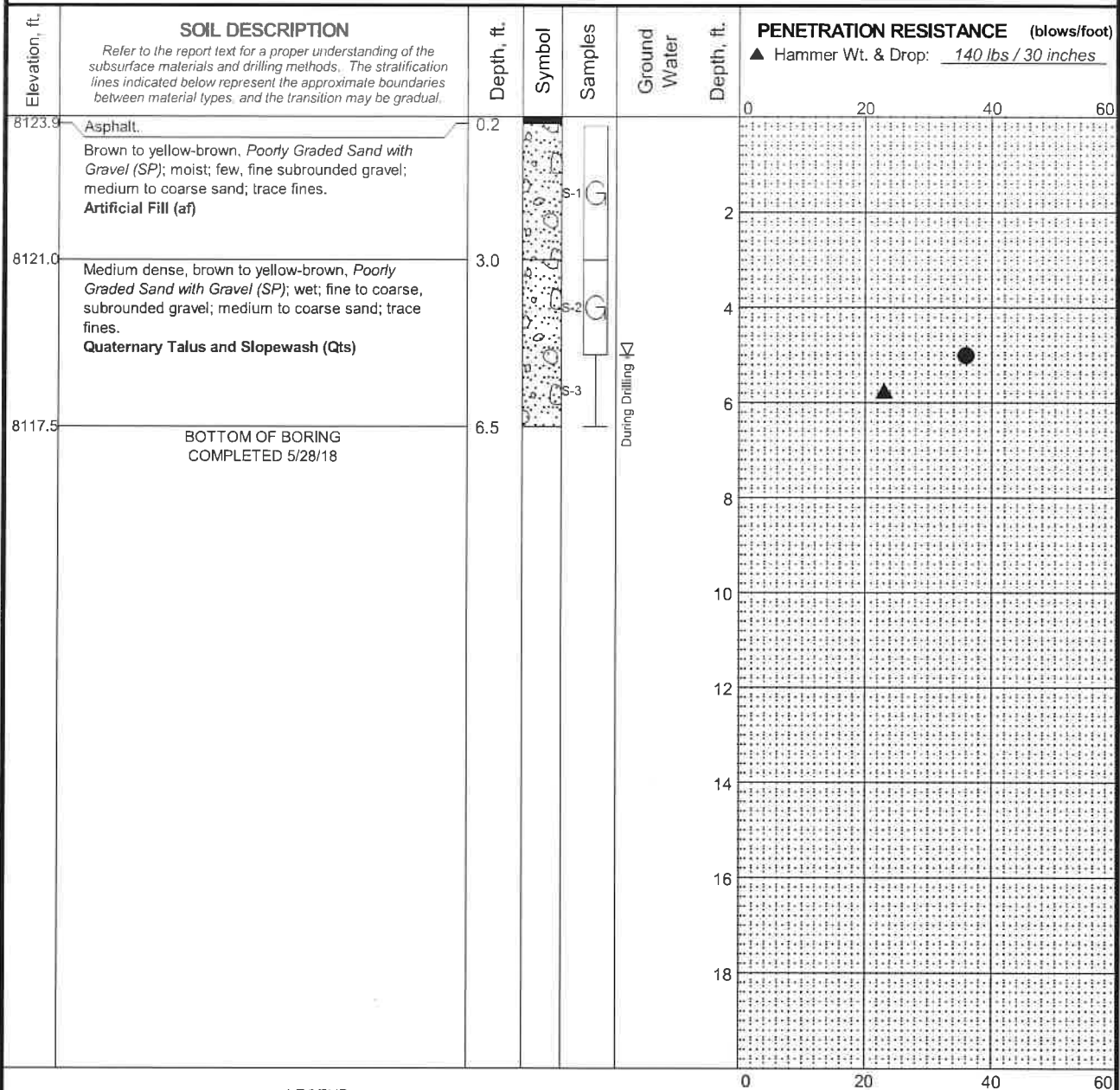
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FIG. A-34

Total Depth: 6.5 ft. Latitude: 37.67201 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8124 ft. Longitude: -119.0759 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 544+40 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane



- LEGEND**
- * Sample Not Recovered
 - ☐ Grab Sample
 - ⊥ 2.0" O.D. Split Spoon Sample
 - ▽ Ground Water Level ATD

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-25

January 2021

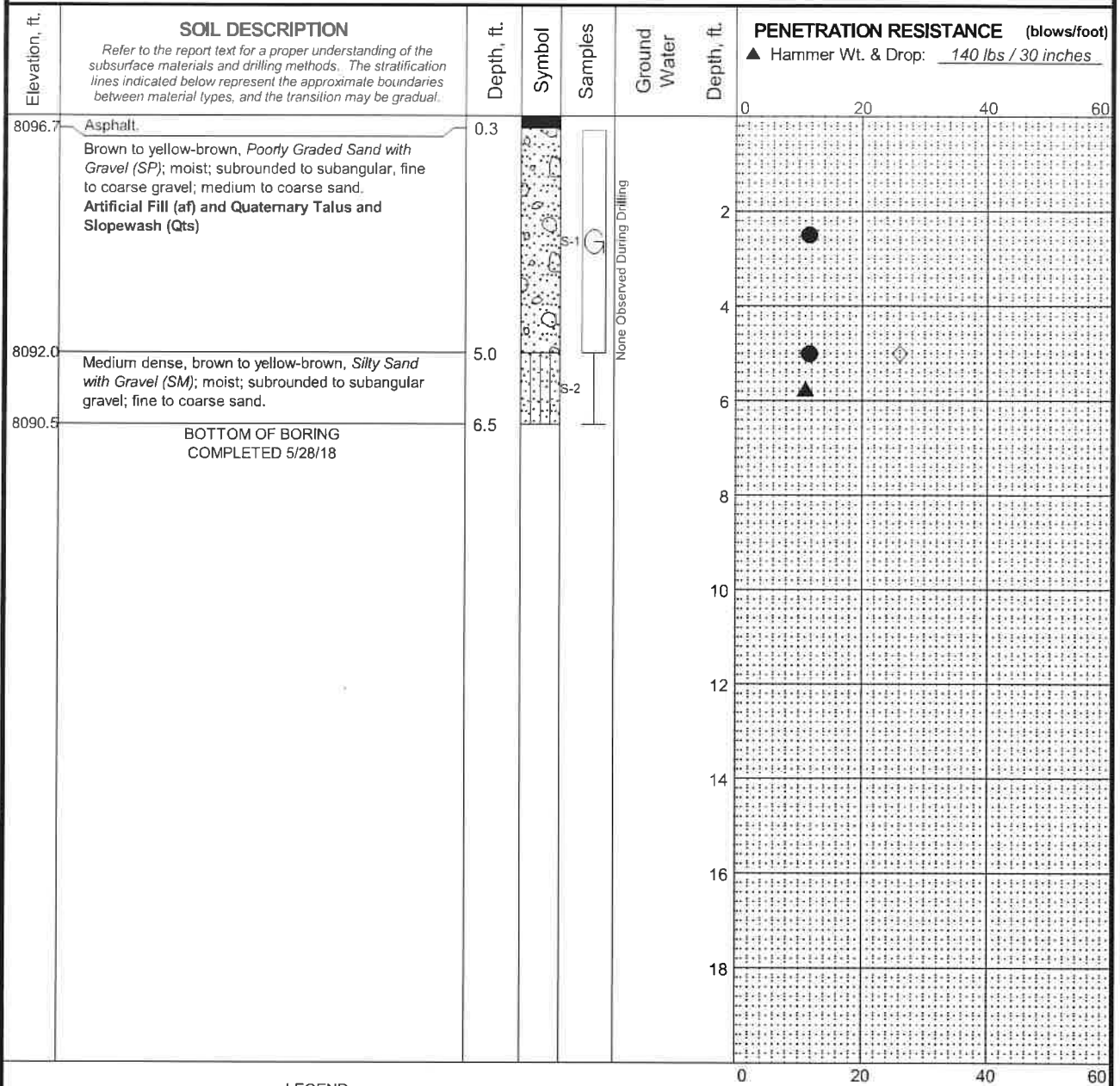
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FIG. A-35

MASTER LOG: E MC 100062.GPJ SHAN WIL GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 6.5 ft. Latitude: 37.66981 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8097 ft. Longitude: -119.0737 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 556+35 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



Typ: SDH
 Rev: BLC
 Log: BLC

MASTER LOG E MC 100062.GPJ SHAN WIL.GOT 5/17/19

LEGEND

- * Sample Not Recovered
- [Symbol] Grab Sample
- [Symbol] 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

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 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-26

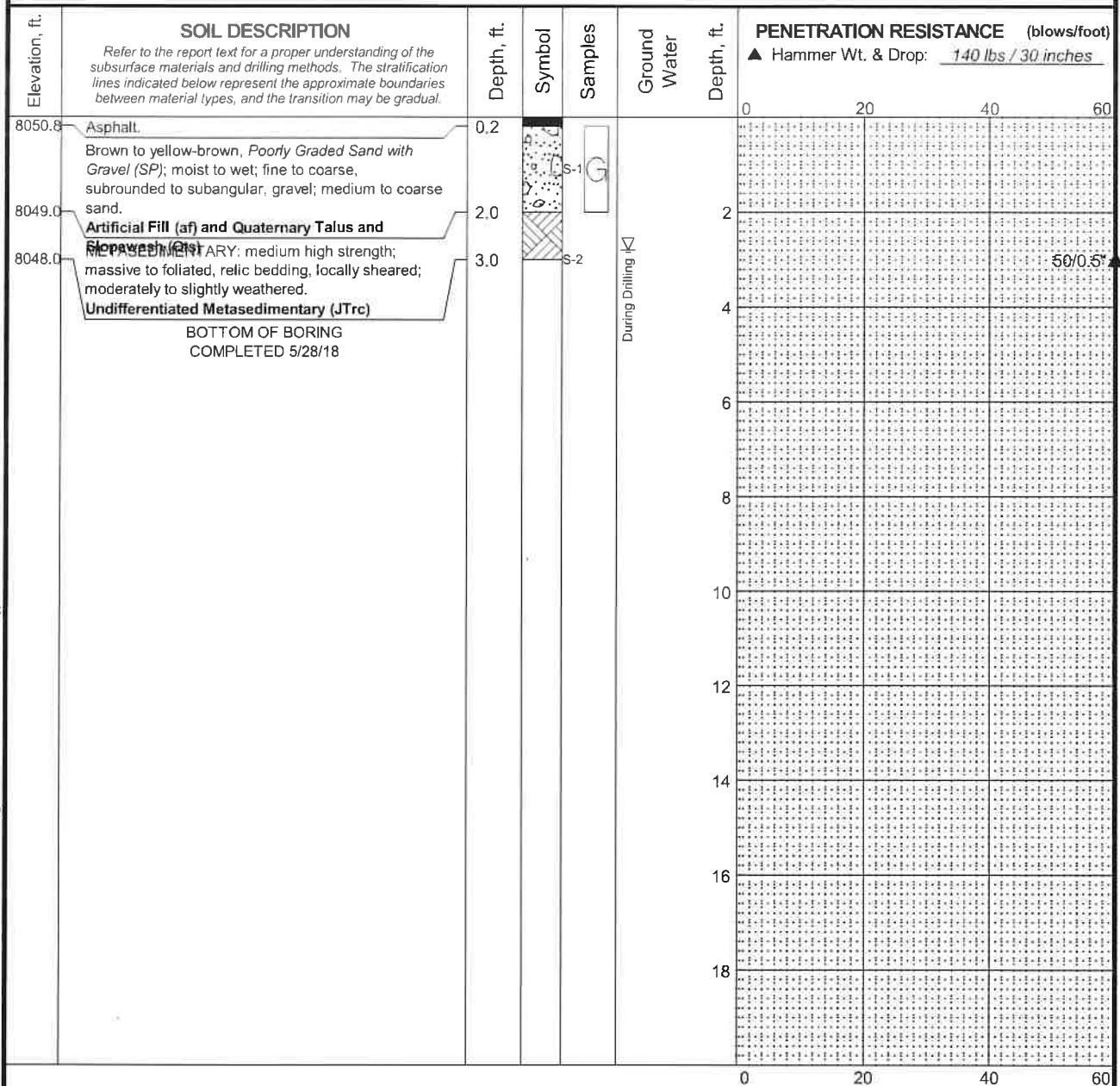
January 2021

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FIG. A-36

Total Depth: 3 ft. Latitude: 37.66619 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8051 ft. Longitude: -119.0740 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 572+45 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane



LEGEND

* Sample Not Recovered Ground Water Level ATD ◇ % Fines (<0.075mm)
 Grab Sample ● % Water Content

- NOTES**
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 2. Groundwater level, if indicated above, is for the date specified and may vary.
 3. USCS designation is based on visual-manual classification and selected lab testing.
 4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-27

January 2021

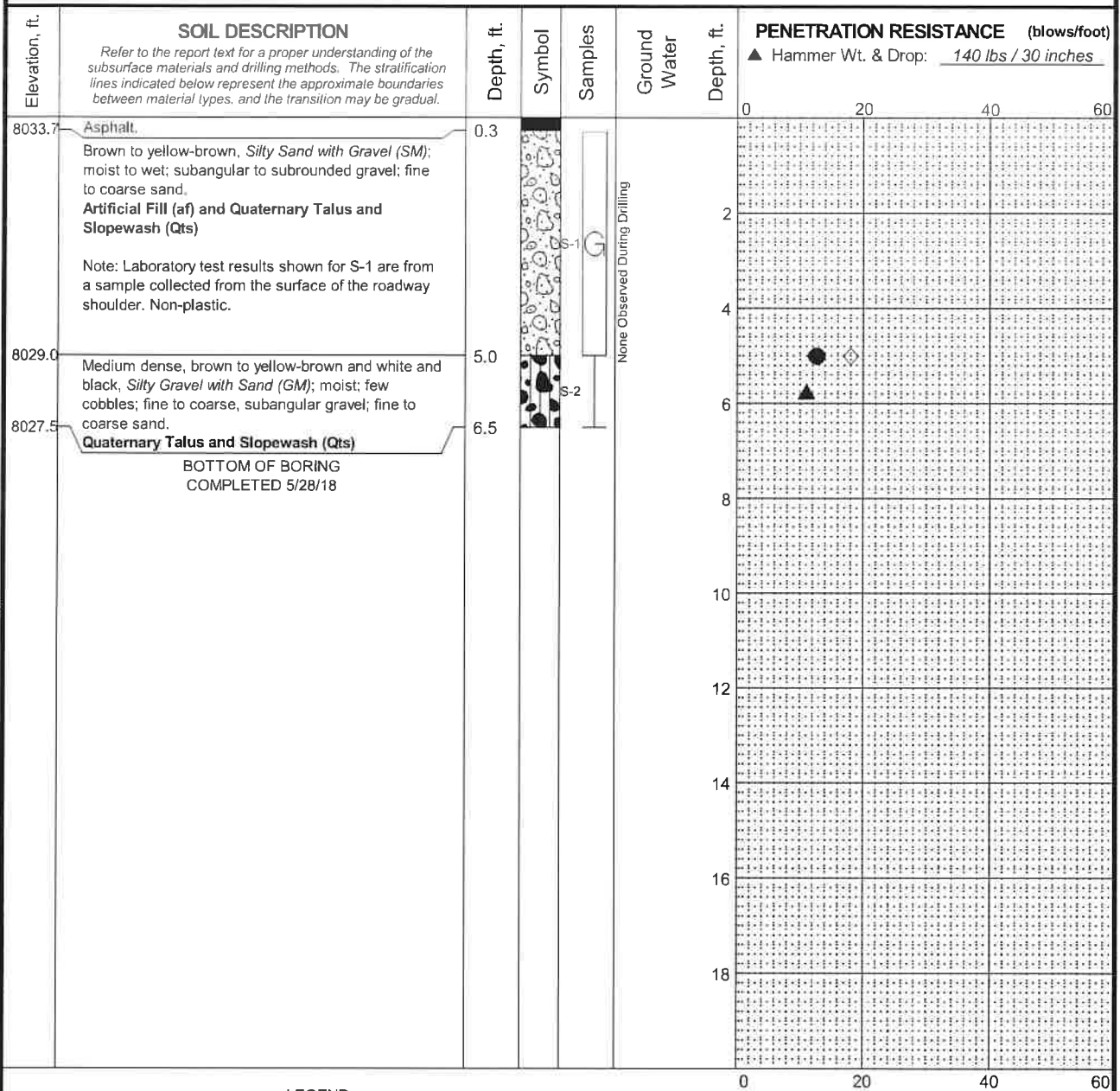
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FIG. A-37

MASTER LOG E MC 100062.GPJ SHAN WILLODT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth:	6.5 ft.	Latitude:	37.66240 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 8034 ft.	Longitude:	-119.0725 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	586+95 ft.	Drill Rig Equipment:	CME 55	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Reds Meadow traffic lane		



LEGEND

* Sample Not Recovered
 Grab Sample
 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)
 ● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-28

January 2021

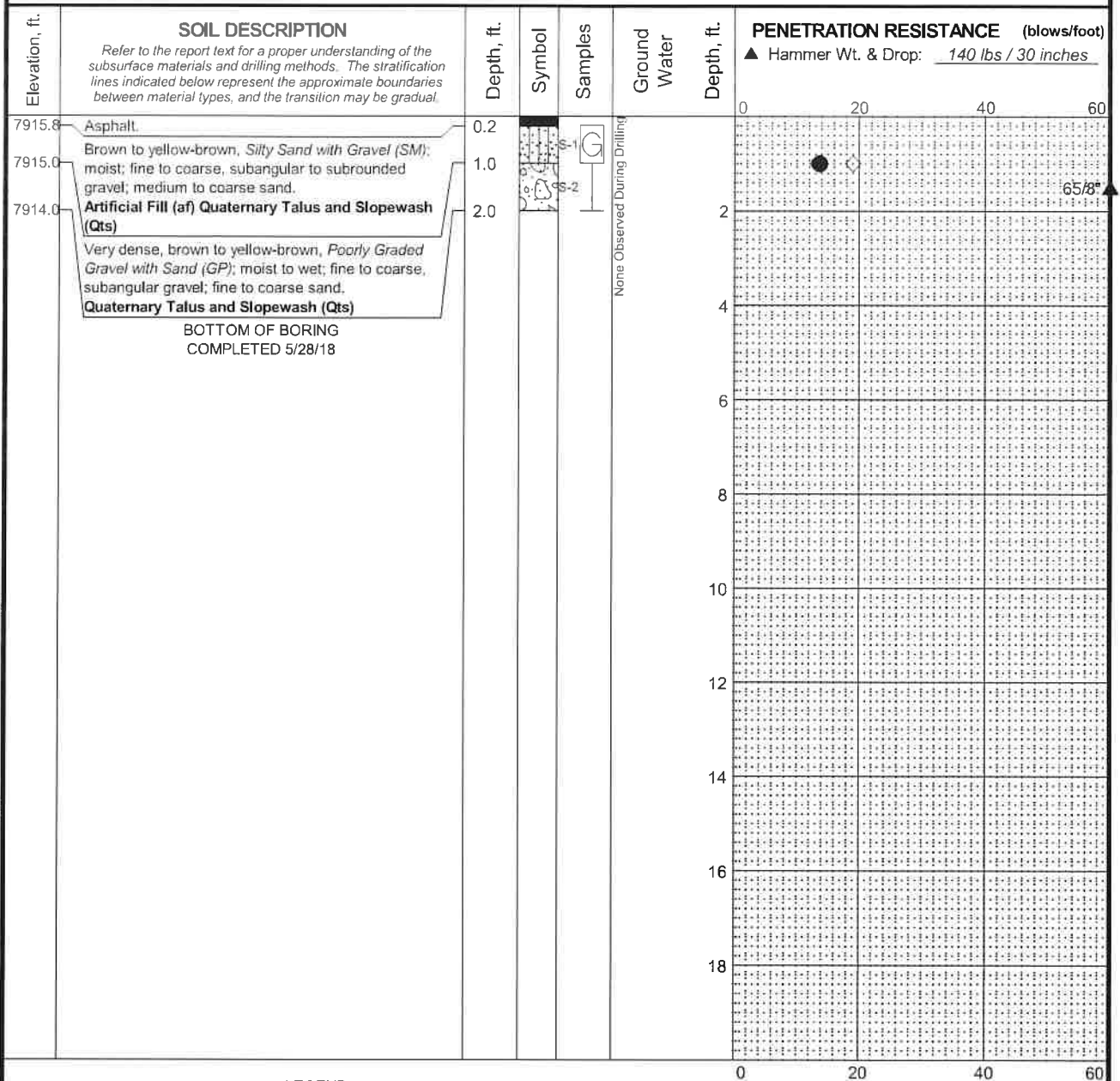
100062-003

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FIG. A-38

MASTER LOG E. MC 100062.GPJ SHAN WIL.GDT 5/17/19

Total Depth: 2 ft. Latitude: 37.65849 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7916 ft. Longitude: -119.0719 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 601+45 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane; Refusal at 2 feet in three attempts



LEGEND

- * Sample Not Recovered
- Grab Sample
- 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-29

January 2021

100062-003

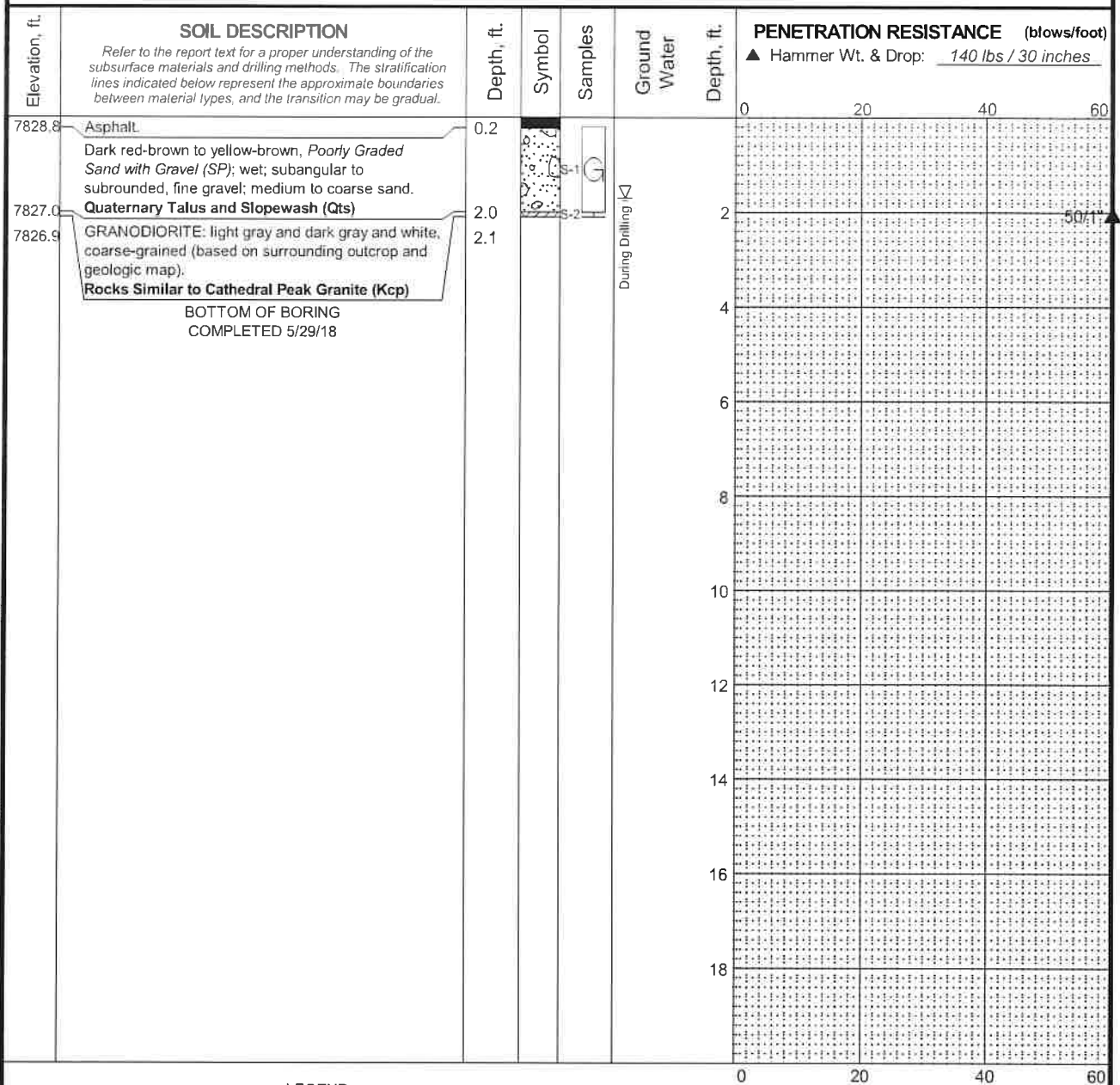
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FIG. A-39

Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth: 2.1 ft. Latitude: 37.65500 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7829 ft. Longitude: -119.0735 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 616+05 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



LEGEND

* Sample Not Recovered ▽ Ground Water Level ATD ◇ % Fines (<0.075mm)
 Grab Sample ● % Water Content
 2.0" O.D. Split Spoon Sample

- NOTES**
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 2. Groundwater level, if indicated above, is for the date specified and may vary.
 3. USCS designation is based on visual-manual classification and selected lab testing.
 4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-30A

January 2021

100062-003

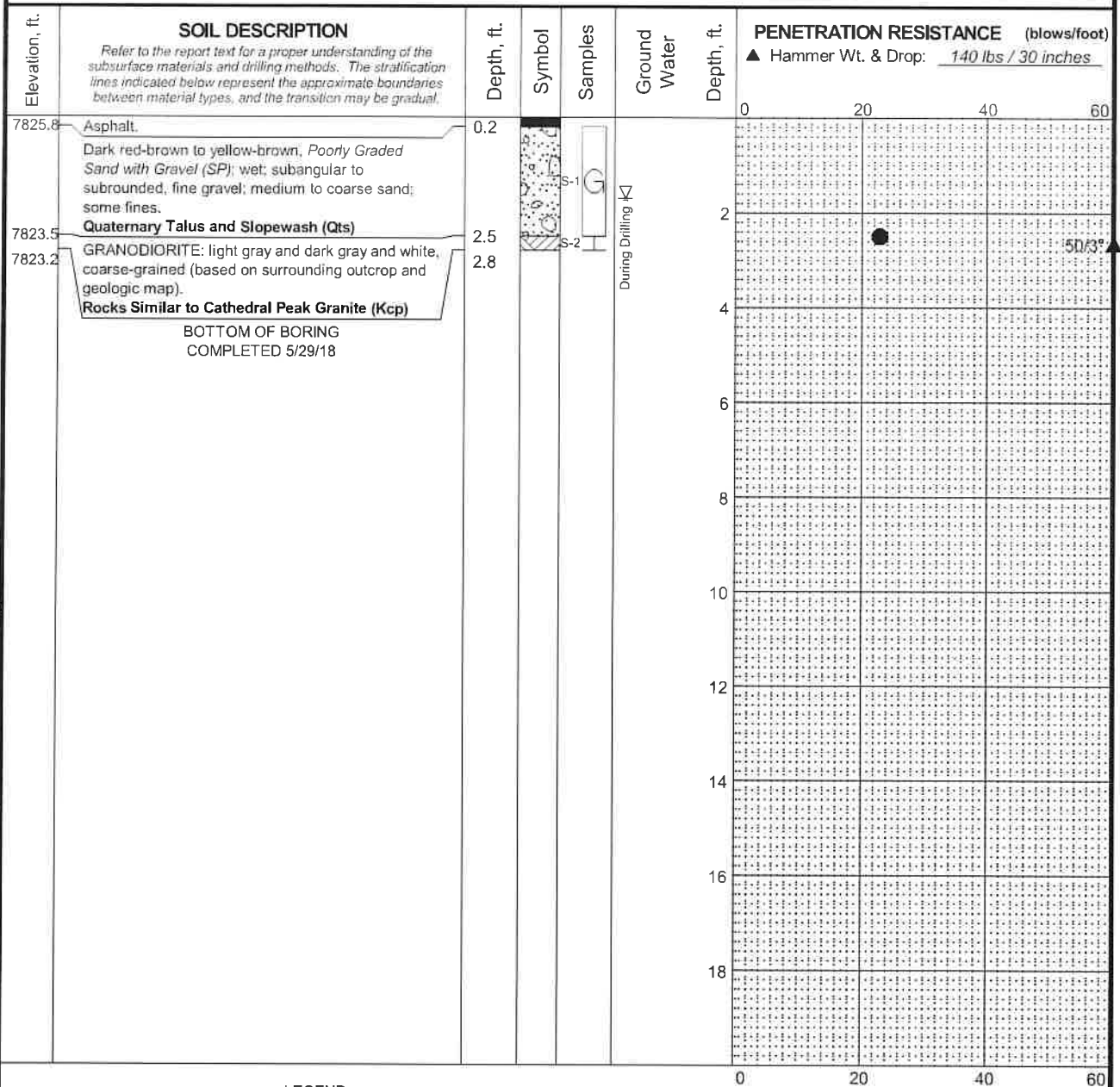
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FIG. A-40

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Log: BLC Rev: BLC Typ: SDH

Total Depth: 2.8 ft. Latitude: 37.65483 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: - 7826 ft. Longitude: -119.0731 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Gecid Station: 616+05 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- └ 2.0" O.D. Split Spoon Sample
- ▽ Ground Water Level ATD
- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-30B

January 2021

100062-003

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FIG. A-41

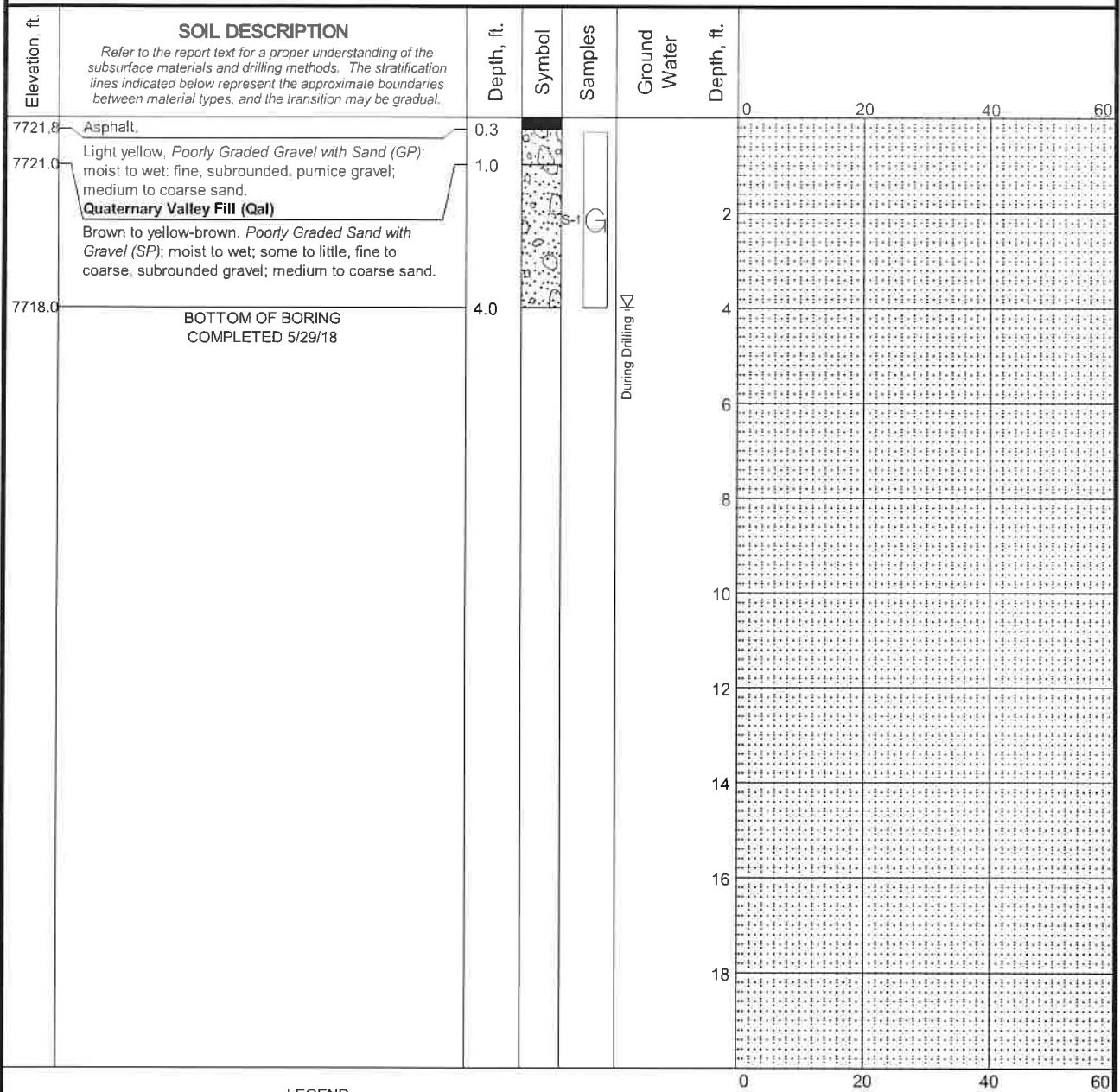
Typ: SDH

Rev: BLC

Log: BLC

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth:	4 ft.	Latitude:	37.65114 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 7722 ft.	Longitude:	-119.0743 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	630+00 ft.	Drill Rig Equipment:	CME 55	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Reds Meadow traffic lane		



LEGEND

* Sample Not Recovered	▽ Ground Water Level ATD	◇ % Fines (<0.075mm)
☐ Grab Sample		● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-31A

January 2021

100062-003

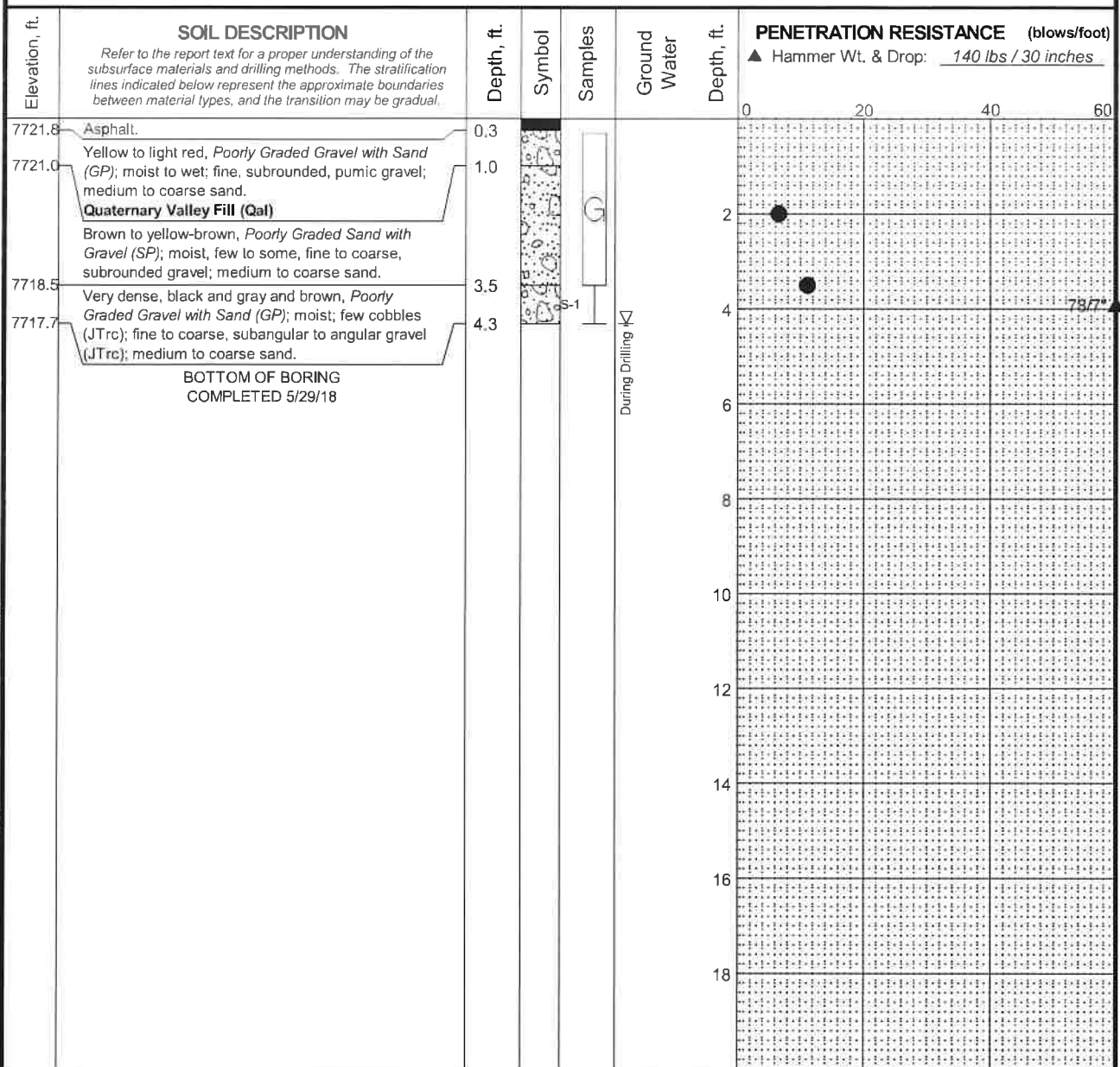
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FIG. A-42

MASTER LOG E. MC 100062.GPJ SHAN WIL.GDT 5/17/19

Log: BLC Rev: BLC Typ: SDH

Total Depth: 4.58 ft. Latitude: 37.65126 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7722 ft. Longitude: -119.0742 " Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 630+00 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- ⊥ 2.0" O.D. Split Spoon Sample

▽ Ground Water Level ATD

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-31B

January 2021

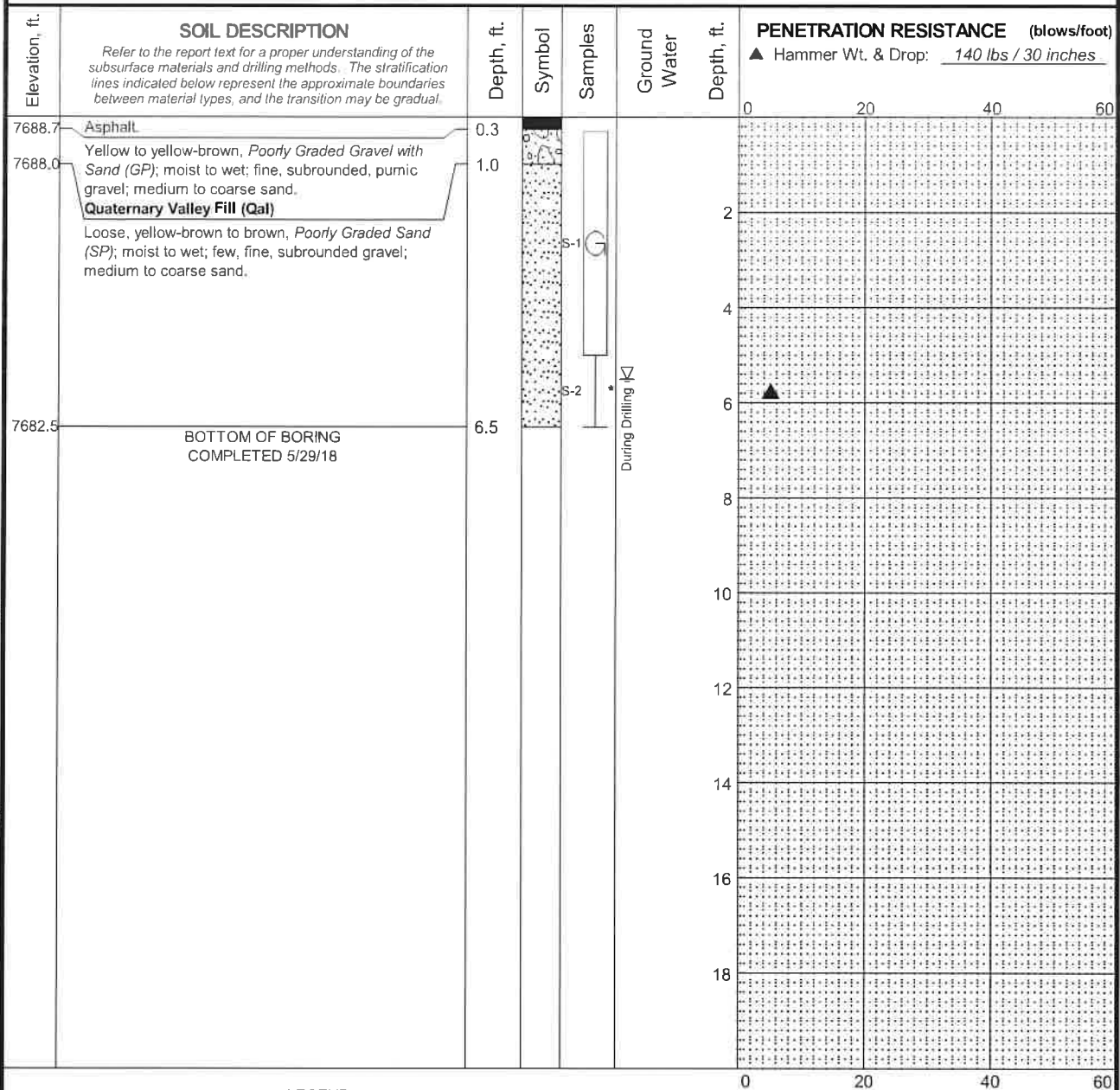
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FIG. A-43

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 6.5 ft. Latitude: 37.64730 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7689 ft. Longitude: -119.0733 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 644+00 ft. Drill Rig Equipment: CME 55 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

- LEGEND**
- * Sample Not Recovered
 - ☐ Grab Sample
 - ⊥ 2.0" O.D. Split Spoon Sample
 - ▽ Ground Water Level ATD
 - ◇ % Fines (<0.075mm)
 - % Water Content

- NOTES**
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 2. Groundwater level, if indicated above, is for the date specified and may vary.
 3. USCS designation is based on visual-manual classification and selected lab testing.
 4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

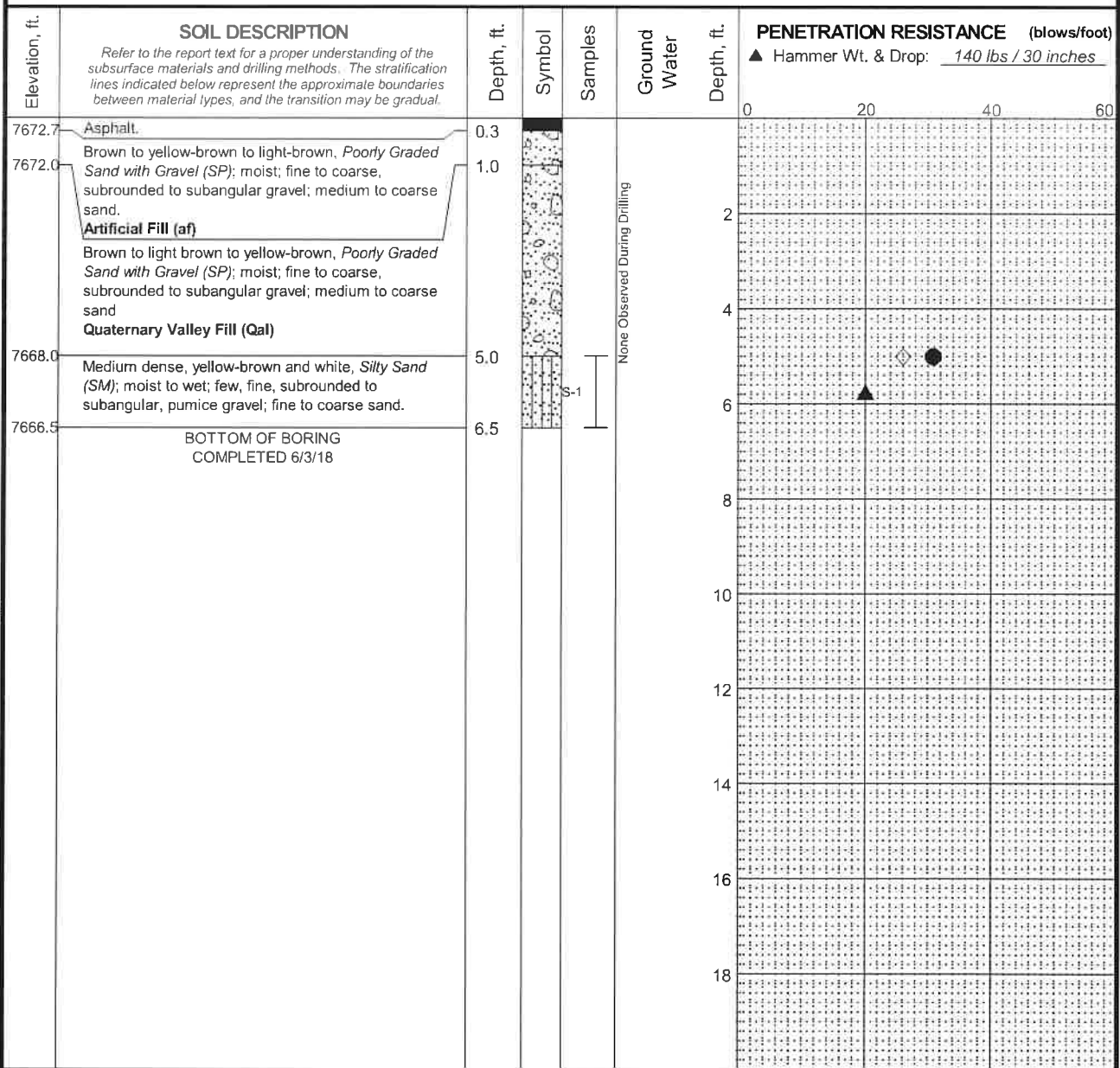
LOG OF BORING SW-B-32

January 2021 100062-003

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FIG. A-44

Total Depth: <u>6.5 ft.</u>	Latitude: <u>37.64387 °</u>	Drilling Method: <u>Solid Auger</u>	Hole Diam.: <u>4 in.</u>
Top Elevation: <u>~ 7673 ft.</u>	Longitude: <u>-119.0750 °</u>	Drilling Company: <u>Geo-Ex</u>	Rod Diam.: <u></u>
Vert. Datum: <u>EGM96 Geoid</u>	Station: <u>658+75 ft.</u>	Drill Rig Equipment: <u>CME 75</u>	Hammer Type: <u>Automatic</u>
Horiz. Datum: <u>WGS84</u>	Offset: <u>N/A</u>	Other Comments: <u>Minaret Vista traffic lane</u>	



LEGEND

* Sample Not Recovered

┌ 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)

● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-33

January 2021

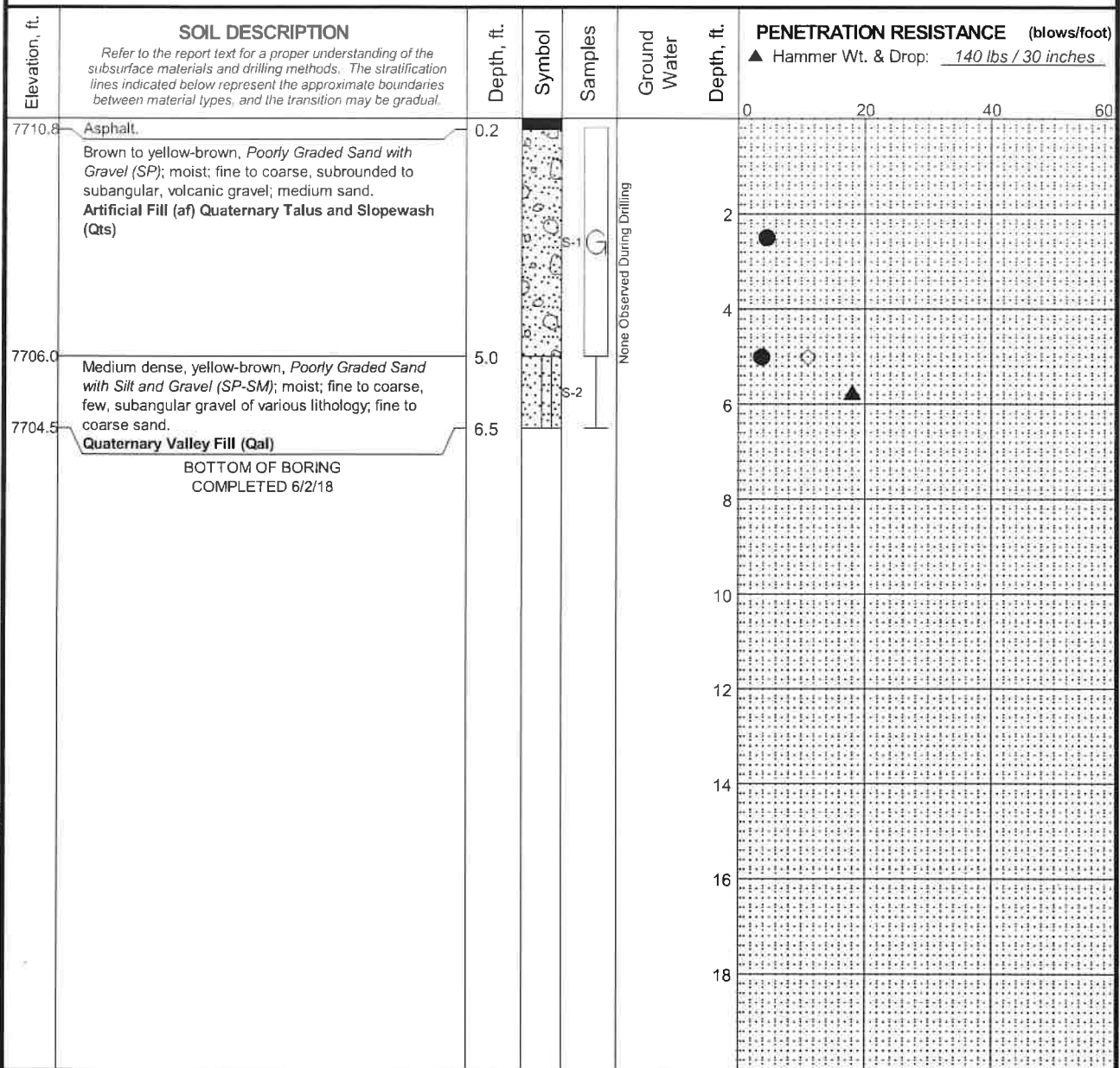
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FIG. A-45

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 6.5 ft. Latitude: 37.64028 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7711 ft. Longitude: -119.0742 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 673+25 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- └─ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-34

January 2021

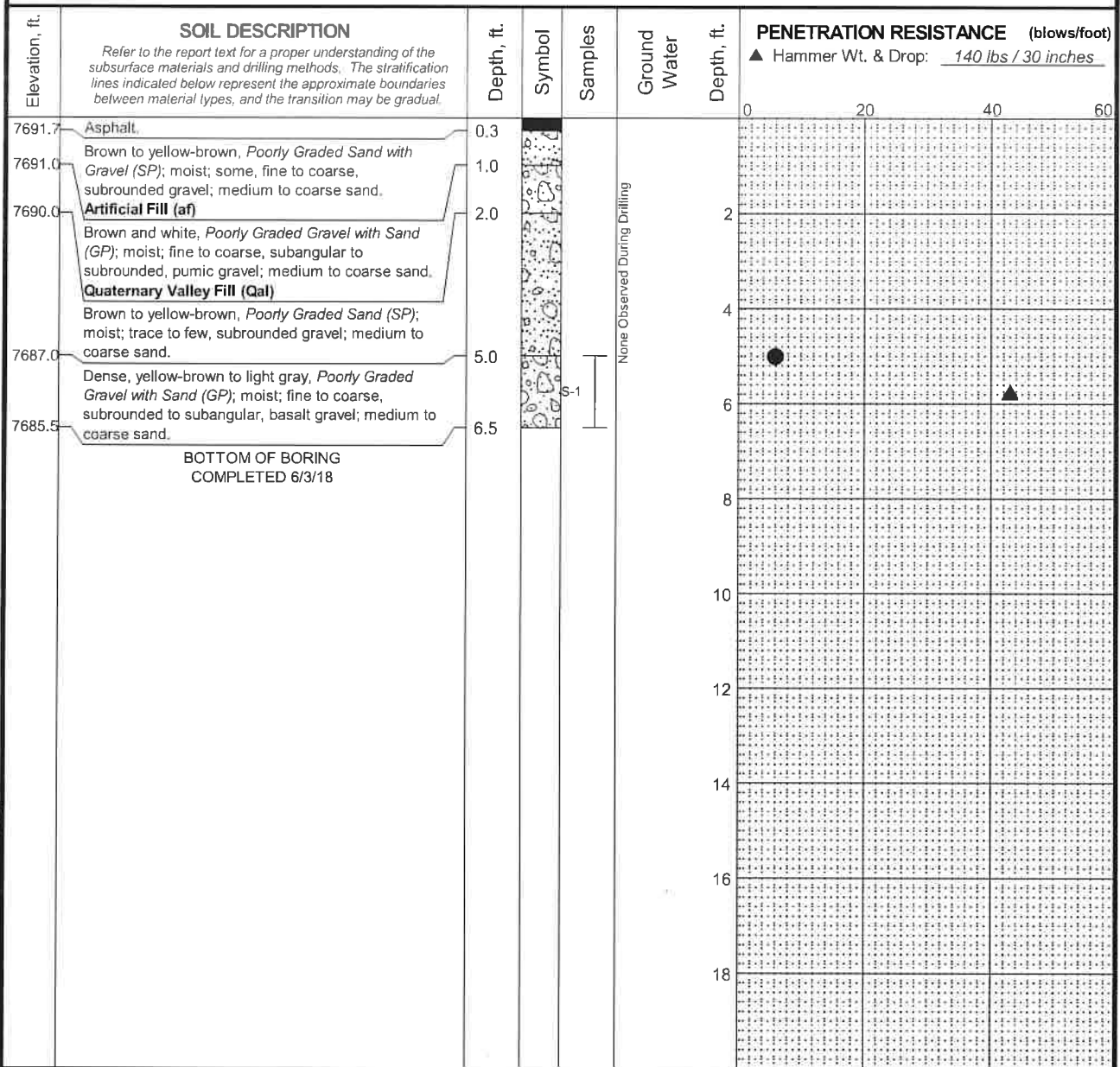
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FIG. A-46

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19 Typ: SDH Rev: BLC Log: BLC

Total Depth:	6.5 ft.	Latitude:	37.63859 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 7692 ft.	Longitude:	-119.0775 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	686+45 ft.	Drill Rig Equipment:	CME 75	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Minaret Vista traffic lane		



LEGEND

* Sample Not Recovered

┌ 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)

● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-35

January 2021

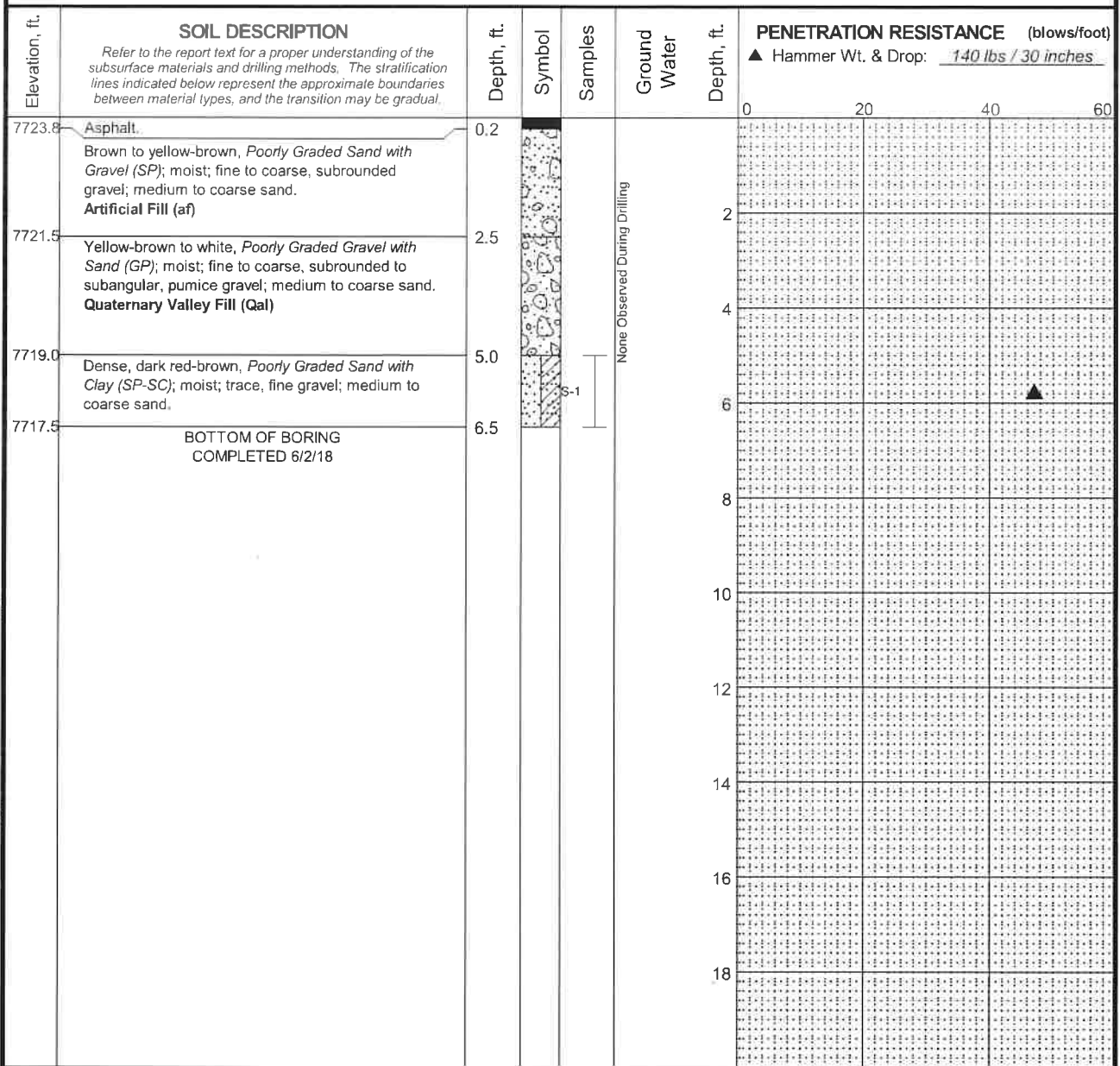
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FIG. A-47

MASTER LOG E MC 100062.GPJ SHAN WIL_GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth:	6.5 ft.	Latitude:	37.63650 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 7724 ft.	Longitude:	-119.0800 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	700+00 ft.	Drill Rig Equipment:	CME 75	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Reds Meadow traffic lane		



LEGEND

* Sample Not Recovered

┌ 2.0" O.D. Split Spoon Sample

◇ % Fines (<0.075mm)

● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-36

January 2021

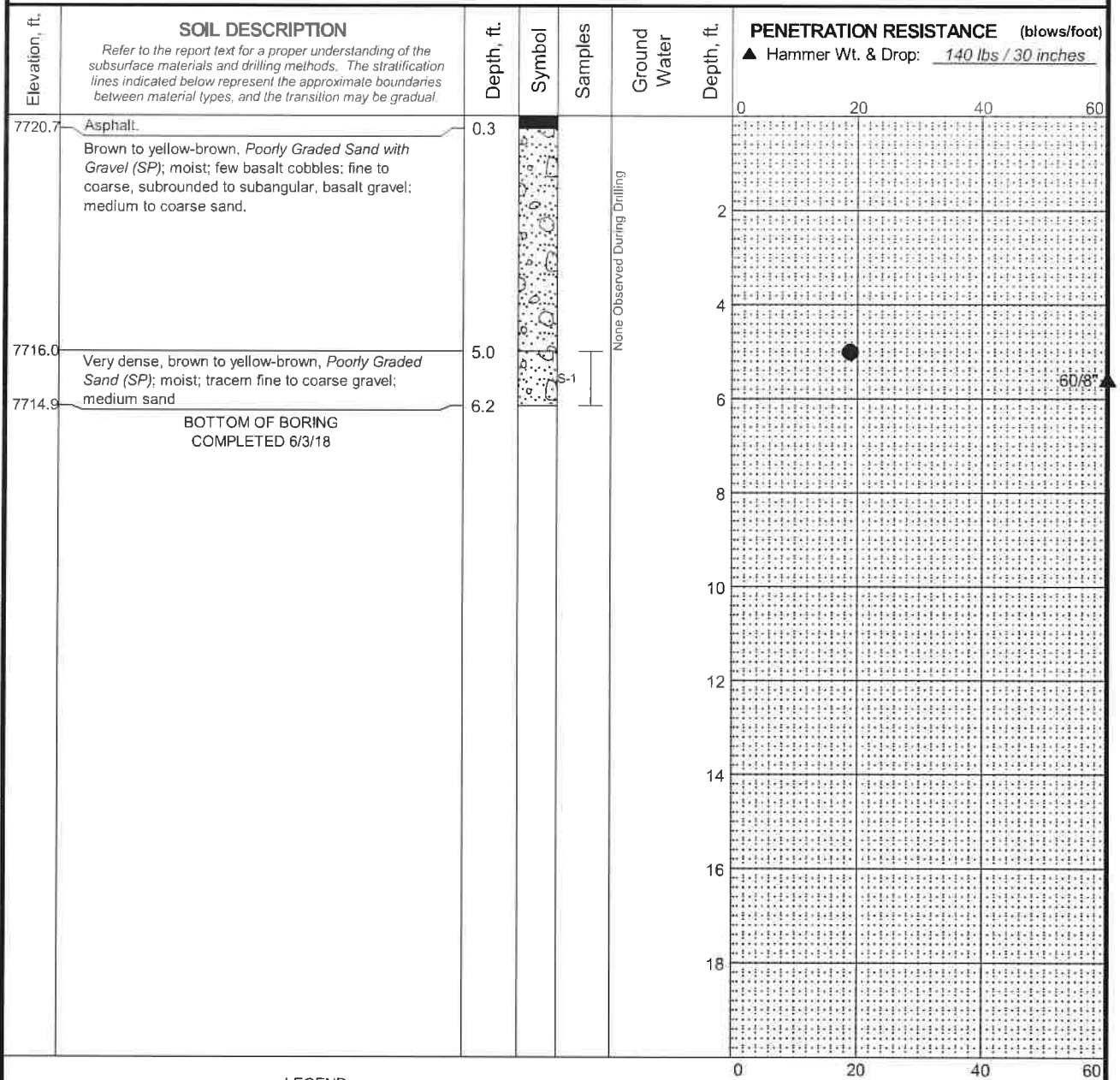
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FIG. A-48

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 6.15 ft. Latitude: 37.63295 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7721 ft. Longitude: -119.0818 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 714+65 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane



LEGEND

- * Sample Not Recovered
-  2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-37

January 2021

100062-003

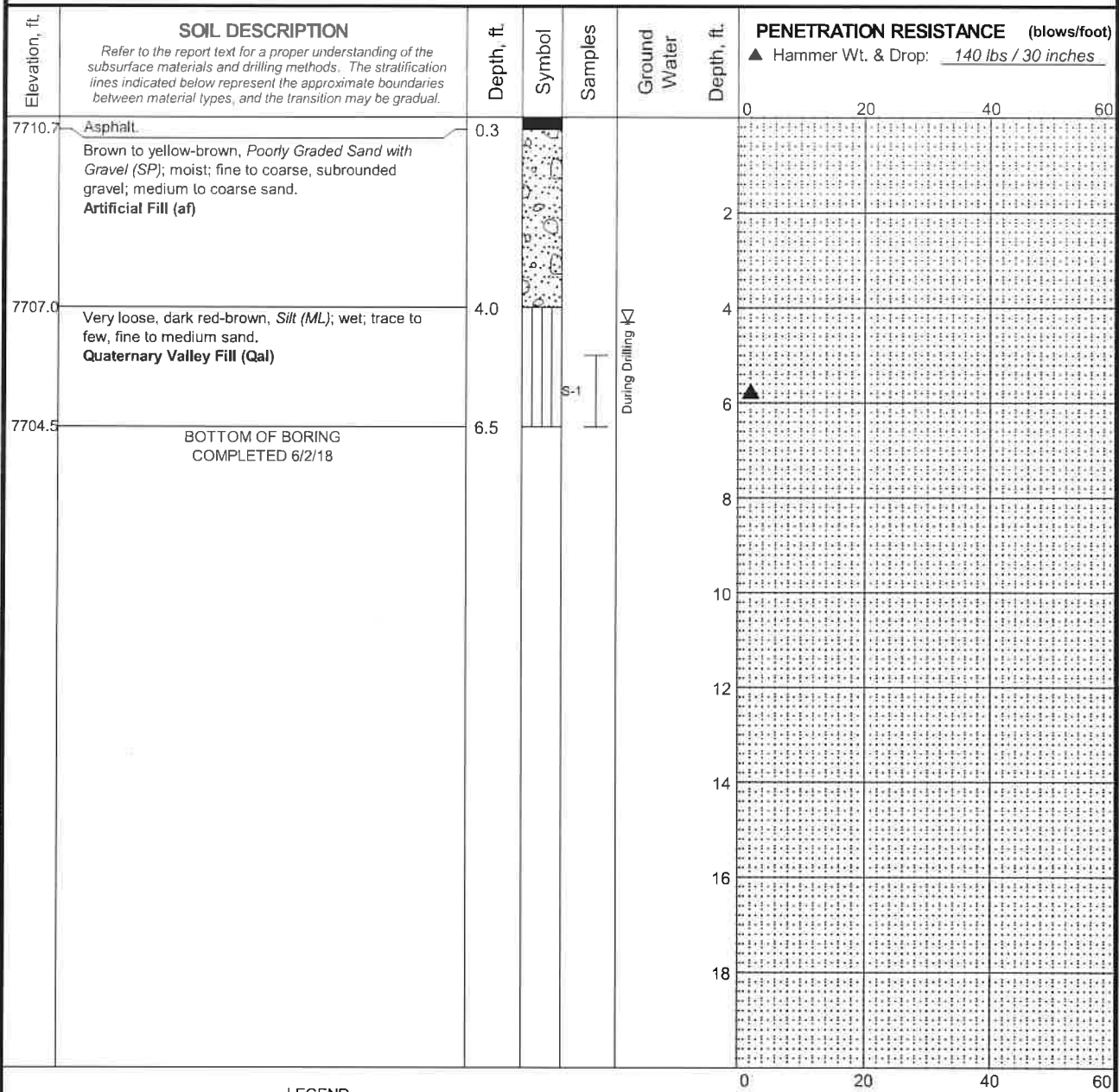
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FIG. A-49

MASTER LOG E MC 100062.GPJ SHAN WIL.GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

REV 3

Total Depth:	6.5 ft.	Latitude:	37.63009 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 7711 ft.	Longitude:	-119.0800 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	729+40 ft.	Drill Rig Equipment:	CME 75	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Center of road		



LEGEND

* Sample Not Recovered	 Ground Water Level ATD	◇ % Fines (<0.075mm)
 2.0" O.D. Split Spoon Sample		● % Water Content

- NOTES**
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 2. Groundwater level, if indicated above, is for the date specified and may vary.
 3. USCS designation is based on visual-manual classification and selected lab testing.
 4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-38

January 2021

100062-003

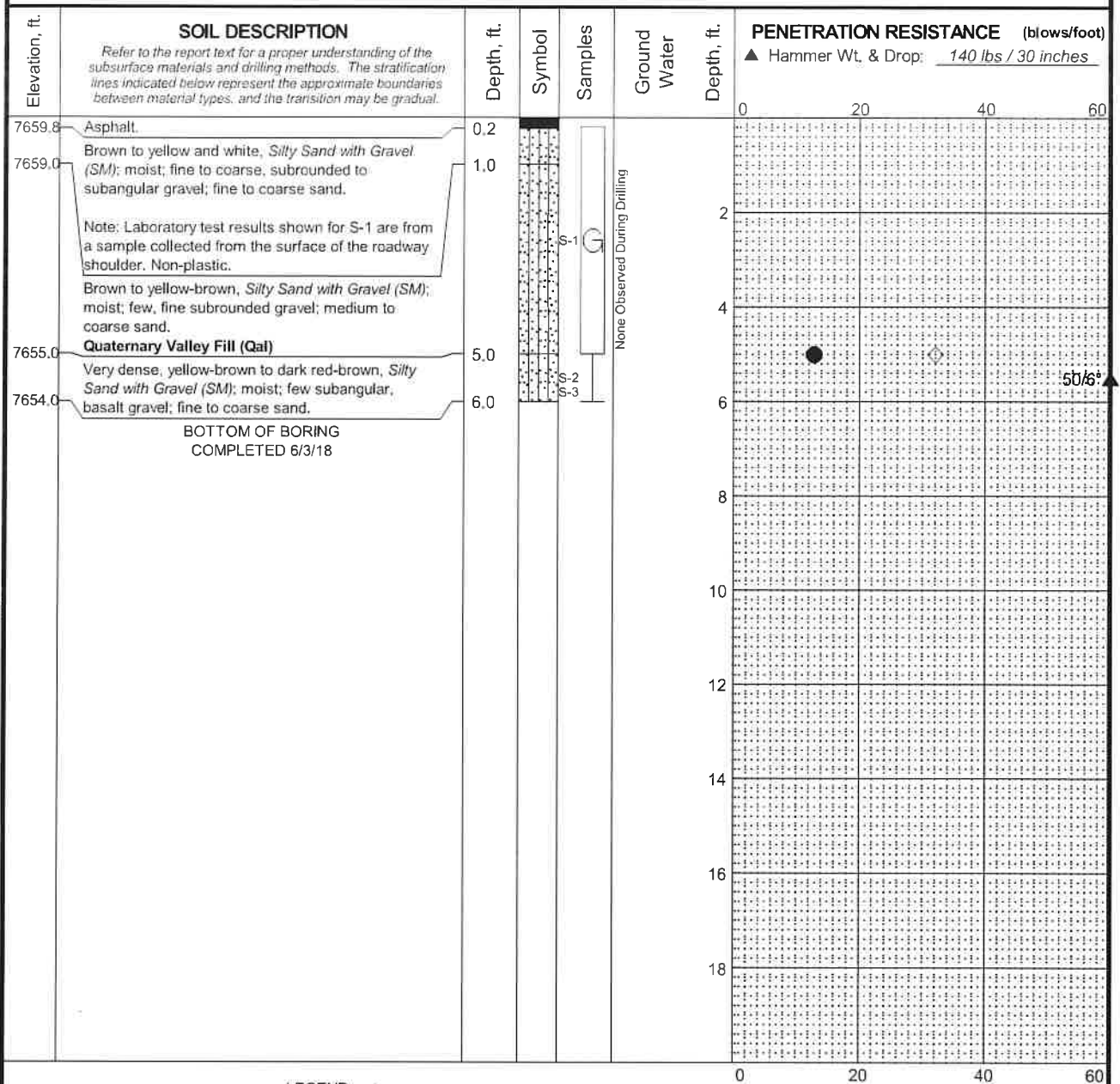
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FIG. A-50

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 6/17/19

REV 3

Total Depth: 6 ft. Latitude: 37.62719 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7660 ft. Longitude: -119.0772 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 743+00 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane; S-3 is ~1ft from S-2



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- └ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-39

January 2021

100062-003

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FIG. A-51

Typ: SDH

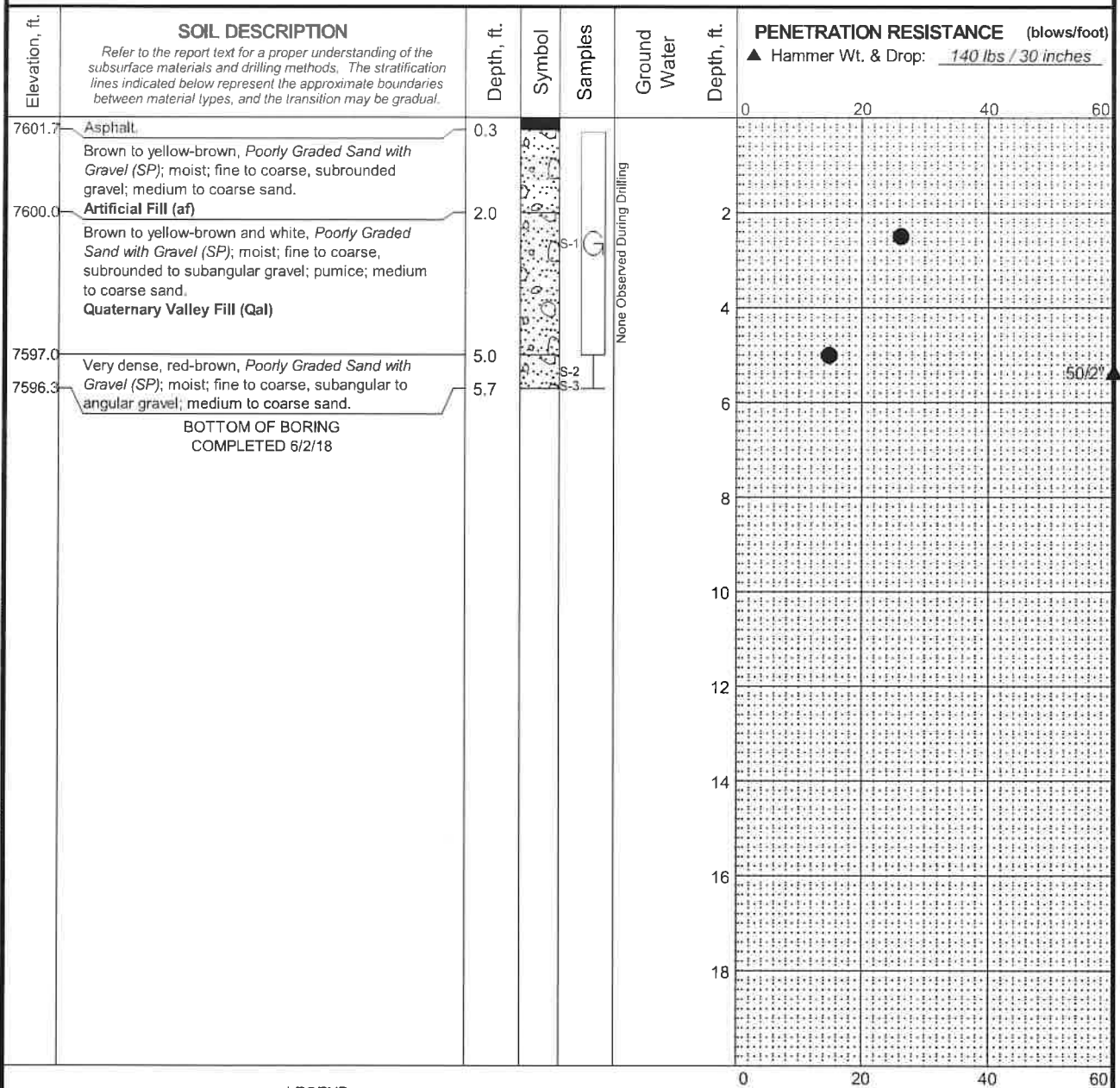
Rev: BLC

Log: BLC

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

REV 3

Total Depth: 5.7 ft. Latitude: 37.62366 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7602 ft. Longitude: -119.0772 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 756+65 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane; S-3 is ~4 ft from S-2



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- └─ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-40

January 2021

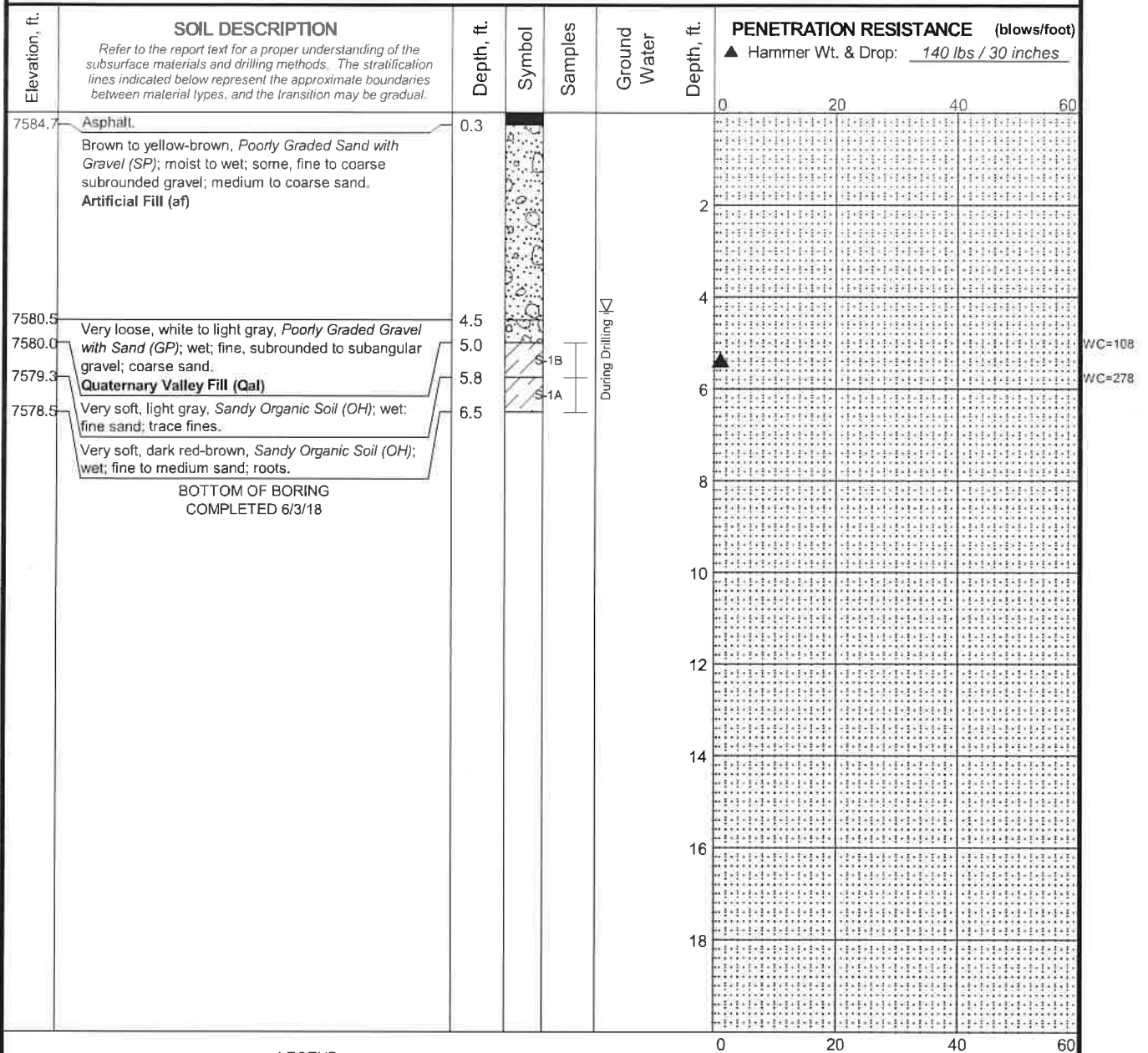
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FIG. A-52

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19 Log: BLC Rev: BLC Typ: SDH

Total Depth: 6.5 ft. Latitude: 37.62011 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7585 ft. Longitude: -119.0774 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 771+25 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Minaret Vista traffic lane



Log: BLC Rev: BLC Typ: SDH

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

LEGEND

* Sample Not Recovered ▽ Ground Water Level ATD Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)
 ┌ 2.0" O.D. Split Spoon Sample Natural Water Content ● % Water Content

- NOTES**
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 2. Groundwater level, if indicated above, is for the date specified and may vary.
 3. USCS designation is based on visual-manual classification and selected lab testing.
 4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-41

January 2021

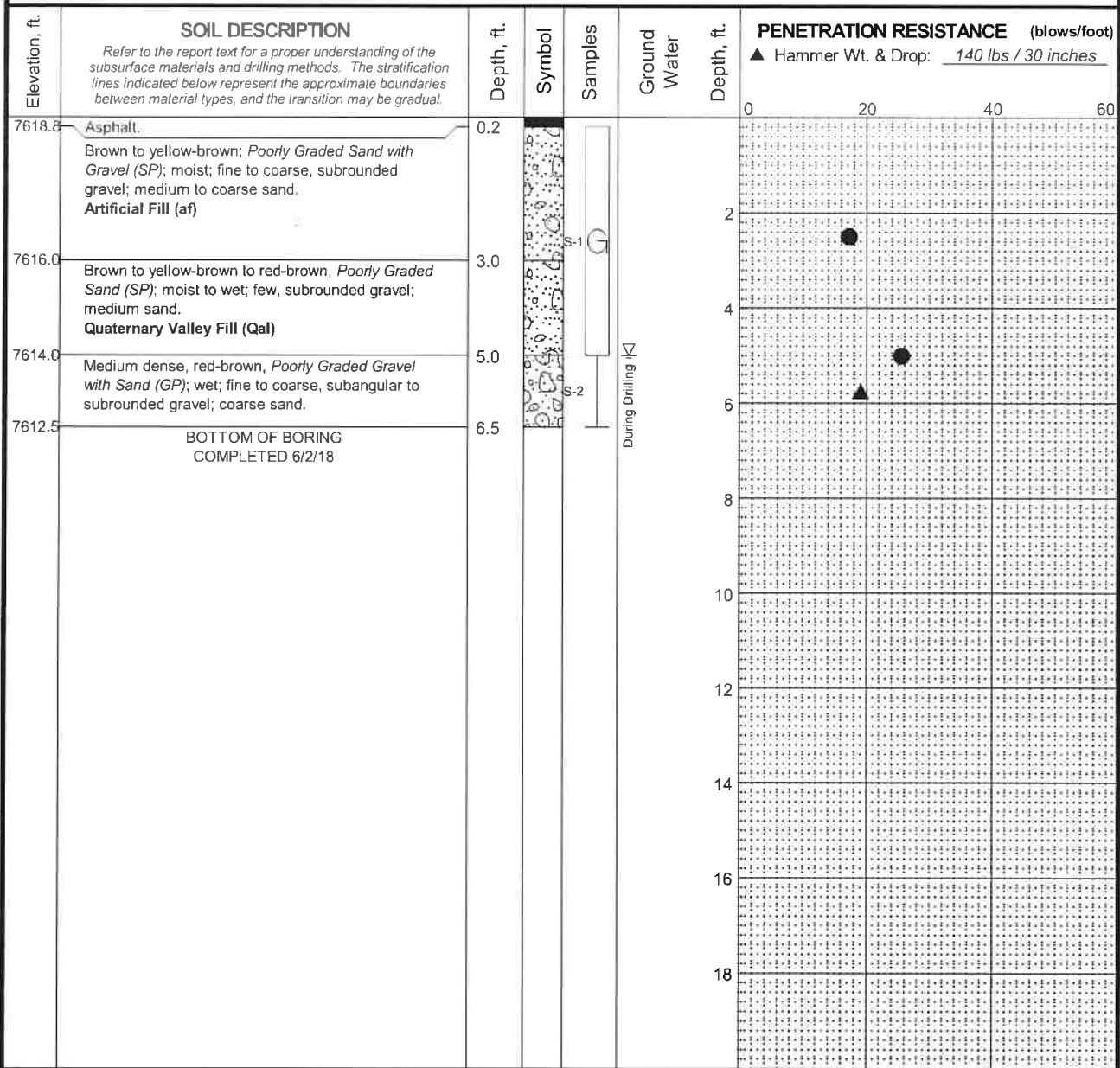
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FIG. A-53

REV 3

Total Depth:	6.5 ft.	Latitude:	37.61614 °	Drilling Method:	Solid Auger	Hole Diam.:	4 in.
Top Elevation:	~ 7619 ft.	Longitude:	-119.0768 °	Drilling Company:	Geo-Ex	Rod Diam.:	
Vert. Datum:	EGM96 Geoid	Station:	785+10 ft.	Drill Rig Equipment:	CME 75	Hammer Type:	Automatic
Horiz. Datum:	WGS84	Offset:	N/A	Other Comments:	Reds Meadow traffic lane		



LEGEND

* Sample Not Recovered	▽ Ground Water Level ATD	◇ % Fines (<0.075mm)
□ Grab Sample		● % Water Content
⊥ 2.0" O.D. Split Spoon Sample		

- NOTES**
1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 2. Groundwater level, if indicated above, is for the date specified and may vary.
 3. USCS designation is based on visual-manual classification and selected lab testing.
 4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-42

January 2021

100062-003

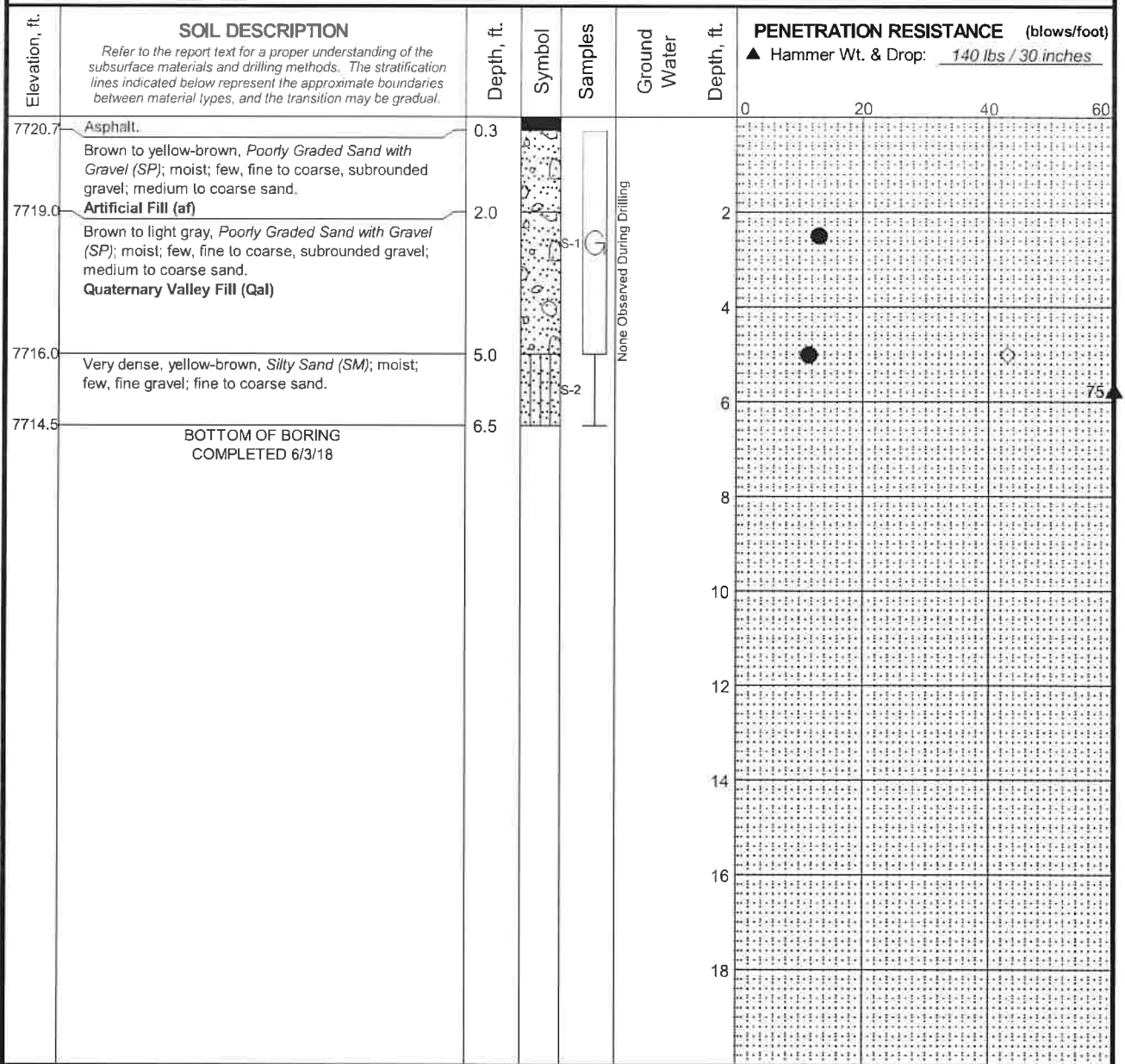
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FIG. A-54

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Log: BLC Rev: BLC Typ: SDH

Total Depth: 6.5 ft. Latitude: 37.61403 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 7721 ft. Longitude: -119.0752 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 800+55 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments: Reds Meadow traffic lane



LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- └─ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-43

January 2021

100062-003

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FIG. A-55

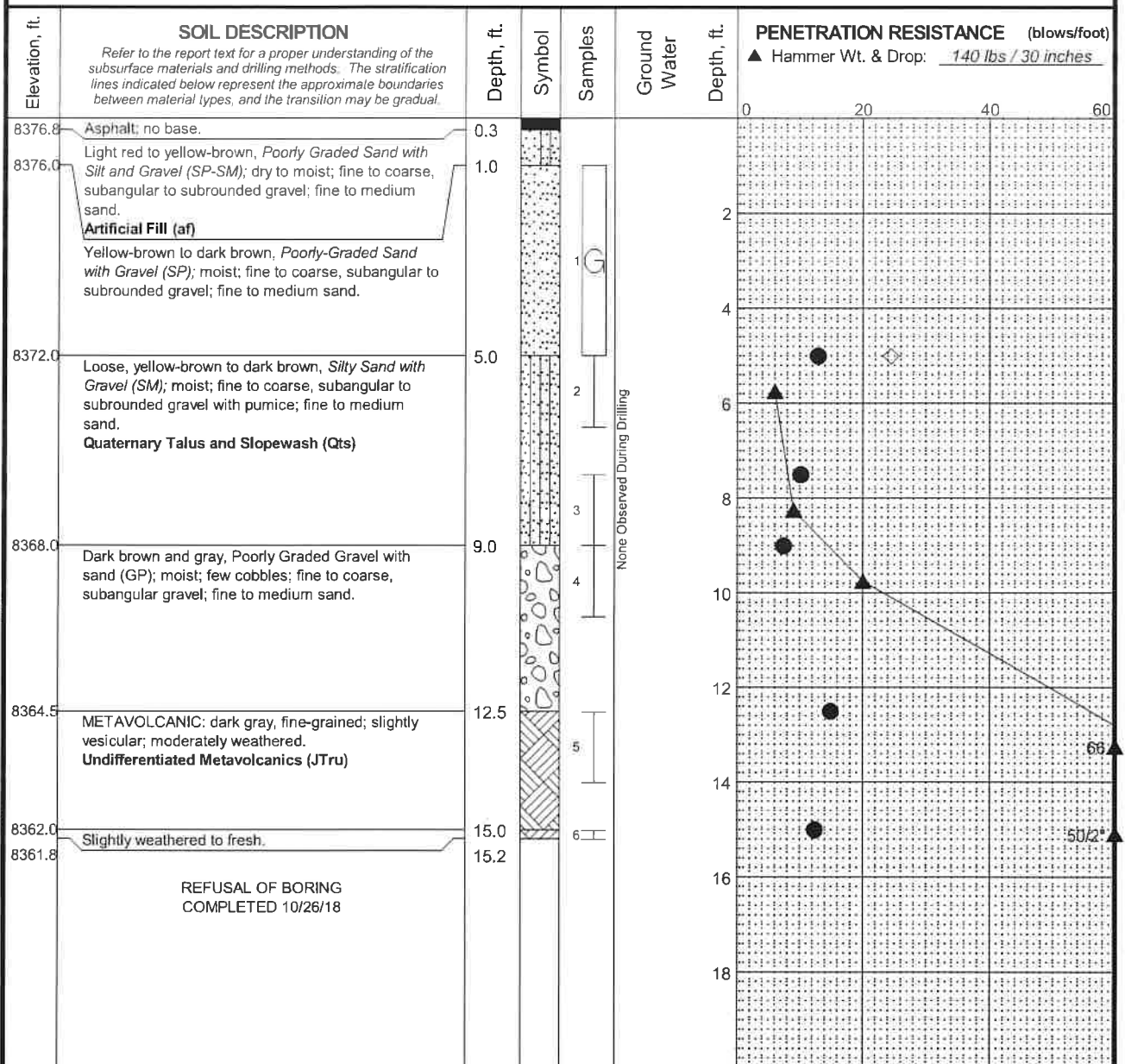
Typ: SDH

Rev: BLC

Log: BLC

MASTER LOG E.M.C. 100062.GPJ SHAN WIL GDT 5/17/19

Total Depth: 15.2 ft. Latitude: 37.67613 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8377 ft. Longitude: -119.0742 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 121+45 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments:



Typ: LOL
Rev: BLC
Log: BLC

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

LEGEND

- * Sample Not Recovered
- Grab Sample
- └─ 2.0" O.D. Split Spoon Sample

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-44

January 2021

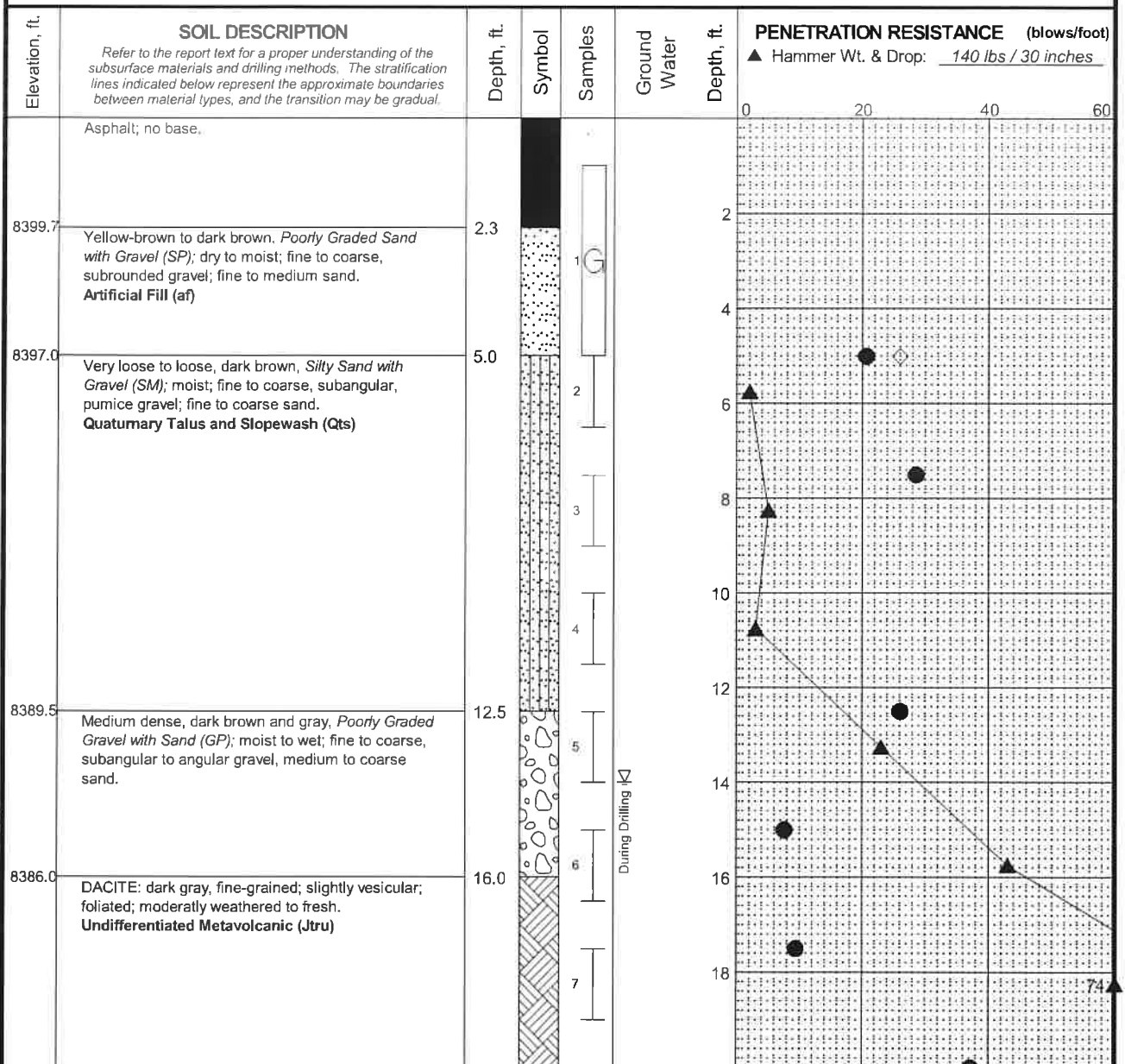
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FIG. A-56

REV 3

Total Depth: <u>21 ft.</u>	Latitude: <u>37.67542 °</u>	Drilling Method: <u>Solid Auger</u>	Hole Diam.: <u>4 in.</u>
Top Elevation: <u>-8402 ft.</u>	Longitude: <u>-119.0731 °</u>	Drilling Company: <u>Geo-Ex</u>	Rod Diam.: <u></u>
Vert. Datum: <u>EGM96 Geoid</u>	Station: <u>117+10 ft.</u>	Drill Rig Equipment: <u>CME 75</u>	Hammer Type: <u>Automatic</u>
Horiz. Datum: <u>WGS84</u>	Offset: <u>N/A</u>	Other Comments: <u></u>	



CONTINUED NEXT SHEET

LEGEND

- * Sample Not Recovered
- ☐ Grab Sample
- ┃ 2.0" O.D. Split Spoon Sample
- ▽ Ground Water Level ATD

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-45

January 2021

100062-003


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FIG. A-57
Sheet 1 of 2



MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

REV 3

Total Depth: 21 ft. Latitude: 37.67542 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8402 ft. Longitude: -119.0731 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 117+10 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments:

Elevation, ft.	SOIL DESCRIPTION <small>Refer to the report text for a proper understanding of the subsurface materials and drilling methods. The stratification lines indicated below represent the approximate boundaries between material types, and the transition may be gradual.</small>	Depth, ft.	Symbol	Samples	Ground Water	Depth, ft.	PENETRATION RESISTANCE (blows/foot) ▲ Hammer Wt. & Drop: <u>140 lbs / 30 inches</u>
8381.0		21.0		8			0 20 40 60
	REFUSAL OF BORING COMPLETED 10/27/18					22	50/6"
						24	
						26	
						28	
						30	
						32	
						34	
						36	
						38	

LEGEND

- * Sample Not Recovered
-  Grab Sample
-  2.0" O.D. Split Spoon Sample

 Ground Water Level ATD

- ◇ % Fines (<0.075mm)
- % Water Content

NOTES

- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
- Groundwater level, if indicated above, is for the date specified and may vary.
- USCS designation is based on visual-manual classification and selected lab testing.
- The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-45

January 2021

100062-003

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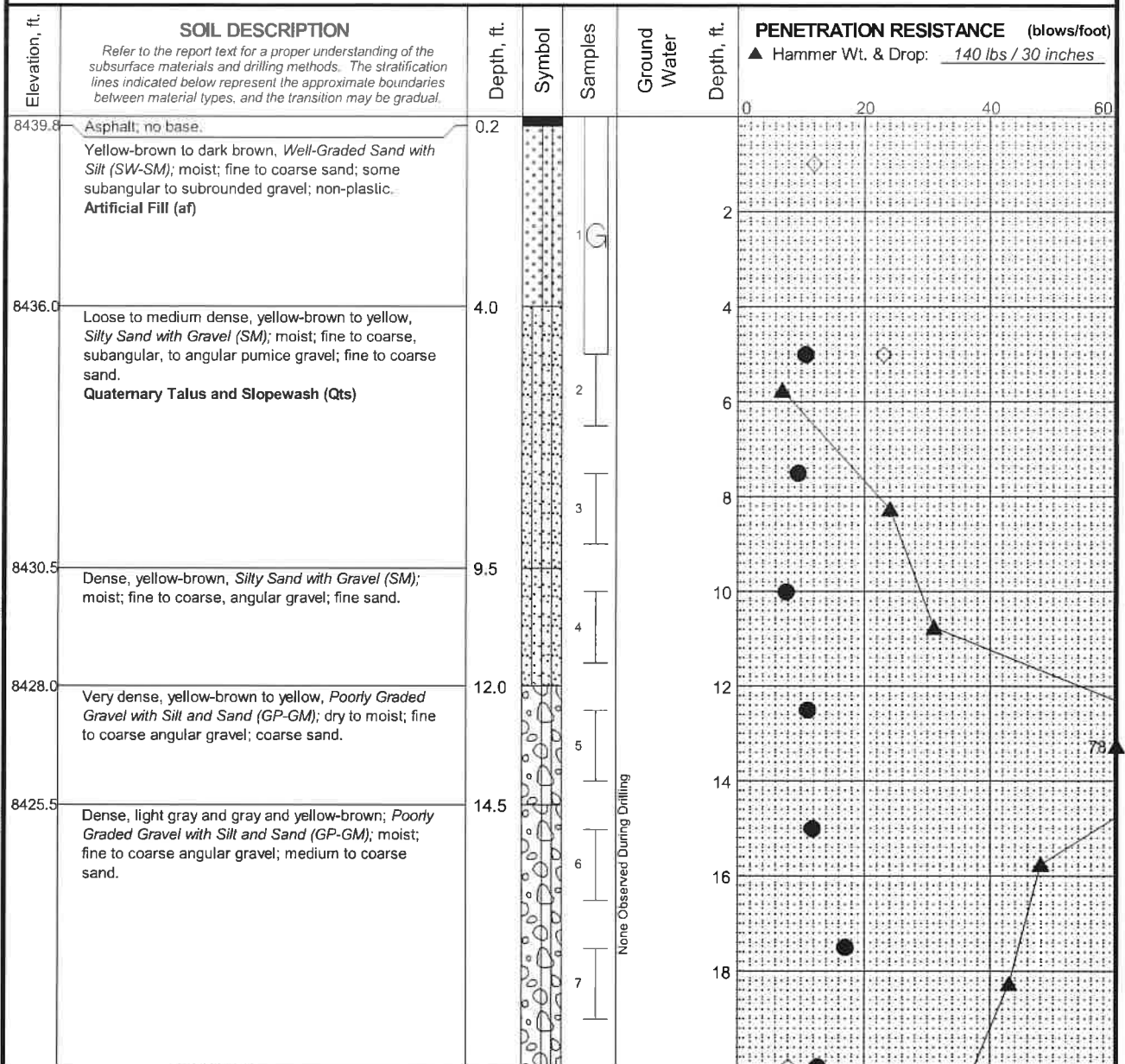
FIG. A-57
 Sheet 2 of 2

MASTER LOG E MC 100062.GPJ SHAN WIL GDT 5/17/19

Log: BLC Rev: BLC Typ: LOL

REV 3

Total Depth: 31.5 ft. Latitude: 37.67469 ° Drilling Method: Solid Auger Hole Diam.: 4 in.
 Top Elevation: ~ 8440 ft. Longitude: -119.0718 ° Drilling Company: Geo-Ex Rod Diam.:
 Vert. Datum: EGM96 Geoid Station: 112+50 ft. Drill Rig Equipment: CME 75 Hammer Type: Automatic
 Horiz. Datum: WGS84 Offset: N/A Other Comments:



LEGEND
 * Sample Not Recovered
 □ Grab Sample
 ⊥ 2.0" O.D. Split Spoon Sample

Plastic Limit —●— Liquid Limit ◇ % Fines (<0.075mm)
 Natural Water Content ● % Water Content

NOTES

1. Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
2. Groundwater level, if indicated above, is for the date specified and may vary.
3. USCS designation is based on visual-manual classification and selected lab testing.
4. The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
 FTFS 03S11(1)
 Madera County, California

LOG OF BORING SW-B-46

January 2021

100062-003

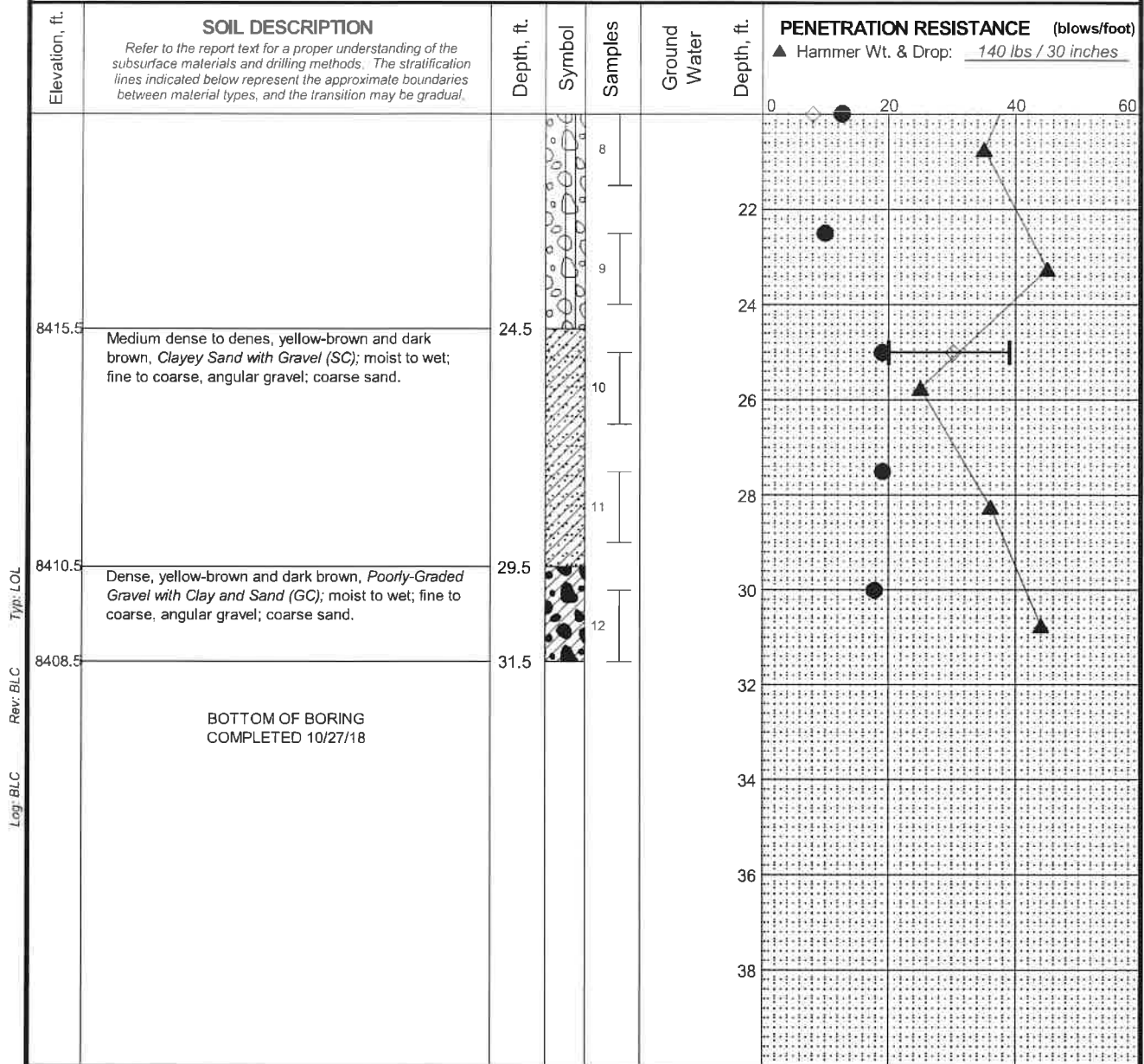
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FIG. A-58
 Sheet 1 of 2

MASTER LOG E MC 100062.GPJ SHAN_WIL_GDT 5/17/19

REV 3

Total Depth: <u>31.5 ft.</u>	Latitude: <u>37.67469 °</u>	Drilling Method: <u>Solid Auger</u>	Hole Diam.: <u>4 in.</u>
Top Elevation: <u>~ 8440 ft.</u>	Longitude: <u>-119.0718 °</u>	Drilling Company: <u>Geo-Ex</u>	Rod Diam.: <u></u>
Vert. Datum: <u>EGM96 Geoid</u>	Station: <u>112+50 ft.</u>	Drill Rig Equipment: <u>CME 75</u>	Hammer Type: <u>Automatic</u>
Horiz. Datum: <u>WGS84</u>	Offset: <u>N/A</u>	Other Comments: <u></u>	



MASTER LOG E MC 100062.GPJ SHAN_WIL_GDT 5/17/19

- LEGEND**
- * Sample Not Recovered
 - Grab Sample
 - 2.0" O.D. Split Spoon Sample

Plastic Limit Liquid Limit % Fines (<0.075mm) % Water Content

- NOTES**
- Refer to KEY for explanation of symbols, codes, abbreviations and definitions.
 - Groundwater level, if indicated above, is for the date specified and may vary.
 - USCS designation is based on visual-manual classification and selected lab testing.
 - The hole location was measured from existing site features and should be considered approximate.

Reds Meadow Road Improvements
FTFS 03S11(1)
Madera County, California

LOG OF BORING SW-B-46

January 2021

100062-003

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FIG. A-58
Sheet 2 of 2