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September 9, 2022

Williford, McCallister, Jacobus and White, LLC
3003 Highland Park Cove, Suite A
Ridgeland, Mississippi 39157

Report No. 220228-1

Attention: Reese G. (Jay) Jacobus, Jr.

Geotechnical Investigation
Landslides at Huntington Lake
Rankin County, Mississippi

Gentlemen:

Submitted here is the geotechnical report for the above-captioned project. Our services were performed in accordance with our proposal dated April 8, 2022 and authorized by signed contract agreement dated April 26, 2022.

We appreciate the opportunity to be of service. If you should have any questions or comments concerning this report, please do not hesitate to contact us.

Very truly yours,

BURNS COOLEY DENNIS, INC.

Alexander B. Reeb, Ph.D., P.E.

A. E. (Eddie) Templeton, P.E.

ALEXIS E. TEMPLETON
LICENSED PROFESSIONAL ENGINEER
9128
STATE OF MISSISSIPPI

ABR/AET/khb
Copy Submitted: (via e-mail)

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Project Description

Huntington Lake is a small neighborhood located off Hugh Ward Boulevard in Brandon, Mississippi. During initial development of the neighborhood in 2005 or 2006, a stream that ran along the east side of the development was dammed to form three small ponds. It is our understanding that during a large rain event in 2020, water flowed around the west side of the south dam, instead of flowing over the dam, and created a large scour hole on the west bank. In order to reduce further erosion of the west bank, the south dam was breached to allow flow through the center of the structure and drain the water from the south pond. Subsequent to the breaching of the south dam and draining of the south pond, a relatively large landslide developed along the west bank of the south pond. The landslide is approximately 200 feet long and is centered along the east side of the properties at 102 and 104 Huntington View.

We visited the site in August 2020 and in August 2022 to observe conditions. We returned in May 2022 to make exploratory soil borings and install geotechnical instrumentation for monitoring slope movements. A plan view showing the area of the scour hole and the large landslide is presented on Figure 1. On this figure, Section A-A' is drawn through the center of the scour hole and the south dam, and Sections B-B' and C-C' are drawn through the central portion of the large landslide on the west bank of the south pond.

1.2 Purposes

The specific purposes of this exploration were:

1) to explore the subsurface conditions at the site with soil borings and to install inclinometer casings for monitoring of subsequent slope movements;
2) to verify field classifications and evaluate pertinent physical properties of soils encountered in the borings by means of visual examination of the soil samples and testing in the laboratory;
3) to perform slope stability analyses to investigate the existing conditions and develop recommendations for remediation of the slopes; and
4) to prepare a geotechnical report with typical cross-sections showing the proposed slope remediation.

2.0 FIELD EXPLORATION

2.1 General

Subsurface soil conditions along the west bank of the south pond were explored by means of four borings (1 through 4) made in May 2022. Two of the borings (1 and 2) were made within the area of the scour hole on the west bank of the south dam, and the other two borings (3 and 4) were made through the large landslide along the west bank of the south pond. The approximate locations of the borings are shown on Figure 1. The borings were located by means of visual sighting and measurement from existing site features.

All soils were classified in general accordance with the Unified Soil Classification System. A synopsis of the Unified Soil Classification System is presented on Figure 2 along with symbols and terminology typically utilized on graphical soil boring logs. Graphical logs of the borings are presented on Figures 3 through 6. The graphical logs illustrate the types of soil and stratification encountered with depth below the existing ground surface at the individual boring locations. Surface elevations included on the graphic boring logs were estimated from ground elevation contours shown on the furnished topographic survey map and should be considered approximate. Approximate GPS coordinates for the boring locations as determined by our drilling personnel using a hand-held device are shown at the bottom of the graphical boring logs within the "Comments" section.

2.2 Drilling Methods and Groundwater Observations

Borings 1 and 2 were made to a depth of 10 ft using a hand auger. Borings 3 and 4 were made to an exploration depth of 30 ft using a track-mounted rotary drill rig. The borings were advanced by dry augering and observations were made continuously to detect free water entering the open boreholes. Notes pertaining to groundwater observations are included at the bottom right corner of the graphic boring logs.

2.3 Sampling Methods

Relatively undisturbed samples of the soils encountered in Borings 3 and 4 were obtained by pushing a 3-in. OD Shelby tube sampler approximately 2 ft into the soil. The Shelby tube samples were obtained within the depth intervals illustrated as shaded portions of the "Samples" column of the graphic logs. The Shelby tube samples were generally obtained at approximate 3-ft to 5-ft intervals of depth. Disturbed auger cutting samples were obtained at approximate 2-ft to 3-

ft depth intervals in Borings 1 and 2. Disturbed auger cutting samples were also taken near the ground surface in Borings 3 and 4. The depths at which the auger cutting samples were taken are illustrated as small I-shaped symbols under the "Samples" column of the graphic boring logs.

2.4 Field Classification, Sample Preservation and Borehole Abandonment

All soils encountered during drilling were examined and classified in the field by a geotechnical engineering technician. The Shelby tube samples were extruded from the sampling tube in the field. An approximate 6-in. long portion of each Shelby tube sample was sealed with melted paraffin in a cylindrical cardboard container to prevent moisture loss and structural disturbance. An additional portion of each Shelby tube sample, representative portions of the split-spoon samples and the auger cutting samples were sealed in jars to provide material for visual examination and testing in the laboratory. Unless other disposition is requested, we routinely discard soil samples after about six months of storage. After completion of drilling and sampling, Boring 1 and 2 were plugged with soil cuttings. Slope inclinometer casings were installed in the Boring 3 and 4 boreholes.

3.0 LABORATORY TESTING

3.1 General

All of the soil samples were examined in the laboratory and tests were performed on selected samples to verify field classifications and to assist in evaluating the strength and volume change properties of the soils encountered. The types of laboratory tests performed are described in the following paragraphs.

3.2 Strength Properties

The undrained shear strength characteristics of the soils encountered the borings were investigated by means of visual estimates of consistency and unconfined compression (UC) tests performed on undisturbed Shelby tube samples from Borings 3 and 4. The cohesions resulting from the UC tests are plotted as small open circles in the data section of the graphic logs. The water content and dry density were also determined for the UC test specimens. The water contents are plotted as small shaded circles in the data section of the graphic logs. The dry densities are tabulated to the nearest lb per cu ft under the “Dry Density” column of the logs.

3.3 Classification Tests

The classifications and volume change properties of the fine-grained soils encountered in the borings were investigated by means of Atterberg liquid and plastic limit tests performed on selected representative samples. The results of the liquid and plastic limit tests are plotted as small crosses interconnected by dashed lines in the data section of the graphic boring logs. In accordance with the Unified Soil Classification System, fine-grained soils are classified as either clays or silts of low or high plasticity based on the results of Atterberg limit tests. The numerical difference between the liquid limit and plastic limit is defined as the plasticity index (PI). The magnitudes of the liquid limit and plasticity index and the proximity of the natural water content to the plastic limit are indicators of the potential for a fine-grained soil to shrink or swell upon changes in moisture content or to consolidate under loading. The proximity of the natural water content to the plastic limit is also an indicator of soil strength.

3.4 Water Content Tests

Water content tests were performed on samples to corroborate field classifications and to extend the usefulness of the strength and plasticity data. The results of the water content tests are plotted as small shaded circles in the data section of the graphic boring logs. The water content data have been interconnected on the logs to illustrate a continuous profile with depth.

4.0 GENERAL SUBSURFACE CONDITIONS

4.1 General

A general description of subsurface conditions revealed by the borings made for this exploration is provided in the following paragraphs. The graphical logs shown on Figures 3 through 6 should be referred to for specific soil and groundwater conditions encountered at each boring location.

4.2 Geology

The site is underlain by the Yazoo formation of the Jackson group. Yazoo clays (CH) are high plasticity, highly expansive soils that are known for their propensity for landslides.

4.3 Soil Stratification

Borings 1 and 2 were made within the area of the scour hole on the west bank of the south dam, and Borings 3 and 4 were made through the large landslide along the west bank of the south pond.

The soil conditions encountered in the borings are similar and generally consist of silty clays (CL) and clays (CH) overlying Yazoo clays (CH). In Boring 1, stiff silty clays (CL) were encountered between the ground surface and a depth of 2 ft, and stiff clays (CH) were encountered between depths of 2 ft and 5 ft. In Boring 2, medium stiff clays (CH) were encountered between the ground surface and a depth of 1 ft. In Boring 3, medium stiff to stiff clays (CH) were encountered between the ground surface and a depth of 8 ft. In Boring 4, stiff silty clays (CL) were encountered between the ground surface and a depth of 3 ft, and stiff clays (CH) were encountered between depths of 3 ft and 8 ft. In Borings 1 and 2, stiff to very stiff weathered Yazoo clays (CH) were encountered below the clays (CH) to the boring terminations depths of 10 ft. In Borings 3 and 4, stiff to hard weathered Yazoo clays (CH) were encountered below the clays (CH) to depths of 27 ft and 26 ft, respectively, and hard unweathered Yazoo clays (CH) were encountered below to the boring terminations depths of 30 ft.

4.4 Groundwater

Free water was encountered in Boring 4 at a depth of 4.5 ft and stabilized at a depth of 4 ft after about 15 minutes. No free water was encountered in the other borings. In our opinion, groundwater conditions at the site will be influenced by rainfall, surface drainage, and by the rise and fall of water levels in the nearby ditches, creeks, ponds, or other bodies of water. Groundwater conditions at the site can also be influenced by man-made changes. Surficial soils can become saturated and weak to relatively shallow depths during periods of prolonged and heavy rainfall.

4.5 Inclinometers

Inclinometer casings were installed in the Borings 3 and 4 boreholes to monitor movement of the large landslide along the west bank of the south pond. The initial inclinometers readings were made on May 25, 2022. The subsequent readings were made on June 7, June 22, and July 22, 2022. Graphs of inclinometer data are presented in the Appendix. Inclinometer B-3 shows horizontal movement of approximately 0.2 inches during the monitoring period originating at a depth of approximately 12 ft. Inclinometer B-4 shows horizontal movement of approximately 0.1 inches during the monitoring period originating at a depth of approximately 10 ft.

5.0 ANALYSES AND RECOMMENDATIONS

5.1 General

The approximate limits of the scour hole and landslide are shown on Figure 1. Cross section A-A′ through the scour hole is presented on Figure 14, and two cross sections through the landslide are presented on Figures 15 and 16 (Sections B-B′ and C-C′).

It is our understanding that the scour hole on the west bank of the south dam is primarily related to a large rain event in 2020. Since that event, it appears some shallow sloughing of the of the slope above the scour hole has occurred, but it does not appear that significant, deep-seated landslide has developed upslope of the scour hole.

The slope movements along the west bank of the south pond appear to extend about 12 ft below the ground surface and are occurring predominantly in the highly plastic Yazoo clays. Yazoo clays are notorious for being highly susceptible to sliding due to strain softening and formation of slickensided surfaces. Based on our observations and monitoring, it is apparent that that this landslide continues to move downslope.

Slope stability analyses were performed for each section with the SLOPE/W computer program using Spencer's method to evaluate existing conditions and proposed remediation schemes. The remediation schemes were selected to generally restore the embankment slopes and configurations back to pre-failure conditions. The slope stability analysis results are presented on Figures 7 to 12. A plan view and typical sections for the proposed remediation are shown on Figures 13 to 16.

5.2 Slope Stability Analyses - Existing Conditions

Slope stability analyses were performed for the existing conditions at each section. For each section, the soil effective stress strength parameters were estimated based on correlations with Atterberg limit test results and back analyses of the existing conditions. The soil properties used in the analyses of the existing conditions were varied so that factors of safety (FS) of about 1.0 or less were calculated. The stability analysis results are presented on Figures 7 to 9 for Sections A-A', B-B', and C-C', respectively.

5.3 Remediation of Scour Hole – Section A-A'

Our slope stability analyses of Section A-A' indicate that the scour hole on the west bank of the south dam could be repaired by reconstructing the slope to approximately 1V:3.5H and by filling in the scour hole to raise the grade to above the previous dam crest height. The stability analyses results for the proposed reconstruction are presented on Figure 10.

Prior to reconstructing the slope, any disturbed soils, slide debris, vegetation, topsoil, weak soils, and muck should be removed. The excavation should extend upslope of any visible surface cracks and down to natural, undisturbed soils at the bottom of the gulley. Figure 14 shows a typical section of the proposed remediation at Section A-A'. A slope flatter than 1V:3.5H can be used if space allows, which would provide a slightly higher factor of safety.

5.4 Remediation of West Bank – Sections B-B' and C-C'

Our slope stability analyses of Sections B-B' and C-C' indicate that the west bank of the south pond could be remediated by installing 30-ft long, HP 12x53 stabilization piles at 6-ft center-to-center spacing about mid-height along the slope, reconstructing the slope to approximately 1V:3.5H, and restoring the grade along the top of the failed slope. The stability analyses results for the proposed reconstruction are presented on Figures 11 and 12 for Sections B-B' and C-C', respectively.

Prior to reconstructing the slope, any disturbed soils, slide debris, vegetation, topsoil, and weak soils should be removed. The excavation should extend upslope of any visible surface scarps and cracks. Across the slide area, we recommend that approximately 1-ft to 2-ft tall benches be cut into the slope to allow for the horizontal placement and compaction of fill materials along the reconstructed slope face that are keyed into the existing soils. At a minimum, the cut into the existing slope should extend at least 2 feet below final grade.

Figure 13 shows a plan view with the proposed minimum limits of HP 12x53 stabilization piles. These limits are based on our observations of current slope movements. However, the slope to the south, immediately east of the property at 100 Huntington View, is similar to the portion of the slope that has failed. It would be prudent to extend the limits of the stabilization piles further south to reduce the likelihood that this adjacent slope will fail in the future.

Figures 15 and 16 show typical sections of the proposed remediation at Sections B-B' and C-C', respectively. To prevent issues when mowing, it is recommended that the piles be installed to about 6 inches below final grade. Because of the poor engineering properties of the Yazoo clays at this site, shallow surficial slides may develop in the future along the slope above or below the piles. In general, these shallow slides should not impact the overall stability of the slope, and they should be repaired in the course of regular slope maintenance. The 2-foot cover of compacted fill material shown on the typical sections will help reduce the potential for these surficial slides.

A slope flatter than 1V:3.5H can be used if space allows, which would provide a slightly higher factor of safety.

5.5 Fill Placement and Compaction

We recommend that fill materials consist of silty or sandy clays (CL) having a liquid limit less than or equal to 45 and a plasticity index in the range of 10 to 25. The moisture content of the fill materials should be within 4 percentage points of the optimum moisture content as determined by the standard Proctor compaction test. Stability must be evident during compaction of each lift before a subsequent lift of fill material is added. Stability is defined as absence of significant pumping or yielding of the soils during compaction.

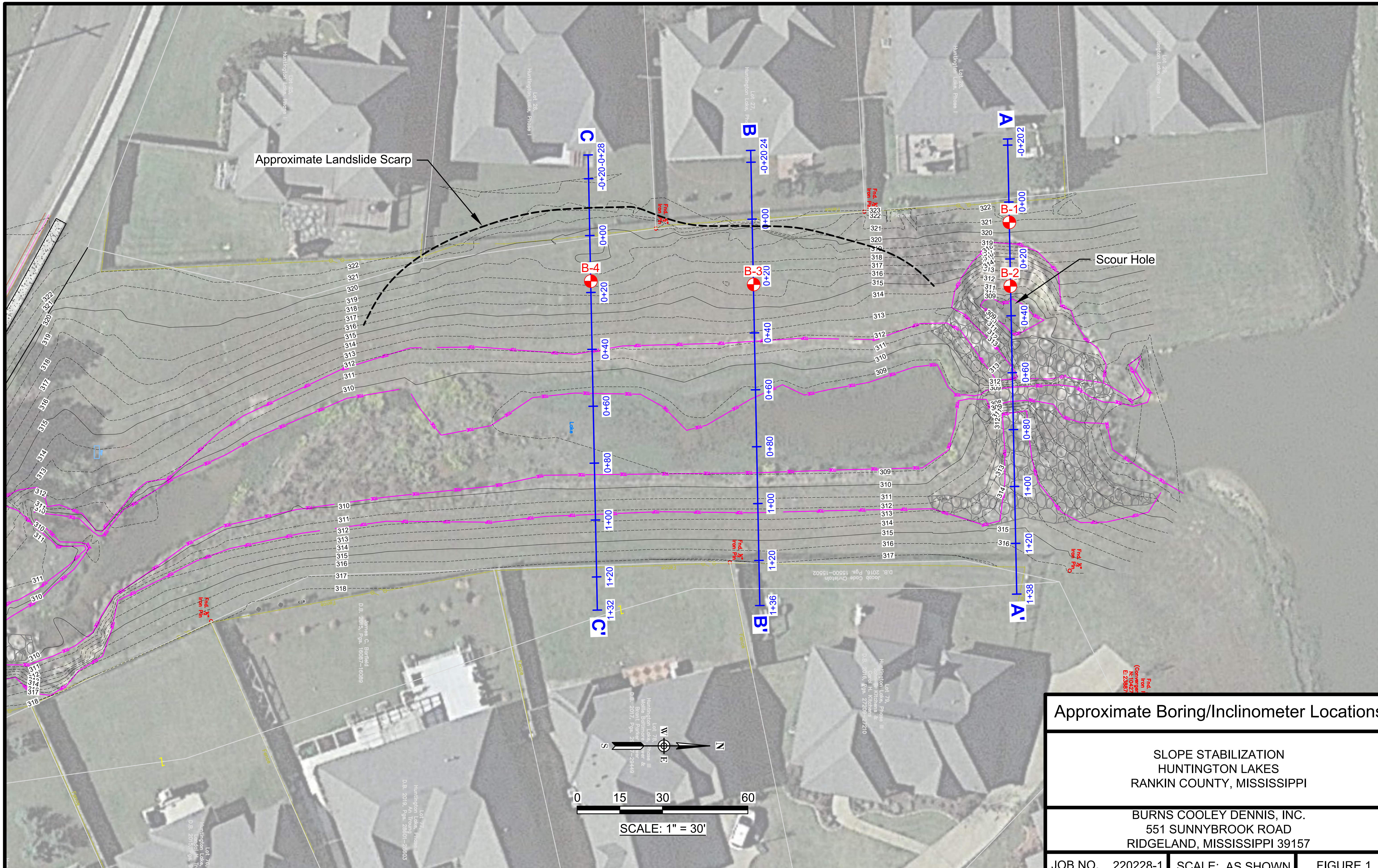
The fill should be placed in horizontal loose lifts having a thickness no greater than 9 in. and compacted to not less than 95 percent of standard Proctor maximum dry density (ASTM D 698). If hand-operated compaction equipment is used, the loose lift thickness should be limited to a maximum of 5 in. The fill should be benched into and against the existing slope faces and excavations.

Laboratory classification tests, including Atterberg limit determinations and grain-size analyses, should be performed on the fill soils initially and routinely during earthwork operations to check for compliance with the recommendations provided herein. Field moisture/density tests should be performed frequently in each compacted lift to assist in evaluating whether the recommended moisture contents and dry densities are being achieved.

6.0 REPORT LIMITATIONS

The analyses, conclusions, and recommendations discussed in this report are based on conditions as they existed at the time of our field exploration and further on the assumption that the exploratory borings are representative of subsurface conditions throughout the areas explored. It should be noted that actual subsurface conditions between and beyond the borings might differ from those encountered at the boring locations. If subsurface conditions are encountered during construction that vary from those discussed in this report, Burns Cooley Dennis, Inc. should be notified immediately in order that we may evaluate the effects on the proposed slope remediation design and construction. This report has been prepared for the exclusive use of the Williford, McCallister, Jacobus and White, LLC to present the proposed remediation schemes for slope instabilities along the west bank of the south pond in the Huntington Lake neighborhood in Rankin County, Mississippi. The only warranty made by us in connection with the services provided is we have used that degree of care and skill ordinarily exercised under similar conditions by reputable members of our profession practicing in the same or similar locality. No other warranty, express or implied, is made or intended.

FIGURES



Approximate Boring/Inclinometer Locations

SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

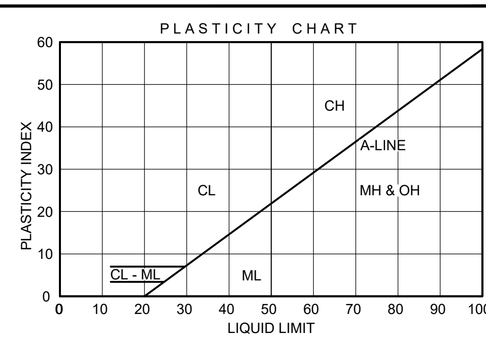
JOB NO. 220228-1	SCALE: AS SHOWN	FIGURE 1

UNIFIED SOIL CLASSIFICATION SYSTEM

MAJOR DIVISIONS			SYMBOL & LETTER	DESCRIPTION
COARSE-GRAINED SOILS More than half of material larger than No. 200 sieve size	GRAVELS More than half of coarse fraction larger than No.4 sieve size	Clean Gravels (Little or no fines)	GW	WELL GRADED GRAVEL, GRAVEL-SAND MIXTURE
			GP	POORLY GRADED GRAVEL, GRAVEL-SAND MIXTURE
		Gravels with fines (Appreciable amount of fines)	GM	SILTY GRAVEL, GRAVEL-SAND-SILT MIXTURE
			GC	CLAYEY GRAVEL, GRAVEL-SAND-CLAY MIXTURE
	SANDS More than half of coarse fraction smaller than No.4 sieve size	Clean Sands (Little or no fines)	SW	WELL GRADED SAND, GRAVELLY SAND
			SP	POORLY GRADED SAND, GRAVELLY SAND
		Sands with fines (Appreciable amount of fines)	SM	SILTY SAND, SAND-SILT MIXTURE
			SP-SM	SLIGHTLY SILTY SAND
			SC	CLAYEY SAND, SAND-CLAY MIXTURE
FINE-GRAINED SOILS More than half of material smaller than No. 200 sieve size	SILTS AND CLAYS	Liquid limit less than 50	ML	SILT WITH LITTLE OR NO PLASTICITY
			ML	CLAYEY SILT, SILT WITH SLIGHT TO MEDIUM PLASTICITY
			ML	SANDY SILT
			CL	SILTY CLAY, LOW TO MEDIUM PLASTICITY
			CL	SANDY CLAY, LOW TO MEDIUM PLASTICITY (30% TO 50% SAND)
	SILTS AND CLAYS	Liquid limit greater than 50	MH	SILT, FINE SANDY OR SILTY SOIL WITH HIGH PLASTICITY
			CH	CLAY, HIGH PLASTICITY
			OH	ORGANIC CLAY OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS			PT	PEAT, HUMUS, SWAMP SOIL
SEDEMENTARY ROCK TYPES:			LS	LIMESTONE
			MARL	MARL

TERMS CHARACTERIZING SOIL STRUCTURE

Slickensided	- Clays with polished and striated planes created as a result of volume changes related to shrinking, swelling and/or changes in overburden pressure.
Fissured	- Clays with a blocky or jointed structure generally created by seasonal shrinking and swelling.
Laminated	- Composed of thin alternating layers of varying color and texture.
Calcareous	- Containing appreciable quantities of calcium carbonate.
Parting	- Paper thin (less than 1/8 inch).
Seam	- 1/8 inch to 3 inch thickness.
Layer	- Greater than 3 inches in thickness.



FOR CLASSIFICATION OF FINE GRAINED SOILS

DENSITY AND CONSISTENCY

COARSE-GRAINED SOILS

DENSITY	PENETRATION RESISTANCE, N Blows per Foot
Very loose	0 - 4
Loose	5 - 10
Medium Dense	11 - 30
Dense	31 - 50
Very Dense	>50

FINE-GRAINED SOILS

CONSISTENCY	COHESION Kips/Sq. Ft	PENETRATION RESISTANCE, N Blows per Foot
Very Soft	<0.25	0 - 1
Soft	0.25 - 0.50	2 - 4
Medium Stiff	0.50 - 1.00	5 - 8
Stiff	1.00 - 2.00	9 - 15
Very Stiff	2.00 - 4.00	16 - 30
Hard	>4.00	>30

SAMPLE TYPES
(Shown in Sample Column)

Shelby Tube
Split Spoon
No Recovery
Auger
Dennison Barrel

PARTICLE SIZE IDENTIFICATION

Cobbles	- Greater than 3 inches
Gravel	- Coarse - 3/4 inch to 3 inches Fine - 4.76 mm to 3/4 inch
Sand	- Coarse - 2 mm to 4.76 mm Medium - 0.42 mm to 2 mm Fine - 0.074 mm to 0.42 mm
Silt & Clay	- Less than 0.074 mm

RELATIVE COMPOSITION

Slightly	5 - 15%
With	16 - 29%
Sandy (or gravelly)	30 - 50%

CLASSIFICATION, SYMBOLS AND TERMS USED ON GRAPHICAL BORING LOGS

LOG OF BORING NO. 1

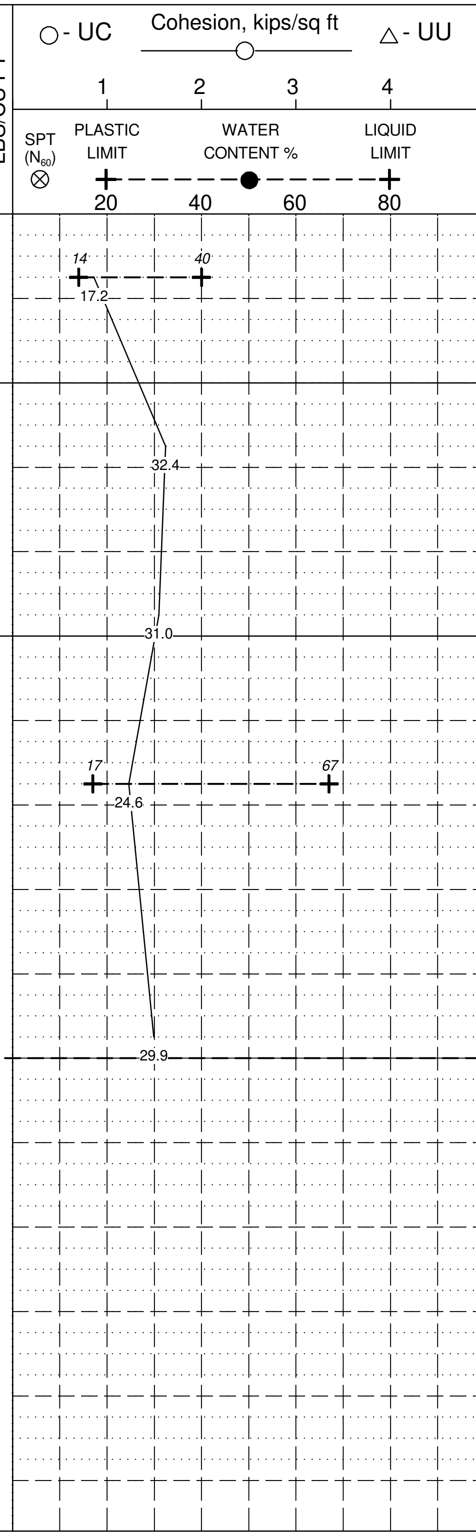
SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

TYPE: 3" Hand auger

LOCATION: See Figure 1

SURFACE EL: 321.0 ±ft

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	FIELD SPT DATA	DRY DENSITY LBS/CU FT	% PASSING NO. 200 SIEVE
0–2			Stiff tan and light gray silty clay (CL)			
2–5			Stiff tan and light gray clay (CH)			
5–10			Very stiff light gray and tan clay (CH) (WEATHERED YAZOO)			
			- with trace of calcareous nodules below 9'			



BORING DEPTH: 10 ft

DATE: 05/18/22

COMMENTS:
GPS Coordinates
N 32° 21' 58.8"
W 90° 2' 6.9"

GROUNDWATER DATA: No free water encountered during auger drilling.

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FIGURE 3

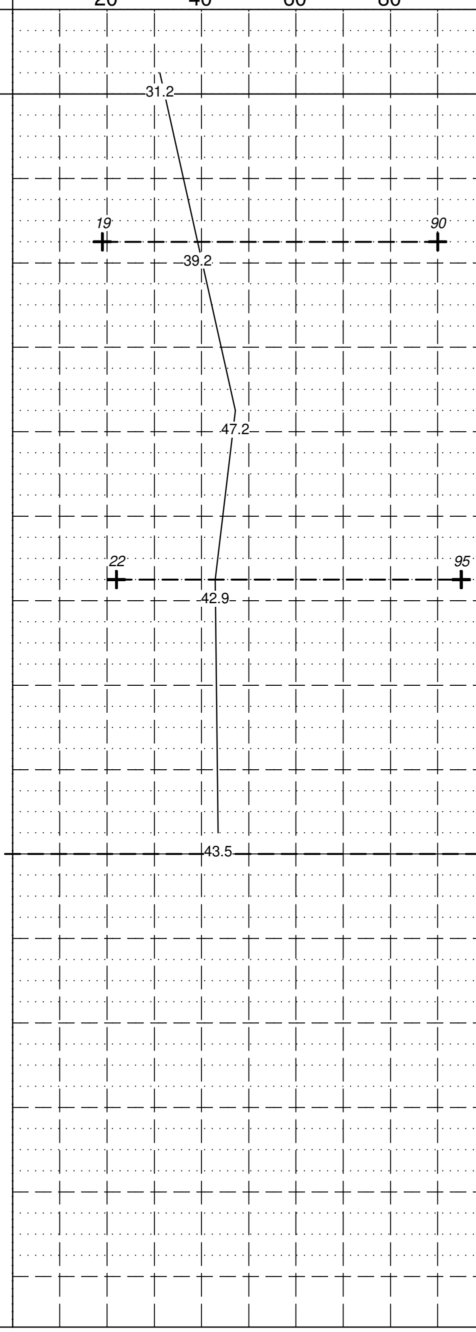
LOG OF BORING NO. 2

SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

TYPE: 3" Hand auger

LOCATION: See Figure 1

DEPTH, ft	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE EL: 311.3 ±ft	FIELD SPT DATA	DRY DENSITY LBS/CU FT	○ - UC Cohesion, kips/sq ft △ - UU (1, 2, 3, 4) SPT (N_{60}) ⊗ PLASTIC LIMIT / WATER CONTENT % / LIQUID LIMIT (20, 40, 60, 80)	% PASSING NO. 200 SIEVE
0–1			Medium stiff tan and light gray clay (CH)			31.2	
1–10			Stiff tan and light gray clay (CH) - with trace of calcareous nodules to 3' (WEATHERED YAZOO)			39.2 (PL 19, LL 90); 47.2; 42.9 (PL 22, LL 95); 43.5	



BORING DEPTH: 10 ft

DATE: 05/18/22

COMMENTS:
GPS Coordinates
N 32° 21' 58.9"
W 90° 2' 6.5"

GROUNDWATER DATA: No free water encountered during auger drilling.

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FIGURE 4

LOG OF BORING NO. 3

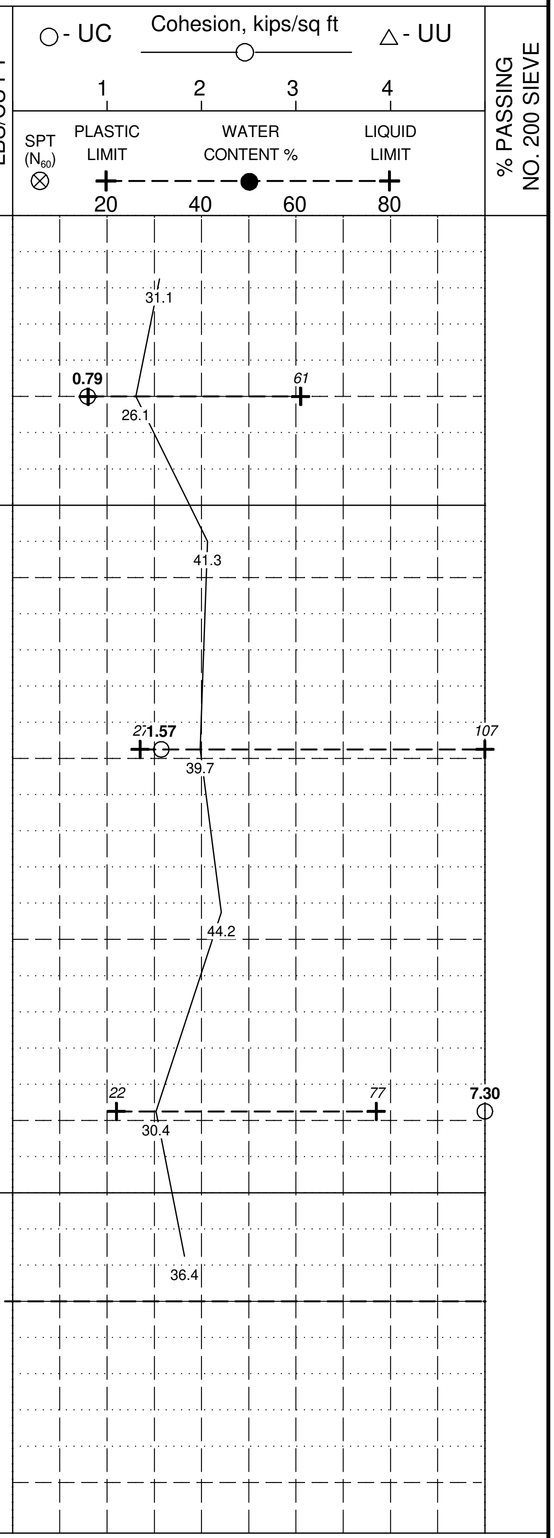
SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

TYPE: 4" Short-flight auger

LOCATION: See Figure 1

SURFACE EL: 316.5 ±ft

DEPTH, ft	DESCRIPTION OF MATERIAL	FIELD SPT DATA	DRY DENSITY LBS/CU FT
0	Stiff tan clay (CH), slightly silty		
4	- medium stiff below 4'		
5			98
8	Stiff tan and light gray clay (CH), slickensided (WEATHERED YAZOO)		
13	- very stiff below 13'		
15			80
18	- with gypsum 18' - 23'		
23	- hard, blue and tan with shell fragments below 23'		
25			93
27	Hard blue clay (CH) with shell fragments (UNWEATHERED YAZOO)		
30			



BORING DEPTH: 30 ft

DATE: 05/20/22

COMMENTS: Set inclinometer following completion of drilling and sampling.
GPS Coordinates
N 32° 21' 58.0"
W 90° 2' 6.7"

GROUNDWATER DATA: No free water encountered during auger drilling.

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FIGURE 5

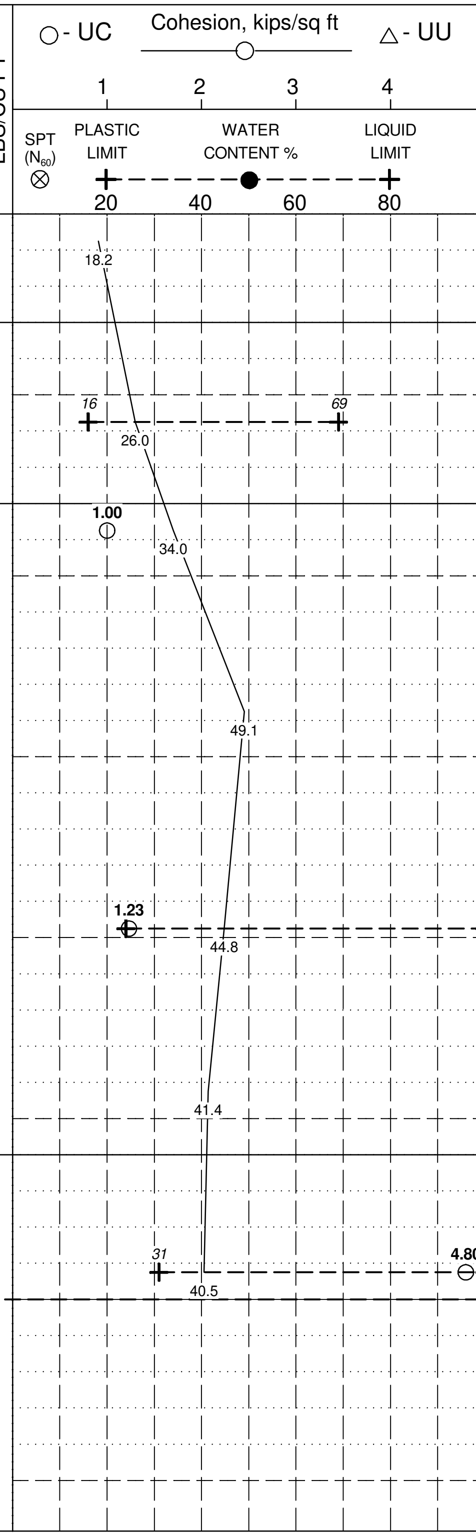
LOG OF BORING NO. 4

SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

TYPE: 4" Short-flight auger

LOCATION: See Figure 1

DEPTH, ft	DESCRIPTION OF MATERIAL (SURFACE EL: 318.4 ±ft)	FIELD SPT DATA	DRY DENSITY LBS/CU FT	% PASSING NO. 200 SIEVE
0–3	Stiff tan and light gray silty clay (CL)			
3–8	Stiff tan and light gray clay (CH)			
8–26	Stiff tan and light gray clay (CH) (WEATHERED YAZOO)		86	
	- slickensided below 13'			
	- with gypsum 18'- 20'			
	- hard below 18'		76	
	- tan and blue, with shell fragments below 23'			
26–30	Hard blue clay (CH) with shell fragments (UNWEATHERED YAZOO)		81	



DEPTH, ft: 5, 10, 15, 20, 25, 30, 35

BORING DEPTH: 30 ft

DATE: 05/20/22

COMMENTS: Set inclinometer following completion of drilling and sampling.
GPS Coordinates
N 32° 21' 57.4"
W 90° 2' 6.9"

GROUNDWATER DATA: Free water encountered at an approximate depth of 4.5' during auger drilling. Water level at an approximate depth of 4' after about 15 minutes.

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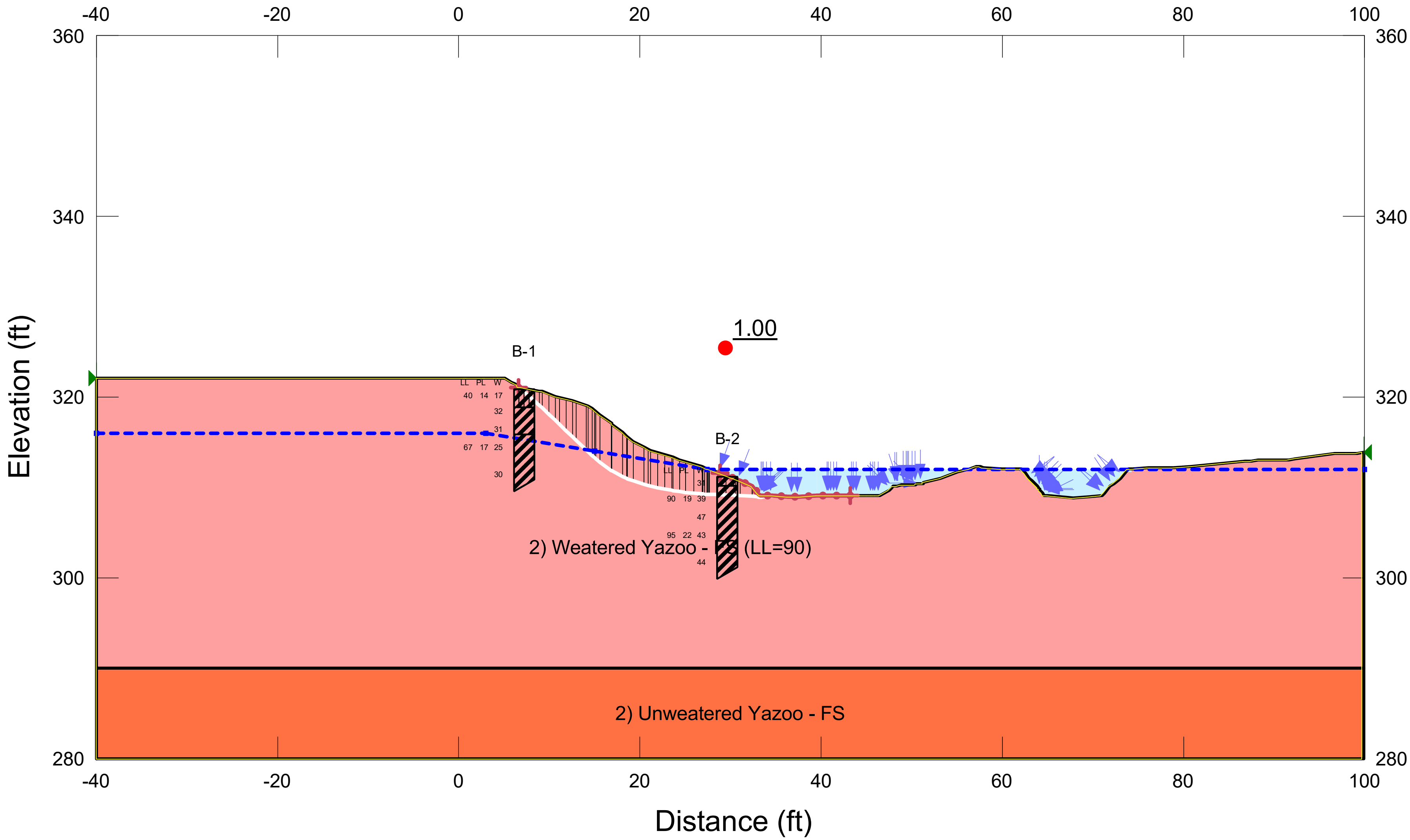
FIGURE 6



Color	Name	Model	Unit Weight (pcf)	Strength Function
	2) Unweatered Yazoo - FS	Shear/Normal Fn.	117	FS
	2) Weatered Yazoo - FS (LL=90)	Shear/Normal Fn.	117	FS (LL=90)

BURNS COOLEY DENNIS, INC.
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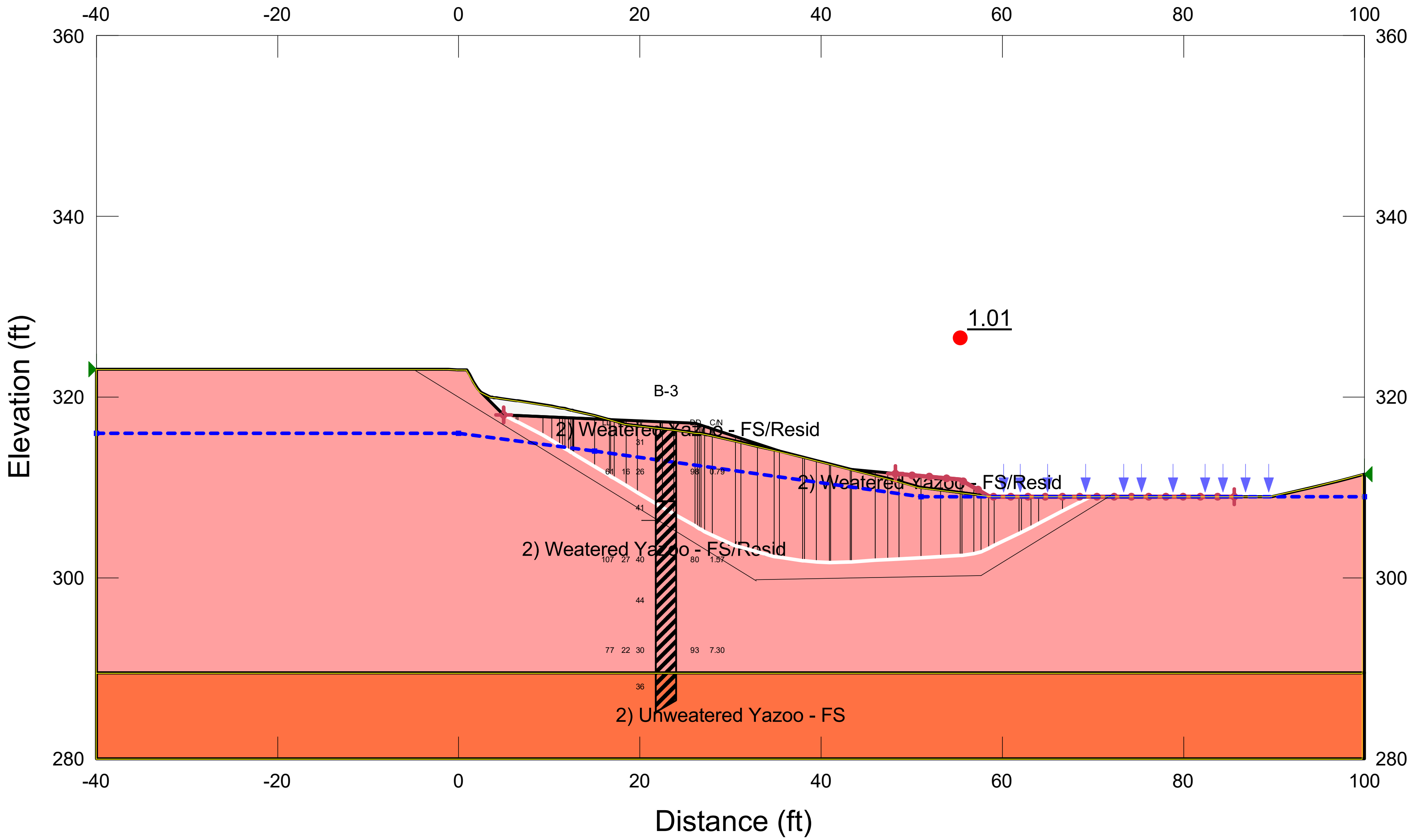
Existing Conditions
Long Term
Section A-A'

Huntington Lakes
Rankin County, MS

Figure 7



Color	Name	Model	Unit Weight (pcf)	Strength Function
	2) Unweatered Yazoo - FS	Shear/Normal Fn.	117	FS
	2) Weatered Yazoo - FS/Resid	Shear/Normal Fn.	117	20% FS/Resid (LL=109)

Existing Conditions
Long Term
Section B-B'

Huntington Lakes
Rankin County, MS

Figure 8

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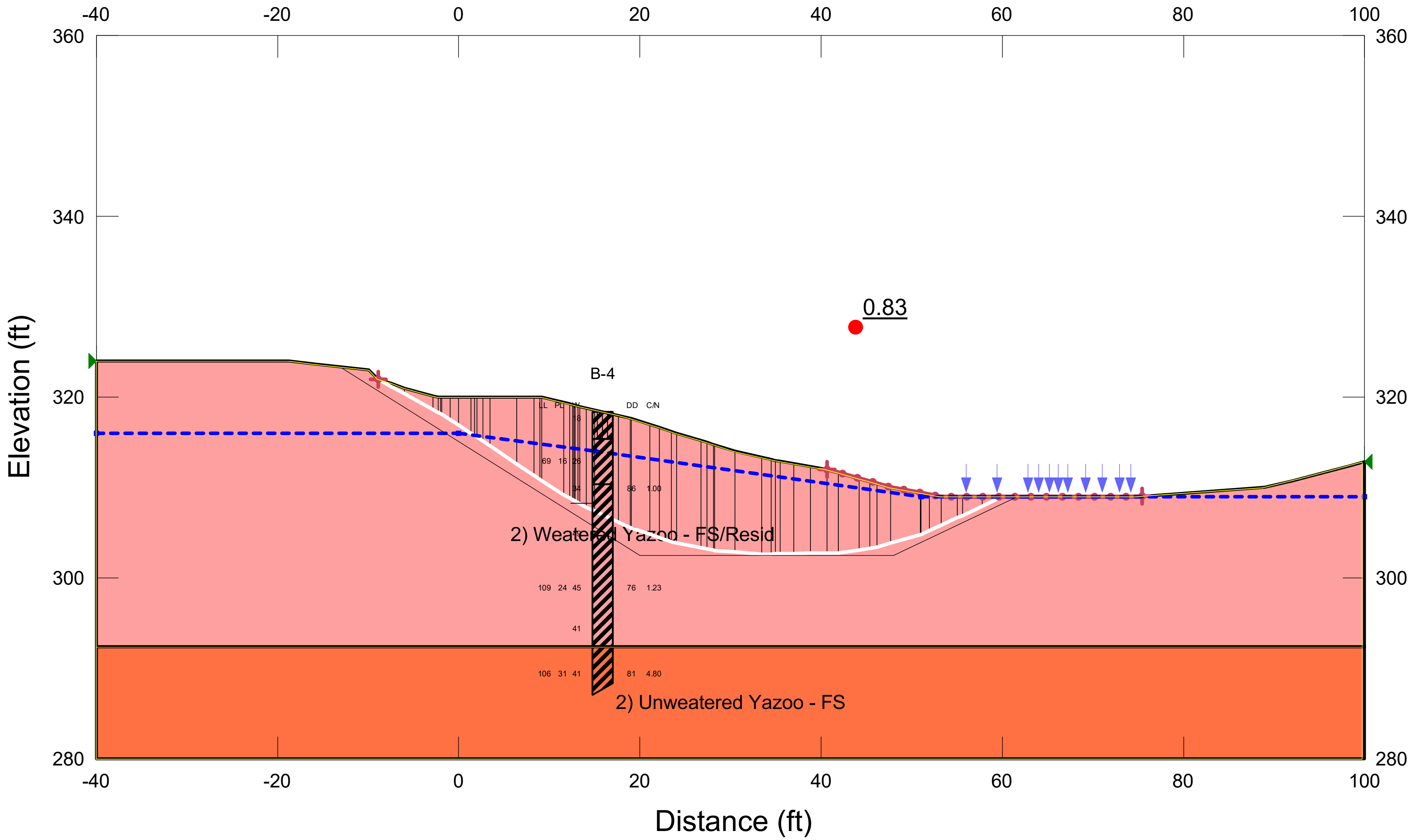
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS



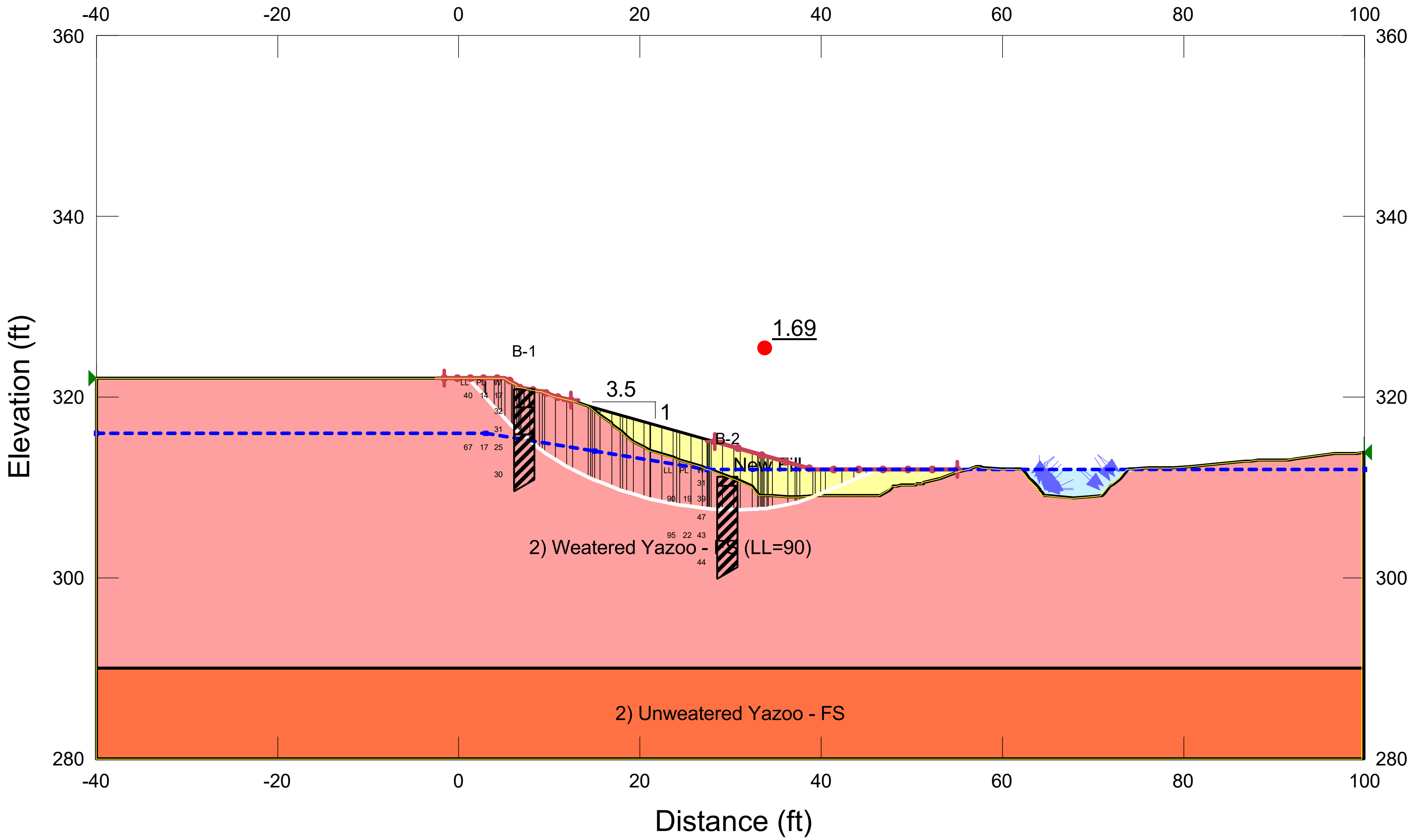
Color	Name	Model	Unit Weight (pcf)	Strength Function
	2) Unweatered Yazoo - FS	Shear/Normal Fn.	117	FS
	2) Weatered Yazoo - FS/Resid	Shear/Normal Fn.	117	20% FS/Resid (LL=109)

Existing Conditions
Long Term
Section C-C'

Huntington Lakes
Rankin County, MS

Figure 9

BURNS COOLEY DENNIS, INC.
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS



Color	Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)	Strength Function
	2) Unweatered Yazoo - FS	Shear/Normal Fn.	117			FS
	2) Weatered Yazoo - FS (LL=90)	Shear/Normal Fn.	117			FS (LL=90)
	New Fill	Mohr-Coulomb	120	0	30	

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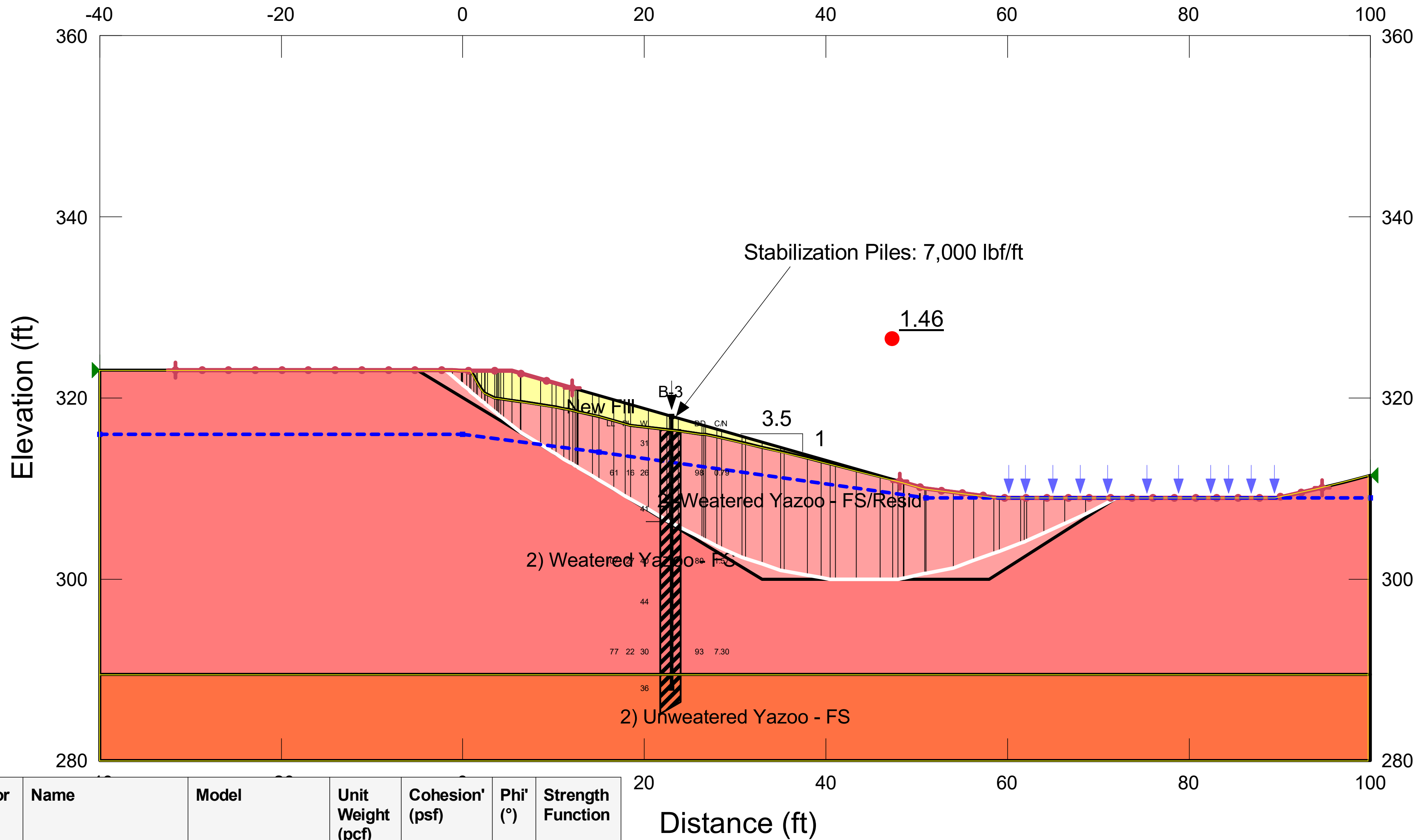
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

Proposed Conditions
Long Term
Section A-A'

Huntington Lakes
Rankin County, MS

Figure 10



Color	Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)	Strength Function
	2) Unweatered Yazoo - FS	Shear/Normal Fn.	117			FS
	2) Weatered Yazoo - FS	Shear/Normal Fn.	117			FS
	2) Weatered Yazoo - FS/Resid	Shear/Normal Fn.	117			20% FS/Resid (LL=109)
	New Fill	Mohr-Coulomb	120	0	30	

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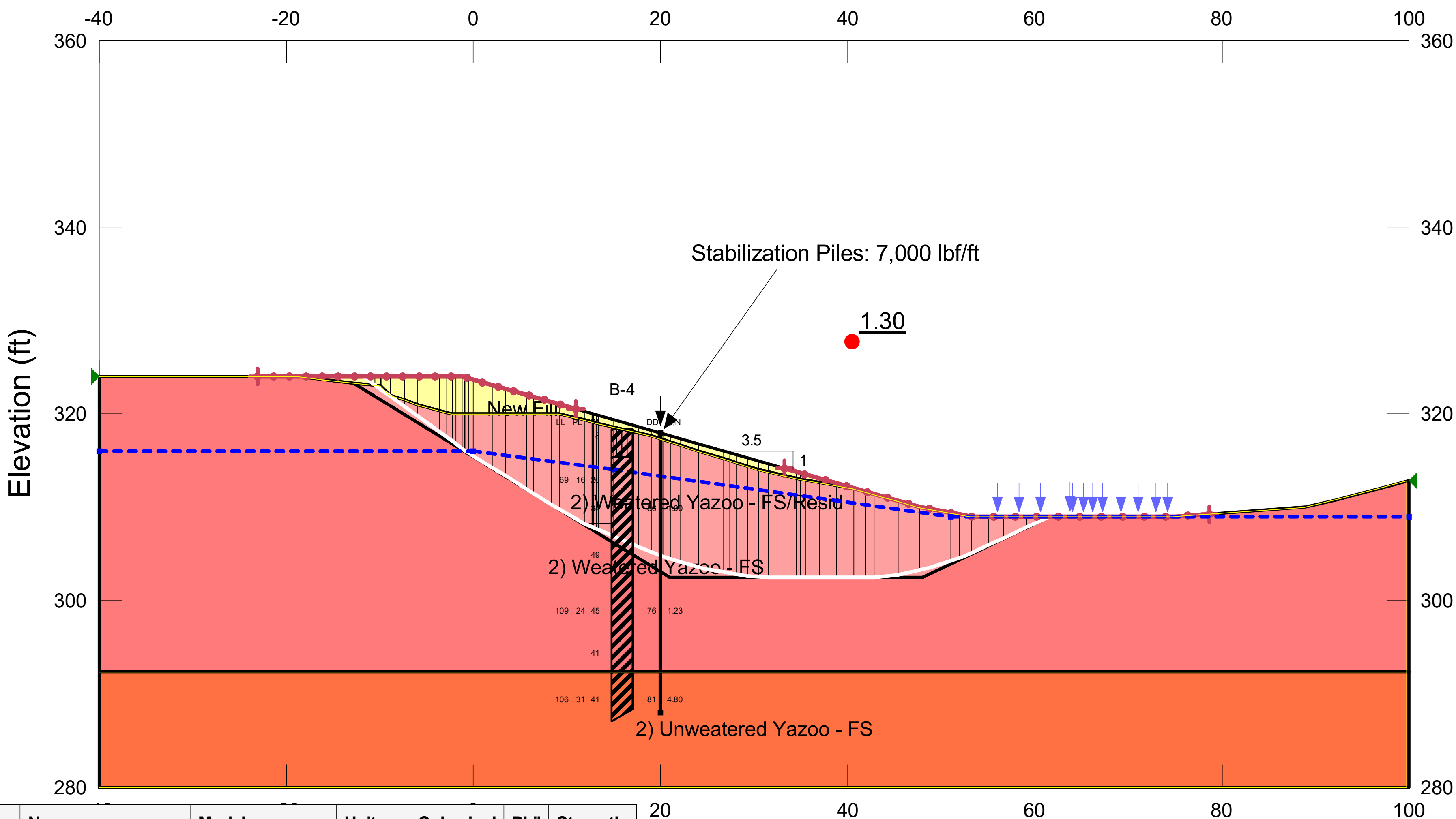
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

Proposed Conditions
Long Term
Section B-B'

Huntington Lakes
Rankin County, MS

Figure 11



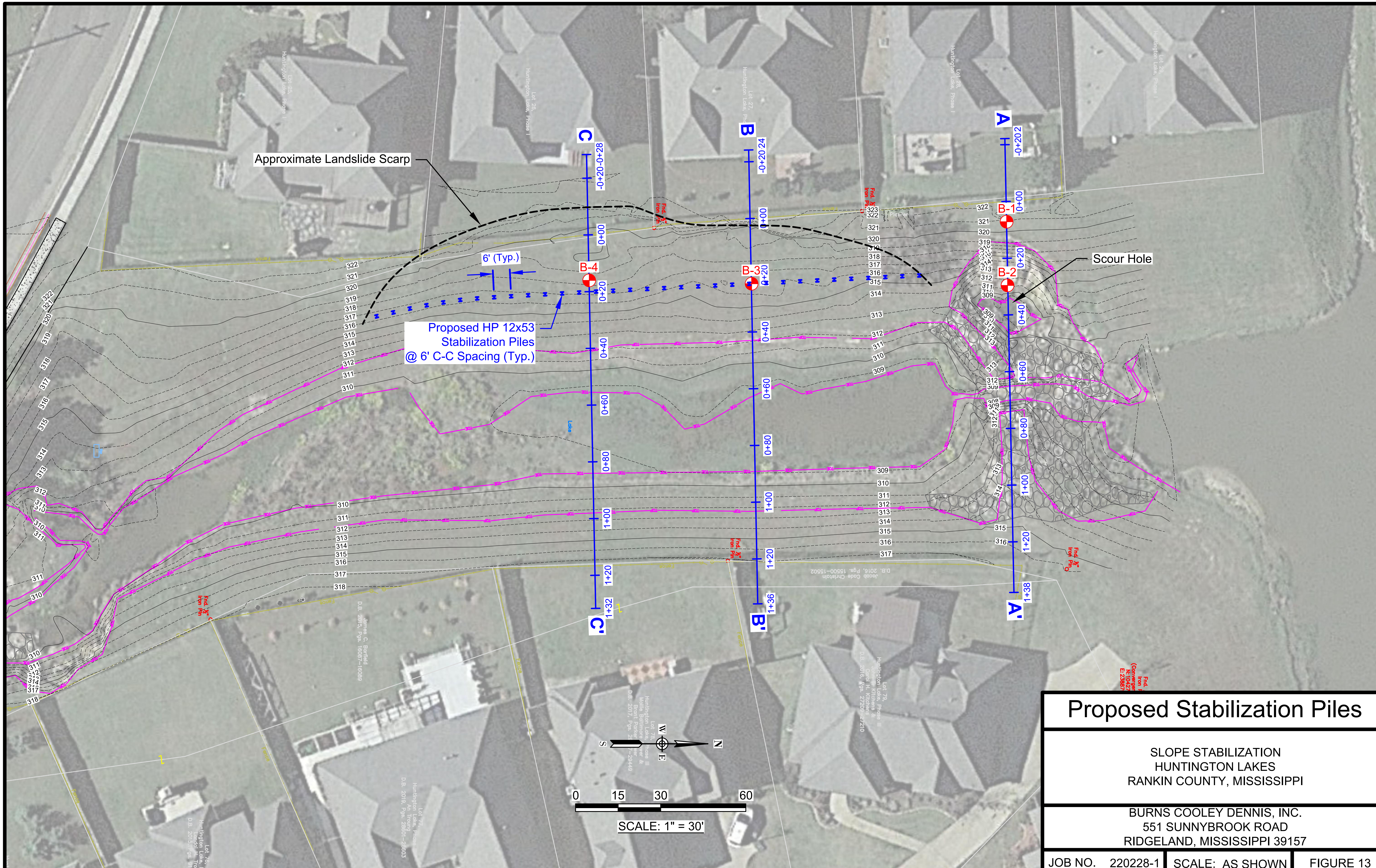
Color	Name	Model	Unit Weight (pcf)	Cohesion' (psf)	Phi' (°)	Strength Function
	2) Unweatered Yazoo - FS	Shear/Normal Fn.	117			FS
	2) Weatered Yazoo - FS	Shear/Normal Fn.	117			FS
	2) Weatered Yazoo - FS/Resid	Shear/Normal Fn.	117			20% FS/Resid (LL=109)
	New Fill	Mohr-Coulomb	120	0	30	

BURNS COOLEY DENNIS, INC.
GEOTECHNICAL AND MATERIALS ENGINEERING CONSULTANTS

Proposed Conditions
Long Term
Section C-C'

Huntington Lakes
Rankin County, MS

Figure 12

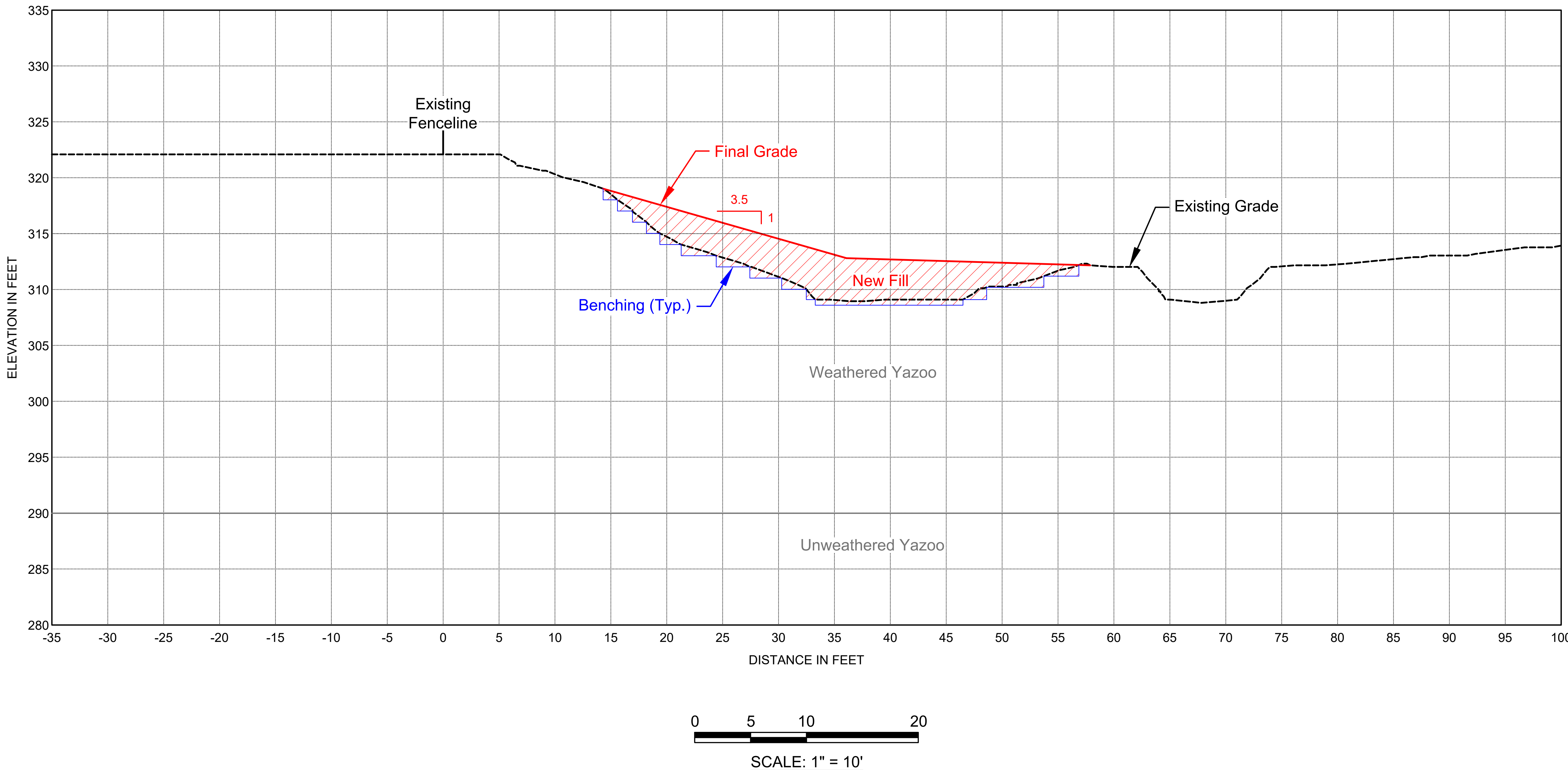


Proposed Stabilization Piles

SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

JOB NO. 220228-1	SCALE: AS SHOWN	FIGURE 13

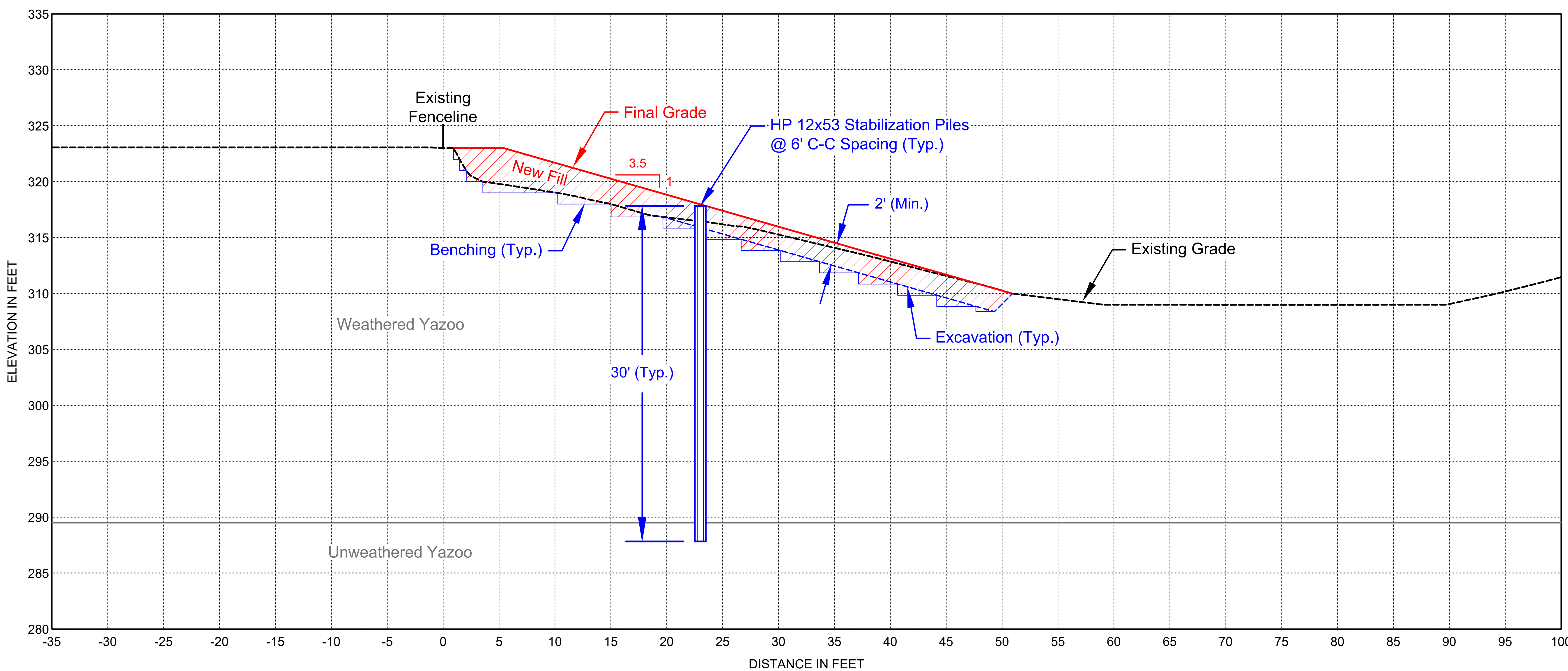


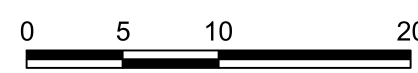
Typical Section A - A'

SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

JOB NO. 220228-1	SCALE: AS SHOWN	FIGURE 14





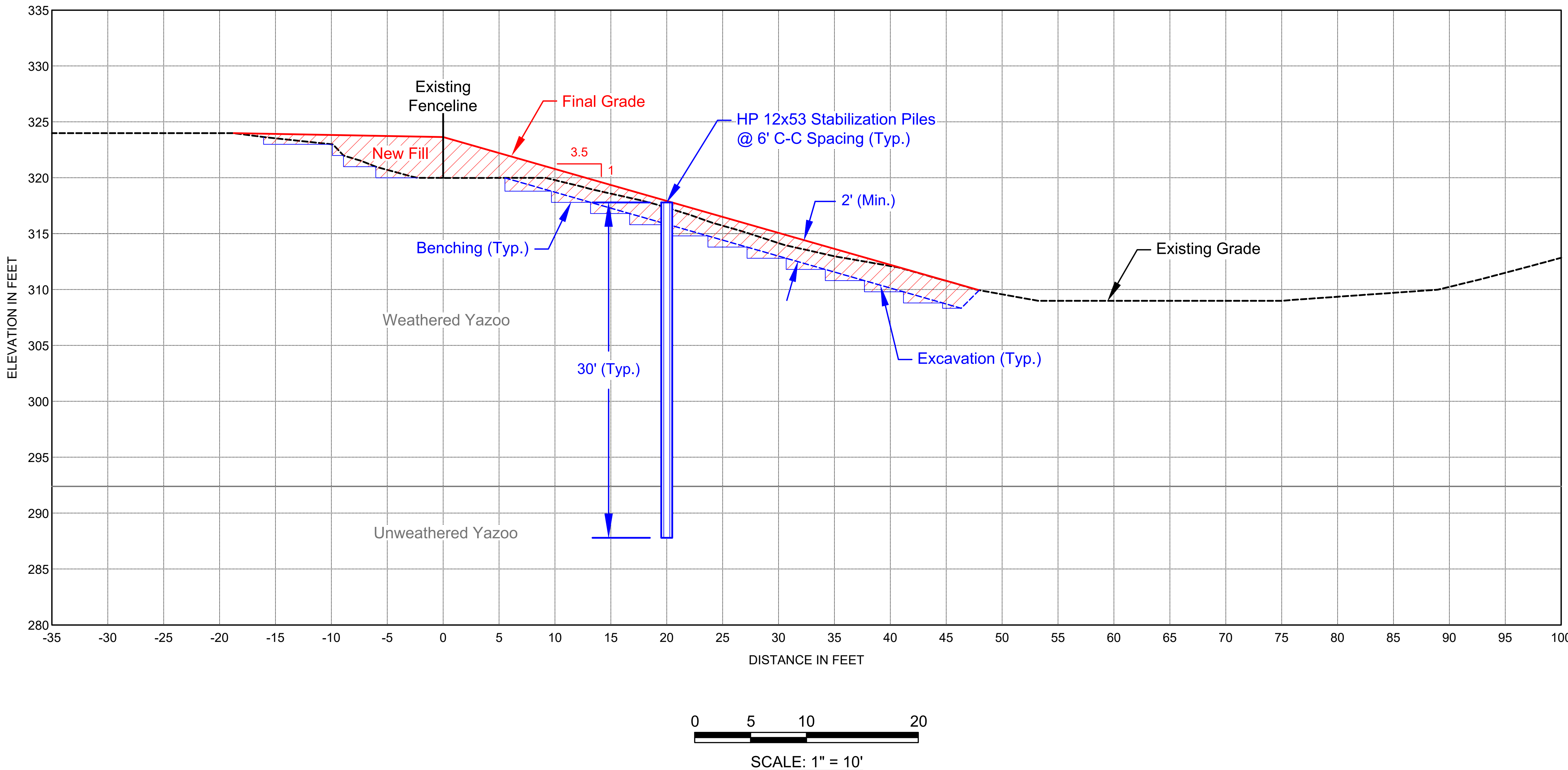
SCALE: 1" = 10'

Typical Section B - B'

SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

JOB NO. 220228-1	SCALE: AS SHOWN	FIGURE 15



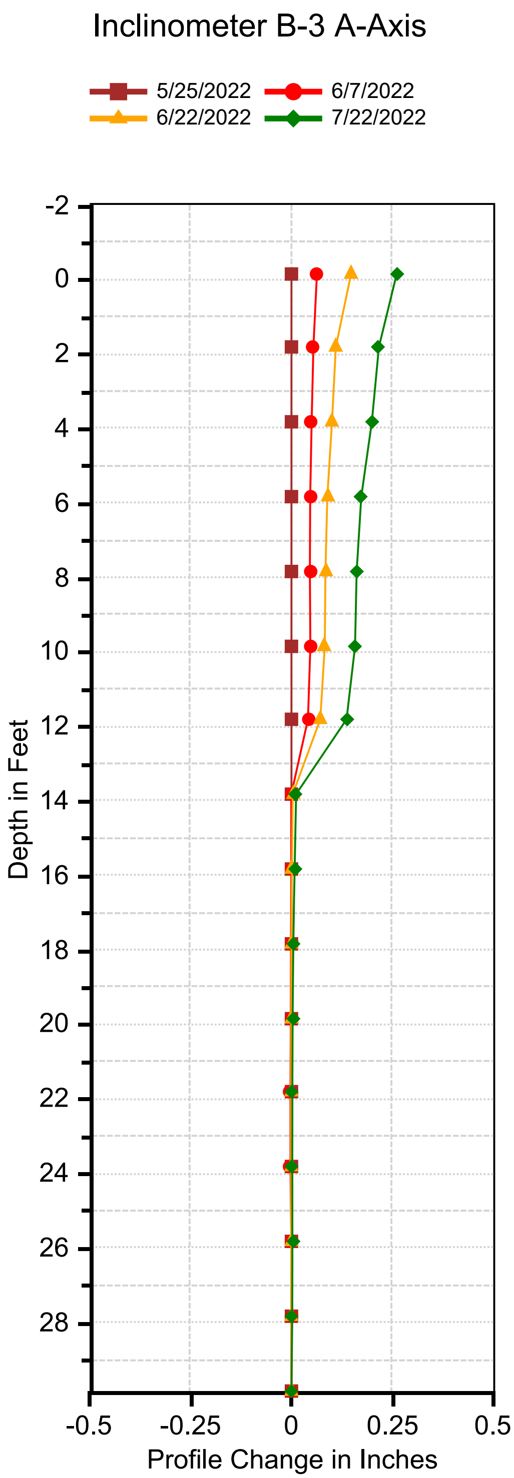
Typical Section C - C'

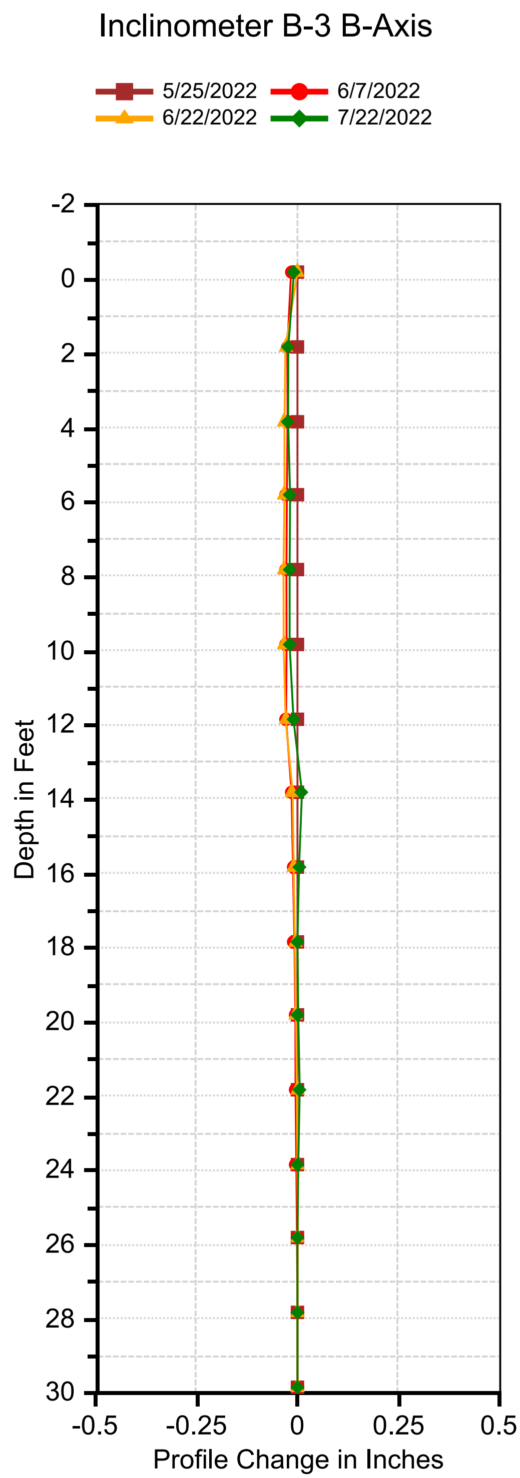
SLOPE STABILIZATION
HUNTINGTON LAKES
RANKIN COUNTY, MISSISSIPPI

BURNS COOLEY DENNIS, INC.
551 SUNNYBROOK ROAD
RIDGELAND, MISSISSIPPI 39157

JOB NO. 220228-1	SCALE: AS SHOWN	FIGURE 16

APPENDIX





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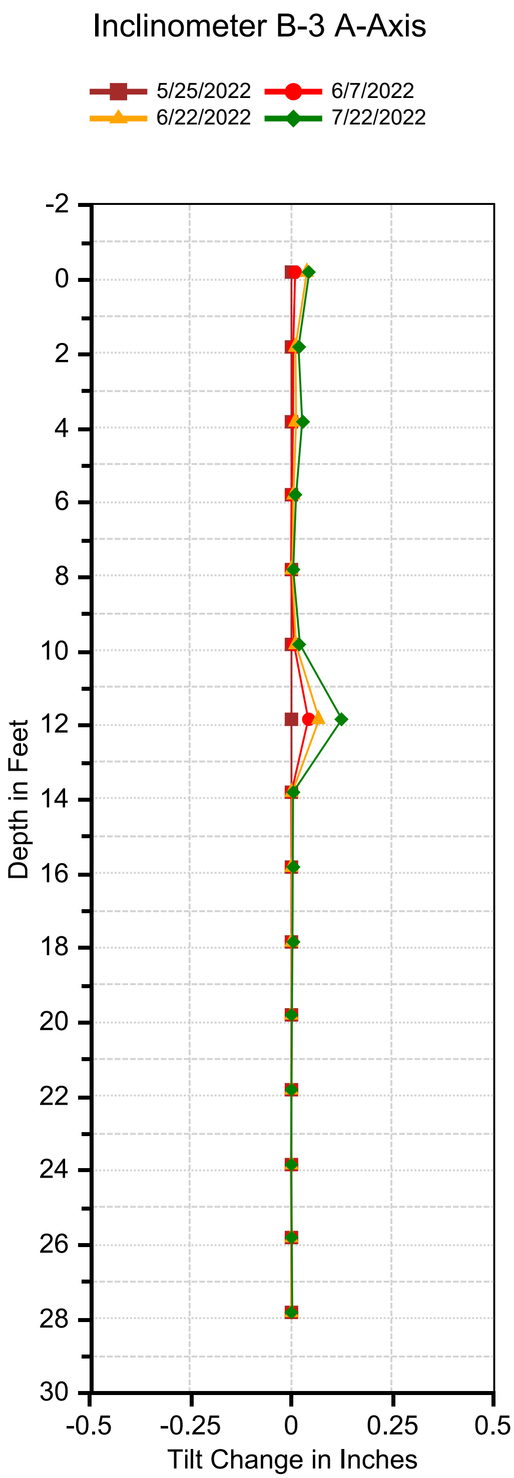
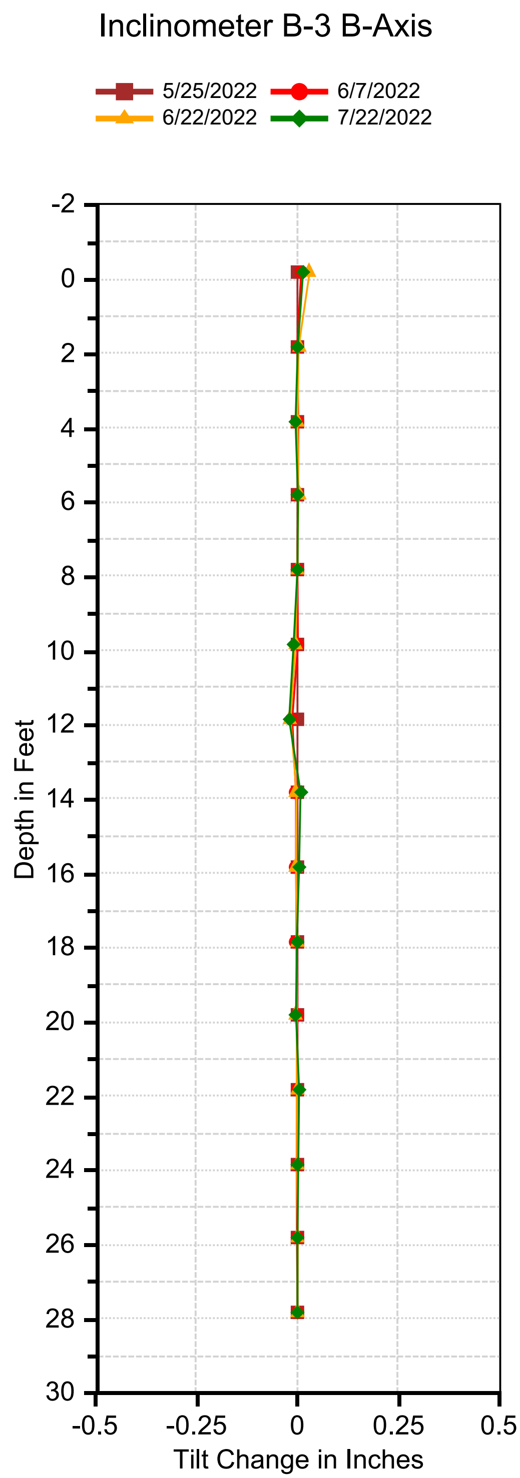
RANKIN COUNTY, MISSISSIPPI





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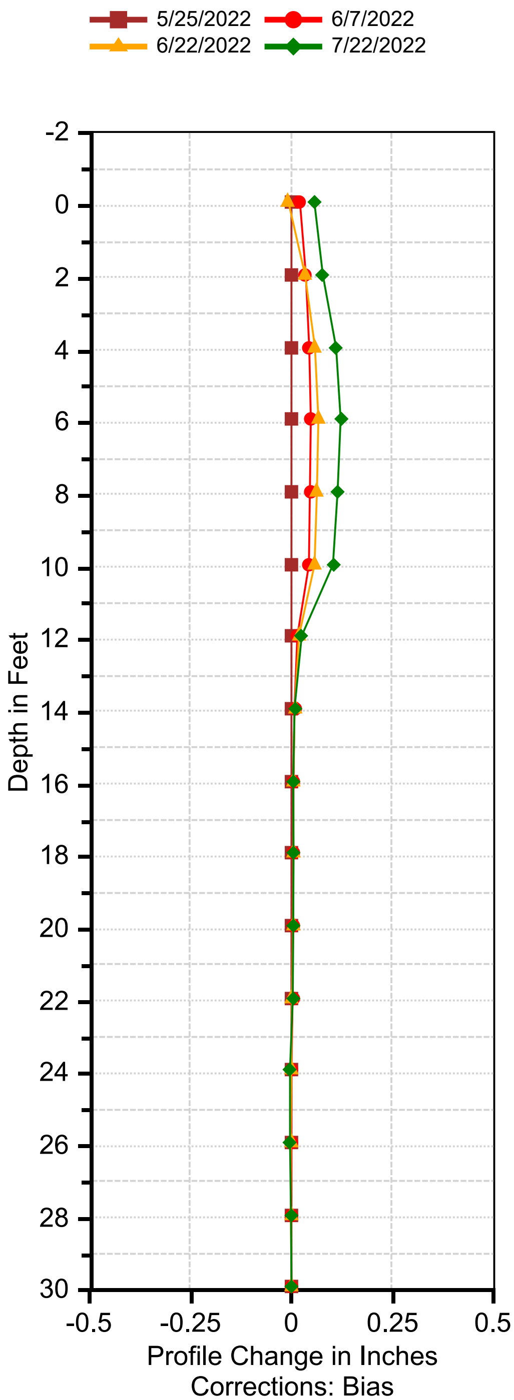
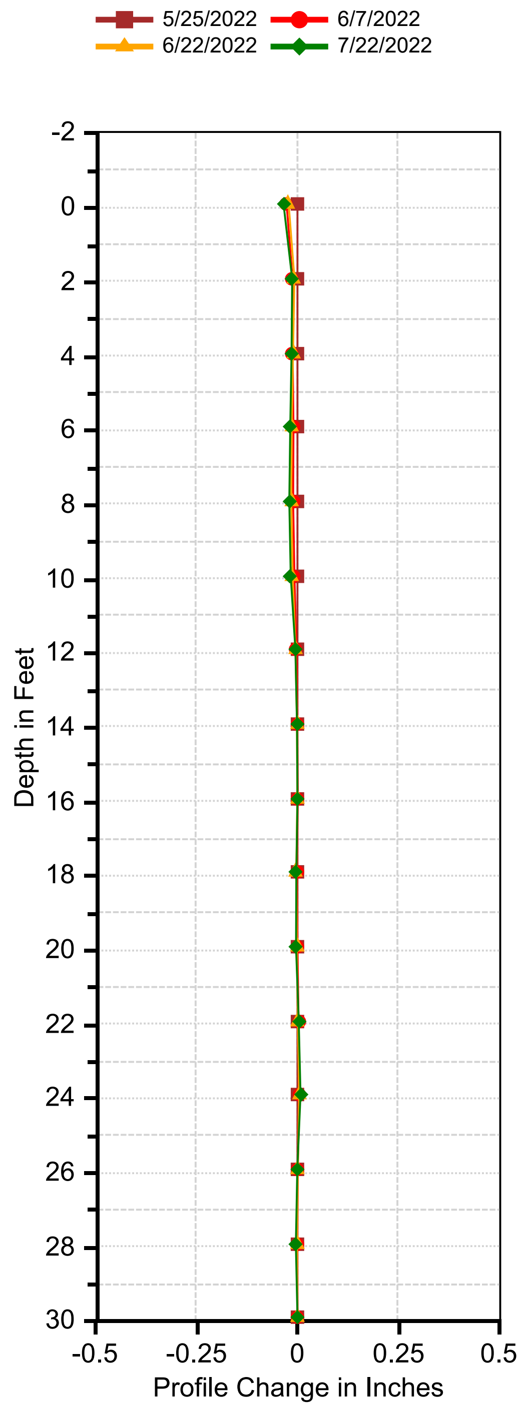
HUNTINGTON SUBDIVISION
LANDSLIDES ALONG WEST BANK OF SOUTH LAKE
RANKIN COUNTY, MISSISSIPPI

Inclinometer B-4 A-Axis



Inclinometer B-4 B-Axis



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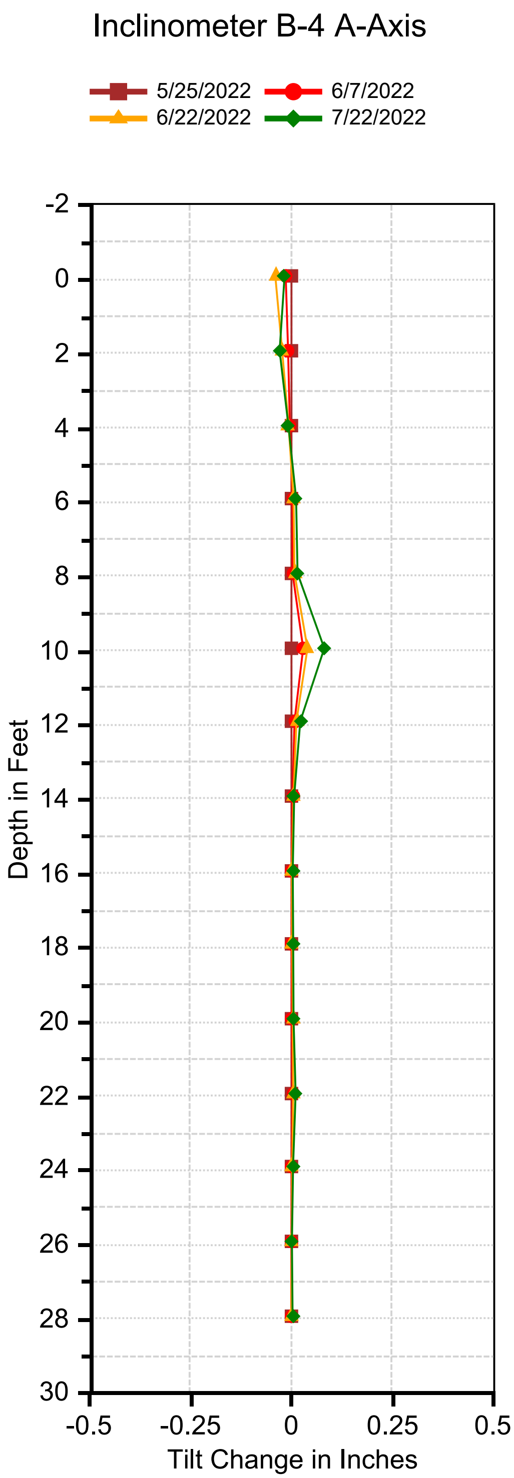
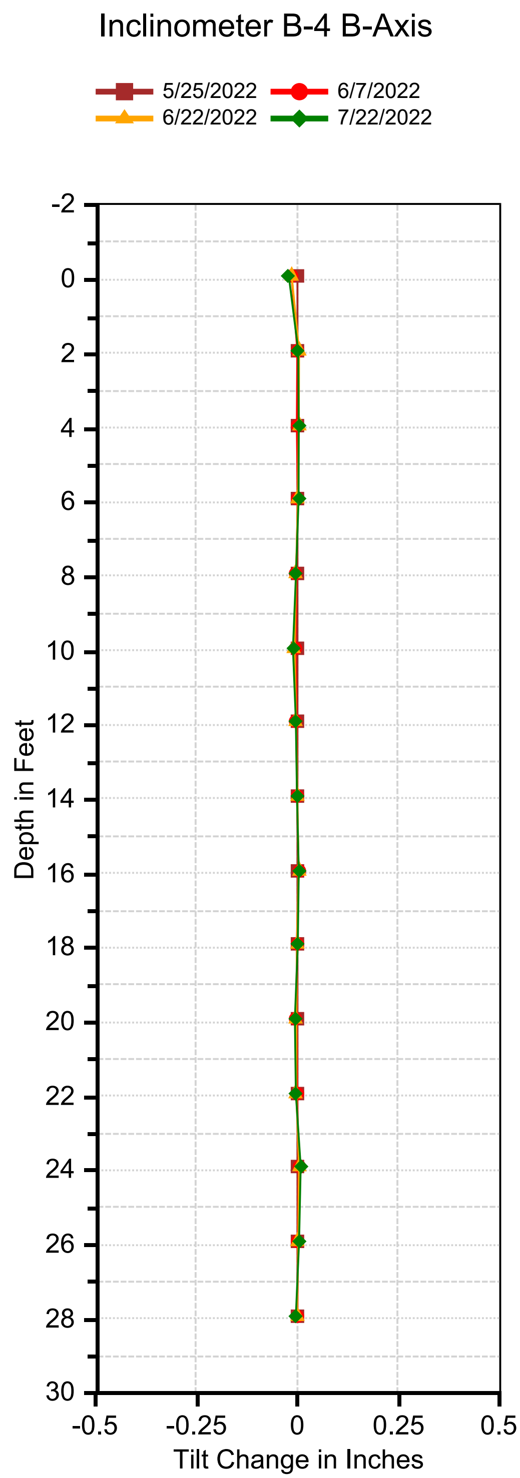
HUNTINGTON SUBDIVISION
LANDSLIDES ALONG WEST BANK OF SOUTH LAKE
RANKIN COUNTY, MISSISSIPPI





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HUNTINGTON SUBDIVISION
LANDSLIDES ALONG WEST BANK OF SOUTH LAKE
RANKIN COUNTY, MISSISSIPPI