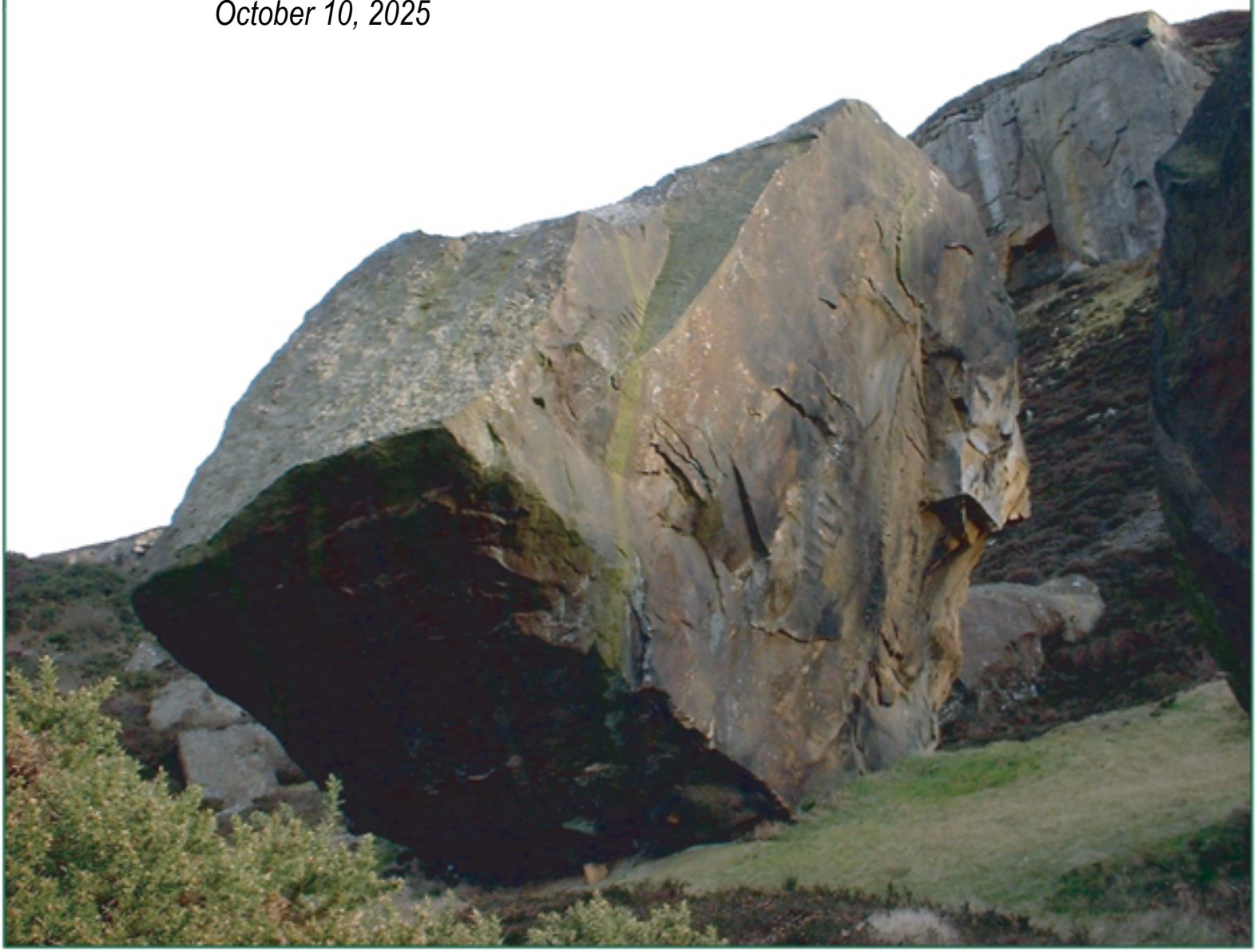
GEO HYDRO ENGINEERS

Report of Pavement Evaluation

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
Geo-Hydro Project Number 252614.20
Revision 1

Prepared for Heard County Board of Commissioners
October 10, 2025



Mr. Tracy McCormick, Chairman
Heard County Board of Commissioners
201 Park Avenue
Franklin, Georgia 30217

October 10, 2025

Report of Pavement Evaluation
West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
Geo-Hydro Project Number 252614.20 Revision 1

Dear Mr. McCormick:

Geo-Hydro Engineers, Inc. has completed the authorized pavement evaluation for the above referenced project. The scope of services for this project was outlined in our proposal number 252614.P0 dated September 18, 2025.

PROJECT INFORMATION

The project encompasses an approximately 2.1-mile long section of West Ferry Road and a 2-mile long section of Hollingsworth Ferry Road in Franklin, Georgia. Figure 1 in the Appendix shows the approximate road alignments pertaining to this evaluation.

We understand that Southern Company is closing the Plant Wansley site in northeast Heard County, Georgia. The closure has included increased traffic involving fully-loaded dump trucks along West Ferry Road and Hollingsworth Ferry Road, and the traffic is expected to continue for about eight years. The annotated aerial photograph below shows the approximate limits of the roadways in question.

The pavement is currently exhibiting signs of distress and failures including sliding, shoving, and some alligator cracking. Based on the information provided to us, traffic counts along both roads will range from about 120 to 230 fully loaded dump trucks per day. For design purposes, we have assumed that the roads will have an average daily truck traffic of about 200 trucks during a period of 8 years. The purpose of this exploration was to sample the existing pavement structures and use the data collected along with the traffic count data to determine a suitable pavement section to withstand the current and future elevated truck traffic volume.

EXPLORATORY PROCEDURES

The subsurface exploration consisted of ten hand auger borings spaced roughly evenly along West Ferry Road and Hollingsworth Ferry Road The approximate test locations are shown on Figures 2 through 4 in the Appendix. The hand auger borings were located in the field by Geo-Hydro by utilizing a handheld GPS unit with preloaded coordinates and measuring distances from existing site features. In general, the locations of the hand auger borings should be considered approximate.

At each test location, the existing asphalt pavement was cored using a 5-inch diameter core barrel to gain access to the soil subgrade. Dynamic cone penetrometer testing (ASTM STP-399) was performed at select depths in the hand auger borings extending to a planned depth of 4 feet or the depth of equipment refusal, whichever occurred first. Soil samples obtained from the hand auger borings were examined and classified in general accordance with ASTM D2488 (Visual-Manual Procedure for Description of Soils). Soil classifications include the use of the Unified Soil Classification System described in ASTM D2487 (Classification of Soils for Engineering Purposes). The soil classifications also include our evaluation of the geologic origin of the soils. Evaluations of geologic origin are based on our experience and interpretation and may be subject to some degree of error.

Descriptions of the soils encountered in the hand auger borings are provided in the hand auger logs included in the Appendix. Groundwater conditions, dynamic cone penetrometer resistances, and other pertinent information are also included.

MATERIAL THICKNESS AND PAVEMENT COMPONENT SUMMARY

The following table summarizes the pavement component thicknesses at each test location:

Core Number	Asphalt Thickness (inches)	GAB Thickness (inches)	Soil Aggregate Base Thickness (inches)
HA-1	6½	3¼	---
HA-2*	5½	---	6½
HA-3*	5⅞	---	6⅛
HA-4*	5¾	---	12¼
HA-5*	6½	---	2¾
HA-6	2¾	---	9¼
HA-7	2⅝	12⅜	---
HA-8	2¼	9¾	---
HA-9	3¼**	---	14¾
HA-10	2	2	---

All measurements in this summary table are approximate
GAB: Graded Aggregate Base
NE: Not Encountered
*Borings HA-2, HA-3, HA-4, and HA-5 indicate the asphalt along West Ferry Road has been overlaid at least once
**Asphalt core was heavily fractured and damaged

HAND AUGER BORING SUMMARY

All borings initially encountered approximately 2 to 6½ inches of asphalt underlain by about 2 to 14¾ inches of graded aggregate base or soil aggregate base.

Beneath the base materials, borings HA-1, HA-5, HA-6, and HA-9 encountered fill materials extending to depths ranging from approximately 2½ to 4 feet. Borings HA-6 and HA-9 refused in the fill at depths of about 2½ and 3 feet, respectively. The fill materials were classified as clayey silt, clayey sand and silty sand with varying amounts of rock fragments and debris. Dynamic cone penetrometer resistances recorded in the fill ranged from 7 to greater than 25 blows per increment.

Beneath the fill materials, borings HA-2, HA-3, HA-4, HA-7, HA-8, and HA-10 encountered residual soils classified as silty sand. Dynamic cone penetrometer resistances recorded in the residual soils ranged from 12 to greater than 25 blows per increment. Borings HA-3, HA-7, and HA-8 refused in the residuum at depths ranging from about 1½ to 2 feet.

At the time of the exploration, groundwater was not encountered in the hand auger borings. The borings were backfilled with soil cuttings and patched with cold patch asphalt upon completion. For more detailed descriptions of subsurface conditions, please refer to the hand auger logs included in the Appendix.

The following pictures are of select locations showing apparent sliding and shoving along West Ferry Road and alligator cracking of varying severity along Hollingsworth Ferry Road. The photos were taken prior to the hand auger exploration, but where shown in the photos, the hand auger borings were performed at the approximate locations marked with white paint. Borings HA-1 through HA-5 were performed along West Ferry Road, and HA-6 through HA-10 were performed along the 2-mile stretch of Hollingsworth Ferry Road.


Near HA-6

EVALUATIONS AND RECOMMENDATIONS

The following evaluations and recommendations are based on the information available on the existing roadways, the data obtained from the hand auger borings, the anticipated traffic volume and composition, and our experience with similar pavement and subsurface conditions. Because the hand auger borings represent a small statistical sampling of subsurface conditions, it is possible that conditions different from those indicated by the exploration could exist at locations intermediate of the borings.

We understand that the preferred method of rehabilitation is to mill approximately 2 inches of existing pavement and overlay with fresh asphalt. However, due to the high truck volume and the weight of the trucks, our analysis indicates that the preferred 2-inch mill-and-overlay approach is insufficient. Our recommendations for each road section are provided in the sections below.

West Ferry Road - Mill and Overlay Approach

Based on our observations and measurements, West Ferry Road has a relatively consistent pavement section consisting of at least 5½ inches of asphalt and several inches of crushed stone base. The hand auger borings indicate generally firm and reasonably well-prepared, albeit somewhat variable subgrade conditions.

Our observations on site identified visible sliding and shoving failure conditions indicating that the road has been overlaid in the past, with the surface course lacking any adhesion to the underlying pavement. The unbonded overlay section of asphalt generally ranges in thickness from about 1½ to 3 inches.

Based on our observations on site and the results of the hand auger borings, a mill-and-overlay approach is viable for West Ferry Road. Based on our analysis, we recommend milling at least 4 inches of the existing asphalt pavement and replacing the milled section with 4 inches of 25 mm Superpave base course and topping with 2 inches of 12.5 mm Superpave surface course. If the asphalt appears unbonded after 4 inches of milling, additional removal will be necessary.

It should be noted that the added service life associated with mill-and-overlay is related to degradation of the asphalt pavement only. In areas of the roadway where environmental and age-related cracking are present, it is likely that the existing cracks that extend the full depth of the existing pavement structure will reflect through the overlay. There are several reflective crack control methods and products such as a chip seal layer, Perma Flex®, and various geosynthetic products that can be applied to retard the propagation of reflective cracking. Options to intervene to reduce the risk of reflective cracking may be implemented on a case-by-case basis.

To summarize, our recommended pavement design section for West Ferry Road is as follows:

Material	Thickness (inches)
Asphaltic Concrete 12.5mm Superpave	2
Asphaltic Concrete 19mm Superpave or 25 mm Superpave	4
Asphaltic Concrete (existing)	2¼
Soil Aggregate Base (Base Course) (existing)	10

The recommended pavement design is based on the provided daily truck traffic applied for a period of 8 years. A conventional mill-and-overlay maintenance event should be considered at the end of the 8-year heavy truck traffic period to refresh the pavement and extend its life.

All pavement construction should be performed in general accordance with Georgia DOT specifications. Proper subgrade compaction, adherence to Georgia DOT specifications, and compliance with project plans and specifications, will be critical to the performance of the constructed pavement.

Hollingsworth Ferry Road - Full Depth Reclamation (FDR) Approach

Based on our observations and measurements, West Ferry Road has a relatively consistent pavement section consisting of about 2 to 3¼ inches of asphalt underlain by several inches of crushed stone base material. The hand auger borings indicate generally firm and reasonably well-prepared, albeit somewhat variable subgrade conditions.

Our observations on site indicate that that the pavement along much of the 2-mile section of Hollingsworth Ferry Road is relatively thin and is showing signs of age-related distress as well as localized stress-related damage. The road is showing normal wear and tear consisting primarily of spotty, moderate to severe alligator cracking commensurate with the age of the pavement. No major ruts or depressions were observed along the road. Based on the relatively thin asphalt and crushed stone base layers measured in the hand auger borings, a customary pavement rehabilitation approach involving milling and overlaying is not a good option for the project. Because the asphalt thickness is insufficient, mill-and-overlay is no feasible both from a design and construction standpoints.

Considering the limitations presented by the existing pavement structure and the desired to develop a pavement section capable of supporting the anticipated heavy dump truck traffic, we recommend improving the pavement structure using full-depth reclamation (FDR) with Portland cement. FDR involves blending the asphalt pavement and the crushed stone base and subgrade soils along with a prescribed amount of Type I Portland cement before moisture conditioning and recompacting. FDR has been successfully used in many similar projects to provide a stable, uniform subgrade to support new asphalt pavement.

Spot remediation of soft or unstable subgrade soils should not be necessary if FDR is used. In addition to providing what is typically a stronger base for the new pavement compared with traditional reconstruction, the per square yard cost of FDR can be substantially less than traditional reconstruction/new construction. Disadvantages of FDR include a relatively large mobilization cost for FDR equipment, making cost savings negligible for smaller projects. Shallow utilities may be damaged as the mixing will be performed to a depth of about 12 inches below the top of the existing asphalt surface. For higher compressive strength FDR sections, the hydration of Portland cement can lead to block cracking in the base material, which can reflect back through the new asphalt surface.

We recommend the following FDR approach:

1. Apply the design Portland cement amendment rate to the ground surface (asphalt, gravel, or soil subgrade).
2. Intimately blend the Portland cement with the existing asphalt, base materials, and soil subgrade to a depth of 14 inches beneath the existing asphalt, gravel, or soil surface. This will allow for some excess material to be removed to accommodate fine grading and still achieve a minimum FDR thickness of 12 inches.
3. Shape the blended materials to the desired subgrade elevation. Note, in order to match the existing pavement elevation, some of the blended material may need to be hauled from the site. *Alternatively, the finished surface elevation may be raised or, the asphalt surface may be milled prior to blending with Portland cement.*
4. Adjust the moisture of the blended material to between 0 and 3 percent above the optimum moisture content, as defined by ASTM D558. This will likely require re-blending while injecting water with a water truck.
5. Intimately blend the necessary amount of Portland cement with the mill cuttings.
6. Thoroughly compact the amended mixture.
7. Protect the finished surface and maintain in a moist condition to allow initial curing for a period of 3 to 7 days.
8. To reduce the potential for shrinkage cracking of the FDR base to reflect back through the finished surface, we recommend pre-cracking (Microcracking) the finished surface in accordance with the Portland Cement Association *Guide to FDR with Cement* by running a vibratory compactor across the surface after initial curing and prior to asphalt placement.
9. Place the surface course or required asphalt layers over the FDR base.

FDR should only be performed by a contractor that has performed this type of work successfully in the past, and the work should be performed in accordance with Georgia DOT specifications. The following link provides an illustration of the FDR process: https://www.youtube.com/watch?v=Sdq-pWLIMdw

For initial planning and budgeting purposes, we recommend using an application rate of 65 pounds of Portland cement per square yard (approximately 6.5 percent by weight). Implementation of an FDR solution will require additional sampling and laboratory testing to determine the optimal cement application rate for the project. We can provide a scope of work and cost for FDR mix design if FDR is selected for the project.

In general, all pavement construction should be in accordance with Georgia DOT specifications. Proper stabilization, adherence to Georgia DOT specifications, and compliance with project plans and specifications will be critical to the performance of the constructed pavement. GDOT compressive strength requirements for FDR samples consist of a minimum compressive strength of 450 psi for laboratory prepared specimens (mix design) and 300 psi for field specimen (confirmation testing).

The following table shows the recommended FDR treatment and new asphalt pavement:

Full-Depth Reclamation (FDR)

Material	Thickness (inches)
Wearing Course Asphaltic Concrete 12.5 mm Superpave	2
Intermediate Course Asphaltic Concrete 19.5 mm Superpave or 25 mm Superpave	2½
*FDR (Asphalt, Crushed Stone Base, and Subgrade Soils) 6.5% Portland cement by weight - ~65 lb./sq. yd.	12

***Implementation of FDR will require additional sampling and laboratory testing to determine the optimal cement application rate for the project.**

* * * * * * *

We appreciate the opportunity to work with you on this project and are prepared to provide any additional services you may require. If you have any questions concerning this report or any of our services, please call us.

Sincerely,

GEO-HYDRO ENGINEERS, INC.

Jacob O. Congrove, E.I.T.
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GEORGIA REGISTERED No. 021308 PROFESSIONAL ENGINEER LUIS E. BABLER

JOC/LEB/252614.20 - West Ferry Road and Hollingsworth Ferry Road - Pavement Evaluation Report Rev.1

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APPENDIX

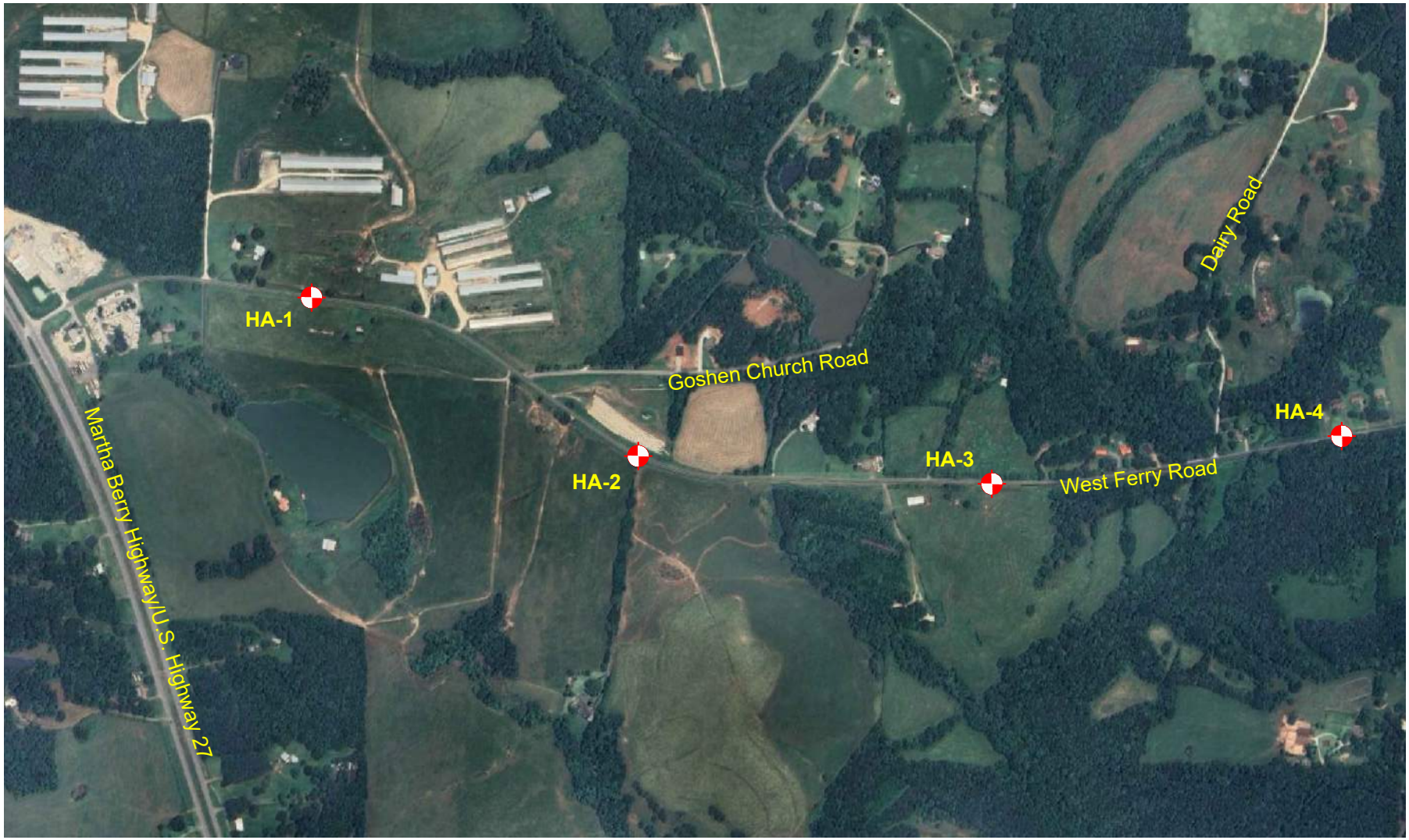
0 0.75 1.5 3 4.5

Approximate Scale, Miles

Figure 1: Site Location Plan

Pavement Evaluation
West Ferry Road & Hollingsworth Ferry Road
Franklin, Georgia
Geo Hydro Project No. 252614.20

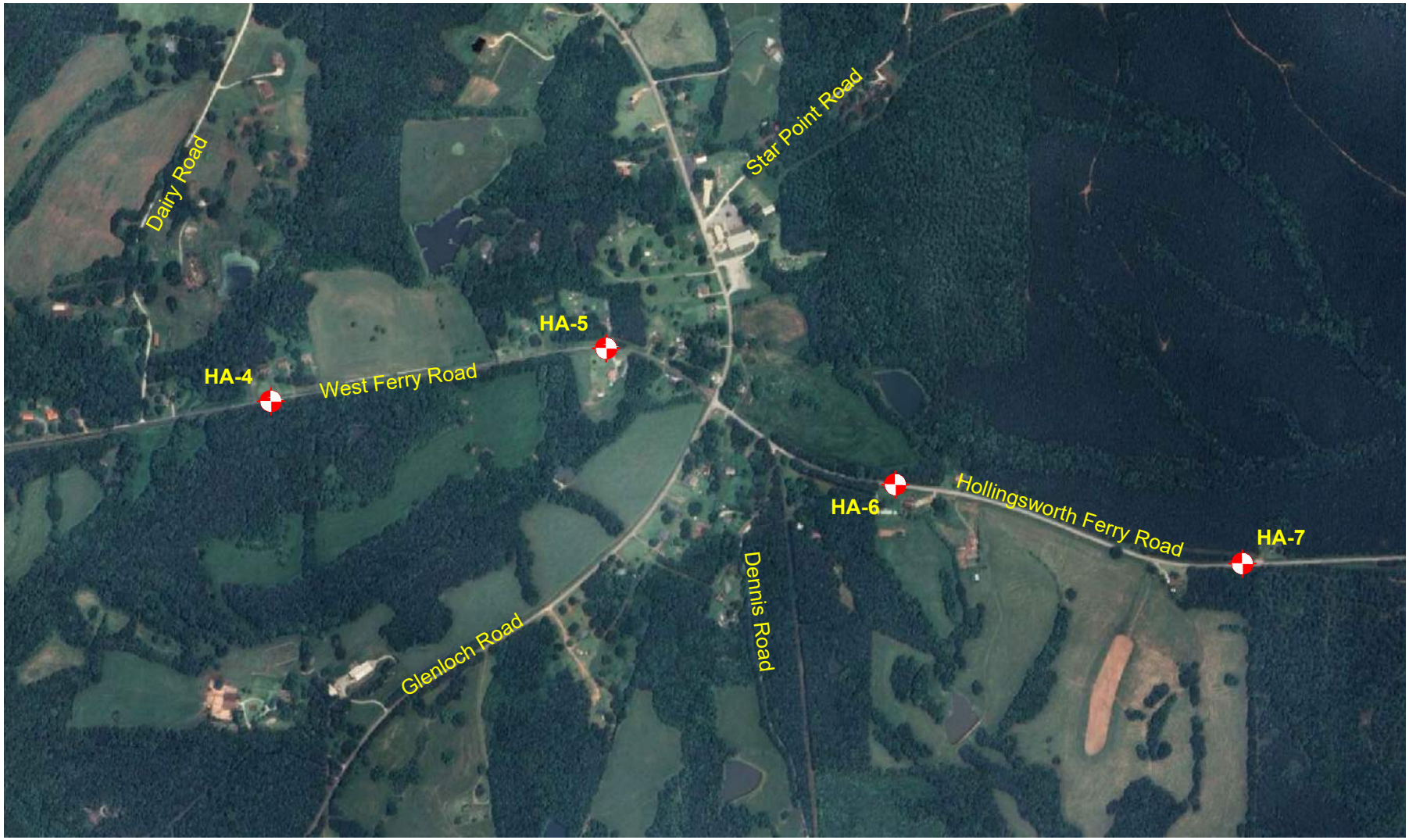
GEO HYDRO ENGINEERS



0 450 900 1,800 2,700

Approximate Scale: 1"=900'

LEGEND: Hand Auger Boring	Figure 2: Boring Location Plan	Pavement Evaluation West Ferry Road & Hollingsworth Ferry Road Franklin, Georgia Geo Hydro Project No. 252614.20



0 450 900 1,800 2,700

Approximate Scale: 1"=800'

LEGEND: Hand Auger Boring

Figure 3: Boring Location Plan

Pavement Evaluation
West Ferry Road & Hollingsworth Ferry Road
Franklin, Georgia
Geo Hydro Project No. 252614.20

0 450 900 1,800 2,700

Approximate Scale: 1"=900'

LEGEND: Hand Auger Boring	Figure 4: Boring Location Plan	Pavement Evaluation West Ferry Road & Hollingsworth Ferry Road Franklin, Georgia Geo Hydro Project No. 252614.20

Symbols and Nomenclature

Symbols

▌	Thin-walled tube (TWT) sample recovered
▯	Thin-walled tube (TWT) sample not recovered
●	Standard penetration resistance (ASTM D1586)
50/2”	Number of blows (50) to drive the split-spoon a number of inches (2)
65%	Percentage of rock core recovered
RQD	Rock quality designation - % of recovered core sample which is 4 or more inches long
GW	Groundwater
	Water level at least 24 hours after drilling
	Water level one hour or less after drilling
ALLUV	Alluvium
TOP	Topsoil
PM	Pavement Materials
CONC	Concrete
FILL	Fill Material
RES	Residual Soil
PWR	Partially Weathered Rock
SPT	Standard Penetration Testing

Penetration Resistance Results	Number of Blows, N	Approximate Relative Density
Sands	0-4	very loose
	5-10	loose
	11-20	firm
	21-30	very firm
	31-50	dense
	Over 50	very dense

	Number of Blows, N	Approximate Consistency
Silts and	0-1	very soft
Clays	2-4	soft
	5-8	firm
	9-15	stiff
	16-30	very stiff
	31-50	hard
	Over 50	very hard

Drilling Procedures

Soil sampling and standard penetration testing performed in accordance with ASTM D 1586. The standard penetration resistance is the number of blows of a 140-pound hammer falling 30 inches to drive a 2-inch O.D., 1.4-inch I.D. split-spoon sampler one foot. Rock coring is performed in accordance with ASTM D 2113. Thin-walled tube sampling is performed in accordance with ASTM D 1587.

HAND AUGER LOG HA-1

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 6 1/2 inches)					
		Graded Aggregate Base (Approximately 3 1/4 inches)					
1		Tan and brown silty fine to medium sand (SM) with rock fragments (FILL)		24			
2		Brown silty fine sand (SM) (FILL)		>25			
3		Red-brown clayey fine to medium sand (SC) with rock fragments (FILL)					
4		Hand Auger Terminated at 4 feet Groundwater Not Encountered		>25			

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER LOG HA-2

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 5 1/2 inches)					
		Soil Aggregate Base (Approximately 6 1/2 inches)					
1		Tan and red silty fine sand (SM) (RESIDUUM)		>25			
2				16			
3							
4				12			
		Hand Auger Terminated at 4 feet Groundwater Not Encountered					

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNN07.GDT 10/3/25

HAND AUGER LOG HA-3

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 5 7/8 inches)					
		Soil Aggregate Base (Approximately 6 1/8 inches)					
1		Tan silty fine to medium sand (SM) (RESIDUUM)		>25			
		Hand Auger Refusal at 1 1/2 feet Groundwater Not Encountered					
2							
3							
4							

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNN07.GDT 10/3/25

HAND AUGER LOG HA-4

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 5 3/4 inches)					
1		Soil Aggregate Base (Approximately 12 1/4 inches)		>25			
2		Tan silty fine sand (SM) (RESIDUUM)		24			
3							
4		Hand Auger Terminated at 4 feet Groundwater Not Encountered		13			

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNN07.GDT 10/3/25

HAND AUGER LOG HA-5

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 6 1/2 inches)					
		Soil Aggregate Base (Approximately 2 3/4 inches)					
1		Gray and red clayey fine to medium sand (SC) with rock fragments (FILL)		19			
		Red clayey silt (ML) (FILL)					
2				7			
3							
4				7			
		Hand Auger Terminated at 4 feet Groundwater Not Encountered					

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNNN07.GDT 10/3/25

HAND AUGER LOG HA-6

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

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DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 2 3/4 inches)					
		Soil Aggregate Base (Approximately 9 1/4 inches)					
1		Brown clayey silt (ML) with rock fragments (FILL)		14			
2				11			
		Hand Auger Refusal at 2 1/2 feet Groundwater Not Encountered					
3							
4							

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER LOG HA-7

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

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DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 2 5/8 inches)					
		Graded Aggregate Base (Approximately 12 3/8 inches)					
1							
		Red and brown silty fine sand (SM) (RESIDUUM)					
2				>25			
		Hand Auger Refusal at 2 feet Groundwater Not Encountered					
3							
4							

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNN07.GDT 10/3/25

HAND AUGER LOG HA-8

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 2 1/4 inches)					
		Graded Aggregate Base (Approximately 9 3/4 inches)					
1		Red and tan silty fine sand (SM) (RESIDUUM)		19			
		Hand Auger Refusal at 1 1/2 feet Groundwater Not Encountered					
2							
3							
4							

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNNN07.GDT 10/3/25

HAND AUGER LOG HA-9

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 3 1/4 inches)					
		Soil Aggregate Base (Approximately 14 3/4 inches)					
1				22			
		Tan and brown silty fine sand (SM) with rock fragments and plastic debris (FILL)					
2				14			
3		Hand Auger Refusal at 3 feet Groundwater Not Encountered					
4							

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER LOG HA-10

Date Performed: 10/1/25 Logged by: JOC

Equipment: HA/DCP Elevation(ft):

GEO HYDRO ENGINEERS

DEPTH (feet)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE	PEN. RESIST	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	LAB TESTS
		Asphalt (Approximately 2 inches)					
		Graded Aggregate Base (Approximately 2 inches)					
1		Red and tan silty fine sand (SM) (RESIDUUM)		18			
2				14			
3							
4				17			
		Hand Auger Terminated at 4 feet Groundwater Not Encountered					

Penetration resistance was evaluated in accordance with ASTM STP-399. The penetration resistance is the number of blows of a hammer weighing 15 lbs. falling 20 inches to drive a 1.5 inch diameter cone 1.75 inches.

West Ferry Road and Hollingsworth Ferry Road
Franklin, Georgia
252614.20

HAND AUGER HA LOGS.GPJ LOG A GNN07.GDT 10/6/25

GDOT Pavement Design Analysis Outputs

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Flexible Pavement Design Analysis

PI Number	1 of 2	**County(s)**	Heard (east)
Project Number	252614.20	**Design Name**	West Ferry Road
Project Description	West Ferry Road (Mill and Overlay)		

Traffic Data (AADTs are one-way)						**Miscellaneous Data**	
Initial Design Year	2025	**Initial AADT, VPD**	250	**24 Hour Truck %**	75.00	**Lanes in one direction**	1
Final Design Year	2033	**Final AADT, VPD**	260	**SU Truck %**	72.00	**Curb & Gutter/Barrier**	No
		Mean AADT, VPD	255	**MU Truck %**	3.00	**Milling Depth (inches)**	4.00

Design Data					
Lane Distribution Factor (%)	100.00	**Soil Support Value**	3.00	**Single Unit ESAL**	0.40
Terminal Serviceability Index	2.50	**Regional Factor**	1.60	**Multiple Unit ESAL**	1.50
		User Defined 18-KIP ESAL	2.70	**Calculated 18-KIP ESAL**	0.44
Non-Standard Value Comment					

Design Loading (User Provided 18-KIP ESAL Factor)					
Mean AADT, VPD	**LDF (%)**	**Vehicle Type**	**Volume (%)**	**ESAL Factor**	**Daily ESAL**
255	100.00	24 Hour Truck	75.00	2.70	517
				Total Design Period ESALs	1,509,640

Proposed Flexible Overlay Pavement Structure				
Course	**Material**	**Thickness (inches)**	**Structural Coefficient**	**Structural Value**
Overlay 1	12.5 mm Superpave	2.00	0.4400	0.88
Overlay 2	25 mm Superpave	2.50	0.4400	1.10
		1.50	0.3000	0.45
Existing 1	Asphaltic Concrete	2.25	0.3000	0.68
Existing 2	Soil Aggregate Base	10.00	0.1200	1.20

Required SN	4.53	**Proposed pavement is 4.94% Underdesigned**	**Proposed SN**	4.31

Design Remarks	

Prepared By 10/10/2025 1:44 PM

Jacob Congrove **Date**

Recommended By

State Roadway Design Engineer **Date**

Approved By

State Pavement Engineer **Date**

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Flexible Pavement Design Analysis

PI Number	2 of 2	**County(s)**	Heard (east)
Project Number	252614.20	**Design Name**	Hollingsworth Ferry Road
Project Description	Hollingsworth Ferry Road (Full Depth Reclamation)		

Traffic Data (AADTs are one-way)						**Miscellaneous Data**	
Initial Design Year	2025	**Initial AADT, VPD**	250	**24 Hour Truck %**	75.00	**Lanes in one direction**	1
Final Design Year	2033	**Final AADT, VPD**	260	**SU Truck %**	72.00	**Curb & Gutter/Barrier**	No
		Mean AADT, VPD	255	**MU Truck %**	3.00		

Design Data					
Lane Distribution Factor (%)	100.00	**Soil Support Value**	3.00	**Single Unit ESAL**	0.40
Terminal Serviceability Index	2.50	**Regional Factor**	1.60	**Multiple Unit ESAL**	1.50
		User Defined 18-KIP ESAL	2.70	**Calculated 18-KIP ESAL**	0.44
Non-Standard Value Comment					

Design Loading (User Provided 18-KIP ESAL Factor)					
Mean AADT, VPD	**LDF (%)**	**Vehicle Type**	**Volume (%)**	**ESAL Factor**	**Daily ESAL**
255	100.00	24 Hour Truck	75.00	2.70	517
				Total Design Period ESALs	1,509,640

Proposed Flexible Full Depth Pavement Structure				
Course	**Material**	**Thickness (inches)**	**Structural Coefficient**	**Structural Value**
Course 1	12.5 mm Superpave	2.00	0.4400	0.88
Course 2	19 mm Superpave	2.50	0.4400	1.10
Course 3	Full Depth Reclamation (FDR)	12.00	0.2000	2.40

Required SN	4.53	**Proposed pavement is 3.29% Underdesigned**	**Proposed SN**	4.38

Design Remarks	

Prepared By 10/6/2025 11:39 AM

Jacob O. Congrove **Date**

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State Roadway Design Engineer **Date**

Approved By

State Pavement Engineer **Date**

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