ARKANSAS DEPARTMENT OF TRANSPORTATION

SUBSURFACE INVESTIGATION

STATE JOB NO. 080457

FEDERAL AID PROJECT NO. CMF-STPU-0023(44)

UPRR OVERPASS & REALIGN. (MAYFLOWER) (S)

STATE HIGHWAY 89 **SECTION** 4 & 5

IN FAULKNER **COUNTY**

The information contained herein was obtained by the Department for design and estimating purposes only. It is being furnished with the express understanding that said information does not constitute a part of the Proposal or Contract and represents only the best knowledge of the Department as to the location, character and depth of the materials encountered. The information is only included and made available so that bidders may have access to subsurface information obtained by the Department and is not intended to be a substitute for personal investigation, interpretation and judgment of the bidder. The bidder should be cognizant of the possibility that conditions affecting the cost and/or quantities of work to be performed may differ from those indicated herein.

ARKANSAS DEPARTMENT OF TRANSPORTATION
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MATERIALS DIVISION
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February 6, 2020

TO: Mr. Rick Ellis, Bridge Engineer

SUBJECT: Job No. 080457
UPRR Overpass & Realign. (Mayflower) (S)
Faulkner County
Route 89 Sections 4 & 5

Transmitted herewith is a revision to the subsurface investigation report dated January 30, 2020 for the above referenced project. This revision corrects the MSE wall locations. Please replace the first three pages of the previous report with the attached documents.

Michael C. Benson
Materials Engineer

MCB:rpt:mlg

cc: State Construction Engineer - Master File Copy
District 8 Engineer
G.C. File

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Transmitted herewith are a brief summary of the geology and site conditions, rock core unconfined compression test summary, RMR, rock core unit weight summary, and the logs of the borings conducted for the structures and approaches of the above referenced project. The samples obtained by the Standard Penetration Tests were brought to the laboratory and visually classified by experienced lab personnel to confirm the field identifications.

This project consists of realigning the Highway 89 Bridge over I-40 and constructing a new section of Highway 89, beginning west of Mayflower and connecting to the realigned I-40 overpass. This will require the construction of two new structures.

I-40 Overpass

The new I-40 overpass will be constructed north of the existing. Three of the twelve requested borings were inaccessible due to steep slopes, utility conflicts, and access limitations. The borings that were not obtained are located at: 184+14 100' Rt. of C.L. Construction, 185+22 C.L. Construction, and 186+15 77' Rt. of C.L. Construction.

Based on the depth at which bedrock was encountered and correspondence with Bridge Design, it is anticipated that all bents will be founded on piling. Preboring may be necessary in order to achieve minimum penetration requirements.

Mechanically stabilized earthen walls are to be utilized at the bridge ends. MSE Wall C will be located at the west bridge end and MSE Wall D will be located at the east bridge end. It is anticipated that both walls will be approximately 20 feet in height. Several borings were obtained along the length of the walls in the vicinity of the wall face. The boring logs indicate soft clay material near the surface of the proposed MSE Wall D in the vicinity of station 186+18 40' Right of Construction Centerline. The problem area is part of a drainage ditch for the existing structure. It is recommended that this material be undercut to elevation 273.5 ft. and replaced with material meeting the requirements of Class 7 of Section 303 of the Standard Specifications for Highway Construction, edition 2014. The limits of excavation should extend from station 186+18 20' right to 186+18 60' right of construction centerline, 5 feet beyond the face of the wall to the back of the reinforcement zone. The excavation limits are shown in the attached Figure 1. Once this material has been replaced and compacted the MSE walls for this bridge should be designed based on the values provided in Table 1.

TABLE 1 – Mechanically Stabilized Earthen Walls Bearing Capacity Recommendations

MSE Wall	Factored Bearing Resistance (ksf)	Founding Elevation (ft.)
C	10	275-276
D	8	277-278

UPRR/Highway 365 Overpass

This bridge will span Highway 365, UPRR, and N Main Street. There currently is no structure at this location. It will be aligned with the new Hwy. 89 Bridge over I-40. Three of the twenty requested borings were inaccessible due to utility conflicts and access limitations. The easternmost borings had to be offset due to utility conflicts. The borings that were not obtained are located at: 180+60 C.L. Construction, 180+63 40' Lt. of C.L. Construction, and 177+21 78' Rt. of C.L. Construction.

Based on the depth at which bedrock was encountered and correspondence with Bridge Division, it is anticipated that all bents will be founded on pilling. If piling is utilized, preboring may be necessary to achieve minimum penetration requirements. However, based on the depth, type, and quality of bedrock encountered drilled shafts would be a viable foundation alternative. Drilled Shafts socketed in competent Shale should be designed based on the values provided in Table 2.

TABLE 2 – Bearing Capacity Recommendations for Drilled Shafts

Nominal Shaft Side Resistance (ksf)	Factored Shaft Side Resistance (ksf)	Nominal Shaft Tip Resistance (ksf)	Factored Shaft Tip Resistance (ksf)
32.7	18	156	78

Mechanically stabilized earthen walls are to be utilized at the bridge ends. MSE Wall A will be located at the west bridge end and MSE Wall B will be located at the east bridge end. It is anticipated that both walls will be approximately 20 feet in height. Several borings were obtained along the length of both walls in the vicinity of the wall face. The MSE walls for this bridge should be designed based on the properties provided in Table 3.

TABLE 3 – Mechanically Stabilized Earthen Walls Bearing Capacity Recommendations

MSE Wall	Factored Bearing Resistance (ksf)	Founding Elevation (ft.)
A	9	282-283
B	10	286-287

If you have any questions concerning these recommendations, please contact the Geotechnical Section.

Michael C. Benson
Materials Engineer

MCB:rpt:mlg

cc: State Construction Engineer - Master File Copy
District 8 Engineer
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Based on the depth at which bedrock was encountered and correspondence with Bridge Design, it is anticipated that all bents will be founded on piling. Preboring may be necessary in order to achieve minimum penetration requirements.

Mechanically stabilized earthen walls are to be utilized at the bridge ends. MSE Wall C will be located at the west bridge end and MSE Wall D will be located at the east bridge end. It is anticipated that both walls will be approximately 20 feet in height. Several borings were obtained along the length of the walls in the vicinity of the wall face. The boring logs indicate soft clay material near the surface of the proposed MSE Wall D in the vicinity of station 186+18 40' Right of Construction Centerline. The problem area is part of a drainage ditch for the existing structure. It is recommended that this material be undercut to elevation 273.5 ft. and replaced with material meeting the requirements of Class 7 of Section 303 of the Standard Specifications for Highway Construction, edition 2014. The limits of excavation should extend from station 186+18 20' right to 186+18 60' right of construction centerline, 5 feet beyond the face of the wall to the back of the reinforcement zone. The excavation limits are shown in the attached Figure 1. Once this material has been replaced and compacted the MSE walls for this bridge should be designed based on the values provided in Table 1.

TABLE 1 – Mechanically Stabilized Earthen Walls Bearing Capacity Recommendations

MSE Wall	Factored Bearing Resistance (ksf)	Founding Elevation (ft.)
C	10	275-276
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TABLE 2 – Bearing Capacity Recommendations for Drilled Shafts

Nominal Shaft Side Resistance (ksf)	Factored Shaft Side Resistance (ksf)	Nominal Shaft Tip Resistance (ksf)	Factored Shaft Tip Resistance (ksf)
32.7	18	156	78

Mechanically stabilized earthen walls are to be utilized at the bridge ends. MSE Wall A will be located at the west bridge end and MSE Wall B will be located at the east bridge end. It is anticipated that both walls will be approximately 20 feet in height. Several borings were obtained along the length of both walls in the vicinity of the wall face. The MSE walls for this bridge should be designed based on the properties provided in Table 3.

TABLE 3 – Mechanically Stabilized Earthen Walls Bearing Capacity Recommendations

MSE Wall	Factored Bearing Resistance (ksf)	Founding Elevation (ft.)
A	9	282-283
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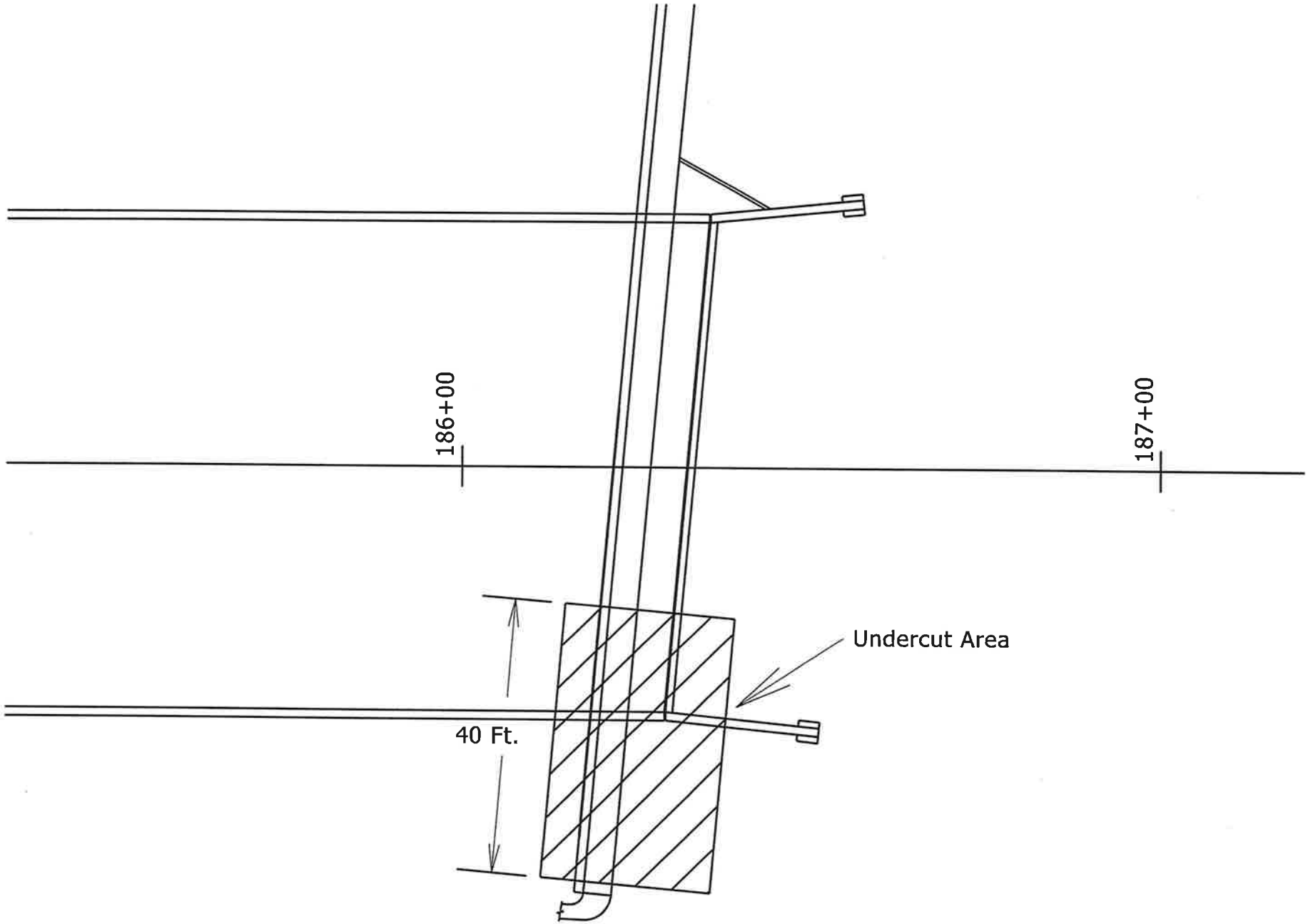


Figure 1 - Undercut Area

GEOLOGY AND SITE CONDITIONS
Job No. 080457
UPRR Overpass & Realign. (Mayflower) (S)
Faulkner County
Route 89 Sections 4 & 5

Site Conditions

There are two proposed structures for this project that are part of a new alignment for Hwy. 89. The new alignment extends from the existing Hwy. 89 west of the intersection of a local surface road, Snuggs Circle, on the west side of the City of Mayflower and passes around the north side of the city, crossing over Interstate 40, connecting back with existing Hwy 89 to the east of the existing Interstate 40 overpass. The first proposed structure (**UPRR/Hwy. 365 Overpass**) is planned to cross over, from west to east, North Main Street, the Union Pacific Railroad, and Hwy. 365. A fuel station is currently located at the proposed east end of this overpass. Overhead power lines parallel the east side of Hwy. 365.

The second proposed structure (**I-40 Overpass**) is planned to cross over Interstate 40, north of the existing Hwy. 89 overpass. The existing overpass is a four span structure composed of reinforced concrete columns and decking supported by five steel beams. A buried telecommunication parallels the north side of the overpass.

Site Geology

The project alignment is located in the mapped outcrop of the upper part of the Atoka Formation of Pennsylvanian age (Pau). This unit is a sequence of marine, mostly tan to gray silty sandstones and grayish-black shales. The unit locally contains discontinuous streaks of coal and coaly shale. The Atoka encountered at the job site consists primarily of well-indurated shale.

Much of the soil overlying bedrock at the proposed job site is a product of the weathering of the bedrock into sand, silt, and clay and have elevated n-values. Shale was encountered at depths ranging from 8.5 to 15.3 feet below ground level (bgl) in borings for the UPRR/Hwy. 365 Overpass. At the I-40 Overpass, shale was encountered at depths ranging from 10.0 to 15.2 feet below ground level (bgl), except at Station 184+18, 60' Right of Construction Centerline and Station 186+18, 40' Right of Construction Centerline, where shale was encountered at 20.3 feet bgl and not encountered at total depth of 26.5 feet bgl, respectively. The increased depth to bedrock in the boring at Station 186+18, 40' Right of Construction Centerline is due to excavations related to the burying of the telecommunication line that parallels the north side of the existing Interstate 40 Overpass.

Subsurface Conditions

Based on the results of the boring at Station 186+18 (UPRR/Hwy. 365 Overpass), the subsurface stratigraphy may be generalized as follows:

0 to 5.0 Feet:	Consists of moist, very soft, brown **clay with sand**.
5.0 to 10.0 Feet:	Varies from moist, stiff, reddish brown **clay with sand** to medium dense, brown **sandy silt**.
10.0 to 26.5 Feet:	Consists of moist, very stiff to hard, reddish brown **clay** to **clay with sand**.

Based on the results of the borings at stations 177+29 to 180+49 (UPRR/Hwy. 365 Overpass), the subsurface stratigraphy may be generalized as follows:

0 to 2.5 Feet:	Varies from dry to moist, soft to very hard, brown to reddish **clay** to **sandy clay** to medium dense to very dense loose brown and **gray sand with silty sand**.
2.5 to 10.0 Feet:	Varies from dry to moist, very stiff to very hard, reddish brown **clay** to **sandy clay** to medium dense to very dense, reddish brown **sand** to **sand with silt** to **sand with clay**. Many samples in this zone contain gravel.
10.0 to 20.3 Feet:	Varies from dry to moist, very stiff to very hard, light gray to reddish brown **clay** to **clay with shale fragments** to dense to very dense, reddish brown **sand with silt and gravel** to **sand with clay and gravel** to highly weathered, soft to medium hard, reddish brown to brown **shale**. One boring encountered a sandstone layer within the soil approximately 1.8' thick, highly weathered, poorly cemented, reddish brown.
20.3 to 25.3 Feet:	Consists of highly weathered to unweathered, soft to medium hard, brown and gray to dark gray **shale** with occasional fractures.
25.3 to 44.6 Feet:	Consists of slightly weathered to unweathered, medium hard, dark gray **shale** with occasional fractures.

Based on the results of the borings at stations 184+21 to 186+29 (I-40 Overpass), the subsurface stratigraphy may be generalized as follows:

0 to 8.5 Feet:	Consists of dry to moist, soft to very hard, reddish brown, **clay** to **sandy clay** to very loose to medium dense brown **sand with silt** to **sandy silt**.
8.5 to 15.3 Feet:	Varies from dry to moist, very stiff to very hard, reddish brown and gray **clay** to medium dense to dense brown **sandy silt** to highly weathered to weathered, soft to medium hard, reddish brown to dark gray **shale**.
15.3 to 25.0 Feet:	Consists of highly weathered to unweathered, soft to medium hard, brown to dark gray **shale** with occasional fractures.
25.0 to 39.7 Feet:	Consists of unweathered, medium hard, dark gray **shale** with occasional fractures.

Rock Core Unconfined Compression Test Summary

Project Number: 080457
Project Name: UPRR Overpass & Realign. (Mayflower) (S)
Date Tested: 12/4/2019 & 12/18/2019

Station	Location	Sample No.	Depth (ft.)	Diameter (in)	Height (in)	Total Load (lbs.)	Correction Factor	Stress (psi)	Remarks
180+38	40' Rt	1	20.3	1.75	3.53	3,530	1.00	1,468	
180+38	40' Rt	2	23.3	1.75	3.56	13,830	1.00	5,750	
180+38	40' Rt	3	27.8	1.75	3.53	18670	1.00	7,762	
179+42	41' Rt	4	20.8	1.75	3.55	17,180	1.00	7,143	
179+42	41' Rt	5	31.6	1.75	3.64	19,220	1.00	7,991	
179+45	23' Rt	6	20.3	1.75	3.50	10,050	1.00	4,178	
179+45	23' Rt	7	28.5	1.75	3.53	20,640	1.00	8,581	
179+45	23' Rt	8	31.1	1.75	3.54	5,580	1.00	2,320	
179+49	5.5' Rt	9	18.7	1.75	3.59	5,120	1.00	2,129	
179+49	5.5' Rt	10	29.0	1.75	3.55	3,190	1.00	1,326	
179+52	12' Lt	11	16.9	1.75	3.53	3,480	1.00	1,447	
179+52	12' Lt	12	20.5	1.75	3.52	7,070	1.00	2,939	
179+52	12' Lt	13	28.1	1.75	3.60	13,930	1.00	5,791	
179+56	30' Lt	14	19.7	1.75	3.50	7,780	1.00	3,235	
179+56	30' Lt	15	29.4	1.75	3.57	12,620	1.00	5,247	
178+09	41' Rt	16	19.9	1.75	4.33	17,960	1.00	7,467	
178+09	41' Rt	17	27.4	1.76	4.27	17,540	1.00	7,210	
178+09	41' Rt	18	31.8	1.76	3.73	25,230	1.00	10,371	
178+14	23' Rt	19	18.4	1.76	4.18	13,030	1.00	5,356	
178+14	23' Rt	20	23.9	1.75	4.11	14,720	1.00	6,120	
178+14	23' Rt	21	29.5	1.76	3.88	23,610	1.00	9,705	
178+14	23' Rt	22	34.0	1.75	4.37	19,500	1.00	8,107	
178+16	5.5' Rt	23	16.8	1.75	4.10	23,870	1.00	9,924	
178+16	5.5' Rt	24	22.7	1.76	4.36	12,320	1.00	5,064	
178+16	5.5' Rt	25	29.8	1.75	4.42	19,810	1.00	8,236	
178+20	12' Lt	26	17.0	1.74	4.31	13,340	1.00	5,610	
178+20	12' Lt	27	23.5	1.76	4.28	12,230	1.00	5,027	
178+20	12' Lt	28	31.3	1.76	4.42	12,910	1.00	5,307	
178+25	30' Lt	29	17.3	1.76	4.07	11,940	1.00	4,908	
178+25	30' Lt	30	23.4	1.76	4.08	10,810	1.00	4,443	
178+25	30' Lt	31	27.7	1.76	4.18	12,620	1.00	5,187	

ROCK MASS RATING SUMMARY

JOB # 080457

SAMPLE #1

Station/Location	180+38 / 40' RT
Depth (ft)	20.3
	Relative Rating
Uniaxial Compressive Strength	1
RQD	17
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*65*
Class Number	II
Description	GOOD ROCK

SAMPLE #2

Station/Location	180+38 / 40' RT
Depth (ft)	23.3
	Relative Rating
Uniaxial Compressive Strength	4
RQD	17
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*78*
Class Number	II
Description	GOOD ROCK

SAMPLE #3

Station/Location	180+38 / 40' RT
Depth (ft)	27.8
	Relative Rating
Uniaxial Compressive Strength	7
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*84*
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #4

Station/Location	179+42 / 41' RT
Depth (ft)	20.8
	Relative Rating
Uniaxial Compressive Strength	4
RQD	13
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*64*
Class Number	II
Description	GOOD ROCK

SAMPLE #5

Station/Location	179+42 / 41' RT
Depth (ft)	31.6
	Relative Rating
Uniaxial Compressive Strength	7
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*84*
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #6

Station/Location	179+45 / 23' RT
Depth (ft)	20.3
	Relative Rating
Uniaxial Compressive Strength	4
RQD	13
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*64*
Class Number	II
Description	GOOD ROCK

SAMPLE #7

Station/Location	179+45 / 23' RT
Depth (ft)	28.5
	Relative Rating
Uniaxial Compressive Strength	7
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*84*
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #8

Station/Location	179+45 / 23' RT
Depth (ft)	31.1
	Relative Rating
Uniaxial Compressive Strength	2
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*79*
Class Number	II
Description	GOOD ROCK

SAMPLE #9

Station/Location	179+43 / 5.5' RT
Depth (ft)	18.7
	Relative Rating
Uniaxial Compressive Strength	2
RQD	8
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*57*
Class Number	III
Description	FAIR ROCK

SAMPLE #10

Station/Location	178+49 / 5.5' RT
Depth (ft)	29
	Relative Rating
Uniaxial Compressive Strength	1
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*78*
Class Number	II
Description	GOOD ROCK

SAMPLE #11

Station/Location	179+52 / 12' LT
Depth (ft)	16.9
	Relative Rating
Uniaxial Compressive Strength	1
RQD	13
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*61*
Class Number	II
Description	GOOD ROCK

SAMPLE #12

Station/Location	179+52 / 12' LT
Depth (ft)	20.5
	Relative Rating
Uniaxial Compressive Strength	2
RQD	17
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*66*
Class Number	II
Description	GOOD ROCK

SAMPLE #13

Station/Location	179+52 / 12' LT
Depth (ft)	28.1
	Relative Rating
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*81*
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #14

Station/Location	179+56 / 30' LT
Depth (ft)	19.7
	Relative Rating
Uniaxial Compressive Strength	2
RQD	13
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	*62*
Class Number	II
Description	GOOD ROCK

SAMPLE #15

Station/Location	179+56 / 30' LT
Depth (ft)	29.4
	Relative Rating
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*81*
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #16

Station/Location	178+09 / 41' RT
Depth (ft)	19.9
	Relative Rating
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	*81*
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #17

Station/Location	178+09 / 41' RT
Depth (ft)	27.4
	Relative Rating
Uniaxial Compressive Strength	4
RQD	17
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	68
Class Number	II
Description	GOOD ROCK

SAMPLE #18

Station/Location	178+09 / 41' RT
Depth (ft)	31.8
	Relative Rating
Uniaxial Compressive Strength	7
RQD	20
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	74
Class Number	II
Description	GOOD ROCK

SAMPLE #19

Station/Location	178+14 / 23' RT
Depth (ft)	18.4
	Relative Rating
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	81
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #20

Station/Location	178+14 / 23' RT
Depth (ft)	23.9
	Relative Rating
Uniaxial Compressive Strength	4
RQD	17
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	78
Class Number	II
Description	GOOD ROCK

SAMPLE #21

Station/Location	178+14 / 23' RT
Depth (ft)	29.5
	Relative Rating
Uniaxial Compressive Strength	7
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	84
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #22

Station/Location	178+14 / 23' RT
Depth (ft)	34
	Relative Rating
Uniaxial Compressive Strength	7
RQD	17
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	71
Class Number	II
Description	GOOD ROCK

SAMPLE #23

Station/Location	178+16 / 5.5' RT
Depth (ft)	16.8
	Relative Rating
Uniaxial Compressive Strength	7
RQD	17
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	71
Class Number	II
Description	GOOD ROCK

SAMPLE #24

Station/Location	178+16 / 5.5' RT
Depth (ft)	22.7
	Relative Rating
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	71
Class Number	II
Description	GOOD ROCK

SAMPLE #25

Station/Location	178+16 / 5.5' RT
Depth (ft)	29.8
	Relative Rating
Uniaxial Compressive Strength	7
RQD	17
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	71
Class Number	II
Description	GOOD ROCK

SAMPLE #26

Station/Location	178+20 / 12' LT
Depth (ft)	17
	Relative Rating
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	81
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #27

Station/Location	178+20 / 12' LT
Depth (ft)	23.5
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	71
Class Number	II
Description	GOOD ROCK

SAMPLE #28

Station/Location	178+20 / 12' LT
Depth (ft)	31.3
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	20
Condition of Joints	20
Groundwater Conditions	7
Sum	71
Class Number	II
Description	GOOD ROCK

SAMPLE #29

Station/Location	178+25 / 30' LT
Depth (ft)	17.3
Unlaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	81
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #30

Station/Location	178+25 / 30' LT
Depth (ft)	23.4
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	81
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #31

Station/Location	178+25 / 30' LT
Depth (ft)	27.7
Uniaxial Compressive Strength	4
RQD	20
Spacing of Joints	25
Condition of Joints	25
Groundwater Conditions	7
Sum	81
Class Number	I
Description	VERY GOOD ROCK

SAMPLE #32

Station/Location	
Depth (ft)	
Uniaxial Compressive Strength	
RQD	
Spacing of Joints	
Condition of Joints	
Groundwater Conditions	
Sum	
Class Number	
Description	

Rock Core Unit Weight Summary

Project Number: 080457
Project Name: UPRR Overpass & Realign. (Mayflower) (S)
Date Tested: 1/21/2020

Station	Location	Sample No.	Depth (ft.)	Diameter (in.)	Height (in.)	Weight (lbs.)	Unit Weight (pcf)	Remarks
186+21	20' Rt	1	31.2	1.75	3.94	0.926	169	I-40 Overpass
186+21	20' Rt	2	38.0	1.75	3.40	0.794	168	I-40 Overpass
184+21	20' Rt	3	23.5	1.75	5.30	1.235	167	I-40 Overpass
184+21	20' Rt	4	32.6	1.75	4.79	1.119	168	I-40 Overpass
184+21	20' Lt	5	22.8	1.75	4.26	0.996	168	I-40 Overpass
184+21	20' Lt	6	28.7	1.75	3.69	0.866	169	I-40 Overpass
180+38	40' Rt	7	24.4	1.75	5.03	1.166	167	UPRR Overpass
180+38	40' Rt	8	32.1	1.75	4.16	0.954	165	UPRR Overpass
179+49	5.5' Rt	9	21.3	1.74	6.63	1.516	166	UPRR Overpass
179+49	5.5' Rt	10	27.8	1.75	4.56	1.070	169	UPRR Overpass
178+16	5.5' Rt	11	19.5	1.75	5.65	1.317	167	UPRR Overpass
178+16	5.5' Rt	12	29.3	1.75	5.15	1.202	168	UPRR Overpass
177+37	C.L.	13	20.0	1.75	3.60	0.836	167	UPRR Overpass
177+37	C.L.	14	29.0	1.75	4.92	1.143	167	UPRR Overpass

* Please note any broken samples, fractures or other characteristics of sample in Remarks.

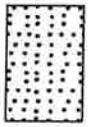
LEGEND

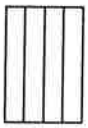
SOIL TYPES

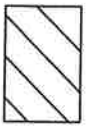
(SHOWN IN SYMBOL COLUMN)

(PREDOMINANT TYPE SHOWN HEAVY)


GRAVEL


SAND

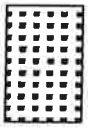

SILT

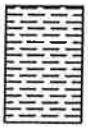

CLAY

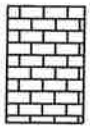

ORGANIC MATTER

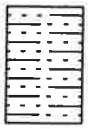
ROCK TYPES

(SHOWN IN SYMBOL COLUMN)


SANDSTONE


SHALE or SILTSTONE


LIMESTONE or DOLOMITE


ALTERNATING LAYERS of SHALE and SANDSTONE


OTHER

SAMPLER TYPES

(SHOWN IN SAMPLE COLUMN)

SHELBY TUBE


UNDISTURBED SAMPLE RECOVERY


DISTURBED SAMPLE RECOVERY


NO RECOVERY

SPLIT SPOON


SAMPLE RECOVERY


NO RECOVERY

ROCK CORING


% RECOVERY INDICATED ON LOGS

TERMS DESCRIBING CONSISTENCY OR CONDITION

GRANULAR SOIL		CLAY		CLAY-SHALE		SHALE	
"N" Value	Density	"N" Value	Consistency	"N" Value	Consistency	"N" Value	Consistency
0-4	Very Loose	0-1	Very Soft	0-1	Very Soft		
5-10	Loose	2-4	Soft	2-4	Soft	31-60	Soft
11-30	Medium Dense	5-8	Medium Stiff	5-8	Medium Stiff	Over 60	
31-50	Dense	9-15	Stiff	9-15	Stiff	More than 2'	
Over 50	Very Dense	16-30	Very Stiff	16-30	Very Stiff	Penetration	
		31-60	Hard	31-60	Hard	in 60 Blows:	Medium Hard
		Over 60	Very Hard	Over 60	Very Hard	Less than 2'	
						Penetration	
						in 60 Blows:	Hard

1. Ground water elevations indicated on boring logs represent ground water elevations at date or time shown on boring log. Absence of water surface implies that no ground water data is available but does not necessarily mean that ground water will not be encountered at locations or within the vertical reaches of these borings.
2. Borings represent subsurface conditions at their respective locations for their respective depths. Variations in conditions between or adjacent to boring locations may be encountered.
3. Terms used for describing soils according to their texture or grain size distribution are in accordance with the Unified Soil Classification System.

Standard Penetration Test – Driving a 2.0" O.D., 1-3/8" I.D. sampler a distance of 1.0 foot into undisturbed soil with a 140-pound hammer free falling a distance of 30 inches. It is customary to drive the spoon 6.0 inches to seat into undisturbed soil, and then perform the test. The number of hammer blows for seating the spoon and performing the test are recorded for each 6 inches of penetration on the drill log. The field "N" Value (N_f) can be obtained by adding the bottom two numbers for example: $\frac{6}{8-9} \Rightarrow 8+9=17 blows/ft$. The "N" Value corrected to 60% efficiency (N_{60}) can be obtained by multiplying N_f by the hammer correction factor published on the boring log.

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 1
PAGE 1 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+29
LOCATION: 39' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 9, 2019
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 289.0								
5			Dry, Medium Dense, Brown Sandy Silt						7 9-10		
10			Dy, Dense, Reddish Brown Silty Sand						10 19-19		
15			SHALE - Weathered, Medium Hard, Brown and Gray						22 60 (4")		
20			SHALE - Unweathered, Medium Hard, Dark Gray							96	77
25										98	98
30										99	99
35										100	100

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 1
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+29
LOCATION: 39' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 9, 2019
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 289.0								
			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							100	80
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 2
PAGE 1 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+37
LOCATION: Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 9 and 10, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 286.7								
5			Dry, Medium Dense, Brown Sandy Silt						7 8-10		
10			SHALE - Highly Weathered, Medium Hard, Reddish Brown						15 50-57		
15			SHALE - Weathered, Medium Hard, Brown and Gray						60 (4")		
			SHALE - Unweathered, Medium Hard, Dark Gray							100	96
20			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							99	87
25										100	97
30			SHALE - Unweathered, Medium Hard, Dark Gray							100	100
35											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 2
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+37
LOCATION: Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 9 and 10, 2019
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.9

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 286.7								
										100	100
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 3
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+45
LOCATION: 39' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December10, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 287.3								
5			Moist, Medium Dense, Brown Sandy Silt						3 4-7		
10			Dry, Hard, Reddish Brown Clay						4 15-18		
15			SHALE - Weathered, Medium Hard, Brown and Gray						50 42 (1")		
										98	79
20										100	96
25			SHALE - Unweathered, Medium Hard, Dark Gray							97	90
30										100	93
35											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 3
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+45
LOCATION: 39' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December10, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 287.3								
			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							98	82
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 4
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 177+53
LOCATION: 78' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 11, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 25.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 286.9	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			Moist, Very Loose, Brown Sandy Silt						1 1-1		
5			Moist, Medium Dense, Brown Sandy Silt						3 7-6		
10			Dry, Medium Dense, Brown Sandy Silt						7 6-6 6 9-12		
15			SHALE - Highly Weathered, Soft, Reddish Brown						14 16-30 20 60 (4")		
20			SHALE - Weathered, Medium Hard, Brown and Gray						33 60 (4")		
25			SHALE - Unweathered, Hard, Dark Gray						60 (1")		
30			Boring Terminated						20 (1")		
35											

REMARKS: UPRR & Hwy 365 overpass
MSE Boring

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 5
PAGE 1 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+09
LOCATION: 41' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 2, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.8								
5			Moist, Very Stiff, Brown Clay						6 9-11		
10			SHALE - Highly Weathered, Medium Hard, Light Brown						14 20-50		
15			SHALE - Weathered, Medium Hard, Brown and Gray						10 34-60 (7")		
			SHALE - Slightly Weathered, Medium Hard, Dark Gray							91	0
20			SHALE - Unweathered, Medium Hard, Dark Gray							96	92
25										100	89
30			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							100	82
35											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 5
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+09
LOCATION: 41' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 2, 2019
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.8								
			SHALE - Unweathered, Medium Hard, Dark Gray							100	98
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 6
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+14
LOCATION: 23' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 3, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 285.8	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5			Moist, Very Stiff, Brown Clay						7 10-10		
10			SHALE - Highly Weathered, Medium Hard, Light Brown						20 45-60 (10")		
15			SHALE - Weathered, Medium Hard, Brown and Gray						35 60 (5")		
			SHALE - Slightly Weathered, Medium Hard, Dark Gray							96	58
20										98	98
25			SHALE - Unweathered, Medium Hard, Dark Gray							98	82
30										95	95
35											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 6
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+14
LOCATION: 23' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 3, 2019
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.8								
										98	86
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 7
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+16
LOCATION: 5.5' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 3, 2019
TYPE OF DRILLING: Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 285.5	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5			Moist, Very Stiff, Brown Clay						8 12-16		
10			SHALE - Highly Weathered, Medium Hard, Light Brown						13 33-59		
15			SHALE - Weathered, Medium Hard, Brown and Gray						39 35 (1")		
										92	75
20										99	85
25										99	96
30			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							99	86
35											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 7
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+16
LOCATION: 5.5' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: December 3, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.5								
										99	95
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 8
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+20
LOCATION: 12' Left of Construction Centerline
LOGGED BY: Troy Frazier

DATE: December 4, 2019
TYPE OF DRILLING:
Hollow Stem - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.6								
5			Dry, Very Stiff, Brown Clay with Sand						7 12-16		
10			SHALE - Highly Weathered, Soft, Light Brown						15 25-35		
15			SHALE - Weathered, Medium Hard, Brown and Gray						36 36 (2")		
20			SHALE - Unweathered, Medium Hard, Dark Gray							94	94
25										100	99
30			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							97	91
35										100	98

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+20
LOCATION: 12' Left of Construction Centerline
LOGGED BY: Troy Frazier

DATE: December 4, 2019
TYPE OF DRILLING: Hollow Stem - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.6								
										99	92
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+25
LOCATION: 30' Left of Construction Centerline
LOGGED BY: Troy Frazier

DATE: December 4, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.5								
5			Dry, Very Stiff, Brown and Gray Clay with Sand						9 13-17		
10			SHALE - Highly Weathered, Medium Hard, Light Brown						17 27-37		
15			SHALE						30 (1")		
20			SHALE - Unweathered, Medium Hard, Dark Gray							92 98	92 94
25			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							99	98
30			SHALE - Unweathered, Medium Hard, Dark Gray							98	94
35											

REMARKS: UPRR & Hwy 365 overpass

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 178+25
LOCATION: 30' Left of Construction Centerline
LOGGED BY: Troy Frazier

DATE: December 4, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 285.5								
			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray								
40			Boring Terminated							99	82
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 180+34.5
LOCATION: 80' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 25, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 25.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 289.6								
			Asphalt								
			Dry, Hard, Reddish Brown Sandy Clay with Some Gravel						10 24-35		
5			Dry, Very Hard, Reddish Brown and Light Gray Clay with Some Gravel						15 27-51		
			Dry, Very Hard, Reddish Brown Sandy Clay with Gravel						27 43-57 (11")		
10			Dry, Very Hard, Reddish Brown Clay with Some Gravel						14 28-40		
									20 41-56		
15									39 60 (4")		
20			SHALE - Highly Weathered, Medium Hard, Brown and Gray						60 (4")		
25			SHALE (No sample recovered) Boring Terminated						25 (1")		
30											
35											

REMARKS: UPRR & Hwy 365 overpass
MSE Boring

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 180+38
LOCATION: 40' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 25, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.4

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 289.8								
			Asphalt								
5			Moist, Very Hard, Reddish Brown Clay with Some Gravel						25 40-56		
10			Dry, Very Hard, Brown and Light Gray Clay						18 60 (5")		
15			SHALE - Highly Weathered, Medium Hard, Brown and Gray						60 (5")		
			SHALE - Weathered with Highly Weathered Layers, Medium Hard, Brown and Gray							100	12
20			SHALE - Slightly Weathered, Medium Hard, Dark Gray							96	80
25										96	90
30			SHALE - Unweathered, Medium Hard, Dark Gray							100	92
35											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 180+38
LOCATION: 40' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 25, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.4

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 289.8								
										96	96
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 180+49
LOCATION: 77' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 25, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 22.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 289.6								
			Asphalt								
5			Moist, Hard, Brown and Light Gray Clay						58 33-23		
10			Dry, Very Hard, Brown and Light Gray Clay						10 33-60 (10")		
			Dry, Hard, Brown and Light Gray Clay						6 15-30		
15			SHALE - Highly Weathered, Brown								
			SHALE - Highly Weathered, Medium Hard, Brown and Gray						33 60 (4")		
20			SHALE - Weathered, Medium Hard, Brown and Gray								
			SHALE - Slightly Weathered, Medium Hard, Dark Gray								
25			Boring Terminated								
30											
35											

REMARKS: UPRR & Hwy 365 overpass
MSE Boring

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MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+42
LOCATION: 41' Right of ConstructionCenterline
LOGGED BY: Stanley Bates

DATE: November 13, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.6

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 288.7								
5			Moist, Dense, Reddish Brown Sand with Silt and Gravel						10 21-23		
10			SHALE - Highly Weathered, Medium Hard, Brown						23 51-49 (10")		
15			SHALE - Highly Weathered, Medium Hard, Brown and Dark Gray						60 (5")		
			SHALE - Highly Weathered, Medium Hard with Soft Layers, Brown and Dark Gray							94	0
20			SHALE - Weathered, Medium Hard, Dark Gray								
			SHALE - Unweathered, Medium Hard, Dark Gray							99	66
25			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							99	85
30			SHALE - Unweathered, Medium Hard, Dark Gray							99	99
35											

REMARKS: UPRR & Hwy 365 overpass

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MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+42
LOCATION: 41' Right of ConstructionCenterline
LOGGED BY: Stanley Bates

DATE: November 13, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.6

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 288.7							98	98
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+45
LOCATION: 23' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 13 and 14, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 288.0								
5			Dry, Very Dense, Reddish Brown Sand with Silt and Some Gravel						54 / 46 (4")		
10			SHALE - Highly Weathered, Medium Hard, Brown						60 (5")		
15			SHALE - Highly Weathered, Medium Hard with Soft Layers, Brown and Gray						51 / 49 (2")	100	0
20			SHALE - Weathered, Medium Hard, Brown and Gray							100	56
			SHALE - Unweathered, Medium Hard, Dark Gray								
25			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							96	80
30			SHALE - Unweathered, Medium Hard, Dark Gray							100	100
35											

REMARKS: UPRR & Hwy 365 overpass

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MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+45
LOCATION: 23' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 13 and 14, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 288.0								
										100	100
			Boring Terminated								
40											
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+49
LOCATION: 5.5' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 18, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 287.8	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5			Dry, Hard, Reddish Brown and Light Gray Clay						11 25-26		
10			SHALE - Highly Weathered, Medium Hard, Brown						35 60 (5")		
15			SHALE - Highly Weathered, Medium Hard, Brown and Gray						53 47 (1")		
			SHALE - Weathered with Highly Weathered Layers, Medium Hard with Soft Layers, Brown and Gray							97	13
20			SHALE - Slightly Weathered, Medium Hard, Dark Gray							94	36
25										100	80
30			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							100	96
35											

REMARKS: UPRR & Hwy 365 overpass

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MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+49
LOCATION: 5.5' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 18, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 287.8							100	87
			Boring Terminated								
40											
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+52
LOCATION: 12' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 19, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 37.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 286.4	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5		X	Moist, Very Hard, Reddish Brown Clay						8 10-52		
10		X	SHALE - Highly Weathered, Medium Hard, Brown						35 60 (5")		
15			SHALE - Highly Weathered, Medium Hard, Brown and Gray SHALE - Weathered with Highly Weathered Layers, Medium Hard with Soft Layers, Occasional Fractures, Brown and Gray						60 (5")	100	24
20			SHALE - Slightly Weathered, Medium Hard, Occasional Fractures, Dark Gray							100	70
25			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							94	90
30			SHALE - Unweathered, Medium Hard, Dark Gray							100	98
35			SHALE - Unweathered, Medium Hard,								

REMARKS: UPRR & Hwy 365 overpass

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MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+52
LOCATION: 12' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 19, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 37.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 286.4								
			Occasional Fractures, Dark Gray							100	94
			Boring Terminated								
40											
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+56
LOCATION: 30' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 20, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 287.4								
5			Dry, Very Hard, Reddish Brown Clay						18 34-35		
10			Dry, Very Hard, Brown and Light Gray Clay						16 35-60 (11")		
15			SHALE - Highly Weathered, Medium Hard, Brown and Gray						59 41 (1")		
			SHALE - Highly Weathered, Soft, Brown and Gray							100	7
			SHALE - Weathered, Medium Hard, Brown and Gray								
20			SHALE - Slightly Weathered, Medium Hard, Dark Gray							100	66
25										90	90
30			SHALE - Unweathered, Medium Hard, Dark Gray							93	93
35											

REMARKS: UPRR & Hwy 365 overpass

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 179+56
LOCATION: 30' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 20, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 38.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 287.4							99	99
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS: UPRR & Hwy 365 overpass

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+18
LOCATION: 60' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 6, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 25.4

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 280.5	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			Moist, Medium Dense, Brown Sand with Silt and Some Gravel						4 8-8		
5			Moist, Dense, Reddish Brown Sand with Silt and Gravel and Cobbles						17 18-24 12 16-28		
10			Moist, Very Dense, Reddish Brown Sand with Silt and Gravel						18 30-26 31 60 (2")		
15			Moist, Dense, Reddish Brown Sand with Clay and Some Gravel						22 24-16		
20			Moist, Very Dense, Reddish Brown Sand with Silt and Some Gravel						7 20-38		
25			SHALE - Highly Weathered, Medium Hard, Brown and Dark Gray						53 47 (2")		
30			SHALE (No sample was recovered) Boring Terminated						60 (1")		
35											

REMARKS: MSE Boring

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+21
LOCATION: 20' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 5, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 44.6

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 280.0	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			Moist, Very Stiff, Reddish Brown Clay						3 7-14		
5			Dry, Very Dense, Reddish Brown Sand with Clay and Gravel						31 39-29 33 28-26 29 31-30		
10									39 60 (5")		
15			SHALE - Highly Weathered, Medium Hard, Brown and Gray						35 39-60 (11")		
20			SHALE WITH OCCASIONAL CLAY LAYERS - Highly Weathered, Medium Hard with Occasional Soft Layers, Brown and Gray						60 (5")	100	0
			SHALE - Slightly Weathered, Medium Hard, Dark Gray								
25			SHALE - Unweathered, Medium Hard, Dark Gray							95	92
30			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							96	76
35										100	73

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

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JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+21
LOCATION: 20' Right of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 5, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 44.6

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 280.0								
40			SHALE - Unweathered, Medium Hard, Dark Gray							99	86
										100	100
45			Boring Terminated								
50											
55											
60											
65											
70											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 20
PAGE 1 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+21
LOCATION: 20' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 4 and 5, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 279.9								
			Moist, Medium Dense, Reddish Brown Sand with Silt with Some Gravel						4 10-14		
			Dry, Very Dense, Reddish Brown Sand with Silt with Some Gravel						29 50-50		
5			Dry, Very Dense, Reddish Brown Sand with Silt						20 24-35		
			Dry, Very Dense, Reddish Brown Sand with Silt with Some Gravel						44 58-60		
10			Dry, Very Hard, Reddish Brown and Gray Clay with Gravel						59 56-60 (10")		
			Dry, Very Hard, Brown Clay						70 (5")		
			SHALE - Highly Weathered, Medium Hard, Brown and Gray								
15			SHALE WITH FREQUENT CLAY LAYERS - Highly Weathered, Soft, Brown and Dark Gray						60 (2")	95	0
20			SHALE - Weathered, Medium Hard, Dark Gray								
			SHALE - Slightly Weathered, Medium Hard, Dark Gray							99	62
25										100	100
30			SHALE - Unweathered, Medium Hard, Dark Gray							100	100
35											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 20
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+21
LOCATION: 20' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 4 and 5, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 39.7

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 279.9								
										100	100
40			Boring Terminated								
45											
50											
55											
60											
65											
70											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 21
PAGE 1 OF 1

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+28
LOCATION: 60' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: November 4, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 24.3

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 279.7								
			Moist, Medium Dense, Reddish Brown Sand with Silt and Some Gravel						3 12-18		
			Moist, Very Dense, Reddish Brown Sand with Silt and Some Gravel						25 29-28		
5			Dry, Very Dense, Reddish Brown Sand with Silt and Some Gravel						20 34-47 31 60 (5")		
10			Dry, Very Hard, Reddish Brown Clay with Shale Fragments						30 60 (4")		
15			SHALE - Highly Weathered, Medium Hard, Brown						65 60 (5") 19 60 (4")		
20			SHALE - Weathered, Medium Hard, Dark Gray						60 (5")		
25			Boring Terminated						36 (1")		
30											
35											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 22
PAGE 1 OF 1

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 184+37
LOCATION: 100' Left of Construction Centerline
LOGGED BY: Don McCollum / Daniel Dickerson

DATE: October 29, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 24.1

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 279.5	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			Dry, Very Hard, Reddish Brown Sandy Clay with Some Organic Matter						13 50-50 (10")		
5			Dry, Very Hard, Reddish Brown Sandy Clay						29 39-59		
			Moist, Very Hard, Reddish Brown and Gray Sandy Clay						35 43-73 (11")		
10			Moist, Very Hard, Light Gray Clay						27 53-47 (10")		
			SHALE - Highly Weathered, Medium Hard, Brown						60 60 (5")		
15									35 60 (5")		
20			SHALE (no sample recovered)						60 (1")		
25			SHALE Boring Terminated						60 (1")		
30											
35											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 23
PAGE 1 OF 1

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 186+18
LOCATION: 40' Right of Construction Centerline
LOGGED BY: Don McCollum and Troy Frazier

DATE: October 22, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 26.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL SURFACE ELEVATION: 283.5	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
5			Moist, Very Soft, Brown Clay with Sand						0 0-0		
10			Moist, Stiff, Brown Clay with Sand						0 8-3 2 5-4		
			Moist, Medium Dense, Brown Sandy Silt						9 13-17		
15			Moist, Stiff, Reddish Brown and Gray Sandy Clay						4 5-9		
20			Moist, Hard, Reddish Brown Clay with Trace Gravel						4 13-22		
25			Moist, Very Stiff, Reddish Brown Clay with Some Shale Fragments						5 9-13		
			Moist, Very Stiff, Reddish Brown Clay with Sand and Some Shale Fragments						3 6-11		
30			Boring Terminated								
35											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 24
PAGE 1 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 186+21
LOCATION: 20' Right of Construction Centerline
LOGGED BY: Don McCollum and Troy Frazier

DATE: October 22 and 23, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 44.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 280.6								
			Moist, Soft, Brown Clay with Some Organic Matter						0 1-3		
5			Dry, Medium Dense, Reddish Brown Sandy Silt						6 9-10		
			Dry, Very Stiff, Reddish Brown Clay						5 10-14		
			Dry, Medium Dense, Reddish Brown Sand								
10			Dry, Medium Dense, Reddish Brown Clayey Sand						14 15-9		
			Dry, Very Stiff, Reddish Brown Clay with Shale Fragments						8 14-14		
			SANDSTONE - Highly Weathered, Poorly Cemented, Reddish Brown								
15			Dry, Hard, Reddish Brown Clay with Shale Fragments						5 13-29		
			SHALE - Highly Weathered, Medium Hard, Brown						19 79-21 (7")		
20									60 (5")		
			SHALE - Weathered with Frequent Highly Weathered Layers, Medium Hard with Occasional Soft Layers, Brown and Dark Gray							94	0
25										98	32
30			SHALE - Slightly Weathered, Medium Hard, Occasional Fractures, Dark Gray							100	76
35											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 24
PAGE 2 OF 2

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 186+21
LOCATION: 20' Right of Construction Centerline
LOGGED BY: Don McCollum and Troy Frazier

DATE: October 22 and 23, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Diamond Core
EQUIPMENT: Acker 2094

HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 44.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 280.6								
			SHALE - Unweathered, Medium Hard, Occasional Fractures, Dark Gray							98	78
40										82	44
45			Boring Terminated								
50											
55											
60											
65											
70											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 25
PAGE 1 OF 1

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 186+25
LOCATION: 40' Left of Construction Centerline
LOGGED BY: Stanley Bates

DATE: October 23 and 24, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 25.5

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 280.6								
			Moist, Very Stiff, Brown Clay with Sand and Some Organic Matter						7 7-10		
			Dry, Hard, Reddish Brown Clay with Sand						17 24-25		
5			Dry, Very Dense, Reddish Brown Sandy Silt						18 46-50		
			Dry, Very Hard, Reddish Brown Sandy Clay with Gravel						18 37-75		
10			Dry, Very Hard, Reddish Brown Clay with Shale Fragments						32 56-44 (10")		
			SHALE - Highly Weathered, Medium Hard, Brown						40 100 (5")		
15									21 64-36 (8")		
20			SHALE - Highly Weathered, Medium Hard, Brown and Gray						23 88-22 (7")		
25			SHALE - Weathered, Medium Hard, Dark Gray						59		
			Boring Terminated						60 (2")		
30											
35											

REMARKS:

ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.

BORING NO. 26
PAGE 1 OF 1

JOB NO. 080457 Faulkner County
JOB NAME: UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Sections 4 & 5
STATION: 186+29
LOCATION: 80' Left of Construction Centerline
LOGGED BY: Troy Frazier

DATE: October 28, 2019
TYPE OF DRILLING: Hollow Stem Auger
EQUIPMENT: Acker 2094
HAMMER CORRECTION FACTOR: N/A

COMPLETION DEPTH: 25.2

DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% TCR	% RQD
			SURFACE ELEVATION: 279.7								
			Moist, Very Stiff, Reddish Brown Clay with Some Organic Matter						4 6-19		
5			Dry, Very Dense, Reddish Brown Sand						25 40-32 42 60 (2")		
10			Dry, Very Hard, Sandy Clay with Gravel						30 60 (5")		
			SHALE - Highly Weathered, Medium Hard, Reddish Brown						21 60 (4")		
15			SHALE - Highly Weathered, Medium Hard, Brown						60 (5")		
20									50 60 (1")		
25									60 (5")		
			Boring Terminated						60 (2")		
30											
35											

REMARKS: I-40 Overpass
MSE Boring

ARKANSAS DEPARTMENT OF TRANSPORTATION
ARDOT.gov | IDriveArkansas.com | Scott E. Bennett, P.E., Director
MATERIALS DIVISION
11301 West Baseline Road | P.O. Box 2261 | Little Rock, AR 72203-2261 | Phone: 501.569.2185 | Fax: 501.569.2368

August 13, 2018

TO: Mr. Trinity Smith, Engineer of Roadway Design

SUBJECT: Job No. 080457
UPRR Overpass & Realign. (Mayflower) (S)
Route 89 Section 4
Faulkner County

Transmitted herewith is the requested Soil Survey, strength data and Resilient Modulus test results for the above referenced job. The project consists of realigning the Highway 89 overpass and building a new bridge over the Union Pacific Railroad. Samples were taken in the existing travel lanes, ditch line and along the new location.

Based on laboratory results of samples obtained, the subgrade soils consist of low plasticity clayey sand. The subgrade soils are expected to provide a stable working platform with conventional processing if the weather is favorable during construction.

Based on currently available cross sections there are three embankments with a maximum height of 30 feet. The embankments will be constructed in areas that are currently wooded and it is expected that soil remediation will be required at these locations. Embankment recommendations will be provided in the subsurface investigation report.

Ramp 2

The proposed 3:1 cut slopes are acceptable as shown on the cross sections.

Exit Ramp

The maximum embankment height is approximately 10 feet. All soft unstable organic material should be undercut prior to embankment construction, anticipated to be no more than 2 feet. The embankment may be constructed using locally available unspecified material utilizing a 3:1 slope configuration.

The proposed 3:1 cut slopes are acceptable as shown in the currently available cross sections.

Highway 365

The construction grade line closely matches that of the existing roadway. Prior to embankment construction in the ditch line all soft unstable organic material should be undercut, anticipated to be no more than two feet. The embankments may be constructed with locally available unspecified material utilizing the 3:1 slope configuration shown in the currently available cross sections.

Listed below is the additional information requested for use in developing the plans:

1. The Qualified Products List (QPL) indicates that Aggregate Base Course (Class CL-7) is available from commercial producers located near Maumelle.

2. Asphalt Concrete Hot Mix

Type	Asphalt Cement %	Mineral Aggregate %
Surface Course	5.5	94.5
Binder Course	4.4	95.6
Base Course	4.0	96.0

Michael C. Benson
Materials Engineer

MCB:pt:bjj
Attachment
cc: State Constr. Eng. – Master File Copy
District 8 Engineer
System Information and Research Div.
G. C. File

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION
MICHAEL BENSON, MATERIALS ENGINEER
*** SOIL SURVEY STRENGTH TEST REPORT ***

DATE - 08/03/2018
JOB NUMBER - 080457

SEQUENCE NO. - 1
MATERIAL CODE - SSRV
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 23
DISTRICT NO. - 08

JOB NAME - UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)

STATION LIMITS	R-VALUE AT 240 psi
BEGIN JOB - END JOB	9
RESILIENT MODULUS STA. 7790+00	6308

REMARKS -
-

AASHTO TESTS : T190

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS DIVISION

AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS
RECOMPACTED SAMPLES

Job No.	080457	**Material Code**	SSRVPS
Date Sampled:	7/3/18	**Station No.:**	7790+00
Date Tested:	July 31, 2018	**Location:**	CL
Name of Project:	UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)		
County:	**Code:** 23 **Name:** FAULKNER		
Sampled By:	DICKERSON/FRAZIER	**Depth:**	0-5
Lab No.:	20181585	**AASHTO Class:**	A-6 (5)
Sample ID:	RV361	**Material Type (1 or 2):**	2
LATITUDE:		**LONGITUDE:**	

1. Testing Information:

Preconditioning - Permanent Strain > 5% (Y=Yes or N= No)	N
Testing - Permanent Strain > 5% (Y=Yes or N=No)	N
Number of Load Sequences Completed (0-15)	15

2. Specimen Information:

Specimen Diameter (in):	
Top	3.94
Middle	3.95
Bottom	3.95
Average	3.95
Membrane Thickness (in):	0.01
Height of Specimen, Cap and Base (in):	8.02
Height of Cap and Base (in):	0.00
Initial Length, Lo (in):	8.02
Initial Area, Ao (sq. in):	12.16
Initial Volume, AoLo (cu. in):	97.52

3. Soil Specimen Weight:

Weight of Wet Soil Used (g):	3337.40

4. Soil Properties:

Optimum Moisture Content (%):	14.0
Maximum Dry Density (pcf):	116.5
95% of MDD (pcf):	110.7
In-Situ Moisture Content (%):	N/A

5. Specimen Properties:

Wet Weight (g):	3337.40
Compaction Moisture content (%):	14.2
Compaction Wet Density (pcf):	130.40
Compaction Dry Density (pcf):	114.19
Moisture Content After Mr Test (%):	14.1

6. Quick Shear Test (Y=Yes, N=No, N/A=Not Applicable): #VALUE!

7. Resilient Modulus, Mr: 9850(Sc)^-0.29710(S3)^0.29939

8. Comments _____

9. Tested By: GW **Date:** July 31, 2018

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS DIVISION

AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS
RECOMPACTED SAMPLES

Job No.	080457	**Material Code**	SSRVPS
Date Sampled:	7/3/18	**Station No.:**	7790+00
Date Tested:	July 31, 2018	**Location:**	CL
Name of Project:	UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)		
County:	**Code:** 23 **Name:** FAULKNER		
Sampled By:	DICKERSON/FRAZIER	**Depth:**	0-5
Lab No.:	20181585	**AASHTO Class:**	A-6 (5)
Sample ID:	RV361	**Material Type (1 or 2):**	2
LATITUDE:		**LONGITUDE:**	

PARAMETER	*Chamber Confining Pressure*	*Nominal Maximum Axial Stress*	*Actual Applied Max. Axial Load*	*Actual Applied Cyclic Load*	*Actual Applied Contact Load*	*Actual Applied Max. Axial Stress*	*Actual Applied Cyclic Stress*	*Actual Applied Contact Stress*	*Average Recov Def. LVDT 1 and 2*	*Resilient Strain*	*Resilient Modulus*
DESIGNATION	S_3	S_{cyclic}	P_{max}	P_{cyclic}	$P_{contact}$	S_{max}	S_{cyclic}	$S_{contact}$	H_{avg}	ε_r	M_r
UNIT	psi	psi	lbs	lbs	lbs	psi	psi	psi	in	in/in	psi
Sequence 1	6.0	2.0	25.2	22.4	2.8	2.1	1.8	0.2	0.00108	0.00014	13,665
Sequence 2	6.0	4.0	47.4	44.6	2.8	3.9	3.7	0.2	0.00234	0.00029	12,539
Sequence 3	6.0	6.0	69.9	66.2	3.6	5.7	5.4	0.3	0.00395	0.00049	11,057
Sequence 4	6.0	8.0	92.5	86.4	6.1	7.6	7.1	0.5	0.00614	0.00077	9,284
Sequence 5	6.0	10.0	114.6	106.1	8.5	9.4	8.7	0.7	0.00853	0.00106	8,203
Sequence 6	4.0	2.0	25.2	22.3	2.8	2.1	1.8	0.2	0.00127	0.00016	11,632
Sequence 7	4.0	4.0	47.0	44.1	2.8	3.9	3.6	0.2	0.00280	0.00035	10,400
Sequence 8	4.0	6.0	68.1	65.3	2.8	5.6	5.4	0.2	0.00463	0.00058	9,304
Sequence 9	4.0	8.0	90.8	85.6	5.2	7.5	7.0	0.4	0.00687	0.00086	8,224
Sequence 10	4.0	10.0	112.6	105.0	7.6	9.3	8.6	0.6	0.00934	0.00116	7,419
Sequence 11	2.0	2.0	25.0	22.2	2.8	2.1	1.8	0.2	0.00149	0.00019	9,810
Sequence 12	2.0	4.0	46.5	43.6	2.8	3.8	3.6	0.2	0.00334	0.00042	8,624
Sequence 13	2.0	6.0	67.0	64.2	2.8	5.5	5.3	0.2	0.00553	0.00069	7,663
Sequence 14	2.0	8.0	88.0	83.7	4.3	7.2	6.9	0.4	0.00800	0.00100	6,904
Sequence 15	2.0	10.0	109.6	102.8	6.7	9.0	8.5	0.6	0.01075	0.00134	6,308

TESTED BY GW DATE July 31, 2018

REVIEWED BY _____ DATE _____

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT

MATERIALS DIVISION

AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS

RECOMPACTED / THINWALL TUBE SAMPLES

Job No.	080457	**Material Code**	SSRVPS
Date Sampled:	7/3/18	**Station No.:**	7790+00
Date Tested:	July 31, 2018	**Location:**	CL
Name of Project:	UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)		
County:	**Code:** 23 **Name:** FAULKNER		
Sampled By:	DICKERSON/FRAZIER	**Depth:**	0-5
Lab No.:	20181585	**AASHTO Class:**	A-6 (5)
Sample ID:	RV361	**Material Type (1 or 2):**	2
LATITUDE:		**LONGITUDE:**	

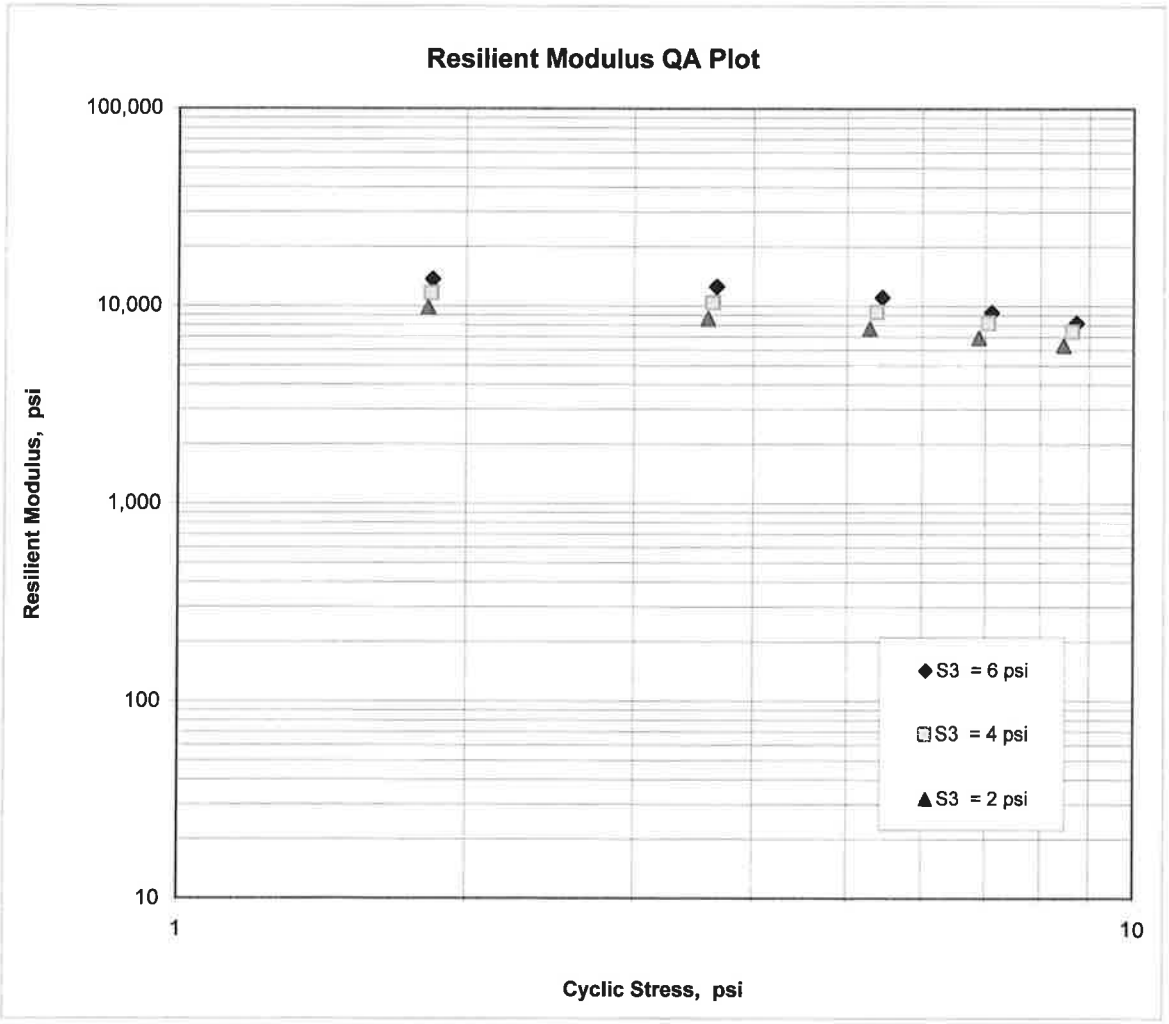
$$M_R = K1\ (S_C)^{K2}\ (S_3)^{K5}$$

K1 = 9,850

K2 = -0.29710

K5 = 0.29939

R^2 = 0.95



JOB: 080457

JOB NAME: UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)

COUNTY NO. 23 **DATE TESTED** 8/3/2018

Arkansas State Highway Transporation Department

Materials Division

Michael Benson, Materials Engineer

STA.#	LOC.	DEPTH	COLOR	#4	#10	#40	#80	#200	L.L.	P.I.	SOIL CLASS	LAB #:	%MOISTURE
				SIEVE				SIZE					
7790+0	CL CON	0-5	RD/BR	89	85	79	70	56	28	15	A-6(5)	RV361	
0100+0	06 RT	0-5	BROWN	100				91	28	12	A-6(9)	S351	21.9
0100+0	24 RT	0-5	BROWN	98	96	91	84	78	21	08	A-4(3)	S352	21.2
0124+0	06 LT	0-5	RD/BR	100	98	97	88	78	37	23	A-6(16)	S353	24
0124+0	24 LT	0-5	BROWN	99	94	88	81	72	26	11	A-6(5)	S354	15.3
0138+0	05 RT	0-5	BROWN	100	99	98	92	86	27	12	A-6(8)	S355	21.8
0138+0	15 RT	0-5	BROWN	96	94	91	87	82	30	13	A-6(9)	S356	21.9
0194+5	06 LT	0-5	RD/BR	100	99	97	93	89	38	25	A-6(21)	S357	25.9
0304+0	CL CON	0-5	BROWN		100			91	44	31	A-7-6(28)	S358	27.5
7789+0	CL CON	0-5	RD/BR	99	97	94	86	80	35	17	A-6(12)	S359	14.4
7790+0	CL CON	0-5	RD/BR	97	93	88	70	47	ND	NP	A-4(0)	S360	20.8

comments: W=MULTIPLE LAYERS, X=STRIPPED

Tuesday, August 07, 2018

JOB: 080457

JOB NAME: UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)

COUNTY NO. 23

Arkansas State Highway Transporation Department

Materials Division

Michael Benson, Materials Engineer

DATE TESTED
8/3/2018

PAVEMENT SOUNDINGS

STA.#	LOC.					
0100+00	06 RT	ACHMSC	ACHMBC	PCCP	AGG.BASE CRS CL-7	
		5.5W	**2.0**	**6.5**	**3.0**	
0100+00	24 RT	ACHMSC	ACHMBC	PCCP	AGG.BASE CRS CL-7	
		---	---	---	---	
0124+00	06 LT	ACHMSC	ACHMBC	PCCP	AGG.BASE CRS CL-7	
		5.5W	**3.5X**	**7.5**	---	
0124+00	24 LT	ACHMSC	AGG.BASE CRS CL-7			
		---	---			
0138+00	05 RT	ACHMSC	AGG.BASE CRS CL-7			
		2.75W	**7.0**			
0138+00	15 RT	ACHMSC	AGG.BASE CRS CL-7			
		---	---			
0194+57	06 LT	ACHMSC	CHIP SEAL	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		2.0	**0.25**	**5.0WX**	**2.0**	**10.0**
0304+00	CL CON	ACHMSC	CHIP SEAL	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		---	---	---	---	---
7789+00	CL CON	ACHMSC	CHIP SEAL	ACHMSC	ACHMBC	AGG.BASE CRS CL-7
		---	---	---	---	---

comments: W=MULTIPLE LAYERS, X=STRIPPED

Tuesday, August 07, 2018

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION
MICHAEL BENSON, MATERIALS ENGINEER
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE - 08/03/18
JOB NUMBER - 080457
FEDERAL AID NO.- TO BE ASSIGNED
PURPOSE - SOIL SURVEY SAMPLE
SPEC. REMARKS - NO SPECIFICATION CHECK
SUPPLIER NAME - STATE
NAME OF PROJECT - UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)
PROJECT ENGINEER - NOT APPLICABLE
PIT/QUARRY - ARKANSAS
LOCATION - FAULKNER, COUNTY
SAMPLED BY - BUIE/FRAZIER
SAMPLE FROM - TEST HOLE
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

SEQUENCE NO. - 1
MATERIAL CODE - SSRVPS
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 23
DISTRICT NO. - 08

DATE SAMPLED - 07/03/18
DATE RECEIVED - 07/24/18
DATE TESTED - 08/03/18

LAB NUMBER	20181575	20181576	20181577
SAMPLE ID	S351	S352	S353
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	0100+00	0100+00	0124+00
LOCATION	06 RT	24 RT	06 LT
DEPTH IN FEET	0-5	0-5	0-5
MAT'L COLOR	BROWN	BROWN	RD/BR
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 58 6.80	34 58 6.80	34 58 29.50
LONGITUDE DEG-MIN-SEC	92 25 17.40	92 25 17.20	92 25 10.30
% PASSING 2 IN.			
1 1/2 IN.			
3/4 IN.			
3/8 IN.		100	
NO. 4	100	98	100
NO. 10		96	98
NO. 40		91	97
NO. 80		84	88
NO. 200	91	78	78
LIQUID LIMIT	28	21	37
PLASTICITY INDEX	12	08	23
AASHTO SOIL	A-6(9)	A-4(3)	A-6(16)
UNIFIED SOIL			
% MOISTURE CONTENT	21.9	21.2	24.0
ACHMSC (IN)	5.5W	---	5.5W
ACHMBC (IN)	2.0	---	3.5X
PCCP (IN)	6.5	---	7.5
AGG.BASE CRS CL-7 (IN)	3.0	---	---

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

AASHTO TESTS : T24 T88 T89 T90 T265

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION
MICHAEL BENSON, MATERIALS ENGINEER
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE - 08/03/18
JOB NUMBER - 080457
FEDERAL AID NO.- TO BE ASSIGNED
PURPOSE - SOIL SURVEY SAMPLE
SPEC. REMARKS - NO SPECIFICATION CHECK
SUPPLIER NAME - STATE
NAME OF PROJECT - UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)
PROJECT ENGINEER - NOT APPLICABLE
PIT/QUARRY - ARKANSAS
LOCATION - FAULKNER, COUNTY
SAMPLED BY - BUIE/FRAZIER
SAMPLE FROM - TEST HOLE
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

SEQUENCE NO. - 2
MATERIAL CODE - SSRVPS
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 23
DISTRICT NO. - 08

DATE SAMPLED - 07/03/18
DATE RECEIVED - 07/24/18
DATE TESTED - 08/03/18

LAB NUMBER	20181578	20181579	20181580
SAMPLE ID	S354	S355	S356
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	0124+00	0138+00	0138+00
LOCATION	24 LT	05 RT	15 RT
DEPTH IN FEET	0-5	0-5	0-5
MAT'L COLOR	BROWN	BROWN	BROWN
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 58 29.50	34 58 20.90	34 58 21.00
LONGITUDE DEG-MIN-SEC	92 25 10.50	92 25 15.00	92 25 15.10
% PASSING 2 IN.			
1 1/2 IN.			
3/4 IN.			
3/8 IN.	100		100
NO. 4	99	100	96
NO. 10	94	99	94
NO. 40	88	98	91
NO. 80	81	92	87
NO. 200	72	86	82
LIQUID LIMIT	26	27	30
PLASTICITY INDEX	11	12	13
AASHTO SOIL	A-6(5)	A-6(8)	A-6(9)
UNIFIED SOIL			
% MOISTURE CONTENT	15.3	21.8	21.9
ACHMSC (IN)	---	2.75W	---
AGG.BASE CRS CL-7 (IN)	---	7.0	---

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

AASHTO TESTS : T24 T88 T89 T90 T265

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION
MICHAEL BENSON, MATERIALS ENGINEER
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE - 08/10/18
JOB NUMBER - 080457
FEDERAL AID NO.- TO BE ASSIGNED
PURPOSE - SOIL SURVEY SAMPLE
SPEC. REMARKS - NO SPECIFICATION CHECK
SUPPLIER NAME - STATE
NAME OF PROJECT - UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)
PROJECT ENGINEER - NOT APPLICABLE
PIT/QUARRY - ARKANSAS
LOCATION - FAULKNER, COUNTY
SAMPLED BY - BUIE/FRAZIER
SAMPLE FROM - TEST HOLE
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

SEQUENCE NO. - 3
MATERIAL CODE - SSRVPS
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 23
DISTRICT NO. - 08

DATE SAMPLED - 07/03/18
DATE RECEIVED - 07/24/18
DATE TESTED - 08/03/18

LAB NUMBER	20181581	20181582	20181583
SAMPLE ID	S357	S358	S359
TEST STATUS	INFORMATION ONLY	INFORMATION ONLY	INFORMATION ONLY
STATION	0194+57	0304+00	7590+71
LOCATION	06 LT	CL CONST	CL CONST
DEPTH IN FEET	0-5	0-5	0-5
MAT'L COLOR	RD/BR	BROWN	RD/BR
MAT'L TYPE			
LATITUDE DEG-MIN-SEC	34 58 14.90	34 58 10.30	34 58 20.50
LONGITUDE DEG-MIN-SEC	92 24 57.30	92 25 12.50	92 25 8.50
% PASSING 2 IN.			
1 1/2 IN.			
3/4 IN.			
3/8 IN.			100
NO. 4	100		99
NO. 10	99	100	97
NO. 40	97		94
NO. 80	93		86
NO. 200	89	91	80
LIQUID LIMIT	38	44	35
PLASTICITY INDEX	25	31	17
AASHTO SOIL	A-6(21)	A-7-6(28)	A-6(12)
UNIFIED SOIL			
% MOISTURE CONTENT	25.9	27.5	14.4

ACHMSC	(IN)	2.0	---	---
CHIP SEAL	(IN)	0.25	---	---
ACHMSC	(IN)	5.0WX	---	---
ACHMBC	(IN)	2.0	---	---
AGG.BASE CRS CL-7	(IN)	10.0	---	---

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

AASHTO TESTS : T24 T88 T89 T90 T265

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION
MICHAEL BENSON, MATERIALS ENGINEER
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE - 08/10/18
JOB NUMBER - 080457
FEDERAL AID NO.- TO BE ASSIGNED
PURPOSE - SOIL SURVEY SAMPLE
SPEC. REMARKS - NO SPECIFICATION CHECK
SUPPLIER NAME - STATE
NAME OF PROJECT - UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)
PROJECT ENGINEER - NOT APPLICABLE
PIT/QUARRY - ARKANSAS
LOCATION - FAULKNER, COUNTY
SAMPLED BY - BUIE/FRAZIER
SAMPLE FROM - TEST HOLE
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS

SEQUENCE NO. - 4
MATERIAL CODE - SSRVPS
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 23
DISTRICT NO. - 08

DATE SAMPLED - 07/03/18
DATE RECEIVED - 07/24/18
DATE TESTED - 08/03/18

LAB NUMBER	20181584
SAMPLE ID	S360
TEST STATUS	INFORMATION ONLY
STATION	7640+53
LOCATION	CL CONST
DEPTH IN FEET	0-5
MAT'L COLOR	RD/BR
MAT'L TYPE	
LATITUDE DEG-MIN-SEC	34 58 28.20
LONGITUDE DEG-MIN-SEC	92 25 5.30
% PASSING 2 IN.	
1 1/2 IN.	
3/4 IN.	
3/8 IN.	100
NO. 4	97
NO. 10	93
NO. 40	88
NO. 80	70
NO. 200	47
LIQUID LIMIT	ND
PLASTICITY INDEX	NP
AASHTO SOIL	A-4(0)
UNIFIED SOIL	
% MOISTURE CONTENT	20.8

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

AASHTO TESTS : T24 T88 T89 T90 T265

ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION
MICHAEL BENSON, MATERIALS ENGINEER
*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE	- 08/10/18	SEQUENCE NO.	- 1
JOB NUMBER	- 080457	MATERIAL CODE	- RV
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 23
SUPPLIER NAME	- STATE	DISTRICT NO.	- 08
NAME OF PROJECT	- UPRR OVERPASS & REALIGN. (MAYFLOWER)(S)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS		
LOCATION	- FAULKNER, COUNTY	DATE SAMPLED	- 07/03/18
SAMPLED BY	- BUIE/FRAZIER	DATE RECEIVED	- 07/24/18
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 08/03/18

MATERIAL DESC. - SOIL SURVEY - RESISTANCE R-VALUE ACTUAL RESULTS

LAB NUMBER	20181585
SAMPLE ID	RV361
TEST STATUS	INFORMATION ONLY
STATION	7604+53
LOCATION	CL CONST
DEPTH IN FEET	0-5
MAT'L COLOR	RD/BR
MAT'L TYPE	
LATITUDE DEG-MIN-SEC	34 58 28.20
LONGITUDE DEG-MIN-SEC	92 25 5.30
% PASSING 2 IN.	
1 1/2 IN.	
3/4 IN.	100
3/8 IN.	96
NO. 4	89
NO. 10	85
NO. 40	79
NO. 80	70
NO. 200	56
LIQUID LIMIT	28
PLASTICITY INDEX	15
AASHTO SOIL	A-6(5)
UNIFIED SOIL	
% MOISTURE CONTENT	

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

AASHTO TESTS : T24 T88 T89 T90 T265