

ARKANSAS DEPARTMENT OF TRANSPORTATION



SUBSURFACE INVESTIGATION

STATE JOB NO. 110664

FEDERAL AID PROJECT NO. STPF-0048(33)

PRAIRIE CO. LINE - BRINKLEY (S)

STATE HIGHWAY 70 SECTION 17

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

DATE - 02/11/2020
JOB NUMBER - 110664

SEQUENCE NO. - 1
MATERIAL CODE - SSRV
SPEC. YEAR - 2014
SUPPLIER ID. - 1
COUNTY/STATE - 48
DISTRICT NO. - 01

JOB NAME - PRAIRIE CO. LINE - HWY 17 (S)

* STATION LIMITS R-VALUE AT 240 psi *

BEGIN JOB - END JOB LESS THAN 5

RESILIENT MODULUS
STA. LM .168 9190
STA. LM 3.3 5703

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.	110664	Material Code	SSRVPS
Date Sampled:	1/22/2020	Station No.:	LM 3.3
Date Tested:	February 6, 2020	Location:	08'LT
Name of Project:	PRARIE CO. LINE - HWY. 17 (S)		
County:	Code: 48	Name: MONROE	
Sampled By:	THORNTON / BUNTON / DILLMAN		
Lab No.:	20200224	Depth:	0-5
Sample ID:	RV64	AASHTO Class:	A-4 (0)
LATITUDE:		Material Type (1 or 2):	2
		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	
Middle	3.94
Bottom	3.95
Average	3.94
Membrane Thickness (in):	3.94
Height of Specimen, Cap and Base (in):	0.01
Height of Cap and Base (in):	8.02
Initial Length, Lo (in):	0.00
Initial Area, Ao (sq. in):	8.02
Initial Volume, AoLo (cu. in):	12.14
	97.35

3. Soil Specimen Weight:

Weight of Wet Soil Used (g):	3255.90
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4. Soil Properties:

Optimum Moisture Content (%):	
Maximum Dry Density (pcf):	11.6
95% of MDD (pcf):	118.5
In-Situ Moisture Content (%):	112.6
	N/A

5. Specimen Properties:

Wet Weight (g):	
Compaction Moisture content (%):	3255.90
Compaction Wet Density (pcf):	11.5
Compaction Dry Density (pcf):	127.43
Moisture Content After Mr Test (%):	114.29
	11.4

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

#VALUE!

7. Resilient Modulus, Mr:

$6753(S_c)^{-0.22201}(S_3)^{0.41497}$

8. Comments

9. Tested By:

GW

Date: February 6, 2020

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS DIVISION**

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

Job No. 110664
Date Sampled: 1/22/2020
Date Tested: February 6, 2020
Name of Project: PRARIE CO. LINE - HWY. 17 (S)
County: Code: 48
Sampled By: THORNTON / BUNTON / DILLMAN
Lab No.: 20200224
Sample ID: RV64
LATITUDE:

Material Code SSRVPS
Station No.: LM 3.3
Location: 08'LT

Depth: 0-5
AASHTO Class: A-4 (0)
Material Type (1 or 2): 2
LONGITUDE:

Name: MONROE
 THORNTON / BUNTON / DILLMAN
 20200224
 RV64

PARAMETER	DESIGNATION	UNIT	Chamber Confining Pressure	Nominal Maximum Axial Stress	Actual Applied Max. Axial Load	P _{max} lbs	Actual Applied Cyclic Load	P _{cyclic} lbs	Actual Applied Contact Load	P _{contact} lbs	Actual Applied Max. Axial Stress	S _{max} psi	Actual Applied Cyclic Stress	S _{cyclic} psi	Actual Applied Contact Stress	S _{contact} psi	Average Recov Def. LVDT 1 and 2	H _{avg} in	Resilient Strain	ε _r in/in	Resilient Modulus	M _r psi
Sequence 1			6.0	2.0	25.1	22.4	22.4	2.6	2.1	2.6	2.1	1.8	0.2	0.00119	0.00015	0.00015	0.00119	0.00015	0.00015	0.00015	12,455	
Sequence 2			6.0	4.0	47.0	44.3	44.3	2.7	3.9	2.7	3.9	3.7	0.2	0.00253	0.00032	0.00032	0.00253	0.00032	0.00032	0.00032	11,556	
Sequence 3			6.0	6.0	69.3	65.9	65.9	3.5	5.7	3.5	5.7	5.4	0.3	0.00422	0.00053	0.00053	0.00422	0.00053	0.00053	0.00053	10,324	
Sequence 4			6.0	8.0	92.6	86.7	86.7	5.9	7.6	5.9	7.6	7.1	0.5	0.00637	0.00079	0.00079	0.00637	0.00079	0.00079	0.00079	8,994	
Sequence 5			6.0	10.0	115.3	107.0	107.0	8.3	9.5	8.3	9.5	8.8	0.7	0.00858	0.00107	0.00107	0.00858	0.00107	0.00107	0.00107	8,235	
Sequence 6			4.0	2.0	24.8	22.0	22.0	2.7	2.0	2.7	2.0	1.8	0.2	0.00144	0.00018	0.00018	0.00144	0.00018	0.00018	0.00018	10,098	
Sequence 7			4.0	4.0	46.4	43.6	43.6	2.8	3.8	2.8	3.8	3.6	0.2	0.00323	0.00040	0.00040	0.00323	0.00040	0.00040	0.00040	8,920	
Sequence 8			4.0	6.0	67.6	64.8	64.8	2.8	5.6	2.8	5.6	5.3	0.2	0.00530	0.00066	0.00066	0.00530	0.00066	0.00066	0.00066	8,072	
Sequence 9			4.0	8.0	91.3	86.1	86.1	5.2	7.5	5.2	7.5	7.1	0.4	0.00732	0.00091	0.00091	0.00732	0.00091	0.00091	0.00091	7,775	
Sequence 10			4.0	10.0	114.0	106.4	106.4	7.6	9.4	7.6	9.4	8.8	0.6	0.00965	0.00120	0.00120	0.00965	0.00120	0.00120	0.00120	7,282	
Sequence 11			2.0	2.0	24.5	21.7	21.7	2.8	2.0	2.8	2.0	1.8	0.2	0.00183	0.00023	0.00023	0.00183	0.00023	0.00023	0.00023	7,847	
Sequence 12			2.0	4.0	45.3	42.4	42.4	2.8	3.7	2.8	3.7	3.5	0.2	0.00417	0.00052	0.00052	0.00417	0.00052	0.00052	0.00052	6,732	
Sequence 13			2.0	6.0	65.9	63.1	63.1	2.8	5.4	2.8	5.4	5.2	0.2	0.00664	0.00083	0.00083	0.00664	0.00083	0.00083	0.00083	6,275	
Sequence 14			2.0	8.0	88.1	83.8	83.8	4.3	7.3	4.3	7.3	6.9	0.4	0.00914	0.00114	0.00114	0.00914	0.00114	0.00114	0.00114	6,058	
Sequence 15			2.0	10.0	110.1	103.5	103.5	6.7	9.1	6.7	9.1	8.5	0.6	0.01198	0.00149	0.00149	0.01198	0.00149	0.00149	0.00149	5,703	

TESTED BY _____ DATE February 6, 2020
 REVIEWED BY _____ DATE _____

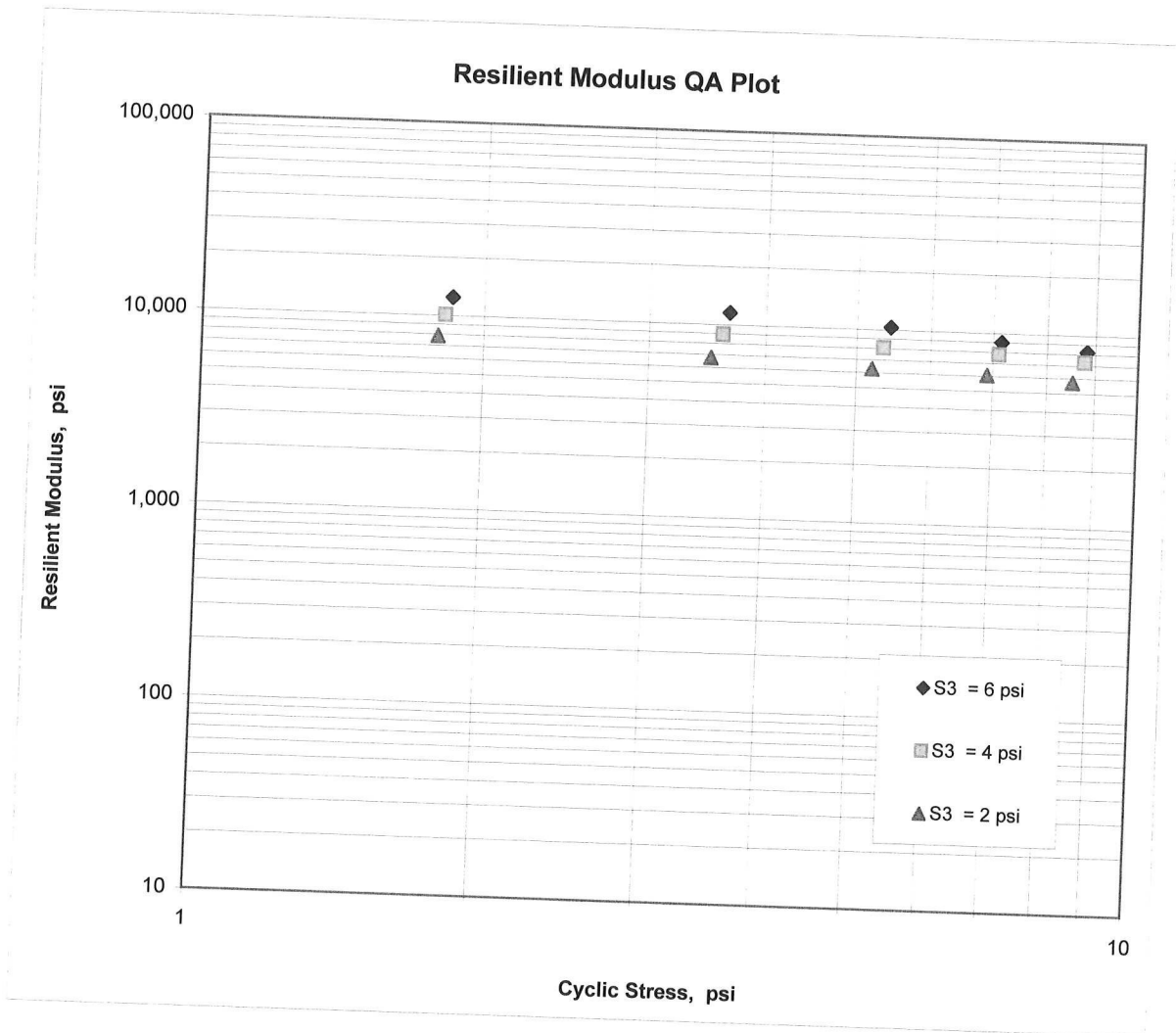
**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS DIVISION**

**AASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS
RECOMPACTED / THINWALL TUBE SAMPLES**

Job No.	110664	Material Code	SSRVPS
Date Sampled:	1/22/2020	Station No.:	LM 3.3
Date Tested:	February 6, 2020	Location:	08'LT
Name of Project:	PRARIE CO. LINE - HWY. 17 (S)	Depth:	0-5
County:	Code: 48 Name: MONROE	AASHTO Class:	A-4 (0)
Sampled By:	THORNTON / BUNTON / DILLMAN	Material Type (1 or 2):	2
Lab No.:	20200224	LONGITUDE:	
Sample ID:	RV64		
LATITUDE:			

$$M_R = K_1 (S_C)^{K_2} (S_3)^{K_5}$$

K1 = 6,753
 K2 = -0.22201
 K5 = 0.41497
 R² = 0.98



**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS DIVISION**

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

Job No.	110664	Material Code	SSRVPS
Date Sampled:	1/22/2020	Station No.:	LM .168
Date Tested:	February 6, 2020	Location:	08'LT
Name of Project:	PRARIE CO. LINE - HWY. 17 (S)		
County:	Code: 48	Name: MONROE	
Sampled By:	THORNTON / BUNTON / DILLMAN		
Lab No.:	20200223	Depth:	0-5
Sample ID:	RV63	AASHTO Class:	A-6 (2)
LATITUDE:		Material Type (1 or 2):	2
		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	
Middle	3.95
Bottom	3.95
Average	3.95
Membrane Thickness (in):	3.95
Height of Specimen, Cap and Base (in):	0.01
Height of Cap and Base (in):	8.03
Initial Length, Lo (in):	0.00
Initial Area, Ao (sq. in):	8.03
Initial Volume, AoLo (cu. in):	12.18
	97.80

3. Soil Specimen Weight:

Weight of Wet Soil Used (g):	3246.50
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4. Soil Properties:

Optimum Moisture Content (%):	13.4
Maximum Dry Density (pcf):	115.9
95% of MDD (pcf):	110.1
In-Situ Moisture Content (%):	N/A

5. Specimen Properties:

Wet Weight (g):	3246.50
Compaction Moisture content (%):	13.7
Compaction Wet Density (pcf):	126.48
Compaction Dry Density (pcf):	111.24
Moisture Content After Mr Test (%):	13.3

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

#VALUE!

7. Resilient Modulus, Mr:

12720(S_c)^{-0.21886}(S₃)^{0.22162}

8. Comments

9. Tested By:

GW

Date: February 6, 2020

**ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT
MATERIALS DIVISION**

**AAASHTO T 307-99 - RESILIENT MODULUS OF SUBGRADE SOILS
RECOMPACTED SAMPLES**

Job No. 110664 **Material Code** SSRVPS
Date Sampled: 1/22/2020 **Station No.:** LM .168
Date Tested: February 6, 2020 **Location:** 08'LT
Name of Project: PRARIE CO. LINE - HWY. 17 (S)
County: Code: 48 **Name:** MONROE
Sampled By: THORNTON / BUNTON / DILLMAN
Lab No.: 20200223
Sample ID: RV63
LATITUDE:

Depth: 0-5
AAASHTO Class: A-6 (2)
Material Type (1 or 2): 2
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	
												UNIT	
	S ₃	S _{cyclic}	P _{max}	P _{cyclic}	P _{contact}	S _{max}	S _{cyclic}	S _{contact}	H _{avg}	ε _r	M _r	psi	psi
Sequence 1	6.0	2.0	25.1	22.4	2.7	2.1	1.8	0.2	0.00091	0.00011	16,244	psi	
Sequence 2	6.0	4.0	47.1	44.4	2.7	3.9	3.6	0.2	0.00193	0.00024	15,166	psi	
Sequence 3	6.0	6.0	69.5	66.1	3.5	5.7	5.4	0.3	0.00317	0.00039	13,738	psi	
Sequence 4	6.0	8.0	92.7	86.9	5.9	7.6	7.1	0.5	0.00473	0.00059	12,103	psi	
Sequence 5	6.0	10.0	115.0	106.7	8.3	9.4	8.8	0.7	0.00650	0.00081	10,825	psi	
Sequence 6	4.0	2.0	25.0	22.4	2.6	2.1	1.8	0.2	0.00099	0.00012	14,927	psi	
Sequence 7	4.0	4.0	46.9	44.3	2.6	3.9	3.6	0.2	0.00214	0.00027	13,644	psi	
Sequence 8	4.0	6.0	68.2	65.6	2.6	5.6	5.4	0.2	0.00350	0.00044	12,341	psi	
Sequence 9	4.0	8.0	91.3	86.4	5.0	7.5	7.1	0.4	0.00507	0.00063	11,240	psi	
Sequence 10	4.0	10.0	113.8	106.4	7.4	9.3	8.7	0.6	0.00685	0.00085	10,245	psi	
Sequence 11	2.0	2.0	25.1	22.5	2.6	2.1	1.8	0.2	0.00124	0.00015	11,955	psi	
Sequence 12	2.0	4.0	46.7	44.1	2.7	3.8	3.6	0.2	0.00252	0.00031	11,541	psi	
Sequence 13	2.0	6.0	67.8	65.2	2.6	5.6	5.4	0.2	0.00404	0.00050	10,647	psi	
Sequence 14	2.0	8.0	89.6	85.5	4.1	7.4	7.0	0.3	0.00572	0.00071	9,855	psi	
Sequence 15	2.0	10.0	111.9	105.3	6.6	9.2	8.6	0.5	0.00755	0.00094	9,190	psi	

TESTED BY _____ DATE February 6, 2020
 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.	110664	Material Code	SSRVPS
Date Sampled:	1/22/2020	Station No.:	LM .168
Date Tested:	February 6, 2020	Location:	08'LT
Name of Project:	PRARIE CO. LINE - HWY. 17 (S)		
County:	Code: 48	Name:	MONROE
Sampled By:	THORNTON / BUNTON / DILLMAN		
Lab No.:	20200223	Depth:	0-5
Sample ID:	RV63	AASHTO Class:	A-6 (2)
LATITUDE:		Material Type (1 or 2):	2
		LONGITUDE:	

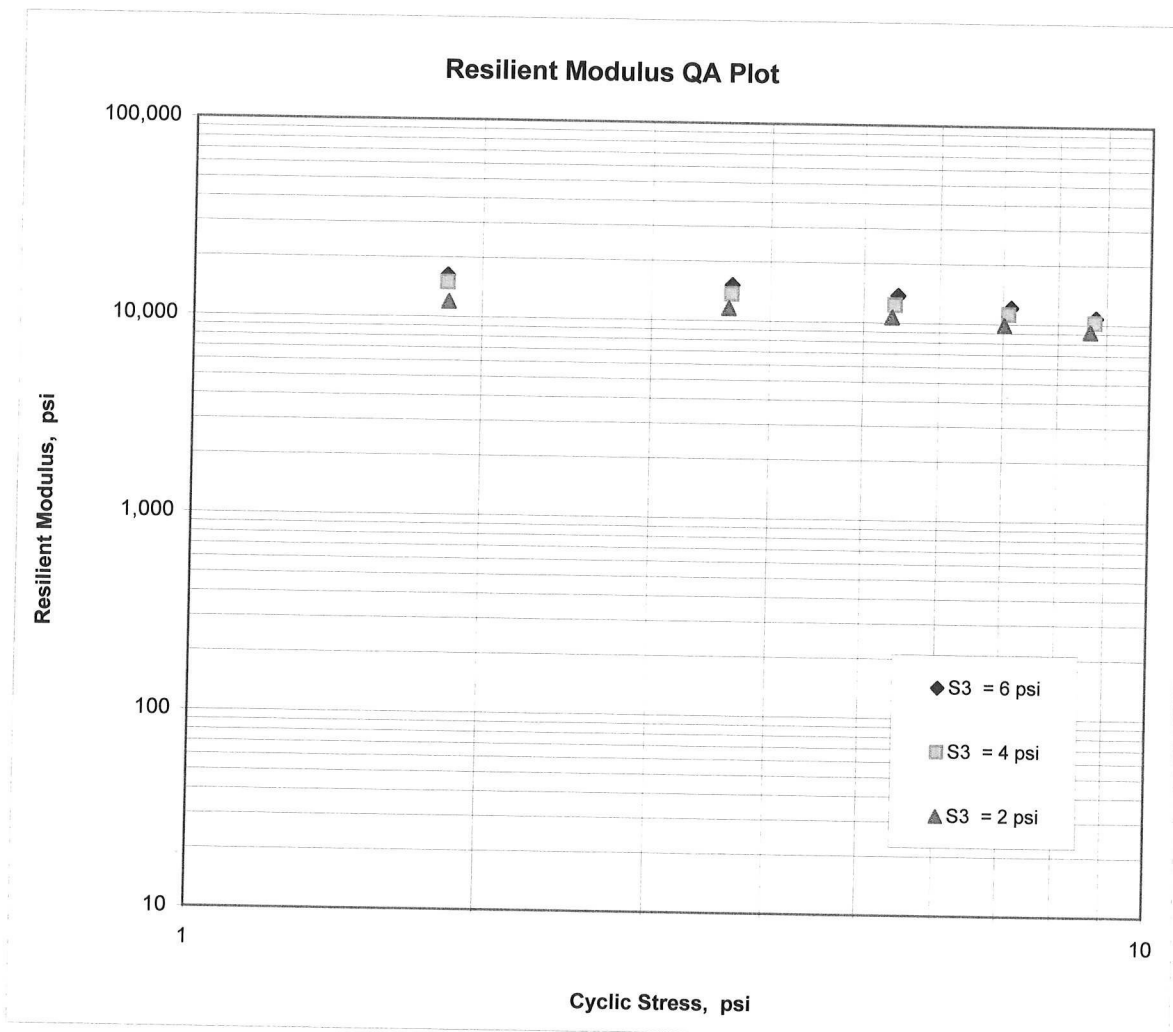
$$M_R = K_1 (S_C)^{K_2} (S_3)^{K_5}$$

$$K_1 = \frac{12,720}{\quad}$$

$$K_2 = \frac{-0.21886}{\quad}$$

$$K_5 = \frac{0.22162}{\quad}$$

$$R^2 = \frac{0.93}{\quad}$$



ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE	- 02/11/20	SEQUENCE NO.	- 1
JOB NUMBER	- 110664	MATERIAL CODE	- SSRVPS
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 48
SUPPLIER NAME	- STATE	DISTRICT NO.	- 01
NAME OF PROJECT - PRAIRIE CO. LINE - HWY 17 (S)			
PROJECT ENGINEER - NOT APPLICABLE			
PIT/QUARRY	- ARKANSAS	DATE SAMPLED	- 01/22/20
LOCATION	- MONROE, COUNTY	DATE RECEIVED	- 01/23/20
SAMPLED BY	- THORNTON/BUNTEN/DILLMAN	DATE TESTED	- 02/11/20
SAMPLE FROM	- TEST HOLE		
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS			

LAB NUMBER	- 20200219	- 20200220	- 20200221
SAMPLE ID	- S59	- S60	- S61
TEST STATUS	- INFORMATION ONLY	- INFORMATION ONLY	- INFORMATION ONLY
STATION	- LM .168	- LM 2.43	- LM 2.56
LOCATION	- 08 LT	- 08 LT	- 08 LT
DEPTH IN FEET	- 0-5	- 0-5	- 0-5
MAT'L COLOR	- BROWN	- GRAY	- BR/GR
MAT'L TYPE	-	-	-
LATITUDE DEG-MIN-SEC	- 34 49 54.60	- 34 50 15.60	- 34 50 15.90
LONGITUDE DEG-MIN-SEC	- 91 22 27.20	- 91 20 6.60	- 91 19 57.90
% PASSING	2 IN. -	-	-
	1 1/2 IN. -	-	-
	3/4 IN. -	-	-
	3/8 IN. -	-	-
	NO. 4 - 100	- 100	- 100
	NO. 10 - 99	-	-
	NO. 40 - 98	-	-
	NO. 80 - 96	-	-
	NO. 200 - 85	- 96	- 99
LIQUID LIMIT	- 45	- 62	- 55
PLASTICITY INDEX	- 31	- 43	- 37
AASHTO SOIL	- A-7-6(26)	- A-7-6(46)	- A-7-6(40)
UNIFIED SOIL	-	-	-
% MOISTURE CONTENT	- 25.9	- 37.9	- 35.3
CHIP SEAL (IN)	- 0.25	- ---	- ---
ACHMSC (IN)	- 3.0	- 1.5	- 7.0X
ACHMSC (IN)	- 0.5X	- 0.5X	- 4.5W
ACHMSC (IN)	- 4.25W	- 6.5W	- ---
ACHMSC (IN)	- 1.0X	- 3.0X	- ---
PCCP (IN)	- 8.5	- 8.0	- 8.5
	-	-	-
	-	-	-
	-	-	-

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

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AASHTO TESTS : T24 T88 T89 T90 T265

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE	- 02/11/20	SEQUENCE NO.	- 2
JOB NUMBER	- 110664	MATERIAL CODE	- SSRVPS
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- SOIL SURVEY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 48
SUPPLIER NAME	- STATE	DISTRICT NO.	- 01
NAME OF PROJECT - PRAIRIE CO. LINE - HWY 17 (S)			
PROJECT ENGINEER - NOT APPLICABLE			
PIT/QUARRY	- ARKANSAS		
LOCATION	- MONROE, COUNTY	DATE SAMPLED	- 01/22/20
SAMPLED BY	- THORNTON/BUNTEN/DILLMAN	DATE RECEIVED	- 01/23/20
SAMPLE FROM	- TEST HOLE	DATE TESTED	- 02/11/20
MATERIAL DESC. - SOIL SURVEY - R VALUE- PAVEMENT SOUNDINGS			

LAB NUMBER	-	20200222	-	-
SAMPLE ID	-	S62	-	-
TEST STATUS	-	INFORMATION ONLY	-	-
STATION	-	LM 3.3	-	-
LOCATION	-	08LT	-	-
DEPTH IN FEET	-	0-5	-	-
MAT'L COLOR	-	BR/GR	-	-
MAT'L TYPE	-		-	-
LATITUDE DEG-MIN-SEC	-	34 50 17.50	-	-
LONGITUDE DEG-MIN-SEC	-	91 19 6.50	-	-
% PASSING	2	IN.	-	-
	1 1/2	IN.	-	-
	3/4	IN.	-	-
	3/8	IN.	-	-
	NO. 4	-	100	-
	NO. 10	-	99	-
	NO. 40	-	97	-
	NO. 80	-	93	-
	NO. 200	-	81	-

LIQUID LIMIT	-	31	-	-
PLASTICITY INDEX	-	18	-	-
AASHTO SOIL	-	A-6(12)	-	-
UNIFIED SOIL	-		-	-
% MOISTURE CONTENT	-	19.8	-	-

ACHMSC	(IN)	-	3.0	-	-
ACHMSC	(IN)	-	1.75X	-	-
ACHMSC	(IN)	-	2.0	-	-
ACHMSC	(IN)	-	2.0X	-	-
ACHMSC	(IN)	-	2.0	-	-
ACHMSC	(IN)	-	1.5X	-	-
ACHMSC	(IN)	-	14.0W	-	-
PCCP	(IN)	-	8.0	-	-
		-		-	-

REMARKS - W=MULTIPLE LAYERS, X=STRIPPED

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-
-
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AASHTO TESTS : T24 T88 T89 T90 T265

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ARKANSAS STATE HIGHWAY AND TRANSPORTATION DEPARTMENT - LITTLE ROCK, ARKANSAS
MATERIALS DIVISION

MICHAEL BENSON, MATERIALS ENGINEER

*** SOIL SURVEY / PAVEMENT SOUNDING TEST REPORT ***

DATE	- 02/14/20	SEQUENCE NO.	- 10
JOB NUMBER	- 110664	MATERIAL CODE	- 20SF
FEDERAL AID NO.	- TO BE ASSIGNED	SPEC. YEAR	- 2014
PURPOSE	- INFORMATION ONLY SAMPLE	SUPPLIER ID.	- 1
SPEC. REMARKS	- NO SPECIFICATION CHECK	COUNTY/STATE	- 48
SUPPLIER NAME	- STATE	DISTRICT NO.	- 01
NAME OF PROJECT	- PRAIRIE CO. LINE - HWY 17 (S)		
PROJECT ENGINEER	- NOT APPLICABLE		
PIT/QUARRY	- ARKANSAS		
LOCATION	- MONROE, COUNTY	DATE SAMPLED	- 02/14/20
SAMPLED BY	- TRACY HENDERSON	DATE RECEIVED	- 02/12/20
SAMPLE FROM	- LM 2.43 @ 11'LT, LM 2.56	DATE TESTED	- 02/14/20
MATERIAL DESC.	- SOIL FOUNDATION INVESTIGATION SAMPLE - SOIL - 2020		

LAB NUMBER	- 20200327	- 20200328	- 20200329
SAMPLE ID	- SF25	- SF26	- SF27
TEST STATUS	- INFORMATION ONLY	- INFORMATION ONLY	- INFORMATION ONLY
STATION	- LM 2.43	- LM 2.43	- LM 2.43
LOCATION	- BORING #2	- BORING #2	- BORING #2
DEPTH IN FEET	- 4.2-6.2	- 7.7-9.7	- *1
MAT'L COLOR	- BROWN	- GRAY	- GRAY
MAT'L TYPE	-	-	-
LATITUDE DEG-MIN-SEC	-	-	-
LONGITUDE DEG-MIN-SEC	-	-	-
% PASSING	2 IN. -	-	-
	1 1/2 IN. -	-	-
	3/4 IN. -	-	-
	3/8 IN. -	-	-
	NO. 4 - 100	-	-
	NO. 10 - 99	-	-
	NO. 40 - 91	-	-
	NO. 80 - 90	-	-
	NO. 200 - 88	-	-

LIQUID LIMIT	- 41	- 54	- 79
PLASTICITY INDEX	- 23	- 30	- 67
AASHTO SOIL	- A-7-6(20)	- A-7-6(35)	- A-7-6(72)
UNIFIED SOIL	- CL	- CH	- CH
% MOISTURE CONTENT	-	-	-

REMARKS -
-
-
-
-
-

AASHTO TESTS : T24 T88 T89 T90 T265
:

**ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 1
PAGE 1 OF 1

JOB NO. 110664 Monroe County
JOB NAME: Hwy 70 Subsidence investigation

DATE: January 29, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Shelby Tube
EQUIPMENT: CME 75

STATION: LM 0.168
LOCATION: 12' Left of Centerline
LOGGED BY: Connor Bunton

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 25.9

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	% ROD
			SURFACE ELEVATION:									
5			Moist, Dark Brown Sand with Gravel	-								
			Moist, Brown Lean Clay with Sand	CL	18	23	40					
			Moist, Very Stiff, Brown Lean Clay	CL	19		41			5		
			Moist, Brown Lean Clay with Some Organic Matter	CL	21	21	46			7-12		
10			Moist, Very Stiff, Brown Fat Clay with Trace Organic Matter	CH	22		50			5		
			Moist, Gray Lean Clay with Trace Organic Matter	CL	24	23	45			6-10		
			Wet, Stiff, Brown Lean Clay with Trace Organic Matter	CL	21		45			4		
15			Wet, Gray Lean Clay with Trace Organic Matter	CL	19	22	31			5-8		
			Wet, Medium Stiff, Brown Lean Clay with Sand and Trace Organic Matter	CL	16		32			2		
			Wet, Brown Sandy Silt	ML	18	27	21			3-3		
20			Wet, Medium Stiff, Brown Lean Clay with Sand	CL	16		31			2		
			Wet, Very Loose, Brown Silty Sand	SM	NP					1		
			Boring Terminated							1-2		
30												
35												

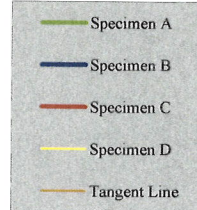
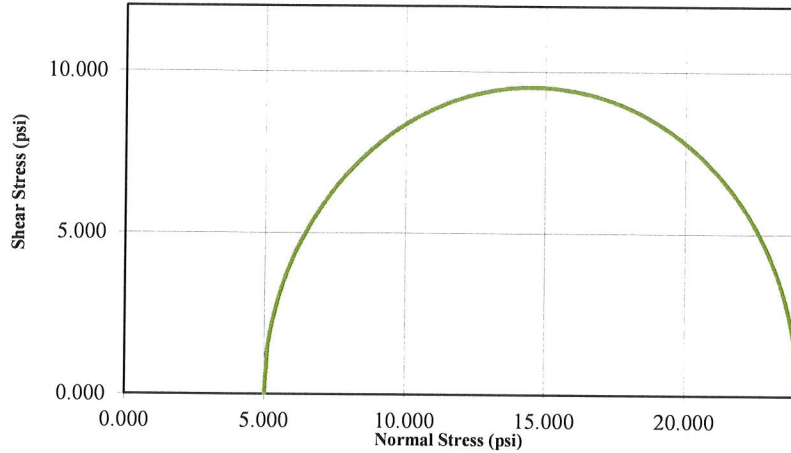
REMARKS:

Arkansas Highway & Transportation Department

Unconsolidated Undrained Triaxial Test (ASTM D2850)



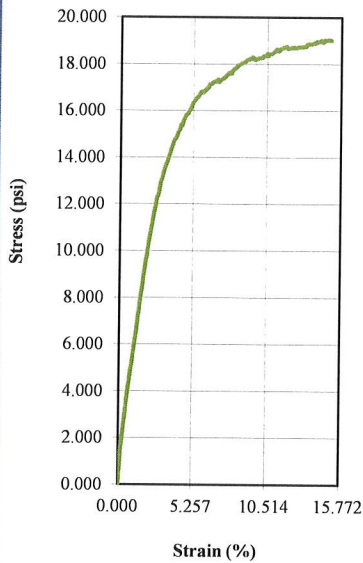
Mohr Circles



Date: ..

Checked By:

Stress-Strain Curve



Date:

		Specimen			
Before Test		A	B	C	D
Water Content (%)		23.20	0.00	0.00	0.00
Dry Density (pcf)		101.85	0.00	0.00	0.00
Saturation (%)		93.06	0.00	0.00	0.00
Void Ratio		0.69	0.00	0.00	0.00
Diameter (in)		2.875	0.000	0.000	0.000
Height (in)		5.960	0.000	0.000	0.000
Liquid Limit					
Plastic Limit					
Specific Gravity		2.750			
After Test		A	B	C	D
Water Content (%)		13.17	0.00	0.00	0.00
Test Data		A	B	C	D
Strain Rate (in/min)		0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)		19.048	0.000	0.000	0.000
Axial Strain @ Failure (%)		14.786	0.000	0.000	0.000
		Cell Pressure			
Cell (psi)		5.0	0.0	0.0	0.0
Back (psi)		n/a	n/a	n/a	n/a
		Principle Stresses at Failure			
σ_1 (psi)		24.0	0.0	0.0	0.0
σ_3 (psi)		5.0	0.0	0.0	0.0

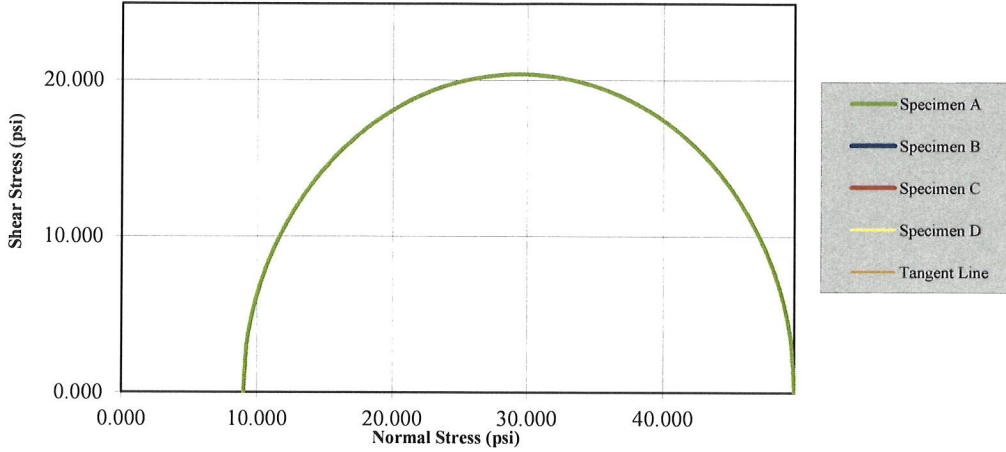
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 4.4-6.4	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	1
Location:	Logmile 0.168, Lat: 34.8319, Long: -92.3743	Sample Number:	SF - 14
Client:			
Remarks:			

Tested By:

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



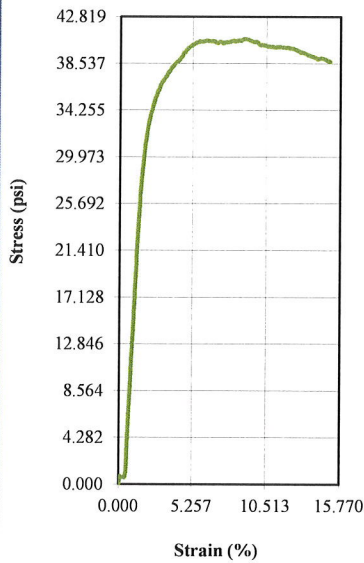
Mohr Circles



Date: _____

Checked By: _____

Stress-Strain Curve



Date: _____

Before Test	Specimen			
	A	B	C	D
Water Content (%)	20.70	0.00	0.00	0.00
Dry Density (pcf)	97.18	0.00	0.00	0.00
Saturation (%)	78.10	0.00	0.00	0.00
Void Ratio	0.70	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.003	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.650			
After Test	A	B	C	D
Water Content (%)	23.79	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	40.780	0.000	0.000	0.000
Axial Strain @ Failure (%)	9.017	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	9.0	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	49.8	0.0	0.0	0.0
σ_3 (psi)	9.0	0.0	0.0	0.0

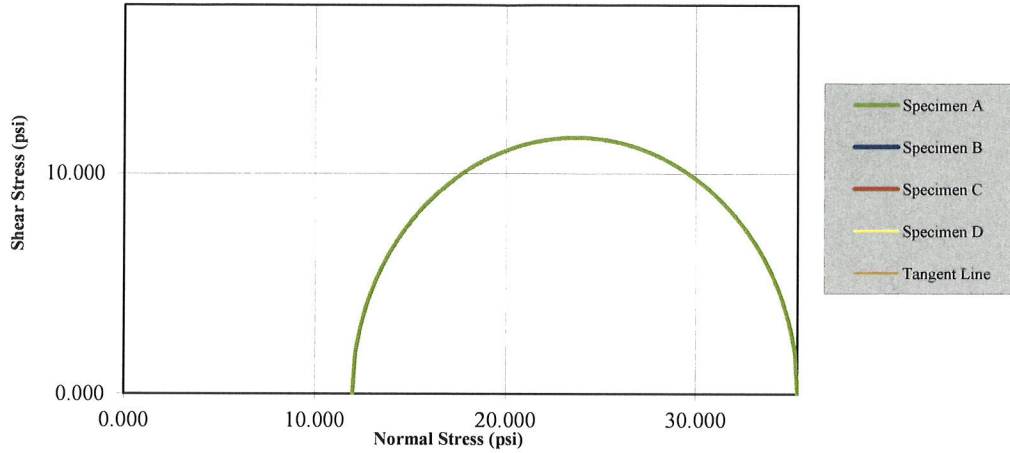
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay with Organic Matter (Roots)	
Friction Angle ϕ	0.00		
Project Information			
Project Name:			
Project Number:		Job Number:	110664
Location:	Logmile 0.168, 12' Left CL, Lat 34.8319, Long: -91.3743	Boring Number:	1
Client:		Sample Number:	
Remarks:			

Tested By: _____

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



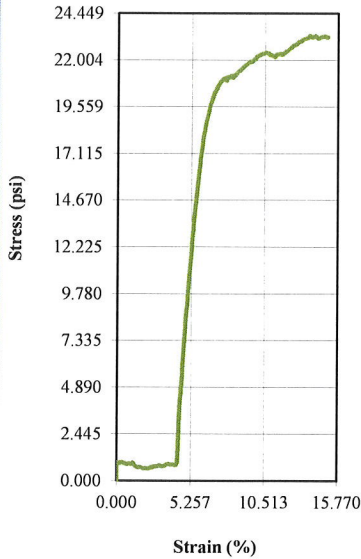
Mohr Circles



Date : ..

Checked By:

Stress-Strain Curve



Date:

		Specimen			
Before Test		A	B	C	D
Water Content (%)		22.96	0.00	0.00	0.00
Dry Density (pcf)		93.40	0.00	0.00	0.00
Saturation (%)		75.35	0.00	0.00	0.00
Void Ratio		0.84	0.00	0.00	0.00
Diameter (in)		2.875	0.000	0.000	0.000
Height (in)		6.003	0.000	0.000	0.000
Liquid Limit					
Plastic Limit					
Specific Gravity		2.750			
After Test		A	B	C	D
Water Content (%)		23.98	0.00	0.00	0.00
Test Data		A	B	C	D
Strain Rate (in/min)		0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)		23.285	0.000	0.000	0.000
Axial Strain @ Failure (%)		13.729	0.000	0.000	0.000
		Cell Pressure			
Cell (psi)		12.0	0.0	0.0	0.0
Back (psi)		n/a	n/a	n/a	n/a
		Principle Stresses at Failure			
σ_1 (psi)		35.3	0.0	0.0	0.0
σ_3 (psi)		12.0	0.0	0.0	0.0

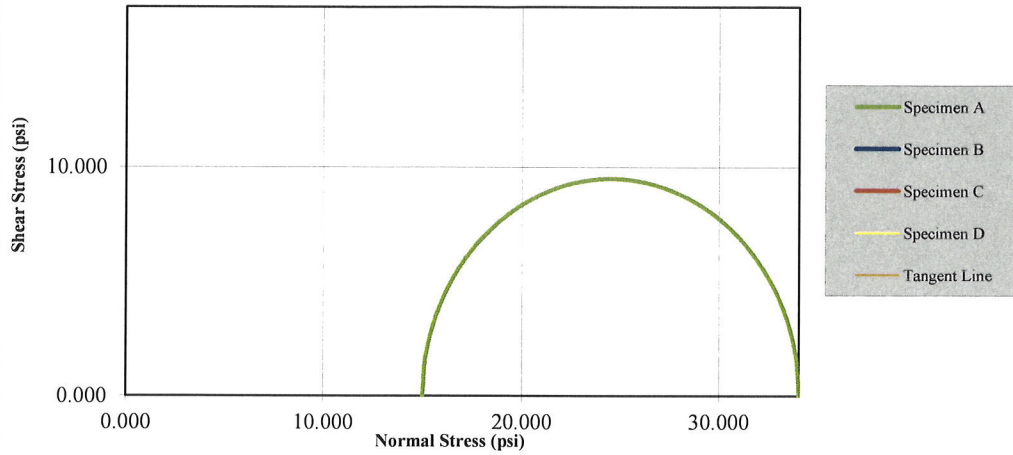
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 11.4-13.4	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	
Location:	LM 0.168/12' Lt	Sample Number:	
Client:			
Remarks:			

Tested By:

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles

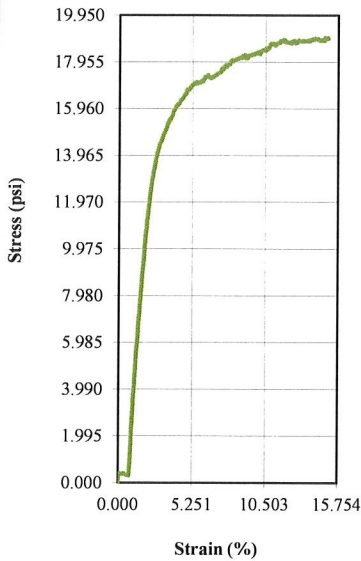


Date : _____

Checked By: _____

Date: _____

Stress-Strain Curve



	Specimen			
Before Test	A	B	C	D
Water Content (%)	22.47	0.00	0.00	0.00
Dry Density (pcf)	102.16	0.00	0.00	0.00
Saturation (%)	96.14	0.00	0.00	0.00
Void Ratio	0.62	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.967	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.650			
After Test	A	B	C	D
Water Content (%)	23.32	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.02	0.00	0.00	0.00
Peak Deviator Stress (psi)	19.000	0.000	0.000	0.000
Axial Strain @ Failure (%)	14.779	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	15.0	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	34.0	0.0	0.0	0.0
σ_3 (psi)	15.0	0.0	0.0	0.0

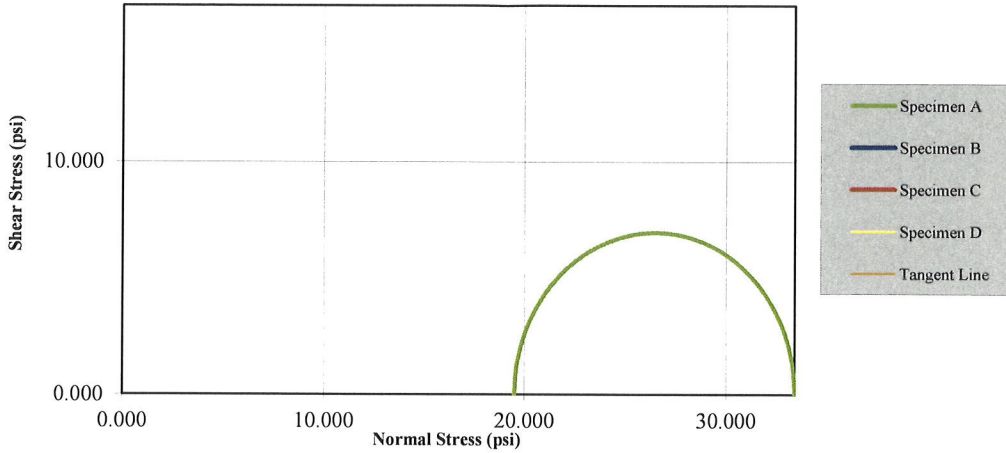
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Silty Clay 14.9 - 16.9	
Friction Angle ϕ	0.00		
Project Information			
Project Name:			
Project Number:		Job Number:	110664
Location:	Logmile 0.168, Lat 34.8319, Long -91.3743	Boring Number:	1
Client:		Sample Number:	4
Remarks:			

Tested By: _____

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



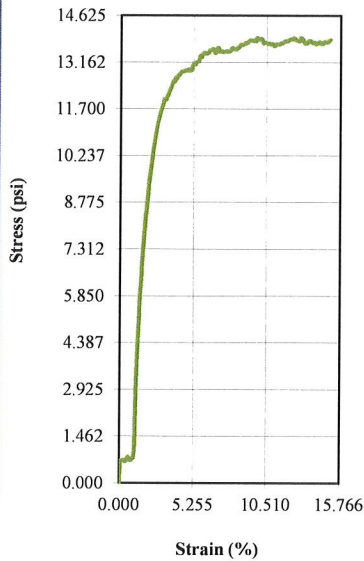
Mohr Circles



Date: ..

Checked By:

Stress-Strain Curve



Date:

Before Test	Specimen			
	A	B	C	D
Water Content (%)	26.50	0.00	0.00	0.00
Dry Density (pcf)	96.97	0.00	0.00	0.00
Saturation (%)	96.92	0.00	0.00	0.00
Void Ratio	0.74	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.993	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.700			
After Test	A	B	C	D
Water Content (%)	26.05	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	13.928	0.000	0.000	0.000
Axial Strain @ Failure (%)	9.770	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	19.5	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	33.4	0.0	0.0	0.0
σ_3 (psi)	19.5	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Silty Clay 18.4 - 20.4	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	SF 22	Boring Number:	1
Location:	Logmile 0.168, 12' LT, Lat 34.8319, Long -91.3743	Sample Number:	5
Client:			
Remarks:			

Tested By:

**ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2
PAGE 1 OF 2

JOB NO. 110664 Monroe County
JOB NAME: Hwy 70 Subsidence investigation

DATE: January 28, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Shelby Tube
EQUIPMENT: CME 75

STATION: LM 2.43
LOCATION: 11' Left of Centerline
LOGGED BY: Connor Bunton

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 35.7

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.	% T C R	% R Q D
			SURFACE ELEVATION:									
5			Reddish Brown and Dark Brown Sand with Gravel	-								
			Moist, Brown Lean Clay	CL	18	29	41					
			Moist, Very Stiff, Brown Clay with Trace Organic Matter	-						5 8-11		
			Moist, Brown Fat Clay	CH	20	27	54					
10			Moist, Stiff, Brown Clay with Trace Organic Matter	-						3 3-7		
			Moist, Gray Fat Clay with Some Organic Matter	CH	12	34	79					
			Wet, Stiff, Gray Clay with Some Organic	-						3 4-6		
15			Wet, Fat Gray Clay	CH	68	29	20					
			Wet, Gray Clay with Trace Organic	-						3 4-6		
			Wet, Gray Fat Clay	CH	18	28	65					
			Wet, Stiff, Gray Clay with Sand							4 6-7		
25			Wet, Brown Clay with Sand and Trace Organic Matter							3 6-6		
			Wet, Soft, Gray Clay with Sand							1 1-2		
30			Wet, Soft, Gray Clay with Sand									
35			Wet, Soft, Gray Clay with Sand							0		

REMARKS:

**ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 2
PAGE 2 OF 2

JOB NO. 110664 Monroe County
JOB NAME: Hwy 70 Subsidence investigation

DATE: January 28, 2019
TYPE OF DRILLING:
Hollow Stem Auger - Shelby Tube
EQUIPMENT: CME 75

STATION: LM 2.43
LOCATION: 11' Left of Centerline
LOGGED BY: Connor Bunton

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 35.7

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	% ROD
			SURFACE ELEVATION:									
			Wet, Loose, Gray Sand							0-5		
			Boring Terminated									
40												
45												
50												
55												
60												
65												
70												

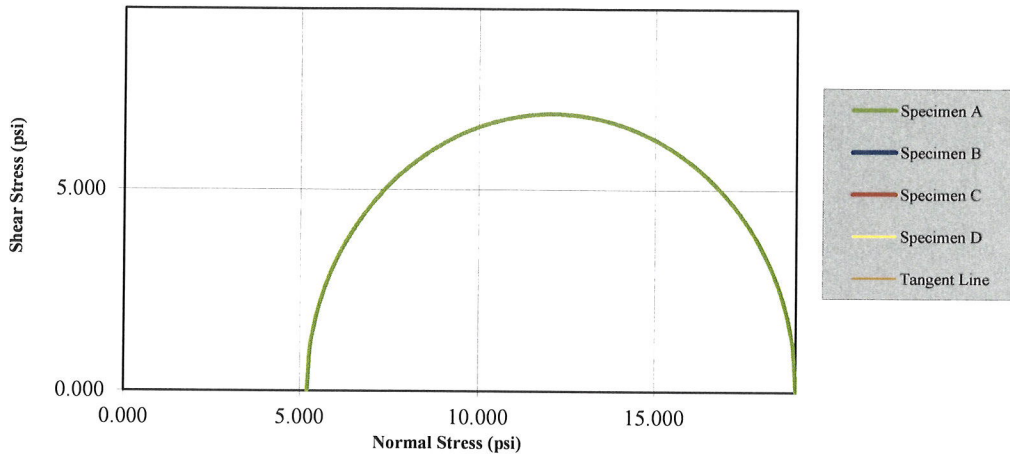
REMARKS:

Arkansas Highway & Transportation Department

Unconsolidated Undrained Triaxial Test (ASTM D2850)



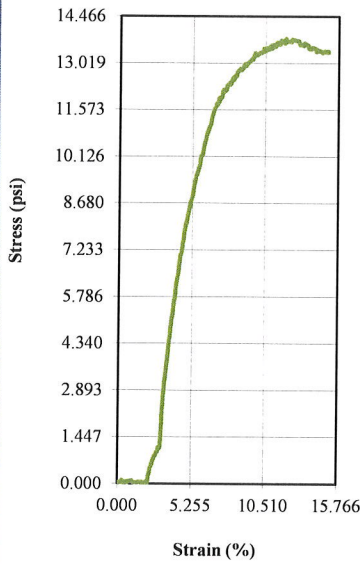
Mohr Circles



Date:

Checked By:

Stress-Strain Curve



Date:

Before Test	Specimen			
	A	B	C	D
Water Content (%)	29.29	0.00	0.00	0.00
Dry Density (pcf)	92.25	0.00	0.00	0.00
Saturation (%)	95.61	0.00	0.00	0.00
Void Ratio	0.83	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.970	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.700			
After Test	A	B	C	D
Water Content (%)	26.89	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.02	0.00	0.00	0.00
Peak Deviator Stress (psi)	13.777	0.000	0.000	0.000
Axial Strain @ Failure (%)	11.944	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	5.2	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	19.0	0.0	0.0	0.0
σ_3 (psi)	5.2	0.0	0.0	0.0

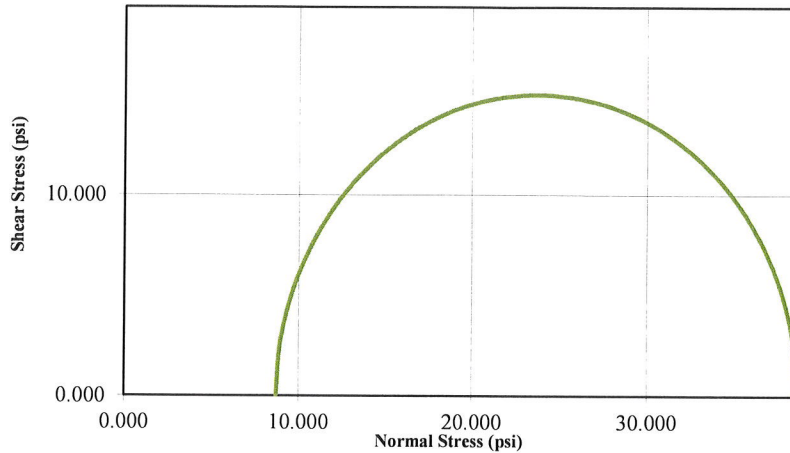
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 4.2 - 6.2	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	2
Location:	Logmile 2.43, 11' LT CL, Lat 34.8377, Long -91.3348	Sample Number:	1
Client:			
Remarks:			

Tested By:

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)

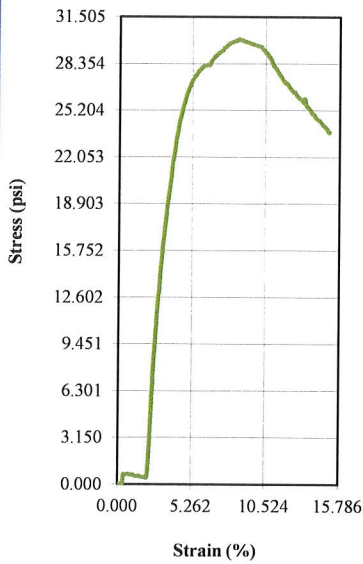


Mohr Circles



- Specimen A
- Specimen B
- Specimen C
- Specimen D
- Tangent Line

Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	27.36	0.00	0.00	0.00
Dry Density (pcf)	94.73	0.00	0.00	0.00
Saturation (%)	97.14	0.00	0.00	0.00
Void Ratio	0.75	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.993	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.650			
After Test	A	B	C	D
Water Content (%)	26.49	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	30.005	0.000	0.000	0.000
Axial Strain @ Failure (%)	8.595	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	8.7	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	38.7	0.0	0.0	0.0
σ_3 (psi)	8.7	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay, Depth 7.7 - 9.7	
Friction Angle ϕ	0.00		
Project Information			
Project Name:			
Project Number:		Job Number:	110664
Location:	Logmile 2.43, 11' LT CL, Lat 34.8377, -91.3348	Boring Number:	2
Client:		Sample Number:	2
Remarks:			

Date:

Checked By:

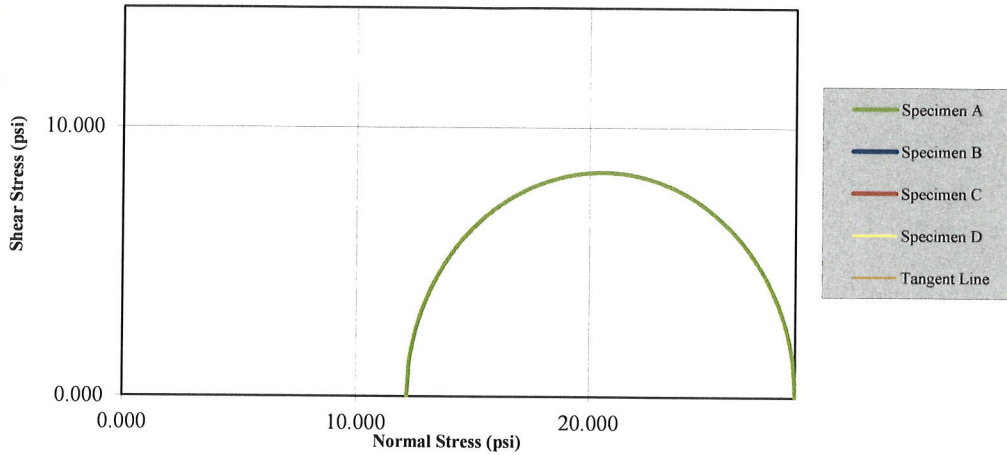
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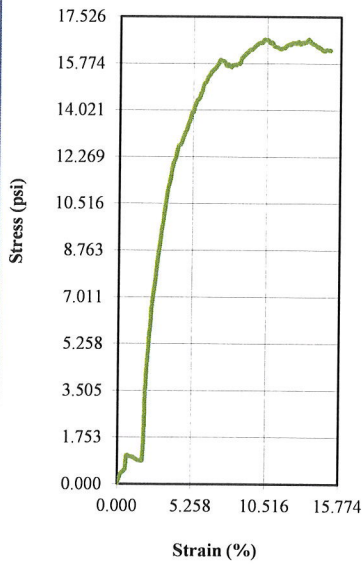
Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles



Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	34.04	0.00	0.00	0.00
Dry Density (pcf)	85.20	0.00	0.00	0.00
Saturation (%)	92.24	0.00	0.00	0.00
Void Ratio	1.01	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.893	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.750			
After Test	A	B	C	D
Water Content (%)	37.92	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	16.692	0.000	0.000	0.000
Axial Strain @ Failure (%)	13.442	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	12.2	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	28.9	0.0	0.0	0.0
σ_3 (psi)	12.2	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 11.2 - 13.2	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	110664	Boring Number:	2
Location:	LM. 2.43, 11' LT CL	Sample Number:	ST3
Client:			
Remarks:			

Date: ..

Checked By:

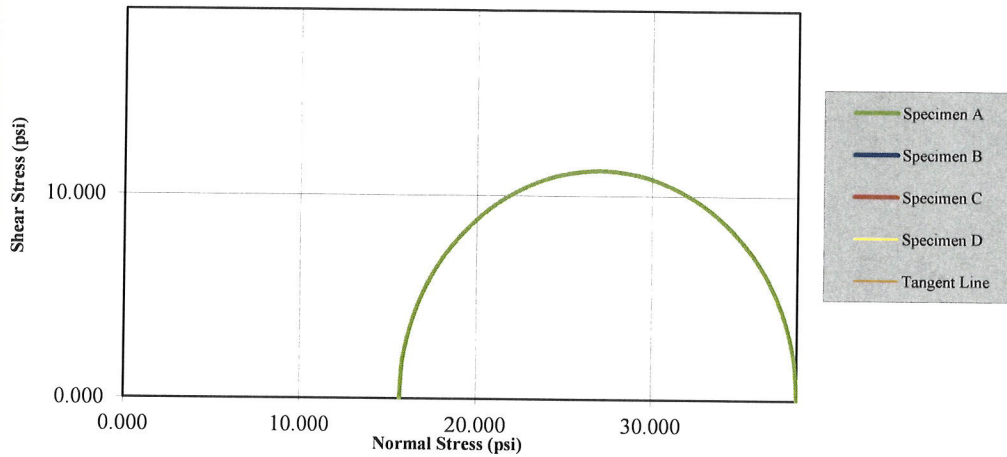
Date:

Tested By:

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



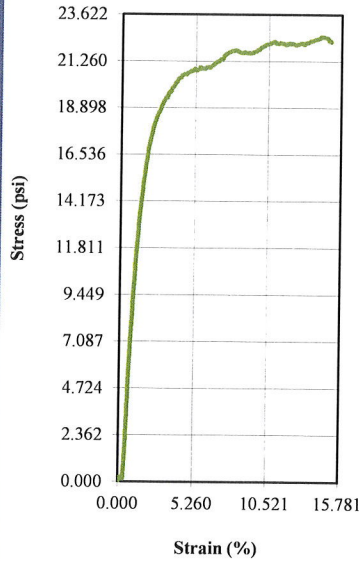
Mohr Circles



Date: _____

Checked By: _____

Stress-Strain Curve



Date: _____

Before Test	Specimen			
	A	B	C	D
Water Content (%)	28.61	0.00	0.00	0.00
Dry Density (pcf)	94.73	0.00	0.00	0.00
Saturation (%)	96.87	0.00	0.00	0.00
Void Ratio	0.81	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.030	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.750			
After Test	A	B	C	D
Water Content (%)	29.15	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	22.497	0.000	0.000	0.000
Axial Strain @ Failure (%)	14.248	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	15.7	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	38.2	0.0	0.0	0.0
σ_3 (psi)	15.7	0.0	0.0	0.0

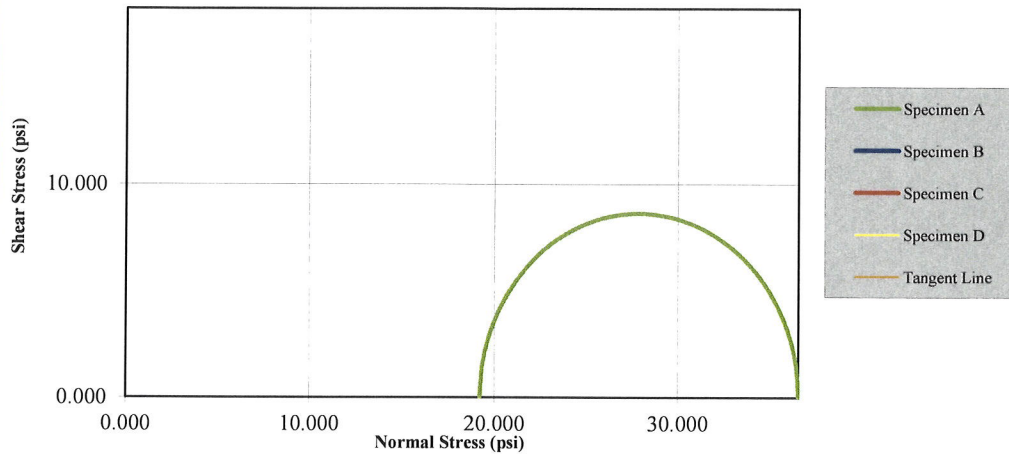
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 14.7 - 16.7	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	110664	Boring Number:	2
Location:		Sample Number:	ST4
Client:			
Remarks:			

Tested By: _____

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles

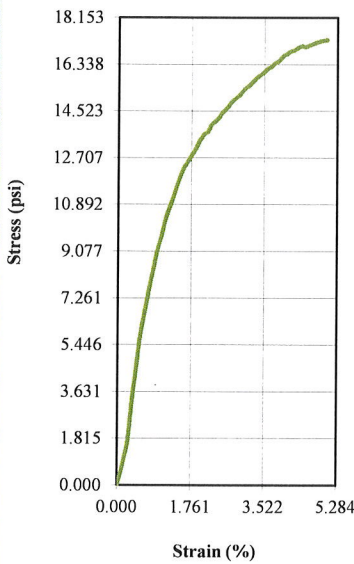


Date : _____

Checked By: _____

Date: _____

Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	27.75	0.00	0.00	0.00
Dry Density (pcf)	96.30	0.00	0.00	0.00
Saturation (%)	98.89	0.00	0.00	0.00
Void Ratio	0.76	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.633	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.720			
After Test	A	B	C	D
Water Content (%)	29.07	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	17.289	0.000	0.000	0.000
Axial Strain @ Failure (%)	5.022	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	19.2	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	36.5	0.0	0.0	0.0
σ_3 (psi)	19.2	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Gray Clay, 18.2 - 20.2	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	2
Location:		Sample Number:	5
Client:			
Remarks:			

Tested By: _____

**ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 3

PAGE 1 OF 2

JOB NO. 110664 Monroe County

DATE: January 27, 2020

JOB NAME: Hwy 70 Subsidence investigation

TYPE OF DRILLING:

Hollow Stem Auger - Shelby Tube

STATION: LM 2.56

EQUIPMENT: CME 75

LOCATION: 11' Left of Centerline

LOGGED BY: Austin Dillman

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 40.4

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.	% T C R	% R O D
			SURFACE ELEVATION:									
5			Dark Brown Gravel with Sand	-								
			Moist, Brown Lean Clay	CL	16	27	42			2		
			Moist, Medium Stiff, Brown Clay	-						3-4		
			Moist, Brown Clay	CH	19	27	53					
10			Moist, Medium Stiff, Brown Clay	-						2		
			Moist, Brown Fat Clay	CH	22	32	55			3-5		
			Moist, Very Soft, Brown Clay (No Return)	-						0		
15			Moist, Brown Fat Clay	CH	23	27	55			0-0		
			Moist, Very Stiff, Brown Clay	-						4		
			Moist, Brown Fat Clay	CH	22	29	58			6-10		
20										2		
										4-9		
25										3		
			Moist, Stiff, Brown Clay with Trace Organic Matter*							5-7		
30										1		
										4-5		
35										3		

REMARKS: * Water was encountered at 33.1' below ground level.

**ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 3
PAGE 2 OF 2



JOB NO. 110664 Monroe County
JOB NAME: Hwy 70 Subsidence investigation

DATE: January 27, 2020
TYPE OF DRILLING:
Hollow Stem Auger - Shelby Tube
EQUIPMENT: CME 75

STATION: LM 2.56
LOCATION: 11' Left of Centerline
LOGGED BY: Austin Dillman

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 40.4

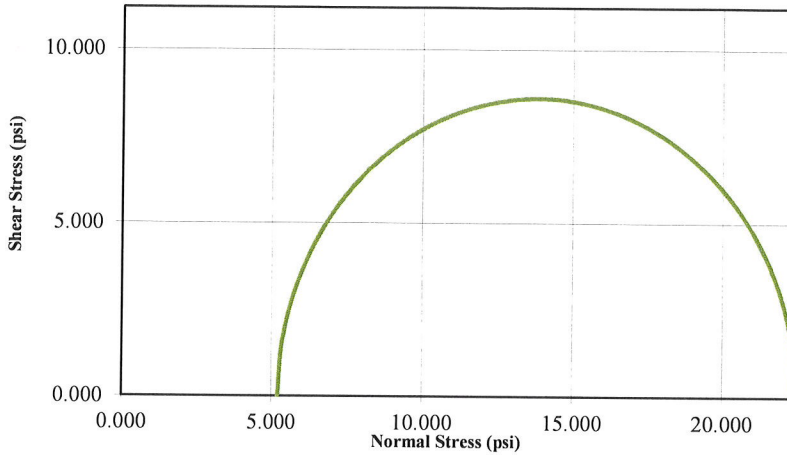
DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% T C R	% R Q D
			SURFACE ELEVATION:									
			Wet, Stiff, Brown Clay							4-6		
40			Wet, Very Loose, Gray Sand							1 1-2		
			Boring Terminated									
45												
50												
55												
60												
65												
70												

REMARKS: * Water was encountered at 33.1' below ground level.

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles



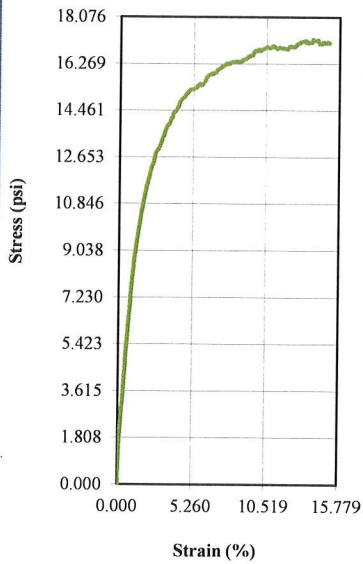
- Specimen A
- Specimen B
- Specimen C
- Specimen D
- Tangent Line

Date: _____

Checked By: _____

Date: _____

Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	26.89	0.00	0.00	0.00
Dry Density (pcf)	95.23	0.00	0.00	0.00
Saturation (%)	92.12	0.00	0.00	0.00
Void Ratio	0.80	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.000	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.750			
After Test	A	B	C	D
Water Content (%)	28.71	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	17.215	0.000	0.000	0.000
Axial Strain @ Failure (%)	13.844	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	5.2	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	22.4	0.0	0.0	0.0
σ_3 (psi)	5.2	0.0	0.0	0.0

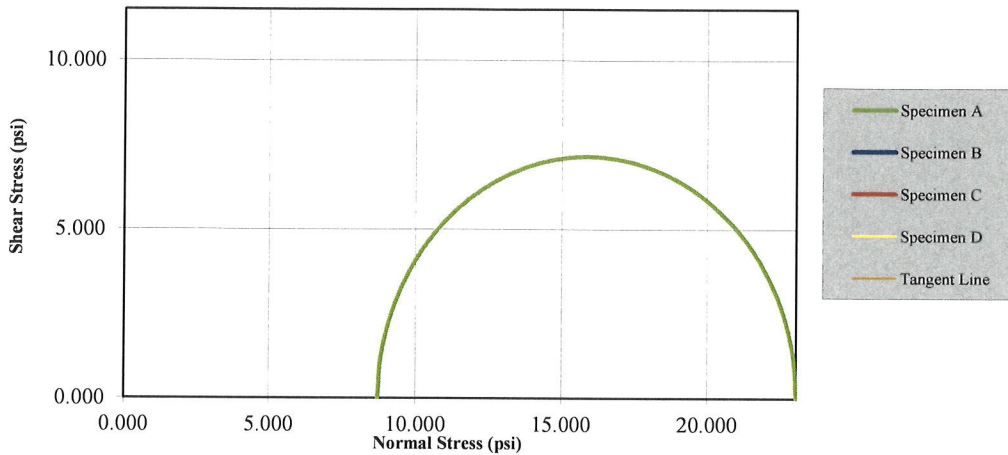
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Brown Clay 4.2 - 6.2	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	110664	Boring Number:	3
Location:		Sample Number:	ST30
Client:			
Remarks:			

Tested By: _____

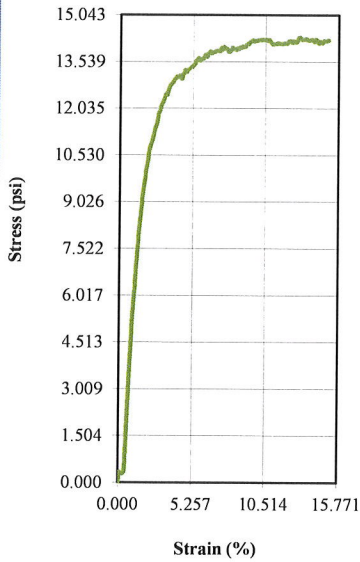
Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles



Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	26.61	0.00	0.00	0.00
Dry Density (pcf)	94.80	0.00	0.00	0.00
Saturation (%)	90.25	0.00	0.00	0.00
Void Ratio	0.81	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.007	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.750			
After Test	A	B	C	D
Water Content (%)	28.82	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	14.327	0.000	0.000	0.000
Axial Strain @ Failure (%)	12.956	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	8.7	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	23.0	0.0	0.0	0.0
σ_3 (psi)	8.7	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Brown Clay 7.7 - 9.7	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	3
Location:		Sample Number:	1
Client:			
Remarks:			

Date: _____

Checked By: _____

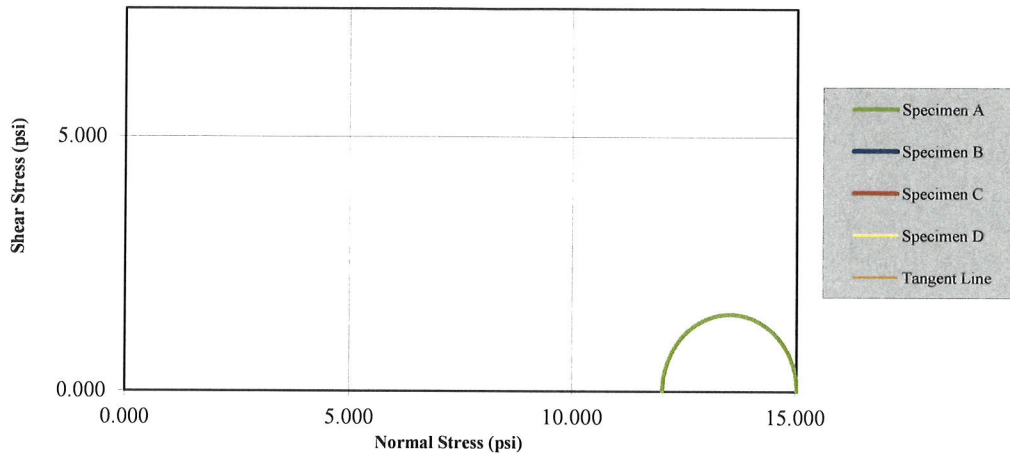
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Tested By: _____

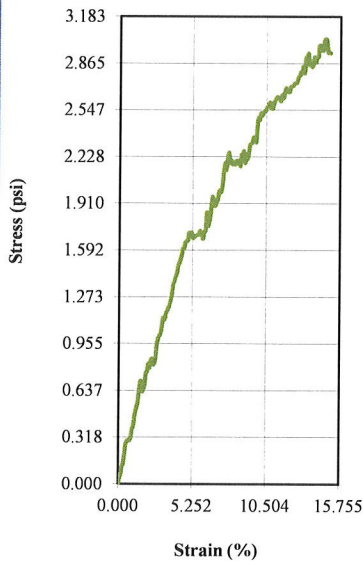
Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles



Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	31.71	0.00	0.00	0.00
Dry Density (pcf)	91.05	0.00	0.00	0.00
Saturation (%)	99.72	0.00	0.00	0.00
Void Ratio	0.86	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	5.993	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.720			
After Test	A	B	C	D
Water Content (%)	27.09	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	3.032	0.000	0.000	0.000
Axial Strain @ Failure (%)	14.665	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	12.0	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	15.0	0.0	0.0	0.0
σ_3 (psi)	12.0	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Gray Clay 11.2 - 13.2	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	110664	Boring Number:	3
Location:		Sample Number:	
Client:			
Remarks:			

Date: _____

Checked By: _____

Date: _____

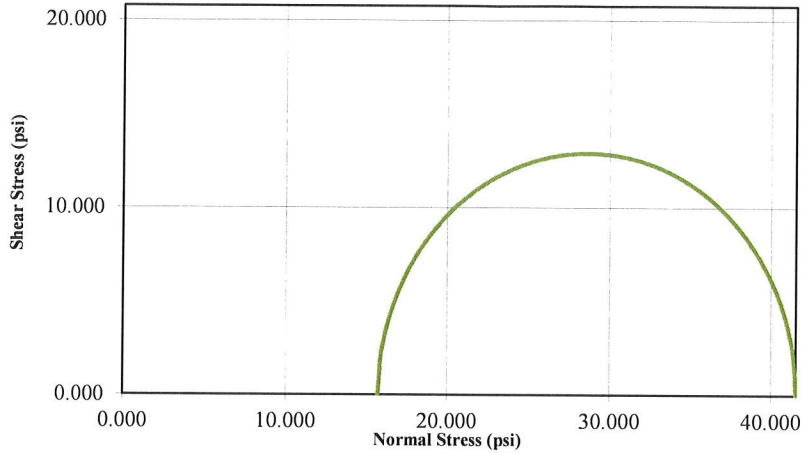
Tested By: _____

Arkansas Highway & Transportation Department

Unconsolidated Undrained Triaxial Test (ASTM D2850)

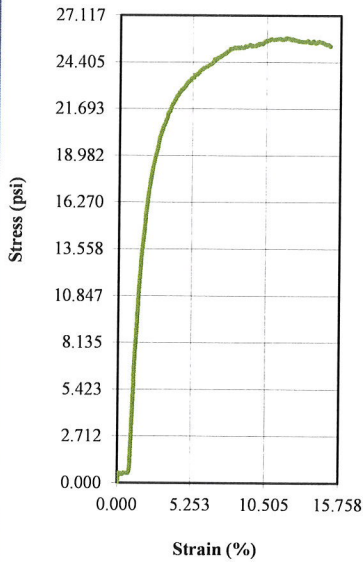


Mohr Circles



- Specimen A
- Specimen B
- Specimen C
- Specimen D
- Tangent Line

Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	27.20	0.00	0.00	0.00
Dry Density (pcf)	98.01	0.00	0.00	0.00
Saturation (%)	100.99	0.00	0.00	0.00
Void Ratio	0.73	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.000	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.720			
After Test	A	B	C	D
Water Content (%)	26.74	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	25.825	0.000	0.000	0.000
Axial Strain @ Failure (%)	11.835	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	15.7	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	41.5	0.0	0.0	0.0
σ_3 (psi)	15.7	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Gray Clay 14.7 - 16.7	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	110664	Boring Number:	3
Location:		Sample Number:	ST 33
Client:			
Remarks:			

Date:

Checked By:

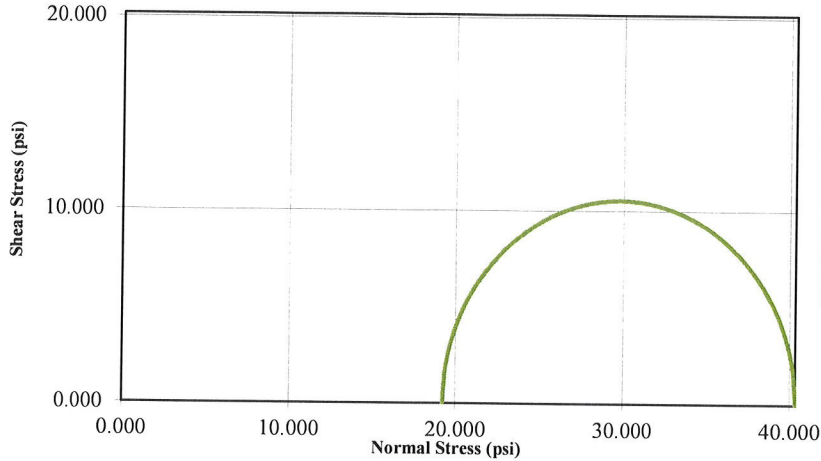
Date:

Tested By:

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles



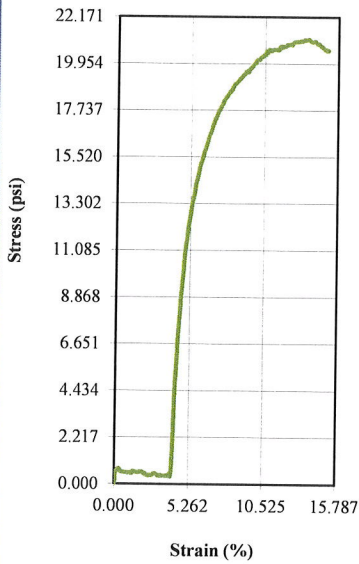
- Specimen A
- Specimen B
- Specimen C
- Specimen D
- Tangent Line

Date:

Checked By:

Date:

Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	28.61	0.00	0.00	0.00
Dry Density (pcf)	106.70	0.00	0.00	0.00
Saturation (%)	137.72	0.00	0.00	0.00
Void Ratio	0.55	0.00	0.00	0.00
Diameter (in)	2.720	0.000	0.000	0.000
Height (in)	6.020	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.650			
After Test	A	B	C	D
Water Content (%)	26.99	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	21.115	0.000	0.000	0.000
Axial Strain @ Failure (%)	13.653	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	19.2	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	40.3	0.0	0.0	0.0
σ_3 (psi)	19.2	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay trace organic matter	
Friction Angle ϕ	0.00		
Project Information			
Project Name:	110664	Job Number:	110664
Project Number:		Boring Number:	3
Location:	Logmile 2.56, 11' LT	Sample Number:	9
Client:			
Remarks:			

Tested By:

**ARKANSAS DEPARTMENT OF TRANSPORTATION
MATERIALS DIVISION - GEOTECHNICAL SEC.**

BORING NO. 4
PAGE 1 OF 1

JOB NO. 110664 Monroe County
JOB NAME: Hwy 70 Subsidence investigation

DATE: January 22, 2020
TYPE OF DRILLING:
Hollow Stem Auger - Shelby Tube
EQUIPMENT: CME 75

STATION: LM 3.382
LOCATION: 11.5 Left of Centerline
LOGGED BY: Austin Dillman

HAMMER CORRECTION FACTOR: 1.37

COMPLETION DEPTH: 31.1

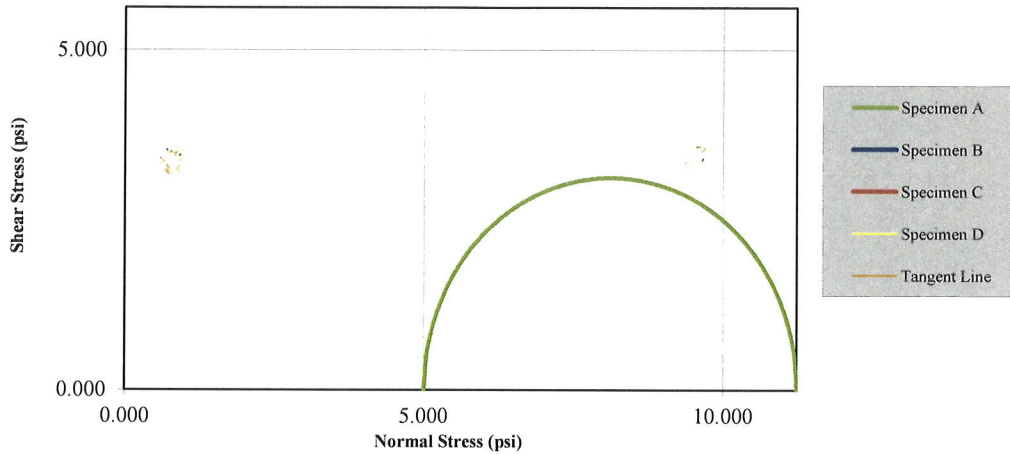
DEPTH FT.	SYMBOL	SAMPLES	DESCRIPTION OF MATERIAL	SOIL GROUP	PLASTIC LIMIT	% MOIST.	LIQUID LIMIT	DRY WEIGHT	LBS PER CU.FT.	NO. OF BLOWS PER 6-IN.	% T C R	% R O D
			SURFACE ELEVATION:									
5			Moist, Dark Brown Sand with Gravel and Some Organic Matter	-								
			Moist, Dark Brown Sand with Gravel									
			Moist, Gray Lean Clay with Sand	CL	14	24	33					
			Moist, Medium Stiff, Gray Fat Clay	CH	17		55			2		
										4-4		
10			Moist, Lean Clay with Some Organic Matter	CL	16	20	47					
			Moist, Stiff, Brown Lean Clay with Sand	CL	13		29			3		
										5-7		
			Moist, Gray Clayey Sand	SC	13		26					
			Moist, Gray Lean Clay	CL	18	18	40					
15			Moist, Medium Stiff, Gray Lean Clay	CL	17		44			2		
										2-5		
			Moist, Gray Lean Clay with Sand and Some Organic Matter	CL	14	25	32					
			Moist, Medium Stiff, Gray Lean Clay	CL	15		25			2		
										3-4		
20			Moist, Gray Fat Clay	CH	19	27	54					
			Moist, Very Stiff, Brown Lean Clay*	CL	18		47			6		
										8-10		
25				-								
			Moist, Stiff, Gray Lean Clay with Sand	CL	14		32			3		
										6-7		
30				-								
			Wet, Loose, Gray Well Graded Sand	SW						2		
										3-4		
			Boring Terminated									
35												

REMARKS: * Water encountered at 24.2' below ground level.

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



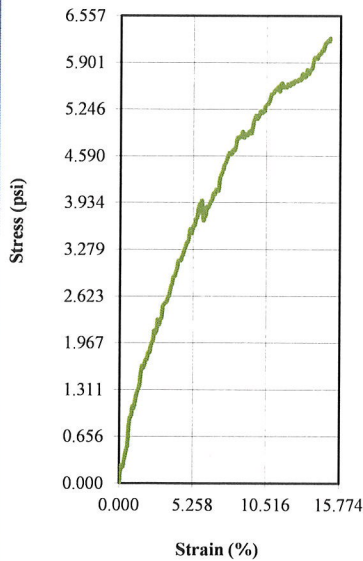
Mohr Circles



Date : _____

Checked By: _____

Stress-Strain Curve



Date: _____

		Specimen			
Before Test		A	B	C	D
Water Content (%)		23.96	0.00	0.00	0.00
Dry Density (pcf)		99.39	0.00	0.00	0.00
Saturation (%)		90.59	0.00	0.00	0.00
Void Ratio		0.73	0.00	0.00	0.00
Diameter (in)		2.875	0.000	0.000	0.000
Height (in)		6.133	0.000	0.000	0.000
Liquid Limit					
Plastic Limit					
Specific Gravity		2.750			
After Test		A	B	C	D
Water Content (%)		22.33	0.00	0.00	0.00
Test Data		A	B	C	D
Strain Rate (in/min)		0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)		6.245	0.000	0.000	0.000
Axial Strain @ Failure (%)		15.023	0.000	0.000	0.000
Cell Pressure		A	B	C	D
Cell (psi)		5.0	0.0	0.0	0.0
Back (psi)		n/a	n/a	n/a	n/a
Principle Stresses at Failure		A	B	C	D
σ_1 (psi)		11.2	0.0	0.0	0.0
σ_3 (psi)		5.0	0.0	0.0	0.0

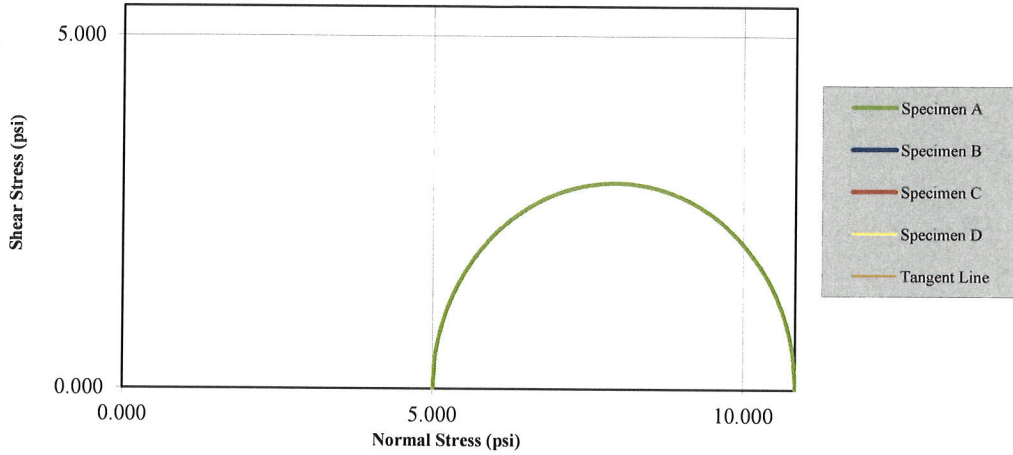
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 4.6 - 6.6	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	4
Location:	L.M 3.382, 11.5 feet left	Sample Number:	1
Client:			
Remarks:			

Tested By: _____

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



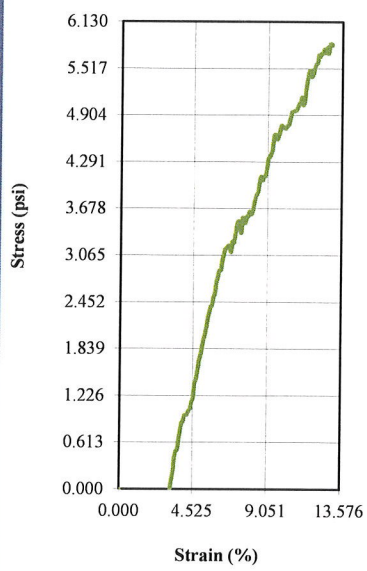
Mohr Circles



Date : .

Checked By:

Stress-Strain Curve



Date:

Before Test	Specimen			
	A	B	C	D
Water Content (%)	17.53	0.00	0.00	0.00
Dry Density (pcf)	103.69	0.00	0.00	0.00
Saturation (%)	73.53	0.00	0.00	0.00
Void Ratio	0.66	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.023	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.750			
After Test	A	B	C	D
Water Content (%)	25.20	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	5.838	0.000	0.000	0.000
Axial Strain @ Failure (%)	12.882	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	5.0	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	10.8	0.0	0.0	0.0
σ_3 (psi)	5.0	0.0	0.0	0.0

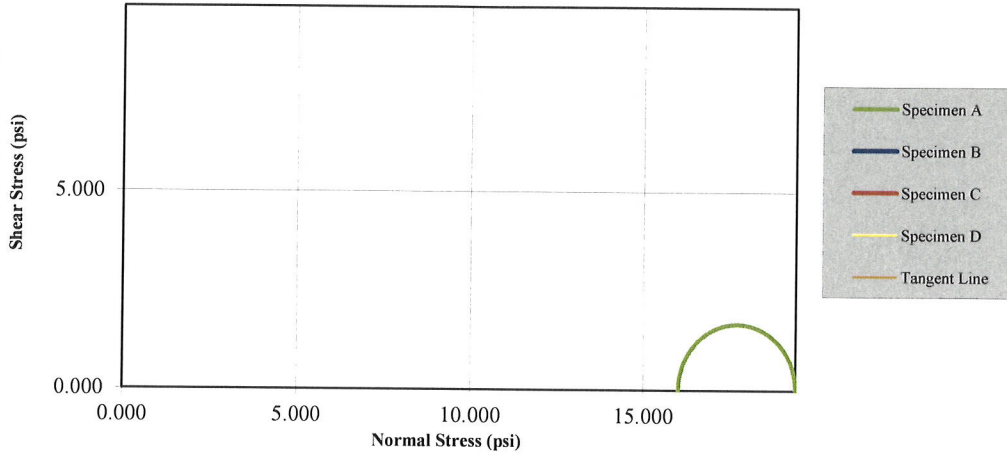
Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 12.9-13.4.6	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	4
Location:	LM 3.382/11.5 Lt	Sample Number:	5
Client:			
Remarks:			

Tested By:

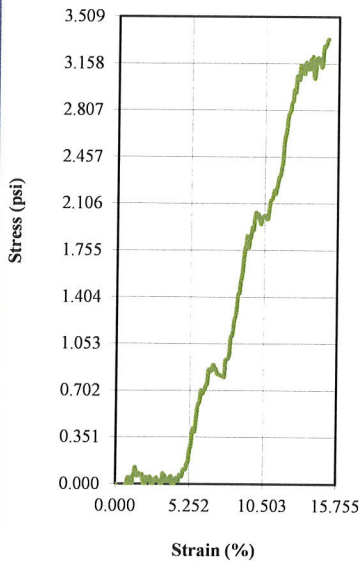
Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



Mohr Circles



Stress-Strain Curve



Before Test	Specimen			
	A	B	C	D
Water Content (%)	24.90	0.00	0.00	0.00
Dry Density (pcf)	99.06	0.00	0.00	0.00
Saturation (%)	93.41	0.00	0.00	0.00
Void Ratio	0.73	0.00	0.00	0.00
Diameter (in)	2.875	0.000	0.000	0.000
Height (in)	6.040	0.000	0.000	0.000
Liquid Limit				
Plastic Limit				
Specific Gravity	2.750			
After Test	A	B	C	D
Water Content (%)	23.07	0.00	0.00	0.00
Test Data	A	B	C	D
Strain Rate (in/min)	0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)	3.342	0.000	0.000	0.000
Axial Strain @ Failure (%)	15.005	0.000	0.000	0.000
Cell Pressure				
Cell (psi)	16.0	0.0	0.0	0.0
Back (psi)	n/a	n/a	n/a	n/a
Principle Stresses at Failure				
σ_1 (psi)	19.3	0.0	0.0	0.0
σ_3 (psi)	16.0	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Clay 15.1-17.1	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:		Boring Number:	4
Location:	LM 3.382	Sample Number:	7
Client:			
Remarks:			

Date : _____

Checked By: _____

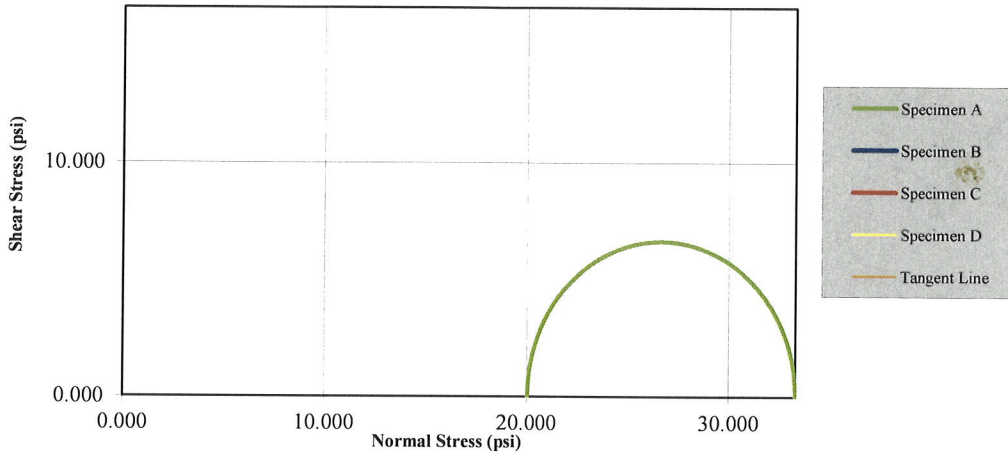
Date: _____

Tested By: _____

Arkansas Highway & Transportation Department
Unconsolidated Undrained Triaxial Test (ASTM D2850)



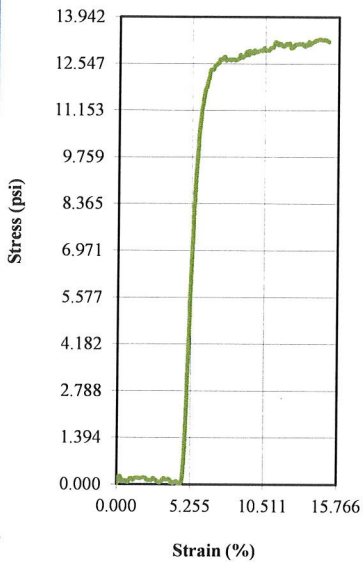
Mohr Circles



Date : .

Checked By:

Stress-Strain Curve



Date:

		Specimen			
Before Test		A	B	C	D
Water Content (%)		26.85	0.00	0.00	0.00
Dry Density (pcf)		96.09	0.00	0.00	0.00
Saturation (%)		93.86	0.00	0.00	0.00
Void Ratio		0.79	0.00	0.00	0.00
Diameter (in)		2.875	0.000	0.000	0.000
Height (in)		6.067	0.000	0.000	0.000
Liquid Limit					
Plastic Limit					
Specific Gravity		2.750			
After Test		A	B	C	D
Water Content (%)		28.22	0.00	0.00	0.00
Test Data		A	B	C	D
Strain Rate (in/min)		0.03	0.00	0.00	0.00
Peak Deviator Stress (psi)		13.278	0.000	0.000	0.000
Axial Strain @ Failure (%)		14.373	0.000	0.000	0.000
		Cell Pressure			
Cell (psi)		20.0	0.0	0.0	0.0
Back (psi)		n/a	n/a	n/a	n/a
		Principle Stresses at Failure			
σ_1 (psi)		33.3	0.0	0.0	0.0
σ_3 (psi)		20.0	0.0	0.0	0.0

Mohr-Coulomb Strength Parameters		Sample Description	
C (psi)	0.0	Depth 18.6 - 20.6	
Friction Angle ϕ	0.00		
Project Information			
Project Name:		Job Number:	110664
Project Number:	110664	Boring Number:	4
Location:	LM 3.382/11.5 Lt	Sample Number:	9
Client:			
Remarks:			

Tested By:

APPENDIX C

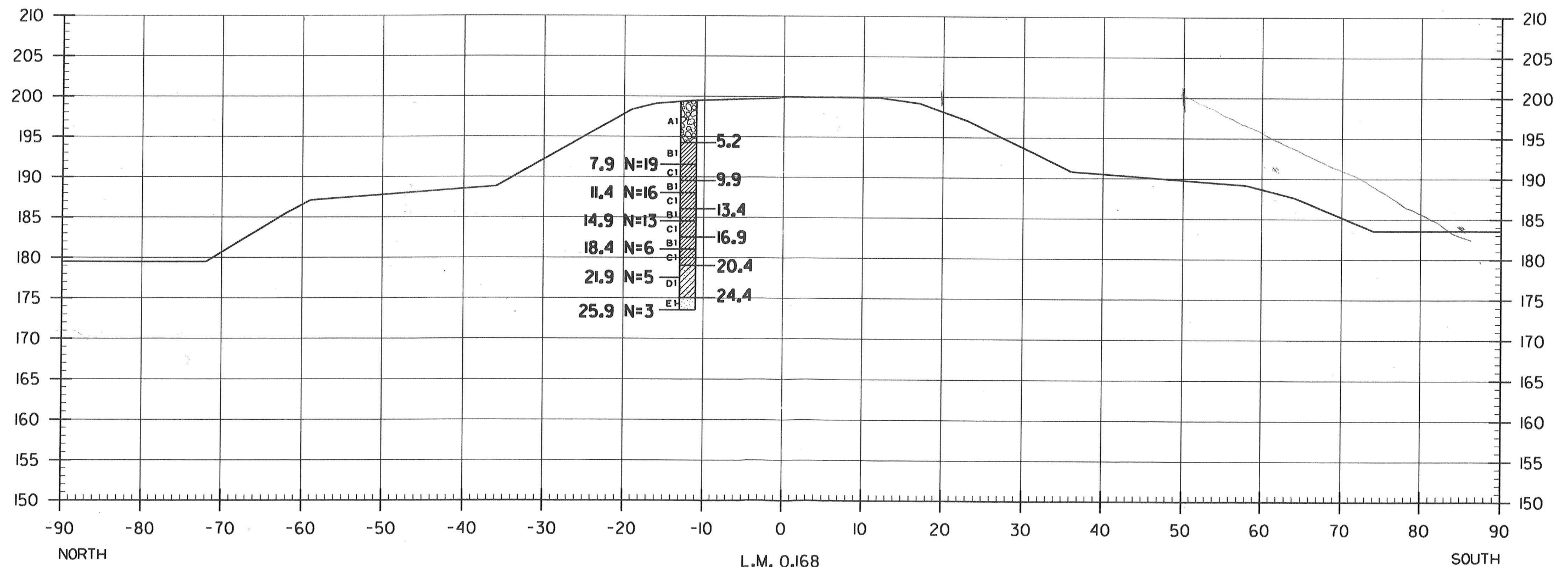
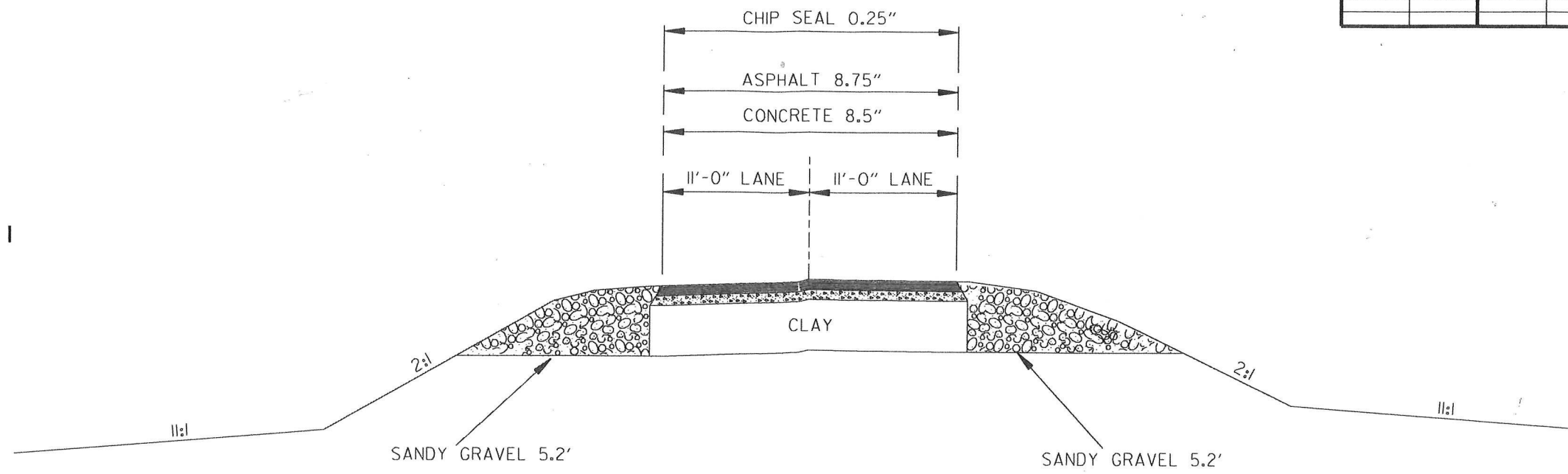
CROSS SECTIONS WITH PAVEMENT AND SUBSURFACE DATA

B1 L.M. 0.168
 12' Lt. of CL
 6.4-7.9, N=19
 9.9-11.4, N=16
 13.4-14.9, N=13
 16.9-18.4, N=6
 20.4-21.9, N=6
 24.4-25.9, N=3

A1-Sand w/ Gravel
 B1-Clay
 C1-Sandy Clay
 D1-Clayey Sand
 E1-Sand
 H1-Gravel

DATE REVISED	DATE PLANNED	DATE REVISED	DATE PLANNED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				3	ARR.			
						JOB NO.	110664	4

② CROSS SECTIONS



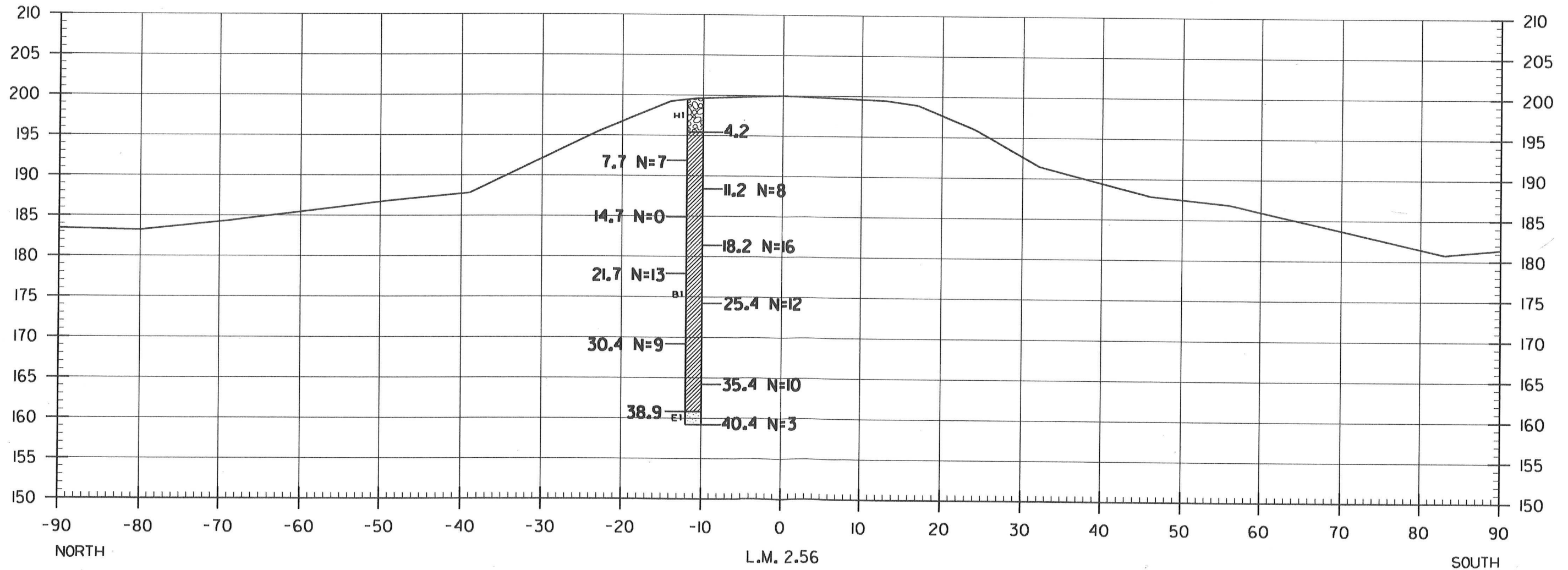
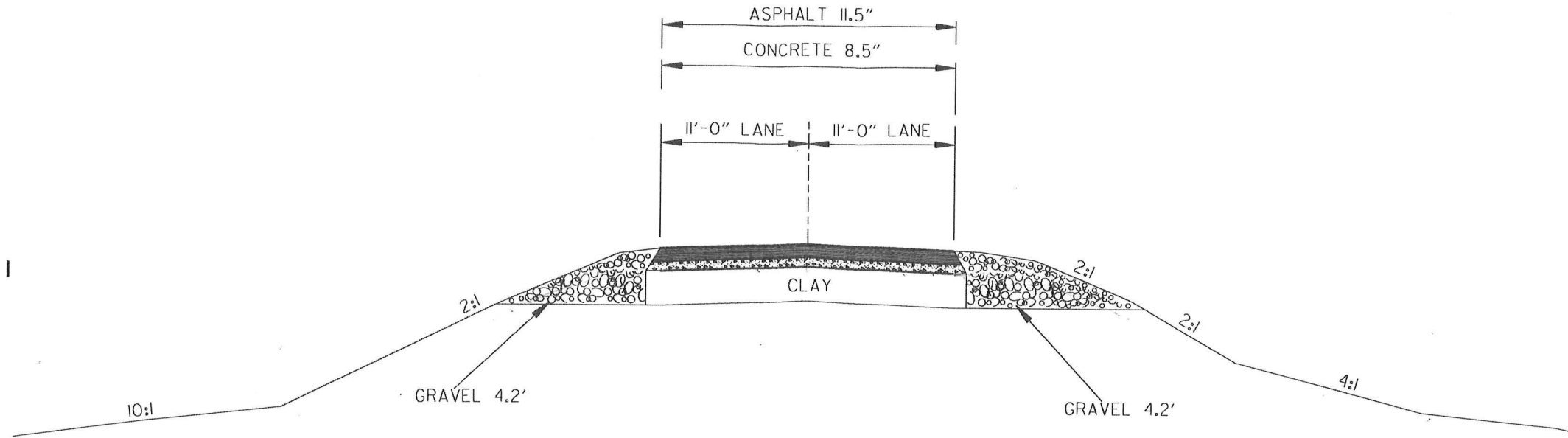
CROSS SECTION L.M. 0.168

B3 L.M. 2.56
 11' Lt. of CL
 6.2-7.7, N=7
 9.7-11.2, N=8
 13.2-14.7, N=0
 16.7-18.2, N=16
 20.2-21.7, N=13
 23.9-25.4, N=12
 28.9-30.4, N=9
 33.9-35.4, N=10
 38.9-40.4, N=3

A1-Sand w/ Gravel
 B1-Clay
 C1-Sandy Clay
 D1-Clayey Sand
 E1-Sand
 H1-Gravel

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				3	ARK.			
JOB NO.						110664	3	4

② CROSS SECTIONS



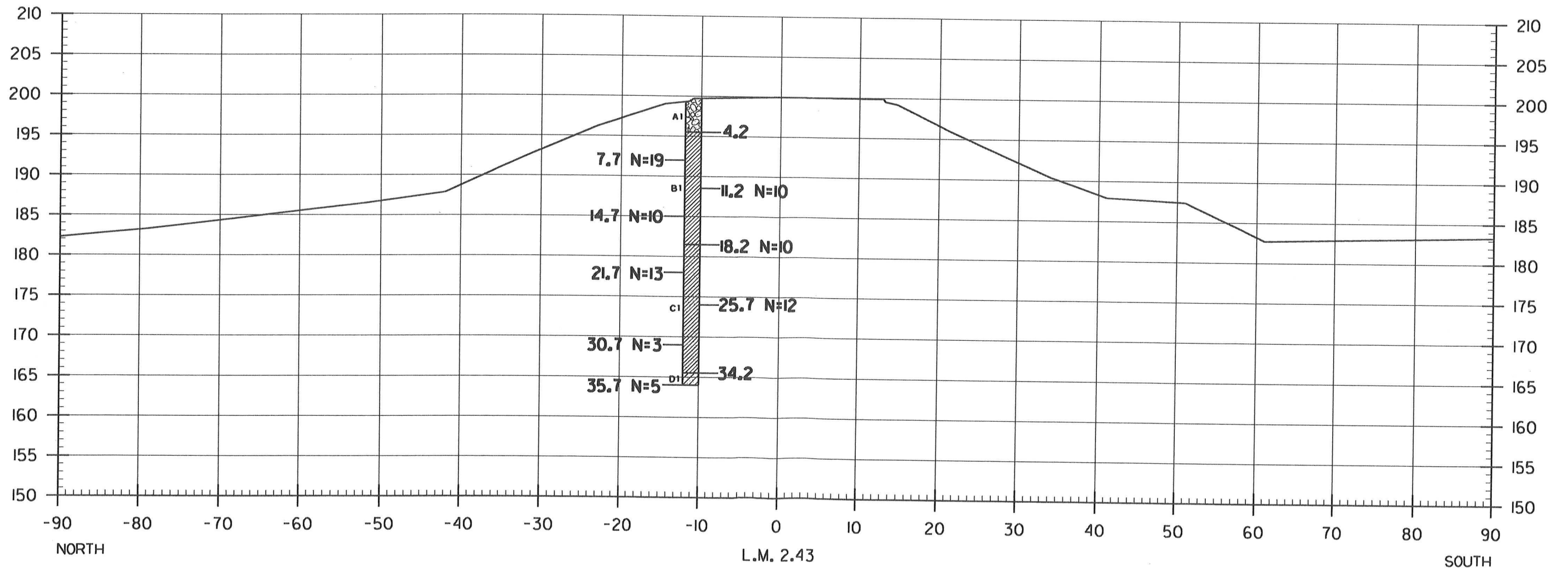
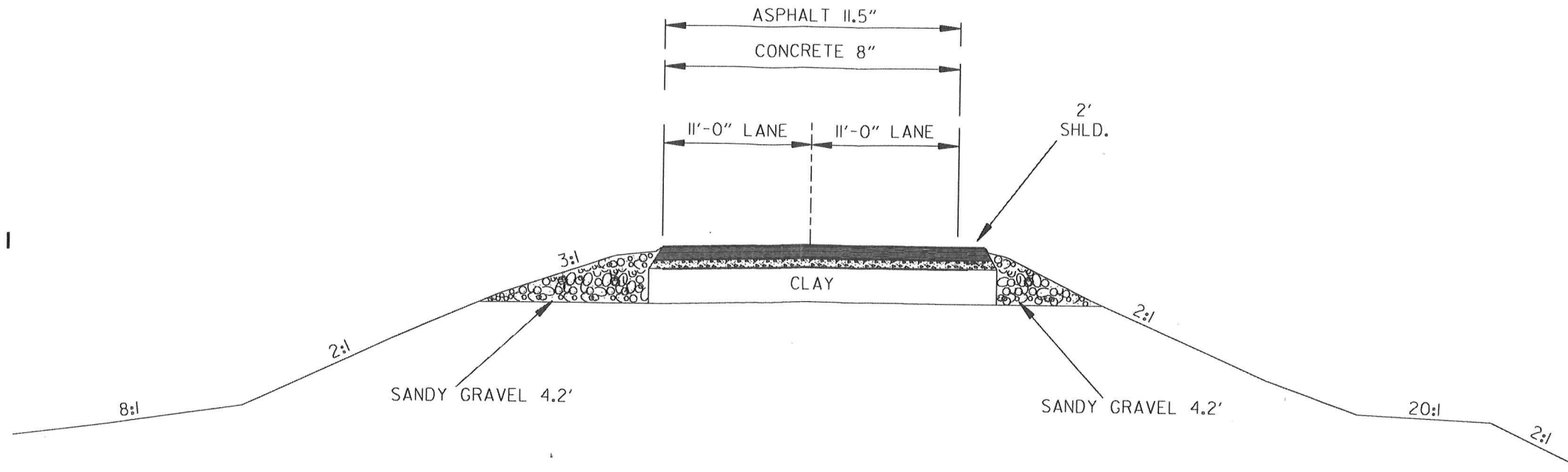
CROSS SECTION L.M. 2.56

B2 L.M. 2.43
 11' Lt. of CL
 6.2-7.7, N=19
 9.7-11.2, N=10
 13.2-14.7, N=10
 16.7-18.2, N=10
 20.2-21.7, N=13
 24.2-25.7, N=12
 29.2-30.7, N=3
 34.2-35.7, N=5

A1-Sand w/ Gravel
 B1-Clay
 C1-Sandy Clay
 D1-Clayey Sand
 E1-Sand
 H1-Gravel

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				3	ARK.			
						JOB NO. 110664	2	4

② CROSS SECTIONS



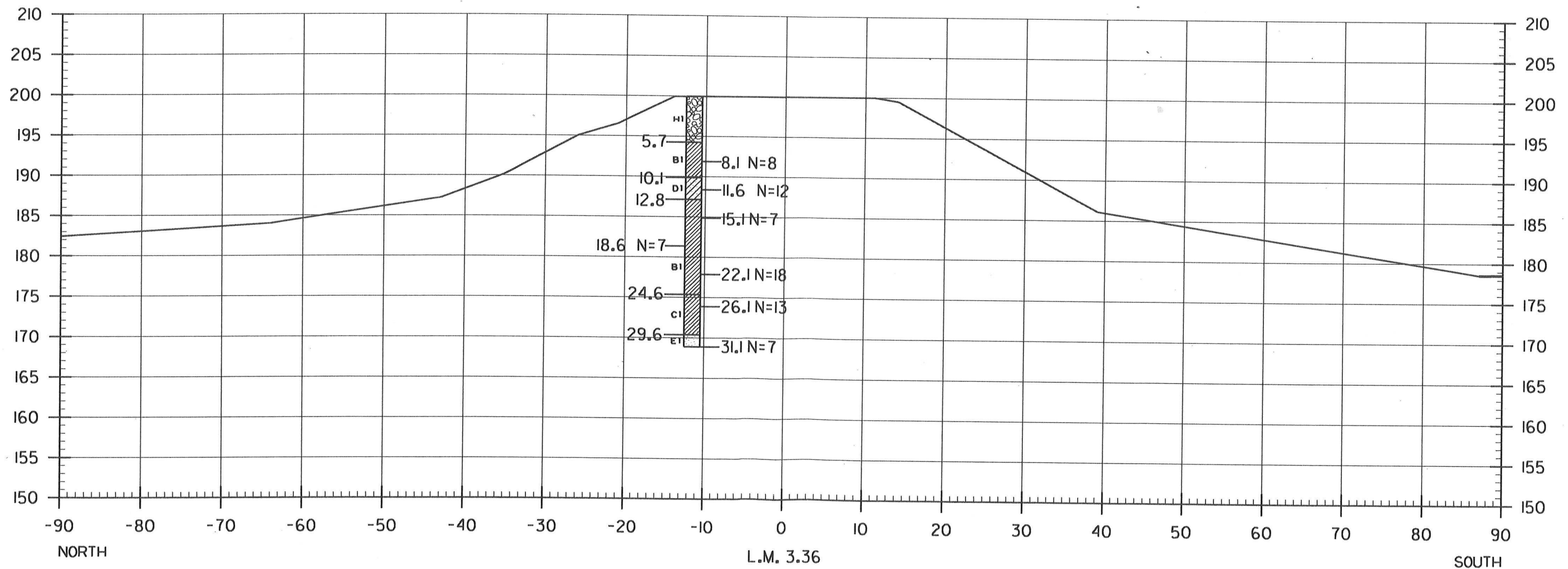
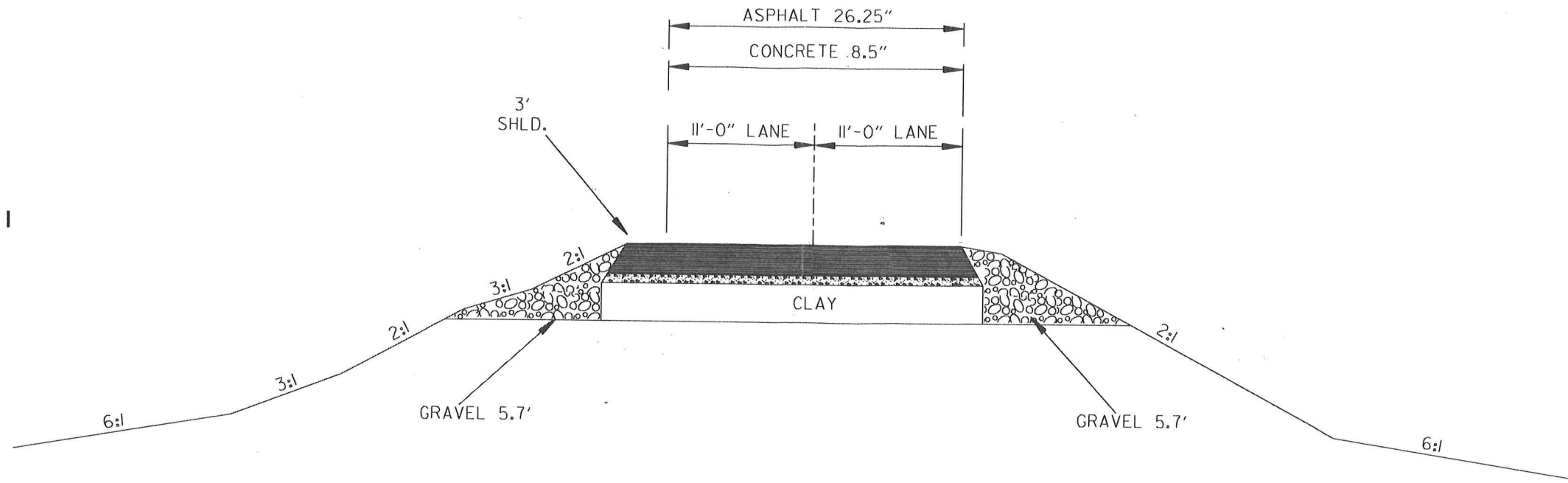
CROSS SECTION L.M. 2.43

B4 L.M. 3.36
 11.5' Lt. of CL
 6.6-8.1, N=8
 10.6-11.6, N=12
 13.6-15.1, N=7
 17.1-18.6, N=7
 20.6-22.1, N=18
 24.6-26.1, N=12
 29.6-31.1, N=7

A1-Sand w/ Gravel
 B1-Clay
 C1-Sandy Clay
 D1-Clayey Sand
 E1-Sand
 H1-Gravel

DATE REVISED	DATE FILED	DATE REVISED	DATE FILED	FED. NO. DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				3	ARK.		4	
						JOB NO. 110664		

2 CROSS SECTIONS



CROSS SECTION L.M. 3.36