

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	1

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.043	Diameter 1:	2.850
Length 2:	6.111	Diameter 2:	2.855
Length 3:	6.075	Diameter 3:	2.837
<i>Avg. Length:</i>	6.076	<i>Avg. Diam.:</i>	2.847

**PRESSURES (psi)**

Cell Pressure (psi)	53.65
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	3.7
Pore Pressure	
Response (%)	97

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	19.1
Final Change (ml)	4.9

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	9.25
Q	=	7.24

Initial Dial Reading (mil)	124
Dial Reading After Saturation (mil)	129
Dial Reading After Consolidation (mil)	160

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
12.8	0.000	50.0
18.4	0.002	50.1
22.9	0.003	50.3
36.3	0.009	50.9
43.2	0.016	51.1
48.3	0.021	51.4
55.1	0.030	51.6
62.0	0.040	51.8
71.3	0.052	52.0
87.8	0.074	51.9
106.1	0.104	51.6
115.8	0.140	50.8
116.9	0.177	50.0
112.4	0.220	49.5
109.0	0.250	49.2
107.6	0.293	48.9
109.1	0.351	48.5
112.1	0.412	48.3
114.9	0.457	48.2
119.7	0.519	47.9
122.5	0.565	47.8
126.7	0.612	47.6
128.2	0.656	47.4
129.3	0.687	47.3
130.5	0.718	47.2
131.5	0.748	47.1
133.0	0.778	47.0
135.8	0.823	46.8
138.5	0.869	46.7
139.7	0.899	46.6
139.8	0.915	46.6

Tested By: MY      Date: 9/13/20      Input Checked By: MPS      Date: 9/17/20

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Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	3.7	Stage No.	0
		Test No	1

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.08
Initial Sample Diameter (in)	2.85
Initial Sample Area (in <sup>2</sup> )	6.37
Initial Sample Volume (in <sup>3</sup> )	38.69

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	38.30
Length After Consolidation (in)	6.04
Area After Consolidation (in <sup>2</sup> )	6.340

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.03	0.88	0.09	4.44	3.6	1.249	0.11	4.00	0.44
0.04	1.60	0.31	4.94	3.3	1.480	0.20	4.14	0.80
0.15	3.70	0.88	6.47	2.8	2.336	0.25	4.62	1.85
0.26	4.79	1.11	7.33	2.5	2.882	0.24	4.94	2.39
0.34	5.59	1.40	7.84	2.3	3.481	0.26	5.05	2.79
0.50	6.65	1.64	8.67	2.0	4.301	0.25	5.34	3.33
0.66	7.71	1.77	9.59	1.9	5.097	0.24	5.74	3.85
0.86	9.15	1.95	10.84	1.7	6.389	0.22	6.27	4.57
1.22	11.70	1.94	13.40	1.7	7.849	0.17	7.56	5.85
1.72	14.47	1.64	16.48	2.0	8.195	0.12	9.25	7.24
2.32	15.87	0.83	18.69	2.8	6.628	0.05	10.76	7.94
2.92	15.95	0.04	19.56	3.6	5.417	0.00	11.58	7.97
3.64	15.14	-0.54	19.33	4.2	4.611	-0.04	11.76	7.57
4.14	14.55	-0.85	19.05	4.5	4.237	-0.06	11.77	7.28
4.85	14.24	-1.13	19.02	4.8	3.977	-0.08	11.90	7.12
5.81	14.32	-1.45	19.42	5.1	3.804	-0.10	12.26	7.16
6.82	14.60	-1.71	19.96	5.4	3.723	-0.12	12.66	7.30
7.57	14.90	-1.84	20.39	5.5	3.713	-0.13	12.94	7.45
8.59	15.41	-2.08	21.14	5.7	3.691	-0.14	13.43	7.71
9.35	15.70	-2.22	21.56	5.9	3.676	-0.15	13.71	7.85
10.12	16.16	-2.42	22.23	6.1	3.663	-0.15	14.15	8.08
10.86	16.23	-2.56	22.44	6.2	3.616	-0.16	14.32	8.12
11.38	16.29	-2.68	22.63	6.3	3.572	-0.17	14.48	8.15
11.88	16.37	-2.79	22.81	6.4	3.540	-0.18	14.63	8.18
12.38	16.42	-2.93	23.00	6.6	3.495	-0.18	14.79	8.21
12.89	16.52	-3.02	23.18	6.7	3.478	-0.19	14.92	8.26
13.63	16.76	-3.21	23.62	6.9	3.444	-0.20	15.24	8.38
14.39	16.97	-3.31	23.93	7.0	3.439	-0.20	15.45	8.49
14.89	17.04	-3.39	24.08	7.0	3.422	-0.20	15.56	8.52
15.15	17.01	-3.41	24.07	7.1	3.410	-0.21	15.56	8.50

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	2

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.178	Diameter 1:	2.846
Length 2:	6.117	Diameter 2:	2.858
Length 3:	6.118	Diameter 3:	2.850
Avg. Length	6.138	Avg. Diam.:	2.851

**PRESSURES (psi)**

Cell Pressure (psi)	57.3
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	7.3
Pore Pressure Response (%)	98

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	19.4
Final Change (ml)	4.6

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	13.82
Q	=	10.73

Initial Dial Reading (mil)	151
Dial Reading After Saturation (mil)	173
Dial Reading After Consolidation (mil)	226

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
10.7	0.000	50.0
14.2	0.001	50.0
18.6	0.003	50.0
43.6	0.008	51.4
58.0	0.015	52.2
68.4	0.021	52.5
81.6	0.030	53.5
88.7	0.039	53.9
101.9	0.052	54.1
121.9	0.073	54.3
149.4	0.104	54.2
170.9	0.140	53.4
175.3	0.177	52.3
178.3	0.219	51.2
185.6	0.250	50.4
183.7	0.293	49.5
176.9	0.351	48.7
164.9	0.412	48.0
158.8	0.458	47.5
160.7	0.520	47.2
158.8	0.567	47.0
169.1	0.612	47.0
183.1	0.658	46.9
191.4	0.689	46.8
192.9	0.718	46.8
195.8	0.749	46.7
193.5	0.779	46.7
199.7	0.826	46.5
213.9	0.872	46.4
229.6	0.902	46.3
225.5	0.932	46.2

Tested By: MY      Date: 9/13/20      Input Checked By: MPS      Date: 9/17/20

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Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		

Visual Description: Gray Clay (UNDISTURBED)

<i>Effective Confining Pressure (psi)</i>	7.3	<i>Stage No.</i>	0
		<i>Test No</i>	2

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.14
Initial Sample Diameter (in)	2.85
Initial Sample Area (in <sup>2</sup> )	6.39
Initial Sample Volume (in <sup>3</sup> )	39.19

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	38.49
Length After Consolidation (in)	6.06
Area After Consolidation (in <sup>2</sup> )	6.349

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	0.55	0.00	7.85	7.3	1.075	0.01	7.57	0.27
0.05	1.24	0.04	8.50	7.3	1.171	0.03	7.88	0.62
0.14	5.17	1.43	11.04	5.9	1.882	0.28	8.45	2.59
0.24	7.42	2.19	12.53	5.1	2.454	0.30	8.82	3.71
0.35	9.05	2.48	13.87	4.8	2.877	0.28	9.35	4.52
0.49	11.10	3.55	14.85	3.8	3.960	0.33	9.30	5.55
0.64	12.20	3.88	15.62	3.4	4.571	0.32	9.52	6.10
0.85	14.24	4.14	17.40	3.2	5.502	0.30	10.28	7.12
1.20	17.30	4.35	20.25	3.0	6.857	0.26	11.60	8.65
1.71	21.47	4.21	24.55	3.1	7.953	0.20	13.82	10.73
2.31	24.65	3.37	28.58	3.9	7.272	0.14	16.25	12.32
2.92	25.17	2.33	30.14	5.0	6.065	0.09	17.55	12.58
3.62	25.44	1.18	31.56	6.1	5.159	0.05	18.84	12.72
4.12	26.41	0.41	33.30	6.9	4.834	0.02	20.10	13.21
4.83	25.93	-0.47	33.70	7.8	4.336	-0.02	20.73	12.96
5.80	24.66	-1.30	33.27	8.6	3.867	-0.05	20.94	12.33
6.80	22.63	-2.01	31.94	9.3	3.432	-0.09	20.62	11.32
7.56	21.56	-2.47	31.33	9.8	3.206	-0.12	20.55	10.78
8.57	21.60	-2.76	31.66	10.1	3.147	-0.13	20.86	10.80
9.35	21.14	-2.96	31.40	10.3	3.060	-0.14	20.83	10.57
10.09	22.43	-3.05	32.78	10.3	3.167	-0.14	21.56	11.22
10.85	24.21	-3.14	34.64	10.4	3.320	-0.13	22.54	12.10
11.36	25.23	-3.18	35.71	10.5	3.406	-0.13	23.10	12.61
11.85	25.29	-3.25	35.84	10.5	3.398	-0.13	23.19	12.65
12.35	25.56	-3.25	36.11	10.6	3.422	-0.13	23.33	12.78
12.86	25.08	-3.32	35.70	10.6	3.363	-0.13	23.16	12.54
13.63	25.71	-3.48	36.49	10.8	3.386	-0.14	23.63	12.86
14.38	27.40	-3.63	38.32	10.9	3.507	-0.14	24.63	13.70
14.88	29.34	-3.72	40.36	11.0	3.662	-0.13	25.69	14.67
15.37	28.63	-3.80	39.74	11.1	3.579	-0.14	25.42	14.32

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WITH PORE PRESSURE READINGS**

ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	3

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.096	Diameter 1:	2.843
Length 2:	6.164	Diameter 2:	2.845
Length 3:	6.128	Diameter 3:	2.828
Avg. Length:	6.129	Avg. Diam.:	2.839

**PRESSURES (psi)**

Cell Pressure (psi)	64.6
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	14.6
Pore Pressure	
Response (%)	100

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	5.1
Final Change (ml)	18.9

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	15.96
Q	=	10.29

Initial Dial Reading (mil)	304
Dial Reading After Saturation (mil)	312
Dial Reading After Consolidation (mil)	383

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
11.3	0.000	50.0
12.4	0.001	50.0
14.5	0.002	50.0
41.7	0.008	52.2
54.1	0.014	53.7
63.3	0.021	54.8
74.3	0.030	56.1
83.4	0.039	56.8
94.1	0.051	57.7
109.7	0.072	58.6
127.3	0.103	59.1
141.7	0.139	58.9
150.2	0.175	58.4
155.1	0.218	57.7
156.9	0.249	57.3
158.5	0.292	56.8
159.5	0.350	56.4
158.9	0.411	56.0
158.4	0.456	55.7
154.5	0.518	55.4
150.5	0.564	55.1
146.3	0.609	54.8
142.2	0.656	54.6
140.4	0.686	54.4
140.2	0.717	54.3
139.2	0.748	54.2
137.6	0.778	54.1
136.9	0.824	53.9
138.7	0.870	53.8
140.5	0.901	53.8
142.0	0.931	53.7

Tested By:	MY	Date:	9/13/20	Input Checked By:	MPS	Date:	9/17/20
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**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	14.6	Stage No.	0
		Test No	3

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.13
Initial Sample Diameter (in)	2.84
Initial Sample Area (in <sup>2</sup> )	6.33
Initial Sample Volume (in <sup>3</sup> )	38.79

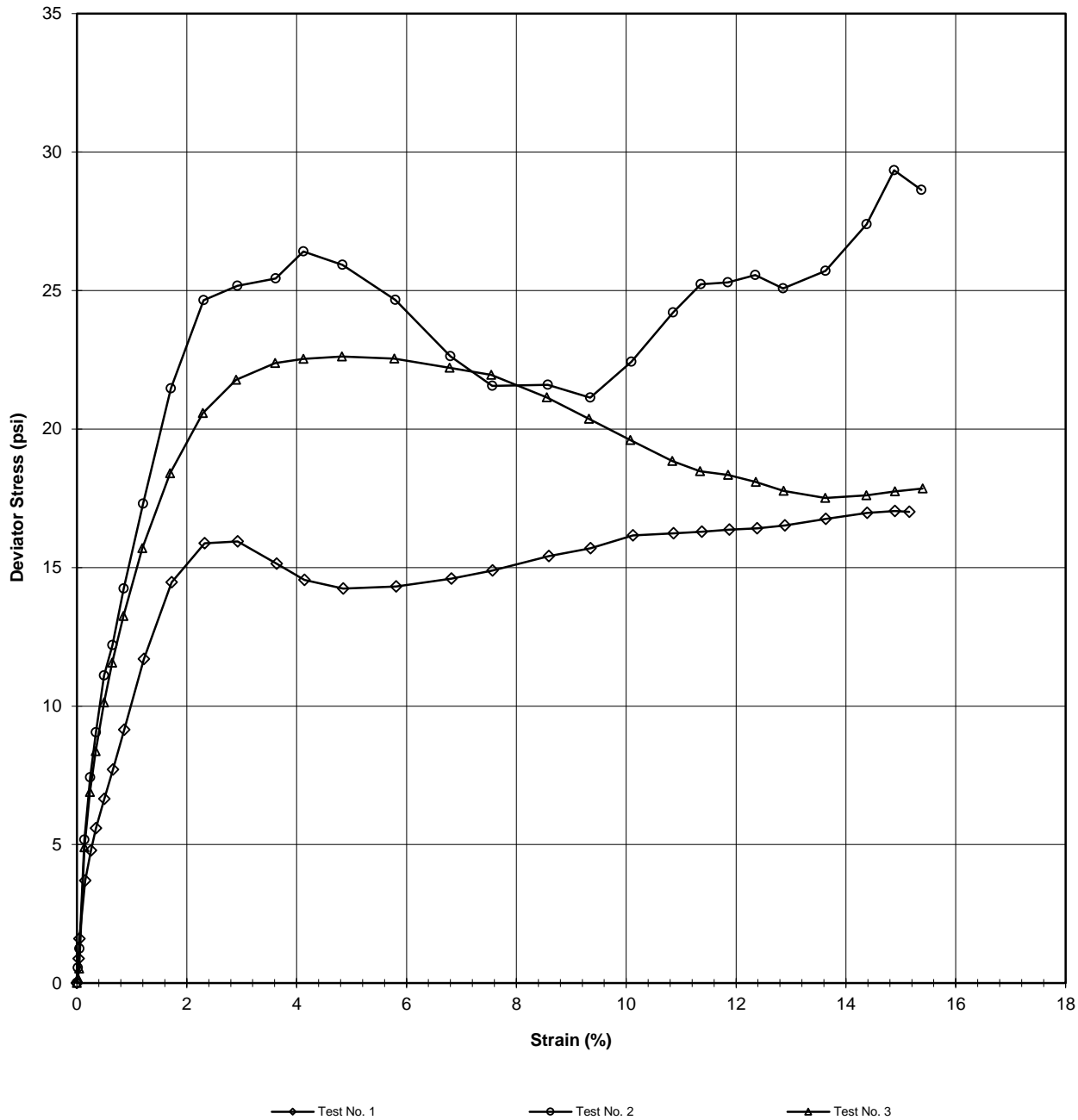
**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	37.49
Length After Consolidation (in)	6.05
Area After Consolidation (in <sup>2</sup> )	6.196

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	0.17	-0.02	14.79	14.6	1.012	-0.09	14.70	0.09
0.04	0.53	0.05	15.08	14.6	1.036	0.09	14.81	0.26
0.13	4.89	2.22	17.27	12.4	1.395	0.45	14.83	2.45
0.23	6.89	3.70	17.79	10.9	1.633	0.54	14.34	3.45
0.34	8.37	4.80	18.16	9.8	1.854	0.57	13.98	4.18
0.49	10.13	6.10	18.63	8.5	2.191	0.60	13.57	5.06
0.64	11.56	6.82	19.34	7.8	2.485	0.59	13.56	5.78
0.85	13.25	7.70	20.15	6.9	2.921	0.58	13.52	6.63
1.19	15.70	8.61	21.69	6.0	3.620	0.55	13.84	7.85
1.70	18.40	9.09	23.91	5.5	4.342	0.49	14.71	9.20
2.29	20.57	8.93	26.25	5.7	4.626	0.43	15.96	10.29
2.90	21.77	8.38	28.00	6.2	4.500	0.38	17.11	10.89
3.61	22.38	7.70	29.28	6.9	4.242	0.34	18.09	11.19
4.12	22.54	7.30	29.84	7.3	4.087	0.32	18.57	11.27
4.83	22.62	6.84	30.38	7.8	3.914	0.30	19.07	11.31
5.78	22.55	6.36	30.78	8.2	3.738	0.28	19.51	11.27
6.79	22.21	6.00	30.81	8.6	3.582	0.27	19.71	11.11
7.54	21.96	5.71	30.84	8.9	3.470	0.26	19.87	10.98
8.56	21.14	5.36	30.38	9.2	3.288	0.25	19.81	10.57
9.32	20.37	5.11	29.86	9.5	3.146	0.25	19.67	10.18
10.07	19.60	4.83	29.37	9.8	3.006	0.25	19.57	9.80
10.84	18.85	4.58	28.87	10.0	2.880	0.24	19.45	9.42
11.35	18.48	4.44	28.64	10.2	2.819	0.24	19.40	9.24
11.85	18.34	4.32	28.62	10.3	2.784	0.24	19.45	9.17
12.36	18.09	4.19	28.50	10.4	2.738	0.23	19.46	9.05
12.87	17.77	4.08	28.28	10.5	2.690	0.23	19.40	8.88
13.62	17.51	3.91	28.20	10.7	2.637	0.22	19.45	8.76
14.37	17.60	3.81	28.39	10.8	2.632	0.22	19.59	8.80
14.89	17.75	3.76	28.59	10.8	2.637	0.21	19.72	8.88
15.40	17.85	3.74	28.71	10.9	2.644	0.21	19.78	8.92

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	10.5'-12.7'
Project No.:	R-2020-164-002	Sample No.:	SPT07-1
Lab ID:	R-2020-164-002-035		
Visual Description:	Gray Clay (UNDISTURBED)		



Tested By:	MY	Date:	9/13/20	Approved By:	MPS	Date:	9/17/20
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**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
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ASTM D4767-11**

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-035      Specific Gravity (assumed)      2.7

Visual Description: Gray Clay (UNDISTURBED)

**SAMPLE CONDITION SUMMARY**

Boring No.:	PRN_20_UD	PRN_20_UD	PRN_20_UD
Depth (ft):	10.5'-12.7'	10.5'-12.7'	10.5'-12.7'
Sample No.:	SPT07-1	SPT07-1	SPT07-1
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	28.3	28.3	28.3
Total Unit Weight (pcf)	119.9	120.2	121.4
Dry Unit Weight (pcf)	93.4	93.6	94.6
Moisture Content (%) (FINAL)	31.0	29.3	26.3
Initial State Void Ratio, e	0.805	0.800	0.781
Void Ratio at Shear, e	0.786	0.768	0.722



Tested By: MY      Date: 9/13/20      Input Checked By: MPS      Date: 9/17/20

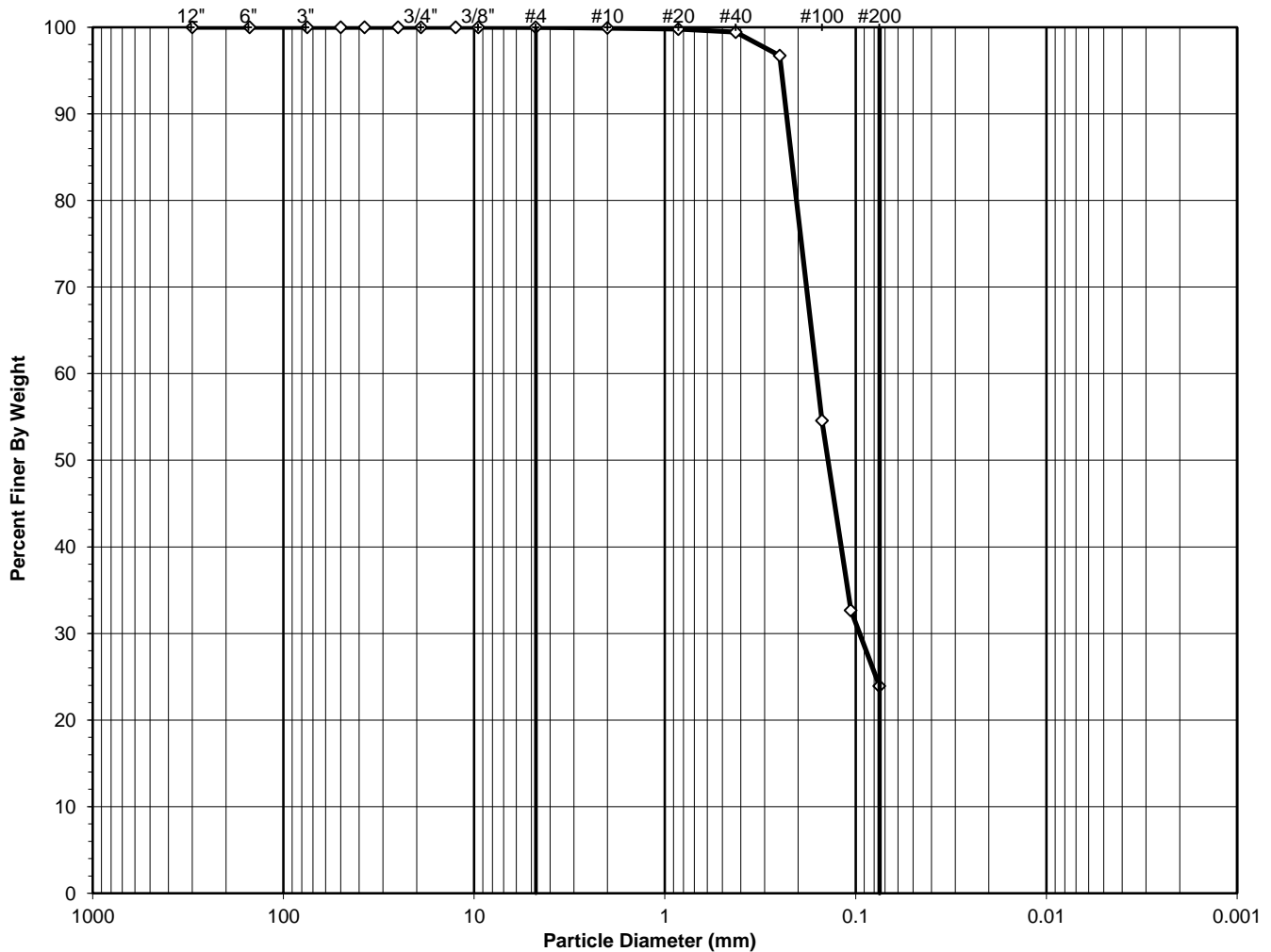


# SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	16.5-18.5
Project No.:	R-2020-164-002	Sample No.:	SPT07-2
Lab ID:	R-2020-164-002-036	Soil Color:	Brown Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



**USCS Symbol:**  
**SM, TESTED**

**D50 = 0.14**

**USCS Classification:**  
**SILTY SAND**  
**(Non Plastic)**

Tested By RFF Date 9/14/20 Checked By GEM Date 9/17/20

## WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	16.5-18.5
Project No.:	R-2020-164-002	Sample No.:	SPT07-2
Lab ID:	R-2020-164-002-036	Soil Color:	Brown Gray

Moisture Content of Passing 3/4" Material				Moisture Content of Retained 3/4" Material			
Tare No.:	718	Tare No.:	NA				
Wt. of Tare & Wet Sample (g):	503.20	Weight of Tare & Wet Sample (g):	NA				
Wt. of Tare & Dry Sample (g):	424.28	Weight of Tare & Dry Sample (g):	NA				
Weight of Tare (g):	91.87	Weight of Tare (g):	NA				
Weight of Water (g):	78.92	Weight of Water (g):	NA				
Weight of Dry Soil (g):	332.41	Weight of Dry Soil (g):	NA				
<b>Moisture Content (%):</b>	<b>23.7</b>	<b>Moisture Content (%):</b>	<b>0.0</b>				
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	332.41				
Tare No. (Sub-Specimen)	718	Wet Weight of +3/4" Sample (g):	0.00				
Wt. of Tare & Wet Sub-Specimen (g):	503.20	Dry Weight of + 3/4" Sample (g):	0.00				
Weight of Tare (g):	91.87	Dry Weight of - 3/4" Sample (g):	332.41				
Sub-Specimen Wet Weight (g):	411.33	Dry Weight -3/4" +3/8" Sample (g):	0.00				
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	332.41				
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA				
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA				
Sub-Specimen -3/8" Wet Weight (g):	NA						

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	( *)	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25	0.00	0.00	0.00	100.00	100.00
3/4"	19	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	( ** )	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2	0.32	0.10	0.10	99.90	99.9
#20	0.85	0.41	( ** )	0.22	99.78	99.8
#40	0.425	1.13	0.34	0.56	99.44	99.4
#60	0.25	9.03	2.72	3.28	96.72	96.7
#100	0.15	140.09	42.14	45.42	54.58	54.6
#140	0.106	72.83	21.91	67.33	32.67	32.7
#200	0.075	29.13	8.76	76.09	23.91	23.9
Pan	-	0.00	0.00	76.09	-	-

**Notes :** ( \* ) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample  
 ( \*\* ) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen

Tested By	RFF	Date	9/14/20	Checked By	GEM	Date	9/17/20
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## ATTERBERG LIMITS

ASTM D 4318-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	16.5-18.5
Project No.:	R-2020-164-002	Sample No.:	SPT07-2
Lab ID:	R-2020-164-002-036	Color:	Brown Gray Sand ( Minus No. 40 sieve material)

### As Received Water Content

Tare Number	859
Wt. of Tare & Wet Sample (g)	370.08
Wt. of Tare & Dry Sample (g)	322.07
Weight of Tare (g)	134.35
Weight of Water (g)	48.01
Weight of Dry Sample (g)	187.72

<b>Water Content (%)</b>	<b>25.6</b>
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# NON - PLASTIC MATERIAL

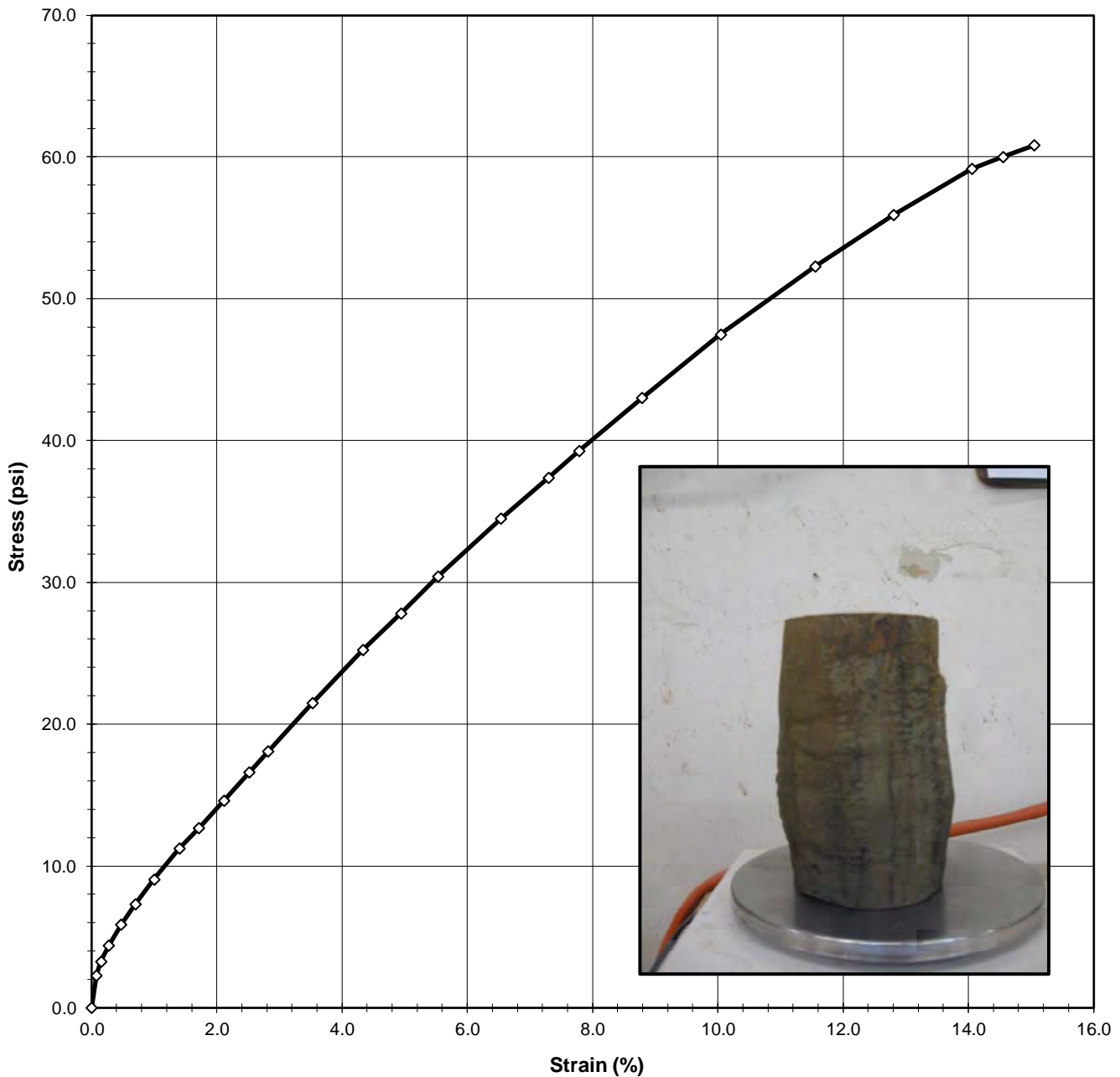
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<i>Tested By</i>	<i>TB</i>	<i>Date</i>	<i>9/16/20</i>	<i>Checked By</i>	<i>GEM</i>	<i>Date</i>	<i>9/17/20</i>
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**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	16.5'-18.5'
Project No.:	R-2020-164-002	Sample No.:	SPT07-2
Lab ID:	R-2020-164-002-036	Visual:	Brown Gray Sand

**INITIAL CONFINING STRESS (psi)      9.5**



Tested By MY      Date 9/14/20      Input Checked By MPS      Date 9/17/20

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15



Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-036

Boring No.: PRN\_20\_UD  
 Depth (ft): 16.5'-18.5'  
 Sample No.: SPT07-2  
 Visual: Brown Gray Sand

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	6.200	Top Dia. (in):	2.822
Length 2 (in):	6.170	Mid. Dia. (in):	2.848
Length 3 (in):	6.232	Bot. Dia. (in):	2.792
<b>Avg.Length (in)</b>	<b>6.201</b>	<b>Area (in<sup>2</sup>):</b>	<b>6.249</b>

WATER CONTENT (AFTER TEST)	
Total Weight of Sample (g):	1270.19
Tare No.:	857
Weight of Tare & Wet Sample (g):	460.70
Weight of Tare & Dry Sample (g):	398.99
Weight of Tare (g):	137.06
% Moisture:	23.6

UNIT WEIGHT			
Undisturbed Sample			
Weight of Tube & Wet Sample (g):	1272.33	Sample Volume (cm <sup>3</sup> ):	634.9
Weight of Tube (g):	0.00	Unit Wet Weight (g/cm <sup>3</sup> ):	2.00
Weight of Wet Sample (g):	1272.33	Unit Wet Weight (pcf):	125.04
Diameter (in):	2.82	Moisture Content (%):	23.6
Length (in):	6.20	Unit Dry Weight (pcf):	101.2
Length (cm):	15.75		

<b>INITIAL CONFINING STRESS (psi)</b>	<b>9.5</b>	Initial Dial Reading (mil)	146
<b>ENDING CONFINING STRESS (psi)</b>	<b>9.5</b>	Dial Reading Before Shearing (mil)	146

DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	6.3	0.0	0.0	0.000
0.005	20.7	0.08	0.1	2.303
0.009	26.8	0.15	0.1	3.271
0.017	33.9	0.28	0.3	4.397
0.029	43.1	0.48	0.5	5.863
0.043	52.4	0.70	0.7	7.314
0.062	63.6	1.00	1.0	9.070
0.087	77.6	1.42	1.4	11.243
0.106	86.9	1.72	1.7	12.671
0.131	99.7	2.12	2.1	14.630
0.156	112.8	2.52	2.5	16.612
0.175	122.6	2.82	2.8	18.085
0.219	145.6	3.53	3.5	21.506
0.269	171.3	4.33	4.3	25.258
0.306	189.2	4.95	4.9	27.820
0.343	207.7	5.55	5.5	30.437
0.405	237.0	6.55	6.5	34.497
0.452	258.2	7.30	7.3	37.371
0.483	272.5	7.80	7.8	39.277
0.545	301.0	8.80	8.8	43.007
0.623	336.3	10.05	10.0	47.499
0.716	375.6	11.55	11.6	52.267
0.794	407.0	12.82	12.8	55.913
0.871	436.4	14.07	14.1	59.155
0.902	445.2	14.57	14.6	60.006
0.933	453.7	15.07	15.1	60.819

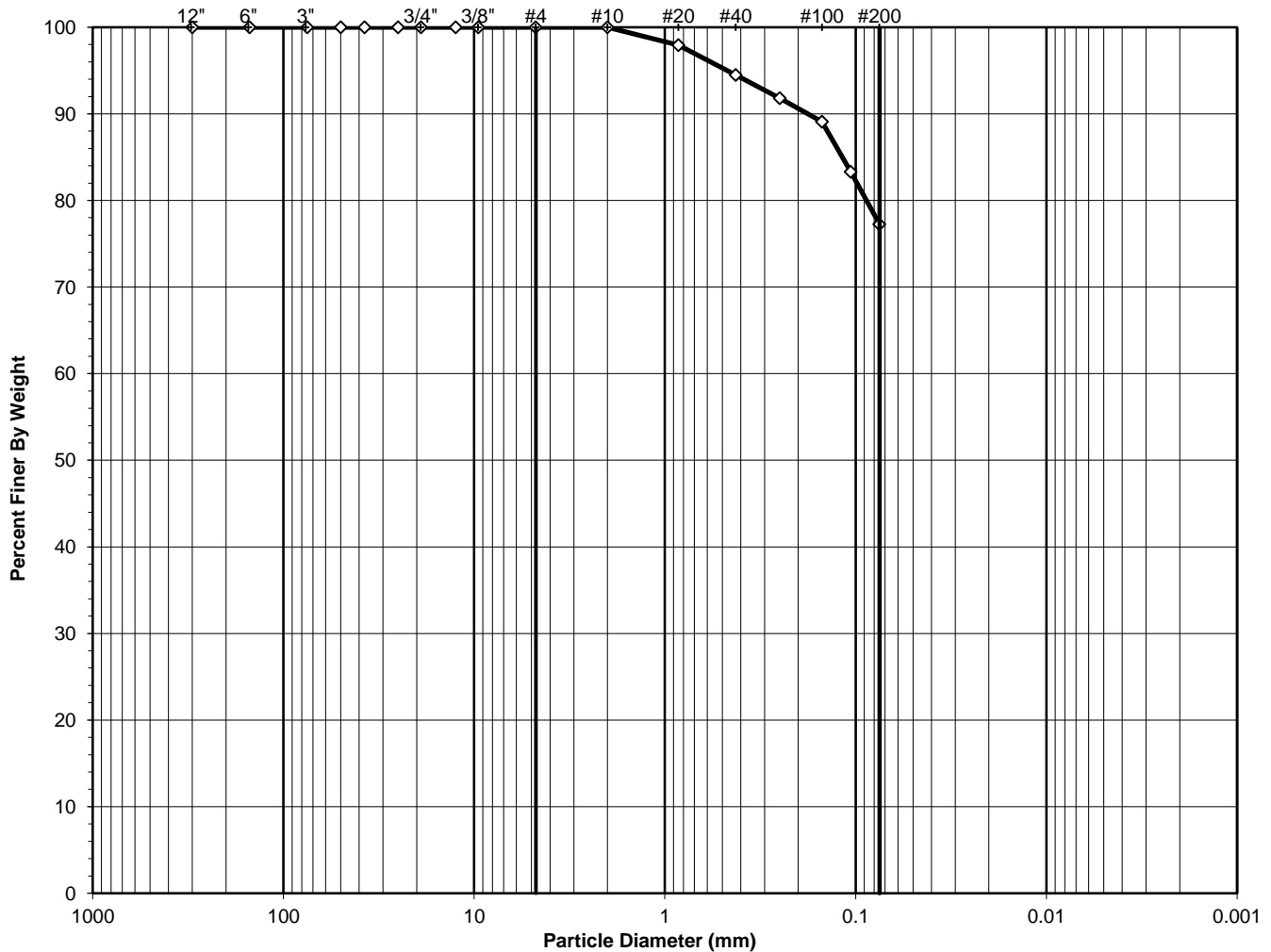
Tested By MY Date 9/14/20 Input Checked By MPS Date 9/17/20

# SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	21.0-23.0
Project No.:	R-2020-164-002	Sample No.:	SPT08-1
Lab ID:	R-2020-164-002-037	Soil Color:	Brown Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



**USCS Symbol:**  
**CH, TESTED**

**D50 = 0.02**

**USCS Classification:**  
**FAT CLAY WITH SAND**

Tested By RFF      Date 9/14/20      Checked By GEM      Date 9/15/20

## WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	21.0-23.0
Project No.:	R-2020-164-002	Sample No.:	SPT08-1
Lab ID:	R-2020-164-002-037	Soil Color:	Brown Gray

Moisture Content of Passing 3/4" Material				Moisture Content of Retained 3/4" Material			
Tare No.:	738	Tare No.:	NA				
Wt. of Tare & Wet Sample (g):	512.24	Weight of Tare & Wet Sample (g):	NA				
Wt. of Tare & Dry Sample (g):	442.23	Weight of Tare & Dry Sample (g):	NA				
Weight of Tare (g):	139.67	Weight of Tare (g):	NA				
Weight of Water (g):	70.01	Weight of Water (g):	NA				
Weight of Dry Soil (g):	302.56	Weight of Dry Soil (g):	NA				
<b>Moisture Content (%):</b>	<b>23.1</b>	<b>Moisture Content (%):</b>	<b>0.0</b>				
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	302.56				
Tare No. (Sub-Specimen)	738	Wet Weight of +3/4" Sample (g):	0.00				
Wt. of Tare & Wet Sub-Specimen (g):	512.24	Dry Weight of + 3/4" Sample (g):	0.00				
Weight of Tare (g):	139.67	Dry Weight of - 3/4" Sample (g):	302.56				
Sub-Specimen Wet Weight (g):	372.57	Dry Weight -3/4" +3/8" Sample (g):	0.00				
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	302.56				
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA				
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA				
Sub-Specimen -3/8" Wet Weight (g):	NA						

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	( *)	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25	0.00	0.00	0.00	100.00	100.00
3/4"	19	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	( ** )	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2	0.00	0.00	0.00	100.00	100.00
#20	0.85	6.21	( ** )	2.05	97.95	97.9
#40	0.425	10.44	3.45	5.50	94.50	94.5
#60	0.25	8.18	2.70	8.21	91.79	91.8
#100	0.15	8.21	2.71	10.92	89.08	89.1
#140	0.106	17.52	5.79	16.71	83.29	83.3
#200	0.075	18.29	6.05	22.76	77.24	77.2
Pan	-	0.00	0.00	22.76	-	-

**Notes :** ( \* ) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample  
 ( \*\* ) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen

Tested By	RFF	Date	9/14/20	Checked By	GEM	Date	9/15/20
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## ATTERBERG LIMITS

ASTM D 4318-17

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-037

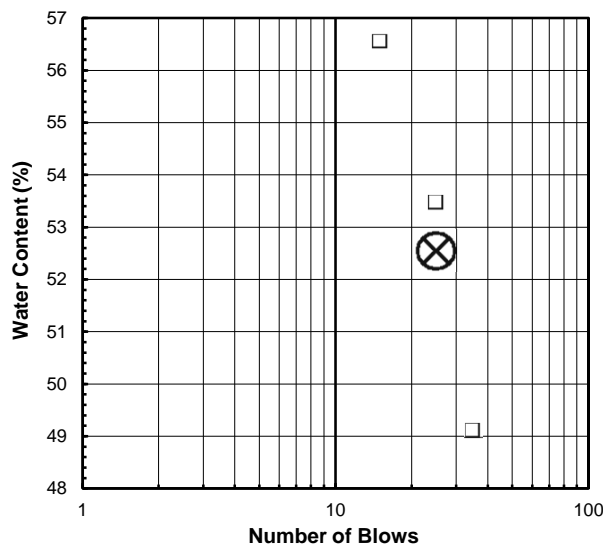
Boring No.: PRN\_20\_UD  
 Depth (ft): 21.0-23.0  
 Sample No.: STP08-1  
 Soil Description: BLUE GRAY FAT CLAY

**Note: The USCS symbol used with this test refers only to the minus No. 40** (Minus No. 40 sieve material, Air dried)  
**sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.**

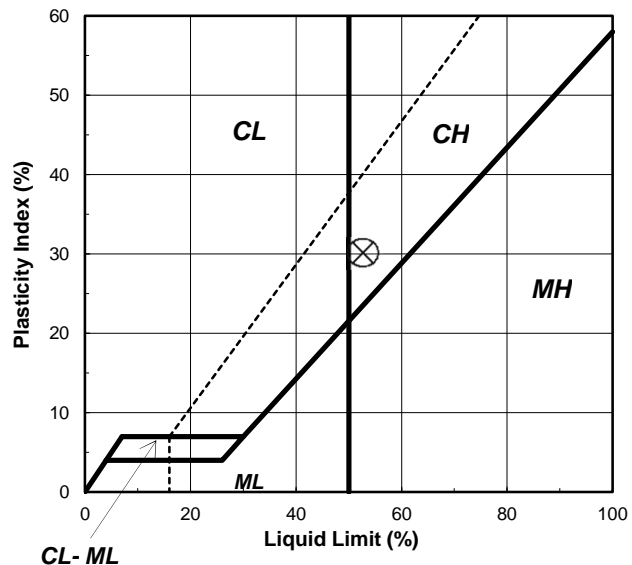
As Received Moisture Content ASTM D2216-19	Liquid Limit Test			
	1	2	3	M
Tare Number:	738			
Wt. of Tare & Wet Sample (g):	512.24	30.48	28.52	28.30
Wt. of Tare & Dry Sample (g):	442.23	25.51	23.96	23.68
Weight of Tare (g):	139.67	15.39	15.43	15.51
Weight of Water (g):	70.0	5.0	4.6	4.6
Weight of Dry Sample (g):	302.6	10.1	8.5	8.2
Was As Received MC Preserved:	<b>Yes</b>			
<b>Moisture Content (%):</b>	<b>23.1</b>	<b>49.1</b>	<b>53.5</b>	<b>56.5</b>
<b>Number of Blows:</b>	<b>35</b>	<b>25</b>	<b>15</b>	<b>T</b>

Plastic Limit Test	1	2	Range	Test Results
Tare Number:	32	25		<b>Liquid Limit (%):</b> <b>53</b>
Wt. of Tare & Wet Sample (g):	14.19	13.75		<b>Plastic Limit (%):</b> <b>23</b>
Wt. of Tare & Dry Sample (g):	12.83	12.48		<b>Plasticity Index (%):</b> <b>30</b>
Weight of Tare (g):	6.95	6.99		<b>USCS Symbol:</b> <b>CH</b>
Weight of Water (g):	1.4	1.3		
Weight of Dry Sample (g):	5.9	5.5		
<b>Moisture Content (%):</b>	<b>23.1</b>	<b>23.1</b>	<b>0.0</b>	
<i>Note: The acceptable range of the two Moisture Contents is <math>\pm</math></i>				<i>1.4</i>

**Flow Curve**



**Plasticity Chart**



Tested By **SS** Date **9/14/20** Checked By **GEM** Date **9/15/20**



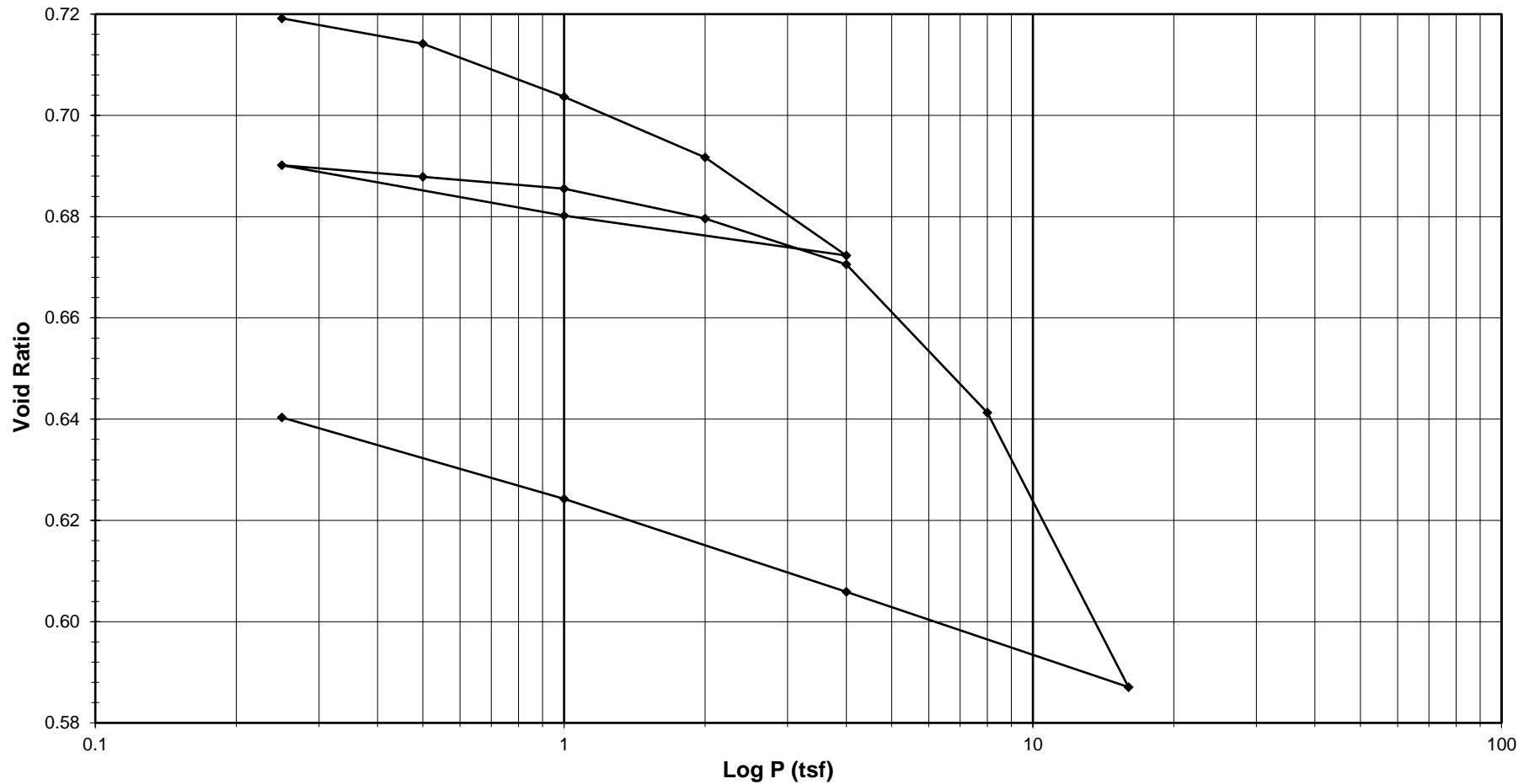
# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Catlin Engineers & Scientists  
 Client Reference USACE Princeville  
 Project No. R-2020-164-002  
 Lab ID R-2020-164-002-037

Boring No. PRN\_20\_UD  
 Depth (ft) 21.0'-23.0'  
 Sample No. SPT08-1  
 Visual Description Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/8/2020 Approved By MPS Date 9/15/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R470  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	Test Data Summary							
<i>Water Content</i>			<b>Applied Pressure</b>	<b>Final Dial Reading</b>	<b>Machine Deflection</b>	<b>Corrected Reading</b>	<b>Height of Sample</b>	<b>Volume (cc)</b>	<b>Dry Density (g/cc)</b>	<b>Void Ratio</b>
Tare Number	857	721	(tsf)	(div)	(div)	(div)	(mm)			
Wt. Tare & WS (g)	379.05	242.88								
Wt. Tare & DS (g)	335.08	213.61								
Wt. Water (g)	43.97	29.27	Seating	0	0	0	25.400	80.440	1.56875	<b>0.72112</b>
Wt. Tare (g)	137.13	90.07	0.25	34.1	22.8	11.3	25.371	80.349	1.57053	<b>0.71917</b>
Wt. DS (g)	197.95	123.54	0.5	84.5	44.2	40.3	25.298	80.115	1.57510	<b>0.71418</b>
Water Content (%)	22.21	23.69	1	161.8	60.5	101.3	25.143	79.625	1.58481	<b>0.70367</b>
			2	264.5	93.6	170.9	24.966	79.065	1.59602	<b>0.69171</b>
			4	413.9	130.5	283.5	24.680	78.160	1.61452	<b>0.67233</b>
<i>Sample Parameters</i>			1	320.8	83.0	237.8	24.796	78.527	1.60697	<b>0.68019</b>
Sample Diameter (in)	2.5	2.5	0.25	232.4	52.7	179.8	24.943	78.994	1.59746	<b>0.69018</b>
Sample Height (in)	1.0000	0.9531	0.5	251.4	58.3	193.1	24.909	78.886	1.59964	<b>0.68788</b>
Sample Volume (cc)	80.44	76.66	1	281.8	74.9	206.9	24.874	78.775	1.60190	<b>0.68550</b>
Wt. Wet Sample + Ring (g)	368.39	370.26	2	341.1	100.0	241.1	24.788	78.500	1.60750	<b>0.67962</b>
Wt. of Ring (g)	214.17	214.17	4	427.0	133.4	293.6	24.654	78.078	1.61620	<b>0.67058</b>
Wt. of Wet Sample (g)	154.22	156.09	8	633.8	169.9	463.9	24.222	76.708	1.64507	<b>0.64127</b>
Wet Density (pcf)	119.63	127.05	16	1004.9	226.1	778.8	23.422	74.175	1.70124	<b>0.58708</b>
Wet Density (g/cc)	1.92	2.04	4	831.3	161.7	669.6	23.699	75.053	1.68133	<b>0.60587</b>
Water Content (%)	22.21	23.69	1	674.6	111.7	562.8	23.970	75.913	1.66231	<b>0.62425</b>
Wt. of Dry Sample (g)	126.19	126.19	0.25	542.4	73.0	469.4	24.208	76.664	1.64601	<b>0.64033</b>
Dry Density (pcf)	97.89	102.71								
Dry Density (g/cc)	1.57	1.65								
Void Ratio	0.7211	0.6403								
Saturation (%)	83.17	99.90								
Specific Gravity	2.70	Assumed								

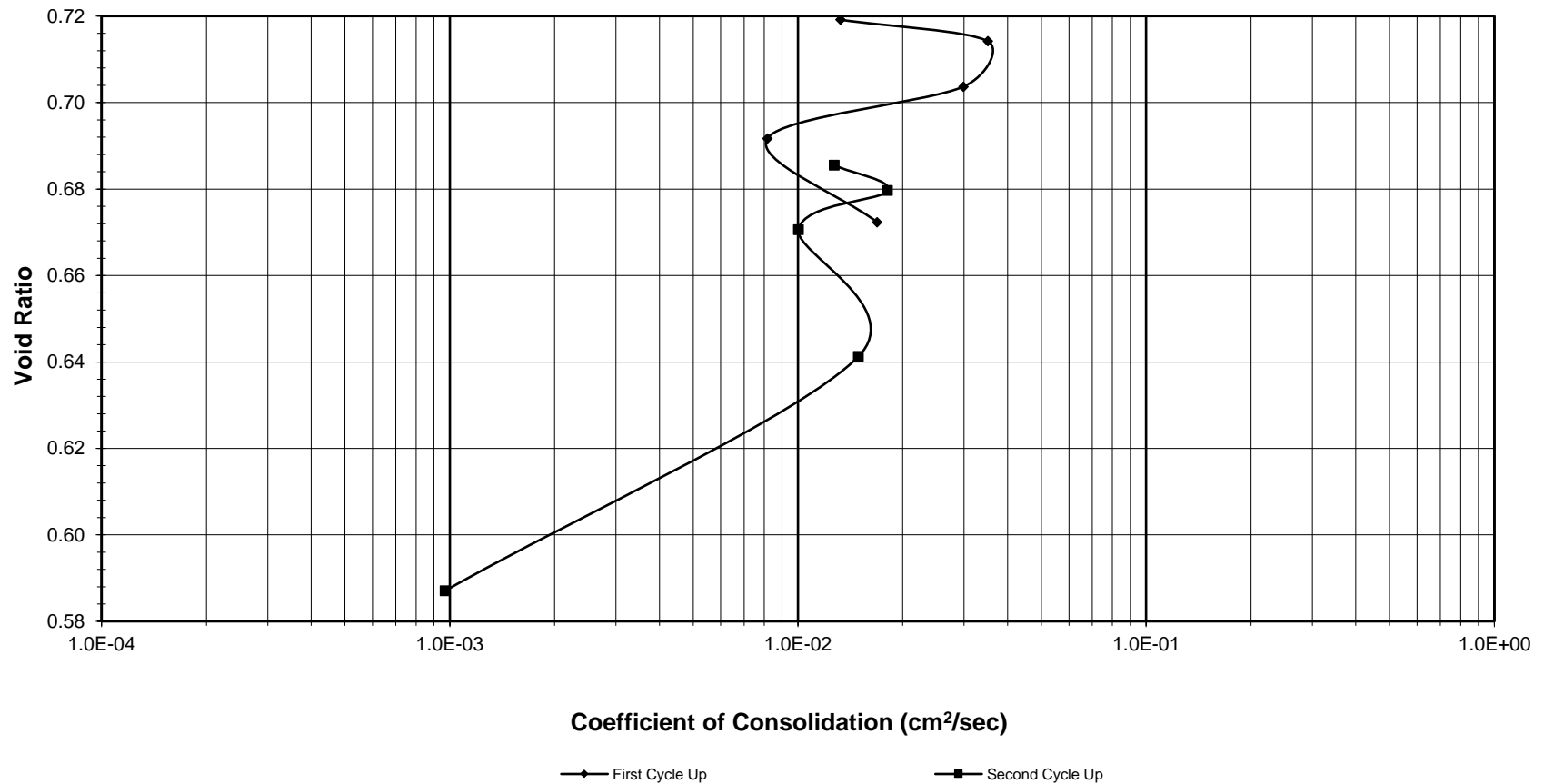
Tested By NL Date 9/8/2020 Input Checked By GEM Date 9/15/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/8/2020 Input Checked By GEM Date 9/15/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R470  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>C<sub>v</sub> Test Data Summary</u>						
			Load Increment (tsf)	Dial Reading @ t <sub>50</sub> (div)	Machine Deflection (div)	Corrected Dial Reading @ t <sub>50</sub> (div)	Sample Height @ t <sub>50</sub> (cm)	Time t <sub>50</sub> (min.)	C <sub>v</sub> (cm <sup>2</sup> /sec)
<i>Water Content</i>									
<i>Tare Number</i>	857	721							
<i>Wt. Tare &amp; WS (g)</i>	379.05	242.88							
<i>Wt. Tare &amp; DS (g)</i>	335.08	213.61							
<i>Wt. Water (g)</i>	43.97	29.27	0 - 0.25	20.6	22.8	-2.2	2.541	<b>0.40</b>	<b>0.01325</b>
<i>Wt. Tare (g)</i>	137.13	90.07	0.25 - 0.5	70.1	44.2	25.9	2.533	<b>0.15</b>	<b>0.03512</b>
<i>Wt. DS (g)</i>	197.95	123.54	0.5 - 1.0	130.2	60.5	69.7	2.522	<b>0.18</b>	<b>0.02984</b>
<i>Water Content (%)</i>	22.21	23.69	1.0 - 2.0	234.8	93.6	141.1	2.504	<b>0.63</b>	<b>0.00817</b>
			2.0 - 4.0	350.9	130.5	220.4	2.484	<b>0.30</b>	<b>0.01688</b>
<i>Sample Parameters</i>			4.0 - 1.0	NA	83.0	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Diameter (in)</i>	2.5	2.5	1.0 - 0.25	NA	52.7	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Height (in)</i>	1.000	0.953	0.25 - 0.5	NA	58.3	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Volume (cc)</i>	80.44	76.66	0.5 - 1.0	271.6	74.9	196.7	2.490	<b>0.40</b>	<b>0.01272</b>
<i>Wt. Wet Sample + Ring (g)</i>	368.39	370.26	1.0 - 2.0	323.5	100.0	223.5	2.483	<b>0.28</b>	<b>0.01808</b>
<i>Wt. of Ring (g)</i>	214.17	214.17	2.0 - 4.0	402.2	133.4	268.8	2.472	<b>0.50</b>	<b>0.01003</b>
<i>Wt. of Wet Sample (g)</i>	154.22	156.09	4.0 - 8.0	529.6	169.9	359.7	2.449	<b>0.33</b>	<b>0.01491</b>
<i>Wet Density (pcf)</i>	119.63	127.05	8.0 - 16.0	851.2	226.1	625.1	2.381	<b>4.80</b>	<b>0.00097</b>
<i>Wet Density (g/cc)</i>	1.92	2.04	16.0 - 4.0	NA	161.7	NA	NA	<b>NA</b>	<b>NA</b>
<i>Water Content (%)</i>	22.21	23.69	4.0 - 1.0	NA	111.7	NA	NA	<b>NA</b>	<b>NA</b>
<i>Wt. of Dry Sample (g)</i>	126.19	126.19	1.0 - 0.25	NA	73.0	NA	NA	<b>NA</b>	<b>NA</b>
<i>Dry Density (pcf)</i>	97.89	102.71							
<i>Dry Density (g/cc)</i>	1.57	1.65							
<i>Void Ratio</i>	0.7211	0.6403							
<i>Saturation (%)</i>	83.17	99.90							
<i>Specific Gravity</i>	2.7	<i>Assumed</i>							

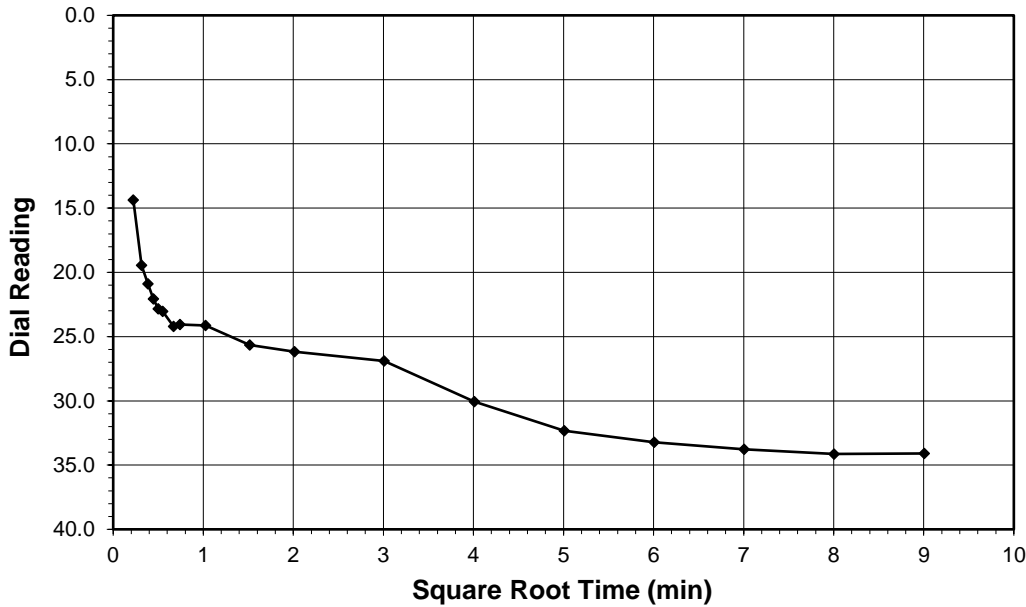
Tested By NL Date 9/8/2020 Input Checked By GEM Date 9/15/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

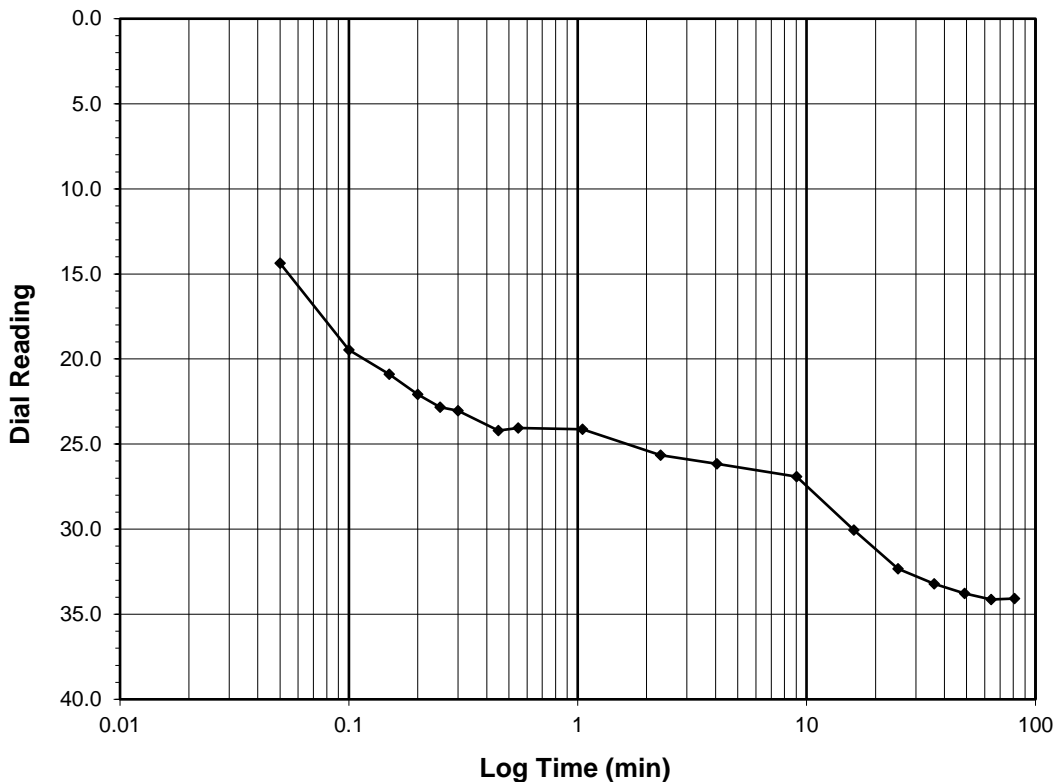
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>34.1</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/8/2020
Start Time	10:56:13

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	14.4
0.10	19.5
0.15	20.9
0.20	22.1
0.25	22.8
0.30	23.0
0.45	24.2
0.55	24.1
1.05	24.1
2.30	25.6
4.05	26.2
9.05	26.9
16.07	30.1
25.07	32.3
36.07	33.2
49.07	33.8
64.07	34.1
81.07	34.1



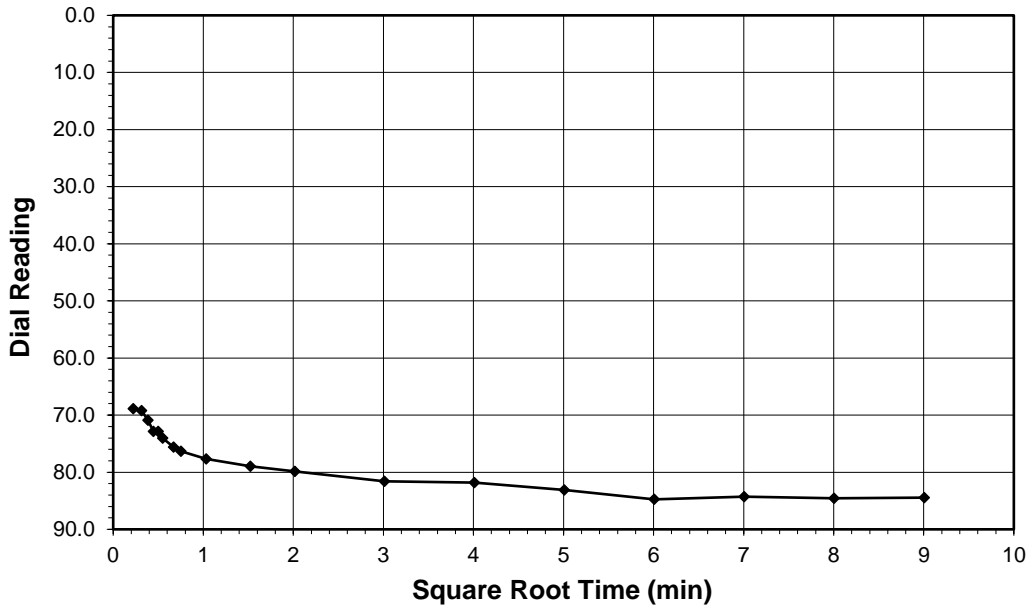
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

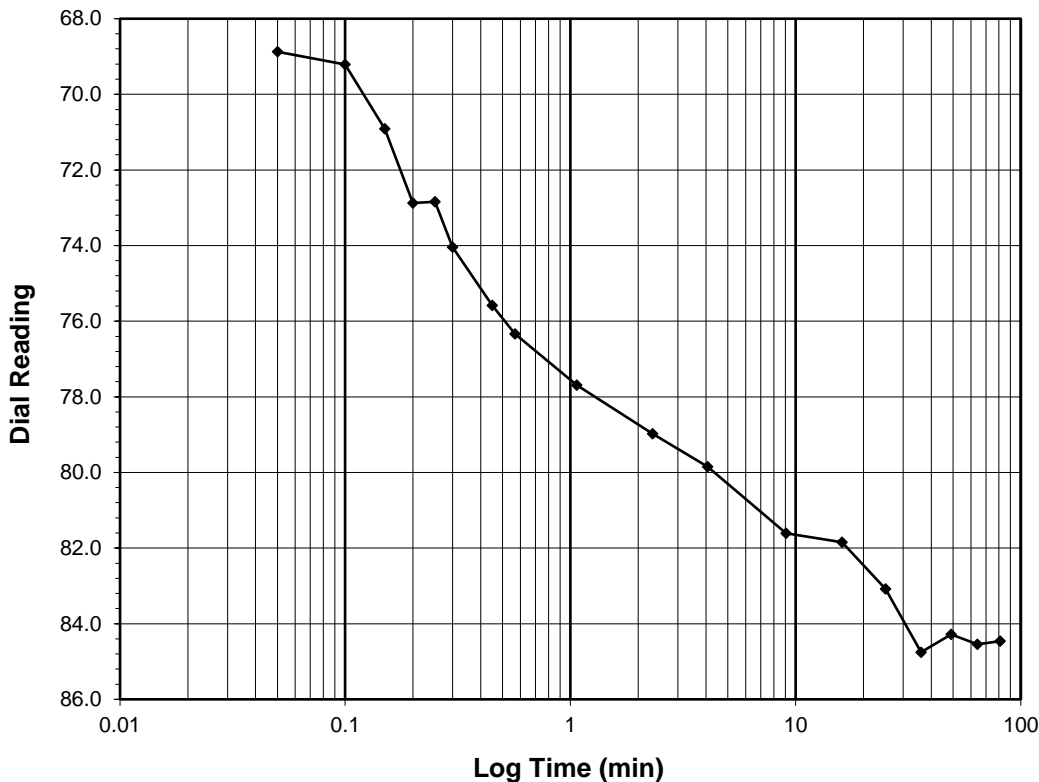
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>84.5</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/8/2020
Start Time	12:18:30

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>34.1</b>
0.05	68.9
0.10	69.2
0.15	70.9
0.20	72.9
0.25	72.8
0.30	74.0
0.45	75.6
0.57	76.3
1.07	77.7
2.32	79.0
4.07	79.8
9.07	81.6
16.07	81.8
25.07	83.1
36.07	84.8
49.07	84.3
64.07	84.5
81.07	84.5



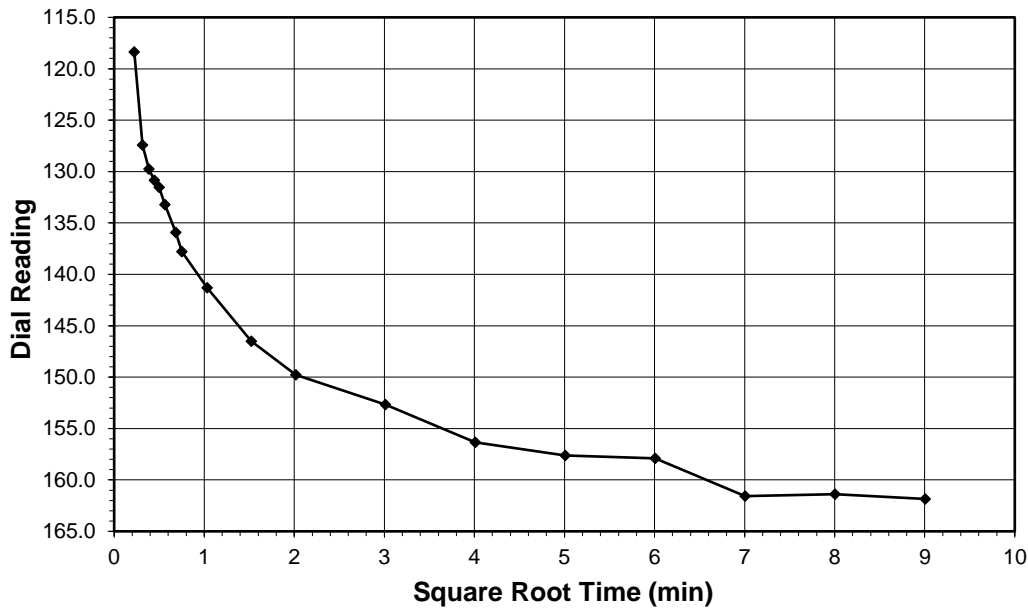
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

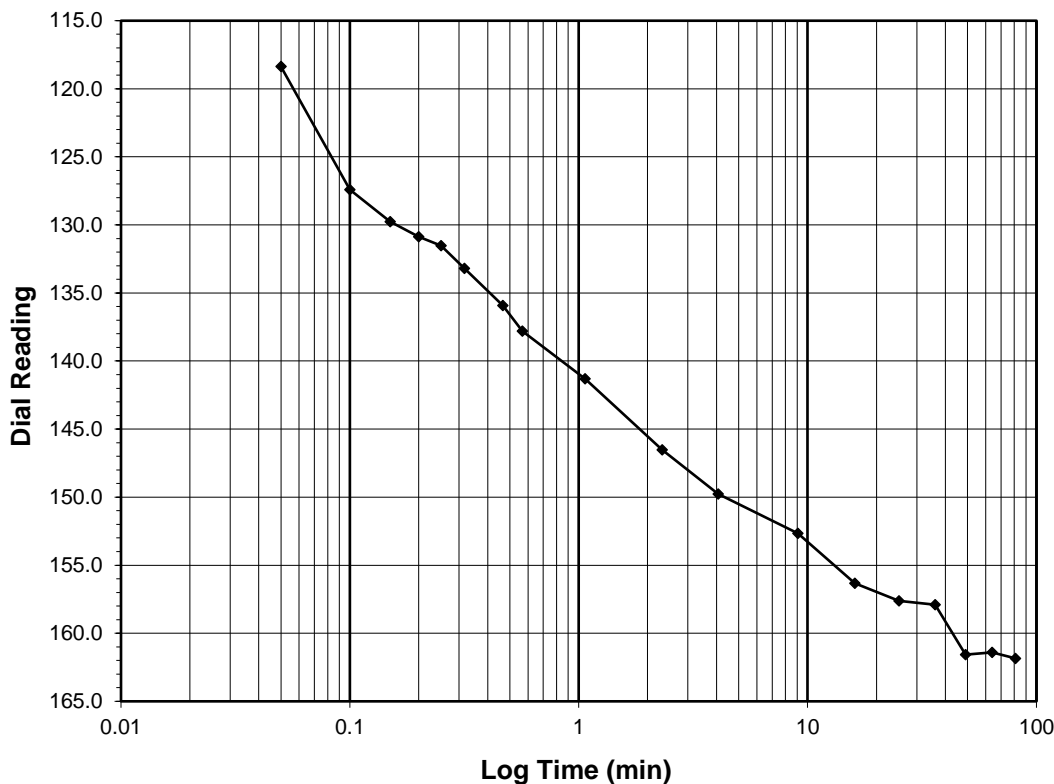
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>161.8</b>
<b>Consolidometer No.</b>	<b>R470</b>
1 Division (in)	0.0001

Start Date	9/8/2020
Start Time	13:48:01

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>84.5</b>
0.05	118.4
0.10	127.4
0.15	129.8
0.20	130.9
0.25	131.5
0.32	133.2
0.47	135.9
0.57	137.8
1.07	141.3
2.32	146.5
4.07	149.8
9.07	152.7
16.07	156.3
25.07	157.6
36.07	157.9
49.07	161.6
64.07	161.4
81.07	161.8



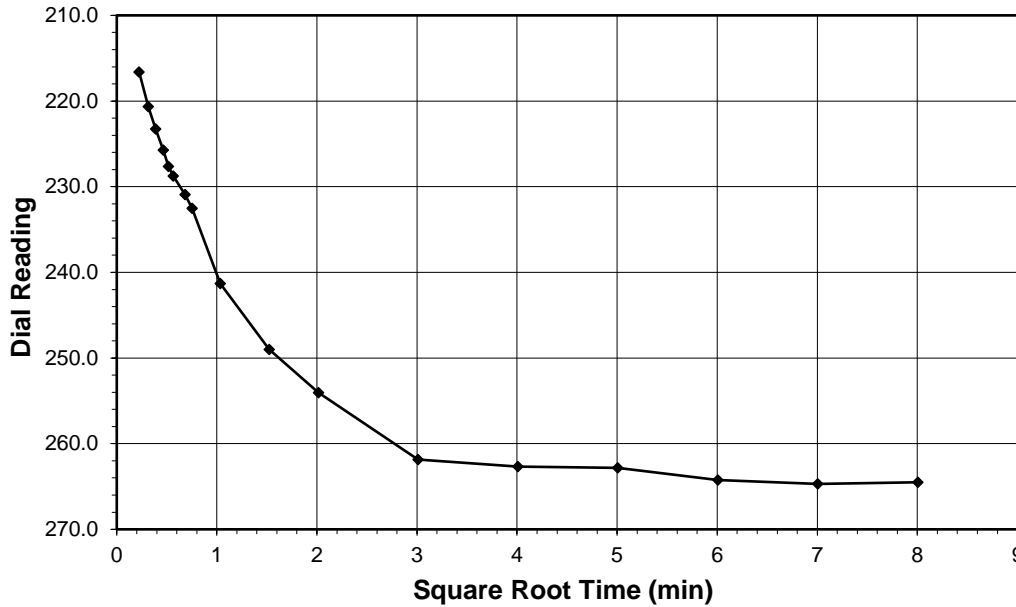
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

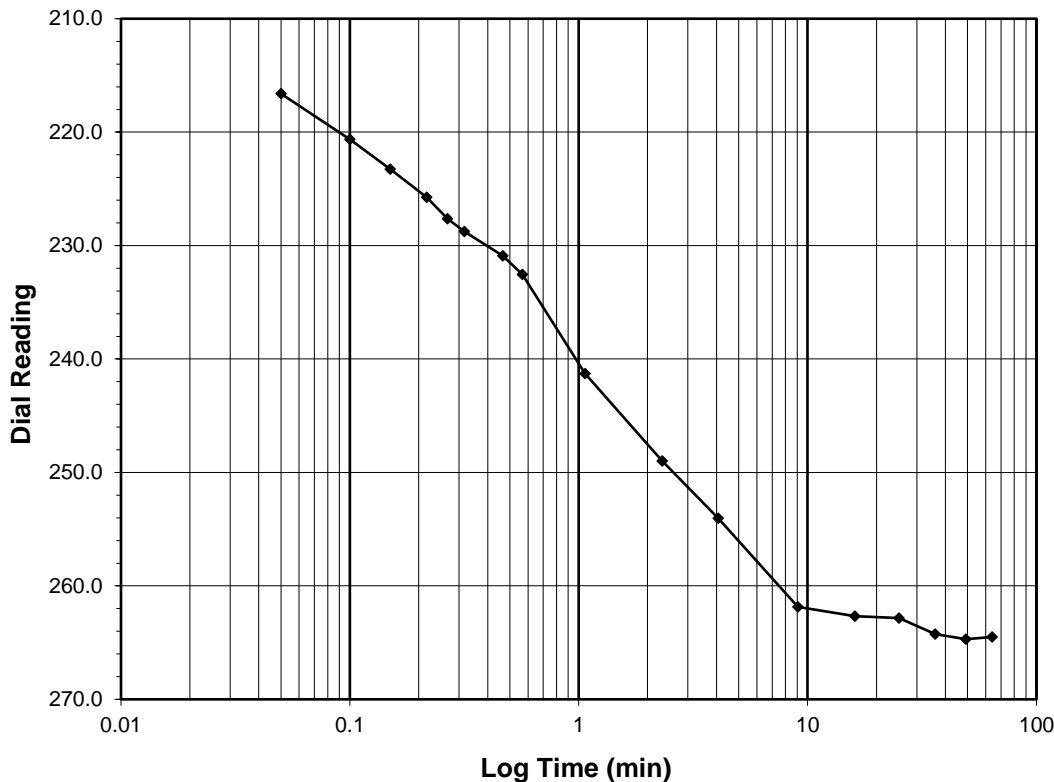
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>264.5</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>

<b>Start Date</b>	9/8/2020
<b>Start Time</b>	15:09:44

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>161.8</b>
0.05	216.6
0.10	220.6
0.15	223.3
0.22	225.7
0.27	227.6
0.32	228.7
0.47	230.9
0.57	232.5
1.07	241.3
2.32	249.0
4.07	254.0
9.07	261.8
16.07	262.7
25.07	262.8
36.08	264.2
49.08	264.7
64.08	264.5



Tested By *NL* Date *9/8/2020* Checked By *GEM* Date *9/15/2020*

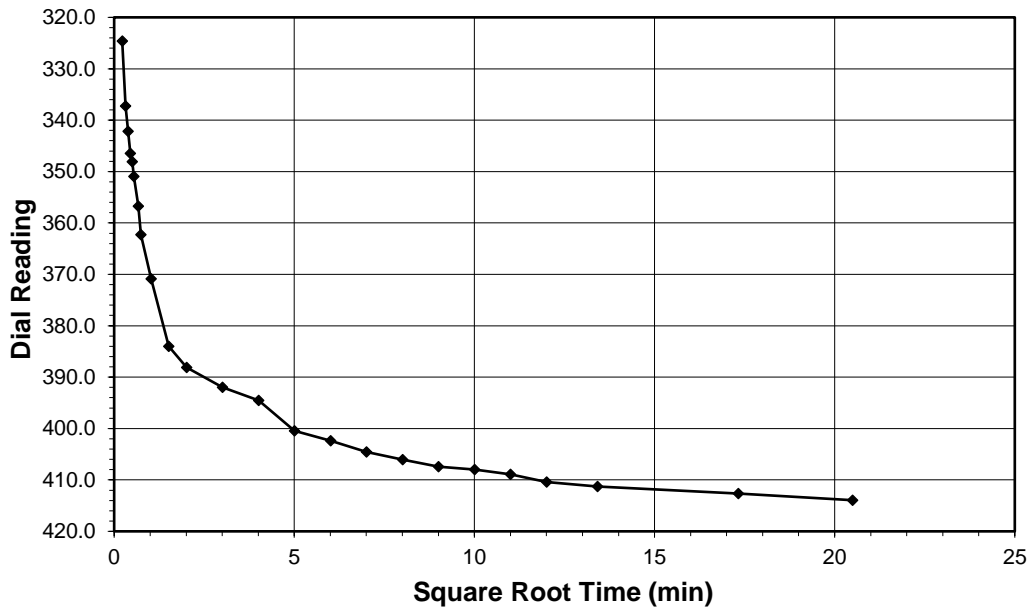


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

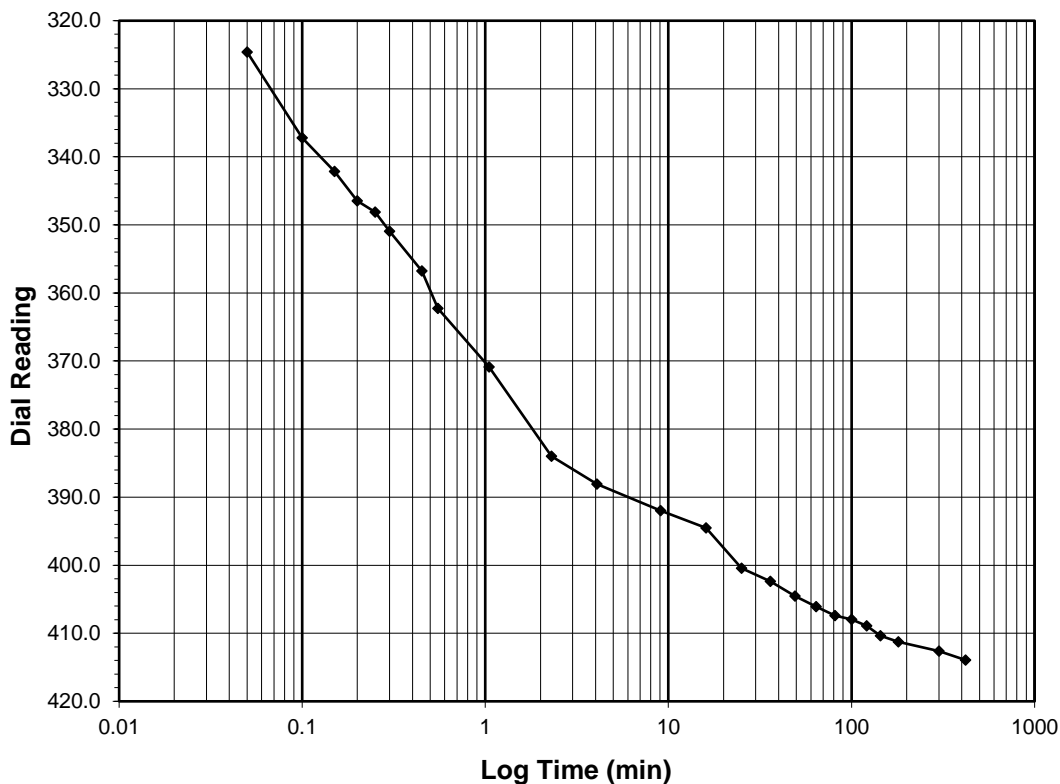
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>413.9</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/8/2020
Start Time	16:14:33

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>264.5</b>
0.05	324.6
0.10	337.2
0.15	342.2
0.20	346.5
0.25	348.1
0.30	350.9
0.45	356.8
0.55	362.3
1.05	370.9
2.30	384.0
4.07	388.1
9.07	392.0
16.07	394.5
25.07	400.5
36.07	402.4
49.07	404.6
64.07	406.1
81.07	407.4
100.07	408.0
121.07	408.9
144.07	410.4
180.07	411.2
300.07	412.6
420.07	413.9



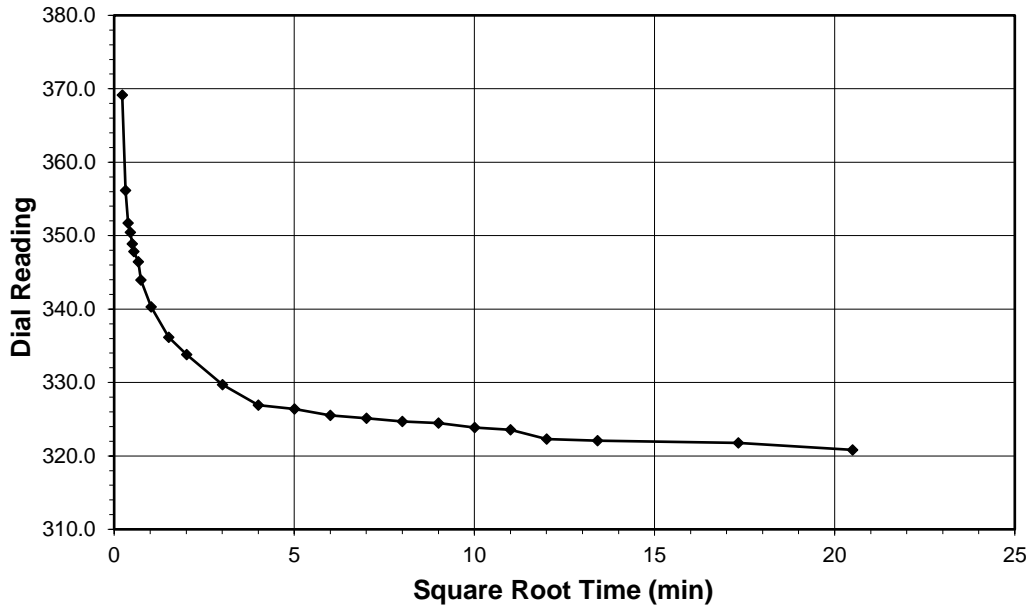
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

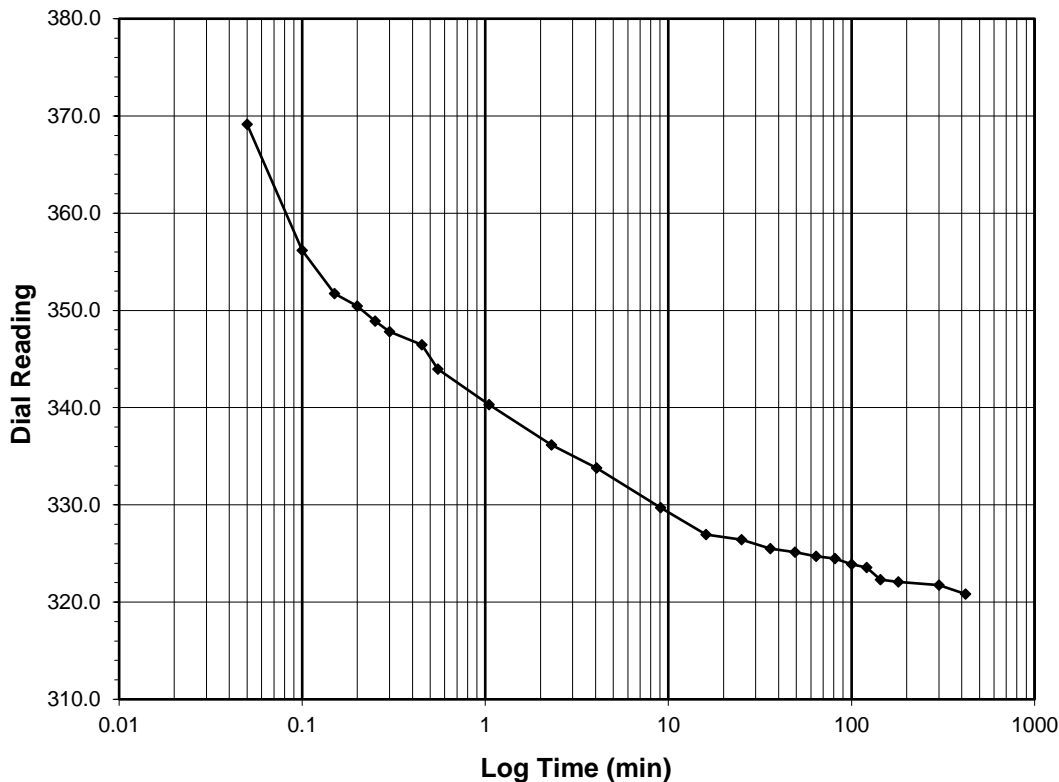
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>320.8</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/8/2020
Start Time	23:14:38

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>413.9</b>
0.05	369.1
0.10	356.2
0.15	351.7
0.20	350.4
0.25	348.9
0.30	347.8
0.45	346.5
0.55	344.0
1.05	340.3
2.30	336.2
4.05	333.8
9.05	329.7
16.05	326.9
25.05	326.4
36.05	325.5
49.05	325.1
64.05	324.7
81.07	324.5
100.07	323.9
121.07	323.5
144.07	322.3
180.07	322.1
300.07	321.8
420.00	320.8



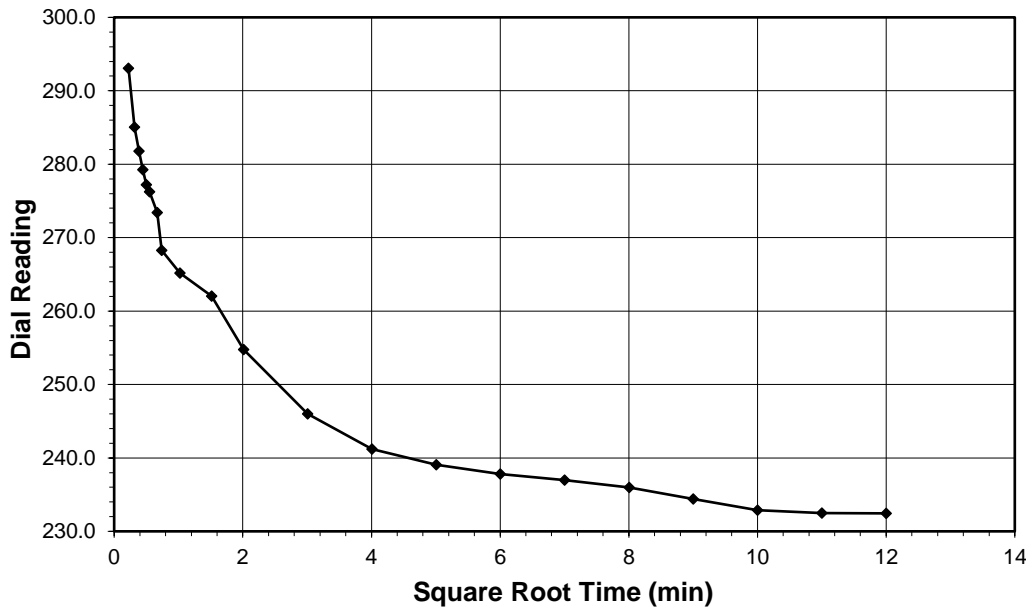
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

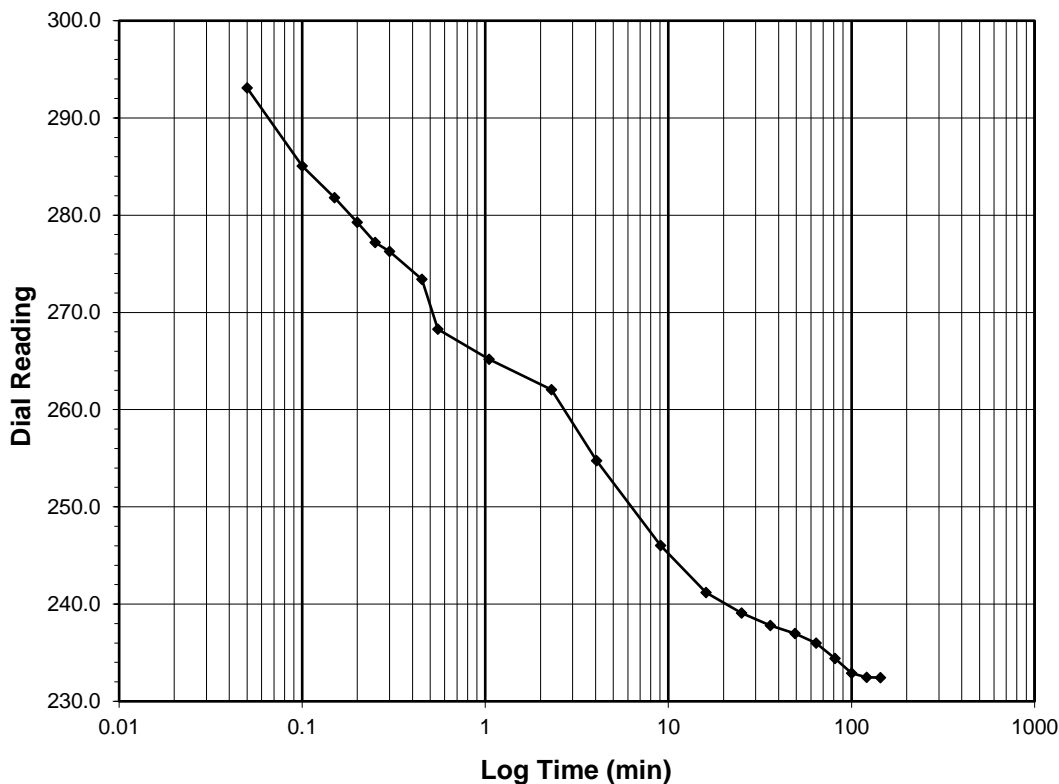
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>232.4</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/9/2020</b>
<b>Start Time</b>	<b>6:14:38</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>320.8</b>
0.05	293.1
0.10	285.0
0.15	281.8
0.20	279.3
0.25	277.2
0.30	276.3
0.45	273.4
0.55	268.3
1.05	265.2
2.30	262.1
4.05	254.8
9.05	246.0
16.05	241.2
25.05	239.1
36.05	237.8
49.05	237.0
64.07	236.0
81.07	234.4
100.07	232.9
121.07	232.5
144.07	232.4



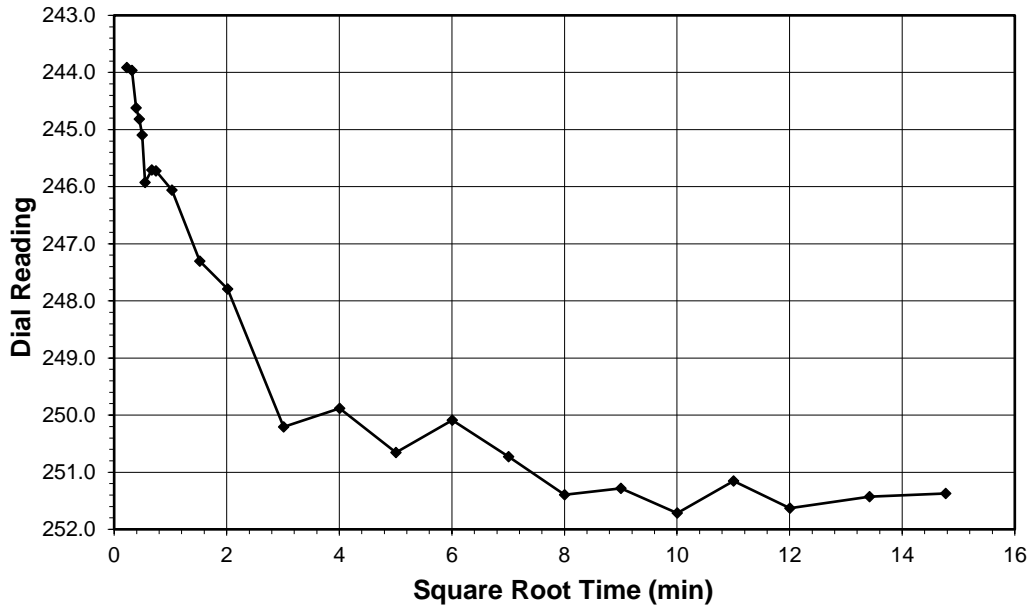
Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

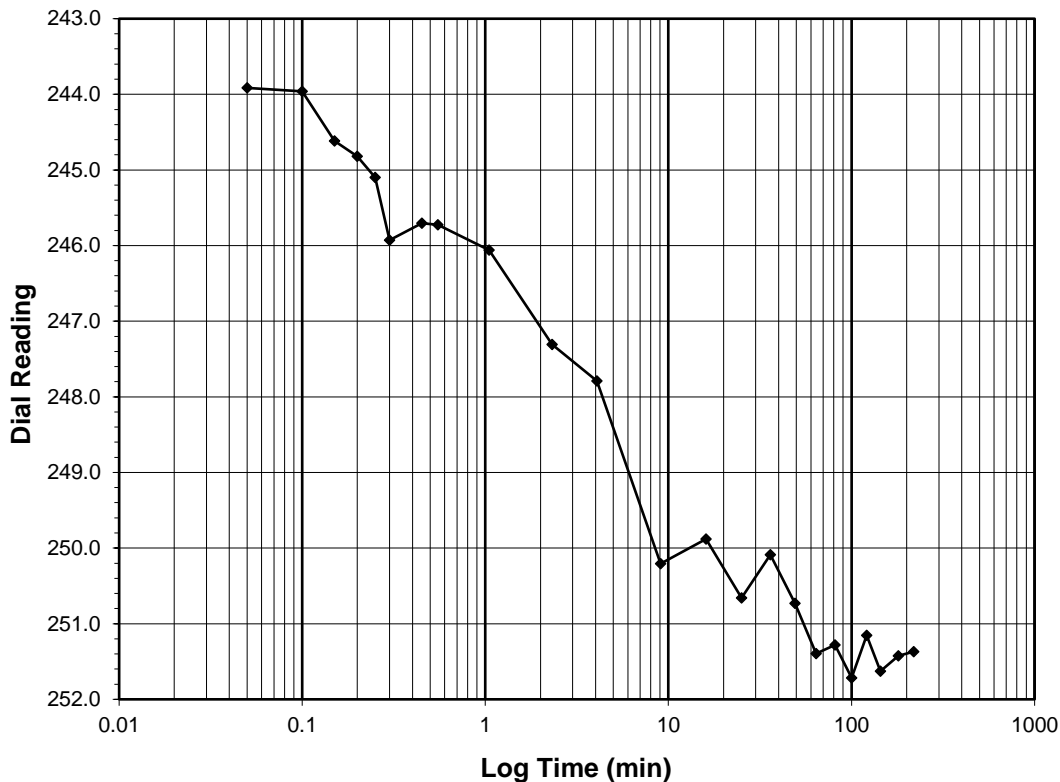
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>251.4</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/9/2020
Start Time	8:42:21

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>232.4</b>
0.05	243.9
0.10	244.0
0.15	244.6
0.20	244.8
0.25	245.1
0.30	245.9
0.45	245.7
0.55	245.7
1.05	246.1
2.32	247.3
4.07	247.8
9.07	250.2
16.07	249.9
25.07	250.7
36.07	250.1
49.07	250.7
64.07	251.4
81.07	251.3
100.07	251.7
121.07	251.2
144.07	251.6
180.07	251.4
218.30	251.4



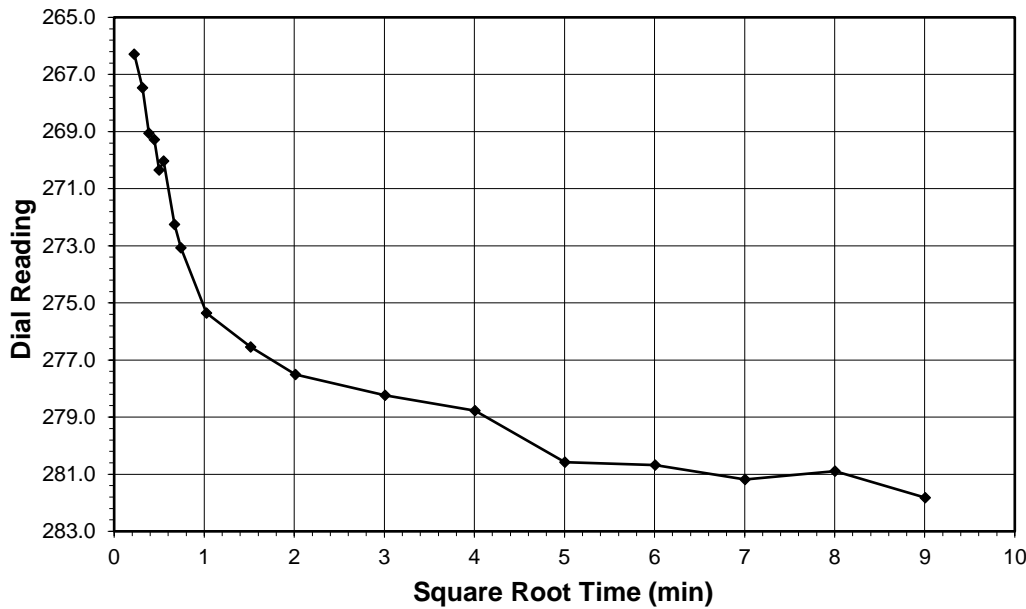
Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

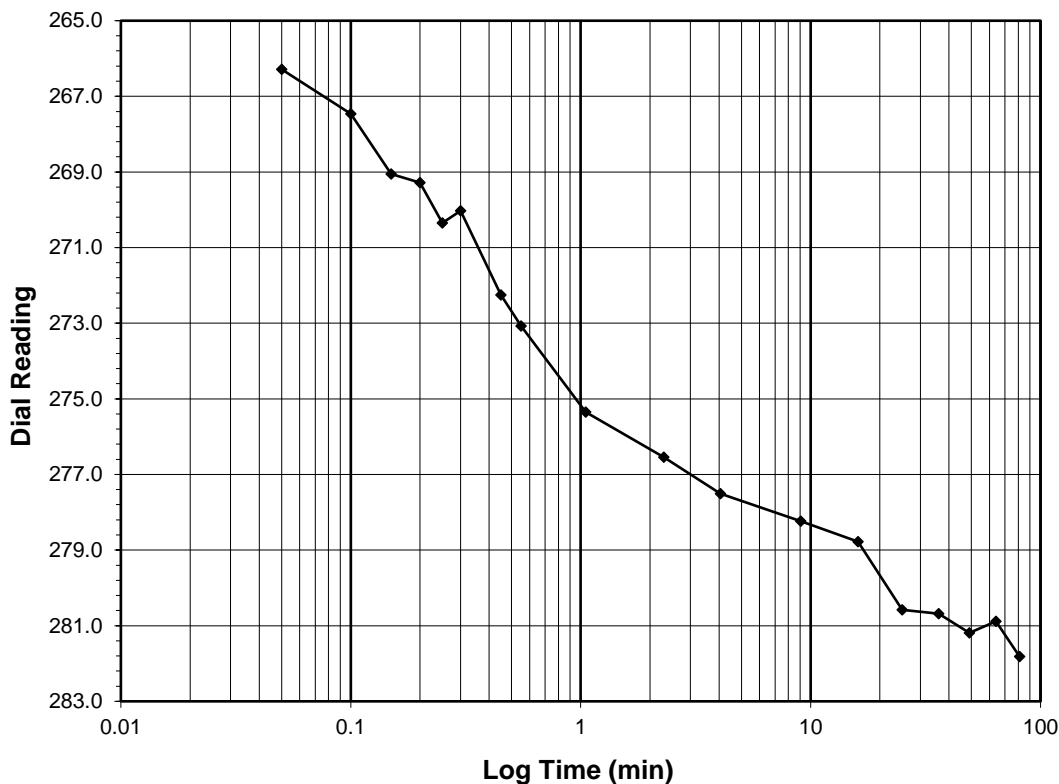
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>281.8</b>
<b>Consolidometer No.</b>	<b>R470</b>
1 Division (in)	0.0001

Start Date	9/9/2020
Start Time	12:20:39

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>251.4</b>
0.05	266.3
0.10	267.5
0.15	269.1
0.20	269.3
0.25	270.3
0.30	270.0
0.45	272.3
0.55	273.1
1.05	275.4
2.30	276.5
4.05	277.5
9.05	278.2
16.05	278.8
25.05	280.6
36.07	280.7
49.07	281.2
64.07	280.9
81.07	281.8



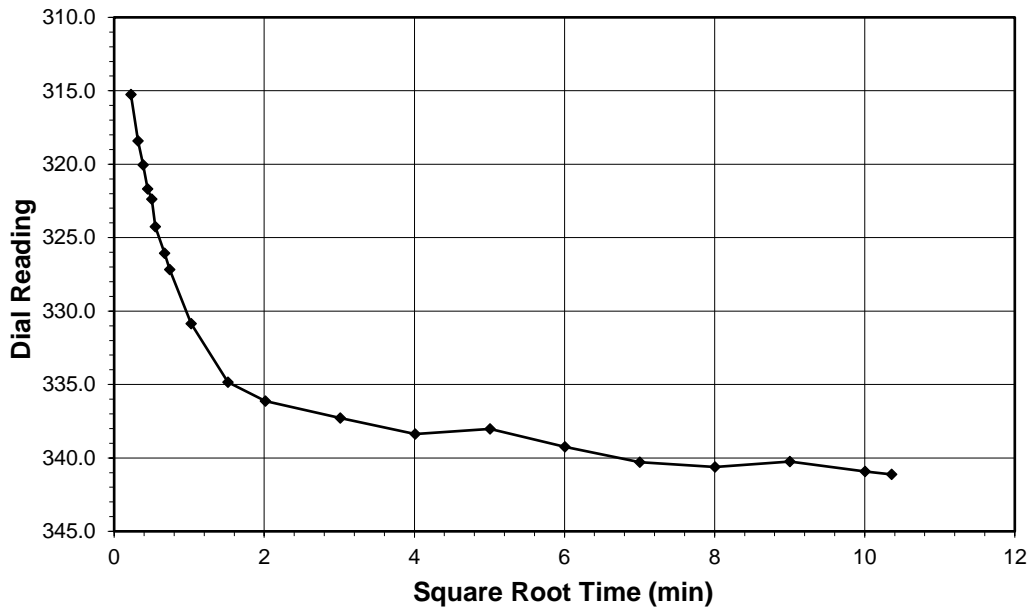
Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

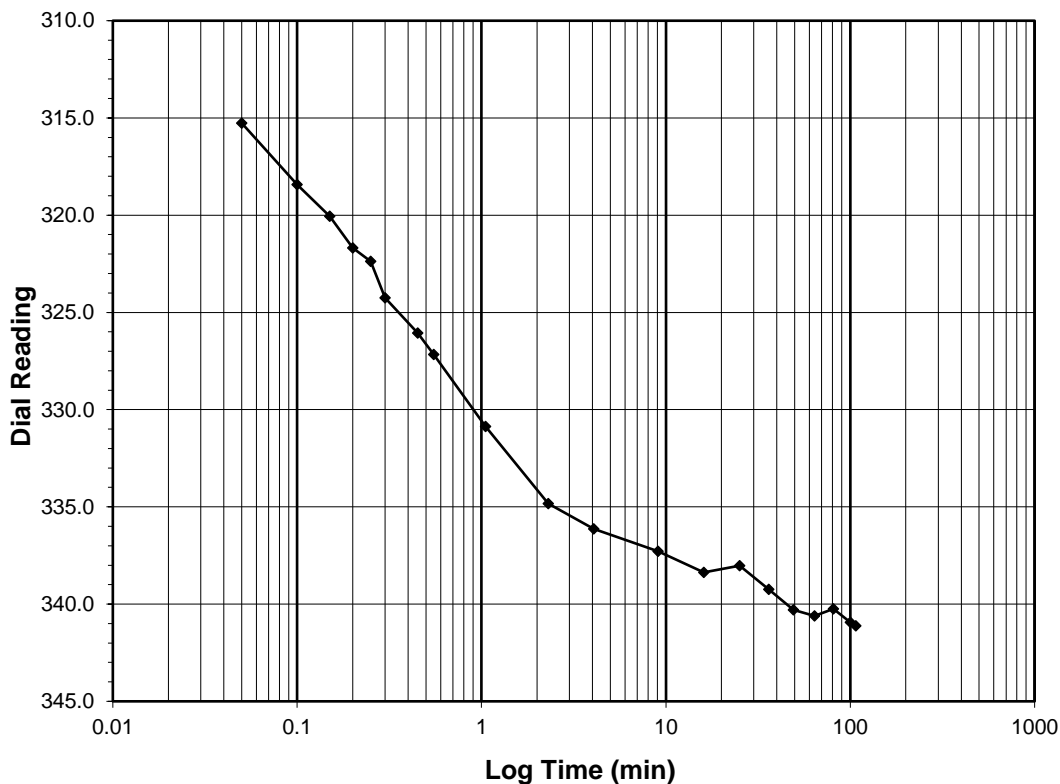
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>341.1</b>
<b>Consolidometer No.</b>	<b>R470</b>
1 Division (in)	0.0001
<b>Start Date</b>	<b>9/9/2020</b>
<b>Start Time</b>	<b>13:47:02</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>281.8</b>
0.05	315.3
0.10	318.4
0.15	320.0
0.20	321.7
0.25	322.4
0.30	324.2
0.45	326.1
0.55	327.2
1.05	330.9
2.30	334.8
4.07	336.1
9.07	337.3
16.07	338.4
25.07	338.0
36.07	339.2
49.07	340.3
64.07	340.6
81.07	340.3
100.07	340.9
107.28	341.1



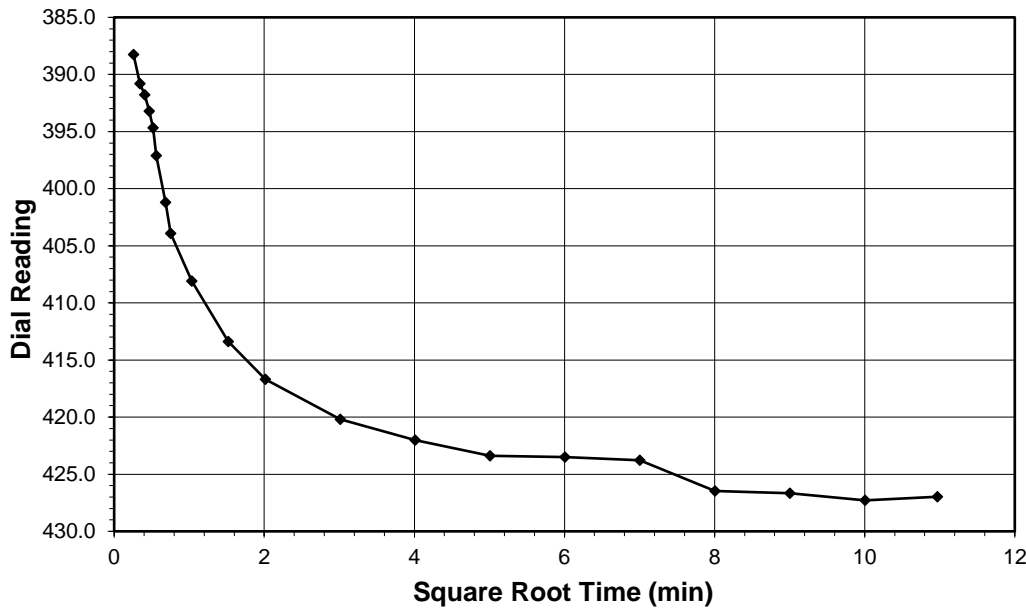
Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

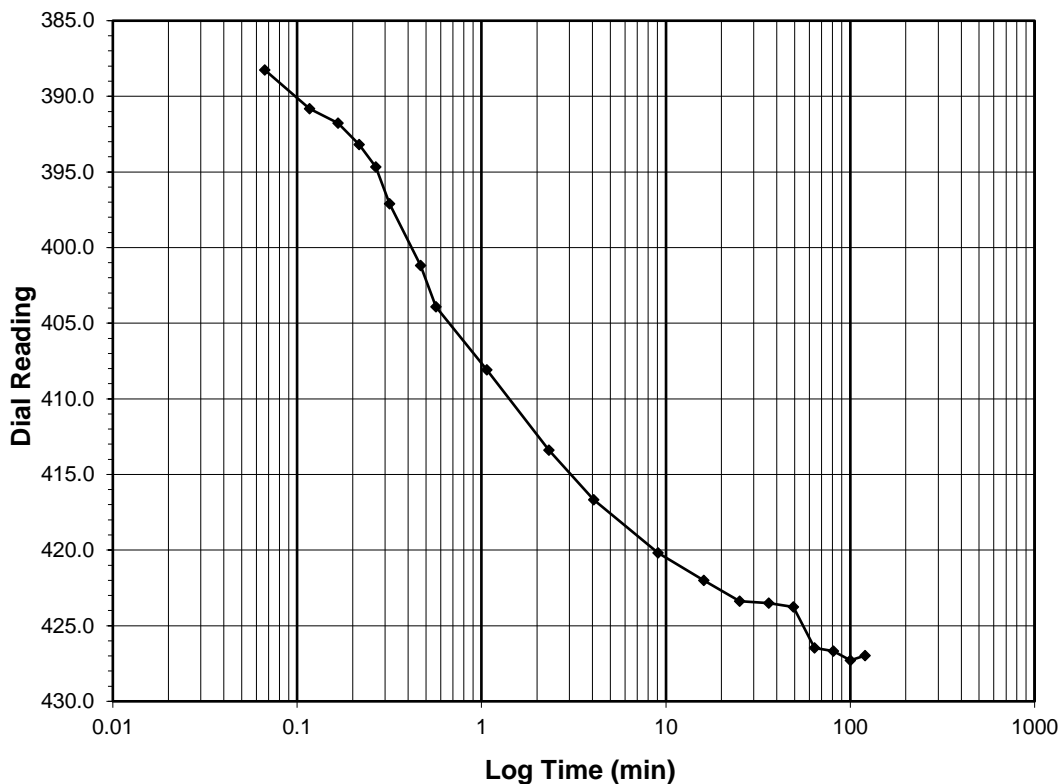
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>427.0</b>
<b>Consolidometer No.</b>	<b>R470</b>
1 Division (in)	0.0001
<b>Start Date</b>	9/9/2020
<b>Start Time</b>	15:34:20

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>341.1</b>
0.07	388.3
0.12	390.8
0.17	391.8
0.22	393.2
0.27	394.7
0.32	397.1
0.47	401.2
0.57	403.9
1.07	408.1
2.32	413.4
4.07	416.7
9.07	420.2
16.07	422.0
25.07	423.4
36.07	423.5
49.07	423.8
64.07	426.5
81.08	426.7
100.08	427.3
120.30	427.0



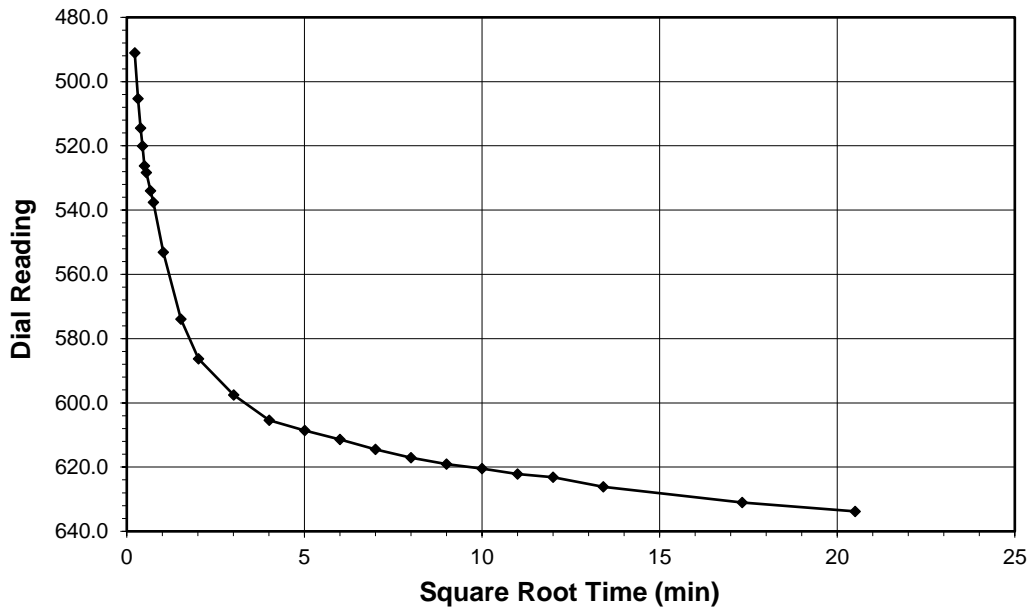
Tested By *NL* Date *9/9/2020* Checked By *GEM* Date *9/15/2020*

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

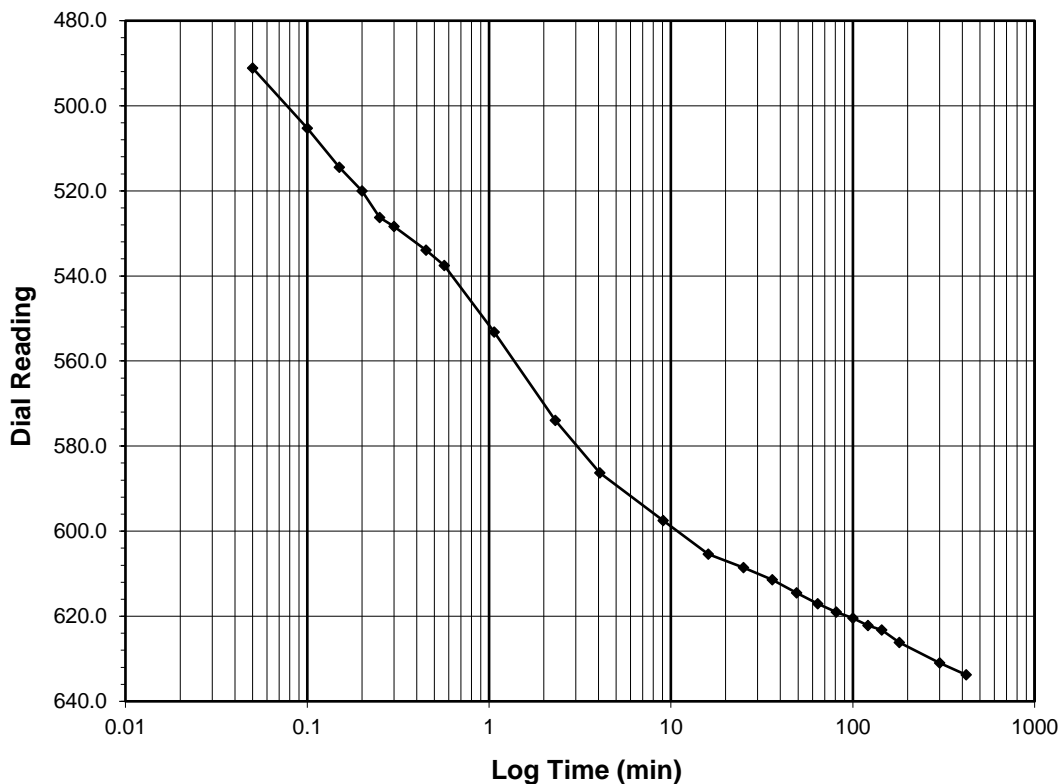
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>633.8</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/9/2020
Start Time	17:34:37

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>427.0</b>
0.05	491.1
0.10	505.3
0.15	514.5
0.20	520.0
0.25	526.2
0.30	528.4
0.45	534.0
0.57	537.6
1.07	553.2
2.32	573.9
4.07	586.3
9.07	597.5
16.07	605.4
25.07	608.6
36.07	611.4
49.07	614.5
64.07	617.1
81.07	619.1
100.07	620.5
121.08	622.2
144.08	623.2
180.08	626.2
300.08	631.0
420.47	633.8



Tested By *NL* Date *9/9/2020* Checked By *GEM* Date *9/15/2020*

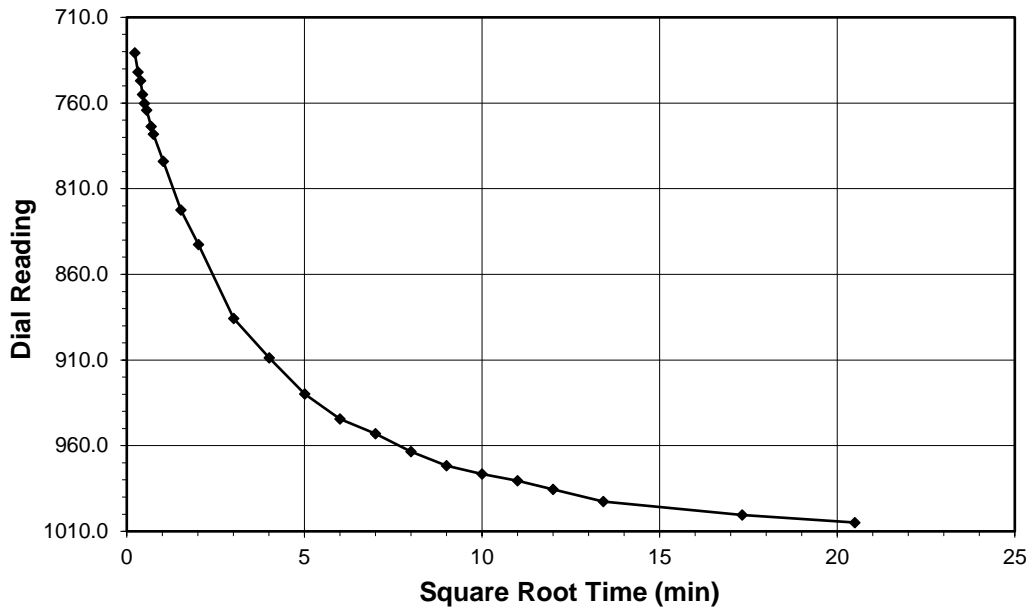


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

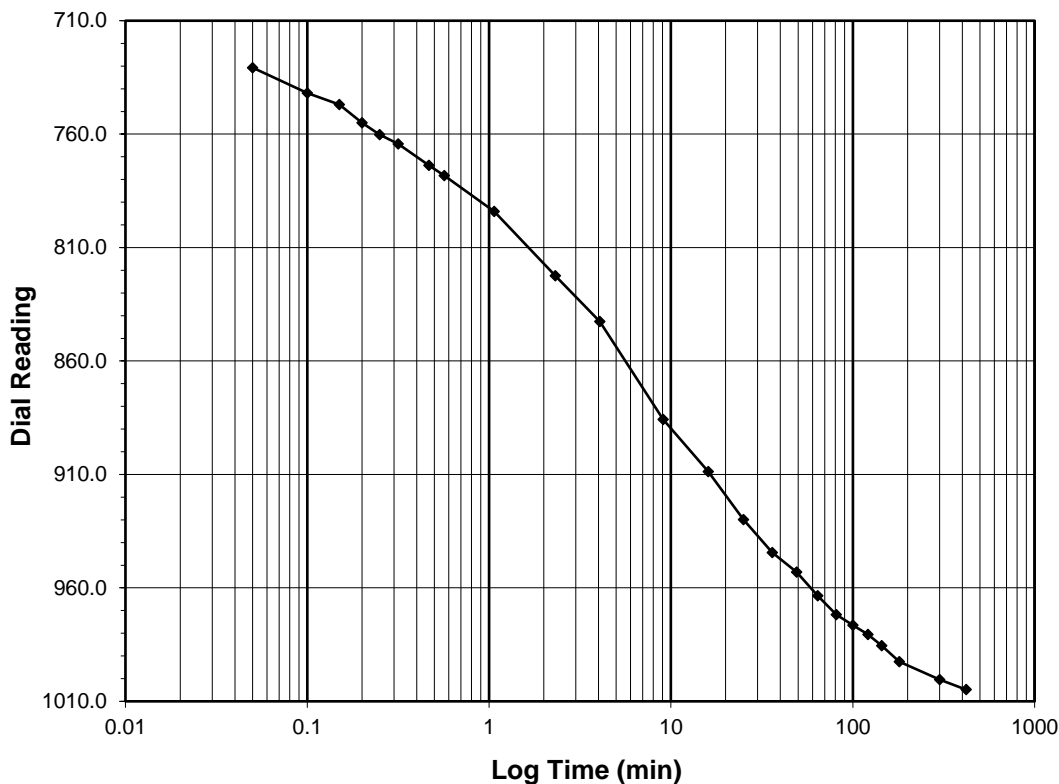
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>1004.9</b>
Consolidometer No.	R470
1 Division (in)	0.0001

Start Date	9/10/2020
Start Time	0:35:05

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>633.8</b>
0.05	730.7
0.10	741.9
0.15	747.0
0.20	755.0
0.25	760.2
0.32	764.3
0.47	773.8
0.57	778.3
1.07	794.0
2.32	822.4
4.07	842.6
9.07	885.7
16.07	908.7
25.07	929.9
36.07	944.4
49.07	953.0
64.07	963.5
81.07	971.7
100.07	976.5
121.07	980.5
144.07	985.5
180.08	992.6
300.08	1000.4
420.03	1004.9



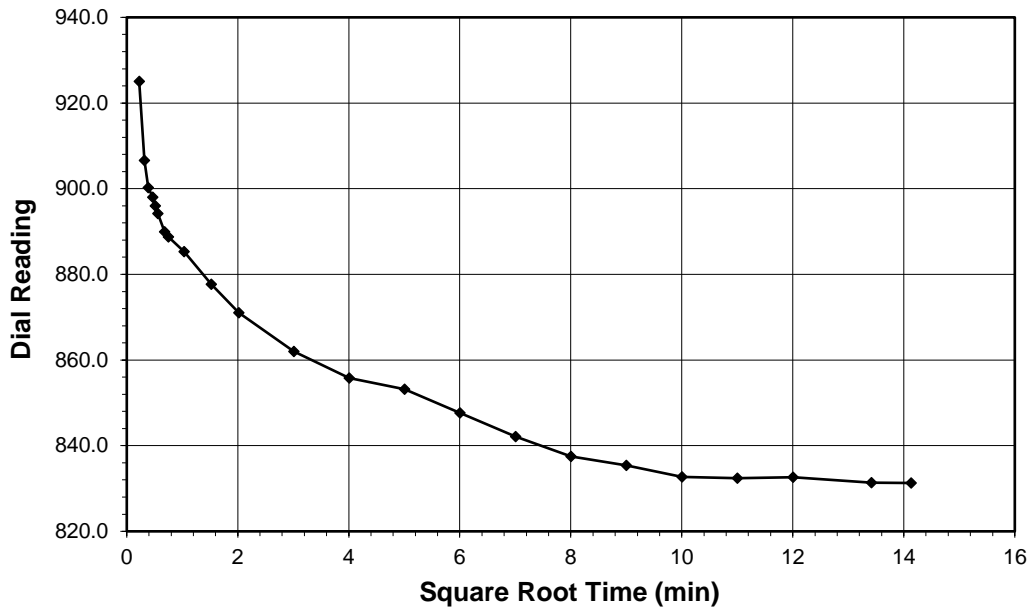
Tested By **NL** Date **9/10/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

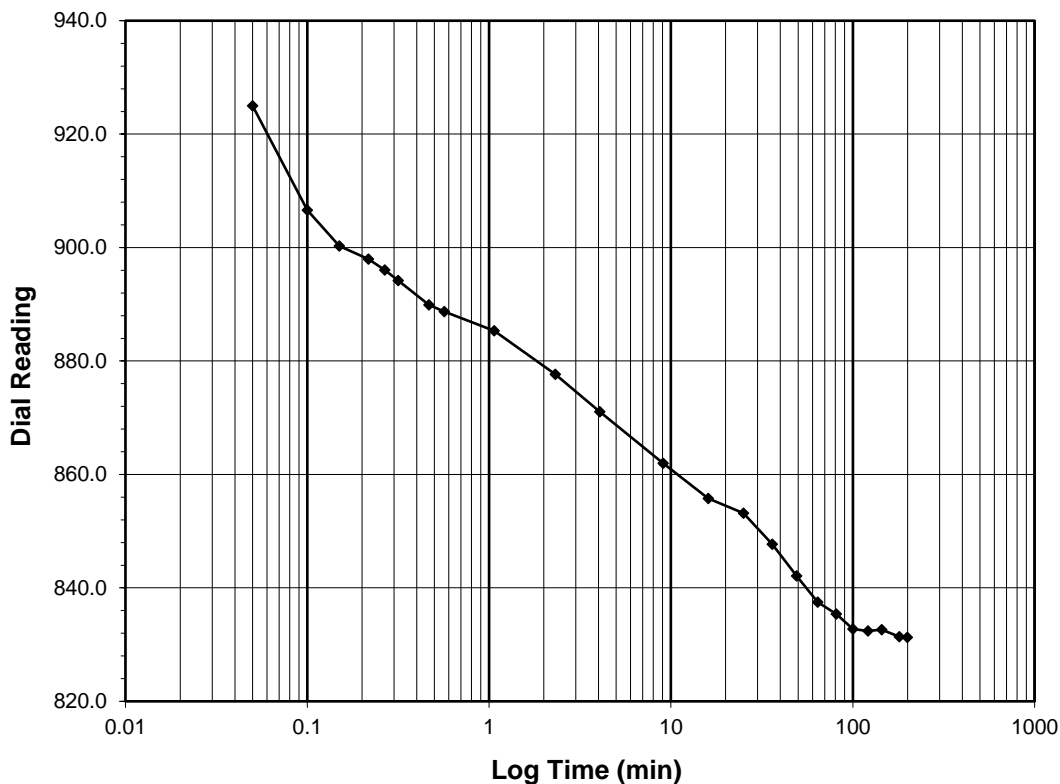
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>831.3</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/10/2020
Start Time	7:35:07

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1004.9</b>
0.05	925.0
0.10	906.6
0.15	900.3
0.22	898.0
0.27	896.0
0.32	894.2
0.47	889.9
0.57	888.7
1.07	885.3
2.32	877.7
4.07	871.0
9.07	862.0
16.07	855.8
25.07	853.2
36.07	847.7
49.07	842.1
64.07	837.5
81.07	835.4
100.08	832.7
121.08	832.4
144.08	832.6
180.08	831.4
199.80	831.3



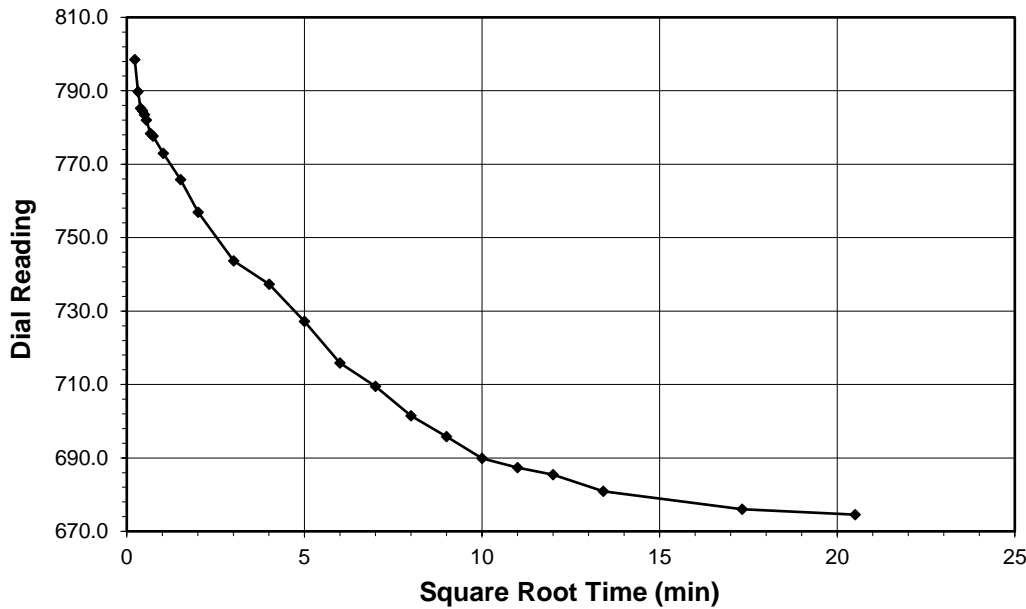
Tested By **NL** Date **9/10/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

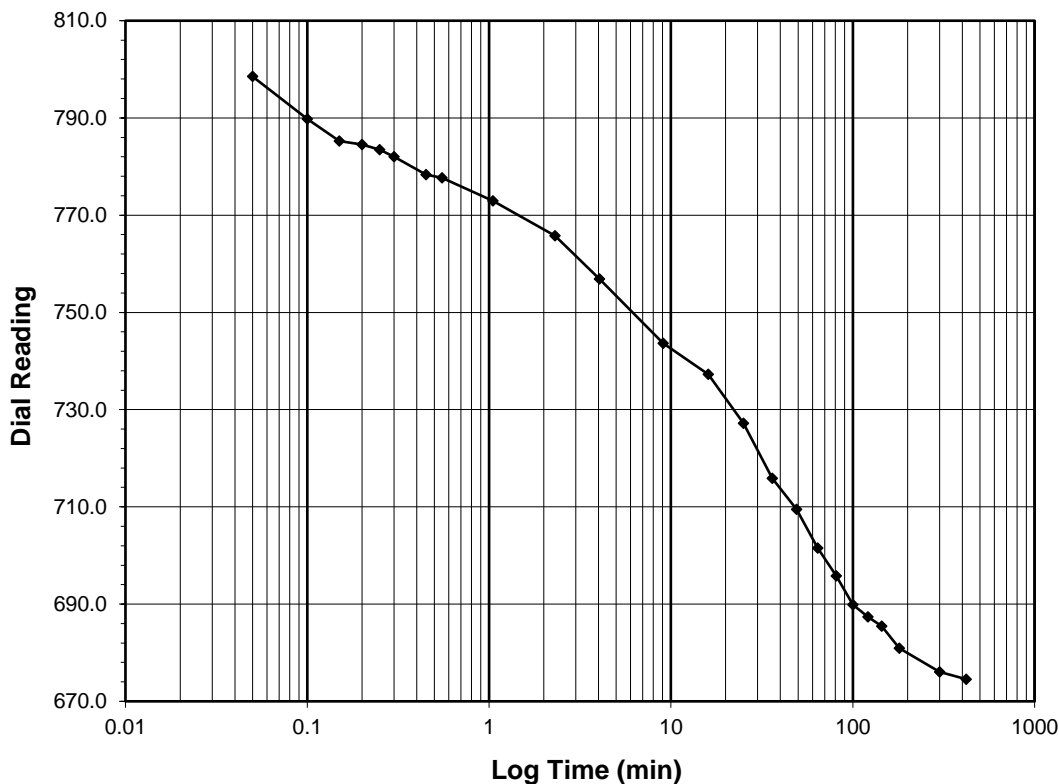
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>674.6</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/10/2020
Start Time	10:54:56

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>831.3</b>
0.05	798.5
0.10	789.8
0.15	785.2
0.20	784.5
0.25	783.5
0.30	782.0
0.45	778.3
0.55	777.7
1.05	772.9
2.30	765.8
4.05	756.9
9.05	743.6
16.05	737.3
25.05	727.2
36.05	715.9
49.05	709.5
64.05	701.5
81.05	695.8
100.05	689.9
121.05	687.4
144.05	685.5
180.05	680.9
300.05	676.1
420.37	674.6



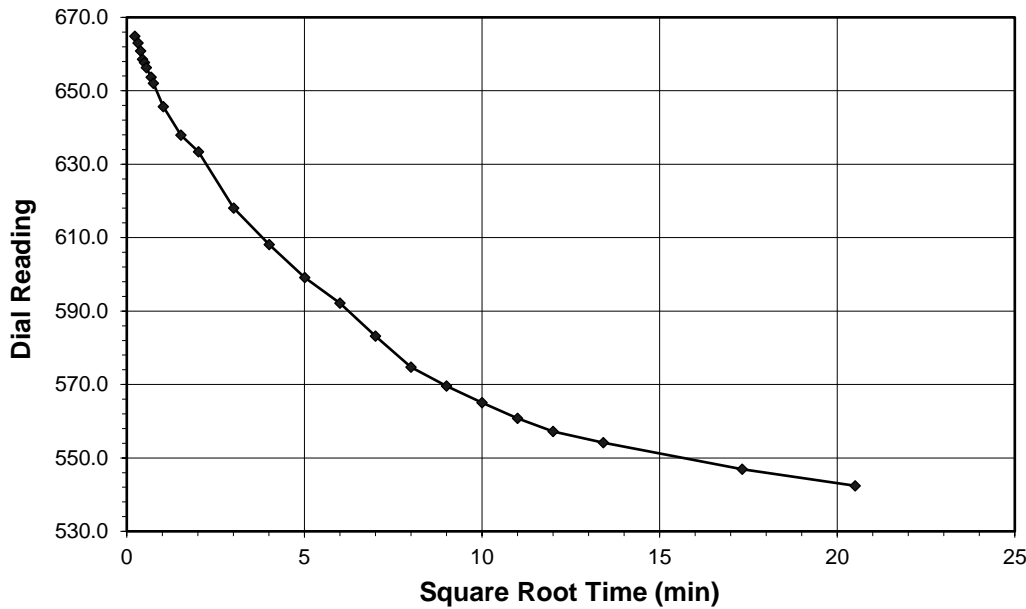
Tested By **NL** Date **9/10/2020** Checked By **GEM** Date **9/15/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

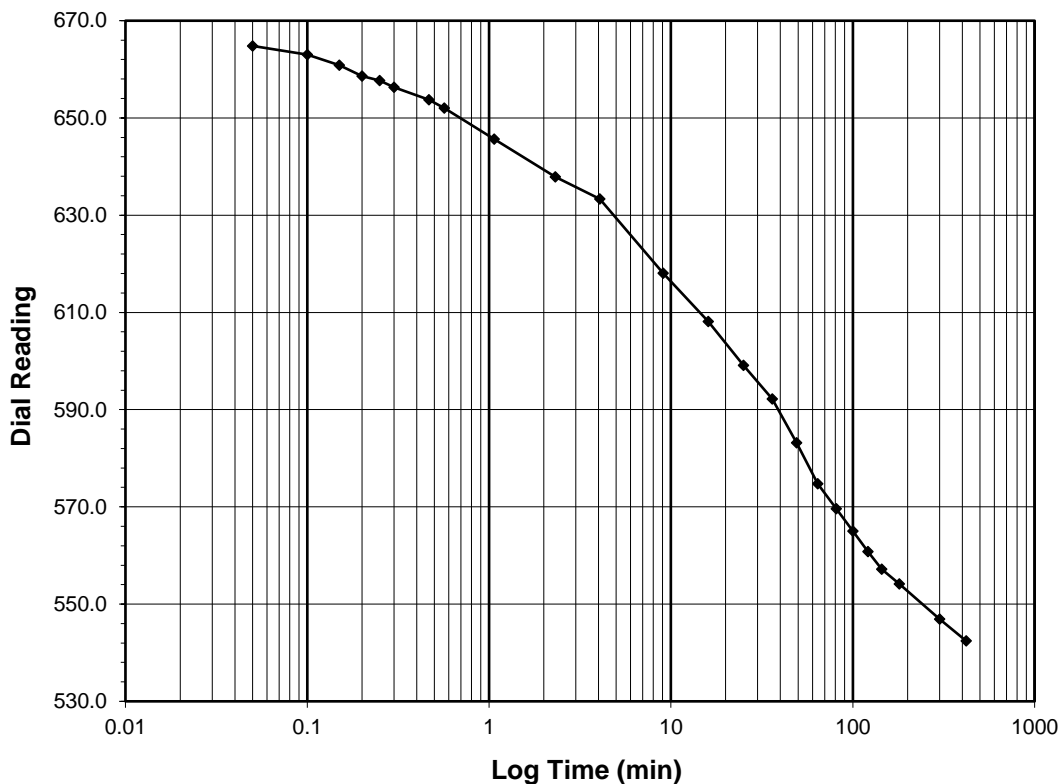
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	21.0'-23.0'
Project No.	R-2020-164-002	Sample No.	SPT08-1
Lab ID	R-2020-164-002-037	Visual Description	Blue-Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>542.4</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/10/2020
Start Time	17:55:18

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>674.6</b>
0.05	664.8
0.10	663.0
0.15	660.9
0.20	658.6
0.25	657.7
0.30	656.3
0.47	653.7
0.57	652.0
1.07	645.7
2.32	637.9
4.07	633.3
9.07	618.1
16.07	608.1
25.07	599.1
36.07	592.2
49.07	583.2
64.07	574.7
81.07	569.6
100.07	565.0
121.07	560.8
144.07	557.2
180.07	554.1
300.07	546.9
420.52	542.4



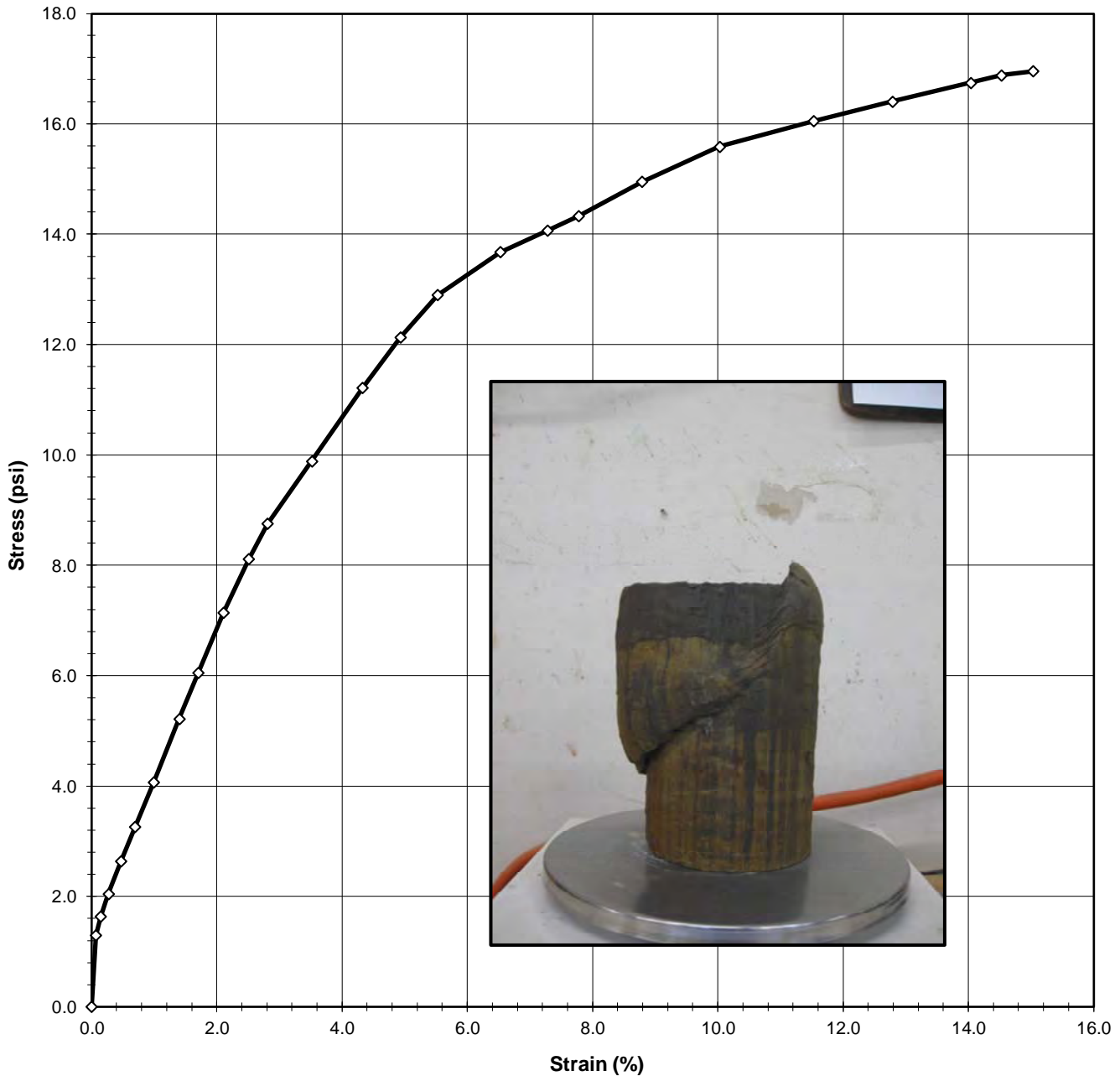
Tested By *NL* Date *9/10/2020* Checked By *GEM* Date *9/15/2020*

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-037

Boring No.: PRN\_20\_UD  
 Depth (ft): 21.0'-23.0'  
 Sample No.: SPT08-1  
 Visual: Gray Clay

**INITIAL CONFINING STRESS (psi)      9.4**



Tested By MY      Date 9/15/20      Input Checked By MPS      Date 9/17/20

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15



Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-037

Boring No.: PRN\_20\_UD  
 Depth (ft): 21.0'-23.0'  
 Sample No.: SPT08-1  
 Visual: Gray Clay

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	6.020	Top Dia. (in):	2.796
Length 2 (in):	6.016	Mid. Dia. (in):	2.837
Length 3 (in):	6.004	Bot. Dia. (in):	2.865
<b>Avg.Length (in)</b>	<b>6.013</b>	<b>Area (in<sup>2</sup>):</b>	<b>6.302</b>

WATER CONTENT (AFTER TEST)	
Total Weight of Sample (g):	1287.20
Tare No.:	852
Weight of Tare & Wet Sample (g):	1422.97
Weight of Tare & Dry Sample (g):	1169.25
Weight of Tare (g):	136.17
% Moisture:	24.6

UNIT WEIGHT			
Undisturbed Sample			
Weight of Tube & Wet Sample (g):	1287.29	Sample Volume (cm <sup>3</sup> ):	621.0
Weight of Tube (g):	0.00	Unit Wet Weight (g/cm <sup>3</sup> ):	2.07
Weight of Wet Sample (g):	1287.29	Unit Wet Weight (pcf):	129.35
Diameter (in):	2.83	Moisture Content (%):	24.6
Length (in):	6.01	Unit Dry Weight (pcf):	103.8
Length (cm):	15.27		

<b>INITIAL CONFINING STRESS (psi)</b>	<b>9.4</b>	Initial Dial Reading (mil)	310
<b>ENDING CONFINING STRESS (psi)</b>	<b>9.4</b>	Dial Reading Before Shearing (mil)	314

DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	10.2	0.0	0.0	0.000
0.004	18.3	0.07	0.1	1.294
0.009	20.5	0.15	0.1	1.634
0.016	23.1	0.27	0.3	2.050
0.028	26.9	0.48	0.5	2.642
0.042	30.9	0.70	0.7	3.260
0.060	36.1	1.00	1.0	4.070
0.084	43.5	1.40	1.4	5.218
0.103	49.0	1.70	1.7	6.057
0.127	56.2	2.12	2.1	7.143
0.151	62.6	2.52	2.5	8.111
0.169	66.9	2.82	2.8	8.755
0.211	74.8	3.52	3.5	9.889
0.260	84.1	4.33	4.3	11.215
0.297	90.6	4.93	4.9	12.134
0.332	96.2	5.53	5.5	12.898
0.392	102.4	6.55	6.5	13.674
0.437	105.8	7.30	7.3	14.063
0.467	108.1	7.80	7.8	14.327
0.528	113.5	8.80	8.8	14.948
0.603	119.4	10.05	10.0	15.586
0.693	124.5	11.55	11.5	16.049
0.768	128.7	12.80	12.8	16.405
0.843	132.9	14.05	14.0	16.745
0.873	134.6	14.55	14.5	16.879
0.903	135.9	15.05	15.0	16.955

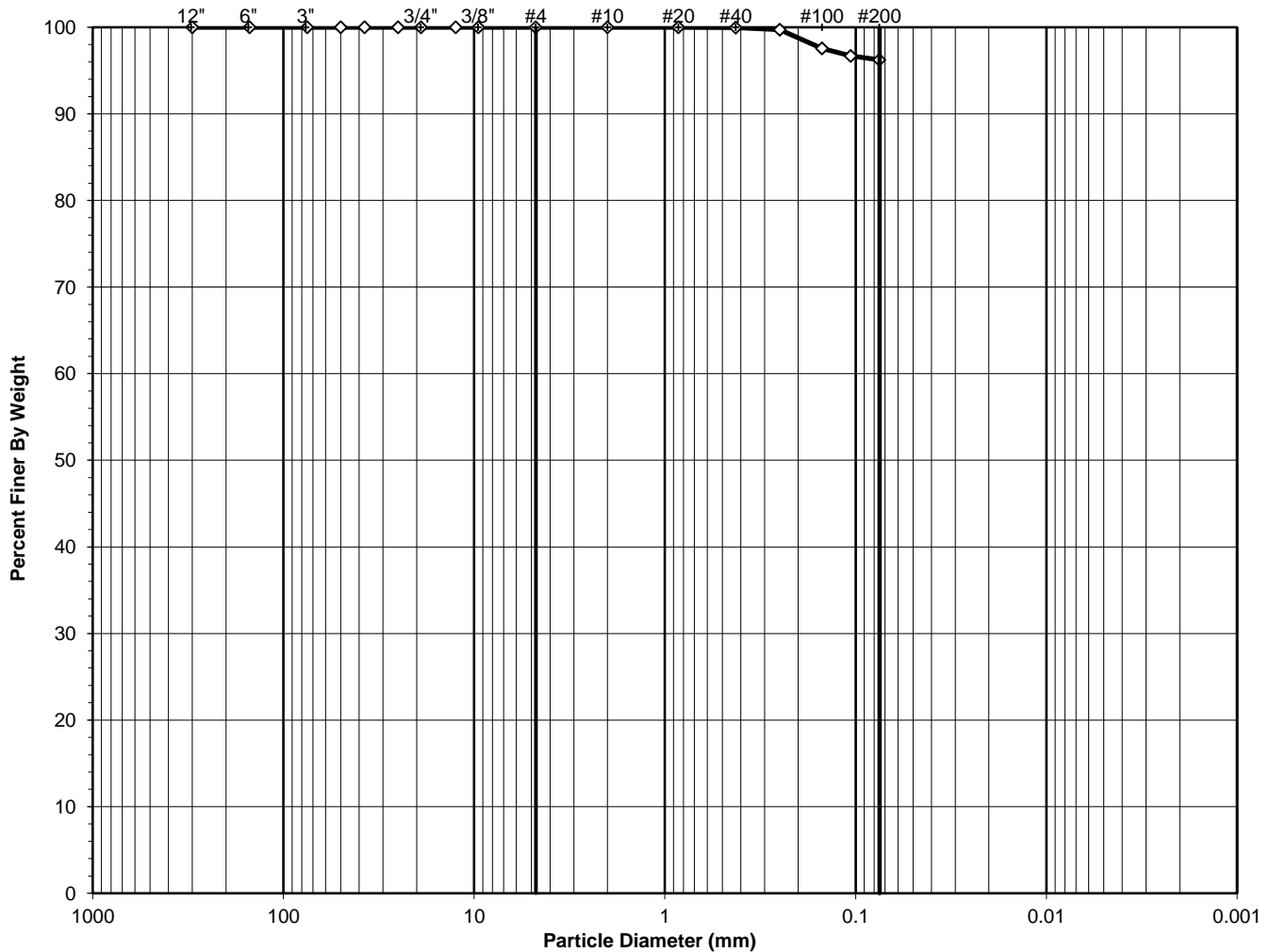
Tested By MY Date 9/15/20 Input Checked By MPS Date 9/17/20

# SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	13.0-15.0
Project No.:	R-2020-164-002	Sample No.:	SPT09-1
Lab ID:	R-2020-164-002-038	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



**USCS Symbol:**  
**CH, TESTED**

**D50 = 0.02**

**USCS Classification:**  
**FAT CLAY WITH SAND**

Tested By	RF	Date	9/10/20	Checked By	GEM	Date	9/14/20
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## WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	13.0-15.0
Project No.:	R-2020-164-002	Sample No.:	SPT09-1
Lab ID:	R-2020-164-002-038	Soil Color:	Gray

Moisture Content of Passing 3/4" Material		Moisture Content of Retained 3/4" Material	
Tare No.:	730	Tare No.:	NA
Wt. of Tare & Wet Sample (g):	475.89	Weight of Tare & Wet Sample (g):	NA
Wt. of Tare & Dry Sample (g):	353.65	Weight of Tare & Dry Sample (g):	NA
Weight of Tare (g):	139.81	Weight of Tare (g):	NA
Weight of Water (g):	122.24	Weight of Water (g):	NA
Weight of Dry Soil (g):	213.84	Weight of Dry Soil (g):	NA
<b>Moisture Content (%):</b>	<b>57.2</b>	<b>Moisture Content (%):</b>	<b>0.0</b>
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	213.84
Tare No. (Sub-Specimen)	730	Wet Weight of +3/4" Sample (g):	0.00
Wt. of Tare & Wet Sub-Specimen (g):	475.89	Dry Weight of + 3/4" Sample (g):	0.00
Weight of Tare (g):	139.81	Dry Weight of - 3/4" Sample (g):	213.84
Sub-Specimen Wet Weight (g):	336.08	Dry Weight -3/4" +3/8" Sample (g):	0.00
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	213.84
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA
Sub-Specimen -3/8" Wet Weight (g):	NA		

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	( *)	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25	0.00	0.00	0.00	100.00	100.00
3/4"	19	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	( ** )	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.00	( ** )	0.00	100.00	100.00
#40	0.425	0.07	0.03	0.03	99.97	100.00
#60	0.25	0.54	0.25	0.29	99.71	99.7
#100	0.15	4.60	2.15	2.44	97.56	97.6
#140	0.106	1.87	0.87	3.31	96.69	96.7
#200	0.075	0.95	0.44	3.76	96.24	96.2
Pan	-	0.00	0.00	3.76	-	-

**Notes :** ( \* ) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample  
 ( \*\* ) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen

Tested By	RF	Date	9/10/20	Checked By	GEM	Date	9/14/20
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## ATTERBERG LIMITS

ASTM D 4318-17

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-038

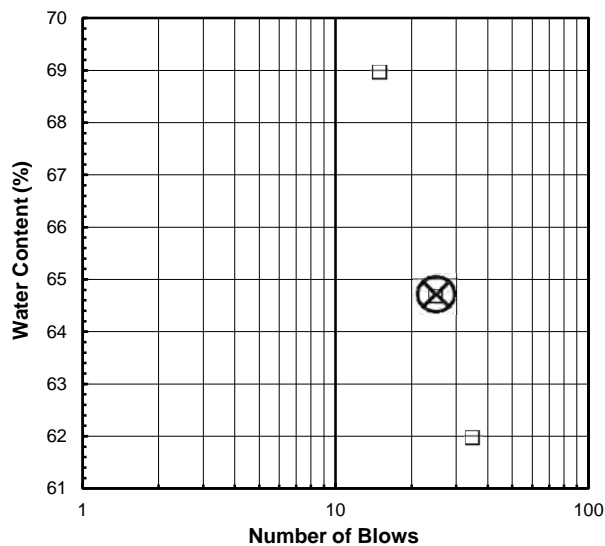
Boring No.: PRN\_20\_UD  
 Depth (ft): 13.0-15.0  
 Sample No.: STP09-1  
 Soil Description: GRAY FAT CLAY

**Note: The USCS symbol used with this test refers only to the minus No. 40** (Minus No. 40 sieve material, Air dried)  
**sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.**

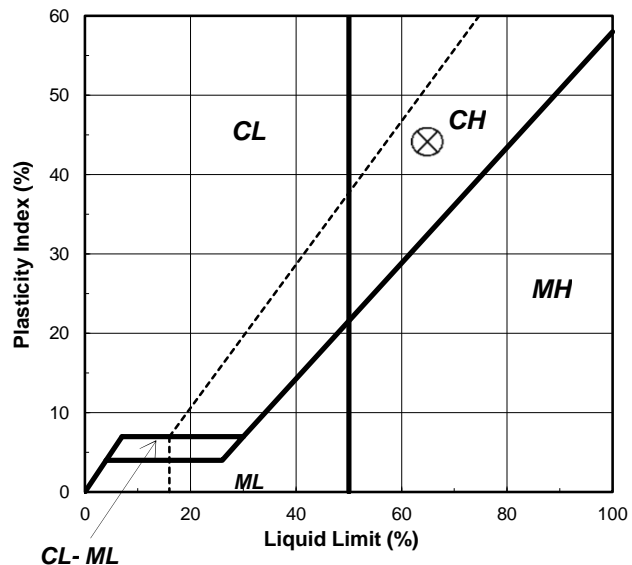
As Received Moisture Content	Liquid Limit Test			
ASTM D2216-19	1	2	3	M
Tare Number: 730	AB	9	A-I	U
Wt. of Tare & Wet Sample (g): 475.89	30.29	17.66	27.20	L
Wt. of Tare & Dry Sample (g): 353.65	24.64	13.47	22.38	T
Weight of Tare (g): 139.81	15.52	6.99	15.39	I
Weight of Water (g): 122.2	5.7	4.2	4.8	P
Weight of Dry Sample (g): 213.8	9.1	6.5	7.0	O
Was As Received MC Preserved: <b>Yes</b>				I
<b>Moisture Content (%): 57.2</b>	<b>62.0</b>	<b>64.7</b>	<b>69.0</b>	<b>N</b>
<b>Number of Blows:</b>	<b>35</b>	<b>25</b>	<b>15</b>	<b>T</b>

Plastic Limit Test	1	2	Range	Test Results
Tare Number:	32	25		<b>Liquid Limit (%): 65</b>
Wt. of Tare & Wet Sample (g):	15.87	16.07		<b>Plastic Limit (%): 21</b>
Wt. of Tare & Dry Sample (g):	14.34	14.51		<b>Plasticity Index (%): 44</b>
Weight of Tare (g):	6.95	7.00		<b>USCS Symbol: CH</b>
Weight of Water (g):	1.5	1.6		
Weight of Dry Sample (g):	7.4	7.5		
<b>Moisture Content (%):</b>	<b>20.7</b>	<b>20.8</b>	<b>-0.1</b>	
<i>Note: The acceptable range of the two Moisture Contents is <math>\pm</math> 1.4</i>				

Flow Curve



Plasticity Chart



Tested By **SS** Date **9/11/20** Checked By **GEM** Date **9/14/20**

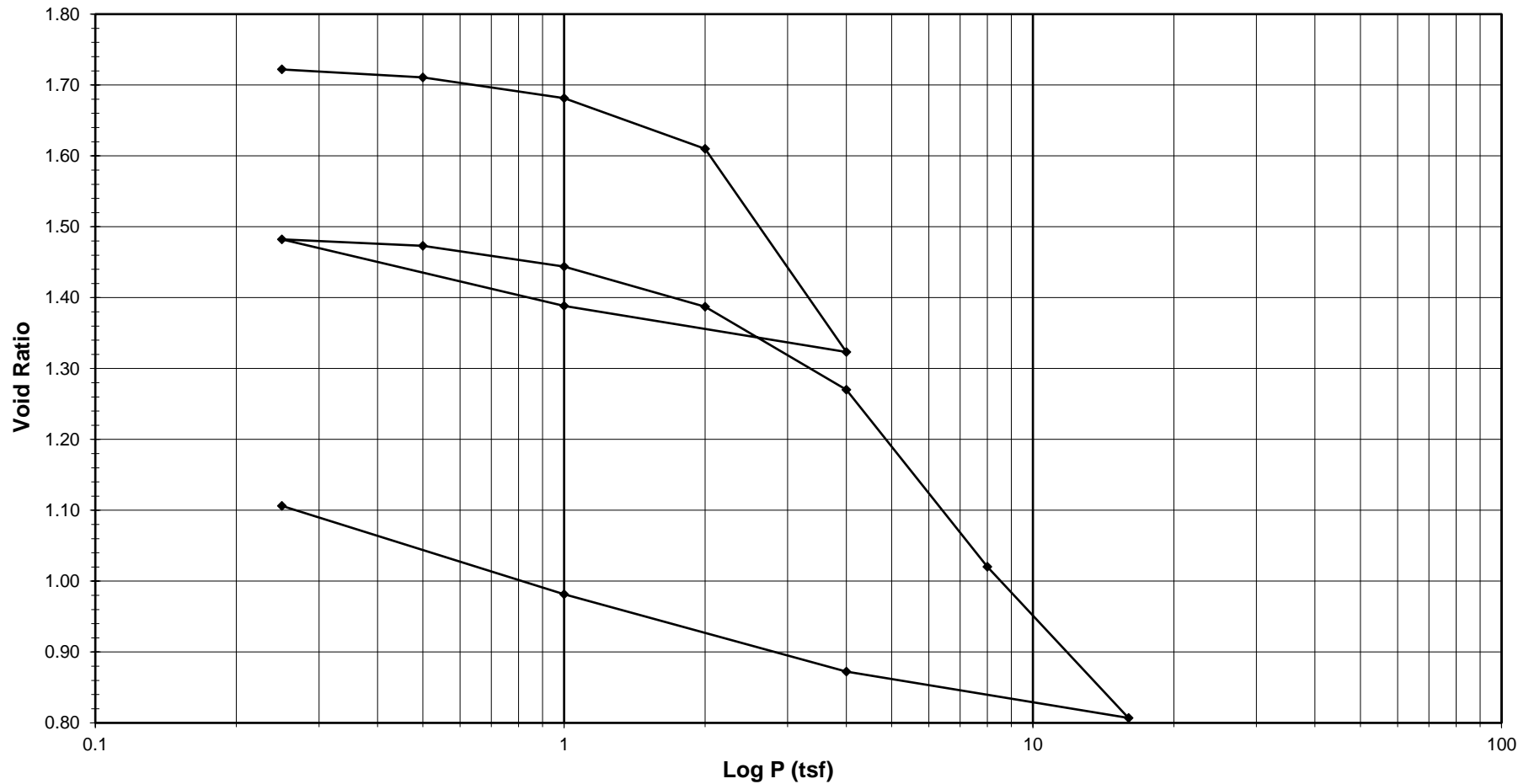
# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Catlin Engineers & Scientists  
 Client Reference USACE Princeville  
 Project No. R-2020-164-002  
 Lab ID R-2020-164-002-038

Boring No. PRN\_20\_UD  
 Depth (ft) 13.0'-15.0'  
 Sample No. SPT09-1  
 Visual Description Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/8/2020 Approved By MPS Date 9/16/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R409  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>Test Data Summary</u>							
			<u>Applied Pressure</u> (tsf)	<u>Final Dial Reading</u> (div)	<u>Machine Deflection</u> (div)	<u>Corrected Reading</u> (div)	<u>Height of Sample</u> (mm)	<u>Volume (cc)</u>	<u>Dry Density</u> (g/cc)	<u>Void Ratio</u>
<i>Water Content</i>										
Tare Number	852	715								
Wt. Tare & WS (g)	280.06	202.96								
Wt. Tare & DS (g)	224.04	170.25								
Wt. Water (g)	56.02	32.71	Seating	0	0	0	25.400	80.440	0.98672	<b>1.73635</b>
Wt. Tare (g)	136.13	90.28	0.25	63.2	10.7	52.5	25.267	80.017	0.99193	<b>1.72197</b>
Wt. DS (g)	87.91	79.97	0.5	124.2	30.0	94.2	25.161	79.682	0.99609	<b>1.71059</b>
Water Content (%)	63.72	40.90	1	247.1	47.1	200.1	24.892	78.831	1.00686	<b>1.68161</b>
			2	536.4	74.4	462.0	24.226	76.723	1.03451	<b>1.60992</b>
			4	1610.4	101.3	1509.1	21.567	68.301	1.16209	<b>1.32340</b>
<i>Sample Parameters</i>			1	1341.1	69.8	1271.3	22.171	70.213	1.13043	<b>1.38847</b>
Sample Diameter (in)	2.5	2.5	0.25	963.3	34.5	928.8	23.041	72.968	1.08775	<b>1.48219</b>
Sample Height (in)	1.0000	0.7698	0.5	1003.0	40.8	962.3	22.956	72.699	1.09177	<b>1.47304</b>
Sample Volume (cc)	80.44	61.92	1	1124.7	55.4	1069.3	22.684	71.838	1.10486	<b>1.44375</b>
Wt. Wet Sample + Ring (g)	344.66	326.55	2	1352.7	77.3	1275.5	22.160	70.180	1.13097	<b>1.38733</b>
Wt. of Ring (g)	214.71	214.71	4	1806.7	102.2	1704.5	21.071	66.729	1.18946	<b>1.26995</b>
Wt. of Wet Sample (g)	129.95	111.84	8	2762.6	146.5	2616.2	18.755	59.396	1.33632	<b>1.02048</b>
Wet Density (pcf)	100.81	112.70	16	3596.1	199.9	3396.2	16.774	53.120	1.49417	<b>0.80702</b>
Wet Density (g/cc)	1.62	1.81	4	3295.4	138.4	3156.9	17.381	55.045	1.44192	<b>0.87250</b>
Water Content (%)	63.72	40.90	1	2845.7	86.8	2758.9	18.392	58.247	1.36266	<b>0.98142</b>
Wt. of Dry Sample (g)	79.37	79.37	0.25	2347.9	45.6	2302.3	19.552	61.920	1.28183	<b>1.10637</b>
Dry Density (pcf)	61.57	79.99								
Dry Density (g/cc)	0.99	1.28								
Void Ratio	1.7363	1.1064								
Saturation (%)	99.09	99.82								
Specific Gravity	2.70	Assumed								

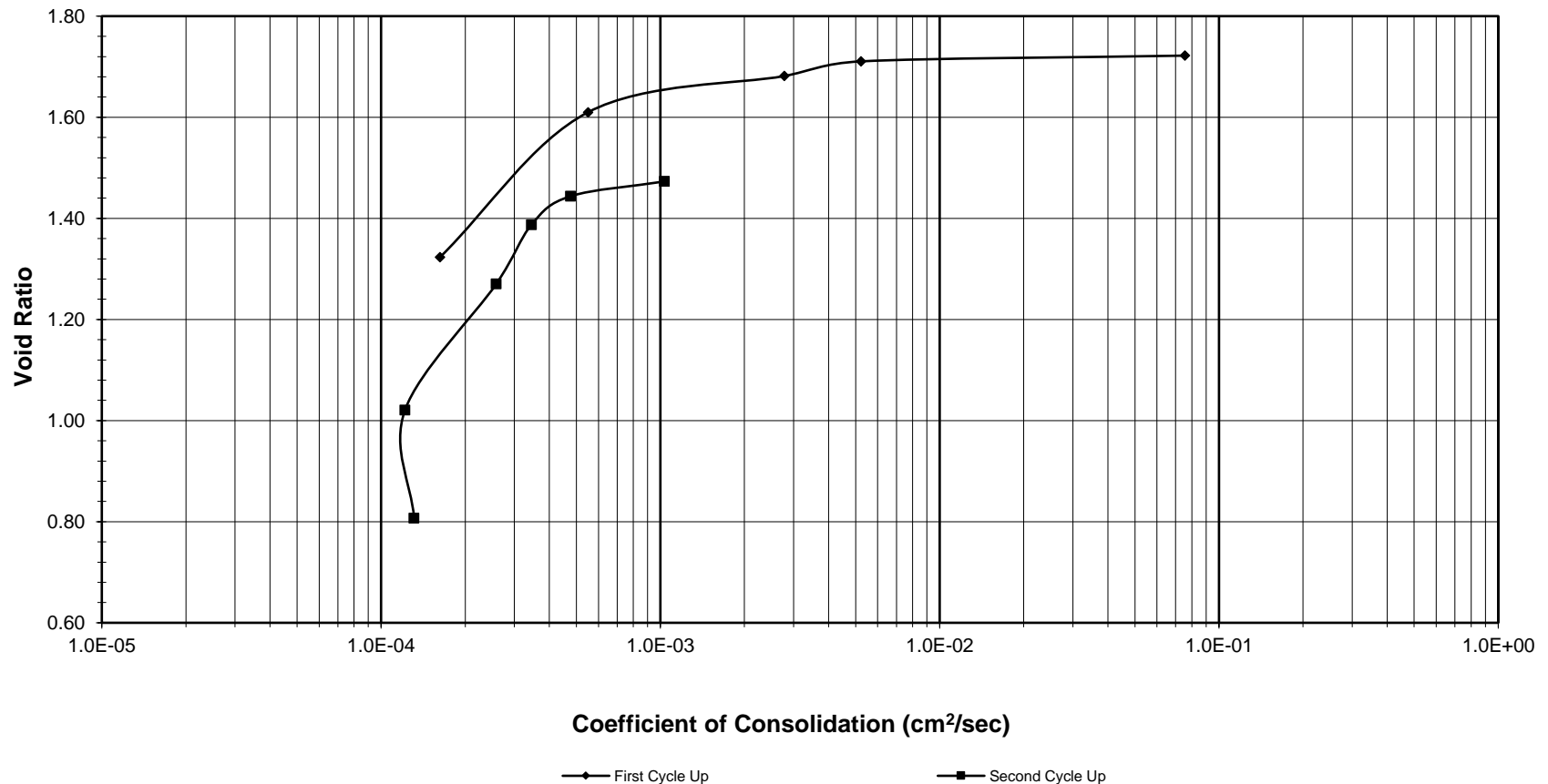
Tested By NL Date 9/8/2020 Input Checked By GEM Date 9/16/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/8/2020 Input Checked By GEM Date 9/16/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R409  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	C <sub>v</sub> Test Data Summary						
			Load Increment	Dial Reading @ t <sub>50</sub>	Machine Deflection	Corrected Dial Reading @ t <sub>50</sub>	Sample Height @ t <sub>50</sub>	Time t <sub>50</sub>	C <sub>v</sub>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
Water Content									
Tare Number	852	715							
Wt. Tare & WS (g)	280.06	202.96							
Wt. Tare & DS (g)	224.04	170.25							
Wt. Water (g)	56.02	32.71	0 - 0.25	26.0	10.7	15.3	2.536	<b>0.07</b>	<b>0.07542</b>
Wt. Tare (g)	136.13	90.28	0.25 - 0.5	99.6	30.0	69.6	2.522	<b>1.00</b>	<b>0.00522</b>
Wt. DS (g)	87.91	79.97	0.5 - 1.0	194.1	47.1	147.0	2.503	<b>1.85</b>	<b>0.00278</b>
Water Content (%)	63.72	40.90	1.0 - 2.0	403.0	74.4	328.5	2.457	<b>9.00</b>	<b>0.00055</b>
			2.0 - 4.0	995.7	101.3	894.4	2.313	<b>27.00</b>	<b>0.00016</b>
Sample Parameters			4.0 - 1.0	NA	69.8	NA	NA	<b>NA</b>	<b>NA</b>
Sample Diameter (in)	2.5	2.5	1.0 - 0.25	NA	34.5	NA	NA	<b>NA</b>	<b>NA</b>
Sample Height (in)	1.000	0.770	0.25 - 0.5	982.4	40.8	941.6	2.301	<b>4.20</b>	<b>0.00103</b>
Sample Volume (cc)	80.44	61.92	0.5 - 1.0	1057.1	55.4	1001.7	2.286	<b>9.00</b>	<b>0.00048</b>
Wt. Wet Sample + Ring (g)	344.66	326.55	1.0 - 2.0	1231.6	77.3	1154.3	2.247	<b>12.00</b>	<b>0.00035</b>
Wt. of Ring (g)	214.71	214.71	2.0 - 4.0	1552.1	102.2	1449.9	2.172	<b>15.00</b>	<b>0.00026</b>
Wt. of Wet Sample (g)	129.95	111.84	4.0 - 8.0	2269.7	146.5	2123.2	2.001	<b>27.00</b>	<b>0.00012</b>
Wet Density (pcf)	100.81	112.70	8.0 - 16.0	3157.5	199.9	2957.6	1.789	<b>20.00</b>	<b>0.00013</b>
Wet Density (g/cc)	1.62	1.81	16.0 - 4.0	NA	138.4	NA	NA	<b>NA</b>	<b>NA</b>
Water Content (%)	63.72	40.90	4.0 - 1.0	NA	86.8	NA	NA	<b>NA</b>	<b>NA</b>
Wt. of Dry Sample (g)	79.37	79.37	1.0 - 0.25	NA	45.6	NA	NA	<b>NA</b>	<b>NA</b>
Dry Density (pcf)	61.57	79.99							
Dry Density (g/cc)	0.99	1.28							
Void Ratio	1.7363	1.1064							
Saturation (%)	99.09	99.82							
Specific Gravity	2.7	Assumed							

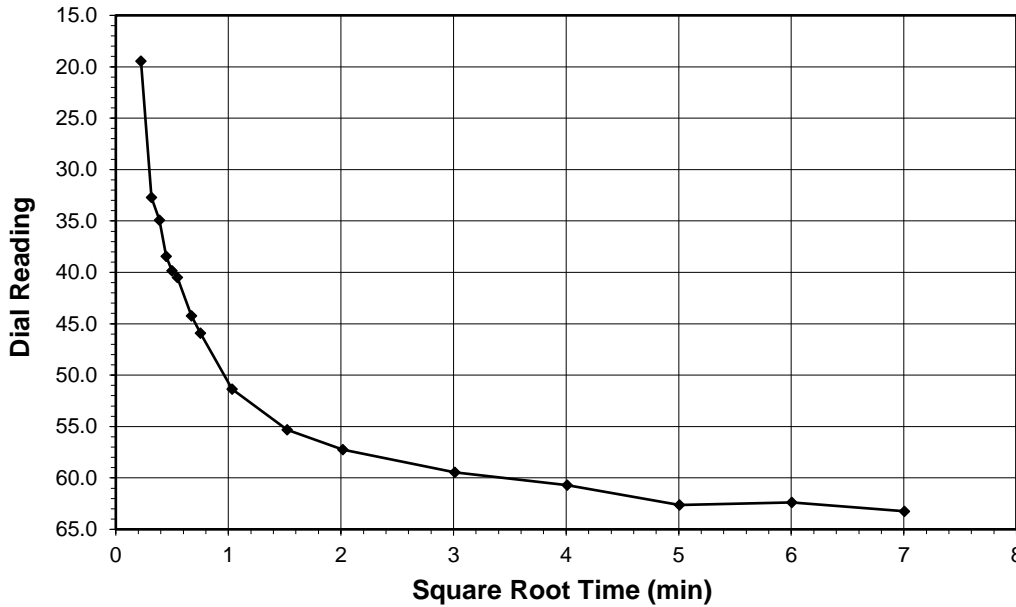
Tested By NL Date 9/8/2020 Input Checked By GEM Date 9/16/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

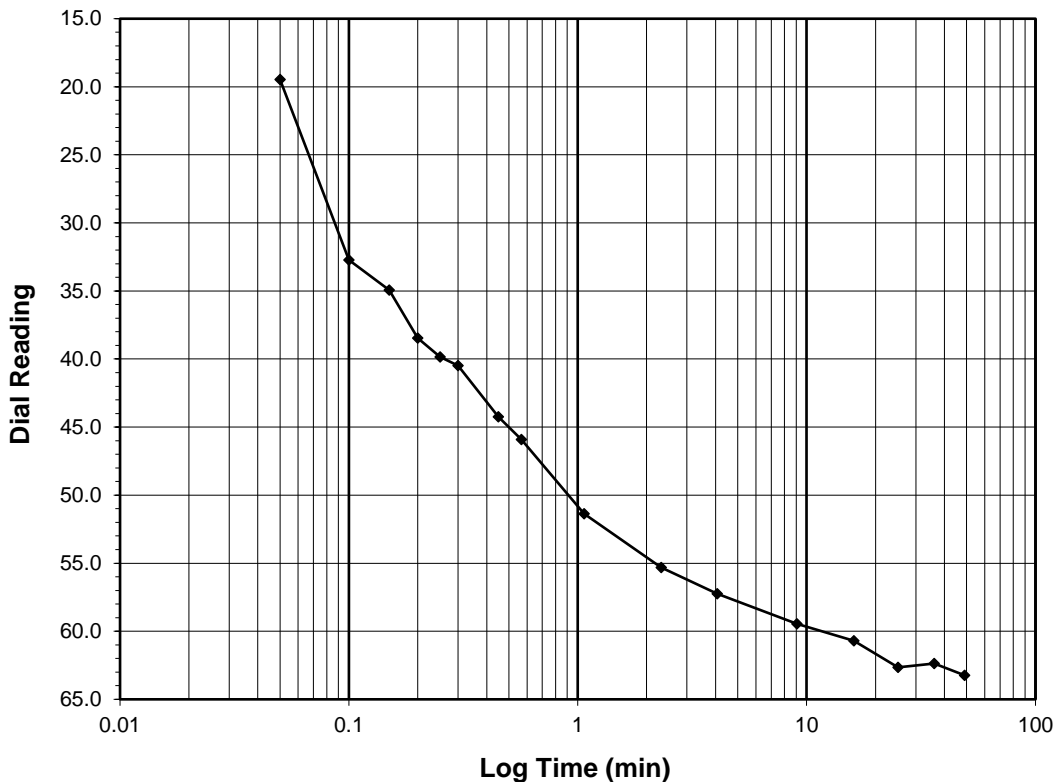
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>63.2</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/8/2020
Start Time	11:29:28

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	19.5
0.10	32.7
0.15	34.9
0.20	38.5
0.25	39.8
0.30	40.5
0.45	44.2
0.57	45.9
1.07	51.4
2.32	55.3
4.07	57.2
9.07	59.5
16.07	60.7
25.07	62.6
36.07	62.4
49.07	63.2



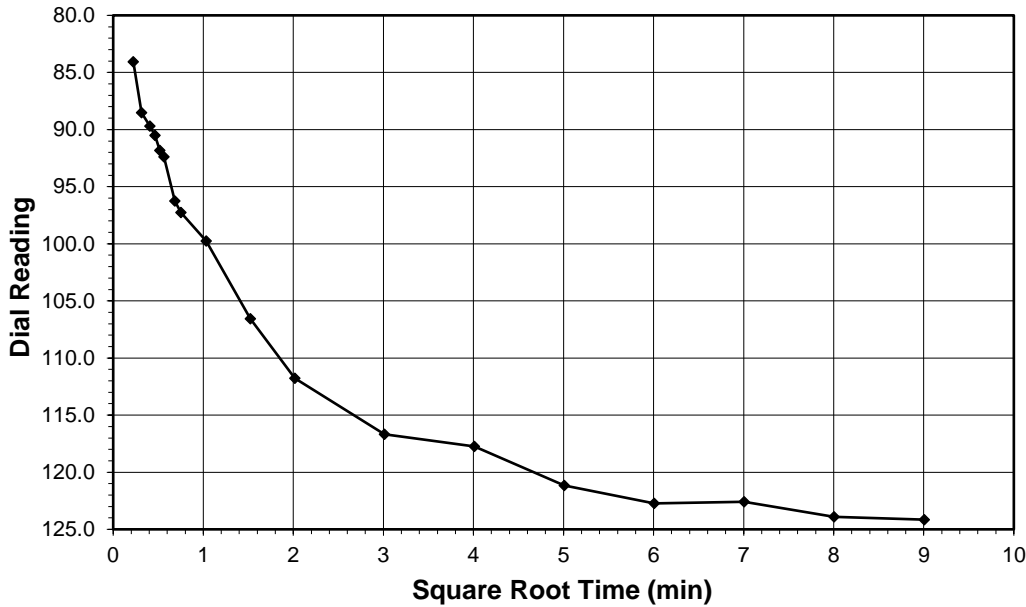
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

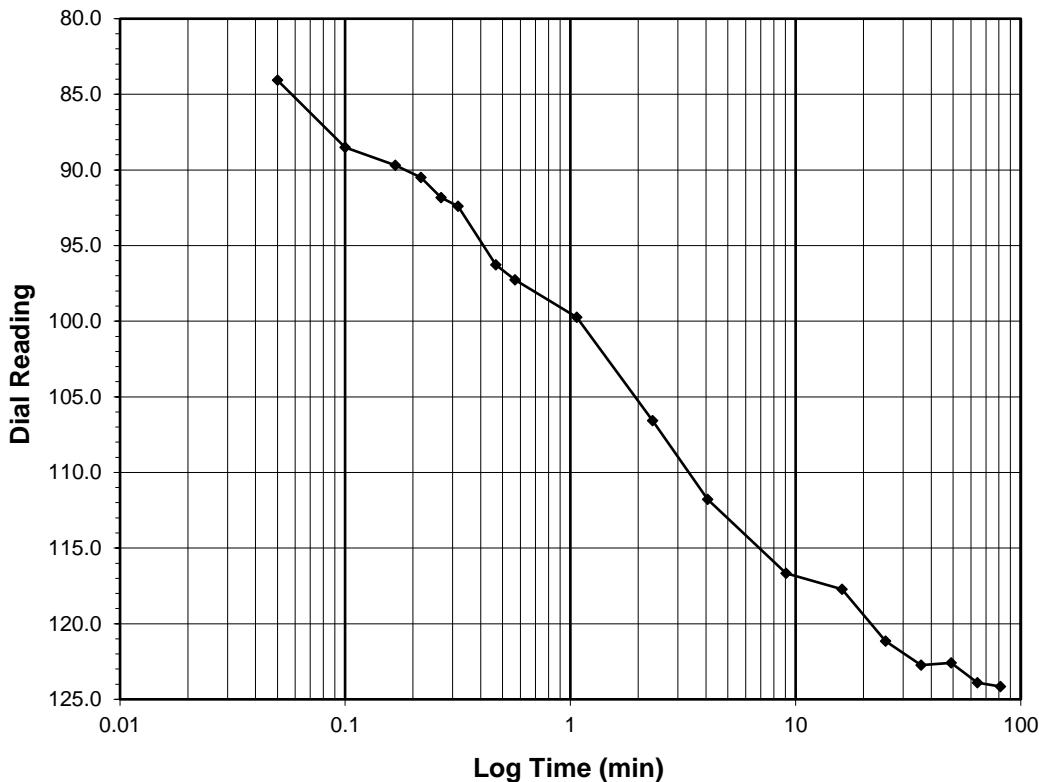
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>124.2</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001

Start Date	9/8/2020
Start Time	12:18:34

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>63.2</b>
0.05	84.1
0.10	88.5
0.17	89.7
0.22	90.5
0.27	91.8
0.32	92.4
0.47	96.3
0.57	97.3
1.07	99.7
2.32	106.6
4.07	111.8
9.07	116.7
16.07	117.7
25.07	121.2
36.07	122.7
49.07	122.6
64.08	123.9
81.08	124.2



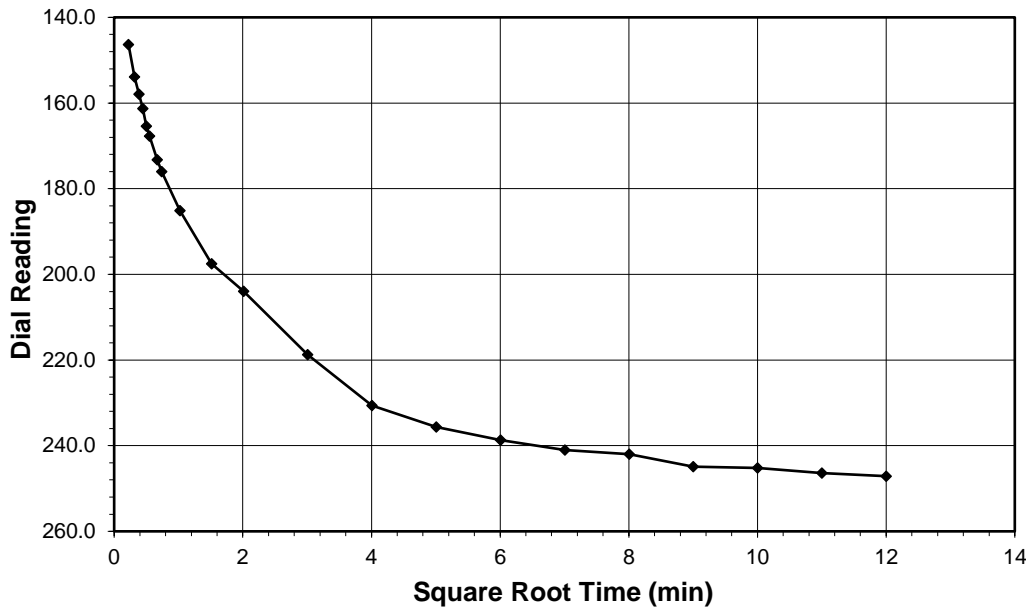
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

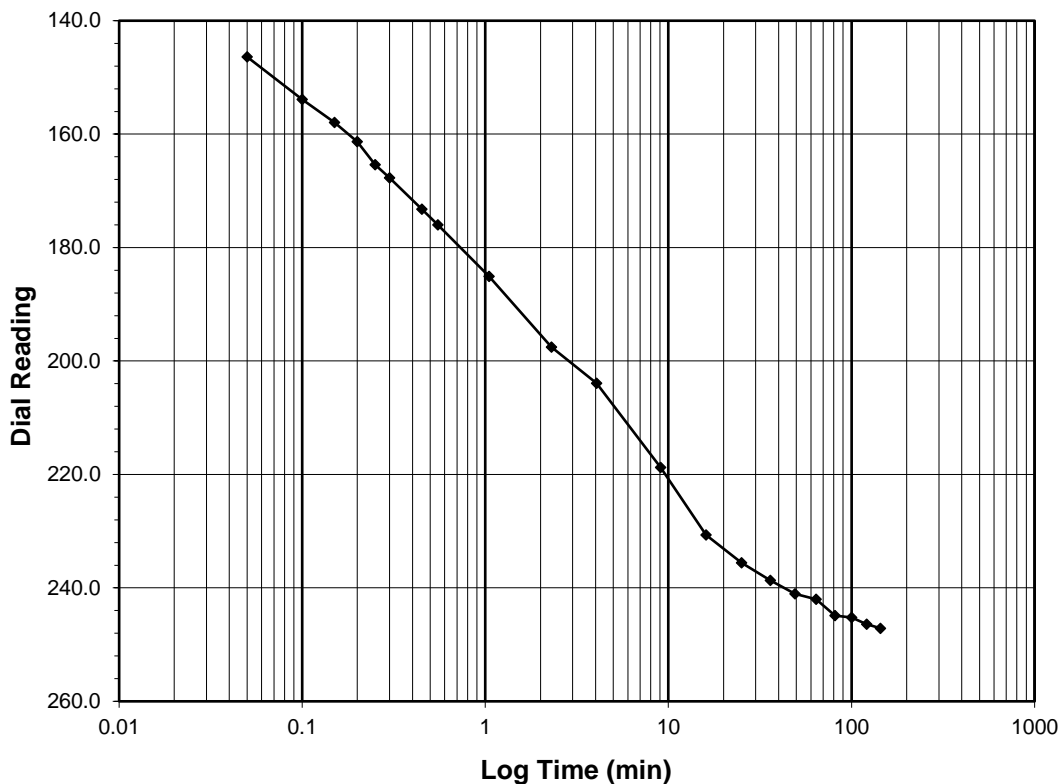
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>247.1</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/8/2020</b>
<b>Start Time</b>	<b>13:48:10</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>124.2</b>
0.05	146.4
0.10	153.9
0.15	157.9
0.20	161.3
0.25	165.4
0.30	167.7
0.45	173.2
0.55	176.0
1.05	185.1
2.30	197.5
4.05	203.9
9.05	218.8
16.05	230.6
25.07	235.6
36.07	238.7
49.07	241.0
64.07	242.0
81.07	244.9
100.07	245.2
121.07	246.4
144.07	247.1



Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/16/2020**

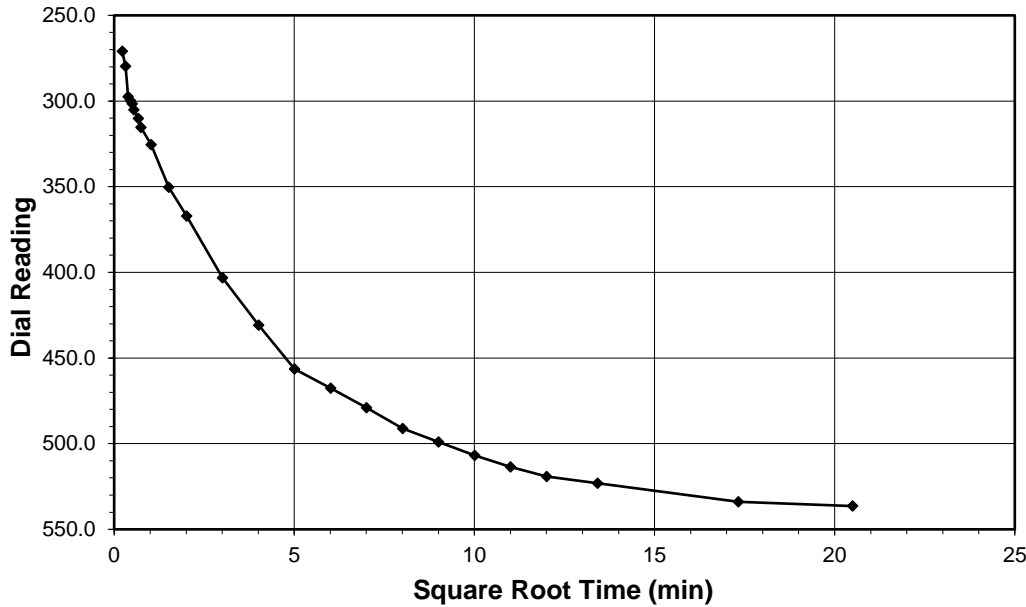


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

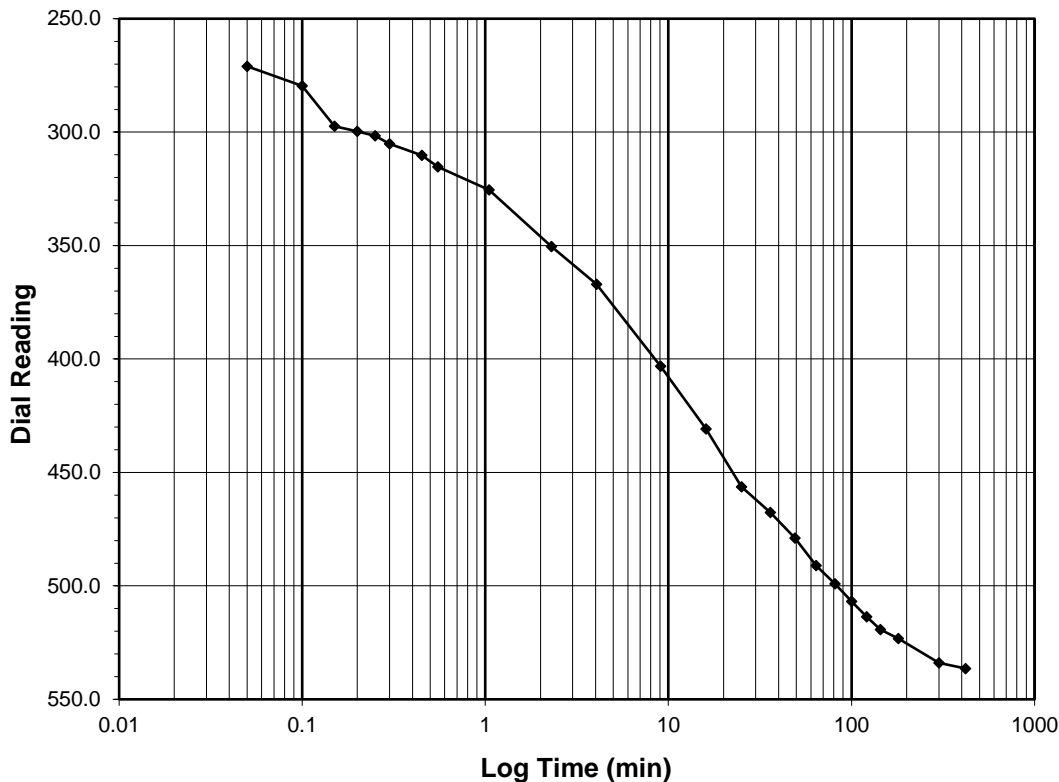
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>536.4</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/8/2020</b>
<b>Start Time</b>	<b>16:14:21</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>247.1</b>
0.05	271.0
0.10	279.7
0.15	297.4
0.20	299.7
0.25	301.6
0.30	305.1
0.45	310.2
0.55	315.3
1.05	325.5
2.30	350.4
4.05	367.1
9.05	403.2
16.07	430.8
25.07	456.3
36.07	467.7
49.07	479.0
64.07	491.1
81.07	499.1
100.07	506.9
121.07	513.6
144.07	519.3
180.07	523.2
300.07	533.9
420.08	536.4



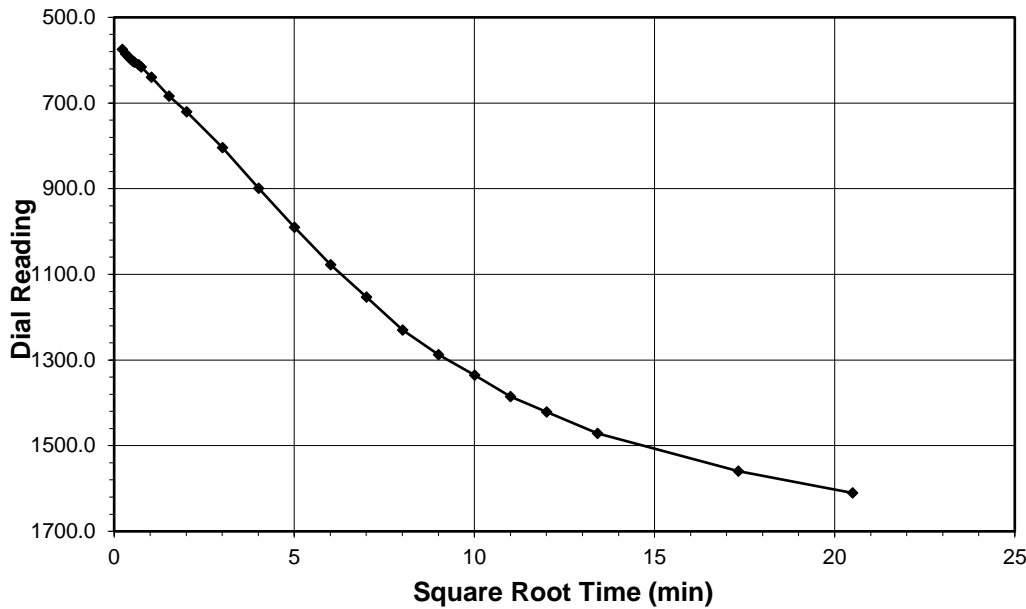
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

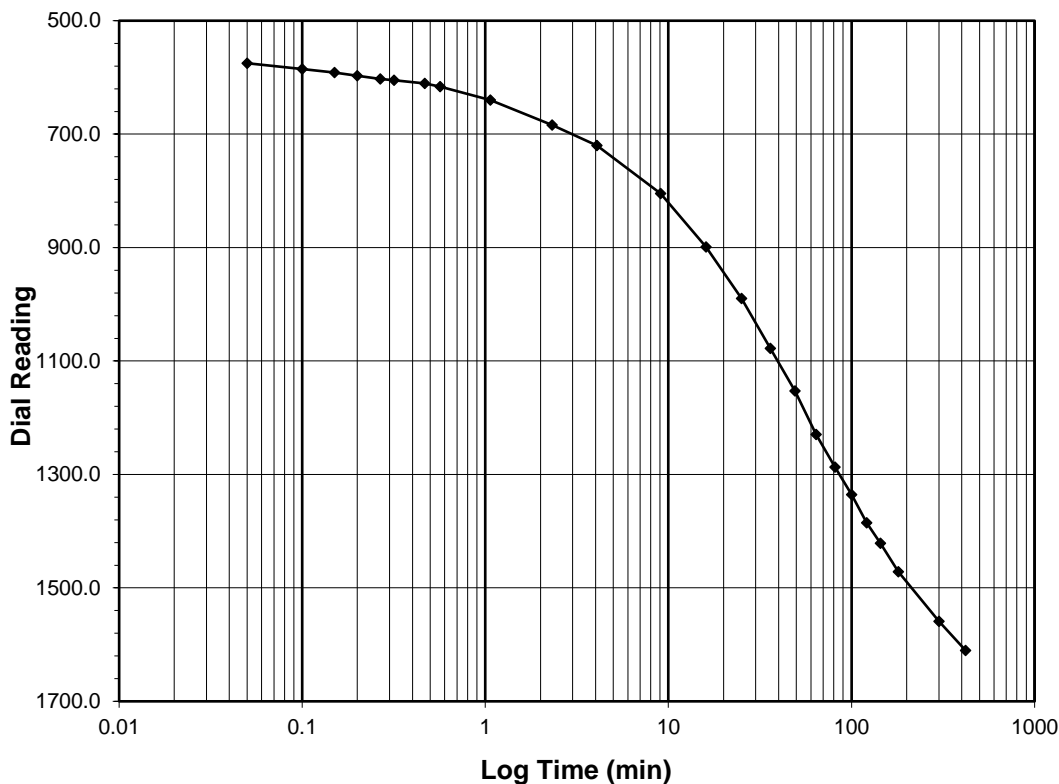
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



**Test Load (tsf)** 2.0-4.0  
**Final Reading (div)** 1610.4  
**Consolidometer No.** R409  
**1 Division (in)** 0.0001

**Start Date** 9/8/2020  
**Start Time** 23:14:26

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>536.4</b>
0.05	575.0
0.10	585.4
0.15	591.5
0.20	597.0
0.27	602.6
0.32	605.0
0.47	610.8
0.57	616.2
1.07	639.9
2.32	683.7
4.07	720.2
9.07	804.4
16.07	899.1
25.07	989.9
36.07	1077.8
49.07	1152.9
64.08	1229.7
81.08	1287.3
100.08	1335.5
121.08	1385.1
144.08	1421.2
180.08	1471.3
300.08	1559.1
420.08	1610.4



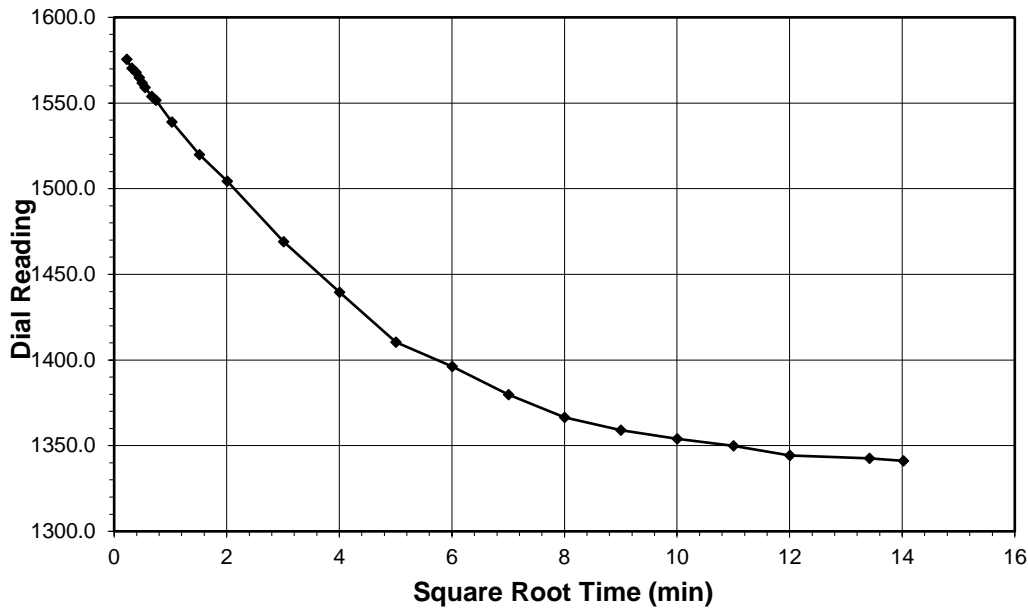
Tested By **NL** Date **9/8/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

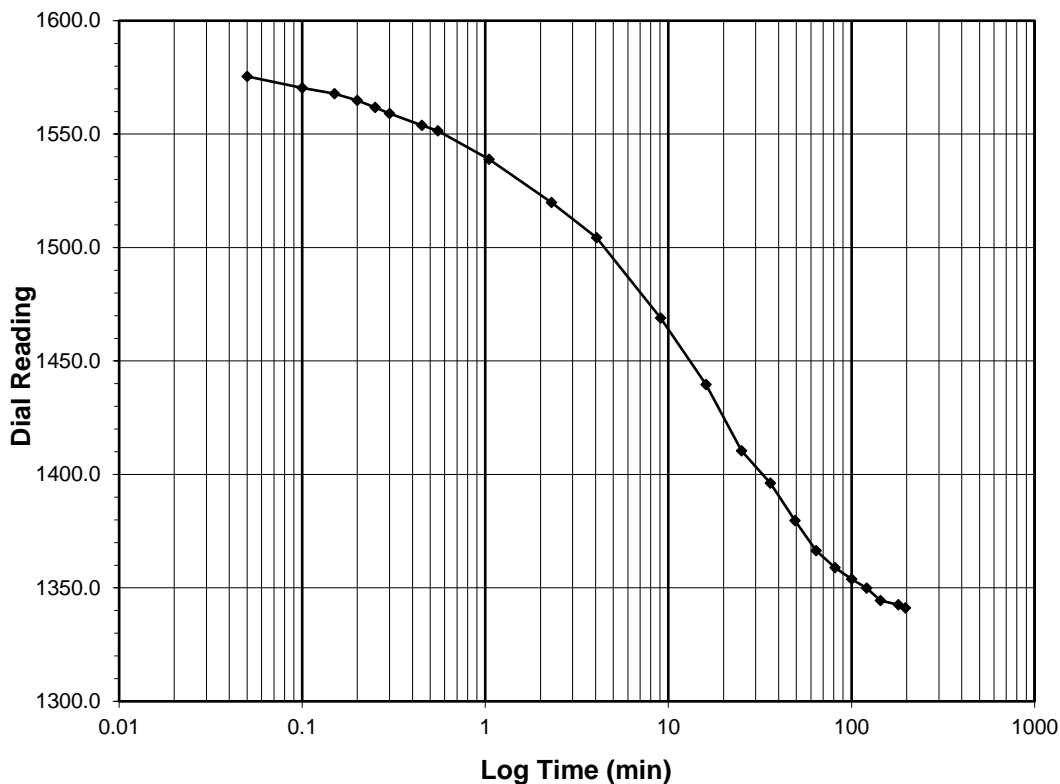
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>1341.1</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001

Start Date	9/9/2020
Start Time	6:14:31

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1610.4</b>
0.05	1575.4
0.10	1570.4
0.15	1567.8
0.20	1564.8
0.25	1561.8
0.30	1559.1
0.45	1553.8
0.55	1551.5
1.05	1539.0
2.30	1519.8
4.05	1504.4
9.07	1469.0
16.07	1439.6
25.07	1410.4
36.07	1396.2
49.07	1379.7
64.07	1366.5
81.07	1359.0
100.07	1353.9
121.07	1349.9
144.07	1344.4
180.07	1342.6
196.67	1341.1



Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/16/2020**

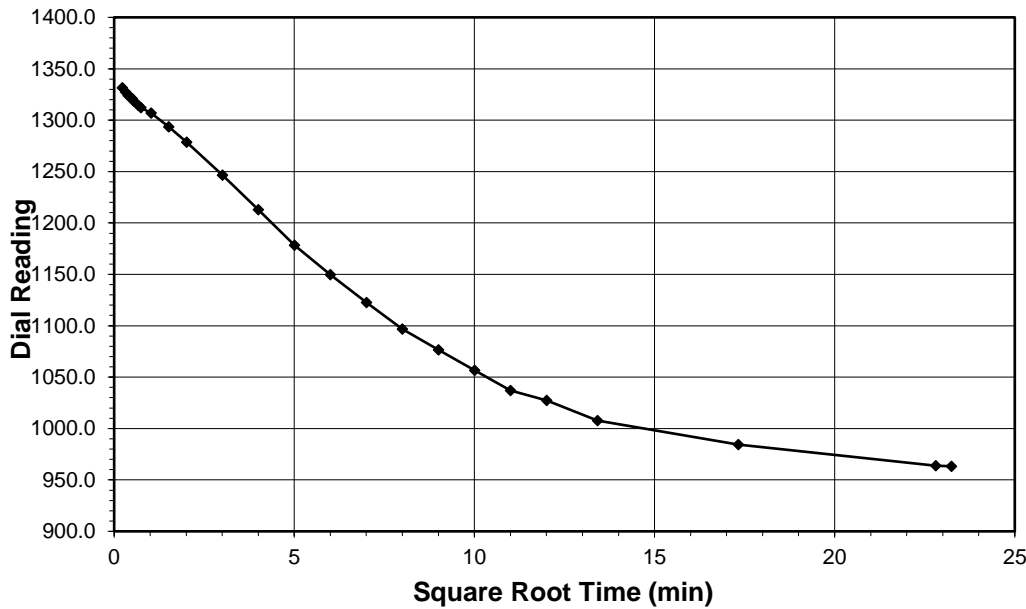


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

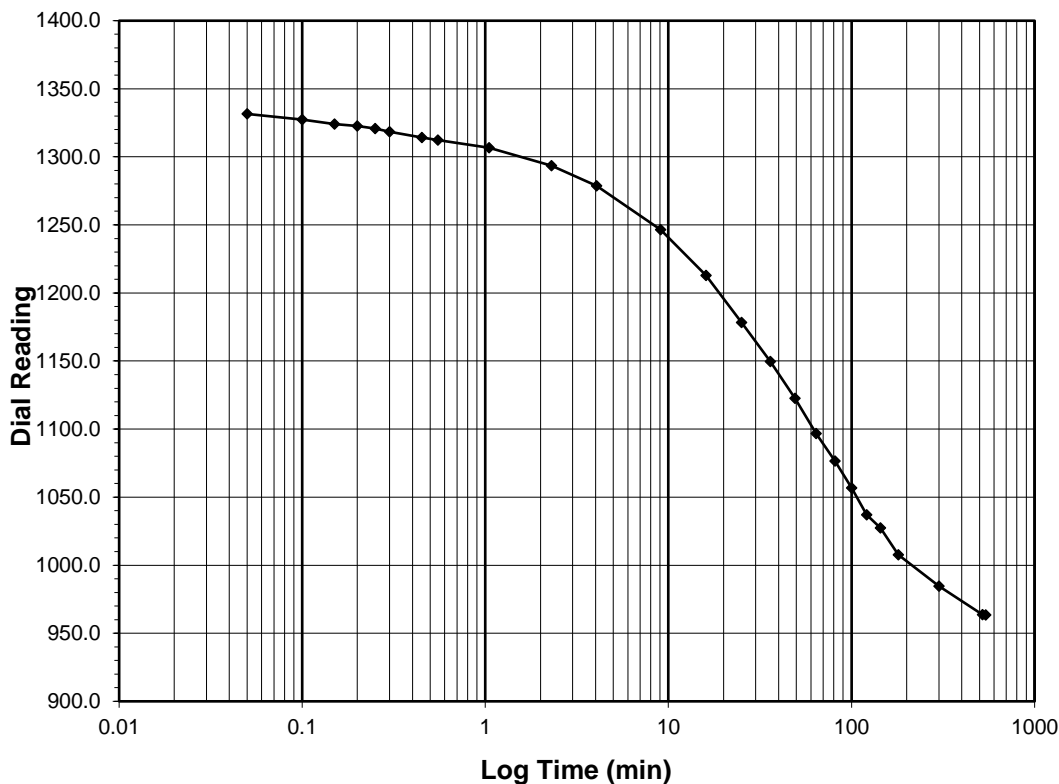
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>963.3</b>
Consolidometer No.	R409
1 Division (in)	0.0001
Start Date	9/9/2020
Start Time	9:31:12

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1341.1</b>
0.05	1331.5
0.10	1327.4
0.15	1324.1
0.20	1322.6
0.25	1320.8
0.30	1318.4
0.45	1314.3
0.55	1312.3
1.05	1306.8
2.30	1293.5
4.05	1278.6
9.05	1246.5
16.05	1212.9
25.05	1178.4
36.05	1149.6
49.05	1122.6
64.05	1096.8
81.07	1076.5
100.07	1056.7
121.07	1036.9
144.07	1027.3
180.07	1007.7
300.07	984.5
520.07	963.8
540.28	963.3



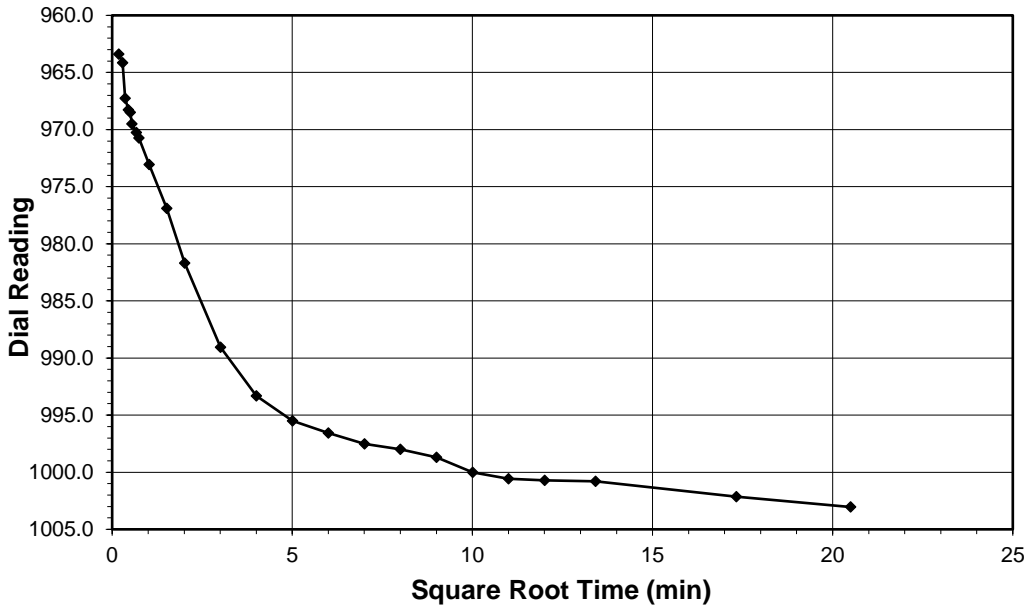
Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

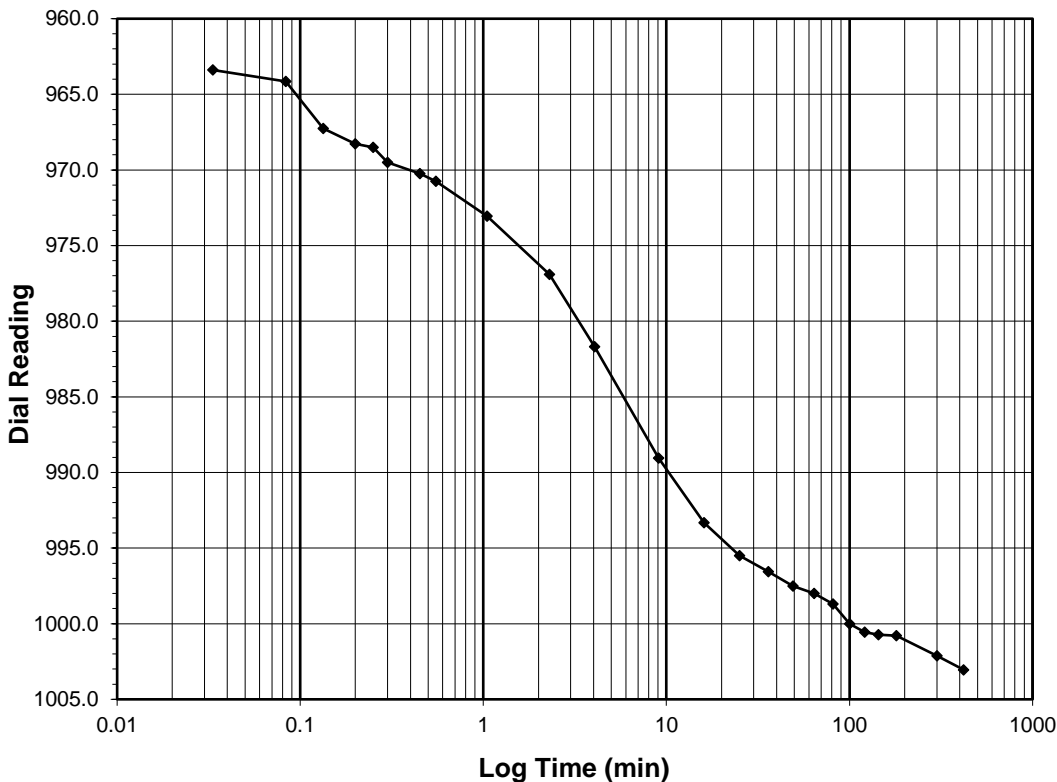
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>1003.0</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/9/2020
Start Time	18:31:29

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>963.3</b>
0.03	963.4
0.08	964.2
0.13	967.3
0.20	968.3
0.25	968.5
0.30	969.5
0.45	970.2
0.55	970.7
1.05	973.1
2.30	976.9
4.05	981.7
9.05	989.1
16.05	993.3
25.05	995.5
36.05	996.6
49.05	997.5
64.05	998.0
81.07	998.7
100.07	1000.0
121.07	1000.6
144.07	1000.7
180.07	1000.8
300.07	1002.1
420.15	1003.0



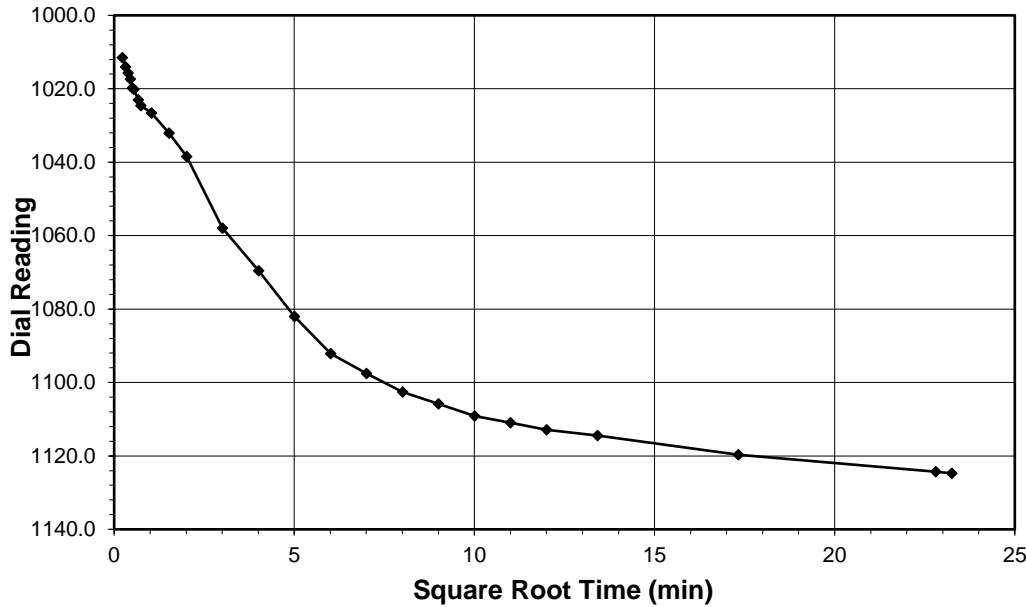
Tested By **NL** Date **9/9/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

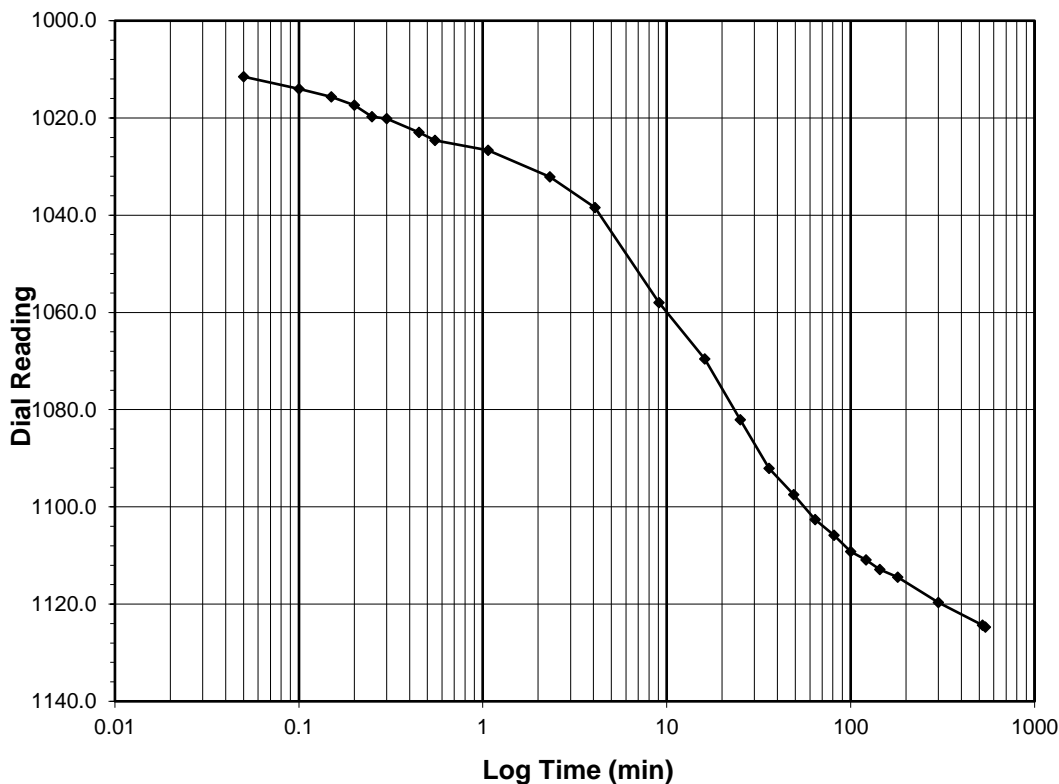
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>1124.7</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/10/2020
Start Time	1:31:39

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1003.0</b>
0.05	1011.5
0.10	1014.1
0.15	1015.7
0.20	1017.4
0.25	1019.8
0.30	1020.2
0.45	1023.0
0.55	1024.6
1.07	1026.6
2.32	1032.1
4.07	1038.4
9.07	1058.0
16.07	1069.6
25.07	1082.1
36.07	1092.1
49.07	1097.5
64.07	1102.6
81.07	1105.9
100.07	1109.2
121.07	1110.9
144.07	1112.9
180.07	1114.4
300.07	1119.7
520.07	1124.3
540.42	1124.7



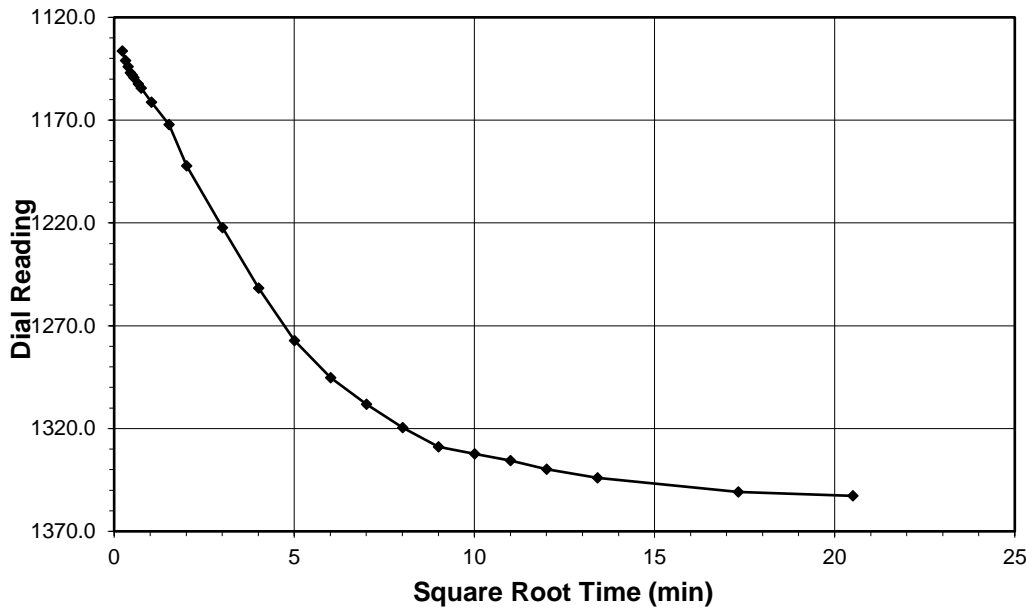
Tested By **NL** Date **9/10/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

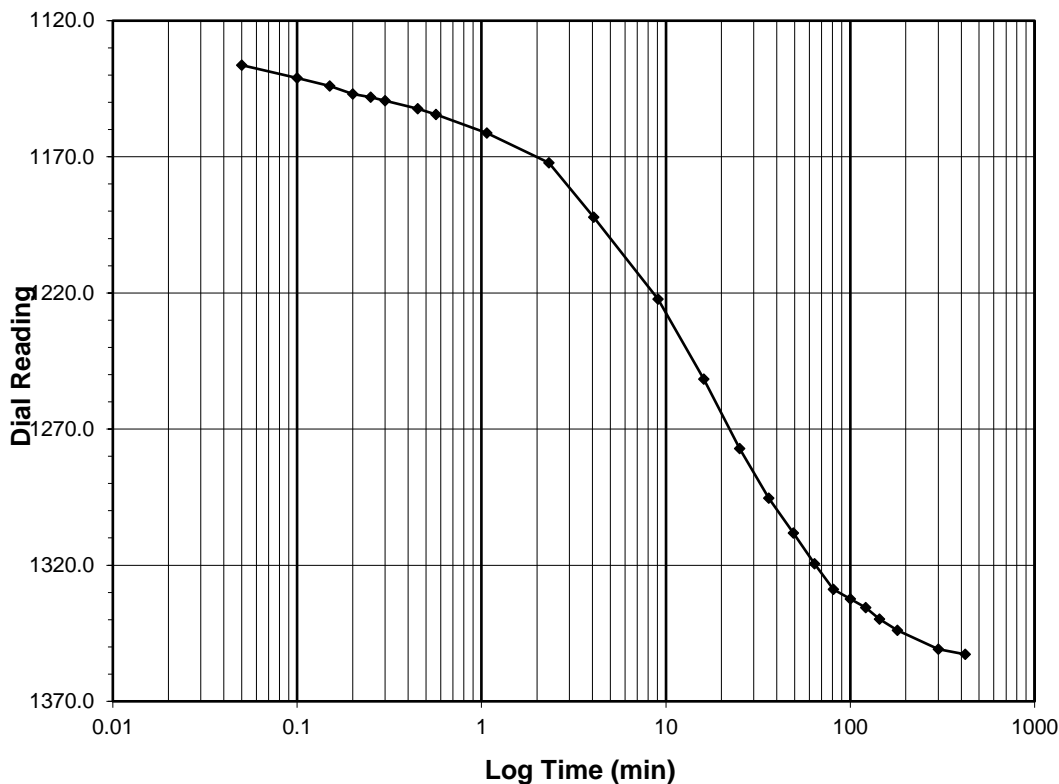
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>1352.7</b>
Consolidometer No.	R409
1 Division (in)	0.0001
Start Date	9/10/2020
Start Time	10:32:04

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1124.7</b>
0.05	1136.3
0.10	1141.0
0.15	1143.9
0.20	1146.9
0.25	1148.0
0.30	1149.3
0.45	1152.4
0.57	1154.5
1.07	1161.3
2.32	1172.2
4.07	1192.2
9.07	1222.3
16.07	1251.7
25.07	1277.2
36.07	1295.3
49.07	1308.2
64.07	1319.5
81.07	1328.8
100.07	1332.4
121.07	1335.6
144.07	1339.9
180.07	1343.9
300.08	1350.8
420.42	1352.7



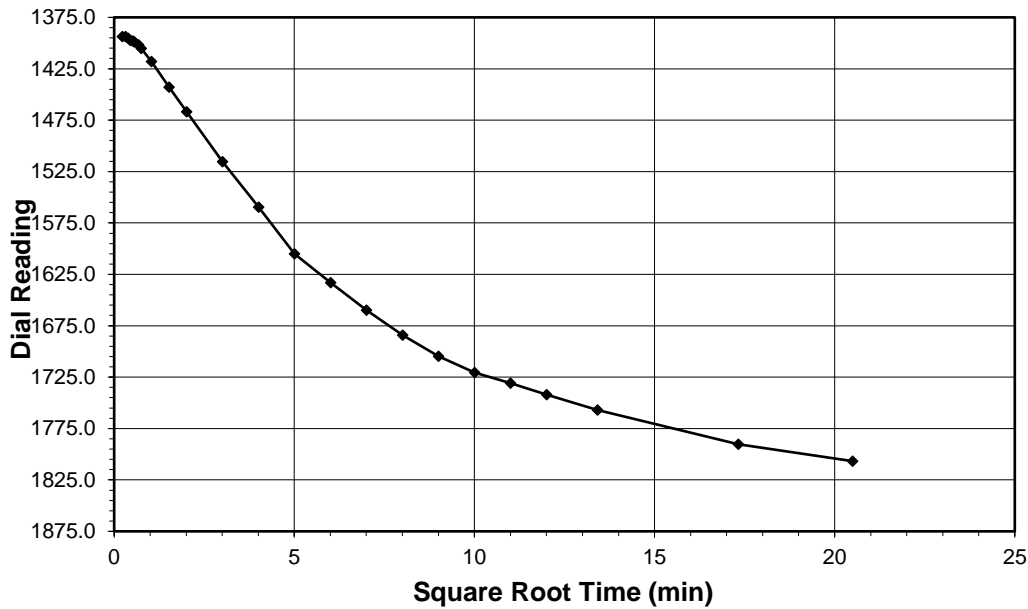
Tested By **NL** Date **9/10/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

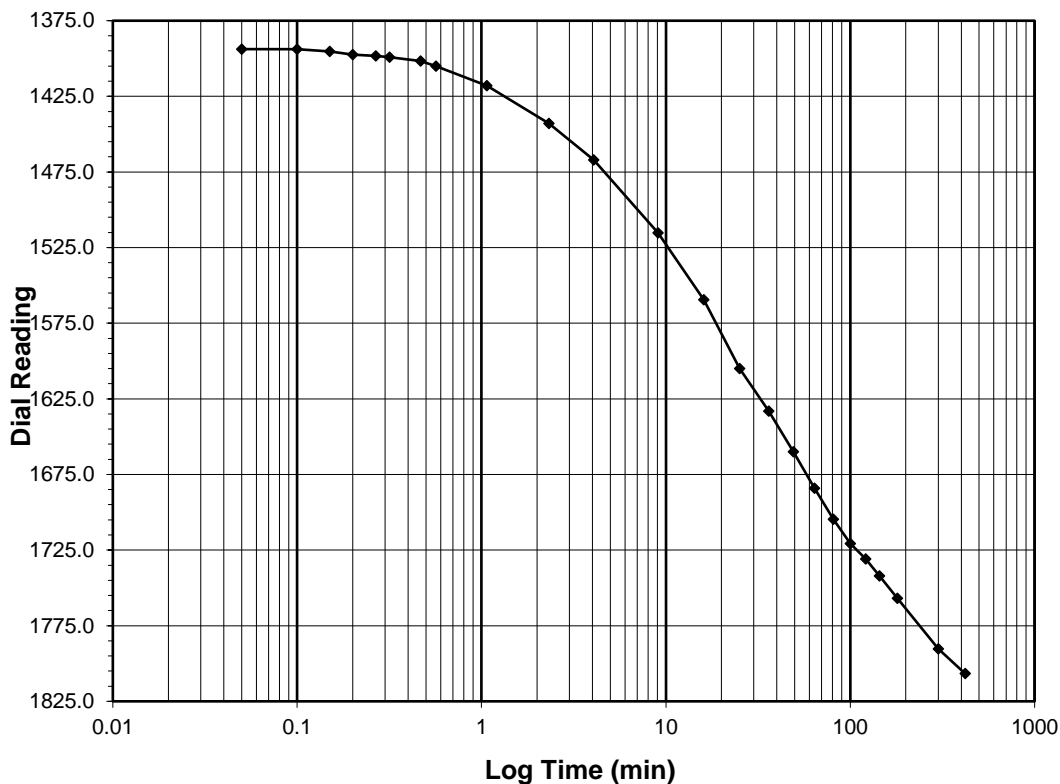
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1806.7</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/10/2020
Start Time	17:32:29

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1352.7</b>
0.05	1393.8
0.10	1393.9
0.15	1395.4
0.20	1397.5
0.27	1398.2
0.32	1399.1
0.47	1401.7
0.57	1405.1
1.07	1418.0
2.32	1443.0
4.07	1466.9
9.07	1515.3
16.07	1559.6
25.07	1605.0
36.07	1633.1
49.07	1660.0
64.07	1684.1
81.07	1704.7
100.07	1720.7
121.08	1730.9
144.08	1742.1
180.08	1757.0
300.08	1790.3
420.08	1806.7



Tested By **NL** Date **9/10/2020** Checked By **GEM** Date **9/16/2020**

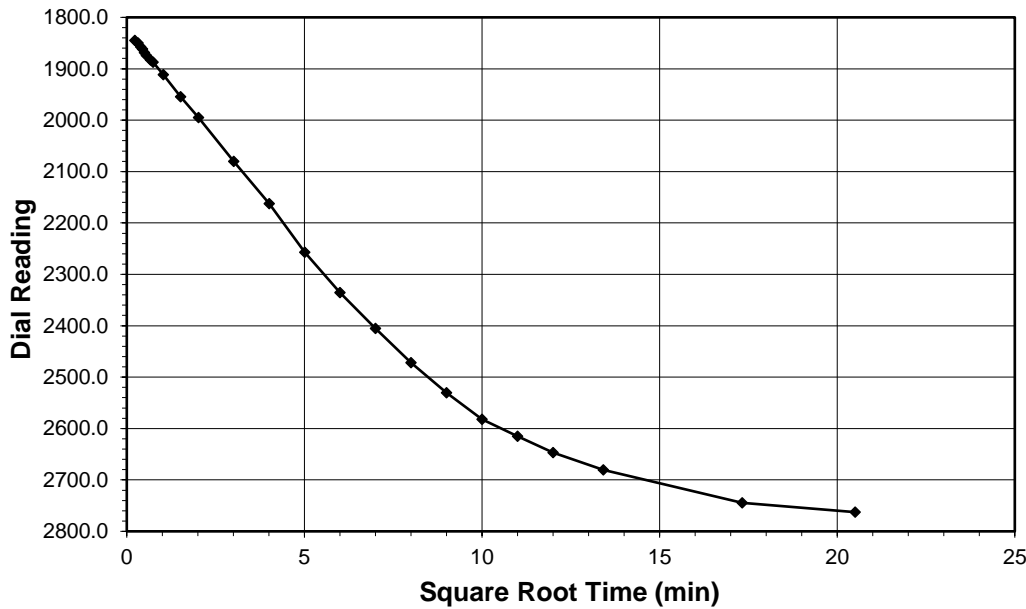


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

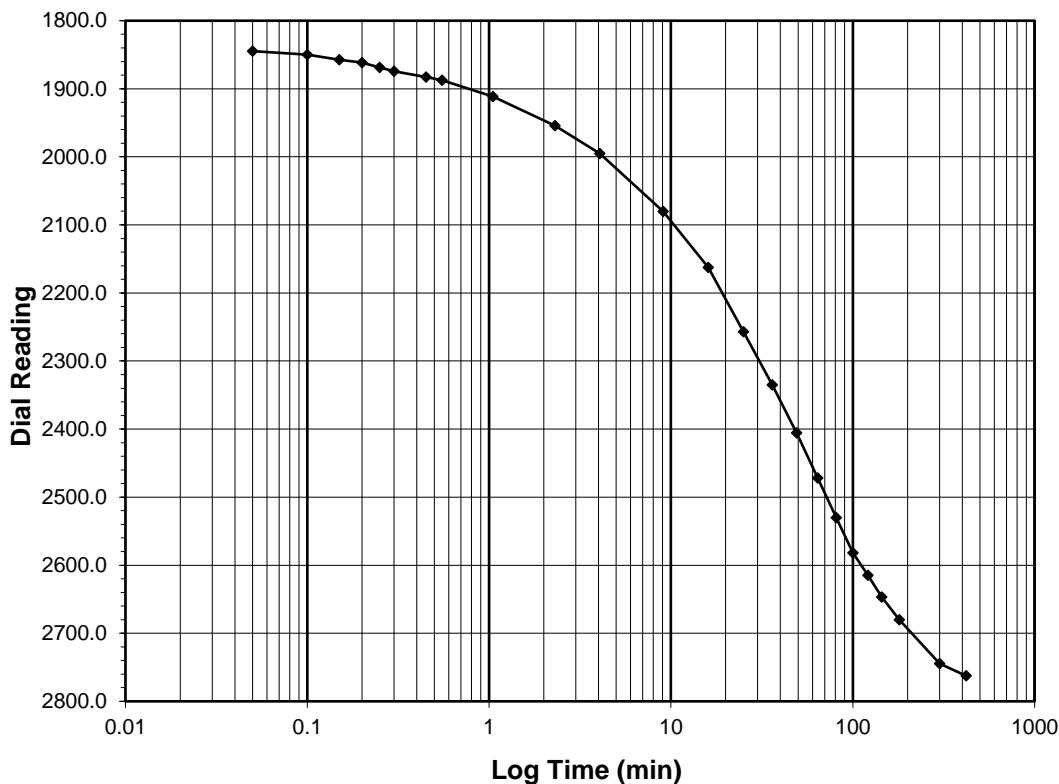
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>2762.6</b>
Consolidometer No.	R409
1 Division (in)	0.0001
Start Date	9/11/2020
Start Time	0:32:34

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1806.7</b>
0.05	1844.7
0.10	1850.0
0.15	1857.2
0.20	1861.8
0.25	1868.8
0.30	1874.2
0.45	1882.8
0.55	1887.3
1.05	1911.5
2.30	1954.4
4.07	1994.9
9.07	2080.0
16.07	2162.4
25.07	2257.2
36.07	2335.2
49.07	2405.4
64.07	2472.1
81.07	2530.3
100.07	2582.1
121.07	2615.0
144.07	2646.9
180.07	2680.2
300.07	2744.4
420.47	2762.6



Tested By **NL** Date **9/11/2020** Checked By **GEM** Date **9/16/2020**

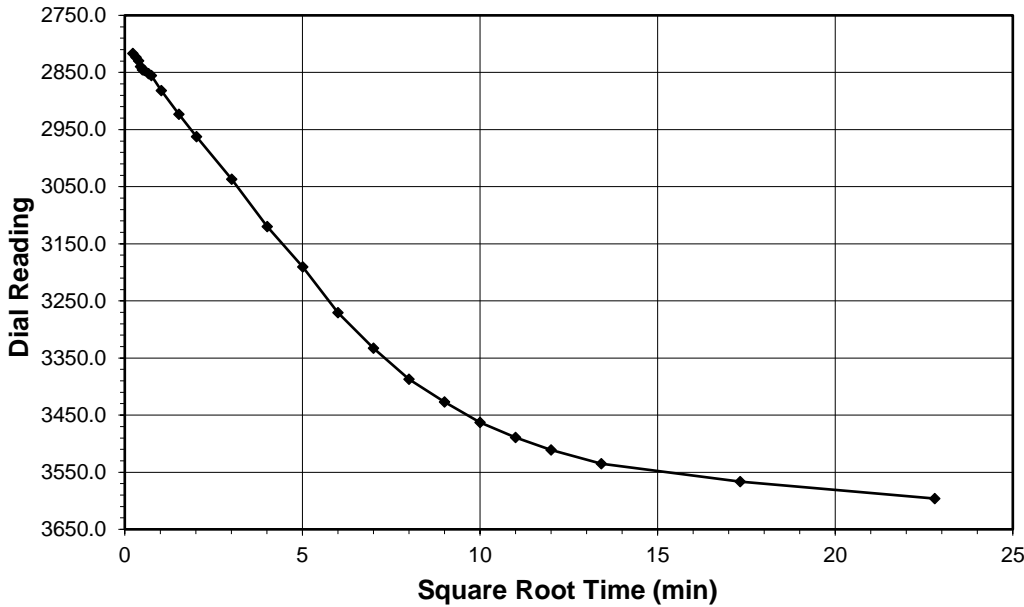


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

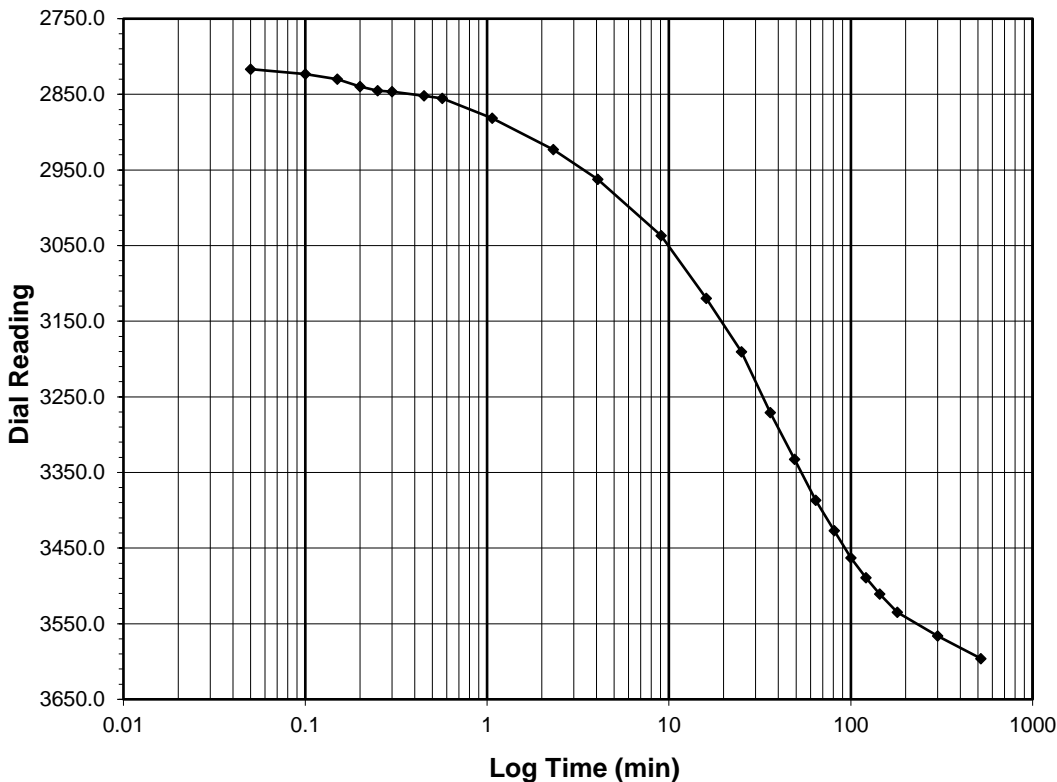
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>3596.1</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/11/2020</b>
<b>Start Time</b>	<b>7:33:02</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2762.6</b>
0.05	2816.7
0.10	2823.2
0.15	2829.8
0.20	2839.5
0.25	2845.0
0.30	2846.6
0.45	2851.8
0.57	2855.4
1.07	2881.8
2.32	2923.2
4.07	2962.3
9.07	3037.0
16.07	3119.7
25.07	3190.7
36.07	3270.7
49.07	3332.7
64.07	3386.9
81.07	3426.9
100.07	3463.0
121.07	3489.4
144.07	3510.9
180.07	3534.8
300.07	3566.4
520.07	3596.1



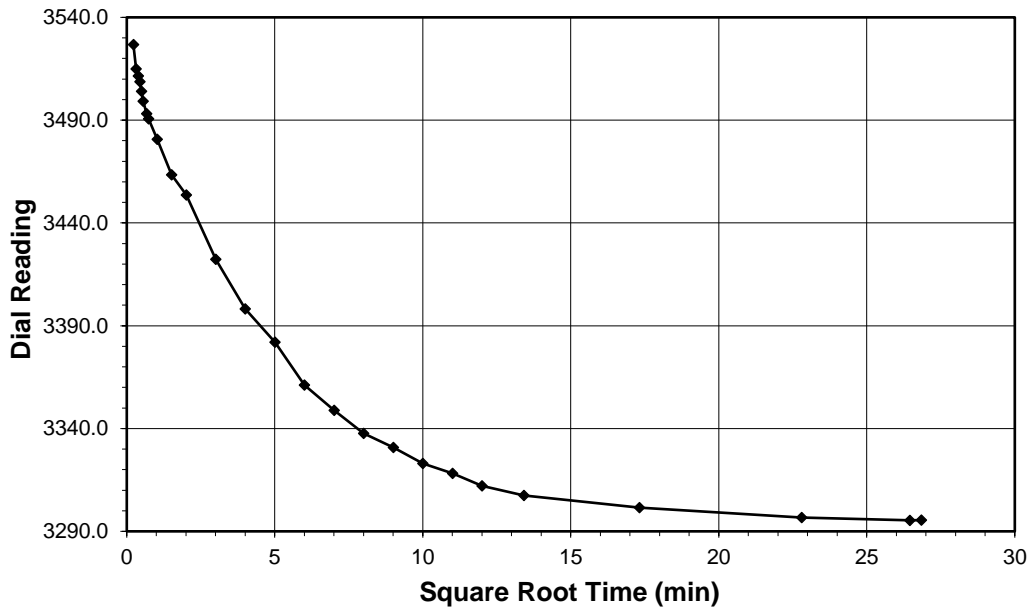
Tested By **NL** Date **9/11/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

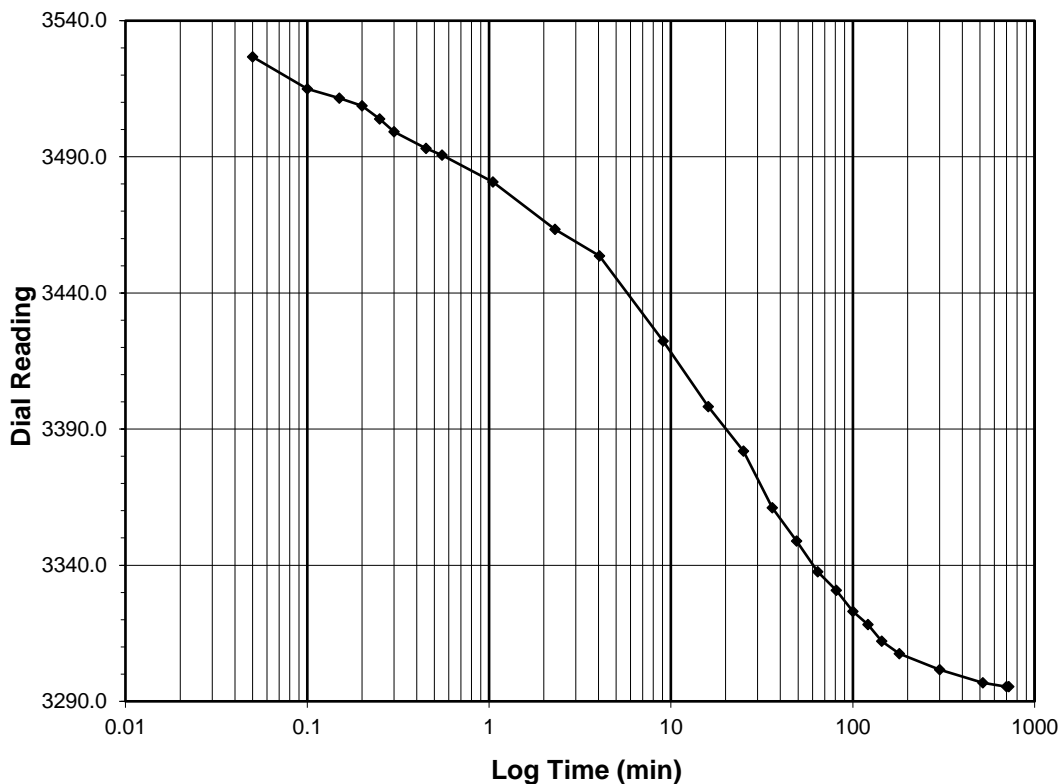
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>3295.4</b>
Consolidometer No.	R409
1 Division (in)	0.0001
Start Date	9/11/2020
Start Time	16:33:07

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>3596.1</b>
0.05	3526.7
0.10	3514.9
0.15	3511.5
0.20	3508.7
0.25	3504.0
0.30	3499.3
0.45	3493.2
0.55	3490.6
1.05	3480.7
2.30	3463.4
4.05	3453.6
9.05	3422.4
16.05	3398.2
25.07	3381.9
36.07	3361.1
49.07	3348.9
64.07	3337.6
81.07	3330.8
100.07	3323.0
121.07	3318.2
144.07	3312.1
180.07	3307.5
300.07	3301.6
520.07	3296.8
700.07	3295.4
720.33	3295.4



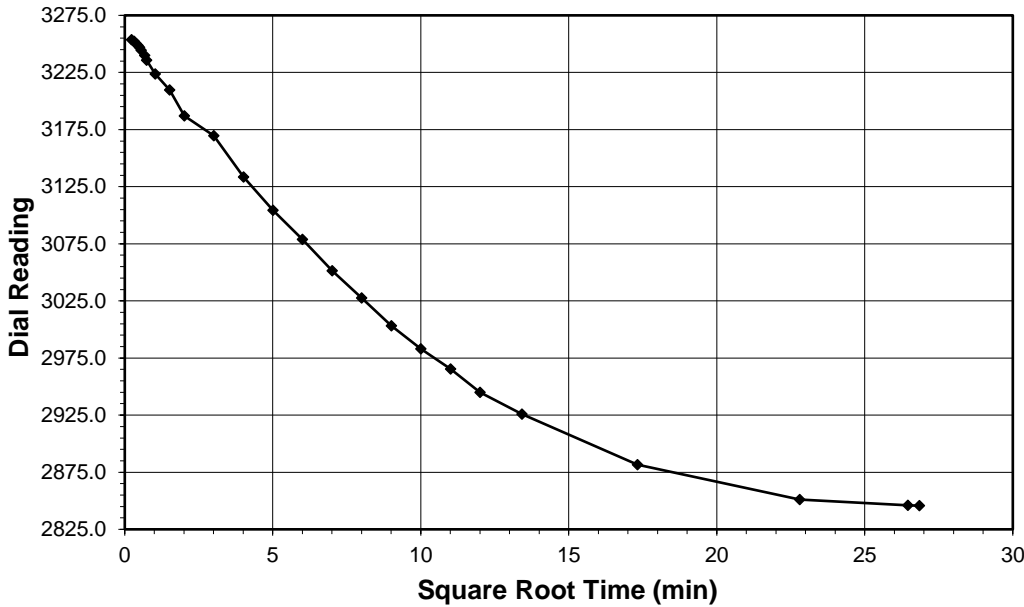
Tested By **NL** Date **9/11/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

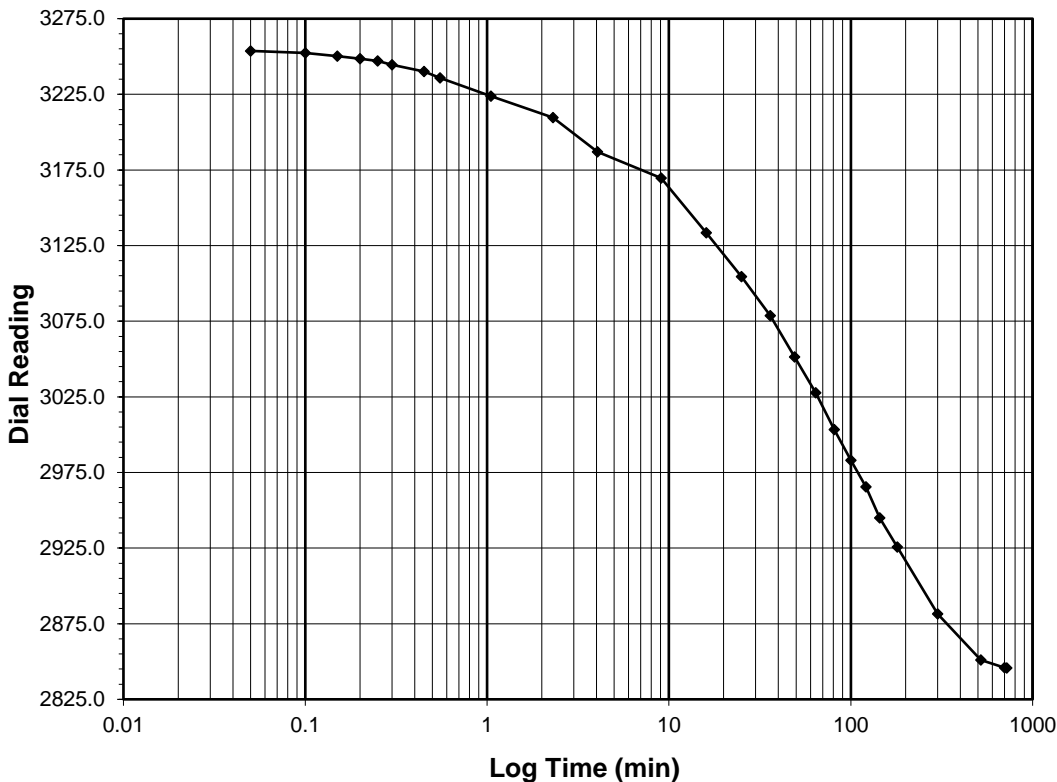
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>2845.7</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/12/2020
Start Time	4:33:27

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>3295.4</b>
0.05	3253.7
0.10	3252.3
0.15	3250.1
0.20	3248.5
0.25	3247.0
0.30	3244.5
0.45	3240.0
0.55	3235.8
1.05	3223.8
2.30	3209.6
4.05	3187.0
9.05	3169.6
16.07	3133.4
25.07	3104.4
36.07	3078.7
49.07	3051.4
64.07	3027.6
81.07	3003.3
100.07	2983.1
121.07	2965.4
144.07	2945.0
180.07	2925.8
300.07	2881.5
520.07	2851.1
700.08	2845.9
720.37	2845.7



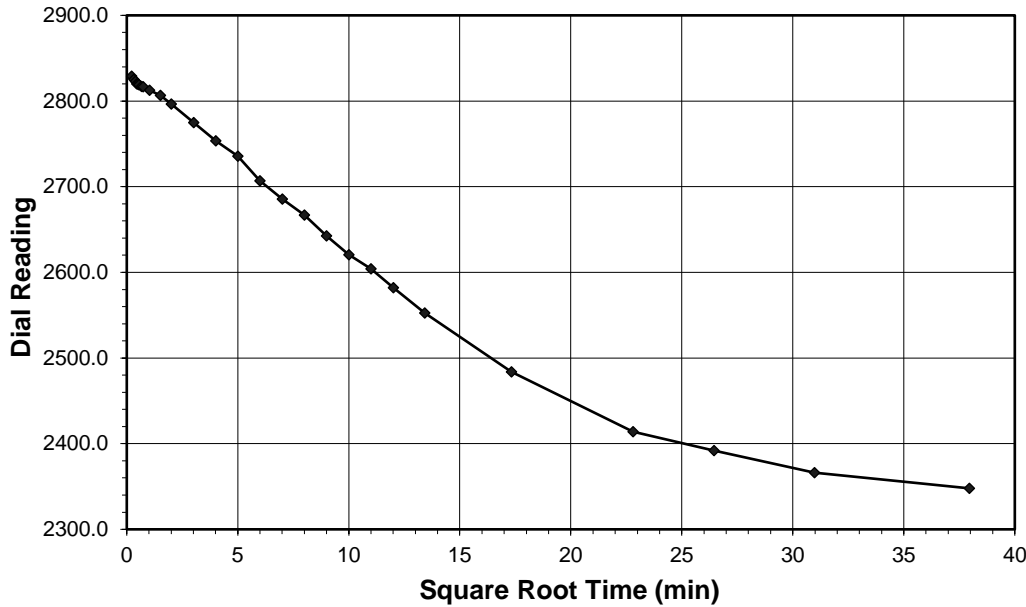
Tested By **NL** Date **9/12/2020** Checked By **GEM** Date **9/16/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

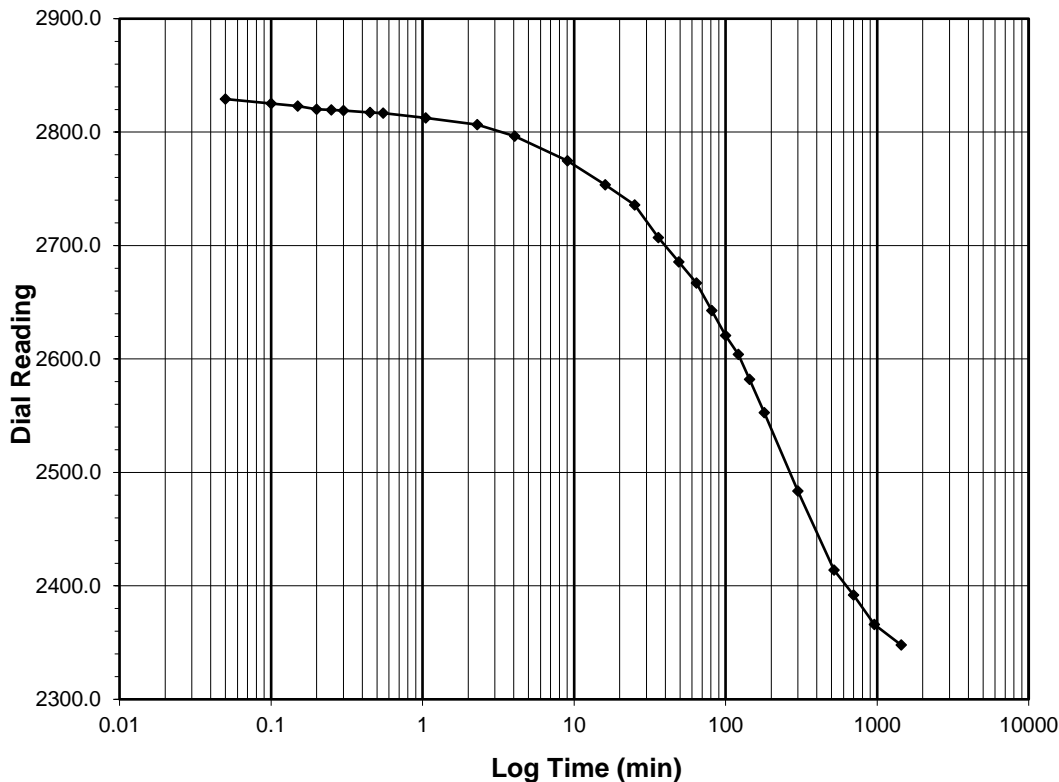
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	13.0'-15.0'
Project No.	R-2020-164-002	Sample No.	SPT09-1
Lab ID	R-2020-164-002-038	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>2347.9</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/12/2020</b>
<b>Start Time</b>	<b>16:33:49</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2845.7</b>
0.05	2829.1
0.10	2825.3
0.15	2822.9
0.20	2820.1
0.25	2819.6
0.30	2819.0
0.45	2817.2
0.55	2816.7
1.05	2812.6
2.30	2806.6
4.05	2796.5
9.05	2774.7
16.05	2753.5
25.05	2735.7
36.05	2707.0
49.05	2685.6
64.07	2666.9
81.07	2642.8
100.07	2620.7
121.07	2604.2
144.07	2582.2
180.07	2552.6
300.07	2483.7
520.07	2414.0
700.07	2392.0
960.07	2366.0
1440.00	2347.9



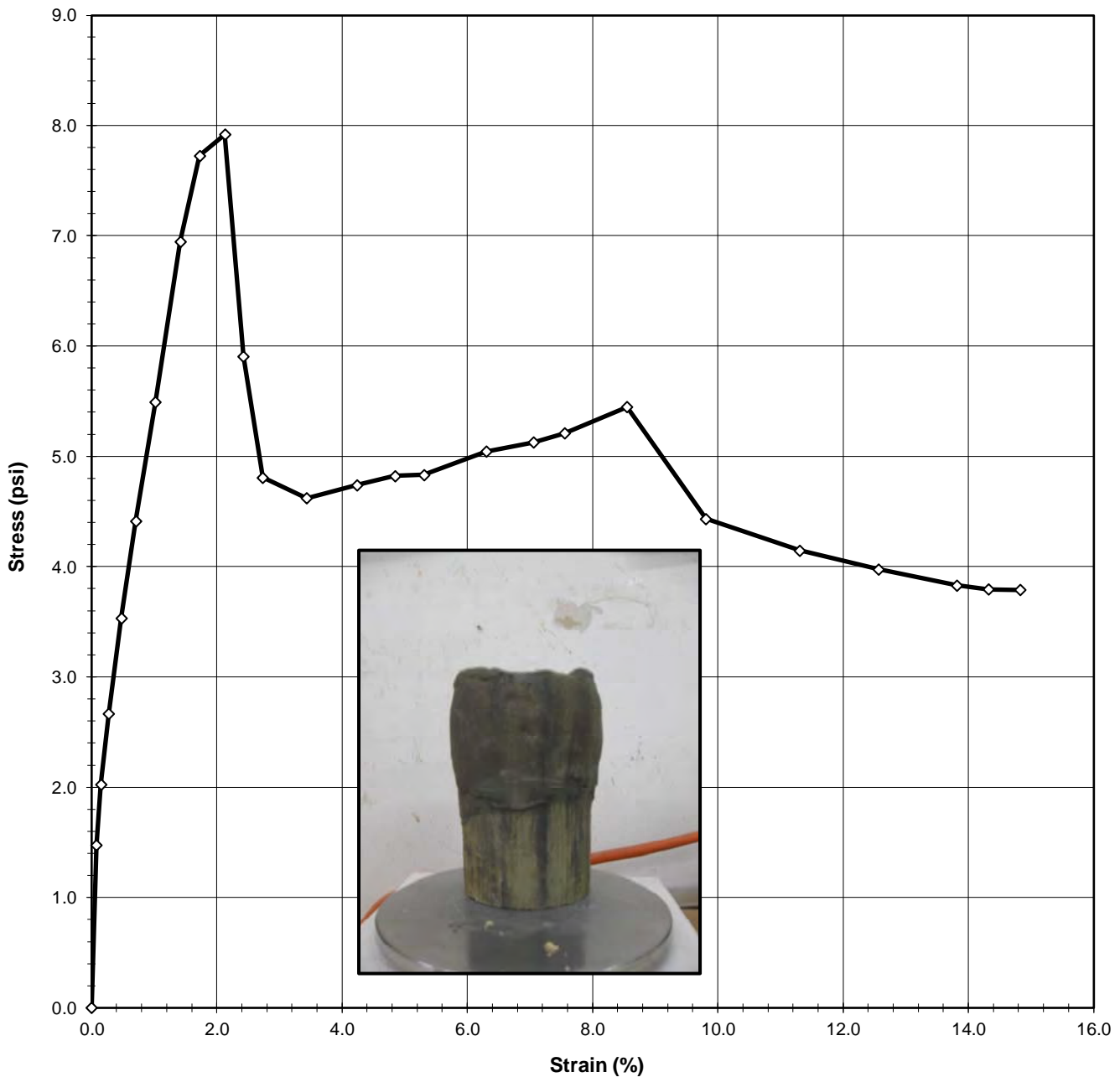
Tested By **NL** Date **9/12/2020** Checked By **GEM** Date **9/16/2020**

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-038

Boring No.: PRN\_20\_UD  
 Depth (ft): 13.0'-15.0'  
 Sample No.: SPT09-1  
 Visual: Gray Clay

**INITIAL CONFINING STRESS (psi)      6.7**



Tested By MY      Date 9/15/20      Input Checked By MPS      Date 9/17/20

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15



Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-038

Boring No.: PRN\_20\_UD  
 Depth (ft): 13.0'-15.0'  
 Sample No.: SPT09-1  
 Visual: Gray Clay

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	6.446	Top Dia. (in):	2.854
Length 2 (in):	6.485	Mid. Dia. (in):	2.844
Length 3 (in):	6.453	Bot. Dia. (in):	2.842
<b>Avg.Length (in)</b>	<b>6.461</b>	<b>Area (in<sup>2</sup>):</b>	<b>6.364</b>

WATER CONTENT (AFTER TEST)	
Total Weight of Sample (g):	1066.62
Tare No.:	715
Weight of Tare & Wet Sample (g):	714.53
Weight of Tare & Dry Sample (g):	455.04
Weight of Tare (g):	90.29
% Moisture:	71.1

UNIT WEIGHT			
Undisturbed Sample			
Weight of Tube & Wet Sample (g):	1068.3	Sample Volume (cm <sup>3</sup> ):	673.9
Weight of Tube (g):	0.00	Unit Wet Weight (g/cm <sup>3</sup> ):	1.59
Weight of Wet Sample (g):	1068.3	Unit Wet Weight (pcf):	98.92
Diameter (in):	2.85	Moisture Content (%):	71.1
Length (in):	6.41	Unit Dry Weight (pcf):	57.8
Length (cm):	16.41		

<b>INITIAL CONFINING STRESS (psi)</b>	<b>6.7</b>	Initial Dial Reading (mil)	204
<b>ENDING CONFINING STRESS (psi)</b>	<b>6.7</b>	Dial Reading Before Shearing (mil)	256

DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	11.6	0.0	0.0	0.000
0.005	21.0	0.08	0.1	1.475
0.009	24.5	0.15	0.1	2.026
0.018	28.6	0.28	0.3	2.668
0.031	34.2	0.48	0.5	3.534
0.045	39.9	0.72	0.7	4.413
0.065	46.9	1.02	1.0	5.492
0.091	56.5	1.42	1.4	6.948
0.111	61.6	1.73	1.7	7.725
0.137	63.1	2.13	2.1	7.916
0.155	50.1	2.43	2.4	5.906
0.175	43.1	2.73	2.7	4.807
0.220	42.1	3.45	3.4	4.620
0.272	43.1	4.25	4.2	4.740
0.310	43.9	4.85	4.8	4.823
0.340	44.1	5.32	5.3	4.832
0.404	45.9	6.32	6.3	5.043
0.452	46.7	7.07	7.1	5.125
0.484	47.5	7.57	7.6	5.210
0.548	49.5	8.57	8.6	5.447
0.629	42.9	9.82	9.8	4.434
0.725	41.4	11.33	11.3	4.147
0.805	40.6	12.58	12.6	3.977
0.885	39.9	13.83	13.8	3.830
0.918	39.8	14.33	14.3	3.793
0.950	39.9	14.85	14.8	3.790

Tested By MY Date 9/15/20 Input Checked By MPS Date 9/17/20





## WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0-17.0
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039	Soil Color:	Gray

Moisture Content of Passing 3/4" Material				Moisture Content of Retained 3/4" Material			
Tare No.:	740	Tare No.:	NA				
Wt. of Tare & Wet Sample (g):	518.32	Weight of Tare & Wet Sample (g):	NA				
Wt. of Tare & Dry Sample (g):	374.04	Weight of Tare & Dry Sample (g):	NA				
Weight of Tare (g):	143.58	Weight of Tare (g):	NA				
Weight of Water (g):	144.28	Weight of Water (g):	NA				
Weight of Dry Soil (g):	230.46	Weight of Dry Soil (g):	NA				
<b>Moisture Content (%):</b>	<b>62.6</b>	<b>Moisture Content (%):</b>	<b>0.0</b>				
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	230.46				
Tare No. (Sub-Specimen)	740	Wet Weight of +3/4" Sample (g):	0.00				
Wt. of Tare & Wet Sub-Specimen (g):	518.32	Dry Weight of + 3/4" Sample (g):	0.00				
Weight of Tare (g):	143.58	Dry Weight of - 3/4" Sample (g):	230.46				
Sub-Specimen Wet Weight (g):	374.74	Dry Weight -3/4" +3/8" Sample (g):	0.00				
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	230.46				
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA				
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA				
Sub-Specimen -3/8" Wet Weight (g):	NA						

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	( *)	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25	0.00	0.00	0.00	100.00	100.00
3/4"	19	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	( ** )	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2	0.18	0.08	0.08	99.92	99.9
#20	0.85	0.79	( ** )	0.34	99.58	99.6
#40	0.425	2.45	1.06	1.48	98.52	98.5
#60	0.25	8.19	3.55	5.04	94.96	95.0
#100	0.15	8.82	3.83	8.86	91.14	91.1
#140	0.106	3.93	1.71	10.57	89.43	89.4
#200	0.075	1.35	0.59	11.16	88.84	88.8
Pan	-	0.00	0.00	11.16	-	-

**Notes :** ( \* ) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample  
 ( \*\* ) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen

Tested By	RF	Date	9/15/20	Checked By	GEM	Date	9/16/20
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### ATTERBERG LIMITS

ASTM D 4318-17

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-039

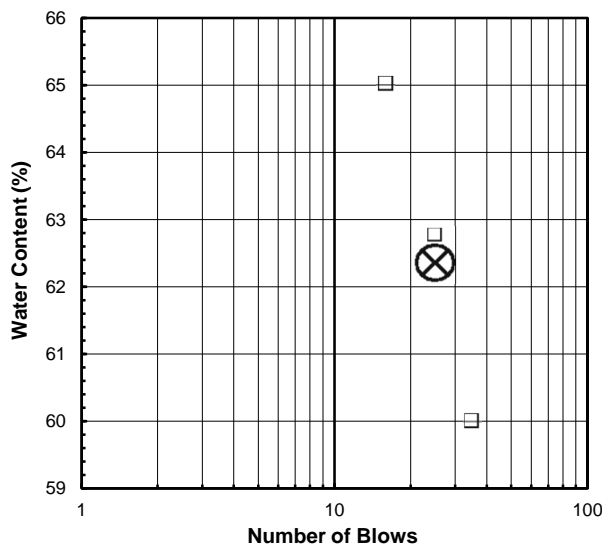
Boring No.: PRN\_20\_UD  
 Depth (ft): 15.0-17.0  
 Sample No.: STP09-1  
 Soil Description: GRAY FAT CLAY

**Note: The USCS symbol used with this test refers only to the minus No. 40 (Minus No. 40 sieve material, Air dried) sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.**

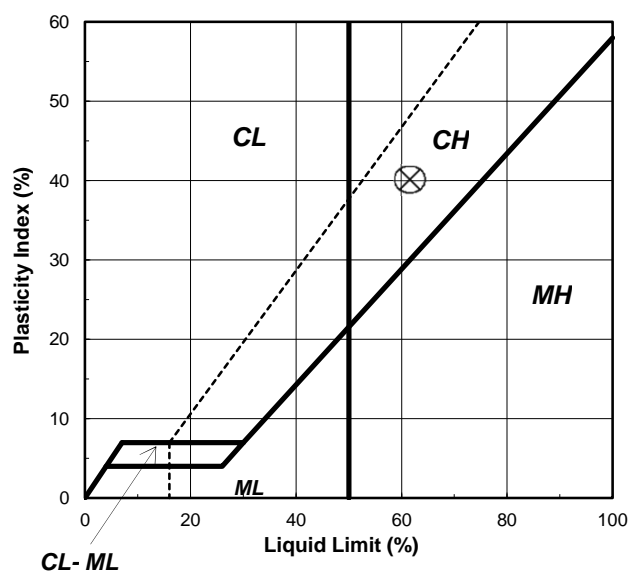
As Received Moisture Content		Liquid Limit Test			
ASTM D2216-19		1	2	3	M
Tare Number:	740	A-O	W	A-B	U
Wt. of Tare & Wet Sample (g):	518.32	27.66	27.18	28.48	L
Wt. of Tare & Dry Sample (g):	374.04	23.04	22.51	23.37	T
Weight of Tare (g):	143.58	15.34	15.07	15.51	I
Weight of Water (g):	144.3	4.6	4.7	5.1	P
Weight of Dry Sample (g):	230.5	7.7	7.4	7.9	O
Was As Received MC Preserved:	Yes				I
<b>Moisture Content (%):</b>	<b>62.6</b>	<b>60.0</b>	<b>62.8</b>	<b>65.0</b>	<b>N</b>
<b>Number of Blows:</b>		<b>35</b>	<b>25</b>	<b>16</b>	<b>T</b>

Plastic Limit Test	1	2	Range	Test Results
Tare Number:	10	18		<b>Liquid Limit (%): 62</b>
Wt. of Tare & Wet Sample (g):	14.94	15.92		<b>Plastic Limit (%): 22</b>
Wt. of Tare & Dry Sample (g):	13.49	14.29		<b>Plasticity Index (%): 40</b>
Weight of Tare (g):	7.02	6.98		<b>USCS Symbol: CH</b>
Weight of Water (g):	1.5	1.6		
Weight of Dry Sample (g):	6.5	7.3		
<b>Moisture Content (%):</b>	<b>22.4</b>	<b>22.3</b>	<b>0.1</b>	
<i>Note: The acceptable range of the two Moisture Contents is <math>\pm</math> 1.4</i>				

Flow Curve



Plasticity Chart



Tested By SS Date 9/16/20 Checked By GEM Date 9/17/20

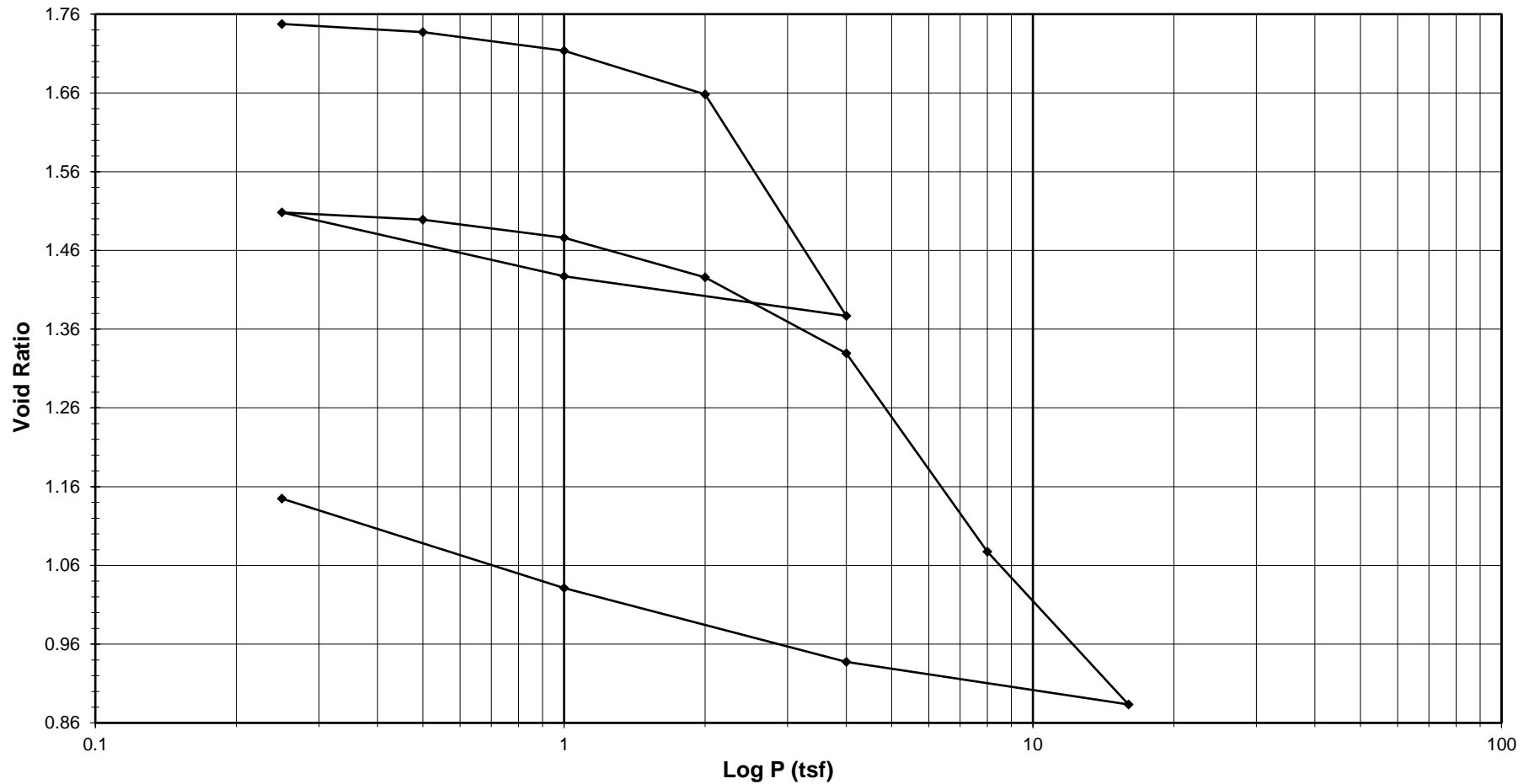
# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Catlin Engineers & Scientists  
 Client Reference USACE Princeville  
 Project No. R-2020-164-002  
 Lab ID R-2020-164-002-039

Boring No. PRN\_20\_UD  
 Depth (ft) 15.0'-17.0'  
 Sample No. SPT09-2  
 Visual Description Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/11/20 Approved By MPS Date 9/17/20

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R470  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>						<u>Test Data Summary</u>		
			<u>Applied Pressure</u>	<u>Final Dial Reading</u>	<u>Machine Deflection</u>	<u>Corrected Reading</u>	<u>Height of Sample</u>	<u>Volume (cc)</u>	<u>Dry Density (g/cc)</u>	<u>Void Ratio</u>
			(tsf)	(div)	(div)	(div)	(mm)			
<i>Water Content</i>										
Tare Number	TB-06	856								
Wt. Tare & WS (g)	387.33	247.21								
Wt. Tare & DS (g)	290.62	214.74								
Wt. Water (g)	96.71	32.47	Seating	0	0	0	25.400	80.440	0.97953	<b>1.75641</b>
Wt. Tare (g)	134.81	137.16	0.25	55.0	22.8	32.2	25.318	80.181	0.98270	<b>1.74753</b>
Wt. DS (g)	155.81	77.58	0.5	113.7	44.2	69.5	25.223	79.881	0.98639	<b>1.73725</b>
Water Content (%)	62.07	41.85	1	215.8	60.5	155.3	25.005	79.190	0.99499	<b>1.71359</b>
			2	450.4	93.6	356.8	24.494	77.570	1.01577	<b>1.65808</b>
			4	1507.2	130.5	1376.7	21.903	69.366	1.13592	<b>1.37693</b>
<i>Sample Parameters</i>			1	1277.1	83.0	1194.1	22.367	70.834	1.11236	<b>1.42726</b>
Sample Diameter (in)	2.5	2.5	0.25	952.6	52.7	899.9	23.114	73.201	1.07640	<b>1.50836</b>
Sample Height (in)	1.0000	0.7781	0.5	991.6	58.3	933.3	23.029	72.932	1.08037	<b>1.49915</b>
Sample Volume (cc)	80.44	62.59	1	1091.4	74.9	1016.5	22.818	72.263	1.09037	<b>1.47621</b>
Wt. Wet Sample + Ring (g)	341.87	325.94	2	1299.8	100.0	1199.8	22.353	70.789	1.11308	<b>1.42570</b>
Wt. of Ring (g)	214.17	214.17	4	1683.2	133.4	1549.8	21.464	67.973	1.15918	<b>1.32923</b>
Wt. of Wet Sample (g)	127.70	111.77	8	2632.8	169.9	2463.0	19.144	60.628	1.29963	<b>1.07752</b>
Wet Density (pcf)	99.06	111.43	16	3393.1	226.1	3167.0	17.356	54.964	1.43354	<b>0.88344</b>
Wet Density (g/cc)	1.59	1.79	4	3132.4	161.7	2970.7	17.854	56.543	1.39350	<b>0.93756</b>
Water Content (%)	62.07	41.85	1	2742.2	111.7	2630.4	18.719	59.281	1.32916	<b>1.03136</b>
Wt. of Dry Sample (g)	78.79	78.79	0.25	2292.2	73.0	2219.2	19.763	62.589	1.25891	<b>1.14472</b>
Dry Density (pcf)	61.12	78.56								
Dry Density (g/cc)	0.98	1.26								
Void Ratio	1.7564	1.1447								
Saturation (%)	95.41	98.72								
Specific Gravity	2.70	Assumed								

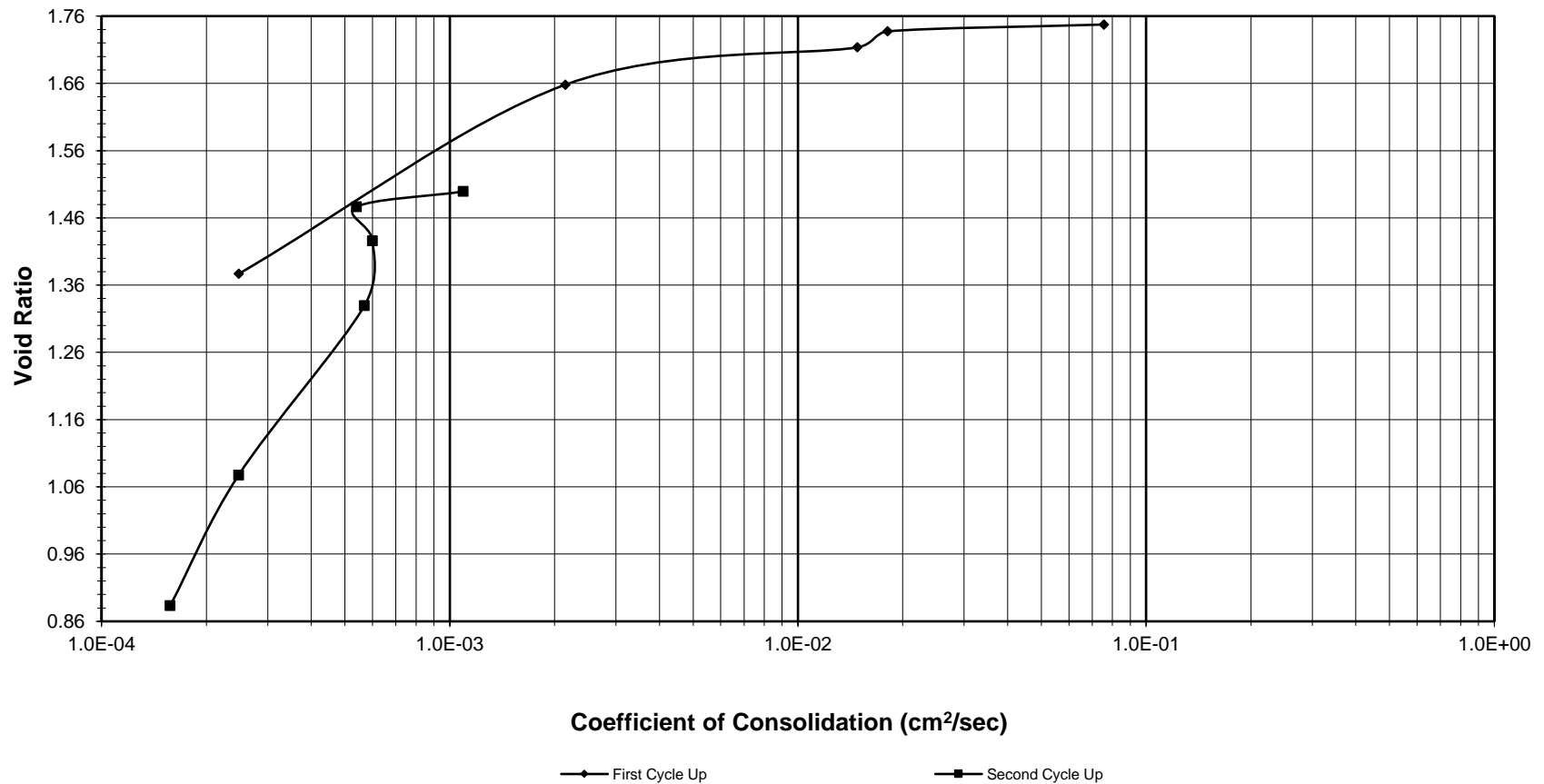
Tested By NL Date 9/11/20 Input Checked By GEM Date 9/17/20

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/11/20 Input Checked By GEM Date 9/17/20

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Reference	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R470  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	C <sub>v</sub> Test Data Summary						
			Load Increment	Dial Reading @ t <sub>50</sub>	Machine Deflection	Corrected Dial Reading @ t <sub>50</sub>	Sample Height @ t <sub>50</sub>	Time t <sub>50</sub>	C <sub>v</sub>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
Water Content									
Tare Number	TB-06	856							
Wt. Tare & WS (g)	387.33	247.21							
Wt. Tare & DS (g)	290.62	214.74							
Wt. Water (g)	96.71	32.47	0 - 0.25	25.7	22.8	2.8	2.539	<b>0.07</b>	<b>0.07561</b>
Wt. Tare (g)	134.81	137.16	0.25 - 0.5	98.2	44.2	54.0	2.526	<b>0.29</b>	<b>0.01806</b>
Wt. DS (g)	155.81	77.58	0.5 - 1.0	168.4	60.5	107.9	2.513	<b>0.35</b>	<b>0.01481</b>
Water Content (%)	62.07	41.85	1.0 - 2.0	328.4	93.6	234.8	2.480	<b>2.35</b>	<b>0.00215</b>
			2.0 - 4.0	949.9	130.5	819.4	2.332	<b>18.00</b>	<b>0.00025</b>
Sample Parameters			4.0 - 1.0	NA	83.0	NA	NA	<b>NA</b>	<b>NA</b>
Sample Diameter (in)	2.5	2.5	1.0 - 0.25	NA	52.7	NA	NA	<b>NA</b>	<b>NA</b>
Sample Height (in)	1.000	0.778	0.25 - 0.5	973.1	58.3	914.8	2.308	<b>4.00</b>	<b>0.00109</b>
Sample Volume (cc)	80.44	62.59	0.5 - 1.0	1045.3	74.9	970.4	2.294	<b>8.00</b>	<b>0.00054</b>
Wt. Wet Sample + Ring (g)	341.87	325.94	1.0 - 2.0	1195.3	100.0	1095.2	2.262	<b>7.00</b>	<b>0.00060</b>
Wt. of Ring (g)	214.17	214.17	2.0 - 4.0	1465.8	133.4	1332.4	2.202	<b>7.00</b>	<b>0.00057</b>
Wt. of Wet Sample (g)	127.70	111.77	4.0 - 8.0	2080.5	169.9	1910.6	2.055	<b>14.00</b>	<b>0.00025</b>
Wet Density (pcf)	99.06	111.43	8.0 - 16.0	3012.0	226.1	2785.9	1.832	<b>17.50</b>	<b>0.00016</b>
Wet Density (g/cc)	1.59	1.79	16.0 - 4.0	NA	161.7	NA	NA	<b>NA</b>	<b>NA</b>
Water Content (%)	62.07	41.85	4.0 - 1.0	NA	111.7	NA	NA	<b>NA</b>	<b>NA</b>
Wt. of Dry Sample (g)	78.79	78.79	1.0 - 0.25	NA	73.0	NA	NA	<b>NA</b>	<b>NA</b>
Dry Density (pcf)	61.12	78.56							
Dry Density (g/cc)	0.98	1.26							
Void Ratio	1.7564	1.1447							
Saturation (%)	95.41	98.72							
Specific Gravity	2.7	Assumed							

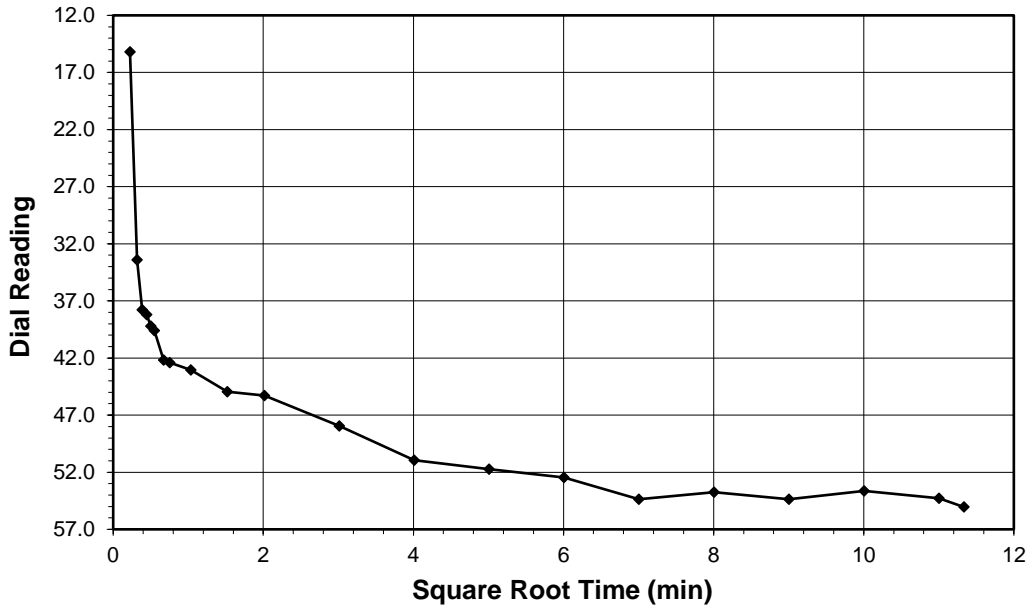
Tested By NL Date 9/11/20 Input Checked By GEM Date 9/17/20

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

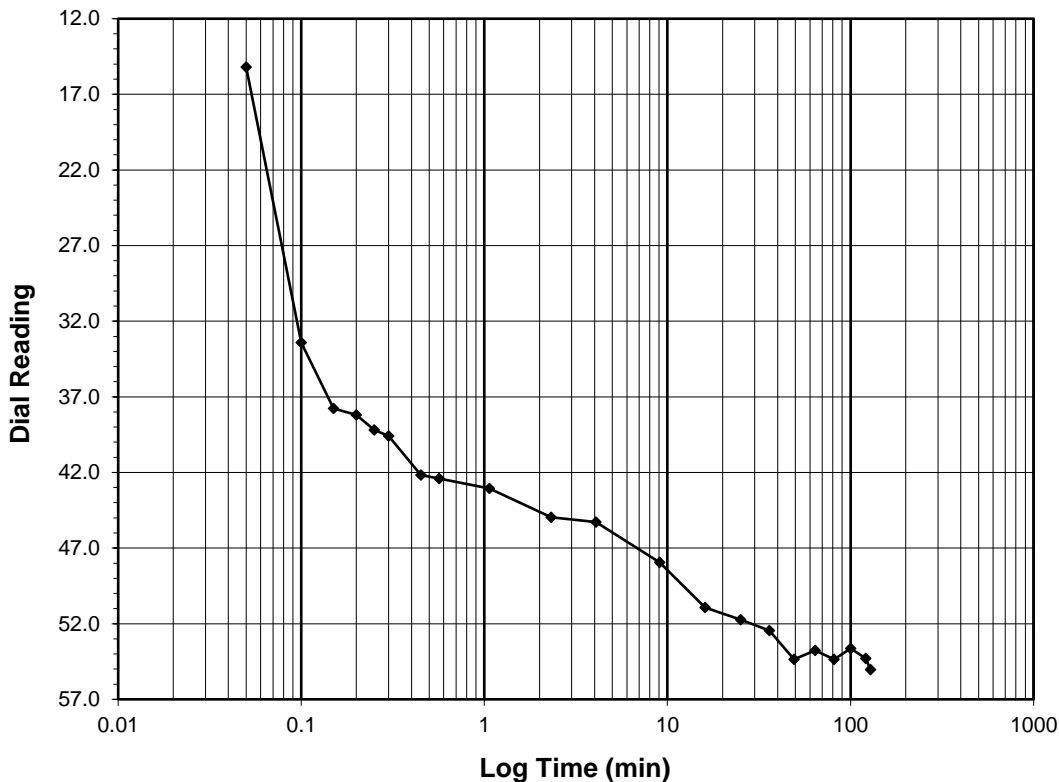
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>55.0</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/11/20
Start Time	9:23:40

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	15.2
0.10	33.4
0.15	37.8
0.20	38.2
0.25	39.2
0.30	39.6
0.45	42.2
0.57	42.4
1.07	43.1
2.32	45.0
4.07	45.3
9.07	48.0
16.07	50.9
25.07	51.7
36.07	52.5
49.07	54.4
64.07	53.8
81.07	54.4
100.07	53.6
121.07	54.3
128.45	55.0



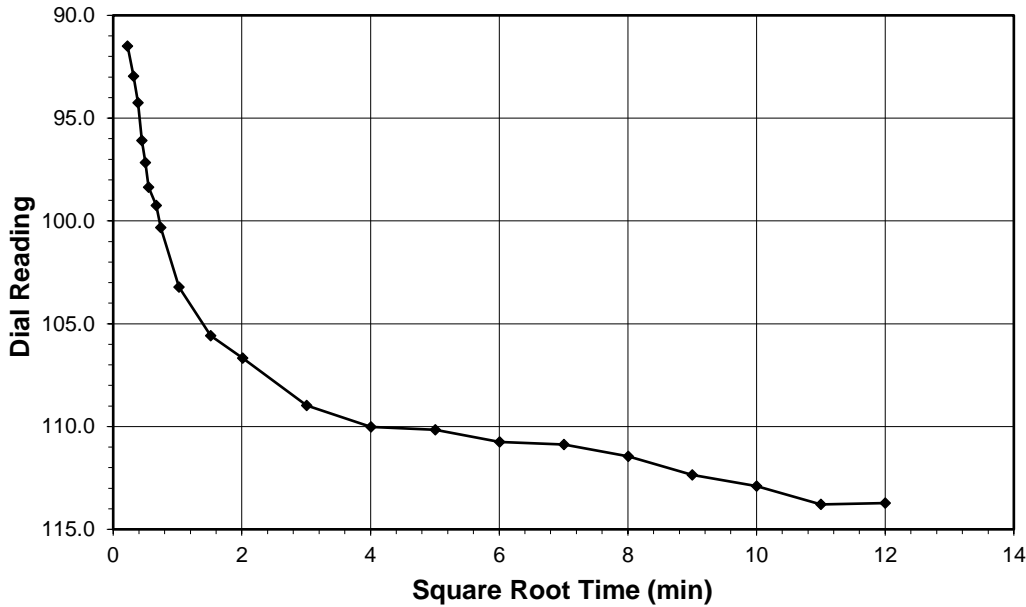
Tested By **NL** Date **9/11/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

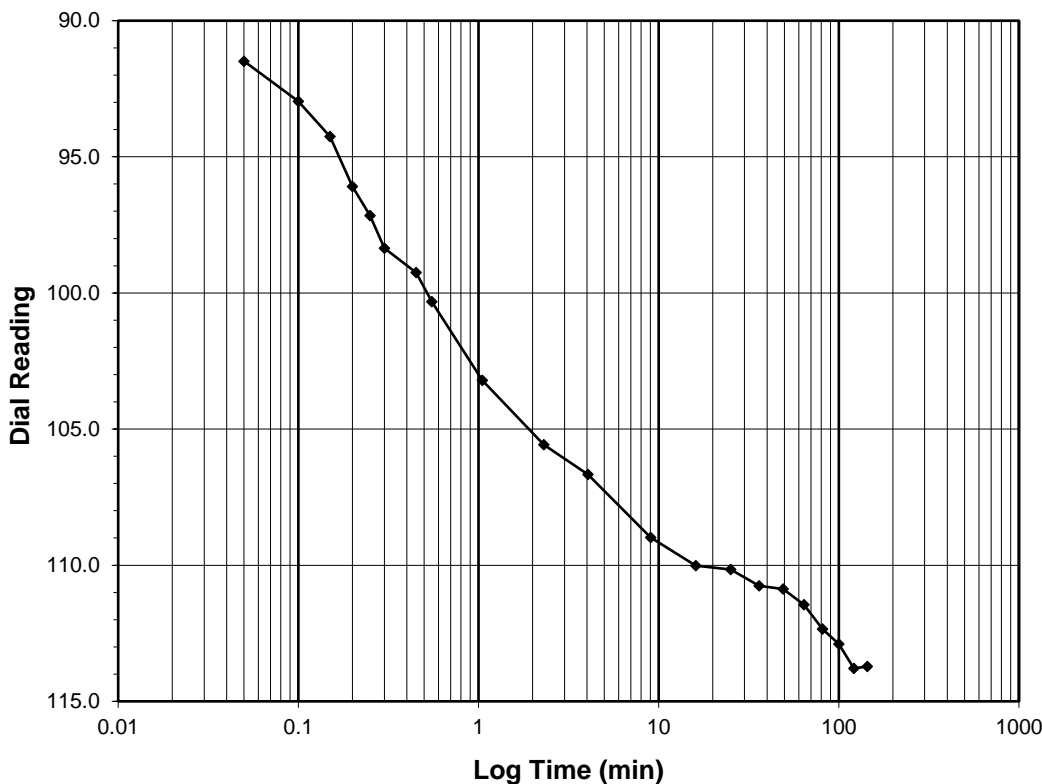
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>113.7</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/11/20
Start Time	11:32:08

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>55.0</b>
0.05	91.5
0.10	93.0
0.15	94.3
0.20	96.1
0.25	97.2
0.30	98.4
0.45	99.2
0.55	100.3
1.05	103.2
2.30	105.6
4.05	106.7
9.05	109.0
16.07	110.0
25.07	110.2
36.07	110.8
49.07	110.9
64.07	111.5
81.07	112.3
100.07	112.9
121.07	113.8
144.07	113.7



Tested By **NL** Date **9/11/20** Checked By **GEM** Date **9/17/20**

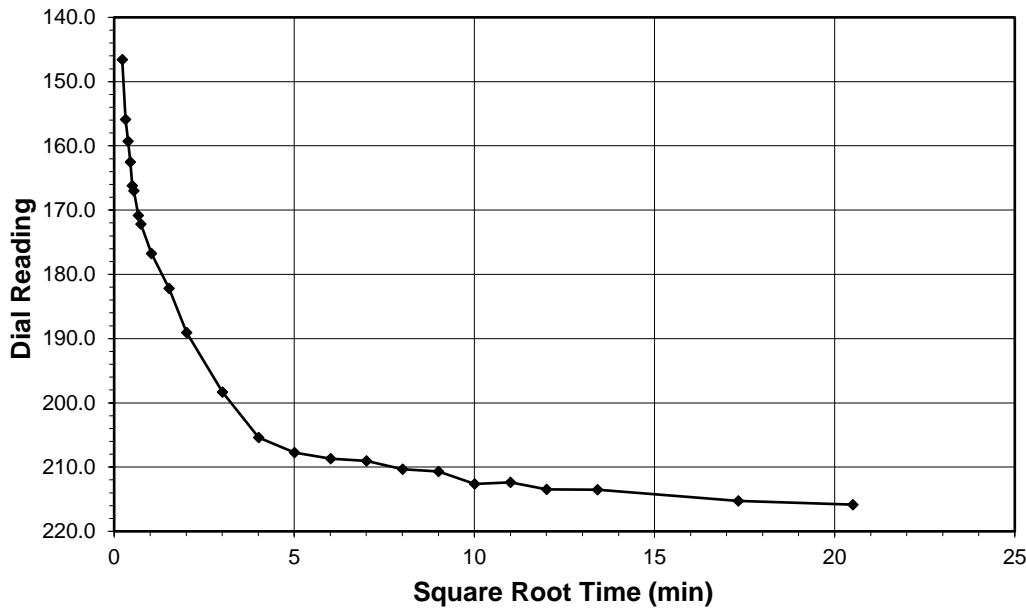


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

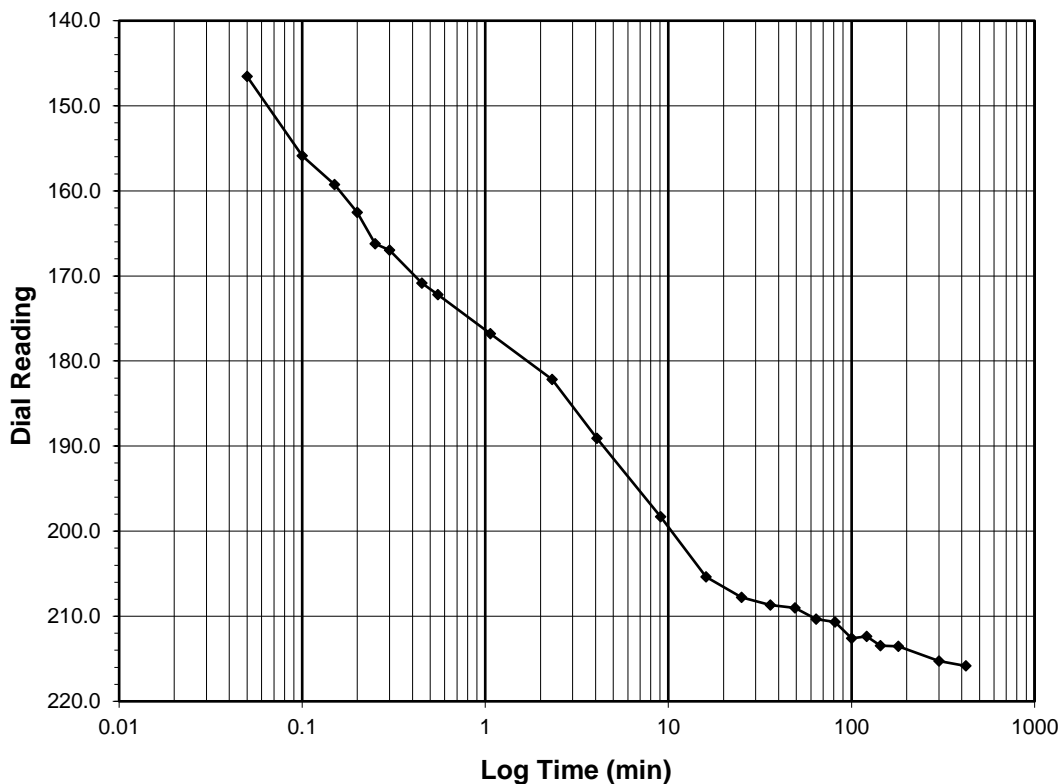
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>215.8</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/11/20
Start Time	14:25:55

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>113.7</b>
0.05	146.6
0.10	155.9
0.15	159.3
0.20	162.5
0.25	166.2
0.30	167.0
0.45	170.8
0.55	172.2
1.07	176.8
2.32	182.2
4.07	189.1
9.07	198.3
16.07	205.4
25.07	207.8
36.07	208.7
49.07	209.0
64.07	210.3
81.07	210.7
100.07	212.6
121.07	212.4
144.07	213.5
180.07	213.5
300.07	215.3
420.42	215.8



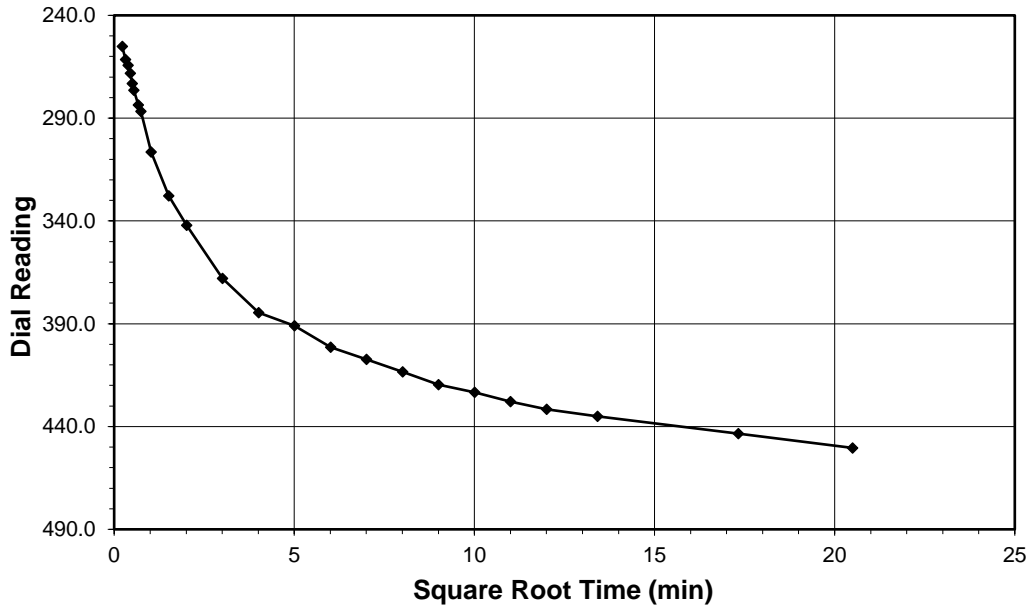
Tested By **NL** Date **9/11/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

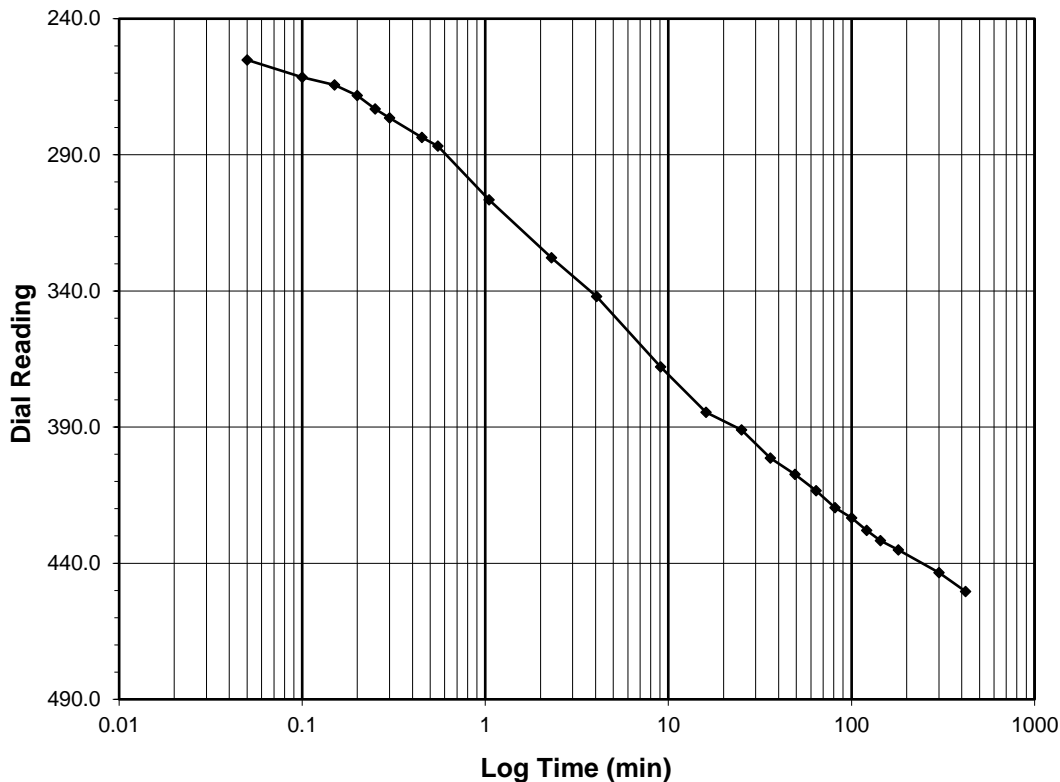
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>450.4</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/11/20
Start Time	21:26:21

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>215.8</b>
0.05	255.1
0.10	261.5
0.15	264.3
0.20	268.2
0.25	273.2
0.30	276.5
0.45	283.6
0.55	286.8
1.05	306.5
2.30	327.8
4.05	342.1
9.05	367.9
16.07	384.6
25.07	391.0
36.07	401.4
49.07	407.4
64.07	413.4
81.07	419.6
100.07	423.3
121.07	427.9
144.07	431.7
180.07	435.1
300.07	443.5
420.02	450.4



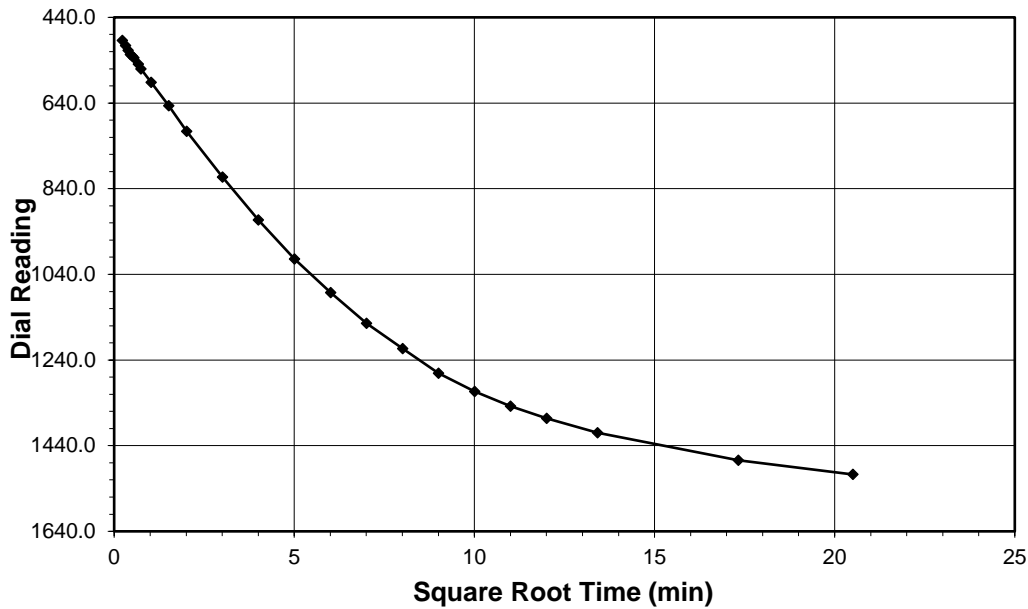
Tested By **NL** Date **9/11/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

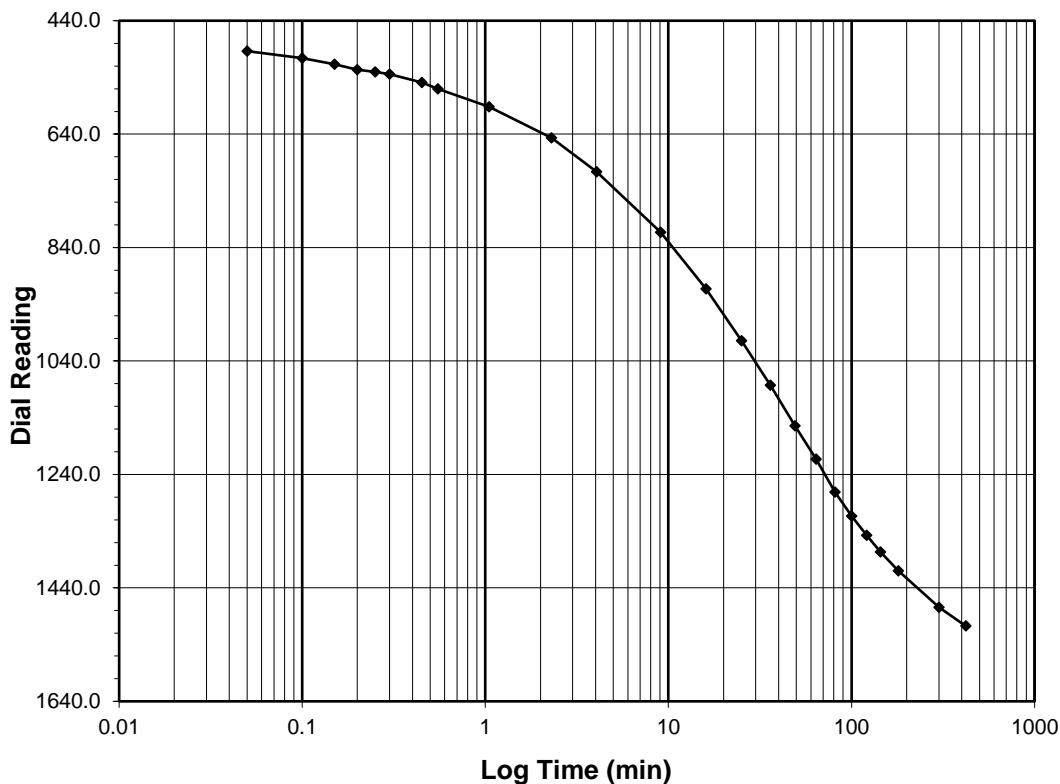
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1507.2</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/12/20</b>
<b>Start Time</b>	<b>4:26:22</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>450.4</b>
0.05	493.6
0.10	505.9
0.15	516.9
0.20	526.4
0.25	530.4
0.30	534.4
0.45	548.9
0.55	560.2
1.05	591.7
2.30	646.6
4.05	706.2
9.05	813.0
16.05	912.7
25.05	1004.4
36.07	1082.8
49.07	1154.2
64.07	1213.0
81.07	1271.0
100.07	1313.4
121.07	1347.5
144.07	1376.4
180.07	1410.0
300.07	1474.3
420.43	1507.2



Tested By **NL** Date **9/12/20** Checked By **GEM** Date **9/17/20**

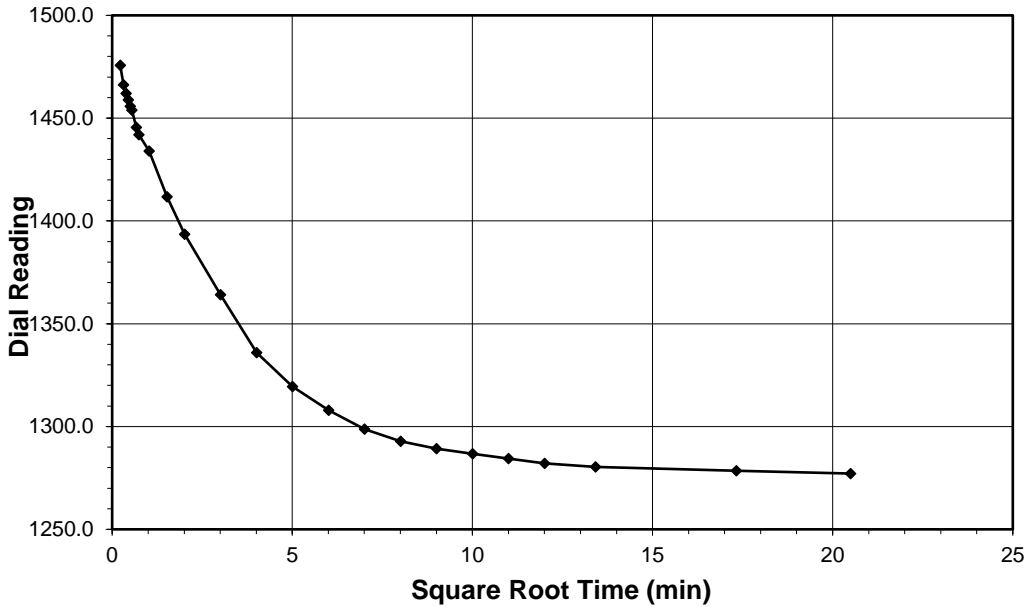


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

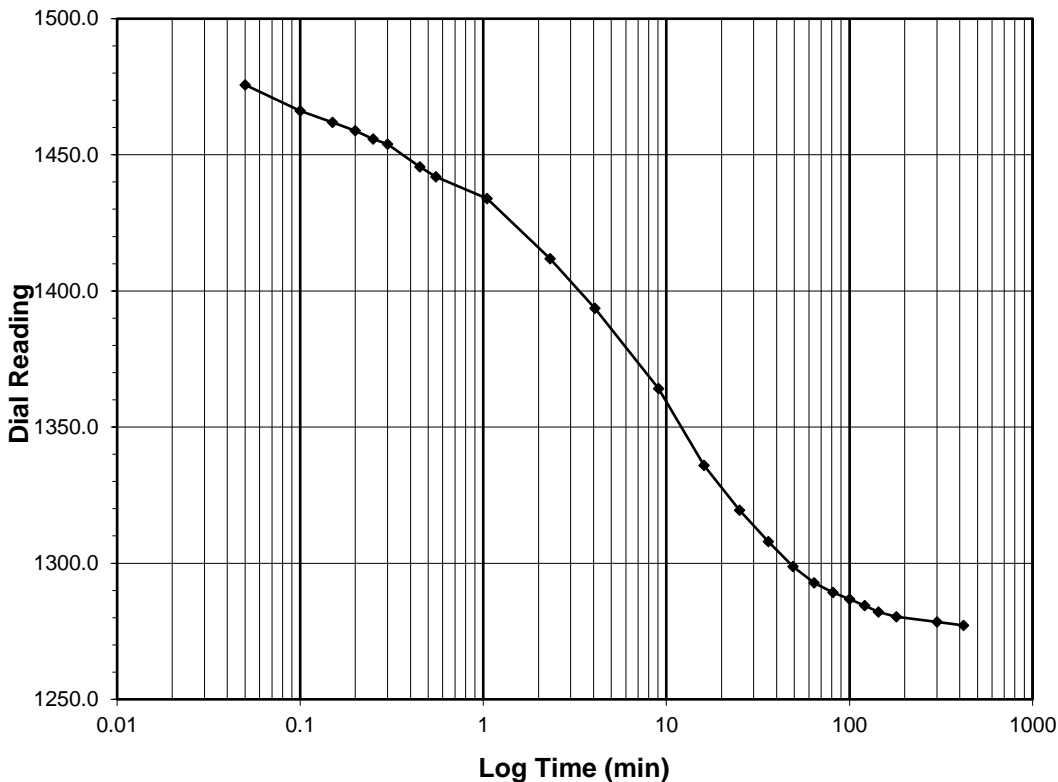
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>1277.1</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/12/20
Start Time	11:26:48

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1507.2</b>
0.05	1475.7
0.10	1466.2
0.15	1461.9
0.20	1458.8
0.25	1455.8
0.30	1454.0
0.45	1445.6
0.55	1441.9
1.05	1434.0
2.32	1411.8
4.07	1393.6
9.07	1364.1
16.07	1335.9
25.07	1319.5
36.07	1307.9
49.07	1298.8
64.07	1292.8
81.07	1289.3
100.07	1286.8
121.07	1284.4
144.07	1282.1
180.07	1280.3
300.07	1278.4
420.05	1277.1



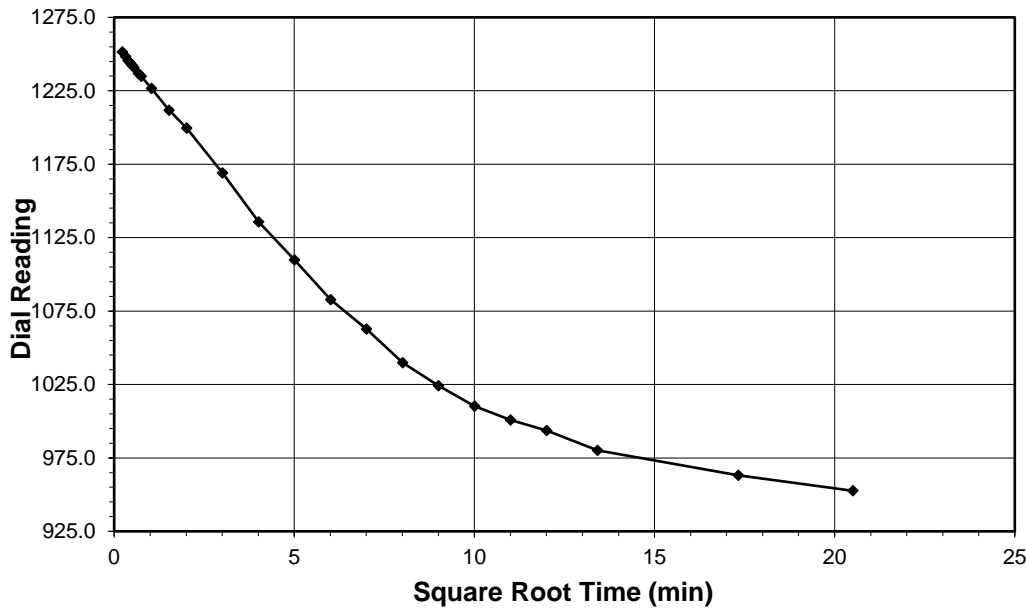
Tested By **NL** Date **9/12/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

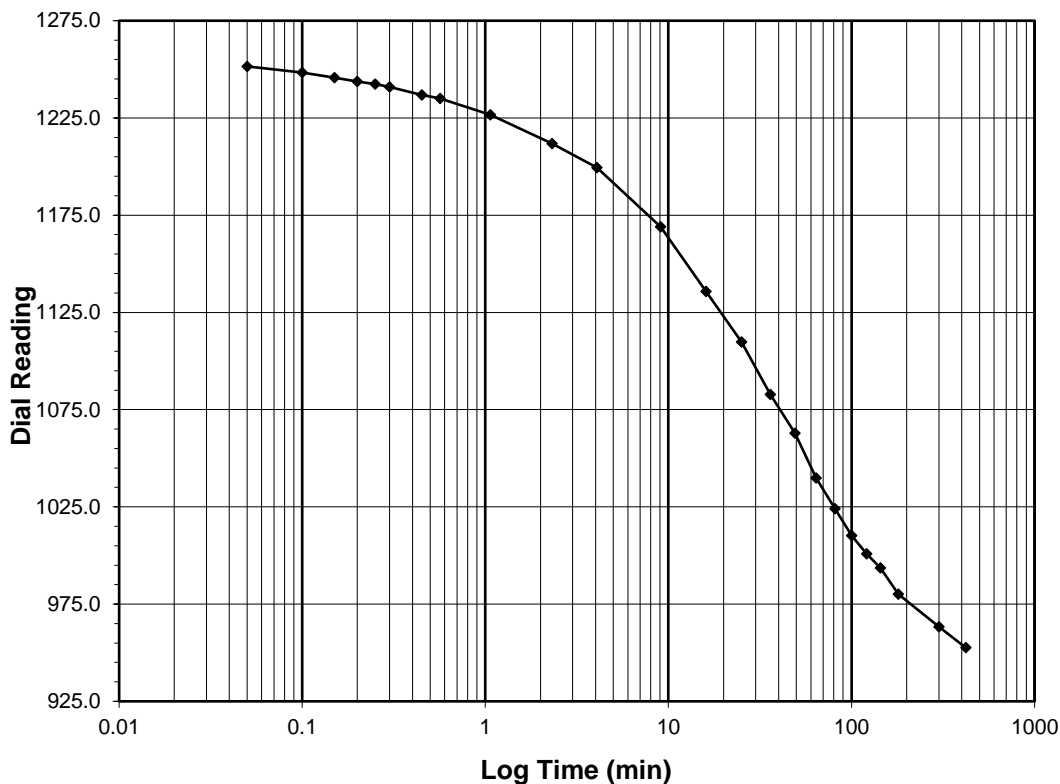
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>952.6</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/12/20</b>
<b>Start Time</b>	<b>18:26:51</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1277.1</b>
0.05	1251.5
0.10	1248.3
0.15	1245.7
0.20	1243.8
0.25	1242.4
0.30	1240.9
0.45	1236.9
0.57	1235.0
1.07	1226.7
2.32	1211.8
4.07	1199.5
9.07	1169.0
16.07	1135.8
25.07	1109.7
36.07	1082.7
49.07	1062.8
64.07	1039.9
81.07	1024.1
100.07	1010.2
121.07	1000.8
144.07	993.7
180.07	980.2
300.07	963.2
420.43	952.6



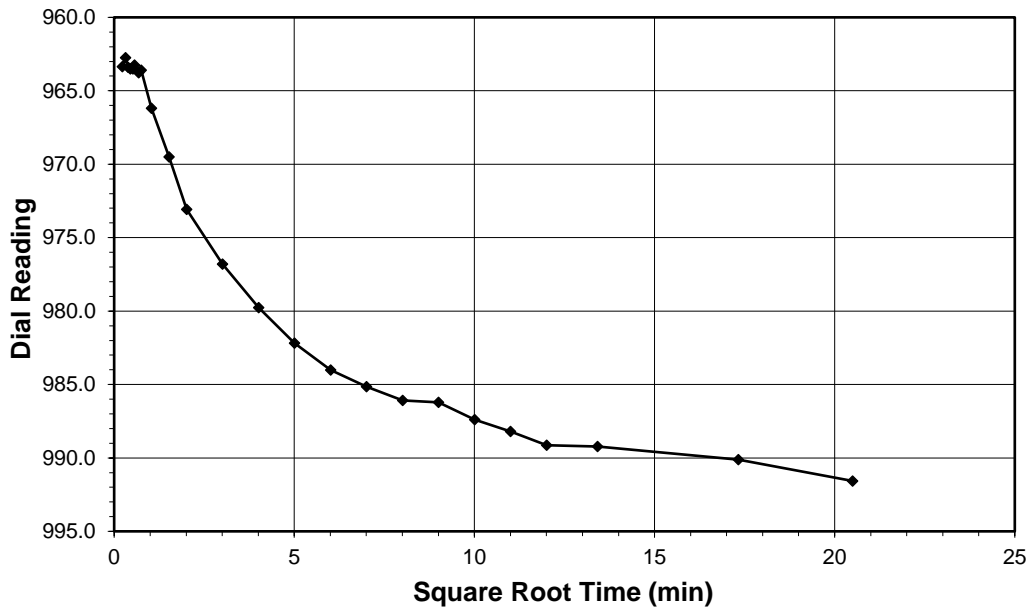
Tested By **NL** Date **9/12/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

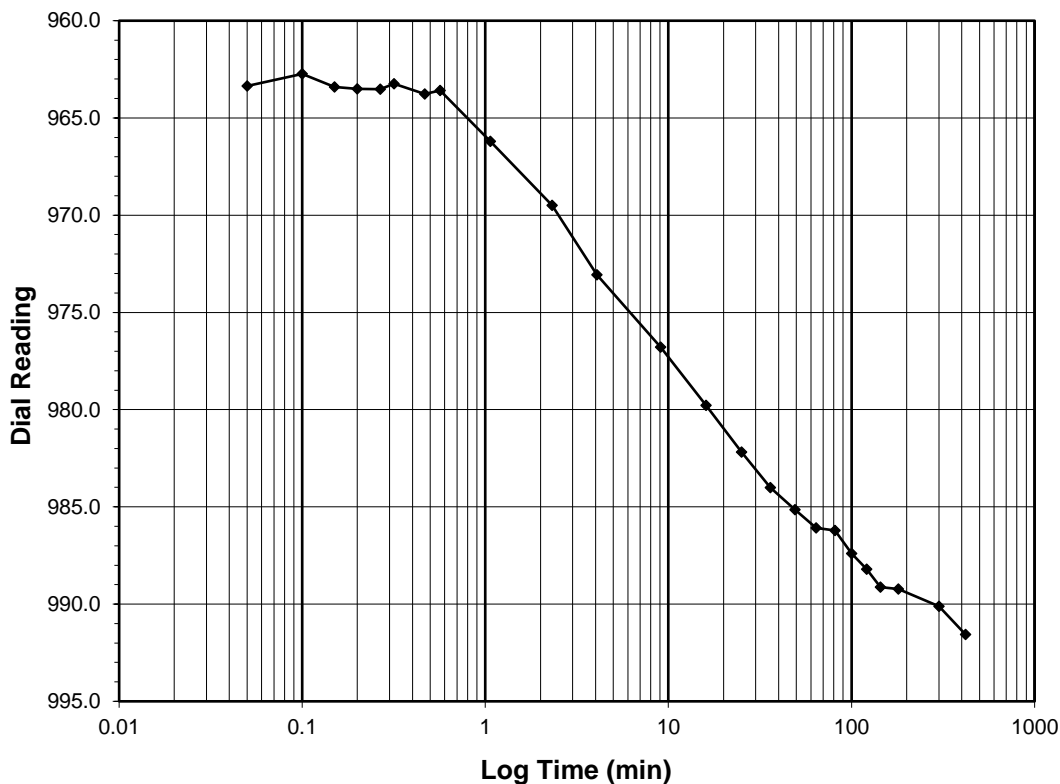
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>991.6</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/13/20
Start Time	1:27:17

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>952.6</b>
0.05	963.4
0.10	962.7
0.15	963.4
0.20	963.5
0.27	963.5
0.32	963.2
0.47	963.8
0.57	963.6
1.07	966.2
2.32	969.5
4.07	973.1
9.07	976.8
16.07	979.8
25.07	982.2
36.07	984.0
49.07	985.1
64.07	986.1
81.07	986.2
100.07	987.4
121.07	988.2
144.07	989.1
180.07	989.2
300.08	990.1
420.02	991.6



Tested By **NL** Date **9/13/20** Checked By **GEM** Date **9/17/20**

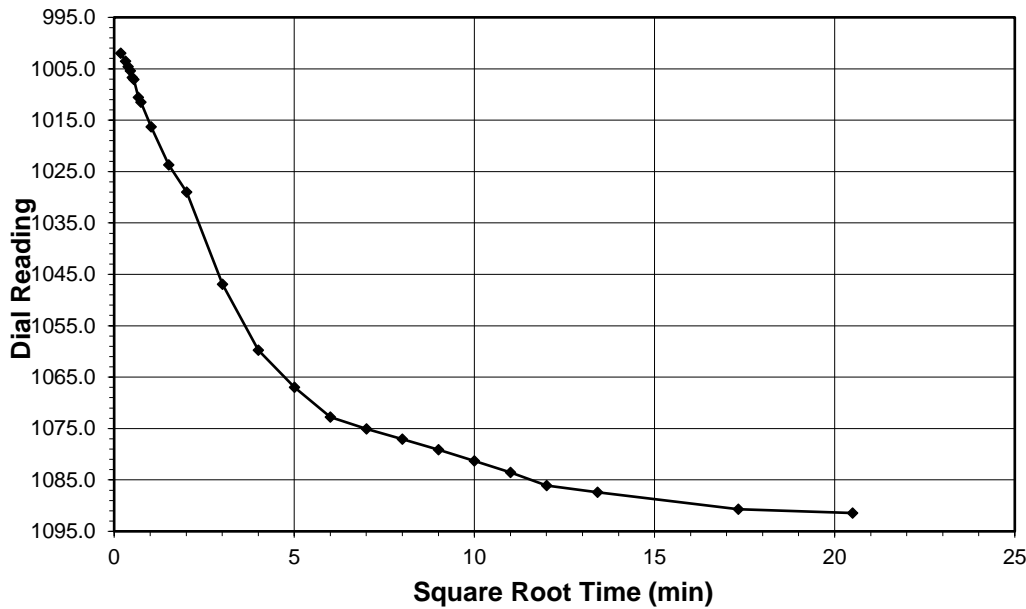


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

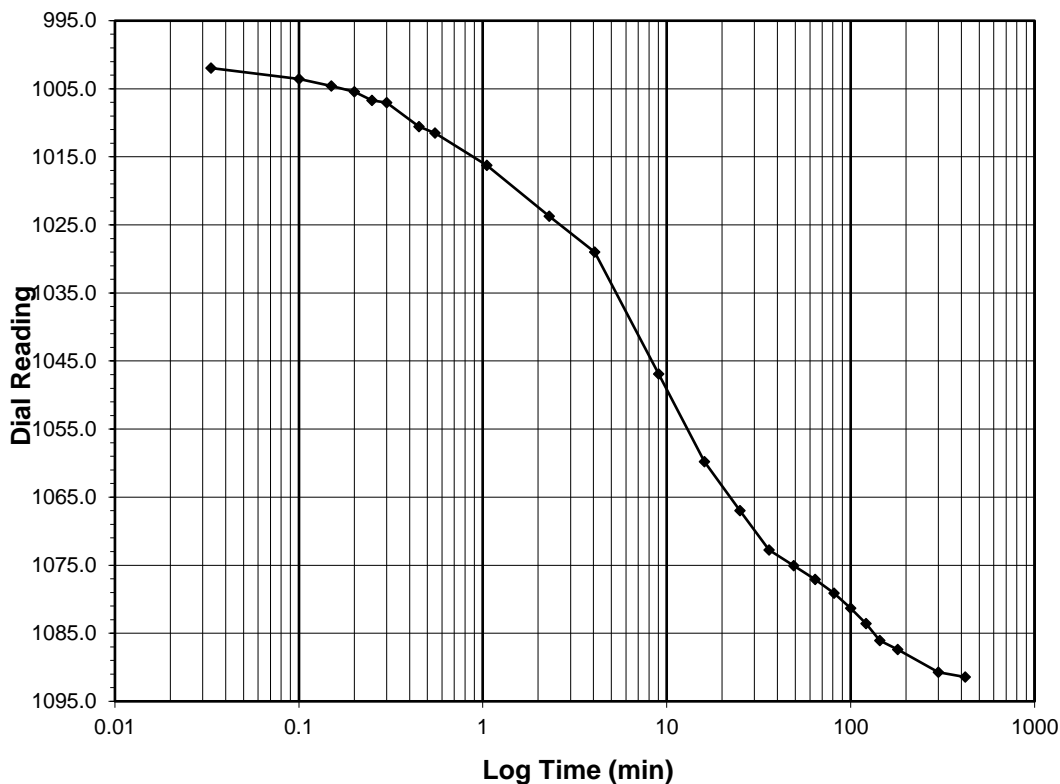
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>1091.4</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/13/20
Start Time	8:27:18

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>991.6</b>
0.03	1002.0
0.10	1003.5
0.15	1004.6
0.20	1005.4
0.25	1006.7
0.30	1007.1
0.45	1010.6
0.55	1011.5
1.05	1016.3
2.30	1023.7
4.05	1029.0
9.05	1046.9
16.05	1059.8
25.05	1067.0
36.05	1072.8
49.05	1075.1
64.05	1077.1
81.05	1079.1
100.05	1081.3
121.07	1083.6
144.07	1086.1
180.07	1087.4
300.07	1090.7
420.05	1091.4



Tested By **NL** Date **9/13/20** Checked By **GEM** Date **9/17/20**

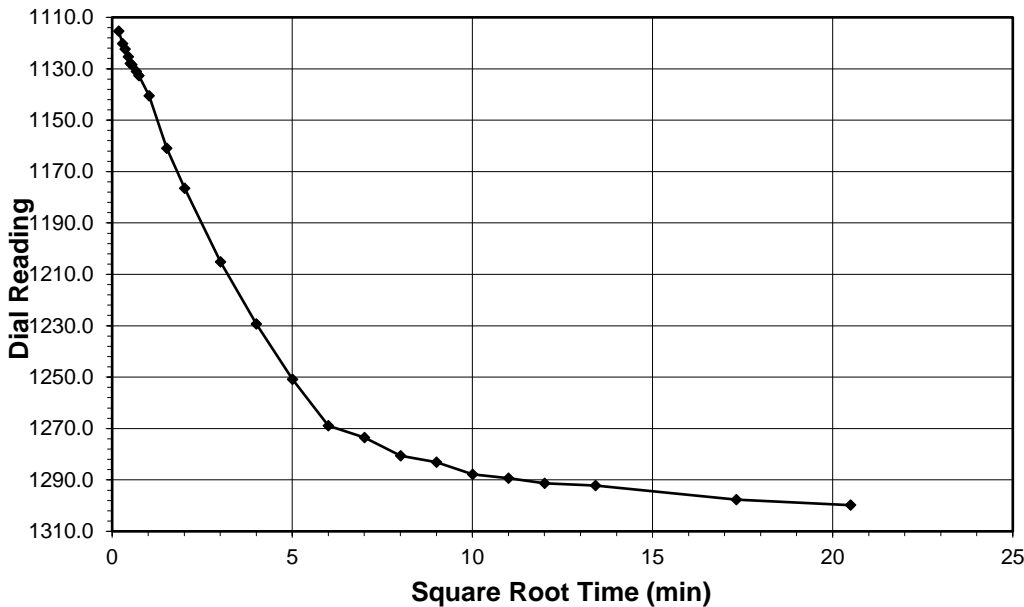


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

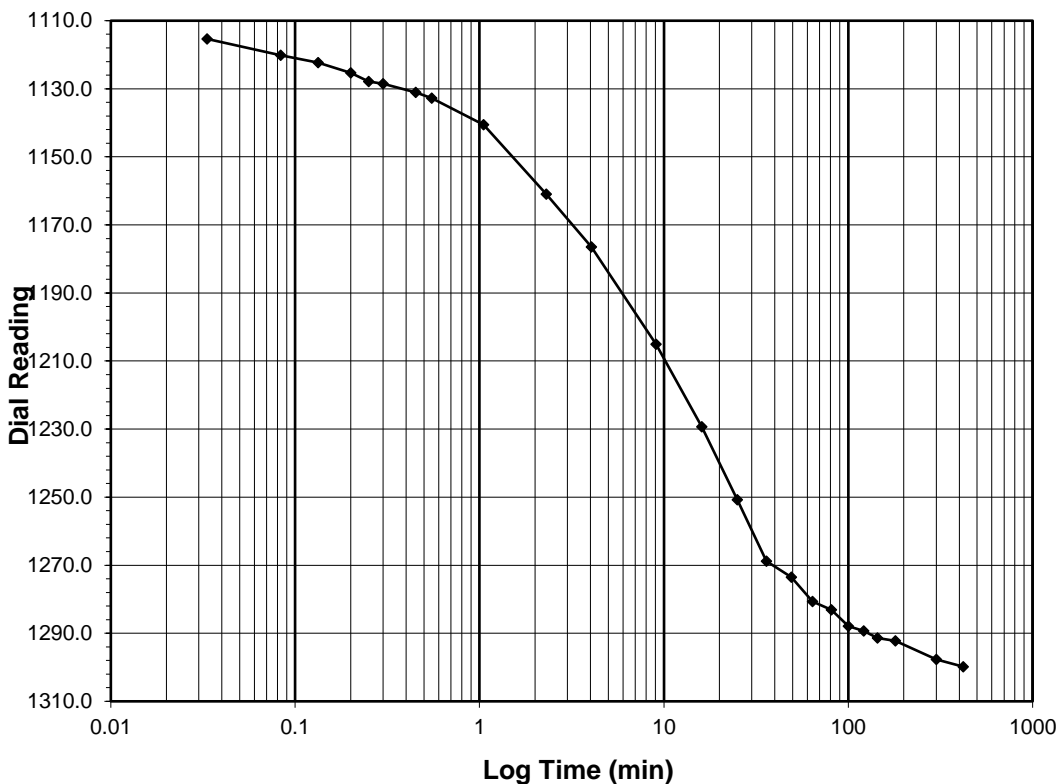
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>1299.8</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/13/20
Start Time	15:27:22

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1091.4</b>
0.03	1115.4
0.08	1120.2
0.13	1122.3
0.20	1125.3
0.25	1127.9
0.30	1128.5
0.45	1131.1
0.55	1132.7
1.05	1140.5
2.30	1160.9
4.05	1176.5
9.05	1205.1
16.05	1229.4
25.05	1250.8
36.05	1268.8
49.07	1273.5
64.07	1280.6
81.07	1283.1
100.07	1287.9
121.07	1289.3
144.07	1291.4
180.07	1292.2
300.07	1297.7
420.08	1299.8



Tested By **NL** Date **9/13/20** Checked By **GEM** Date **9/17/20**

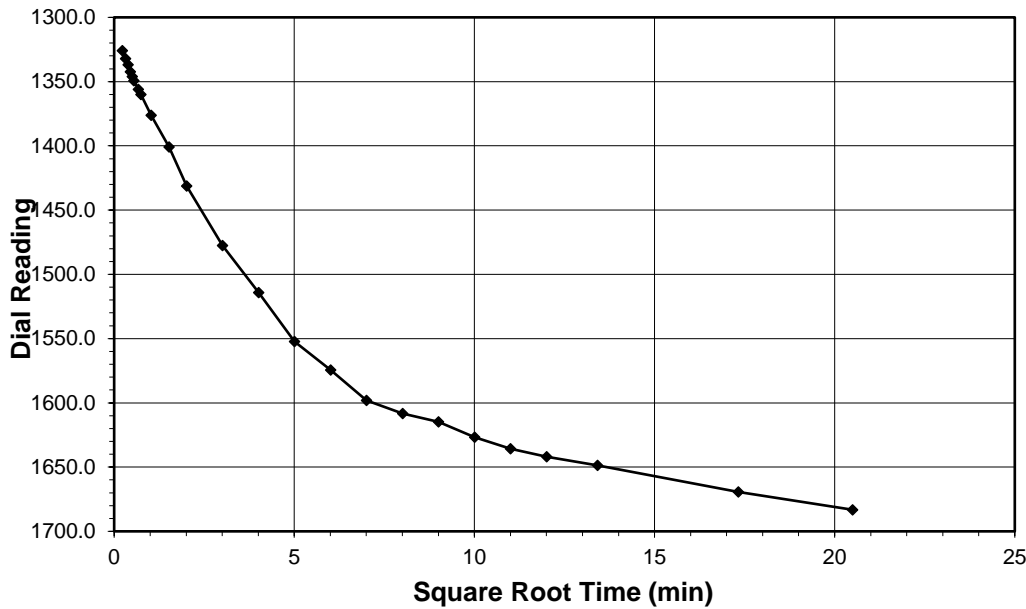


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

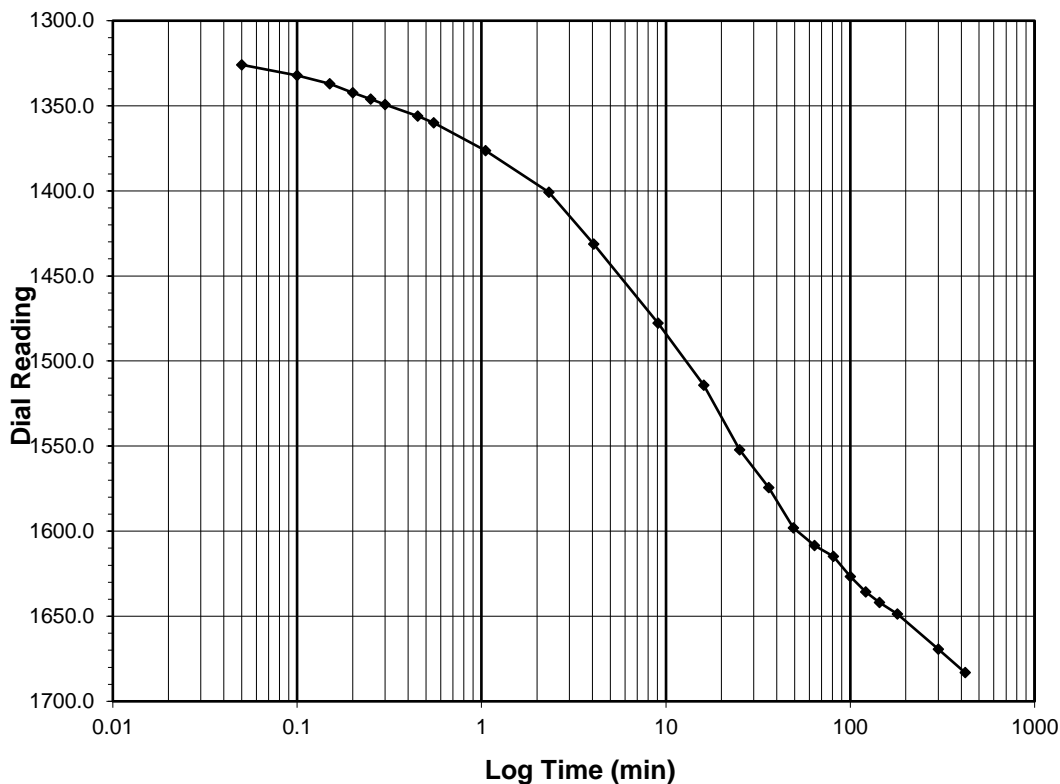
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1683.2</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/13/20
Start Time	22:27:28

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1299.8</b>
0.05	1325.9
0.10	1332.1
0.15	1337.0
0.20	1342.3
0.25	1346.1
0.30	1349.3
0.45	1356.0
0.55	1360.0
1.05	1376.3
2.32	1400.8
4.07	1431.2
9.07	1477.7
16.07	1514.2
25.07	1552.2
36.07	1574.5
49.07	1598.1
64.07	1608.3
81.07	1614.8
100.07	1626.7
121.08	1635.7
144.08	1641.9
180.08	1648.6
300.08	1669.4
420.07	1683.2



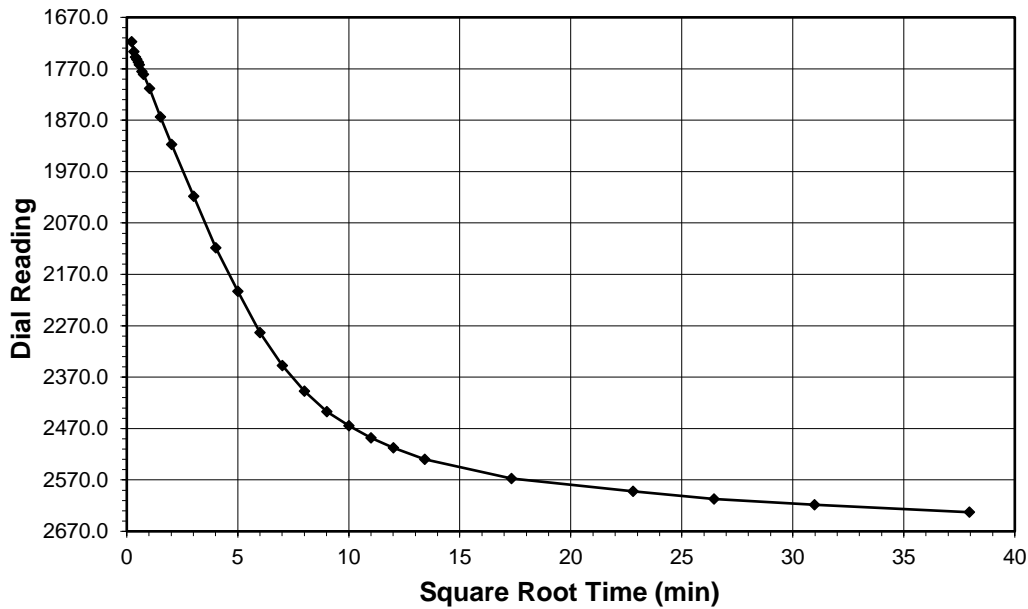
Tested By **NL** Date **9/13/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

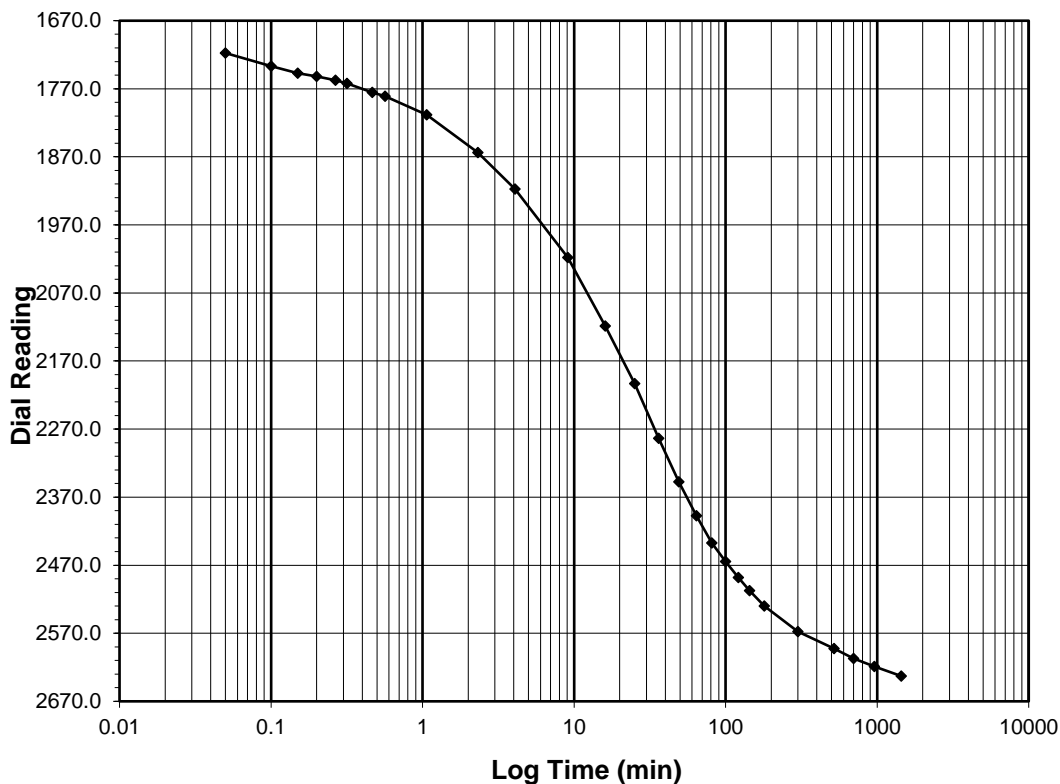
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>2632.8</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/14/20
Start Time	5:27:32

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1683.2</b>
0.05	1717.5
0.10	1736.8
0.15	1747.1
0.20	1751.7
0.27	1757.5
0.32	1762.2
0.47	1775.1
0.57	1780.7
1.07	1808.3
2.32	1863.9
4.07	1917.3
9.07	2018.0
16.07	2118.6
25.07	2203.3
36.07	2283.5
49.07	2347.6
64.07	2397.2
81.08	2437.2
100.08	2464.5
121.08	2488.1
144.08	2507.3
180.08	2529.8
300.08	2567.3
520.08	2592.4
700.08	2606.9
960.08	2618.6
1440.08	2632.8



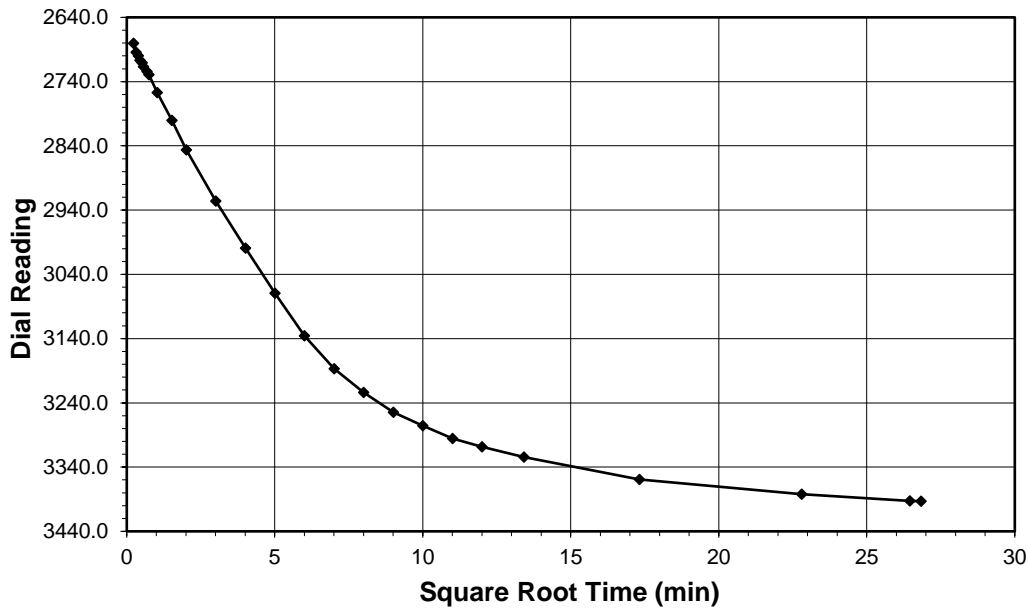
Tested By **NL** Date **9/14/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

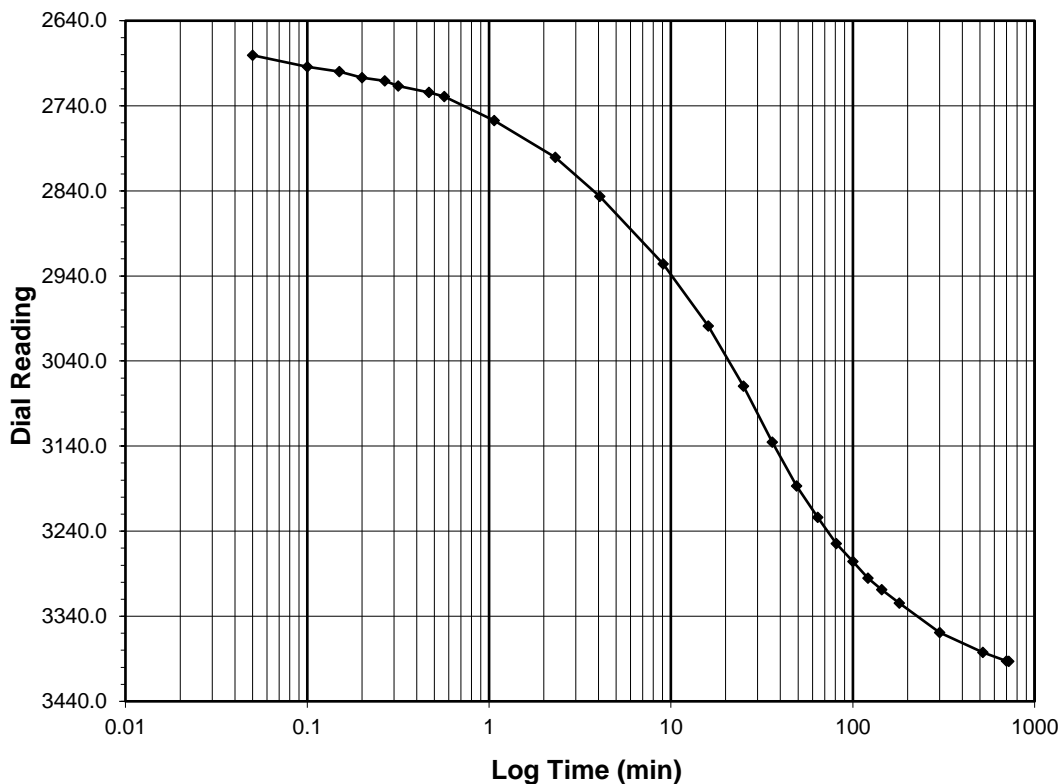
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>3393.1</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/15/20
Start Time	5:27:48

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2632.8</b>
0.05	2680.6
0.10	2694.3
0.15	2699.6
0.20	2707.0
0.27	2710.7
0.32	2716.8
0.47	2724.4
0.57	2729.0
1.07	2757.2
2.32	2800.5
4.07	2846.4
9.07	2925.8
16.07	2998.9
25.07	3069.6
36.07	3135.5
49.07	3187.0
64.07	3223.9
81.07	3254.8
100.08	3275.7
121.08	3295.4
144.08	3308.6
180.08	3324.5
300.08	3359.1
520.08	3382.4
700.08	3392.5
720.13	3393.1



Tested By **NL** Date **9/15/20** Checked By **GEM** Date **9/17/20**

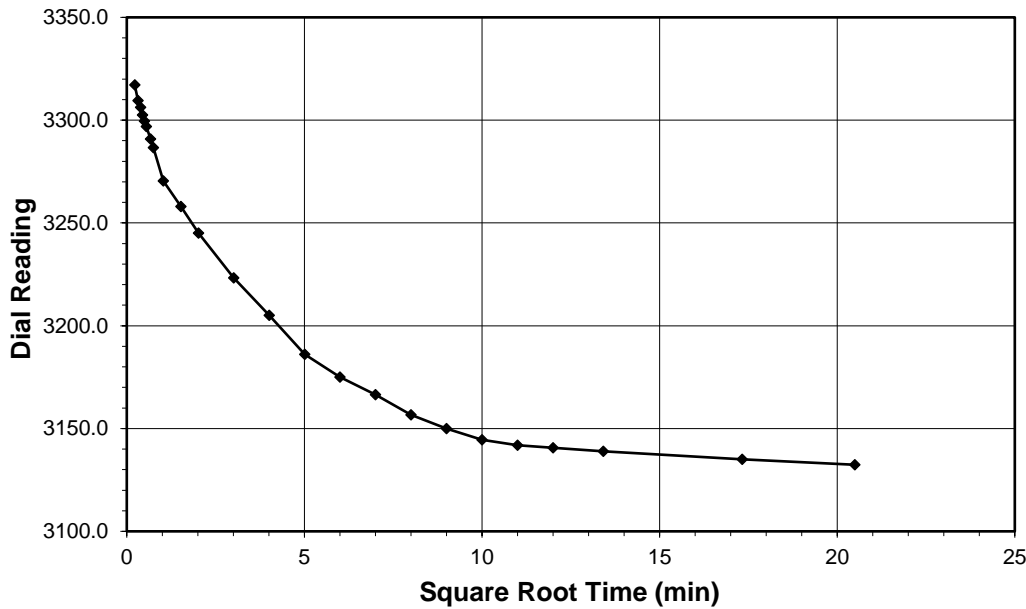


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

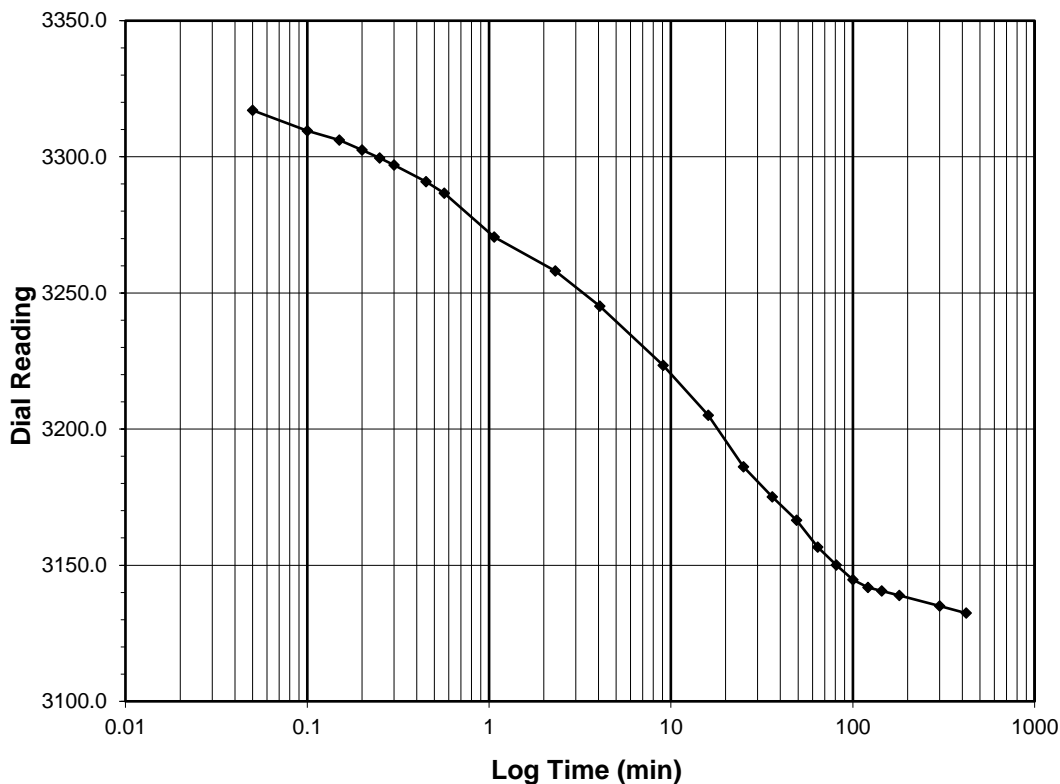
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>3132.4</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/15/20
Start Time	17:27:56

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>3393.1</b>
0.05	3317.1
0.10	3309.6
0.15	3306.2
0.20	3302.5
0.25	3299.5
0.30	3297.0
0.45	3290.8
0.57	3286.6
1.07	3270.5
2.32	3258.0
4.07	3245.1
9.07	3223.3
16.07	3205.1
25.07	3186.1
36.07	3175.1
49.07	3166.5
64.07	3156.6
81.07	3150.0
100.07	3144.6
121.08	3141.8
144.08	3140.6
180.08	3138.9
300.08	3135.0
420.07	3132.4



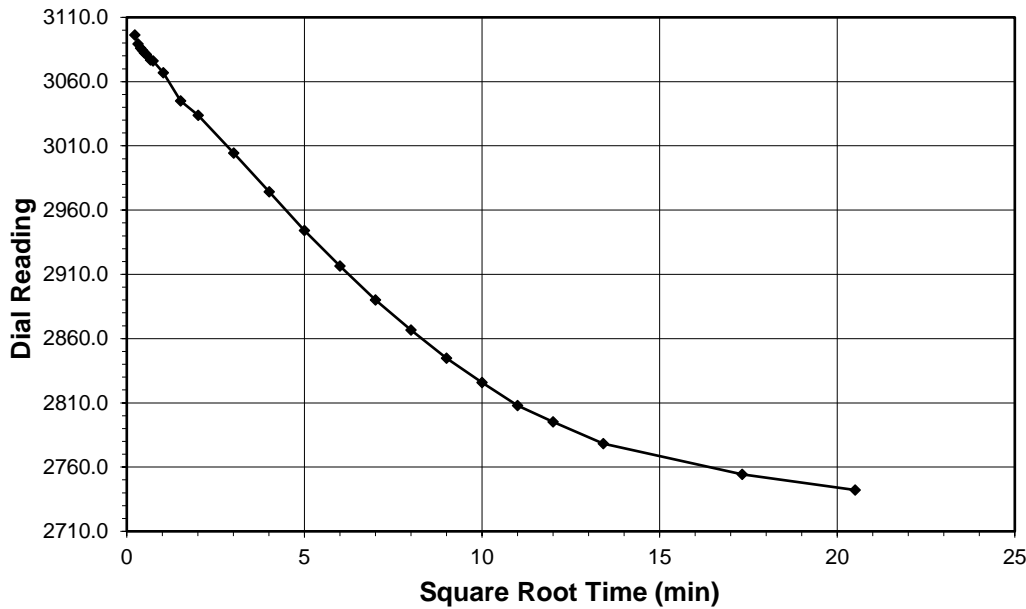
Tested By *NL* Date *9/15/20* Checked By *GEM* Date *9/17/20*

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

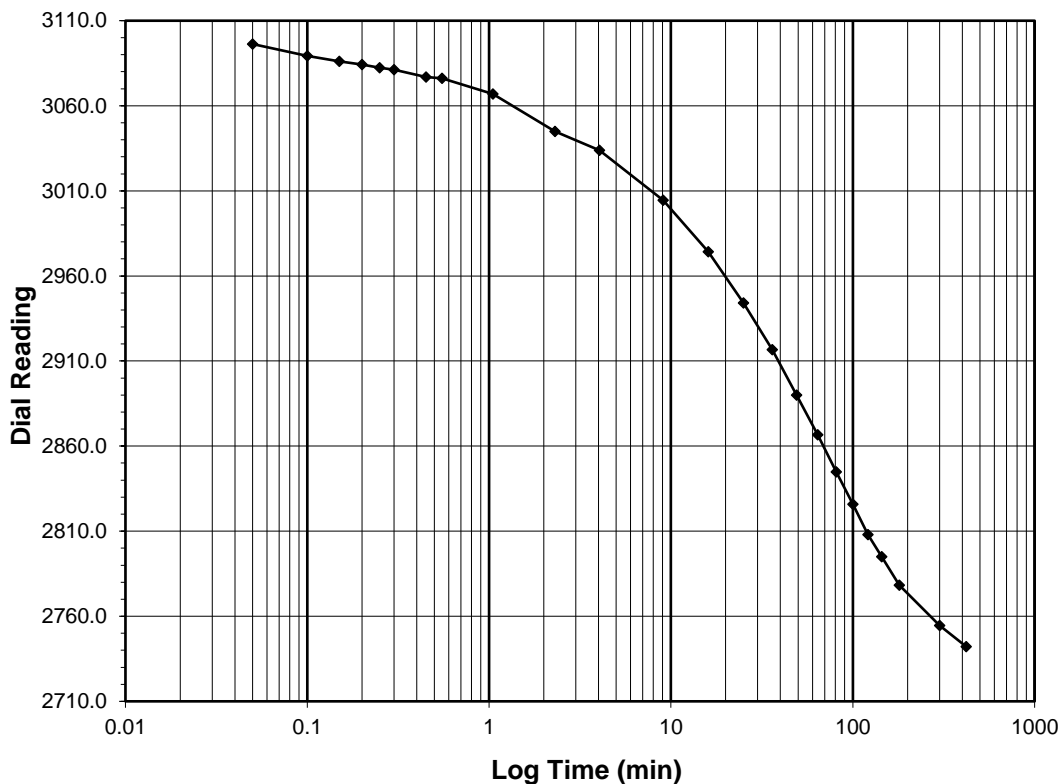
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>2742.2</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/16/20
Start Time	0:28:00

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>3132.4</b>
0.05	3096.3
0.10	3089.3
0.15	3086.2
0.20	3084.2
0.25	3082.3
0.30	3081.2
0.45	3076.9
0.55	3076.1
1.05	3067.0
2.30	3045.0
4.05	3033.8
9.05	3004.5
16.05	2974.2
25.05	2944.1
36.07	2916.6
49.07	2890.0
64.07	2866.6
81.07	2844.8
100.07	2825.9
121.07	2807.9
144.07	2795.1
180.07	2778.2
300.07	2754.5
420.42	2742.2



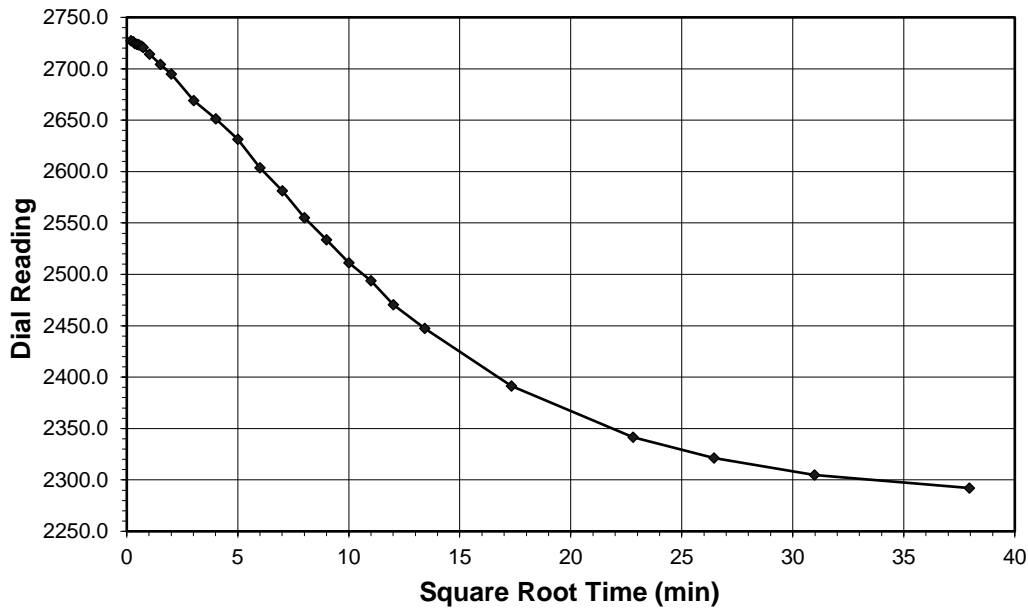
Tested By **NL** Date **9/16/20** Checked By **GEM** Date **9/17/20**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

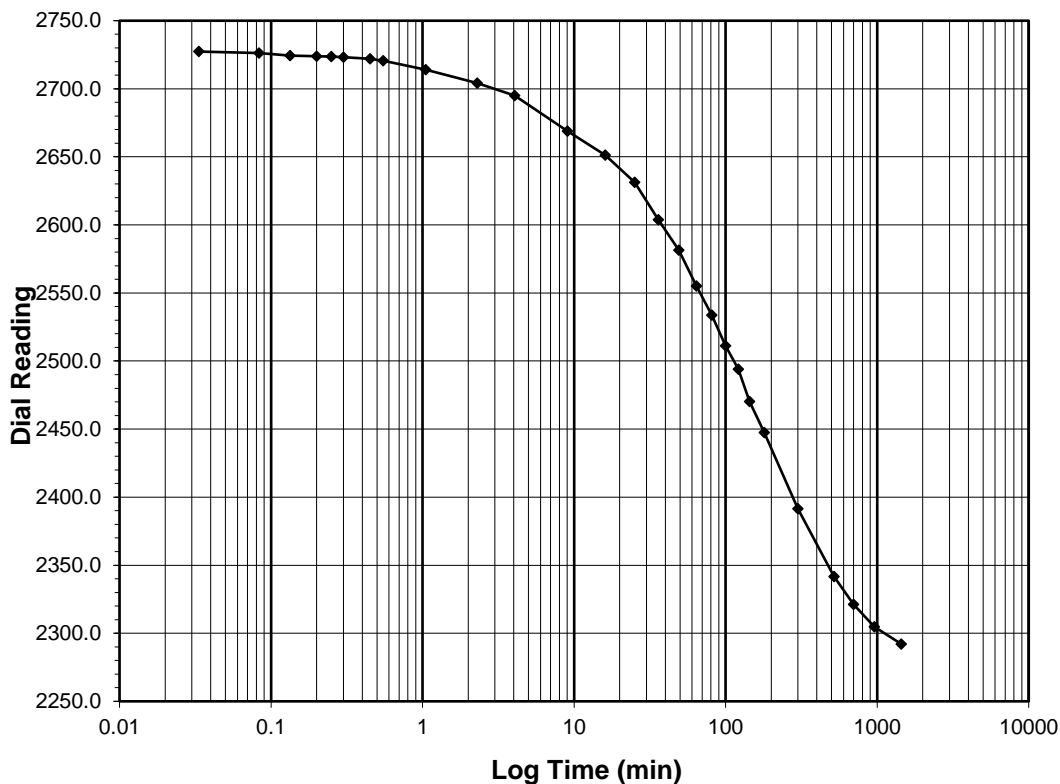
Client	Catlin Engineers & Scientists	Boring No.	PRN_20_UD
Client Project	USACE Princeville	Depth (ft)	15.0'-17.0'
Project No.	R-2020-164-002	Sample No.	SPT09-2
Lab ID	R-2020-164-002-039	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>2292.2</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/16/20
Start Time	7:28:25

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2742.2</b>
0.03	2727.3
0.08	2726.3
0.13	2724.4
0.20	2723.8
0.25	2723.6
0.30	2723.1
0.45	2722.0
0.55	2720.6
1.05	2714.1
2.30	2704.2
4.05	2695.0
9.05	2669.0
16.05	2651.2
25.05	2631.2
36.05	2603.7
49.05	2581.3
64.05	2555.1
81.05	2533.7
100.05	2511.1
121.05	2493.9
144.05	2470.3
180.05	2447.5
300.05	2391.4
520.05	2341.6
700.07	2321.3
960.07	2304.7
1440.03	2292.2

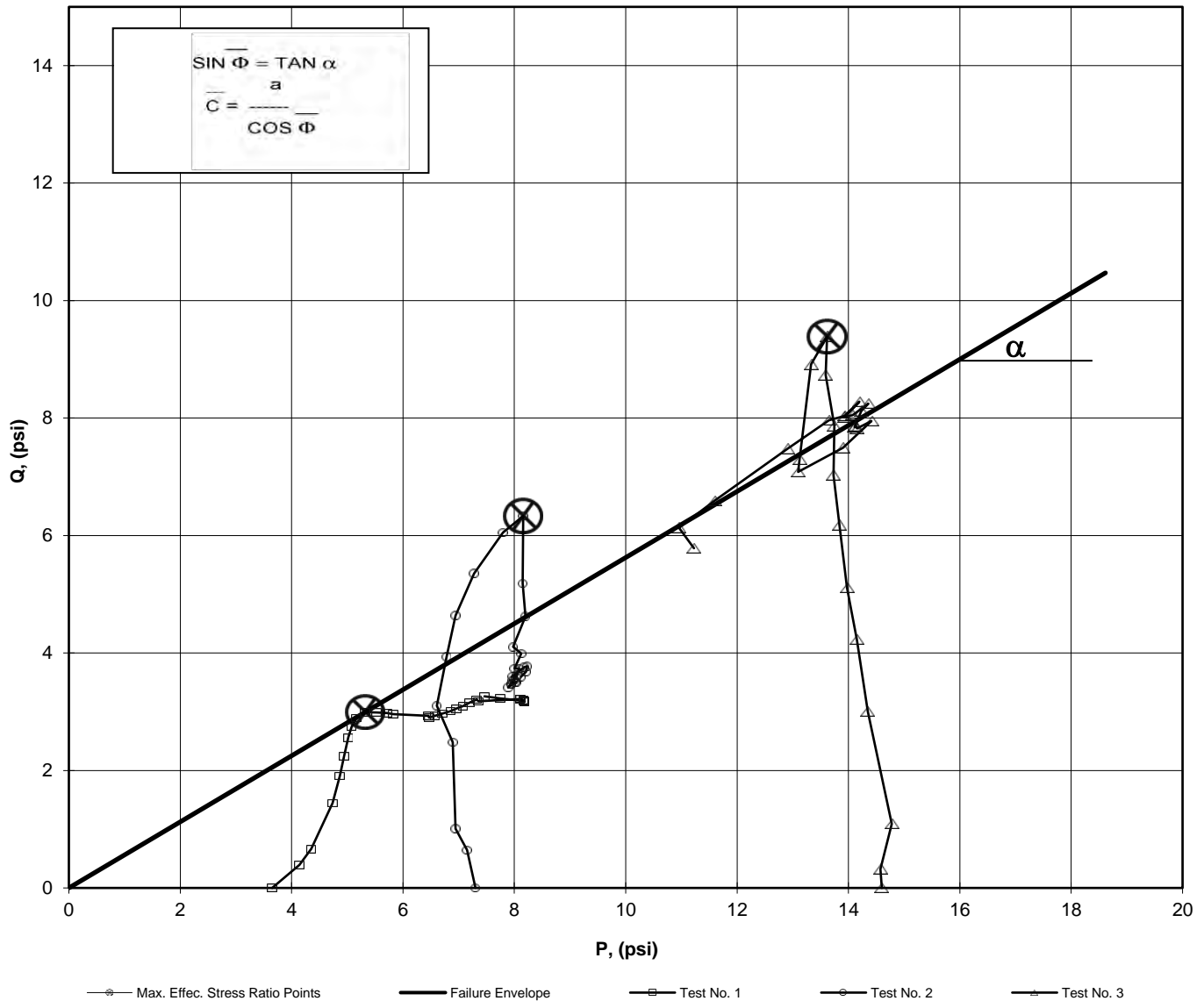


Tested By **NL** Date **9/16/20** Checked By **GEM** Date **9/17/20**

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

**Consolidated Undrained Triaxial Test with Pore Pressure**

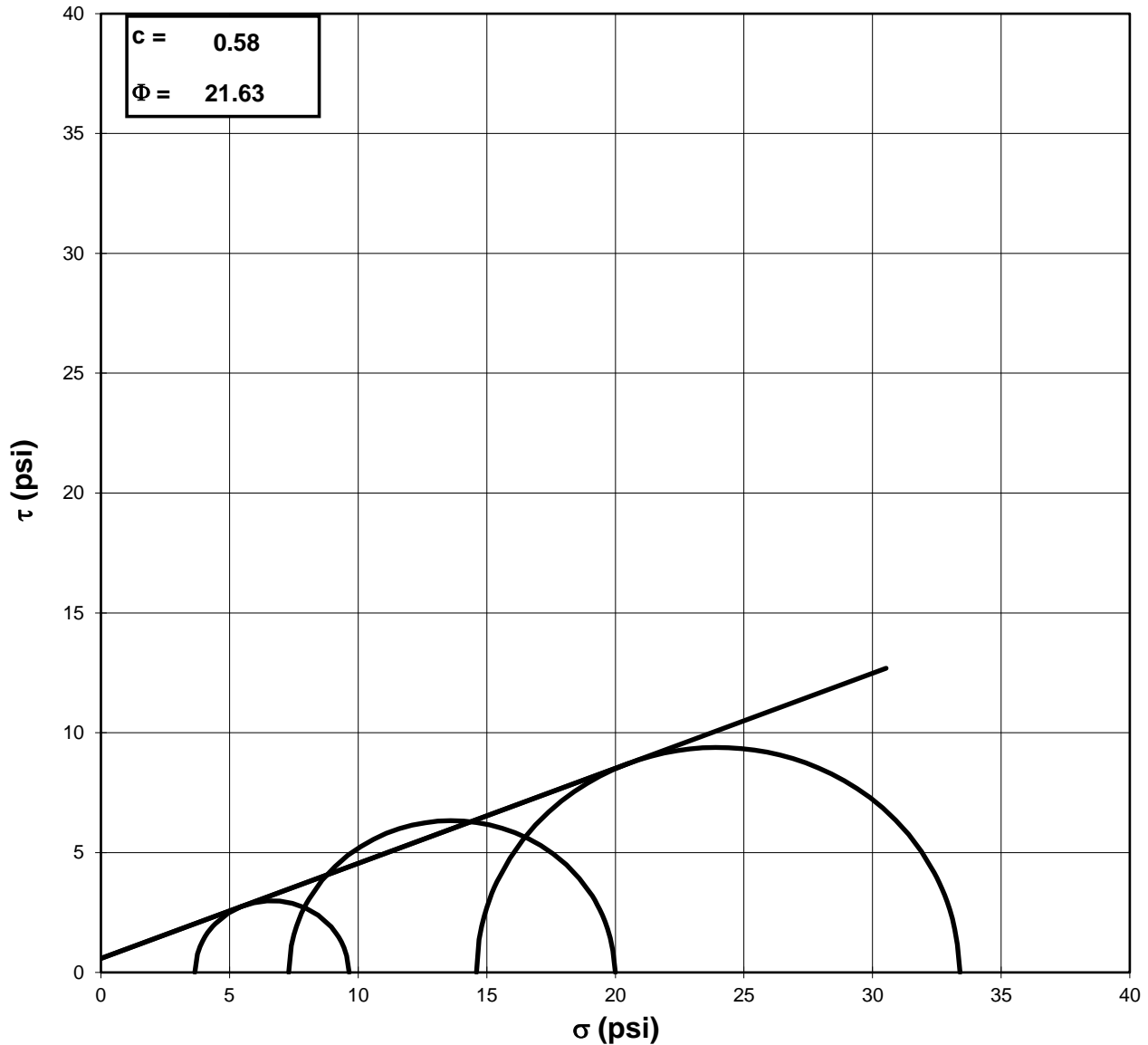


<b>a</b>	<b>=</b>	<b>0.00</b>	<b>C</b>	<b>=</b>	<b>0.00</b>
<b>α</b>	<b>=</b>	<b>29.4</b>	<b>Φ</b>	<b>=</b>	<b>34.23</b>

Tested By: MY      Date: 9/8/20      Approved By: MPS      Date: 9/17/20

**MOHR TOTAL STRENGTH ENVELOPE**  
ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		
Visual Description:	Gray Clay (UNDISTURBED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: MY      Date: 9/8/20      Approved By: MPS      Date: 9/17/20

page 2 of 10      DCN: CT-S28      DATE: 4/12/13      REVISION: 3



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	1

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	5.965	Diameter 1:	2.865
Length 2:	5.938	Diameter 2:	2.854
Length 3:	5.967	Diameter 3:	2.849
<i>Avg. Length:</i>	5.957	<i>Avg. Diam.:</i>	2.856

**PRESSURES (psi)**

Cell Pressure (psi)	53.65
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	3.7
Pore Pressure	
Response (%)	96

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.9
Final Change (ml)	10.1

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	5.32
Q	=	2.99

Initial Dial Reading (mil)	258
Dial Reading After Saturation (mil)	260
Dial Reading After Consolidation (mil)	291

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
16.1	0.000	50.0
21.0	0.001	49.9
24.5	0.003	50.0
34.4	0.008	50.4
40.2	0.014	50.7
44.5	0.019	51.0
48.7	0.029	51.2
51.0	0.038	51.3
53.0	0.049	51.4
54.4	0.070	51.3
54.5	0.100	51.1
54.6	0.136	50.9
54.6	0.172	50.8
54.5	0.213	50.1
54.3	0.242	50.1
55.0	0.282	50.0
55.9	0.339	49.9
56.9	0.397	49.8
57.8	0.441	49.7
58.9	0.500	49.7
60.1	0.545	49.6
61.2	0.590	49.5
61.1	0.634	49.5
61.9	0.663	48.8
62.3	0.692	48.8
62.2	0.722	48.7
62.0	0.751	48.6
62.6	0.795	48.7
63.7	0.840	49.1
64.5	0.869	49.5
64.7	0.898	49.5

Tested By: MY      Date: 9/8/20      Input Checked By: MPS      Date: 9/17/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	3.7	Stage No.	0
		Test No	1

**INITIAL DIMENSIONS**

Initial Sample Length (in)	5.96
Initial Sample Diameter (in)	2.86
Initial Sample Area (in <sup>2</sup> )	6.41
Initial Sample Volume (in <sup>3</sup> )	38.16

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	37.51
Length After Consolidation (in)	5.92
Area After Consolidation (in <sup>2</sup> )	6.331

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	0.79	-0.10	4.53	3.7	1.210	-0.13	4.14	0.39
0.05	1.33	-0.04	5.02	3.7	1.362	-0.03	4.35	0.67
0.14	2.89	0.36	6.18	3.3	1.877	0.13	4.74	1.44
0.24	3.81	0.69	6.77	3.0	2.287	0.19	4.87	1.91
0.33	4.48	0.95	7.18	2.7	2.660	0.22	4.94	2.24
0.48	5.13	1.20	7.58	2.5	3.090	0.24	5.02	2.56
0.64	5.49	1.32	7.83	2.3	3.353	0.25	5.08	2.75
0.83	5.79	1.38	8.06	2.3	3.549	0.25	5.16	2.89
1.18	5.98	1.32	8.31	2.3	3.572	0.23	5.32	2.99
1.69	5.98	1.11	8.52	2.5	3.354	0.19	5.53	2.99
2.29	5.95	0.91	8.69	2.7	3.172	0.16	5.72	2.98
2.90	5.91	0.78	8.78	2.9	3.059	0.14	5.83	2.96
3.59	5.86	0.12	9.39	3.5	2.661	0.02	6.46	2.93
4.09	5.80	0.08	9.37	3.6	2.624	0.01	6.47	2.90
4.76	5.86	0.01	9.50	3.6	2.608	0.00	6.57	2.93
5.72	5.94	-0.09	9.67	3.7	2.588	-0.02	6.71	2.97
6.71	6.02	-0.20	9.87	3.8	2.565	-0.03	6.86	3.01
7.45	6.11	-0.25	10.01	3.9	2.565	-0.04	6.96	3.05
8.44	6.19	-0.33	10.18	4.0	2.554	-0.06	7.08	3.10
9.21	6.31	-0.39	10.35	4.0	2.562	-0.06	7.20	3.16
9.96	6.41	-0.47	10.53	4.1	2.558	-0.08	7.32	3.21
10.71	6.36	-0.53	10.54	4.2	2.521	-0.09	7.36	3.18
11.20	6.43	-1.24	11.32	4.9	2.316	-0.20	8.10	3.22
11.69	6.44	-1.24	11.34	4.9	2.317	-0.20	8.12	3.22
12.18	6.40	-1.32	11.37	5.0	2.288	-0.21	8.17	3.20
12.68	6.34	-1.37	11.36	5.0	2.264	-0.22	8.19	3.17
13.42	6.37	-1.33	11.35	5.0	2.277	-0.22	8.17	3.18
14.18	6.46	-0.87	10.98	4.5	2.427	-0.14	7.75	3.23
14.67	6.52	-0.55	10.72	4.2	2.554	-0.09	7.46	3.26
15.17	6.52	-0.53	10.69	4.2	2.561	-0.08	7.43	3.26

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	2

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.053	Diameter 1:	2.851
Length 2:	6.022	Diameter 2:	2.859
Length 3:	6.046	Diameter 3:	2.858
Avg. Length	6.040	Avg. Diam.:	2.856

**PRESSURES (psi)**

Cell Pressure (psi)	57.3
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	7.3
Pore Pressure Response (%)	97

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	15.6
Final Change (ml)	8.4

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	8.16
Q	=	6.33

Initial Dial Reading (mil)	218
Dial Reading After Saturation (mil)	219
Dial Reading After Consolidation (mil)	237

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
20.4	0.000	50.0
28.6	0.002	50.8
33.2	0.003	51.4
51.9	0.009	52.9
59.9	0.014	53.8
70.4	0.020	54.4
79.5	0.029	55.0
88.7	0.038	55.4
97.7	0.050	55.6
101.7	0.072	55.5
87.3	0.102	54.3
80.4	0.139	53.7
74.0	0.175	53.4
72.9	0.217	53.2
69.9	0.248	53.0
70.1	0.290	52.9
68.1	0.348	52.8
66.8	0.409	52.8
68.5	0.452	52.8
68.9	0.513	52.8
69.0	0.558	52.8
69.2	0.604	52.8
70.6	0.649	52.9
72.3	0.679	52.9
72.0	0.709	52.9
72.4	0.739	52.9
75.0	0.769	52.9
75.8	0.814	52.8
74.8	0.860	52.8
73.9	0.890	52.8
73.1	0.920	52.7

Tested By: MY      Date: 9/8/20      Input Checked By: MPS      Date: 9/17/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	7.3	Stage No.	0
		Test No	2

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.04
Initial Sample Diameter (in)	2.86
Initial Sample Area (in <sup>2</sup> )	6.41
Initial Sample Volume (in <sup>3</sup> )	38.70

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	38.16
Length After Consolidation (in)	6.02
Area After Consolidation (in <sup>2</sup> )	6.338

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.03	1.29	0.79	7.79	6.5	1.198	0.63	7.15	0.64
0.05	2.02	1.37	7.95	5.9	1.340	0.70	6.94	1.01
0.14	4.97	2.89	9.38	4.4	2.126	0.60	6.89	2.48
0.24	6.21	3.80	9.71	3.5	2.772	0.63	6.61	3.10
0.33	7.86	4.45	10.72	2.9	3.756	0.58	6.78	3.93
0.48	9.27	4.99	11.58	2.3	5.016	0.55	6.95	4.64
0.64	10.71	5.38	12.63	1.9	6.577	0.52	7.28	5.36
0.83	12.10	5.55	13.85	1.7	7.920	0.47	7.80	6.05
1.19	12.66	5.47	14.49	1.8	7.933	0.45	8.16	6.33
1.69	10.37	4.33	13.34	3.0	4.497	0.43	8.15	5.19
2.30	9.24	3.72	12.82	3.6	3.582	0.41	8.20	4.62
2.90	8.21	3.43	12.08	3.9	3.122	0.43	7.98	4.11
3.61	7.98	3.17	12.11	4.1	2.933	0.41	8.12	3.99
4.12	7.48	3.04	11.74	4.3	2.755	0.42	8.00	3.74
4.82	7.47	2.94	11.82	4.4	2.714	0.41	8.09	3.73
5.77	7.08	2.84	11.54	4.5	2.588	0.41	8.00	3.54
6.79	6.82	2.83	11.30	4.5	2.525	0.43	7.89	3.41
7.51	7.02	2.79	11.53	4.5	2.557	0.41	8.02	3.51
8.52	7.00	2.77	11.54	4.5	2.546	0.41	8.03	3.50
9.27	6.95	2.83	11.42	4.5	2.556	0.42	7.95	3.48
10.03	6.93	2.82	11.41	4.5	2.545	0.42	7.95	3.46
10.78	7.07	2.86	11.50	4.4	2.593	0.42	7.97	3.53
11.28	7.26	2.88	11.68	4.4	2.642	0.41	8.05	3.63
11.77	7.18	2.86	11.62	4.4	2.619	0.41	8.03	3.59
12.27	7.19	2.94	11.56	4.4	2.648	0.42	7.96	3.60
12.77	7.51	2.88	11.93	4.4	2.700	0.40	8.17	3.76
13.52	7.56	2.85	12.01	4.5	2.697	0.39	8.23	3.78
14.28	7.36	2.77	11.89	4.5	2.624	0.39	8.21	3.68
14.78	7.19	2.78	11.72	4.5	2.590	0.40	8.12	3.60
15.29	7.05	2.72	11.62	4.6	2.540	0.40	8.10	3.52

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

Visual Description: Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	3

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	5.975	Diameter 1:	2.854
Length 2:	5.998	Diameter 2:	2.872
Length 3:	6.009	Diameter 3:	2.861
Avg. Length:	5.994	Avg. Diam.:	2.862

**PRESSURES (psi)**

Cell Pressure (psi)	64.6
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	14.6
Pore Pressure	
Response (%)	95

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	4.7
Final Change (ml)	19.3

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	13.61
Q	=	9.39

Initial Dial Reading (mil)	280
Dial Reading After Saturation (mil)	283
Dial Reading After Consolidation (mil)	362

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
9.8	0.000	50.0
13.8	0.000	50.3
23.5	0.001	50.9
47.8	0.008	53.3
63.3	0.013	54.7
74.5	0.019	55.7
88.2	0.028	56.9
99.1	0.037	57.9
110.0	0.049	58.7
121.3	0.070	59.7
130.4	0.100	60.4
125.0	0.135	60.2
104.7	0.172	58.8
102.6	0.214	58.6
108.5	0.244	58.2
115.3	0.286	58.1
114.7	0.343	58.3
116.4	0.404	58.3
117.0	0.448	58.3
121.9	0.508	58.5
124.7	0.554	58.5
122.9	0.600	58.6
123.4	0.644	58.7
127.8	0.674	58.7
124.9	0.704	58.7
124.6	0.734	58.9
118.3	0.765	59.2
106.2	0.810	59.6
100.4	0.856	59.8
95.7	0.885	59.2
93.5	0.915	59.0

Tested By:	MY	Date:	9/8/20	Input Checked By:	MPS	Date:	9/17/20
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**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		

Visual Description: Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	14.6	Stage No.	0
		Test No	3

**INITIAL DIMENSIONS**

Initial Sample Length (in)	5.99
Initial Sample Diameter (in)	2.86
Initial Sample Area (in <sup>2</sup> )	6.43
Initial Sample Volume (in <sup>3</sup> )	38.57

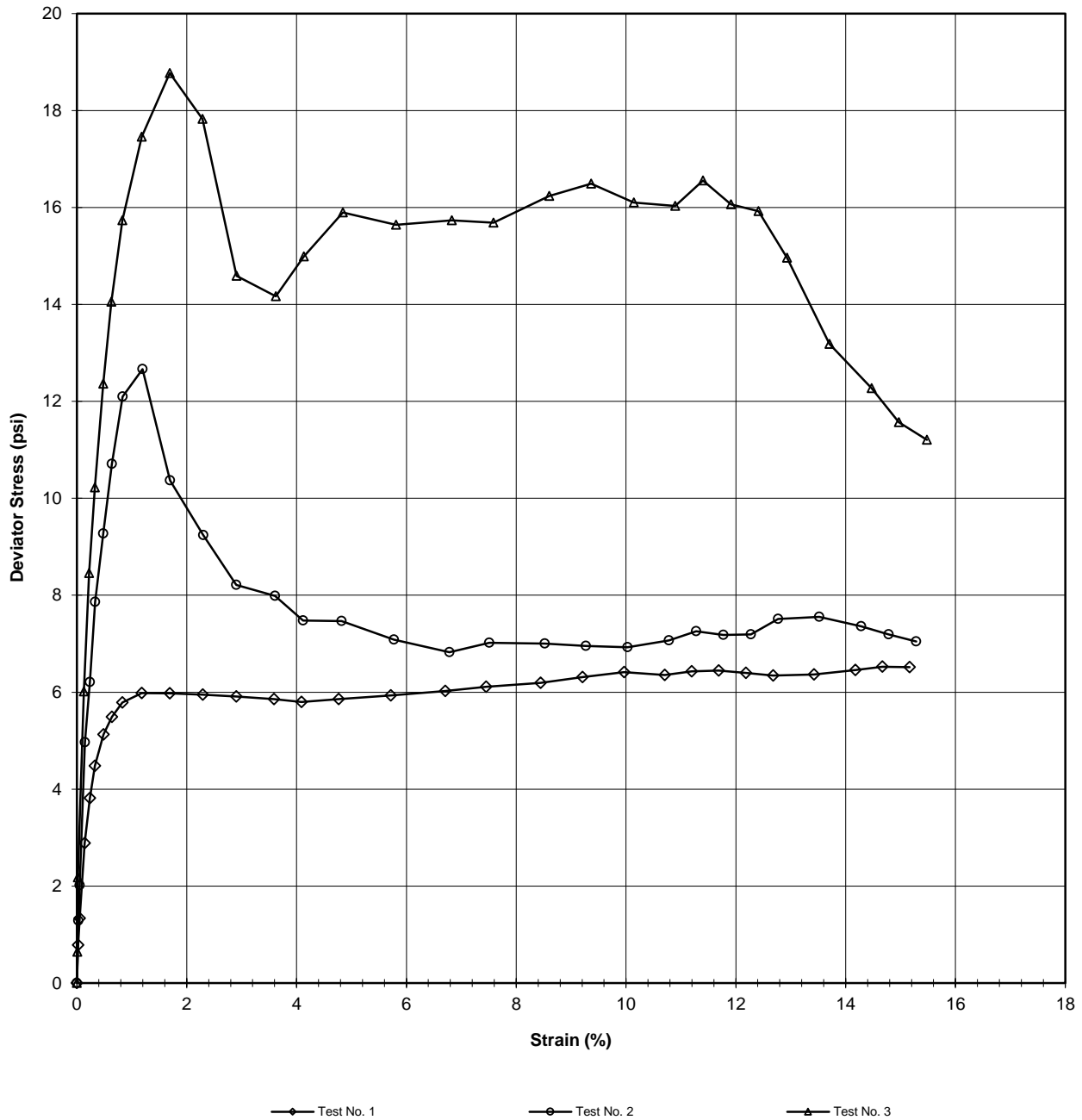
**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	37.33
Length After Consolidation (in)	5.91
Area After Consolidation (in <sup>2</sup> )	6.315

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.01	0.64	0.35	14.90	14.3	1.045	0.57	14.58	0.32
0.02	2.18	0.91	15.87	13.7	1.159	0.44	14.78	1.09
0.13	6.02	3.26	17.36	11.3	1.531	0.57	14.35	3.01
0.22	8.46	4.68	18.38	9.9	1.853	0.58	14.15	4.23
0.33	10.22	5.74	19.09	8.9	2.153	0.59	13.97	5.11
0.48	12.36	6.94	20.02	7.7	2.615	0.59	13.84	6.18
0.63	14.05	7.90	20.76	6.7	3.097	0.59	13.73	7.03
0.83	15.74	8.72	21.61	5.9	3.677	0.58	13.75	7.87
1.18	17.46	9.74	22.32	4.9	4.592	0.59	13.59	8.73
1.69	18.77	10.37	23.00	4.2	5.439	0.58	13.61	9.39
2.29	17.83	10.18	22.24	4.4	5.036	0.60	13.33	8.91
2.91	14.59	8.78	20.42	5.8	3.505	0.63	13.12	7.30
3.62	14.17	8.59	20.18	6.0	3.357	0.64	13.10	7.08
4.13	14.99	8.19	21.40	6.4	3.340	0.58	13.90	7.50
4.84	15.90	8.14	22.36	6.5	3.460	0.54	14.41	7.95
5.81	15.64	8.27	21.98	6.3	3.470	0.56	14.16	7.82
6.83	15.73	8.34	21.99	6.3	3.513	0.56	14.13	7.87
7.58	15.69	8.33	21.95	6.3	3.503	0.56	14.11	7.84
8.60	16.24	8.48	22.35	6.1	3.655	0.55	14.23	8.12
9.36	16.49	8.49	22.60	6.1	3.698	0.54	14.36	8.25
10.14	16.10	8.58	22.13	6.0	3.673	0.56	14.08	8.05
10.90	16.03	8.69	21.94	5.9	3.714	0.57	13.92	8.02
11.40	16.55	8.68	22.47	5.9	3.798	0.55	14.19	8.28
11.91	16.06	8.70	21.96	5.9	3.724	0.57	13.93	8.03
12.41	15.92	8.91	21.61	5.7	3.798	0.59	13.65	7.96
12.93	14.96	9.17	20.39	5.4	3.757	0.65	12.91	7.48
13.70	13.18	9.60	18.19	5.0	3.635	0.77	11.59	6.59
14.47	12.27	9.78	17.09	4.8	3.545	0.84	10.96	6.13
14.97	11.57	9.16	17.01	5.4	3.127	0.83	11.22	5.78
15.48	11.20	9.03	16.78	5.6	3.011	0.85	11.17	5.60

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN_20_UD
Client Reference:	USACE Princeville	Depth (ft):	15.0'-17.0'
Project No.:	R-2020-164-002	Sample No.:	SPT09-2
Lab ID:	R-2020-164-002-039		
Visual Description:	Gray Clay (UNDISTURBED)		



Tested By: MY	Date: 9/8/20	Approved By: MPS	Date: 9/17/20
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**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-11

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-002  
 Lab ID: R-2020-164-002-039      Specific Gravity (assumed)      2.7

Visual Description: Gray Clay (UNDISTURBED)

**SAMPLE CONDITION SUMMARY**

Boring No.:	PRN_20_UD	PRN_20_UD	PRN_20_UD
Depth (ft):	15.0'-17.0'	15.0'-17.0'	15.0'-17.0'
Sample No.:	SPT09-2	SPT09-2	SPT09-2
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	62.1	62.1	62.1
Total Unit Weight (pcf)	93.7	98.6	99.8
Dry Unit Weight (pcf)	57.8	60.8	61.6
Moisture Content (%) (FINAL)	64.2	69.9	63.5
Initial State Void Ratio, e	1.914	1.770	1.738
Void Ratio at Shear, e	1.864	1.732	1.651



Tested By: MY      Date: 9/8/20      Input Checked By: MPS      Date: 9/17/20





October 5, 2020

Project No. R-2020-164-004

Mr. Lee Stone  
Catlin Engineers & Scientists  
P.O. Box 10279  
Wilmington, NC 28404

lee.stone@catlinusa.com

**Transmittal**  
**Laboratory Test Results**  
**USACE Princeville**

Please find attached the laboratory test results for the above referenced project. The tests were outlined on the Project Verification Form that was transmitted to your firm prior to the testing. The testing was performed in general accordance with the methods listed on the enclosed data sheets. The test results are believed to be representative of the samples that were submitted for testing and are indicative only of the specimens which were evaluated. We have no direct knowledge of the origin of the samples and imply no position with regard to the nature of the test results, i.e. pass/fail and no claims as to the suitability of the material for its intended use.

The test data and all associated project information provided shall be held in strict confidence and disclosed to other parties only with authorization by our Client. The test data submitted herein is considered integral with this report and is not to be reproduced except in whole and only with the authorization of the Client and Geotechnics. The remaining sample materials for this project will be retained for a minimum of 90 days as directed by the Geotechnics' Quality Program.

We are pleased to provide these testing services. Should you have any questions or if we may be of further assistance, please contact our office.

Respectively submitted,  
**Geotechnics, Inc.**

Michael P. Smith  
VP Regional Manager

***We understand that you have a choice in your laboratory services  
and we thank you for choosing Geotechnics.***

## MOISTURE CONTENT

ASTM D 2216-10

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-004

Lab ID:	002	005
Boring No.:	PRN-20-UD	PRN-20-UD
Depth (ft):	10.0-12.0	22.0-24.0
Sample No.:	CPT-18	CPT-31
Tare Number	715	705
Wt. of Tare & Wet Sample (g)	265.85	448.86
Wt. of Tare & Dry Sample (g)	230.66	370.17
Weight of Tare (g)	90.37	91.42
Weight of Water (g)	35.19	78.69
Weight of Dry Sample (g)	140.29	278.75
<b>Water Content (%)</b>	<b>25.1</b>	<b>28.2</b>

Notes :

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*Tested By*    *NL*                    *Date*        *9/21/20*    *Checked By*    *GEM*                    *Date*        *9/30/20*

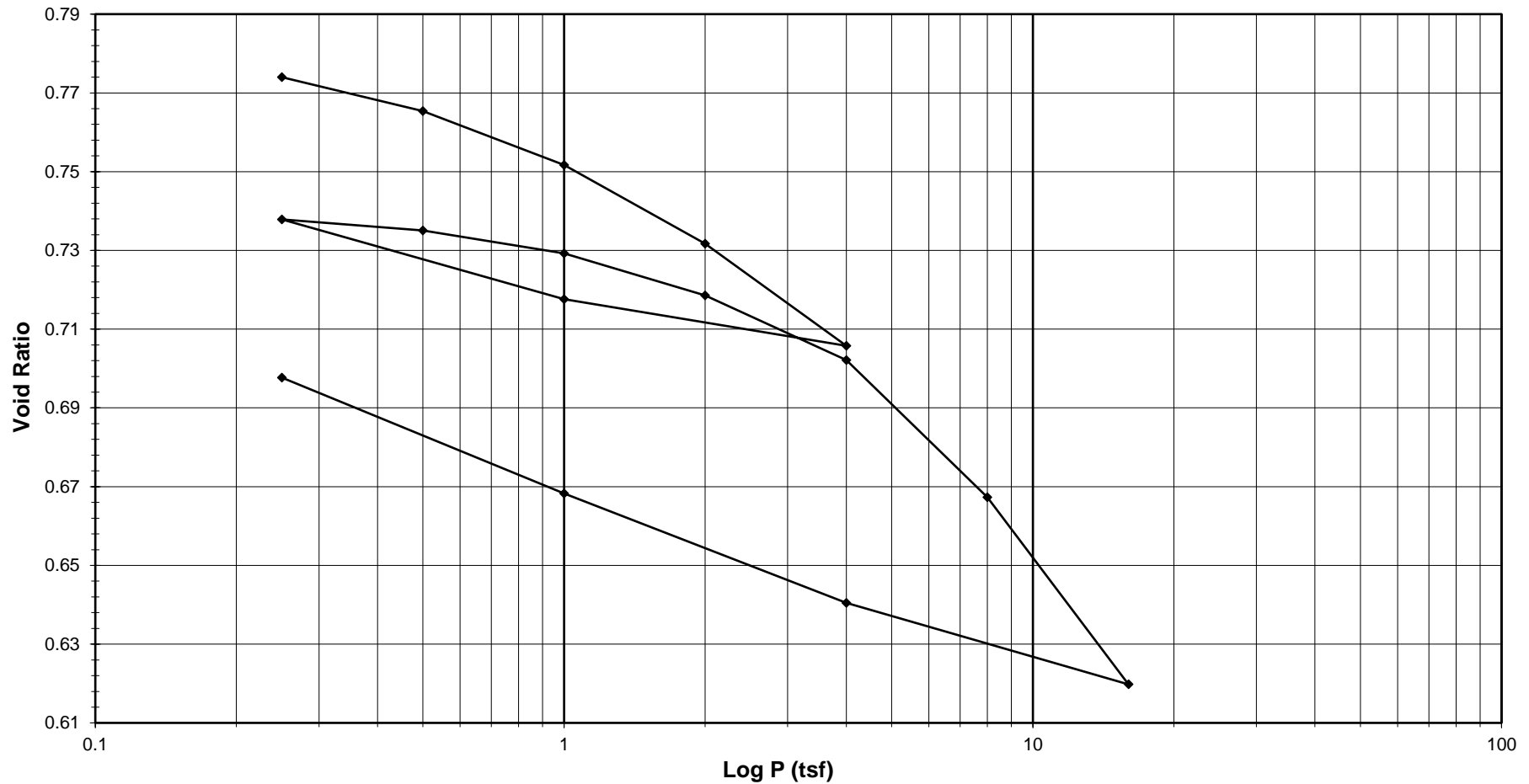
# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Catlin Engineers & Scientists  
 Client Reference USACE Princeville  
 Project No. R-2020-164-004  
 Lab ID R-2020-164-004-001

Boring No. PRN-20-UD  
 Depth (ft) 5.0'-7.0'  
 Sample No. CPT-01  
 Visual Description Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/18/2020 Approved By MPS Date 9/28/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R470  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>Test Data Summary</u>							
			<u>Applied Pressure</u> (tsf)	<u>Final Dial Reading</u> (div)	<u>Machine Deflection</u> (div)	<u>Corrected Reading</u> (div)	<u>Height of Sample</u> (mm)	<u>Volume (cc)</u>	<u>Dry Density</u> (g/cc)	<u>Void Ratio</u>
<i>Water Content</i>										
Tare Number	TB-10	826								
Wt. Tare & WS (g)	531.72	288.47								
Wt. Tare & DS (g)	442.56	257.23								
Wt. Water (g)	89.16	31.24	Seating	0	0	0	25.400	80.440	1.51652	<b>0.78039</b>
Wt. Tare (g)	134.98	132.27	0.25	58.8	22.8	36.0	25.309	80.150	1.52199	<b>0.77399</b>
Wt. DS (g)	307.58	124.96	0.5	128.6	44.2	84.4	25.186	79.761	1.52943	<b>0.76536</b>
Water Content (%)	28.99	25.00	1	221.6	60.5	161.1	24.991	79.144	1.54135	<b>0.75171</b>
			2	367.1	93.6	273.5	24.705	78.240	1.55916	<b>0.73171</b>
			4	549.7	130.5	419.2	24.335	77.067	1.58288	<b>0.70575</b>
<i>Sample Parameters</i>			1	435.8	83.0	352.8	24.504	77.602	1.57198	<b>0.71758</b>
Sample Diameter (in)	2.5	2.5	0.25	291.3	52.7	238.7	24.794	78.520	1.55360	<b>0.73790</b>
Sample Height (in)	1.0000	0.9536	0.5	313.0	58.3	254.7	24.753	78.391	1.55616	<b>0.73504</b>
Sample Volume (cc)	80.44	76.70	1	362.3	74.9	287.4	24.670	78.128	1.56139	<b>0.72923</b>
Wt. Wet Sample + Ring (g)	371.51	366.65	2	447.1	100.0	347.1	24.518	77.648	1.57105	<b>0.71859</b>
Wt. of Ring (g)	214.16	214.16	4	572.8	133.4	439.5	24.284	76.905	1.58623	<b>0.70215</b>
Wt. of Wet Sample (g)	157.35	152.49	8	805.1	169.9	635.2	23.787	75.330	1.61939	<b>0.66730</b>
Wet Density (pcf)	122.06	124.05	16	1128.1	226.1	902.1	23.109	73.183	1.66689	<b>0.61979</b>
Wet Density (g/cc)	1.96	1.99	4	947.6	161.7	786.0	23.404	74.117	1.64588	<b>0.64046</b>
Water Content (%)	28.99	25.00	1	741.7	111.7	629.9	23.800	75.373	1.61847	<b>0.66824</b>
Wt. of Dry Sample (g)	121.99	121.99	0.25	537.4	73.0	464.4	24.220	76.704	1.59038	<b>0.69771</b>
Dry Density (pcf)	94.63	99.24								
Dry Density (g/cc)	1.52	1.59								
Void Ratio	0.7804	0.6977								
Saturation (%)	100.29	96.74								
Specific Gravity	2.70	Assumed								

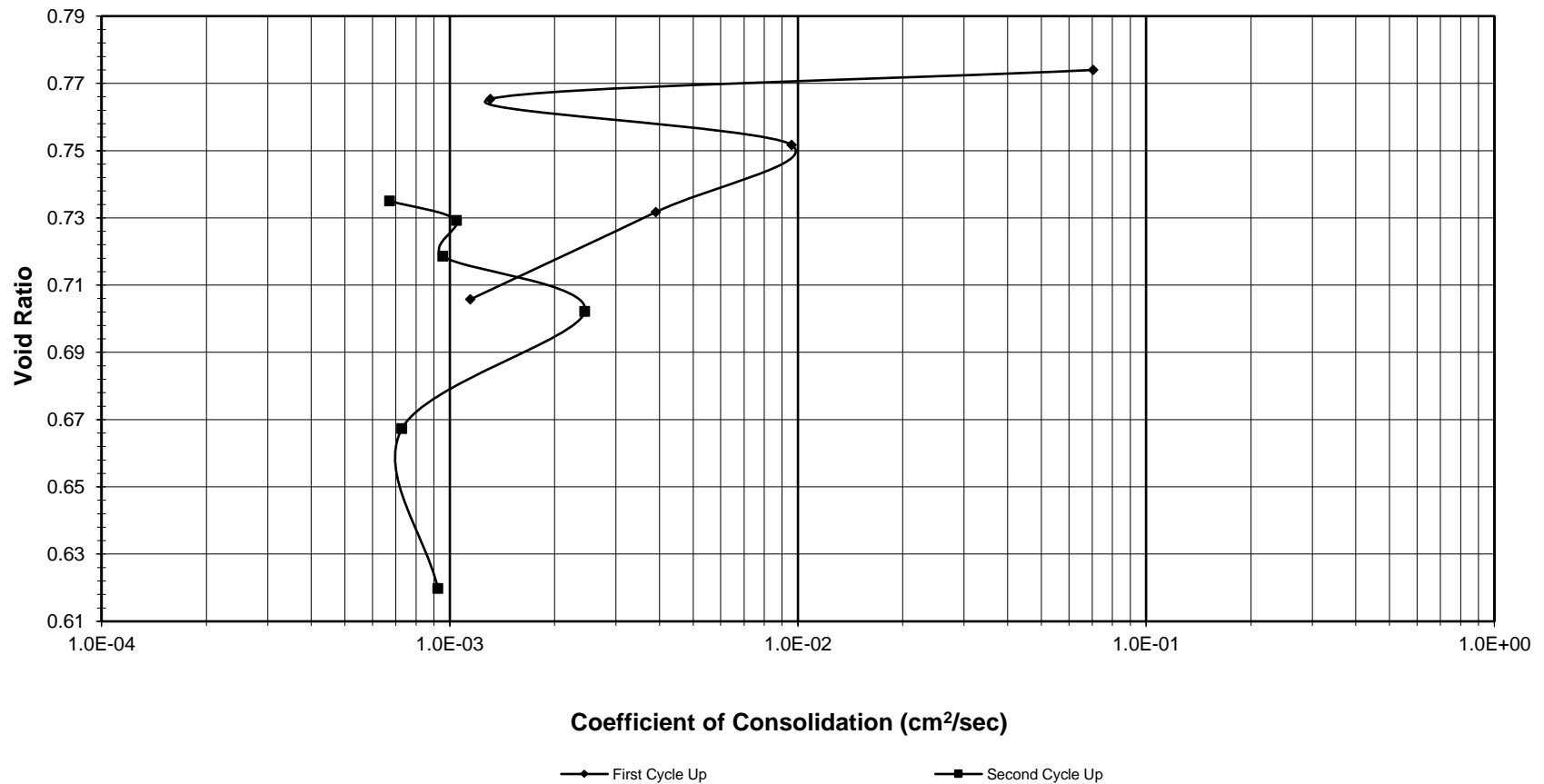
Tested By NL Date 9/18/2020 Input Checked By GEM Date 9/28/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/18/2020 Input Checked By GEM Date 9/28/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R470  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	C <sub>v</sub> Test Data Summary						
			Load Increment	Dial Reading @ t <sub>50</sub>	Machine Deflection	Corrected Dial Reading @ t <sub>50</sub>	Sample Height @ t <sub>50</sub>	Time t <sub>50</sub>	C <sub>v</sub>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
<i>Water Content</i>									
<i>Tare Number</i>	TB-10	826							
<i>Wt. Tare &amp; WS (g)</i>	531.72	288.47							
<i>Wt. Tare &amp; DS (g)</i>	442.56	257.23							
<i>Wt. Water (g)</i>	89.16	31.24	0 - 0.25	36.9	22.8	14.0	2.536	<b>0.08</b>	<b>0.07041</b>
<i>Wt. Tare (g)</i>	134.98	132.27	0.25 - 0.5	111.4	44.2	67.2	2.523	<b>4.00</b>	<b>0.00131</b>
<i>Wt. DS (g)</i>	307.58	124.96	0.5 - 1.0	176.7	60.5	116.2	2.510	<b>0.54</b>	<b>0.00958</b>
<i>Water Content (%)</i>	28.99	25.00	1.0 - 2.0	303.8	93.6	210.1	2.487	<b>1.30</b>	<b>0.00390</b>
			2.0 - 4.0	488.9	130.5	358.4	2.449	<b>4.30</b>	<b>0.00114</b>
<i>Sample Parameters</i>			4.0 - 1.0	NA	83.0	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Diameter (in)</i>	2.5	2.5	1.0 - 0.25	NA	52.7	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Height (in)</i>	1.000	0.954	0.25 - 0.5	303.7	58.3	245.4	2.478	<b>7.50</b>	<b>0.00067</b>
<i>Sample Volume (cc)</i>	80.44	76.70	0.5 - 1.0	340.7	74.9	265.8	2.472	<b>4.80</b>	<b>0.00105</b>
<i>Wt. Wet Sample + Ring (g)</i>	371.51	366.65	1.0 - 2.0	413.7	100.0	313.6	2.460	<b>5.20</b>	<b>0.00096</b>
<i>Wt. of Ring (g)</i>	214.16	214.16	2.0 - 4.0	525.7	133.4	392.3	2.440	<b>2.00</b>	<b>0.00244</b>
<i>Wt. of Wet Sample (g)</i>	157.35	152.49	4.0 - 8.0	712.5	169.9	542.6	2.402	<b>6.50</b>	<b>0.00073</b>
<i>Wet Density (pcf)</i>	122.06	124.05	8.0 - 16.0	977.8	226.1	751.7	2.349	<b>4.90</b>	<b>0.00092</b>
<i>Wet Density (g/cc)</i>	1.96	1.99	16.0 - 4.0	NA	161.7	NA	NA	<b>NA</b>	<b>NA</b>
<i>Water Content (%)</i>	28.99	25.00	4.0 - 1.0	NA	111.7	NA	NA	<b>NA</b>	<b>NA</b>
<i>Wt. of Dry Sample (g)</i>	121.99	121.99	1.0 - 0.25	NA	73.0	NA	NA	<b>NA</b>	<b>NA</b>
<i>Dry Density (pcf)</i>	94.63	99.24							
<i>Dry Density (g/cc)</i>	1.52	1.59							
<i>Void Ratio</i>	0.7804	0.6977							
<i>Saturation (%)</i>	100.29	96.74							
<i>Specific Gravity</i>	2.7	Assumed							

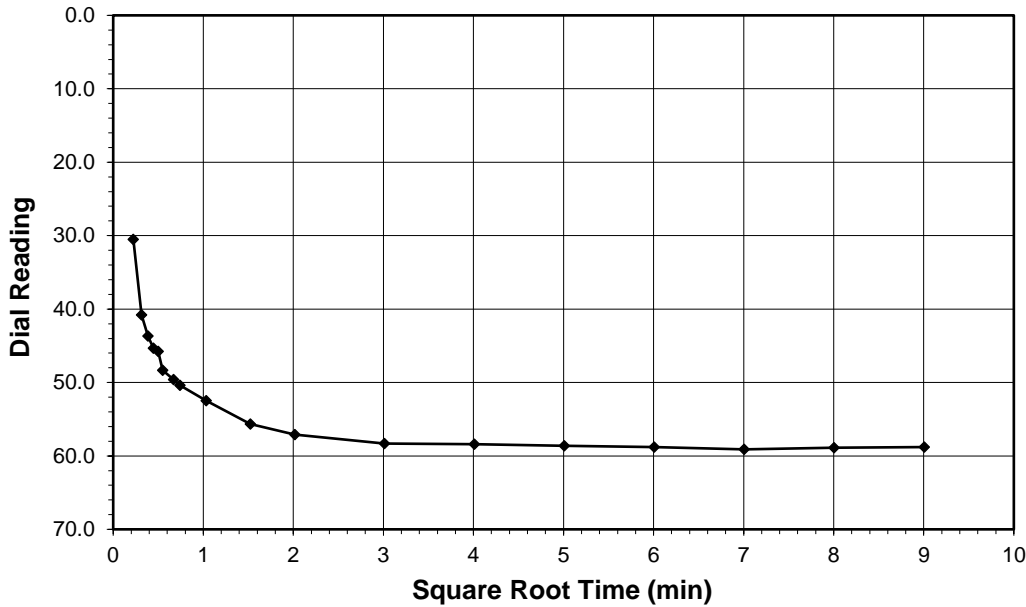
Tested By NL Date 9/18/2020 Input Checked By GEM Date 9/28/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

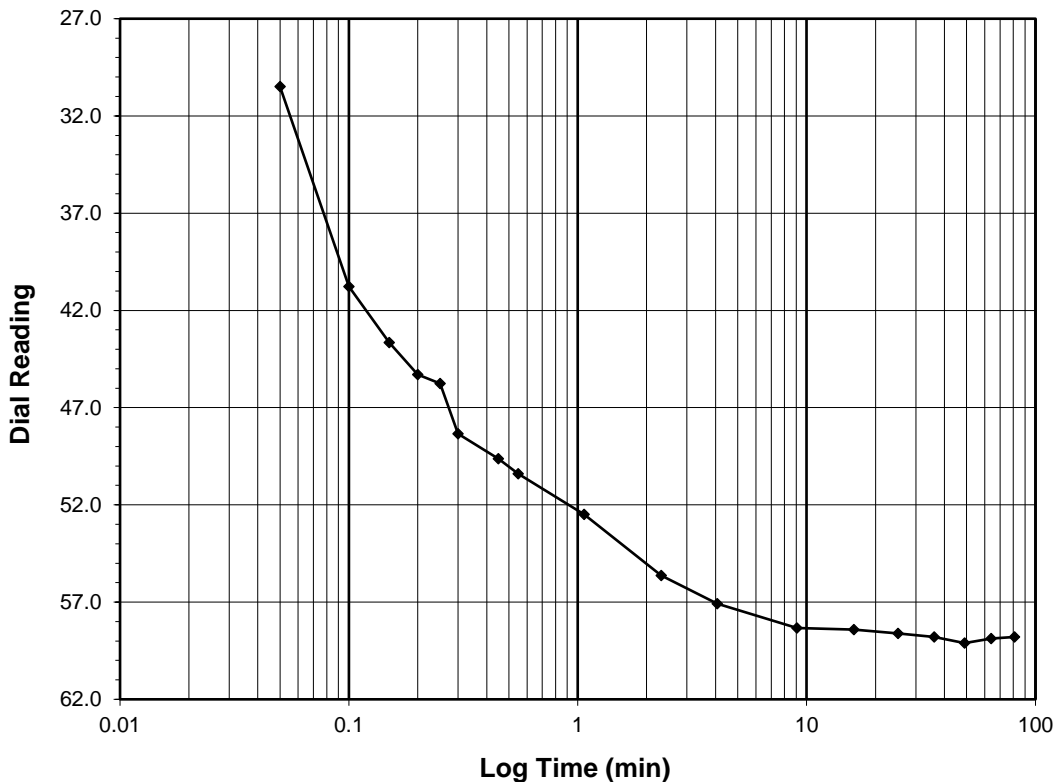
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>58.8</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/18/2020</b>
<b>Start Time</b>	<b>7:47:32</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	30.5
0.10	40.8
0.15	43.7
0.20	45.3
0.25	45.8
0.30	48.3
0.45	49.6
0.55	50.4
1.07	52.5
2.32	55.6
4.07	57.1
9.07	58.3
16.07	58.4
25.07	58.6
36.07	58.8
49.07	59.1
64.07	58.9
81.07	58.8



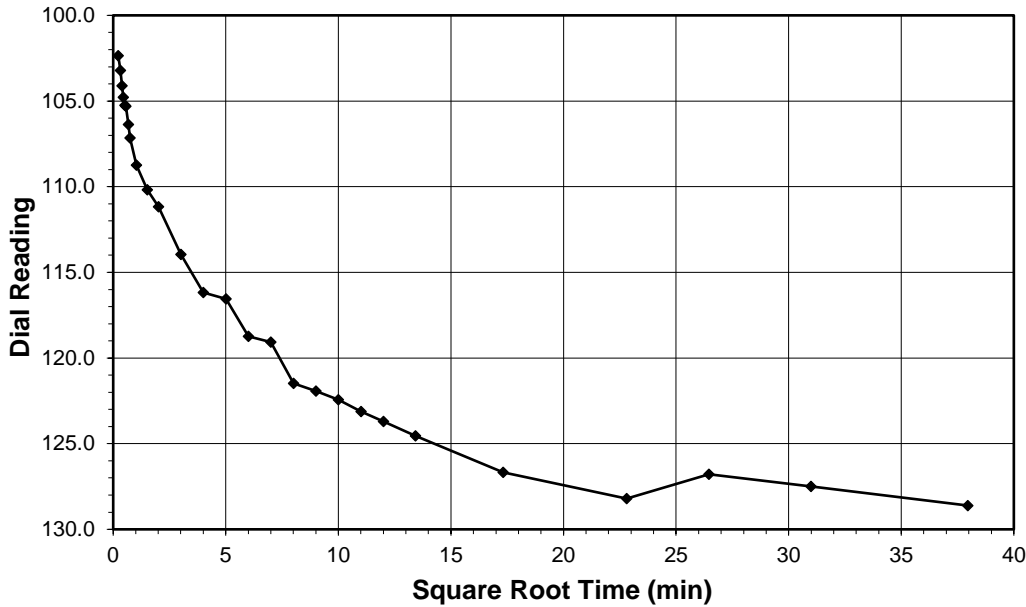
Tested By **NL** Date **9/18/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

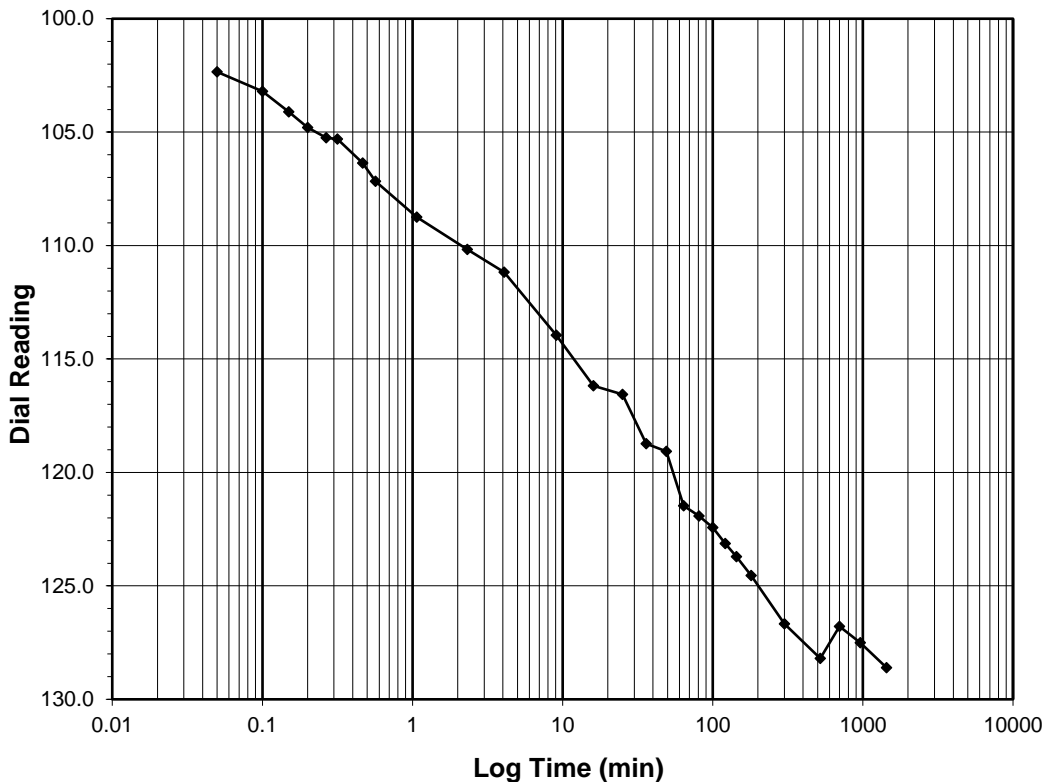
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>128.6</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/18/2020
Start Time	9:14:40

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>58.8</b>
0.05	102.3
0.10	103.2
0.15	104.1
0.20	104.8
0.27	105.2
0.32	105.3
0.47	106.4
0.57	107.2
1.07	108.7
2.32	110.2
4.07	111.2
9.07	113.9
16.07	116.2
25.07	116.6
36.07	118.7
49.07	119.1
64.07	121.5
81.07	121.9
100.07	122.4
121.07	123.1
144.07	123.7
180.07	124.5
300.07	126.7
520.07	128.2
700.07	126.8
960.07	127.5
1440.05	128.6



Tested By **NL** Date **9/18/2020** Checked By **GEM** Date **9/28/2020**

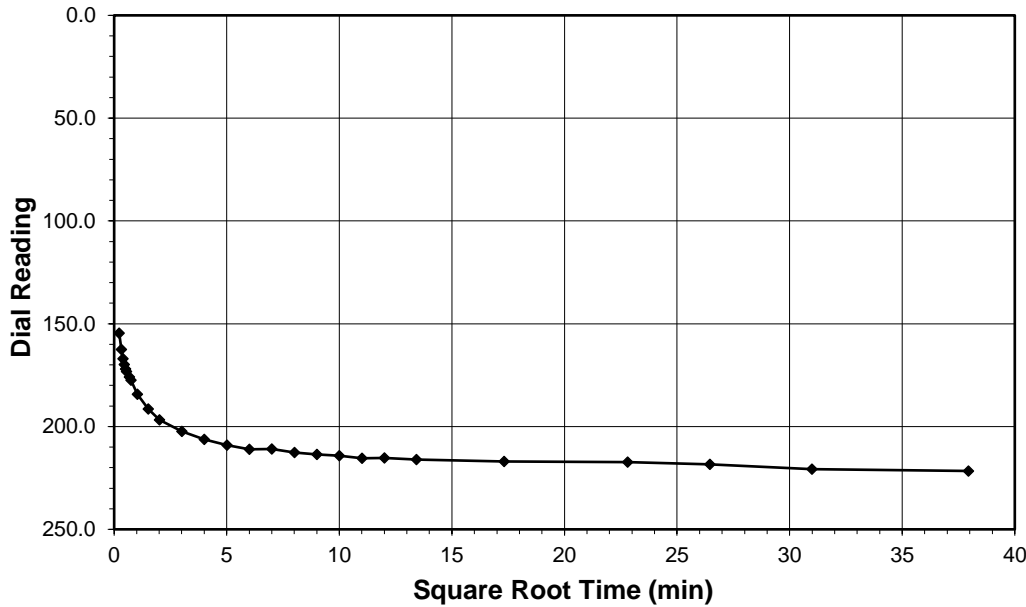


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

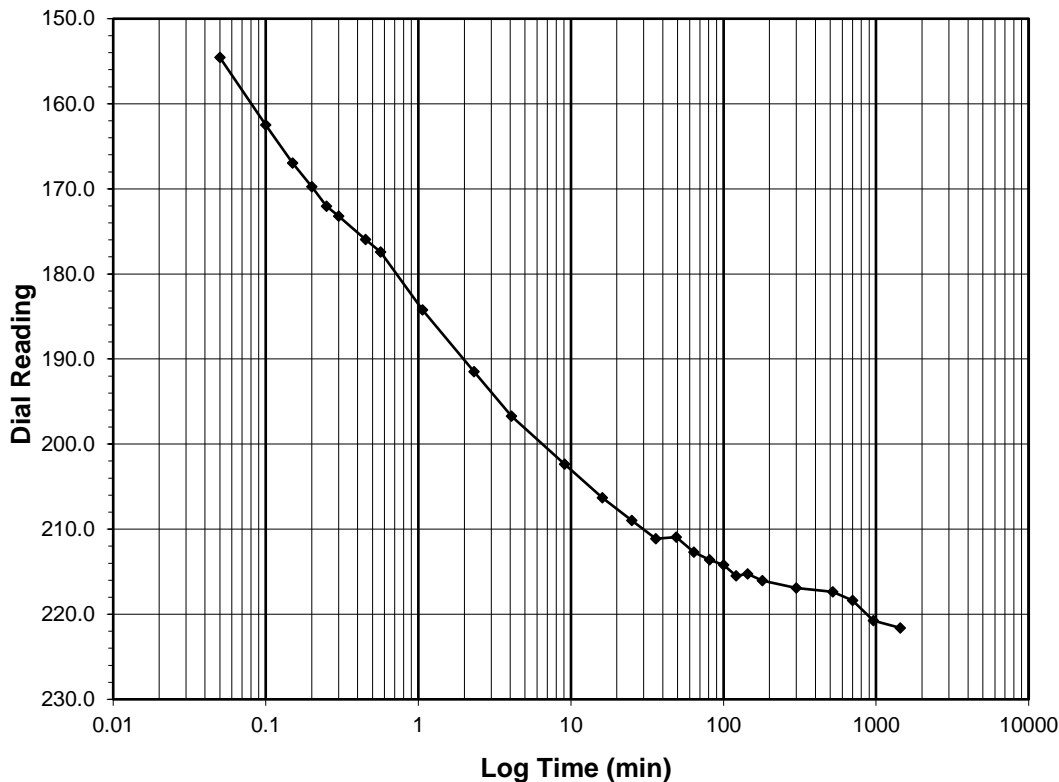
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>221.6</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/19/2020
Start Time	9:14:43

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>128.6</b>
0.05	154.6
0.10	162.5
0.15	167.0
0.20	169.8
0.25	172.0
0.30	173.2
0.45	175.9
0.57	177.4
1.07	184.2
2.32	191.5
4.07	196.7
9.07	202.4
16.07	206.3
25.07	209.0
36.07	211.1
49.07	210.9
64.07	212.7
81.07	213.6
100.07	214.2
121.08	215.5
144.08	215.3
180.08	216.0
300.08	216.9
520.08	217.4
700.08	218.4
960.08	220.7
1440.00	221.6



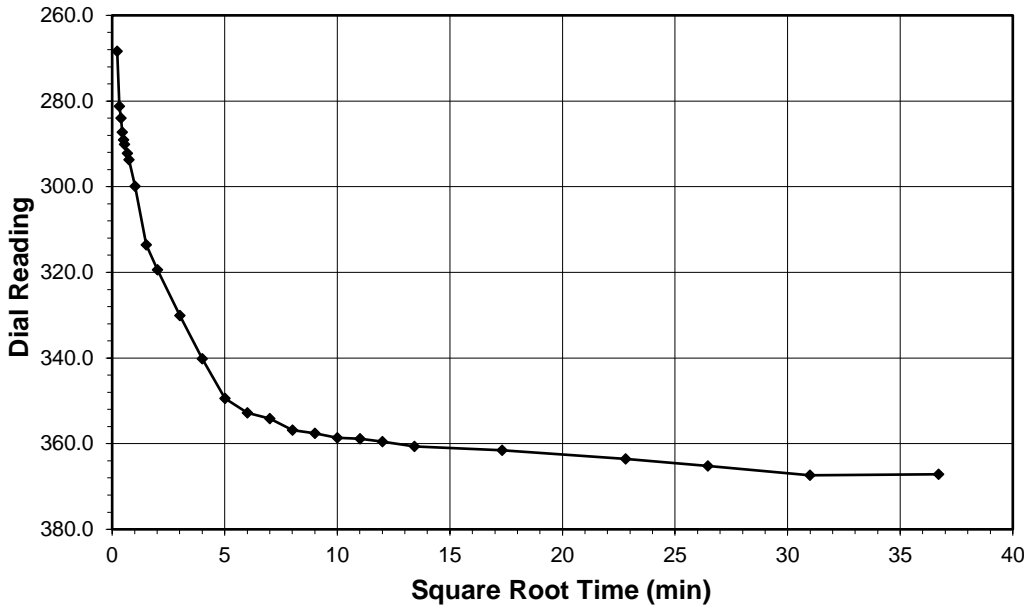
Tested By **NL** Date **9/19/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

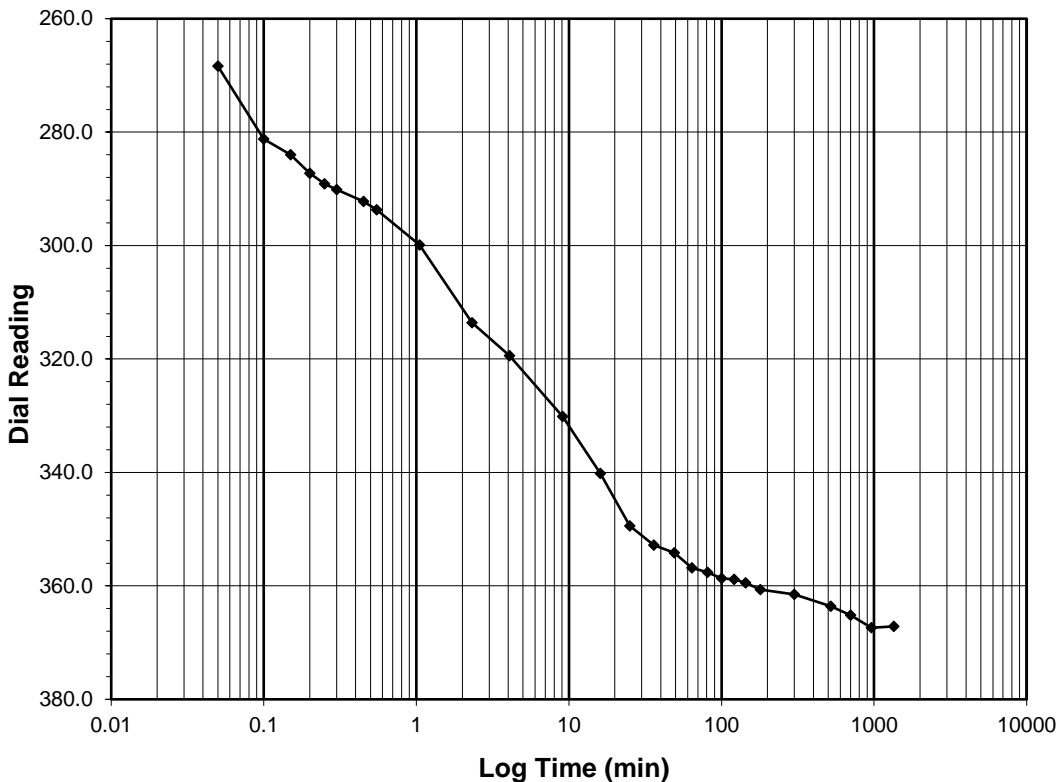
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



**Test Load (tsf)** 1.0-2.0  
**Final Reading (div)** 367.1  
**Consolidometer No.** R470  
 1 Division (in) 0.0001

**Start Date** 9/20/2020  
**Start Time** 9:14:43

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>221.6</b>
0.05	268.4
0.10	281.2
0.15	284.0
0.20	287.3
0.25	289.1
0.30	290.1
0.45	292.2
0.55	293.7
1.05	299.9
2.32	313.6
4.07	319.4
9.07	330.1
16.07	340.2
25.07	349.4
36.07	352.8
49.07	354.2
64.07	356.8
81.07	357.6
100.07	358.7
121.07	358.9
144.07	359.5
180.07	360.6
300.07	361.5
520.07	363.6
700.08	365.2
960.08	367.4
1347.65	367.1



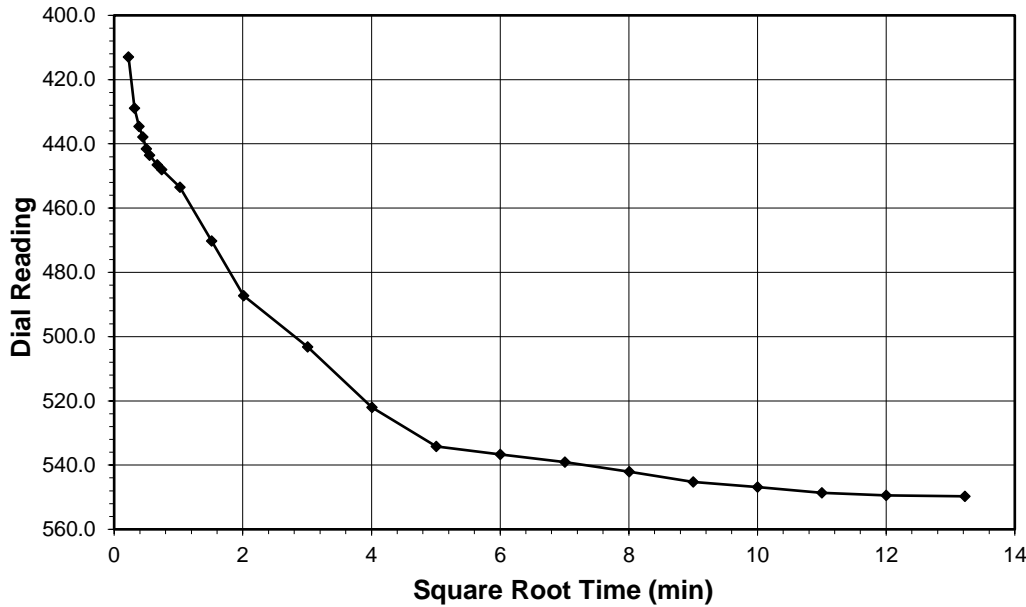
Tested By **NL** Date **9/20/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

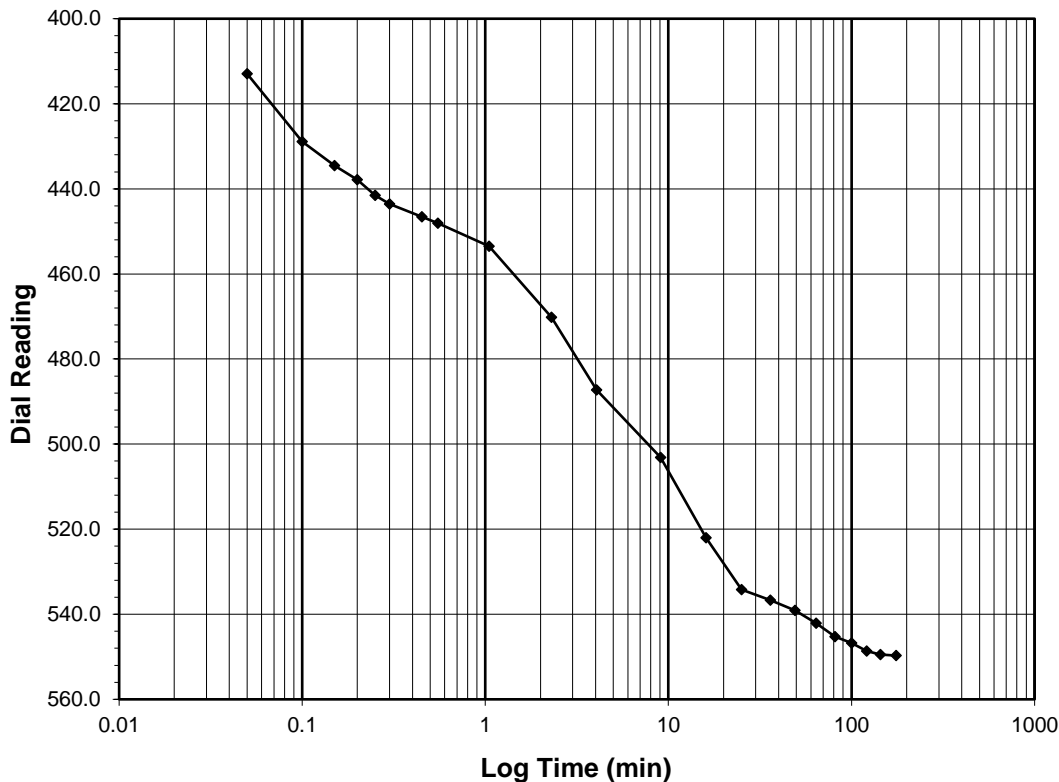
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>549.7</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/21/2020
Start Time	7:42:22

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>367.1</b>
0.05	413.0
0.10	428.9
0.15	434.6
0.20	437.8
0.25	441.6
0.30	443.6
0.45	446.6
0.55	448.1
1.05	453.5
2.30	470.2
4.05	487.3
9.05	503.2
16.05	522.0
25.05	534.2
36.05	536.7
49.07	539.1
64.07	542.1
81.07	545.3
100.07	546.8
121.07	548.6
144.07	549.5
174.92	549.7



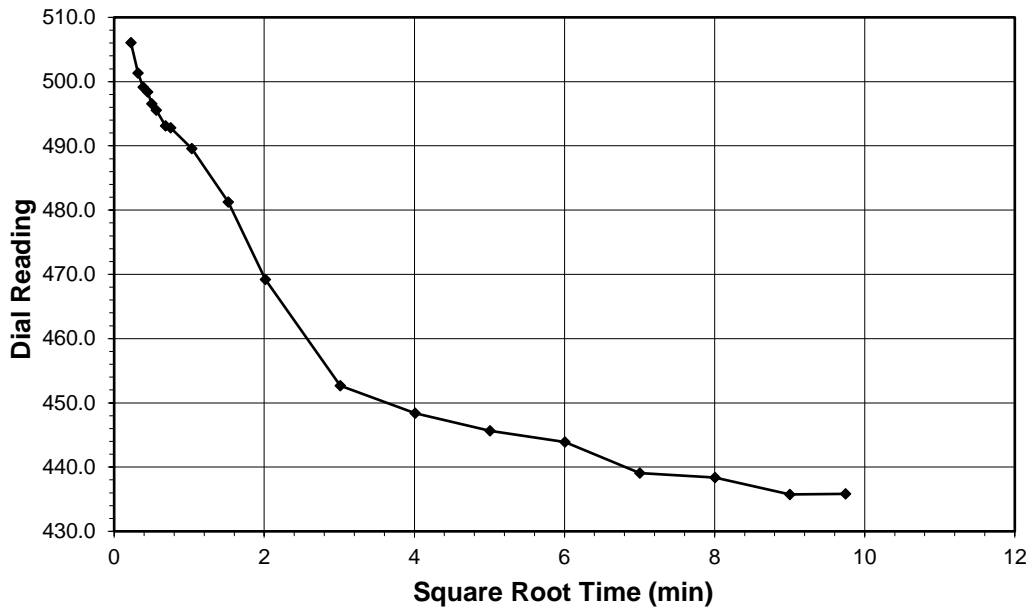
Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

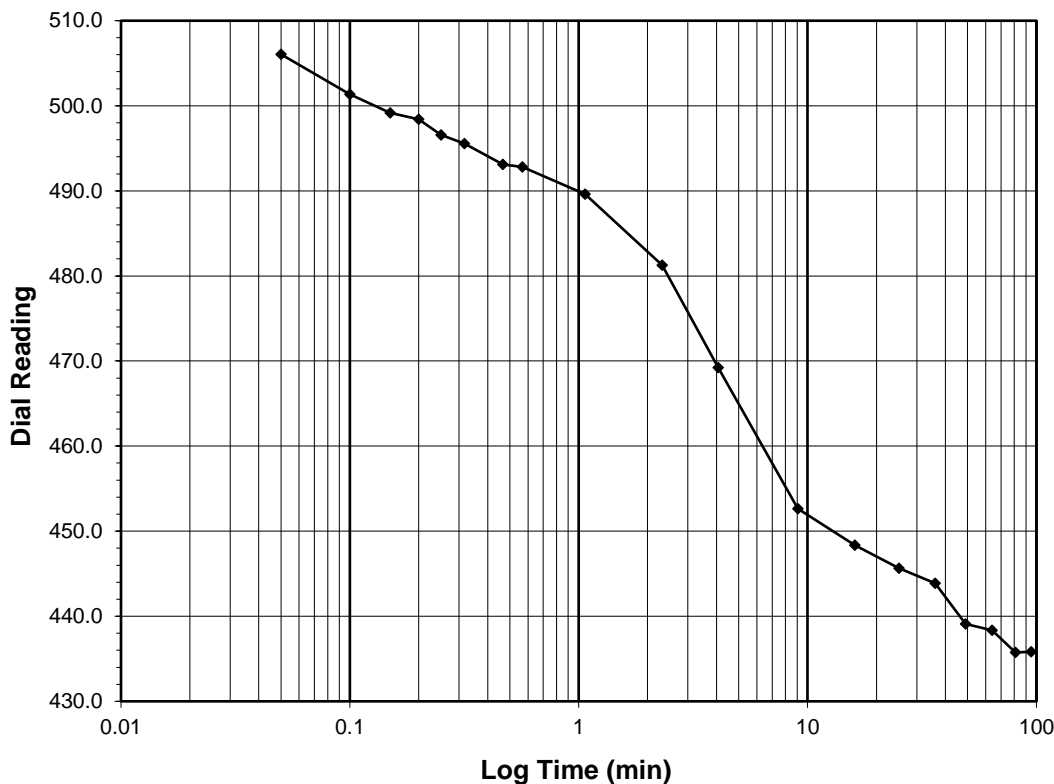
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>435.8</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/21/2020</b>
<b>Start Time</b>	<b>10:37:17</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>549.7</b>
0.05	506.1
0.10	501.3
0.15	499.2
0.20	498.4
0.25	496.6
0.32	495.6
0.47	493.1
0.57	492.8
1.07	489.6
2.32	481.3
4.07	469.2
9.07	452.7
16.07	448.4
25.07	445.6
36.07	443.9
49.07	439.1
64.07	438.3
81.07	435.7
94.93	435.8



Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/28/2020**

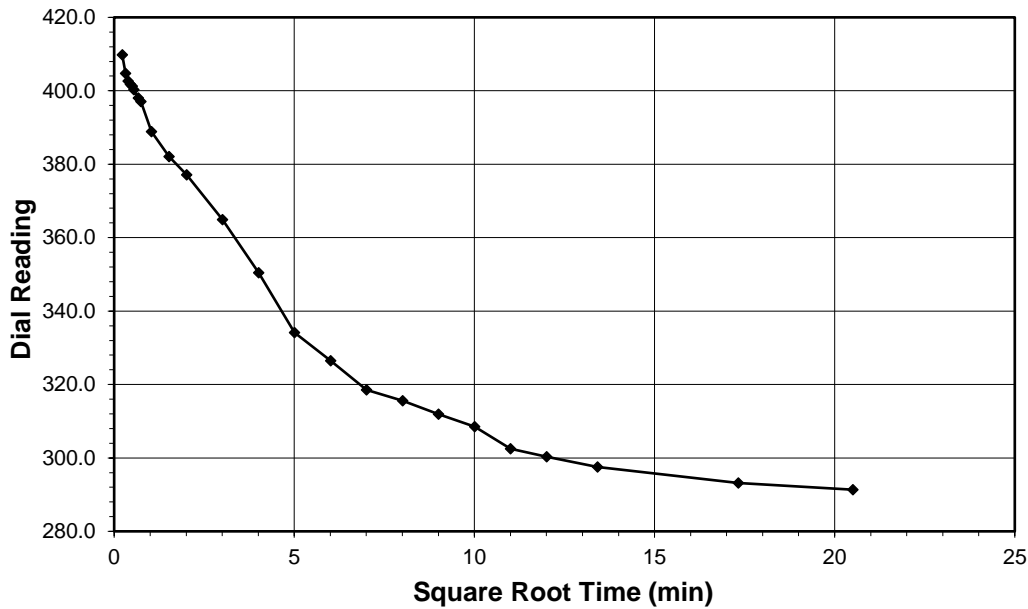


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

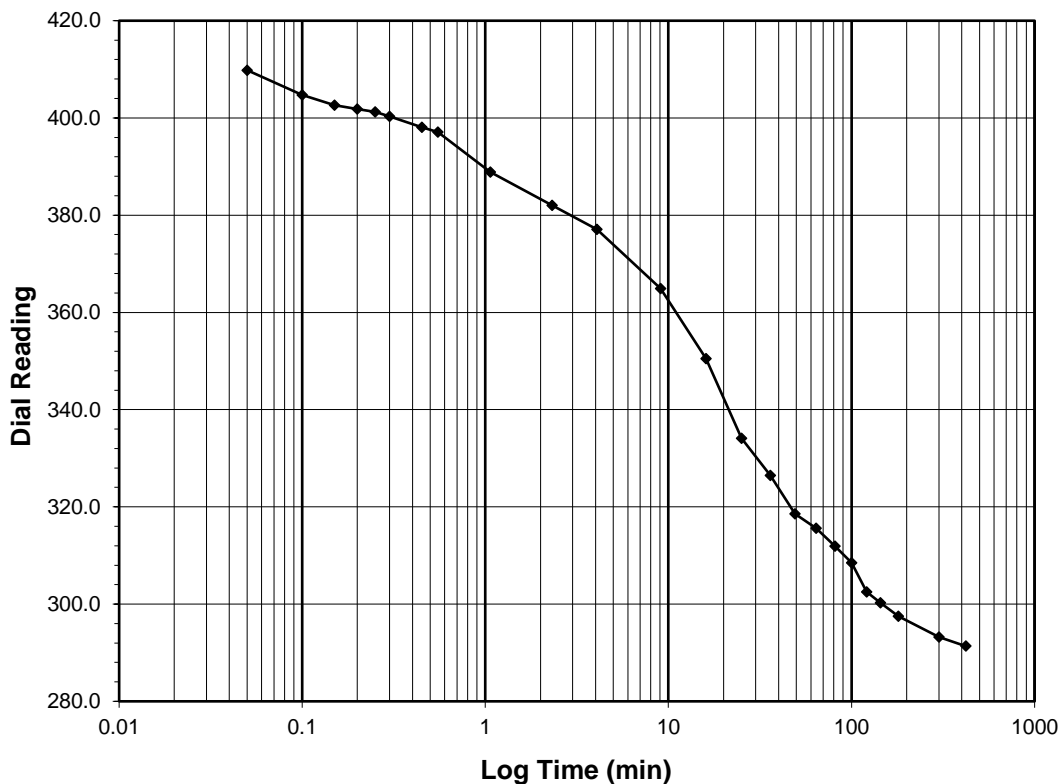
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>291.3</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/21/2020</b>
<b>Start Time</b>	<b>12:12:13</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>435.8</b>
0.05	409.8
0.10	404.7
0.15	402.6
0.20	401.8
0.25	401.2
0.30	400.3
0.45	398.1
0.55	397.1
1.07	388.8
2.32	382.0
4.07	377.1
9.07	364.9
16.07	350.5
25.07	334.1
36.07	326.5
49.07	318.6
64.07	315.6
81.07	311.9
100.07	308.5
121.07	302.5
144.07	300.3
180.07	297.5
300.08	293.2
420.42	291.3



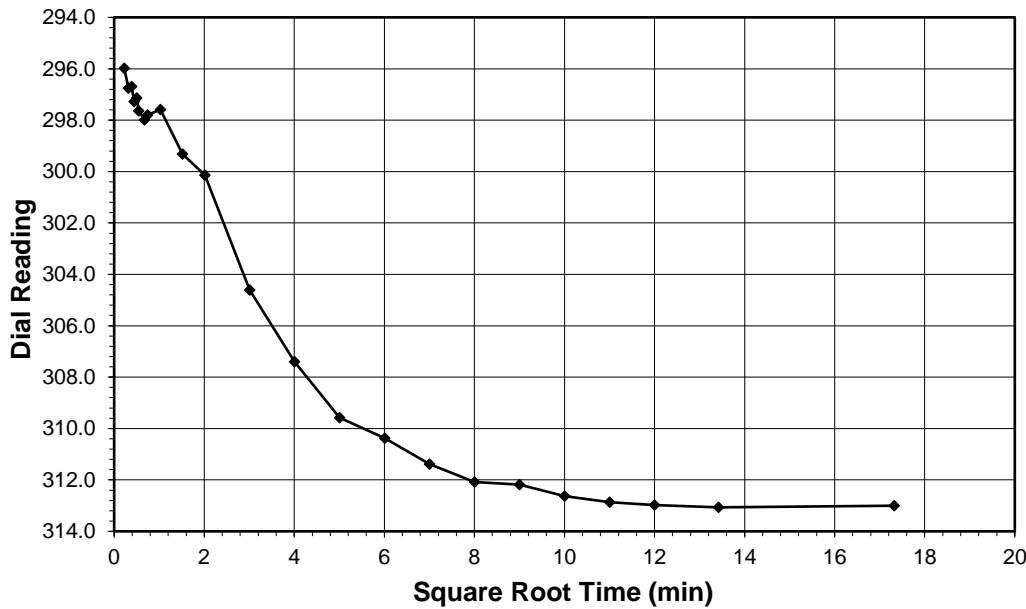
Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

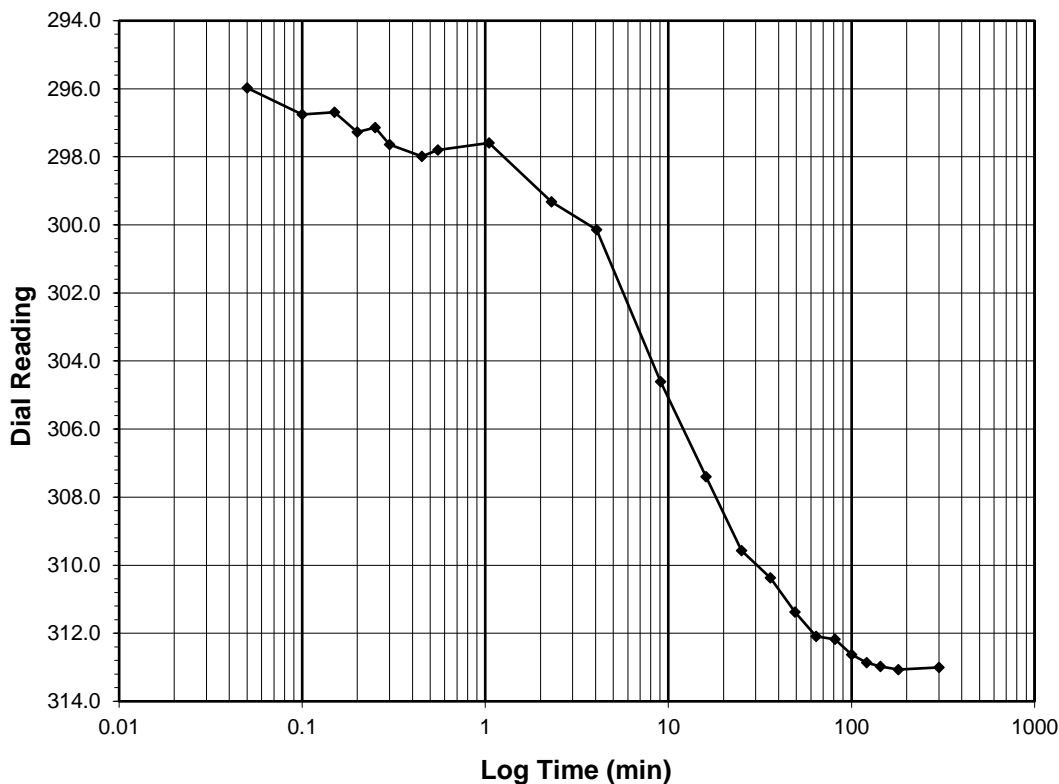
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>313.0</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/21/2020
Start Time	19:12:38

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>291.3</b>
0.05	296.0
0.10	296.8
0.15	296.7
0.20	297.3
0.25	297.1
0.30	297.6
0.45	298.0
0.55	297.8
1.05	297.6
2.30	299.3
4.05	300.1
9.05	304.6
16.05	307.4
25.05	309.6
36.07	310.4
49.07	311.4
64.07	312.1
81.07	312.2
100.07	312.6
121.07	312.9
144.07	313.0
180.07	313.1
300.07	313.0



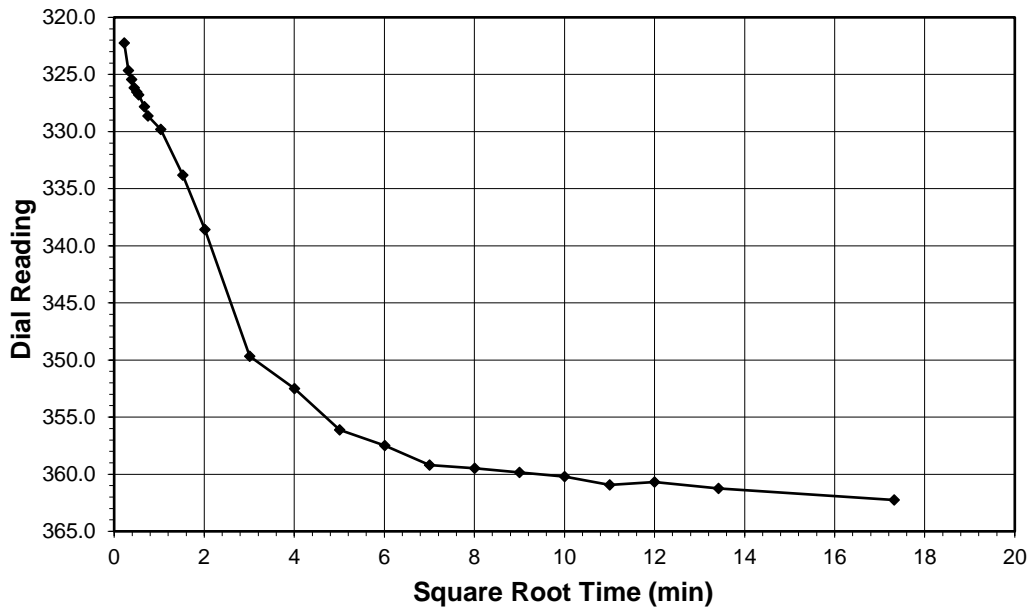
Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

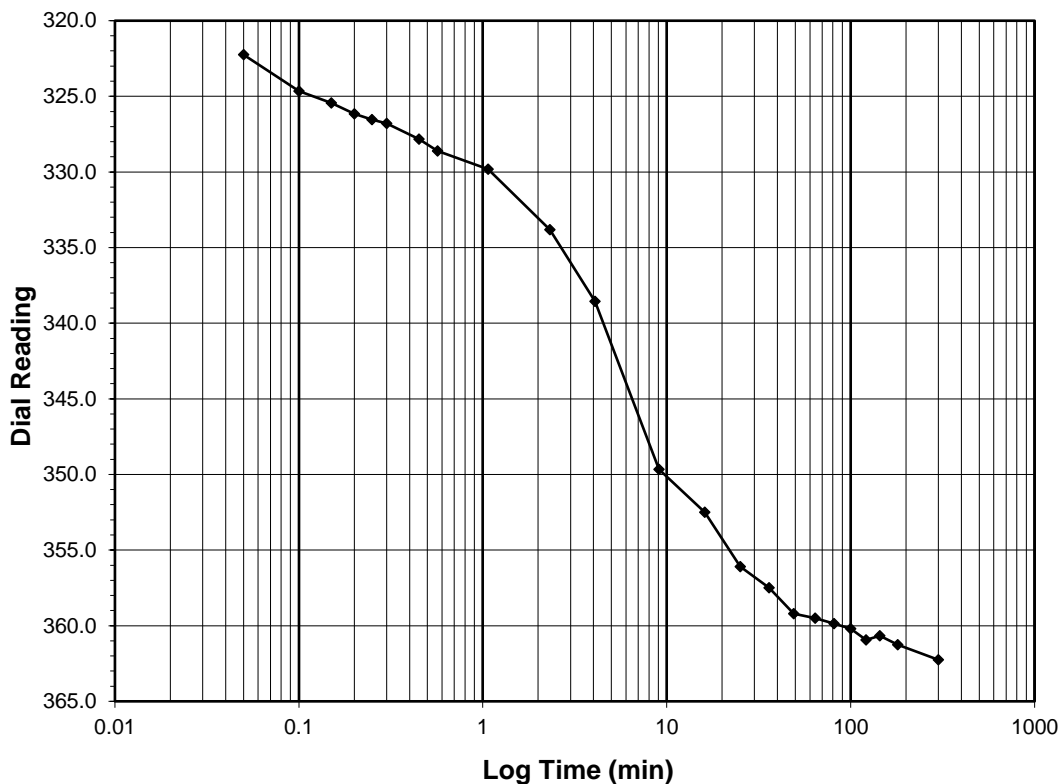
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>362.3</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>

<b>Start Date</b>	9/22/2020
<b>Start Time</b>	2:13:08

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>313.0</b>
0.05	322.2
0.10	324.7
0.15	325.4
0.20	326.2
0.25	326.5
0.30	326.8
0.45	327.8
0.57	328.6
1.07	329.8
2.32	333.8
4.07	338.6
9.07	349.7
16.07	352.5
25.07	356.1
36.07	357.5
49.07	359.2
64.07	359.5
81.07	359.9
100.07	360.2
121.07	360.9
144.07	360.7
180.07	361.3
300.07	362.3



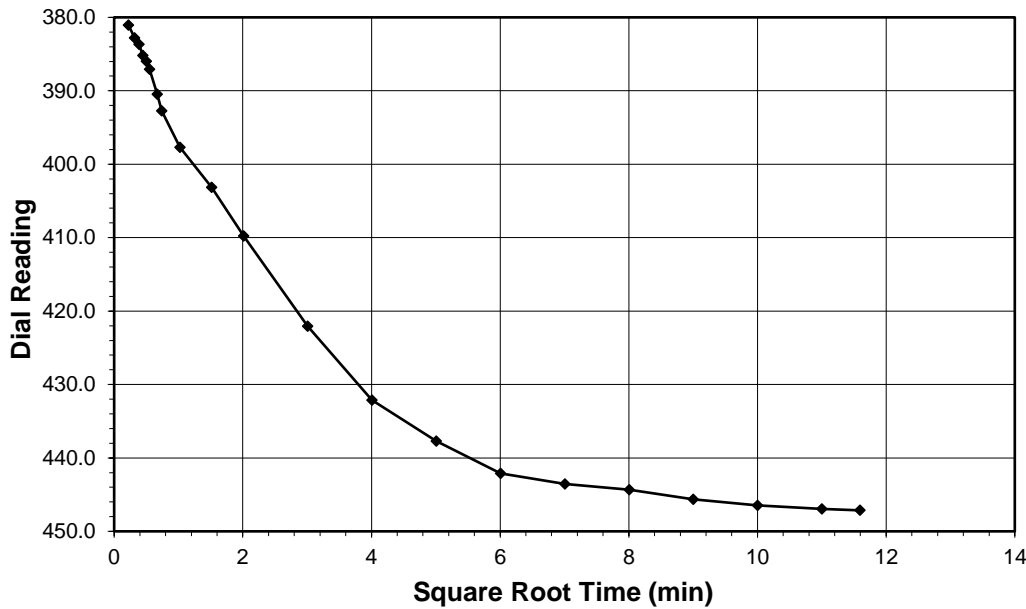
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

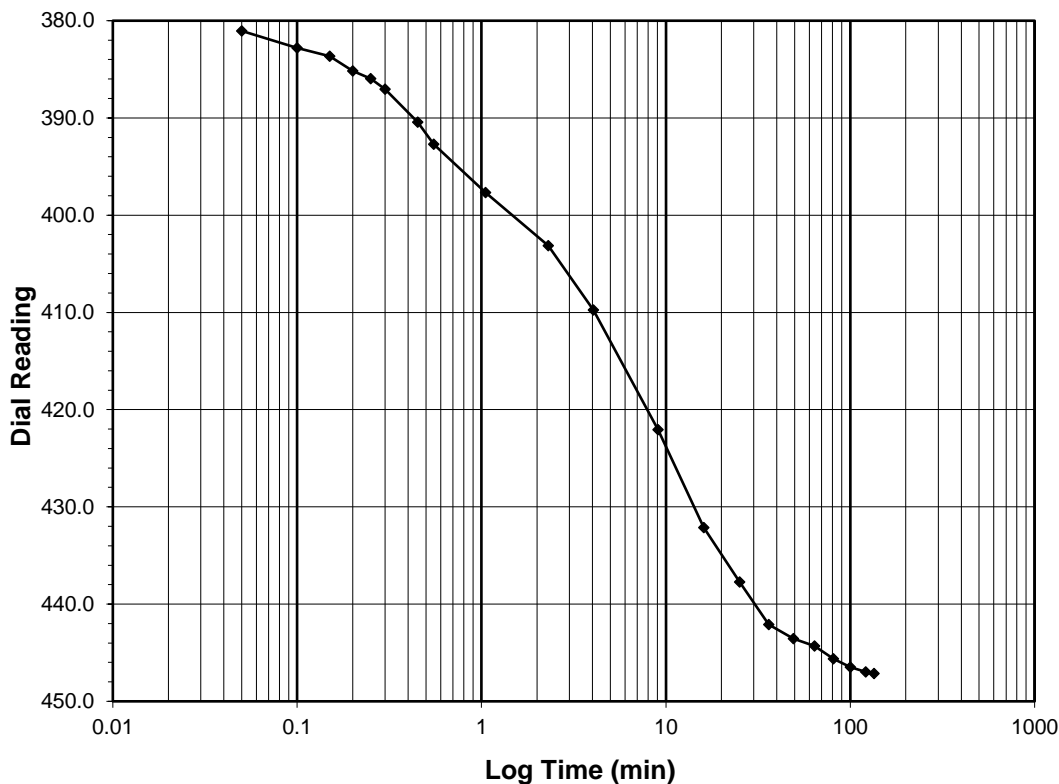
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>447.1</b>
<b>Consolidometer No.</b>	<b>R470</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/22/2020</b>
<b>Start Time</b>	<b>7:43:14</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>362.3</b>
0.05	381.0
0.10	382.8
0.15	383.7
0.20	385.2
0.25	386.0
0.30	387.1
0.45	390.4
0.55	392.7
1.05	397.7
2.30	403.1
4.05	409.8
9.05	422.1
16.05	432.1
25.07	437.7
36.07	442.1
49.07	443.6
64.07	444.3
81.07	445.6
100.07	446.5
121.07	447.0
134.38	447.1



Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/28/2020**

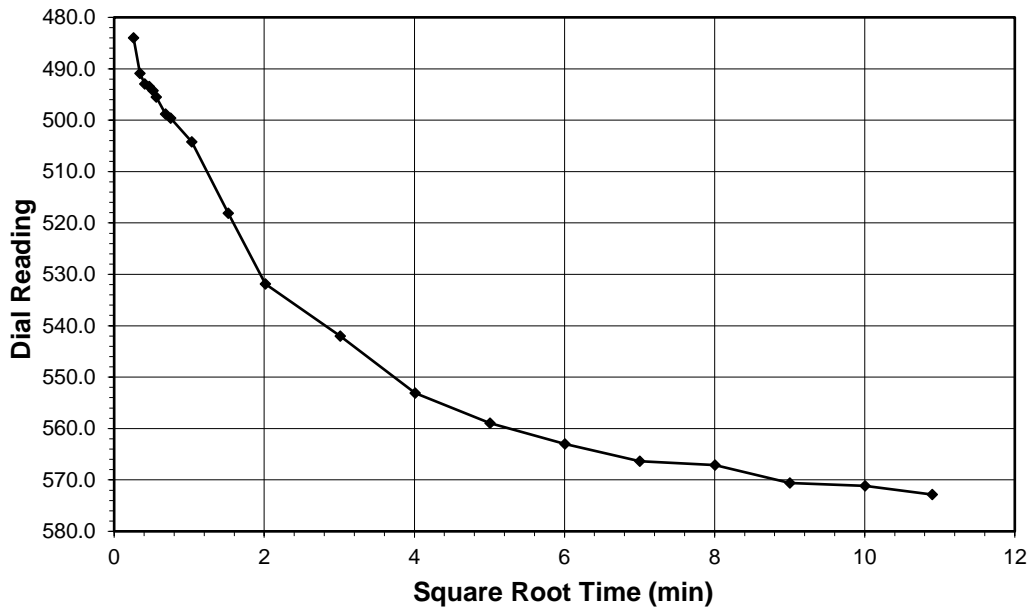


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

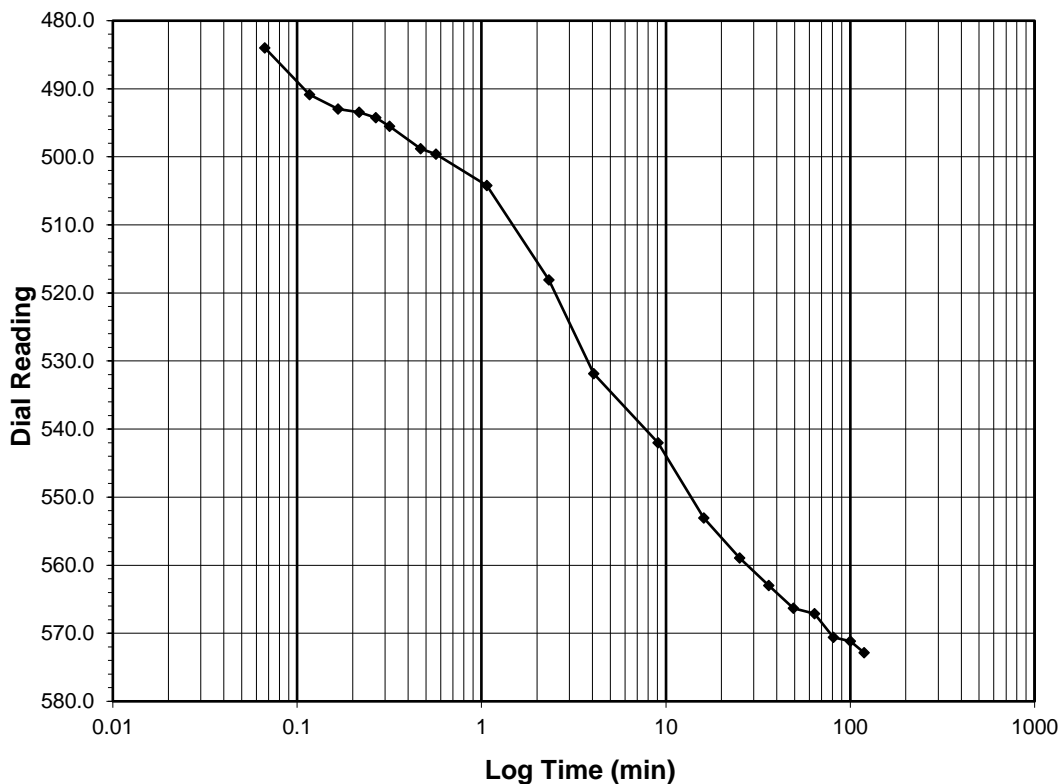
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>572.8</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	9:57:38

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>447.1</b>
0.07	484.0
0.12	490.9
0.17	493.0
0.22	493.5
0.27	494.3
0.32	495.5
0.47	498.8
0.57	499.6
1.07	504.2
2.32	518.1
4.07	531.9
9.07	542.0
16.07	553.1
25.07	558.9
36.07	563.0
49.07	566.3
64.07	567.1
81.07	570.6
100.08	571.1
118.85	572.8



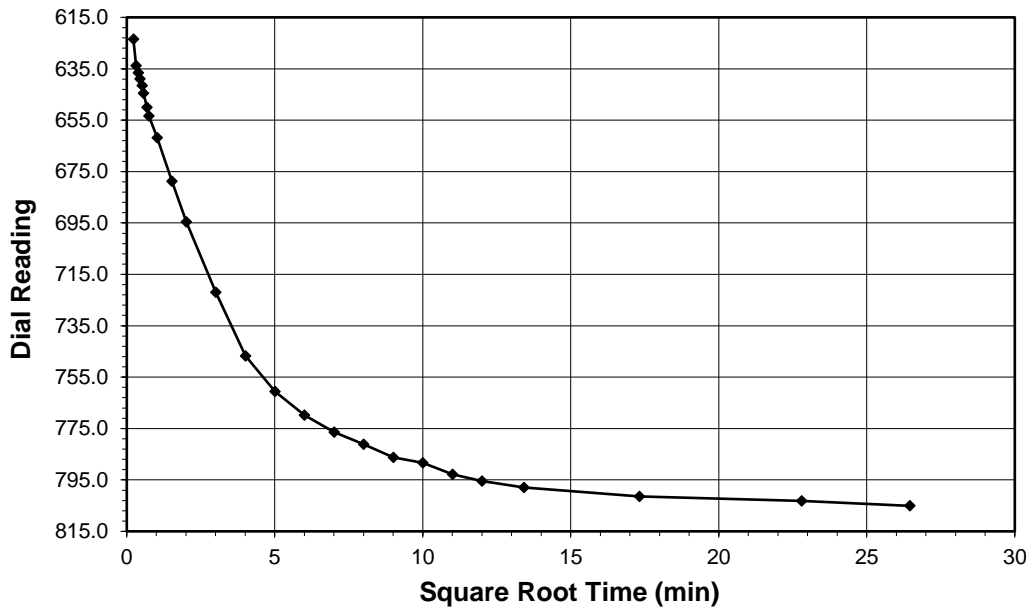
Tested By *NL* Date *9/22/2020* Checked By *GEM* Date *9/28/2020*

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

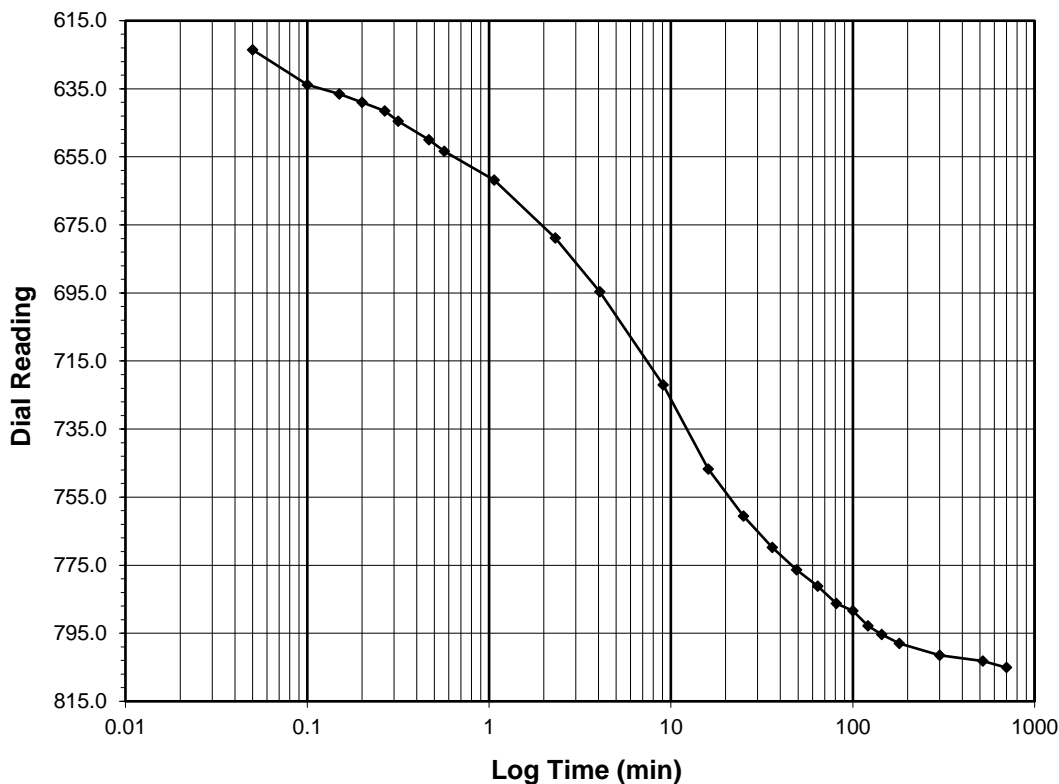
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>805.1</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	11:56:28

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>572.8</b>
0.05	623.5
0.10	633.8
0.15	636.5
0.20	639.0
0.27	641.5
0.32	644.5
0.47	650.0
0.57	653.4
1.07	661.8
2.32	678.8
4.07	694.6
9.07	722.0
16.07	746.8
25.07	760.5
36.07	769.8
49.07	776.3
64.07	781.2
81.07	786.3
100.07	788.4
121.07	792.8
144.07	795.4
180.07	798.0
300.07	801.5
520.07	803.2
700.07	805.1



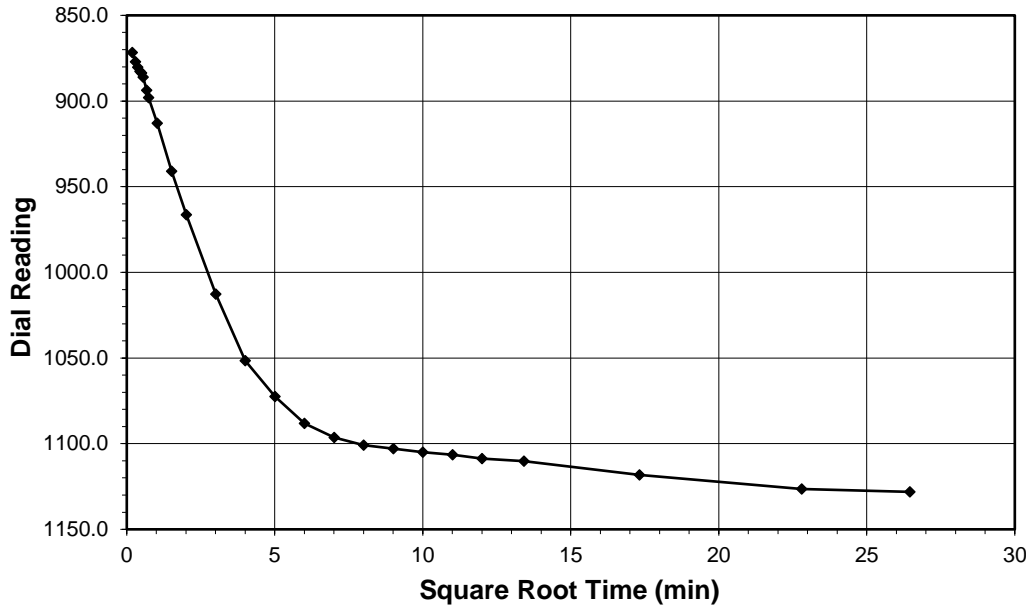
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

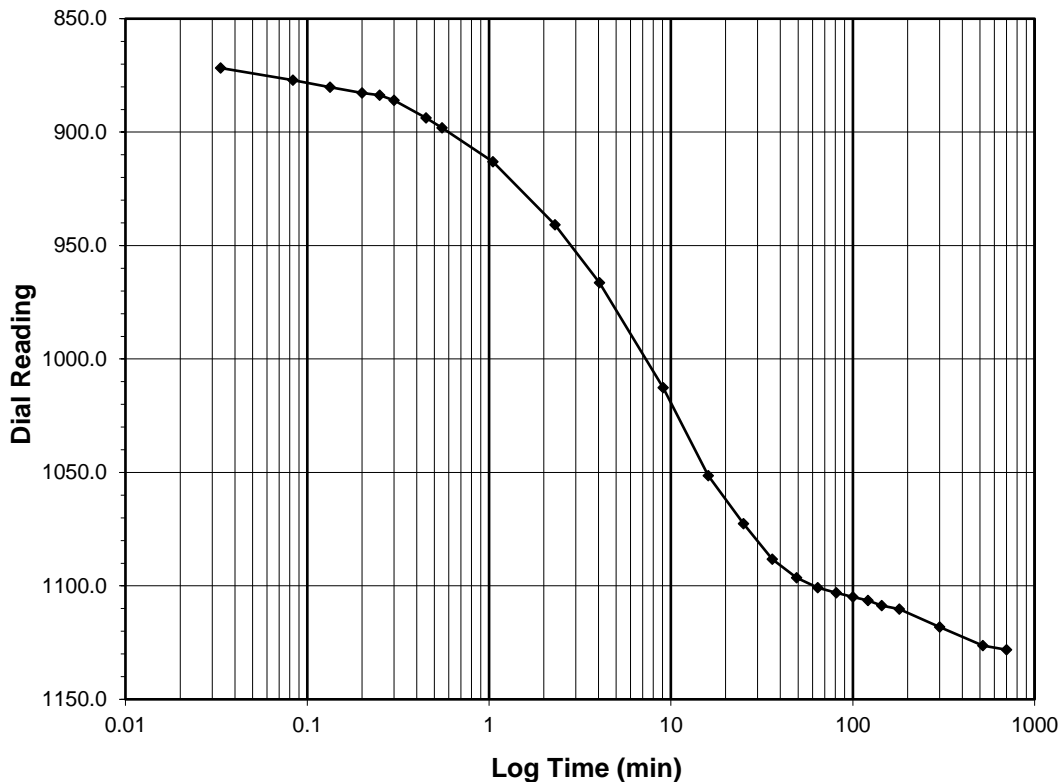
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>1128.1</b>
<b>Consolidometer No.</b>	<b>R470</b>
1 Division (in)	0.0001
<b>Start Date</b>	<b>9/22/2020</b>
<b>Start Time</b>	<b>23:56:31</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>805.1</b>
0.03	871.7
0.08	877.1
0.13	880.2
0.20	882.7
0.25	883.7
0.30	886.0
0.45	893.7
0.55	898.1
1.05	913.0
2.30	940.9
4.05	966.4
9.05	1012.7
16.05	1051.5
25.05	1072.6
36.05	1088.2
49.05	1096.4
64.05	1100.8
81.05	1103.0
100.05	1104.9
121.05	1106.4
144.05	1108.7
180.07	1110.2
300.07	1118.1
520.07	1126.4
700.07	1128.1



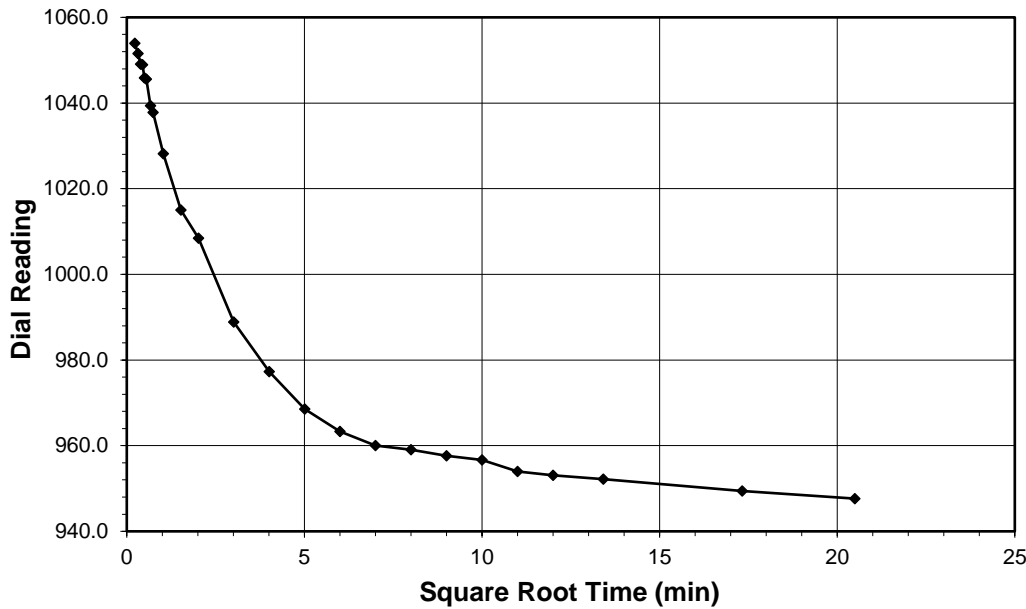
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

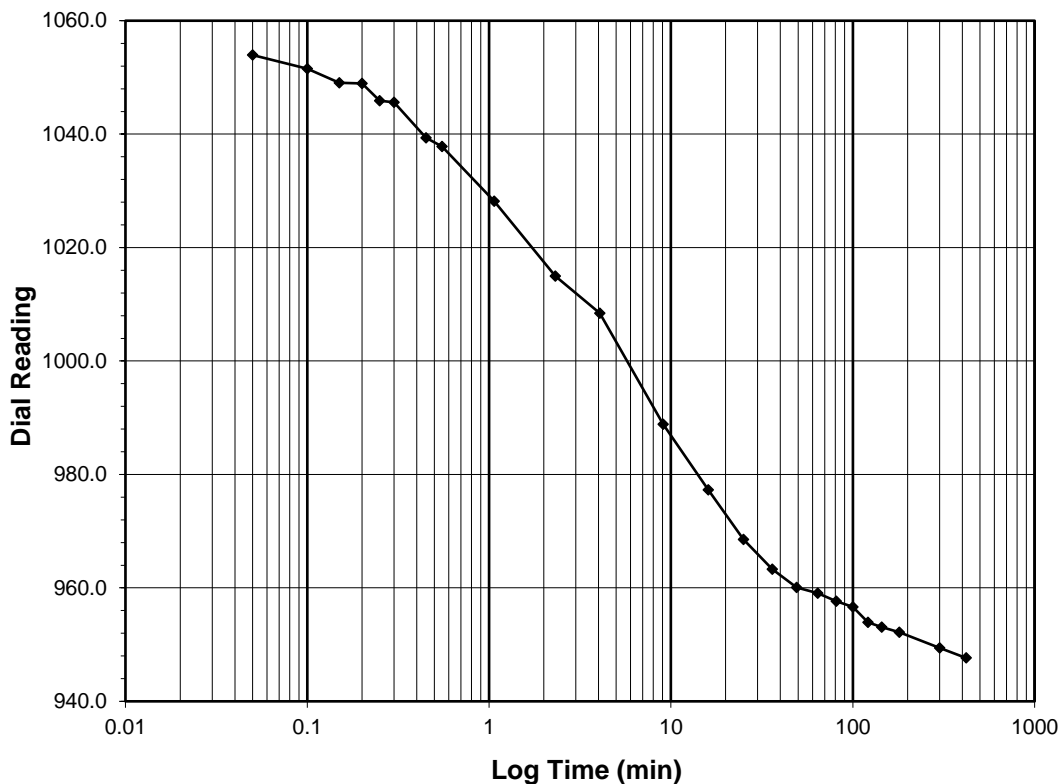
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>947.6</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	11:56:49

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1128.1</b>
0.05	1053.9
0.10	1051.5
0.15	1049.1
0.20	1048.9
0.25	1045.9
0.30	1045.6
0.45	1039.4
0.55	1037.8
1.07	1028.2
2.32	1015.0
4.07	1008.4
9.07	988.8
16.07	977.3
25.07	968.6
36.07	963.3
49.07	960.1
64.07	959.0
81.07	957.6
100.07	956.6
121.07	953.9
144.07	953.1
180.08	952.2
300.08	949.4
420.02	947.6



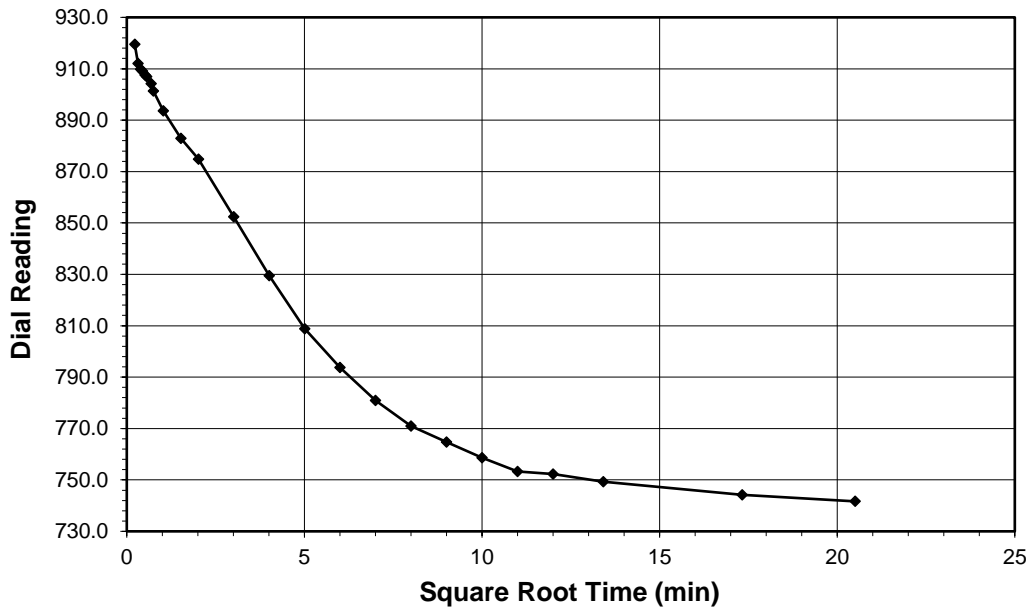
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

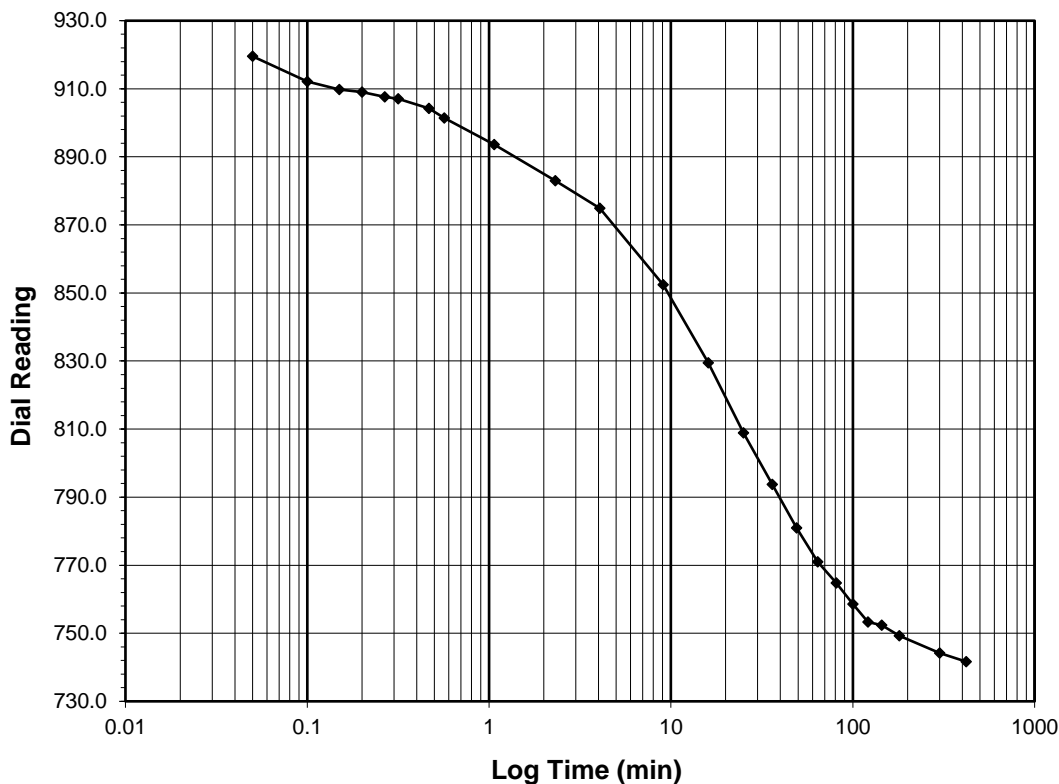
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>741.7</b>
Consolidometer No.	<b>R470</b>
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	18:56:50

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>947.6</b>
0.05	919.5
0.10	912.1
0.15	909.8
0.20	909.1
0.27	907.6
0.32	907.0
0.47	904.2
0.57	901.4
1.07	893.6
2.32	883.0
4.07	874.9
9.07	852.4
16.07	829.5
25.07	808.9
36.07	793.8
49.07	780.9
64.07	771.0
81.07	764.8
100.07	758.6
121.07	753.3
144.07	752.4
180.07	749.3
300.07	744.2
420.48	741.7



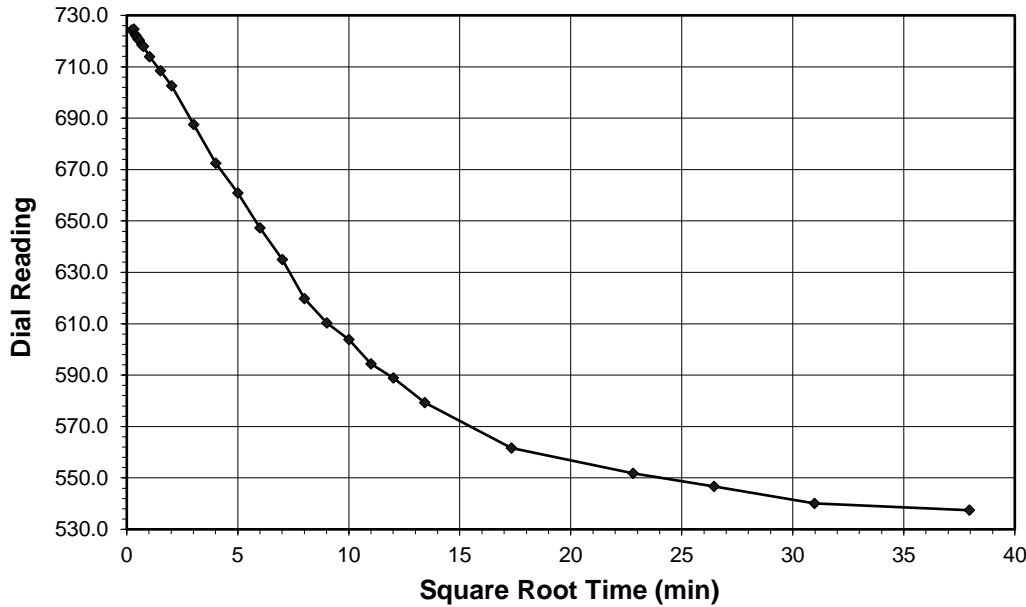
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/28/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

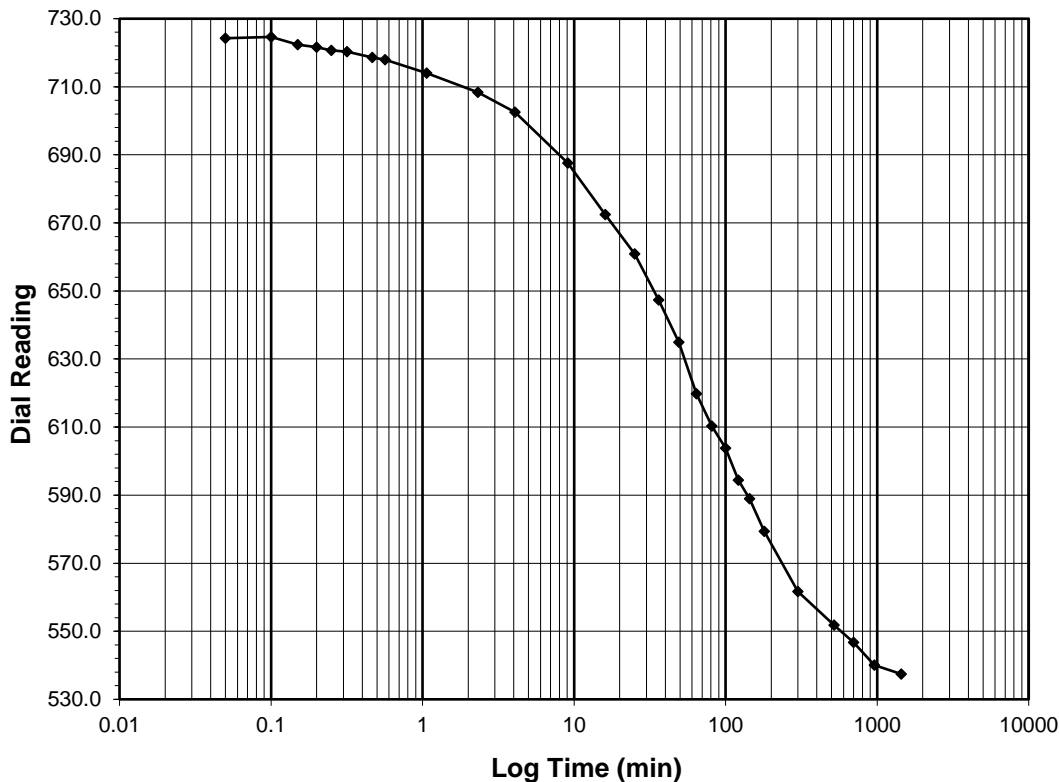
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	5.0'-7.0'
Project No.	R-2020-164-004	Sample No.	CPT-01
Lab ID	R-2020-164-004-001	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>537.4</b>
Consolidometer No.	R470
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	1:57:19

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>741.7</b>
0.05	724.3
0.10	724.6
0.15	722.4
0.20	721.6
0.25	720.7
0.32	720.3
0.47	718.6
0.57	718.0
1.07	714.0
2.32	708.4
4.07	702.6
9.07	687.5
16.07	672.4
25.07	660.9
36.07	647.4
49.07	635.0
64.08	619.8
81.08	610.3
100.08	603.8
121.08	594.4
144.08	589.0
180.08	579.4
300.08	561.7
520.08	551.8
700.08	546.7
960.08	540.0
1440.02	537.4

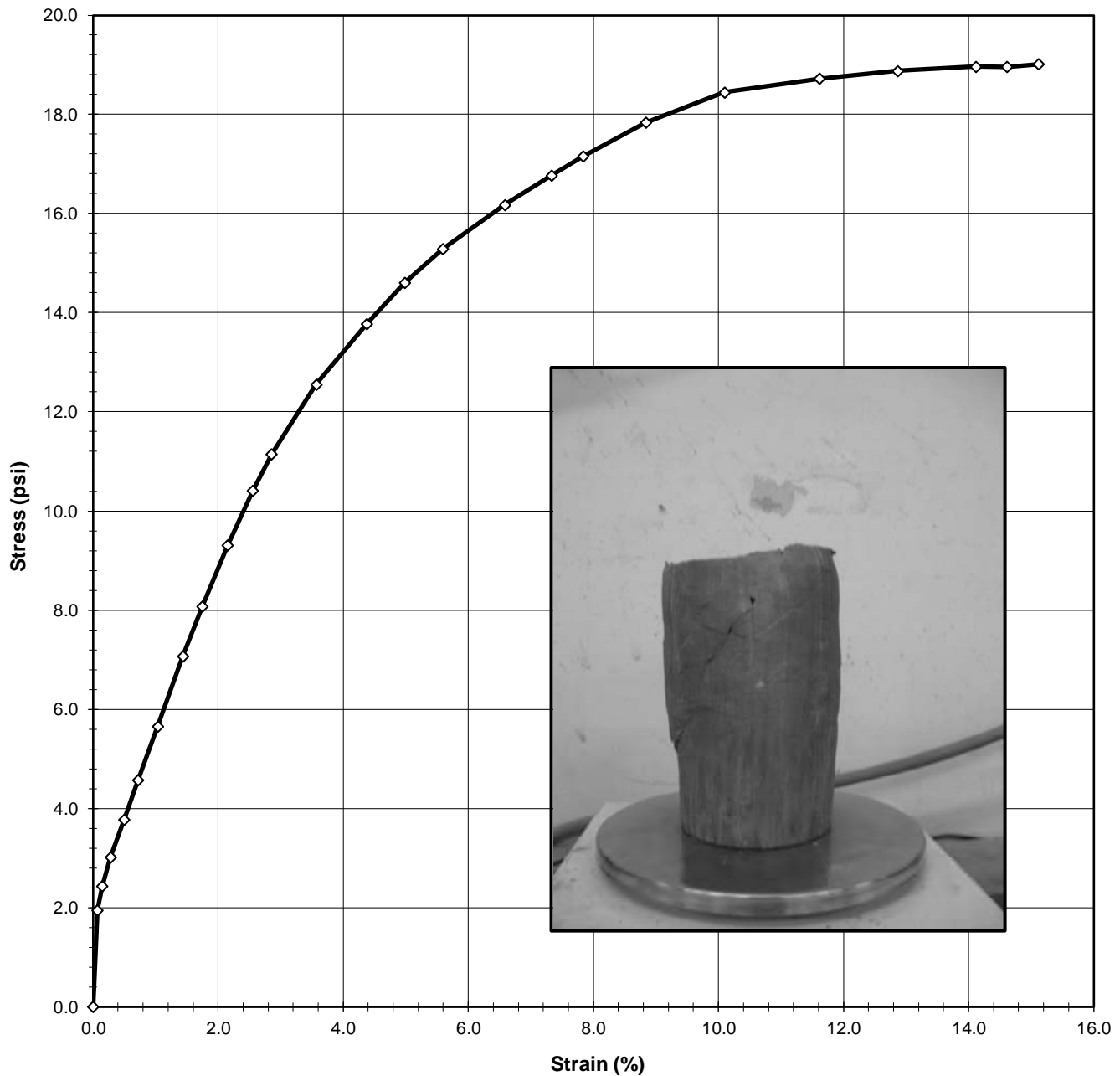


Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/28/2020**

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	5.0'-7.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-01
Lab ID:	R-2020-164-004-001	Visual:	Gray Clay

**INITIAL CONFINING STRESS (psi)      4.1**



Tested By MY      Date 9/28/20      Input Checked By GEM      Date 9/30/20

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15



Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-004  
 Lab ID: R-2020-164-004-001

Boring No.: PRN-20-UD  
 Depth (ft): 5.0'-7.0'  
 Sample No.: CPT-01  
 Visual: Gray Clay

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	6.190	Top Dia. (in):	2.852
Length 2 (in):	6.206	Mid. Dia. (in):	2.844
Length 3 (in):	6.183	Bot. Dia. (in):	2.842
<b>Avg.Length (in)</b>	<b>6.193</b>	<b>Area (in<sup>2</sup>):</b>	<b>6.362</b>

WATER CONTENT (AFTER TEST)	
Total Weight of Sample (g):	1305.81
Tare No.:	TB-01
Weight of Tare & Wet Sample (g):	940.05
Weight of Tare & Dry Sample (g):	792.89
Weight of Tare (g):	136.15
% Moisture:	22.4

UNIT WEIGHT			
Undisturbed Sample			
Weight of Tube & Wet Sample (g):	1307.19	Sample Volume (cm <sup>3</sup> ):	645.6
Weight of Tube (g):	0.00	Unit Wet Weight (g/cm <sup>3</sup> ):	2.02
Weight of Wet Sample (g):	1307.19	Unit Wet Weight (pcf):	126.35
Diameter (in):	2.85	Moisture Content (%):	22.4
Length (in):	6.19	Unit Dry Weight (pcf):	103.2
Length (cm):	15.73		

<b>INITIAL CONFINING STRESS (psi)</b>	<b>4.1</b>	Initial Dial Reading (mil)	288
<b>ENDING CONFINING STRESS (psi)</b>	<b>4.1</b>	Dial Reading Before Shearing (mil)	291

DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	11.5	0.0	0.0	0.000
0.004	24.0	0.07	0.1	1.952
0.009	27.1	0.15	0.1	2.436
0.017	30.8	0.28	0.3	3.019
0.031	35.7	0.48	0.5	3.778
0.045	40.9	0.72	0.7	4.576
0.064	47.9	1.03	1.0	5.651
0.089	57.2	1.43	1.4	7.070
0.108	63.9	1.73	1.7	8.082
0.133	72.0	2.13	2.2	9.304
0.158	79.5	2.55	2.6	10.409
0.176	84.5	2.85	2.9	11.144
0.221	94.4	3.55	3.6	12.554
0.271	103.2	4.37	4.4	13.772
0.308	109.3	4.97	5.0	14.599
0.346	114.5	5.57	5.6	15.280
0.408	121.7	6.57	6.6	16.173
0.454	126.7	7.32	7.3	16.769
0.485	129.9	7.82	7.8	17.149
0.547	136.0	8.82	8.8	17.834
0.625	142.0	10.08	10.1	18.440
0.719	146.3	11.58	11.6	18.718
0.796	149.3	12.83	12.9	18.872
0.874	152.0	14.08	14.1	18.961
0.905	152.8	14.58	14.6	18.956
0.936	154.0	15.08	15.1	19.007

Tested By MY Date 9/28/20 Input Checked By GEM Date 9/30/20

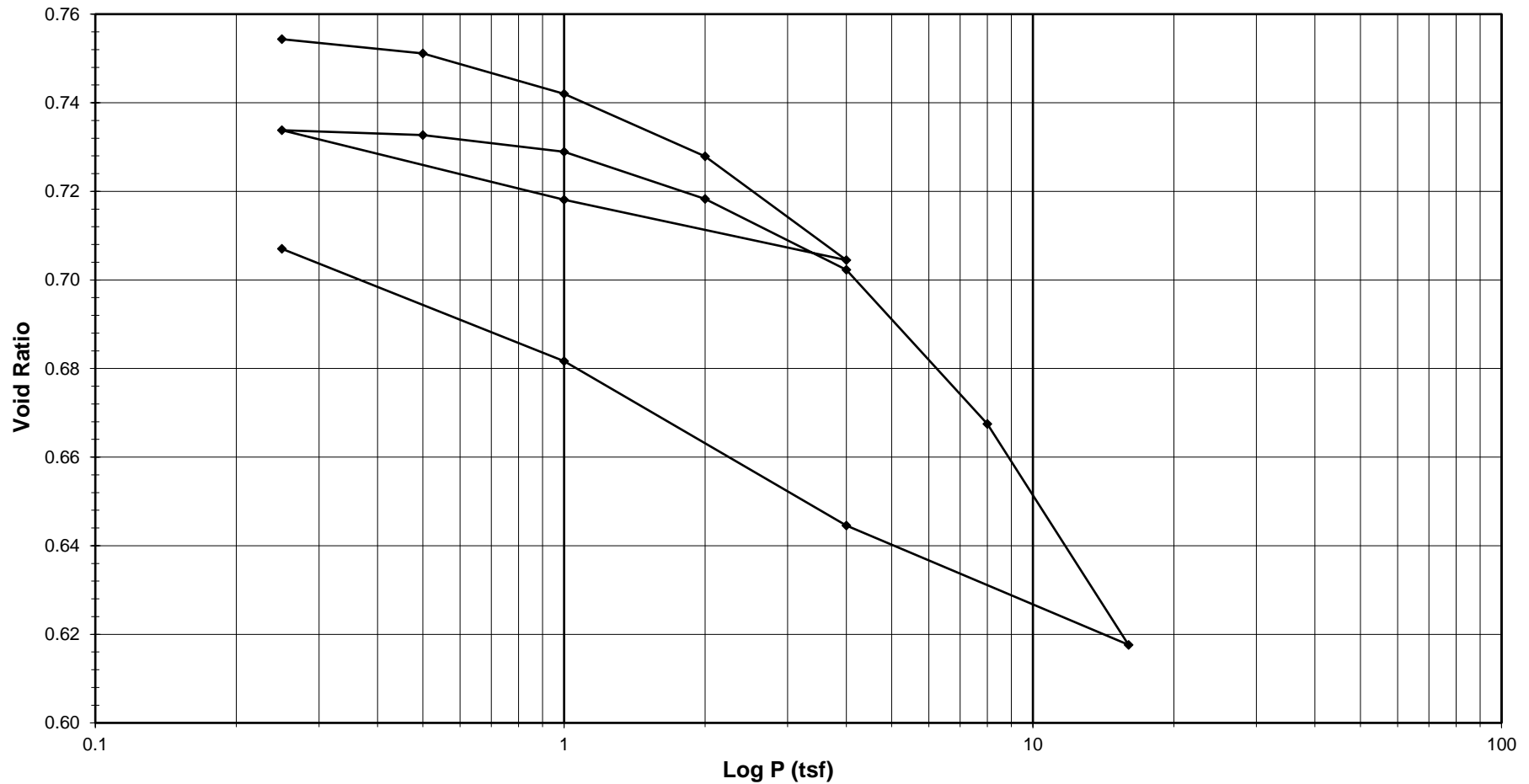


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/16/2020 Approved By MPS Date 9/24/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R409  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>Test Data Summary</u>							
			<u>Applied Pressure</u> (tsf)	<u>Final Dial Reading</u> (div)	<u>Machine Deflection</u> (div)	<u>Corrected Reading</u> (div)	<u>Height of Sample</u> (mm)	<u>Volume (cc)</u>	<u>Dry Density</u> (g/cc)	<u>Void Ratio</u>
<i>Water Content</i>										
Tare Number	715	SS-6								
Wt. Tare & WS (g)	265.85	251.19								
Wt. Tare & DS (g)	230.66	219.34								
Wt. Water (g)	35.19	31.85	Seating	0	0	0	25.400	80.440	1.53334	<b>0.76087</b>
Wt. Tare (g)	90.37	97.54	0.25	47.7	10.7	37.0	25.306	80.142	1.53903	<b>0.75435</b>
Wt. DS (g)	140.29	121.80	0.5	85.2	30.0	55.2	25.260	79.996	1.54185	<b>0.75115</b>
Water Content (%)	25.08	26.15	1	154.1	47.1	107.0	25.128	79.579	1.54993	<b>0.74202</b>
			2	261.5	74.4	187.1	24.925	78.935	1.56257	<b>0.72792</b>
			4	421.4	101.3	320.1	24.587	77.865	1.58405	<b>0.70450</b>
<i>Sample Parameters</i>			1	312.6	69.8	242.9	24.783	78.486	1.57150	<b>0.71810</b>
Sample Diameter (in)	2.5	2.5	0.25	188.4	34.5	153.8	25.009	79.203	1.55729	<b>0.73378</b>
Sample Height (in)	1.0000	0.9694	0.5	200.9	40.8	160.1	24.993	79.152	1.55828	<b>0.73268</b>
Sample Volume (cc)	80.44	77.98	1	236.7	55.4	181.3	24.940	78.982	1.56164	<b>0.72895</b>
Wt. Wet Sample + Ring (g)	368.98	370.29	2	319.0	77.3	241.7	24.786	78.495	1.57132	<b>0.71830</b>
Wt. of Ring (g)	214.70	214.70	4	434.8	102.2	332.6	24.555	77.764	1.58609	<b>0.70230</b>
Wt. of Wet Sample (g)	154.28	155.59	8	676.7	146.5	530.2	24.053	76.175	1.61918	<b>0.66751</b>
Wet Density (pcf)	119.68	124.51	16	1013.3	199.9	813.4	23.334	73.897	1.66910	<b>0.61764</b>
Wet Density (g/cc)	1.92	2.00	4	799.0	138.4	660.6	23.722	75.126	1.64179	<b>0.64455</b>
Water Content (%)	25.08	26.15	1	536.5	86.8	449.7	24.258	76.822	1.60554	<b>0.68167</b>
Wt. of Dry Sample (g)	123.34	123.34	0.25	351.5	45.6	305.9	24.623	77.979	1.58172	<b>0.70701</b>
Dry Density (pcf)	95.68	98.70								
Dry Density (g/cc)	1.53	1.58								
Void Ratio	0.7609	0.7070								
Saturation (%)	89.01	99.86								
Specific Gravity	2.70	Assumed								

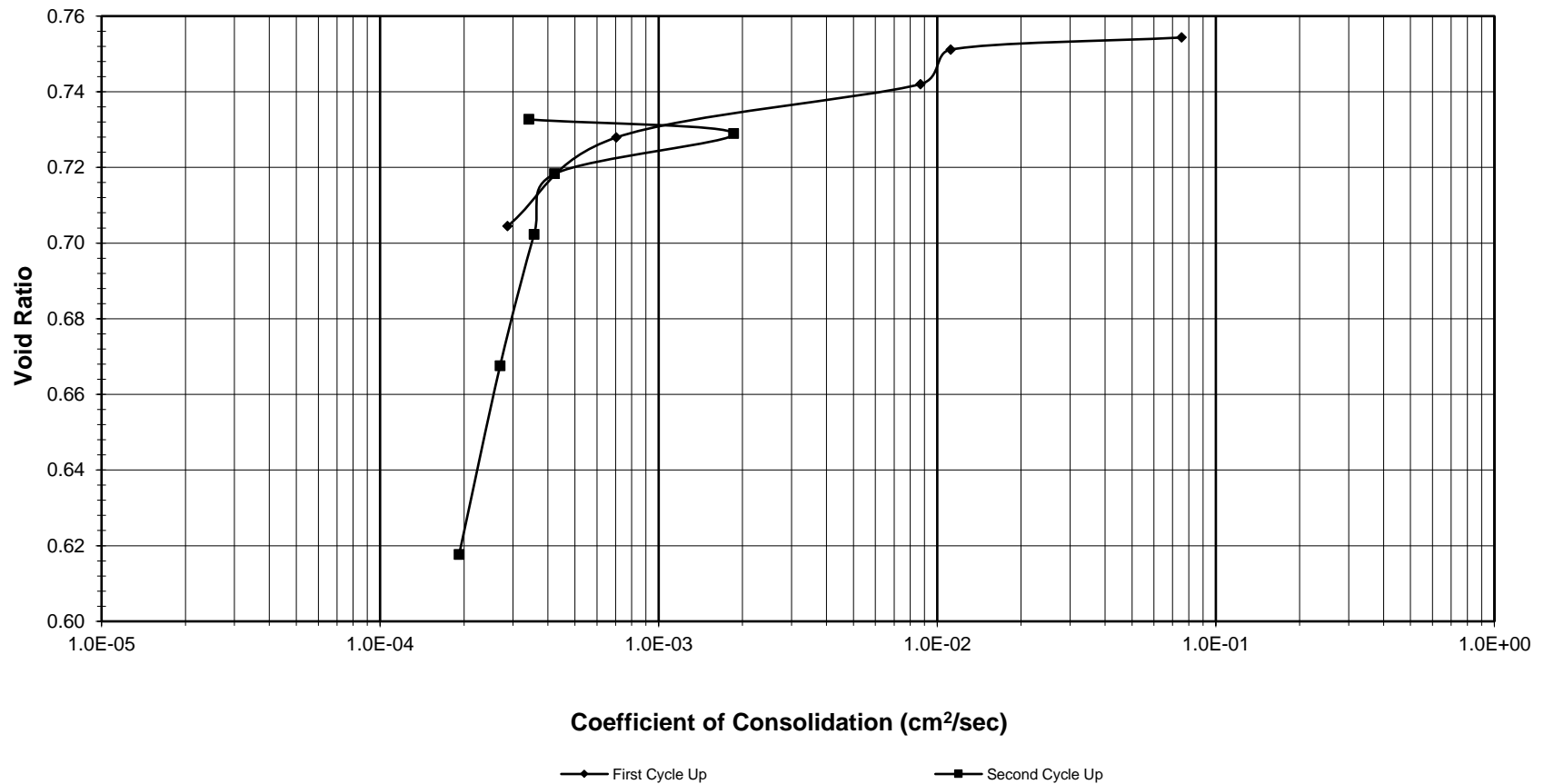
Tested By NL Date 9/16/2020 Input Checked By GEM Date 9/24/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/16/2020 Input Checked By GEM Date 9/24/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R409  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	C <sub>v</sub> Test Data Summary						
			Load Increment	Dial Reading @ t <sub>50</sub>	Machine Deflection	Corrected Dial Reading @ t <sub>50</sub>	Sample Height @ t <sub>50</sub>	Time t <sub>50</sub>	C <sub>v</sub>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
<i>Water Content</i>									
<i>Tare Number</i>	715	SS-6							
<i>Wt. Tare &amp; WS (g)</i>	265.85	251.19							
<i>Wt. Tare &amp; DS (g)</i>	230.66	219.34							
<i>Wt. Water (g)</i>	35.19	31.85	0 - 0.25	35.3	10.7	24.6	2.534	<b>0.07</b>	<b>0.07528</b>
<i>Wt. Tare (g)</i>	90.37	97.54	0.25 - 0.5	70.0	30.0	39.9	2.530	<b>0.47</b>	<b>0.01118</b>
<i>Wt. DS (g)</i>	140.29	121.80	0.5 - 1.0	122.3	47.1	75.2	2.521	<b>0.60</b>	<b>0.00869</b>
<i>Water Content (%)</i>	25.08	26.15	1.0 - 2.0	221.4	74.4	147.0	2.503	<b>7.30</b>	<b>0.00070</b>
			2.0 - 4.0	367.7	101.3	266.4	2.472	<b>17.50</b>	<b>0.00029</b>
<i>Sample Parameters</i>			4.0 - 1.0	NA	69.8	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Diameter (in)</i>	2.5	2.5	1.0 - 0.25	NA	34.5	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Height (in)</i>	1.000	0.969	0.25 - 0.5	195.5	40.8	154.7	2.501	<b>15.00</b>	<b>0.00034</b>
<i>Sample Volume (cc)</i>	80.44	77.98	0.5 - 1.0	224.6	55.4	169.2	2.497	<b>2.75</b>	<b>0.00186</b>
<i>Wt. Wet Sample + Ring (g)</i>	368.98	370.29	1.0 - 2.0	285.0	77.3	207.7	2.487	<b>12.00</b>	<b>0.00042</b>
<i>Wt. of Ring (g)</i>	214.70	214.70	2.0 - 4.0	387.0	102.2	284.8	2.468	<b>14.00</b>	<b>0.00036</b>
<i>Wt. of Wet Sample (g)</i>	154.28	155.59	4.0 - 8.0	575.2	146.5	428.7	2.431	<b>18.00</b>	<b>0.00027</b>
<i>Wet Density (pcf)</i>	119.68	124.51	8.0 - 16.0	869.2	199.9	669.3	2.370	<b>24.00</b>	<b>0.00019</b>
<i>Wet Density (g/cc)</i>	1.92	2.00	16.0 - 4.0	NA	138.4	NA	NA	<b>NA</b>	<b>NA</b>
<i>Water Content (%)</i>	25.08	26.15	4.0 - 1.0	NA	86.8	NA	NA	<b>NA</b>	<b>NA</b>
<i>Wt. of Dry Sample (g)</i>	123.34	123.34	1.0 - 0.25	NA	45.6	NA	NA	<b>NA</b>	<b>NA</b>
<i>Dry Density (pcf)</i>	95.68	98.70							
<i>Dry Density (g/cc)</i>	1.53	1.58							
<i>Void Ratio</i>	0.7609	0.7070							
<i>Saturation (%)</i>	89.01	99.86							
<i>Specific Gravity</i>	2.7	Assumed							

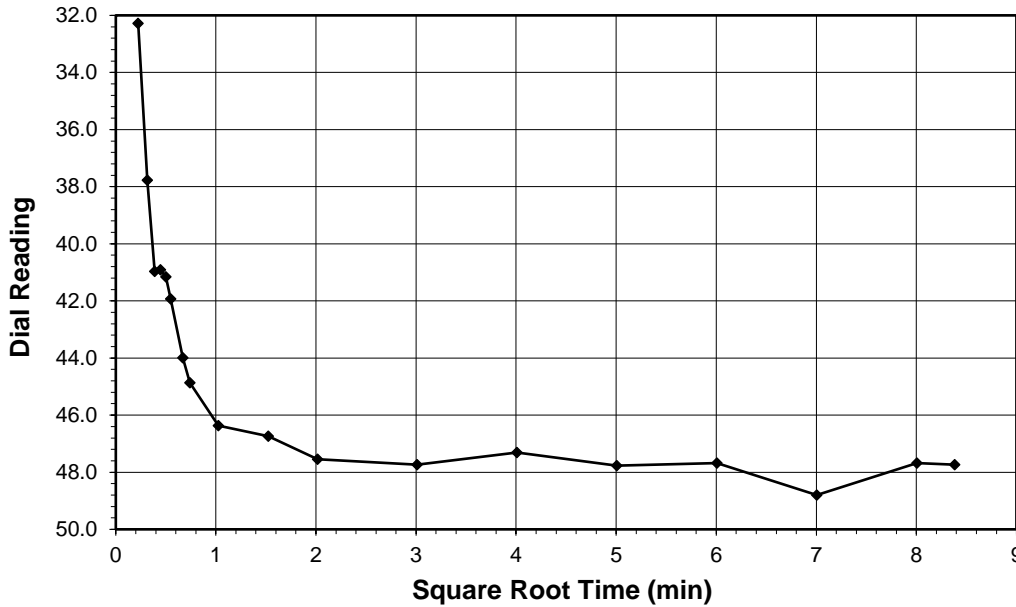
Tested By NL Date 9/16/2020 Input Checked By GEM Date 9/24/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

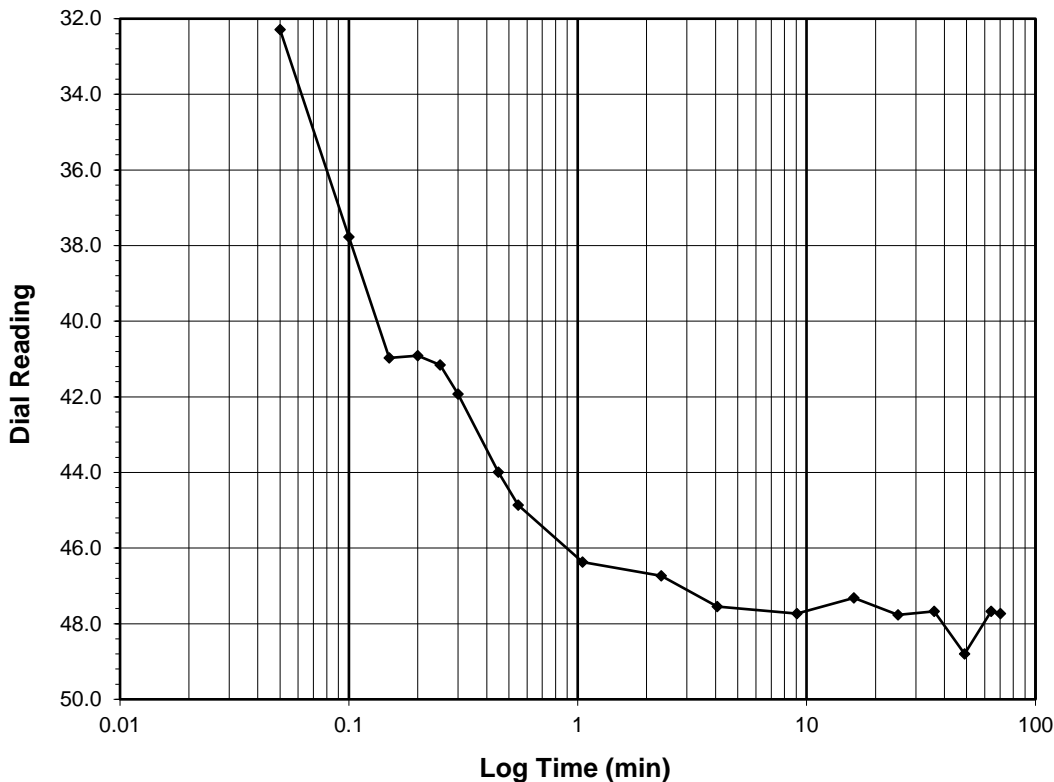
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>47.7</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/16/2020
Start Time	11:52:46

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	32.3
0.10	37.8
0.15	41.0
0.20	40.9
0.25	41.2
0.30	41.9
0.45	44.0
0.55	44.9
1.05	46.4
2.32	46.7
4.07	47.6
9.07	47.7
16.07	47.3
25.07	47.8
36.07	47.7
49.07	48.8
64.07	47.7
70.27	47.7



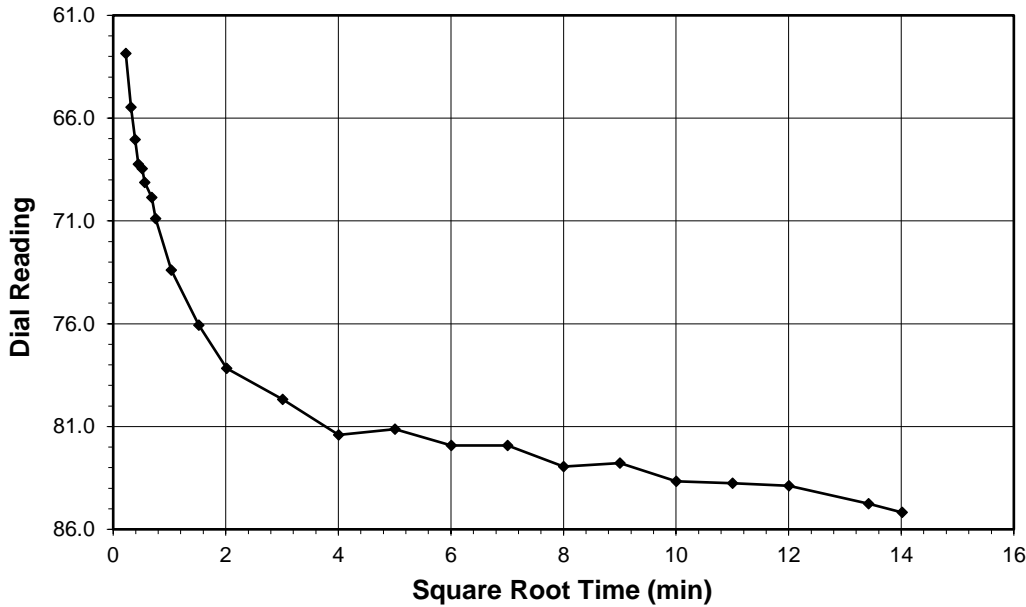
Tested By **NL** Date **9/16/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

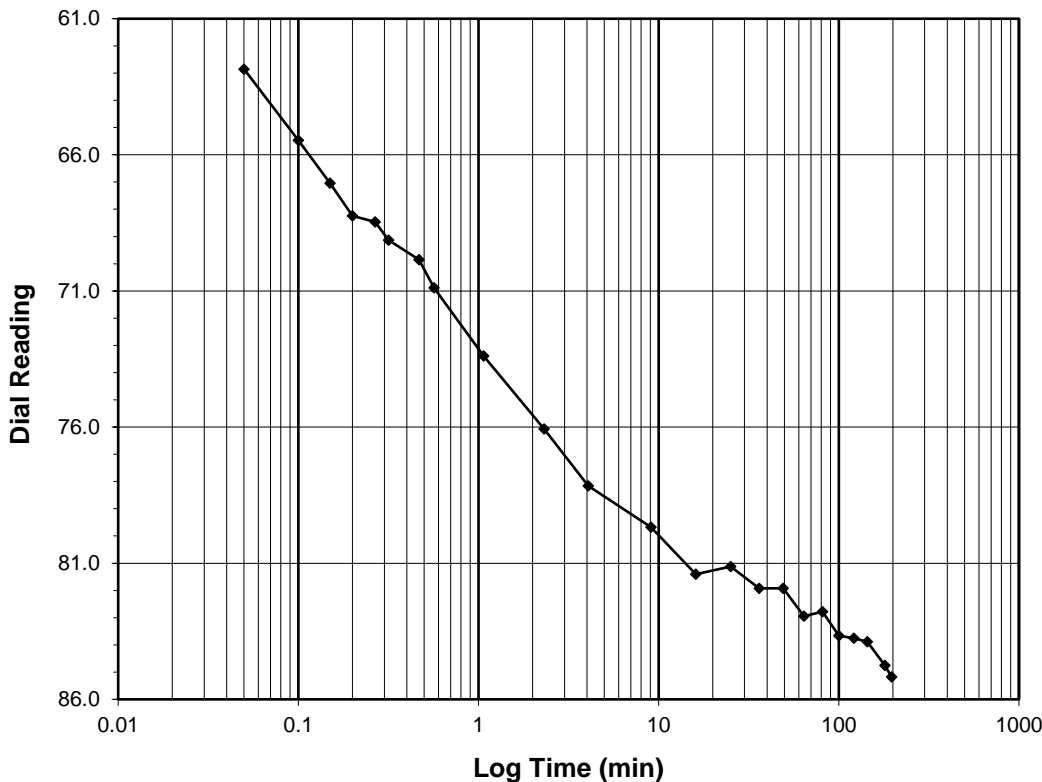
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>85.2</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/16/2020
Start Time	13:03:02

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>47.7</b>
0.05	62.9
0.10	65.5
0.15	67.0
0.20	68.2
0.27	68.5
0.32	69.1
0.47	69.9
0.57	70.9
1.07	73.4
2.32	76.1
4.07	78.2
9.07	79.7
16.07	81.4
25.07	81.1
36.07	81.9
49.07	81.9
64.07	82.9
81.07	82.8
100.07	83.7
121.07	83.8
144.07	83.9
180.07	84.8
196.50	85.2



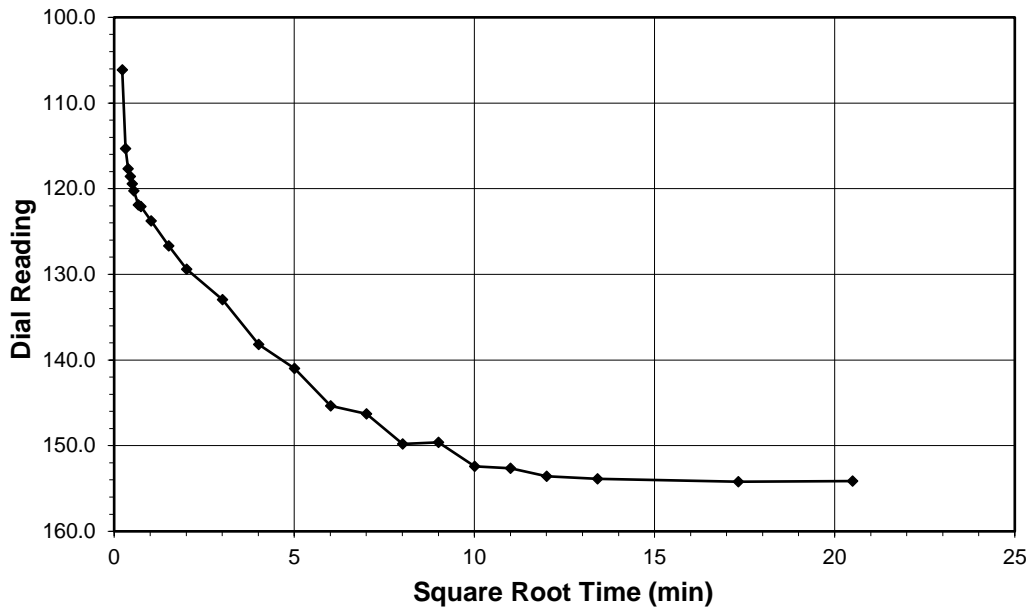
Tested By **NL** Date **9/16/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

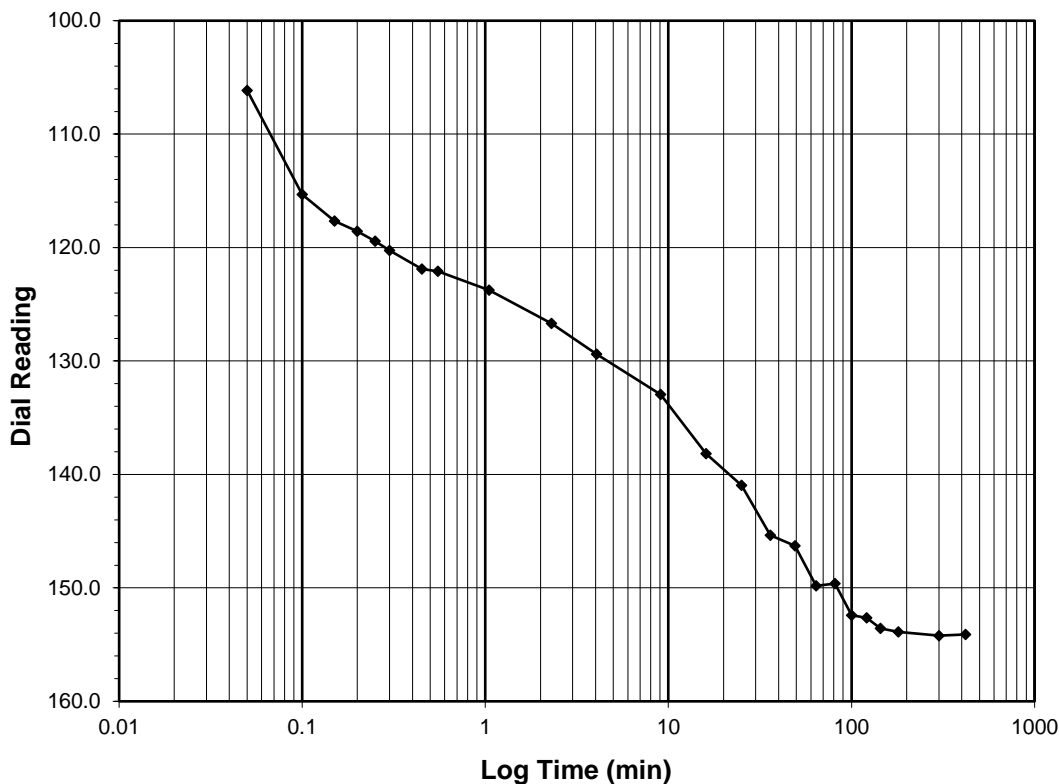
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



**Test Load (tsf)** 0.5-1.0  
**Final Reading (div)** 154.1  
 Consolidometer No. R409  
 1 Division (in) 0.0001

Start Date 9/16/2020  
 Start Time 16:19:32

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>85.2</b>
0.05	106.1
0.10	115.3
0.15	117.7
0.20	118.6
0.25	119.4
0.30	120.3
0.45	121.9
0.55	122.1
1.05	123.8
2.30	126.7
4.05	129.4
9.07	133.0
16.07	138.2
25.07	141.0
36.07	145.4
49.07	146.3
64.07	149.8
81.07	149.6
100.07	152.4
121.07	152.6
144.07	153.6
180.07	153.9
300.07	154.2
420.05	154.1



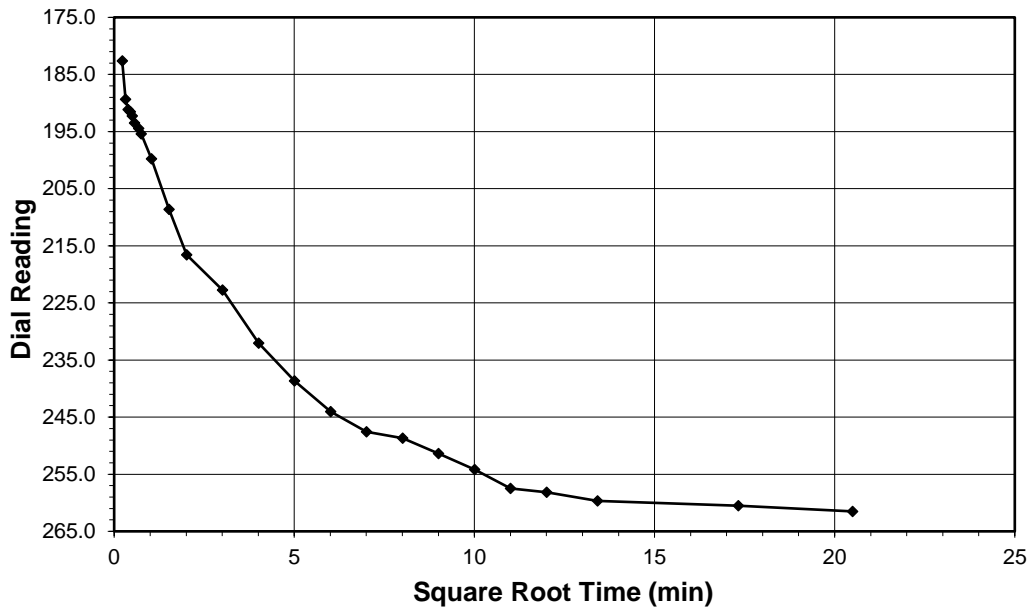
Tested By **NL** Date **9/16/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

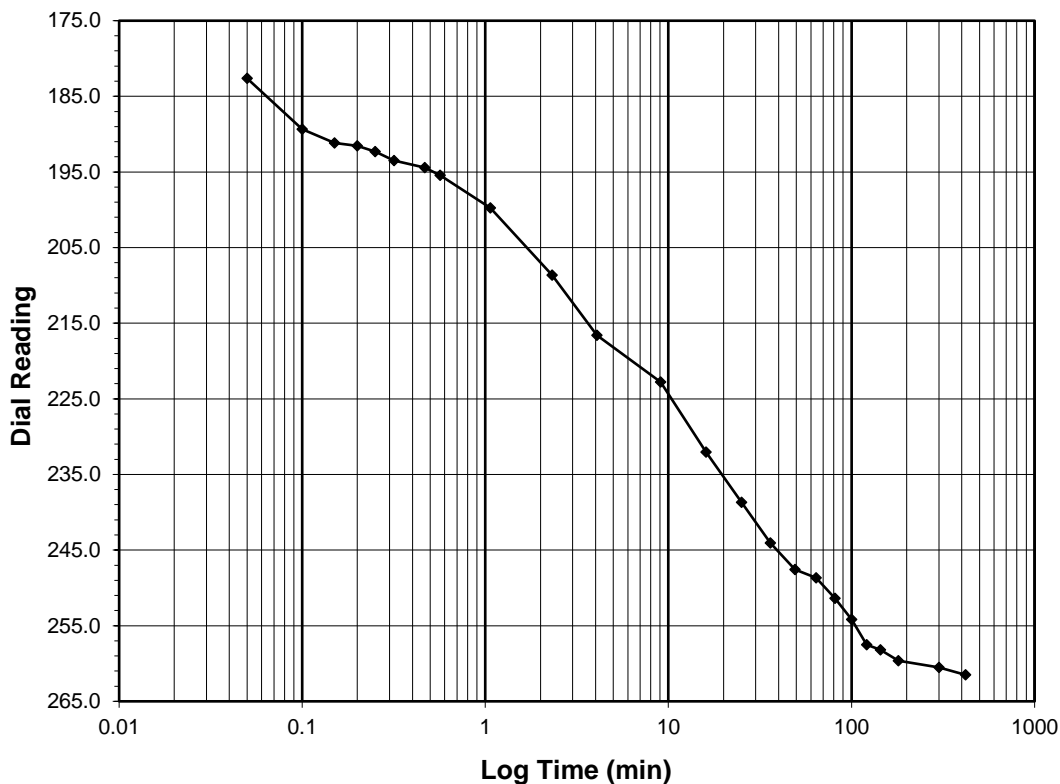
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>261.5</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/16/2020
Start Time	23:19:35

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>154.1</b>
0.05	182.6
0.10	189.4
0.15	191.2
0.20	191.6
0.25	192.3
0.32	193.5
0.47	194.4
0.57	195.4
1.07	199.8
2.32	208.6
4.07	216.6
9.07	222.8
16.07	232.0
25.07	238.7
36.07	244.0
49.07	247.6
64.07	248.7
81.07	251.4
100.07	254.2
121.07	257.5
144.07	258.2
180.07	259.6
300.07	260.5
420.13	261.5



Tested By **NL** Date **9/16/2020** Checked By **GEM** Date **9/24/2020**

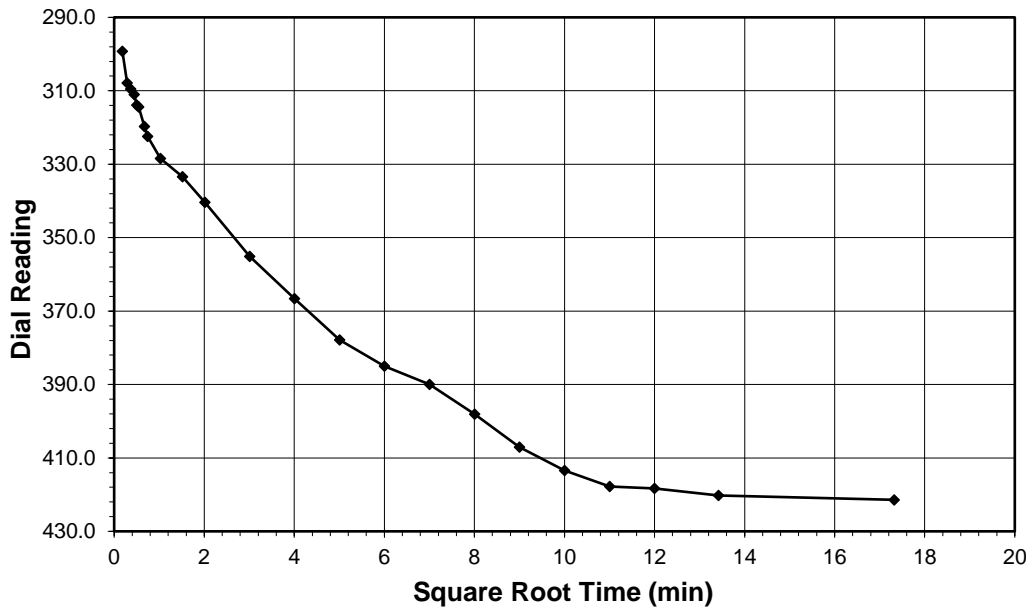


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

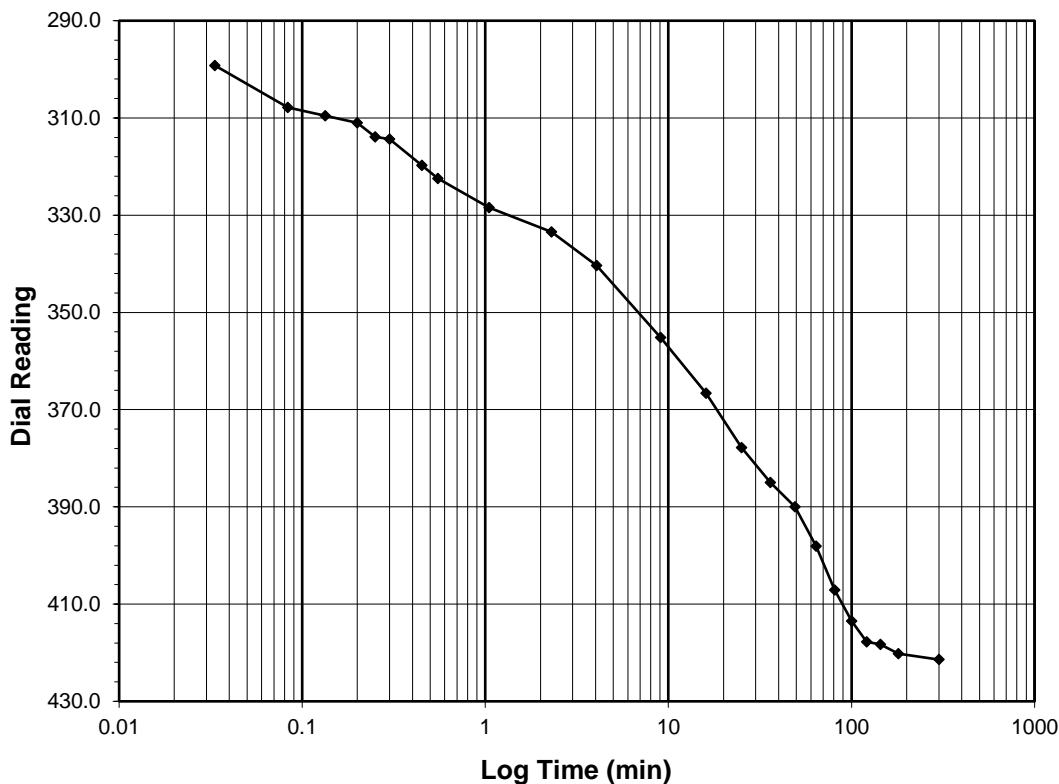
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>421.4</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/17/2020</b>
<b>Start Time</b>	<b>6:19:43</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>261.5</b>
0.03	299.2
0.08	307.9
0.13	309.5
0.20	311.0
0.25	313.9
0.30	314.4
0.45	319.8
0.55	322.5
1.05	328.4
2.30	333.4
4.05	340.4
9.05	355.2
16.05	366.7
25.05	377.8
36.05	385.0
49.05	390.0
64.05	398.1
81.05	407.1
100.05	413.5
121.05	417.8
144.07	418.3
180.07	420.2
300.07	421.4



Tested By **NL** Date **9/17/2020** Checked By **GEM** Date **9/24/2020**

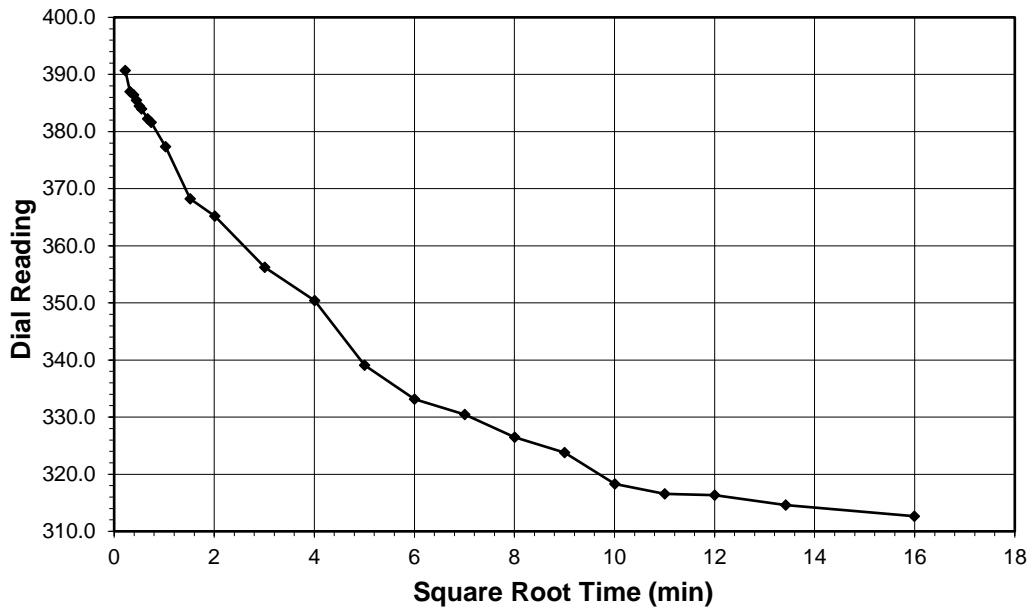


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

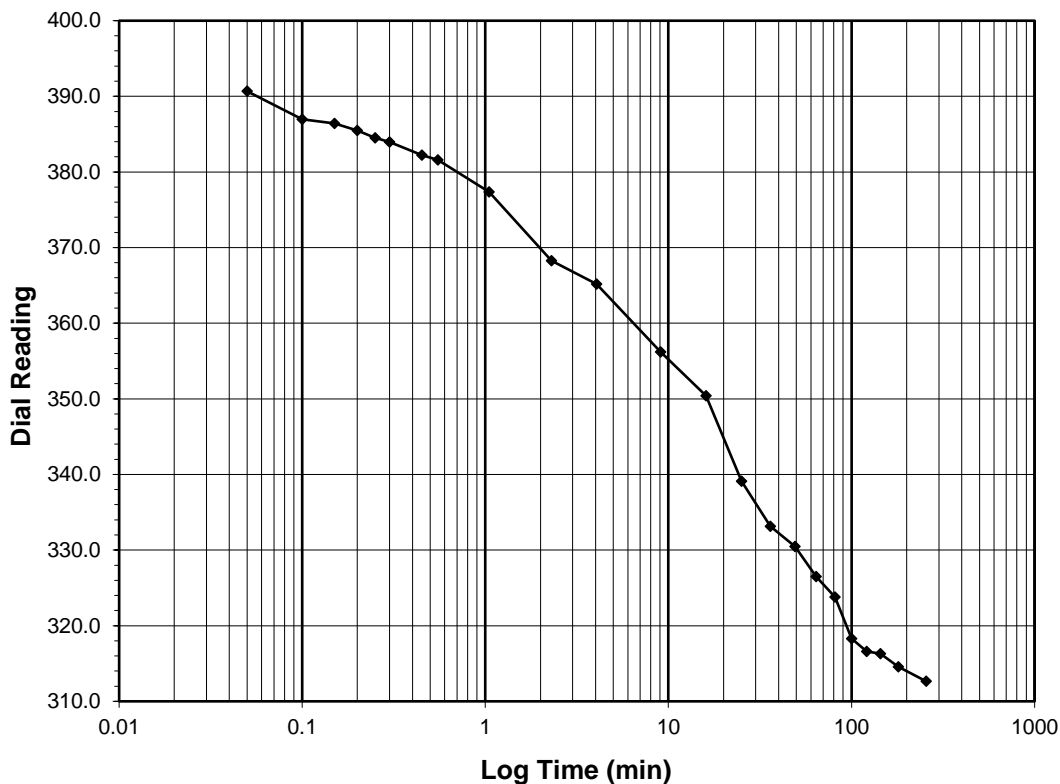
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>312.6</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>

<b>Start Date</b>	9/17/2020
<b>Start Time</b>	11:41:28

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>421.4</b>
0.05	390.7
0.10	387.0
0.15	386.4
0.20	385.5
0.25	384.5
0.30	384.0
0.45	382.2
0.55	381.6
1.05	377.4
2.30	368.2
4.05	365.2
9.05	356.2
16.05	350.4
25.05	339.1
36.05	333.1
49.07	330.5
64.07	326.5
81.07	323.8
100.07	318.3
121.07	316.6
144.07	316.3
180.07	314.6
255.85	312.6



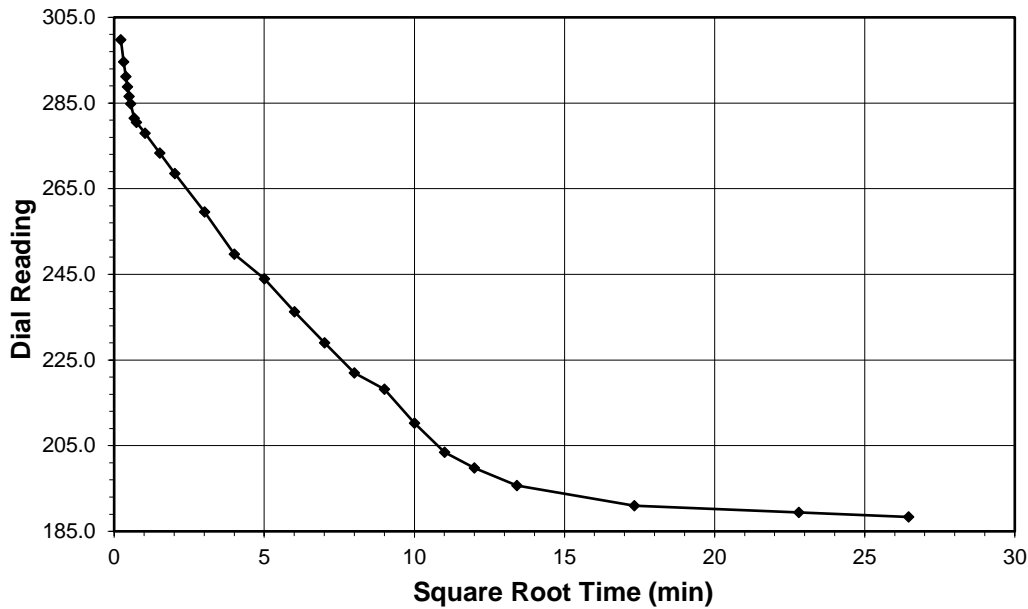
Tested By **NL** Date **9/17/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

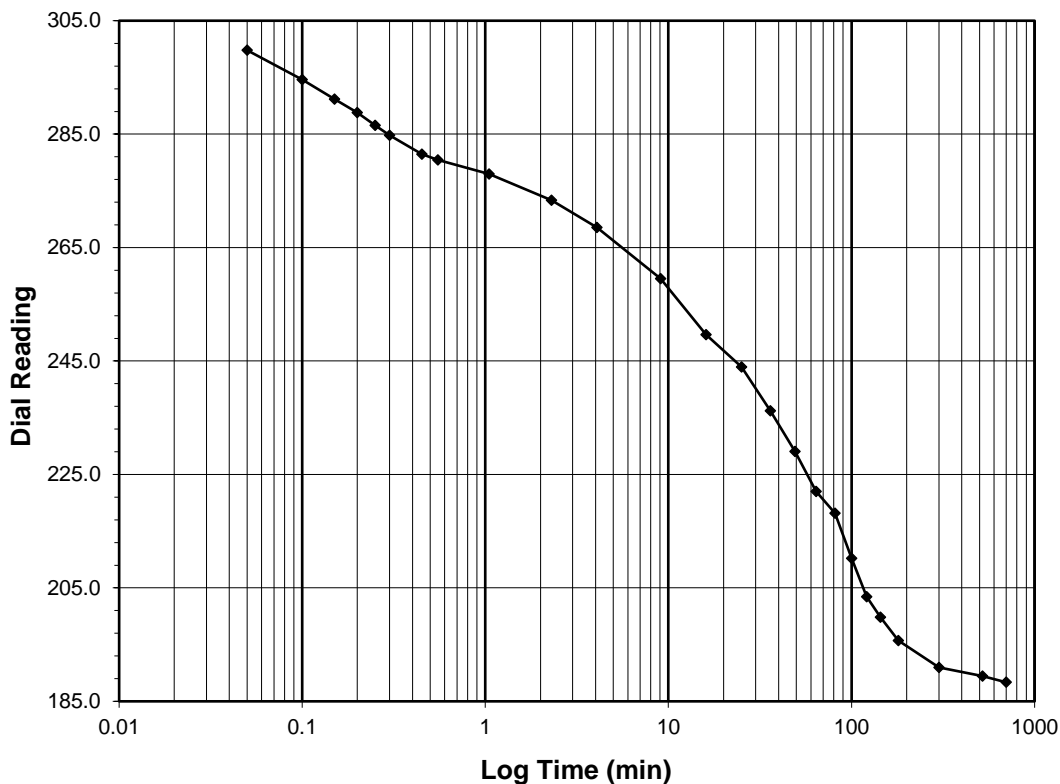
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>188.4</b>
<b>Consolidometer No.</b>	<b>R409</b>
1 Division (in)	0.0001
<b>Start Date</b>	<b>9/17/2020</b>
<b>Start Time</b>	<b>15:57:20</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>312.6</b>
0.05	299.8
0.10	294.6
0.15	291.2
0.20	288.8
0.25	286.5
0.30	284.8
0.45	281.5
0.55	280.5
1.05	278.0
2.30	273.3
4.07	268.6
9.07	259.5
16.07	249.7
25.07	243.9
36.07	236.2
49.07	229.0
64.07	222.0
81.07	218.2
100.07	210.2
121.07	203.4
144.07	199.8
180.07	195.7
300.08	191.0
520.08	189.4
700.08	188.4



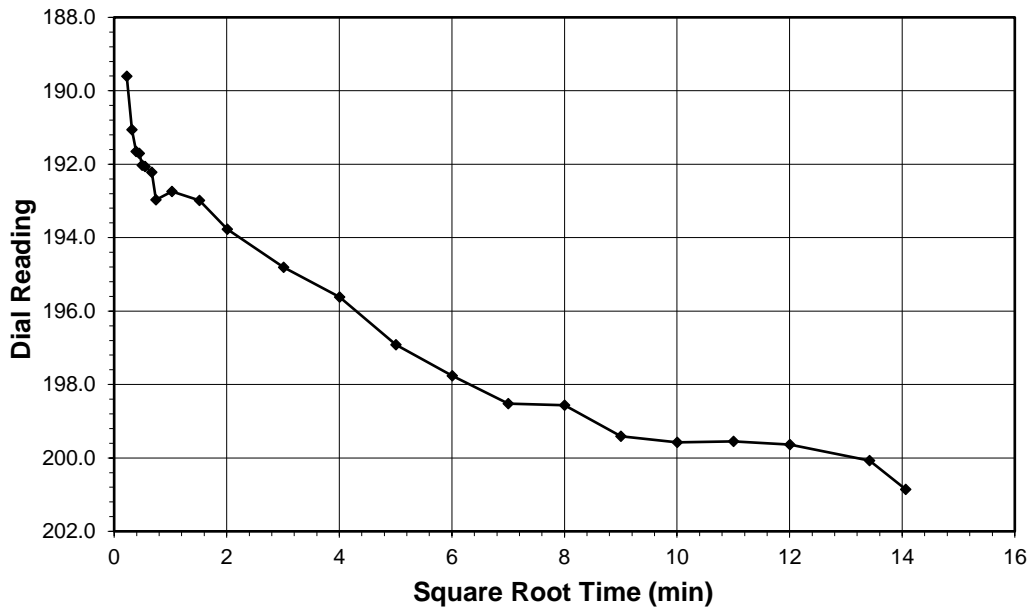
Tested By **NL** Date **9/17/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

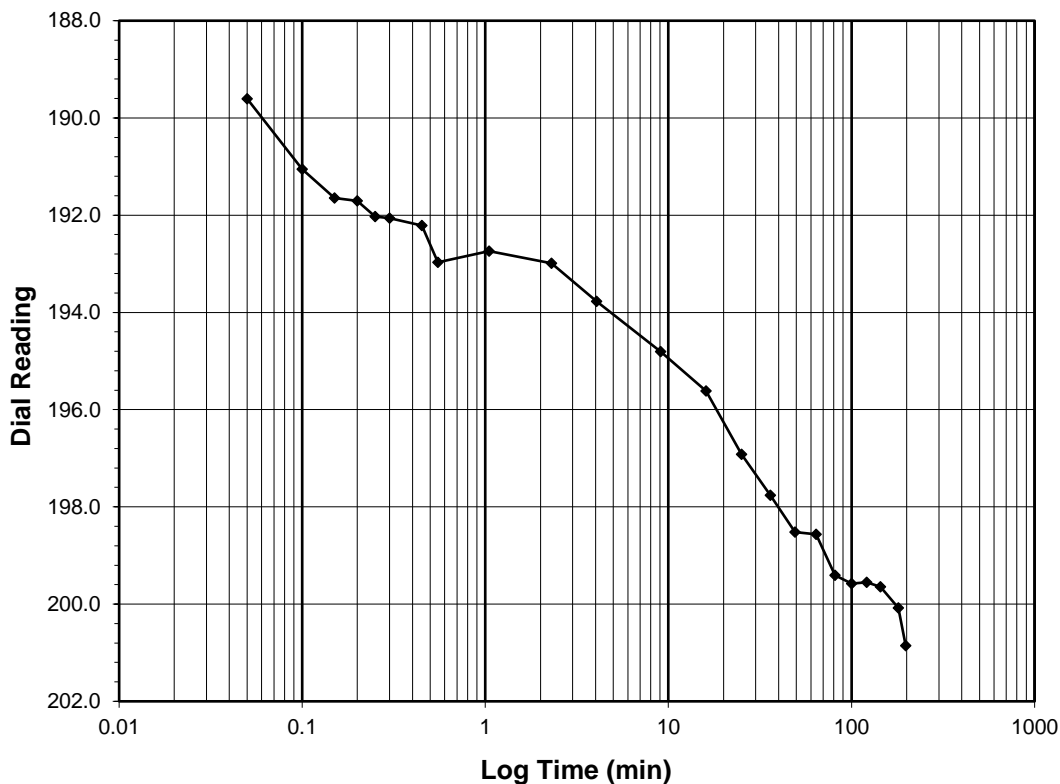
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>200.9</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/18/2020</b>
<b>Start Time</b>	<b>3:57:27</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>188.4</b>
0.05	189.6
0.10	191.1
0.15	191.6
0.20	191.7
0.25	192.0
0.30	192.1
0.45	192.2
0.55	193.0
1.05	192.7
2.30	193.0
4.05	193.8
9.05	194.8
16.05	195.6
25.05	196.9
36.05	197.8
49.05	198.5
64.07	198.6
81.07	199.4
100.07	199.6
121.07	199.6
144.07	199.6
180.07	200.1
197.77	200.9



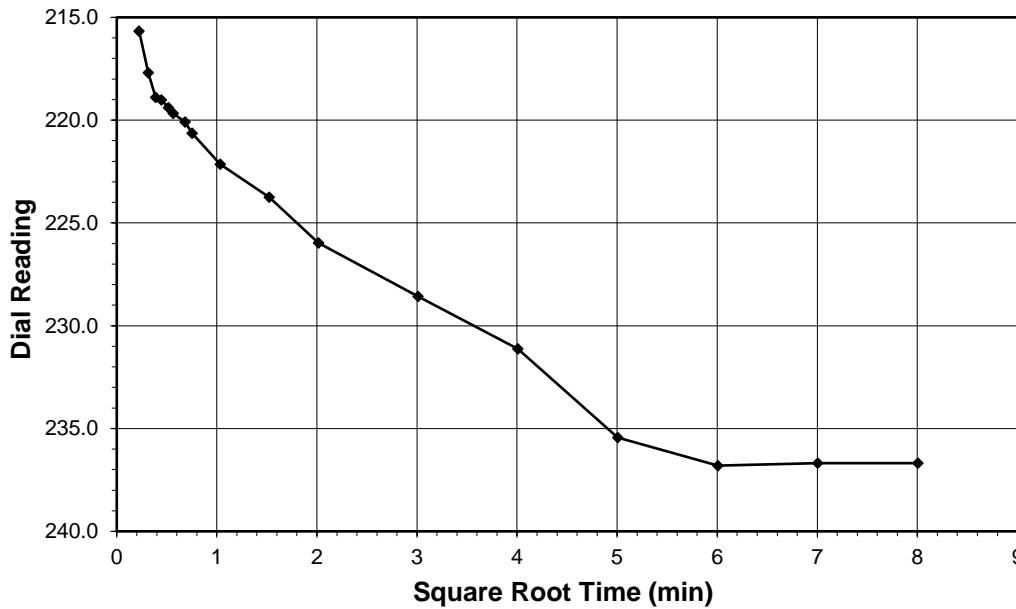
Tested By **NL** Date **9/18/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

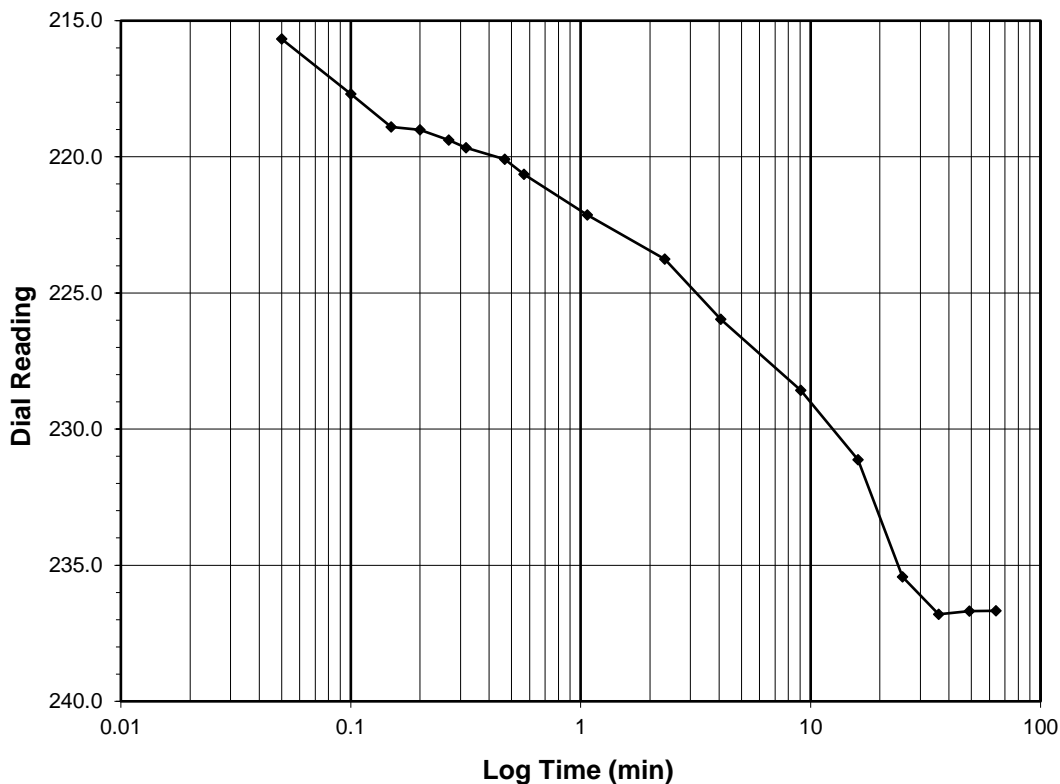
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>236.7</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/18/2020
Start Time	7:15:13

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>200.9</b>
0.05	215.7
0.10	217.7
0.15	218.9
0.20	219.0
0.27	219.4
0.32	219.7
0.47	220.1
0.57	220.6
1.07	222.1
2.32	223.8
4.07	226.0
9.07	228.6
16.07	231.1
25.07	235.4
36.07	236.8
49.07	236.7
64.07	236.7



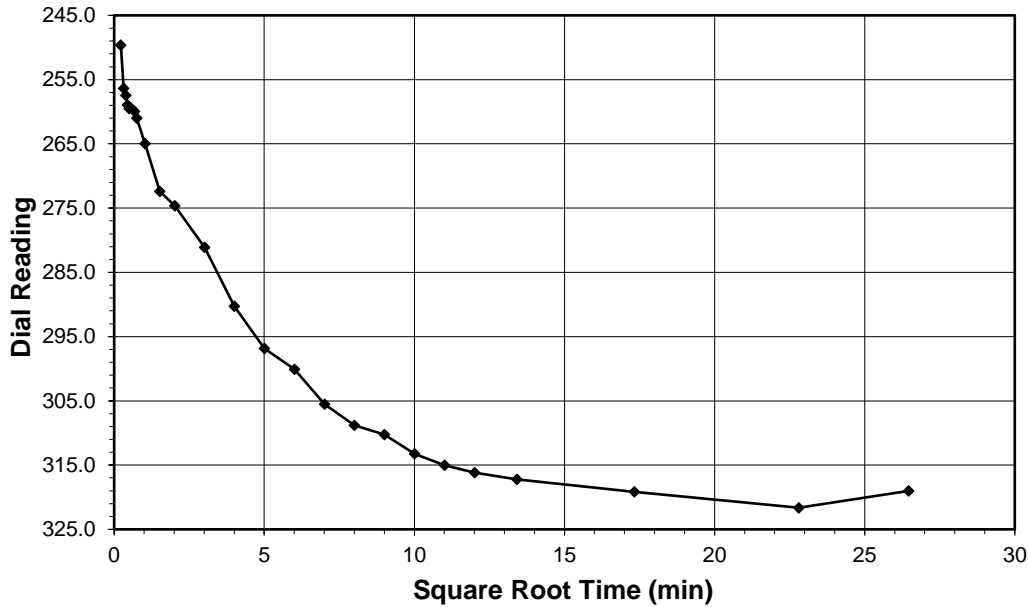
Tested By **NL** Date **9/18/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

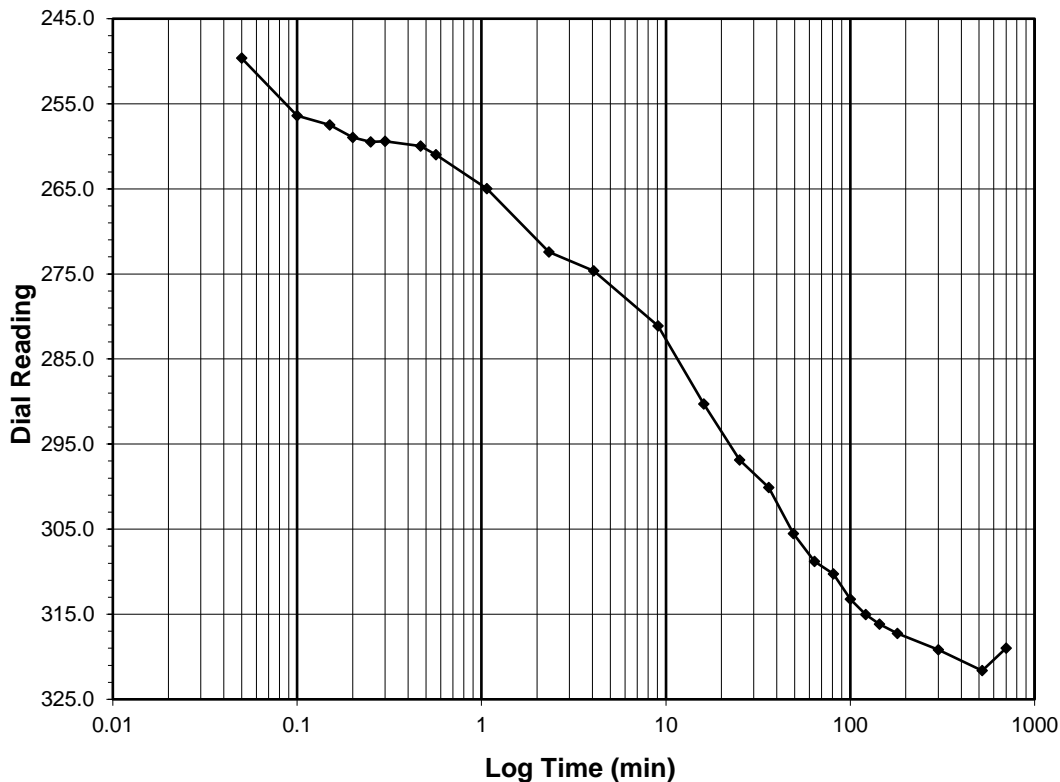
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>319.0</b>
<b>Consolidometer No.</b>	<b>R409</b>
1 Division (in)	0.0001
<b>Start Date</b>	9/18/2020
<b>Start Time</b>	8:19:24

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>236.7</b>
0.05	249.6
0.10	256.4
0.15	257.5
0.20	258.9
0.25	259.5
0.30	259.4
0.47	260.0
0.57	261.0
1.07	265.0
2.32	272.4
4.07	274.6
9.07	281.1
16.07	290.3
25.07	296.9
36.07	300.1
49.07	305.5
64.08	308.8
81.08	310.3
100.08	313.2
121.08	315.0
144.08	316.2
180.08	317.2
300.08	319.2
520.08	321.6
700.08	319.0



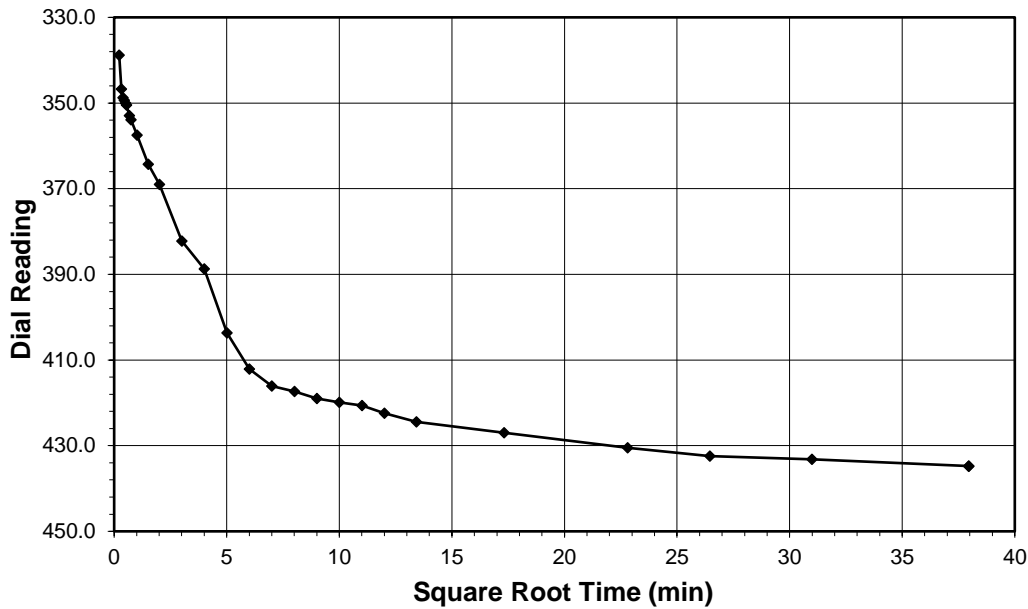
Tested By **NL** Date **9/18/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

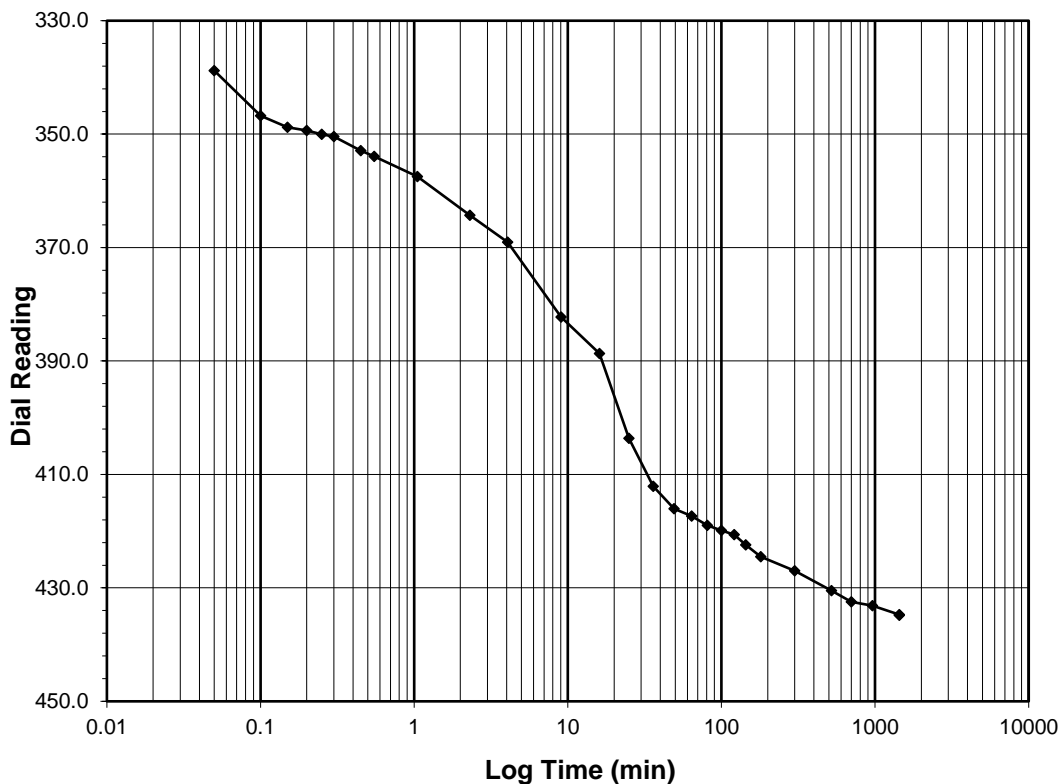
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



**Test Load (tsf)** 2.0-4.0  
**Final Reading (div)** 434.8  
**Consolidometer No.** R409  
 1 Division (in) 0.0001

**Start Date** 9/18/2020  
**Start Time** 20:19:37

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>319.0</b>
0.05	338.8
0.10	346.7
0.15	348.8
0.20	349.4
0.25	350.0
0.30	350.5
0.45	352.9
0.55	353.9
1.05	357.5
2.30	364.3
4.05	369.0
9.05	382.3
16.05	388.7
25.05	403.6
36.07	412.1
49.07	416.1
64.07	417.3
81.07	419.0
100.07	419.9
121.07	420.6
144.07	422.4
180.07	424.5
300.07	427.0
520.07	430.5
700.07	432.4
960.07	433.2
1440.07	434.7
1440.17	434.8



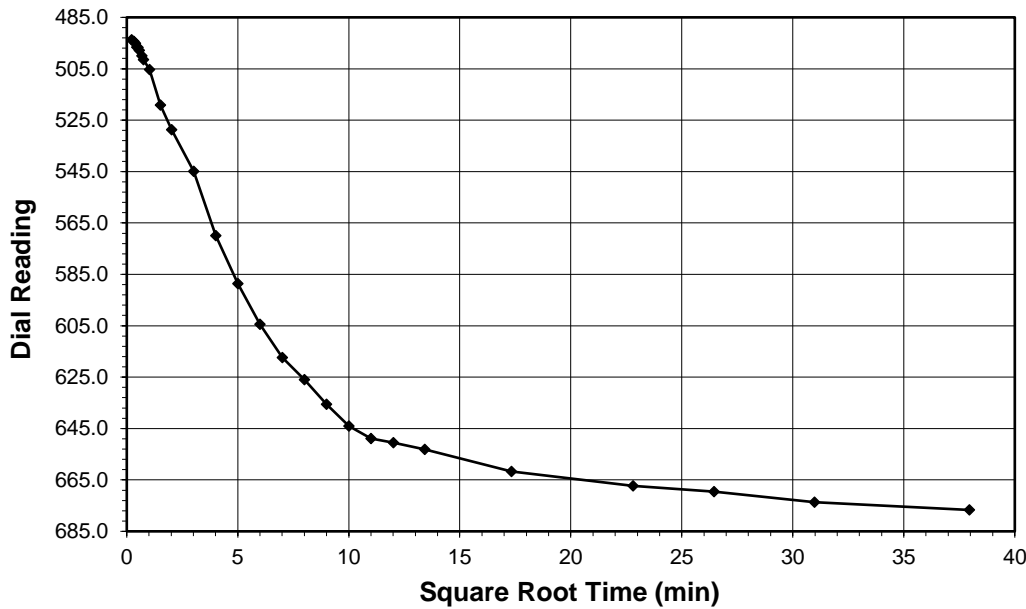
Tested By **NL** Date **9/18/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

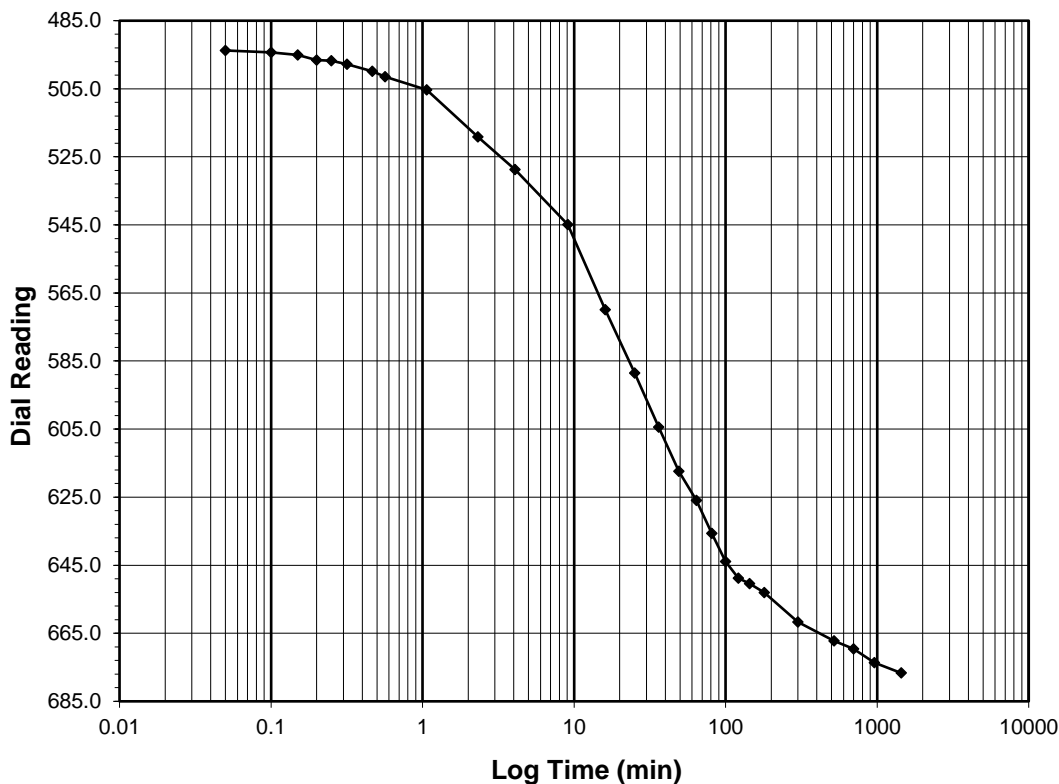
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>676.7</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/19/2020</b>
<b>Start Time</b>	<b>20:19:47</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>434.8</b>
0.05	493.7
0.10	494.3
0.15	495.1
0.20	496.6
0.25	496.8
0.32	497.8
0.47	499.9
0.57	501.5
1.07	505.3
2.32	519.1
4.07	528.7
9.07	544.9
16.07	569.9
25.07	588.6
36.07	604.5
49.07	617.4
64.07	625.9
81.07	635.6
100.07	644.0
121.07	648.8
144.07	650.4
180.07	653.1
300.07	661.7
520.07	667.3
700.07	669.6
960.07	673.7
1440.05	676.7



Tested By **NL** Date **9/19/2020** Checked By **GEM** Date **9/24/2020**

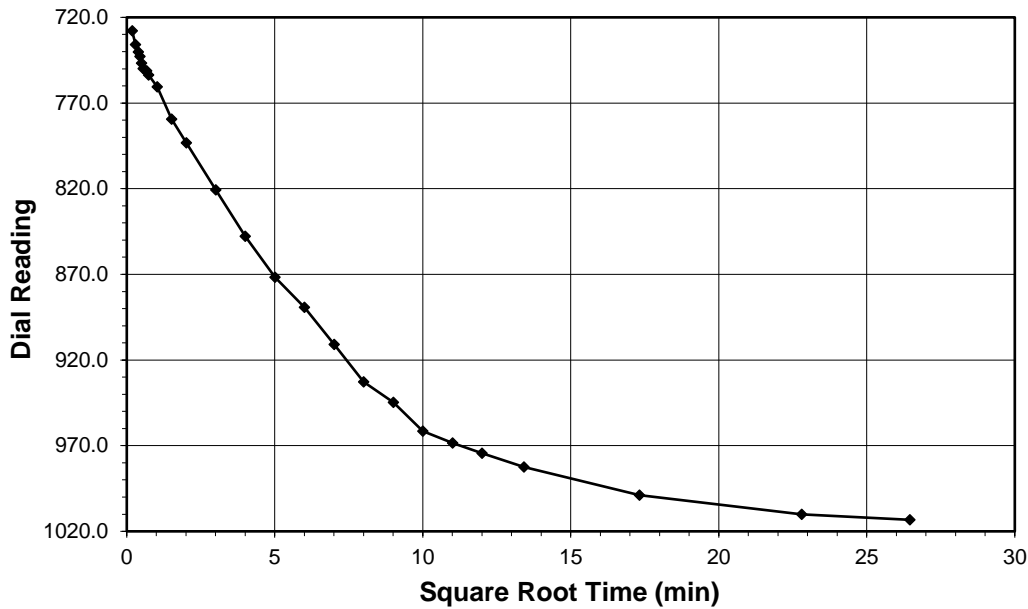


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

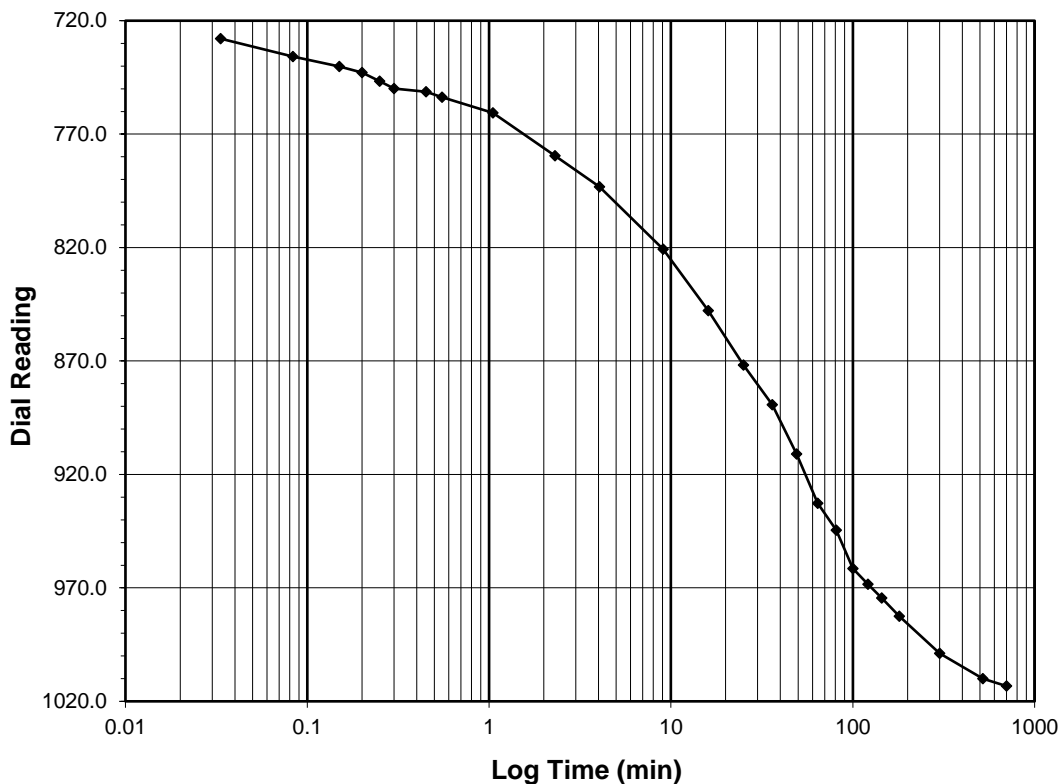
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>1013.3</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/20/2020
Start Time	20:19:50

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>676.7</b>
0.03	727.9
0.08	735.8
0.15	740.1
0.20	742.9
0.25	746.7
0.30	749.9
0.45	751.3
0.55	753.7
1.05	760.6
2.30	779.5
4.05	793.1
9.05	820.7
16.05	847.7
25.05	871.7
36.05	889.2
49.07	911.0
64.07	932.8
81.07	944.6
100.07	961.5
121.07	968.4
144.07	974.5
180.07	982.4
300.07	998.9
520.07	1010.0
700.07	1013.3



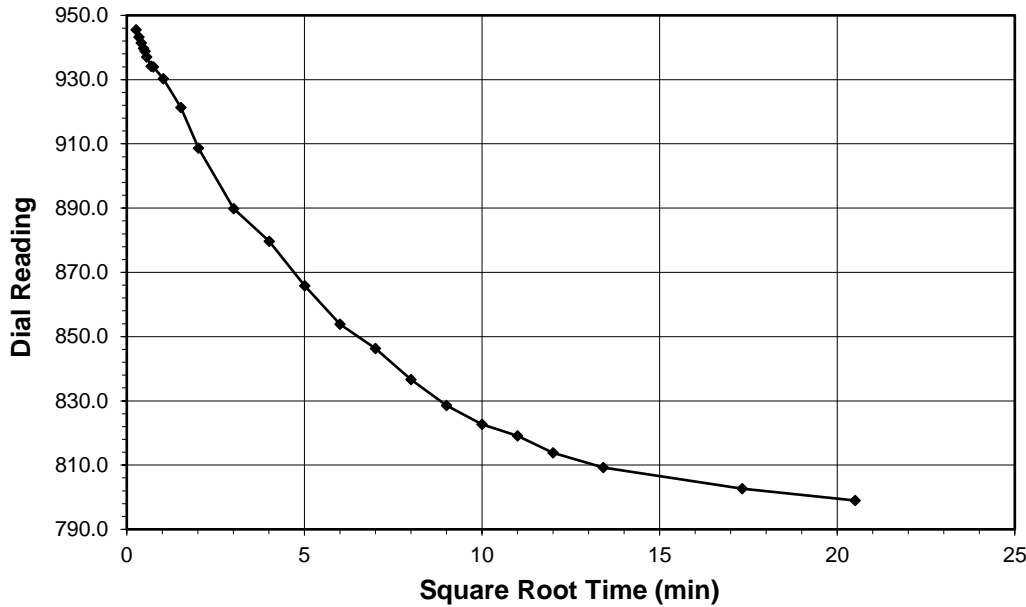
Tested By **NL** Date **9/20/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

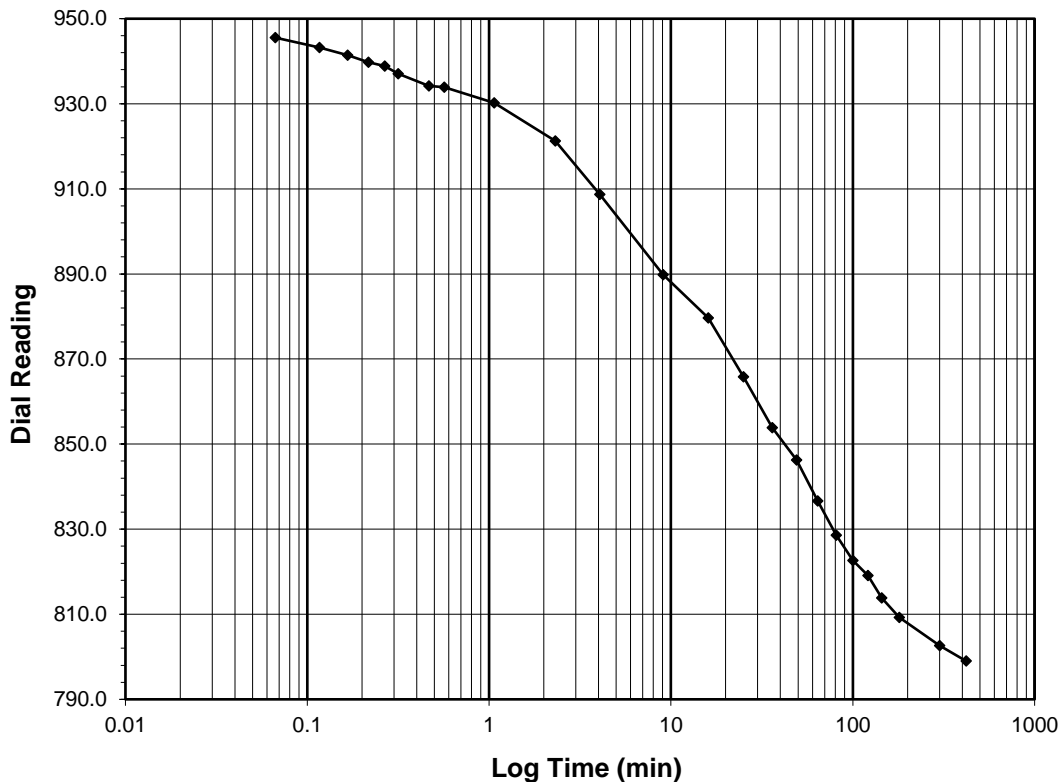
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>799.0</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/21/2020
Start Time	8:00:31

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1013.3</b>
0.07	945.6
0.12	943.2
0.17	941.4
0.22	939.7
0.27	938.9
0.32	937.1
0.47	934.2
0.57	933.9
1.07	930.2
2.32	921.3
4.07	908.7
9.07	889.8
16.07	879.6
25.07	865.8
36.07	853.9
49.07	846.3
64.07	836.6
81.07	828.6
100.07	822.7
121.07	819.1
144.08	813.8
180.08	809.2
300.08	802.6
420.40	799.0



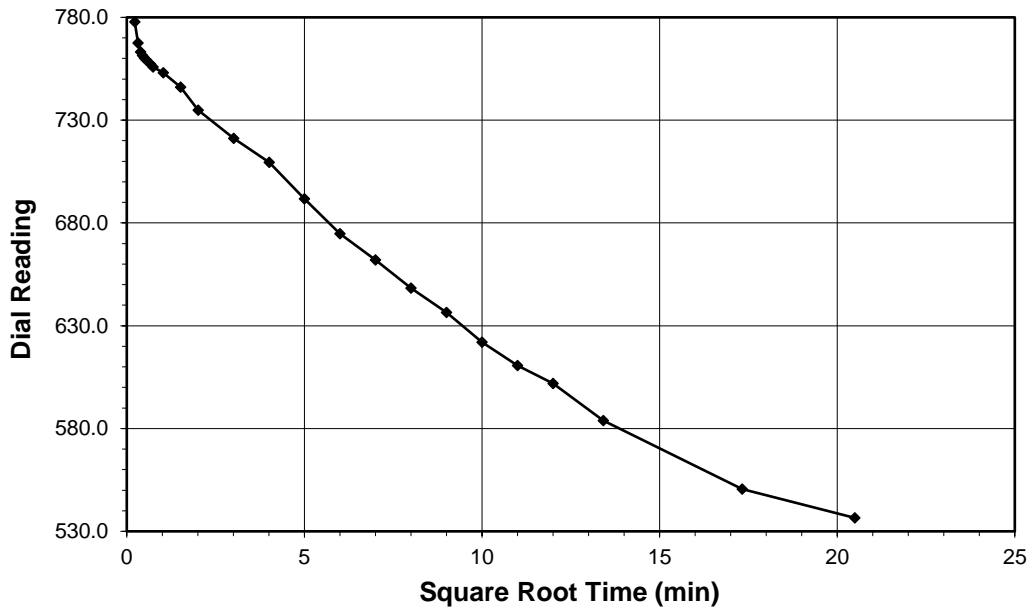
Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

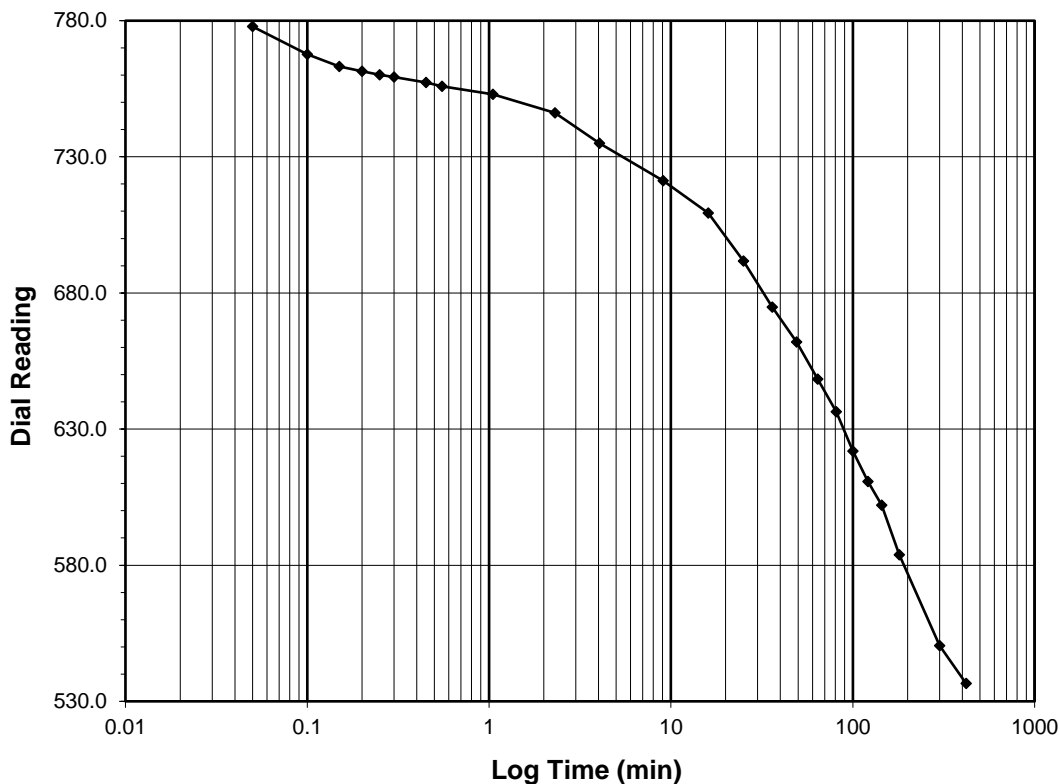
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>536.5</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/21/2020
Start Time	15:00:54

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>799.0</b>
0.05	777.8
0.10	767.6
0.15	763.2
0.20	761.4
0.25	760.1
0.30	759.3
0.45	757.3
0.55	755.9
1.05	753.0
2.30	746.1
4.05	734.9
9.05	721.2
16.05	709.4
25.05	691.7
36.05	674.8
49.07	662.0
64.07	648.4
81.07	636.4
100.07	621.9
121.07	610.7
144.07	602.0
180.07	583.8
300.07	550.5
420.02	536.5



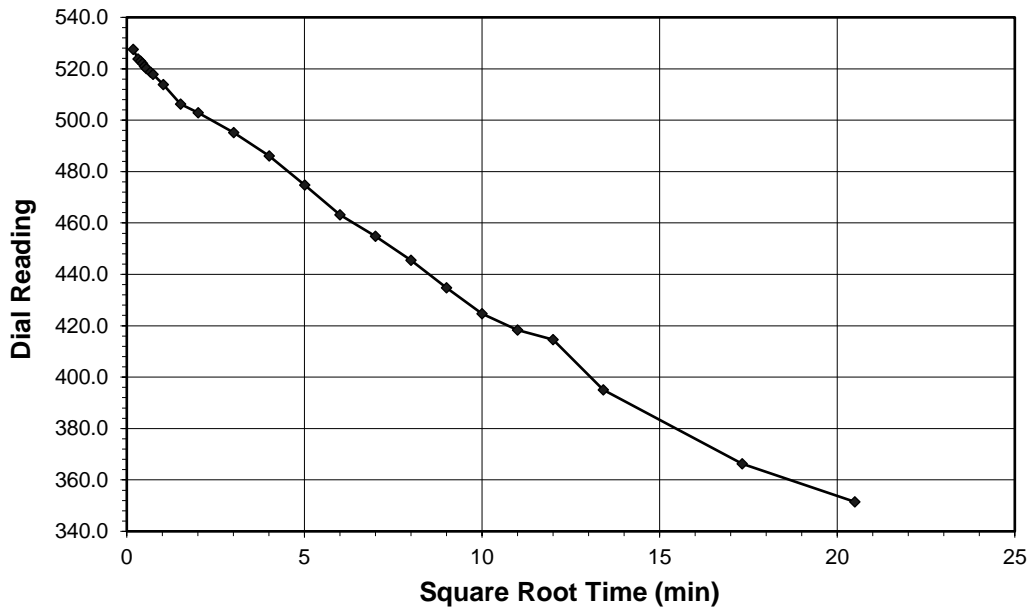
Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/24/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

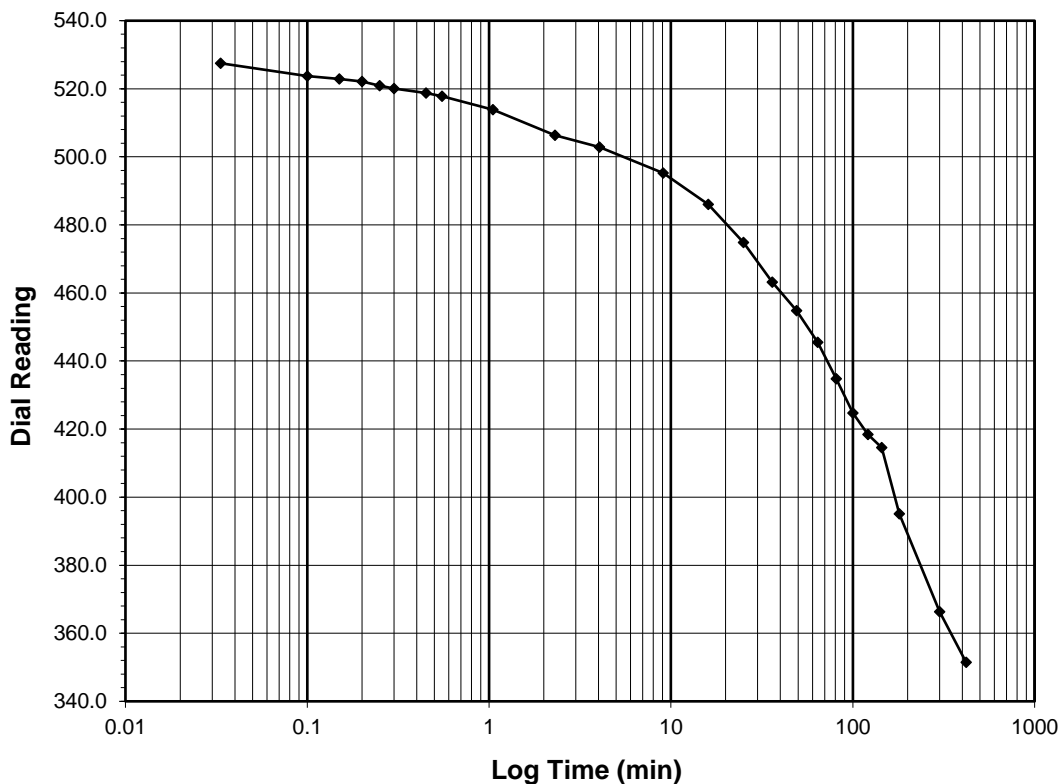
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	10.0'-12.0'
Project No.	R-2020-164-004	Sample No.	CPT-18
Lab ID	R-2020-164-004-002	Visual Description	Blue Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>351.5</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/21/2020
Start Time	22:00:55

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>536.5</b>
0.03	527.5
0.10	523.8
0.15	522.9
0.20	522.1
0.25	520.9
0.30	520.1
0.45	518.7
0.55	517.8
1.05	513.9
2.30	506.3
4.05	502.8
9.05	495.2
16.07	486.1
25.07	474.8
36.07	463.2
49.07	454.8
64.07	445.5
81.07	434.7
100.07	424.7
121.07	418.4
144.07	414.5
180.07	395.1
300.07	366.3
420.00	351.5



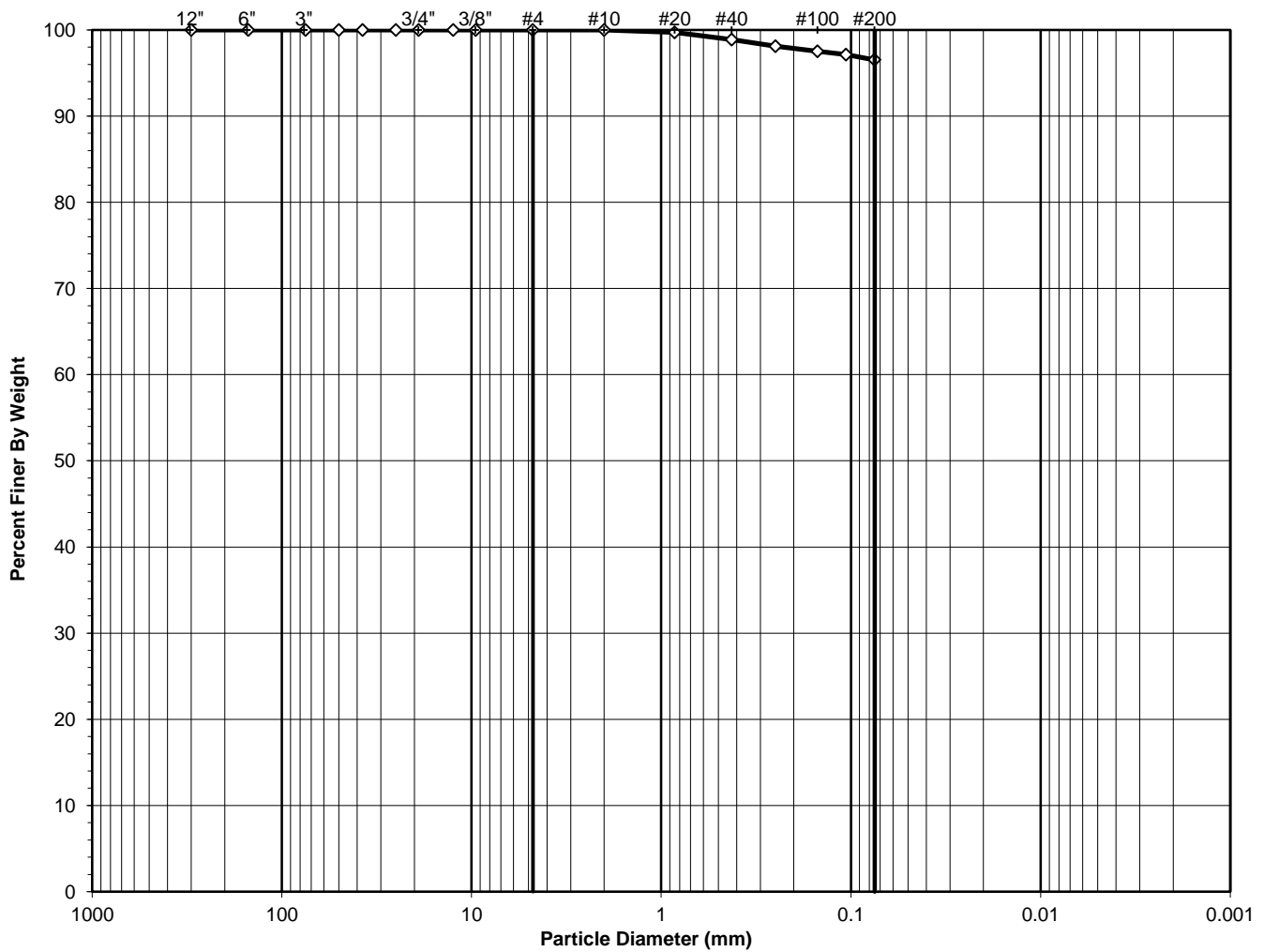
Tested By **NL** Date **9/21/2020** Checked By **GEM** Date **9/24/2020**

# SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002	Soil Color:	Blue Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



**USCS Symbol:**  
**CL, TESTED**

**D50 = 0.02**

**USCS Classification:**  
**LEAN CLAY**

Tested By SS Date 10/3/20 Checked By MPS Date 10/5/20

## WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002	Soil Color:	Blue Gray

Moisture Content of Passing 3/4" Material				Moisture Content of Retained 3/4" Material			
Tare No.:	x-16	Tare No.:	NA				
Wt. of Tare & Wet Sample (g):	514.92	Weight of Tare & Wet Sample (g):	NA				
Wt. of Tare & Dry Sample (g):	421.55	Weight of Tare & Dry Sample (g):	NA				
Weight of Tare (g):	141.68	Weight of Tare (g):	NA				
Weight of Water (g):	93.37	Weight of Water (g):	NA				
Weight of Dry Soil (g):	279.87	Weight of Dry Soil (g):	NA				
<b>Moisture Content (%):</b>	<b>33.4</b>	<b>Moisture Content (%):</b>	<b>0.0</b>				
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	279.87				
Tare No. (Sub-Specimen)	x-16	Wet Weight of +3/4" Sample (g):	0.00				
Wt. of Tare & Wet Sub-Specimen (g):	514.92	Dry Weight of + 3/4" Sample (g):	0.00				
Weight of Tare (g):	141.68	Dry Weight of - 3/4" Sample (g):	279.87				
Sub-Specimen Wet Weight (g):	373.24	Dry Weight -3/4" +3/8" Sample (g):	0.00				
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	279.87				
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA				
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA				
Sub-Specimen -3/8" Wet Weight (g):	NA						

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.00
6"	150	0.00	0.00	0.00	100.00	100.00
3"	75	0.00	0.00	0.00	100.00	100.00
2"	50	0.00	( *)	0.00	100.00	100.00
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.00
1"	25	0.00	0.00	0.00	100.00	100.00
3/4"	19	0.00	0.00	0.00	100.00	100.00
1/2"	12.5	0.00	( ** )	0.00	100.00	100.00
3/8"	9.5	0.00	0.00	0.00	100.00	100.00
#4	4.75	0.00	0.00	0.00	100.00	100.00
#10	2	0.00	0.00	0.00	100.00	100.00
#20	0.85	0.82	( ** )	0.29	99.71	99.7
#40	0.425	2.33	0.83	1.13	98.87	98.9
#60	0.25	2.16	0.77	1.90	98.10	98.1
#100	0.15	1.62	0.58	2.48	97.52	97.5
#140	0.106	1.12	0.40	2.88	97.12	97.1
#200	0.075	1.65	0.59	3.47	96.53	96.5
Pan	-	0.00	0.00	3.47	-	-

**Notes :** ( \* ) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample  
 ( \*\* ) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen

Tested By	SS	Date	10/3/20	Checked By	MPS	Date	10/5/20
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## ATTERBERG LIMITS

ASTM D 4318-17

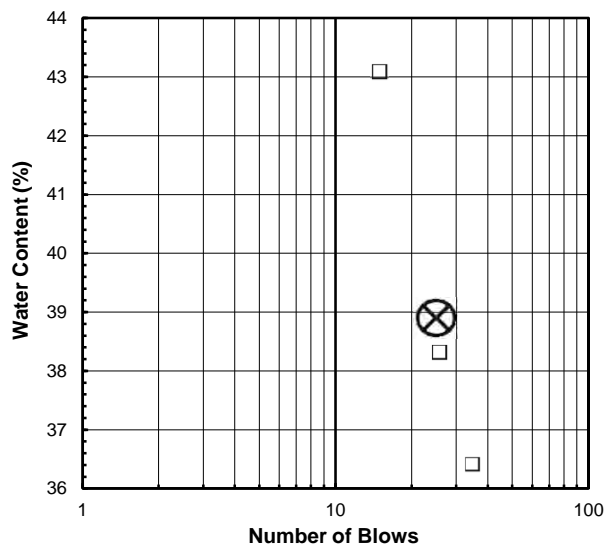
Client: Catlin Engineers & Scientists	Boring No.: PRN-20-UD
Client Reference: USACE Princeville	Depth (ft): 10.0-12.0
Project No.: R-2020-164-004	Sample No.: CPT-18
Lab ID: R-2020-164-004-002	Soil Description: GRAY LEAN CLAY

**Note: The USCS symbol used with this test refers only to the minus No. 40** (Minus No. 40 sieve material, Air dried) **sieve material. See the "Sieve and Hydrometer Analysis" graph page for the complete material description.**

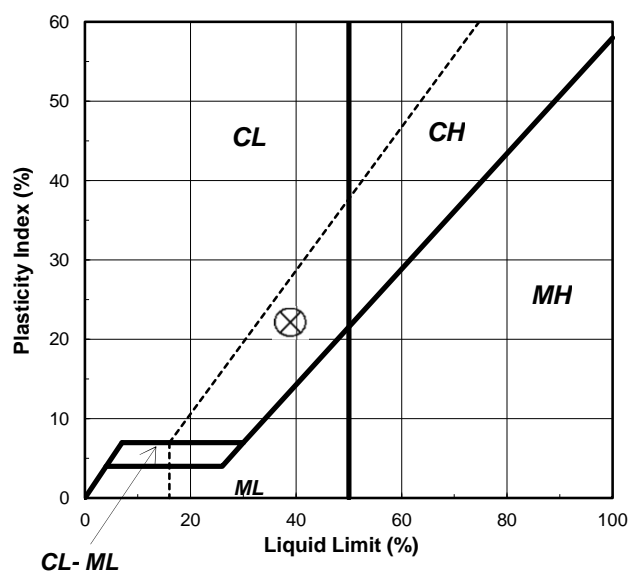
As Received Moisture Content	Liquid Limit Test			
ASTM D2216-19	1	2	3	M
Tare Number: 715	26	9	10	U
Wt. of Tare & Wet Sample (g): 265.85	20.96	21.36	21.17	L
Wt. of Tare & Dry Sample (g): 230.66	17.24	17.38	16.91	T
Weight of Tare (g): 90.37	7.02	6.99	7.02	I
Weight of Water (g): 35.2	3.7	4.0	4.3	P
Weight of Dry Sample (g): 140.3	10.2	10.4	9.9	O
Was As Received MC Preserved: <b>Yes</b>				I
<b>Moisture Content (%): 25.1</b>	<b>36.4</b>	<b>38.3</b>	<b>43.1</b>	<b>N</b>
<b>Number of Blows:</b>	<b>35</b>	<b>26</b>	<b>15</b>	<b>T</b>

Plastic Limit Test	1	2	Range	Test Results
Tare Number:	6	25		<b>Liquid Limit (%): 39</b>
Wt. of Tare & Wet Sample (g):	15.61	15.86		<b>Plastic Limit (%): 17</b>
Wt. of Tare & Dry Sample (g):	14.36	14.56		<b>Plasticity Index (%): 22</b>
Weight of Tare (g):	6.99	7.01		<b>USCS Symbol: CL</b>
Weight of Water (g):	1.3	1.3		
Weight of Dry Sample (g):	7.4	7.6		
<b>Moisture Content (%):</b>	<b>17.0</b>	<b>17.2</b>	<b>-0.3</b>	
<i>Note: The acceptable range of the two Moisture Contents is <math>\pm</math></i>				<i>1.12</i>

**Flow Curve**



**Plasticity Chart**

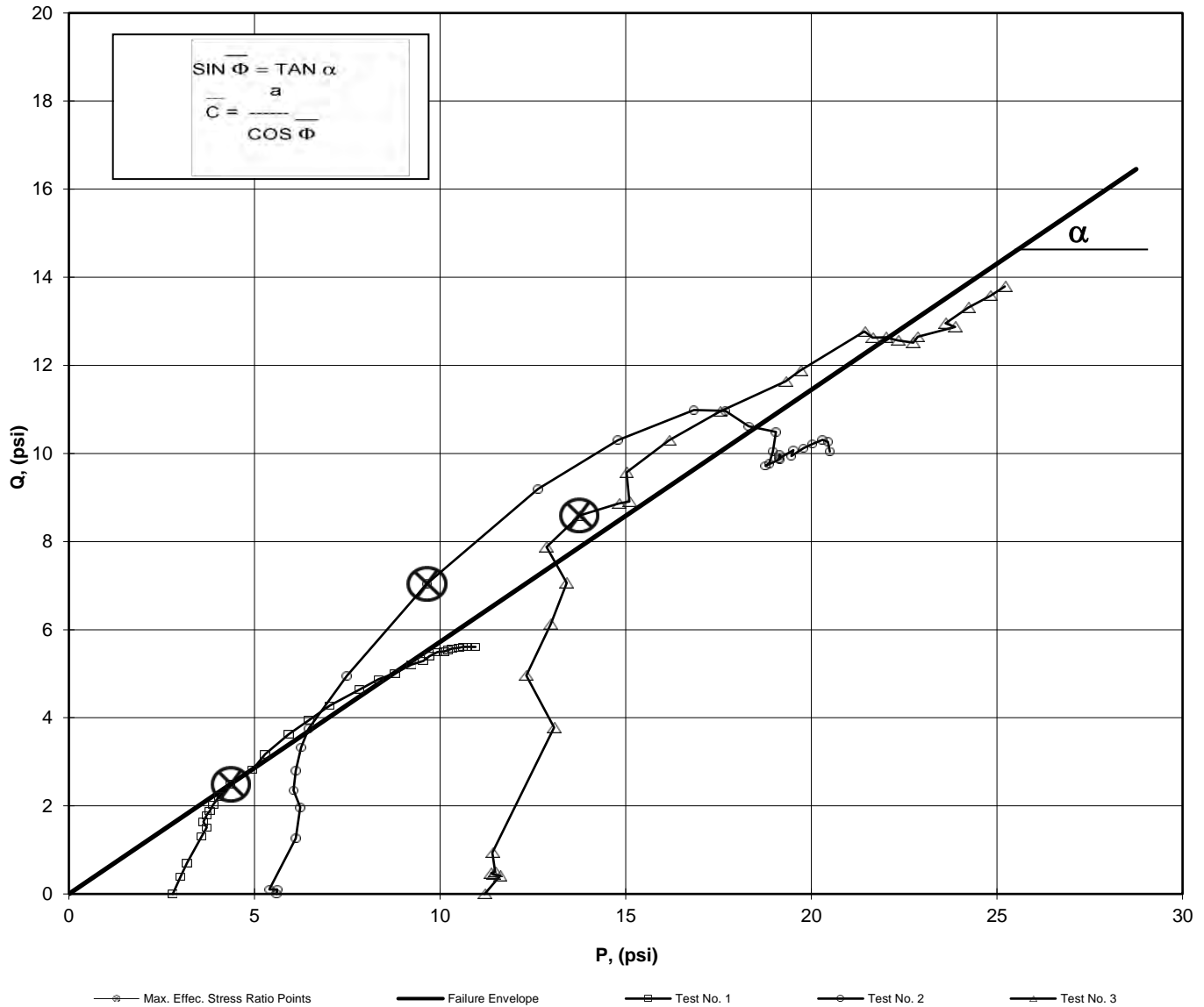


Tested By **SS** Date **9/18/20** Checked By **GEM** Date **9/21/20**

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

**Consolidated Undrained Triaxial Test with Pore Pressure**



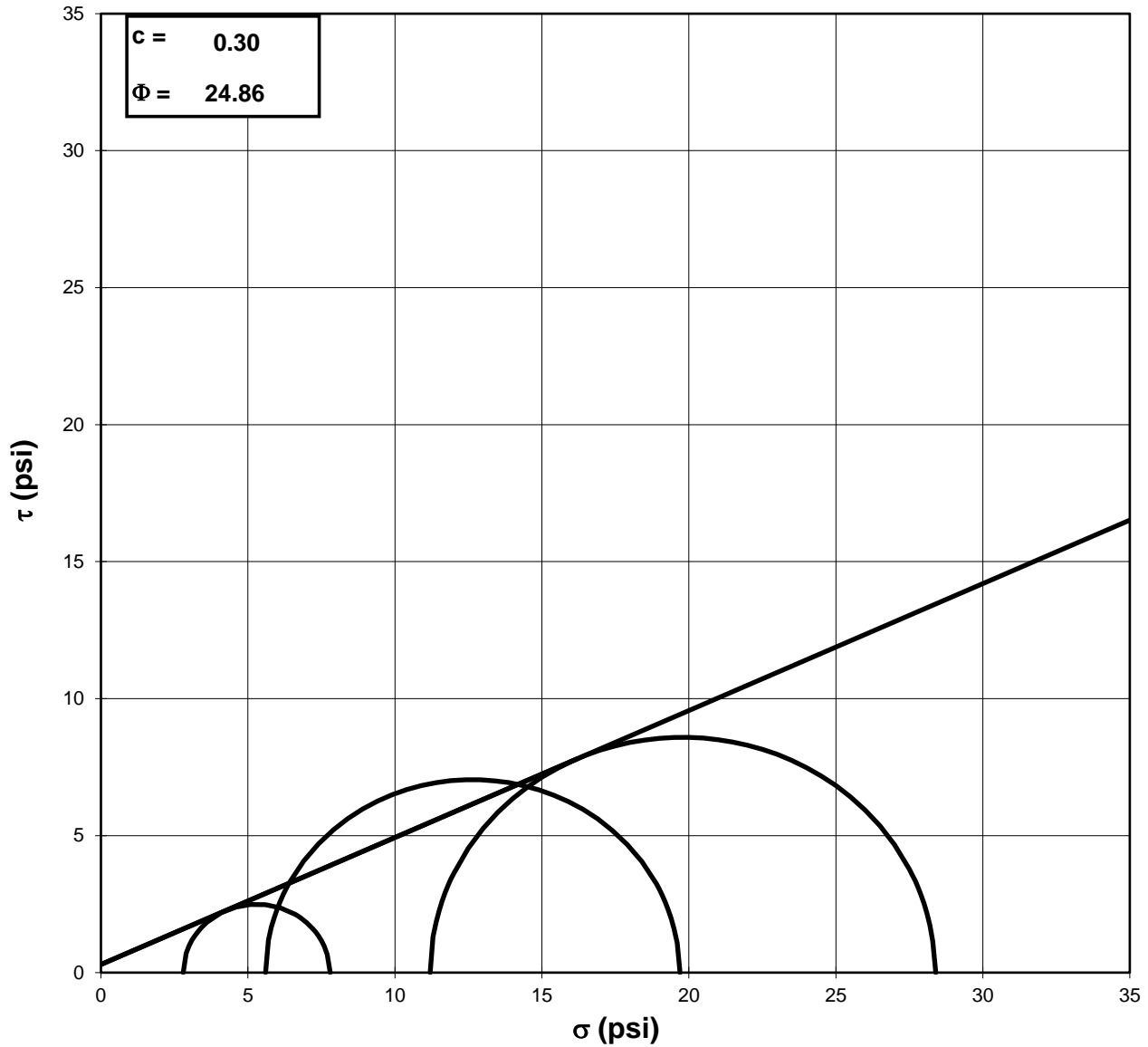
<b>a</b>	<b>=</b>	<b>0.00</b>	<b>C̄</b>	<b>=</b>	<b>0.00</b>
<b>α</b>	<b>=</b>	<b>29.8</b>	<b>Φ̄</b>	<b>=</b>	<b>34.91</b>

Tested By: MY      Date: 9/29/20      Approved By: MPS      Date: 10/5/20



**MOHR TOTAL STRENGTH ENVELOPE**  
ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		
Visual Description:	Blue Gray Clay (UNDISTURBED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: MY      Date: 9/29/20      Approved By: MPS      Date: 10/5/20

page 2 of 10      DCN: CT-S28      DATE: 4/12/13      REVISION: 3

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

Visual Description: Blue Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	1

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.368	Diameter 1:	2.826
Length 2:	6.382	Diameter 2:	2.831
Length 3:	6.397	Diameter 3:	2.833
<i>Avg. Length:</i>	6.382	<i>Avg. Diam.:</i>	2.830

**PRESSURES (psi)**

Cell Pressure (psi)	52.8
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	2.8
Pore Pressure	
Response (%)	97

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	17.5
Final Change (ml)	6.5

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	4.36
Q	=	2.49

Initial Dial Reading (mil)	265
Dial Reading After Saturation (mil)	393
Dial Reading After Consolidation (mil)	416

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
14.8	0.000	50.0
19.5	0.001	50.2
23.3	0.003	50.3
30.4	0.009	50.5
32.9	0.016	50.6
34.5	0.022	50.8
36.3	0.032	50.9
37.5	0.042	50.9
39.2	0.054	50.9
41.6	0.077	51.0
45.2	0.109	50.9
49.4	0.147	50.7
54.0	0.185	50.7
59.9	0.230	50.5
64.1	0.262	50.3
68.6	0.307	50.0
73.9	0.368	49.6
77.6	0.432	49.3
79.8	0.480	49.0
83.1	0.543	48.8
84.8	0.592	48.5
86.8	0.640	48.5
88.8	0.689	48.4
89.3	0.721	48.2
90.3	0.753	48.1
91.1	0.785	48.0
91.8	0.818	47.9
92.8	0.866	47.8
93.5	0.913	47.7
94.0	0.946	47.5
94.2	0.978	47.5

Tested By: MY      Date: 9/29/20      Input Checked By: MPS      Date: 10/5/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

Visual Description: Blue Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	2.8	Stage No.	0
		Test No	1

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.38
Initial Sample Diameter (in)	2.83
Initial Sample Area (in <sup>2</sup> )	6.29
Initial Sample Volume (in <sup>3</sup> )	40.15

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	37.33
Length After Consolidation (in)	6.23
Area After Consolidation (in <sup>2</sup> )	5.991

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	0.79	0.19	3.40	2.6	1.302	0.24	3.01	0.39
0.04	1.42	0.33	3.89	2.5	1.574	0.24	3.18	0.71
0.15	2.61	0.53	4.88	2.3	2.149	0.21	3.58	1.30
0.25	3.02	0.60	5.22	2.2	2.368	0.20	3.71	1.51
0.35	3.28	0.81	5.26	2.0	2.651	0.26	3.62	1.64
0.51	3.58	0.88	5.50	1.9	2.865	0.25	3.71	1.79
0.67	3.77	0.89	5.68	1.9	2.974	0.24	3.80	1.89
0.86	4.05	0.94	5.91	1.9	3.175	0.24	3.89	2.02
1.23	4.42	0.97	6.26	1.8	3.413	0.23	4.05	2.21
1.74	4.99	0.94	6.85	1.9	3.676	0.19	4.36	2.49
2.36	5.65	0.67	7.77	2.1	3.657	0.12	4.95	2.82
2.97	6.35	0.69	8.46	2.1	4.009	0.11	5.29	3.18
3.69	7.26	0.51	9.55	2.3	4.166	0.07	5.92	3.63
4.21	7.89	0.28	10.41	2.5	4.124	0.04	6.47	3.94
4.93	8.55	0.05	11.30	2.8	4.104	0.01	7.03	4.27
5.90	9.28	-0.38	12.47	3.2	3.916	-0.04	7.83	4.64
6.94	9.76	-0.67	13.22	3.5	3.815	-0.07	8.34	4.88
7.71	10.02	-0.97	13.79	3.8	3.660	-0.10	8.78	5.01
8.72	10.41	-1.23	14.44	4.0	3.585	-0.12	9.23	5.20
9.50	10.58	-1.46	14.84	4.3	3.482	-0.14	9.55	5.29
10.28	10.79	-1.51	15.11	4.3	3.501	-0.14	9.71	5.40
11.05	10.99	-1.64	15.43	4.4	3.479	-0.15	9.93	5.50
11.56	11.01	-1.81	15.62	4.6	3.389	-0.17	10.11	5.50
12.09	11.08	-1.88	15.76	4.7	3.370	-0.17	10.22	5.54
12.60	11.13	-1.95	15.89	4.8	3.343	-0.18	10.32	5.57
13.13	11.18	-2.12	16.09	4.9	3.273	-0.20	10.50	5.59
13.89	11.21	-2.21	16.22	5.0	3.240	-0.20	10.61	5.61
14.65	11.22	-2.32	16.34	5.1	3.191	-0.21	10.73	5.61
15.18	11.21	-2.55	16.56	5.3	3.097	-0.23	10.95	5.61
15.70	11.18	-2.51	16.49	5.3	3.107	-0.23	10.90	5.59

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

Visual Description: Blue Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	2

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.456	Diameter 1:	2.863
Length 2:	6.466	Diameter 2:	2.850
Length 3:	6.418	Diameter 3:	2.884
Avg. Length	6.447	Avg. Diam.:	2.866

**PRESSURES (psi)**

Cell Pressure (psi)	55.6
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	5.6
Pore Pressure	
Response (%)	97

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	13.8
Final Change (ml)	10.2

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	9.65
Q	=	7.04

Initial Dial Reading (mil)	170
Dial Reading After Saturation (mil)	175
Dial Reading After Consolidation (mil)	222

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
10.6	0.000	50.0
11.9	0.001	50.1
11.9	0.003	50.3
26.7	0.009	50.8
35.8	0.015	51.3
40.7	0.021	51.9
46.5	0.031	52.3
53.4	0.041	52.7
59.0	0.053	52.9
74.7	0.076	53.1
102.1	0.108	53.0
130.9	0.147	52.2
146.2	0.185	51.1
156.2	0.229	49.8
156.7	0.261	48.9
153.1	0.307	47.9
152.9	0.368	47.0
148.3	0.432	46.7
145.7	0.480	46.5
146.3	0.544	46.5
149.6	0.593	46.3
152.3	0.641	46.4
152.2	0.689	46.4
155.7	0.721	46.2
154.6	0.753	46.1
158.1	0.785	45.9
160.2	0.817	45.8
163.0	0.866	45.6
163.7	0.914	45.4
161.3	0.946	45.1
165.5	0.962	44.5

Tested By: MY      Date: 9/29/20      Input Checked By: MPS      Date: 10/5/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

Visual Description: Blue Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	5.6	Stage No.	0
		Test No	2

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.45
Initial Sample Diameter (in)	2.87
Initial Sample Area (in <sup>2</sup> )	6.45
Initial Sample Volume (in <sup>3</sup> )	41.58

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	40.86
Length After Consolidation (in)	6.39
Area After Consolidation (in <sup>2</sup> )	6.390

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	0.20	0.09	5.71	5.5	1.036	0.45	5.61	0.10
0.05	0.20	0.30	5.50	5.3	1.038	1.55	5.40	0.10
0.15	2.52	0.75	7.37	4.8	1.520	0.31	6.11	1.26
0.24	3.93	1.33	8.20	4.3	1.922	0.35	6.23	1.97
0.33	4.70	1.90	8.40	3.7	2.271	0.42	6.05	2.35
0.48	5.59	2.28	8.91	3.3	2.687	0.42	6.11	2.80
0.64	6.65	2.67	9.58	2.9	3.268	0.41	6.26	3.33
0.84	7.51	2.89	10.22	2.7	3.772	0.40	6.46	3.75
1.19	9.91	3.07	12.44	2.5	4.914	0.32	7.49	4.95
1.69	14.08	2.99	16.69	2.6	6.405	0.22	9.65	7.04
2.29	18.39	2.15	21.84	3.4	6.336	0.12	12.64	9.19
2.89	20.61	1.11	25.10	4.5	5.588	0.06	14.79	10.30
3.59	21.97	-0.25	27.82	5.8	4.757	-0.01	16.84	10.99
4.09	21.93	-1.12	28.65	6.7	4.265	-0.05	17.68	10.97
4.80	21.23	-2.09	28.93	7.7	3.759	-0.10	18.31	10.62
5.76	20.98	-2.96	29.54	8.6	3.453	-0.15	19.05	10.49
6.75	20.09	-3.32	29.01	8.9	3.252	-0.17	18.97	10.05
7.51	19.56	-3.48	28.64	9.1	3.153	-0.18	18.86	9.78
8.51	19.43	-3.45	28.49	9.1	3.146	-0.18	18.77	9.72
9.27	19.74	-3.68	29.03	9.3	3.126	-0.19	19.16	9.87
10.03	19.95	-3.57	29.12	9.2	3.175	-0.18	19.15	9.97
10.78	19.77	-3.64	29.01	9.2	3.140	-0.19	19.13	9.89
11.28	20.15	-3.84	29.59	9.4	3.136	-0.20	19.51	10.08
11.77	19.89	-3.92	29.41	9.5	3.090	-0.20	19.46	9.94
12.27	20.24	-4.07	29.91	9.7	3.094	-0.21	19.79	10.12
12.78	20.43	-4.21	30.24	9.8	3.081	-0.21	20.03	10.21
13.53	20.62	-4.40	30.62	10.0	3.063	-0.22	20.31	10.31
14.29	20.53	-4.58	30.72	10.2	3.017	-0.23	20.45	10.27
14.79	20.09	-4.85	30.54	10.5	2.922	-0.25	20.50	10.05
15.04	20.60	-5.54	31.74	11.1	2.849	-0.28	21.44	10.30

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

Visual Description: Blue Gray Clay (UNDISTURBED)

Stage No.	0
Test No.	3

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.153	Diameter 1:	2.853
Length 2:	6.114	Diameter 2:	2.858
Length 3:	6.127	Diameter 3:	2.847
Avg. Length:	6.131	Avg. Diam.:	2.853

**PRESSURES (psi)**

Cell Pressure (psi)	61.2
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	11.2
Pore Pressure	
Response (%)	98

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	9.3
Final Change (ml)	14.7

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	13.75
Q	=	8.59

Initial Dial Reading (mil)	215
Dial Reading After Saturation (mil)	224
Dial Reading After Consolidation (mil)	256

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
10.5	0.000	50.0
15.7	0.002	50.0
16.0	0.003	50.2
16.4	0.009	50.3
16.8	0.015	50.2
22.2	0.022	50.7
58.0	0.031	51.9
73.0	0.040	53.8
87.8	0.052	54.3
99.9	0.073	54.8
110.8	0.104	56.2
120.5	0.140	56.0
124.8	0.176	55.3
126.1	0.219	55.0
135.4	0.250	55.7
145.8	0.292	55.3
156.0	0.349	54.6
166.6	0.410	53.5
171.4	0.457	53.4
185.2	0.518	52.5
184.7	0.564	52.2
186.2	0.609	51.8
186.7	0.655	51.4
187.0	0.685	51.0
189.9	0.716	51.0
194.1	0.746	50.2
196.3	0.777	50.5
203.1	0.822	50.3
208.7	0.868	50.0
213.0	0.899	49.8

Tested By: MY	Date: 9/29/20	Input Checked By: MPS	Date: 10/5/20
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DCN: CT-S28 DATE: 4/12/13 REVISION: 3

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		

Visual Description: Blue Gray Clay (UNDISTURBED)

Effective Confining Pressure (psi)	11.2	Stage No.	0
		Test No	3

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.13
Initial Sample Diameter (in)	2.85
Initial Sample Area (in <sup>2</sup> )	6.39
Initial Sample Volume (in <sup>3</sup> )	39.19

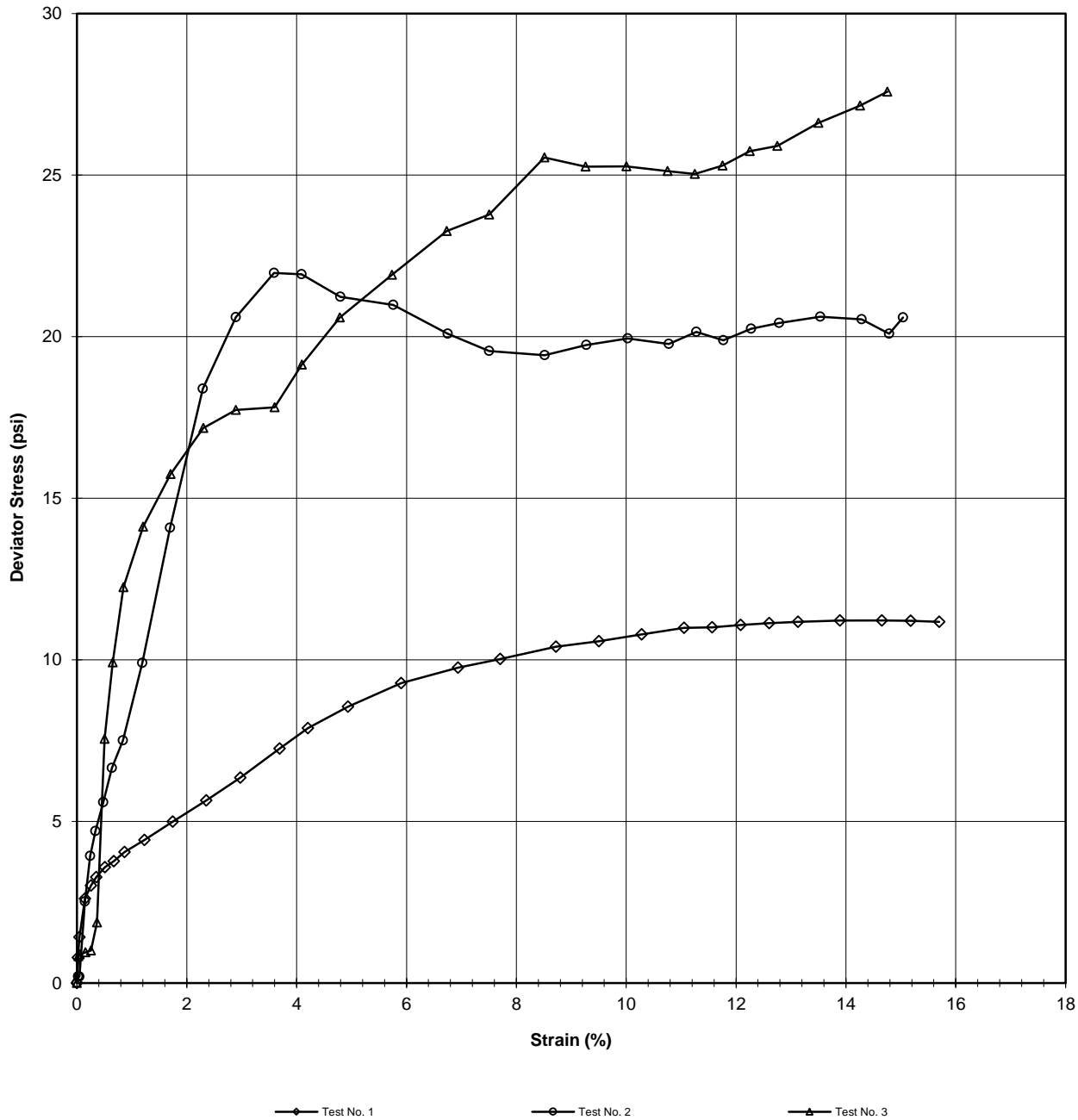
**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	38.12
Length After Consolidation (in)	6.09
Area After Consolidation (in <sup>2</sup> )	6.259

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	0.83	-0.01	12.03	11.2	1.074	-0.01	11.62	0.41
0.05	0.88	0.20	11.88	11.0	1.080	0.23	11.44	0.44
0.16	0.95	0.30	11.85	10.9	1.087	0.32	11.37	0.47
0.25	1.01	0.22	11.99	11.0	1.092	0.22	11.48	0.50
0.37	1.87	0.73	12.34	10.5	1.179	0.40	11.41	0.94
0.50	7.56	1.90	16.85	9.3	1.813	0.26	13.07	3.78
0.65	9.92	3.84	17.28	7.4	2.348	0.39	12.32	4.96
0.85	12.25	4.35	19.10	6.9	2.787	0.36	12.98	6.12
1.20	14.12	4.85	20.47	6.4	3.223	0.35	13.41	7.06
1.71	15.75	6.21	20.74	5.0	4.157	0.40	12.87	7.88
2.30	17.18	6.04	22.34	5.2	4.327	0.36	13.75	8.59
2.89	17.73	5.26	23.67	5.9	3.985	0.30	14.81	8.87
3.60	17.82	5.01	24.01	6.2	3.877	0.29	15.10	8.91
4.10	19.14	5.75	24.59	5.5	4.511	0.31	15.02	9.57
4.79	20.59	5.33	26.46	5.9	4.510	0.26	16.16	10.30
5.74	21.91	4.61	28.50	6.6	4.326	0.21	17.54	10.96
6.73	23.27	3.53	30.94	7.7	4.036	0.15	19.30	11.64
7.51	23.78	3.38	31.59	7.8	4.042	0.15	19.71	11.89
8.51	25.55	2.54	34.21	8.7	3.950	0.10	21.43	12.77
9.26	25.27	2.18	34.29	9.0	3.801	0.09	21.65	12.63
10.00	25.27	1.84	34.63	9.4	3.698	0.07	22.00	12.63
10.75	25.13	1.44	34.89	9.8	3.573	0.06	22.33	12.56
11.25	25.04	0.97	35.26	10.2	3.448	0.04	22.74	12.52
11.76	25.30	0.98	35.51	10.2	3.476	0.04	22.87	12.65
12.25	25.75	0.20	36.74	11.0	3.341	0.01	23.87	12.87
12.75	25.91	0.54	36.57	10.7	3.430	0.02	23.61	12.95
13.50	26.62	0.28	37.54	10.9	3.438	0.01	24.23	13.31
14.26	27.15	-0.05	38.40	11.2	3.414	0.00	24.83	13.58
14.75	27.58	-0.22	39.00	11.4	3.415	-0.01	25.21	13.79

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	10.0'-12.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-18
Lab ID:	R-2020-164-004-002		
Visual Description:	Blue Gray Clay (UNDISTURBED)		



Tested By:	MY	Date:	9/29/20	Approved By:	MPS	Date:	10/5/20
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page 9 of 10



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-004  
 Lab ID: R-2020-164-004-002                      Specific Gravity (assumed)                      2.7

Visual Description: Blue Gray Clay (UNDISTURBED)

**SAMPLE CONDITION SUMMARY**

Boring No.:	PRN-20-UD	PRN-20-UD	PRN-20-UD
Depth (ft):	10.0'-12.0'	10.0'-12.0'	10.0'-12.0'
Sample No.:	CPT-18	CPT-18	CPT-18
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	25.1	24.2	23.2
Total Unit Weight (pcf)	113.8	121.1	123.1
Dry Unit Weight (pcf)	91.0	97.5	99.9
Moisture Content (%) (FINAL)	36.7	22.8	25.8
Initial State Void Ratio, e	0.853	0.729	0.686
Void Ratio at Shear, e	0.723	0.700	0.641



Tested By: MY                      Date: 9/29/20                      Input Checked By: MPS                      Date: 10/5/20

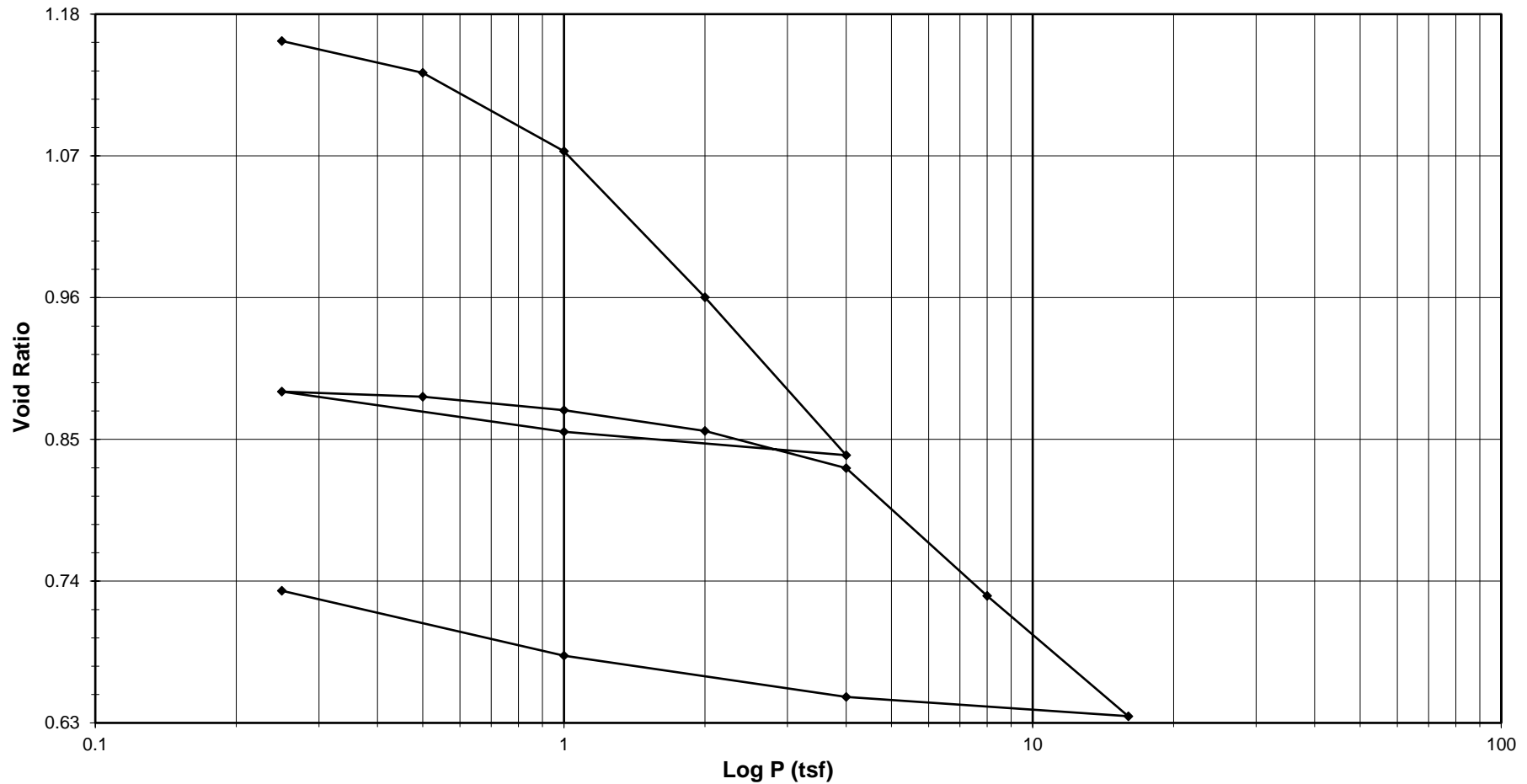
# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Catlin Engineers & Scientists  
 Client Reference USACE Princeville  
 Project No. R-2020-164-004  
 Lab ID R-2020-164-004-003

Boring No. PRN-20-UD  
 Depth (ft) 16.5'-18.5'  
 Sample No. CPT-21-1  
 Visual Description Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/22/2020 Approved By MPS Date 9/29/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R409  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>Test Data Summary</u>							
<i>Water Content</i>			<b>Applied Pressure</b>	<b>Final Dial Reading</b>	<b>Machine Deflection</b>	<b>Corrected Reading</b>	<b>Height of Sample</b>	<b>Volume (cc)</b>	<b>Dry Density (g/cc)</b>	<b>Void Ratio</b>
Tare Number	715	720	(tsf)	(div)	(div)	(div)	(mm)			
Wt. Tare & WS (g)	375.34	213.98								
Wt. Tare & DS (g)	291.46	187.67								
Wt. Water (g)	83.88	26.31	Seating	0	0	0	25.400	80.440	1.22361	<b>1.20658</b>
Wt. Tare (g)	90.45	90.12	0.25	235.1	20.1	215.0	24.854	78.710	1.25050	<b>1.15914</b>
Wt. DS (g)	201.01	97.55	0.5	358.4	32.0	326.4	24.571	77.814	1.26490	<b>1.13455</b>
Water Content (%)	41.73	26.97	1	653.7	50.8	602.9	23.869	75.590	1.30211	<b>1.07355</b>
			2	1192.6	76.1	1116.5	22.564	71.459	1.37740	<b>0.96021</b>
<i>Sample Parameters</i>			4	1775.5	104.0	1671.4	21.155	66.995	1.46918	<b>0.83776</b>
Sample Diameter (in)	2.5	2.5	1	1655.3	66.0	1589.3	21.363	67.656	1.45482	<b>0.85590</b>
Sample Height (in)	1.0000	0.7852	0.25	1484.1	36.2	1447.9	21.722	68.793	1.43078	<b>0.88708</b>
Sample Volume (cc)	80.44	63.16	0.5	1507.9	42.0	1465.9	21.677	68.648	1.43380	<b>0.88311</b>
Wt. Wet Sample + Ring (g)	354.20	339.67	1	1569.4	55.8	1513.6	21.555	68.265	1.44185	<b>0.87260</b>
Wt. of Ring (g)	214.70	214.70	2	1667.3	81.1	1586.2	21.371	67.681	1.45429	<b>0.85658</b>
Wt. of Wet Sample (g)	139.50	124.97	4	1821.2	104.3	1716.9	21.039	66.629	1.47724	<b>0.82773</b>
Wet Density (pcf)	108.22	123.47	8	2312.6	145.9	2166.7	19.897	63.011	1.56207	<b>0.72848</b>
Wet Density (g/cc)	1.73	1.98	16	2795.5	206.1	2589.4	18.823	59.611	1.65116	<b>0.63521</b>
Water Content (%)	41.73	26.97	4	2655.0	133.1	2522.0	18.994	60.153	1.63627	<b>0.65009</b>
Wt. of Dry Sample (g)	98.43	98.43	1	2461.8	85.3	2376.5	19.364	61.323	1.60505	<b>0.68219</b>
Dry Density (pcf)	76.35	97.24	0.25	2193.3	45.4	2147.9	19.944	63.162	1.55832	<b>0.73263</b>
Dry Density (g/cc)	1.22	1.56								
Void Ratio	1.2066	0.7326								
Saturation (%)	93.38	99.40								
Specific Gravity	2.70	Assumed								

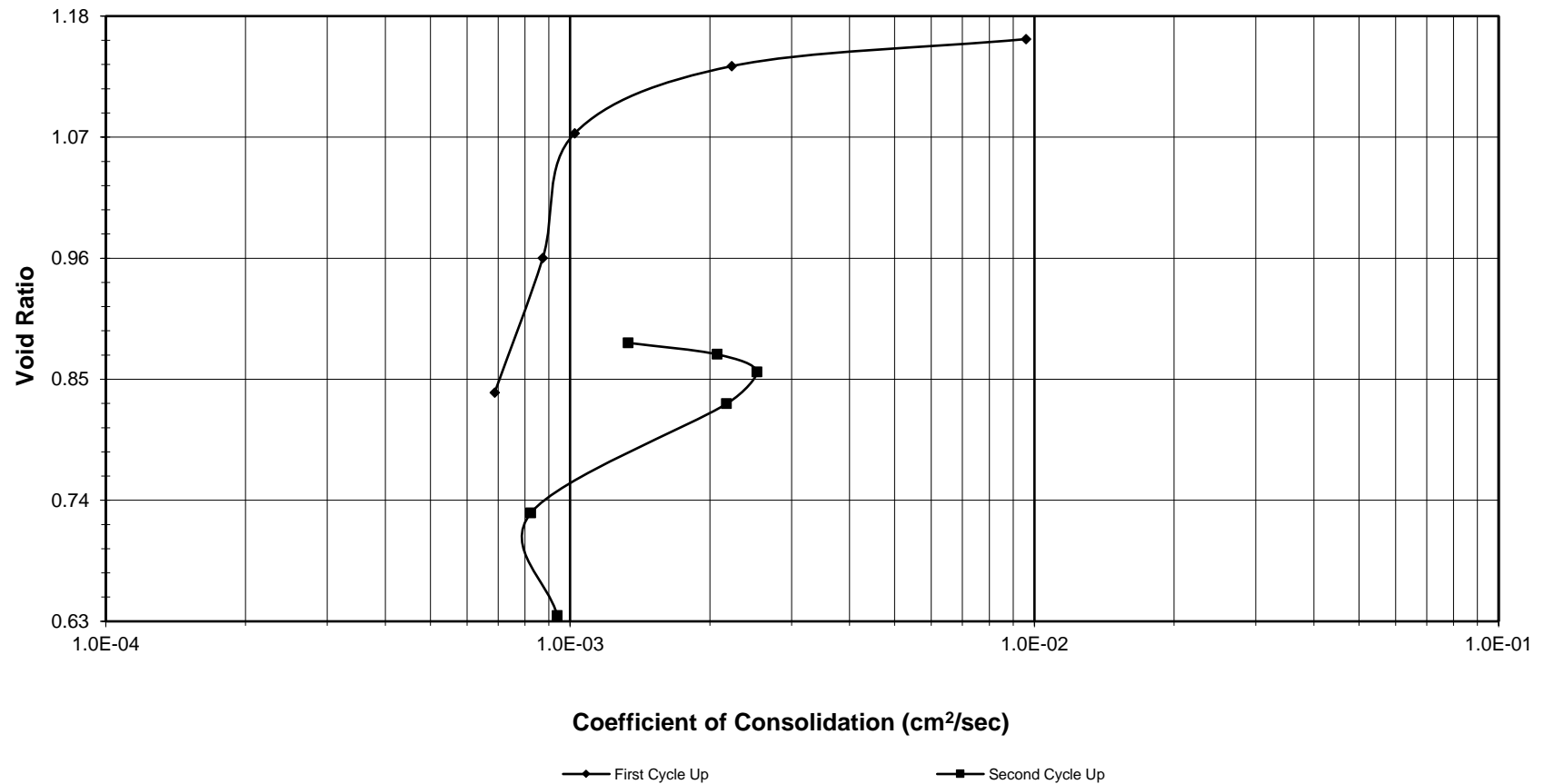
Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/29/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/29/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R409  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>C<sub>v</sub> Test Data Summary</u>						
			<u>Load Increment</u>	<u>Dial Reading @ t<sub>50</sub></u>	<u>Machine Deflection</u>	<u>Corrected Dial Reading @ t<sub>50</sub></u>	<u>Sample Height @ t<sub>50</sub></u>	<u>Time t<sub>50</sub></u>	<u>C<sub>v</sub></u>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
<i>Water Content</i>									
<i>Tare Number</i>	715	720							
<i>Wt. Tare &amp; WS (g)</i>	375.34	213.98							
<i>Wt. Tare &amp; DS (g)</i>	291.46	187.67							
<i>Wt. Water (g)</i>	83.88	26.31	0 - 0.25	130.5	20.1	110.4	2.512	<b>0.54</b>	<b>0.00959</b>
<i>Wt. Tare (g)</i>	90.45	90.12	0.25 - 0.5	299.2	32.0	267.2	2.472	<b>2.25</b>	<b>0.00223</b>
<i>Wt. DS (g)</i>	201.01	97.55	0.5 - 1.0	519.4	50.8	468.5	2.421	<b>4.70</b>	<b>0.00102</b>
<i>Water Content (%)</i>	41.73	26.97	1.0 - 2.0	904.5	76.1	828.4	2.330	<b>5.10</b>	<b>0.00087</b>
			2.0 - 4.0	1462.3	104.0	1358.2	2.195	<b>5.75</b>	<b>0.00069</b>
<i>Sample Parameters</i>			4.0 - 1.0	NA	66.0	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Diameter (in)</i>	2.5	2.5	1.0 - 0.25	NA	36.2	NA	NA	<b>NA</b>	<b>NA</b>
<i>Sample Height (in)</i>	1.000	0.785	0.25 - 0.5	1497.2	42.0	1455.2	2.170	<b>2.90</b>	<b>0.00133</b>
<i>Sample Volume (cc)</i>	80.44	63.16	0.5 - 1.0	1542.4	55.8	1486.6	2.162	<b>1.85</b>	<b>0.00207</b>
<i>Wt. Wet Sample + Ring (g)</i>	354.20	339.67	1.0 - 2.0	1621.6	81.1	1540.4	2.149	<b>1.50</b>	<b>0.00253</b>
<i>Wt. of Ring (g)</i>	214.70	214.70	2.0 - 4.0	1750.7	104.3	1646.4	2.122	<b>1.70</b>	<b>0.00217</b>
<i>Wt. of Wet Sample (g)</i>	139.50	124.97	4.0 - 8.0	2064.9	145.9	1918.9	2.053	<b>4.20</b>	<b>0.00082</b>
<i>Wet Density (pcf)</i>	108.22	123.47	8.0 - 16.0	2558.4	206.1	2352.2	1.943	<b>3.30</b>	<b>0.00094</b>
<i>Wet Density (g/cc)</i>	1.73	1.98	16.0 - 4.0	NA	133.1	NA	NA	<b>NA</b>	<b>NA</b>
<i>Water Content (%)</i>	41.73	26.97	4.0 - 1.0	NA	85.3	NA	NA	<b>NA</b>	<b>NA</b>
<i>Wt. of Dry Sample (g)</i>	98.43	98.43	1.0 - 0.25	NA	45.4	NA	NA	<b>NA</b>	<b>NA</b>
<i>Dry Density (pcf)</i>	76.35	97.24							
<i>Dry Density (g/cc)</i>	1.22	1.56							
<i>Void Ratio</i>	1.2066	0.7326							
<i>Saturation (%)</i>	93.38	99.40							
<i>Specific Gravity</i>	2.7	<i>Assumed</i>							

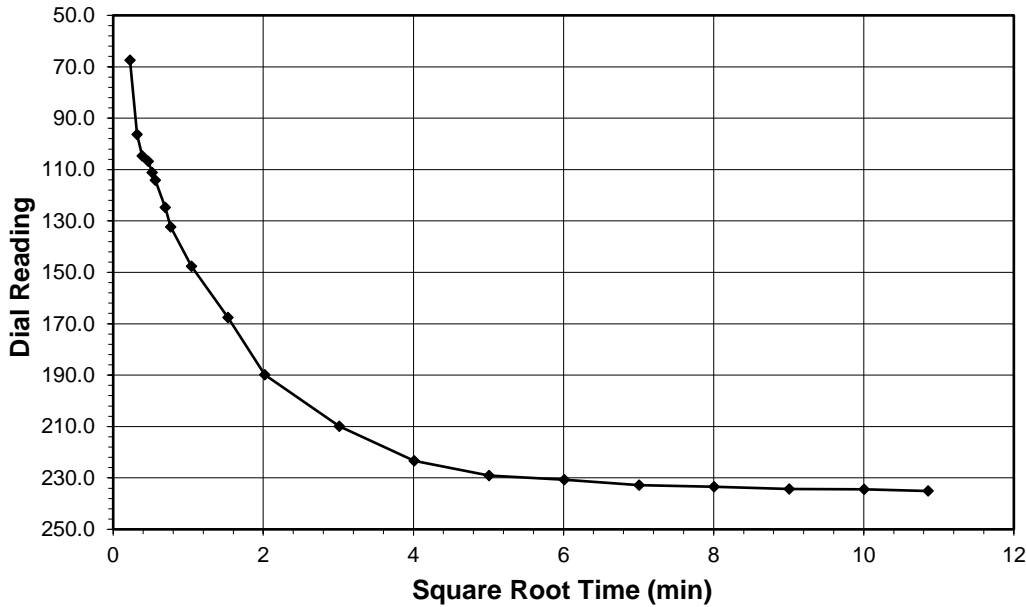
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# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

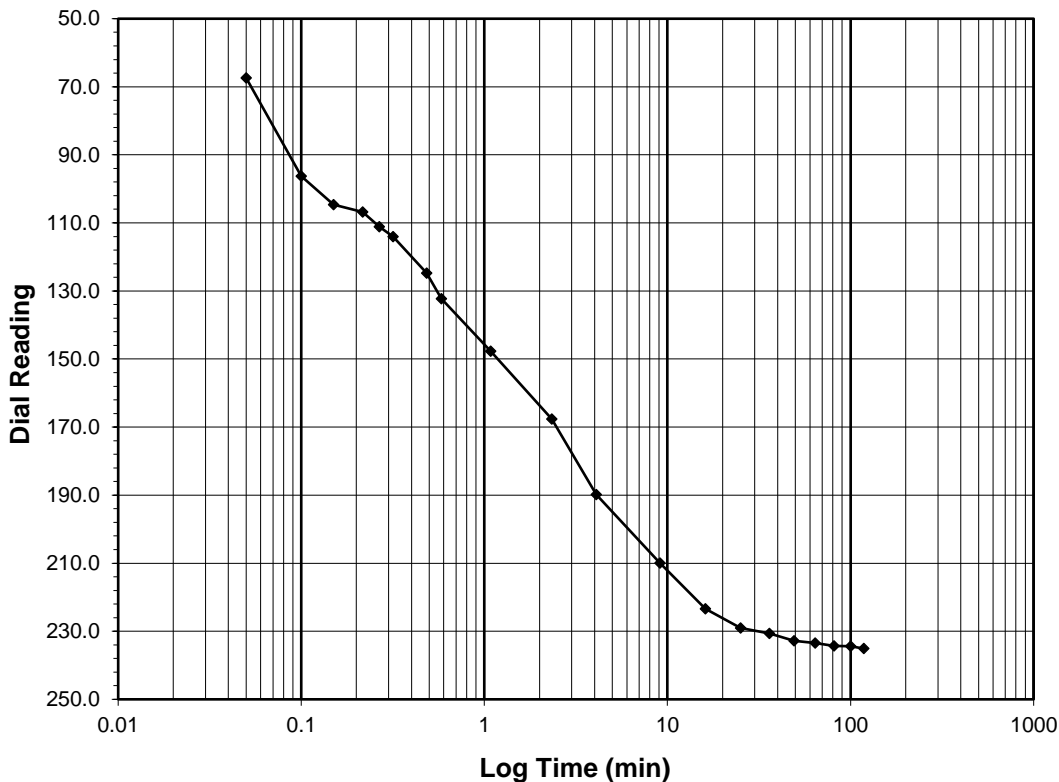
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>235.1</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/22/2020</b>
<b>Start Time</b>	<b>9:57:45</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	67.4
0.10	96.3
0.15	104.6
0.22	106.8
0.27	111.1
0.32	114.1
0.48	124.7
0.58	132.3
1.08	147.7
2.33	167.6
4.08	189.8
9.08	209.9
16.08	223.4
25.10	229.0
36.10	230.6
49.10	232.8
64.10	233.5
81.10	234.3
100.10	234.4
117.90	235.1



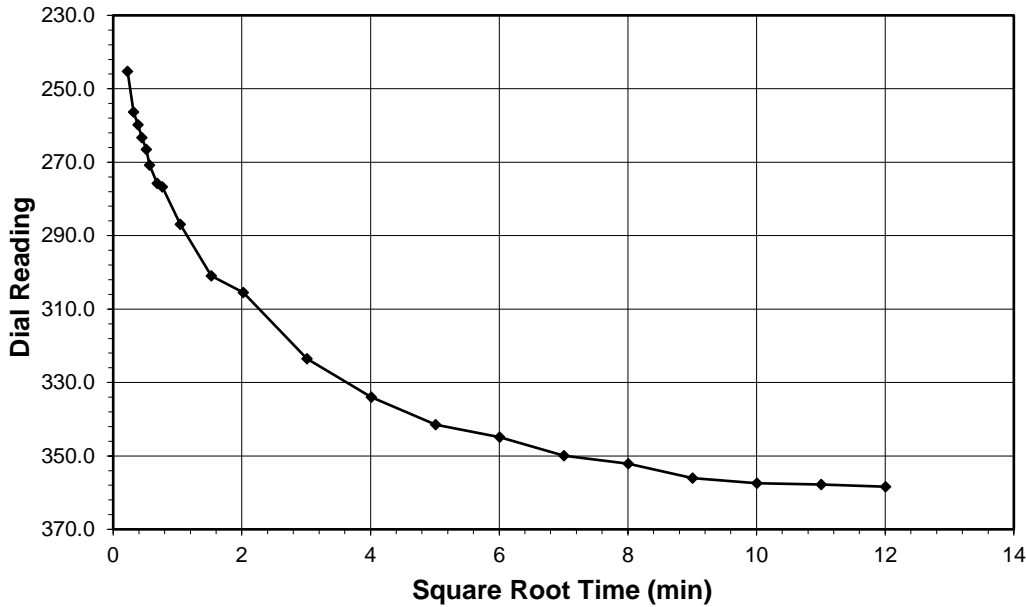
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# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

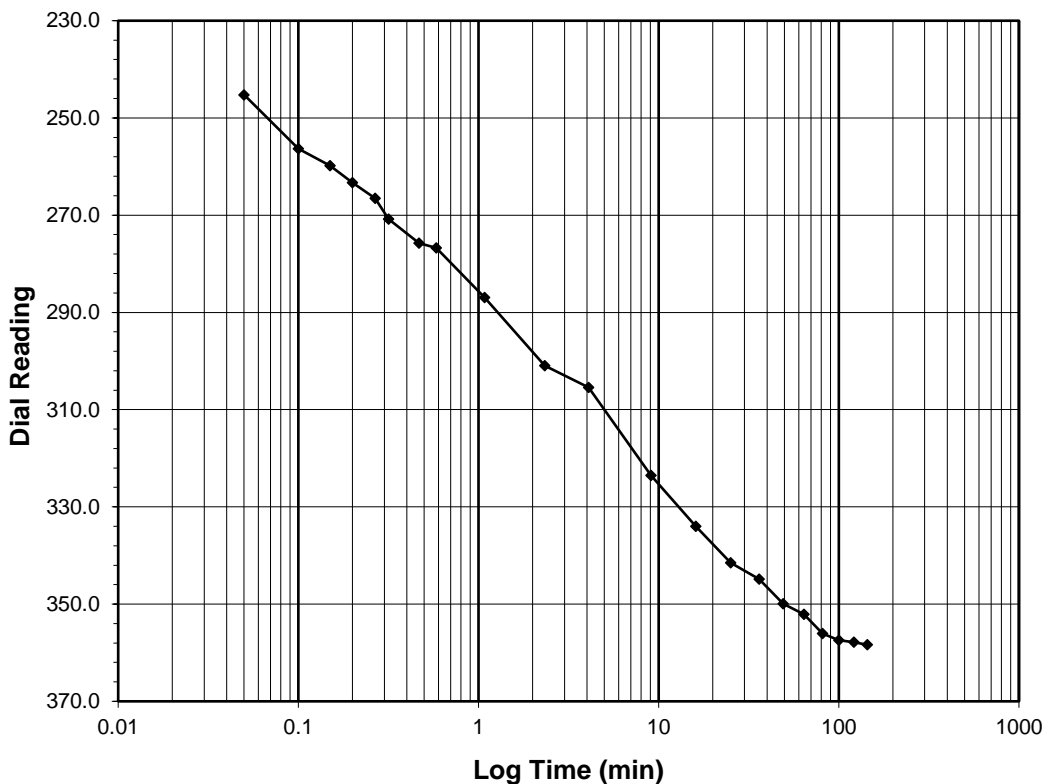
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>358.4</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	11:55:39

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>235.1</b>
0.05	245.2
0.10	256.3
0.15	259.8
0.20	263.3
0.27	266.6
0.32	270.8
0.47	275.8
0.58	276.8
1.08	286.9
2.33	300.9
4.08	305.5
9.08	323.6
16.08	334.0
25.10	341.5
36.10	344.9
49.10	349.9
64.10	352.1
81.10	356.1
100.10	357.5
121.10	357.8
144.10	358.4



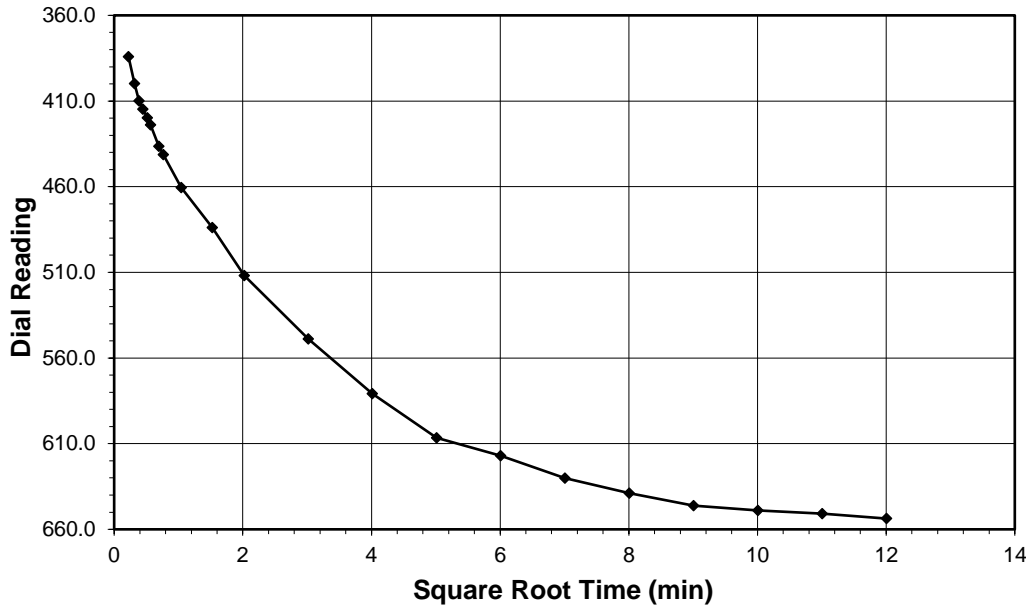
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

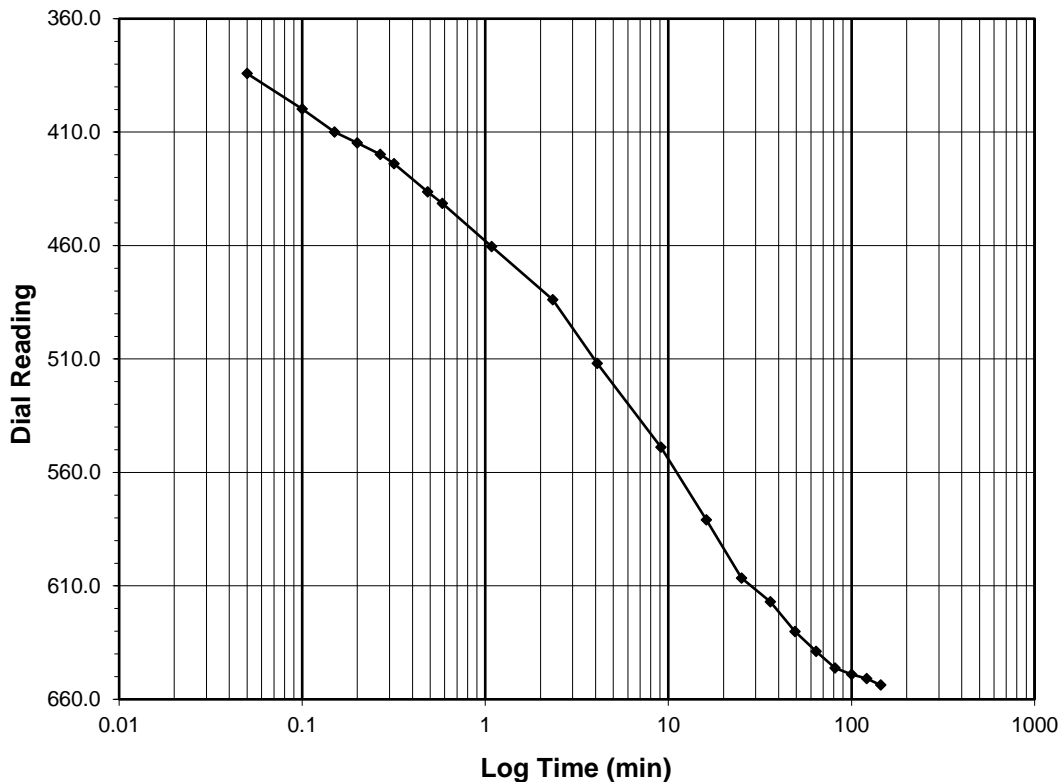
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>653.7</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001

Start Date	9/22/2020
Start Time	14:31:30

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>358.4</b>
0.05	384.2
0.10	399.8
0.15	409.9
0.20	414.7
0.27	419.7
0.32	424.0
0.48	436.4
0.58	441.3
1.08	460.5
2.33	483.9
4.08	512.0
9.10	548.9
16.10	580.9
25.10	606.6
36.10	617.0
49.10	630.1
64.12	638.9
81.12	646.2
100.13	649.0
121.13	650.8
144.13	653.7



Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/29/2020**

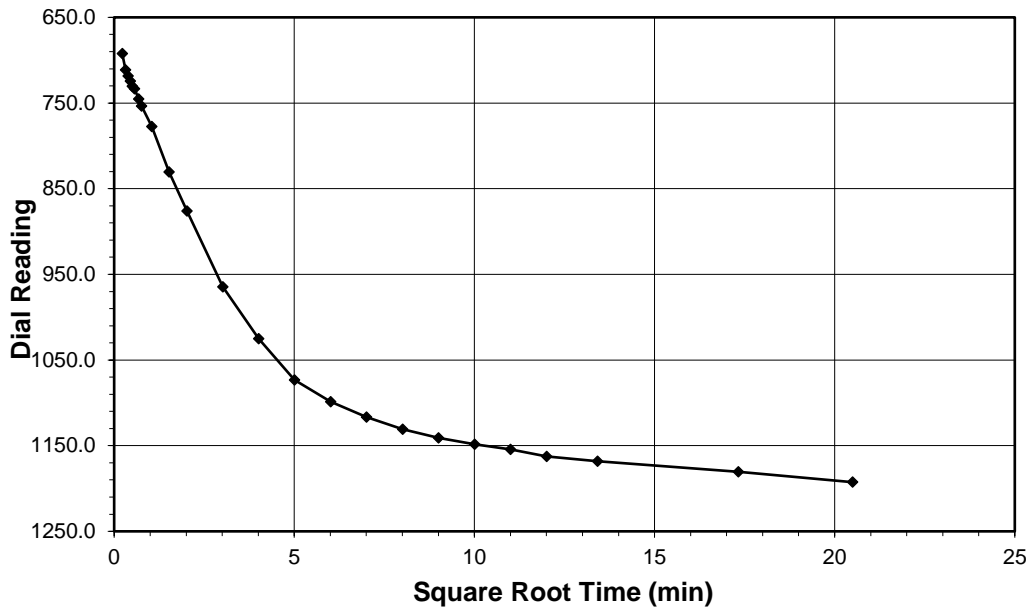


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

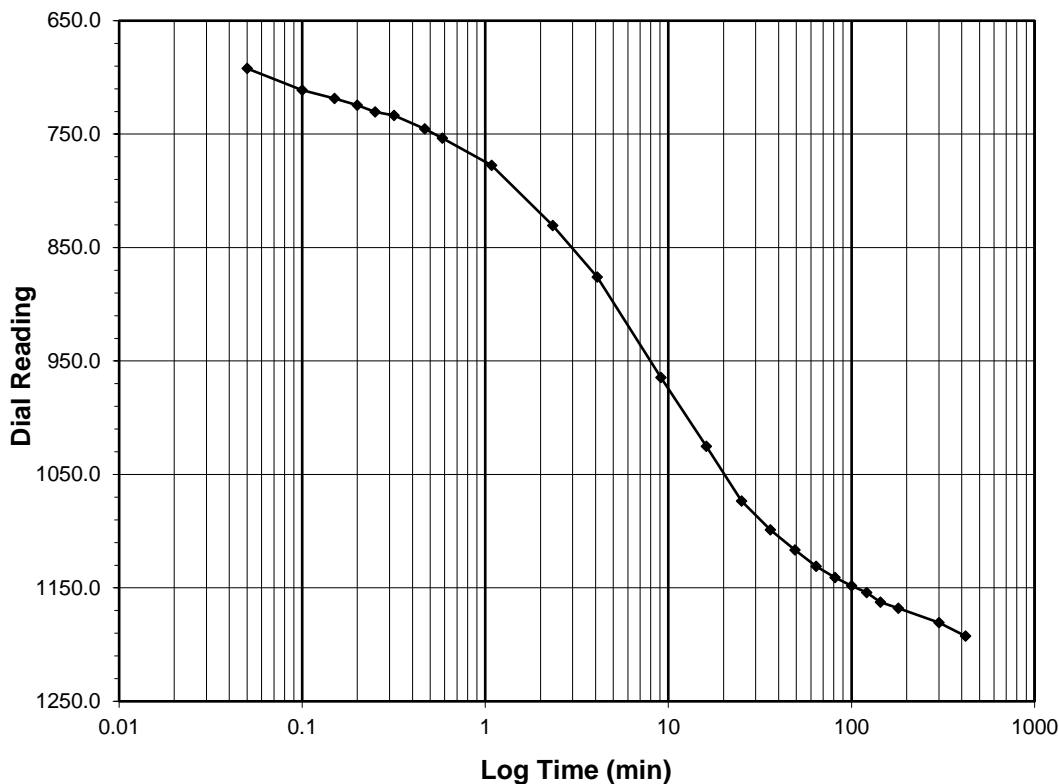
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>1192.6</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	16:56:52

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>653.7</b>
0.05	692.1
0.10	711.2
0.15	718.4
0.20	724.4
0.25	730.4
0.32	733.4
0.47	745.4
0.58	753.5
1.08	777.4
2.33	830.6
4.08	875.9
9.08	964.6
16.08	1025.2
25.08	1073.4
36.10	1098.7
49.10	1116.6
64.10	1131.0
81.10	1140.8
100.10	1148.3
121.10	1154.2
144.12	1162.5
180.12	1168.0
300.12	1180.5
420.10	1192.6



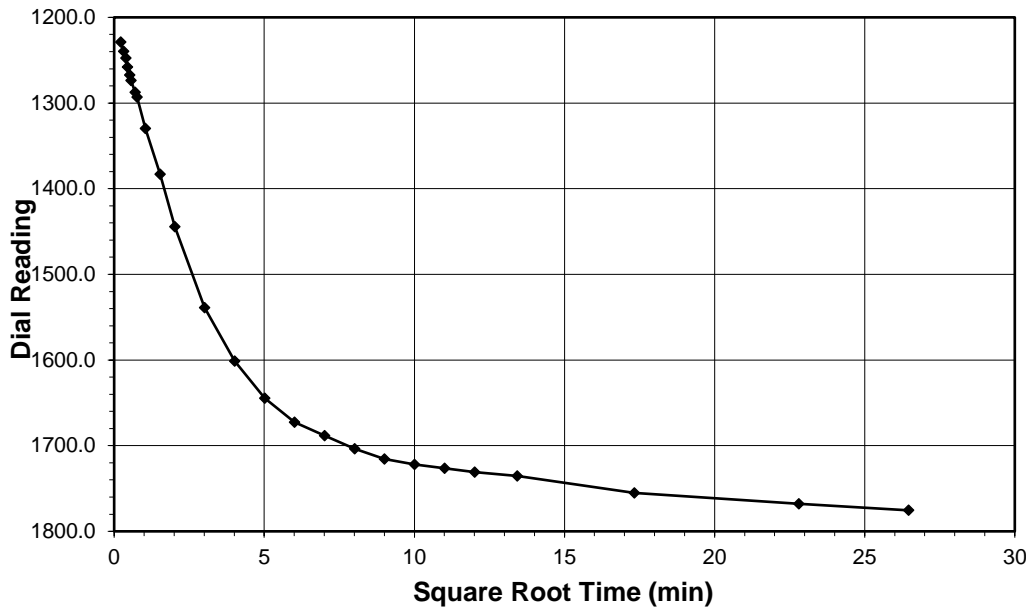
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# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

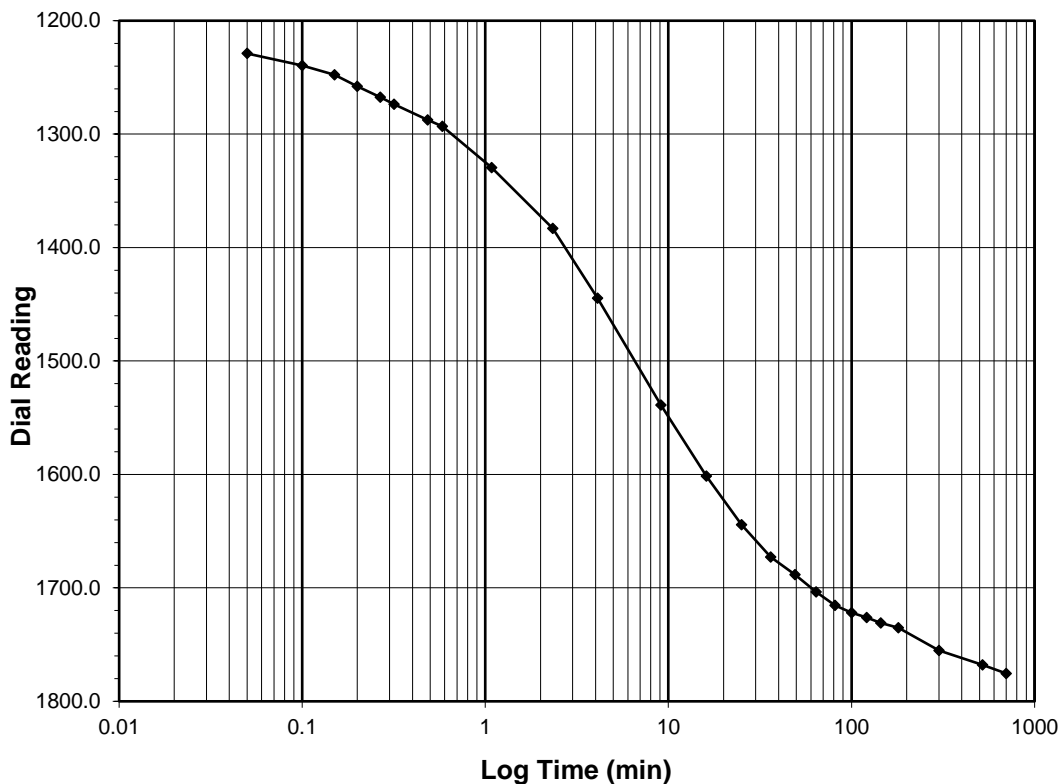
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1775.5</b>
Consolidometer No.	R409
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	23:56:58

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1192.6</b>
0.05	1228.9
0.10	1239.5
0.15	1247.5
0.20	1257.9
0.27	1267.4
0.32	1273.5
0.48	1287.3
0.58	1293.0
1.08	1329.5
2.33	1383.1
4.10	1444.5
9.10	1538.8
16.10	1601.4
25.12	1644.4
36.12	1672.7
49.13	1688.2
64.13	1703.6
81.13	1715.5
100.13	1722.0
121.13	1726.2
144.13	1730.9
180.15	1735.2
300.15	1755.1
520.15	1768.0
700.15	1775.5



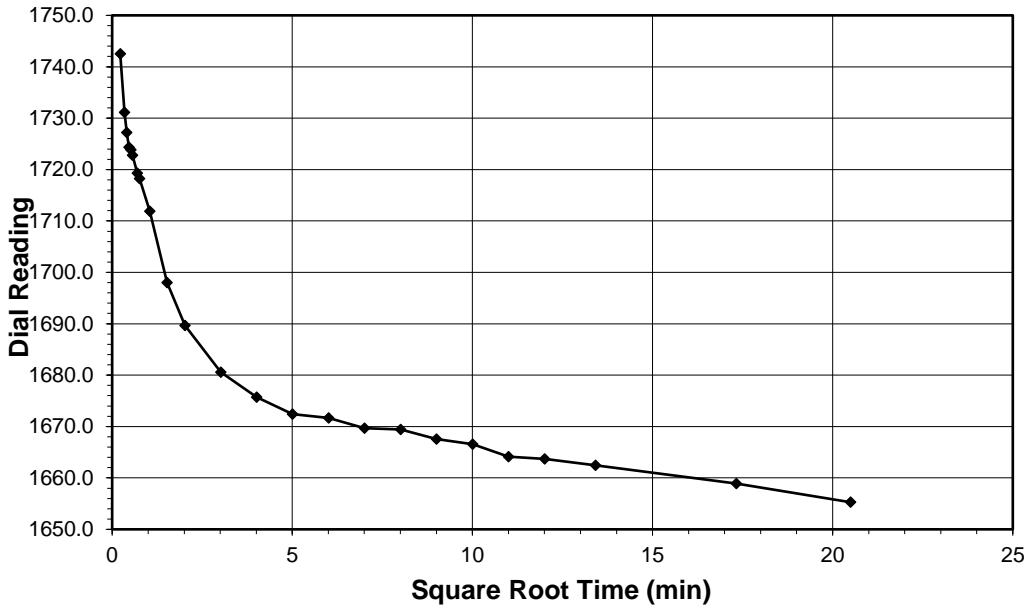
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

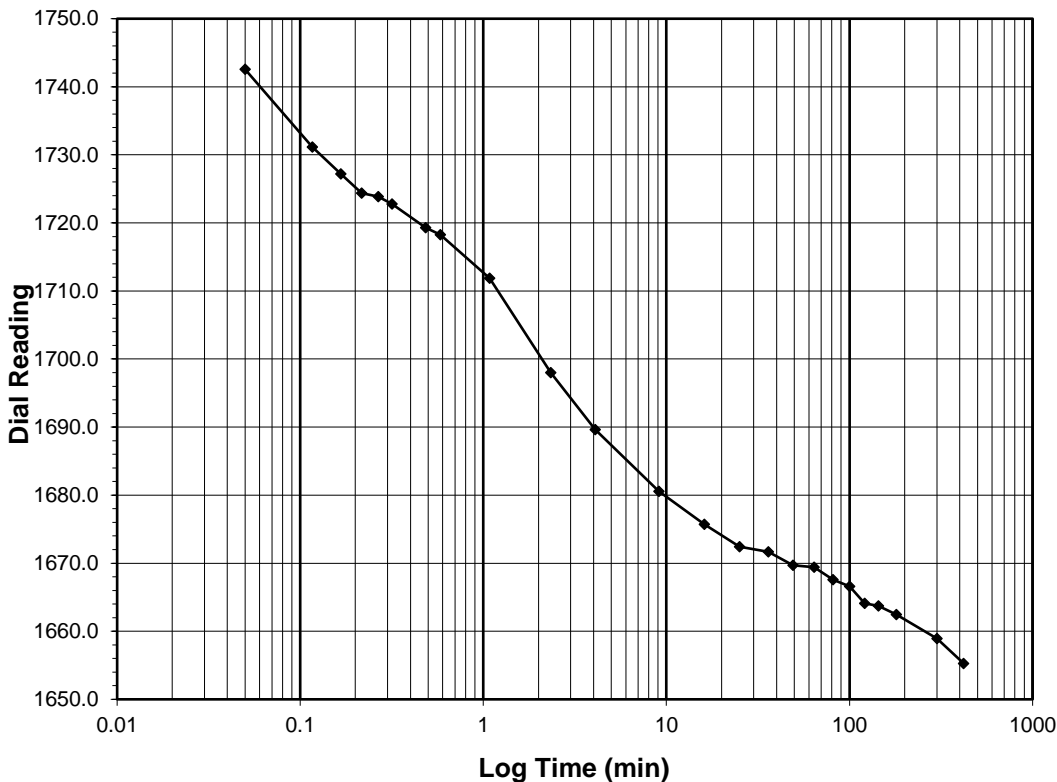
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>1655.3</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	11:57:25

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1775.5</b>
0.05	1742.6
0.12	1731.1
0.17	1727.2
0.22	1724.4
0.27	1723.9
0.32	1722.8
0.48	1719.3
0.58	1718.3
1.08	1711.9
2.33	1698.0
4.08	1689.6
9.08	1680.6
16.08	1675.7
25.10	1672.4
36.10	1671.7
49.10	1669.7
64.10	1669.4
81.10	1667.6
100.10	1666.6
121.10	1664.1
144.12	1663.7
180.12	1662.5
300.13	1658.9
420.03	1655.3



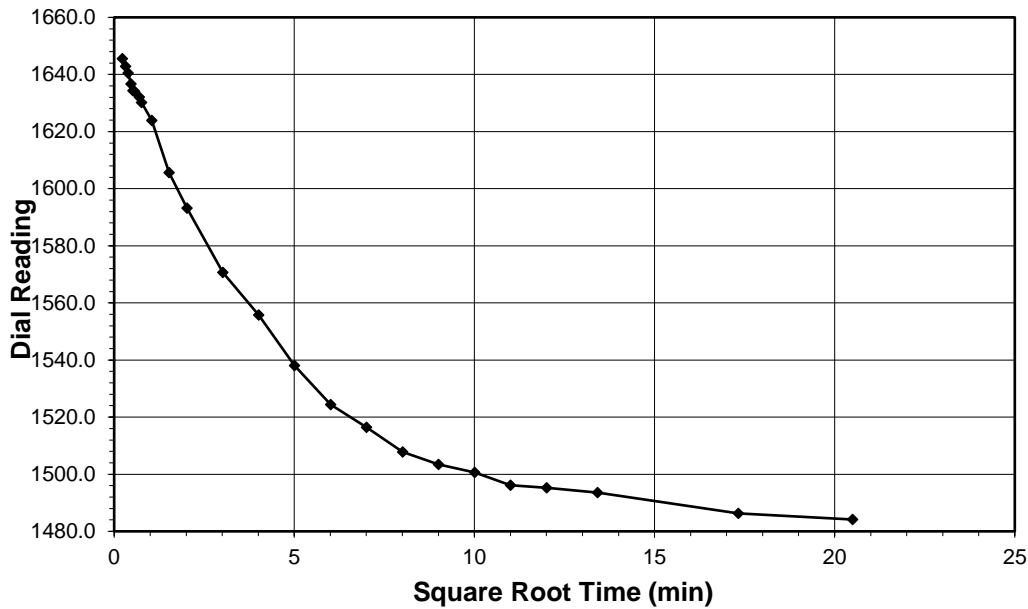
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

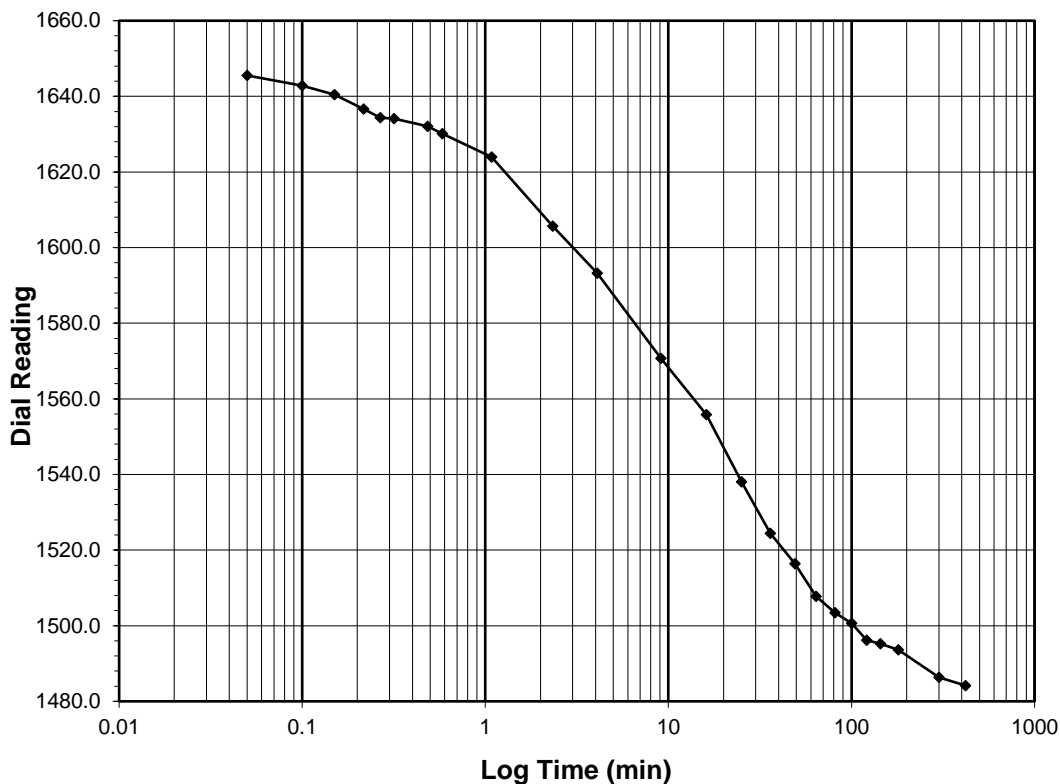
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>1484.1</b>
Consolidometer No.	R409
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	18:57:27

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1655.3</b>
0.05	1645.5
0.10	1642.8
0.15	1640.5
0.22	1636.6
0.27	1634.4
0.32	1634.1
0.48	1632.0
0.58	1630.1
1.08	1623.9
2.33	1605.7
4.08	1593.3
9.08	1570.7
16.08	1555.8
25.08	1538.1
36.10	1524.4
49.10	1516.4
64.12	1507.8
81.12	1503.4
100.12	1500.6
121.12	1496.2
144.12	1495.2
180.13	1493.6
300.13	1486.3
420.10	1484.1



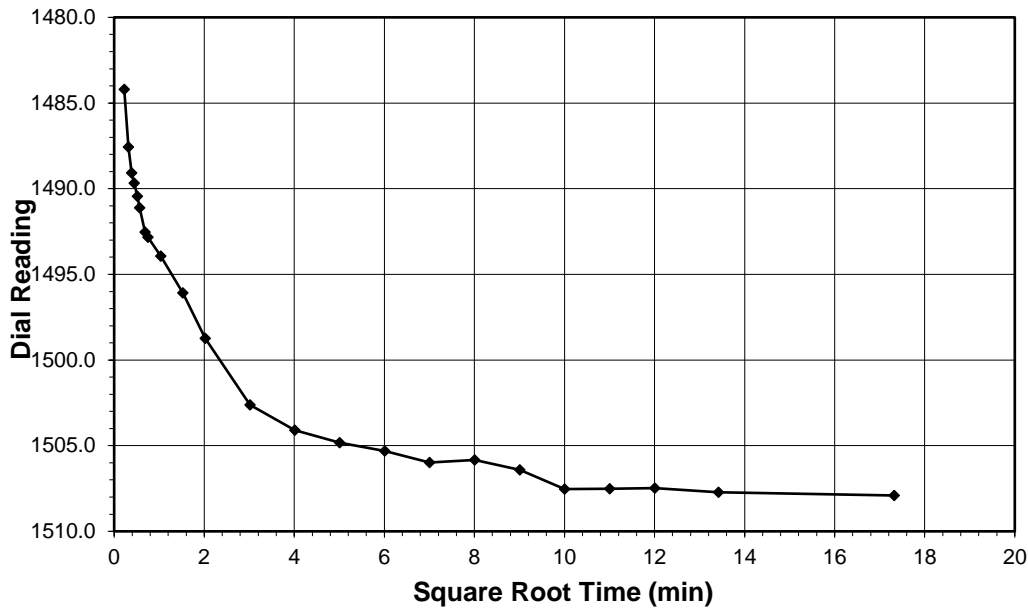
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

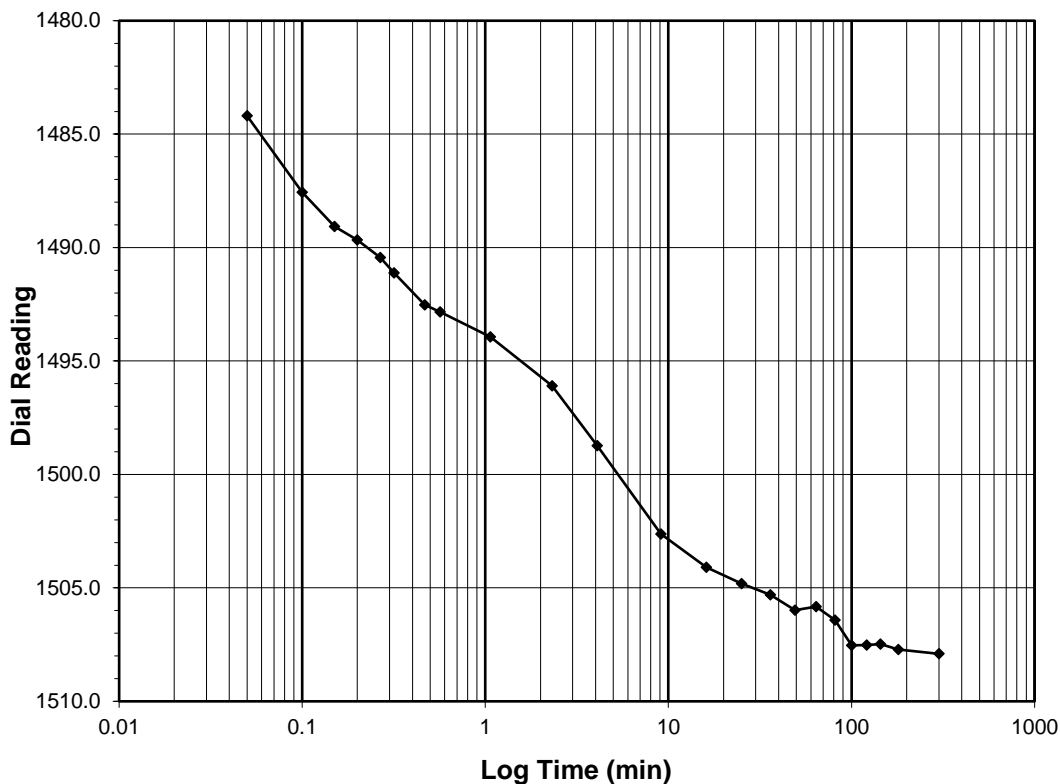
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>1507.9</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	1:57:34

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1484.1</b>
0.05	1484.2
0.10	1487.6
0.15	1489.1
0.20	1489.7
0.27	1490.4
0.32	1491.1
0.47	1492.5
0.57	1492.8
1.07	1493.9
2.32	1496.1
4.08	1498.7
9.08	1502.6
16.08	1504.1
25.08	1504.8
36.08	1505.3
49.08	1506.0
64.10	1505.8
81.10	1506.4
100.10	1507.5
121.10	1507.5
144.10	1507.5
180.10	1507.7
300.10	1507.9



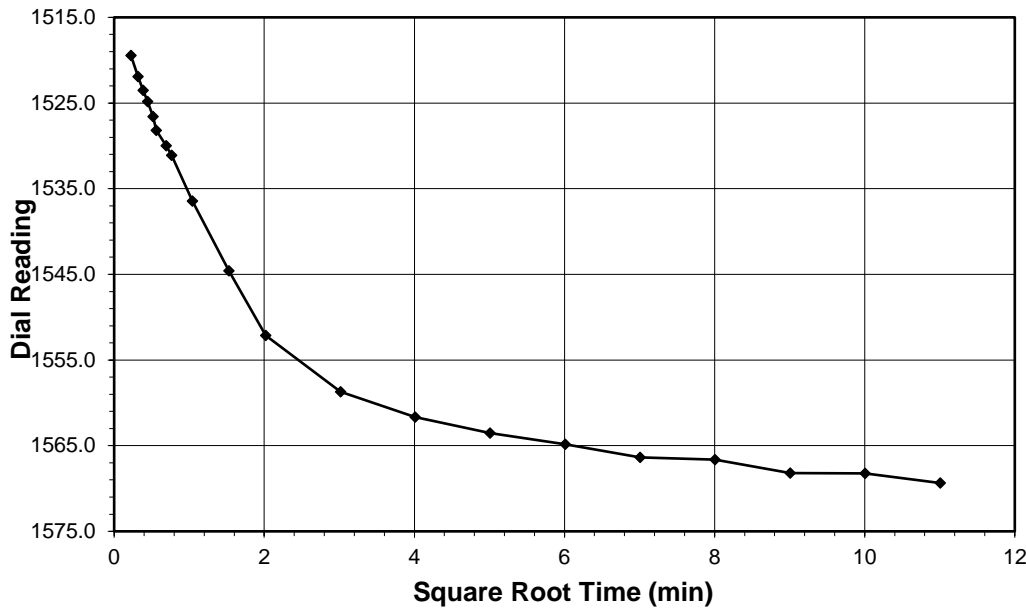
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

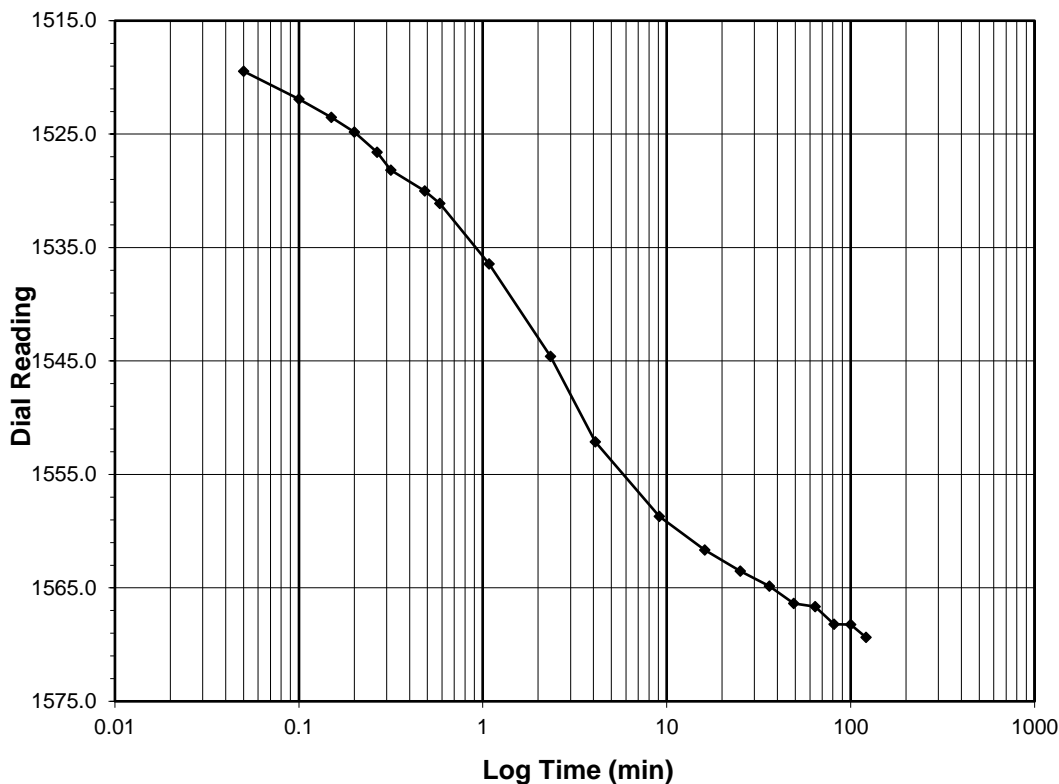
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>1569.4</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	7:16:23

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1507.9</b>
0.05	1519.5
0.10	1521.9
0.15	1523.5
0.20	1524.8
0.27	1526.6
0.32	1528.2
0.48	1530.0
0.58	1531.1
1.08	1533.4
2.33	1534.6
4.08	1535.7
9.10	1536.4
16.10	1536.6
25.10	1536.8
36.10	1536.9
49.10	1537.0
64.10	1537.1
81.12	1537.2
100.12	1537.3
121.12	1537.4



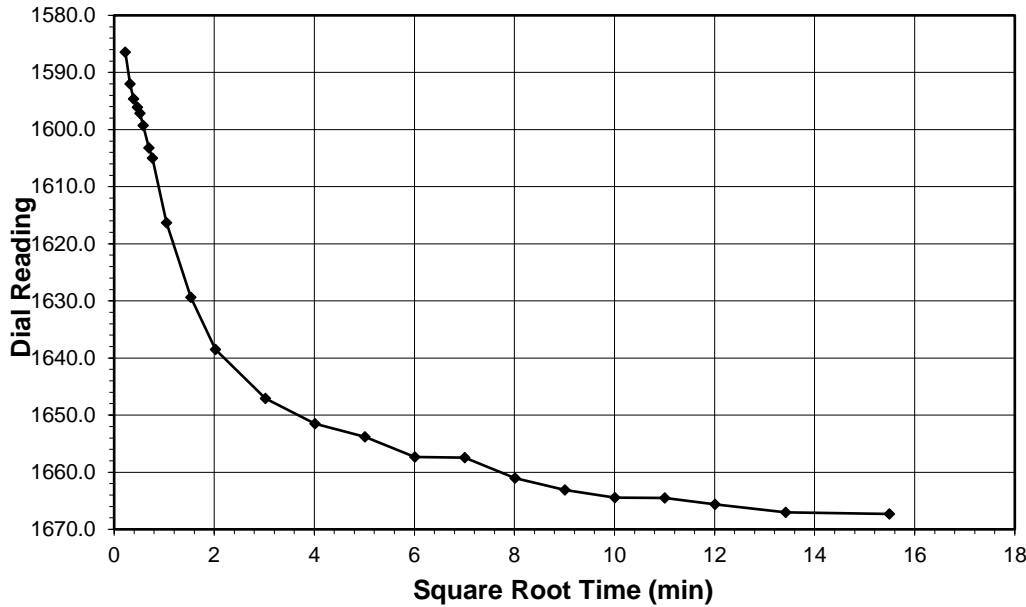
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

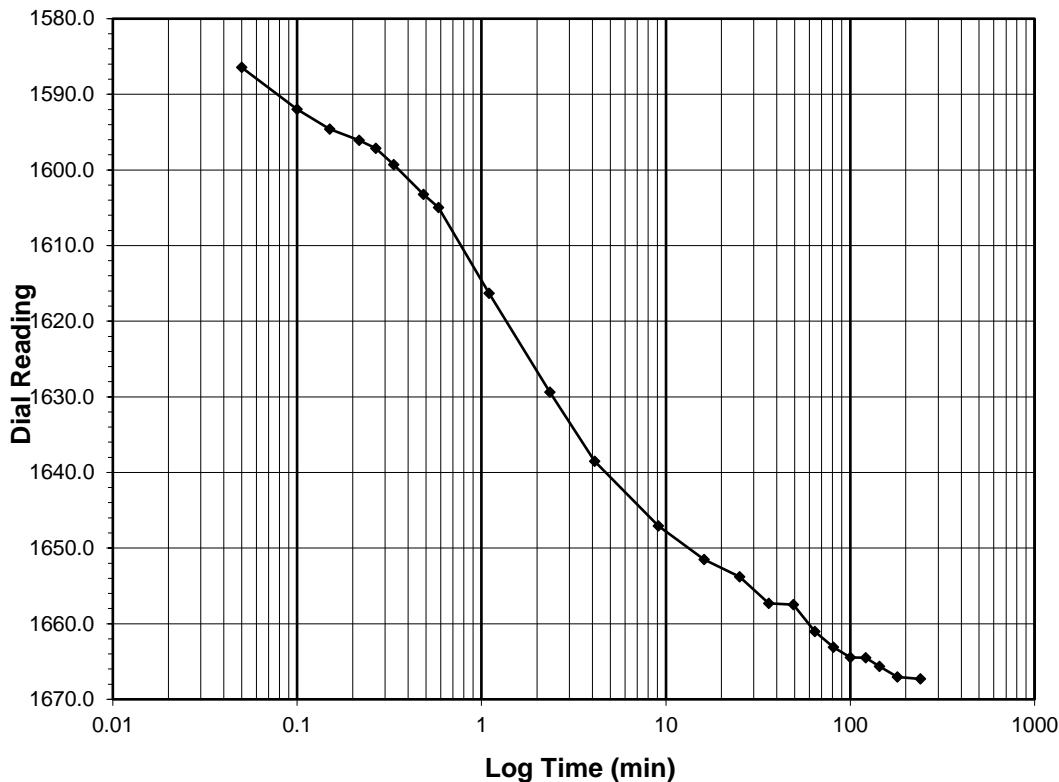
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>1667.3</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001

Start Date	9/24/2020
Start Time	9:30:51

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1569.4</b>
0.05	1586.4
0.10	1592.0
0.15	1594.6
0.22	1596.1
0.27	1597.2
0.33	1599.3
0.48	1603.2
0.58	1605.0
1.10	1616.3
2.35	1629.4
4.10	1638.5
9.12	1647.1
16.12	1651.5
25.12	1653.8
36.12	1657.3
49.13	1657.5
64.15	1661.0
81.15	1663.1
100.15	1664.5
121.15	1664.5
144.17	1665.6
180.17	1667.0
240.07	1667.3



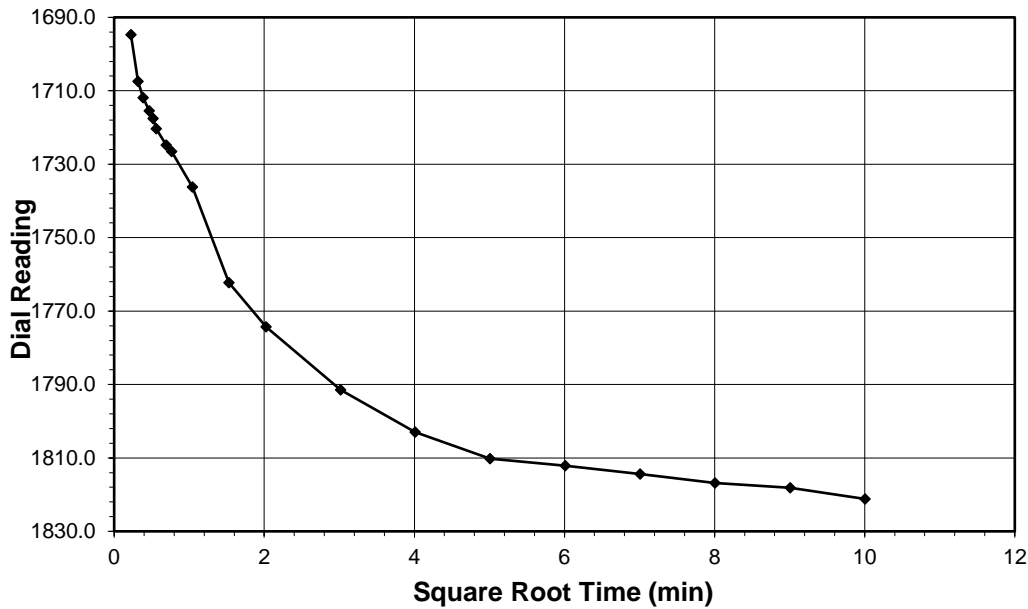
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

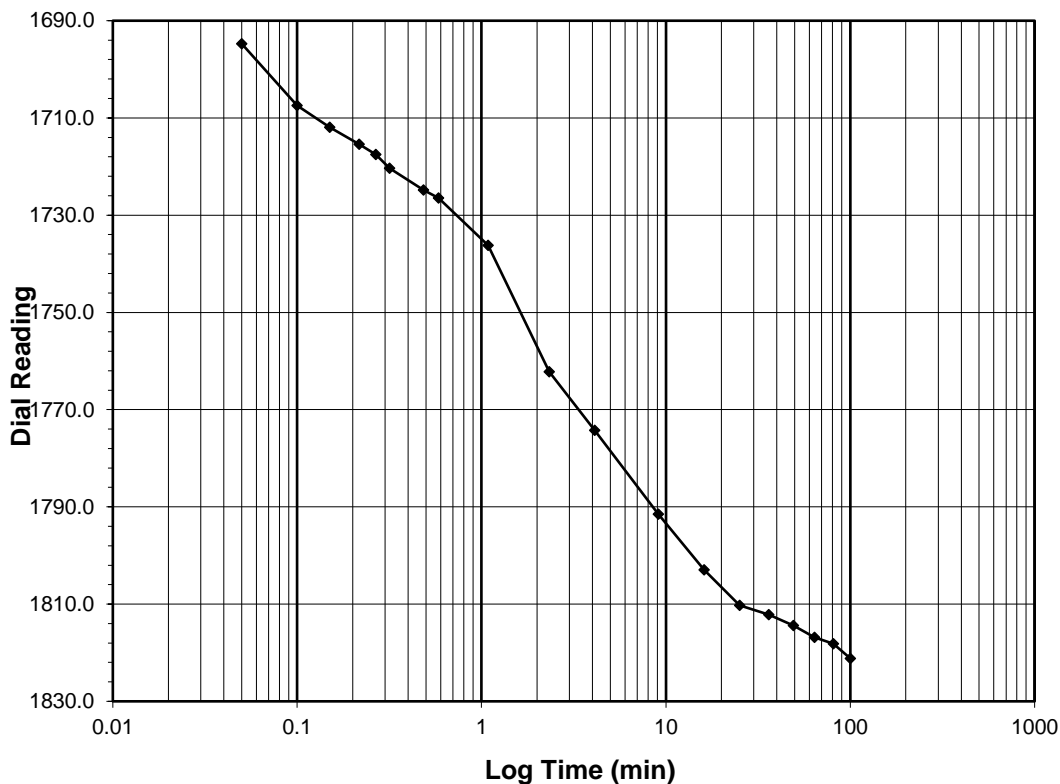
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1821.2</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	13:30:55

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1667.3</b>
0.05	1694.7
0.10	1707.4
0.15	1711.9
0.22	1715.4
0.27	1717.5
0.32	1720.3
0.48	1724.8
0.58	1726.5
1.08	1736.2
2.33	1762.2
4.10	1774.3
9.10	1791.5
16.10	1803.0
25.10	1810.2
36.10	1812.1
49.10	1814.4
64.10	1816.8
81.12	1818.1
100.12	1821.2



Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/29/2020**

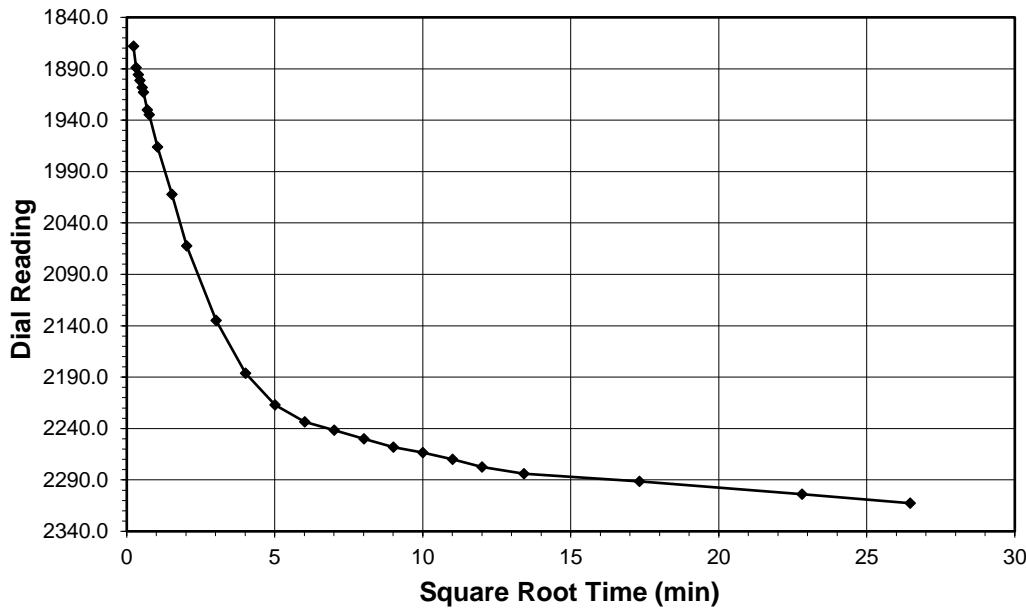


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

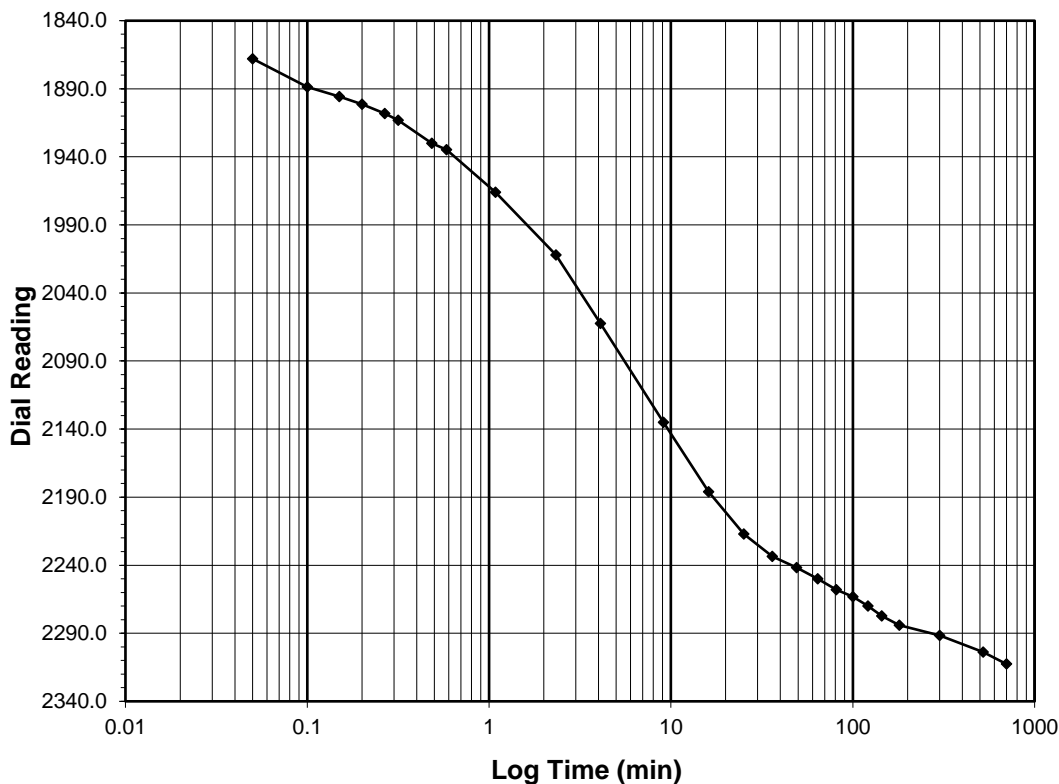
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>2312.6</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	15:11:57

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1821.2</b>
0.05	1867.9
0.10	1888.7
0.15	1895.6
0.20	1901.4
0.27	1908.2
0.32	1913.0
0.48	1929.9
0.58	1934.7
1.08	1966.0
2.33	2012.2
4.10	2062.3
9.10	2135.0
16.12	2186.1
25.12	2217.0
36.12	2233.5
49.13	2241.7
64.13	2249.9
81.13	2258.0
100.13	2263.2
121.15	2269.9
144.15	2277.4
180.15	2284.0
300.17	2291.5
520.17	2303.8
700.17	2312.6



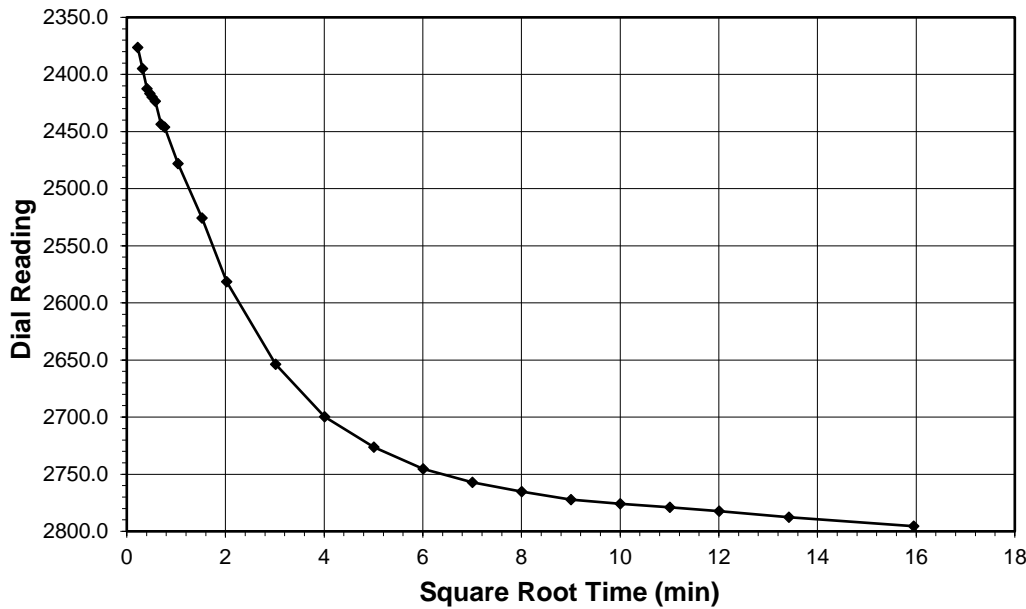
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

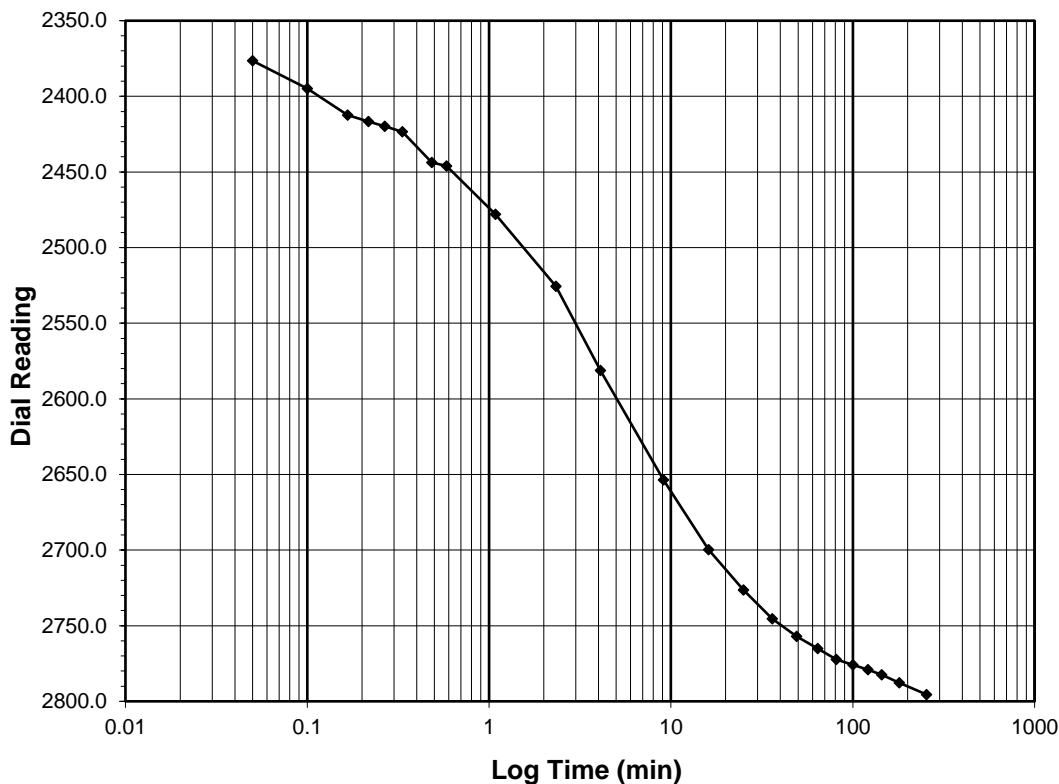
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>2795.5</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/25/2020
Start Time	3:12:17

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2312.6</b>
0.05	2376.5
0.10	2394.8
0.17	2412.5
0.22	2416.7
0.27	2419.9
0.33	2423.3
0.48	2443.6
0.58	2446.2
1.08	2477.9
2.33	2525.7
4.10	2581.4
9.10	2653.7
16.10	2699.8
25.10	2726.4
36.10	2745.4
49.10	2757.1
64.12	2765.2
81.12	2772.2
100.12	2775.9
121.12	2779.0
144.12	2782.4
180.12	2787.7
254.42	2795.5



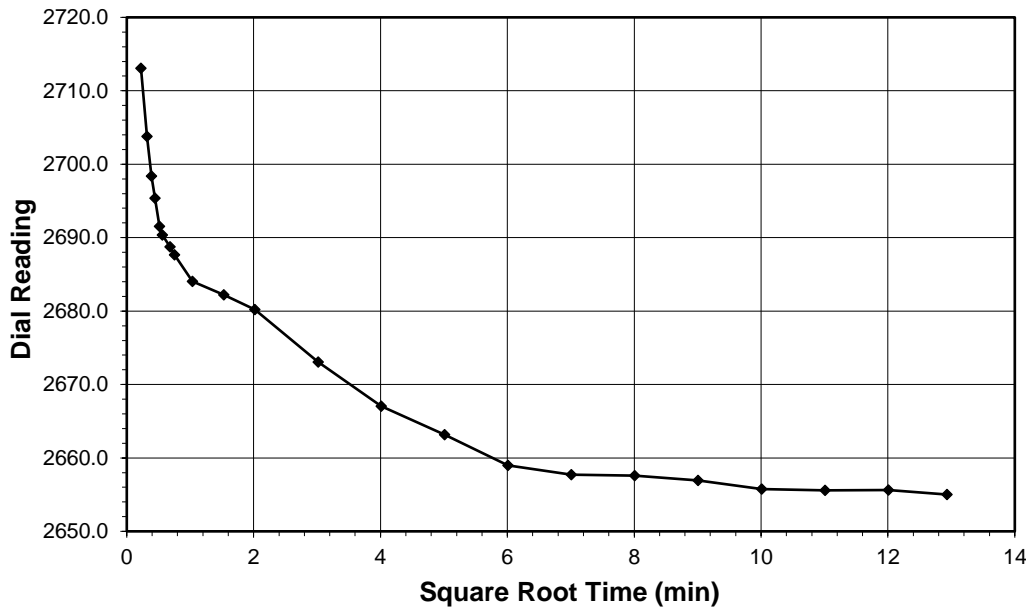
Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

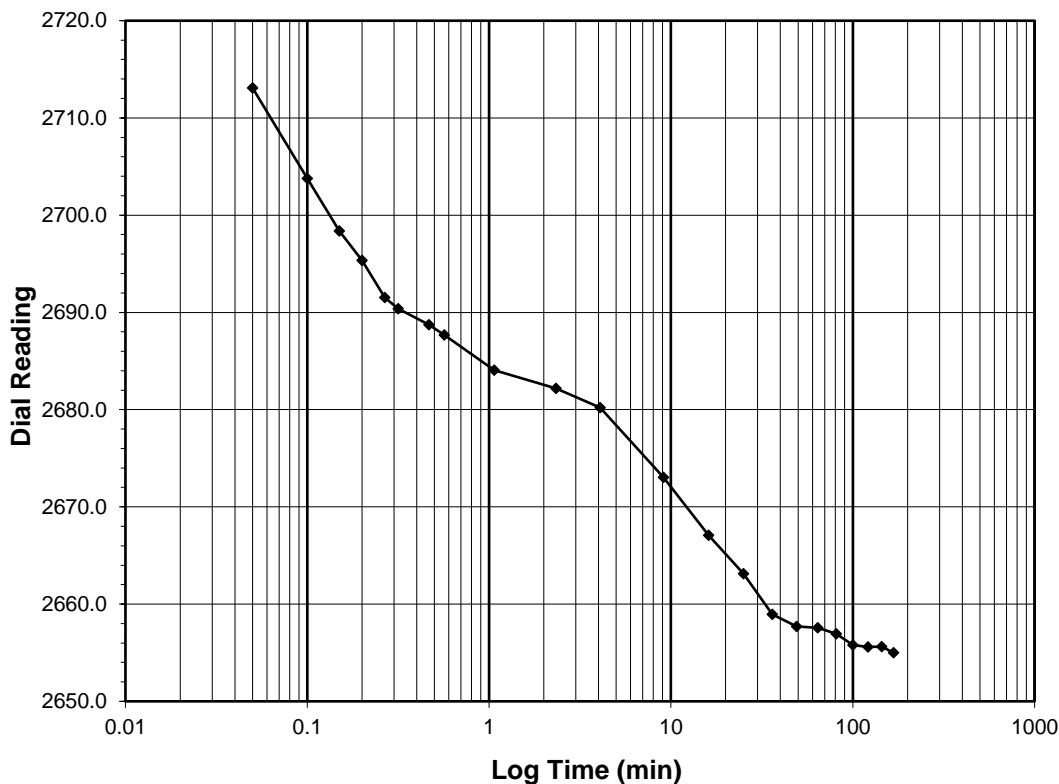
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>2655.0</b>
Consolidometer No.	<b>R409</b>
1 Division (in)	0.0001
Start Date	9/25/2020
Start Time	7:26:43

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2795.5</b>
0.05	2713.1
0.10	2703.8
0.15	2698.4
0.20	2695.4
0.27	2691.5
0.32	2690.4
0.47	2688.7
0.57	2687.7
1.07	2684.1
2.33	2682.2
4.08	2680.2
9.10	2673.0
16.10	2667.1
25.10	2663.1
36.12	2659.0
49.12	2657.7
64.13	2657.6
81.13	2656.9
100.15	2655.8
121.15	2655.6
144.15	2655.6
167.25	2655.0



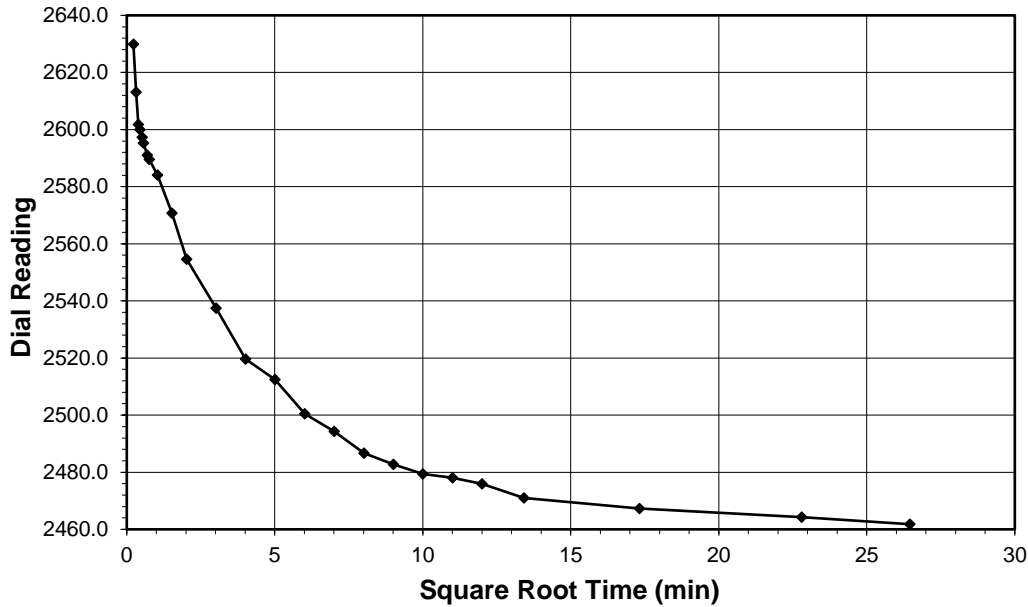
Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/29/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

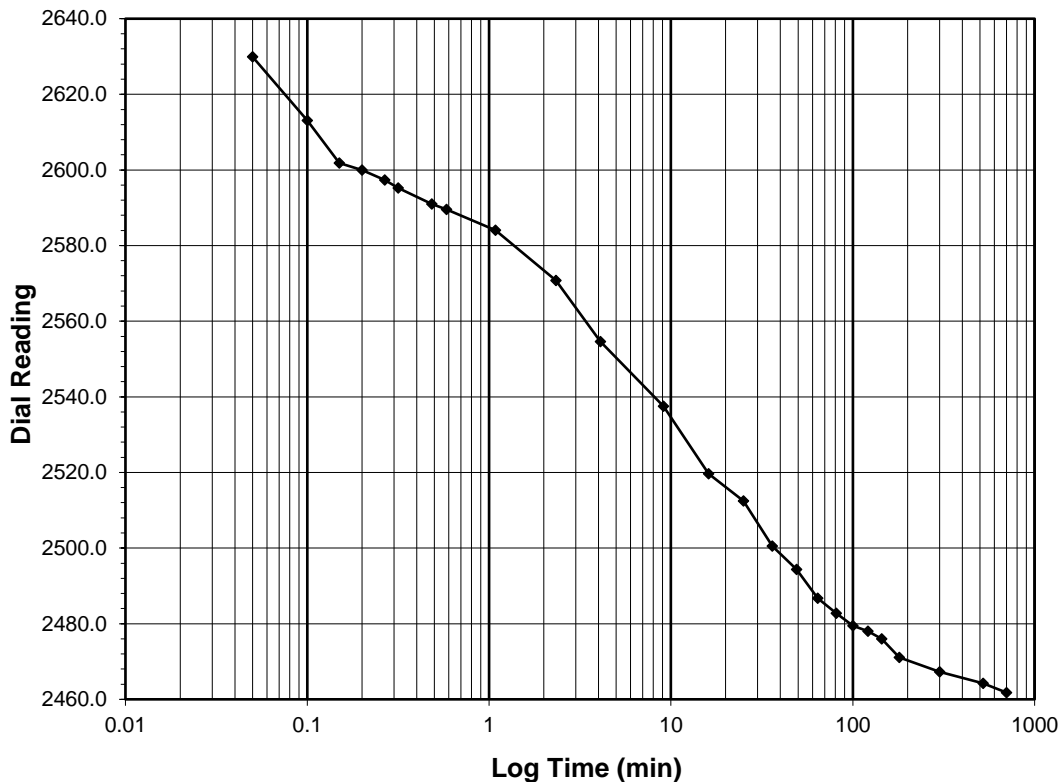
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>2461.8</b>
Consolidometer No.	R409
1 Division (in)	0.0001

Start Date	9/25/2020
Start Time	10:13:58

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2655.0</b>
0.05	2629.9
0.10	2613.1
0.15	2601.8
0.20	2600.0
0.27	2597.3
0.32	2595.2
0.48	2591.0
0.58	2589.6
1.08	2584.0
2.33	2570.8
4.10	2554.6
9.10	2537.5
16.10	2519.7
25.10	2512.5
36.12	2500.5
49.12	2494.3
64.12	2486.7
81.12	2482.7
100.12	2479.4
121.12	2478.0
144.13	2475.9
180.13	2471.0
300.13	2467.3
520.13	2464.2
700.15	2461.8



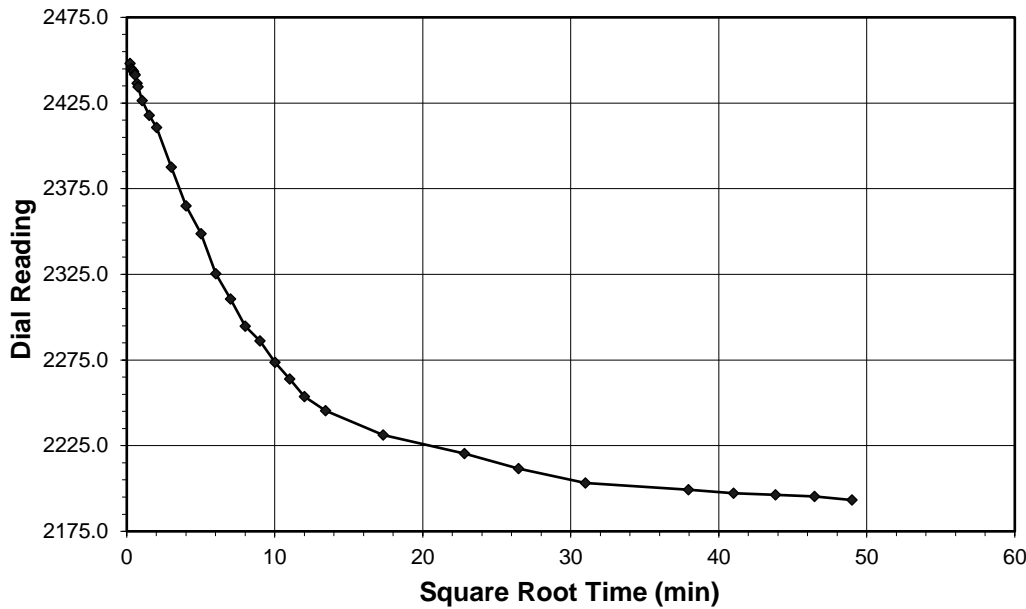
Tested By *NL* Date *9/25/2020* Checked By *GEM* Date *9/29/2020*

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

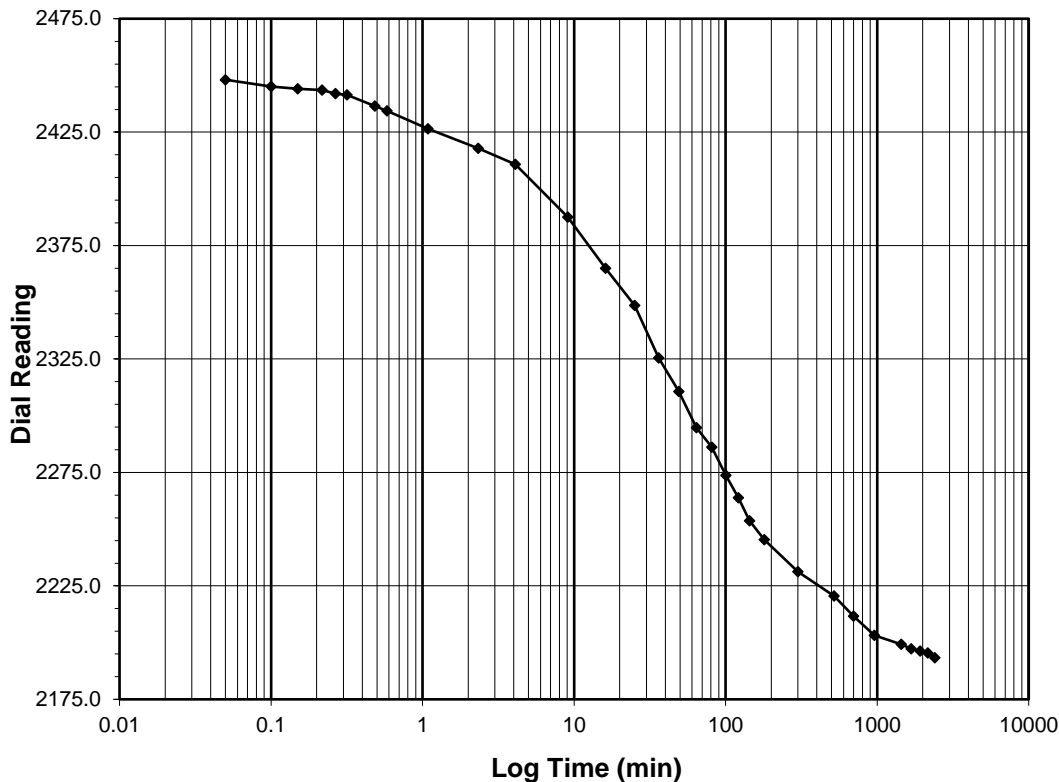
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	16.5'-18.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-1
Lab ID	R-2020-164-004-003	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>2193.3</b>
<b>Consolidometer No.</b>	<b>R409</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/25/2020</b>
<b>Start Time</b>	<b>22:14:16</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2461.8</b>
0.05	2448.1
0.10	2445.1
0.15	2444.2
0.22	2443.5
0.27	2442.0
0.32	2441.4
0.48	2436.4
0.58	2434.4
1.08	2426.4
2.33	2417.9
4.10	2410.8
9.10	2387.6
16.10	2365.0
25.12	2348.7
36.12	2325.4
49.12	2310.7
64.13	2294.8
81.13	2286.2
100.13	2273.7
121.13	2263.8
144.13	2253.7
180.15	2245.4
300.15	2231.3
520.15	2220.5
700.15	2211.6
960.15	2203.2
1440.15	2199.3
1680.15	2197.3
1920.15	2196.2
2160.17	2195.4
2400.17	2193.3

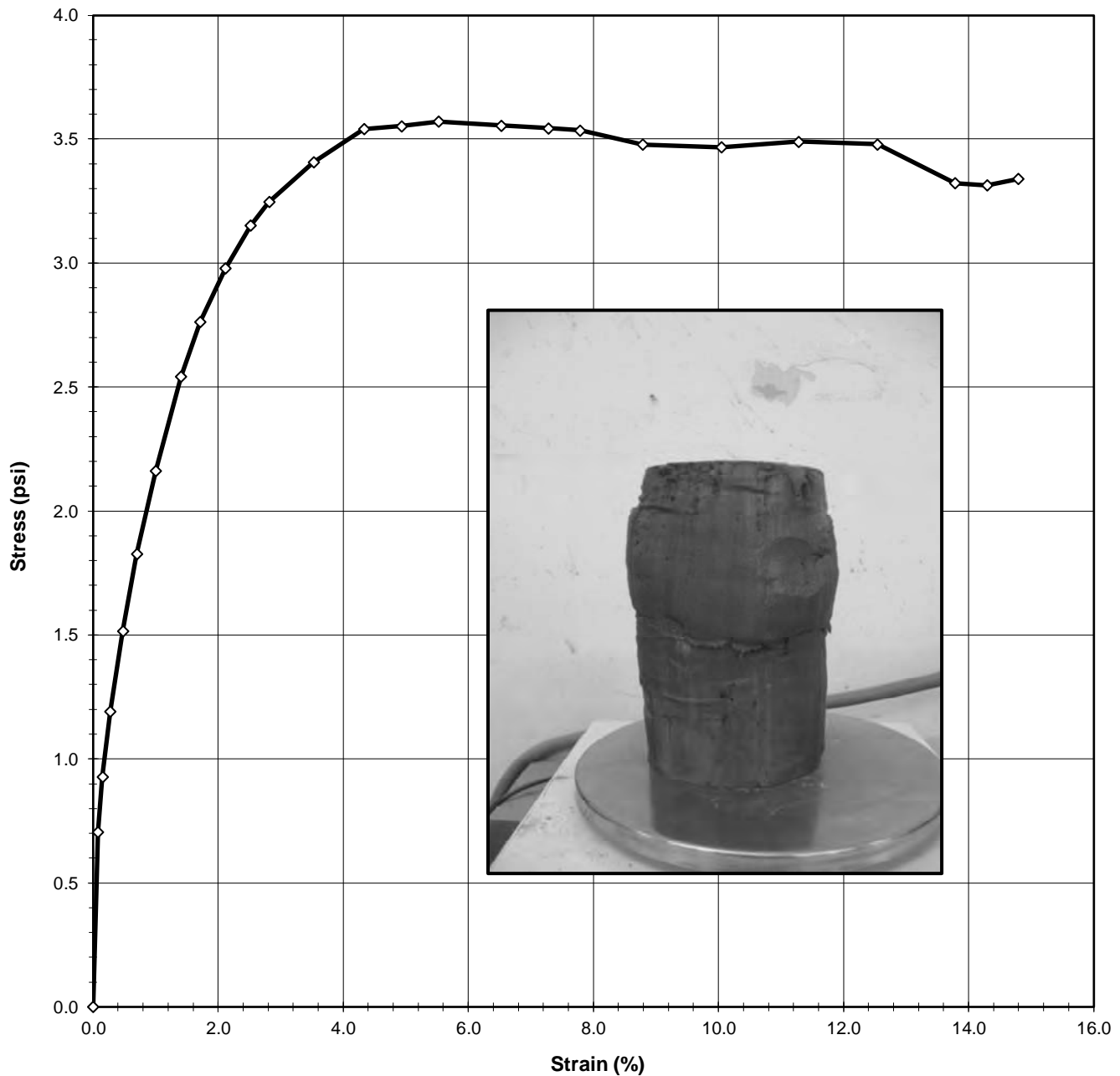


Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/29/2020**

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	16.5-18.5
Project No.:	R-2020-164-004	Sample No.:	CPT-21-1
Lab ID:	R-2020-164-004-003	Visual:	Gray Clay

**INITIAL CONFINING STRESS (psi)      7.2**



Tested By MY      Date 9/28/20      Input Checked By GEM      Date 9/30/20

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15



Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-004  
 Lab ID: R-2020-164-004-003

Boring No.: PRN-20-UD  
 Depth (ft): 16.5-18.5  
 Sample No.: CPT-21-1  
 Visual: Gray Clay

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	6.029	Top Dia. (in):	2.830
Length 2 (in):	6.027	Mid. Dia. (in):	2.812
Length 3 (in):	6.022	Bot. Dia. (in):	2.772
<b>Avg.Length (in)</b>	<b>6.026</b>	<b>Area (in<sup>2</sup>):</b>	<b>6.178</b>

WATER CONTENT (AFTER TEST)	
Total Weight of Sample (g):	1100.80
Tare No.:	TB-12
Weight of Tare & Wet Sample (g):	646.73
Weight of Tare & Dry Sample (g):	490.20
Weight of Tare (g):	136.00
% Moisture:	44.2

UNIT WEIGHT			
Undisturbed Sample			
Weight of Tube & Wet Sample (g):	1104	Sample Volume (cm <sup>3</sup> ):	610.1
Weight of Tube (g):	0.00	Unit Wet Weight (g/cm <sup>3</sup> ):	1.81
Weight of Wet Sample (g):	1104	Unit Wet Weight (pcf):	112.92
Diameter (in):	2.80	Moisture Content (%):	44.2
Length (in):	6.01	Unit Dry Weight (pcf):	78.3
Length (cm):	15.31		

<b>INITIAL CONFINING STRESS (psi)</b>	<b>7.2</b>	Initial Dial Reading (mil)	271
<b>ENDING CONFINING STRESS (psi)</b>	<b>7.2</b>	Dial Reading Before Shearing (mil)	284

DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	12.4	0.0	0.0	0.000
0.005	16.8	0.08	0.1	0.706
0.009	18.2	0.15	0.1	0.929
0.016	19.8	0.28	0.3	1.193
0.029	21.9	0.48	0.5	1.516
0.042	23.8	0.70	0.7	1.826
0.060	25.9	1.02	1.0	2.163
0.084	28.4	1.42	1.4	2.542
0.103	29.8	1.72	1.7	2.764
0.127	31.2	2.12	2.1	2.979
0.151	32.4	2.52	2.5	3.151
0.169	33.1	2.82	2.8	3.247
0.212	34.3	3.53	3.5	3.407
0.260	35.3	4.33	4.3	3.540
0.297	35.5	4.95	4.9	3.552
0.332	35.8	5.55	5.5	3.571
0.392	35.9	6.55	6.5	3.555
0.438	36.1	7.30	7.3	3.544
0.468	36.1	7.80	7.8	3.535
0.528	36.0	8.80	8.8	3.478
0.604	36.3	10.07	10.0	3.467
0.678	36.7	11.32	11.3	3.490
0.754	37.0	12.57	12.5	3.478
0.829	36.3	13.82	13.8	3.323
0.860	36.3	14.32	14.3	3.314
0.889	36.7	14.82	14.8	3.339

Tested By MY Date 9/28/20 Input Checked By GEM Date 9/30/20

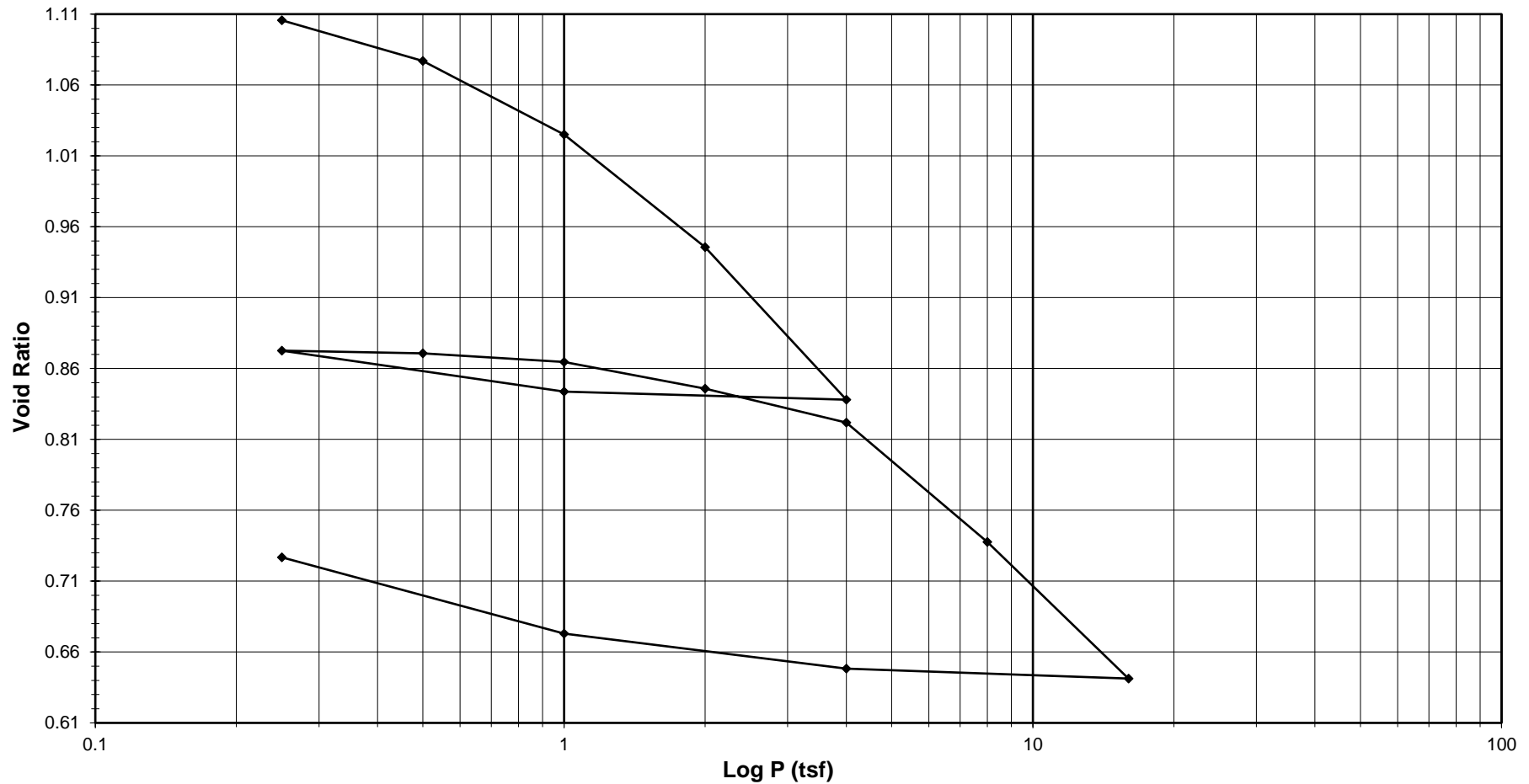
# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client Catlin Engineers & Scientists  
 Client Reference USACE Princeville  
 Project No. R-2020-164-004  
 Lab ID R-2020-164-004-004

Boring No. PRN-20-UD  
 Depth (ft) 18.5'-20.5'  
 Sample No. CPT-21-2  
 Visual Description Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/22/2020 Approved By MPS Date 9/30/2020



## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R557  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>Test Data Summary</u>							
<i>Water Content</i>			<b>Applied Pressure</b>	<b>Final Dial Reading</b>	<b>Machine Deflection</b>	<b>Corrected Reading</b>	<b>Height of Sample</b>	<b>Volume (cc)</b>	<b>Dry Density (g/cc)</b>	<b>Void Ratio</b>
Tare Number	718	721	(tsf)	(div)	(div)	(div)	(mm)			
Wt. Tare & WS (g)	478.13	216.89	Seating	0	0	0	25.400	80.440	1.25797	<b>1.14631</b>
Wt. Tare & DS (g)	369.02	190.16	0.25	206.5	17.2	189.4	24.919	78.917	1.28225	<b>1.10567</b>
Wt. Water (g)	109.11	26.73	0.5	350.0	27.0	323.0	24.580	77.841	1.29996	<b>1.07698</b>
Wt. Tare (g)	91.95	90.21	1	605.7	40.9	564.8	23.965	75.896	1.33328	<b>1.02508</b>
Wt. DS (g)	277.07	99.95	2	992.2	56.8	935.4	23.024	72.916	1.38778	<b>0.94555</b>
Water Content (%)	39.38	26.74	4	1524.9	88.8	1436.2	21.752	68.887	1.46893	<b>0.83807</b>
<i>Sample Parameters</i>			1	1463.3	53.4	1409.9	21.819	69.099	1.46444	<b>0.84371</b>
Sample Diameter (in)	2.5	2.5	0.25	1304.9	29.5	1275.4	22.160	70.180	1.44187	<b>0.87257</b>
Sample Height (in)	1.0000	0.8045	0.5	1319.7	35.6	1284.1	22.138	70.111	1.44331	<b>0.87070</b>
Sample Volume (cc)	80.44	64.71	1	1363.0	50.6	1312.5	22.066	69.882	1.44802	<b>0.86462</b>
Wt. Wet Sample + Ring (g)	245.48	232.69	2	1457.5	57.1	1400.4	21.843	69.175	1.46282	<b>0.84575</b>
Wt. of Ring (g)	104.44	104.44	4	1599.0	87.3	1511.7	21.560	68.280	1.48201	<b>0.82185</b>
Wt. of Wet Sample (g)	141.04	128.25	8	2025.7	121.7	1904.0	20.564	65.124	1.55383	<b>0.73765</b>
Wet Density (pcf)	109.41	123.67	16	2532.8	179.9	2352.9	19.424	61.513	1.64504	<b>0.64130</b>
Wet Density (g/cc)	1.75	1.98	4	2418.0	97.5	2320.5	19.506	61.773	1.63810	<b>0.64825</b>
Water Content (%)	39.38	26.74	1	2261.1	56.0	2205.2	19.799	62.702	1.61385	<b>0.67302</b>
Wt. of Dry Sample (g)	101.19	101.19	0.25	1988.7	33.8	1954.9	20.434	64.714	1.56365	<b>0.72672</b>
Dry Density (pcf)	78.50	97.57								
Dry Density (g/cc)	1.26	1.56								
Void Ratio	1.1463	0.7267								
Saturation (%)	92.75	99.36								
Specific Gravity	2.70	Assumed								

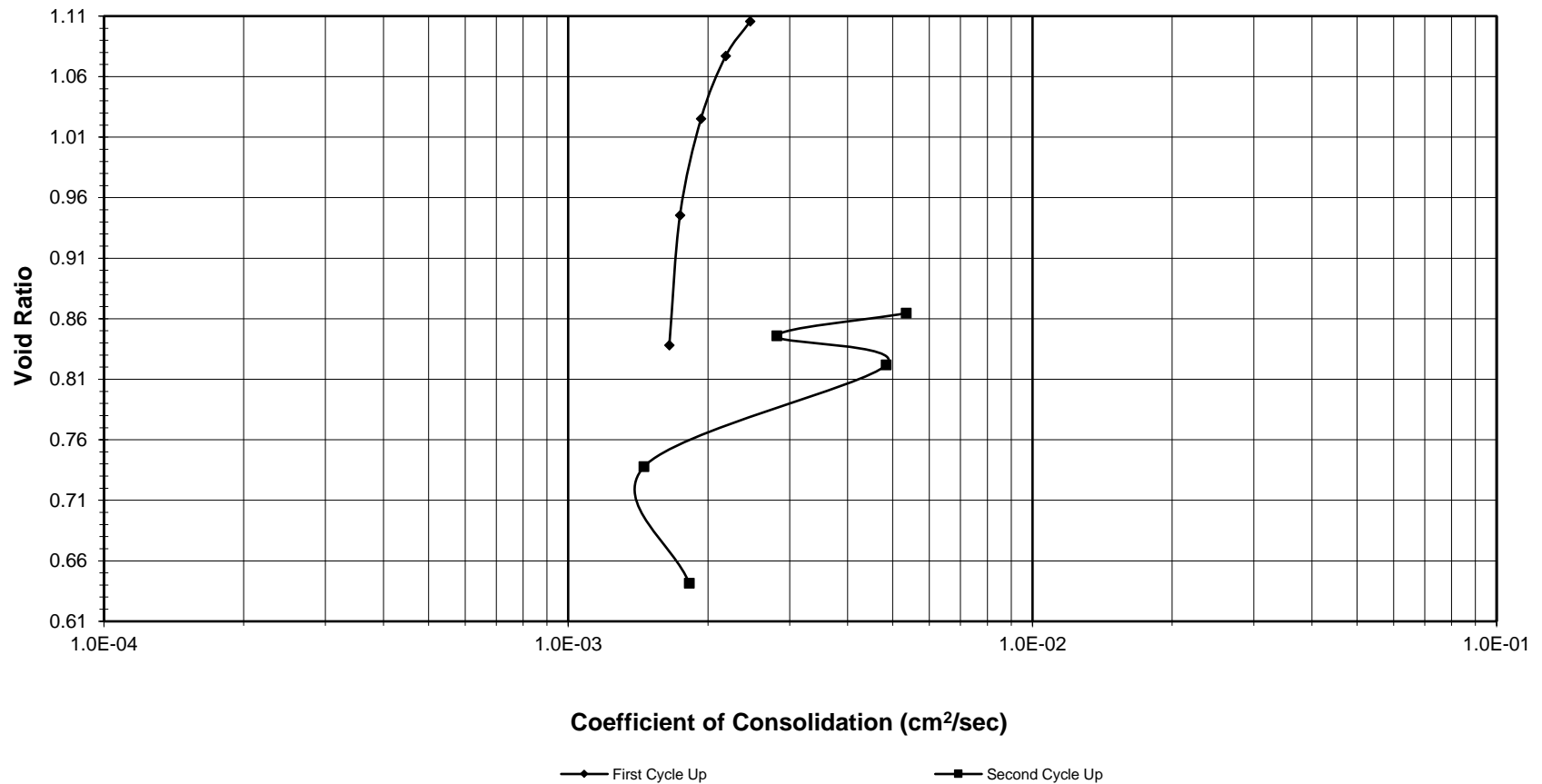
Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/30/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/30/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R557  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	C <sub>v</sub> Test Data Summary						
			Load Increment	Dial Reading @ t <sub>50</sub>	Machine Deflection	Corrected Dial Reading @ t <sub>50</sub>	Sample Height @ t <sub>50</sub>	Time t <sub>50</sub>	C <sub>v</sub>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
Water Content									
Tare Number	718	721							
Wt. Tare & WS (g)	478.13	216.89							
Wt. Tare & DS (g)	369.02	190.16							
Wt. Water (g)	109.11	26.73	0 - 0.25	126.8	17.2	109.6	2.512	<b>2.10</b>	<b>0.00247</b>
Wt. Tare (g)	91.95	90.21	0.25 - 0.5	286.9	27.0	259.9	2.474	<b>2.30</b>	<b>0.00218</b>
Wt. DS (g)	277.07	99.95	0.5 - 1.0	491.0	40.9	450.0	2.426	<b>2.50</b>	<b>0.00193</b>
Water Content (%)	39.38	26.74	1.0 - 2.0	811.4	56.8	754.6	2.348	<b>2.60</b>	<b>0.00174</b>
			2.0 - 4.0	1259.3	88.8	1170.5	2.243	<b>2.50</b>	<b>0.00165</b>
Sample Parameters			4.0 - 1.0	NA	53.4	NA	NA	<b>NA</b>	<b>NA</b>
Sample Diameter (in)	2.5	2.5	1.0 - 0.25	NA	29.5	NA	NA	<b>NA</b>	<b>NA</b>
Sample Height (in)	1.000	0.805	0.25 - 0.5	NA	35.6	NA	NA	<b>NA</b>	<b>NA</b>
Sample Volume (cc)	80.44	64.71	0.5 - 1.0	1342.9	50.6	1292.3	2.212	<b>0.75</b>	<b>0.00535</b>
Wt. Wet Sample + Ring (g)	245.48	232.69	1.0 - 2.0	1428.7	57.1	1371.6	2.192	<b>1.40</b>	<b>0.00282</b>
Wt. of Ring (g)	104.44	104.44	2.0 - 4.0	1532.0	87.3	1444.6	2.173	<b>0.80</b>	<b>0.00485</b>
Wt. of Wet Sample (g)	141.04	128.25	4.0 - 8.0	1830.6	121.7	1708.9	2.106	<b>2.50</b>	<b>0.00146</b>
Wet Density (pcf)	109.41	123.67	8.0 - 16.0	2306.9	179.9	2127.0	2.000	<b>1.80</b>	<b>0.00182</b>
Wet Density (g/cc)	1.75	1.98	16.0 - 4.0	NA	97.5	NA	NA	<b>NA</b>	<b>NA</b>
Water Content (%)	39.38	26.74	4.0 - 1.0	NA	56.0	NA	NA	<b>NA</b>	<b>NA</b>
Wt. of Dry Sample (g)	101.19	101.19	1.0 - 0.25	NA	33.8	NA	NA	<b>NA</b>	<b>NA</b>
Dry Density (pcf)	78.50	97.57							
Dry Density (g/cc)	1.26	1.56							
Void Ratio	1.1463	0.7267							
Saturation (%)	92.75	99.36							
Specific Gravity	2.7	Assumed							

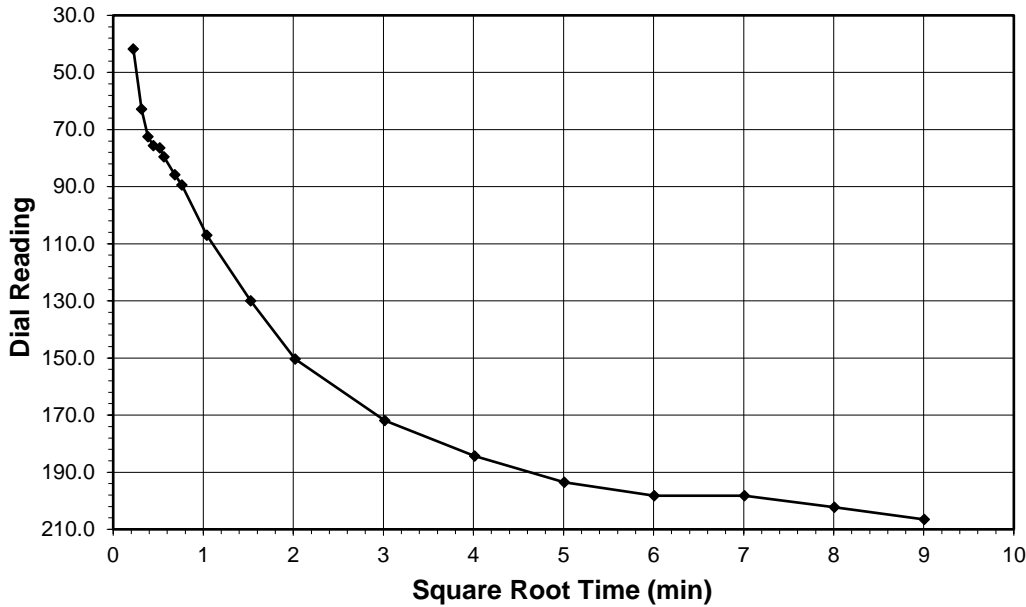
Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/30/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

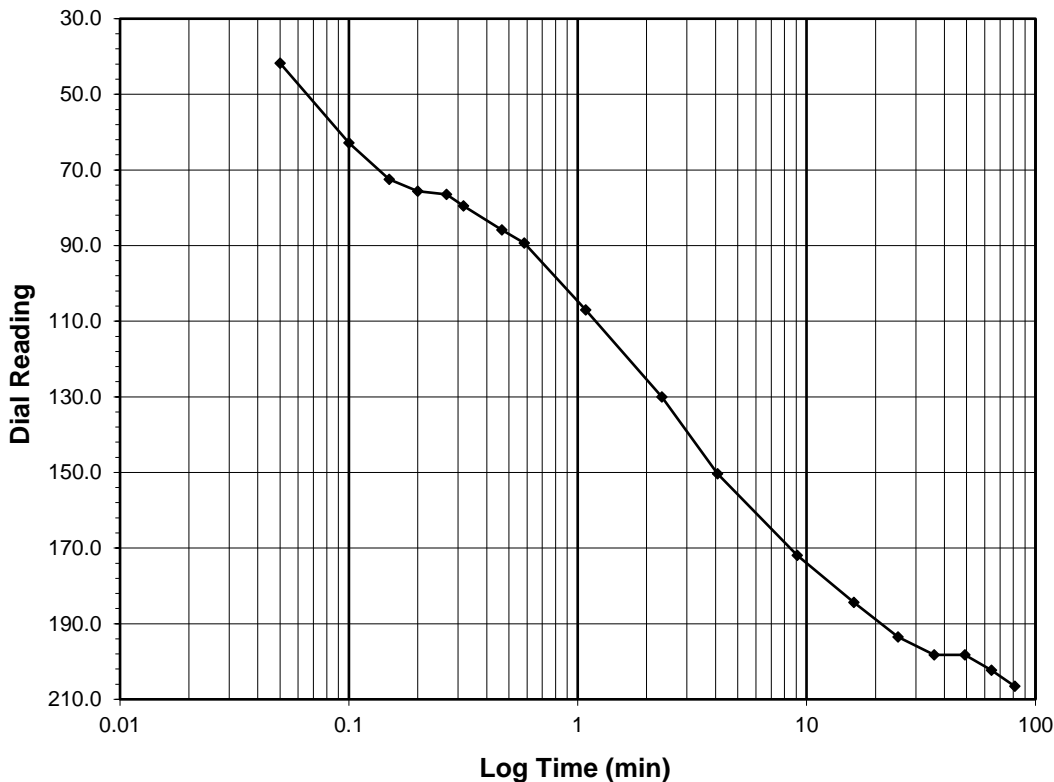
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load</b> (tsf)	<b>0.0-0.25</b>
<b>Final Reading</b> (div)	<b>206.5</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001

Start Date	9/22/2020
Start Time	10:41:53

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.05	41.7
0.10	62.9
0.15	72.5
0.20	75.6
0.27	76.5
0.32	79.5
0.47	85.9
0.58	89.4
1.08	107.0
2.33	130.0
4.08	150.4
9.08	171.9
16.10	184.3
25.10	193.5
36.10	198.2
49.10	198.3
64.12	202.3
81.12	206.5



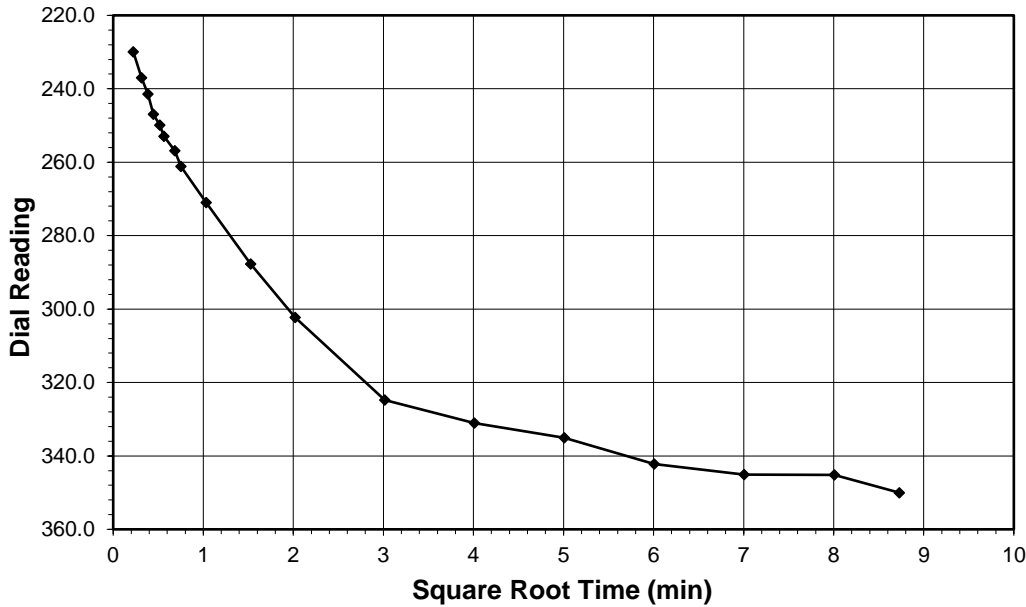
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

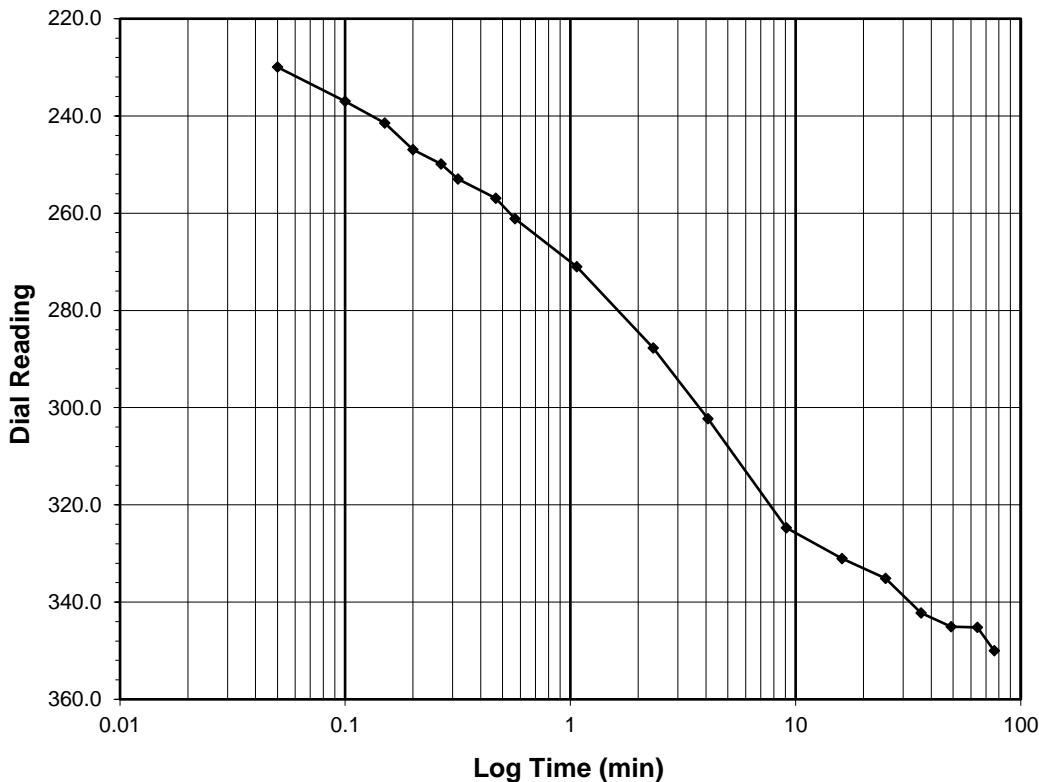
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>350.0</b>
Consolidometer No.	R557
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	12:03:05

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>206.5</b>
0.05	230.0
0.10	237.0
0.15	241.5
0.20	246.9
0.27	249.9
0.32	253.0
0.47	256.9
0.57	261.1
1.07	271.0
2.33	287.7
4.08	302.3
9.08	324.7
16.08	331.0
25.08	335.1
36.08	342.2
49.08	345.1
64.10	345.2
76.20	350.0



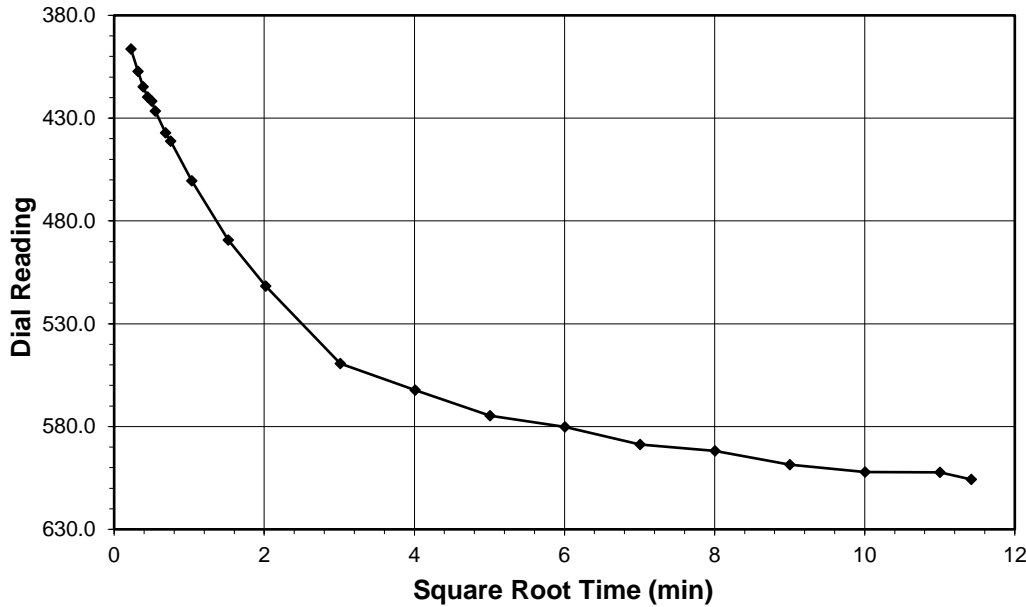
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

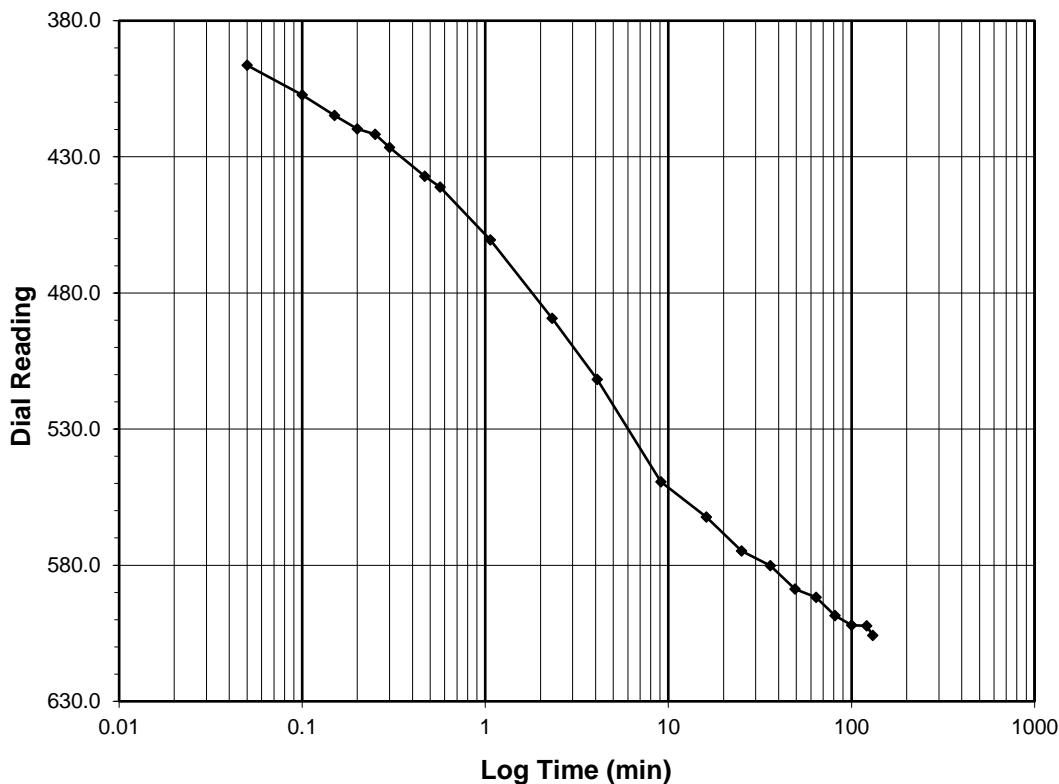
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>605.7</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001

Start Date	9/22/2020
Start Time	13:19:17

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>350.0</b>
0.05	396.4
0.10	407.3
0.15	414.7
0.20	419.8
0.25	421.7
0.30	426.6
0.47	437.2
0.57	441.1
1.07	460.5
2.32	489.3
4.08	511.7
9.08	549.4
16.08	562.3
25.08	574.7
36.08	580.1
49.08	588.7
64.08	591.8
81.08	598.6
100.08	602.1
121.10	602.3
130.43	605.7



Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

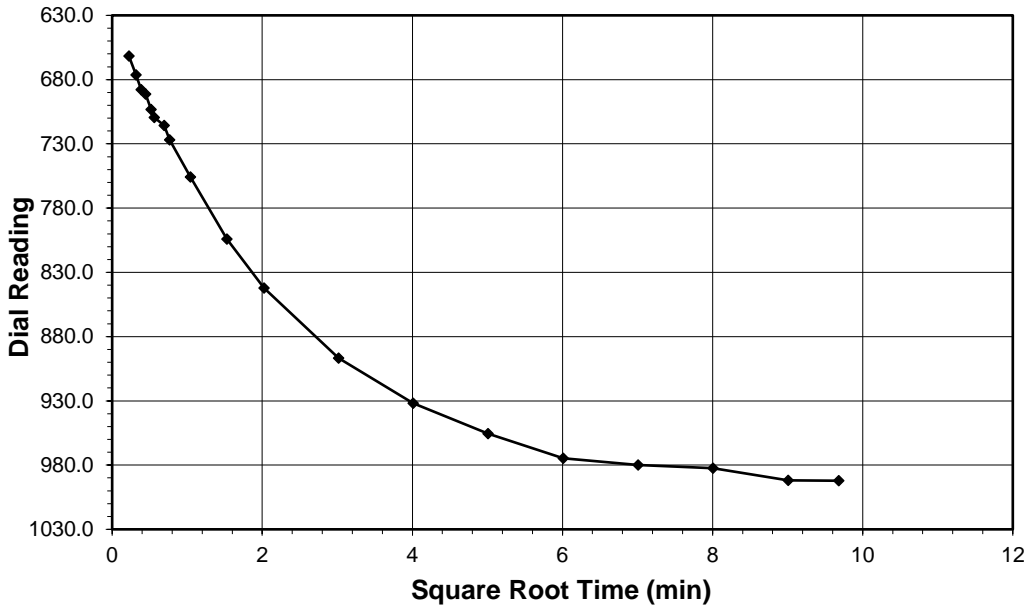


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

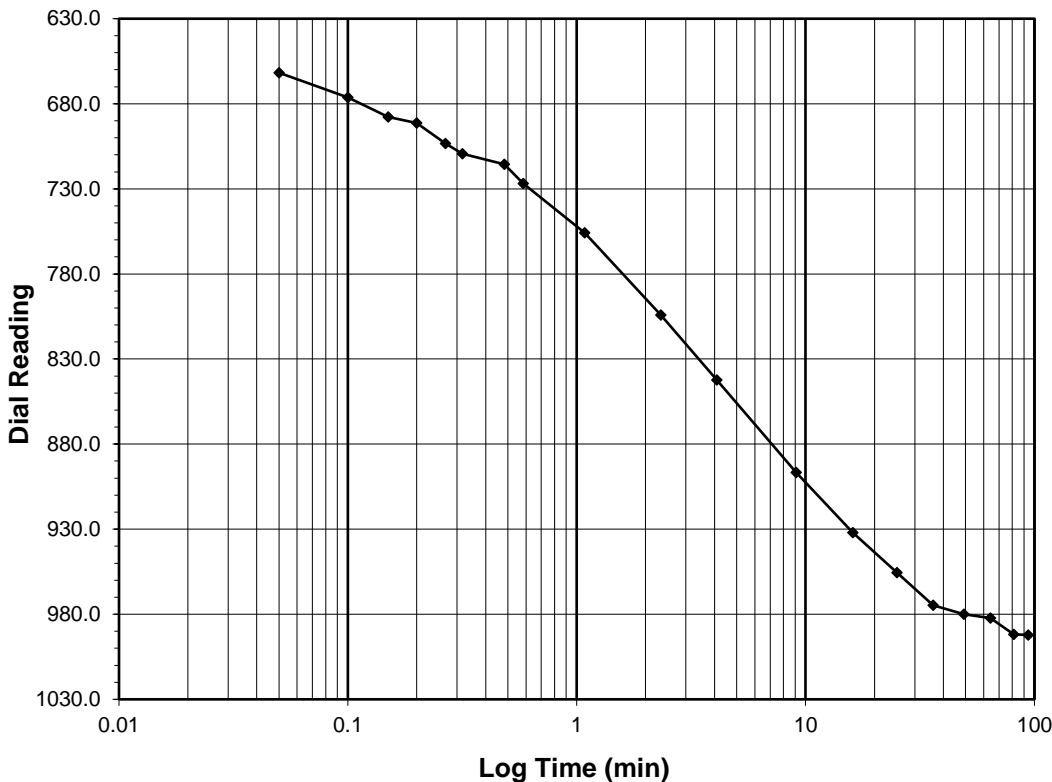
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>992.2</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	15:29:43

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>605.7</b>
0.05	661.7
0.10	676.4
0.15	687.8
0.20	691.4
0.27	703.3
0.32	709.4
0.48	715.6
0.58	726.9
1.08	755.8
2.33	804.1
4.10	842.2
9.10	896.7
16.10	932.0
25.10	955.6
36.10	974.7
49.10	980.0
64.12	982.3
81.12	991.8
93.75	992.2



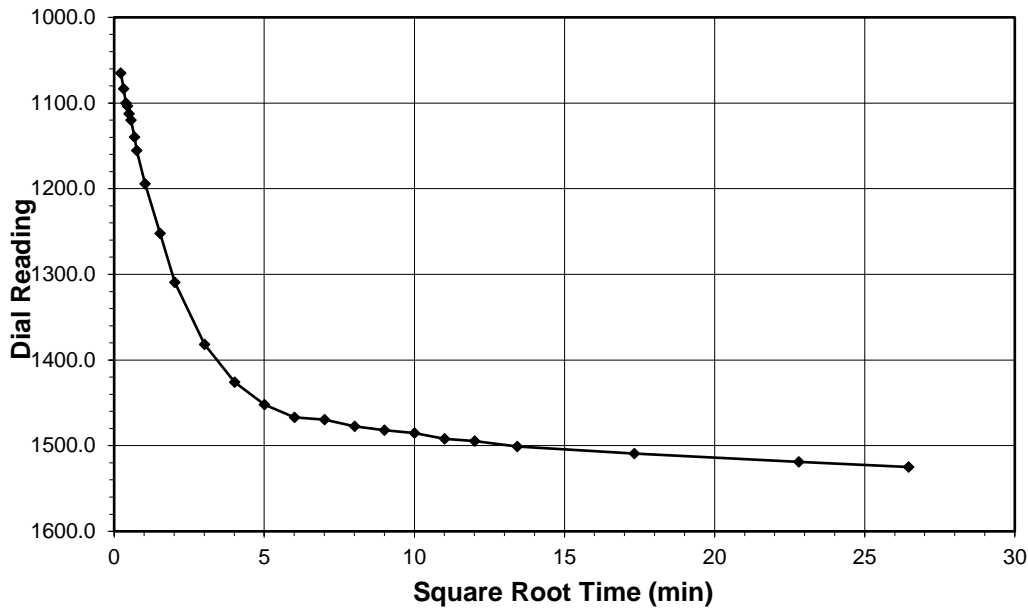
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

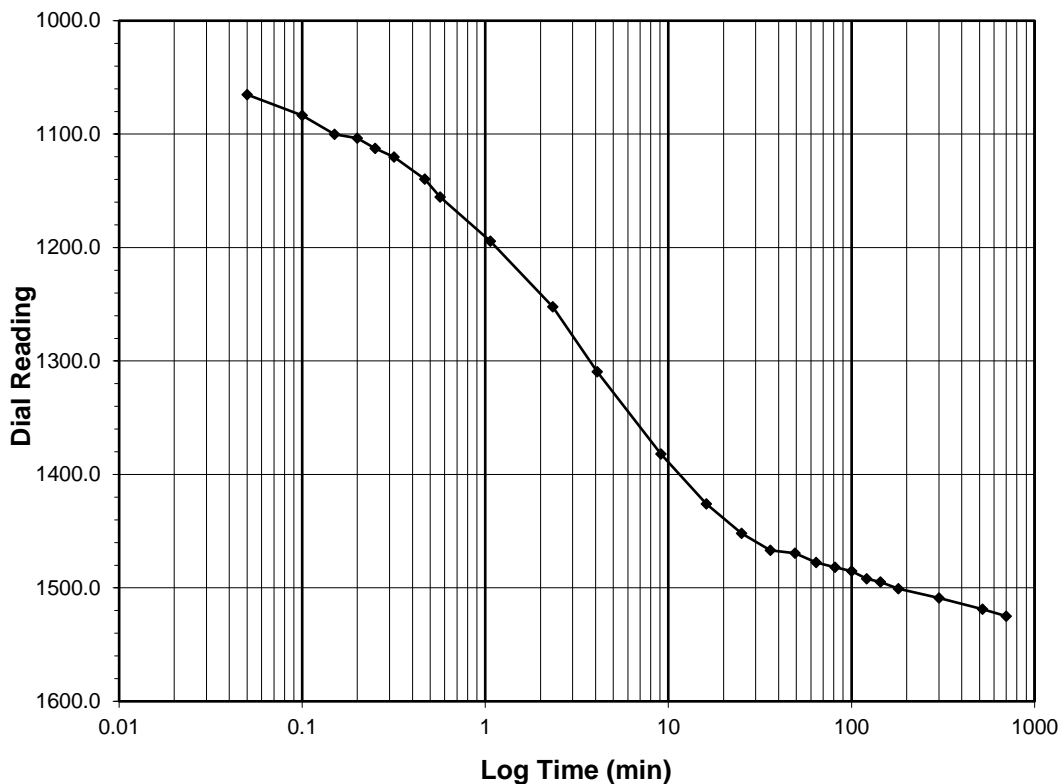
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1524.9</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	17:03:29

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>992.2</b>
0.05	1065.2
0.10	1083.4
0.15	1100.1
0.20	1103.4
0.25	1112.4
0.32	1120.0
0.47	1139.8
0.57	1155.4
1.07	1194.3
2.33	1252.2
4.08	1309.4
9.08	1381.9
16.08	1426.1
25.08	1451.9
36.08	1467.0
49.10	1469.6
64.10	1477.6
81.10	1481.8
100.12	1485.2
121.12	1492.1
144.12	1494.8
180.13	1500.9
300.13	1509.0
520.15	1518.9
700.15	1524.9



Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

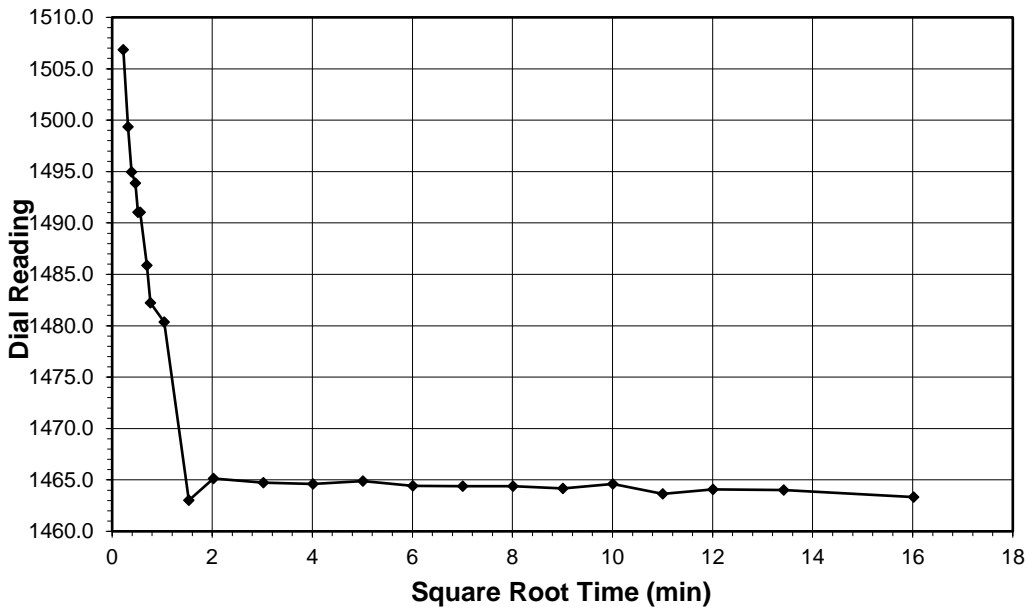


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

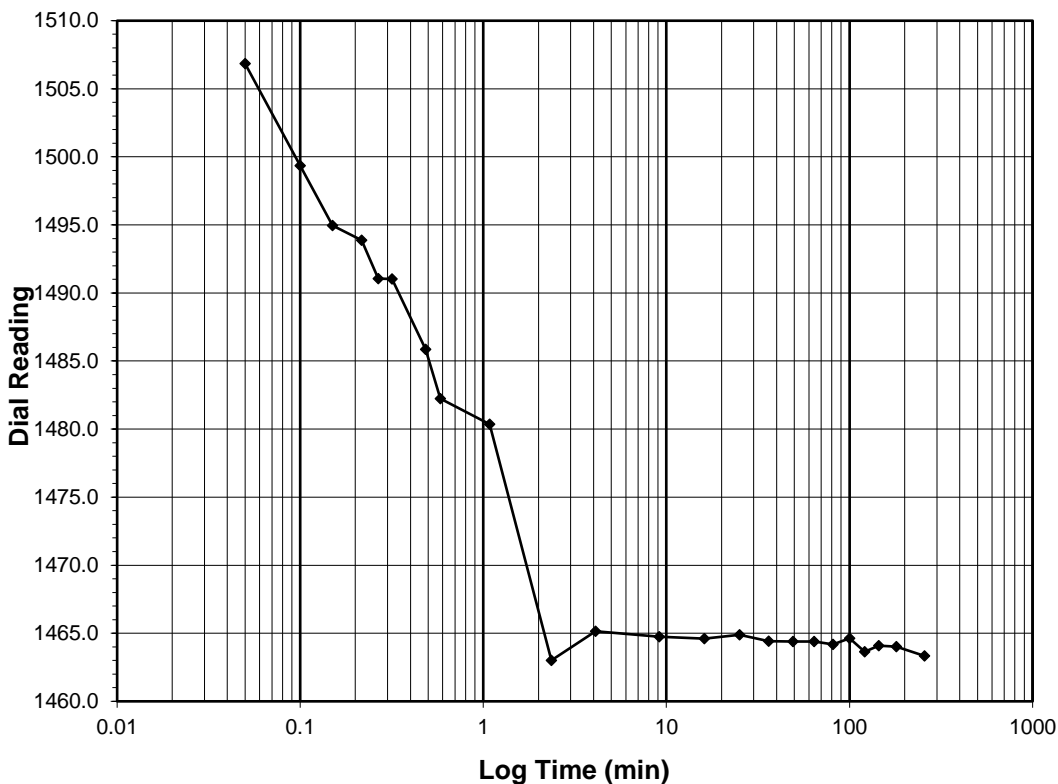
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>1463.3</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	5:03:47

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1524.9</b>
0.05	1506.8
0.10	1499.4
0.15	1495.0
0.22	1493.9
0.27	1491.0
0.32	1491.0
0.48	1485.9
0.58	1482.2
1.08	1480.4
2.35	1463.0
4.10	1465.2
9.12	1464.7
16.12	1464.6
25.12	1464.9
36.12	1464.4
49.12	1464.4
64.13	1464.4
81.13	1464.2
100.13	1464.6
121.13	1463.6
144.13	1464.1
180.13	1464.0
256.52	1463.3



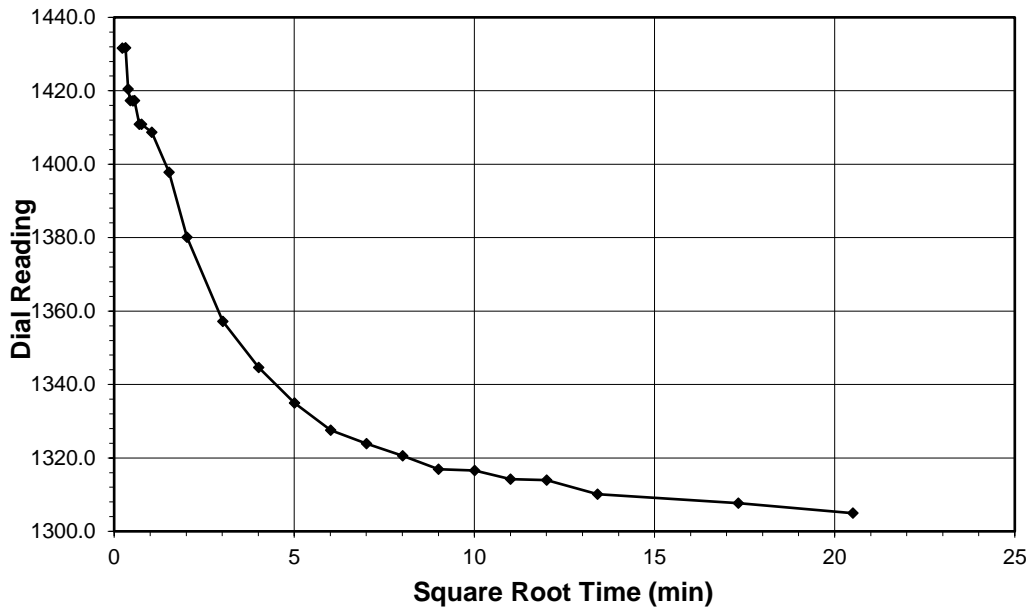
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

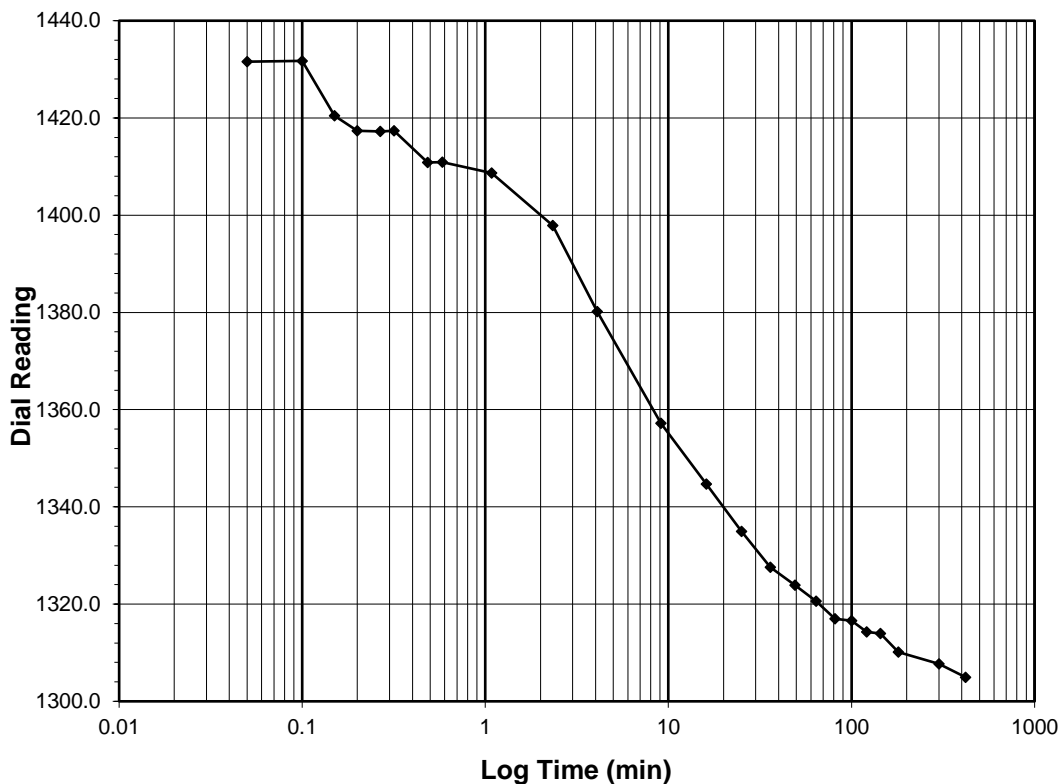
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>1304.9</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	9:20:18

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1463.3</b>
0.05	1431.6
0.10	1431.7
0.15	1420.4
0.20	1417.4
0.27	1417.2
0.32	1417.3
0.48	1410.8
0.58	1410.9
1.08	1408.7
2.33	1397.8
4.08	1380.1
9.08	1357.2
16.08	1344.7
25.08	1335.0
36.10	1327.6
49.10	1323.9
64.10	1320.6
81.10	1317.0
100.10	1316.6
121.10	1314.3
144.10	1313.9
180.10	1310.1
300.10	1307.7
420.35	1304.9



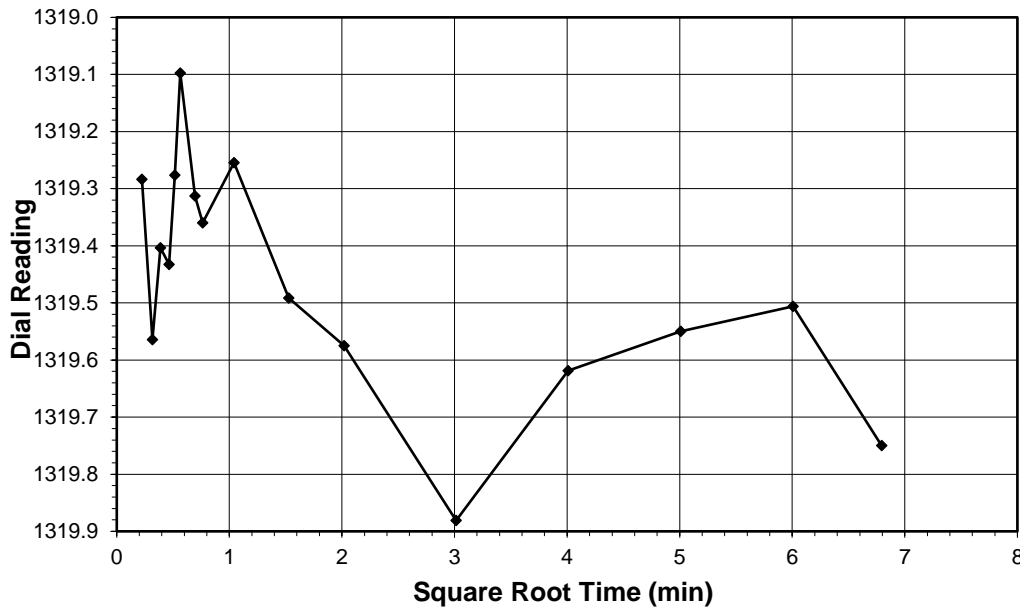
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

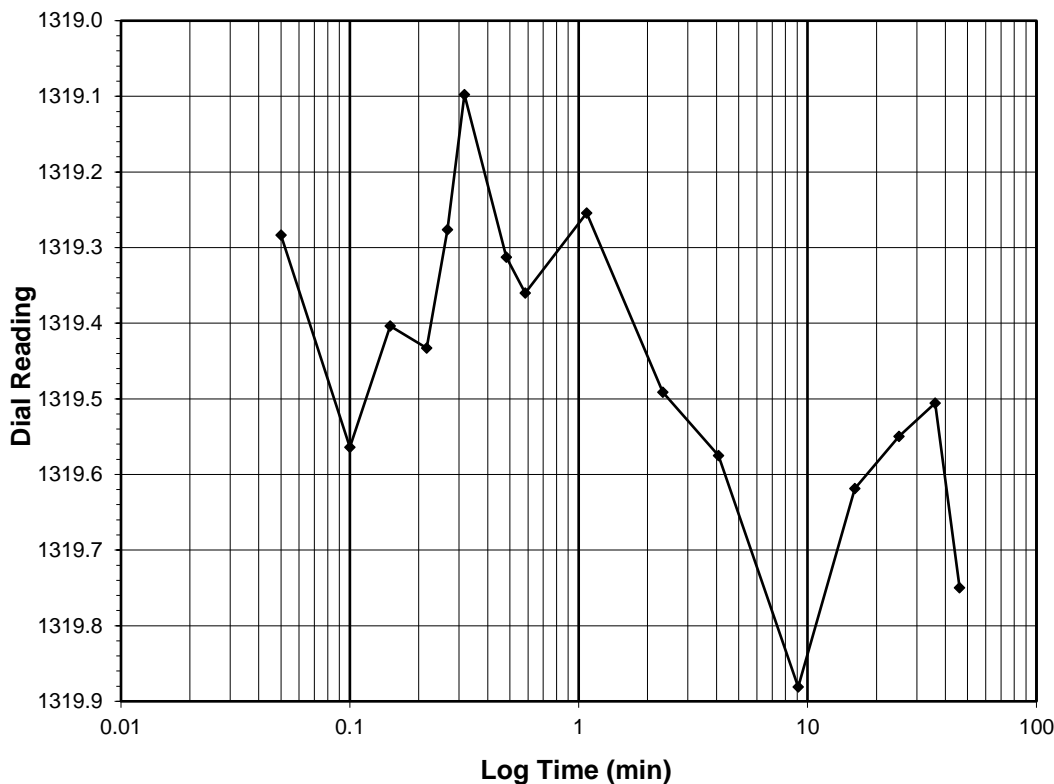
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>1319.7</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001

Start Date	9/23/2020
Start Time	16:20:39

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1304.9</b>
0.05	1319.3
0.10	1319.6
0.15	1319.4
0.22	1319.4
0.27	1319.3
0.32	1319.1
0.48	1319.3
0.58	1319.4
1.08	1319.3
2.33	1319.5
4.08	1319.6
9.08	1319.9
16.08	1319.6
25.08	1319.5
36.08	1319.5
46.15	1319.7



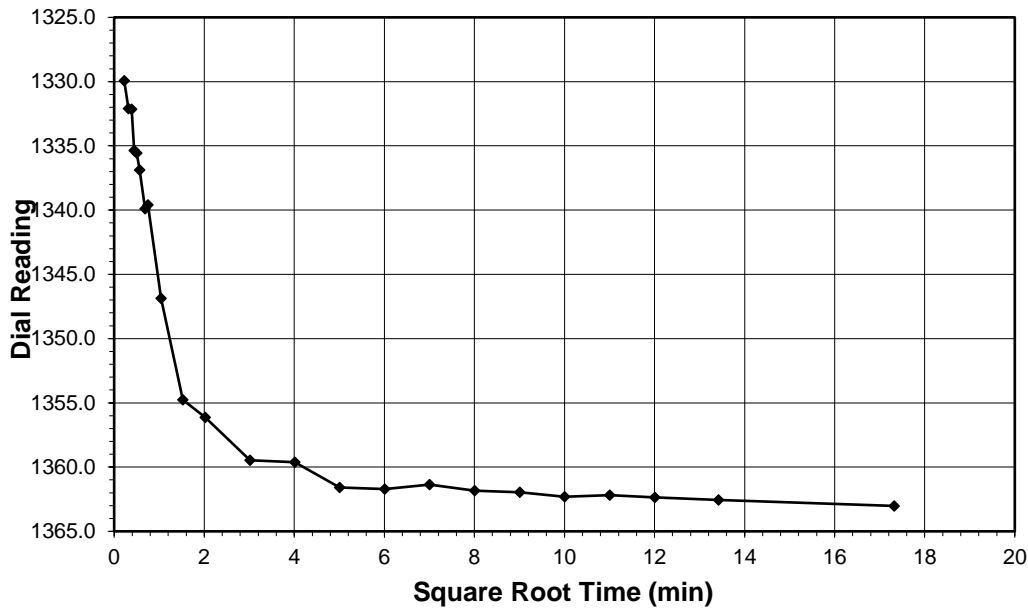
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

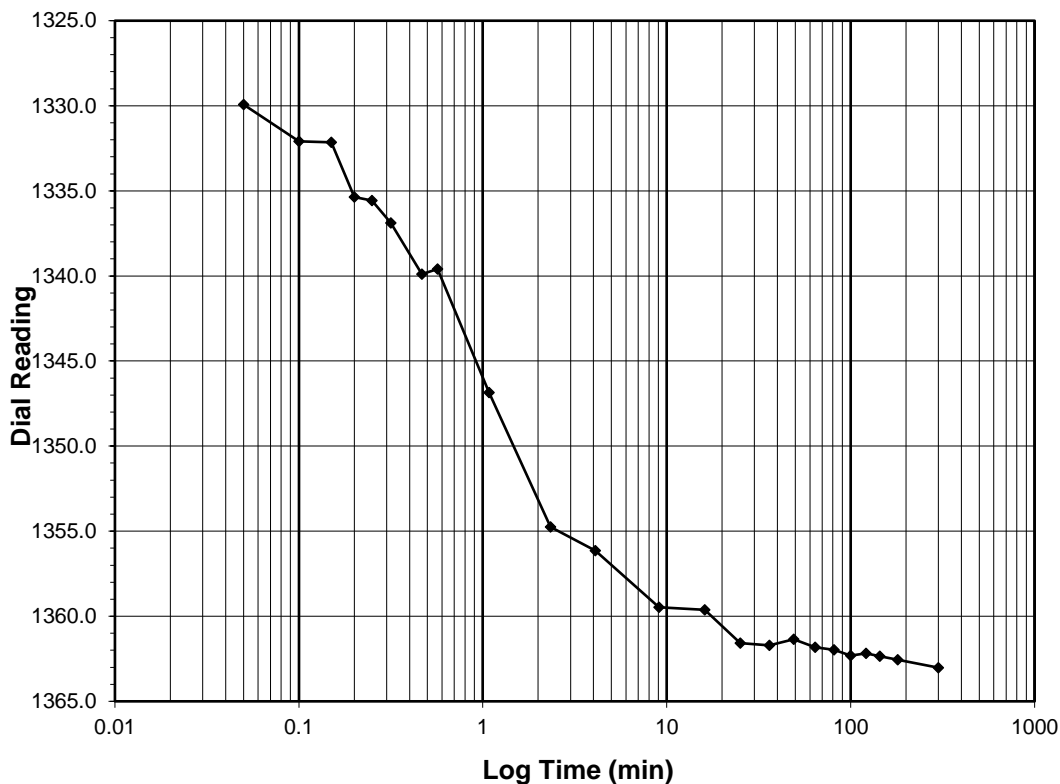
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>1363.0</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	17:06:48

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1319.7</b>
0.05	1329.9
0.10	1332.1
0.15	1332.2
0.20	1335.4
0.25	1335.6
0.32	1336.9
0.47	1339.9
0.57	1339.6
1.08	1346.9
2.33	1354.8
4.08	1356.1
9.08	1359.5
16.08	1359.6
25.08	1361.6
36.08	1361.7
49.10	1361.4
64.10	1361.8
81.10	1362.0
100.12	1362.3
121.12	1362.2
144.12	1362.3
180.13	1362.6
300.13	1363.0



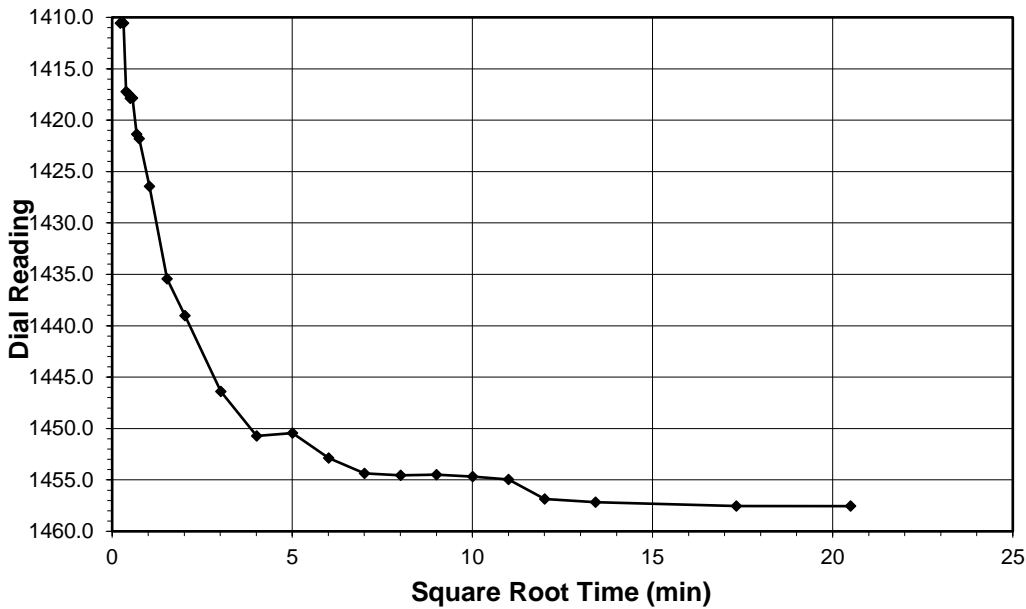
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

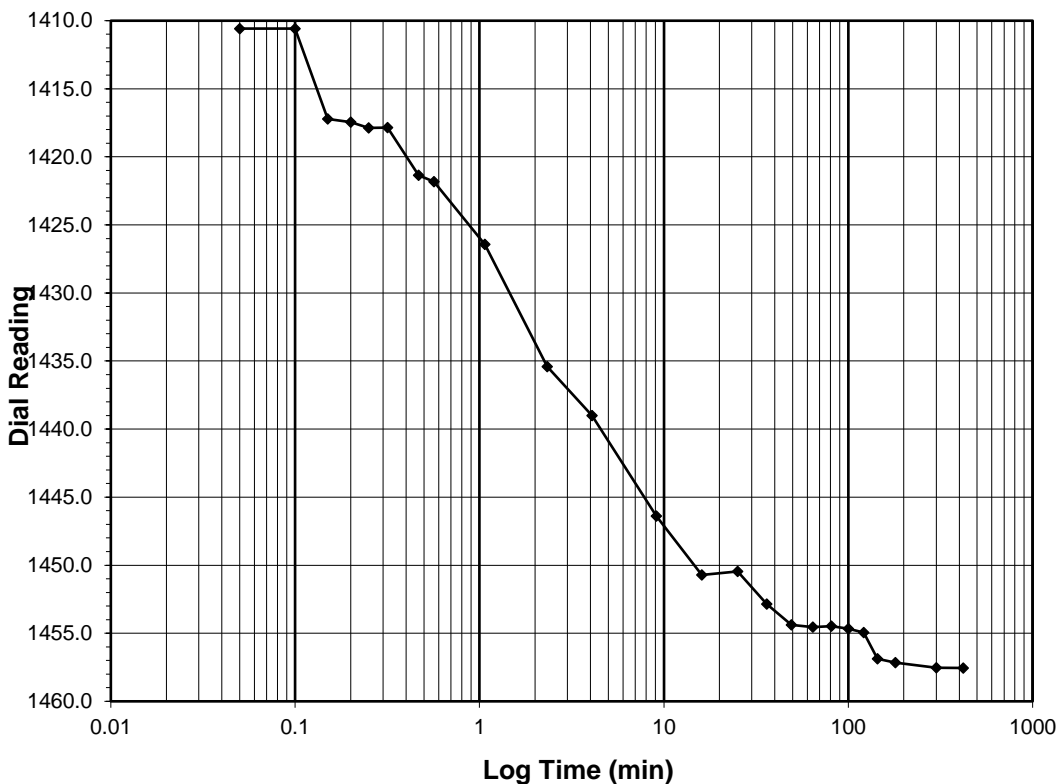
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>1457.5</b>
Consolidometer No.	R557
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	0:06:56

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1363.0</b>
0.05	1410.6
0.10	1410.6
0.15	1417.2
0.20	1417.5
0.25	1417.9
0.32	1417.8
0.47	1421.4
0.57	1421.8
1.07	1426.4
2.33	1435.4
4.08	1439.0
9.08	1446.4
16.08	1450.7
25.10	1450.5
36.10	1452.9
49.10	1454.4
64.12	1454.5
81.12	1454.5
100.12	1454.7
121.12	1455.0
144.12	1456.9
180.12	1457.2
300.13	1457.5
420.32	1457.5



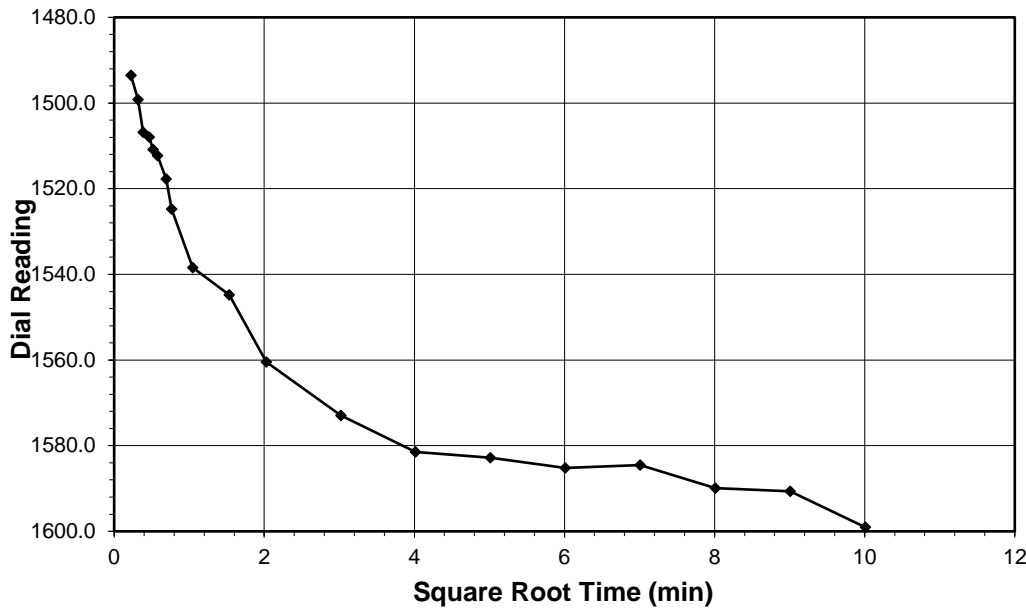
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

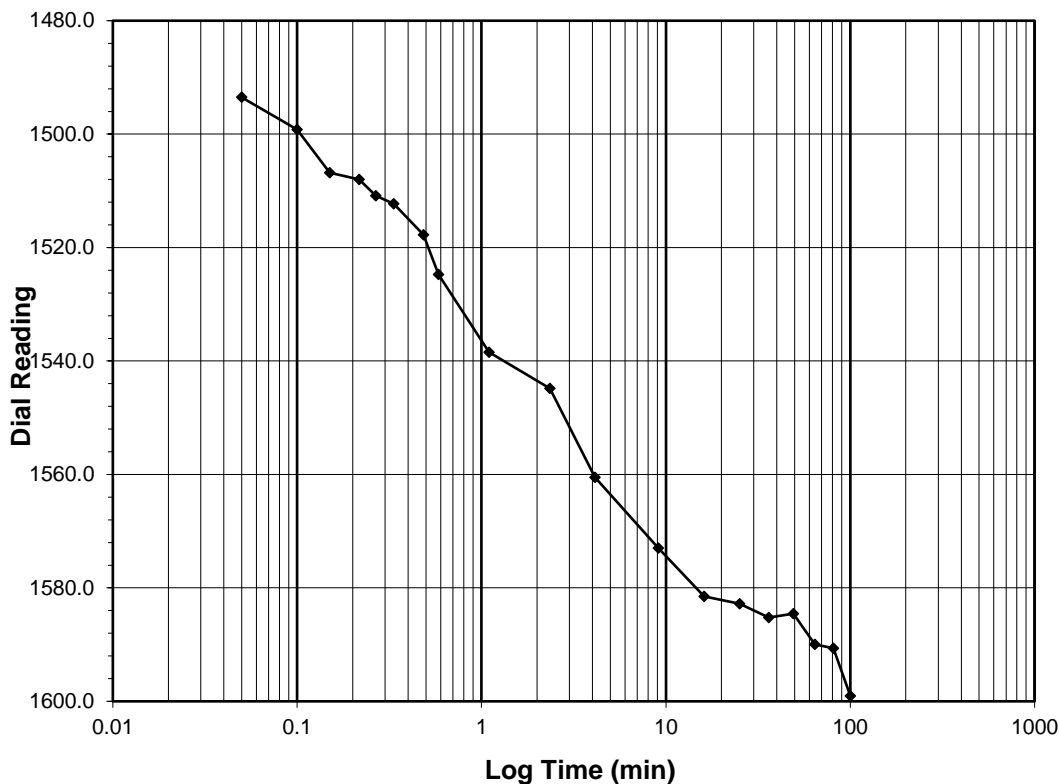
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1599.0</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	7:07:15

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1457.5</b>
0.05	1493.5
0.10	1499.2
0.15	1506.8
0.22	1508.0
0.27	1510.9
0.33	1512.3
0.48	1517.8
0.58	1524.7
1.10	1538.4
2.35	1544.8
4.12	1560.5
9.12	1573.0
16.13	1581.5
25.13	1582.8
36.13	1585.2
49.13	1584.5
64.15	1589.9
81.15	1590.6
100.15	1599.0



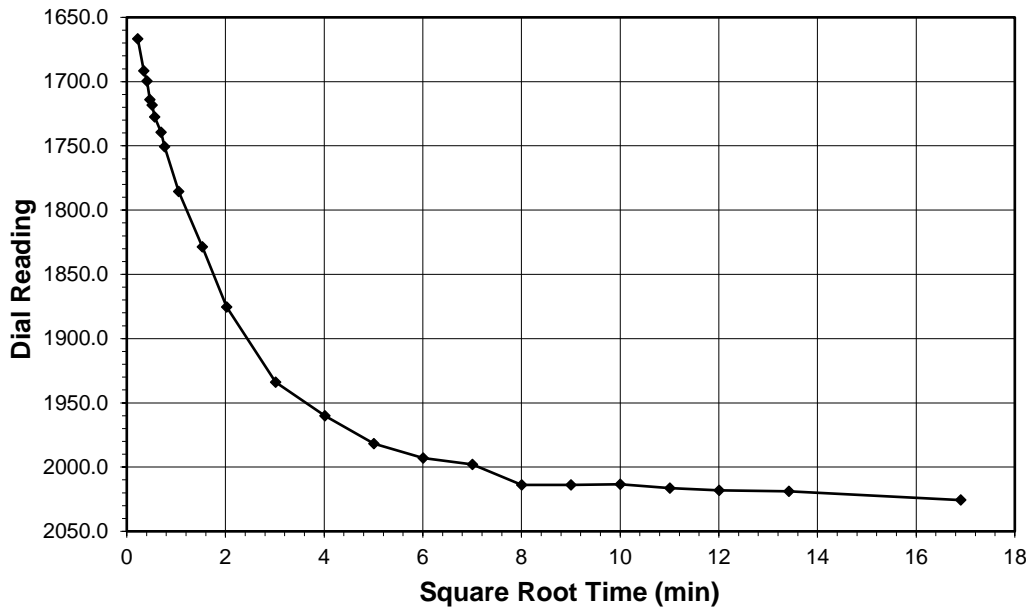
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

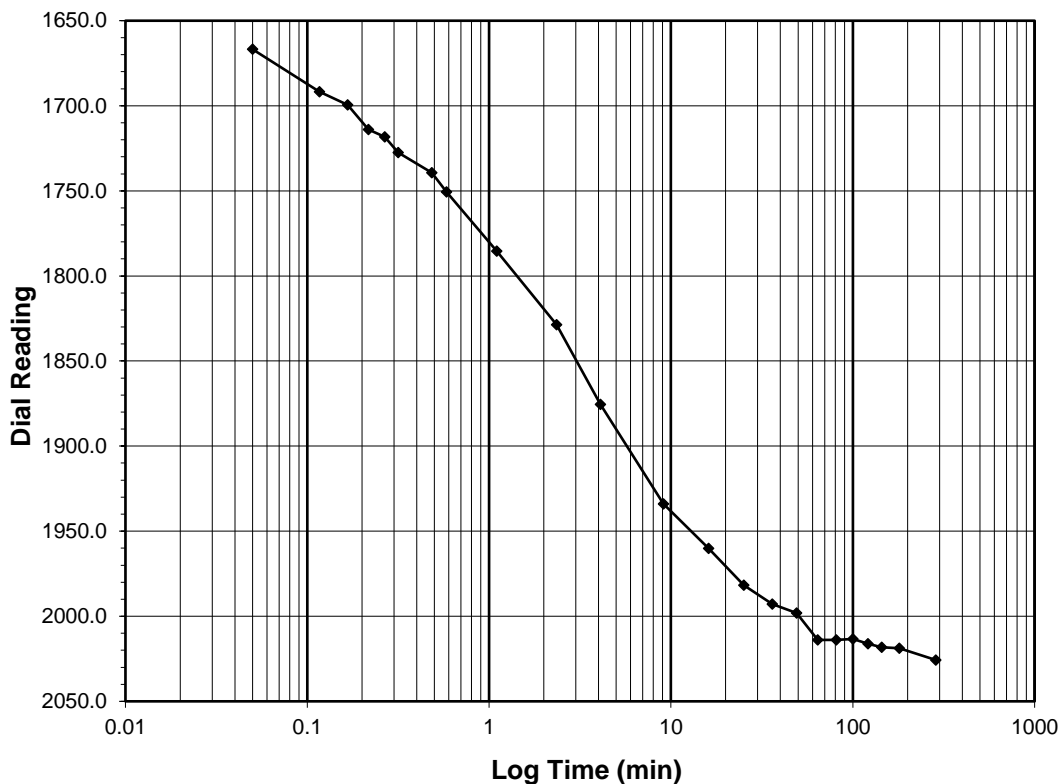
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>2025.7</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	8:51:36

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1599.0</b>
0.05	1666.8
0.12	1691.7
0.17	1699.5
0.22	1714.0
0.27	1718.3
0.32	1727.6
0.48	1739.4
0.58	1750.6
1.10	1785.4
2.35	1828.7
4.10	1875.4
9.10	1934.0
16.12	1960.1
25.12	1981.8
36.12	1992.9
49.12	1998.1
64.12	2013.9
81.12	2013.9
100.12	2013.3
121.12	2016.3
144.13	2018.2
180.13	2018.9
285.85	2025.7



Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

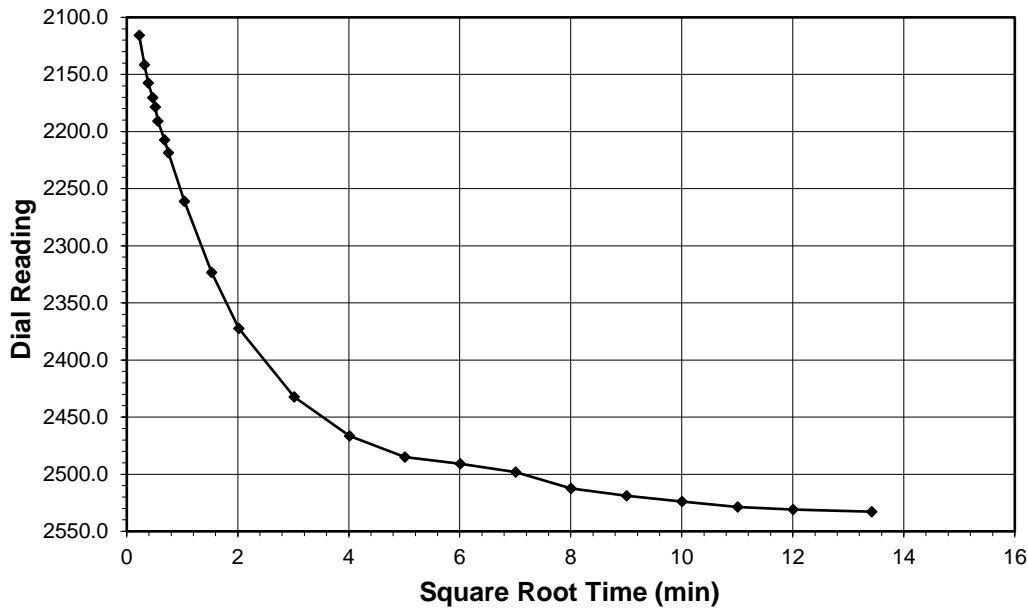


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

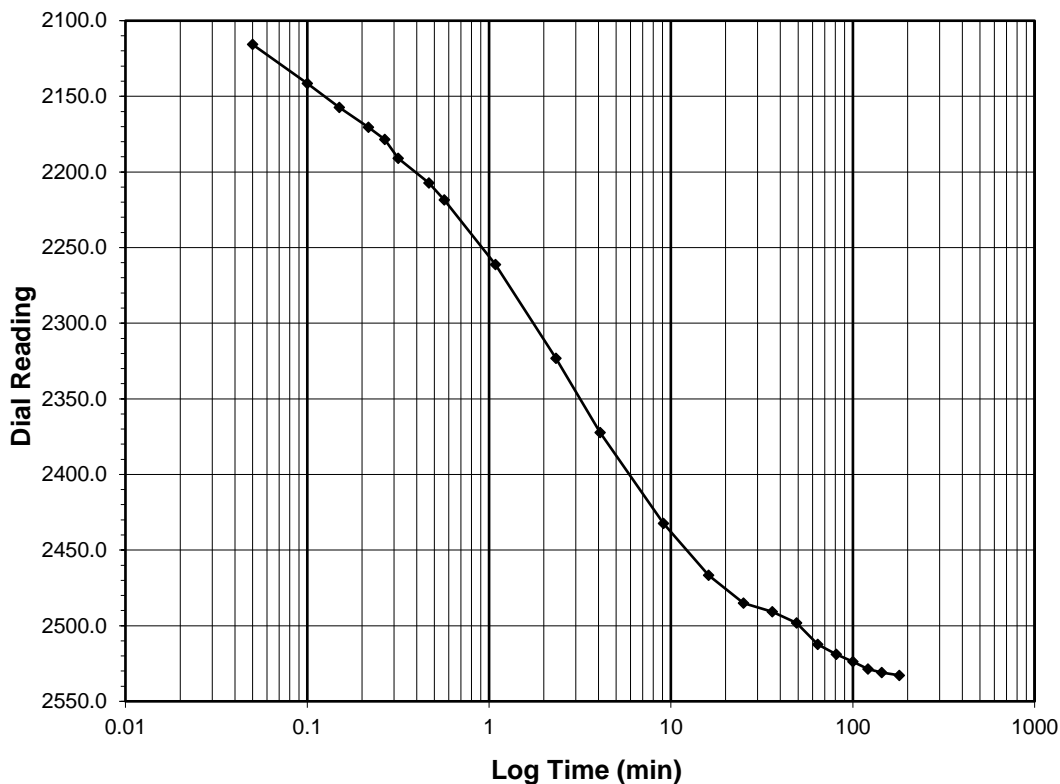
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>2532.8</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	13:37:27

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2025.7</b>
0.05	2115.7
0.10	2141.5
0.15	2157.4
0.22	2170.4
0.27	2178.5
0.32	2190.9
0.47	2207.2
0.57	2218.5
1.08	2261.2
2.33	2323.2
4.08	2372.3
9.08	2432.4
16.10	2466.6
25.10	2485.1
36.10	2490.7
49.10	2498.1
64.10	2512.4
81.12	2518.8
100.12	2523.8
121.12	2528.7
144.12	2531.0
180.13	2532.8



Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

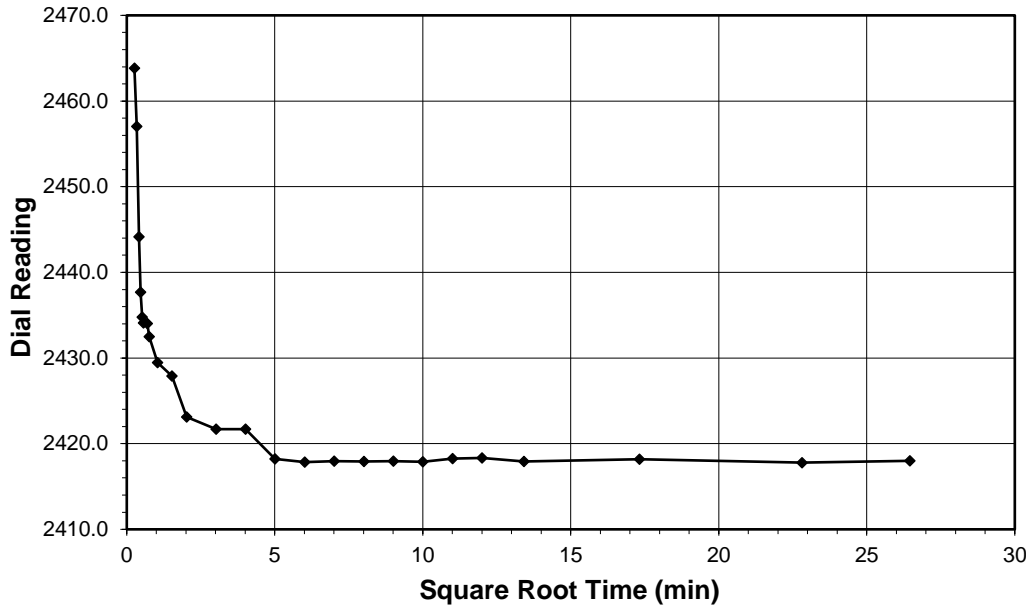


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

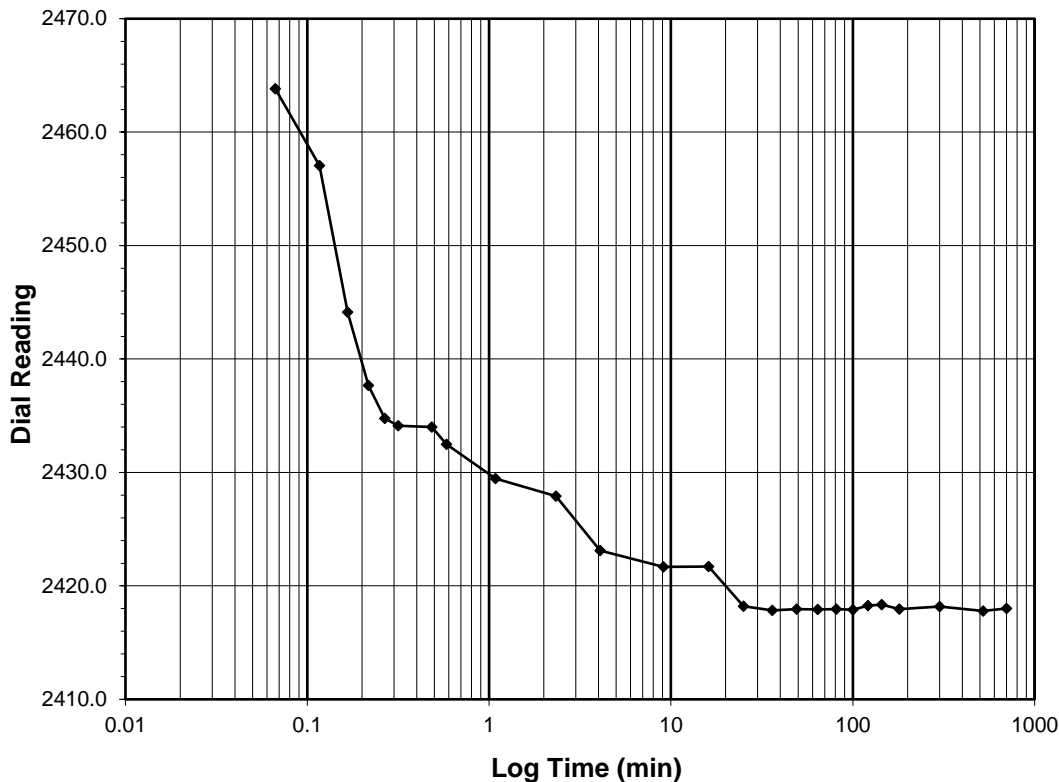
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>2418.0</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	16:47:49

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2532.8</b>
0.07	2463.8
0.12	2457.0
0.17	2444.1
0.22	2437.7
0.27	2434.8
0.32	2434.1
0.48	2434.0
0.58	2432.5
1.08	2429.5
2.33	2427.9
4.08	2423.1
9.10	2421.7
16.10	2421.7
25.10	2418.2
36.10	2417.8
49.12	2418.0
64.12	2417.9
81.12	2418.0
100.12	2417.9
121.12	2418.3
144.13	2418.3
180.13	2417.9
300.13	2418.2
520.15	2417.8
700.15	2418.0



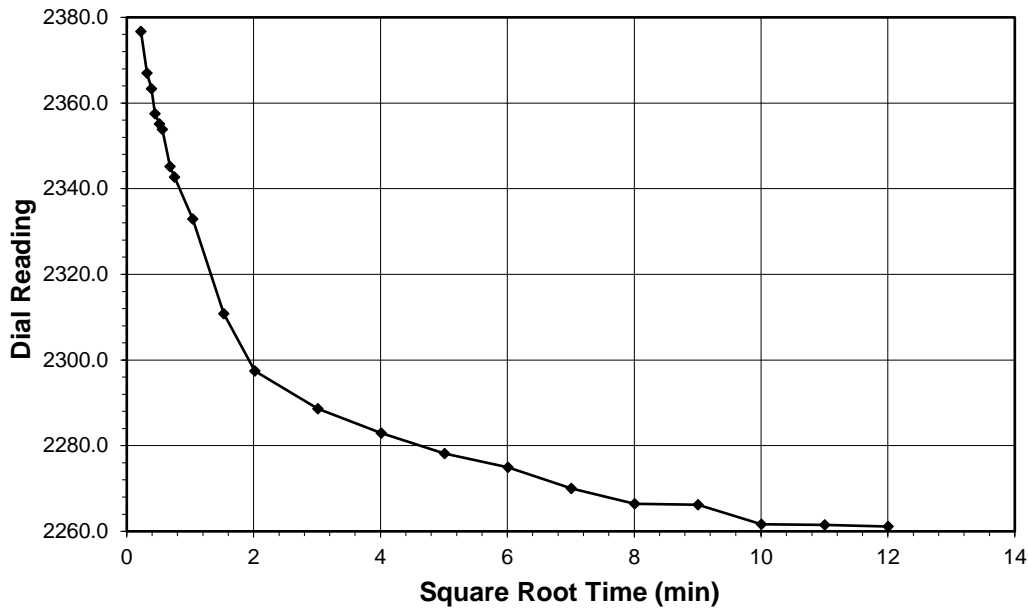
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

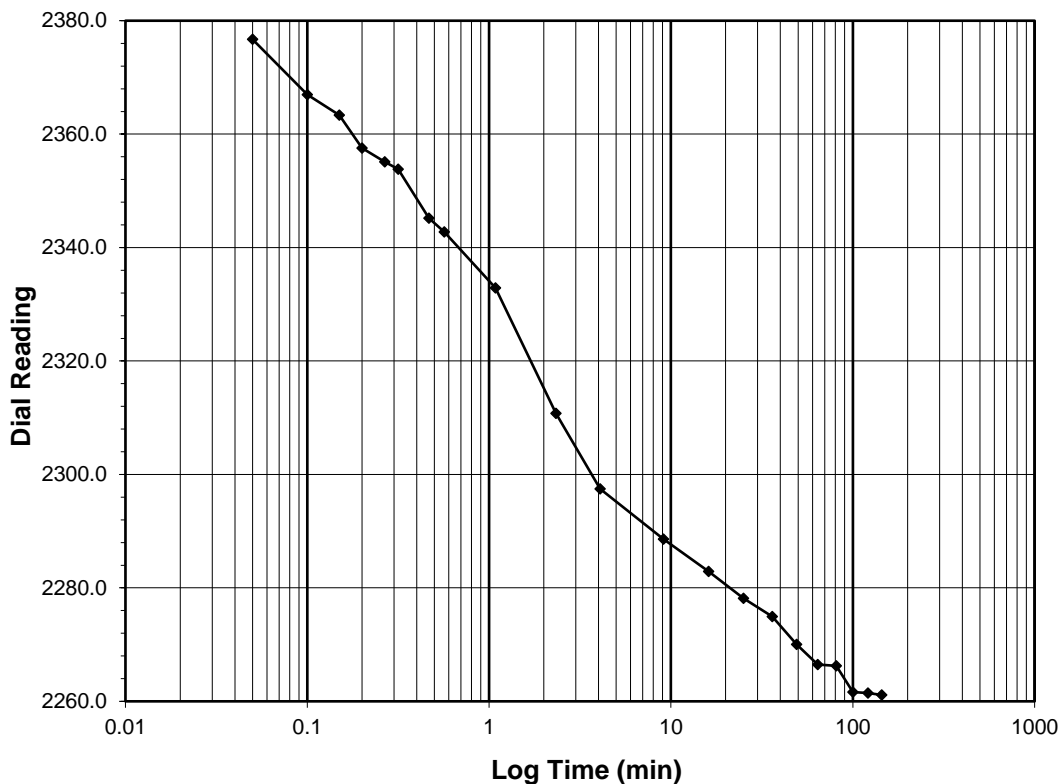
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>2261.1</b>
Consolidometer No.	<b>R557</b>
1 Division (in)	0.0001

Start Date	9/25/2020
Start Time	4:47:59

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2418.0</b>
0.05	2376.7
0.10	2367.0
0.15	2363.3
0.20	2357.5
0.27	2355.1
0.32	2353.8
0.47	2345.2
0.57	2342.7
1.08	2332.9
2.33	2310.8
4.08	2297.4
9.08	2288.6
16.08	2282.9
25.08	2278.2
36.08	2274.9
49.08	2270.0
64.08	2266.5
81.08	2266.2
100.10	2261.6
121.10	2261.5
144.10	2261.1



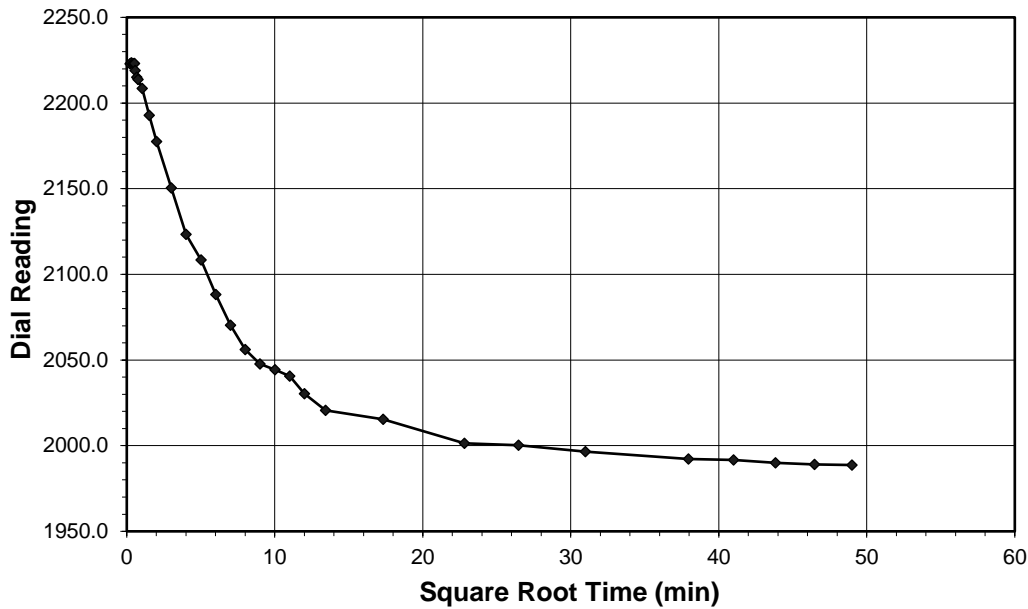
Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	18.5'-20.5'
Project No.	R-2020-164-004	Sample No.	CPT-21-2
Lab ID	R-2020-164-004-004	Visual Description	Gray Clay

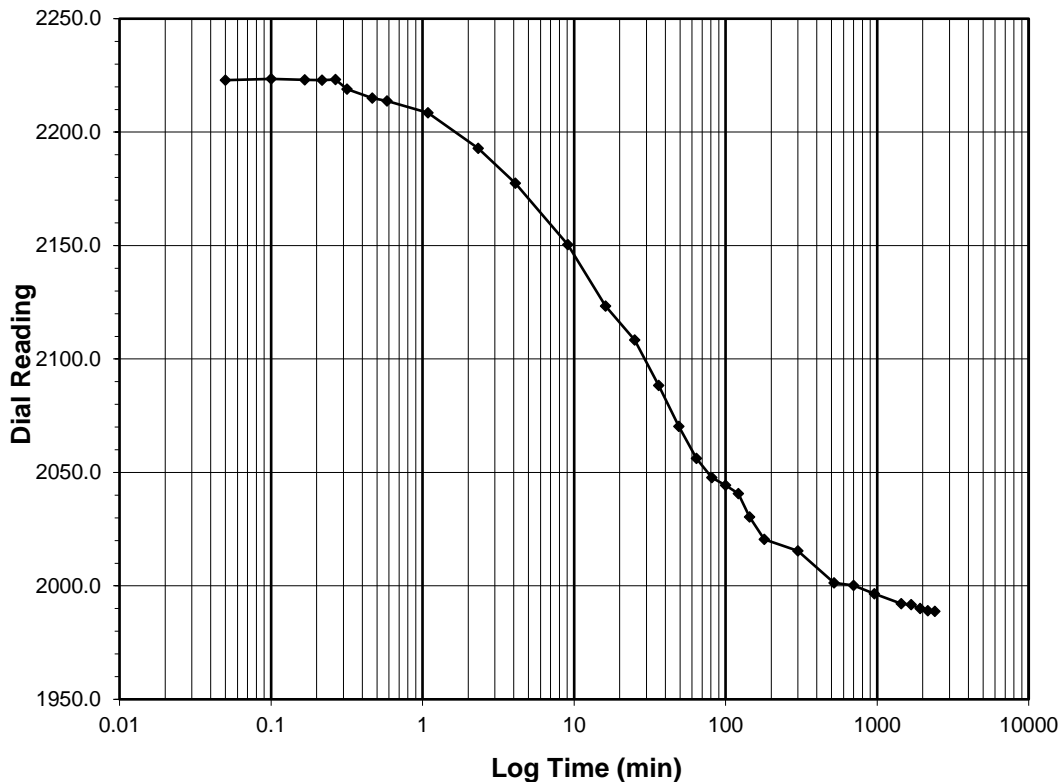
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



**Test Load (tsf)** 1.0-0.25  
**Final Reading (div)** 1988.7  
 Consolidometer No. R557  
 1 Division (in) 0.0001

Start Date 9/25/2020  
 Start Time 7:32:10

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>2261.1</b>
0.05	2223.0
0.10	2223.5
0.17	2223.0
0.22	2222.9
0.27	2223.2
0.32	2218.9
0.47	2215.0
0.58	2213.7
1.08	2208.6
2.33	2192.8
4.10	2177.5
9.10	2150.4
16.10	2123.3
25.10	2108.3
36.10	2088.3
49.10	2070.3
64.10	2056.2
81.10	2047.7
100.12	2044.3
121.12	2040.7
144.12	2030.3
180.12	2020.5
300.13	2015.4
520.15	2001.3
700.15	2000.2
960.15	1996.5
1440.17	1992.2
1680.17	1991.7
1920.18	1990.0
2160.18	1989.0
2400.18	1988.7

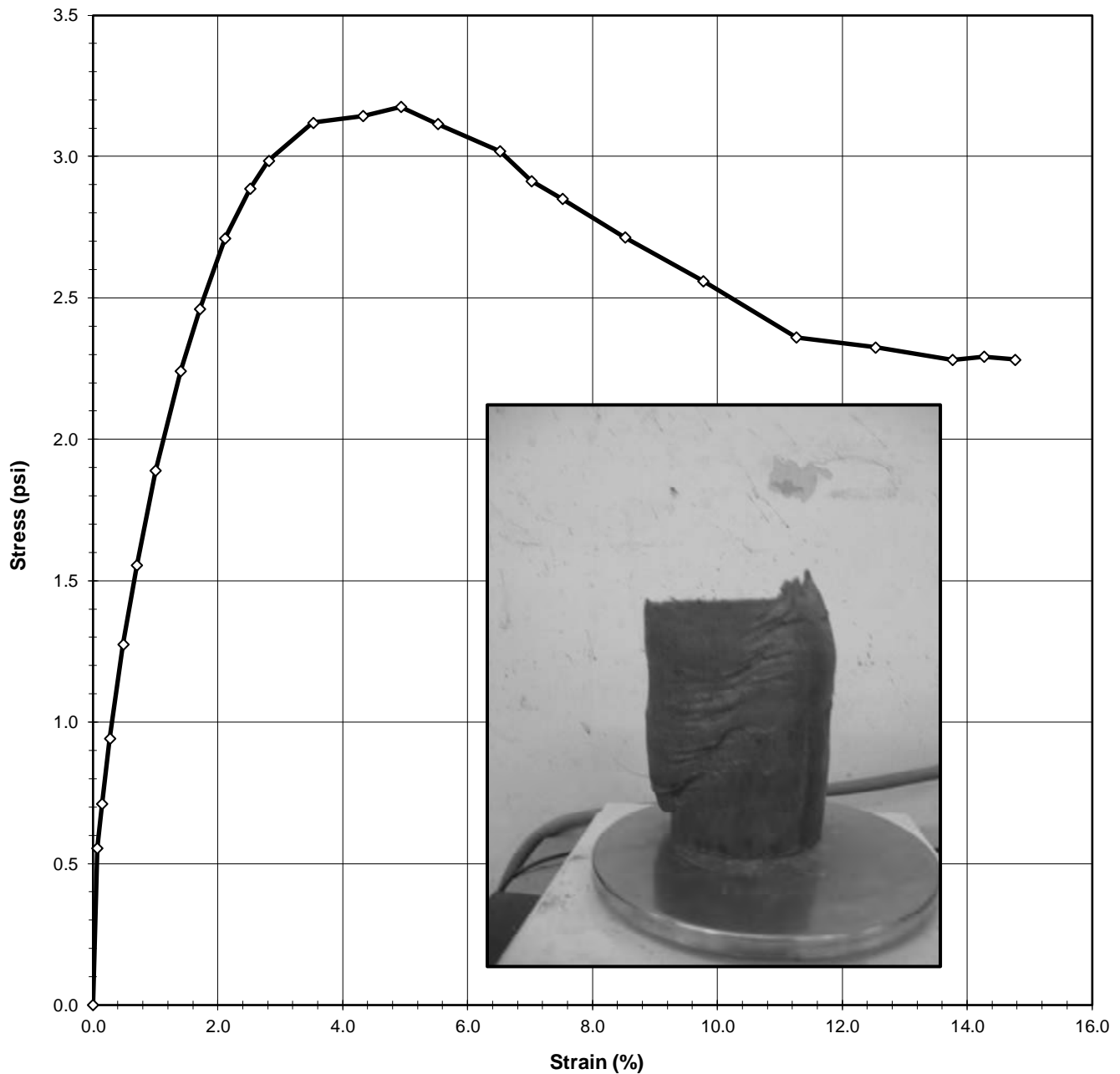


Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/30/2020**

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	18.5-20.5
Project No.:	R-2020-164-004	Sample No.:	CPT-21-2
Lab ID:	R-2020-164-004-004	Visual:	Gray Clay with Sand

**INITIAL CONFINING STRESS (psi)      8.0**



Tested By MY      Date 9/28/20      Input Checked By GEM      Date 9/30/20

**UNCONSOLIDATED UNDRAINED TRIAXIAL**  
ASTM D2850-15



Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-004  
 Lab ID: R-2020-164-004-004

Boring No.: PRN-20-UD  
 Depth (ft): 18.5-20.5  
 Sample No.: CPT-21-2  
 Visual: Gray Clay with Sand

INITIAL SAMPLE DIMENSIONS			
Length 1 (in):	5.629	Top Dia. (in):	2.825
Length 2 (in):	5.635	Mid. Dia. (in):	2.829
Length 3 (in):	5.623	Bot. Dia. (in):	2.843
<b>Avg.Length (in)</b>	<b>5.629</b>	<b>Area (in<sup>2</sup>):</b>	<b>6.301</b>

WATER CONTENT (AFTER TEST)	
Total Weight of Sample (g):	1030.67
Tare No.:	TB-02
Weight of Tare & Wet Sample (g):	610.08
Weight of Tare & Dry Sample (g):	463.94
Weight of Tare (g):	134.24
% Moisture:	44.3

UNIT WEIGHT			
Undisturbed Sample			
Weight of Tube & Wet Sample (g):	1033.95	Sample Volume (cm <sup>3</sup> ):	581.2
Weight of Tube (g):	0.00	Unit Wet Weight (g/cm <sup>3</sup> ):	1.78
Weight of Wet Sample (g):	1033.95	Unit Wet Weight (pcf):	111.01
Diameter (in):	2.83	Moisture Content (%):	44.3
Length (in):	5.62	Unit Dry Weight (pcf):	76.9
Length (cm):	14.30		

<b>INITIAL CONFINING STRESS (psi)</b>	<b>8.0</b>	Initial Dial Reading (mil)	515
<b>ENDING CONFINING STRESS (psi)</b>	<b>8.0</b>	Dial Reading Before Shearing (mil)	525

DEFORMATION (in)	LOAD (lb)	ELAPSED TIME (min)	STRAIN (%)	STRESS (psi)
0.000	13.4	0.0	0.0	0.000
0.004	16.9	0.08	0.1	0.556
0.008	17.9	0.15	0.1	0.712
0.015	19.3	0.28	0.3	0.942
0.027	21.4	0.48	0.5	1.276
0.039	23.2	0.72	0.7	1.555
0.056	25.4	1.02	1.0	1.890
0.079	27.7	1.42	1.4	2.242
0.096	29.1	1.72	1.7	2.462
0.119	30.8	2.12	2.1	2.711
0.142	32.0	2.53	2.5	2.887
0.158	32.7	2.83	2.8	2.985
0.198	33.7	3.53	3.5	3.120
0.243	34.1	4.35	4.3	3.144
0.277	34.4	4.95	4.9	3.177
0.310	34.1	5.55	5.5	3.115
0.366	33.7	6.55	6.5	3.019
0.394	33.1	7.05	7.0	2.914
0.422	32.8	7.55	7.5	2.851
0.479	32.1	8.55	8.5	2.714
0.549	31.2	9.82	9.8	2.560
0.633	30.1	11.32	11.3	2.361
0.704	30.1	12.57	12.5	2.326
0.774	30.0	13.82	13.8	2.281
0.802	30.2	14.32	14.3	2.293
0.830	30.2	14.82	14.8	2.282

Tested By MY Date 9/28/20 Input Checked By GEM Date 9/30/20

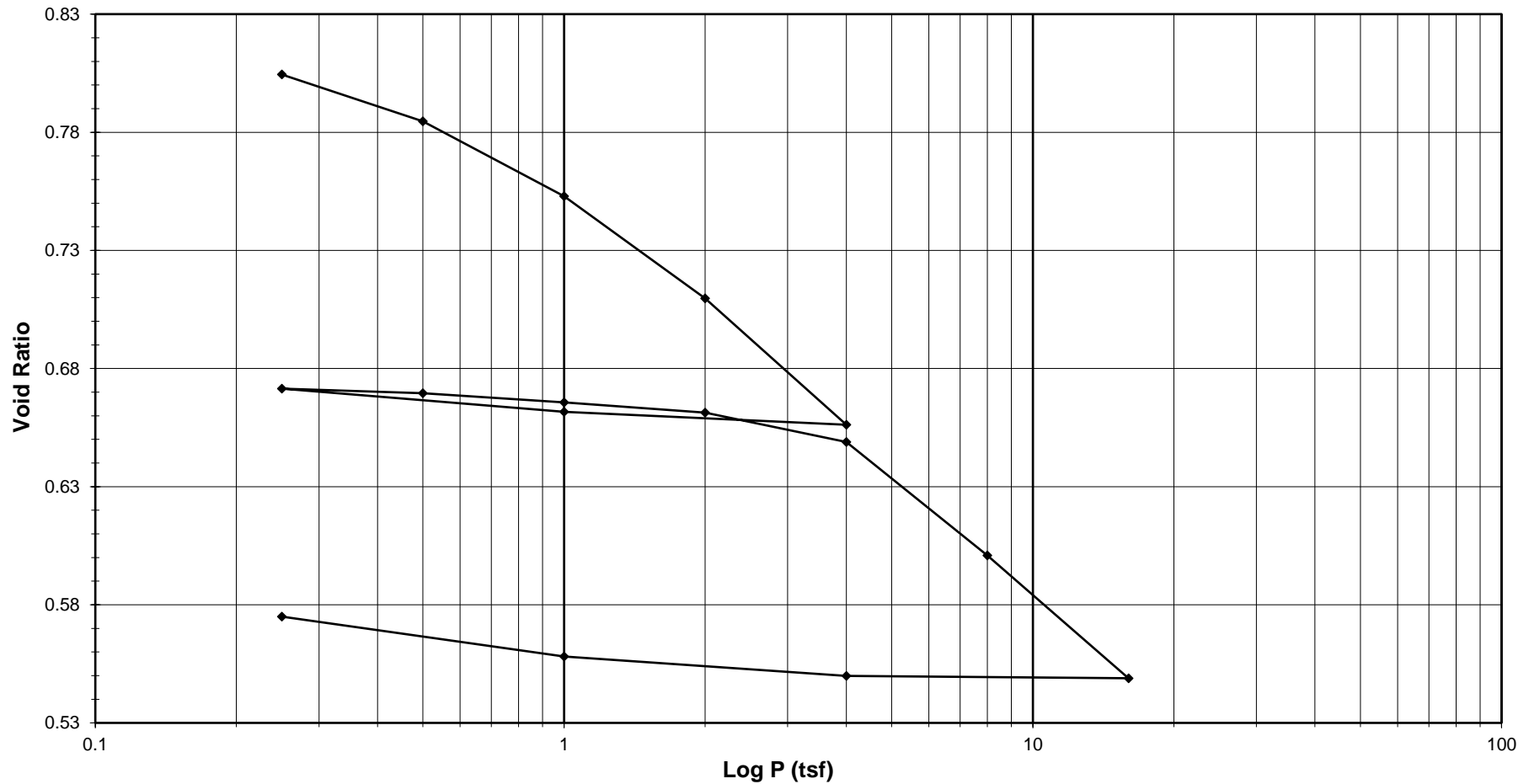
## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client                    Catlin Engineers & Scientists  
 Client Reference      USACE Princeville  
 Project No.            R-2020-164-004  
 Lab ID                  R-2020-164-004-005

Boring No.            PRN-20-UD  
 Depth (ft)            22.0'-24.0'  
 Sample No.            CPT-31  
 Visual Description    Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



*Tested By*    NL      *Date*    9/22/2020    *Approved By*      MPS      *Date*      9/30/2020

## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R554  
**1 Division** = 0.0001 (in.)

<u>Sample Properties</u>	<u>Initial</u>	<u>Final</u>	<u>Test Data Summary</u>							
			<u>Applied Pressure</u> (tsf)	<u>Final Dial Reading</u> (div)	<u>Machine Deflection</u> (div)	<u>Corrected Reading</u> (div)	<u>Height of Sample</u> (mm)	<u>Volume (cc)</u>	<u>Dry Density</u> (g/cc)	<u>Void Ratio</u>
<i>Water Content</i>										
Tare Number	705	704								
Wt. Tare & WS (g)	448.86	232.63								
Wt. Tare & DS (g)	370.17	207.86								
Wt. Water (g)	78.69	24.77	Seating	0	0	0	25.400	80.440	1.47798	<b>0.82682</b>
Wt. Tare (g)	91.42	89.87	0.25	131.8	9.3	122.5	25.089	79.455	1.49630	<b>0.80445</b>
Wt. DS (g)	278.75	117.99	0.5	252.5	21.7	230.9	24.814	78.583	1.51290	<b>0.78465</b>
Water Content (%)	28.23	20.99	1	439.4	34.9	404.5	24.373	77.186	1.54029	<b>0.75292</b>
			2	698.9	57.6	641.3	23.771	75.282	1.57925	<b>0.70967</b>
<i>Sample Parameters</i>			4	1016.3	82.1	934.1	23.027	72.926	1.63027	<b>0.65617</b>
Sample Diameter (in)	2.5	2.5	1	956.3	52.6	903.7	23.105	73.170	1.62482	<b>0.66173</b>
Sample Height (in)	1.0000	0.8621	0.25	876.5	26.1	850.4	23.240	73.600	1.61534	<b>0.67148</b>
Sample Volume (cc)	80.44	69.35	0.5	889.0	28.4	860.6	23.214	73.517	1.61716	<b>0.66960</b>
Wt. Wet Sample + Ring (g)	256.78	248.18	1	920.8	38.4	882.3	23.159	73.342	1.62100	<b>0.66564</b>
Wt. of Ring (g)	104.33	104.33	2	965.8	59.7	906.1	23.099	73.151	1.62524	<b>0.66129</b>
Wt. of Wet Sample (g)	152.45	143.85	4	1056.0	82.3	973.7	22.927	72.608	1.63741	<b>0.64895</b>
Wet Density (pcf)	118.26	129.43	8	1358.9	122.0	1236.8	22.258	70.491	1.68658	<b>0.60087</b>
Wet Density (g/cc)	1.90	2.07	16	1715.0	193.7	1521.3	21.536	68.203	1.74316	<b>0.54891</b>
Water Content (%)	28.23	20.99	4	1620.4	104.7	1515.7	21.550	68.248	1.74202	<b>0.54993</b>
Wt. of Dry Sample (g)	118.89	118.89	1	1535.6	64.8	1470.8	21.664	68.609	1.73284	<b>0.55814</b>
Dry Density (pcf)	92.23	106.97	0.25	1416.0	37.3	1378.7	21.898	69.349	1.71434	<b>0.57495</b>
Dry Density (g/cc)	1.48	1.71								
Void Ratio	0.8268	0.5750								
Saturation (%)	92.18	98.59								
Specific Gravity	2.70	Assumed								

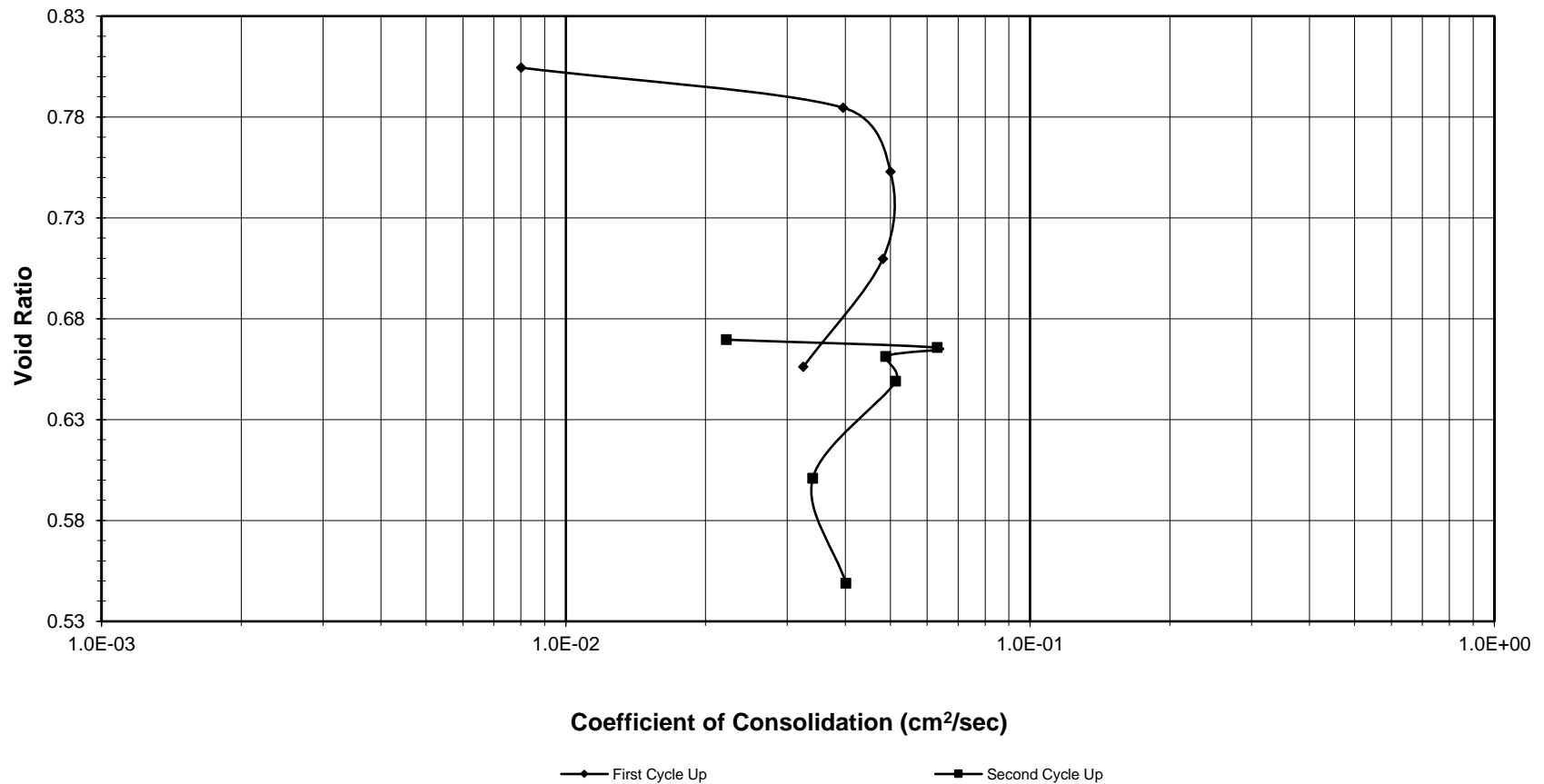
Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/30/2020

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/30/2020



## ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Reference	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED

**Consolidometer No.** R554  
**1 Division** = 0.0001 (in.)

Sample Properties	Initial	Final	C <sub>v</sub> Test Data Summary						
			Load Increment	Dial Reading @ t <sub>50</sub>	Machine Deflection	Corrected Dial Reading @ t <sub>50</sub>	Sample Height @ t <sub>50</sub>	Time t <sub>50</sub>	C <sub>v</sub>
			(tsf)	(div)	(div)	(div)	(cm)	(min.)	(cm <sup>2</sup> /sec)
Water Content									
Tare Number	705	704							
Wt. Tare & WS (g)	448.86	232.63							
Wt. Tare & DS (g)	370.17	207.86							
Wt. Water (g)	78.69	24.77	0 - 0.25	91.2	9.3	81.8	2.519	<b>0.65</b>	<b>0.00801</b>
Wt. Tare (g)	91.42	89.87	0.25 - 0.5	171.7	21.7	150.0	2.502	<b>0.13</b>	<b>0.03952</b>
Wt. DS (g)	278.75	117.99	0.5 - 1.0	316.7	34.9	281.8	2.468	<b>0.10</b>	<b>0.05001</b>
Water Content (%)	28.23	20.99	1.0 - 2.0	520.0	57.6	462.3	2.423	<b>0.10</b>	<b>0.04817</b>
			2.0 - 4.0	816.2	82.1	734.0	2.354	<b>0.14</b>	<b>0.03248</b>
Sample Parameters			4.0 - 1.0	NA	52.6	NA	NA	<b>NA</b>	<b>NA</b>
Sample Diameter (in)	2.5	2.5	1.0 - 0.25	NA	26.1	NA	NA	<b>NA</b>	<b>NA</b>
Sample Height (in)	1.000	0.862	0.25 - 0.5	879.8	28.4	851.4	2.324	<b>0.20</b>	<b>0.02216</b>
Sample Volume (cc)	80.44	69.35	0.5 - 1.0	902.6	38.4	864.2	2.321	<b>0.07</b>	<b>0.06314</b>
Wt. Wet Sample + Ring (g)	256.78	248.18	1.0 - 2.0	943.3	59.7	883.6	2.316	<b>0.09</b>	<b>0.04890</b>
Wt. of Ring (g)	104.33	104.33	2.0 - 4.0	1003.6	82.3	921.2	2.306	<b>0.09</b>	<b>0.05135</b>
Wt. of Wet Sample (g)	152.45	143.85	4.0 - 8.0	1161.1	122.0	1039.0	2.276	<b>0.13</b>	<b>0.03402</b>
Wet Density (pcf)	118.26	129.43	8.0 - 16.0	1490.4	193.7	1296.7	2.211	<b>0.10</b>	<b>0.04011</b>
Wet Density (g/cc)	1.90	2.07	16.0 - 4.0	NA	104.7	NA	NA	<b>NA</b>	<b>NA</b>
Water Content (%)	28.23	20.99	4.0 - 1.0	NA	64.8	NA	NA	<b>NA</b>	<b>NA</b>
Wt. of Dry Sample (g)	118.89	118.89	1.0 - 0.25	NA	37.3	NA	NA	<b>NA</b>	<b>NA</b>
Dry Density (pcf)	92.23	106.97							
Dry Density (g/cc)	1.48	1.71							
Void Ratio	0.8268	0.5750							
Saturation (%)	92.18	98.59							
Specific Gravity	2.7	Assumed							

Tested By NL Date 9/22/2020 Input Checked By GEM Date 9/30/2020

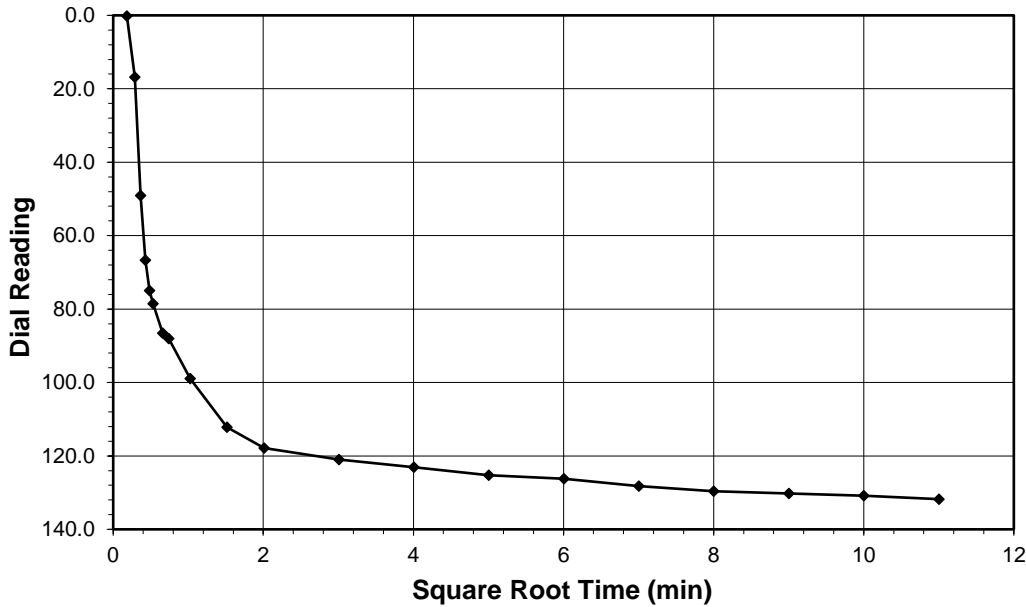


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

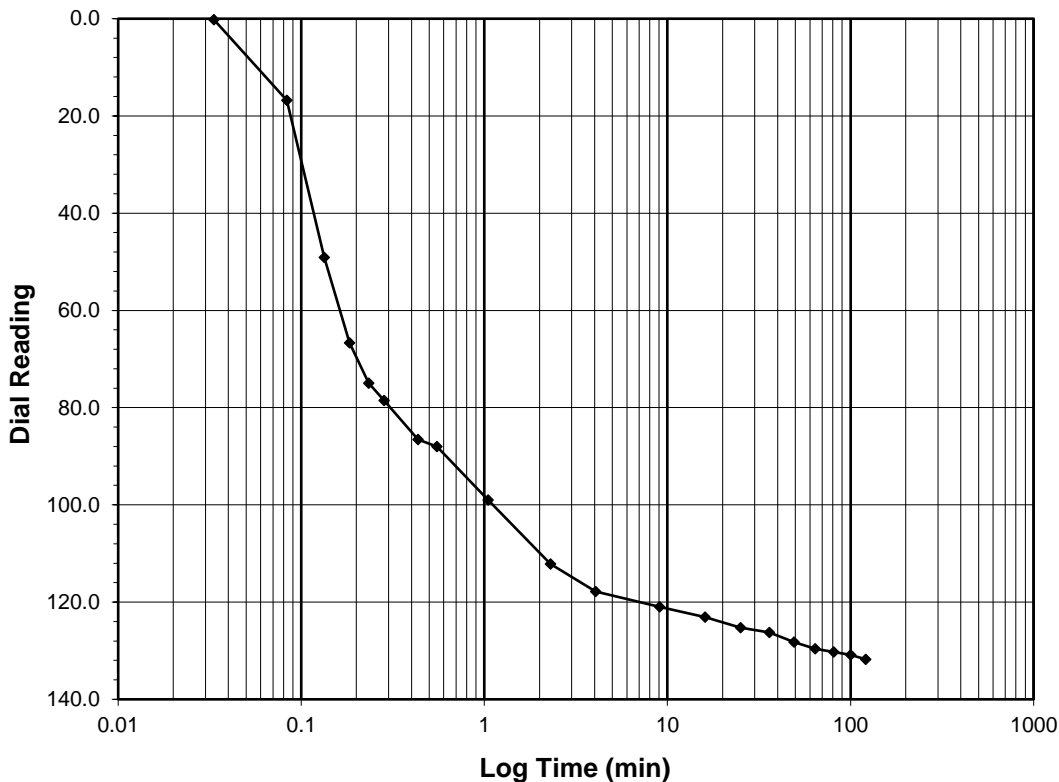
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.0-0.25</b>
<b>Final Reading (div)</b>	<b>131.8</b>
<b>Consolidometer No.</b>	<b>R554</b>
<b>1 Division (in)</b>	<b>0.0001</b>
<b>Start Date</b>	<b>9/22/2020</b>
<b>Start Time</b>	<b>11:28:52</b>

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>0.0</b>
0.03	0.2
0.08	16.8
0.13	49.1
0.18	66.7
0.23	75.0
0.28	78.6
0.43	86.5
0.55	88.0
1.05	99.0
2.30	112.2
4.05	117.9
9.05	121.0
16.05	123.1
25.05	125.2
36.05	126.3
49.05	128.2
64.05	129.6
81.05	130.2
100.05	130.9
121.05	131.8



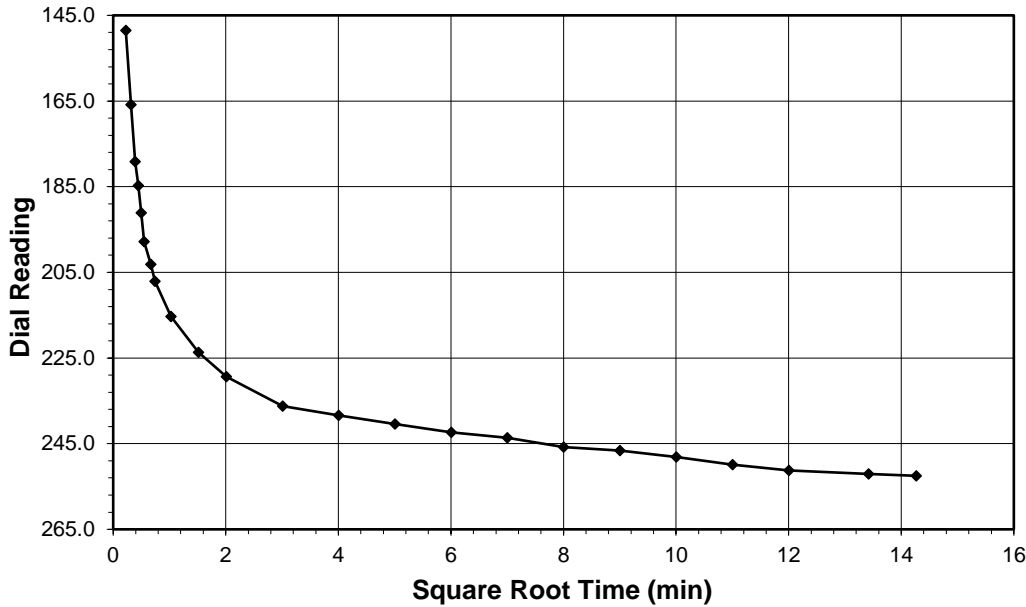
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

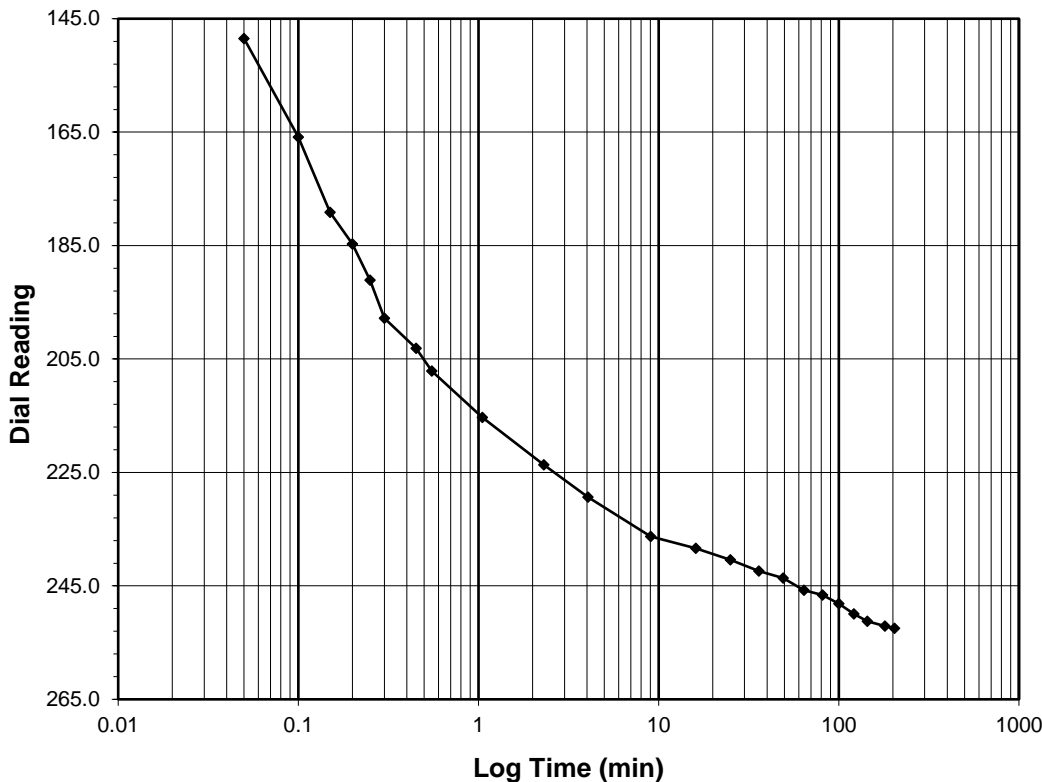
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>252.5</b>
Consolidometer No.	<b>R554</b>
1 Division (in)	0.0001
Start Date	9/22/2020
Start Time	13:39:45

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>131.8</b>
0.05	148.5
0.10	165.9
0.15	179.1
0.20	184.7
0.25	191.1
0.30	197.8
0.45	203.1
0.55	207.1
1.05	215.3
2.30	223.7
4.05	229.4
9.05	236.3
16.05	238.4
25.05	240.4
36.05	242.4
49.05	243.6
64.07	245.8
81.07	246.6
100.07	248.1
121.07	249.9
144.07	251.2
180.07	252.1
203.62	252.5



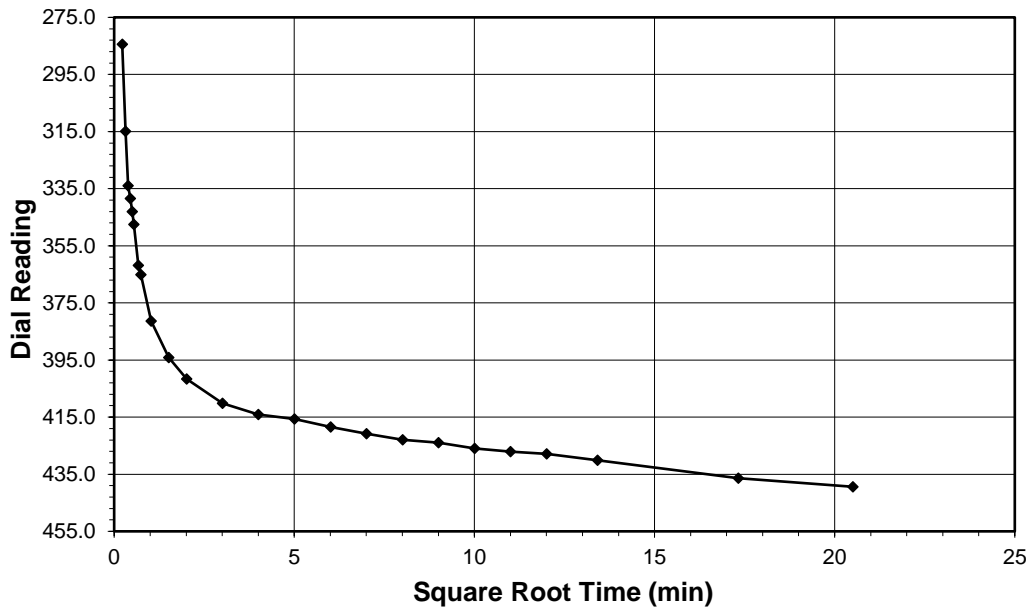
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

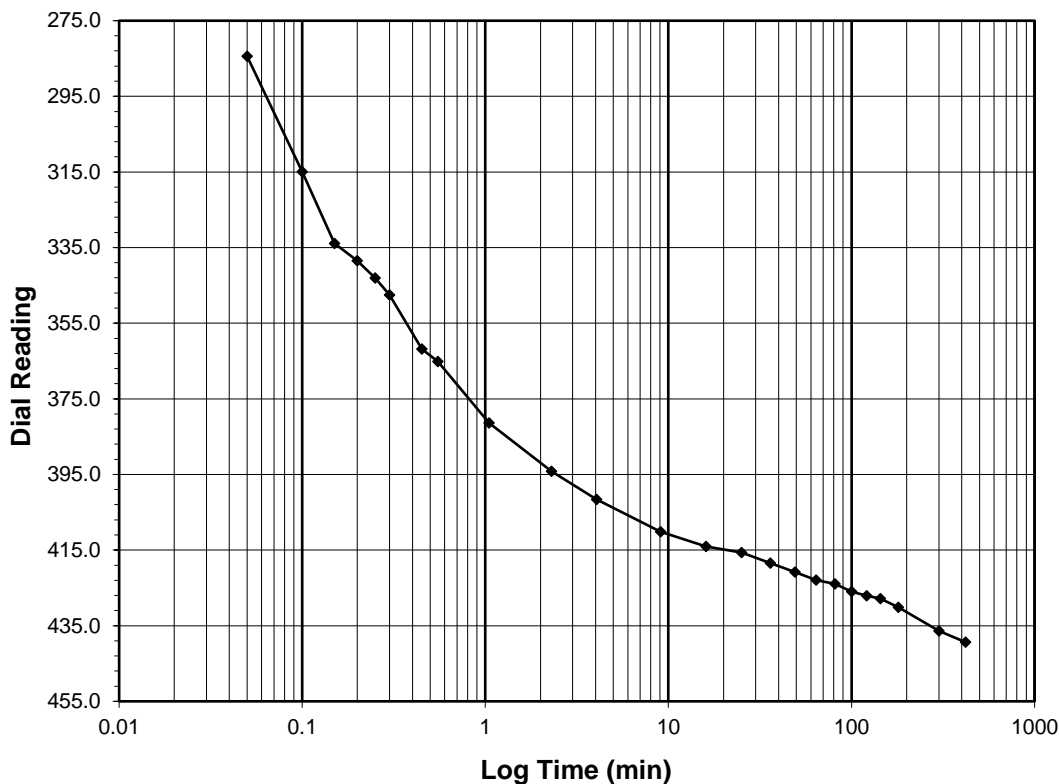
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>439.4</b>
<b>Consolidometer No.</b>	<b>R554</b>
<b>1 Division (in)</b>	<b>0.0001</b>

<b>Start Date</b>	9/22/2020
<b>Start Time</b>	17:03:23

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>252.5</b>
0.05	284.4
0.10	315.0
0.15	333.9
0.20	338.5
0.25	343.1
0.30	347.6
0.45	361.8
0.55	365.1
1.05	381.4
2.30	394.2
4.05	401.6
9.05	410.1
16.05	414.0
25.07	415.6
36.07	418.4
49.07	420.8
64.07	422.9
81.07	423.9
100.07	426.0
121.07	427.1
144.07	427.8
180.07	430.1
300.07	436.4
420.33	439.4



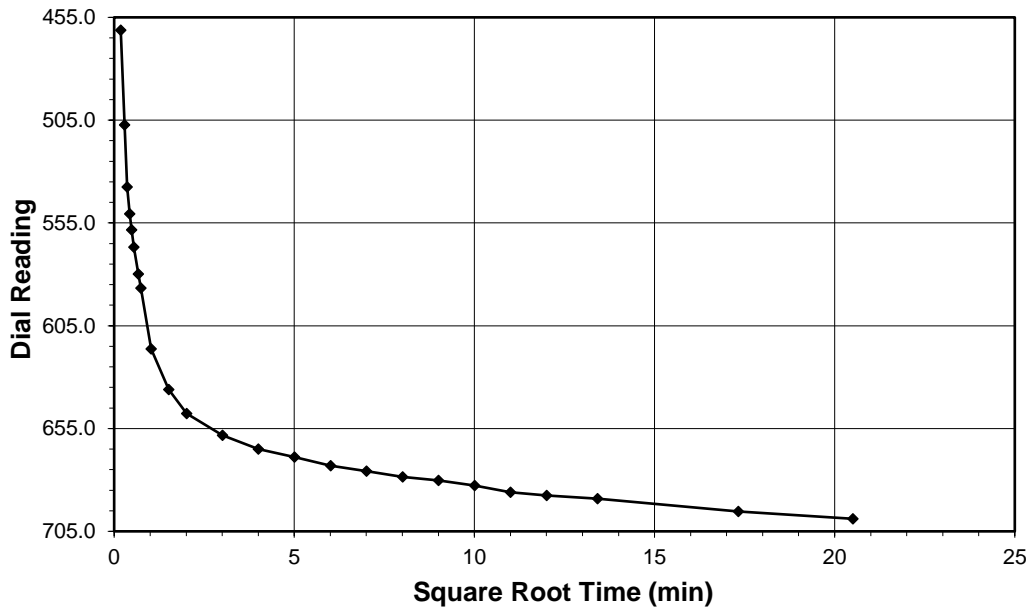
Tested By **NL** Date **9/22/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

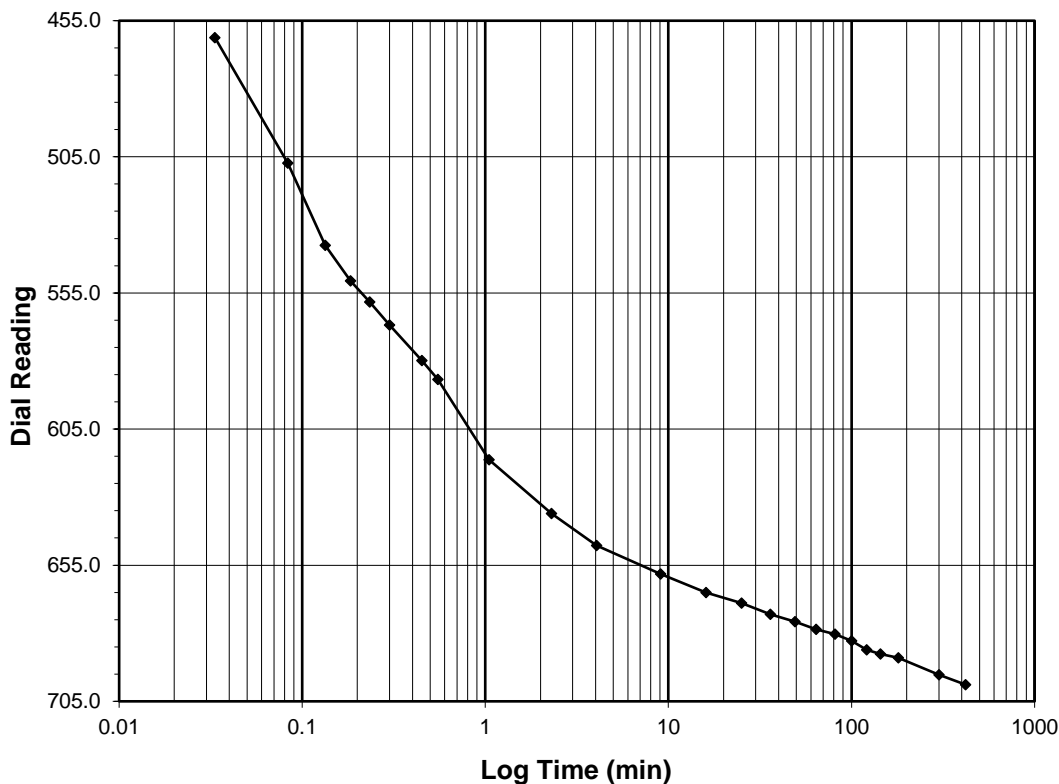
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>698.9</b>
Consolidometer No.	R554
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	0:03:43

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>439.4</b>
0.03	461.2
0.08	507.3
0.13	537.5
0.18	550.5
0.23	558.4
0.30	566.7
0.45	579.8
0.55	586.7
1.05	616.2
2.30	636.1
4.05	647.7
9.05	658.2
16.05	665.0
25.07	669.0
36.07	673.1
49.07	675.8
64.07	678.6
81.07	680.3
100.07	682.8
121.07	686.0
144.07	687.6
180.07	689.1
300.07	695.3
420.37	698.9



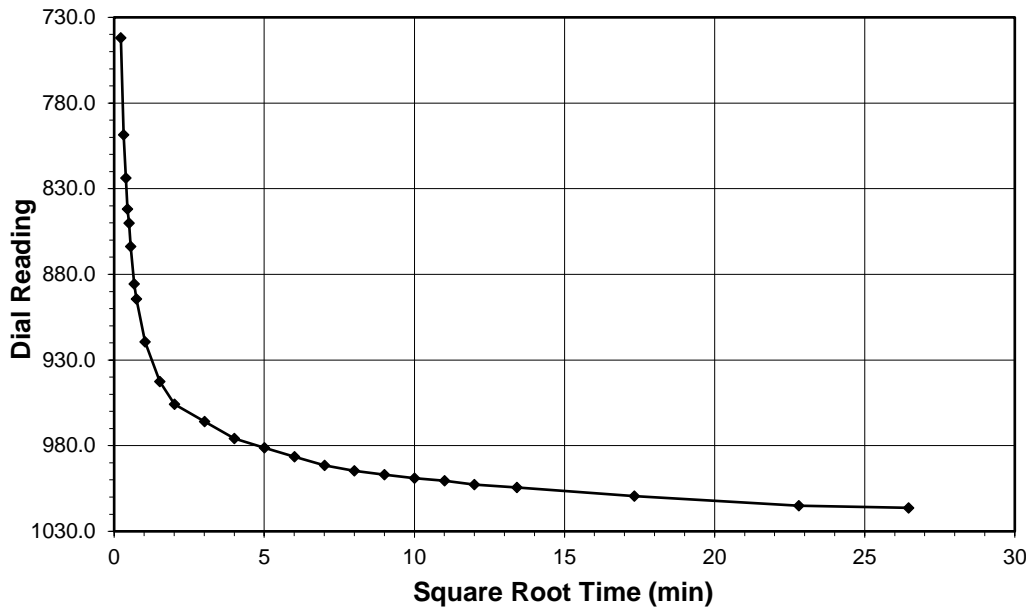
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

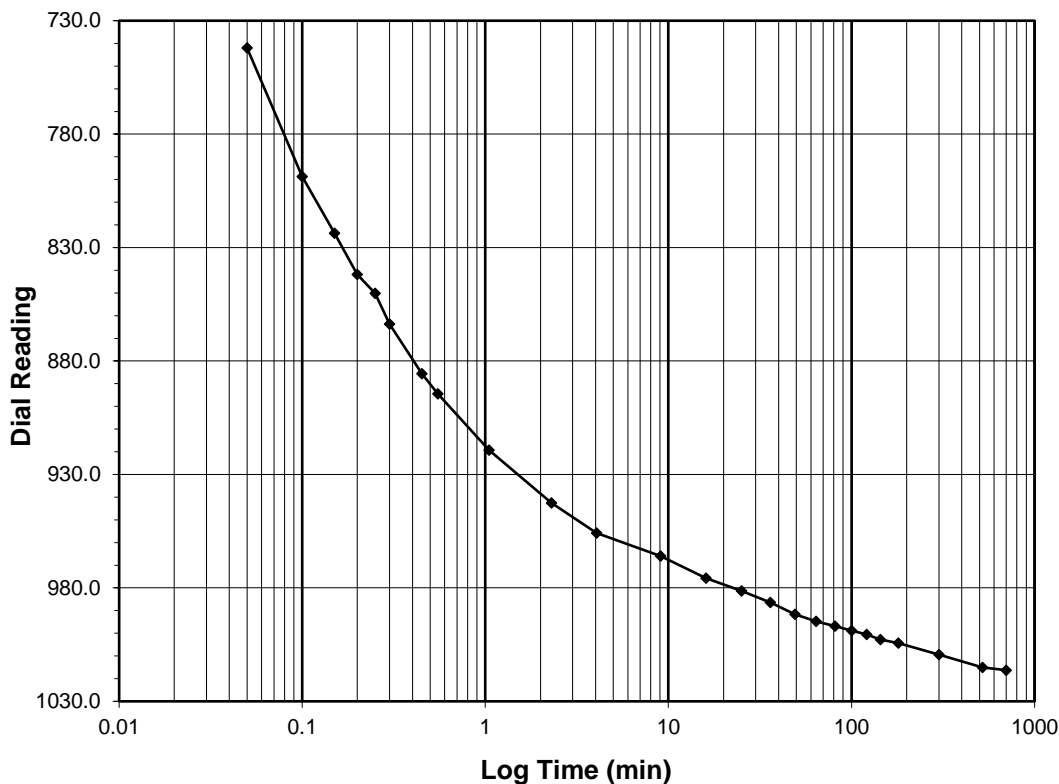
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1016.3</b>
Consolidometer No.	<b>R554</b>
1 Division (in)	0.0001
Start Date	9/23/2020
Start Time	7:04:06

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>698.9</b>
0.05	742.1
0.10	798.7
0.15	823.7
0.20	841.9
0.25	850.1
0.30	863.7
0.45	885.6
0.55	894.5
1.05	919.4
2.30	942.5
4.05	955.8
9.05	966.0
16.05	975.7
25.07	981.3
36.07	986.4
49.07	991.6
64.07	994.7
81.07	996.8
100.07	998.9
121.07	1000.5
144.07	1002.8
180.07	1004.4
300.07	1009.4
520.08	1015.1
700.08	1016.3



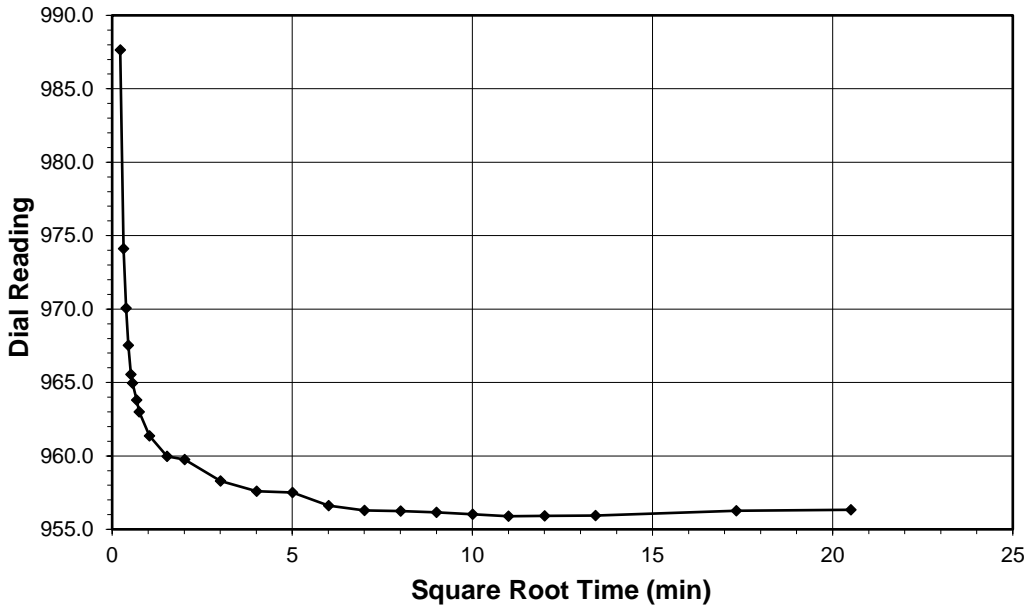
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

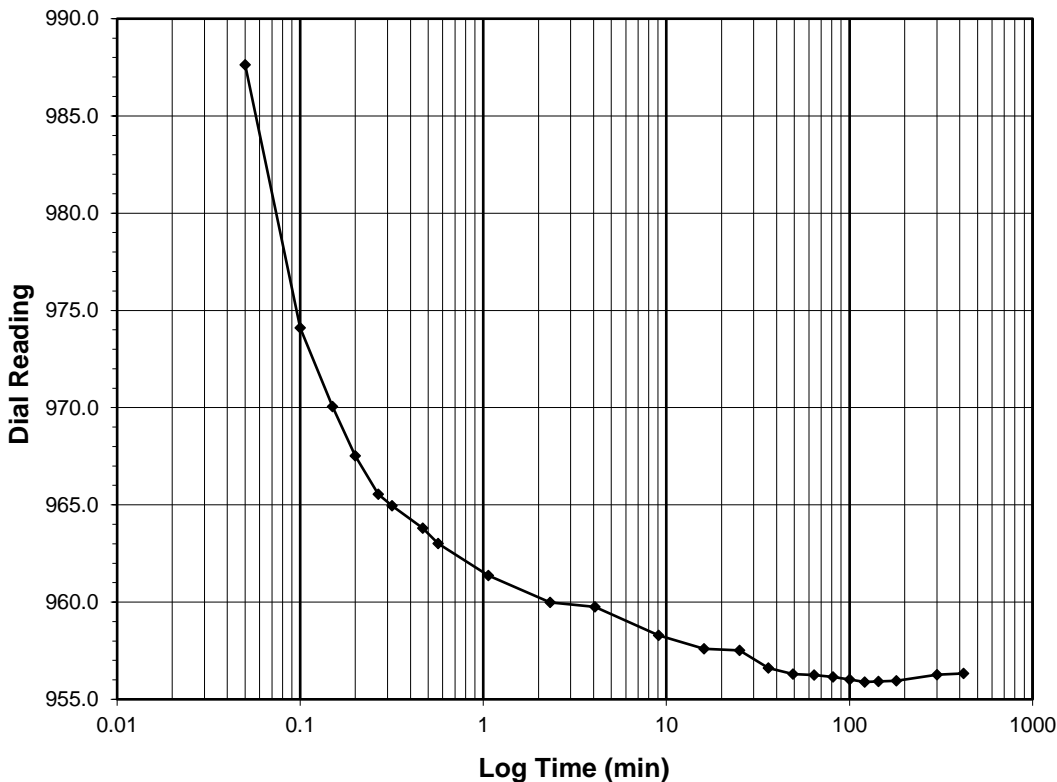
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-1.0</b>
<b>Final Reading (div)</b>	<b>956.3</b>
Consolidometer No.	R554
1 Division (in)	0.0001

Start Date	9/23/2020
Start Time	19:04:25

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1016.3</b>
0.05	987.6
0.10	974.1
0.15	970.1
0.20	967.5
0.27	965.5
0.32	965.0
0.47	963.8
0.57	963.0
1.07	961.4
2.32	960.0
4.07	959.7
9.07	958.3
16.07	957.6
25.07	957.5
36.07	956.6
49.07	956.3
64.07	956.3
81.07	956.2
100.08	956.0
121.08	955.9
144.08	955.9
180.08	955.9
300.08	956.3
420.35	956.3



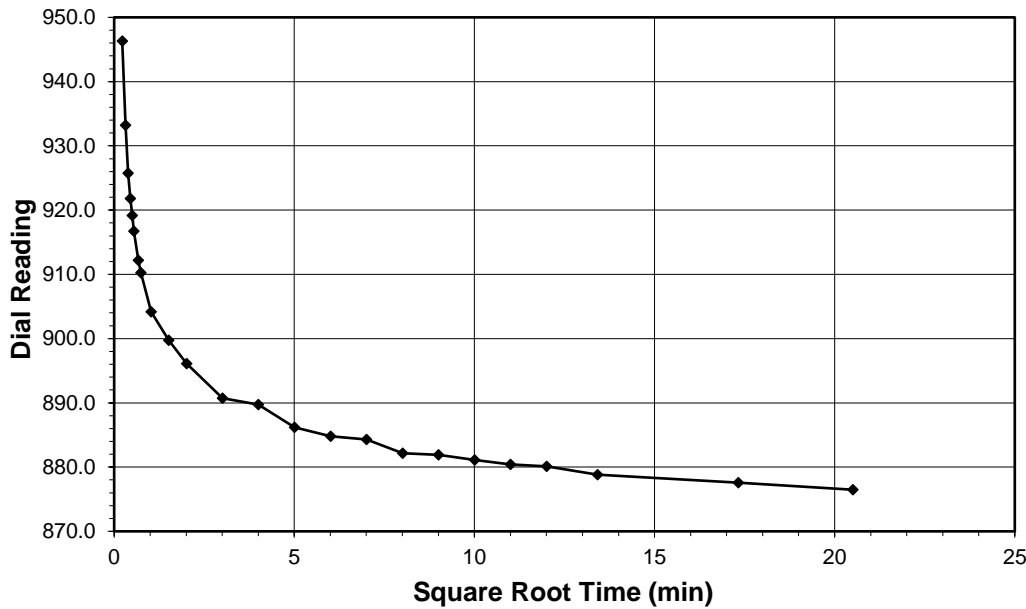
Tested By **NL** Date **9/23/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

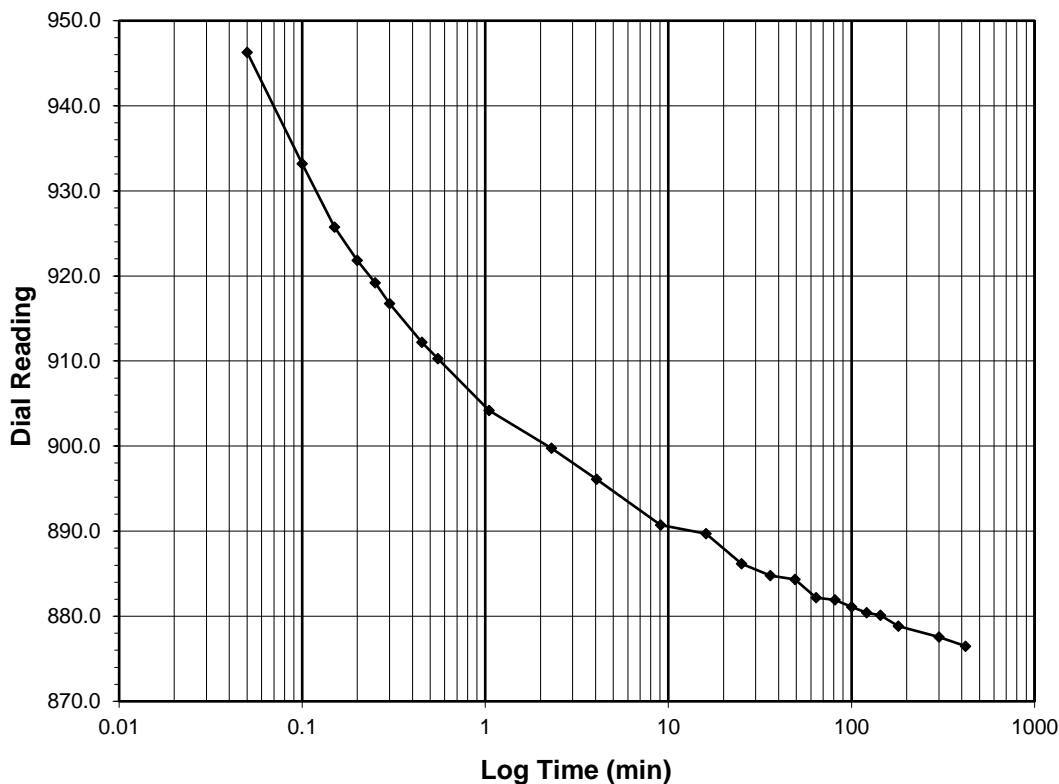
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>876.5</b>
Consolidometer No.	R554
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	2:04:46

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>956.3</b>
0.05	946.3
0.10	933.2
0.15	925.7
0.20	921.8
0.25	919.2
0.30	916.7
0.45	912.2
0.55	910.3
1.05	904.2
2.30	899.8
4.05	896.1
9.05	890.7
16.05	889.7
25.07	886.2
36.07	884.8
49.07	884.3
64.07	882.2
81.07	881.9
100.07	881.1
121.07	880.4
144.07	880.1
180.07	878.8
300.07	877.6
420.33	876.5



Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

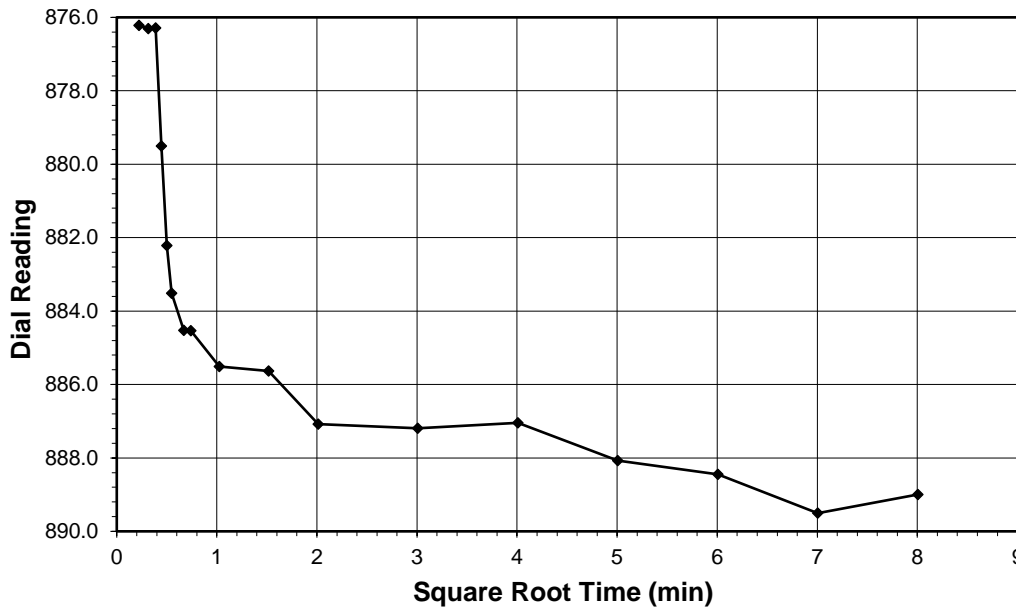


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

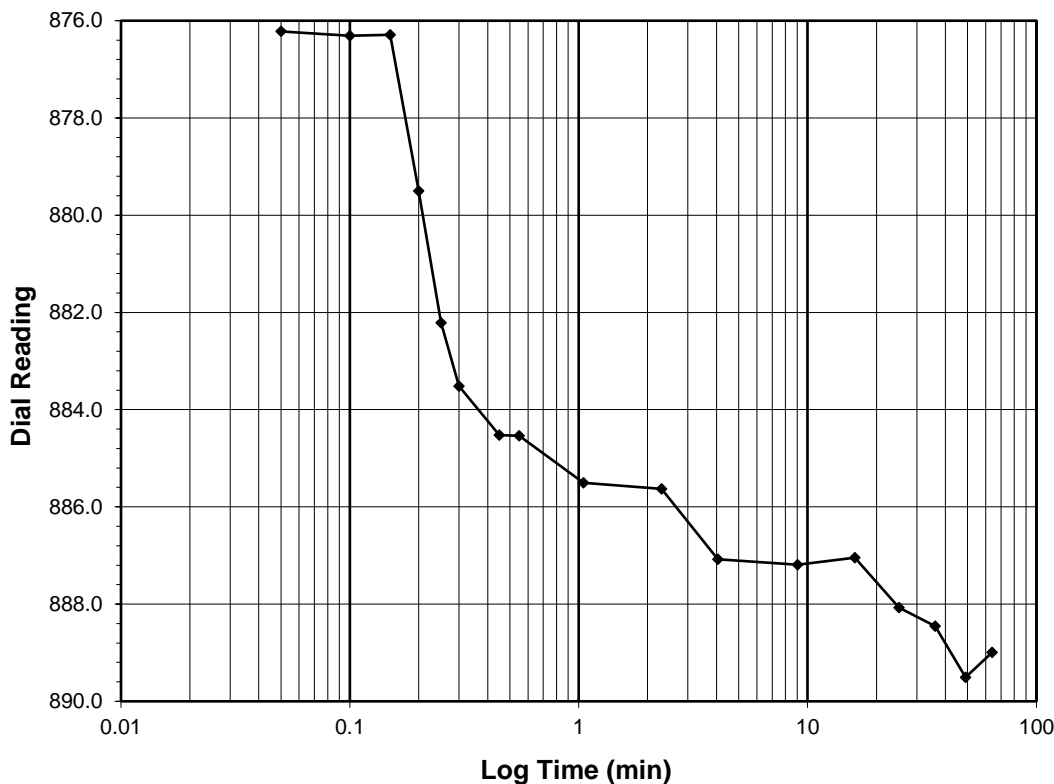
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.25-0.5</b>
<b>Final Reading (div)</b>	<b>889.0</b>
Consolidometer No.	R554
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	9:05:06

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>876.5</b>
0.05	876.2
0.10	876.3
0.15	876.3
0.20	879.5
0.25	882.2
0.30	883.5
0.45	884.5
0.55	884.5
1.05	885.5
2.30	885.6
4.05	887.1
9.05	887.2
16.07	887.0
25.07	888.1
36.07	888.5
49.07	889.5
64.07	889.0



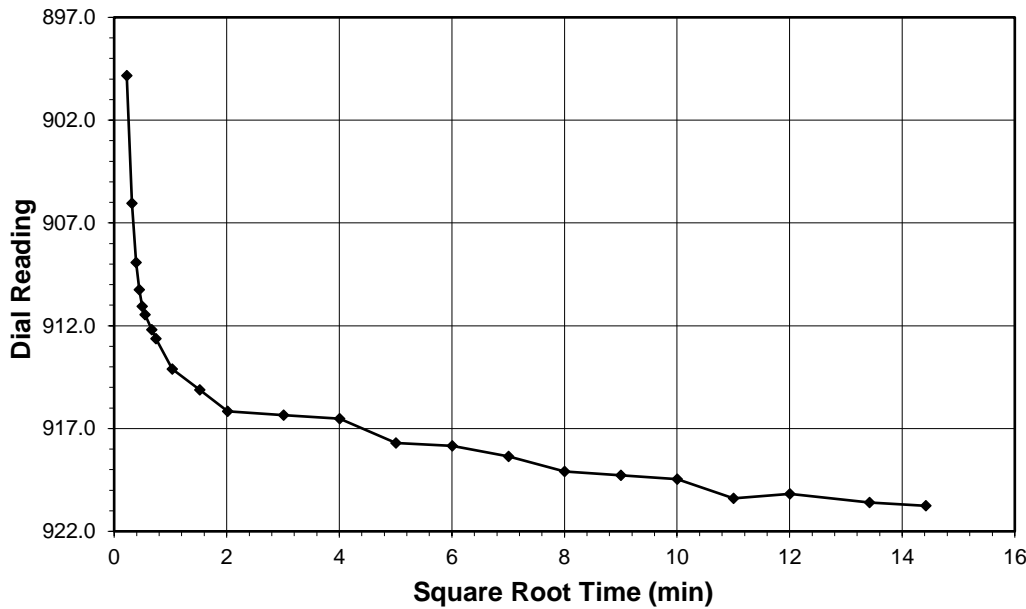
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

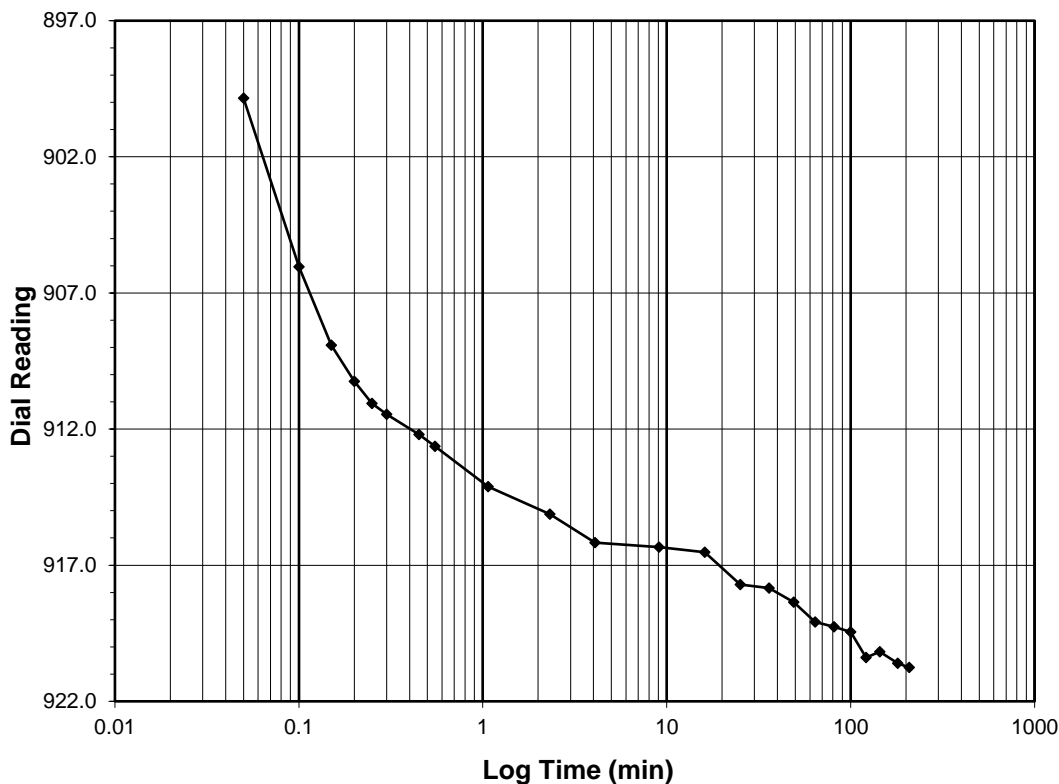
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>0.5-1.0</b>
<b>Final Reading (div)</b>	<b>920.8</b>
Consolidometer No.	<b>R554</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	10:09:41

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>889.0</b>
0.05	899.8
0.10	906.0
0.15	908.9
0.20	910.2
0.25	911.1
0.30	911.5
0.45	912.2
0.55	912.6
1.07	914.1
2.32	915.1
4.07	916.2
9.07	916.3
16.07	916.5
25.07	917.7
36.07	917.8
49.07	918.4
64.07	919.1
81.07	919.3
100.07	919.5
121.08	920.4
144.08	920.2
180.08	920.6
207.95	920.8



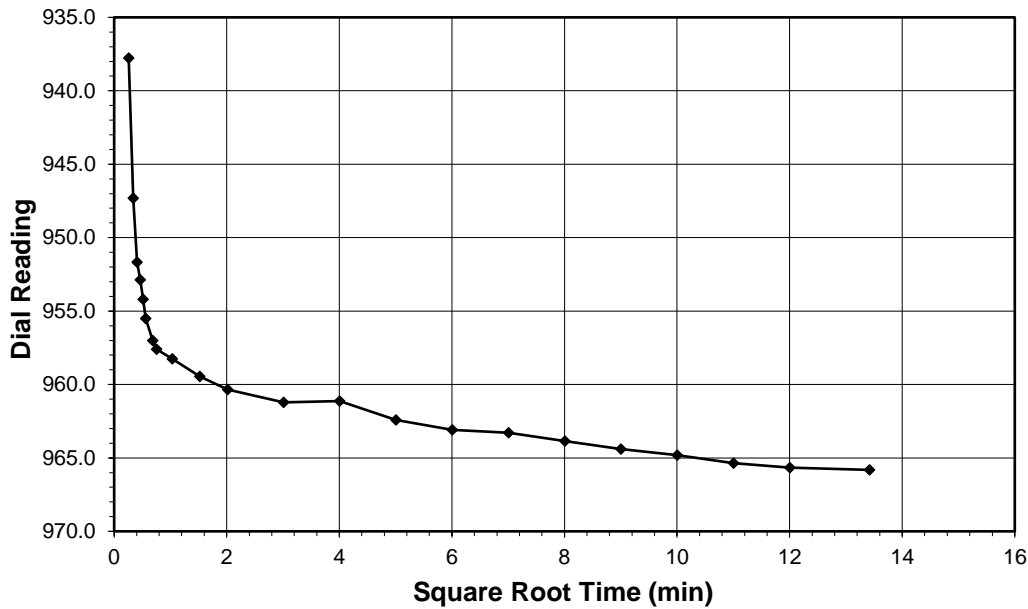
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

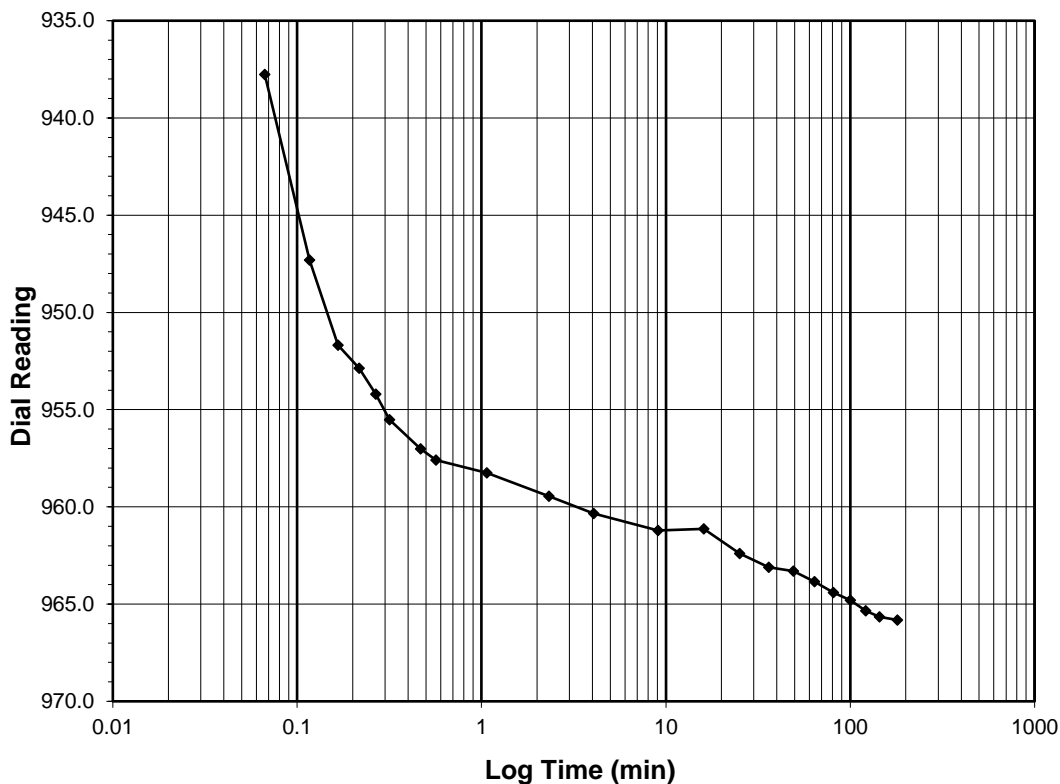
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-2.0</b>
<b>Final Reading (div)</b>	<b>965.8</b>
Consolidometer No.	<b>R554</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	13:37:39

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>920.8</b>
0.07	937.8
0.12	947.3
0.17	951.7
0.22	952.9
0.27	954.2
0.32	955.5
0.47	957.0
0.57	957.6
1.07	958.2
2.32	959.5
4.07	960.3
9.07	961.2
16.07	961.1
25.07	962.4
36.07	963.1
49.07	963.3
64.08	963.8
81.08	964.4
100.08	964.8
121.08	965.4
144.08	965.7
180.08	965.8



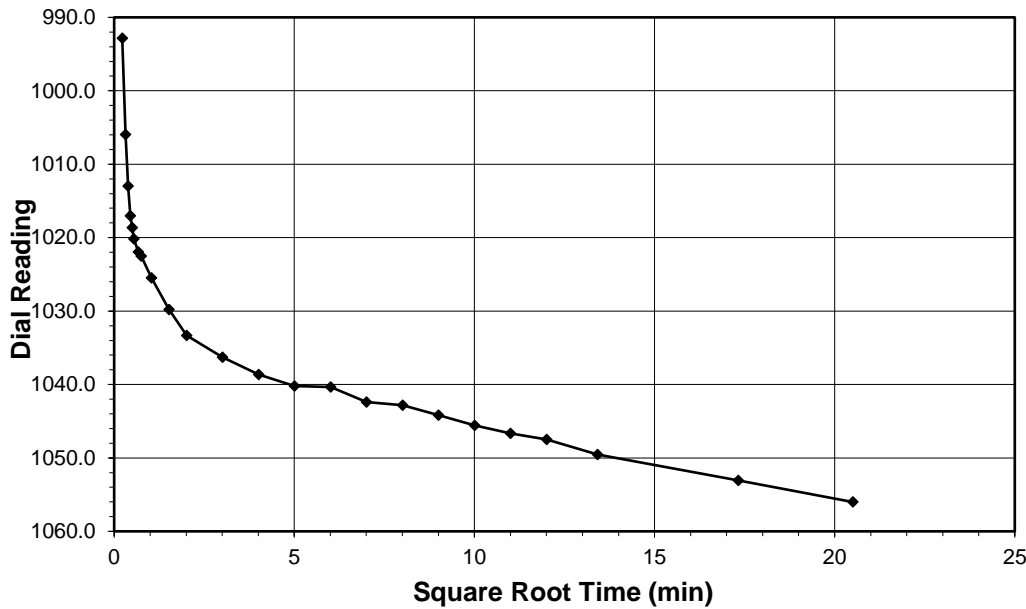
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

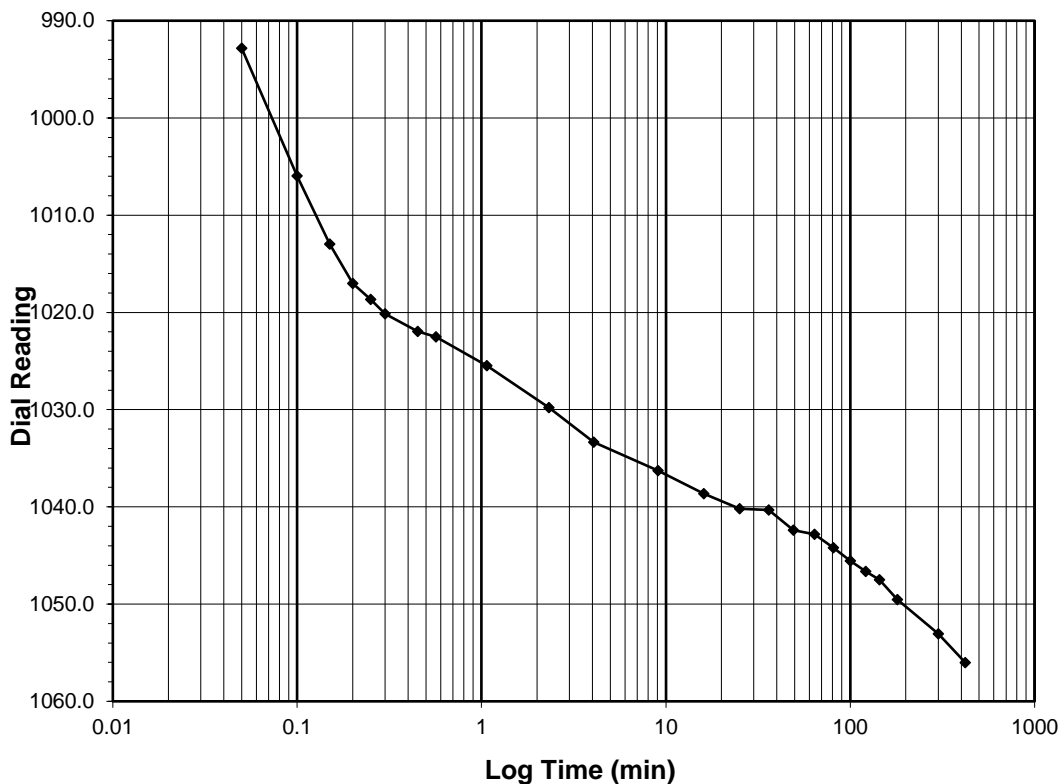
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>2.0-4.0</b>
<b>Final Reading (div)</b>	<b>1056.0</b>
Consolidometer No.	R554
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	16:47:41

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>965.8</b>
0.05	992.8
0.10	1006.0
0.15	1013.0
0.20	1017.0
0.25	1018.7
0.30	1020.2
0.45	1022.0
0.57	1022.5
1.07	1025.5
2.32	1029.8
4.07	1033.3
9.07	1036.3
16.07	1038.6
25.07	1040.2
36.07	1040.3
49.07	1042.4
64.07	1042.8
81.08	1044.2
100.08	1045.6
121.08	1046.6
144.08	1047.5
180.08	1049.5
300.08	1053.0
420.42	1056.0



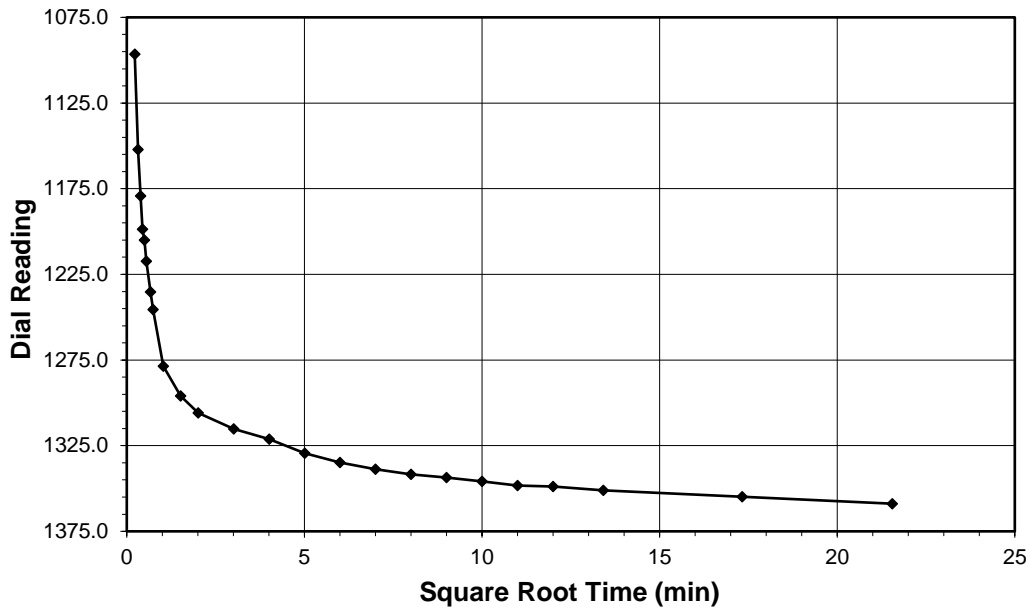
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

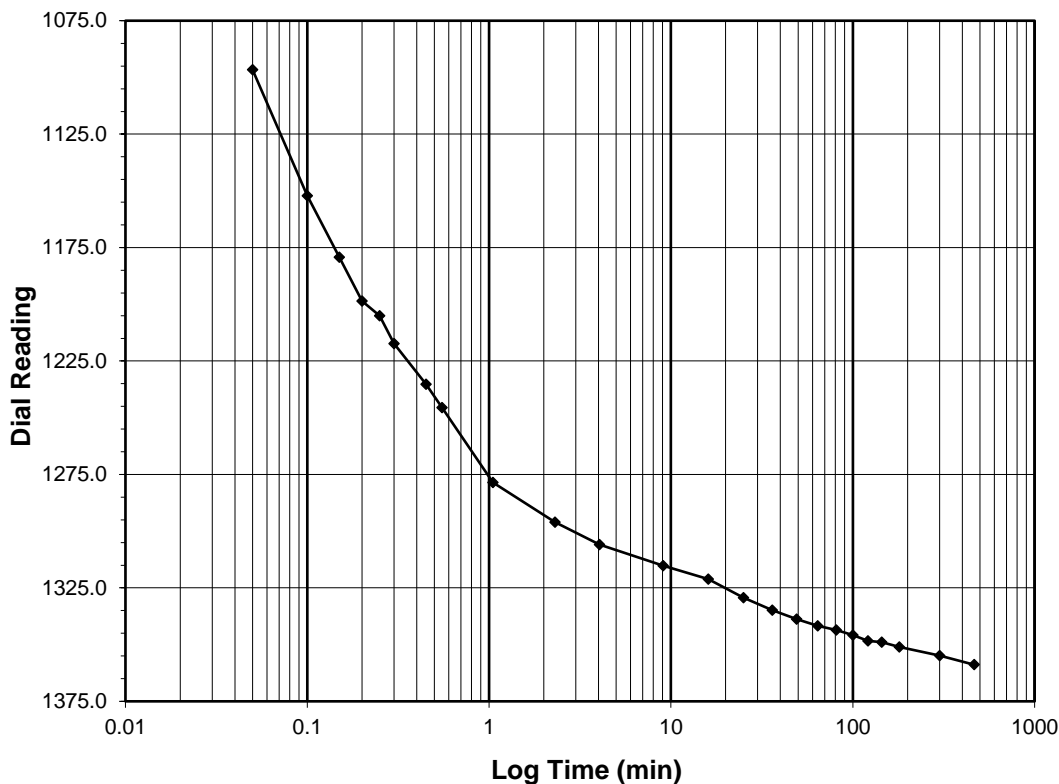
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>4.0-8.0</b>
<b>Final Reading (div)</b>	<b>1358.9</b>
Consolidometer No.	<b>R554</b>
1 Division (in)	0.0001
Start Date	9/24/2020
Start Time	23:48:06

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1056.0</b>
0.05	1096.6
0.10	1152.2
0.15	1179.2
0.20	1198.6
0.25	1205.0
0.30	1217.3
0.45	1235.2
0.55	1245.5
1.05	1278.5
2.30	1296.0
4.05	1305.9
9.05	1315.3
16.07	1321.1
25.07	1329.4
36.07	1334.9
49.07	1338.8
64.07	1341.7
81.07	1343.6
100.07	1345.8
121.07	1348.3
144.07	1348.9
180.07	1351.1
300.07	1354.9
464.32	1358.9



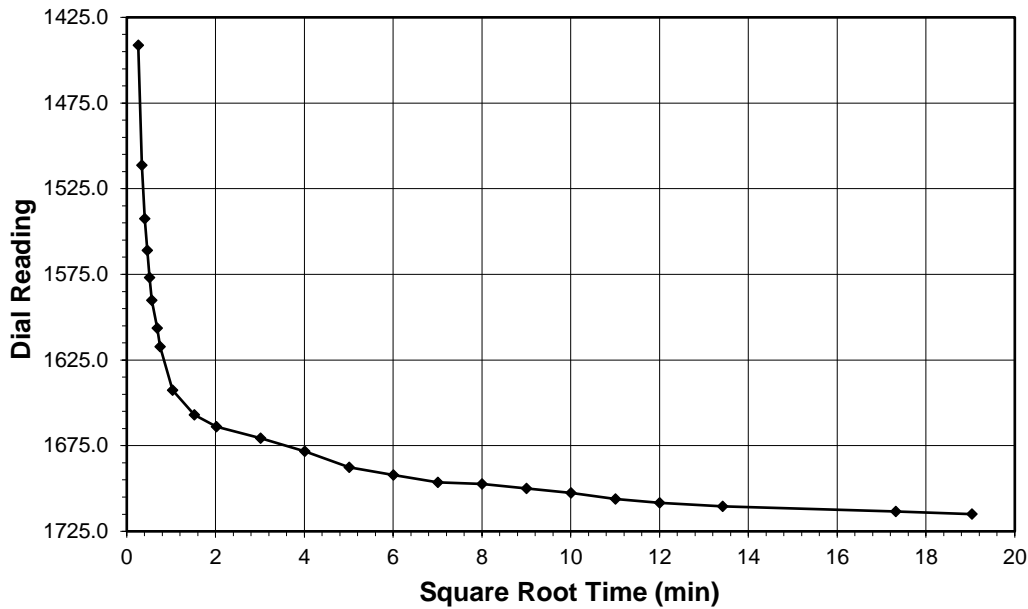
Tested By **NL** Date **9/24/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

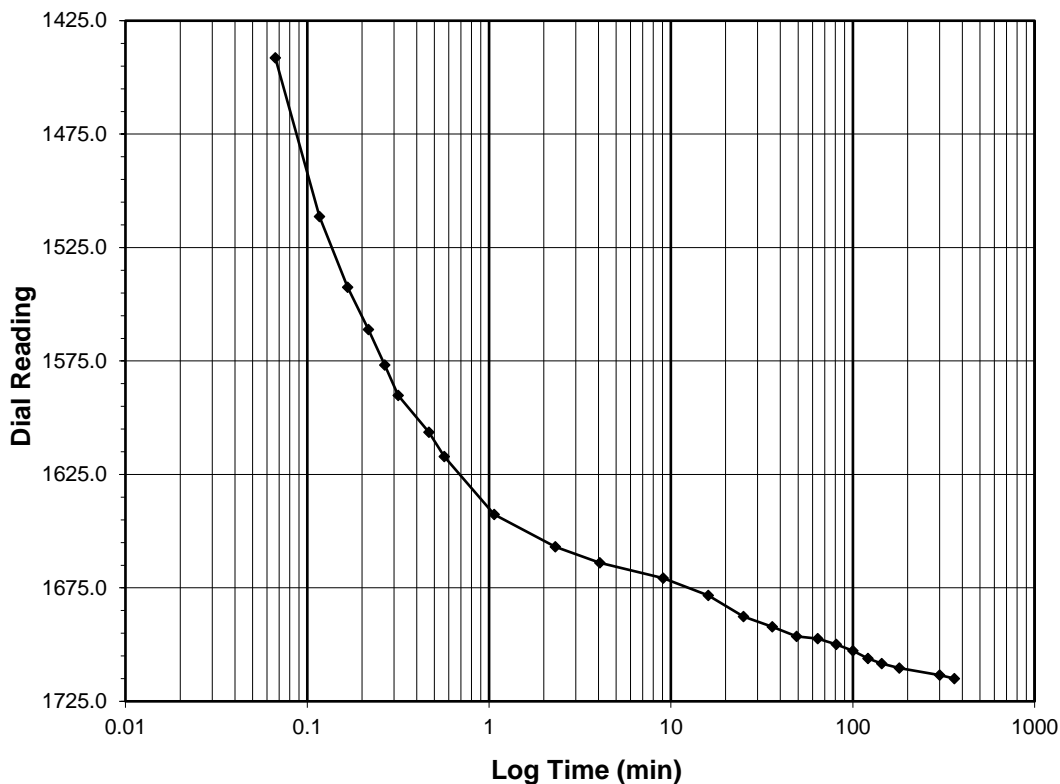
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>8.0-16.0</b>
<b>Final Reading (div)</b>	<b>1715.0</b>
Consolidometer No.	<b>R554</b>
1 Division (in)	0.0001
Start Date	9/25/2020
Start Time	7:32:26

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1358.9</b>
0.07	1441.3
0.12	1511.4
0.17	1542.5
0.22	1561.1
0.27	1576.8
0.32	1590.1
0.47	1606.3
0.57	1617.1
1.07	1642.7
2.32	1657.0
4.07	1663.9
9.07	1670.7
16.07	1678.3
25.07	1687.7
36.07	1692.2
49.07	1696.4
64.07	1697.4
81.07	1699.9
100.07	1702.7
121.08	1706.2
144.08	1708.4
180.08	1710.4
300.08	1713.4
362.42	1715.0



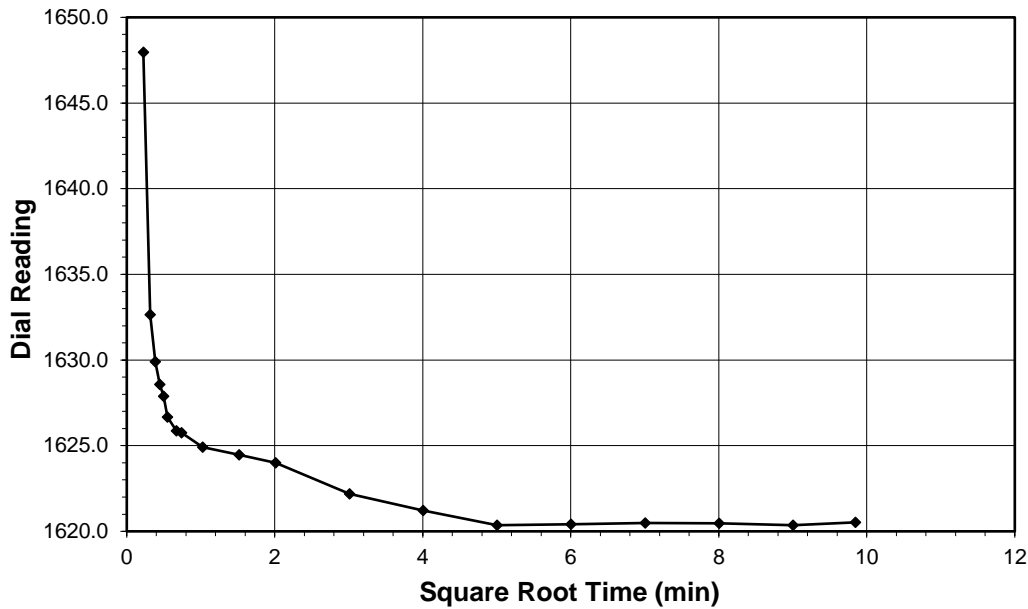
Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

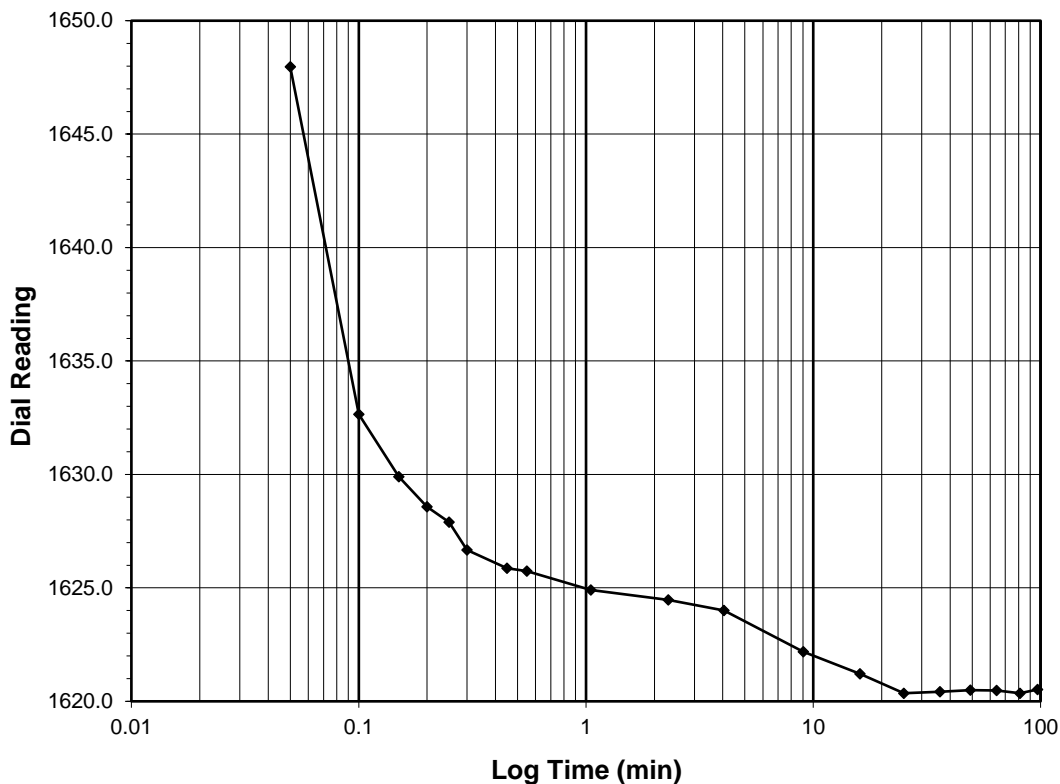
Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>16.0-4.0</b>
<b>Final Reading (div)</b>	<b>1620.4</b>
Consolidometer No.	R554
1 Division (in)	0.0001
Start Date	9/25/2020
Start Time	13:34:51

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1715.0</b>
0.05	1648.0
0.10	1632.6
0.15	1629.9
0.20	1628.6
0.25	1627.9
0.30	1626.7
0.45	1625.9
0.55	1625.7
1.05	1624.9
2.30	1624.5
4.05	1624.0
9.05	1622.2
16.05	1621.2
25.05	1620.4
36.05	1620.4
49.07	1620.5
64.07	1620.5
81.07	1620.4
96.97	1620.5



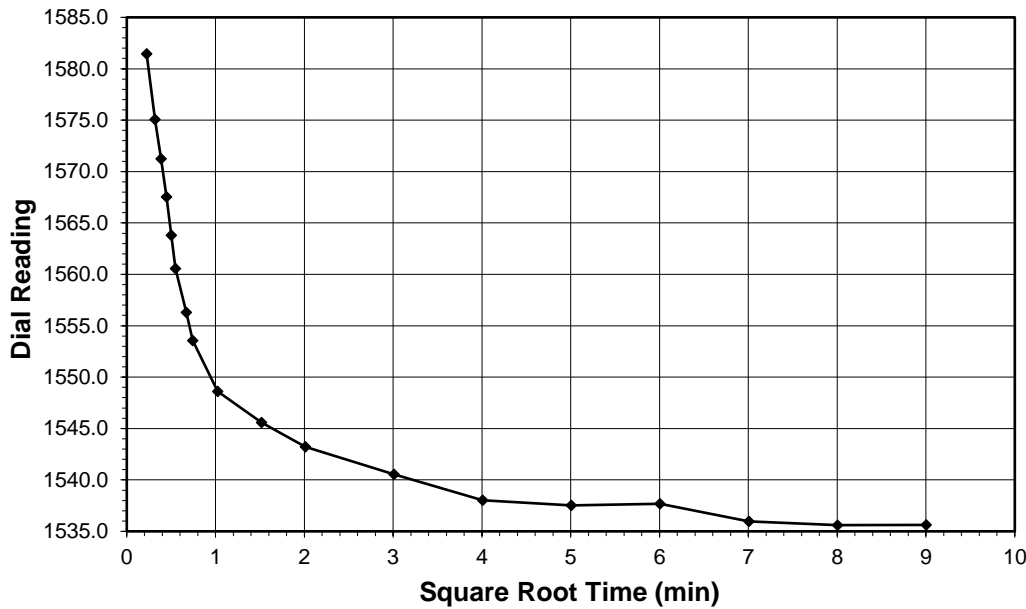
Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/30/2020**

# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

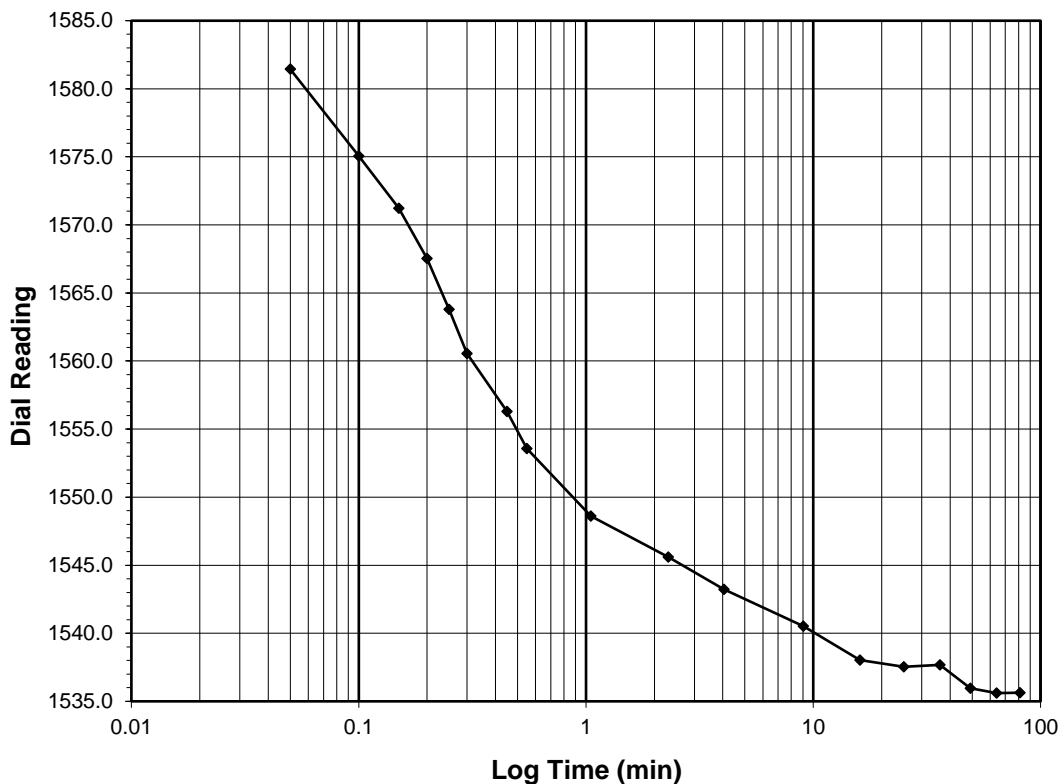
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



**Test Load (tsf)** 4.0-1.0  
**Final Reading (div)** 1535.6  
 Consolidometer No. R554  
 1 Division (in) 0.0001

Start Date 9/25/2020  
 Start Time 15:11:50

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1620.4</b>
0.05	1581.4
0.10	1575.1
0.15	1571.2
0.20	1567.5
0.25	1563.8
0.30	1560.6
0.45	1556.3
0.55	1553.6
1.05	1548.6
2.30	1545.6
4.05	1543.2
9.05	1540.5
16.05	1538.0
25.05	1537.5
36.05	1537.7
49.07	1536.0
64.07	1535.6
81.07	1535.6



Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/30/2020**

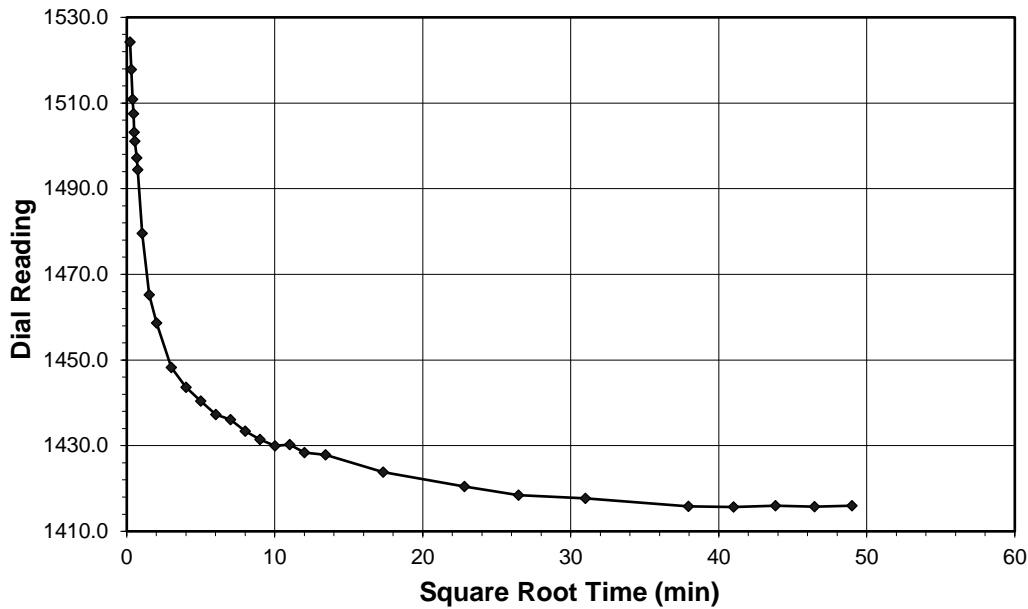


# ONE DIMENSIONAL CONSOLIDATION

ASTM D 2435-11

Client	Catlin Engineers & Scientists	Boring No.	PRN-20-UD
Client Project	USACE Princeville	Depth (ft)	22.0'-24.0'
Project No.	R-2020-164-004	Sample No.	CPT-31
Lab ID	R-2020-164-004-005	Visual Description	Gray Clay

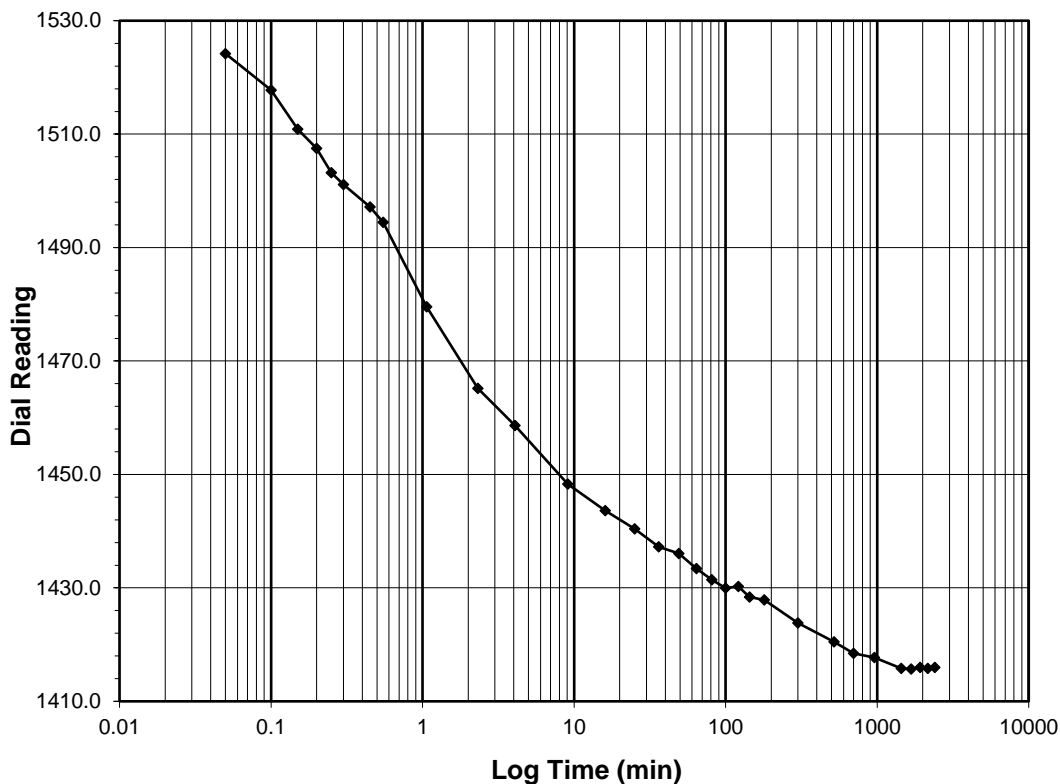
**Sample Conditions:** UNDISTURBED, INUNDATED AND DOUBLE DRAINED



<b>Test Load (tsf)</b>	<b>1.0-0.25</b>
<b>Final Reading (div)</b>	<b>1416.0</b>
Consolidometer No.	R554
1 Division (in)	0.0001

Start Date	9/25/2020
Start Time	16:33:03

Elapsed Time (min)	Dial Reading (div)
<b>Initial</b>	<b>1535.6</b>
0.05	1524.2
0.10	1517.8
0.15	1510.9
0.20	1507.5
0.25	1503.2
0.30	1501.1
0.45	1497.2
0.55	1494.5
1.07	1479.6
2.32	1465.2
4.07	1458.6
9.07	1448.3
16.07	1443.6
25.07	1440.4
36.07	1437.3
49.07	1436.1
64.07	1433.4
81.07	1431.4
100.07	1429.9
121.07	1430.2
144.08	1428.4
180.08	1427.9
300.08	1423.8
520.08	1420.5
700.08	1418.5
960.08	1417.7
1440.08	1415.8
1680.08	1415.7
1920.08	1416.0
2160.08	1415.8
2400.08	1416.0



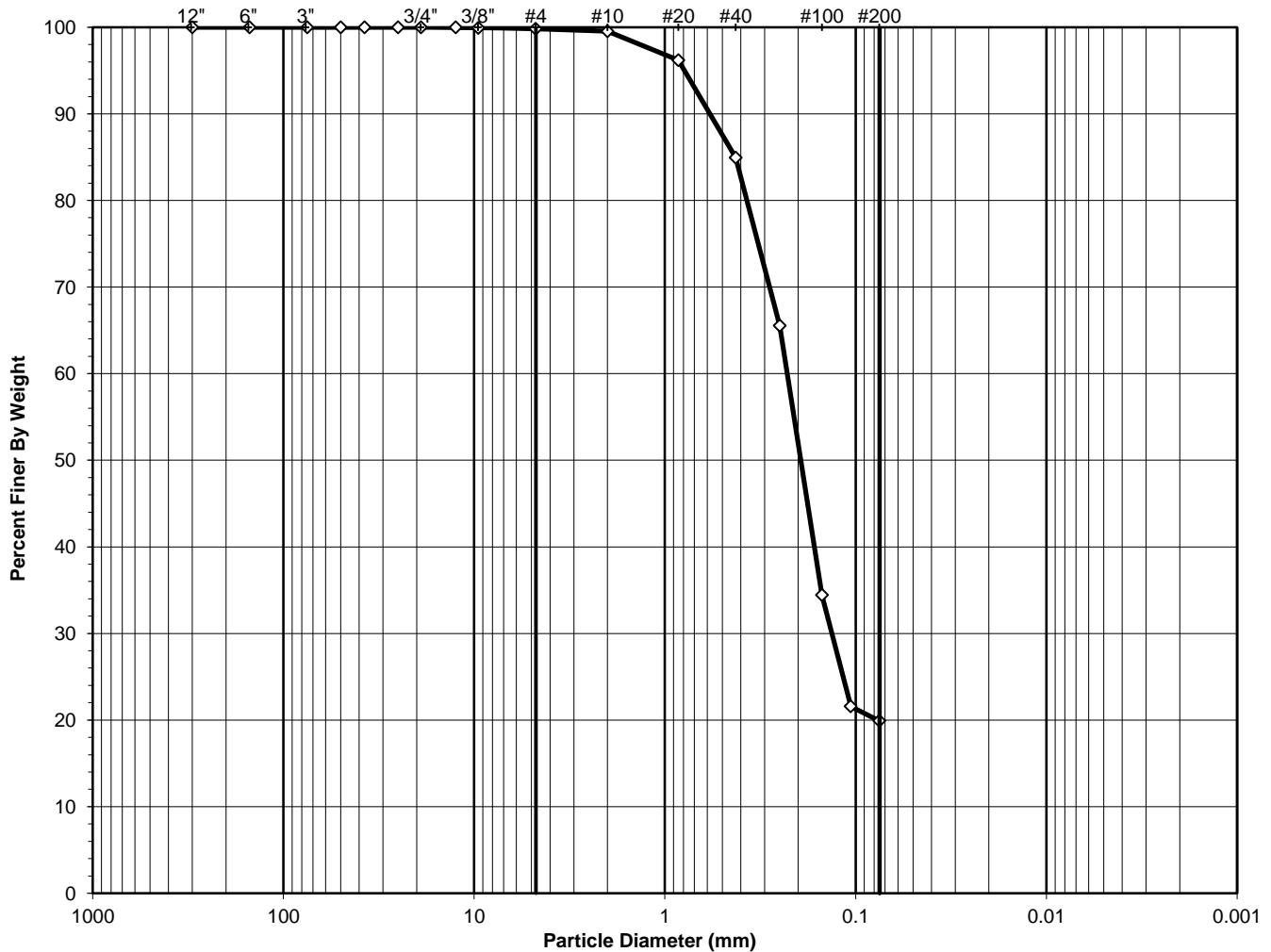
Tested By **NL** Date **9/25/2020** Checked By **GEM** Date **9/30/2020**

# SIEVE AND HYDROMETER ANALYSIS

ASTM D6913 / D7928

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0'-24.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005	Soil Color:	Gray

USCS	SIEVE ANALYSIS		HYDROMETER
	gravel	sand	silt and clay



**USCS Symbol:**  
**SM, TESTED**

**D50 = 0.19**

**USCS Classification:**  
**SILTY SAND**

Tested By **SS** Date **10/3/20** Checked By **MPS** Date **10/5/20**

## WASH SIEVE ANALYSIS

ASTM D6913-17

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0'-24.0'
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005	Soil Color:	Gray

Moisture Content of Passing 3/4" Material				Moisture Content of Retained 3/4" Material			
Tare No.:	TB-08	Tare No.:	NA				
Wt. of Tare & Wet Sample (g):	567.07	Weight of Tare & Wet Sample (g):	NA				
Wt. of Tare & Dry Sample (g):	480.16	Weight of Tare & Dry Sample (g):	NA				
Weight of Tare (g):	135.64	Weight of Tare (g):	NA				
Weight of Water (g):	86.91	Weight of Water (g):	NA				
Weight of Dry Soil (g):	344.52	Weight of Dry Soil (g):	NA				
<b>Moisture Content (%):</b>	<b>25.2</b>	<b>Moisture Content (%):</b>	<b>0.0</b>				
Dry Weight of Sample (g):	NA	Total Dry Weight of Sample (g):	344.52				
Tare No. (Sub-Specimen)	TB-08	Wet Weight of +3/4" Sample (g):	0.00				
Wt. of Tare & Wet Sub-Specimen (g):	567.07	Dry Weight of + 3/4" Sample (g):	0.00				
Weight of Tare (g):	135.64	Dry Weight of - 3/4" Sample (g):	344.52				
Sub-Specimen Wet Weight (g):	431.43	Dry Weight -3/4" +3/8" Sample (g):	0.25				
Tare No. (-3/8" Sub-Specimen):	NA	Dry Weight of -3/8" Sample (g):	344.27				
Wt. of Tare & Wet -3/8" Sub-Specimen (g):	NA	J - Factor (% Finer than 3/4"):	NA				
Weight of Tare (g):	NA	J - Factor (% Finer than 3/8"):	NA				
Sub-Specimen -3/8" Wet Weight (g):	NA						

Sieve Size	Sieve Opening (mm)	Weight of Soil Retained (g)	Percent Retained (%)	Accumulated Percent Retained (%)	Percent Finer (%)	Accumulated Percent Finer (%)
12"	300	0.00	0.00	0.00	100.00	100.0
6"	150	0.00	0.00	0.00	100.00	100.0
3"	75	0.00	0.00	0.00	100.00	100.0
2"	50	0.00	( *)	0.00	100.00	100.0
1 1/2"	37.5	0.00	0.00	0.00	100.00	100.0
1"	25	0.00	0.00	0.00	100.00	100.0
3/4"	19	0.00	0.00	0.00	100.00	100.0
1/2"	12.5	0.00	( ** )	0.00	100.00	100.0
3/8"	9.5	0.25	0.07	0.07	99.93	99.9
#4	4.75	0.42	0.12	0.19	99.81	99.8
#10	2	0.88	0.26	0.45	99.55	99.6
#20	0.85	11.56	( ** )	3.81	96.19	96.2
#40	0.425	38.71	11.24	15.04	84.96	85.0
#60	0.25	66.88	19.41	34.45	65.55	65.5
#100	0.15	107.22	31.12	65.58	34.42	34.4
#140	0.106	44.29	12.86	78.43	21.57	21.6
#200	0.075	5.75	1.67	80.10	19.90	19.9
Pan	-	0.00	0.00	80.10	-	-

**Notes :** ( \* ) The + 3/4" sieve analysis is based on the Total Dry Weight of the Sample  
 ( \*\* ) The - 3/4" and - 3/8" sieve analysis is based on the Weight of the Dry Specimen

Tested By	SS	Date	10/3/20	Checked By	MPS	Date	10/5/20
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## ATTERBERG LIMITS

ASTM D 4318-17

Client: Catlin Engineers & Scientists  
Client Reference: USACE Princeville  
Project No.: R-2020-164-004  
Lab ID: R-2020-164-004-005

Boring No.: PNR-20-UD  
Depth (ft): 22.0-24.0  
Sample No.: CPT-31  
Color: GRAY  
( Minus No. 40 sieve material)

### As Received Water Content

Tare Number	705
Wt. of Tare & Wet Sample (g)	448.86
Wt. of Tare & Dry Sample (g)	370.17
Weight of Tare (g)	91.42
Weight of Water (g)	78.69
Weight of Dry Sample (g)	278.75

**Water Content (%)**                      **28.2**

# NON - PLASTIC MATERIAL

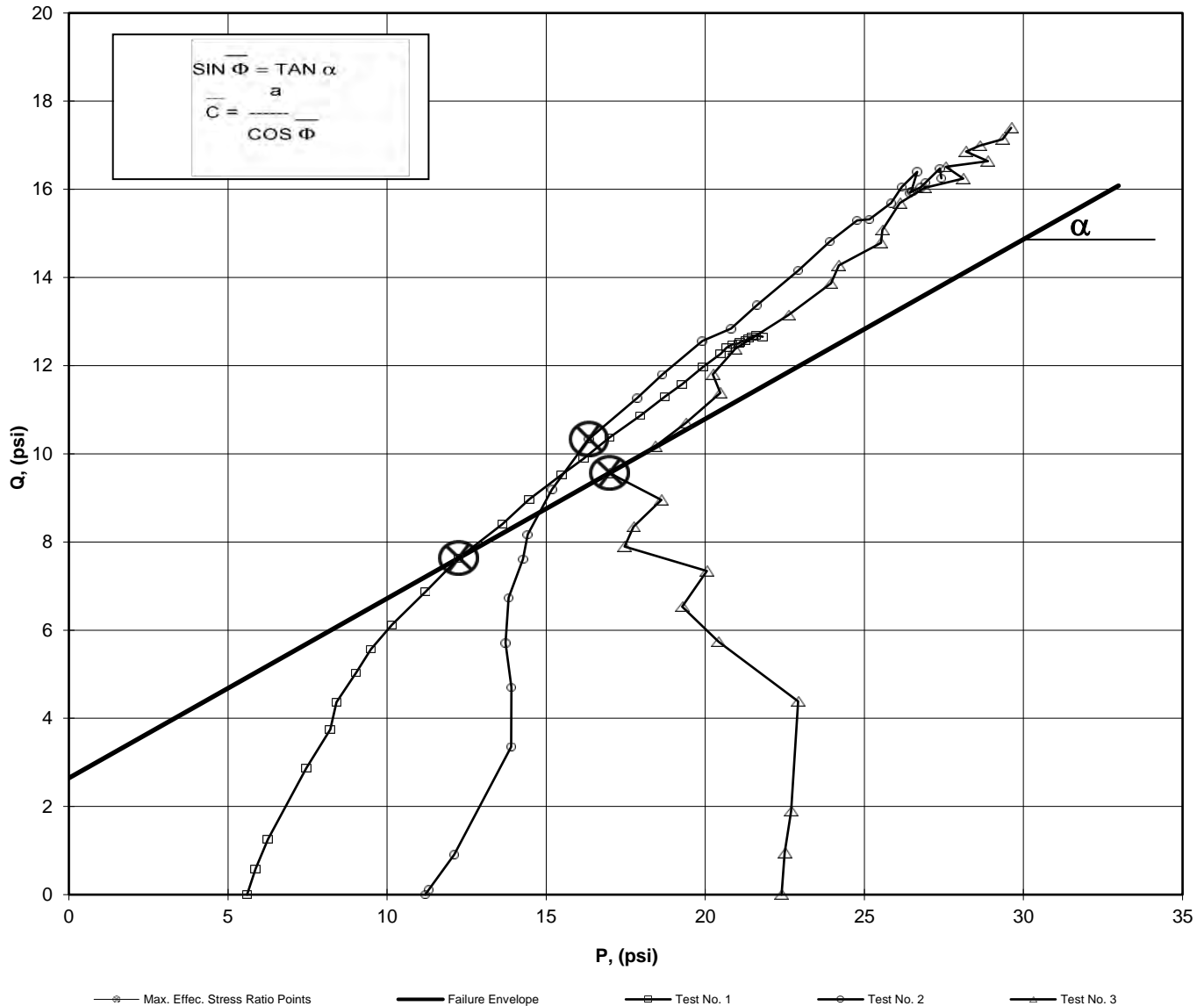
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*Tested By*    SS            *Date*    9/30/20            *Checked By*            GEM            *Date*    9/30/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

**Consolidated Undrained Triaxial Test with Pore Pressure**

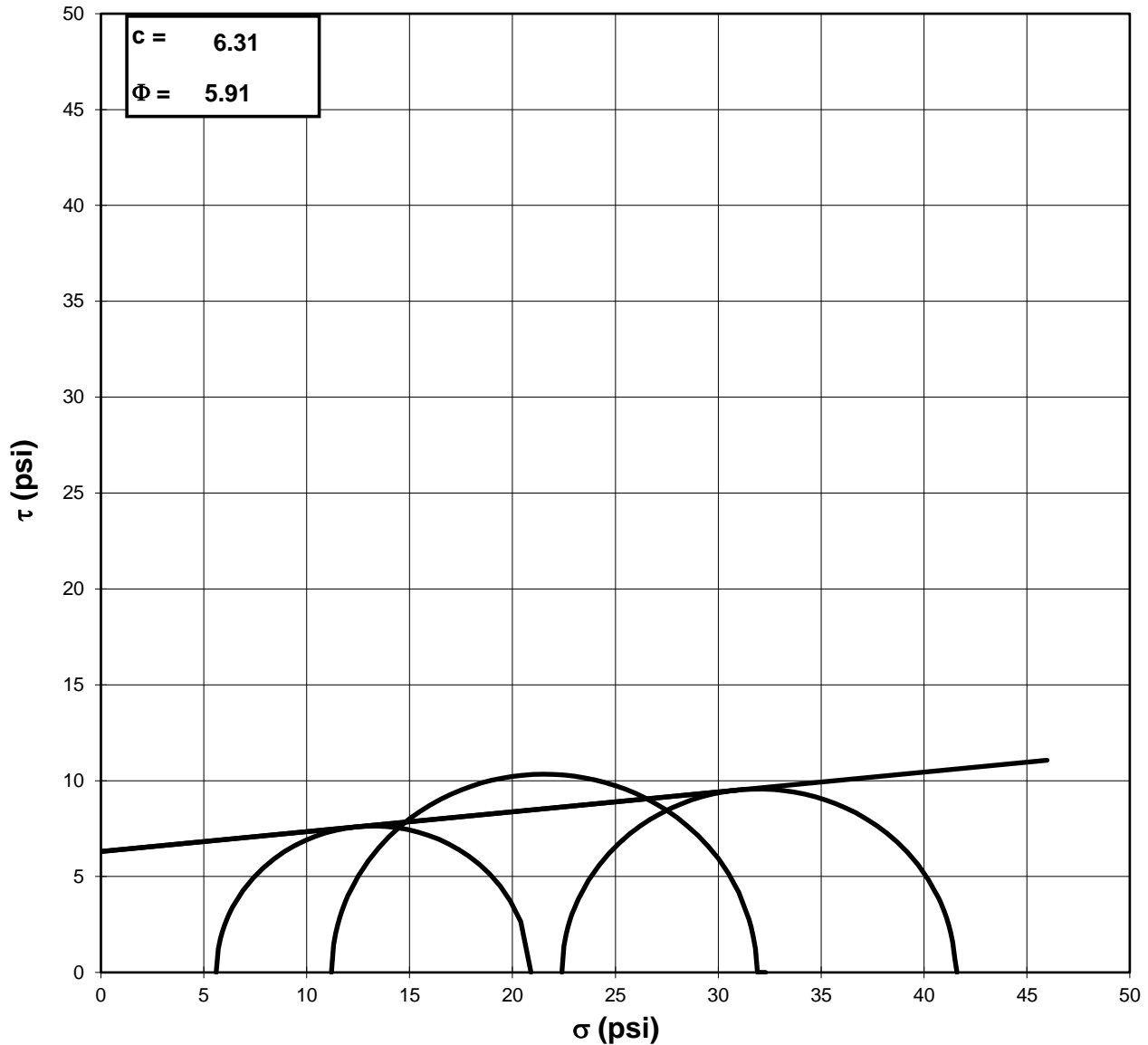


<b>a</b>	<b>=</b>	<b>2.64</b>	<b>C</b>	<b>=</b>	<b>2.90</b>
<b>α</b>	<b>=</b>	<b>22.2</b>	<b>Φ</b>	<b>=</b>	<b>24.04</b>

Tested By: MY      Date: 9/25/20      Approved By: MPS      Date: 10/2/20

**MOHR TOTAL STRENGTH ENVELOPE**  
ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		
Visual Description:	Gray Green Clayey Sand (UNDISTURBED)		



Failure Based on Maximum Effective Principal Stress Ratio

NOTE: GRAPH NOT TO SCALE

Tested By: MY      Date: 9/25/20      Approved By: MPS      Date: 10/2/20

page 2 of 10      DCN: CT-S28      DATE: 4/12/13      REVISION: 3

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**  
ASTM D4767-11



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

Stage No.	0
Test No.	1

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	6.037	Diameter 1:	2.830
Length 2:	6.021	Diameter 2:	2.834
Length 3:	6.015	Diameter 3:	2.810
<i>Avg. Length:</i>	6.024	<i>Avg. Diam.:</i>	2.825

**PRESSURES (psi)**

Cell Pressure (psi)	55.6
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	5.6
Pore Pressure	
Response (%)	100

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	18.1
Final Change (ml)	5.9

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	12.25
Q	=	7.64

Initial Dial Reading (mil)	265
Dial Reading After Saturation (mil)	262
Dial Reading After Consolidation (mil)	265

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
8.4	0.000	50.0
15.7	0.002	50.3
24.1	0.003	50.6
44.2	0.009	51.0
55.1	0.015	51.1
62.9	0.021	51.6
71.4	0.030	51.6
78.1	0.038	51.7
85.2	0.051	51.6
94.9	0.072	51.3
105.0	0.101	51.0
115.4	0.137	50.4
123.2	0.173	50.1
131.3	0.215	49.6
136.6	0.245	49.3
143.8	0.287	49.0
151.6	0.344	48.5
158.9	0.403	48.2
164.0	0.449	47.9
171.0	0.509	47.6
176.4	0.555	47.4
179.8	0.599	47.3
182.2	0.644	47.2
183.5	0.675	47.0
184.9	0.704	47.0
186.4	0.734	46.9
188.1	0.764	46.9
190.3	0.809	46.8
192.2	0.854	46.7
192.9	0.884	46.5
194.0	0.914	46.6

Tested By: MY      Date: 9/25/20      Input Checked By: GEM      Date: 10/2/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

Effective Confining Pressure (psi)	5.6	Stage No.	0
		Test No	1

**INITIAL DIMENSIONS**

Initial Sample Length (in)	6.02
Initial Sample Diameter (in)	2.82
Initial Sample Area (in <sup>2</sup> )	6.27
Initial Sample Volume (in <sup>3</sup> )	37.75

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	37.45
Length After Consolidation (in)	6.02
Area After Consolidation (in <sup>2</sup> )	6.216

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.03	1.17	0.32	6.45	5.3	1.222	0.27	5.87	0.59
0.04	2.52	0.60	7.52	5.0	1.503	0.24	6.26	1.26
0.14	5.75	1.01	10.34	4.6	2.252	0.18	7.47	2.87
0.24	7.49	1.14	11.96	4.5	2.678	0.15	8.21	3.75
0.34	8.73	1.55	12.78	4.0	3.157	0.18	8.41	4.37
0.50	10.07	1.61	14.06	4.0	3.526	0.16	9.03	5.04
0.64	11.14	1.68	15.06	3.9	3.838	0.15	9.49	5.57
0.84	12.25	1.57	16.28	4.0	4.041	0.13	10.15	6.13
1.19	13.74	1.26	18.08	4.3	4.169	0.09	11.21	6.87
1.68	15.27	0.98	19.89	4.6	4.308	0.06	12.25	7.64
2.27	16.81	0.38	22.03	5.2	4.218	0.02	13.63	8.41
2.87	17.93	0.10	23.43	5.5	4.260	0.01	14.46	8.96
3.57	19.06	-0.36	25.02	6.0	4.198	-0.02	15.49	9.53
4.07	19.79	-0.68	26.07	6.3	4.150	-0.03	16.17	9.89
4.77	20.74	-1.02	27.36	6.6	4.135	-0.05	16.99	10.37
5.70	21.73	-1.49	28.82	7.1	4.063	-0.07	17.96	10.86
6.70	22.59	-1.84	30.03	7.4	4.038	-0.08	18.73	11.30
7.46	23.16	-2.10	30.86	7.7	4.009	-0.09	19.28	11.58
8.46	23.95	-2.36	31.91	8.0	4.008	-0.10	19.93	11.97
9.21	24.54	-2.61	32.75	8.2	3.988	-0.11	20.48	12.27
9.95	24.82	-2.66	33.08	8.3	4.005	-0.11	20.67	12.41
10.69	24.97	-2.77	33.34	8.4	3.982	-0.11	20.86	12.48
11.20	25.01	-2.95	33.57	8.6	3.924	-0.12	21.06	12.51
11.69	25.07	-2.96	33.63	8.6	3.928	-0.12	21.10	12.53
12.18	25.14	-3.10	33.84	8.7	3.892	-0.12	21.27	12.57
12.68	25.23	-3.14	33.97	8.7	3.887	-0.12	21.36	12.62
13.43	25.33	-3.21	34.14	8.8	3.874	-0.13	21.47	12.66
14.17	25.37	-3.30	34.28	8.9	3.850	-0.13	21.59	12.69
14.67	25.32	-3.55	34.46	9.1	3.767	-0.14	21.81	12.66
15.17	25.33	-3.41	34.34	9.0	3.810	-0.13	21.68	12.66



**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

Stage No.	0
Test No.	2

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	5.936	Diameter 1:	2.831
Length 2:	5.948	Diameter 2:	2.842
Length 3:	5.942	Diameter 3:	2.823
Avg. Length	5.942	Avg. Diam.:	2.832

**PRESSURES (psi)**

Cell Pressure (psi)	61.2
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	11.2
Pore Pressure Response (%)	100

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	12.8
Final Change (ml)	11.2

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	16.35
Q	=	10.34

Initial Dial Reading (mil)	143
Dial Reading After Saturation (mil)	140
Dial Reading After Consolidation (mil)	143

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
10.8	0.000	50.0
12.3	0.002	50.0
22.0	0.003	50.0
52.4	0.009	50.7
69.2	0.015	52.0
81.8	0.021	53.2
94.7	0.030	54.1
105.7	0.039	54.5
112.9	0.051	54.9
126.1	0.072	55.2
141.1	0.102	55.2
153.7	0.138	54.6
161.4	0.174	54.3
172.3	0.216	53.9
176.8	0.246	53.2
184.9	0.288	53.0
197.0	0.345	52.4
207.8	0.405	52.1
215.8	0.450	51.7
218.4	0.510	51.4
225.2	0.555	51.1
232.0	0.600	51.1
238.7	0.645	50.9
233.9	0.676	50.7
234.6	0.706	50.7
236.4	0.736	50.6
239.0	0.766	50.5
242.5	0.811	50.4
249.2	0.856	50.3
247.4	0.886	50.0
246.9	0.916	50.2

Tested By: MY      Date: 9/25/20      Input Checked By: GEM      Date: 10/2/20

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**



Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

Effective Confining Pressure (psi)	11.2	Stage No.	0
		Test No	2

**INITIAL DIMENSIONS**

Initial Sample Length (in)	5.94
Initial Sample Diameter (in)	2.83
Initial Sample Area (in <sup>2</sup> )	6.30
Initial Sample Volume (in <sup>3</sup> )	37.43

**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	36.80
Length After Consolidation (in)	5.94
Area After Consolidation (in <sup>2</sup> )	6.194

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.03	0.23	0.00	11.43	11.2	1.021	0.01	11.32	0.12
0.05	1.81	0.00	13.01	11.2	1.161	0.00	12.11	0.90
0.15	6.71	0.66	17.25	10.5	1.636	0.10	13.90	3.36
0.25	9.41	1.99	18.62	9.2	2.022	0.21	13.91	4.70
0.35	11.42	3.19	19.43	8.0	2.426	0.28	13.72	5.71
0.51	13.47	4.12	20.56	7.1	2.902	0.31	13.82	6.74
0.66	15.22	4.54	21.88	6.7	3.286	0.30	14.27	7.61
0.86	16.34	4.94	22.59	6.3	3.611	0.30	14.42	8.17
1.21	18.38	5.22	24.37	6.0	4.072	0.28	15.18	9.19
1.72	20.68	5.19	26.68	6.0	4.441	0.25	16.35	10.34
2.33	22.54	4.60	29.13	6.6	4.417	0.20	17.87	11.27
2.93	23.59	4.35	30.44	6.9	4.444	0.18	18.65	11.80
3.64	25.12	3.85	32.47	7.3	4.420	0.15	19.91	12.56
4.15	25.69	3.23	33.65	8.0	4.223	0.13	20.81	12.84
4.85	26.74	2.95	34.99	8.2	4.243	0.11	21.62	13.37
5.81	28.32	2.44	37.08	8.8	4.231	0.09	22.92	14.16
6.82	29.63	2.10	38.74	9.1	4.255	0.07	23.92	14.82
7.58	30.59	1.72	40.06	9.5	4.227	0.06	24.77	15.29
8.59	30.65	1.36	40.48	9.8	4.115	0.04	25.16	15.32
9.35	31.38	1.05	41.53	10.1	4.093	0.03	25.84	15.69
10.11	32.11	1.08	42.23	10.1	4.172	0.03	26.17	16.05
10.86	32.79	0.93	43.06	10.3	4.195	0.03	26.66	16.40
11.37	31.92	0.68	42.44	10.5	4.035	0.02	26.48	15.96
11.87	31.85	0.70	42.35	10.5	4.032	0.02	26.42	15.92
12.38	31.91	0.63	42.49	10.6	4.018	0.02	26.53	15.96
12.88	32.10	0.48	42.81	10.7	3.995	0.02	26.76	16.05
13.64	32.30	0.43	43.08	10.8	3.998	0.01	26.93	16.15
14.40	32.95	0.30	43.85	10.9	4.023	0.01	27.38	16.47
14.90	32.51	0.03	43.67	11.2	3.911	0.00	27.42	16.25
15.41	32.24	0.18	43.25	11.0	3.927	0.01	27.14	16.12

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS**

ASTM D4767-11

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

Stage No.	0
Test No.	3

**INITIAL SAMPLE DIMENSIONS (in)**

Length 1:	5.665	Diameter 1:	2.819
Length 2:	5.687	Diameter 2:	2.795
Length 3:	5.622	Diameter 3:	2.786
Avg. Length:	5.658	Avg. Diam.:	2.800

**PRESSURES (psi)**

Cell Pressure (psi)	72.4
Back Pressure (psi)	50.0
Eff. Conf. Pressure (psi)	22.4
Pore Pressure	
Response (%)	100

**VOLUME CHANGE**

Initial Burette Reading (ml)	24.0
Final Burette Reading (ml)	6.4
Final Change (ml)	17.6

**MAXIMUM OBLIQUITY POINTS**

$\bar{P}$	=	16.99
Q	=	9.56

Initial Dial Reading (mil)	225
Dial Reading After Saturation (mil)	231
Dial Reading After Consolidation (mil)	242

LOAD (LB)	DEFORMATION (IN)	PORE PRESSURE (PSI)
9.6	0.000	50.1
21.0	0.001	50.9
32.2	0.002	51.6
62.0	0.008	53.9
78.3	0.013	57.7
87.8	0.020	59.7
97.7	0.028	59.7
104.5	0.036	62.8
110.1	0.048	63.0
117.8	0.068	62.7
125.7	0.096	65.0
133.9	0.130	64.1
141.1	0.165	63.7
150.5	0.204	63.3
156.5	0.233	64.0
164.9	0.273	63.8
176.2	0.327	62.9
187.2	0.384	62.3
194.0	0.427	62.5
202.6	0.483	61.7
208.1	0.527	61.9
217.9	0.570	62.0
224.2	0.612	61.5
228.3	0.641	60.5
233.2	0.670	61.3
236.2	0.698	60.2
240.5	0.726	61.1
244.4	0.770	60.8
248.5	0.812	60.2
253.6	0.840	60.2
256.5	0.869	60.3

Tested By:	MY	Date:	9/25/20	Input Checked By:	GEM	Date:	10/2/20
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DCN: CT-S28 DATE: 4/12/13 REVISION: 3

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

Effective Confining Pressure (psi)	22.4	Stage No.	0
		Test No	3

**INITIAL DIMENSIONS**

Initial Sample Length (in)	5.66
Initial Sample Diameter (in)	2.80
Initial Sample Area (in <sup>2</sup> )	6.16
Initial Sample Volume (in <sup>3</sup> )	34.84

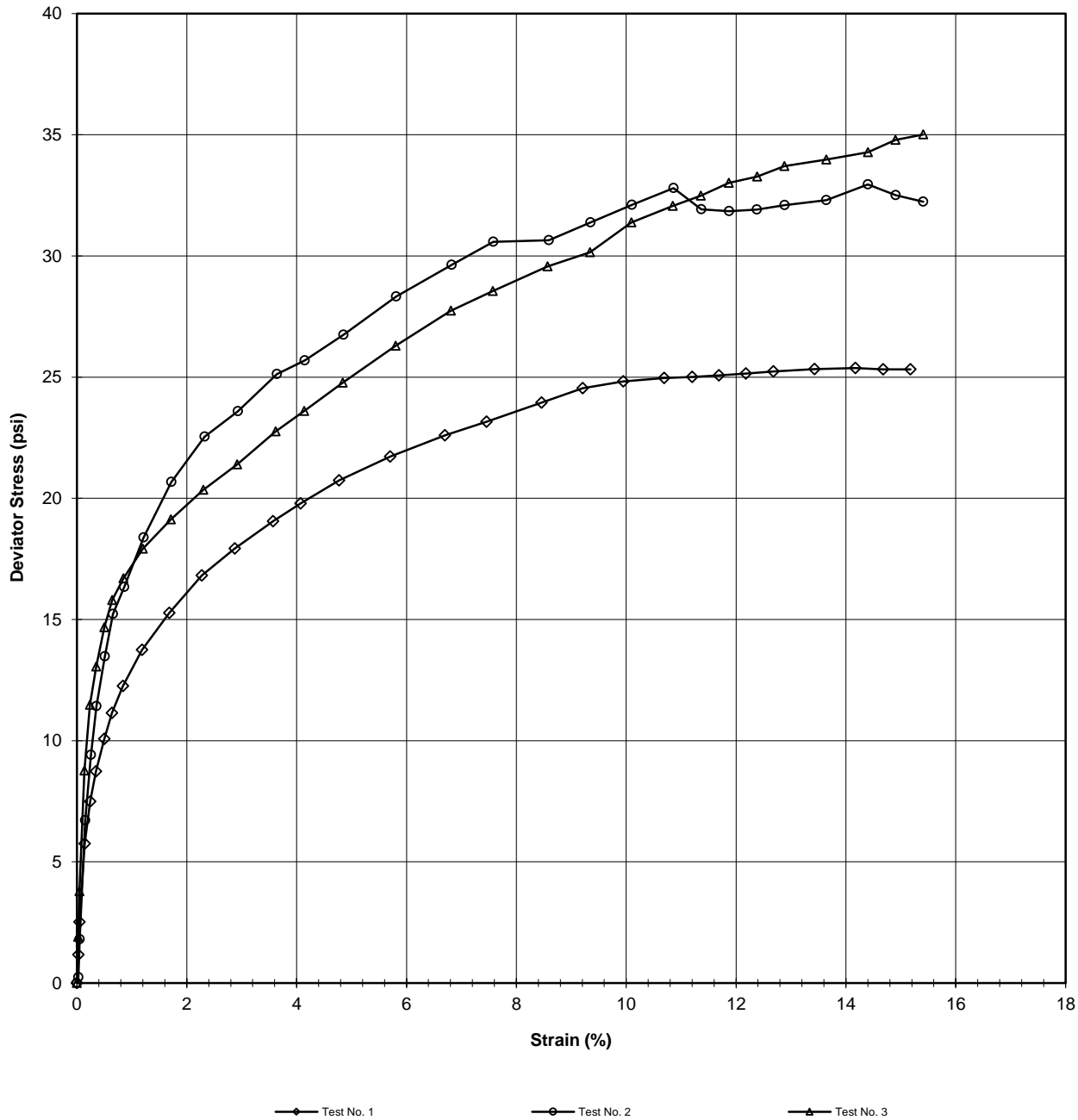
**VOLUME CHANGE**

Volume After Consolidation (in <sup>3</sup> )	33.65
Length After Consolidation (in)	5.64
Area After Consolidation (in <sup>2</sup> )	5.966

Strain (%)	Deviator Stress PSI	$\Delta U$	$\bar{\sigma}_1$	$\bar{\sigma}_3$	Effective Principal Stress Ratio	$\bar{A}$	$\bar{P}$	Q
0.02	1.90	0.85	23.45	21.5	1.088	0.45	22.50	0.95
0.04	3.78	1.59	24.59	20.8	1.182	0.42	22.70	1.89
0.14	8.77	3.86	27.30	18.5	1.473	0.44	22.92	4.38
0.24	11.48	7.71	26.16	14.7	1.782	0.67	20.42	5.74
0.35	13.06	9.66	25.80	12.7	2.025	0.74	19.27	6.53
0.50	14.68	9.69	27.39	12.7	2.155	0.66	20.05	7.34
0.64	15.80	12.83	25.36	9.6	2.651	0.81	17.47	7.90
0.85	16.70	13.00	26.10	9.4	2.776	0.78	17.75	8.35
1.20	17.91	12.74	27.58	9.7	2.853	0.71	18.62	8.96
1.71	19.13	14.98	26.55	7.4	3.577	0.78	16.99	9.56
2.30	20.34	14.15	28.60	8.3	3.465	0.70	18.43	10.17
2.92	21.40	13.71	30.09	8.7	3.462	0.64	19.39	10.70
3.62	22.76	13.31	31.86	9.1	3.503	0.58	20.47	11.38
4.14	23.60	13.96	32.04	8.4	3.798	0.59	20.24	11.80
4.84	24.77	13.84	33.33	8.6	3.894	0.56	20.94	12.38
5.80	26.29	12.94	35.75	9.5	3.778	0.49	22.61	13.14
6.81	27.74	12.31	37.82	10.1	3.751	0.44	23.95	13.87
7.57	28.56	12.48	38.48	9.9	3.878	0.44	24.20	14.28
8.57	29.57	11.66	40.31	10.7	3.754	0.39	25.52	14.79
9.34	30.15	11.91	40.64	10.5	3.873	0.39	25.57	15.07
10.10	31.38	11.98	41.80	10.4	4.011	0.38	26.11	15.69
10.85	32.06	11.54	42.92	10.9	3.953	0.36	26.89	16.03
11.36	32.49	10.54	44.35	11.9	3.738	0.32	28.11	16.24
11.87	33.02	11.35	44.07	11.1	3.987	0.34	27.56	16.51
12.38	33.28	10.15	45.52	12.2	3.717	0.31	28.89	16.64
12.88	33.71	11.06	45.05	11.3	3.972	0.33	28.20	16.86
13.64	33.97	10.77	45.61	11.6	3.920	0.32	28.62	16.99
14.40	34.27	10.20	46.48	12.2	3.809	0.30	29.34	17.14
14.90	34.79	10.18	47.01	12.2	3.848	0.29	29.61	17.40
15.41	35.01	10.31	47.10	12.1	3.896	0.29	29.60	17.50

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client:	Catlin Engineers & Scientists	Boring No.:	PRN-20-UD
Client Reference:	USACE Princeville	Depth (ft):	22.0-24.0
Project No.:	R-2020-164-004	Sample No.:	CPT-31
Lab ID:	R-2020-164-004-005		
Visual Description:	Gray Green Clayey Sand (UNDISTURBED)		



Tested By:	MY	Date:	9/25/20	Approved By:	MPS	Date:	10/2/20
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page 9 of 10

**CONSOLIDATED UNDRAINED TRIAXIAL TEST  
WITH PORE PRESSURE READINGS  
ASTM D4767-11**

Client: Catlin Engineers & Scientists  
 Client Reference: USACE Princeville  
 Project No.: R-2020-164-004  
 Lab ID: R-2020-164-004-005      Specific Gravity (assumed)      2.7

Visual Description: Gray Green Clayey Sand (UNDISTURBED)

**SAMPLE CONDITION SUMMARY**

Boring No.:	PRN-20-UD	PRN-20-UD	PRN-20-UD
Depth (ft):	22.0-24.0	22.0-24.0	22.0-24.0
Sample No.:	CPT-31	CPT-31	CPT-31
Test No.	T1	T2	T3
Deformation Rate (in/min)	0.002	0.002	0.002
Back Pressure (psi)	50.0	50.0	50.0
Consolidation Time (days)	1	1	1
Moisture Content (%) (INITIAL)	28.2	28.2	28.2
Total Unit Weight (pcf)	124.7	129.5	127.5
Dry Unit Weight (pcf)	97.3	101.0	99.4
Moisture Content (%) (FINAL)	26.4	25.9	23.6
Initial State Void Ratio, e	0.733	0.669	0.695
Void Ratio at Shear, e	0.719	0.642	0.638



Tested By: MY      Date: 9/25/20      Input Checked By: GEM      Date: 10/2/20

APPENDIX C  
NCDOT REPORTS

PROJECT: 6.299003T ID. R-2111AA

CONTENTS:

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

**SUBSURFACE INVESTIGATION**

STATE PROJECT 6.299003T ID. No. R-2111AA  
F.A. PROJECT \_\_\_\_\_  
COUNTY EDGE COMBE  
DESCRIPTION US-64 RELOCATION FR. W. OF  
US-258 (NC-44) INTERCHANGE IN TARBORO TO  
E. CSX RAILROAD  
**(INVENTORY)**

STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6.299003T	1	31

PROJECT \_\_\_\_\_  
TIP \_\_\_\_\_  
LETTING DATE \_\_\_\_\_

CAUTION NOTICE

The Subsurface information and the Subsurface Investigation on which it is based was made for the purpose of study, planning and design, and not for construction or pay purposes. Some data obtained may be omitted from this release.

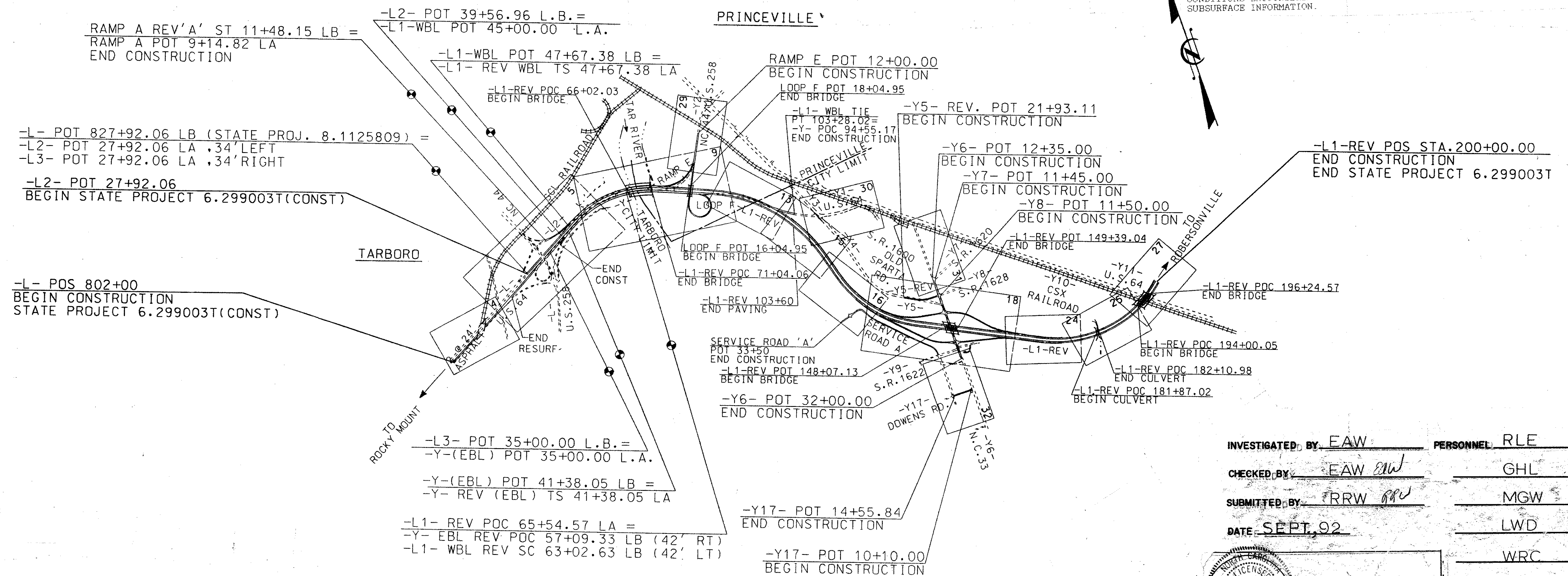
Additional information may be available, including, but not limited to the following:

- Field Boring Logs
- Rock Cores
- Soil & Rock Test Data
- Subsurface Report

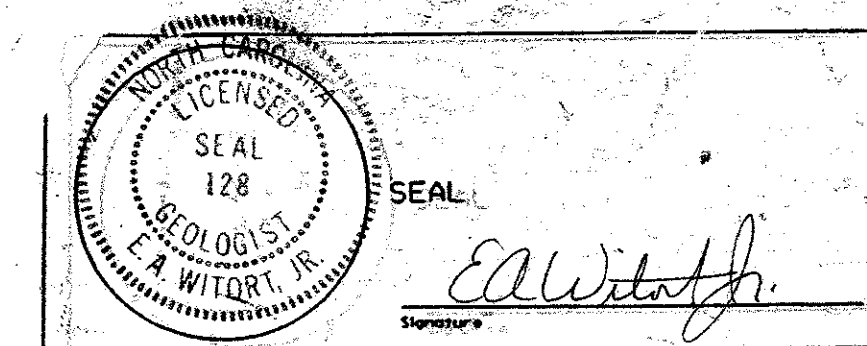
This information may be viewed by appointment by contacting the N. C. Department of Transportation, Geotechnical Unit @ (919) 250-4088. Neither the Subsurface plans and reports, nor the field boring logs, rock cores, or soil test data is part of the contract.

General soil and rock strata descriptions and indicated boundaries are based on a geotechnical interpretation of all available subsurface data and may not necessarily reflect the actual subsurface conditions between borings or between sampled strata within the borehole. The laboratory sample data and the in situ (in-place) test data can be relied on only to the degree of reliability inherent in the standard test method. The observed water levels or soil moisture conditions indicated in the subsurface investigations are as recorded at the time of the investigation. These water levels or soil moisture conditions may vary considerably with time according to climatic conditions including temperature, precipitation and wind, as well as other non-climatic factors.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE INFORMATION ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPTIONS OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.



INVESTIGATED BY: <u>EAW</u>	PERSONNEL: <u>RLE</u>
CHECKED BY: <u>EAW</u>	<u>GHL</u>
SUBMITTED BY: <u>RRW</u>	<u>MGW</u>
DATE: <u>SEPT. 92</u>	<u>LWD</u>
	<u>WRC</u>



DRAWN BY: \_\_\_\_\_



N.C. DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GEOTECHNICAL UNIT

STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6,299 003T	2	

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		TERMS AND DEFINITIONS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 B.P.F. ACCORDING TO THE STANDARD PENETRATION TEST (ASTM-D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY STRUCTURE, PLASTICITY, ETC. EXAMPLE: VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6.		ALLUVIUM (alluv.) - Soils which have been transported by flowing water. APPARENT DIP - The dip of rock strata not perpendicular to strike. AQUIFER - A water-bearing formation or strata. AUGER REFUSAL (A.R.) - Point at which power augers will not actually or practically penetrate. BEDDED - Soil or rock lying in a position essentially parallel. BEDROCK - Rock of relatively great thickness and extent in its original location. CALCAREOUS (calc.) - Soils which contain appreciable amounts of calcium carbonate. COHESIVE SOIL - A soil that when unconfined has considerable dry strength and significant cohesion when submerged. COLLUVIUM - Rock fragments mixed with soil deposited by gravity on slope or at bottom of slope. CORE RECOVERY (% Rec.) - Total length of all rock divided by total length of core run expressed as a percentage. COQUINA - A rock type composed essentially of marine shells cemented by calcium carbonate. DIKE - Igneous rock intrusive which is narrow compared with its other dimensions. DIP - The angle between a bedding plane, joint plane or fault plane and the horizontal, measured perpendicular to the strike. DUMPS - Uncovered deposits of waste materials such as wood, masonry debris or garbage. FAULT - A break in the continuity of a body of rock, attended by a movement on either or both sides of the break. FINES - Portion of a soil finer than No. 200 U. S. Standard Sieve. FISSILITY OR FISSILE - A property of splitting easily along closely spaced parallel planes. FLOAT - Rock fragments on surface near their original position dislodged from parent material. FLOODPLAIN - Land bordering a stream, built of sediments deposited by the stream. FORMATION - A mappable unit that can be recognized and traced in the field. FRACTURE - A crack large enough to be visible to unaided eye. FRIABLE - Easy to break or crumble. GRANULAR SOIL - Soil that when unconfined has little or no dry strength and has little or no cohesion when submerged. GROUND WATER - (Free Water) (G. W.) - Water that is free to move through soil mass under influence of gravity. GROUNDWATER LEVEL - Level at which the pressure in water is zero with respect to the atmospheric pressure. HARDPAN - A general term used to describe a hard cemented soil layer which does not soften when wet. INDURATED - Earth material hardened by heat, pressure or cementation. INTERBEDDED - Alternating lenses or layers of soil and/or rock materials. JOINT - Fracture in rock along which no appreciable movement has occurred. LAMINATED - Very thin alternating layers less than 1" in thickness. LAYER - Subject material greater than 1" thick. LEDGE - A shelf-like ridge or projection of rock whose thickness is small compared to its lateral extent. LENS - A body of soil or rock that thins out in one or more directions. MARL - A non-indurated, calcareous deposit of clays, silts and sand, often containing shells. MICACEOUS SOIL (mic.) - A soil or rock containing an appreciable amount of mica. MUCK (mk.) - An highly organic soil of very soft consistency, generally found on tidal flats, lakes or stream floodplains. PEAT (pt) - A fibrous mass of organic matter in various stages of decomposition.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
<b>SOIL LEGEND AND CLASSIFICATION</b> <table border="1" style="width:100%; border-collapse: collapse; font-size: x-small;"> <thead> <tr> <th rowspan="2">GENERAL CLASS.</th> <th colspan="6">GRANULAR MATERIALS (35% LESS PASSING NO. 200)</th> <th colspan="4">SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)</th> <th colspan="3">ORGANIC SOILS</th> </tr> <tr> <th>A-1</th> <th>A-1-a</th> <th>A-2</th> <th>A-2-a</th> <th>A-2-b</th> <th>A-2-c</th> <th>A-4</th> <th>A-5</th> <th>A-6</th> <th>A-7</th> <th>A-1-A-2</th> <th>A-4-A-5</th> <th>A-6-A-7</th> </tr> </thead> <tbody> <tr> <td>GROUP CLASS.</td> <td>A-1-a</td> <td>A-1-b</td> <td>A-2-1</td> <td>A-2-2</td> <td>A-2-3</td> <td>A-2-4</td> <td>A-4</td> <td>A-5</td> <td>A-6</td> <td>A-7</td> <td>A-1-A-2</td> <td>A-4-A-5</td> <td>A-6-A-7</td> </tr> <tr> <td>SYMBOL</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>% PASSING</td> <td colspan="6"></td> <td colspan="4"></td> <td>GRANULAR SOILS</td> <td>SILT-CLAY SOILS</td> <td>MUCK, PEAT</td> </tr> <tr> <td># 10</td> <td colspan="6">50 MX</td> <td colspan="4"></td> <td></td> <td></td> <td></td> </tr> <tr> <td># 40</td> <td colspan="6">30 MX 50 MX 51 MN</td> <td colspan="4"></td> <td></td> <td></td> <td></td> </tr> <tr> <td># 200</td> <td colspan="6">15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN</td> <td colspan="4"></td> <td></td> <td></td> <td></td> </tr> <tr> <td>LIQUID LIMIT</td> <td colspan="6">8 MAX.</td> <td colspan="4">40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN</td> <td colspan="3">WITH LITTLE OR MODERATE AMOUNT OF ORGANIC MATTER</td> </tr> <tr> <td>PLASTIC INDEX</td> <td colspan="6">N.P.</td> <td colspan="4">10 MX 11 MN 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN</td> <td colspan="3">HIGHLY ORGANIC SOIL</td> </tr> <tr> <td>GROUP INDEX</td> <td colspan="6">0</td> <td colspan="4">4 MAX.</td> <td colspan="3">FAIR TO POOR</td> </tr> <tr> <td>USUAL TYPES OF MAJOR MATERIALS</td> <td colspan="2">STONE FRAGS. GRAVEL &amp; SAND</td> <td colspan="2">SILTY OR CLAYEY GRAVEL &amp; SAND</td> <td colspan="2">SILTY SOILS</td> <td colspan="2">CLAYEY SOILS</td> <td colspan="3"></td> </tr> <tr> <td>GEN. RATING AS A SUBGRADE</td> <td colspan="6">EXCELLENT TO GOOD</td> <td colspan="4">FAIR TO POOR</td> <td colspan="3">UNSUITABLE</td> </tr> <tr> <td colspan="13">                     P.I. OF A-7-6 ≤ L.L. - 30; P.I. OF A-7-6 &gt; L.L. - 30                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>CONSISTENCY OR DENSENESS</b> </td> </tr> <tr> <td>PRIMARY SOIL TYPE</td> <td>COMPACTNESS OR CONSISTENCY</td> <td>RANGE OF STANDARD PENETRATION RESISTANCE</td> <td>RANGE OF UNCONFINED COMPRESSIVE STRENGTH</td> <td colspan="9"></td> </tr> <tr> <td>COARSE GRAINED SOILS</td> <td>VERY LOOSE LOOSE MED. DENSE DENSE VERY DENSE</td> <td>LESS THAN 4 B.P.F. 1 4 TO 10 10 TO 30 30 TO 50 MORE THAN 50</td> <td>N/A</td> <td colspan="9"></td> </tr> <tr> <td>FINE GRAINED SOILS</td> <td>VERY SOFT SOFT MED. STIFF STIFF VERY STIFF HARD</td> <td>LESS THAN 2 B.P.F. 2 TO 4 4 TO 8 8 TO 15 15 TO 30 MORE THAN 30</td> <td>LESS THAN .25 TSF 0.25 TO 0.5 0.5 TO 1.0 1.0 TO 2.0 2.0 TO 4.0 MORE THAN 4.0</td> <td colspan="9"></td> </tr> <tr> <td colspan="13">                     1 SEE STANDARD PENETRATION TEST                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>TEXTURE OR GRAIN SIZE</b> </td> </tr> <tr> <td>U.S. STD. SIEVE SIZE</td> <td>4</td> <td>10</td> <td>40</td> <td>60</td> <td>200</td> <td>270</td> <td colspan="6"></td> </tr> <tr> <td>OPENING (MM)</td> <td>4.76</td> <td>2.0</td> <td>0.42</td> <td>0.25</td> <td>0.075</td> <td>0.053</td> <td colspan="6"></td> </tr> <tr> <td>BOULDER</td> <td>COBBLE</td> <td>GRAVEL</td> <td>COARSE SAND</td> <td>MED. SAND</td> <td>FINE SAND</td> <td>SILT</td> <td>CLAY</td> <td colspan="5"></td> </tr> <tr> <td>GRAIN SIZE IN.</td> <td>12"</td> <td>3"</td> <td>2</td> <td>0.6</td> <td>0.25</td> <td>0.2</td> <td>.05</td> <td colspan="5"></td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>SOIL MOISTURE - CORRELATION OF TERMS</b> </td> </tr> <tr> <td>SOIL MOISTURE SCALE (ATTERBERG LIMITS)</td> <td>PHYSICAL STATE</td> <td>FIELD MOISTURE DESCRIPTION</td> <td>GUIDE FOR FIELD MOISTURE DESCRIPTION</td> <td colspan="9"></td> </tr> <tr> <td>LL - LIQUID LIMIT</td> <td>LIQUID</td> <td>SATURATED</td> <td>VERY WET, USUALLY FROM BELOW GROUND WATER TABLE</td> <td colspan="9"></td> </tr> <tr> <td>PL - PLASTIC LIMIT</td> <td>SEMI-SOLID</td> <td>WET (W)</td> <td>REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE</td> <td colspan="9"></td> </tr> <tr> <td>OM - OPT. MOISTURE</td> <td>SOLID</td> <td>MOIST (M)</td> <td>AT OR NEAR OPTIMUM MOISTURE</td> <td colspan="9"></td> </tr> <tr> <td>SL - SHRINKAGE LIMIT</td> <td></td> <td>DRY (D)</td> <td>REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE</td> <td colspan="9"></td> </tr> <tr> <td>0%</td> <td></td> <td></td> <td></td> <td colspan="9"></td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>PLASTICITY</b> </td> </tr> <tr> <td>NONPLASTIC</td> <td>PLASTICITY INDEX</td> <td>DRY STRENGTH</td> <td colspan="10"></td> </tr> <tr> <td>LOW PLASTICITY</td> <td>0-5</td> <td>VERY LOW</td> <td colspan="10"></td> </tr> <tr> <td>MED. PLASTICITY</td> <td>6-15</td> <td>SLIGHT</td> <td colspan="10"></td> </tr> <tr> <td>HIGH PLASTICITY</td> <td>16-25</td> <td>MEDIUM</td> <td colspan="10"></td> </tr> <tr> <td></td> <td>26 OR MORE</td> <td>HIGH</td> <td colspan="10"></td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>COLOR</b> </td> </tr> <tr> <td colspan="13">                     DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>GRADATION</b> </td> </tr> <tr> <td colspan="13">                     WELL-GRADED INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.                      UNIFORM INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)                      GAP-GRADED INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>ANGULARITY OF GRAINS</b> </td> </tr> <tr> <td colspan="13">                     THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>MINERALOGICAL COMPOSITION</b> </td> </tr> <tr> <td colspan="13">                     MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>COMPRESSIBILITY</b> </td> </tr> <tr> <td colspan="13">                     SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30                      MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50                      HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>ROCK DESCRIPTION</b> </td> </tr> <tr> <td colspan="13">                     IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:                 </td> </tr> <tr> <td>WEATHERED ROCK (HWR) (SWR)</td> <td></td> <td>SOFT WEATHERED ROCK</td> <td>MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. VALUES &gt;100 B.P.F. BUT &lt;S.P.T. REFUSAL.</td> <td colspan="9"></td> </tr> <tr> <td>HARD ROCK (HR)</td> <td></td> <td>HARD WEATHERED ROCK</td> <td>MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. REFUSAL.</td> <td colspan="9"></td> </tr> <tr> <td></td> <td></td> <td>CORED ROCK</td> <td>MATERIAL SUCH THAT IT CANNOT BE PENETRATED BY POWER AUGER, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING SAMPLE.</td> <td colspan="9"></td> </tr> <tr> <td></td> <td></td> <td>INFERRED ROCK LINE</td> <td></td> <td colspan="9"></td> </tr> <tr> <td colspan="13">                     * S.P.T. REFUSAL (ASTM) ≤ 1" OF PENETRATION PER 50 BLOWS.                      AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. WHEN ROCK IS CORED, THE HARD ROCK SYMBOL IS SHOWN TO THE DEPTH CORED. A FULL DESCRIPTION OF ROCK USING APPROPRIATE TERMS (SEE DEFINITION OF TERMS)-INCLUDES PERCENT OF CORE RECOVERY (% REC) AND ROCK QUALITY DESIGNATION (ROD).                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>GROUND WATER</b> </td> </tr> <tr> <td colspan="13">                     DATE: WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING-                      DATE: STATIC WATER LEVEL AFTER 24 HOURS                      DATE: PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA                      SPRING                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>MISCELLANEOUS SYMBOLS AND ABBREVIATIONS</b> </td> </tr> <tr> <td></td> <td colspan="2">ROADWAY EMBANKMENT WITH SOIL DESCRIPTION</td> <td></td> <td colspan="2">ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS</td> <td></td> <td colspan="2">CORE BORING</td> <td></td> <td colspan="3">PIEZOMETER INSTALLATION</td> </tr> <tr> <td></td> <td colspan="2">SOIL SYMBOL</td> <td></td> <td colspan="2">AUGER BORING</td> <td></td> <td colspan="2">TEST BORING</td> <td></td> <td colspan="3">SLOPE INDICATOR INSTALLATION</td> </tr> <tr> <td></td> <td colspan="2">STRIKE AND DIP OF BEDS</td> <td></td> <td colspan="2">INFERRED SOIL BOUNDARIES</td> <td></td> <td colspan="2">SPT N-COUNT</td> <td></td> <td colspan="3">APPARENT DIP (NORMAL TO)</td> </tr> <tr> <td colspan="13">                     SAMPLE DESIGNATION: ST - 3-SHELBY TUBE SAMPLES                      S - BULK SAMPLE                      SS - SPLIT SPOON SAMPLE                      WS - WASH BORING SAMPLE                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>EQUIPMENT USED ON SUBJECT PROJECT</b> </td> </tr> <tr> <td colspan="13">                     DRILL UNITS: <input type="checkbox"/> MOBILE B-52 <input type="checkbox"/> MOBILE B-56 <input checked="" type="checkbox"/> CME - 550 <input type="checkbox"/> PORTABLE HOIST  <input type="checkbox"/> CME - 45B <input type="checkbox"/> MINUTEMAN                 </td> </tr> <tr> <td colspan="13">                     AUGER TOOLS: <input checked="" type="checkbox"/> 6" CONTINUOUS FLIGHT W/ <input type="checkbox"/> HARD FACED FINGER BITS <input checked="" type="checkbox"/> CLAY BITS  <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> TUNG.-CARBIDE INSERTS                      CORE BORING TOOLS: <input type="checkbox"/> -AX <input type="checkbox"/> -BX <input type="checkbox"/> -NX                 </td> </tr> <tr> <td colspan="13">                     HAND TOOLS: <input checked="" type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input checked="" type="checkbox"/> SOUNDING ROD                 </td> </tr> <tr> <td colspan="13" style="text-align: center;"> <b>ABBREVIATIONS</b> </td> </tr> <tr> <td>Boulder - bldr.</td> <td>Organic - org.</td> <td>Clay - cl.</td> <td>Plastic Limit - P.L.</td> <td>Cobble - cob.</td> <td>Plasticity Index - P.I.</td> <td>Coarse - cse.</td> <td>Porosity - n</td> <td>Fine - f.</td> <td>Sand - sd.</td> <td>Fossiliferous - foss.</td> <td>Saturated - sat.</td> <td>Fractured - frac.</td> <td>Silt, Silty - sl.</td> <td>Gravel - gr.</td> <td>Slightly - sli.</td> <td>Liquid Limit - LL</td> <td>Specific Gravity - G<sub>s</sub></td> <td>Medium - med.</td> <td>Unconfined Compressive Strength - qu</td> <td>Moisture Content - w</td> <td>Unit Weight (wet unit weight) - γ</td> <td>Mottled - mot.</td> <td>Dry Unit Weight - γ<sub>d</sub></td> <td>Optimum Moisture - OM</td> <td>Saturated Unit Weight - γ<sub>sat</sub></td> <td>Void Ratio - e</td> <td>Very - V.</td> <td>Estimated - Est.</td> </tr> <tr> <td colspan="13">                     NOTES:                 </td> </tr> </tbody> </table>		GENERAL CLASS.	GRANULAR MATERIALS (35% LESS PASSING NO. 200)						SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)				ORGANIC SOILS			A-1	A-1-a	A-2	A-2-a	A-2-b	A-2-c	A-4	A-5	A-6	A-7	A-1-A-2	A-4-A-5	A-6-A-7	GROUP CLASS.	A-1-a	A-1-b	A-2-1	A-2-2	A-2-3	A-2-4	A-4	A-5	A-6	A-7	A-1-A-2	A-4-A-5	A-6-A-7	SYMBOL														% PASSING											GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT	# 10	50 MX													# 40	30 MX 50 MX 51 MN													# 200	15 MX 25 MX 10 MX 35 MX 35 MX 35 MX 35 MX 36 MN 36 MN 36 MN 36 MN													LIQUID LIMIT	8 MAX.						40 MX 41 MN 40 MX 41 MN 40 MX 41 MN 40 MX 41 MN				WITH LITTLE OR MODERATE AMOUNT OF ORGANIC MATTER			PLASTIC INDEX	N.P.						10 MX 11 MN 11 MN 11 MN 10 MX 10 MX 11 MN 11 MN				HIGHLY ORGANIC SOIL			GROUP INDEX	0						4 MAX.				FAIR TO POOR			USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL & SAND		SILTY OR CLAYEY GRAVEL & SAND		SILTY SOILS		CLAYEY SOILS					GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD						FAIR TO POOR				UNSUITABLE			P.I. OF A-7-6 ≤ L.L. - 30; P.I. 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SAND	FINE SAND	SILT	CLAY						GRAIN SIZE IN.	12"	3"	2	0.6	0.25	0.2	.05						<b>SOIL MOISTURE - CORRELATION OF TERMS</b>													SOIL MOISTURE SCALE (ATTERBERG LIMITS)	PHYSICAL STATE	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION										LL - LIQUID LIMIT	LIQUID	SATURATED	VERY WET, USUALLY FROM BELOW GROUND WATER TABLE										PL - PLASTIC LIMIT	SEMI-SOLID	WET (W)	REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE										OM - OPT. MOISTURE	SOLID	MOIST (M)	AT OR NEAR OPTIMUM MOISTURE										SL - SHRINKAGE LIMIT		DRY (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE										0%													<b>PLASTICITY</b>													NONPLASTIC	PLASTICITY INDEX	DRY STRENGTH											LOW PLASTICITY	0-5	VERY LOW											MED. PLASTICITY	6-15	SLIGHT											HIGH PLASTICITY	16-25	MEDIUM												26 OR MORE	HIGH											<b>COLOR</b>													DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.													<b>GRADATION</b>													WELL-GRADED INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.													<b>ANGULARITY OF GRAINS</b>													THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.													<b>MINERALOGICAL COMPOSITION</b>													MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.													<b>COMPRESSIBILITY</b>													SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50													<b>ROCK DESCRIPTION</b>													IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:													WEATHERED ROCK (HWR) (SWR)		SOFT WEATHERED ROCK	MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. VALUES >100 B.P.F. BUT <S.P.T. REFUSAL.										HARD ROCK (HR)		HARD WEATHERED ROCK	MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. REFUSAL.												CORED ROCK	MATERIAL SUCH THAT IT CANNOT BE PENETRATED BY POWER AUGER, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING SAMPLE.												INFERRED ROCK LINE											* S.P.T. REFUSAL (ASTM) ≤ 1" OF PENETRATION PER 50 BLOWS. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. WHEN ROCK IS CORED, THE HARD ROCK SYMBOL IS SHOWN TO THE DEPTH CORED. 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IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
P.O. BOX 25201  
RALEIGH 27611-5201

JAMES G. MARTIN  
GOVERNOR  
September 8, 1992  
DIVISION OF HIGHWAYS  
WILLIAM G. MARLEY, JR., P.E.  
STATE HIGHWAY ADMINISTRATOR

STATE PROJECT: 6.299001T R-2111A  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44) Interchange  
in Tarboro to East of NC 42

SUBJECT: Geotechnical Report - Inventory

The project consists of upgrading US 64 to a four (4) lane divided facility along a new location. The project begins at the US 64/US 258 interchange at Tarboro and proceeds 9.98 miles in an easterly direction to a point northeast of Conetoe and 0.49 mile east of NC 42. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

Line	Station
-L1- WBL	45+00 to 117+00
-L1- EBL	73+20 to 107+94
-L1-	117+00 to 117+76
-L1- Rev.	117+76 to 202+48
-L1-	202+97 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 59+50

Line	Station
Ramp A Rev.	0+00 to 11+57
Ramp E	12+63 to 28+11

-6-

Physiography and Geology

The project corridor is located in eastern Edgecombe County between Tarboro and a point northeast of Conetoe. Topography is typical of the Coastal Plain Physiographic Province, and ranges from nearly level to moderately sloping. Elevations along the project range from a high of 80± feet at the beginning of the project to a low of 10± feet in the Tar River Channel. Elevations on the Tar River flood plain and adjacent terrace range from 20 to 40 feet M.S.L. The remainder of the project generally lies at an elevation between 40 and 60 feet.

The project corridor is drained by the Tar River and several small tributary streams which include Cromwell Canal, Knight Canal, Mitchell Swamp Canal, Ballahack Canal and Conetoe Creek.

Surface drainage conditions along the project corridor range from poor in the flood plains and nearby level interstream areas to good in areas with moderate topographic relief. However, most of the project generally has only fair to poor surface drainage. In areas with abundant surficial granular soils, much of the water drains by infiltration into the underlying sand.

The geology of the project area generally consists of coastal plain sand and clay beds overlying the Yorktown Formation of Upper Pliocene age and the Cape Fear Formation of Upper Cretaceous age. The Yorktown Formation within the project area typically lies at an elevation of 25 to 35 feet and consists of interbedded marine sands and clays. Thickness of the Yorktown ranges from less than 5 feet to 15 feet or more. The Cape Fear Formation underlies the Yorktown Formation and consists of sand and clay beds of probable deltaic origin.

Ground Water Properties

Ground water data was collected during the fall, winter and spring seasons of 1991-1992 during average rainfall conditions. Ground water is high along most of the project corridor with the water table typically lying at a depth of 6 feet or less. Areas where ground water depths exceed 6 feet are mainly located on the prominent bluff and wide fluvial terrace adjacent to the Tar River.

Soil Properties

Based on origin and occurrence, three main soil groups were encountered along the project corridor.

1. Upland Soils

Most of the upland soils found along the project corridor were formed from sediments deposited by marine, fluvial and eolian action in the geologic past. Upland soils typically consist of fine to

-2-

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	0+00 to 17+89
Ramp B	0+00 to 15+06
Ramp C	0+00 to 22+07
Ramp D	0+00 to 14+48

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	0+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	0+00 to 17+57

Areas of Special Geotechnical Interest

1. The following sections were found to exhibit a high water table seasonal high ground water or the potential for ground water related construction problems:

Line	Station
-L1- WBL	64+50 to 69+00
-L1- WBL	70+00 to 77+25
-L1- WBL	79+50 to 85+00
-L1- WBL	113+00 to 114+00
-L1- EBL	92+00 to 96+50
-L1- EBL	100+00 to 106+00
-L1- Rev.	130+25 to 141+00
-L1- Rev.	161+00 to 175+00

-7-

coarse sand (A-2-4, A-3, A-1-b), clayey sand (A-2-6), sandy silt (A-4) and sandy clay (A-6, A-7-6). The granular soils occur mainly as surficial beds and interbeds with clay. Cohesive soils occur as topsoil, surficial beds and as interbeds with sand. Typically, the granular soils range from a very loose to medium dense compactness and the cohesive soils range in consistency from soft to stiff. Engineering properties generally range from good to excellent for the granular material and from fair to poor for cohesive soils. The clay soils typically have between 50 and 90 percent passing the No. 200 sieve, high moisture contents and plasticity indices ranging from slight to high. Clayey sands (A-2-6) generally exhibit slight to medium plasticity indices.

2. Stream Terrace Soils

Stream terrace soils are found in a band approximately 0.5 miles wide roughly paralleling the eastern boundary of the Tar River flood plain. Granular soils consisting of fine to coarse sand with gravel (A-2-4, A-3, A-1-b) are the predominant soil type in this area. These soils exhibit excellent engineering properties.

3. Flood Plain Soils

Flood plain soils are found associated with major drainage features along the project corridor. Typically, the flood plain soils consist of silty and fine sandy clay (A-6, A-7-5, A-7-6), clayey sandy silt (A-4) and fine to coarse sand (A-2-4, A-1-b). Soils in the Tar River flood plain generally do not have significant organic contents. However, the flood plains of several tributary streams contain soils with slight to moderate organic contents. Engineering properties of flood plain soils are generally poor.

Rootmat in wooded portions of the project averages 0.2 feet in thickness.

Geotechnical Descriptive Analysis of the Project

-L1- WBL Station 45+00 to 81+00  
This segment begins on moderately sloping upland topography west of the Tar River and proceeds in an easterly direction crossing the Tar River and the Tar River flood plain. Soils on the upland section typically consist of 1 to 6 feet or more of very loose to loose (2 to 4 BPF) fine to coarse sand (A-2-4) overlying medium stiff to very stiff (7 to 16 BPF) silty sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 16 to 24 and a natural moisture content of 16 percent. Flood plain soils generally occur from station 65+00 to 81+00± and consist of 1 to 6 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6) underlain by loose to medium dense (7 to 24 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils have plasticity indices which range from 13 to 38. A sample of flood plain clay was tested at 42 percent natural moisture.

-3-

Line	Station
-L1- Rev.	177+50 to 184+50
-L1- Rev.	191+00 to 202+48
-L1-	202+97 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 54+00

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp E	18+50 to 26+00

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	0+00 to 17+89
Ramp B	2+00 to 8+50
Ramp C	11+00 to 15+06
Ramp D	1+00 to 14+00
Ramp C	18+00 to 20+00
Ramp D	0+00 to 2+50
Ramp D	6+00 to 9+00
Ramp D	11+00 to 14+48

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

-8-

The water table generally lies at a depth of 6 feet or more on the upland. In the Tar River flood plain, ground water depths vary considerably depending on rainfall conditions. Typically, either the area is flooded or ground water levels are at a depth of 3 feet or less.

-L1- WBL Station 91+00 to 117+00  
-L1- EBL Station 73+20 to 107+94  
-L1- Station 117+00 to 117+76  
-L1- Rev. Station 117+76 to 185+00

This segment crosses the nearly level to moderately sloping Tar River alluvial terrace. Soils typically consist of very loose to medium dense (2 to 13 BPF) fine to coarse sand with gravel (A-2-4, A-3, A-1-b). The flood plain of a minor tributary stream between -L1- Rev. Station 181+25 and 184+25 contains up to 4 feet of moderately organic (9%) soft silty sandy clay (A-7-5) and very loose (2 BPF) clayey silty sand (A-2-5). The moisture content of a tested organic sample was near 60 percent. Ground water depths through this segment range from less than 1 foot to 6 feet or more.

-L1- Rev. Station 185+00 to 202+48  
-L1- Station 202+97 to 327+00

This segment crosses nearly level to gently sloping topography. Soils typically consist of 0.5 to 3 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) or very loose (2 BPF) sand (A-2-4) underlain by 1 to 5 feet or more of soft to stiff (2 to 11 BPF) silty sandy clay (A-6, A-7-6). The clay soils generally have plasticity indices ranging from 15 to 34, and natural moisture contents of 16 to 32 percent. Loose to medium dense (4 to 20 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) underlies the clay soils. The surficial clay soils are absent in several areas along this segment where there is a slight rise in topographic relief. Very loose to medium dense (3 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) generally occurs in the slightly elevated areas. Ground water depths typically range from 1 to 6 feet through the segment, however, several poorly drained areas often contain standing water.

-L1- Station 327+00 to 367+60

This segment crosses nearly level topography. Soils typically consist of very loose to medium dense (2 to 15 BPF) fine to coarse sand (A-2-4, A-3). Ground water was measured at depths ranging from 4 to 8 feet.

-L1- Station 367+60 to 442+00

This segment crosses nearly level topography. Soils generally consist of 1 to 5 feet of very loose sand (2 BPF) or soft to medium stiff (2 to 4 BPF) clayey sandy silt (A-4) underlain by discontinuous

-4-

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	3	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

-5-

2. The following sections contain surficial clay soils with medium to high plasticity indices:

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	5+00 to 9+00
Ramp B	15+00 to 16+31
Ramp C	0+00 to 18+00
Ramp D	0+00 to 17+92
Ramp D	3+00 to 17+57

US 258 -L- & -Y2- Interchange

Line	Station
-L1- WBL	55+50 to 64+00
-L1- WBL	72+00 to 77+25
-L1- WBL	79+25 to 80+50
-L1- Rev.	185+00 to 200+50
-L1-	207+50 to 222+25
-L1-	225+25 to 231+00
-L1-	249+50 to 259+50
-L1-	261+50 to 275+25
-L1-	283+25 to 293+50
-L1-	299+50 to 327+00
-L1-	371+00 to 375+50
-L1-	419+50 to 435+00
-L1-	439+50 to 442+25
-L1-	450+00 to 502+50
-L1-	546+50 to 554+00

SR 1523 (-Y12-) Interchange

Line	Station
-Y5- Rev.	24+26 to 26+50
-Y12-	12+50 to 20+25
-Y12-	23+00 to 45+00
-Y13- Rev.	28+75 to 32+25
-Y13- Rev.	36+50 to 40+25
-Y15-	8+50 to 14+00
-Y16-	25+00 to 26+50

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A Rev.	1+75 to 11+57
Ramp E	18+00 to 25+75

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	10+50 to 15+00

-8-

beds of medium stiff to stiff (5 to 15 BPF) silty sandy clay (A-6) and very loose to medium dense (2 to 30 BPF) fine to coarse sand (A-2-4, A-3). The surficial silt soils occurring between station 367+60 and 381+50 are slightly organic. The moisture content of a tested silt sample was near 30 percent and organic contents are estimated to be less than 5 percent. Clay soils through this section typically have plasticity indices ranging from 12 to 21 and natural moisture contents of 18 to 33 percent. Ground water depths typically range from 1 foot or less to 6 feet.

-L1- Station 442+00 to 453+00

This segment crosses moderately sloping topography. Soils generally consist of loose to medium dense (7 to 18 BPF) fine to coarse sand (A-2-4). Ground water depths typically range from 4 to 6 feet.

-L1- Station 453+00 to 501+25

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) underlain by interbedded medium stiff to stiff (6 to 11 BPF) silty sandy clay (A-6, A-2-6) and clayey sandy silt (A-4). Loose to medium dense (6 to 16 BPF) sand (A-2-4, A-1-b) underlies the cohesive soils. The clay soils have plasticity indices ranging from 15 to 34 and natural moisture contents of 22 to 26 percent. Ground water depths range from 1 to 6 feet or more.

-L1- Station 501+25 to 528+00

This segment crosses the flood plain of Conetoe Creek. Soils consist of 1 to 7 feet of very soft to soft, dark brown to black, moderately organic (5 to 10 percent), clayey fine sandy silt (A-6) and silty fine sandy clay (A-6, A-7-5, A-7-6). Moisture contents of tested organic samples typically range between 30 and 50 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 250 to 600 psf. An undisturbed (Shelby Tube) sample was taken in the cohesive soil and submitted for Triaxial CU and Consolidation testing. Loose to medium dense sand (A-2-4) underlies the organic soil. This area is either flooded or has ground water at a depth of 1 foot or less.

-L1- Station 528+00 to 554+00

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 to 3 feet of very loose (2 BPF) fine to coarse sand (A-2-4) and soft (3 BPF) clayey sandy silt (A-4) underlain by interbedded very loose to medium dense (2 to 8 BPF) fine to coarse sand (A-2-4, A-3) and medium stiff to stiff (7 to 13 BPF) sandy clay (A-6, A-7-6). The clay soils have plasticity indices ranging from 12 to 21 and natural moisture contents of 16 to 19 percent. Ground water was measured at depths ranging from 1 to 5 feet.

3. The following sections contain slightly to moderately organic soils:

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	8+50 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	8+50 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	1+50 to 8+00
Ramp D	0+00 to 4+50

NC 42 (-Y16-) Interchange

Line	Station
-L1- Rev.	181+25 to 184+25
-L1-	367+60 to 381+50
-L1-	501+25 to 528+00

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 1+50
Ramp D	3+00 to 4+50
Ramp D	6+50 to 7+50

NC 42 (-Y16-) Interchange

Line	Station
Ramp B	0+00 to 14+75
Ramp C	0+00 to 12+75

-9-

-Y5- Rev. Station 24+26 to 29+81

Topography is nearly level. At the beginning of the relocated segment, soils consist of approximately 2 feet of soft to medium stiff fine sandy clay (A-6) underlain by loose to medium dense sand (A-2-4, A-1-b). The clay has a plasticity index of 22 and a moisture content of 35 percent. From station 26+50 to the end of the segment, soils consist of loose to medium dense sand (A-2-4, A-1-b). Ground water was measured at depths ranging from 0.5 to 4.0 feet.

-Y12- Station 12+50 to 45+00

This segment follows the alignment of SR 1523 (Shiloh Road). Soils generally consist of 1 to 3 feet of loose sand (A-2-4) fill underlain by 3 to 5 feet of interbedded medium stiff (7 BPF) sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The cohesive soils are underlain by medium dense (12 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils typically have plasticity indices ranging from 16 to 44 and natural moisture contents of 22 to 33 percent. Ground water was measured at depths ranging from 3 to 8 feet.

-Y13- Rev. Station 10+00 to 59+87

This relocated segment crosses nearly level to very gently sloping topography. Soils typically consist of 1 to 2 feet of very loose, (1 to 2 BPF) fine to coarse sand (A-2-4) or soft sandy silt (A-4) underlain by loose to medium dense (5 to 10 BPF) fine to coarse sand (A-2-4, A-3). Portions of this segment contain interbeds of soft to medium stiff (4 to 5 BPF) silty sandy clay (A-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 13 to 18 and natural moisture contents of 20 to 28 percent. Ground water was measured at depths ranging from 2 to 4 feet.

-Y14- Station 14+00 to 35+50

This segment follows the alignment of SR 1526. Soils generally consist of 1 to 5 feet of loose silty sand, soft sandy silt (2 BPF) and medium stiff sandy clay (A-6) underlain by loose to medium dense (6 to 17 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). Ground water was measured at a depth of 3 to 5 feet.

-Y15- Station 8+50 to 14+89

This segment follows the alignment of SR 1524. Soils typically consist of 2 to 6 feet of loose to medium dense clayey sand (A-2-4) underlain by medium stiff to stiff sandy clay (A-6). Ground water was measured at depths ranging from 4 to 6 feet.

Culverts

Based on available Culvert Survey and Hydraulic Design Reports, reinforced concrete box culverts (RCBC) are proposed at the following locations:

- 1. Cromwell Canal at -L1- Station 264+92
2. Mitchell Swamp Canal at -L1- Station 323+26
3. Ballahack Canal at -L1- Station 399+41
4. Conetoe Creek at -L1- Station 509+28

Borings made in the immediate vicinity of the above sites show that soils underlying the proposed culvert beds consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b).

California Bearing Ratio (CBR) Samples

Bulk samples were taken at the following locations along the project and submitted for testing:

Table with 3 columns: Sample, Station, Depth. Rows include CBR-1 and CBR-2 with their respective station and depth ranges.

Respectively submitted,

EAWitort

E. A. Witort, Project Geologist

-Y16- Station 25+00 to 59+50

This segment follows the alignment of NC 42. Soils typically consist of loose to medium dense clayey fine to coarse sand (A-2-4, A-2-6) with interbeds of very loose (2 BPF) silty sand (A-2-4), soft sandy silt (A-4) and medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

US 258 (-L- & -Y2-) Interchange

Ramp A Rev. Station 0+00 to 11+57

This segment closely parallels existing Ramp A at the US 258 interchange. Soils consist of loose to medium dense fine to coarse sand and clayey sand (A-2-4), stiff clayey sandy silt (A-4) and very stiff sandy silty clay (A-6, A-7-6). The clay has a plasticity index of 41 and a natural moisture content of 27 percent. The water table lies at a depth of 8 feet or more.

Ramp E Station 12+63 to 28+11

This segment crosses a portion of the Tar River flood plain. Soils typically consist of 1 to 7 feet of medium stiff to stiff silty sandy clay (A-6, A-7-5) underlain by medium dense fine to coarse sand (A-2-4, A-1-b). The clay soils typically have plasticity indices ranging from 13 to 38. A sample of clay was tested through this section with natural moisture. Ground water depths through this section vary with the amount of rainfall and the level of the Tar River. During this investigation, ground water depths ranged from 0 to 6 feet or more.

NC 33 (-Y6-) interchange

- Ramp A Station 0+00 to 17+89
Ramp B Station 0+00 to 15+06
Ramp C Station 0+00 to 22+07
Ramp D Station 0+00 to 14+48

This interchange area is located on nearly level to gently sloping topography. Soils typically consist of very loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) with some interbeds of medium stiff to stiff clayey sandy silt (A-4) and silty sandy clay (A-6). Ground water depths range from 2 to 6 feet or more.

SR 1523 (-Y12-) Interchange

Ramp A Station 0+00 to 19+65

This segment crosses nearly level topography. Soils generally consist of 1 1/2 feet of very loose silty sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 2 feet of medium stiff silty sandy clay (A-6, A-7-6), clayey sandy silt (A-4) or clayey sand (A-2-4). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soils typically have plasticity indices of 17 to 28 and natural moisture contents of 24 to 29 percent. Ground water was measured at depths ranging from 0 to 3 feet.



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
P.O. BOX 52201, RALEIGH, NC 27611-5201

JAMES B. HUNT, JR.
GOVERNOR

SAM HUNT
SECRETARY

April 1, 1993

STATE PROJECT: 6.299001T R-2111AA
FEDERAL PROJECT:
COUNTY: Edgecombe
DESCRIPTION: US 64 Relocation East of US 258 (NC 44) Interchange to East of CSX Railroad
SUBJECT: Geotechnical Report - Addendum to Inventory

The project consists of upgrading US 64 to a four (4) lane divided section along a new location. The project begins at the US 258 (NC 44) interchange at Tarboro and proceeds approximately 3 miles in an easterly direction to a point just east of the CSX Railroad and US 64. The investigation of subsurface conditions was confined to the most recent additions and revisions to the US 258 (NC 44) interchange area. The remaining portions of the project are covered in the Inventory Report for Project R-2111A dated September 8, 1992.

The following base lines were investigated:

Table with 2 columns: Line, Station. Rows include -L1- Rev. WBL, -L1- Rev., Ramp E, and Loop F with their respective station ranges.

Areas of Special Geotechnical Interest

- 1. The following sections were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

Table with 2 columns: Line, Station. Rows include Ramp E, Loop F, and Loop F with their respective station ranges.

Ramp B Station 0+00 to 17+83
Ramp C Station 0+00 to 16+44

This segment crosses nearly level topography. Soils typically consist of 1 to 2 feet of soft clayey sandy silt (A-4) underlain by 1 to 5 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6). Medium dense fine to coarse sand (A-2-4) underlies the surficial soils. The clay soils typically have plasticity indices of 16 to 29 and natural moisture contents of 21 to 29 percent. Ground water was measured at depths ranging from 1 to 5 feet.

Ramp D Station 0+00 to 17+98

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of very loose clayey sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 3 feet of soft to medium stiff sandy clay (A-6). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soil has plasticity indices of 16 to 19 and natural moisture contents of 21 to 24 percent. Ground water was measured at a depth of 1 to 3 feet.

SR 1524 (-Y13- Rev.) Interchange

Ramp A Station 0+00 to 17+05

This segment crosses nearly level to very gently sloping topography. Surficial soils consist of 2 1/2 feet of soft slightly organic clayey sandy silt (A-4) to station 1+50ft, and 3 1/2 feet of medium stiff sandy clay (A-6) or clayey sandy silt (A-4) to station 8+00ft. Loose to medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The remaining soils throughout this segment consist of very loose to loose granular deposits (A-2-4). The clay soils have plasticity indices of 12 to 17 and natural moisture contents of 17 to 24 percent. Ground water was measured at depths ranging from 2 to 5 feet.

- Ramp B Station 0+00 to 18+71
Ramp C Station 0+00 to 17+29

This segment crosses nearly level topography. Soils consist of 1 to 2 feet of very loose to loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense fine to coarse sand (A-2-4, A-3). Ground water was measured at a depth of 3 to 5 feet.

Ramp D Station 0+00 to 17+83

This segment crosses nearly level to gently sloping topography. Soils to station 7+50ft typically consist of 0.5 to 3 feet of soft, slightly organic clayey sandy silt (A-4) and very loose silty sand (A-2-4) underlain by medium stiff sandy clay. Loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) underlies the surficial soils. Soils through the remainder of the segment consist of very loose to medium dense fine to coarse sand (A-2-4, A-3). The clay soils have plasticity indices of 13 to 17 and natural moisture contents of 17 to 19 percent. The water table typically lies at a depth of 3 to 4 feet.

- 2. The following sections contain surficial clay soils with medium to high plasticity indices:

Table with 2 columns: Line, Station. Rows include -L1- Rev. WBL, -L1- Rev., Ramp E, and Loop F with their respective station ranges.

Geotechnical Description Analysis of the Project

- L1- Rev. WBL Station 59+00 to 63+02
-L1- Rev. Station 65+54 to 71+00

This segment begins on gently sloping upland topography west of the Tar River and proceeds in an easterly direction crossing the prominent bluff of the Tar River, the Tar River, and a portion of the Tar River flood plain. Soils on the upland section generally consist of 1 to 2 feet of stiff silty fine sandy clay (A-7-6) underlain by beds of medium dense silty sand (A-2-4) and medium stiff to stiff silty fine sandy clay (A-6). The clay soils have plasticity indices of 16 to 29 and natural moisture contents of 18 to 20 percent. Flood plain soils adjacent to the Tar River consist of loose to medium dense sand (A-2-4, A-3) with them interbeds of medium stiff sandy clay (A-6) and clayey sandy silt (A-4). The water table typically occurs at a depth of 6 feet or more on the upland portion, but varies considerably in the flood plain depending on rainfall conditions.

-L1- Rev. Station 71+00 to 100+00

This segment is mainly located on or adjacent to the existing US 64 embankment which crosses a portion of the Tar River flood plain and alluvial terrace. Soils generally consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-6). The water table typically lies at a depth greater than 6 feet.

-L1- Rev. Station 100+00 to 104+00

This segment is located on the Tar River alluvial terrace. Soils consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b). The water table typically lies at a depth of 6 feet or more.

Ramp E Station 16+89 to 30+84

This segment parallels the existing NC 44/US 258 and US 64 embankment which is situated on the Tar River flood plain. The embankment material consists of loose to medium dense sand (A-2-4, A-3, A-1-b). Flood plain soils occurring beneath and adjacent to the embankment typically consist of 1 to 2 feet of loose silty sand (A-2-4) or soft to medium stiff sandy silt (A-4) underlain by 4 to 8 feet of medium stiff to very stiff fine sandy silty clay (A-6). Tested clay samples have plasticity indices of 12 to 18, liquid limits

Table with 3 columns: PROJ. REFERENCE NO., SHEET NO., TOTAL SHEETS. Row 1: 6.299003T, 4, 4. Row 2: STATE PROJ. NO., F.A. PROJ. NO., DESCRIPTION.

NC 42 (-Y16-) Interchange

Ramp A Station 0+00 to 16+31

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 1/2 feet of very loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense silty and clayey fine to coarse sand (A-2-4) with interbeds of medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

Ramp B Station 0+00 to 18+00

This segment is located in the flood plain of Conetoe Creek to station 15+00ft and on very gently sloping upland to station 18+00ft. Flood plain soils generally consist of up to 7 feet of very soft to soft moderately organic (6%) clayey sandy silt (A-4) and silty sandy clay (A-6) underlain by loose to medium dense sand (A-2-4). The moisture content of tested organic samples range from 24 to 65 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 550 to 1400 psf. Upland soils consist of loose to medium dense silty and clayey fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. In the flood plain, water is typically near or at the ground surface.

Ramp C Station 0+00 to 17+92

This segment is located in the flood plain of Conetoe Creek to station 12+75ft and on very gently sloping upland to station 17+92ft. Flood plain soils generally consist of up to 5 feet of very soft to soft moderately organic (10%) clayey sandy silt (A-4) underlain by medium stiff sandy clay, clayey sandy silt, and loose to medium dense fine to coarse sand (A-2-4, A-3). Moisture content of a tested organic sample is near 36 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 600 to 1100 psf. Upland soils consist of very loose to medium dense fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. On the flood plain, water is typically near or at the ground surface.

Ramp D Station 0+00 to 17+57

This segment crosses nearly level topography. Soils consist of 1 1/2 feet of very loose fine to coarse sand (A-2-4) or soft clayey sandy silt (A-4) underlain by interbedded loose to medium dense sand (A-2-4, A-2-6) and medium stiff to stiff silty sandy clay (A-6, A-7-6). The clay soils have plasticity indices of 12 to 21. A sample of clay was tested at 16 percent natural moisture. Ground water depths range from 2 to 6 feet or more.

of 34 to 39 and natural moisture contents of 30 to 32 percent. Vane Shear Tests made in the clay show typical shear strengths of 2000 to 4000 psf. Medium dense sand (A-2-4) underlies the clay soil. Water depths are typically close to the natural ground surface.

Loop F Station 0+00 to 25+29

This segment is located on the Tar River flood plain and includes portions of existing US 64 and (NC 44/US 258) embankments. The embankment material consists of loose to medium dense (4 to 30 BPF) sand (A-2-4, A-3, A-1-b). The flood plain soils consist of interbedded loose to medium dense sand (A-2-4) and soft to very stiff (2 to 24 BPF) silty or fine sandy clay (A-7-5, A-7-6, A-6). The clay (2 to 24 BPF) silty or fine sandy clay (A-7-5, A-7-6, A-6). The clay soils mainly occur as a surficial deposit up to 11 feet thick from station 9+50 to 14+50. Tested clay samples have plasticity indices of 19 to 36, liquid limits of 33 to 52, and natural moisture contents of 29 to 42 percent. In addition, an undisturbed (Shelby Tube) sample was taken in the clay and submitted for Txiaral CU and Consolidation testing. The water table was measured at depths of 1 to 3 feet below the natural ground surface.

Respectfully submitted,

EAWitort

E.A. Witort, Project Geologist

EAW:ths



STATE OF NORTH CAROLINA  
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JAMES B. HUNT, JR.  
GOVERNOR

DIVISION OF HIGHWAYS  
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

SAM HUNT  
SECRETARY

April 1, 1993

STATE PROJECT: 6.299001T R-2111AA  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44) Interchange to East of CSX Railroad

SUBJECT: Geotechnical Report - Addendum to Inventory

The project consists of upgrading US 64 to a four (4) lane divided section along a new location. The project begins at the US 258 (NC 44) interchange at Tarboro and proceeds approximately 3 miles in an easterly direction to a point just east of the CSX Railroad and US 64. The investigation of subsurface conditions was confined to the most recent additions and revisions to the US 258 (NC 44) interchange area. The remaining portions of the project are covered in the Inventory Report for Project R-2111A dated September 8, 1992.

The following base lines were investigated:

Line	Station
-LI- Rev. WBL	59+00 to 63+02
-LI- Rev.	65+54 to 66+50
Ramp E	16+89 to 30+84
Loop F	0+00 to 25+29

Areas of Special Geotechnical Interest

1. The following sections were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

Line	Station
Ramp E	20+00 to 28+50
Loop F	4+50 to 15+50
Loop F	18+00 to 21+75

-2-

2. The following sections contain surficial clay soils with medium to high plasticity indices:

Line	Station
-LI- Rev. WBL	59+00 to 63+02
-LI- Rev.	65+54 to 66+50
Ramp E	20+00 to 27+75
Loop F	9+50 to 14+50

Geotechnical Description Analysis of the Project

-LI- Rev. WBL Station 59+00 to 63+02  
-LI- Rev. Station 65-54 to 71+00

This segment begins on gently sloping upland topography west of the Tar River and proceeds in an easterly direction crossing the prominent bluff of the Tar River, the Tar River, and a portion of the Tar River flood plain. Soils on the upland section generally consist of 1 to 2 feet of stiff silty fine sandy clay (A-7-6) underlain by beds of medium dense silty sand (A-2-4) and medium stiff to stiff silty fine sandy clay (A-6). The clay soils have plasticity indices of 16 to 29 and natural moisture contents of 18 to 20 percent. Flood plain soils adjacent to the Tar River consist of loose to medium dense sand (A-2-4, A-3) with them interbeds of medium stiff sandy clay (A-6) and clayey sandy silt (A-4). The water table typically occurs at a depth of 6 feet or more on the upland portion, but varies considerably in the flood plain depending on rainfall conditions.

-LI- Rev. Station 71+00 to 100+00

This segment is mainly located on or adjacent to the existing US 64 embankment which crosses a portion of the Tar River flood plain and alluvial terrace. Soils generally consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b). The water table typically lies at a depth greater than 6 feet.

-LI- Rev. Station 100+00 to 104+00

This segment is located on the Tar River alluvial terrace. Soils consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b). The water table typically lies at a depth of 6 feet or more.

Ramp E Station 16+89 to 30+84

This segment parallels the existing NC 44/US 258 and US 64 embankment which is situated on the Tar River flood plain. The embankment material consists of loose to medium dense sand (A-2-4, A-3, A-1-b). Flood plain soils occurring beneath and adjacent to the embankment typically consist of 1 to 2 feet of loose silty sand (A-2-4) or soft to medium stiff sandy silt (A-4) underlain by 4 to 8 feet of medium stiff to very stiff fine sandy silty clay (A-6). Tested clay samples have plasticity indices of 12 to 18, liquid limits

-3-

of 34 to 39 and natural moisture contents of 30 to 32 percent. Vane Shear Tests made in the clay show typical shear strengths of 2000 to 4000 psf. Medium dense sand (A-2-4) underlies the clay soil. Water depths are typically close to the natural ground surface.

Loop F Station 0+00 to 25+29

This segment is located on the Tar River flood plain and includes portions of existing US 64 and (NC 44/US 258) embankments. The embankment material consists of loose to medium dense (4 to 30 BPF) sand (A-2-4, A-3, A-1-b). The flood plain soils consist of interbedded loose to medium dense sand (A-2-4) and soft to very stiff (2 to 24 BPF) silty or fine sandy clay (A-7-5, A-7-6, A-6). The clay soils mainly occur as a surficial deposit up to 11 feet thick from station 9+50 to 14+50. Tested clay samples have plasticity indices of 19 to 36, liquid limits of 33 to 52, and natural moisture contents of 29 to 42 percent. In addition, an undisturbed (Shelby Tube) sample was taken in the clay and submitted for Triaxial CU and Consolidation testing. The water table was measured at depths of 1 to 3 feet below the natural ground surface.

Respectfully submitted,

*E.A. Witort*  
E.A. Witort, Project Geologist

EAW:ths

PROJECT 6.299003T R-2111AA COUNTY EDGEcombe SHEET 1 OF 2

STATION	STATION	EXCAVATION			TOTAL	EMBANKMENT			BORROW	WASTE					
		TOTAL UNCLASS	ROCK	SUITABLE EARTH		ROCK	EARTH	EARTH + %		ROCK	SUITABLE	UNSATURABLE			
-LI- Rev. WBL	28200 TO EMBANKMENT														
-LI- Rev. WBL	59+57 L.A.														
-LI- Rev. WBL	65+54 TO 66+50														
-LI- Rev. WBL	66+50 TO 71+00														
Subtotal		18312	18042						0	586					
Ramp E	16+89 TO 30+84	3191	614	963	3142	1458				2545	0	597	963		
Subtotal		9347	614	1549	8912	16044				20857	18042	597	1299		
-LI- Rev. WBL	71+00 TO 100+00	3302	0	330	2972	165430				215059	212657	0	350		
Ramp E	16+89 TO 30+84	5355	0	535	4820	38379				50153	45333	0	535		
Loop F	20+00 TO 27+75	0	0	0	0	216591				281568	281568	0	0		
FLOOD STRIKES	16+89 TO 21+75	78405	0	7840	70565					0	0	70565	7840		
Subtotal		87128	0	3712	73416	410273				546556	538504	70565	8712		
-LI- Rev. WBL	100+00 TO 130+00	30218	0	3022	27196	97714				117028	97135	0	3022		
-LI- Rev. WBL	130+00 TO 148+00	57	0	5	49	283757				362834	368835	0	5		
-LI- Rev. WBL	148+00 TO 165+50	2399	0	300	2699	15680				20384	11680	0	300		
-LI- Rev. WBL	165+50 TO 184+50	0	0	0	0	6572				8544	8344	0	0		
-LI- Rev. WBL	184+50 TO 21+32	528	0	53	475	14046				18325	17850	0	53		
-LI- Rev. WBL	21+32 TO 27+75	572	153	204	461	987				1785	825	726	204		
-LI- Rev. WBL	27+75 TO 33+52	815	0	81	734	0				0	0	0	0		
Subtotal		335	0	33	302	1162				14511	14309	0	33		
Subtotal		5293	153	676	4720	332260				431999	421445	726	676		
SHEET TOTAL		132616	767	14027	111100	865631				1125377	1077908	71880	14027		

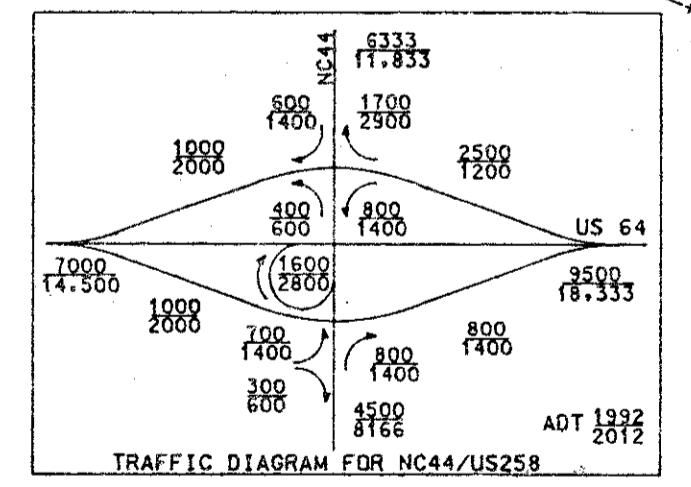
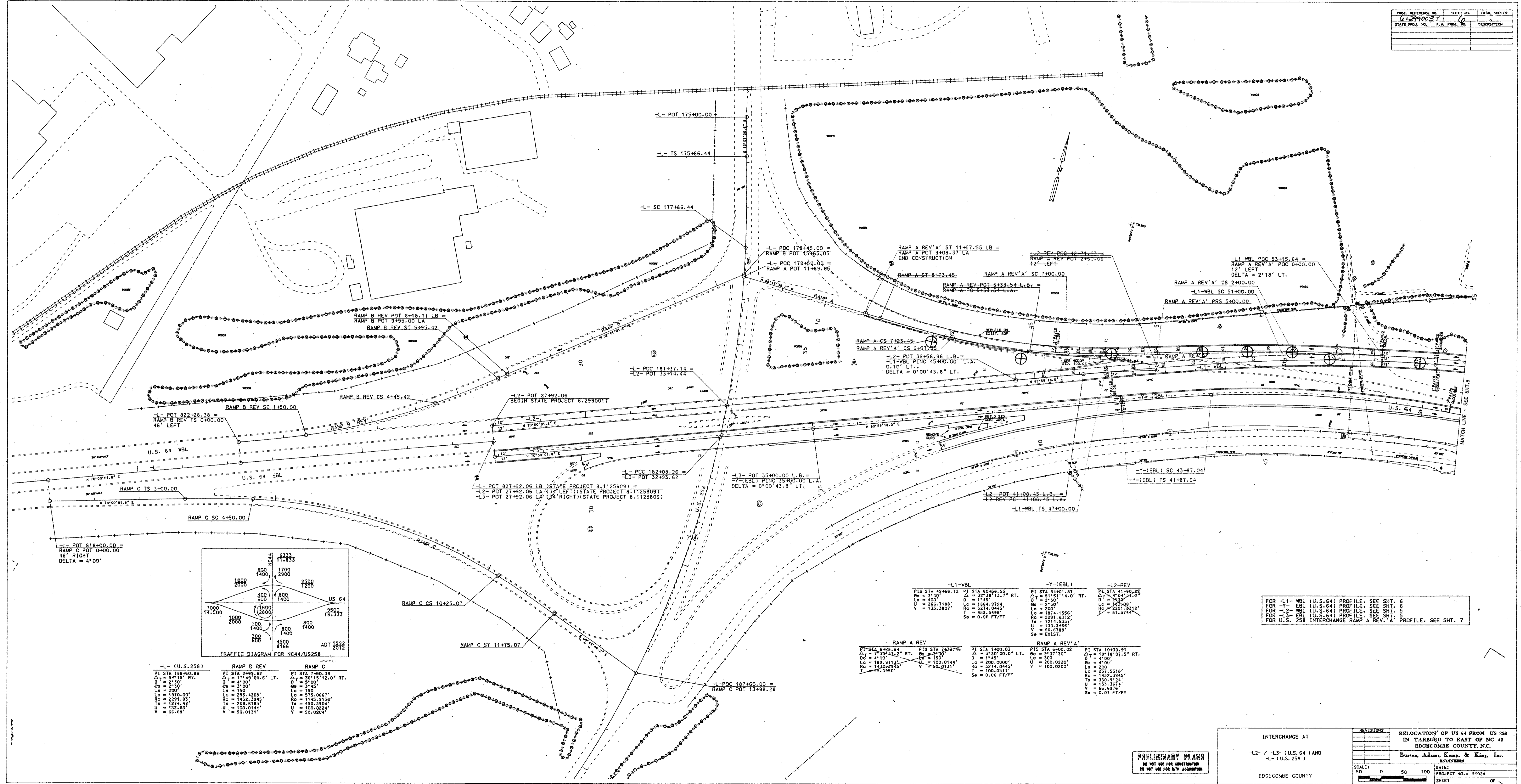
PROJECT 6.299003T R-2111AA COUNTY EDGEcombe SHEET 2 OF 2

STATION	STATION	EXCAVATION			TOTAL	EMBANKMENT			BORROW	WASTE					
		TOTAL UNCLASS	ROCK	SUITABLE EARTH		ROCK	EARTH	EARTH + %		ROCK	SUITABLE	UNSATURABLE			
-LI- Rev. WBL	149+32 TO 180+00	1253	0	165	1128	287858				374215	373087	0	1253		
-LI- Rev. WBL	180+00 TO 184+50	789	0	71	638	8727				11345	10707	0	71		
-LI- Rev. WBL	184+50 TO 194+00	407	0	41	366	4442				5775	5409	0	41		
Subtotal		2349	0	237	2132	301027				391335	389203	0	237		
-LI- Rev. WBL	194+00 TO 200+00	0	0	0	0	270706				351918	351918	0	0		
-LI- Rev. WBL	200+00 TO 210+00	0	0	0	0	86850				108355	108355	0	0		
-LI- Rev. WBL	210+00 TO 220+00	153	0	15	138	26075				38895	38757	0	15		
Subtotal		153	0	15	138	109423				142250	142112	0	15		
EMULSION REMOVAL		850	0	82	768	0				0	0	768	82		
REMOVAL OF SURFACE		3130	0	313	2817	4083				5208	249	0	313		
REMOVAL OF ASPHALT		737	0	74	663	0				0	0	663	74		
REMOVAL OF CURB		210	0	21	189	0				0	0	189	21		
Subtotal		5657	0	564	5093	4083				5808	249	768	564		
SHEET TOTAL		8119	0	812	7301	655239				810211	805724	0	812		
GRAND TOTAL		140795	1767	18445	126717	1557893				2095213	1995945	71880	18445		
SAY		140800	1800							1995980					

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PROJ. REFERENCE NO.	0	SHEET NO.	10	TOTAL SHEETS	10
STATE PROJ. NO.	4-29903	F.A. PROJ. NO.		DESCRIPTION	



L- (U.S. 258)	RAMP B REV	RAMP C
PI STA 188+60.86	PI STA 2499.62	PI STA 7+50.33
Δ = 54'15" RT.	Δ = 17'49" 00.0" LT.	Δ = 36'15" 12.0" RT.
OB = 2'30"	OB = 4'00"	OB = 3'00"
DB = 2'30"	DB = 3'00"	DB = 3'45"
LB = 200'	LB = 150'	LB = 150'
LO = 1970.00'	LO = 235.4208'	LO = 573.0667'
RO = 2291.83'	RO = 1432.3845'	RO = 1145.9156'
TE = 1274.42'	TE = 223.6183'	TE = 450.3004'
U = 133.65'	U = 100.0144'	U = 100.0224'
V = 62.68'	V = 50.0131'	V = 50.0204'

-L1-WBL	-Y-(EBL)	-L2-REV
PI STA 49+66.72	PI STA 34+01.37	PI STA 41+50.00
OB = 3'30"	Δ = 31'51" 14.0" RT.	Δ = 4'04" 34.5" RT.
DB = 4'00"	D = 2'30"	D = 2'30"
U = 266.1188'	LB = 1864.9794'	LB = 250'
V = 133.3807'	RO = 3274.0445'	RO = 2351.3412'
	T = 254.5466'	TE = 81.5744'
	Sa = 0.06 FT/FT	Sa = EXIST.

RAMP A REV	RAMP A REV' A'
PI STA 6+28.64	PI STA 6+00.02
Δ = 3'55" 42.2" RT.	Δ = 3'00" 00.0" LT.
OB = 4'00"	OB = 1'45"
DB = 183.9113'	DB = 150.0144'
V = 132.2955'	V = 50.0131'
T = 95.0350'	T = 100.0317'
	Sa = 0.06 FT/FT

FOR -L1- WBL (U.S. 64) PROFILE, SEE SHT. 6  
 FOR -Y- EBL (U.S. 64) PROFILE, SEE SHT. 6  
 FOR -L2- WBL (U.S. 64) PROFILE, SEE SHT. 6  
 FOR -L3- EBL (U.S. 64) PROFILE, SEE SHT. 6  
 FOR U.S. 258 INTERCHANGE RAMP A REV' A' PROFILE, SEE SHT. 7

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR B/V ACQUISITION

INTERCHANGE AT  
 -L2- / -L3- (U.S. 64) AND  
 -L- (U.S. 258)  
 EDGEcombe COUNTY

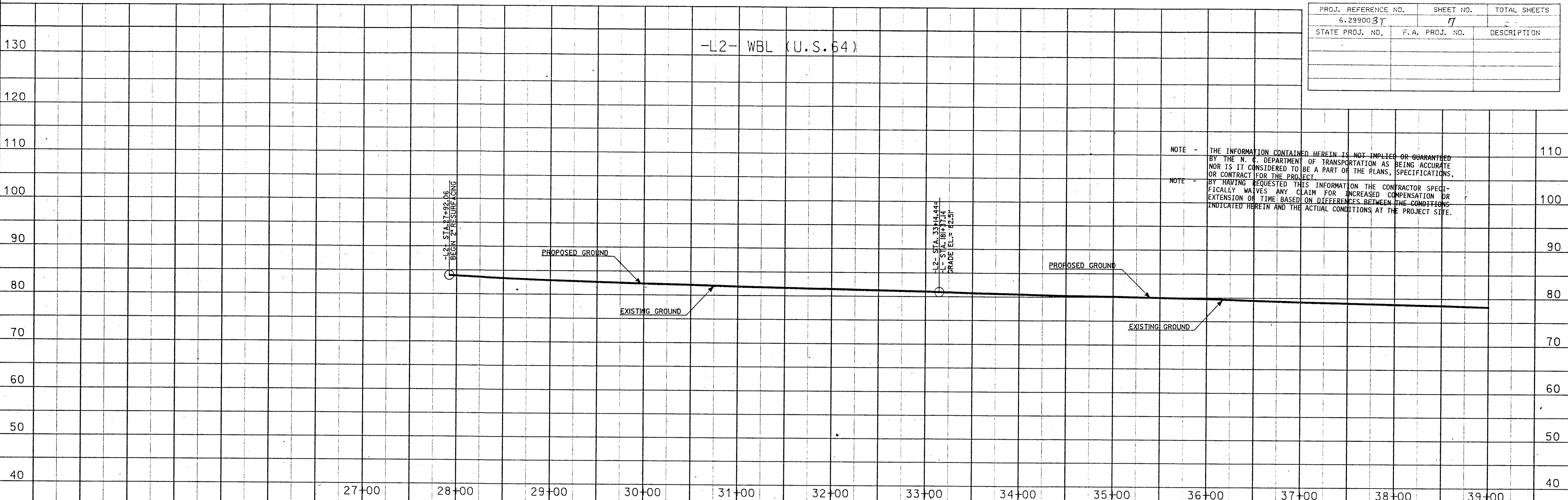
REVISIONS

RELOCATION OF US 64 FROM US 358 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, NC.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 1" = 40'

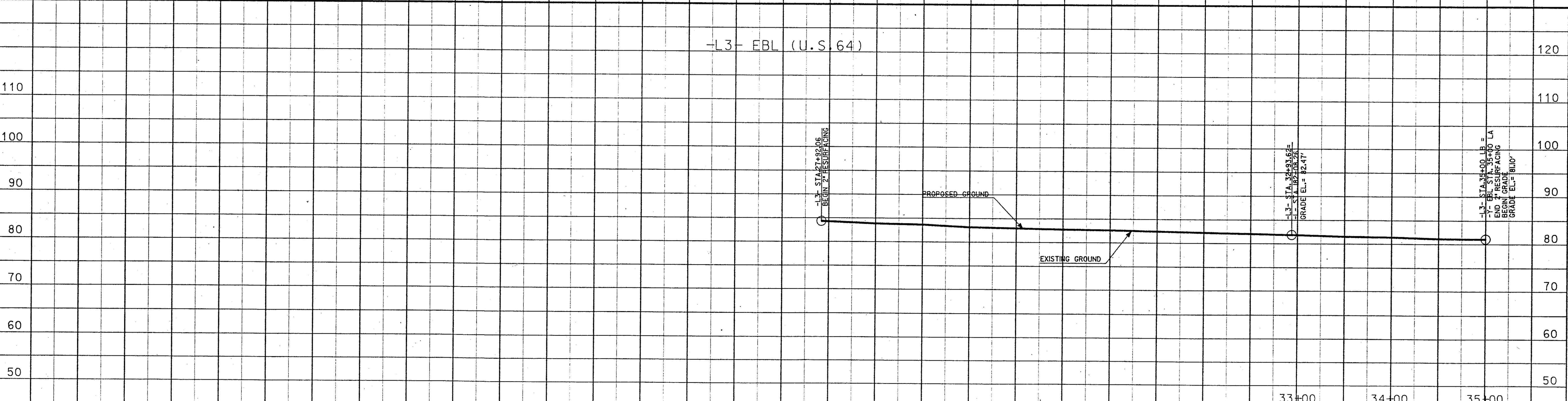
DATE: PROJECT NO. 1 91024  
 SHEET 10 OF 10  
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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	7	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



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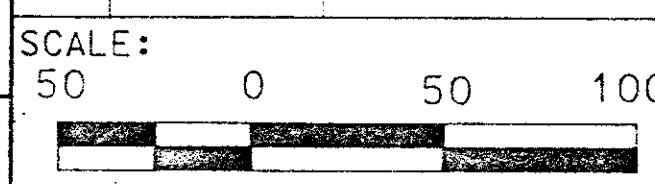


**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

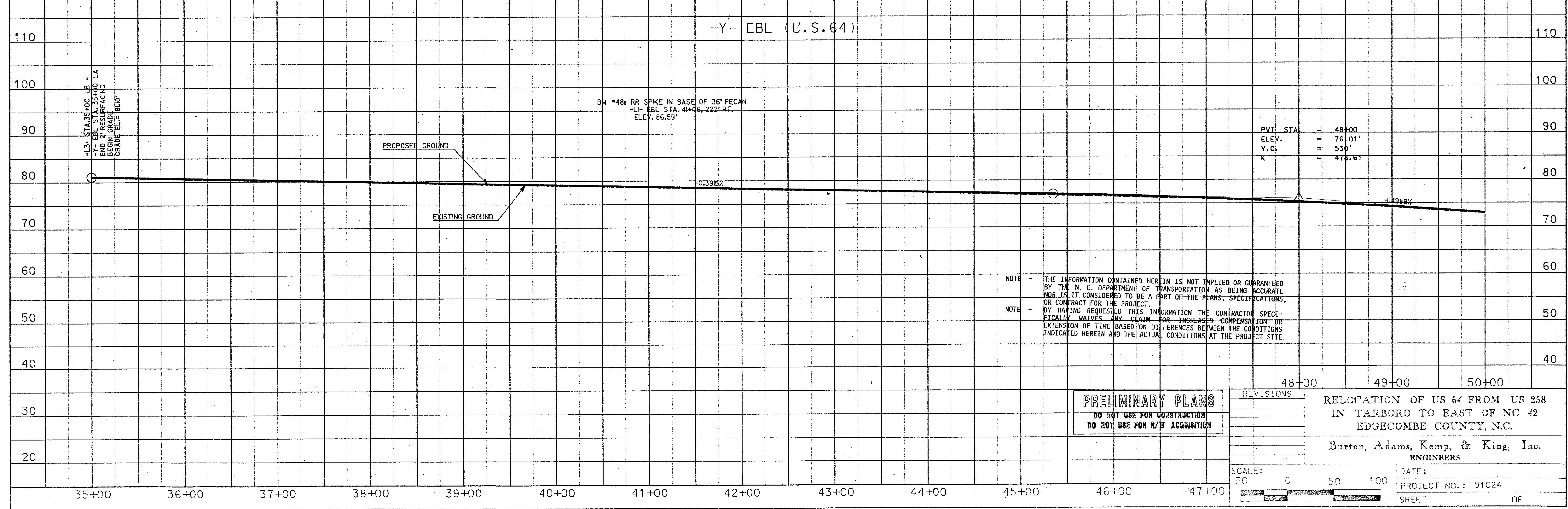
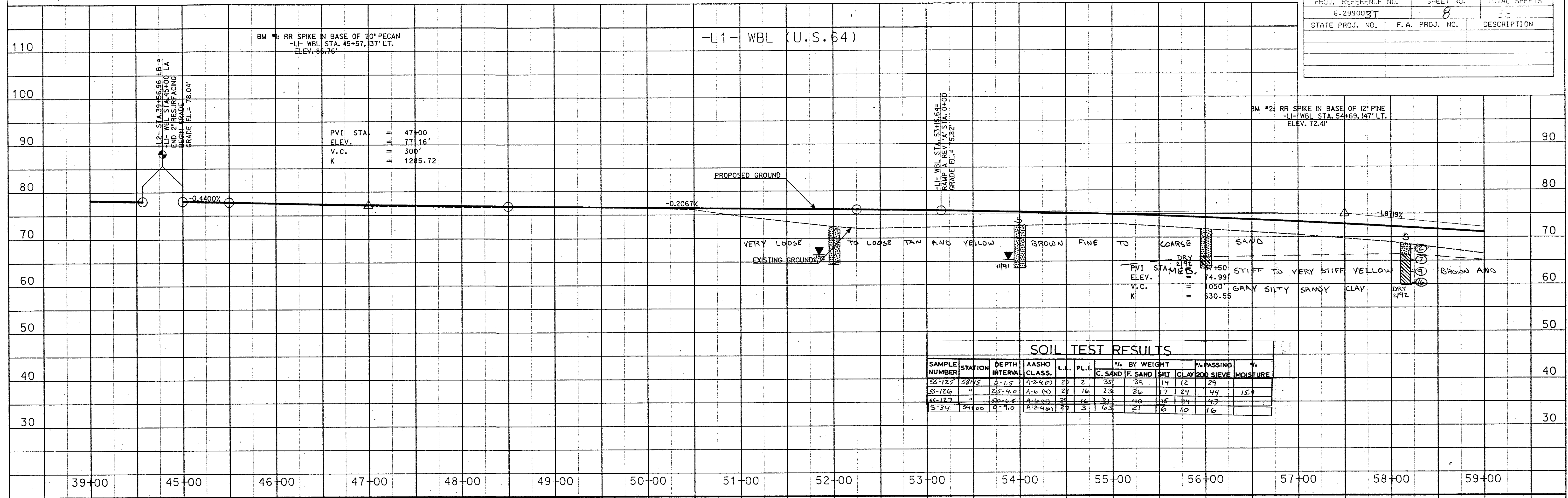
RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	8	10
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

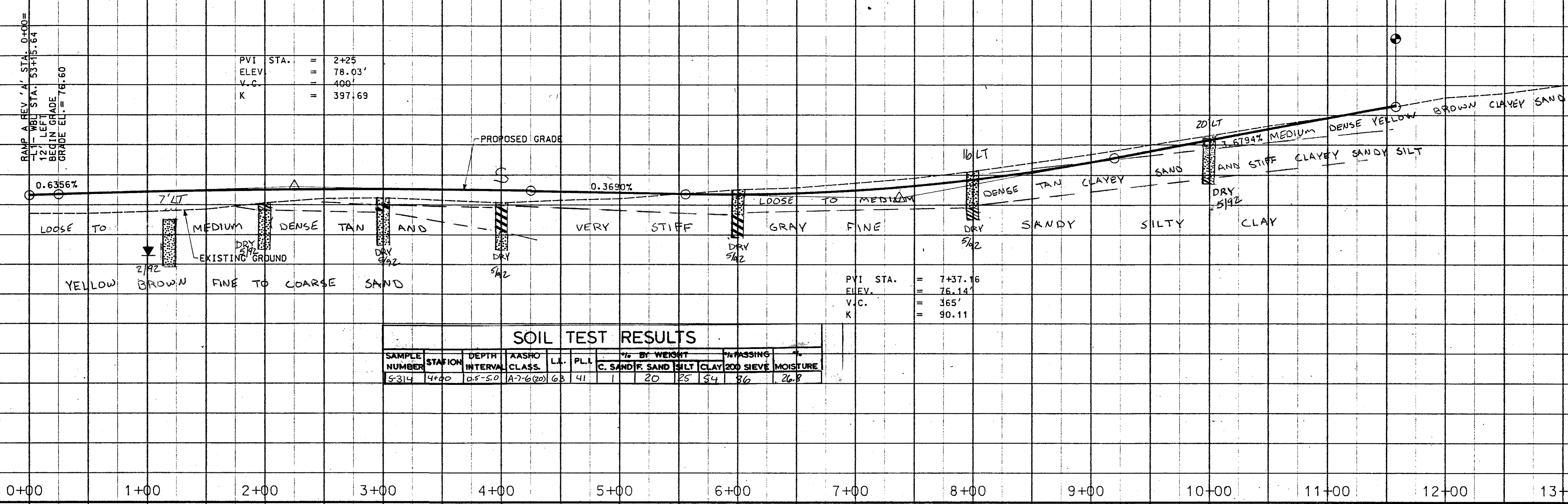
SCALE: 1" = 50'

DATE: PROJECT NO.: 91024 SHEET 8 OF 10

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	9	95
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

U.S. 258 INTERCHANGE RAMP A REV 'A'

RAMP A REV 'A' STA. 11+57.55 LB =  
 RAMP A STA. 9+08.37 LA  
 END GRADE  
 GRADE EL. = 91.61'



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	CLASS.	L.L.	P.L.L.	% BY WEIGHT				% PASSING 200 SIEVE	MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5314	4+00	0.5'-5.0'	A-7-6(20)	68	141	1	20	25	54	86	26.8

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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF

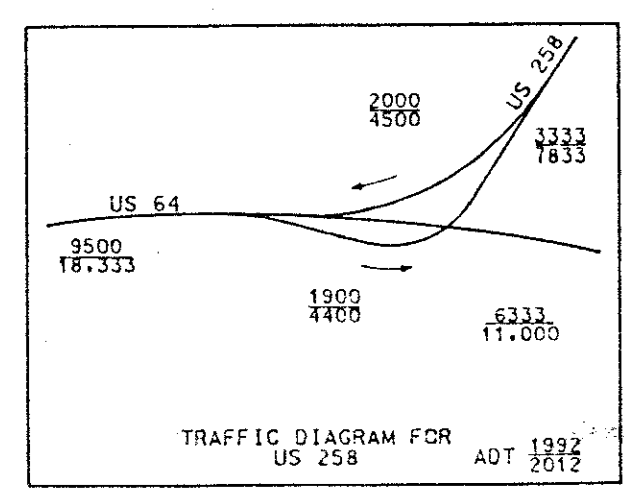
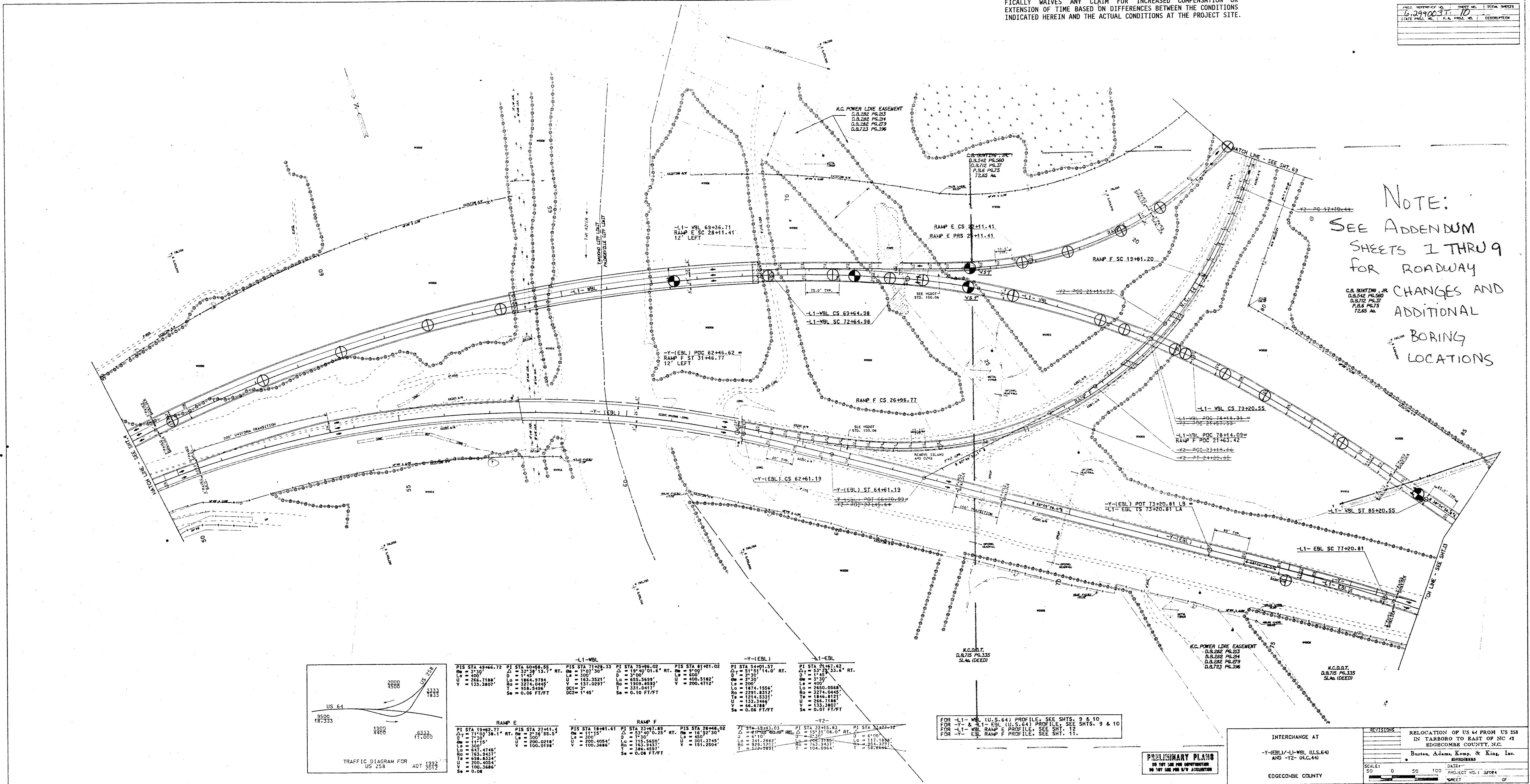


Note: See Addendum

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PROJECT NUMBER	6,299,003	SHEET NO.	10	TOTAL SHEETS	
STATE PROJECT NO.		F.A. PROJECT NO.		DESCRIPTION	

NOTE:  
 SEE ADDENDUM SHEETS 1 THRU 9 FOR ROADWAY CHANGES AND ADDITIONAL BORING LOCATIONS



-L1-WBL		-Y-(EBL)		-L1-EBL	
PI STA 49+66.72	PI STA 60+48.35	PI STA 71+28.33	PI STA 75+96.02	PI STA 81+91.57	PI STA 81+91.57
LS = 300'	LS = 300'	LS = 300'	LS = 300'	LS = 300'	LS = 300'
LO = 1884.9784	LO = 1884.9784	LO = 1884.9784	LO = 1884.9784	LO = 1884.9784	LO = 1884.9784
RO = 3274.0445	RO = 3274.0445	RO = 3274.0445	RO = 3274.0445	RO = 3274.0445	RO = 3274.0445
U = 266.1188'	U = 266.1188'	U = 266.1188'	U = 266.1188'	U = 266.1188'	U = 266.1188'
V = 133.3807'	V = 133.3807'	V = 133.3807'	V = 133.3807'	V = 133.3807'	V = 133.3807'
Se = 0.06 FT/FT	Se = 0.06 FT/FT	Se = 0.06 FT/FT	Se = 0.06 FT/FT	Se = 0.06 FT/FT	Se = 0.06 FT/FT

FOR -L1-WBL (U.S. 64) PROFILE, SEE SHTS. 9 & 10  
 FOR -Y- & -L1-EBL (U.S. 64) PROFILE, SEE SHTS. 9 & 10  
 FOR -L1-WBL RAMP E PROFILE, SEE SHT. 12  
 FOR -Y-EBL RAMP F PROFILE, SEE SHT. 11.

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION

INTERCHANGE AT  
 -Y-(EBL)/-L1-WBL (U.S. 64)  
 AND -Y2-(U.S. 44)  
 EDGEcombe COUNTY

REVISIONS	RELOCATION OF US 44 FROM US 558 IN TARBORO TO EAST OF NC 41 EDGEcombe COUNTY, N.C.
DATE	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE	PROJECT NO.: 51004
50 0 50 100	SHEET

Note: See Addendum.

-L1- WBL (U.S. 64 WBL)

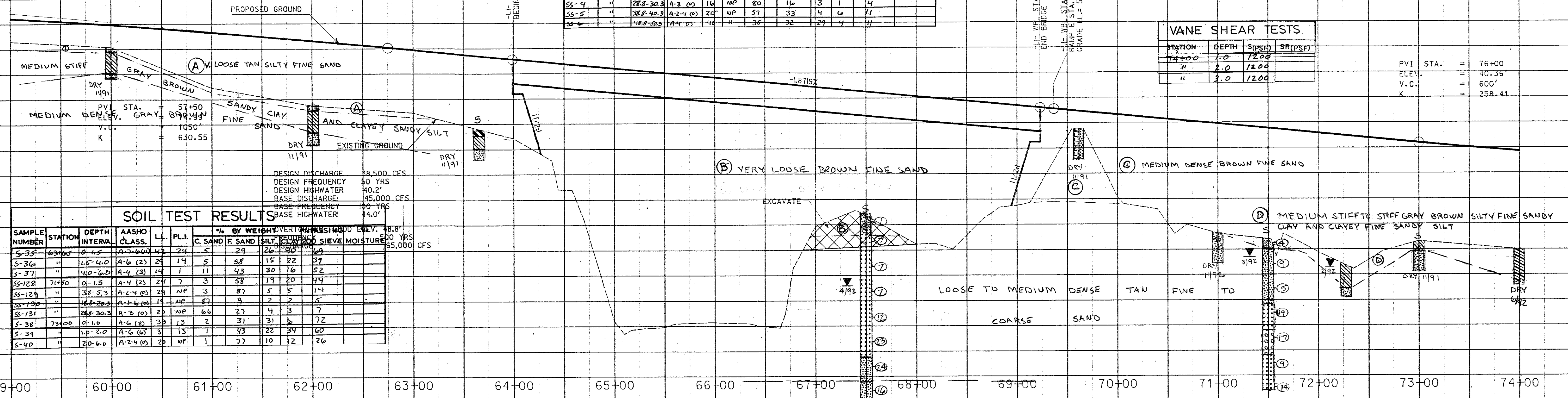
**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY	
SS-1	67+50	0-1.5	A-2-4 (M)	19	NP	2	82	3	3	13
SS-2	"	8'-10.3	A-3 (C)	17	NP	7	84	5	4	10
SS-3	"	18'-8-20.3	A-3 (C)	16	NP	56	41	2	1	4
SS-4	"	28'-8-30.3	A-3 (C)	16	NP	80	16	3	1	4
SS-5	"	38'-7-40.3	A-2-4 (C)	20	NP	57	33	4	6	11
SS-6	"	48'-8-50.3	A-4 (C)	40	11	35	32	29	4	11

**VANE SHEAR TESTS**

STATION	DEPTH	SI (PSF)	SR (PSF)
71+00	1.0	1200	
"	2.0	1200	
"	3.0	1200	

PVI STA. = 76+00  
 ELEV. = 40.36'  
 V.C. = 600'  
 K = 258.41



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY	
S-35	63+65	0-1.5	A-2-4 (M)	19	NP	2	82	3	3	13
S-36	"	1.5-4.0	A-6 (2)	24	14	5	58	15	22	39
S-37	"	4.0-6.0	A-4 (3)	14	1	11	43	30	16	52
SS-128	71+50	0-1.5	A-4 (2)	24	7	3	58	19	20	14
SS-129	"	3'-5.3	A-2-4 (C)	21	NP	3	87	5	5	14
SS-130	"	18'-8-20.3	A-2-4 (C)	14	NP	87	9	2	2	5
SS-131	"	28'-8-30.3	A-3 (C)	20	NP	66	27	4	3	7
S-38	73+00	0-1.0	A-6 (2)	30	13	2	31	31	16	72
S-39	"	1.0-2.0	A-6 (2)	31	13	1	43	22	34	60
S-40	"	2.0-6.0	A-2-4 (M)	20	NP	1	77	10	12	26

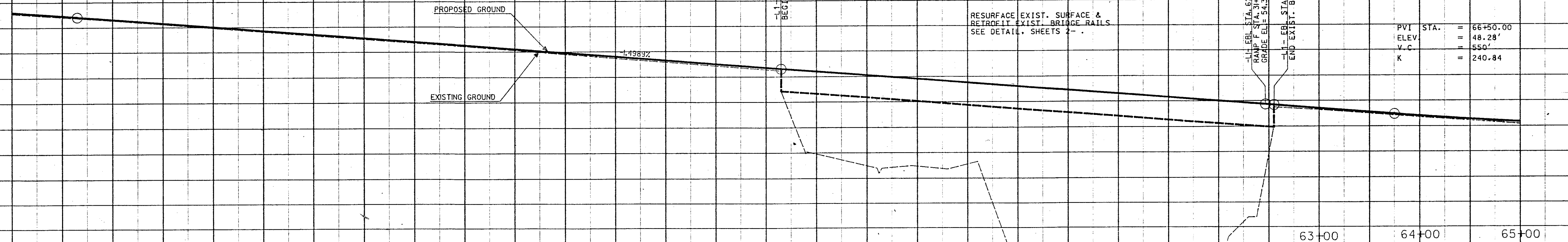
DESIGN DISCHARGE 38,500 CFS  
 DESIGN FREQUENCY 50 YRS  
 DESIGN HIGHWATER 40.2'  
 BASE DISCHARGE 45,000 CFS  
 BASE FREQUENCY 100 YRS  
 BASE HIGHWATER 44.0'

PVI STA. = 48+00  
 ELEV. = 76.01'  
 V.C. = 530'  
 K = 478.61

BM #4 RR SPIKE IN BASE OF 18" PINE  
 -L1- EBL STA. 52+07.109 RT.  
 ELEV. 76.95'

-L1- EBL (U.S. 64 EBL) (CAPE FEAR FORMATION)

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PVI STA. = 66+50.00  
 ELEV. = 48.28'  
 V.C. = 550'  
 K = 240.84

RESURFACE EXIST. SURFACE & RETROFIT EXIST. BRIDGE RAILS SEE DETAIL, SHEETS 2--

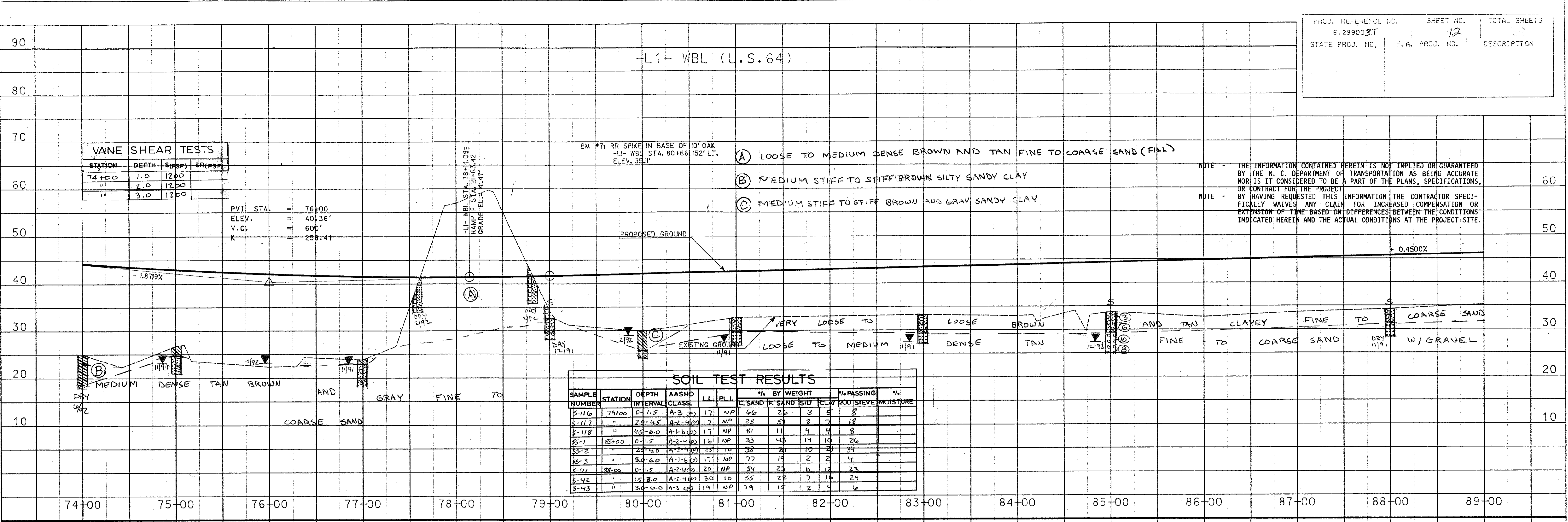
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

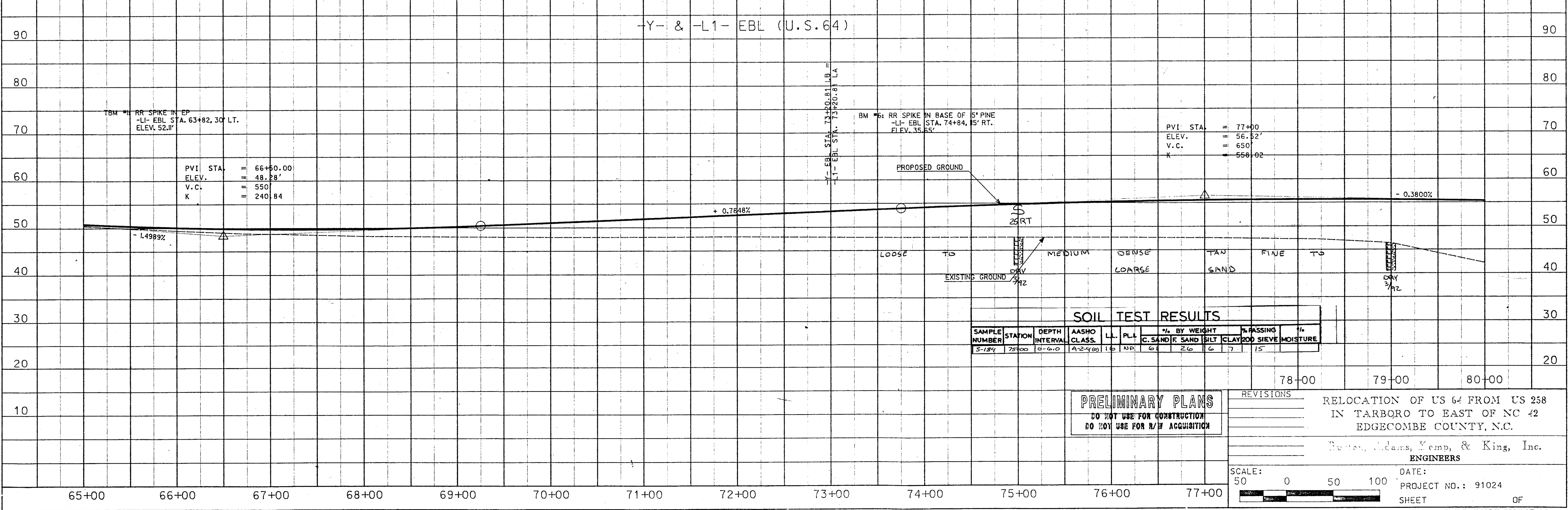
RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 1" = 50'  
 0 50 100

DATE: PROJECT NO.: 91024  
 SHEET OF



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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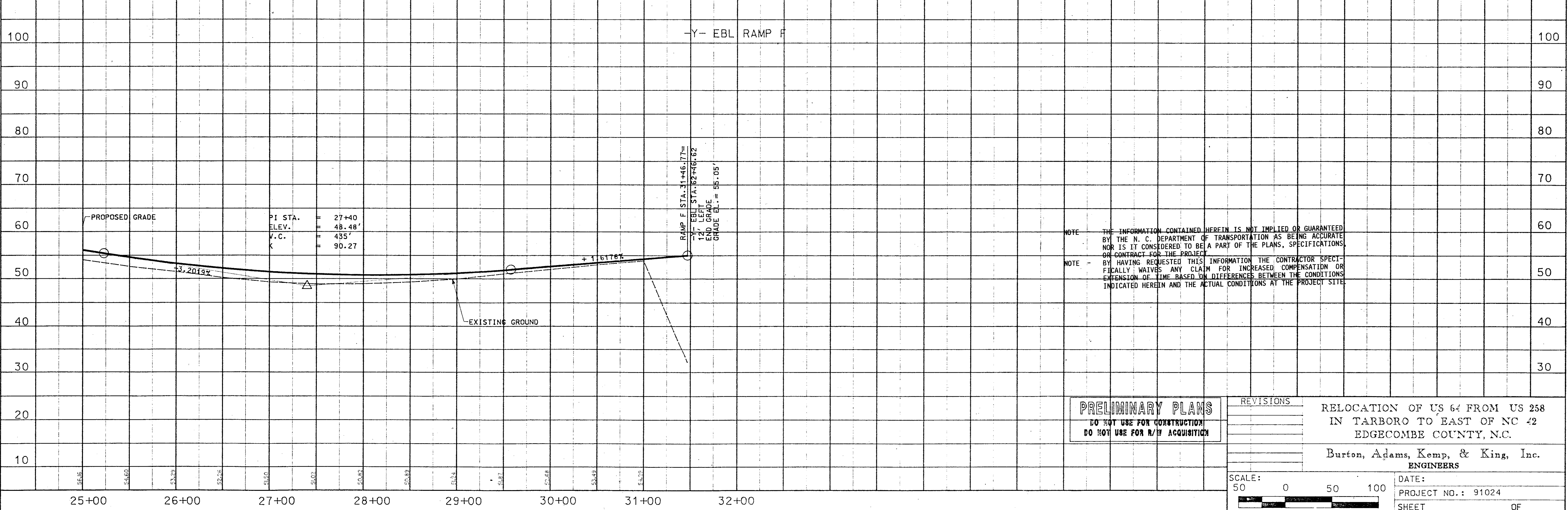
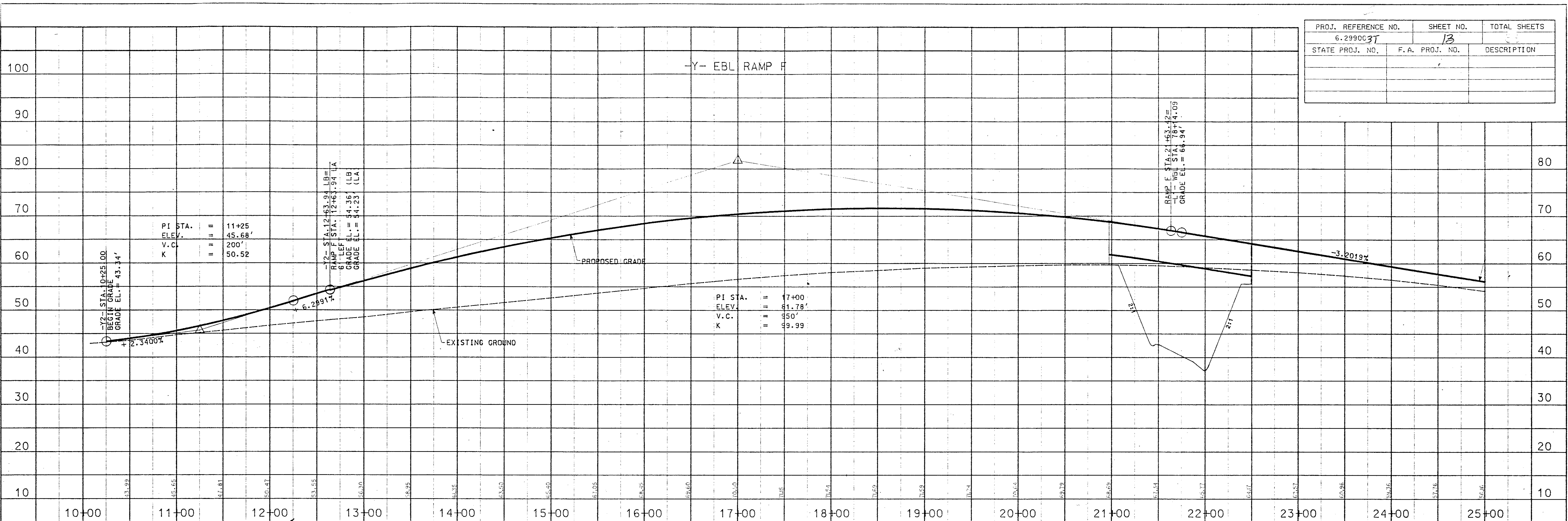


**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS  
 RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Guyton, Adams, Kemp, & King, Inc.  
**ENGINEERS**

SCALE: 50 0 50 100  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	13	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

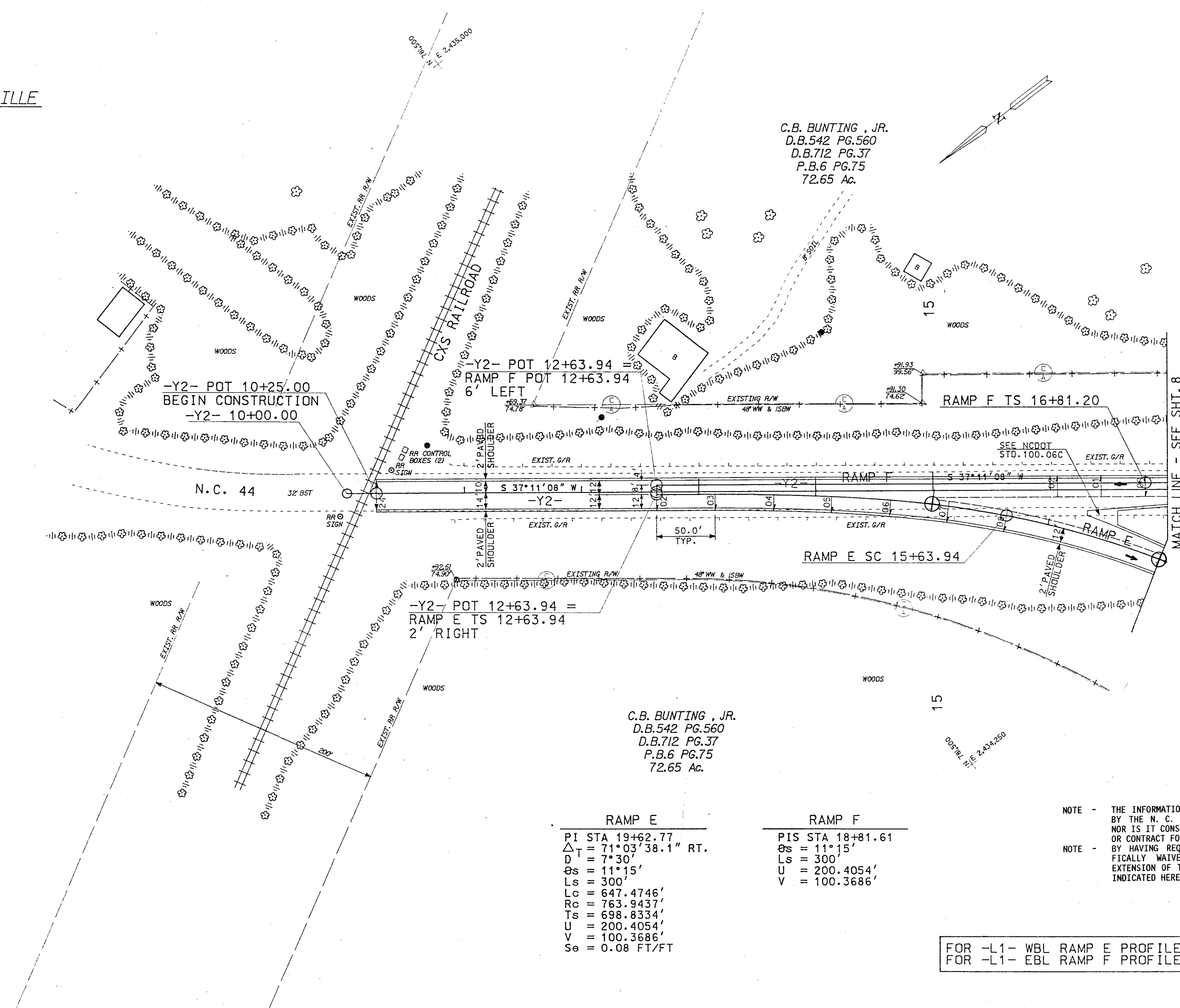
RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 1" = 50'  
 0 50 100

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	14	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

PRINCEVILLE



**RAMP E**  
 PI STA 19+62.77  
 $\Delta T = 71^{\circ}03'38.1''$  RT.  
 D = 7\*30'  
 $\phi_s = 11^{\circ}15'$   
 Ls = 300'  
 Lc = 647.4746'  
 Rc = 763.9437'  
 Ts = 698.8334'  
 U = 200.4054'  
 V = 100.3686'  
 Se = 0.08 FT/FT

**RAMP F**  
 PIS STA 18+81.61  
 $\phi_s = 11^{\circ}15'$   
 Ls = 300'  
 U = 200.4054'  
 V = 100.3686'

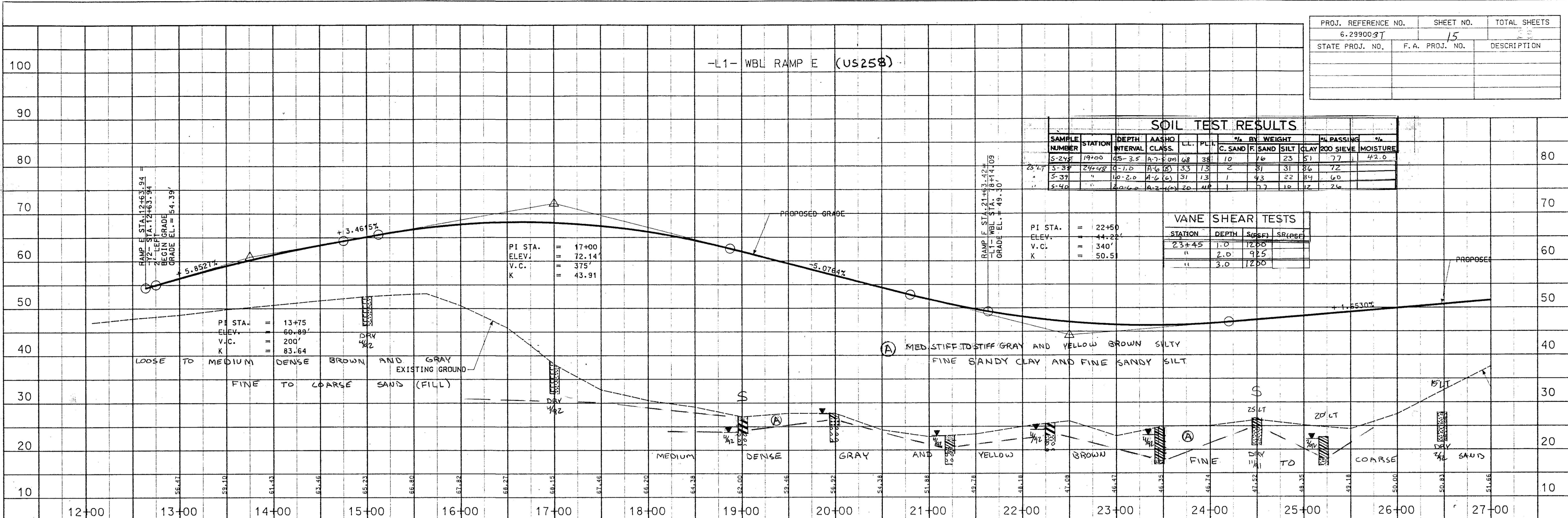
NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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FOR -L1- WBL RAMP E PROFILE, SEE SHT. 12  
 FOR -L1- EBL RAMP F PROFILE, SEE SHT. 11

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

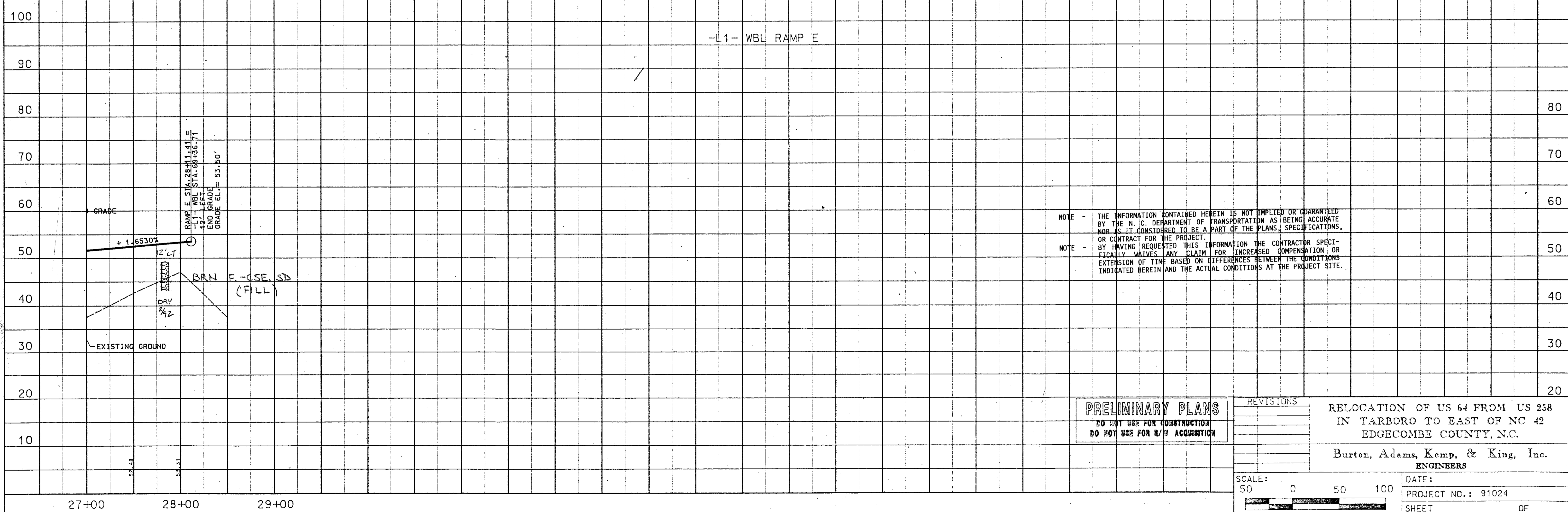
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	15	20
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% C. SAND	% F. SAND	% SILT	% CLAY	% PASSING 200 SIEVE	% MOISTURE
S-24T	19+00	45-3.5	A-7.5(0)	68	38	10	16	23	51	77	42.0
S-37	24+48	0-1.0	A-7.6(3)	33	13	2	81	31	86	72	
S-39	"	10-2.0	A-7.6(3)	31	13	1	43	22	84	60	
S-40	"	20-4.0	A-2.5(1)	20	14	1	77	10	12	76	

STATION	DEPTH	S <sub>u</sub> (psf)	S <sub>r</sub> (psf)
23+45	1.0	1250	
"	2.0	925	
"	3.0	1200	

PI STA. = 22+50  
 ELEV. = 44.22'  
 V.C. = 340'  
 K = 50.51



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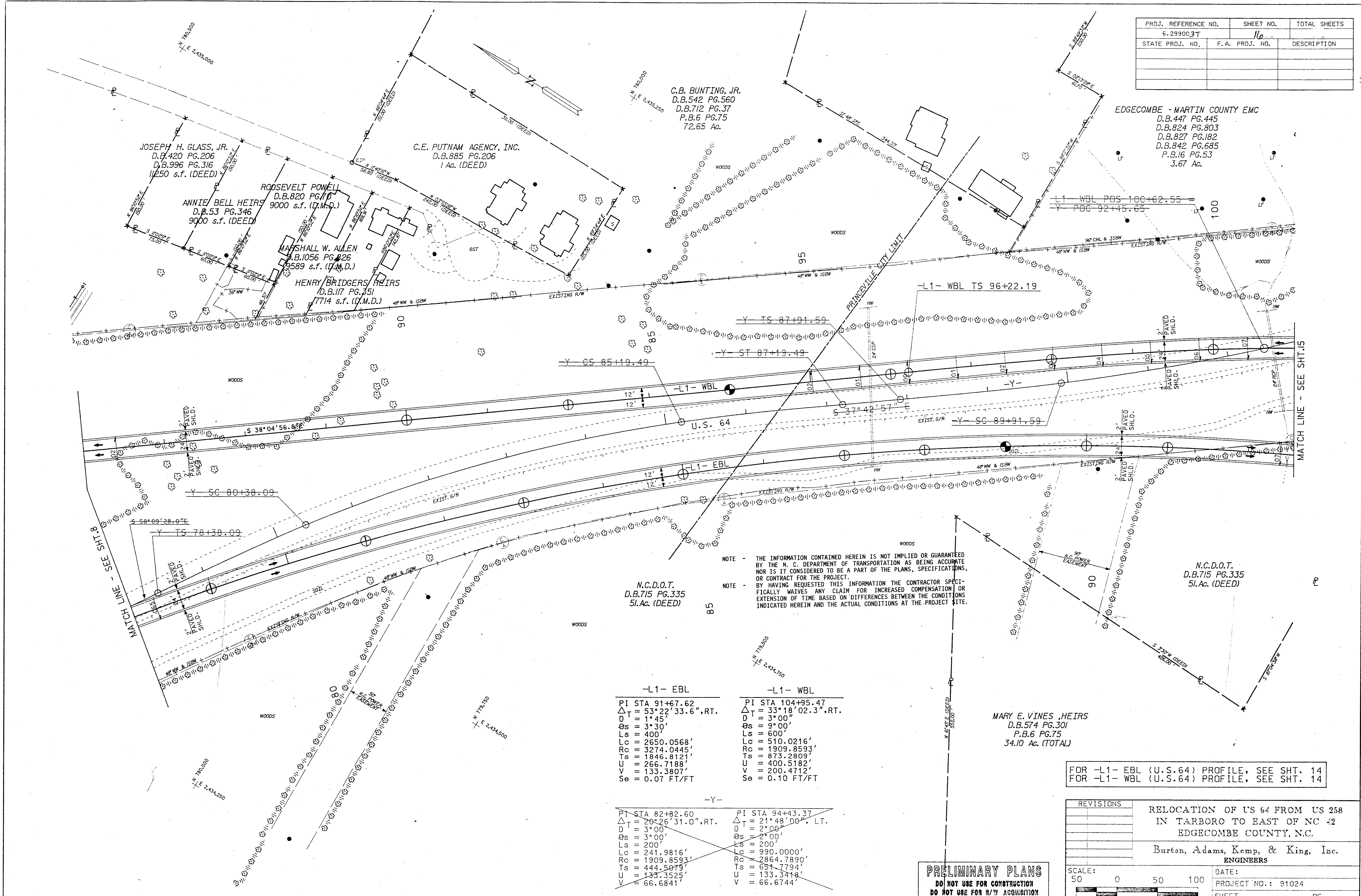
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 0 50 100  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	16	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



C.B. BUNTING, JR.  
D.B.542 PG.560  
D.B.712 PG.37  
P.B.6 PG.75  
72.65 Ac.

JOSEPH H. GLASS, JR.  
D.B.420 PG.206  
D.B.996 PG.316  
1250 s.f. (DEED)

ANNIE BELL HEIRS  
D.B.53 PG.346  
9000 s.f. (DEED)

ROOSEVELT POWELL  
D.B.820 PG.110  
9000 s.f. (D.M.D.)

MARSHALL W. ALLEN  
D.B.1056 PG.426  
9589 s.f. (D.M.D.)

HENRY BRIDGERS HEIRS  
D.B.117 PG.351  
7714 s.f. (D.M.D.)

C.E. PUTNAM AGENCY, INC.  
D.B.885 PG.206  
1 Ac. (DEED)

EDGECOMBE - MARTIN COUNTY EMC  
D.B.447 PG.445  
D.B.824 PG.803  
D.B.827 PG.182  
D.B.842 PG.685  
P.B.16 PG.53  
3.67 Ac.

N.C.D.O.T.  
D.B.715 PG.335  
51 Ac. (DEED)

MARY E. VINES HEIRS  
D.B.574 PG.301  
P.B.6 PG.75  
34.10 Ac. (TOTAL)

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N.C.D.O.T.  
D.B.715 PG.335  
51 Ac. (DEED)

-L1- EBL  
PI STA 91+67.62  
 $\Delta T = 53^{\circ}22'33.6''$ , RT.  
D = 1'45"  
Os = 3'30"  
Ls = 400'  
Lc = 2650.0568'  
Rc = 3274.0445'  
Ts = 1846.8121'  
U = 266.7188'  
V = 133.3807'  
Se = 0.07 FT/FT

-L1- WBL  
PI STA 104+95.47  
 $\Delta T = 33^{\circ}18'02.3''$ , RT.  
D = 3'00"  
Os = 9'00"  
Ls = 600'  
Lc = 510.0216'  
Rc = 1909.8593'  
Ts = 873.2809'  
U = 400.5182'  
V = 200.4712'  
Se = 0.10 FT/FT

~~PI STA 82+82.60  
 $\Delta T = 20^{\circ}26'31.0''$ , RT.  
D = 3'00"  
Os = 3'00"  
Ls = 200'  
Lc = 241.9816'  
Rc = 1909.8593'  
Ts = 444.5079'  
U = 133.3525'  
V = 66.6841'~~

~~PI STA 94+43.37  
 $\Delta T = 21^{\circ}48'00''$ , LT.  
D = 2'00"  
Os = 2'00"  
Ls = 200'  
Lc = 990.0000'  
Rc = 2864.7890'  
Ts = 651.7794'  
U = 133.3418'  
V = 66.6744'~~

FOR -L1- EBL (U.S. 64) PROFILE, SEE SHT. 14  
FOR -L1- WBL (U.S. 64) PROFILE, SEE SHT. 14

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	17	20
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

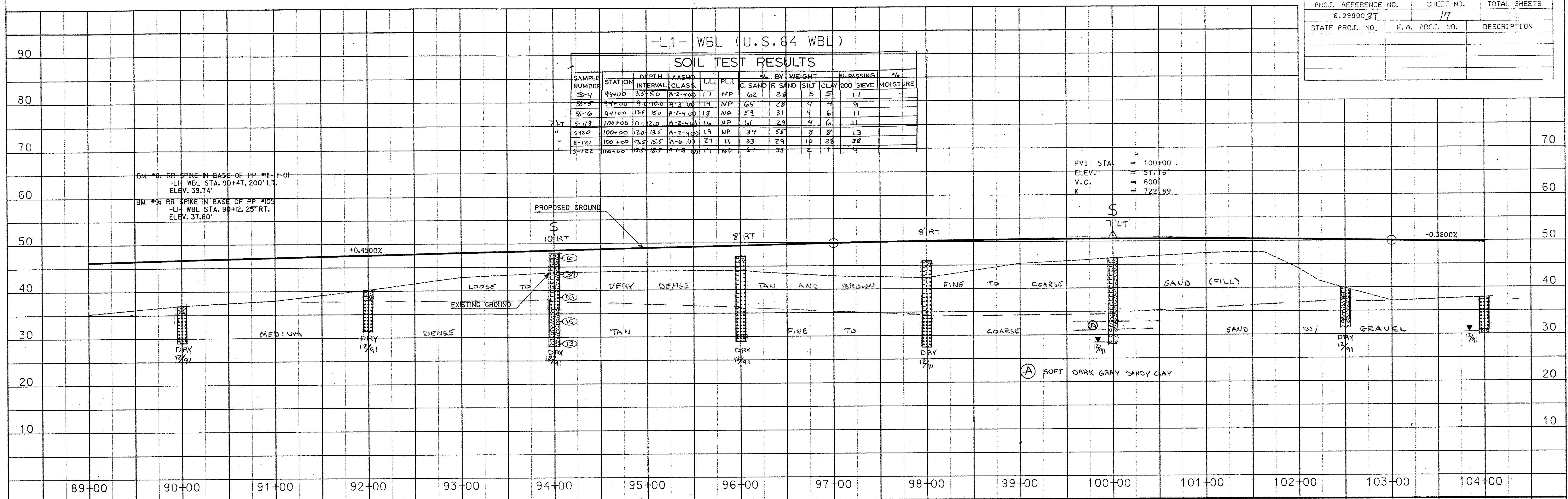
-L1- WBL (U.S. 64 WBL)

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-4	94+00	3.5-5.0	A-2-4(0)	17	NP	62	28	5	5	11	
SS-5	94+00	9.0-10.0	A-2-4(0)	14	NP	67	28	4	4	5	
SS-6	94+00	13.5-15.0	A-2-4(0)	18	NP	59	31	4	6	11	
SS-119	100+00	0-2.0	A-2-4(0)	16	NP	61	29	4	6	11	
SS-120	100+00	12.0-13.5	A-2-4(0)	19	NP	34	55	3	8	13	
SS-121	100+00	13.5-15.5	A-6(U)	27	11	33	29	10	28	38	
SS-122	100+00	15.5-18.5	A-1-B(0)	11	NP	64	33	2	1	9	

BM #8: RR SPIKE IN BASE OF PP #117-01  
-LI- WBL STA. 90+47, 200' LT.  
ELEV. 39.74'

BM #9: RR SPIKE IN BASE OF PP #105  
-LI- WBL STA. 90+12, 25' RT.  
ELEV. 37.60'

PVI STA. = 100+00  
ELEV. = 51.16'  
V.C. = 600'  
K = 722.89



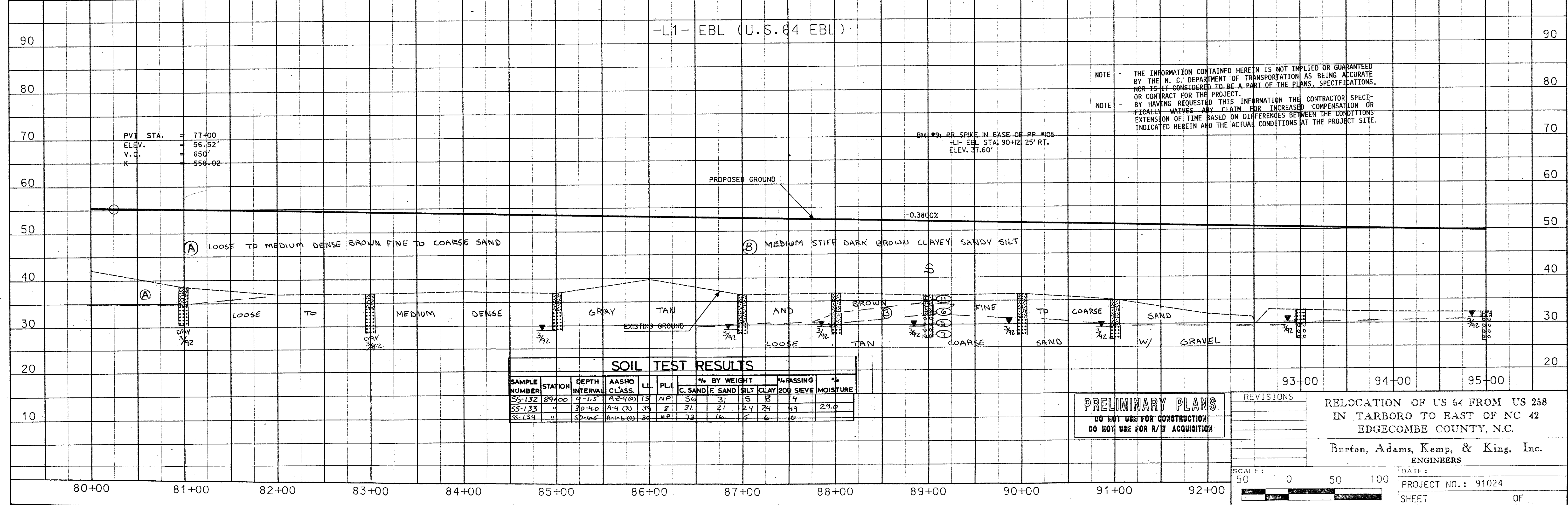
-L1- EBL (U.S. 64 EBL)

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PVI STA. = 77+00  
ELEV. = 56.52'  
V.C. = 650'  
K = 558.02

BM #9: RR SPIKE IN BASE OF PP #105  
-LI- EBL STA. 90+12, 25' RT.  
ELEV. 37.60'



SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-132	89+00	0-1.5	A-2-4(0)	13	NP	56	31	5	8	7	
SS-133	"	3.0-4.0	A-4(3)	34	8	21	24	24	49	29.0	
SS-134	"	5.0-6.5	A-1-B(0)	30	NP	73	16	5	6	0	

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

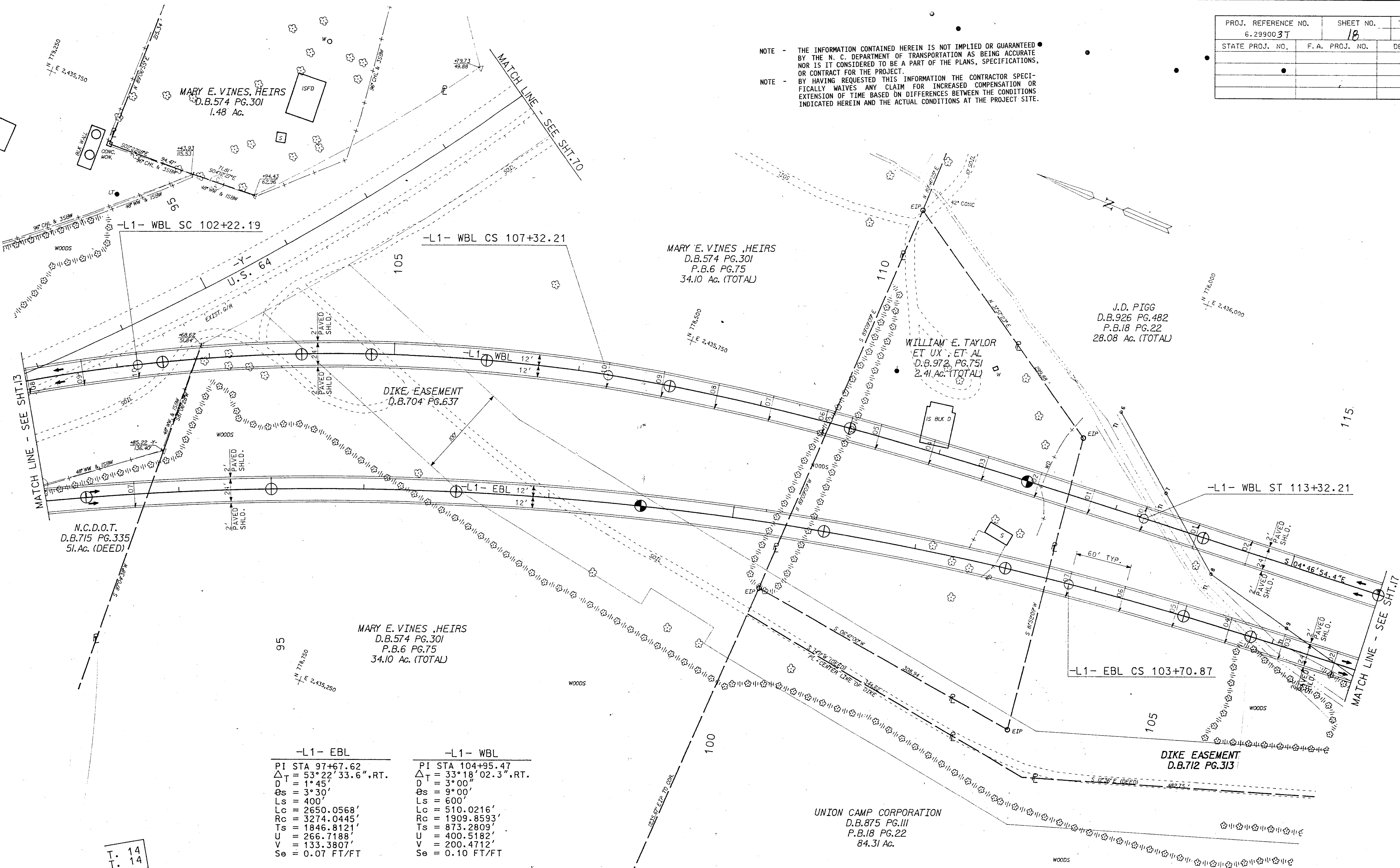
SCALE: 50 0 50 100  
DATE: PROJECT NO.: 91024  
SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	18	20
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

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N.C.D.O.T.  
D.B.715 PG.335  
51. Ac. (DEED)

MARY E. VINES HEIRS  
D.B.574 PG.301  
P.B.6 PG.75  
34.10 Ac. (TOTAL)

MARY E. VINES HEIRS  
D.B.574 PG.301  
P.B.6 PG.75  
34.10 Ac. (TOTAL)

J.D. PIGG  
D.B.926 PG.482  
P.B.18 PG.22  
28.08 Ac. (TOTAL)

WILLIAM E. TAYLOR  
ET UX ET AL  
D.B.972 PG.751  
2.41 Ac. (TOTAL)

UNION CAMP CORPORATION  
D.B.875 PG.III  
P.B.18 PG.22  
84.31 Ac.

-L1- EBL	-L1- WBL
PI STA 97+67.62	PI STA 104+95.47
$\Delta T = 53^{\circ}22'33.6''$ , RT.	$\Delta T = 33^{\circ}18'02.3''$ , RT.
D = 1'45'	D = 3'00'
$\theta_s = 3^{\circ}30'$	$\theta_s = 9^{\circ}00'$
Ls = 400'	Ls = 600'
Lc = 2650.0568'	Lc = 510.0216'
Rc = 3274.0445'	Rc = 1909.8593'
Ts = 1846.8121'	Ts = 873.2809'
U = 266.7188'	U = 400.5182'
V = 133.3807'	V = 200.4712'
Se = 0.07 FT/FT	Se = 0.10 FT/FT

-Y-
PI STA 94+43.37
$\Delta T = 21^{\circ}48'00''$ , LT.
D = 2'00'
$\theta_s = 2^{\circ}00'$
Ls = 200'
Lc = 990.0900'
Rc = 2864.7890'
Ts = 651.7794'
U = 133.3418'
V = 66.6744'

FOR -L1- EBL (U.S.64) PROFILE, SEE SHT. 16  
FOR -L1- WBL (U.S.64) PROFILE, SEE SHT. 16

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	DATE

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

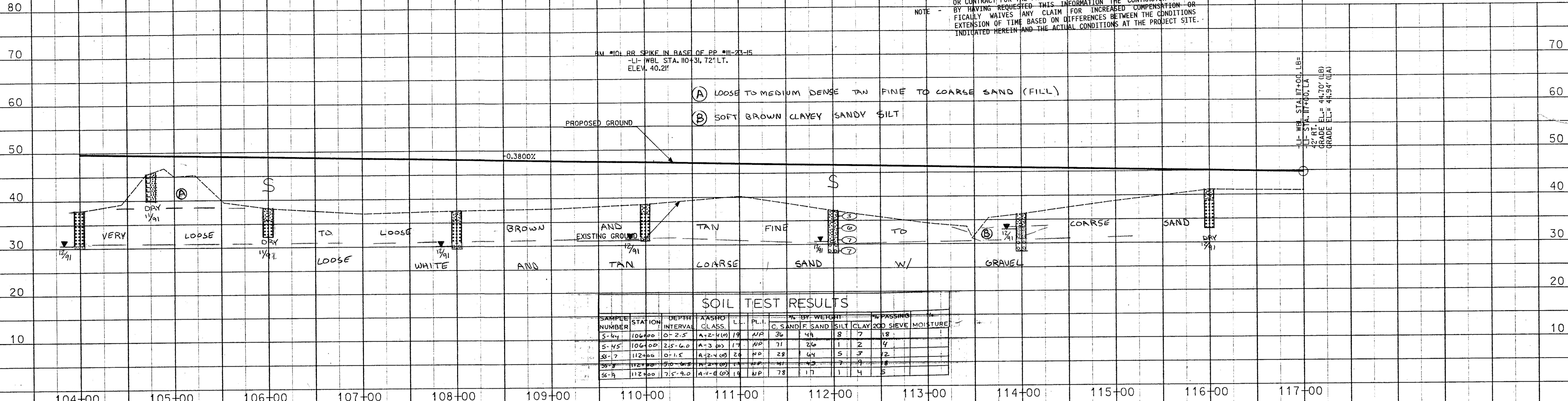
PROJECT NO.: 91024  
SHEET OF

-L1- WBL (U.S. 64 WBL)

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BM #10: RR SPIKE IN BASE OF PP #11-23-15  
 -L1- WBL STA. 110+31.72' LT.  
 ELEV. 40.21'

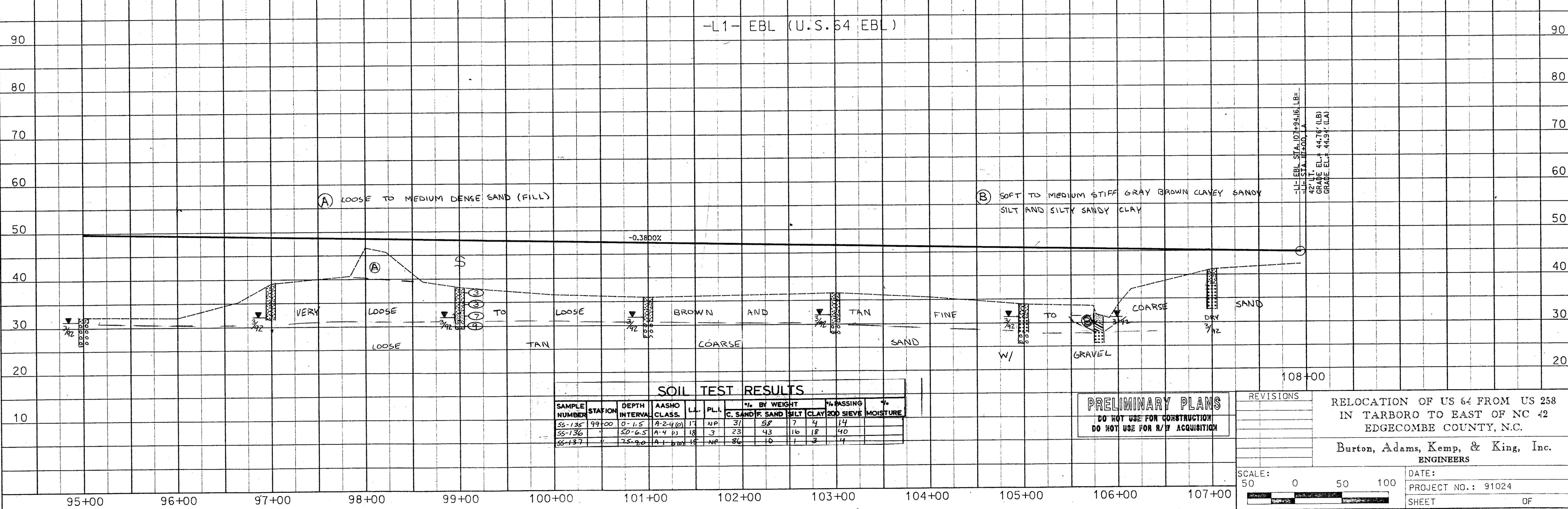
- (A) LOOSE TO MEDIUM DENSE TAN FINE TO COARSE SAND (FILL)
- (B) SOFT BROWN CLAYEY SANDY SILT



-L1- WBL STA. 117+00.16' LB.  
 -L1- STA. 117+00.16' LA  
 42' LT. GRADE ELEV. 44.70' (LB)  
 GRADE ELEV. 44.94' (LA)

-L1- EBL (U.S. 64 EBL)

- (A) LOOSE TO MEDIUM DENSE SAND (FILL)
- (B) SOFT TO MEDIUM STIFF GRAY BROWN CLAYEY SANDY SILT AND SILTY SANDY CLAY



-L1- EBL STA. 107+94.16' LB.  
 -L1- STA. 107+00.16' LA  
 42' LT. GRADE ELEV. 44.70' (LB)  
 GRADE ELEV. 44.94' (LA)

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/F ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc. ENGINEERS

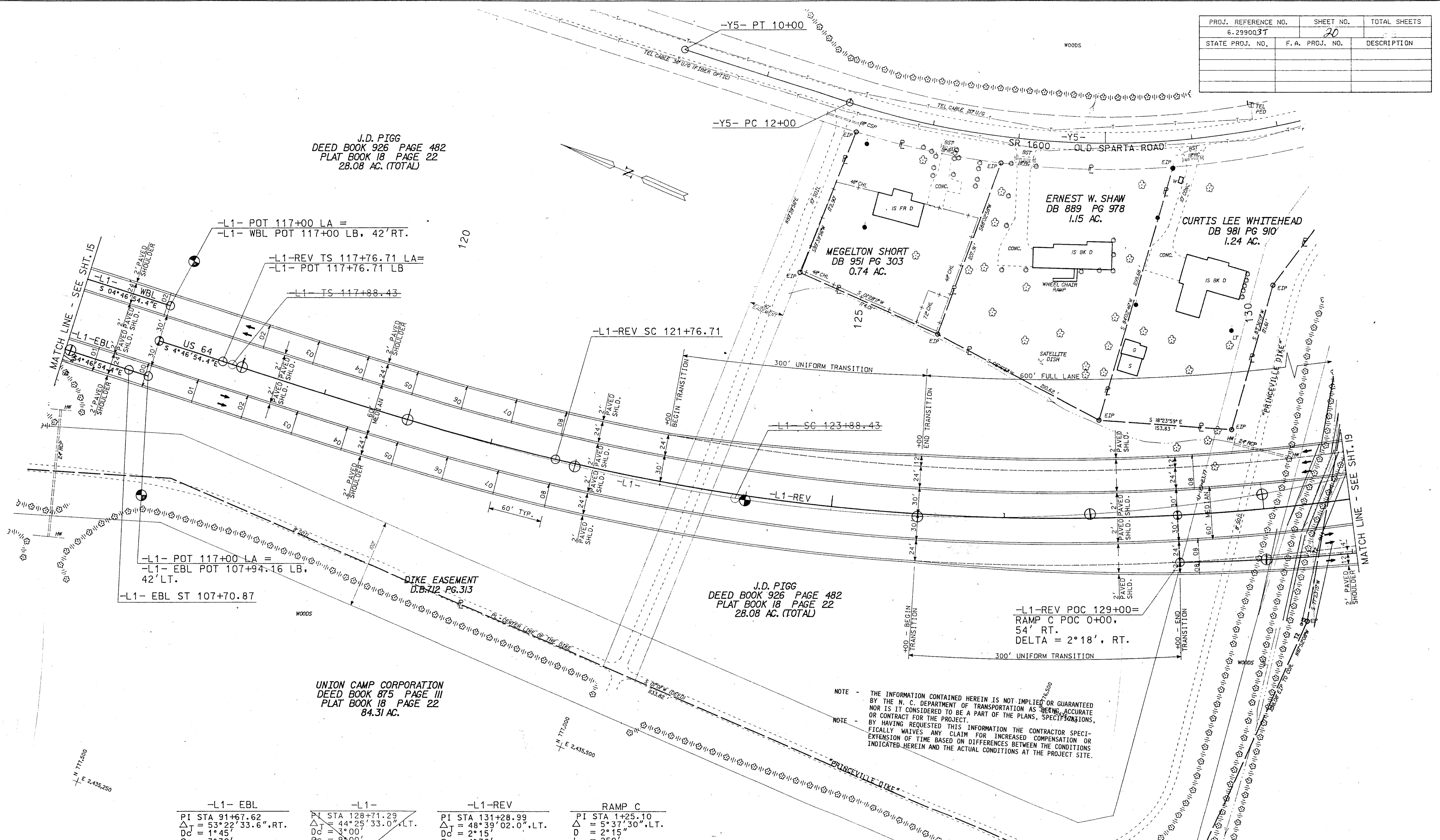
SCALE: 0 50 100  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	20	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

J.D. PIGG  
DEED BOOK 926 PAGE 482  
PLAT BOOK 18 PAGE 22  
28.08 AC. (TOTAL)

J.D. PIGG  
DEED BOOK 926 PAGE 482  
PLAT BOOK 18 PAGE 22  
28.08 AC. (TOTAL)

UNION CAMP CORPORATION  
DEED BOOK 875 PAGE III  
PLAT BOOK 18 PAGE 22  
84.31 AC.



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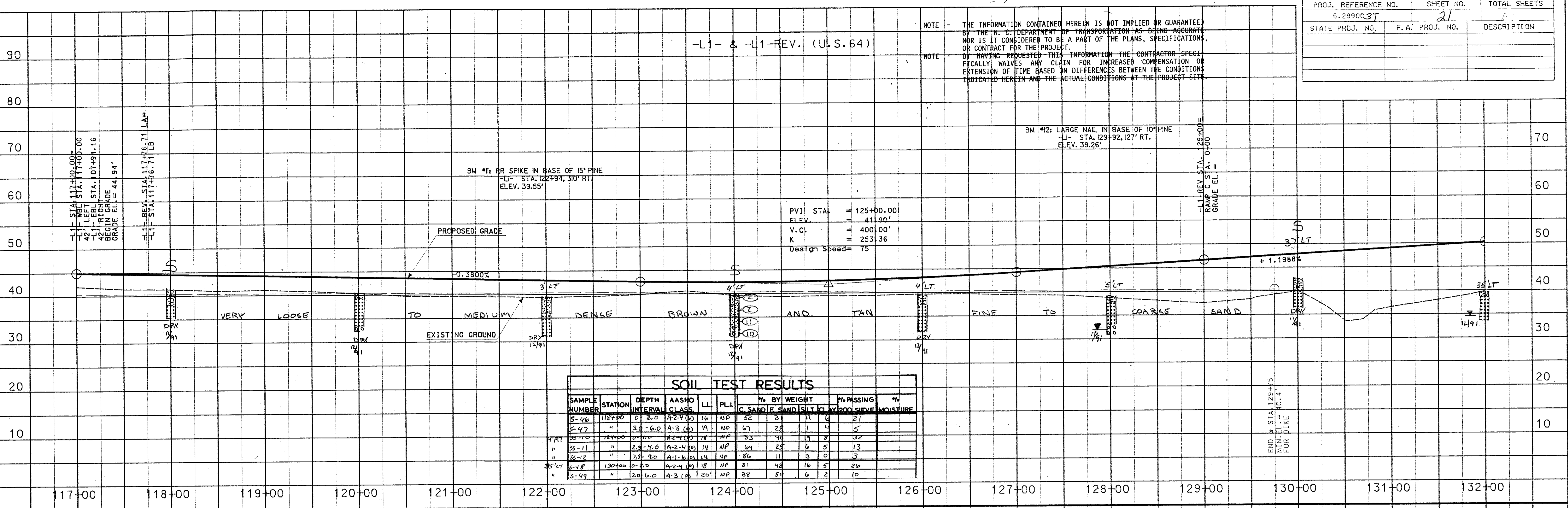
-L1- EBL	-L1-	-L1-REV	RAMP C
PI STA 91+67.62	PI STA 128+71.29	PI STA 131+28.99	PI STA 1+25.10
ΔT = 53°22'33.6".RT.	ΔT = 44°25'33.0".LT.	ΔT = 48°39'02.0".LT.	ΔT = 5°37'30".LT.
Dc = 1°45'	Dc = 3°00'	Dc = 2°15'	Dc = 2°15'
Os = 3°30'	Os = 9°00'	Os = 4°30'	L = 250'
Ls = 400'	Ls = 600'	Ls = 400'	R = 2546.4791'
Lc = 2650.0568'	Lc = 880.8614'	Lc = 1762.2471'	T = 125.1005'
Rc = 3274.0445'	Rc = 1909.8593'	Rc = 2546.4791'	Se = 0.08 FT/FT
Ts = 1846.8121'	Ts = 1082.8594'	Ts = 1352.2796'	
U = 266.7188'	U = 400.5182'	U = 266.7529'	
V = 133.3807'	V = 200.4712'	V = 133.4117'	
Se = 0.08 FT/FT			

FOR -L1- & -L1- REV. (U.S.64) PROFILE, SEE SHT. 18

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

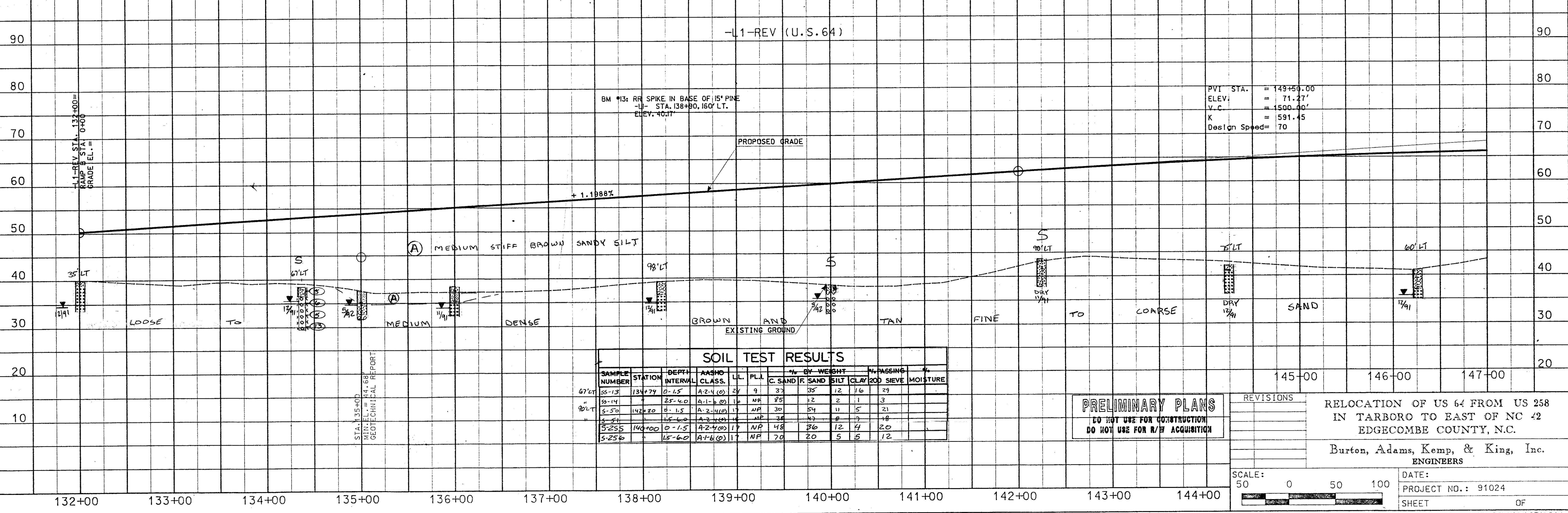
REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	21	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-46	118+00	0-3.0	A-2.4 (6)	16	NP	52	31	11	6	21	
S-47	"	3.0-6.0	A-3 (4)	19	NP	67	23	1	4	5	
S-10	124+00	0-1.0	A-2.4 (6)	18	NP	53	48	13	8	32	
S-11	"	2.5-4.0	A-2.4 (6)	14	NP	64	25	6	5	13	
S-12	"	2.5-9.0	A-1-b (6)	14	NP	86	11	3	0	3	
S-48	130+00	0-2.0	A-2.4 (6)	18	NP	31	48	16	5	26	
S-49	"	2.0-6.0	A-3 (6)	20	NP	38	54	6	2	10	



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-13	134+74	0-1.5	A-2.4 (6)	24	9	37	35	12	16	29	
S-14	"	2.5-4.0	A-1-b (6)	16	NP	85	12	2	1	3	
S-50	142+20	0-1.5	A-2.4 (6)	17	NP	30	54	11	5	21	
S-51	"	1.5-6.0	A-2.4 (6)	17	NP	38	47	6	7	18	
S-255	140+00	0-1.5	A-2.4 (6)	17	NP	48	36	12	4	20	
S-256	"	1.5-6.0	A-1-b (6)	17	NP	70	20	5	5	12	

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

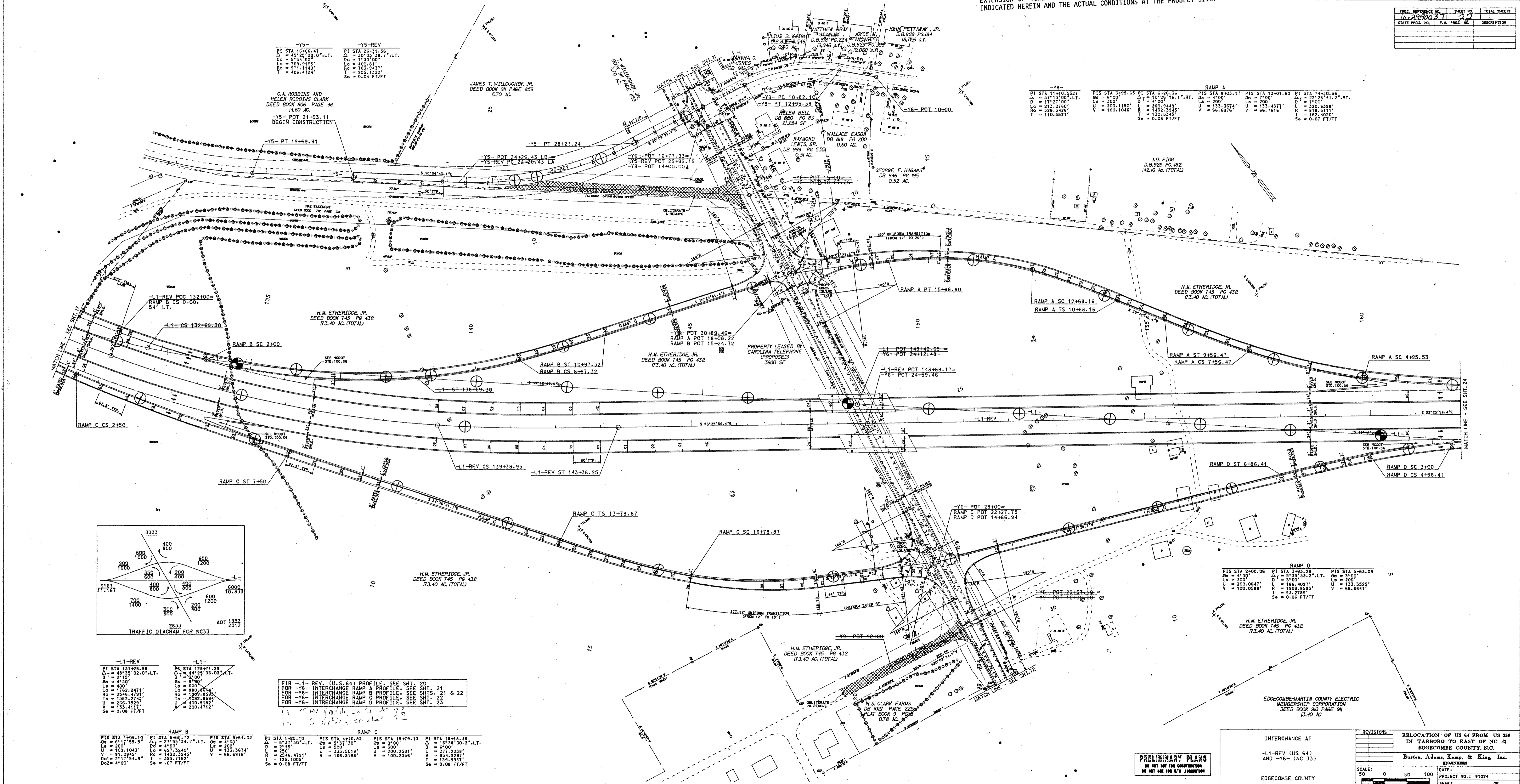
DATE: PROJECT NO.: 91024

SHEET OF

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
612990031	22	
STATE PROJ. NO.	P.A. PROJ. NO.	DESCRIPTION

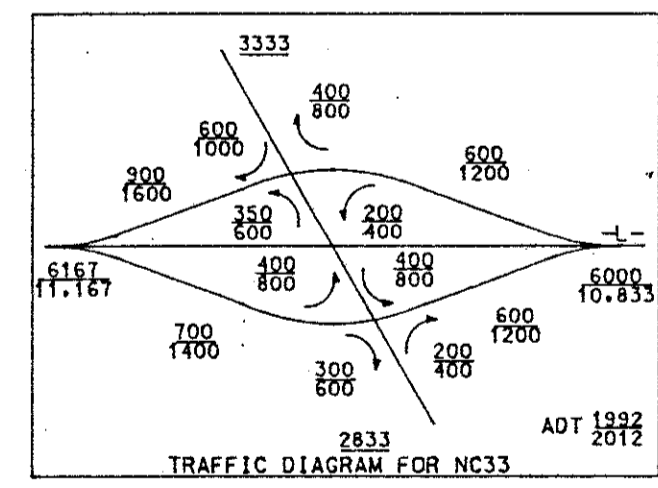


-Y5-  
 PI STA 16+08.41  
 Δ = 49°28'23.07" LT.  
 D = 5°34'00"  
 L = 763.9105'  
 U = 311.1143'  
 V = 406.4724'

-Y5-REV  
 PI STA 26+31.56  
 Δ = 5°13'38.7" LT.  
 D = 7°40'00"  
 L = 400.81'  
 U = 763.5431'  
 V = 205.1322'  
 S = 0.04 FT/FT

-Y8-  
 PI STA 11+10.5527  
 Δ = 31°17'00" LT.  
 D = 17°27'00"  
 L = 113.2760'  
 U = 328.3426'  
 V = 110.5527'

RAMP A  
 PI STA 8+23.17  
 Δ = 4°00"  
 D = 10°25'16.1" RT.  
 L = 300'  
 U = 133.3674'  
 V = 66.6376'



-L1-REV  
 PI STA 131+28.28  
 Δ = 48°39'02.0" LT.  
 D = 2°15'  
 L = 400'  
 U = 1762.2471'  
 V = 2546.4791'  
 S = 132.2745'  
 S = 0.08 FT/FT

-L1-  
 PI STA 129+71.23  
 Δ = 42°27'11.23" LT.  
 D = 4°00'  
 L = 600'  
 U = 180.8814'  
 V = 1989.8592'  
 S = 400.5182'  
 S = 0.07 FT/FT

FIR -L1- REV. (U.S. 64) PROFILE, SEE SHT. 20  
 FOR -Y6- INTERCHANGE RAMP A PROFILE, SEE SHT. 21  
 FOR -Y6- INTERCHANGE RAMP B PROFILE, SEE SHTS. 21 & 22  
 FOR -Y6- INTERCHANGE RAMP C PROFILE, SEE SHT. 22  
 FOR -Y6- INTERCHANGE RAMP D PROFILE, SEE SHT. 23

RAMP B  
 PI STA 1+00.10  
 Δ = 8°17'55.5"  
 D = 109.1043'  
 U = 91.0943'  
 V = 21.1754.3"  
 D = 4°00"

RAMP C  
 PI STA 4+16.82  
 Δ = 5°17'30" LT.  
 D = 2°15'  
 L = 500'  
 U = 263.5011'  
 V = 166.8198'  
 S = 0.08 FT/FT

RAMP D  
 PI STA 5+63.05  
 Δ = 5°35'52.2" LT.  
 D = 3°00'  
 L = 300'  
 U = 186.4091'  
 V = 100.0588'  
 S = 0.06 FT/FT

INTERCHANGE AT  
 -L1- REV (U.S. 64)  
 AND -Y6- (NC 33)

EDGECOMBE COUNTY

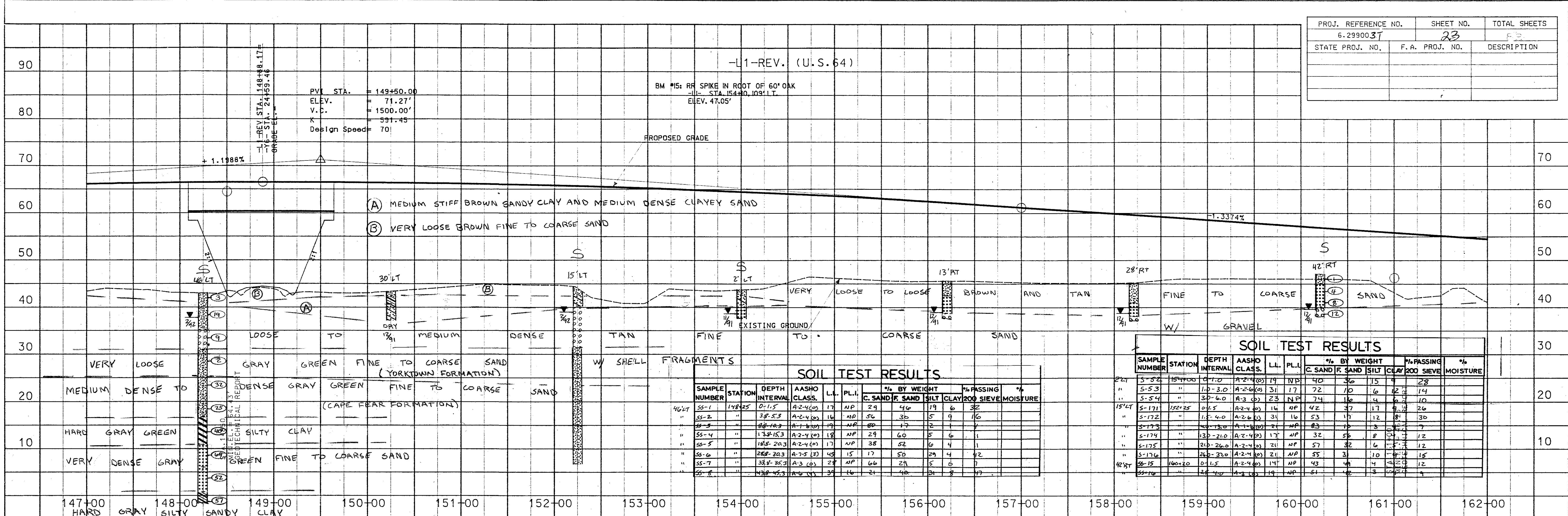
RELOCATION OF US 64 FROM US 268  
 IN TARBORO TO EAST OF NC 43  
 EDGECOMBE COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

SCALE: 50 0 50 100  
 1" = 50'

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR U/V SUBMITTAL

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6-29900.3T	23	32
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

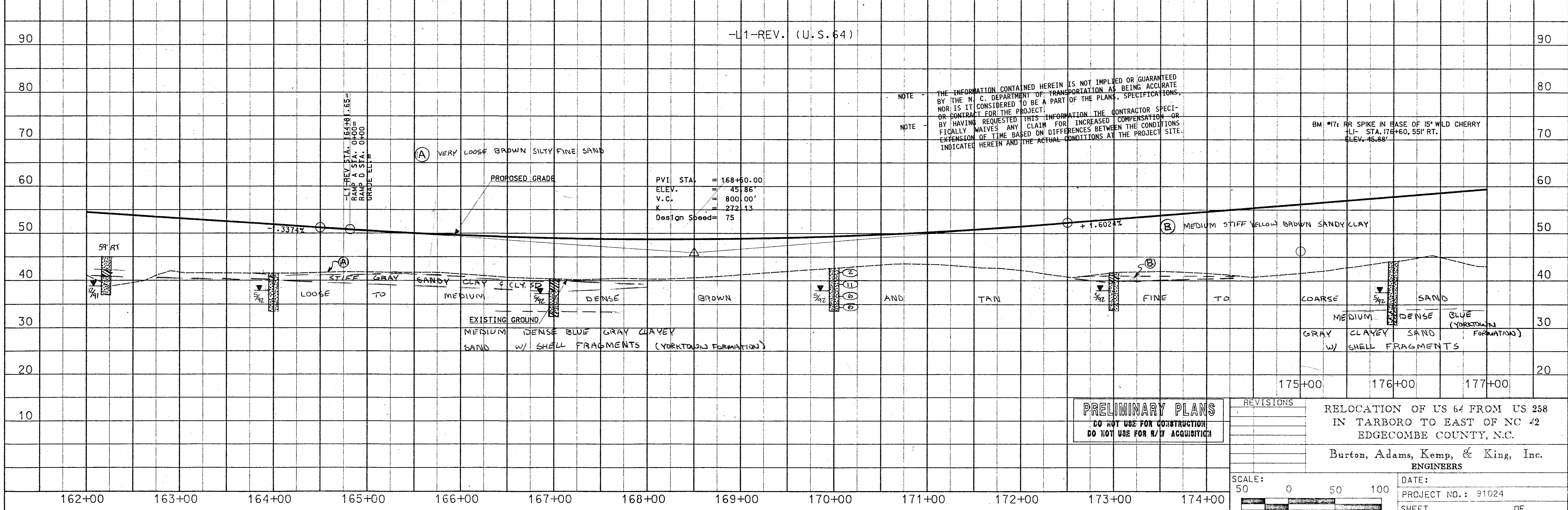


**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
46LT	148+25	0-1.5	A-2-4 (G)	17	NP	29	46	19	6	32	
SS-2	"	38'-5.5	A-2-4 (G)	16	NP	36	36	5	9	16	
SS-3	"	88'-10.3	A-1-B (G)	19	NP	60	17	2	1	7	
SS-4	"	133'-15.3	A-2-4 (G)	18	NP	29	60	5	6	1	
SS-5	"	188'-20.3	A-2-4 (G)	17	NP	38	52	6	4	1	
SS-6	"	248'-20.3	A-2-5 (2)	45	15	17	50	29	4	42	
SS-7	"	338'-35.3	A-3 (G)	27	NP	66	28	5	0	7	
SS-8	"	438'-45.3	A-6 (G)	35	16	21	48	21	8	17	

**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
22LT	159+00	0-1.0	A-2-4 (G)	19	ND	40	36	15	9	28	
SS-3	"	1.0-3.0	A-2-6 (G)	31	17	72	70	6	12	14	
SS-4	"	3.0-6.0	A-3 (G)	23	NP	74	16	4	6	10	
SS-171	152+25	0-1.5	A-2-4 (G)	16	NP	42	37	17	8	26	
SS-172	"	1.5-4.0	A-2-6 (G)	34	16	53	17	12	8	30	
SS-173	"	4.0-15.0	A-1-B (G)	21	NP	83	15	3	2	7	
SS-174	"	13.0-21.0	A-2-4 (G)	17	NP	32	56	8	5	12	
SS-175	"	21.0-26.0	A-2-4 (G)	21	NP	57	32	6	5	12	
SS-176	"	26.0-32.0	A-2-4 (G)	21	NP	55	31	10	11	15	
42RT	160+20	0-1.5	A-2-4 (G)	14	NP	43	48	4	4	12	
SS-178	"	26-41.0	A-3 (G)	19	NP	61	42	3	14	14	



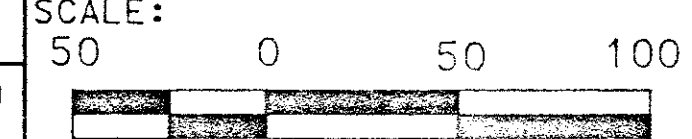
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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS


RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC #2 EDGECOMBE COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc. ENGINEERS

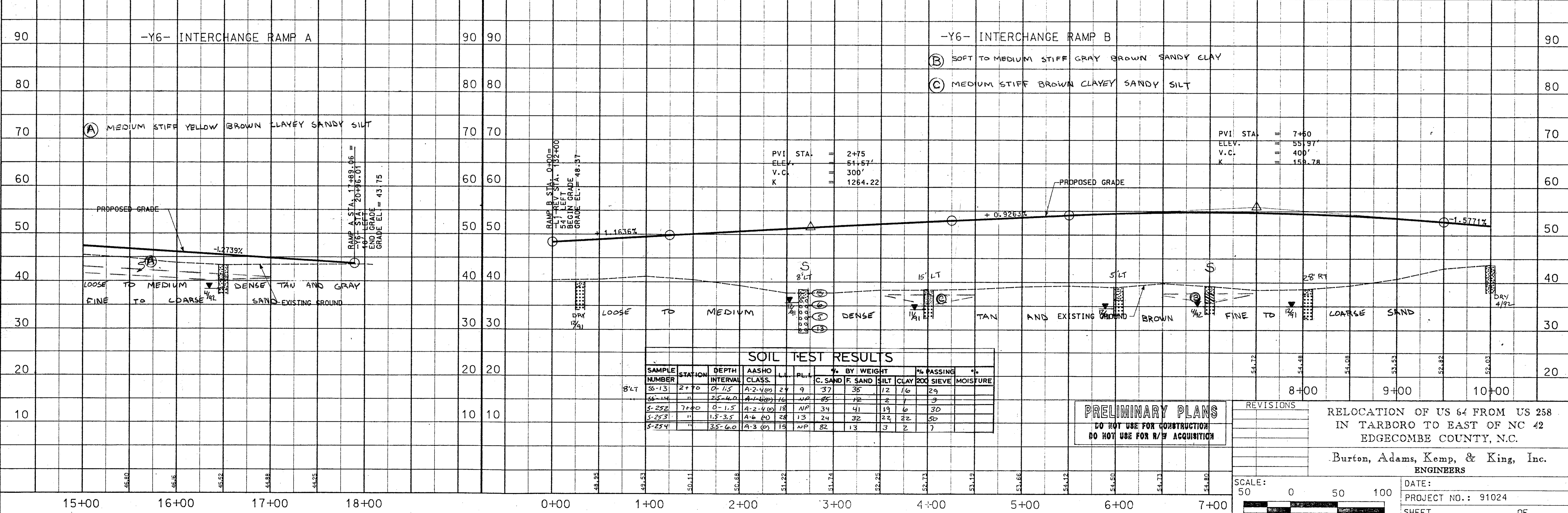
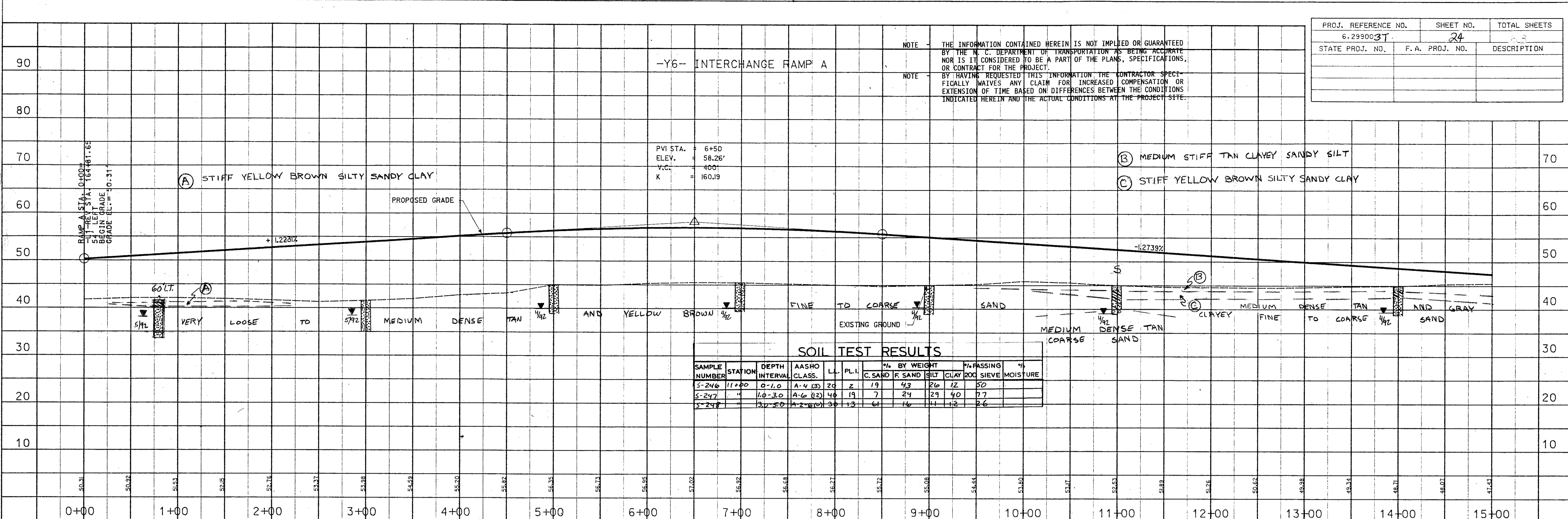


DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	24	25
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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**PRELIMINARY PLANS**  
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DO NOT USE FOR R/W ACQUISITION

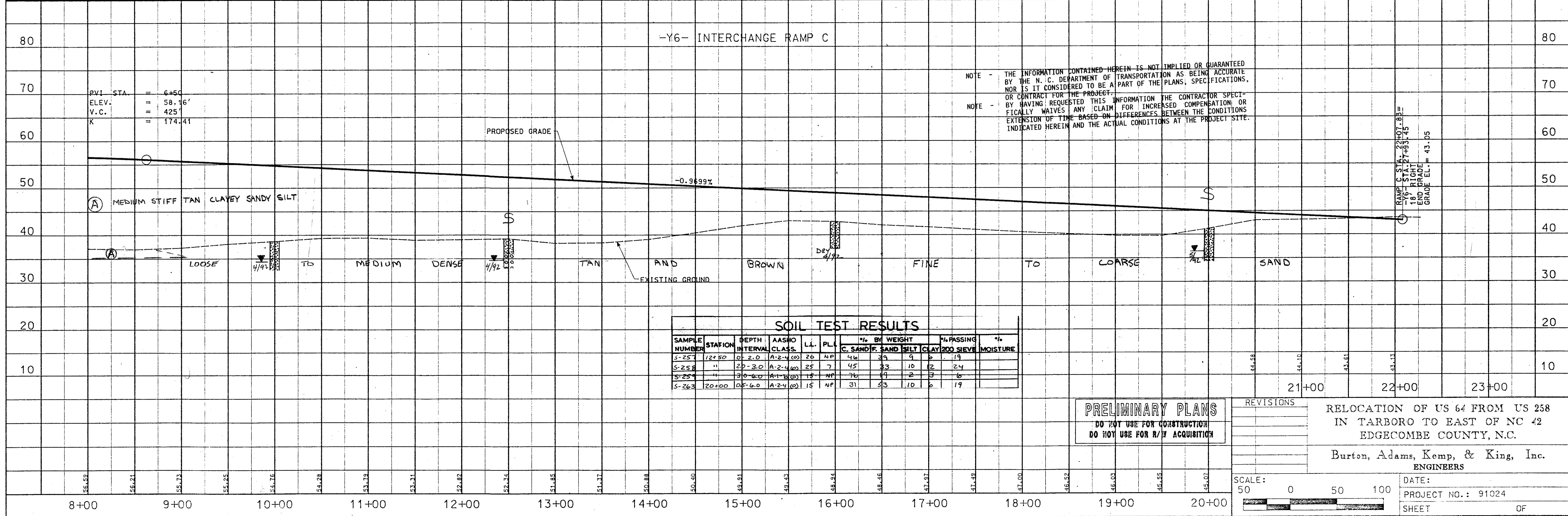
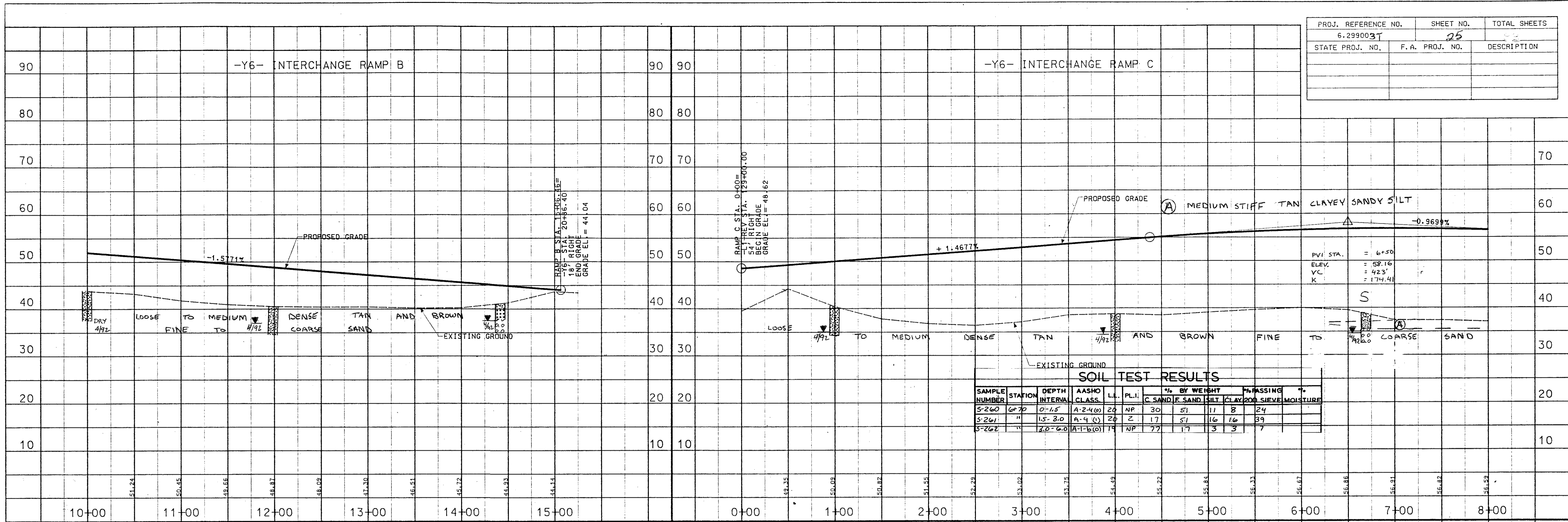
REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc. ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	25	25
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET 25 OF 25



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	20	30
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

-Y6- INTERCHANGE RAMP D

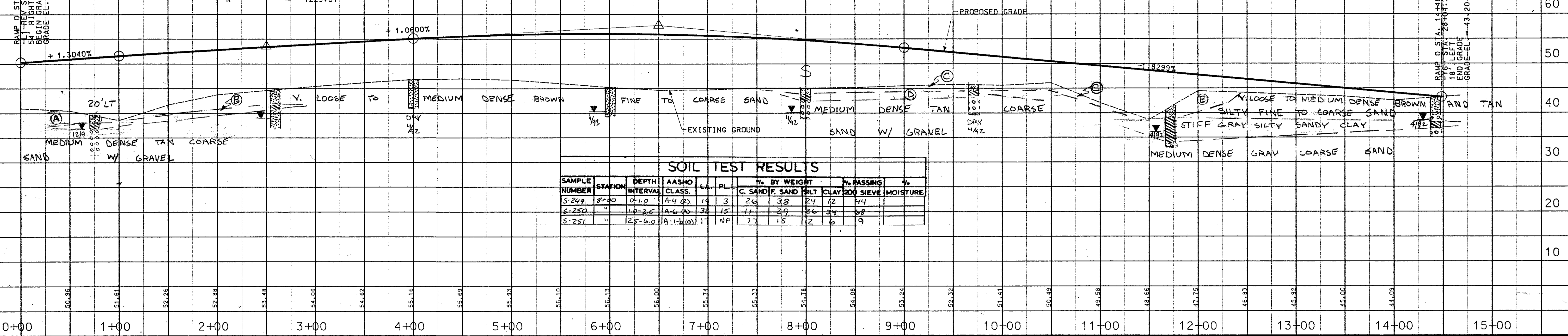
- (A) LOOSE BROWN SILTY FINE SAND
- (B) MEDIUM STIFF GRAY SANDY CLAY
- (C) SOFT BROWN CLAYEY SANDY SILT
- (D) MEDIUM STIFF YELLOW BROWN SILTY FINE SANDY CLAY
- (E) SOFT TO MEDIUM STIFF TAN SANDY SILT

PVI STA. = 6+50  
 ELEV. = 57.81'  
 V.C. = 500'  
 K = 175.02

PVI STA. = 2+50  
 ELEV. = 53.57'  
 V.C. = 300'  
 K = 1229.51

RAMP D STA. 0+00  
 LEFT REV STA. 184+81.85  
 BEGIN GRADE  
 GRADE E.L. = 50.31

RAMP D STA. 14+58.22  
 LEFT REV STA. 284+17.26  
 END GRADE  
 GRADE E.L. = 43.20



SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L <sub>1</sub>	P <sub>L</sub>	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-249	8+00	0'-1.0	A-4 (2)	15	3	26	38	24	12	44	
S-250	"	1.0-2.5	A-6 (2)	32	15	17	29	26	34	68	
S-251	"	2.5-6.0	A-1-b (2)	17	NP	77	15	2	6	9	

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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

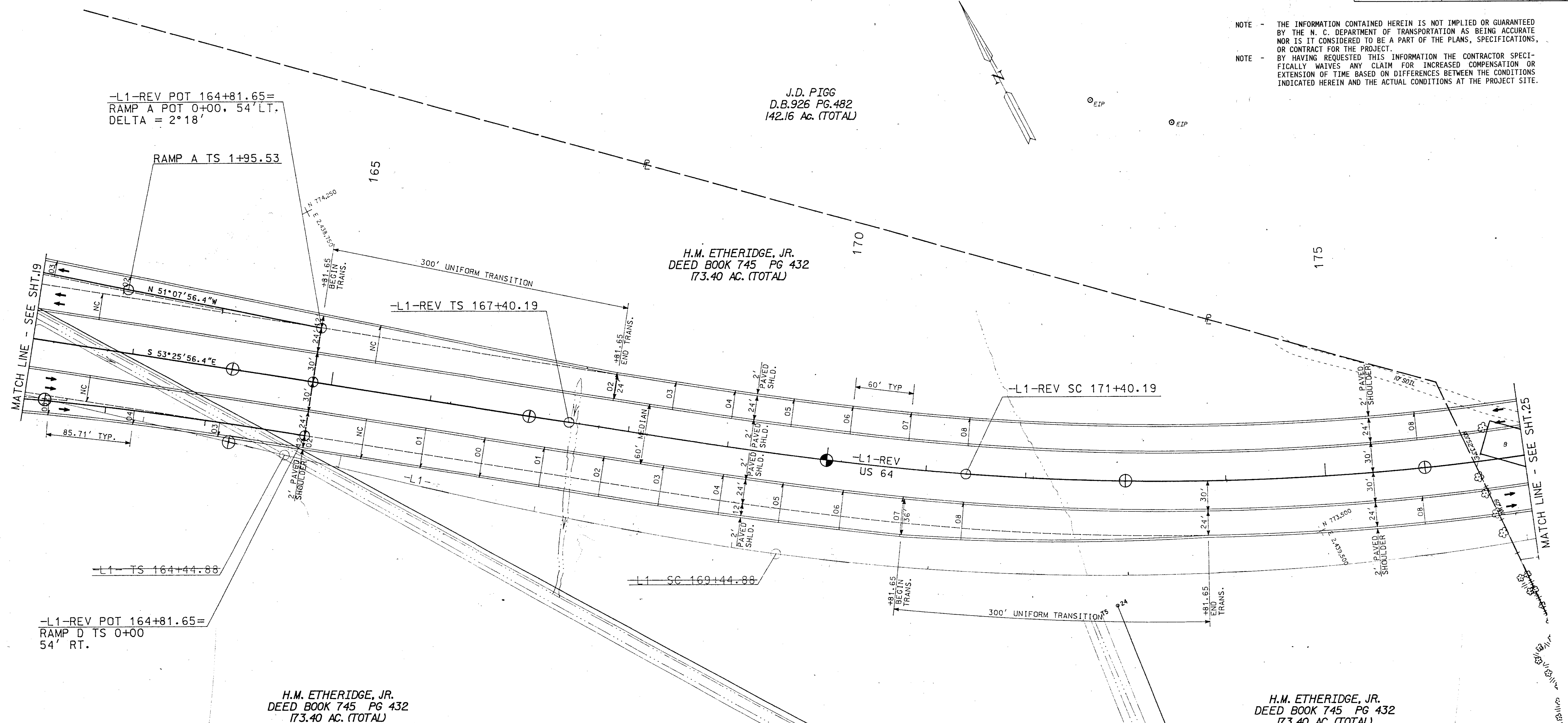
SCALE: 1" = 50'  
 0 50 100

DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990031	27	31
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

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FOR -L1- REV. (U.S. 64) PROFILE, SEE SHT. 20

**RAMP A**  
 PIS STA 3+95.65  
 $\phi_s = 6^{\circ}00'$   
 $L_s = 300'$   
 $U = 200.1150'$   
 $V = 100.1046'$

**RAMP D**  
 PIS STA 2+00.06  
 $\phi_s = 4^{\circ}30'$   
 $L_s = 300'$   
 $U = 200.0647'$   
 $V = 100.0588'$

**-L1-REV**  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0''$ .LT.  
 $D = 2^{\circ}15'$   
 $\phi_s = 4^{\circ}30'$   
 $L_s = 400'$   
 $L_c = 2708.3460'$   
 $R_c = 2546.4791'$   
 $T_s = 1982.7935'$   
 $U = 266.7529'$   
 $V = 133.4117'$   
 $S_e = 0.08$  FT/FT

~~**-L1-**  
 PI STA 186+22.47  
 $\Delta T = 74^{\circ}09'45.0''$ .LT.  
 $D = 2^{\circ}15'$   
 $\phi_s = 5^{\circ}37'$   
 $L_s = 500'$   
 $L_c = 2798.1113'$   
 $R_c = 2546.4791'$   
 $T_s = 2177.5877'$   
 $U = 333.5018'$   
 $V = 166.8198'$~~

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	28	80
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-L1-REV  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0''$ .LT.  
 $D = 2^{\circ}15'$   
 $\Theta s = 4^{\circ}30'$   
 $Ls = 400'$   
 $Lc = 2708.3460'$   
 $Rc = 2546.4791'$   
 $Ts = 1982.7935'$   
 $U = 266.7529'$   
 $V = 133.4117'$   
 $Se = 0.08$  FT/FT

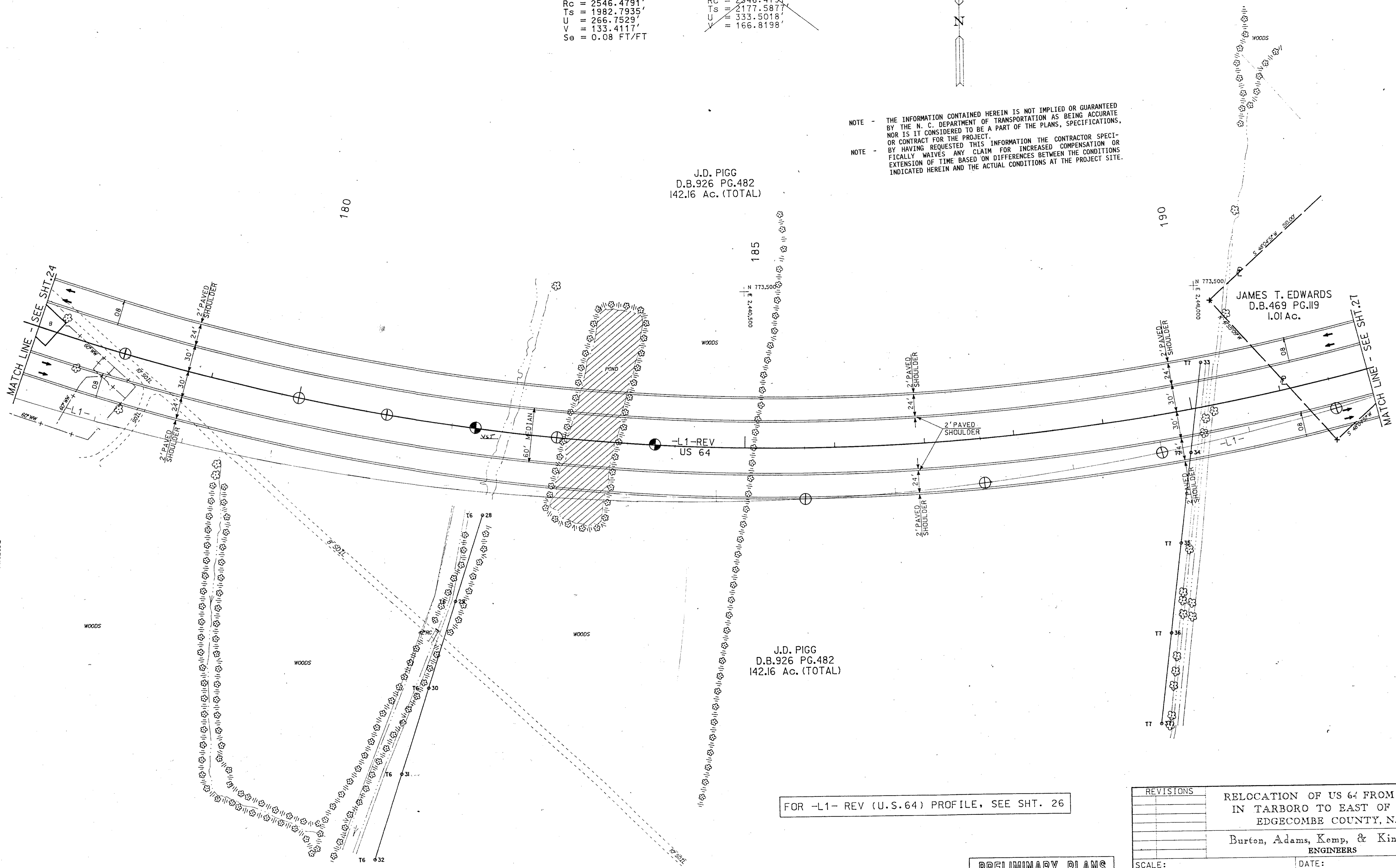
~~-L1-~~  
~~PI STA 186+22.47~~  
 ~~$\Delta T = 74^{\circ}09'45.0''$ .LT.~~  
 ~~$D = 2^{\circ}15'$~~   
 ~~$\Theta s = 5^{\circ}37'$~~   
 ~~$Ls = 500'$~~   
 ~~$Lc = 2798.7113'$~~   
 ~~$Rc = 2546.4791'$~~   
 ~~$Ts = 2177.5877'$~~   
 ~~$U = 333.5018'$~~   
 ~~$V = 166.8198'$~~



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)



FOR -L1- REV (U.S.64) PROFILE, SEE SHT. 26

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
SCALE: 50 0 50 100	Burton, Adams, Kemp, & King, Inc. ENGINEERS
DATE:	PROJECT NO.: 91024
SHEET	OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	29	30
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

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-L1- REV. (U.S. 64)

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	% ORGANIC
						C. SAND	F. SAND	SILT	CLAY			
S-123	182+00	0-1.0	A-2-6(0)	40	15	43	23	116	18	35		
S-124	"	1.0-2.0	A-2-5(0)	49	13	33	20	119	28	48	32.5	
S-125	"	2.0-3.0	A-2-5(0)	42	NP	42	29	119	10	31	60.2	8.6
S-20	184+00	0-1.5	A-4(0)	23	G	25	32	25	18	48		
S-21	"	1.5-3.0	A-2-5(0)	48	NP	48	32	114	6	22		
S-22	"	3.0-6.0	A-1-6(0)	16	NP	78	17	3	2	5		
S-23	"	6.0-9.0	A-2-4(0)	23	G	54	23	9	14	21		

### SOIL TEST RESULTS

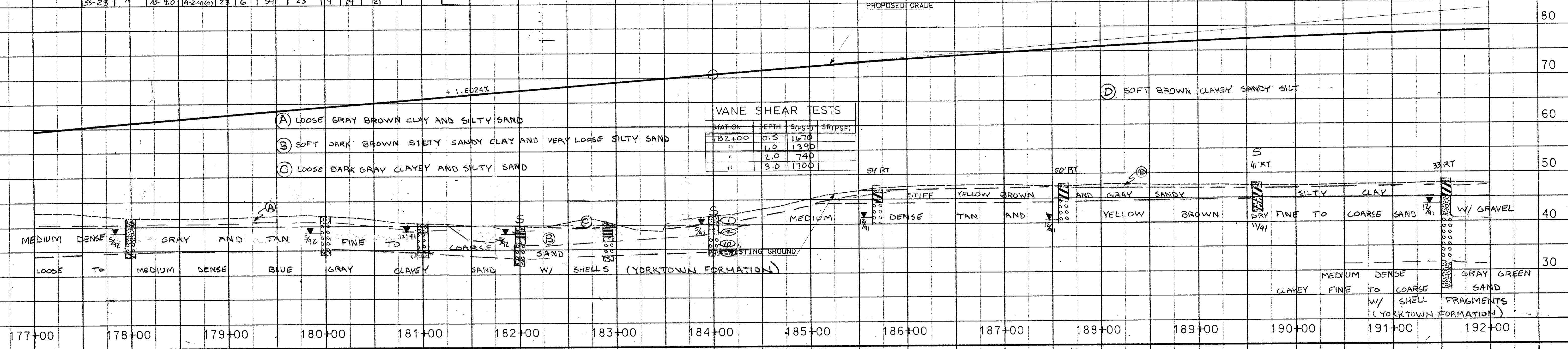
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-63	184+58	0-1.0	A-4(0)	19	2	20	36	32	12	54		
S-64	"	1.0-2.5	A-2-6(0)	57	30	6	19	31	44	82		
S-65	"	2.5-6.0	A-2-6(0)	37	22	55	21	7	17	25		

BM #18: RR SPIKE IN BASE OF 10' WILD CHERRY 141' RT.  
 STA. 183+38.34 LT.  
 ELEV. 47.13'

### VANE SHEAR TESTS

STATION	DEPTH	SP(SPT)	SR(PST)
182+00	0.5	1670	
"	1.0	1390	
"	2.0	740	
"	3.0	1700	

- (A) LOOSE GRAY BROWN CLAY AND SILTY SAND
- (B) SOFT DARK BROWN SILTY SANDY CLAY AND VERY LOOSE SILTY SAND
- (C) LOOSE DARK GRAY CLAYEY AND SILTY SAND



-L1-REV. & -L1- (U.S. 64)

BM #19: RR SPIKE IN BASE OF PP #S-196  
 LT STA. 185+27.243' LT.  
 ELEV. 49.45'

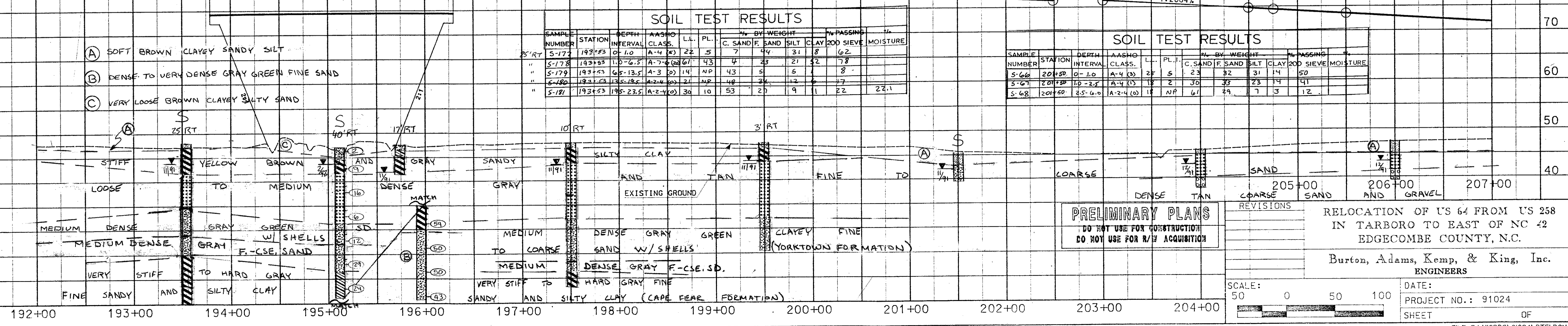
PVI STA. = 94+00.00  
 ELEV. = 86.72'  
 V.C. = 2000.00'  
 = 713.57  
 Design Speed = 75

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-1	195+11	0-1.5	A-2-4	19	NP	50	21	19	10	29		
S-2	195+11	1.5-3.0	A-7-6(0)	52	28	2	15	29	36	87	26.9	
S-3	195+11	3.0-10.3	A-3(0)	15	NP	55	40	3	2	6		
S-4	195+11	10.3-19.8	A-2-4(0)	21	G	40	39	9	12	21		
S-5	195+11	19.8-25.8	A-2-4(0)	31	10	15	59	18	8	30	24.2	
S-6	195+11	25.8-30.3	A-6(0)	37	14	7	42	3	PROPOSED GRADE			
S-7	195+11	30.3-35.3	A-2-6(0)	49	22	4	50	16	30	89		
S-8	195+11	35.3-40.3	A-2-4(0)	24	NP	24	66	8	2	15		
S-9	195+11	40.3-60.3	A-2-4(0)	82	NP	13	72	13	2	9		

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-172	193+53	0-1.0	A-4(0)	22	5	7	44	31	8	62		
S-178	193+53	1.0-6.5	A-7-6(0)	61	43	4	23	21	32	78		
S-179	193+53	6.5-13.5	A-3(0)	14	NP	43	5	5	1	8		
S-180	193+53	13.5-18.5	A-2-4(0)	21	NP	40	24	12	6	17		
S-181	193+53	18.5-23.5	A-2-4(0)	30	10	53	27	9	11	22	22.1	



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 1" = 50'

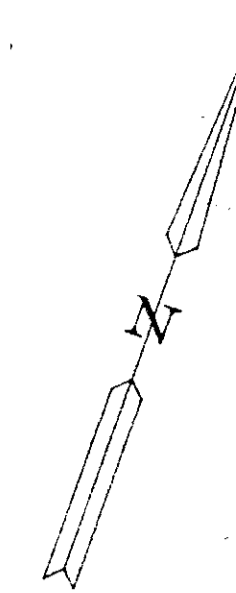
DATE: PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	30	33
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

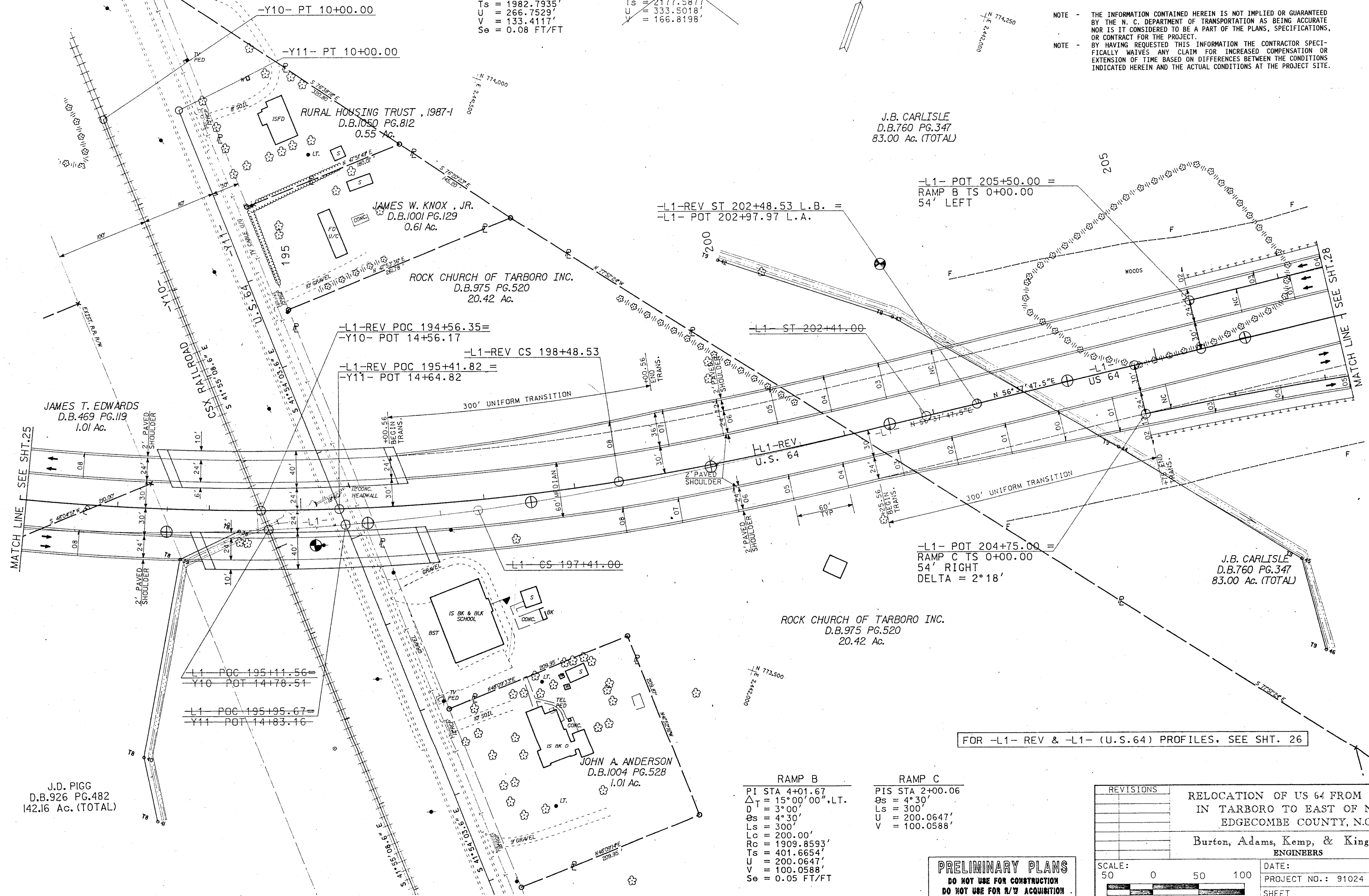
-L1-REV  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0"$  LT.  
 D = 2'15"  
 $\Theta S = 4^{\circ}30'$   
 Ls = 400'  
 Lc = 2708.3460'  
 Rc = 2546.4791'  
 Ts = 1982.7935'  
 U = 266.7529'  
 V = 133.4117'  
 Se = 0.08 FT/FT

-L1-  
 PI STA 186+22.47  
 $\Delta T = 74^{\circ}09'45.0"$  LT.  
 D = 2'15"  
 $\Theta S = 5^{\circ}37'$   
 Ls = 500'  
 Lc = 2798.1113'  
 Rc = 2546.4791'  
 Ts = 2177.5877'  
 U = 333.5018'  
 V = 166.8198'



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
 NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)



JAMES T. EDWARDS  
 D.B.469 PG.119  
 1.01 Ac.

RURAL HOUSING TRUST, 1987-1  
 D.B.1050 PG.812  
 0.55 Ac.

JAMES W. KNOX, JR.  
 D.B.1001 PG.129  
 0.61 Ac.

ROCK CHURCH OF TARBORO INC.  
 D.B.975 PG.520  
 20.42 Ac.

-L1-REV POC 194+56.35 =  
 -Y10- POT 14+56.17

-L1-REV CS 198+48.53

-L1-REV POC 195+41.82 =  
 -Y11- POT 14+64.82

-L1-REV ST 202+48.53 L.B. =  
 -L1- POT 202+97.97 L.A.

-L1- POT 205+50.00 =  
 RAMP B TS 0+00.00  
 54' LEFT

-L1-REV.  
 U.S. 64

-L1- POT 204+75.00 =  
 RAMP C TS 0+00.00  
 54' RIGHT  
 DELTA = 2°18'

J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)

ROCK CHURCH OF TARBORO INC.  
 D.B.975 PG.520  
 20.42 Ac.

JOHN A. ANDERSON  
 D.B.1004 PG.528  
 1.01 Ac.

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

RAMP B  
 PI STA 4+01.67  
 $\Delta T = 15^{\circ}00'00"$  LT.  
 D = 3'00"  
 $\Theta S = 4^{\circ}30'$   
 Ls = 300'  
 Lc = 200.00'  
 Rc = 1909.8593'  
 Ts = 401.6654'  
 U = 200.0647'  
 V = 100.0588'  
 Se = 0.05 FT/FT

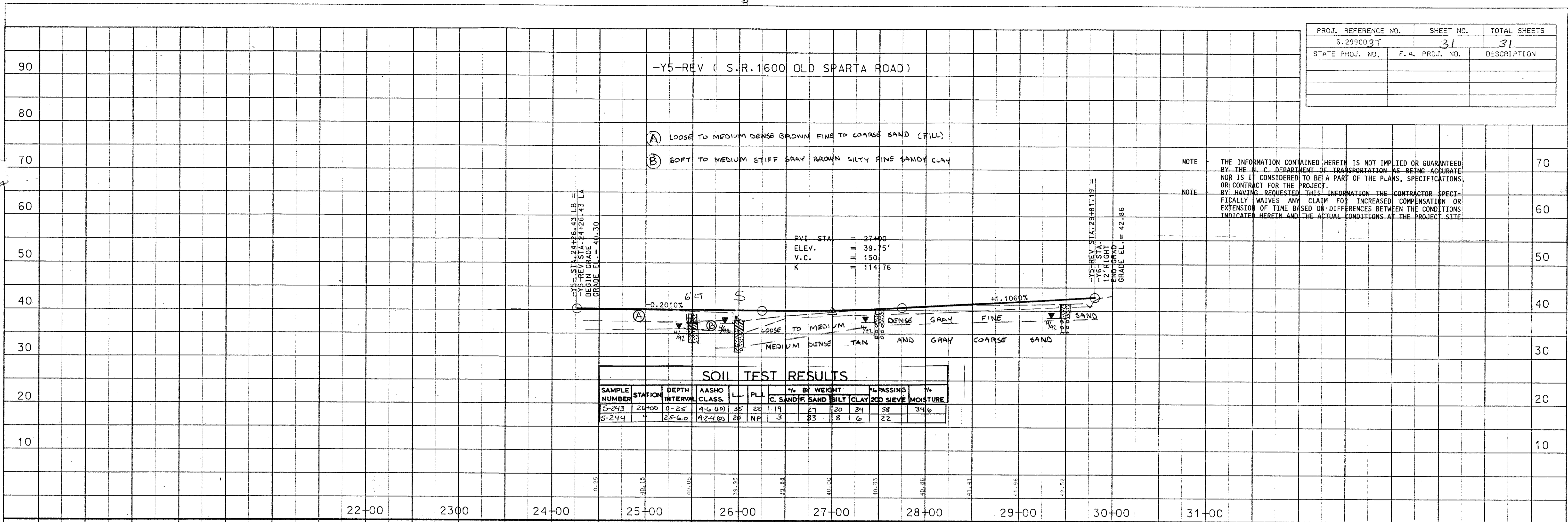
RAMP C  
 PIS STA 2+00.06  
 $\Theta S = 4^{\circ}30'$   
 Ls = 300'  
 U = 200.0647'  
 V = 100.0588'

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

FOR -L1- REV & -L1- (U.S.64) PROFILES, SEE SHT. 26

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	31	31
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



-Y5-REV ( S.R.1600 OLD SPARTA ROAD )

- (A) LOOSE TO MEDIUM DENSE BROWN FINE TO COARSE SAND (FILL)
- (B) SOFT TO MEDIUM STIFF GRAY BROWN SILTY FINE SANDY CLAY

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PVI STA. = 27+00  
 ELEV. = 39.75'  
 V.C. = 150'  
 K = 114.76

-Y5- STA. 24+66.43 LB =  
 -Y5-REV STA. 24+26.43 LA =  
 BEGIN GRADE  
 GRADE EL. = 40.30

-Y5-REV STA. 29+81.19 =  
 -Y6- STA. 12+RIGHT  
 END OF ROAD  
 GRADE EL. = 42.86

-Y6- STA. 20+89.46 =  
 RAMP A STA. 18+05.22 =  
 RAMP B STA. 15+24.72 =

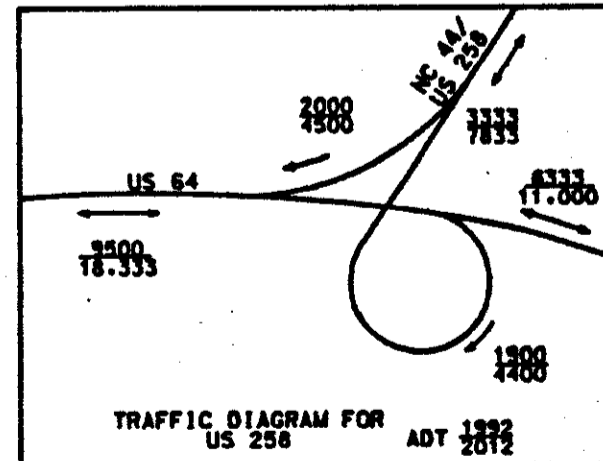
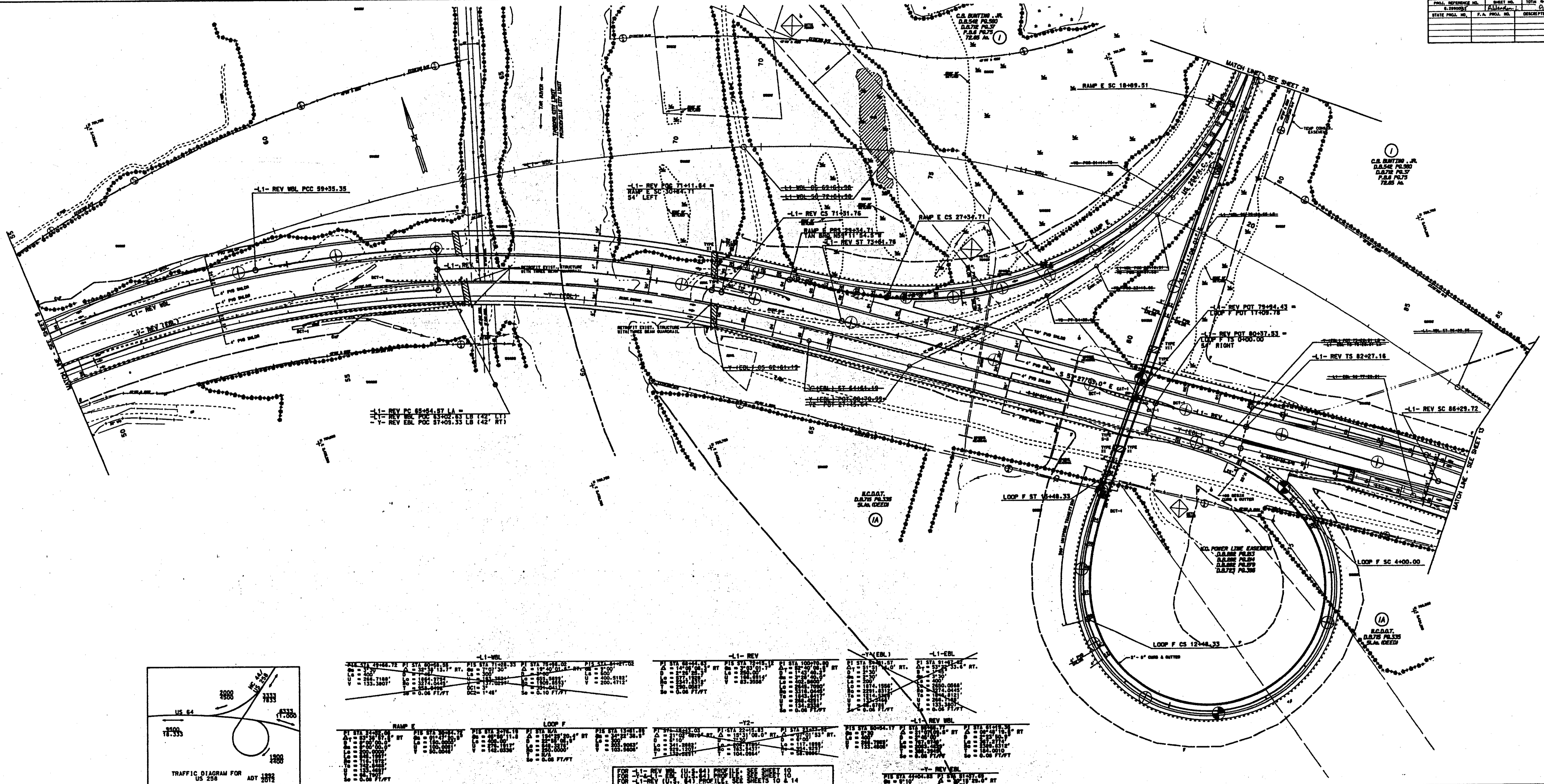
-Y6- STA. 24+59.46 =  
 -Y6-REV STA. 148+88.17 =

-Y6- STA. 28+00 =  
 RAMP C STA. 24+61.75 =  
 RAMP D STA. 4466.94 =

-Y6- ( N.C.33 )

EXISTING GROUND

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
1.25000	11	14
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



-1-1- WBL				-1-1- REV				-1-1- EBL			
STATION	PC	PT	PI	STATION	PC	PT	PI	STATION	PC	PT	PI
11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00	11+00.00
12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00	12+00.00

FOR -1-1- REV WBL (11+00.00) PROFILE, SEE SHEET 10  
FOR -1-1- REV EBL (11+00.00) PROFILE, SEE SHEET 10  
FOR -1-1- REV WBL (12+00.00) PROFILE, SEE SHEET 10  
FOR -1-1- REV EBL (12+00.00) PROFILE, SEE SHEET 10  
FOR LOOP F STRUCTURE, SEE STRUCTURE SHEETS 5 - THRU 5-  
FOR LOOP F STRUCTURE, SEE STRUCTURE SHEETS 5 - THRU 5-

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

INTERCHANGE AT  
-Y-EBL/-1-1-WBL (11+00.00)  
AND -Y2- (11+00.00)

EDGECOMBE COUNTY

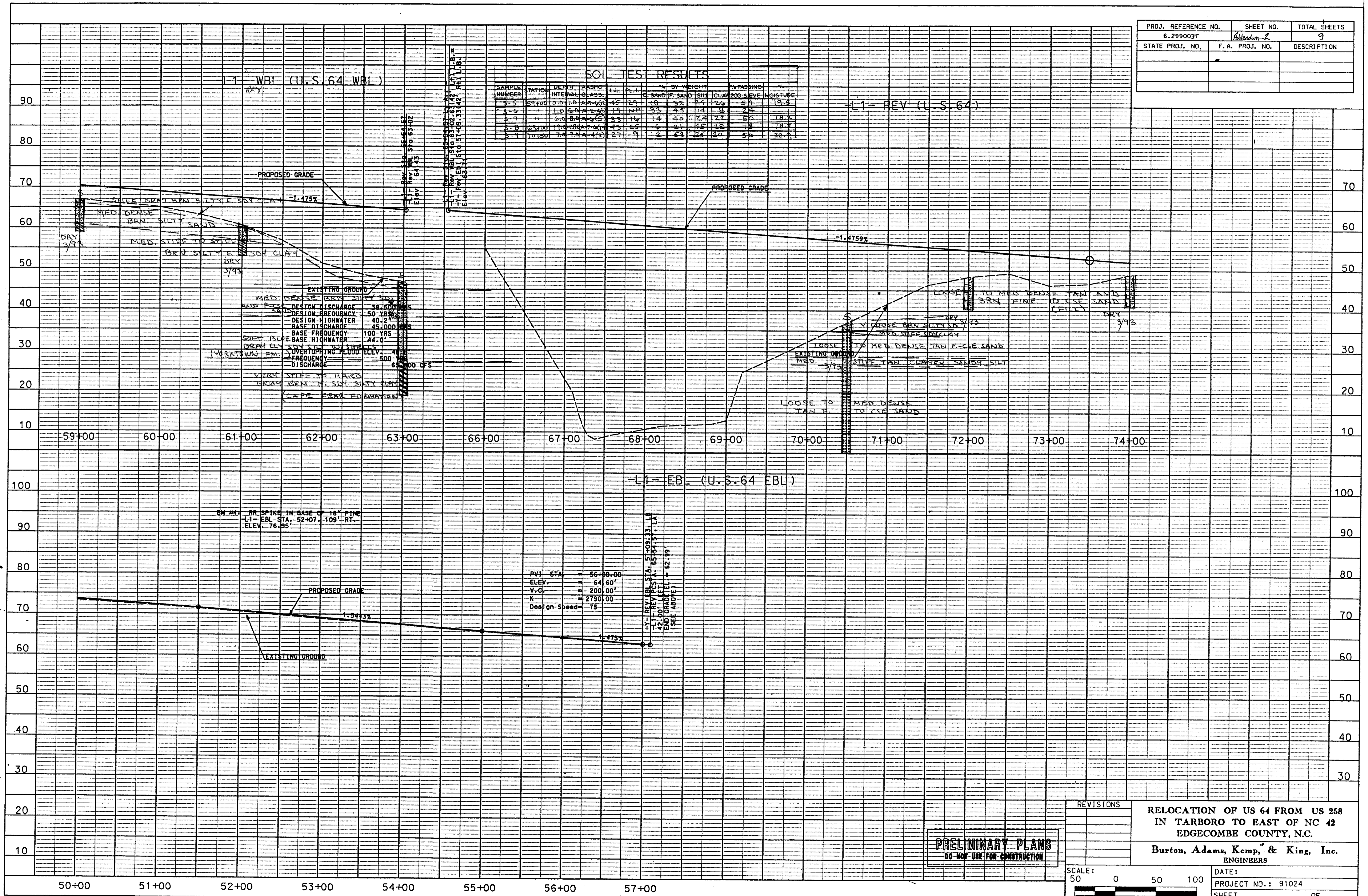
REVISION	RELOCATION OF US 64 FROM US 29B IN TARBORO TO EAST OF NC 48 EDGECOMBE COUNTY, N.C.
DATE	Barton, Adams, Kemp, & King, Inc.
PROJECT NO. 1 91024	
SHEET	

SCALE: 50 0 50 100  
DATE: 11/20/92  
SHEET 11 OF 14

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	Appendix L	9
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	ASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				FLUWASHING	MOISTURE
						G. SAND	F. SAND	SILT	CLAY		
S-5	59+00	0.0-1.0	A-7.6(2)	45	29	18	32	24	26	54	19.3
S-6	"	1.0-2.0	A-7.6(2)	19	11P	33	45	17	28	24	
S-7	"	2.0-3.0	A-7.6(2)	33	16	14	16	24	27	50	18.7
S-8	63+00	1.0-2.0	A-7.6(2)	43	25	6	21	25	28	18	18.3
S-9	70+00	7.0-9.0	A-7.6(2)	27	9	2	63	25	20	50	22.0



EXISTING GROUND  
 MED. DENSE BRN. SILTY SAND  
 SAND DESIGN DISCHARGE 38,500 CFS  
 DESIGN FREQUENCY 50 YRS  
 DESIGN HIGHWATER 40.2'  
 BASE DISCHARGE 45,000 CFS  
 BASE FREQUENCY 100 YRS  
 BASE HIGHWATER 44.0'  
 SOFT CLAY (YORKTOWN) FM  
 SUPERIMPOSED FLOOD ELEV. 48'  
 DISCHARGE 65,000 CFS  
 VERY STIFF TO HARD GRAY BRN. F. SILTY CLAY (CAPR. FEAR ED. MARVIN)

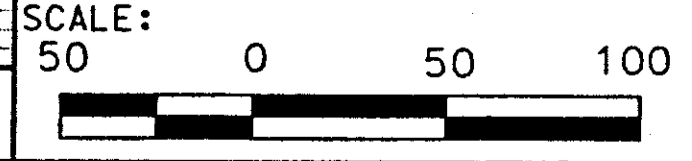
PVI STA = 56+98.00  
 ELEV. = 64.60'  
 V.C. = 200.00'  
 K = 2790.00  
 Design Speed = 75

REV EBL STA. 51+00:33.18  
 42.00' L.F. STA. 65+54.15' LA  
 END GRADE ELEV. = 62.99'  
 (SEE ABOVE)

CM 441 RR SPIKE IN BASE OF 18" PINE  
 L1-EBL STA. 52+07.109' RT.  
 ELEV. 76.85'

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

REVISIONS	

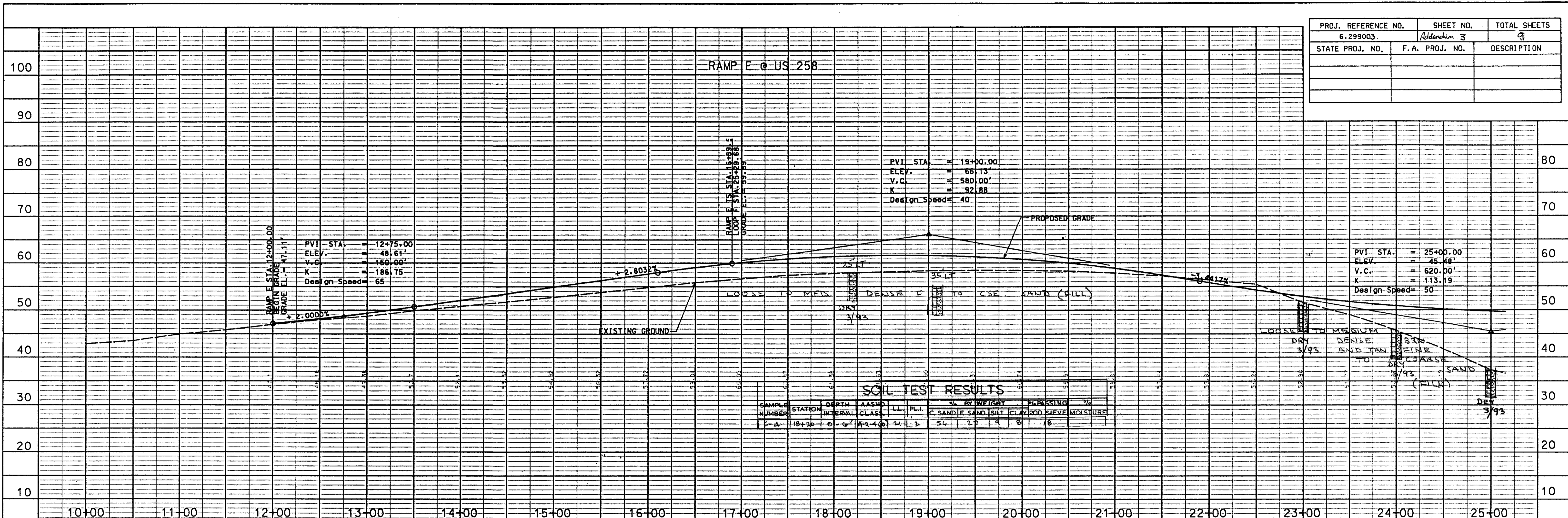


**RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.**  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

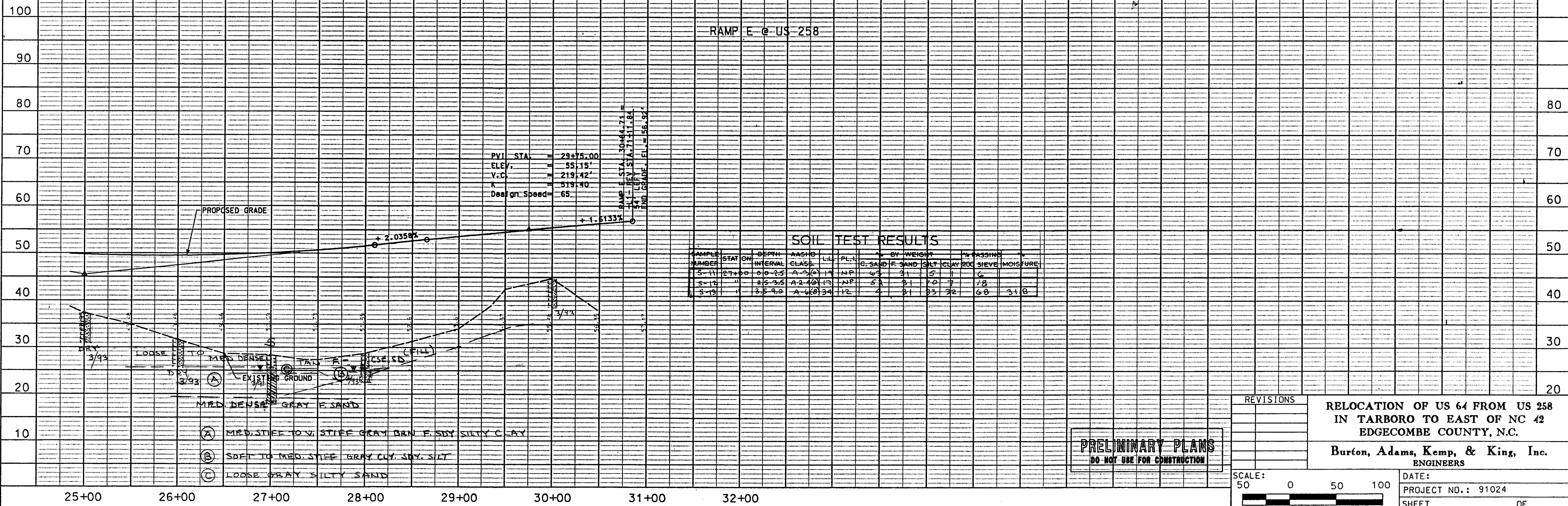


PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003	ADDENDUM 3	9
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PL	% BY WEIGHT				PASSING 200 SIEVE	MOISTURE
						C SAND	F SAND	SILT	CLAY		
S-11	18+20	0-6"	A-2	21	12	56	27	19	8	18	



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PL	% BY WEIGHT				PASSING 200 SIEVE	MOISTURE
						C SAND	F SAND	SILT	CLAY		
S-11	27+00	0-2.5'	A-2	19	NP	63	31	5	1	6	
S-12	"	2.5-3.5'	A-2	17	NP	58	31	10	1	18	
S-13	"	3.5-9.0'	A-6	34	12	4	31	33	32	68	31.0

- (A) MED. STIFF TO V. STIFF GRAY BRN F. SDY SILTY CLAY
- (B) SOFT TO MED. STIFF GRAY CLY. SDY. SILT
- (C) LOOSE GRAY SILTY SAND

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

REVISIONS

**RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.**

**Burton, Adams, Kemp, & King, Inc.**  
ENGINEERS

SCALE: 50 0 50 100

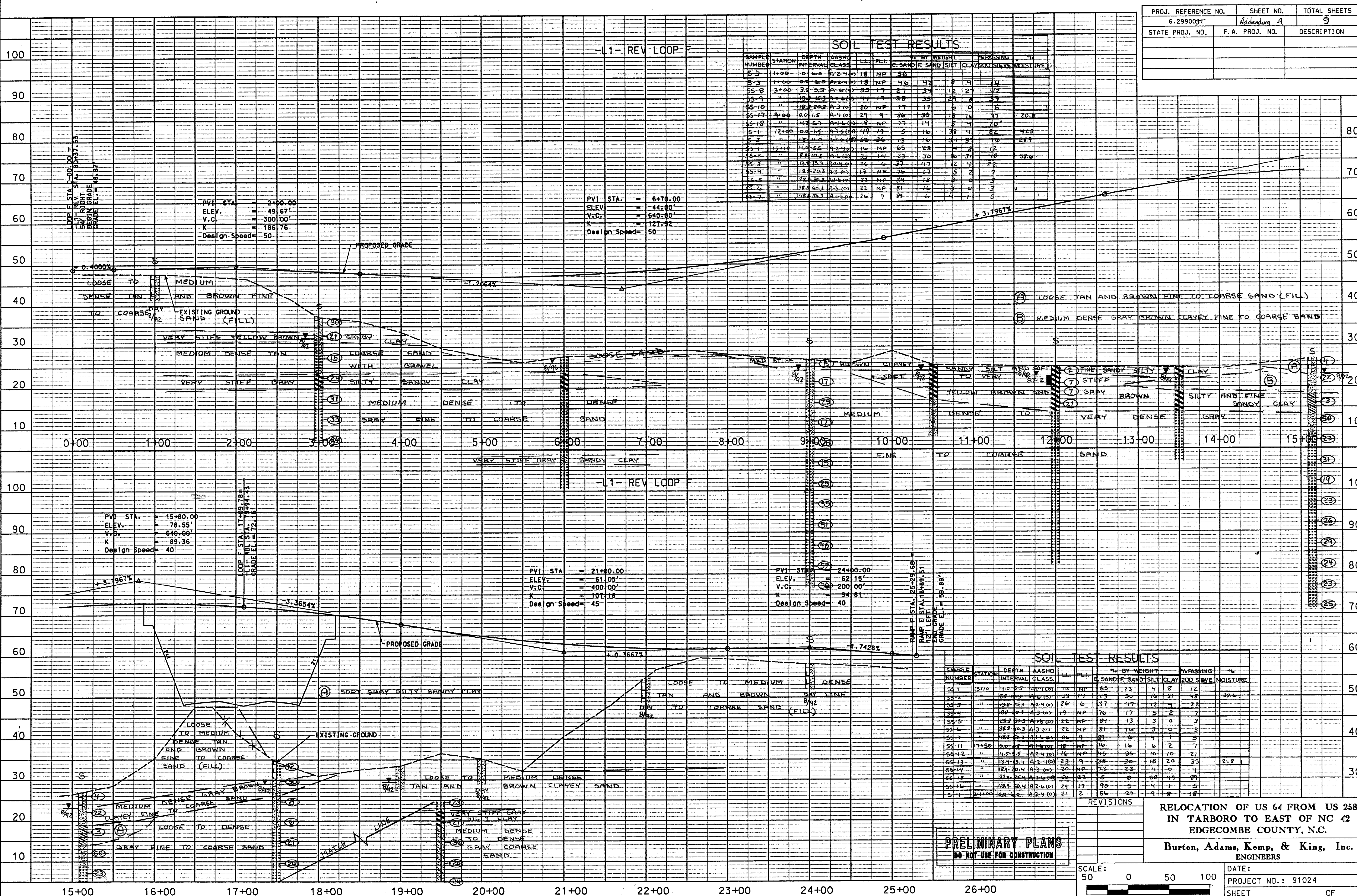
DATE: PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299003T	Addendum A	9
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PL	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY	
SS-3	11+00	0-1.00	A-2(4)	18	NP	56	42	8	4	14
SS-3	11+00	0-6.00	A-2(4)	18	NP	56	42	8	4	14
SS-8	3+00	3.5-5.3	A-6(4)	35	17	27	37	12	2	42
SS-9	"	13.0-16.3	A-7(4)	44	17	28	32	29	8	53
SS-10	"	18.0-20.9	A-3(4)	20	NP	77	17	6	0	16
SS-17	9+00	0.0-1.5	A-4(4)	20	9	36	30	18	16	20.8
SS-18	"	4.2-5.7	A-1(4)	18	NP	77	14	5	4	10
SS-1	12+00	0.0-1.5	A-2.5(4)	44	19	5	16	38	4	82
SS-2	"	1.5-11.0	A-7(4)	52	36	13	16	37	3	28.7
SS-2	"	11.0-14.0	A-6(4)	16	NP	65	23	4	8	12
SS-2	"	14.0-18.0	A-6(4)	32	14	23	30	16	31	48
SS-2	"	18.0-23.3	A-2(4)	26	6	27	47	12	4	22
SS-4	"	18.0-20.3	A-3(4)	19	NP	76	17	5	2	7
SS-5	"	22.0-30.0	A-1(4)	22	NP	84	12	3	0	3
SS-6	"	32.0-40.3	A-3(4)	22	NP	81	16	3	0	3
SS-7	"	42.0-50.3	A-1(4)	26	9	39	6	4	1	5



- (A) LOOSE TAN AND BROWN FINE TO COARSE SAND (FILL)
- (B) MEDIUM DENSE GRAY BROWN CLAYEY FINE TO COARSE SAND

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PL	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY	
SS-1	15+10	4.0-5.5	A-2(4)	16	NP	65	23	4	8	12
SS-2	"	6.0-8.0	A-6(4)	33	11	23	30	10	31	48
SS-3	"	13.0-15.3	A-2(4)	20	6	37	47	12	4	22
SS-4	"	18.0-20.3	A-3(4)	19	NP	76	17	5	2	7
SS-5	"	28.0-30.3	A-1(4)	22	NP	84	13	3	0	3
SS-6	"	32.0-40.3	A-3(4)	22	NP	81	16	3	0	3
SS-7	"	42.0-50.3	A-1(4)	26	9	39	6	4	1	5
SS-11	17+50	0.0-1.5	A-1(4)	18	NP	76	16	2	4	7
SS-12	"	1.5-4.5	A-2(4)	16	NP	45	35	10	10	21
SS-13	"	13.0-15.4	A-2(4)	23	9	35	30	15	20	35
SS-14	"	18.0-20.4	A-3(4)	20	NP	73	23	4	0	4
SS-15	"	22.0-24.4	A-1(4)	22	NP	86	8	6	4	8
SS-16	"	28.0-30.4	A-2(4)	29	17	40	5	4	1	5
SS-17	24+00	0.0-1.0	A-2(4)	21	2	56	27	9	8	18

**REVISIONS**

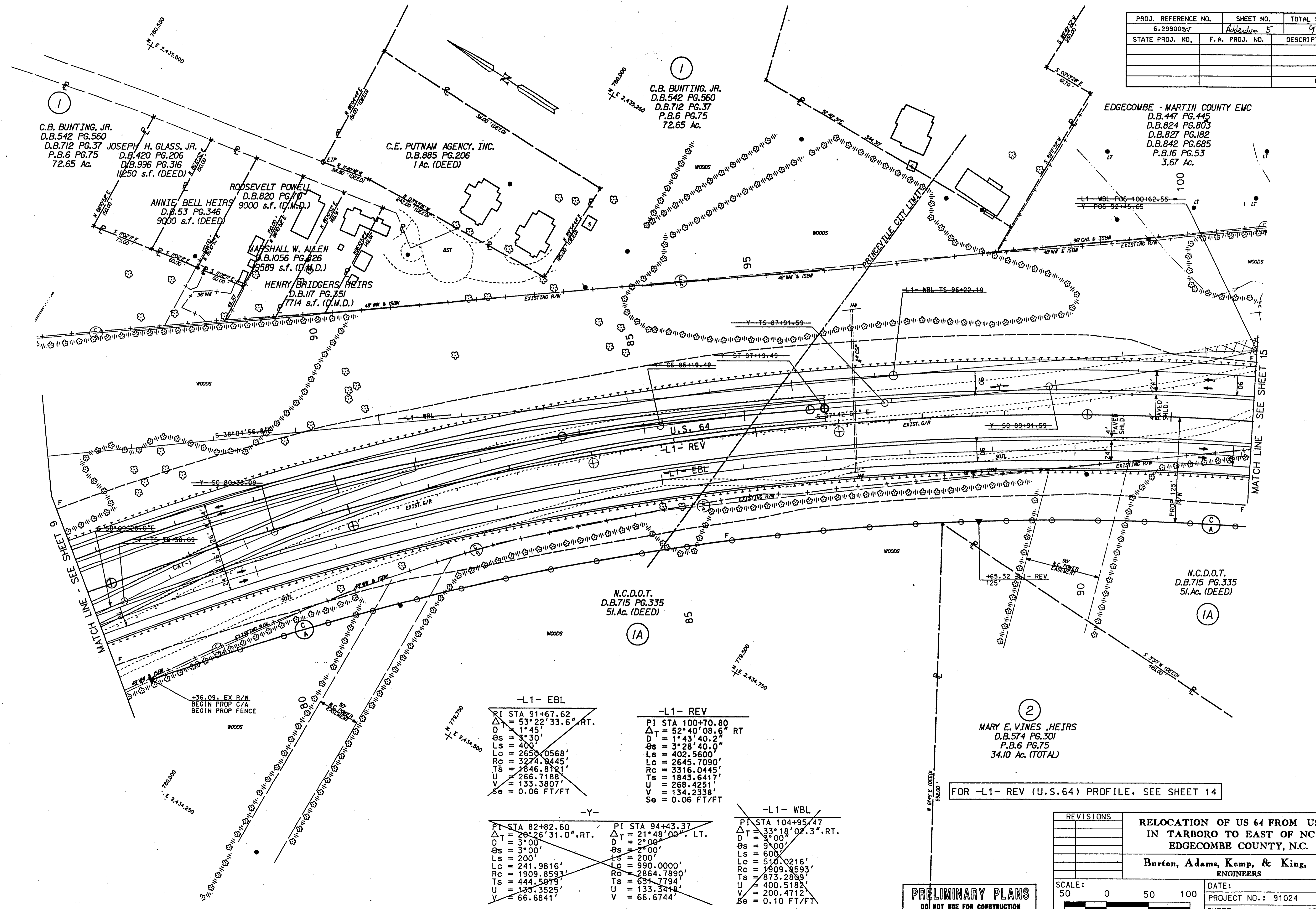
**RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.**

**Burton, Adams, Kemp, & King, Inc.  
ENGINEERS**

**PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION**

SCALE: 50' = 1" (0, 50, 100)	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	Attachment 5	9
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



C.B. BUNTING, JR.  
D.B.542 PG.560  
D.B.712 PG.37  
P.B.6 PG.75  
72.65 Ac.

JOSEPH H. GLASS, JR.  
D.B.420 PG.206  
D.B.996 PG.316  
11250 s.f. (DEED)

ANNIE BELL HEIRS  
D.B.53 PG.346  
9000 s.f. (DEED)

ROOSEVELT POWELL  
D.B.820 PG.110  
9000 s.f. (D.M.D.)

MARSHALL W. ALLEN  
D.B.1056 PG.626  
3589 s.f. (D.M.D.)

HENRY BRIDGERS HEIRS  
D.B.117 PG.751  
7714 s.f. (D.M.D.)

C.E. PUTNAM AGENCY, INC.  
D.B.885 PG.206  
1 Ac. (DEED)

C.B. BUNTING, JR.  
D.B.542 PG.560  
D.B.712 PG.37  
P.B.6 PG.75  
72.65 Ac.

EDGECOMBE - MARTIN COUNTY EMC  
D.B.447 PG.445  
D.B.824 PG.803  
D.B.827 PG.182  
D.B.842 PG.685  
P.B.16 PG.53  
3.67 Ac.

N.C.D.O.T.  
D.B.715 PG.335  
51 Ac. (DEED)

N.C.D.O.T.  
D.B.715 PG.335  
51 Ac. (DEED)

MARY E. VINES HEIRS  
D.B.574 PG.301  
P.B.6 PG.75  
34.10 Ac. (TOTAL)

~~-L1- EBL~~  
PI STA 91+67.62  
 $\Delta T = 53^{\circ}22'33.6''$  RT.  
D = 1'45"  
Ss = 3'30"  
Ls = 400'  
Lc = 2650.0568'  
Rc = 3274.8445'  
Ts = 1846.8121'  
U = 266.7188'  
V = 133.3807'  
Se = 0.06 FT/FT

~~-L1- REV~~  
PI STA 100+70.80  
 $\Delta T = 52^{\circ}40'08.6''$  RT  
D = 1'43'40.2"  
Ss = 3'28'40.0"  
Ls = 402.5600'  
Lc = 2645.7090'  
Rc = 3316.0445'  
Ts = 1843.6417'  
U = 268.4251'  
V = 134.2338'  
Se = 0.06 FT/FT

~~-Y-~~  
PI STA 82+82.60  
 $\Delta T = 28^{\circ}26'31.0''$  RT.  
D = 3'00"  
Ss = 3'00"  
Ls = 200'  
Lc = 241.9816'  
Rc = 1909.8593'  
Ts = 444.5079'  
U = 133.3525'  
V = 66.6841'

~~PI STA 94+43.37~~  
 $\Delta T = 21^{\circ}48'00.0''$  LT.  
D = 2'00"  
Ss = 2'00"  
Ls = 200'  
Lc = 990.0000'  
Rc = 2864.7890'  
Ts = 651.7794'  
U = 133.3418'  
V = 66.6744'

~~-L1- WBL~~  
PI STA 104+95.47  
 $\Delta T = 33^{\circ}18'02.3''$  RT.  
D = 3'00"  
Ss = 9'00"  
Ls = 600'  
Lc = 510.0216'  
Rc = 1909.8593'  
Ts = 873.2809'  
U = 400.5182'  
V = 200.4712'  
Se = 0.10 FT/FT

FOR -L1- REV (U.S.64) PROFILE. SEE SHEET 14

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION

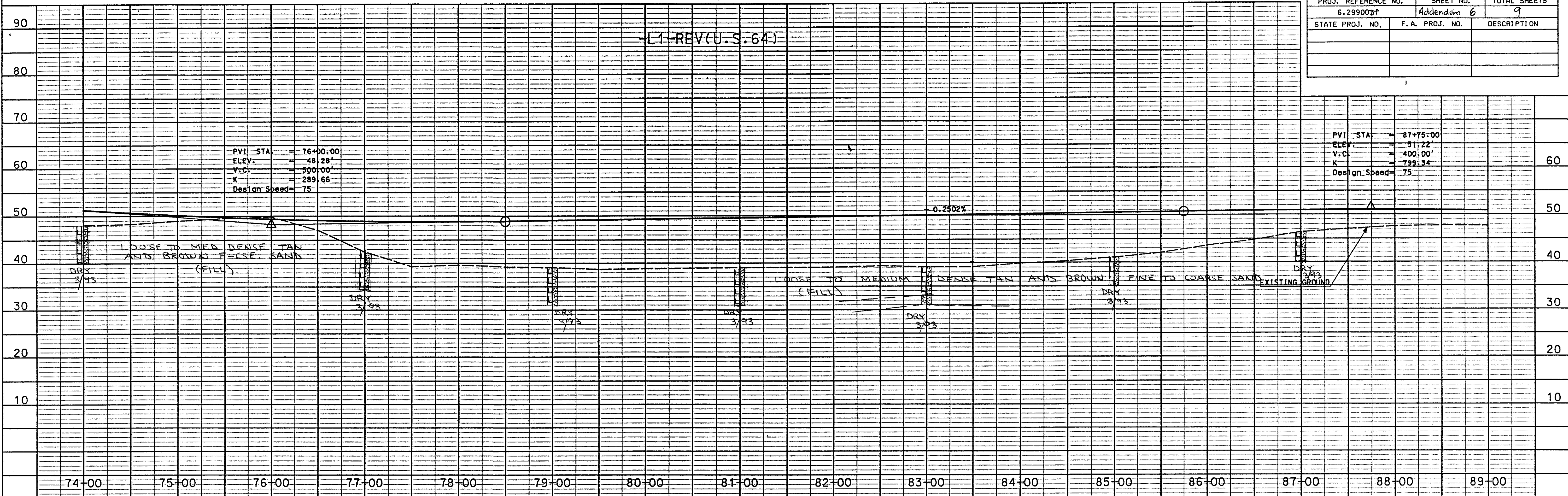
REVISIONS

**RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGECOMBE COUNTY, N.C.**  
**Burton, Adams, Kemp, & King, Inc.**  
ENGINEERS

SCALE: 50 0 50 100  
DATE: PROJECT NO.: 91024  
SHEET OF

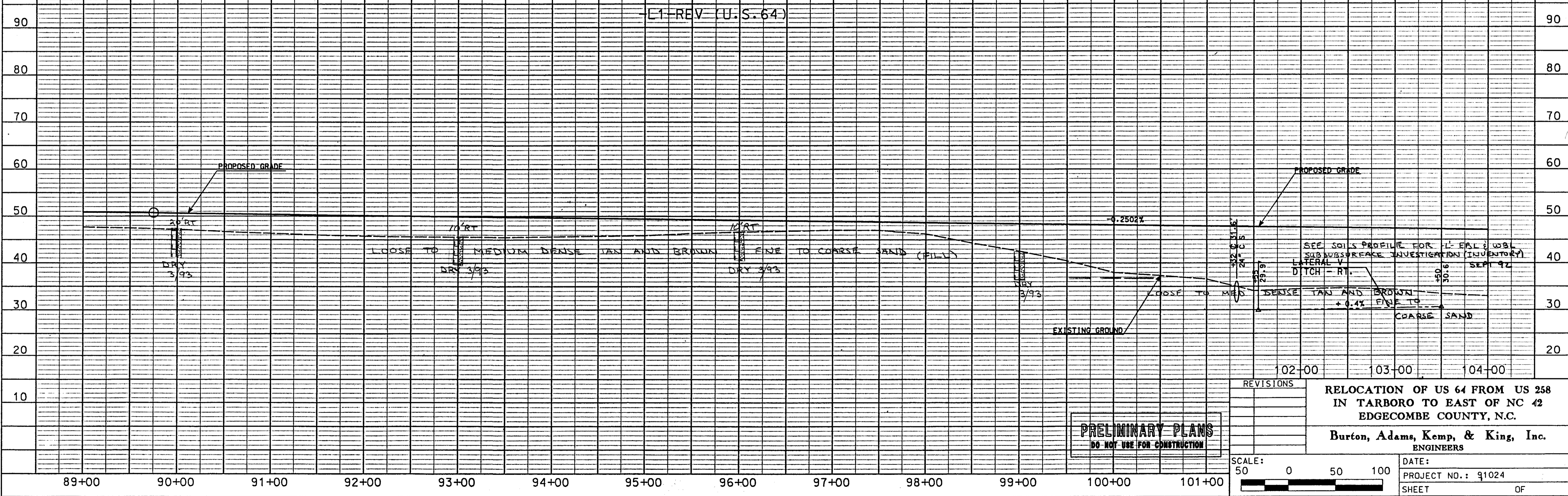
DATE: PROJECT NO.: 91024  
SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990037	Addendum 6	9
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



PVI STA. = 76+00.00  
 ELEV. = 48.28'  
 V.C. = 500.00'  
 K = 289.66  
 Design Speed = 75

PVI STA. = 87+75.00  
 ELEV. = 51.22'  
 V.C. = 400.00'  
 K = 799.34  
 Design Speed = 75



SEE SOIL PROFILE FOR L-ERL WBL  
 SUBSURFACE INVESTIGATION (INVENTORY)  
 LATERAL V. DITCH - RT. SEPT 92

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

**RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.**  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

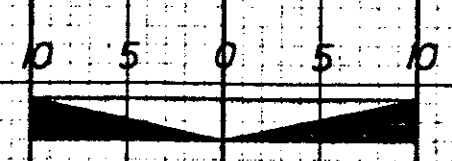
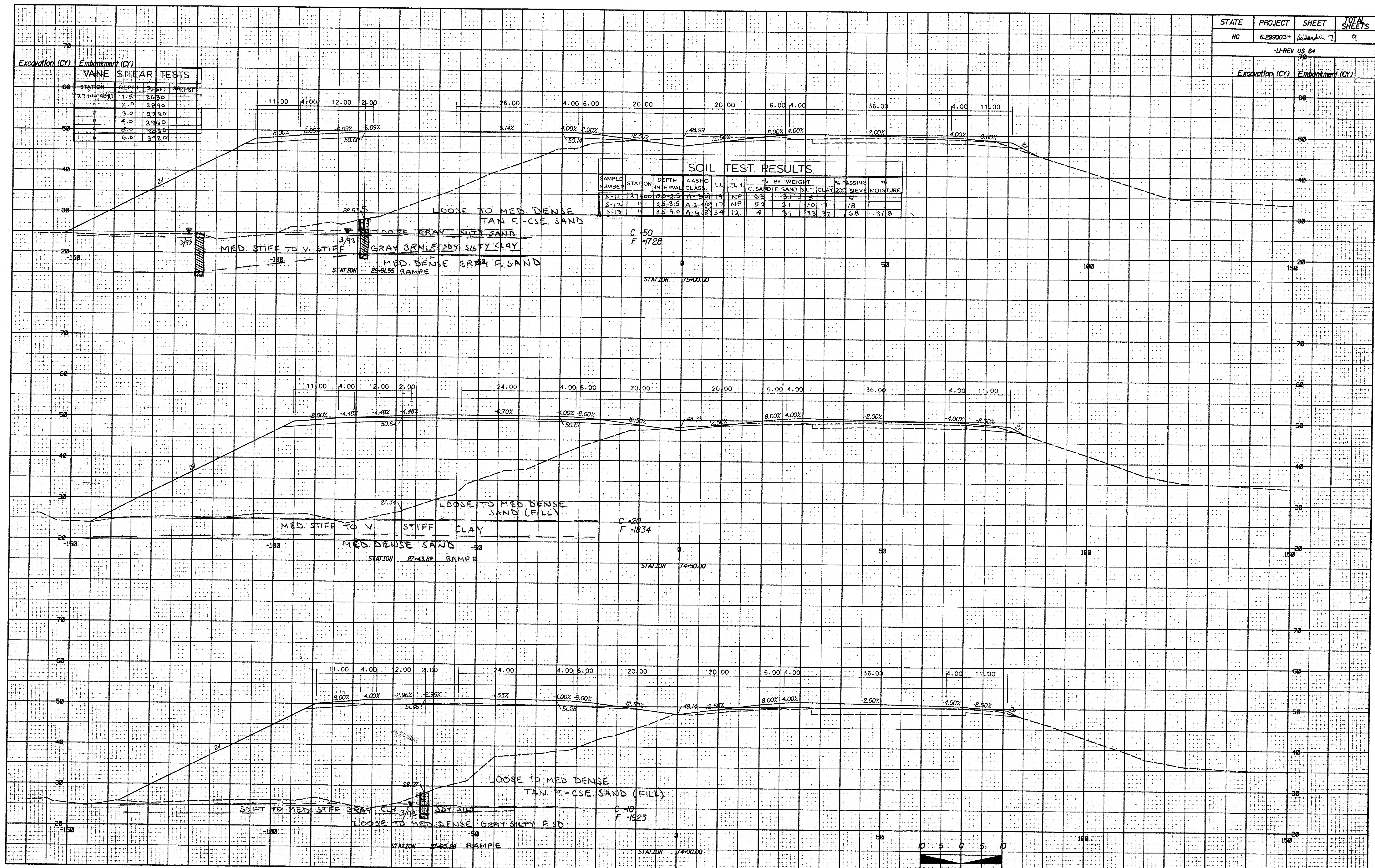
SCALE: 50 0 50 100

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

Excavation (CY)	Embankment (CY)
60	70
50	60
40	50
30	40
20	30
10	20
0	10
-10	0
-20	-10
-30	-20
-40	-30
-50	-40
-60	-50
-70	-60
-80	-70
-90	-80
-100	-90
-110	-100
-120	-110
-130	-120
-140	-130
-150	-140

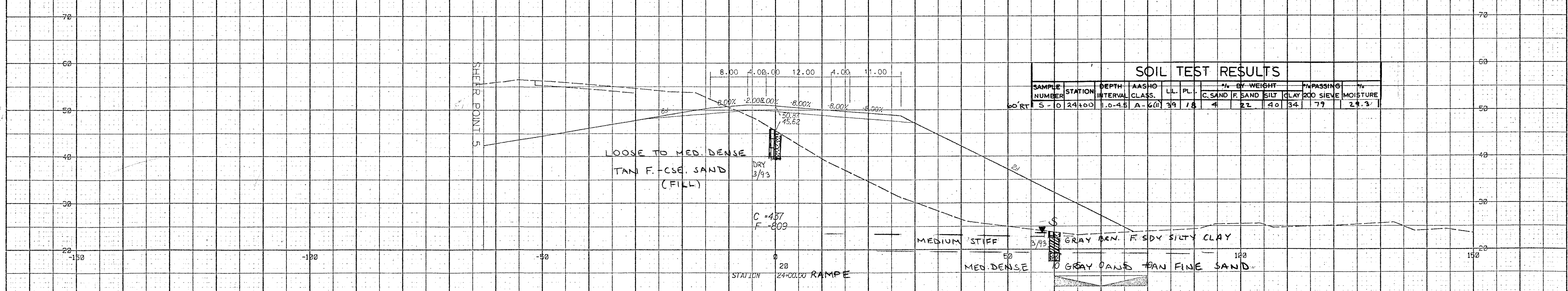
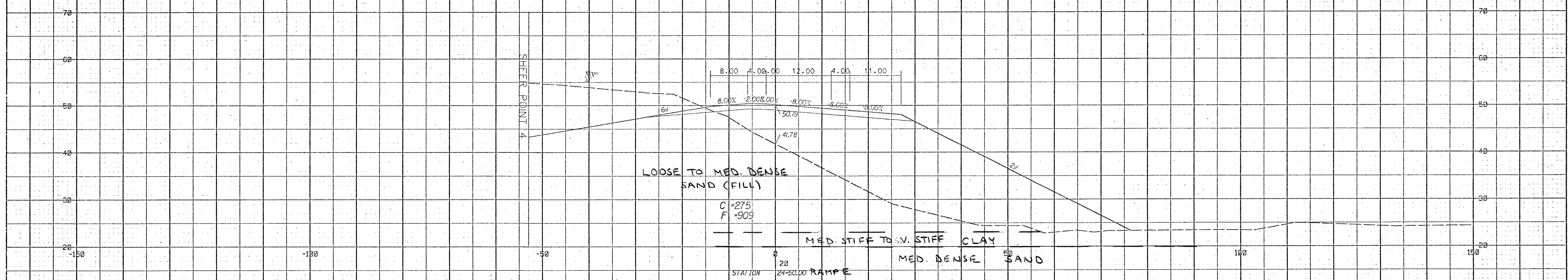
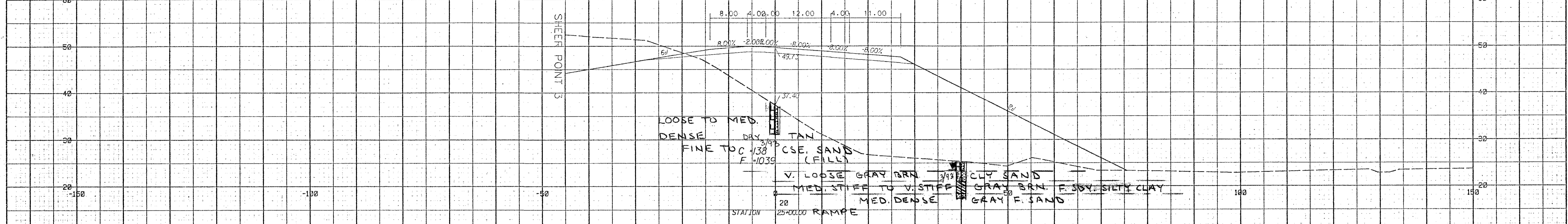
VANE SHEAR TESTS			
STATION	DEPTH	9/16"	3/16"
27+48.40	1.5	2630	
"	2.0	2690	
"	3.0	2720	
"	4.0	2740	
"	5.0	2730	
"	6.0	3720	

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	LL	PL.1	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-11	27+00	0.0-2.5	A-3(0)	14	NP	62	31	3	3	68	
S-12	"	2.5-3.5	A-2-4(0)	17	NP	52	31	10	7	78	
S-13	"	3.5-9.0	A-4(8)	34	12	4	51	33	32	68	31.8



Excavation (CY)    Embankment (CY)

Excavation (CY)    Embankment (CY)

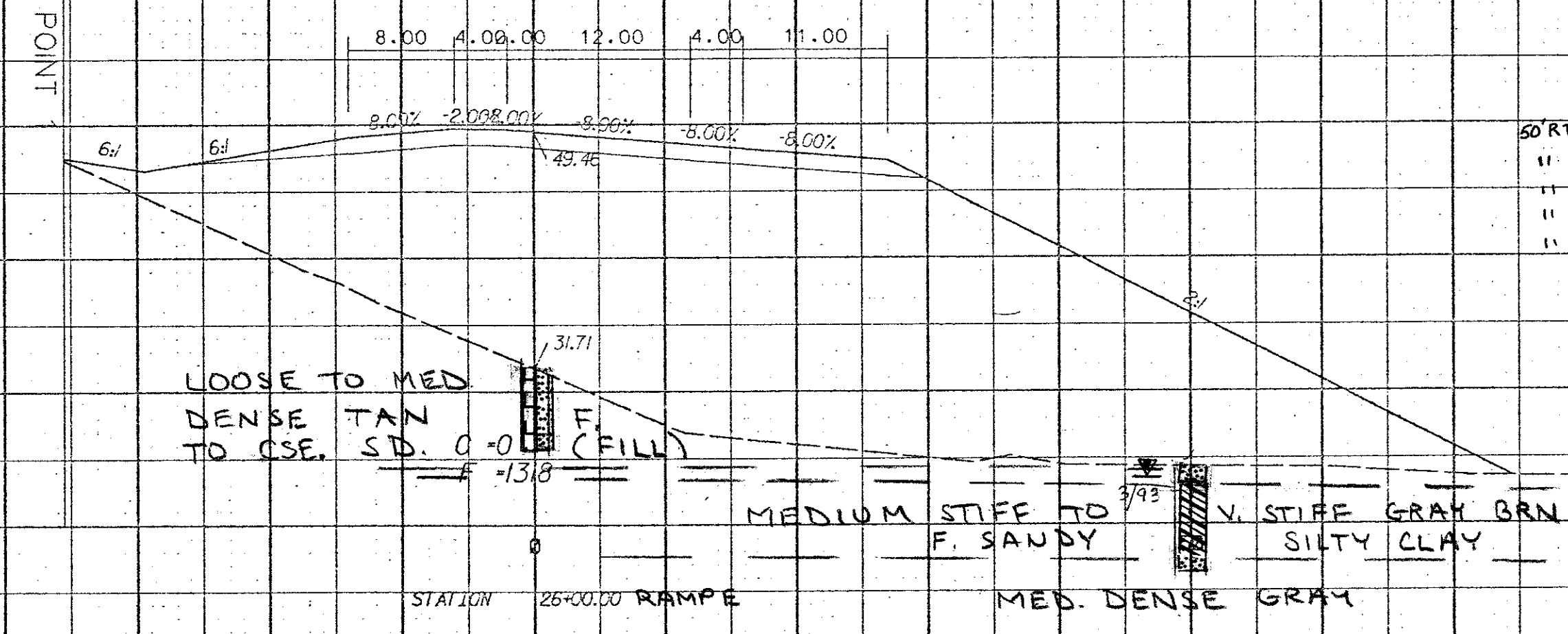


SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-10	24+00	1.0-4.5	A-6(1)	39	18	4	22	40	34	79	21.3

STATE	PROJECT	SHEET	TOTAL SHEETS
NC	6.299003T	ADDENDUM 9	9
RAMP E US 258			
Excavation (CY)	Embankment (CY)		

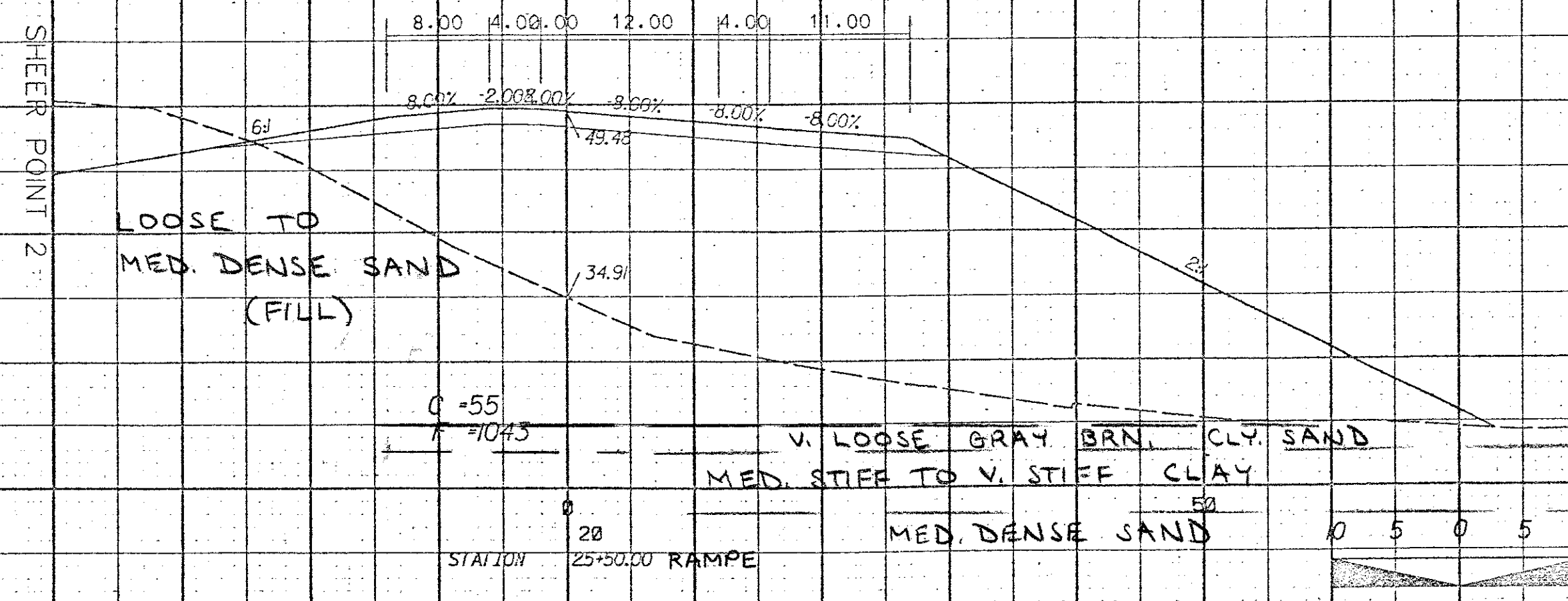
Excavation (CY)    Embankment (CY)

SHEER POINT



STATION	DEPTH	SR (PSF)	SR (PSF)
26+00	2.5	1300	
"	3.0	1900	
"	4.0	2700	
"	5.0	3740	
"	6.0	4440	

SHEER POINT 2



PROJECT: 6.299005T ID. R-2111AB

PROJECT 6.299005T  
TIP R-2111AB  
LETTING DATE

STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6.299005T	1	65

CAUTION NOTICE

The Subsurface information and the Subsurface Investigation on which it is based was made for the purpose of study, planning and design, and not for construction or pay purposes. Some data obtained may be omitted from this release.

Additional information may be available, including, but not limited to the following:

- Field Boring Logs
- Rock Cores
- Soil & Rock Test Data
- Subsurface Report

This information may be viewed by appointment by contacting the N. C. Department of Transportation, Geotechnical Unit @ (919) 250-4088. Neither the Subsurface plans and reports, nor the field boring logs, rock cores, or soil test data is part of the contract.

General soil and rock strata descriptions and indicated boundaries are based on a geotechnical interpretation of all available subsurface data and may not necessarily reflect the actual subsurface conditions between borings or between sampled strata within the borehole. The laboratory sample data and the in situ (in-place) test data can be relied on only to the degree of reliability inherent in the standard test method. The observed water levels or soil moisture conditions indicated in the subsurface investigations are as recorded at the time of the investigation. These water levels or soil moisture conditions may vary considerably with time according to climatic conditions including temperature, precipitation and wind, as well as other non-climatic factors.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE INFORMATION ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPTIONS OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

# SUBSURFACE INVESTIGATION

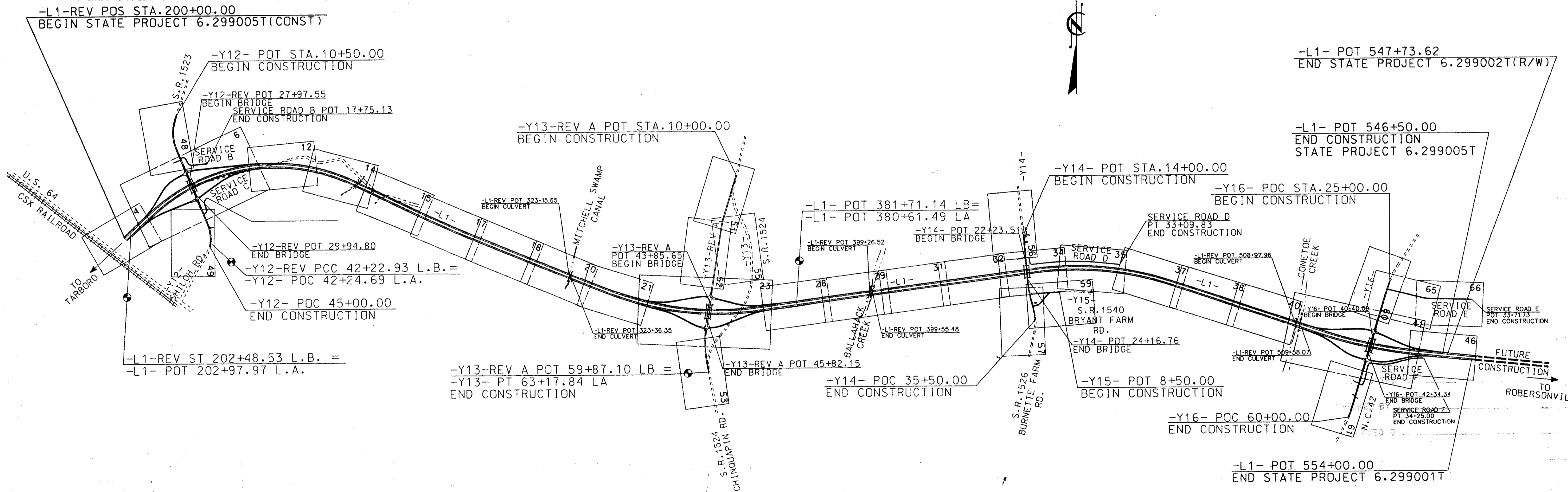
STATE PROJECT 6.299005T ID. No. R-2111AB

F.A. PROJECT

COUNTY EDGEcombe

DESCRIPTION U.S. 64 RELOCATION FROM EAST OF CSX RAILROAD TO EAST OF NC-42

(INVENTORY)



DRAWN BY: \_\_\_\_\_

SEAL

Signature \_\_\_\_\_



N.C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6.299005T	2	

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

**SOIL DESCRIPTION**

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 B.P.F. ACCORDING TO THE STANDARD PENETRATION TEST (ASTM-D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY STRUCTURE, PLASTICITY, ETC. EXAMPLE: *VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, BLEGELY PLASTIC, A-7-G.*

**SOIL LEGEND AND CLASSIFICATION**

GENERAL CLASS.	GRANULAR MATERIALS (35% LESS PASSING NO. 200)							SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)							ORGANIC SOILS							
	A-1	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1	A-2	A-4	A-5	A-6	A-7	A-1	A-2	A-3			
GROUP CLASS.	A-1-1	A-1-2	A-2-4-1	A-2-5-1	A-2-6-1	A-2-7-1	A-4-1	A-5-1	A-6-1	A-7-1	A-1-1	A-2-1	A-4-1	A-5-1	A-6-1	A-7-1	A-1-1	A-2-1	A-3-1			
SYMBOL	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]	[Symbol]			
% PASSING	# 10	# 40	# 200	# 10	# 40	# 200	# 10	# 40	# 200	# 10	# 40	# 200	# 10	# 40	# 200	# 10	# 40	# 200	# 10	# 40	# 200	
LIQUID LIMIT	0 MAX.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLASTIC INDEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GROUP INDEX	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL & SAND			SILTY OR CLAYEY GRAVEL & SAND			SILTY SOILS			CLAYEY SOILS			WITH LITTLE OR MODERATE AMOUNT OF ORGANIC MATTER			HIGHLY ORGANIC SOIL						
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD						FAIR TO POOR						FAIR TO POOR			POOR			UNSUITABLE			

P.I. OF A-7-G < L.L. -30; P.I. OF A-7-G > L.L. -30

**CONSISTENCY OR DENSENESS**

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH
COARSE GRAINED SOILS	VERY LOOSE LOOSE MED. DENSE DENSE VERY DENSE	LESS THAN 4 B.P.F. 4 TO 10 10 TO 30 30 TO 50 MORE THAN 50	N/A
FINE GRAINED SOILS	VERY SOFT SOFT MED. STIFF STIFF VERY STIFF HARD	LESS THAN 2 B.P.F. 2 TO 4 4 TO 8 8 TO 15 15 TO 30 MORE THAN 30	LESS THAN .25 TSF 0.25 TO 0.5 0.5 TO 1.0 1.0 TO 2.0 2.0 TO 4.0 MORE THAN 4.0

1 SEE STANDARD PENETRATION TEST

**TEXTURE OR GRAIN SIZE**

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.0	0.42	0.25	0.075	0.053

BOULDER	COBBLE	GRAVEL	COARSE SAND	MED. SAND	FINE SAND	SILT	CLAY
GRAIN SIZE MM	305	76	2	0.6	0.25	0.2	.05
SIZE IN.	12"	3"					.005

**SOIL MOISTURE SCALE (ATTERBERG LIMITS)**

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	PHYSICAL STATE	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
LL - LIQUID LIMIT	LIQUID	SATURATED	VERY WET, USUALLY FROM BELOW GROUND WATER TABLE
PL - PLASTIC LIMIT (P.I.)	SEMI-SOLID	WET (W)	REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
OM - OPT. MOISTURE	SOLID	MOIST (M)	AT OR NEAR OPTIMUM MOISTURE
SL - SHRINKAGE LIMIT		DRY (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

**PLASTICITY**

NONPLASTIC	PLASTICITY INDEX	DRY STRENGTH
LOW PLASTICITY	0-5	VERY LOW
MED. PLASTICITY	6-15	SLIGHT
HIGH PLASTICITY	16-25	MEDIUM
	26 OR MORE	HIGH

**COLOR**

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

**GRADATION**

WELL-GRADED INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.  
UNIFORM INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)  
GAP-GRADED INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.

**ANGULARITY OF GRAINS**

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

**MINERALOGICAL COMPOSITION**

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

**COMPRESSIBILITY**

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 30
MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

**ROCK DESCRIPTION**

IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:

TERM	SYMBOL	DESCRIPTION
WEATHERED ROCK (HWR) (SWR)	[Symbol]	MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. VALUES >100 B.P.F. BUT <S.P.T. REFUSAL.
HARD ROCK (HR)	[Symbol]	MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. REFUSAL.
CORED ROCK	[Symbol]	MATERIAL SUCH THAT IT CANNOT BE PENETRATED BY POWER AUGER, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING SAMPLE.
INFERRED ROCK LINE	[Symbol]	* S.P.T. REFUSAL (ASTM) ≤ 1" OF PENETRATION PER 50 BLOWS. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. WHEN ROCK IS CORED, THE HARD ROCK SYMBOL IS SHOWN TO THE DEPTH CORED. A FULL DESCRIPTION OF ROCK USING APPROPRIATE TERMS (SEE DEFINITION OF TERMS)-INCLUDES PERCENT OF CORE RECOVERY (% REC) AND ROCK QUALITY DESIGNATION (RQD).

**GROUND WATER**

▽ DATE: WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING-  
▼ DATE: STATIC WATER LEVEL AFTER 24 HOURS  
○ SPRING

**MISCELLANEOUS SYMBOLS AND ABBREVIATIONS**

[Symbol] ROADWAY EMBANKMENT WITH SOIL DESCRIPTION	[Symbol] ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS
[Symbol] SOIL SYMBOL	[Symbol] CORE BORING
[Symbol] AUGER BORING	[Symbol] PIEZOMETER INSTALLATION
[Symbol] TEST BORING	[Symbol] SLOPE INDICATOR INSTALLATION
[Symbol] STRIKE AND DIP OF BEDS	[Symbol] INFERRED SOIL BOUNDARIES
[Symbol] SPT N-COUNT	[Symbol] APPARENT DIP (NORMAL TO)

SAMPLE DESIGNATION: ST - 3 - SHELBY TUBE SAMPLES  
S - BULK SAMPLE  
SS - SPLIT SPOON SAMPLE  
WS - WASH BORING SAMPLE

**TERMS AND DEFINITIONS**

ALLUVIUM (alluv.) - Soils which have been transported by flowing water.  
APPARENT DIP - The dip of rock strata not perpendicular to strike.  
AQUIFER - A water-bearing formation or strata.  
AUGER REFUSAL (A.R.) - Point at which power augers will not actually or practically penetrate.  
BEDDED - Soil or rock lying in a position essentially parallel.  
BEDROCK - Rock of relatively great thickness and extent in its original location.  
CALCAREOUS (calc.) - Soils which contain appreciable amounts of calcium carbonate.  
COHESIVE SOIL - A soil that when unconfined has considerable dry strength and significant cohesion when submerged.  
COLLUVIUM - Rock fragments mixed with soil deposited by gravity on slope or at bottom of slope.  
CORE RECOVERY (% Rec.) - Total length of all rock divided by total length of core run expressed as a percentage.  
COQUINA - A rock type composed essentially of marine shells cemented by calcium carbonate.  
DIKE - Igneous rock intrusive which is narrow compared with its other dimensions.  
DIP - The angle between a bedding plane, joint plane or fault plane and the horizontal, measured perpendicular to the strike.  
DUMPS - Uncovered deposits of waste materials such as wood, masonry debris or garbage.  
FAULT - A break in the continuity of a body of rock, attended by a movement on either or both sides of the break.  
FINES - Portion of a soil finer than No. 200 U. S. Standard Sieve.  
FISSILITY OR FISSILE - A property of splitting easily along closely spaced parallel planes.  
FLOAT - Rock fragments on surface near their original position dislodged from parent material.  
FLOODPLAIN - Land bordering a stream, built of sediments deposited by the stream.  
FORMATION - A mappable unit that can be recognized and traced in the field.  
FRACTURE - A crack large enough to be visible to unaided eye.  
FRIABLE - Easy to break or crumble.  
GRANULAR SOIL - Soil that when unconfined has little or no dry strength and has little or no cohesion when submerged.  
GROUND WATER - (Free Water) (G. W.) - Water that is free to move through soil mass under influence of gravity.  
GROUNDWATER LEVEL - Level at which the pressure in water is zero with respect to the atmospheric pressure.  
HARDPAN - A general term used to describe a hard cemented soil layer which does not soften when wet.  
INDURATED - Earth material hardened by heat, pressure or cementation.  
INTERBEDDED - Alternating lenses or layers of soil and/or rock materials.  
JOINT - Fracture in rock along which no appreciable movement has occurred.  
LAMINATED - Very thin alternating layers less than 1" in thickness.  
LAYER - Subject material greater than 1" thick.  
LEDGE - A shelf-like ridge or projection of rock whose thickness is small compared to its lateral extent.  
LENS - A body of soil or rock that thins out in one or more directions.  
MARL - A non-indurated, calcareous deposit of clays, silts and sand, often containing shells.  
MICACEOUS SOIL (mic.) - A soil or rock containing an appreciable amount of mica.  
MUCK (mk.) - An highly organic soil of very soft consistency, generally found on tidal flats, lakes or stream floodplains.  
PEAT (pt) - A fibrous mass of organic matter in various stages of decomposition.

PERCHED WATER - Water maintained above the normal ground water level by the presence of an intervening impervious stratum.  
RESIDUAL SOIL - Soil formed in place by weathering of rock.  
ROCK - SEE Legend  
ROCK QUALITY DESIGNATION (R.Q.D.) - A measure of rock quality described by: total length of rock segments equal to or greater than 4 inches divided by total length of core run expressed as a percentage.  
SANITARY LANDFILLS - Compacted and/or covered layers of soil and waste products.  
SAPROLITE (sap.) - Residual soil which retain the relic structure or fabric of the parent rock.  
SLICKENSIDE - Polished and striated surface that results from friction along a fault, or slip plane.  
SILL - An igneous sheet of rock intrusive whose thickness is slight compared to its lateral extent.  
SOME - Presence of 5% to 30% of subject material.  
STANDARD PENETRATION TEST (Penetration Resistance) (SPT) - Number of blows (N or B.P.F.) of a 140# hammer falling 30" required to produce a penetration of 1 foot into soil with a 2" O.D. split spoon sampler. SPT refusal - penetration resistance of less than 1 inch with 50 blows.  
STRIKE - The direction or bearing of a horizontal line in the plane of an inclined stratum, joint, fault or other structural plane.  
SUBGRADE - The soil prepared to support a structure or a pavement system.  
TOPSOIL - (T.S.) - Surface soils usually containing organic matter.  
TRACE - Presence of less than 5% of subject material.

**ABBREVIATIONS**

Boulder - bldr.	Organic - org.
Clay - cl.	Plastic Limit - P.L.
Cobble - cob.	Plasticity Index - P.I.
Coarse - cse.	Porosity - n
Fine - f.	Sand - sd.
Fossiliferous - foss.	Saturated - sat.
Fractured - frac.	Silt, Silty - si.
Gravel - gr.	Slightly - sli.
Liquid Limit - LL	Specific Gravity - G <sub>s</sub>
Medium - med.	Unconfined Compressive Strength - qu
Moisture Content - w	Unit Weight (wet unit weight) - γ
Mottled - mot.	Dry Unit Weight - γ <sub>d</sub>
Optimum Moisture - OM	Saturated Unit Weight - γ <sub>sat</sub>
	Void Ratio - e
	Very - V.
	Estimated - Est.

**EQUIPMENT USED ON SUBJECT PROJECT**

DRILL UNITS:  MOBILE B-52  MOBILE B-56  CME - 550  PORTABLE HOIST

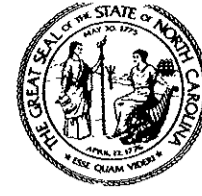
AUGER TOOLS:  6" CONTINUOUS FLIGHT W/  HARD FACED FINGER BITS  CLAY BITS  
 8" HOLLOW AUGERS  TUNG.-CARBIDE INSERTS

CORE BORING TOOLS:  -AX  -BX  -NX

HAND TOOLS:  POST HOLE DIGGER  HAND AUGER  SOUNDING ROD

**NOTES:**

10770 revised, October 1, 1931



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
P.O. BOX 25201  
RALEIGH 27611-5201

JAMES G. MARTIN  
GOVERNOR  
September 8, 1992

DIVISION OF HIGHWAYS

THOMAS J. HARRELSON  
SECRETARY

WILLIAM G. MARLEY, JR., P.E.  
STATE HIGHWAY ADMINISTRATOR

STATE PROJECT: 6.299001T R-2111A  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44) Interchange  
in Tarboro to East of NC 42

SUBJECT: Geotechnical Report - Inventory

The project consists of upgrading US 64 to a four (4) lane divided facility along a new location. The project begins at the US 64/US 258 interchange at Tarboro and proceeds 2.98 miles in an easterly direction to a point northeast of Conetoe and 0.49 mile east of NC 42. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

Line	Station
-L1- WBL	45+00 to 117+00
-L1- EBL	73+20 to 107+94
-L1-	117+00 to 117+76
-L1- Rev.	117+76 to 202+48
-L1-	202+47 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 59+50

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp A Rev.	0+00 to 11+57
Ramp E	12+63 to 28+11

-6-

Physiography and Geology

The project corridor is located in eastern Edgecombe County between Tarboro and a point northeast of Conetoe. Topography is typical of the Coastal Plain Physiographic Province, and ranges from nearly level to moderately sloping. Elevations along the project range from a high of 80 feet at the beginning of the project to a low of 10 feet in the Tar River Channel. Elevations on the Tar River flood plain and adjacent terrace range from 20 to 40 feet M.S.L. The remainder of the project generally lies at an elevation between 40 and 60 feet.

The project corridor is drained by the Tar River and several small tributary streams which include Cromwell Canal, Knight Canal, Mitchell Swamp Canal, Ballahack Canal and Conetoe Creek.

Surface drainage conditions along the project corridor range from poor in the flood plains and nearly level interstream areas to good in areas with moderate topographic relief. However, most of the project generally has only fair to poor surface drainage. In areas with abundant surficial granular soils, much of the water drains by infiltration into the underlying sand.

The geology of the project area generally consists of coastal plain sand and clay beds overlying the Yorktown Formation of Upper Pliocene age and the Cape Fear Formation of Upper Cretaceous age. The Yorktown Formation within the project area typically lies at an elevation of 25 to 35 feet and consists of interbedded marine sands and clays. Thickness of the Yorktown ranges from less than 5 feet to 15 feet or more. The Cape Fear Formation underlies the Yorktown Formation and consists of sand and clay beds of probable deltaic origin.

Ground Water Properties

Ground water data was collected during the fall, winter and spring seasons of 1991-1992 during average rainfall conditions. Ground water is high along most of the project corridor with the water table typically lying at a depth of 6 feet or less. Areas where ground water depths exceed 6 feet are mainly located on the prominent bluff and wide fluvial terrace adjacent to the Tar River.

Soil Properties

Based on origin and occurrence, three main soil groups were encountered along the project corridor.

1. Upland Soils

Most of the upland soils found along the project corridor were formed from sediments deposited by marine, fluvial and eolian action in the geologic past. Upland soils typically consist of fine to

-2-

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	0+00 to 17+89
Ramp B	0+00 to 15+06
Ramp C	0+00 to 22+07
Ramp D	0+00 to 14+48

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	0+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	0+00 to 17+57

Areas of Special Geotechnical Interest

1. The following sections were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

Line	Station
-L1- WBL	64+50 to 69+00
-L1- WBL	70+00 to 77+25
-L1- WBL	79+50 to 85+00
-L1- WBL	113+00 to 114+00
-L1- EBL	92+00 to 96+50
-L1- EBL	100+00 to 106+00
-L1- Rev.	130+25 to 141+00
-L1- Rev.	161+00 to 175+00

-7-

coarse sand (A-2-4, A-3, A-1-b), clayey sand (A-2-6), sandy silt (A-4) and sandy clay (A-6, A-7-6). The granular soils occur mainly as surficial beds and interbeds with clay. Cohesive soils occur as topsoil, surficial beds and as interbeds with sand. Typically, the granular soils range from a very loose to medium dense compactness and the cohesive soils range in consistency from soft to stiff. Engineering properties generally range from good to excellent for the granular material and from fair to poor for cohesive soils. The clay granular soils typically have between 50 and 90 percent passing the No. 200 sieve, high moisture contents and plasticity indices ranging from slight to high. Clayey sands (A-2-6) generally exhibit slight to medium plasticity indices.

2. Stream Terrace Soils

Stream terrace soils are found in a band approximately 0.5 miles wide roughly paralleling the eastern boundary of the Tar River flood plain. Granular soils consisting of fine to coarse sand with gravel (A-2-4, A-3, A-1-b) are the predominant soil type in this area. These soils exhibit excellent engineering properties.

3. Flood Plain Soils

Flood plain soils are found associated with major drainage features along the project corridor. Typically, the flood plain soils consist of silty and fine sandy clay (A-6, A-7-5, A-7-6), clayey sandy silt (A-4) and fine to coarse sand (A-2-4, A-1-b). Soils in the Tar River flood plain generally do not have significant organic contents. However, the flood plains of several tributary streams contain soils with slight to moderate organic contents. Engineering properties of flood plain soils are generally poor.

Rootmat in wooded portions of the project averages 0.2 feet in thickness.

Geotechnical Descriptive Analysis of the Project

-L1- WBL Station 45+00 to 81+00

This segment begins on moderately sloping upland topography west of the Tar River and proceeds in an easterly direction crossing the Tar River and the Tar River flood plain. Soils on the upland section typically consist of 1 to 6 feet or more of very loose to loose (2 to 4 BPF) fine to coarse sand (A-2-4) overlying medium stiff to very stiff (7 to 16 BPF) silty sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 16 to 24 and a natural moisture content of 16 percent. Flood plain soils generally occur from station 65+00 to 81+00 and consist of 1 to 6 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6) underlain by loose to medium dense (7 to 24 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils have plasticity indices which range from 13 to 38. A sample of flood plain clay was tested at 42 percent natural moisture.

-3-

Line Station

-L1- Rev.	177+50 to 184+50
-L1- Rev.	191+00 to 202+48
-L1-	202+97 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 54+00

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp E	18+50 to 26+00

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	0+00 to 17+89
Ramp B	2+00 to 8+50
Ramp C	11+00 to 15+06
Ramp D	14+00 to 14+00
Ramp C	18+00 to 20+00
Ramp D	0+00 to 2+50
Ramp D	6+00 to 9+00
Ramp D	11+00 to 14+48

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

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The water table generally lies at a depth of 6 feet or more on the upland. In the Tar River flood plain, ground water depths vary considerably depending on rainfall conditions. Typically, either the area is flooded or ground water levels are at a depth of 3 feet or less.

-L1- WBL Station	81+00 to 117+00
-L1- EBL Station	73+20 to 107+94
-L1- Station	117+00 to 117+76
-L1- Rev. Station	117+76 to 185+00

This segment crosses the nearly level to moderately sloping Tar River alluvial terrace. Soils typically consist of very loose to medium dense (2 to 13 BPF) fine to coarse sand with gravel (A-2-4, A-3, A-1-b). The flood plain of a minor tributary stream between -L1- Rev. Station 181+25 and 184+25 contains up to 4 feet of moderately organic (9%) soft silty sandy clay (A-7-5) and very loose (2 BPF) clayey silty sand (A-2-5). The moisture content of a tested organic sample was near 60 percent. Ground water depths through this segment range from less than 1 foot to 6 feet or more.

-L1- Rev. Station	185+00 to 202+48
-L1- Station	202+97 to 327+00

This segment crosses nearly level to gently sloping topography. Soils typically consist of 0.5 to 3 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) or very loose (2 BPF) sand (A-2-4) underlain by 1 to 5 feet or more of soft to stiff (2 to 11 BPF) silty sandy clay (A-6, A-7-6). The clay soils generally have plasticity indices ranging from 15 to 34, and natural moisture contents of 16 to 32 percent. Loose to medium dense (4 to 20 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) underlies the clay soils. The surficial clay soils are absent in several areas along this segment where there is a slight rise in topographic relief. Very loose to medium dense (3 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) generally occurs in the slightly elevated areas. Ground water depths typically range from 1 to 6 feet through the segment, however, several poorly drained areas often contain standing water.

-L1- Station 327+00 to 367+60

This segment crosses nearly level topography. Soils typically consist of very loose to medium dense (2 to 15 BPF) fine to coarse sand (A-2-4, A-3). Ground water was measured at depths ranging from 4 to 8 feet.

-L1- Station 367+60 to 442+00

This segment crosses nearly level topography. Soils generally consist of 1 to 5 feet of very loose sand (2 BPF) or soft to medium stiff (2 to 4 BPF) clayey sandy silt (A-4) underlain by discontinuous

-4-

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	5+00 to 9+00
Ramp A	15+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	3+00 to 17+57

2. The following sections contain surficial clay soils with medium to high plasticity indices:

Line	Station
-L1- WBL	55+50 to 64+00
-L1- WBL	72+00 to 77+25
-L1- WBL	79+25 to 80+50
-L1- Rev.	185+00 to 200+50
-L1-	207+50 to 222+25
-L1-	225+25 to 231+00
-L1-	249+50 to 259+50
-L1-	261+50 to 275+25
-L1-	283+25 to 293+50
-L1-	299+50 to 327+00
-L1-	371+00 to 375+50
-L1-	419+50 to 435+00
-L1-	439+50 to 442+25
-L1-	450+00 to 502+50
-L1-	546+50 to 554+00

-Y5- Rev.	24+26 to 26+50
-Y12-	12+50 to 20+25
-Y12-	23+00 to 45+00
-Y13- Rev.	28+75 to 32+25
-Y13- Rev.	36+50 to 40+25
-Y15-	8+50 to 14+00
-Y16-	25+00 to 26+50

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp A Rev.	1+75 to 11+57
Ramp E	18+00 to 25+75

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	10+50 to 15+00

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beds of medium stiff to stiff (5 to 15 BPF) silty sandy clay (A-6) and very loose to medium dense (2 to 30 BPF) fine to coarse sand (A-2-4, A-3). The surficial silt soils occurring between station 367+60 and 381+50 are slightly organic. The moisture content of a tested silt sample was near 30 percent and organic contents are estimated to be less than 5 percent. Clay soils through this section typically have plasticity indices ranging from 12 to 21 and natural moisture contents of 18 to 33 percent. Ground water depths typically range from 1 foot or less to 6 feet.

-L1- Station 442+00 to 453+00

This segment crosses moderately sloping topography. Soils generally consist of loose to medium dense (7 to 18 BPF) fine to coarse sand (A-2-4). Ground water depths typically range from 4 to 6 feet.

-L1- Station 453+00 to 501+25

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) underlain by interbedded medium stiff to stiff (6 to 11 BPF) silty sandy clay (A-6, A-2-6) and clayey sandy silt (A-4). Loose to medium dense (6 to 16 BPF) sand (A-2-4, A-1-b) underlies the cohesive soils. The clay soils have plasticity indices ranging from 15 to 34 and natural moisture contents of 22 to 26 percent. Ground water depths range from 1 to 6 feet or more.

-L1- Station 501+25 to 528+00

This segment crosses the flood plain of Conetoe Creek. Soils consist of 1 to 7 feet of very soft to soft, dark brown to black, moderately organic (5 to 10 percent), clayey fine sandy silt (A-4) and silty fine sandy clay (A-6, A-7-5, A-7-6). Moisture contents of tested organic samples typically range between 30 and 50 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 250 to 600 psf. An undisturbed (Shelby Tube) sample was taken in the cohesive soil and submitted for Triaxial CU and Consolidation testing. Loose to medium dense sand (A-2-4) underlies the organic soil. This area is either flooded or has ground water at a depth of 1 foot or less.

-L1- Station 528+00 to 554+00

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 to 3 feet of very loose (2 BPF) fine to coarse sand (A-2-4) and soft (3 BPF) clayey sandy silt (A-4) underlain by interbedded very loose to medium dense (2 to 8 BPF) fine to coarse sand (A-2-4, A-3) and medium stiff to stiff (7 to 13 BPF) sandy clay (A-6, A-7-6). The clay soils have plasticity indices ranging from 12 to 21 and natural moisture contents of 16 to 19 percent. Ground water was measured at depths ranging from 1 to 5 feet.

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	3	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

-5-

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	8+50 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	8+50 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	1+50 to 8+00
Ramp D	0+00 to 4+50

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	7+50 to 8+50
Ramp D	3+25 to 12+50

3. The following sections contain slightly to moderately organic soils:

Line	Station
-L1- Rev.	181+25 to 184+25
-L1-	367+60 to 381+50
-L1-	501+25 to 528+00

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 1+50
Ramp D	3+00 to 4+50
Ramp D	6+50 to 7+50

NC 42 (-Y16-) Interchange

Line	Station
Ramp B	0+00 to 14+75
Ramp C	0+00 to 12+75

-Y5- Rev. Station 24+26 to 29+81

Topography is nearly level. At the beginning of the relocated segment, soils consist of approximately 2 feet of soft to medium stiff fine sandy clay (A-6) underlain by loose to medium dense sand (A-2-4, A-1-b). The clay has a plasticity index of 22 and a moisture content of 35 percent. From station 26+50 to the end of the segment, soils consist of loose to medium dense sand (A-2-4, A-1-b). Ground water was measured at depths ranging from 0.5 to 4.0 feet.

-Y12- Station 12+50 to 45+00

This segment follows the alignment of SR 1523 (Shiloh Road). Soils generally consist of 1 to 3 feet of loose sand (A-2-4) fill underlain by 3 to 5 feet of interbedded medium stiff (7 BPF) sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The cohesive soils are underlain by medium dense (12 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils typically have plasticity indices ranging from 16 to 44 and natural moisture contents of 22 to 33 percent. Ground water was measured at depths ranging from 3 to 8 feet.

-Y13- Rev. Station 10+00 to 59+87

This relocated segment crosses nearly level to very gently sloping topography. Soils typically consist of 1 to 2 feet of very loose, (1 to 2 BPF) fine to coarse sand (A-2-4) or soft sandy silt (A-4) underlain by loose to medium dense (5 to 10 BPF) fine to coarse sand (A-2-4, A-3). Portions of this segment contain interbeds of soft to medium stiff (4 to 5 BPF) silty sandy clay (A-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 13 to 18 and natural moisture contents of 20 to 28 percent. Ground water was measured at depths ranging from 2 to 4 feet.

-Y14- Station 14+00 to 35+50

This segment follows the alignment of SR 1526. Soils generally consist of 1 to 5 feet of loose silty sand, soft sandy silt (2 BPF) and medium stiff sandy clay (A-6) underlain by loose to medium dense (6 to 17 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). Ground water was measured at a depth of 3 to 5 feet.

-Y15- Station 8+50 to 14+89

This segment follows the alignment of SR 1524. Soils typically consist of 2 to 6 feet of loose to medium dense clayey sand (A-2-4) underlain by medium stiff to stiff sandy clay (A-6). Ground water was measured at depths ranging from 4 to 6 feet.

Culverts

Based on available Culvert Survey and Hydraulic Design Reports, reinforced concrete box culverts (RCBC) are proposed at the following locations:

- 1. Cromwell Canal at -L1- Station 264+72
2. Mitchell Swamp Canal at -L1- Station 323+26
3. Ballahack Canal at -L1- Station 399+41
4. Conetoe Creek at -L1- Station 509+28

Borings made in the immediate vicinity of the above sites show that soils underlying the proposed culvert beds should consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b).

California Bearing Ratio (CBR) Samples

Bulk samples were taken at the following locations along the project and submitted for testing:

Table with columns: Sample, Station, Depth. Rows for CBR-1 and CBR-2.

Respectively submitted,

Signature of E. A. Witort

E. A. Witort, Project Geologist

-Y16- Station 25+00 to 59+50

This segment follows the alignment of NC 42. Soils typically consist of loose to medium dense clayey fine to coarse sand (A-2-4, A-2-6) with interbeds of very loose (2 BPF) silty sand (A-2-4), soft sandy silt (A-4) and medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

US 258 (-L- & -Y2-) Interchange

Ramp A Rev. Station 0+00 to 11+57

This segment closely parallels existing Ramp A at the US 258 interchange. Soils consist of loose to medium dense fine to coarse sand and clayey sand (A-2-4), stiff clayey sandy silt (A-4) and very stiff sandy silty clay (A-6, A-7-6). The clay has a plasticity index of 41 and a natural moisture content of 27 percent. The water table lies at a depth of 8 feet or more.

Ramp E Station 12+63 to 28+11

This segment crosses a portion of the Tar River flood plain. Soils typically consist of 1 to 7 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6) underlain by medium dense fine to coarse sand (A-2-4, A-1-b). The clay soils typically have plasticity indices ranging from 13 to 38. A sample of clay was tested at 42 percent natural moisture. Ground water depths through this section vary with the amount of rainfall and the level of the Tar River. During this investigation, ground water depths ranged from 0 to 6 feet or more.

NC 33 (-Y6-) Interchange

Ramp A Station 0+00 to 17+89

Ramp B Station 0+00 to 15+06

Ramp C Station 0+00 to 22+07

Ramp D Station 0+00 to 14+48

This interchange area is located on nearly level to gently sloping topography. Soils typically consist of very loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) with some interbeds of medium stiff to stiff clayey sandy silt (A-4) and silty sandy clay (A-6). Ground water depths range from 2 to 6 feet or more.

SR 1523 (-Y12-) Interchange

Ramp A Station 0+00 to 19+65

This segment crosses nearly level topography. Soils generally consist of 1 1/2 foot of very loose silty sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 2 feet of medium stiff silty sandy clay (A-6, A-7-6), clayey sandy silt (A-4) or clayey sand (A-2-4). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soils typically have plasticity indices of 17 to 28 and natural moisture contents of 24 to 29 percent. Ground water was measured at depths ranging from 0 to 3 feet.

Ramp B Station 0+00 to 17+83

Ramp C Station 0+00 to 16+44

This segment crosses nearly level topography. Soils typically consist of 1 to 2 feet of soft clayey sandy silt (A-4) underlain by 1 to 5 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6). Medium dense fine to coarse sand (A-2-4) underlies the surficial soils. The clay soils typically have plasticity indices of 16 to 29 and natural moisture contents of 21 to 29 percent. Ground water was measured at depths ranging from 1 to 5 feet.

Ramp D Station 0+00 to 17+98

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of very loose clayey sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 3 feet of soft to medium stiff sandy clay (A-6). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soil has plasticity indices of 16 to 19 and natural moisture contents of 21 to 24 percent. Ground water was measured at a depth of 1 to 3 feet.

SR 1524 (-Y13- Rev.) Interchange

Ramp A Station 0+00 to 17+05

This segment crosses nearly level to very gently sloping topography. Surficial soils consist of 2 1/2 feet of soft slightly organic clayey sandy silt (A-4) to station 1+50ft, and 3 1/2 feet of medium stiff sandy clay (A-6) or clayey sandy silt (A-4) to station 8+00ft. Loose to medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The remaining soils throughout this segment consist of very loose to coarse granular deposits (A-2-4). The clay soils have plasticity indices of 12 to 17 and natural moisture contents of 17 to 24 percent. Ground water was measured at depths ranging from 2 to 5 feet.

Ramp B Station 0+00 to 18+71

Ramp C Station 0+00 to 17+29

This segment crosses nearly level topography. Soils consist of 1 to 2 feet of very loose to loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense fine to coarse sand (A-2-4, A-3). Ground water was measured at a depth of 3 to 5 feet.

Ramp D Station 0+00 to 17+83

This segment crosses nearly level to gently sloping topography. Soils to station 7+50ft typically consist of 0.5 to 3 feet of soft, slightly organic clayey sandy silt (A-4) and very loose silty sand (A-2-4) underlain by medium stiff sandy clay. Loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) underlies the surficial soils. Soils through the remainder of the segment consist of very loose to medium dense fine to coarse sand (A-2-4, A-3). The clay soils have plasticity indices of 13 to 17 and natural moisture contents of 17 to 19 percent. The water table typically lies at a depth of 3 to 4 feet.

NC 42 (-Y16-) Interchange

Ramp A Station 0+00 to 16+31

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 1/2 foot of very loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense silty and clayey fine to coarse sand (A-2-4) with interbeds of medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

Ramp B Station 0+00 to 18+00

This segment is located in the flood plain of Conetoe Creek to station 15+00ft and on very gently sloping upland to station 18+00ft. Flood plain soils generally consist of up to 7 feet of very soft to soft moderately organic (6%) clayey sandy silt (A-4) and silty sandy clay (A-6) underlain by loose to medium dense sand (A-2-4). The moisture content of tested organic samples range from 24 to 65 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 550 to 1400 psf. Upland soils consist of loose to medium dense silty and clayey fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. In the flood plain, water is typically near or at the ground surface.

Ramp C Station 0+00 to 17+92

This segment is located in the flood plain of Conetoe Creek to station 12+75 and on very gently sloping upland to station 17+92. Flood plain soils generally consist of up to 3 feet of very soft to soft moderately organic (10%) clayey sandy silt (A-4) underlain by medium stiff sandy clay, clayey sandy silt, and loose to medium dense fine to coarse sand (A-2-4, A-3). Moisture content of a tested organic sample is near 36 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 600 to 1100 psf. Upland soils consist of very loose to medium dense fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. On the flood plain, water is typically near or at the ground surface.

Ramp D Station 0+00 to 17+57

This segment crosses nearly level topography. Soils consist of 1 1/2 foot of very loose fine to coarse sand (A-2-4) or soft clayey sandy silt (A-4) underlain by interbedded loose to medium dense sand (A-2-4, A-2-6) and medium stiff to stiff silty sandy clay (A-6, A-7-6). The clay soils have plasticity indices of 12 to 21. A sample of clay was tested at 16 percent natural moisture. Ground water depths range from 2 to 6 feet or more.

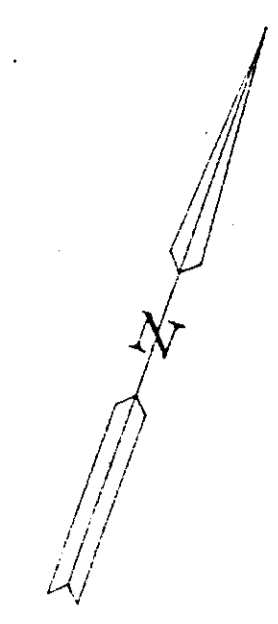
Summary table for PROJECT 6.29905 T (R-2111AB) showing excavation, embankment, earth, borrow, rock, and waste quantities across various stations.

Summary table for PROJECT 6.29905 T (R-2111AB) showing excavation, embankment, earth, borrow, rock, and waste quantities across various stations.

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900ST	5	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

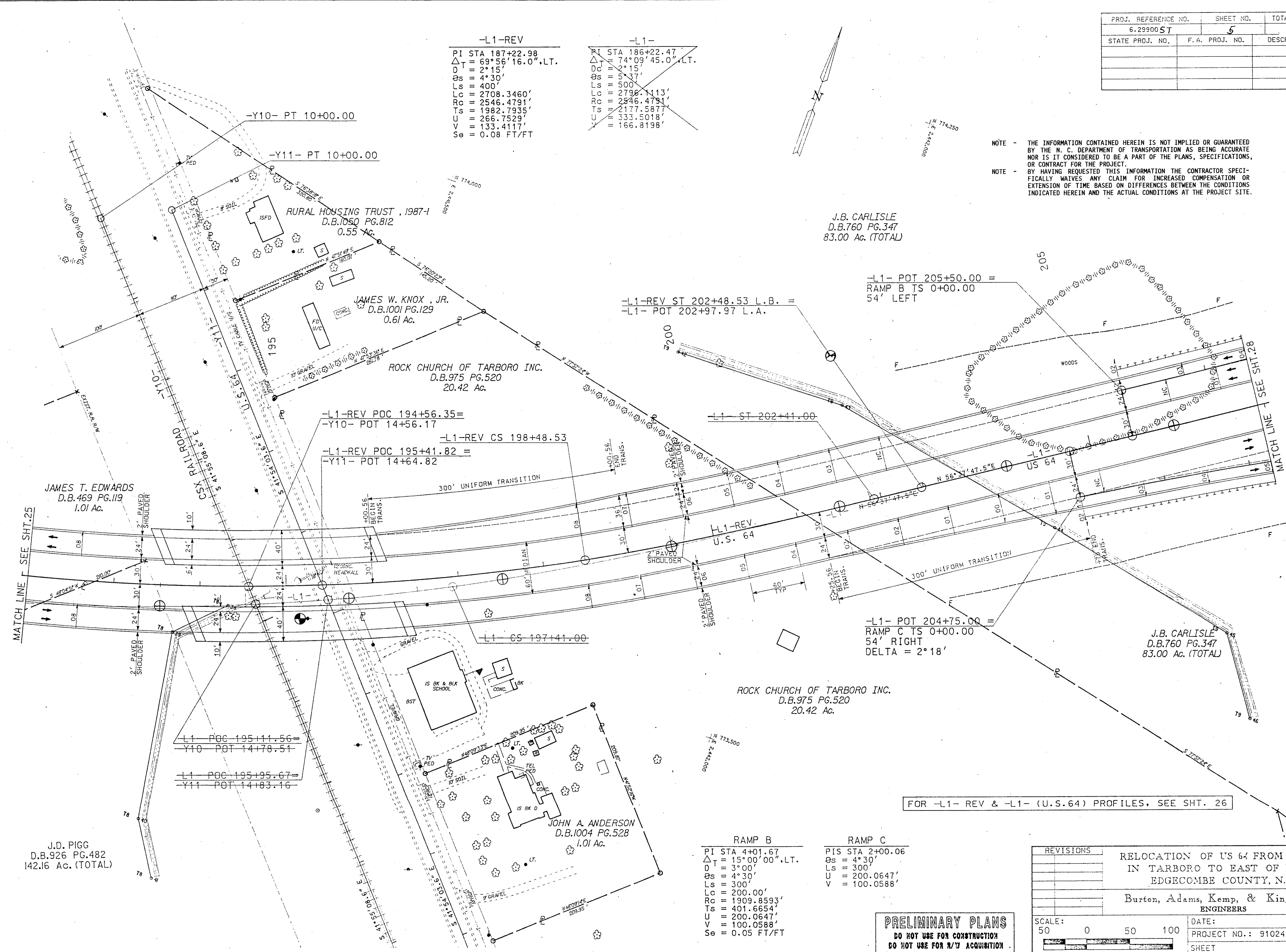
**-L1-REV**  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0"$  LT.  
 $D = 2^{\circ}15'$   
 $\theta_s = 4^{\circ}30'$   
 $L_s = 400'$   
 $L_c = 2708.3460'$   
 $R_c = 2546.4791'$   
 $T_s = 1982.7935'$   
 $U = 266.7529'$   
 $V = 133.4117'$   
 $S_e = 0.08$  FT/FT

**-L1-**  
 PI STA 186+22.47  
 $\Delta T = 74^{\circ}09'45.0"$  LT.  
 $D = 2^{\circ}15'$   
 $\theta_s = 5^{\circ}37'$   
 $L_s = 500'$   
 $L_c = 2796.1113'$   
 $R_c = 2546.4791'$   
 $T_s = 2177.5877'$   
 $U = 333.5018'$   
 $V = 166.8198'$



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR CONTRACT FOR THE PROJECT.  
 NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)



-L1-REV ST 202+48.53 L.B. =  
 -L1- POT 202+97.97 L.A.

-L1- POT 205+50.00 =  
 RAMP B TS 0+00.00  
 54' LEFT

-L1-REV POC 194+56.35 =  
 -Y10- POT 14+56.17

-L1-REV POC 195+41.82 =  
 -Y11- POT 14+64.82

-L1- POT 204+75.00 =  
 RAMP C TS 0+00.00  
 54' RIGHT  
 DELTA = 2°18'

JAMES T. EDWARDS  
 D.B.469 PG.119  
 1.01 Ac.

ROCK CHURCH OF TARBORO INC.  
 D.B.975 PG.520  
 20.42 Ac.

J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)

JOHN A. ANDERSON  
 D.B.1004 PG.528  
 1.01 Ac.

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

**RAMP B**  
 PI STA 4+01.67  
 $\Delta T = 15^{\circ}00'00"$  LT.  
 $D = 3^{\circ}00'$   
 $\theta_s = 4^{\circ}30'$   
 $L_s = 300'$   
 $L_c = 200.00'$   
 $R_c = 1909.8593'$   
 $T_s = 401.6654'$   
 $U = 200.0647'$   
 $V = 100.0588'$   
 $S_e = 0.05$  FT/FT

**RAMP C**  
 PIS STA 2+00.06  
 $\theta_s = 4^{\circ}30'$   
 $L_s = 300'$   
 $U = 200.0647'$   
 $V = 100.0588'$

FOR -L1- REV & -L1- (U.S. 64) PROFILES, SEE SHT. 26

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900ST	6	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

-L1- REV. (U.S. 64)

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR CONTRACT FOR THE PROJECT.  
 NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	% ORGANIC
						C. SAND	F. SAND	SILT	CLAY			
S-123	182+00	0-1.0	A-2-6(0)	40	15	43	23	16	18	35		
S-124	"	1.0-2.0	A-2-5(4)	44	13	33	20	19	28	48	32.5	
S-125	"	2.0-3.0	A-2-5(0)	42	NP	42	29	19	10	31	60.2	8.0
S-20	184+00	0-1.5	A-4 (3)	23	6	25	32	25	18	48		
S-21	"	2.5-4.0	A-2-5(0)	42	NP	48	32	14	6	22		
S-22	"	5.0-6.5	A-1-6(0)	16	NP	78	17	3	2	5		
S-23	"	7.5-9.0	A-2-4(0)	23	6	54	23	9	14	21		

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-63	184+58	0-1.0	A-4 (0)	19	2	20	36	32	12	54		
S-64	"	1.0-2.5	A-2-6(0)	51	30	6	19	31	44	32		
S-65	"	2.5-6.0	A-2-6(0)	37	22	55	21	7	17	25		

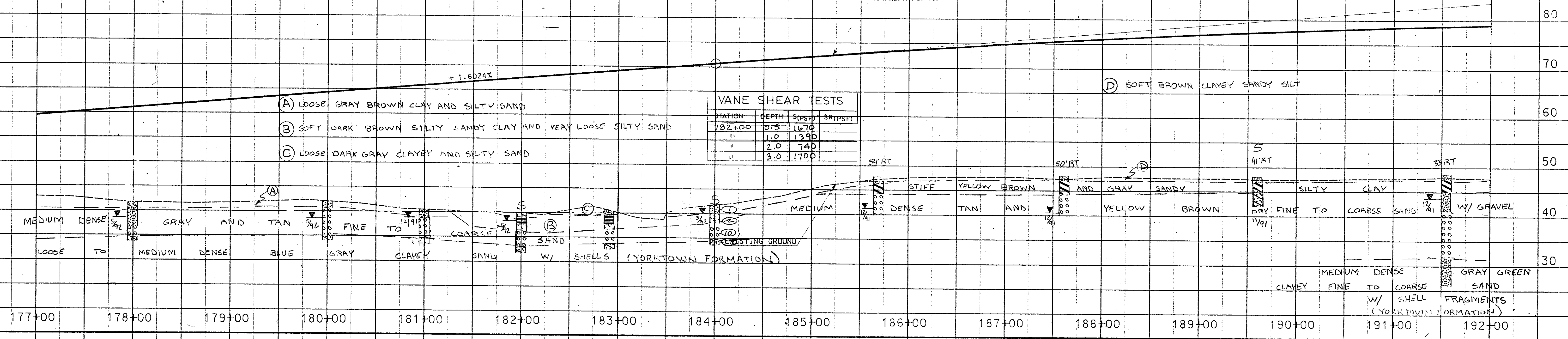
BM #18: RR SPIKE IN BASE OF 10' WILD CHERRY  
 LT - STA. 185+38.34' LT.  
 ELEV. 47.13'

VANE SHEAR TESTS

STATION	DEPTH	SIPSH	SR(PSP)
182+00	0.5	1670	
"	1.0	1390	
"	2.0	740	
"	3.0	1700	

- (A) LOOSE GRAY BROWN CLAY AND SILTY SAND
- (B) SOFT DARK BROWN SILTY SANDY CLAY AND VERY LOOSE SILTY SAND
- (C) LOOSE DARK GRAY CLAYEY AND SILTY SAND

(D) SOFT BROWN CLAYEY SANDY SILT



-L1-REV. & -L1- (U.S. 64)

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-1	195+11	0-1.5	A-2-4	18	NP	50	21	19	10	29		
S-2	195+11	3.8-5.3	A-2-6(0)	52	28	2	15	27	36	87	26.9	
S-3	195+11	8.8-10.3	A-3 (0)	15	NP	55	40	3	2	6		
S-4	195+11	15.8-19.8	A-2-4(0)	24	8	40	39	9	12	21		
S-5	195+11	23.8-25.3	A-2-4(0)	31	10	15	59	18	8	30	24.2	
S-6	195+11	28.8-30.3	A-6 (7)	37	14	7	42	39	30	24.2		
S-7	195+11	34.8-36.3	A-2-6(0)	44	22	4	20	46	30	39		
S-8	195+11	38.3-40.3	A-2-4(0)	24	NP	24	66	8	2	15		
S-9	195+11	48.8-50.3	A-2-4(0)	32	NP	13	72	13	2	9		

PVI STA. = 94+00.00  
 ELEV. = 86.72'  
 V.C. = 2000.00'  
 K = 713.57  
 Design Speed = 75

BM #21: RR SPIKE IN BASE OF 20'  
 LT - STA. 206+52.78' LT.  
 ELEV. 51.12'

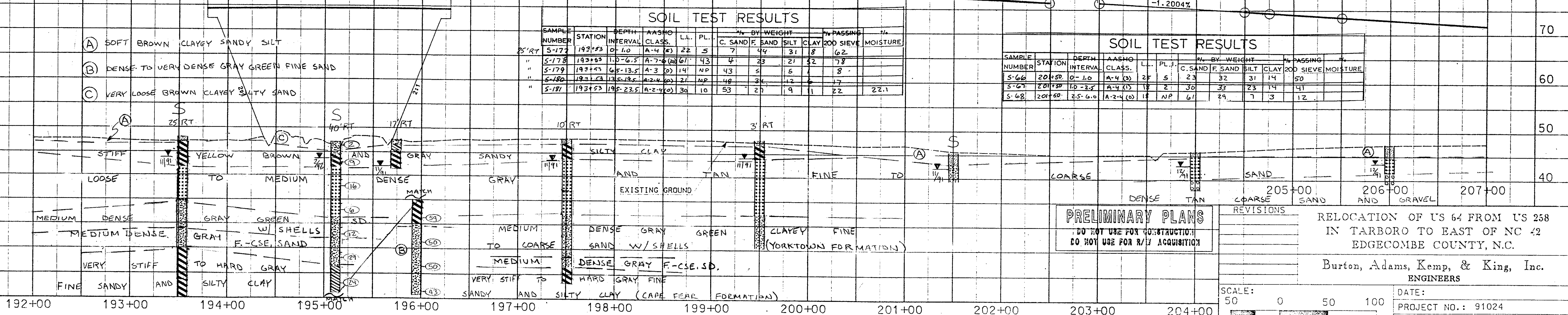
- (A) SOFT BROWN CLAYEY SANDY SILT
- (B) DENSE TO VERY DENSE GRAY GREEN FINE SAND
- (C) VERY LOOSE BROWN CLAYEY SILTY SAND

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-173	193+53	0-1.0	A-4 (2)	22	5	7	44	31	8	62		
S-178	193+65	1.0-6.5	A-7-6(0)	61	43	4	23	21	52	78		
S-179	193+73	6.5-13.5	A-3 (0)	14	NP	43	5	5	7	8		
S-180	193+73	13.5-19.5	A-2-4(0)	21	NP	48	34	12	6	17		
S-181	193+73	19.5-23.5	A-2-4(0)	34	10	53	27	19	11	22	22.1	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-66	204+50	0-1.0	A-4 (3)	27	5	23	32	31	14	50		
S-67	204+50	1.0-2.5	A-4 (3)	18	2	30	33	23	14	41		
S-68	204+50	2.5-6.0	A-2-4(0)	18	NP	61	24	7	3	12		



PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

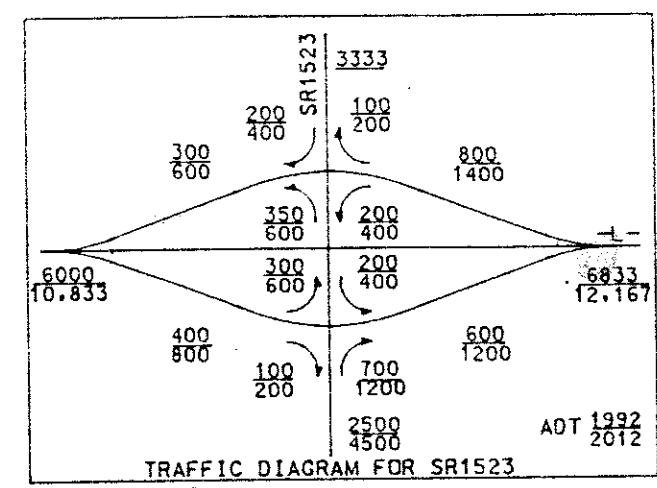
Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE:  
 PROJECT NO.: 91024  
 SHEET OF

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
12990057	7	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

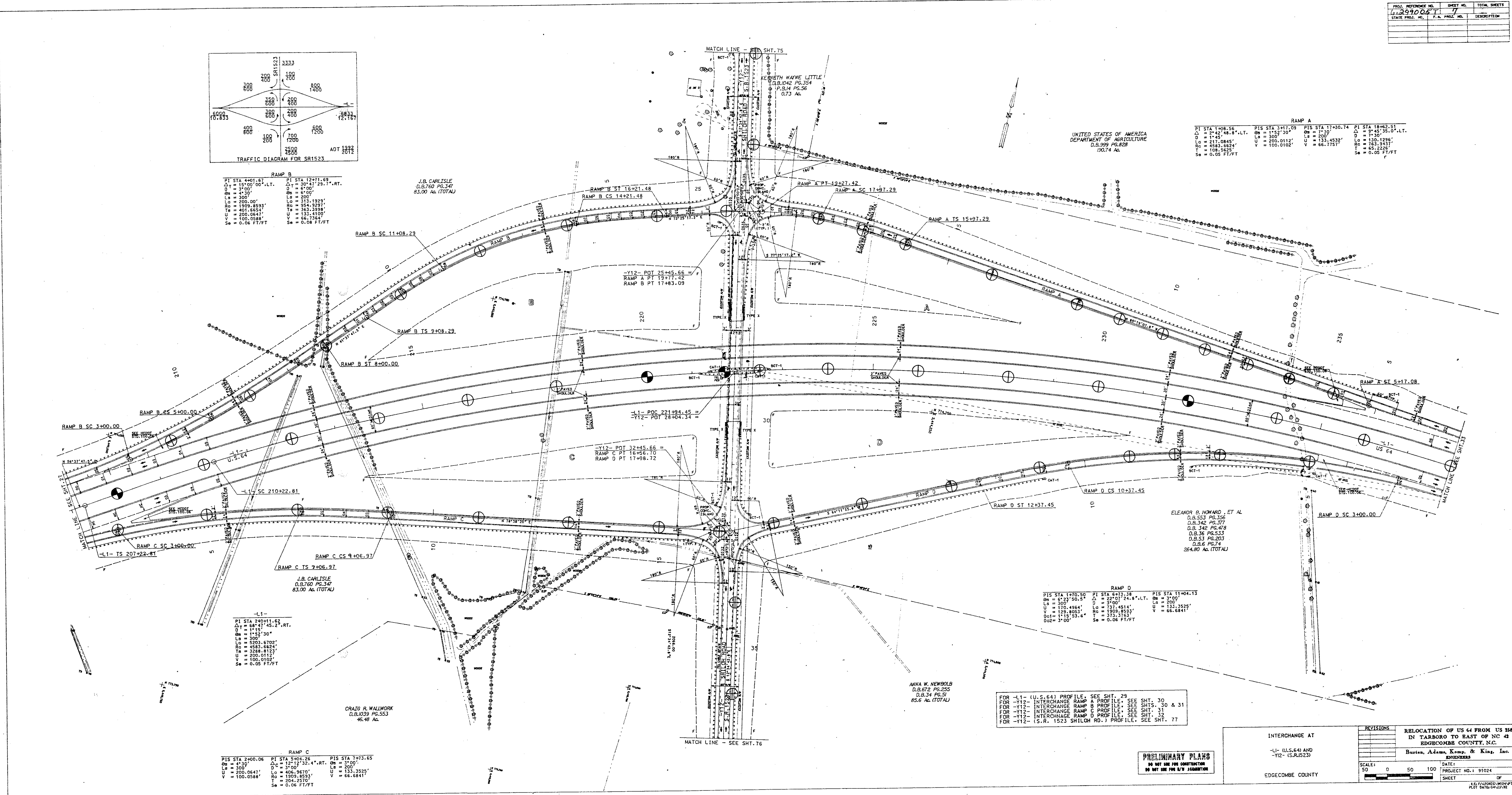


RAMP B

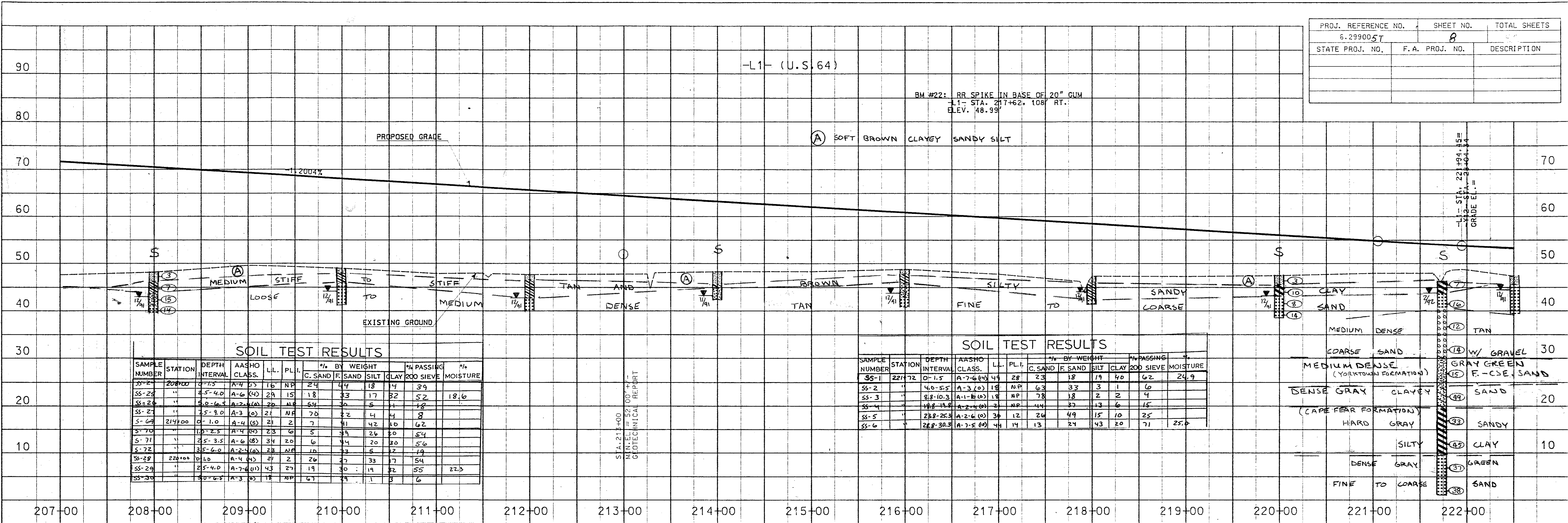
PI STA 4401.61	PI STA 12471.63
Δ = 12°00'00" L.T.	Δ = 30°47'23.77" R.T.
D = 3700'	D = 6700'
Δs = 4730'	Δs = 9100'
Ls = 300'	Ls = 300'
Rs = 200.00'	Rs = 131.1923'
Ro = 1909.8593'	Ro = 954.9297'
Ts = 401.8554'	Ts = 363.3938'
U = 200.0647'	U = 133.4100'
I = 100.0324'	I = 66.7364'
Se = 0.06 FT/FT	Se = 0.08 FT/FT

RAMP A

PI STA 1408.56	PI STA 3417.09	PI STA 11430.74	PI STA 18462.61
Δ = 27°42'48.87" L.T.	Δ = 11°53'30"	Δ = 7°00'	Δ = 8°45'36.07" L.T.
D = 5745'	D = 300'	D = 203.4533'	D = 130.1296'
Δs = 4893.8624'	Δs = 100.0112'	Δs = 203.4533'	Δs = 130.1296'
Ts = 108.5625'	Ts = 100.0102'	Ts = 66.7757'	Ts = 45.2227'
U = 108.5625'	U = 100.0102'	U = 66.7757'	U = 45.2227'
Se = 0.05 FT/FT			Se = 0.05 FT/FT

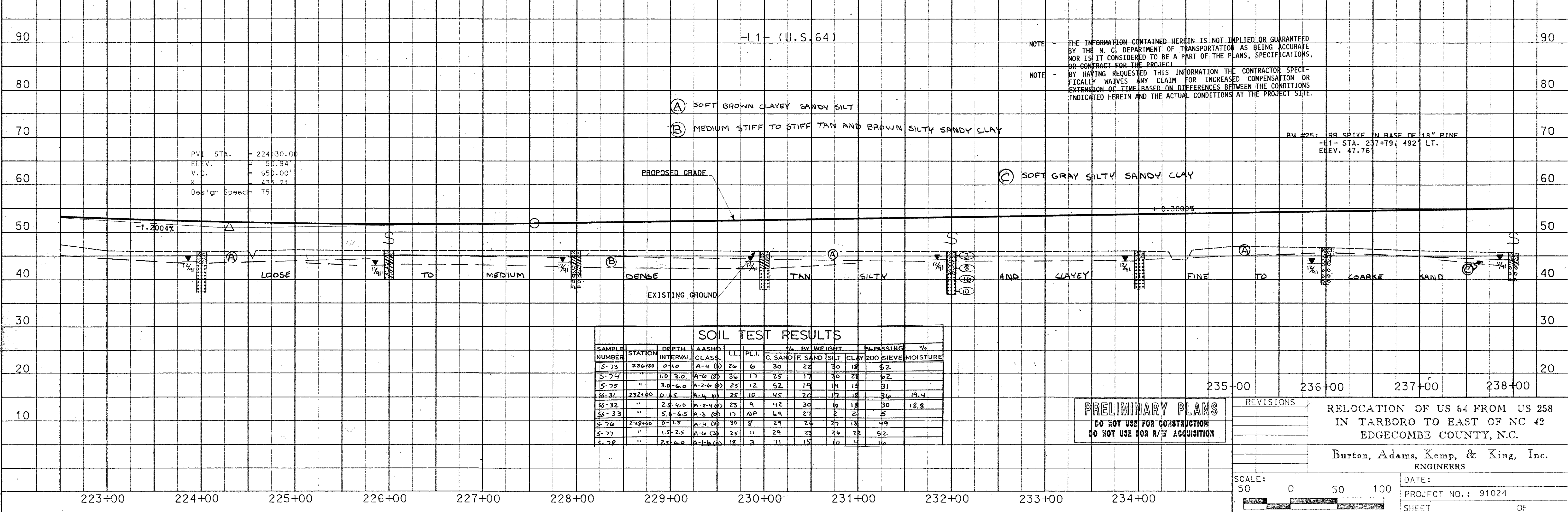


PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	8	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
SS-2	208+00	0-1.5	A-4 (S)	16	NP	24	44	18	14	39
SS-24	"	2.5-4.0	A-6 (M)	29	15	18	33	17	32	52
SS-26	"	5.0-6.5	A-2-4 (A)	20	NP	54	36	8	1	18
SS-27	"	7.5-9.0	A-3 (M)	21	NP	70	22	4	4	8
S-69	214+00	0-1.0	A-4 (S)	21	2	7	41	42	10	62
S-70	"	1.0-2.5	A-4 (M)	23	6	5	39	26	20	54
S-71	"	2.5-3.5	A-6 (M)	34	2.0	6	44	20	20	5.0
S-72	"	3.5-6.0	A-2-4 (M)	28	NP	10	73	5	2	19
SS-28	220+00	0-1.0	A-4 (M)	27	2	26	27	33	17	54
SS-29	"	2.5-4.0	A-7-6 (M)	43	27	19	30	19	32	55
SS-30	"	5.0-6.5	A-3 (M)	18	NP	67	24	1	3	6

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
SS-1	221+72	0-1.5	A-7-6 (M)	49	28	23	18	19	40	62
SS-2	"	4.0-5.5	A-3 (M)	18	NP	63	33	3	1	6
SS-3	"	6.8-10.3	A-1-B (M)	18	NP	78	18	2	2	4
SS-4	"	14.8-19.8	A-2-4 (M)	2	NP	44	37	13	6	15
SS-5	"	23.8-25.3	A-2-6 (M)	36	12	26	49	15	10	25
SS-6	"	28.8-30.3	A-7-5 (M)	44	14	13	24	43	20	71



P.V.E. STA. = 224+30.00  
 ELEV. = 50.94  
 V.C. = 650.00'  
 K = 433.21  
 Design Speed = 75

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-73	226+00	0-1.0	A-4 (M)	26	6	30	24	30	18	52
S-74	"	1.0-3.0	A-6 (M)	36	17	25	17	30	28	62
S-75	"	3.0-6.0	A-2-6 (M)	25	12	52	14	14	15	31
SS-31	232+00	0-1.5	A-4 (M)	25	10	45	20	17	18	19.4
SS-32	"	2.5-4.0	A-2-4 (M)	23	9	42	30	10	18	18.8
SS-33	"	5.0-6.5	A-3 (M)	17	NP	69	27	2	2	5
S-76	233+00	0-1.5	A-4 (M)	30	8	24	26	27	18	49
S-77	"	1.5-2.5	A-6 (M)	25	11	29	23	26	22	52
S-78	"	2.5-6.0	A-1-B (M)	18	3	71	15	10	4	16

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 NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

BM #25: RR SPIKE IN BASE OF 18" PINE  
 -L1- STA. 237+79: 492' LT.  
 ELEV. 47.76'

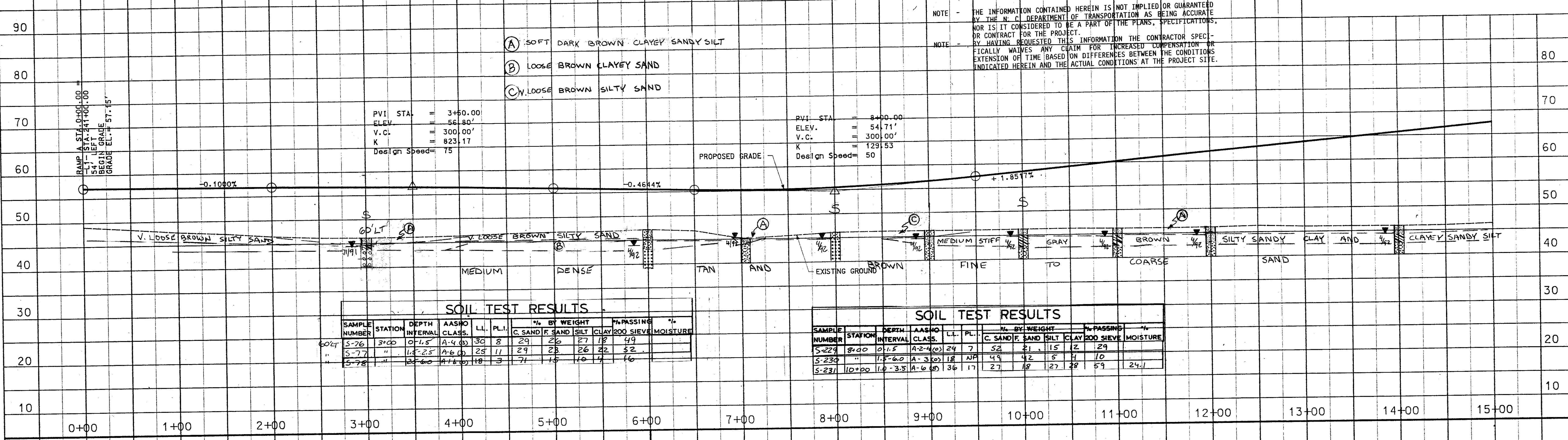
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS  
 RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.293005T	9	10
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-Y12- INTERCHANGE RAMP A



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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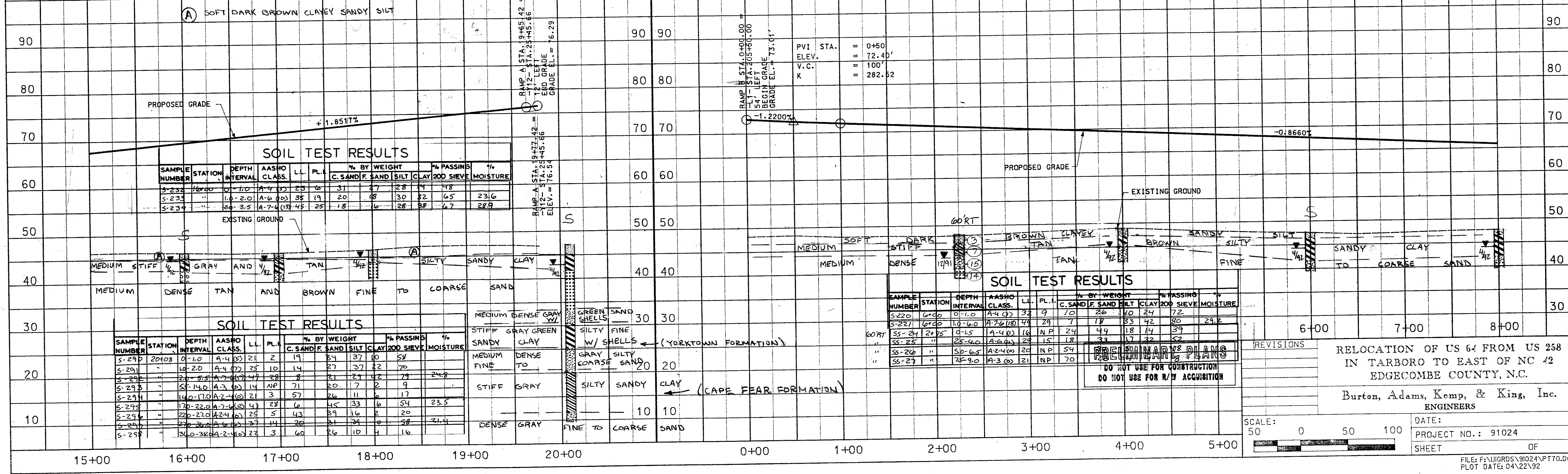
PVI STA. = 3+00.00  
 ELEV. = 56.80'  
 V.C. = 300.00'  
 K = 823.17  
 Design Speed = 75

PVI STA. = 8+00.00  
 ELEV. = 54.71'  
 V.C. = 300.00'  
 K = 1291.53  
 Design Speed = 50

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-76	3+00	0-1.5	A-4 (S)	30	8	29	26	27	18	49	
S-77	"	1.5-2.5	A-6 (S)	28	11	29	28	26	22	52	
S-78	"	2.5-6.0	A-7.6 (S)	18	3	7	15	10	12	16	

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-229	8+00	0-1.5	A-2.4 (S)	29	7	52	21	15	2	29	
S-230	"	1.5-6.0	A-3 (S)	18	NP	49	42	5	4	10	
S-231	10+00	1.0-3.5	A-6 (S)	36	17	27	18	27	28	59	24.1

-Y12- INTERCHANGE RAMP A



-Y12- INTERCHANGE RAMP B

PVI STA. = 0+50  
 ELEV. = 72.40'  
 V.C. = 100'  
 K = 282.52

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-232	16+00	0-1.0	A-4 (S)	25	6	31	27	28	11	78	
S-233	"	1.0-2.0	A-6 (S)	35	19	20	48	30	32	65	23.6
S-234	"	2.0-3.5	A-7.6 (S)	45	25	18	16	28	38	67	28.9

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-220	6+00	0-1.0	A-4 (S)	32	9	10	26	40	24	72	
S-221	6+00	1.0-6.0	A-7.6 (S)	49	29	7	18	83	42	80	23.2
S-222	"	2+05	A-4 (S)	16	NP	24	44	18	14	39	
S-223	"	25-40	A-6 (S)	29	15	18	33	17	32	52	
S-224	"	50-65	A-2.4 (S)	20	NP	54					
S-225	"	75-90	A-3 (S)	21	NP	70					

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-290	20+08	0-1.0	A-4 (S)	21	2	19	84	37	10	59	
S-291	"	1.0-2.0	A-4 (S)	25	10	14	27	37	22	70	
S-292	"	2.0-5.5	A-7.6 (S)	47	28	8	21	24	42	79	24.8
S-293	"	5.5-14.0	A-3 (S)	14	NP	71	20	7	2	9	
S-294	"	14.0-17.0	A-2.4 (S)	21	3	57	26	11	6	17	
S-295	"	17.0-22.0	A-7.6 (S)	40	47	28	6	45	33	6	54
S-296	"	22.0-27.0	A-2.4 (S)	29	5	43	39	16	2	20	
S-297	"	27.0-36.0	A-4 (S)	37	14	26	21	24	0	58	21.4
S-298	"	36.0-38.0	A-2.4 (S)	23	3	60	26	10	4	16	

REVISIONS

DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

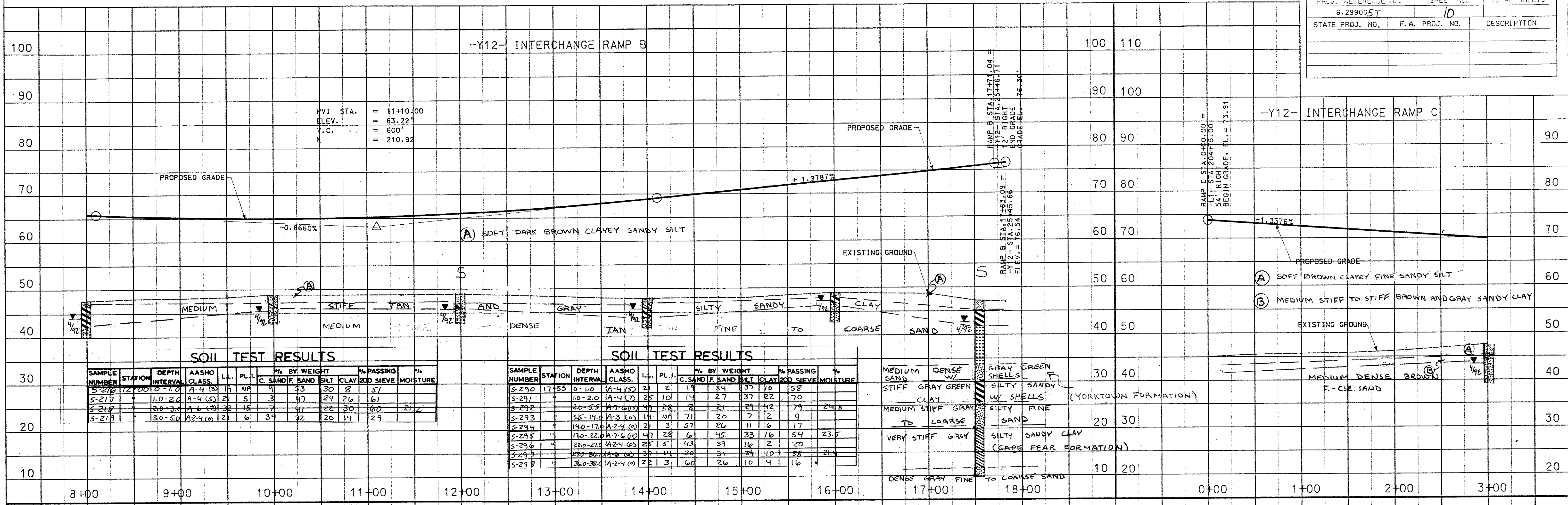
RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	10	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



PVI STA. = 11+10.00  
 ELEV. = 63.22'  
 V.C. = 600'  
 = 210.92

PROPOSED GRADE

PROPOSED GRADE

EXISTING GROUND

PROPOSED GRADE

EXISTING GROUND

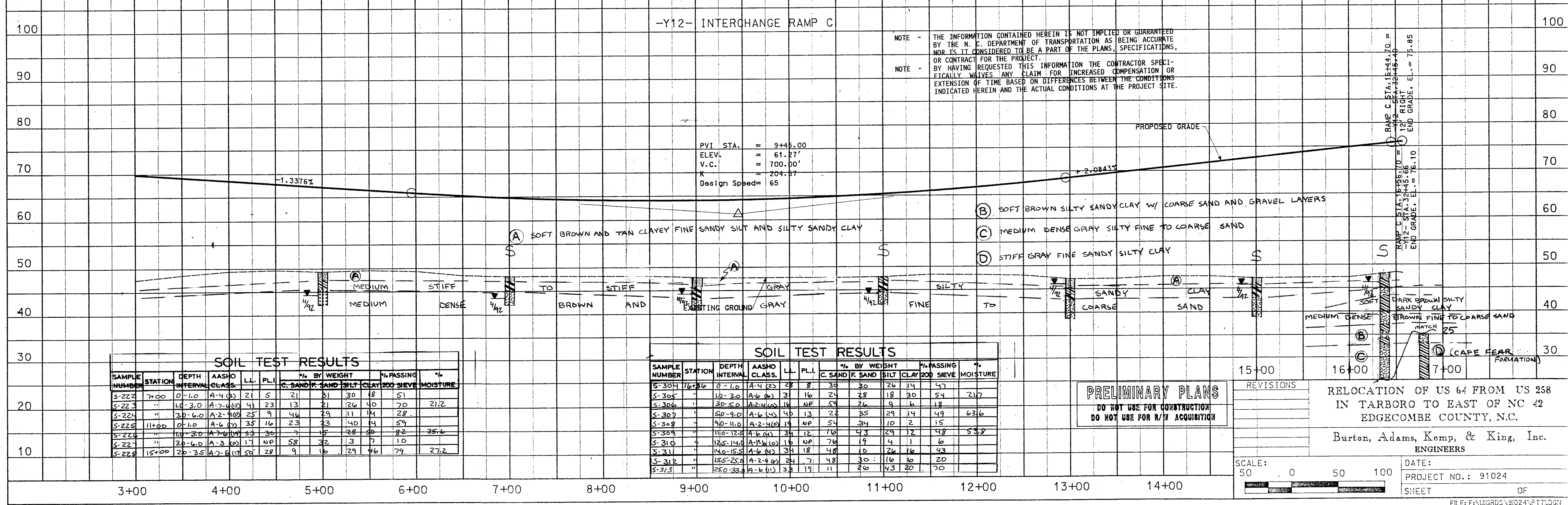
SOIL TEST RESULTS

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-216	11+00	0-1.0	A-4 (S)	19	5	3	53	30	18	51
S-217	"	1.0-2.0	A-4 (S)	21	5	3	47	29	26	61
S-218	"	2.0-3.0	A-6 (S)	32	15	7	41	22	30	60
S-219	"	3.0-5.0	A-2-4 (S)	21	6	34	32	20	14	29

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-290	17+55	0-1.0	A-4 (S)	21	2	19	34	37	70	58
S-291	"	1.0-2.0	A-4 (S)	25	10	14	27	37	22	70
S-292	"	2.0-5.5	A-7 (S)	41	28	8	21	29	42	79
S-293	"	5.5-14.0	A-3 (S)	14	NP	71	20	7	2	9
S-294	"	14.0-17.0	A-2-4 (S)	21	3	57	26	11	6	17
S-295	"	17.0-22.0	A-7-6 (S)	47	28	6	45	33	16	54
S-296	"	22.0-22.0	A-2-4 (S)	25	5	43	39	16	2	20
S-297	"	23.0-36.0	A-6 (S)	37	14	28	31	34	10	58
S-298	"	36.0-36.0	A-2-4 (S)	22	3	60	26	10	4	16

MEDIUM DENSE GRAY SILTY SAND  
 STIFF GRAY GREEN CLAY  
 MEDIUM STIFF GRAY TO COARSE SAND  
 VERY STIFF GRAY  
 DENSE GRAY FINE TO COARSE SAND



PVI STA. = 9+45.00  
 ELEV. = 61.27'  
 V.C. = 700.00'  
 K = 204.57  
 Design Speed = 65

PROPOSED GRADE

EXISTING GROUND

EXISTING GROUND

SOIL TEST RESULTS

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-222	7+00	0-1.0	A-4 (S)	21	5	21	31	30	18	51
S-223	"	1.0-3.0	A-7-6 (S)	41	23	13	21	26	40	70
S-224	"	3.0-6.0	A-2-4 (S)	25	9	46	29	11	14	28
S-225	11+00	0-1.0	A-6 (S)	35	16	23	23	40	14	59
S-226	"	1.0-3.0	A-7-6 (S)	53	30	7	15	28	30	82
S-227	"	3.0-6.0	A-3 (S)	17	NP	58	32	3	7	10
S-228	15+00	20-35	A-7-6 (S)	58	28	9	16	29	46	79

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-304	16+30	0-1.0	A-4 (S)	25	8	38	30	26	14	47
S-305	"	1.0-3.0	A-6 (S)	31	16	24	28	18	30	54
S-306	"	3.0-5.0	A-2-4 (S)	16	NP	59	26	9	6	18
S-307	"	5.0-9.0	A-6 (S)	40	13	22	35	29	14	49
S-308	"	9.0-11.0	A-2-4 (S)	19	NP	54	34	10	2	15
S-309	"	11.0-12.5	A-6 (S)	34	12	76	43	29	12	48
S-310	"	12.5-14.8	A-16 (S)	16	NP	76	19	4	1	6
S-311	"	14.8-15.5	A-6 (S)	34	18	48	16	26	16	43
S-312	"	15.5-25.0	A-2-4 (S)	24	7	48	30	16	6	20
S-313	"	25.0-33.0	A-6 (S)	33	19	11	26	43	20	70

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 1" = 50'  
 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990057	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

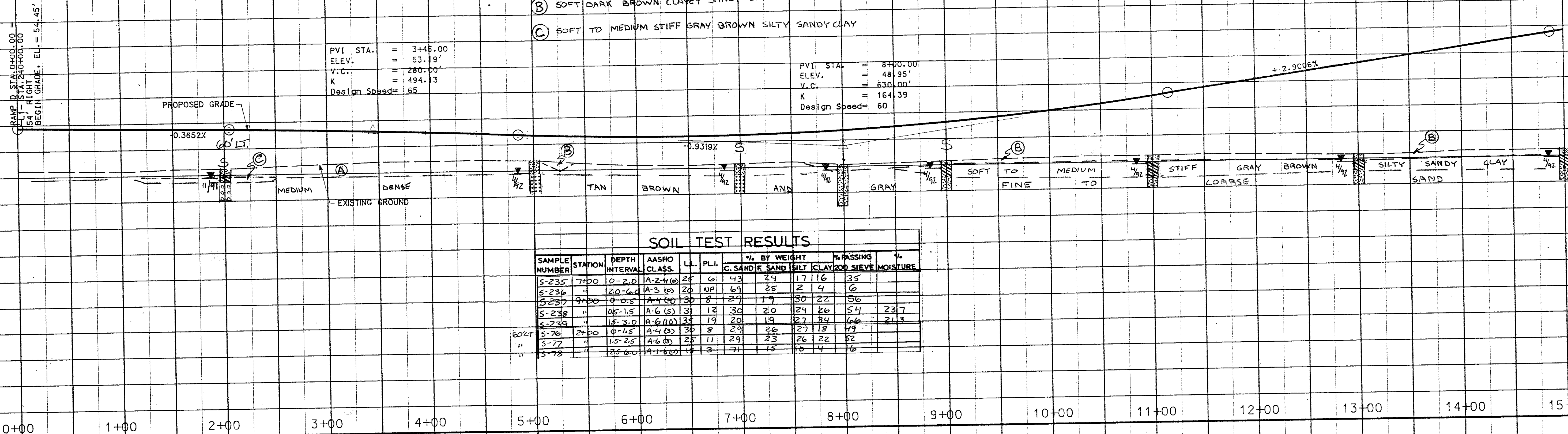
-Y12- INTERCHANGE RAMP D

- (A) LOOSE BROWN SILTY CLAYEY SAND
- (B) SOFT DARK BROWN CLAYEY SANDY SILT
- (C) SOFT TO MEDIUM STIFF GRAY BROWN SILTY SANDY CLAY

PVI STA. = 3+45.00  
 ELEV. = 53.19'  
 V.C. = 280.00'  
 K = 494.13  
 Design Speed = 65

PVI STA. = 8+00.00  
 ELEV. = 48.95'  
 V.C. = 630.00'  
 K = 164.39  
 Design Speed = 60

RAMP D STA. 0+00.00 =  
 STA. 1+00.00 =  
 BEGIN GRADE. EL. = 54.45'



SOIL TEST RESULTS

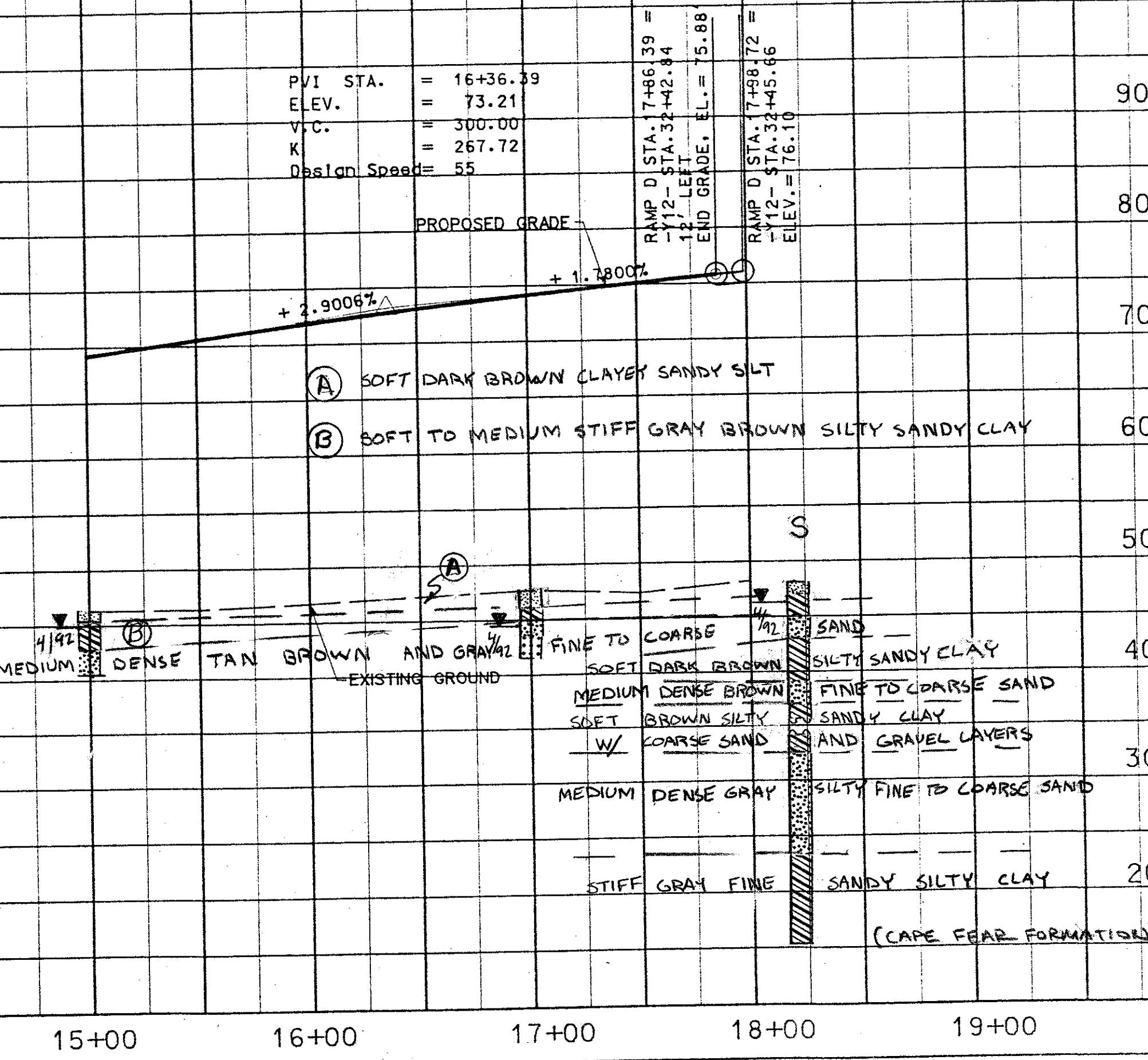
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING #100 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-235	7+00	0-2.0	A-2-4(0)	24	6	43	24	17	16	35
S-236	"	20-2.0	A-3(0)	20	NP	67	25	2	4	6
S-237	9+00	0-0.5	A-4(0)	30	8	27	19	30	22	56
S-238	"	0.5-1.5	A-6(5)	31	12	30	20	24	26	54
S-239	"	1.5-3.0	A-6(10)	35	19	20	19	27	34	66
S-70	2+00	0-1.5	A-4(3)	30	8	29	26	27	18	49
S-77	"	1.5-2.5	A-6(3)	25	11	29	23	26	22	52
S-78	"	2.5-6.0	A-1(0)	12	3	71	15	10	4	16

-Y12- INTERCHANGE RAMP D

PVI STA. = 16+36.39  
 ELEV. = 73.21  
 V.C. = 300.00'  
 K = 267.72  
 Design Speed = 55

RAMP D STA. 17+00.00 =  
 STA. 17+42.84 =  
 LEFT END GRADE. EL. = 55.88

RAMP D STA. 17+00.00 =  
 STA. 17+45.66 =  
 RIGHT END GRADE. EL. = 56.10



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING #100 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-304	18+20	0-1.0	A-4(2)	28	8	30	26	4	47	
S-305	"	1.0-3.0	A-6(0)	31	16	24	28	18	30	
S-306	"	3.0-5.0	A-2-4(0)	16	NP	57	26	9	6	
S-307	"	5.0-9.0	A-6(4)	40	13	22	35	21	41	
S-308	"	9.0-11.0	A-2-4(0)	19	NP	54	34	10	15	
S-309	"	11.0-12.5	A-6(4)	34	12	16	43	27	2	
S-310	"	12.5-14.0	A-1(0)	16	NP	76	9	4	6	
S-311	"	14.0-15.2	A-6(4)	34	18	18	48	16	26	
S-312	"	15.2-25.0	A-2-4(0)	29	7	48	20	16	6	
S-313	"	25.0-33.0	A-6(10)	33	19	11	26	43	20	

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NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 0 50 100

DATE:  
 PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	12	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

RAMP A  
 PI STA 1+08.56    PIS STA 3+17.09  
 $\Delta = 2^\circ 42' 48.8''$ , LT.     $\theta_s = 1^\circ 52' 30''$   
 D = 1' 45"    Ls = 300  
 Lc = 217.0845'    U = 200.0112'  
 Rc = 4583.6624'    V = 100.0102'  
 T = 108.5625'  
 Se = 0.05 FT/FT

-L1-  
 PI STA 240+11.62  
 $\Delta_T = 68^\circ 47' 45.2''$ , RT.  
 Dc = 1' 15"  
 $\theta_s = 1^\circ 52' 30''$   
 Ls = 300'  
 Lc = 5203.6702'  
 Rc = 4583.6624'  
 Ts = 3288.8123'  
 U = 200.0112'  
 V = 100.0102'  
 Se = 0.05 FT/FT

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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-L1- POC 241+00.00 =  
 RAMP A POC 0+00.00  
 54' RIGHT  
 DELTA = 2° 18'

-L1- POC 240+00.00 =  
 RAMP D CS 0+00.00  
 54' LEFT

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

ANNA W. NEWBOLB  
 D.B.672 PG.255  
 D.B.34 PG.51  
 85.6 Ac. (TOTAL)

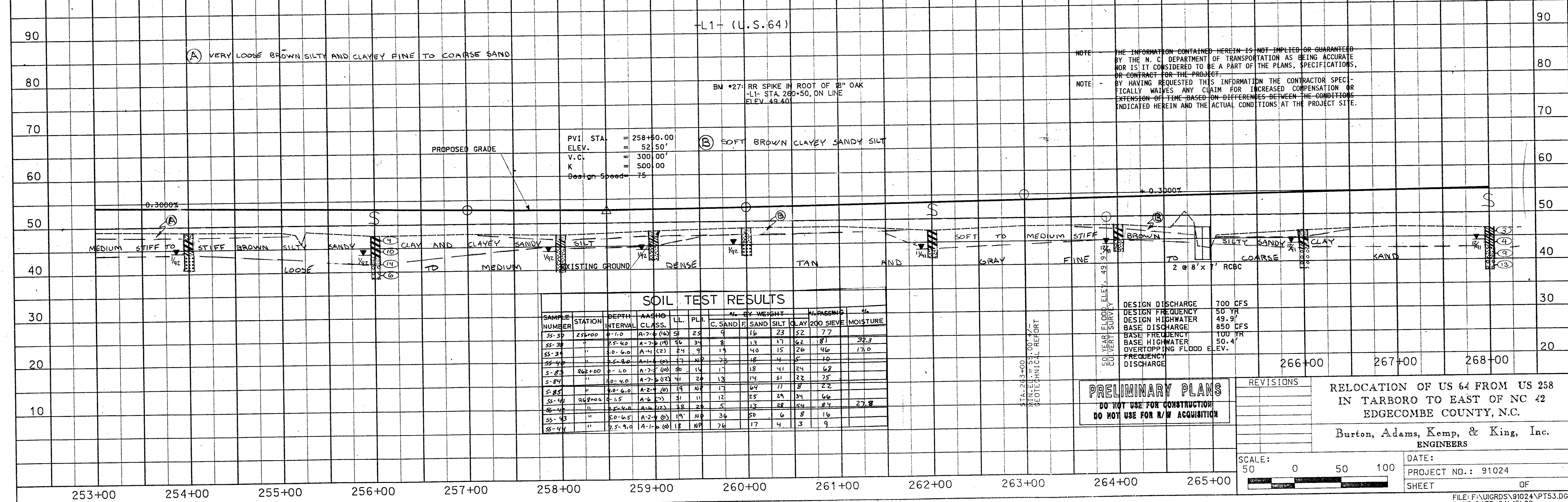
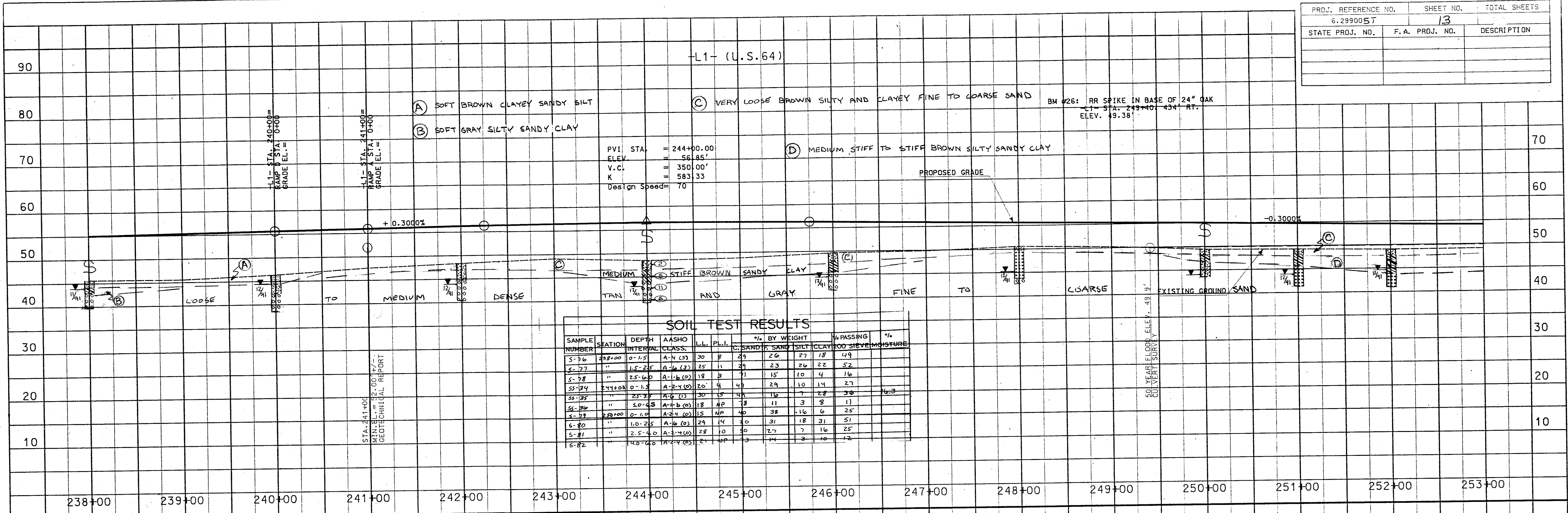
FOR -L1- (U.S.64) PROFILE, SEE SHT. 34

RAMP D  
 PIS STA 1+70.50  
 $\theta_s = 6^\circ 23' 50.5''$   
 Ls = 300'  
 U = 170.4964'  
 V = 129.8053'  
 Dc1 = 1° 15' 53.6"  
 Dc2 = 3° 00''

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	13	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE: THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE: BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

DESIGN DISCHARGE: 700 CFS  
 DESIGN FREQUENCY: 50 YR  
 DESIGN HIGHWATER: 49.9'  
 BASE DISCHARGE: 850 CFS  
 BASE FREQUENCY: 100 YR  
 BASE HIGHWATER: 50.4'  
 OVERTOPPING FLOOD ELEV.: 50.4'  
 FREQUENCY DISCHARGE

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
0.293057	14	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

ANNA W. NEWBOLD  
 D.B.672 PG.255  
 D.B.34 PG.51  
 85.6 Ac. (TOTAL)

-L1-  
 PI STA 240+11.62  
 $\Delta T = 68^{\circ}47'45.2''$  RT.  
 Dc = 1'15"  
 $\theta_s = 1^{\circ}52'30''$   
 Ls = 300'  
 Lc = 5203.6702'  
 Rc = 4583.6624'  
 Ts = 3288.8123'  
 U = 200.0112'  
 V = 100.0102'  
 Se = 0.05 FT/FT

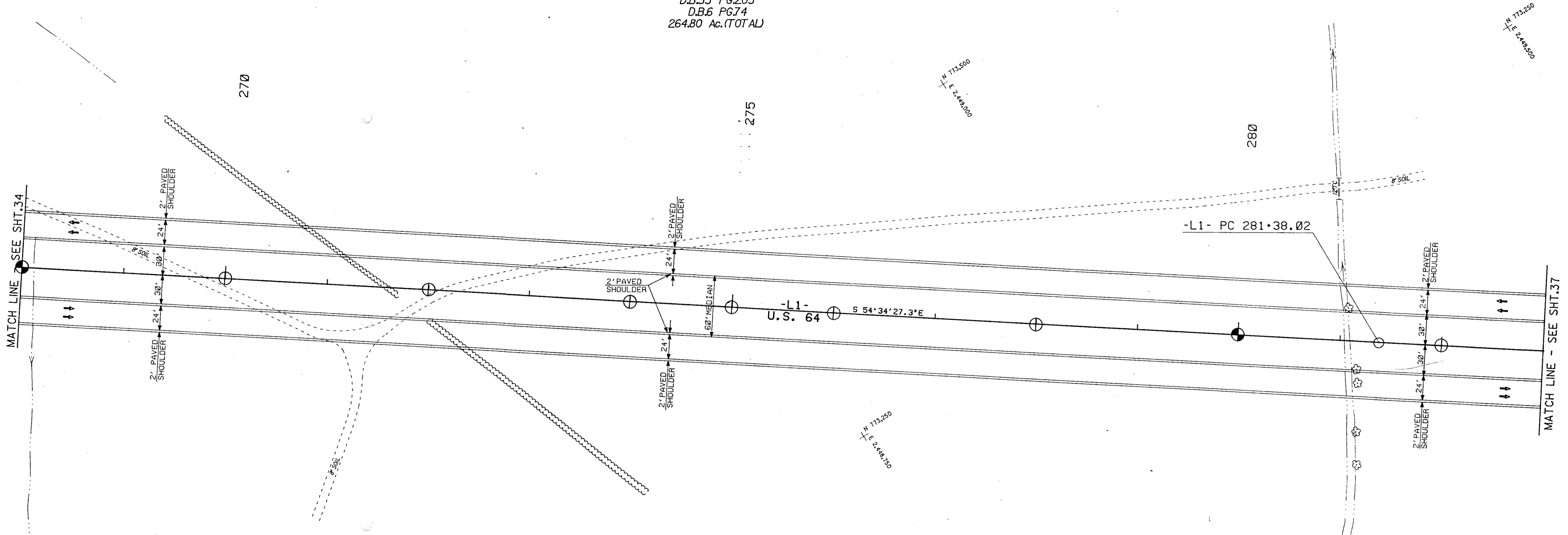
FOR -L1- (U.S.64) PROFILE, SEE SHT. 34

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	15	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac.(TOTAL)



MATCH LINE - SEE SHT.34

MATCH LINE - SEE SHT.37

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac.(TOTAL)

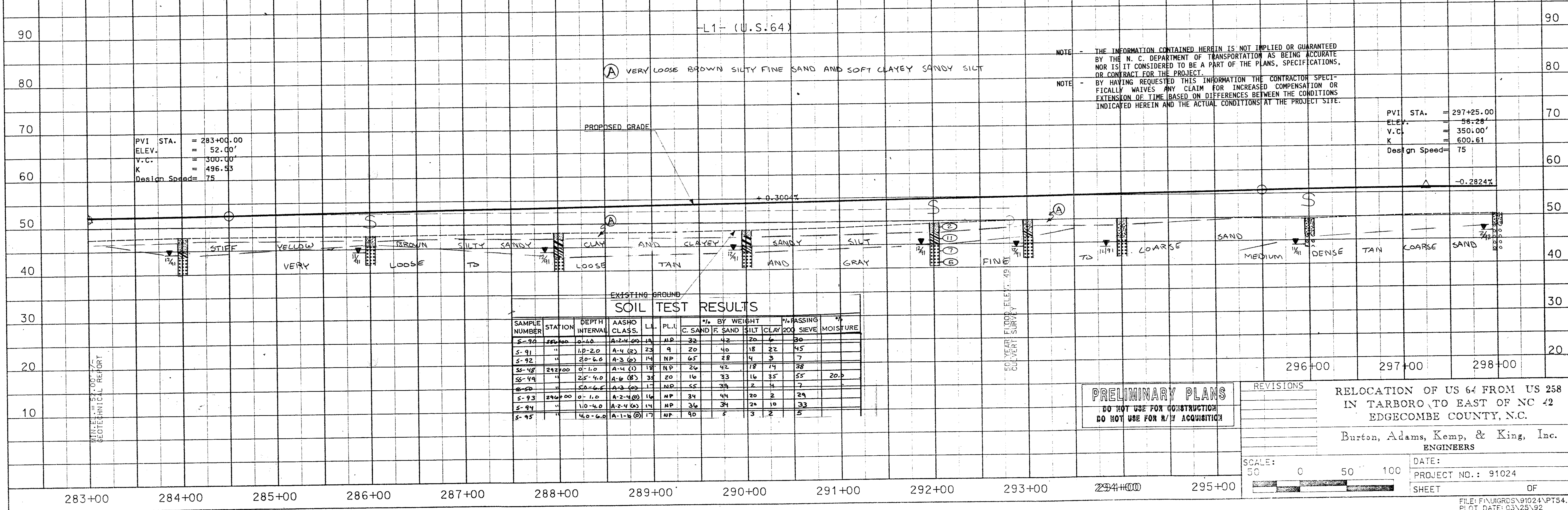
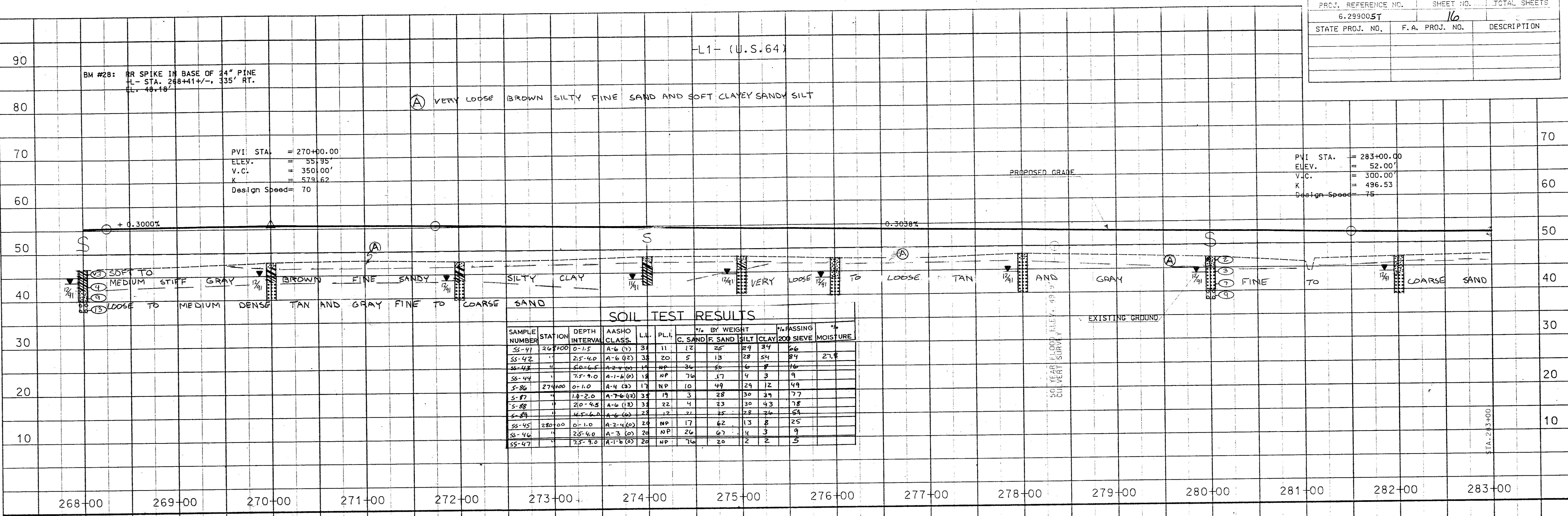
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-L1-  
 PI STA 288+18.65  
 $\Delta T = 3'24''07.7''$ , RT.  
 D = 0'15'  
 L = 1360.8561'  
 RC = 22918.3118'  
 T = 680.6280'  
 SE = NC

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE:
	PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	16	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

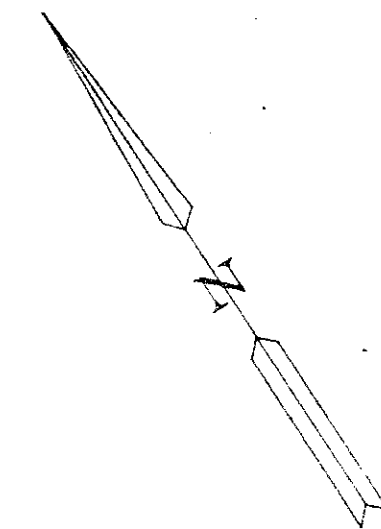
SCALE: 50' 0" 50' 100'

DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.259005J	17	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

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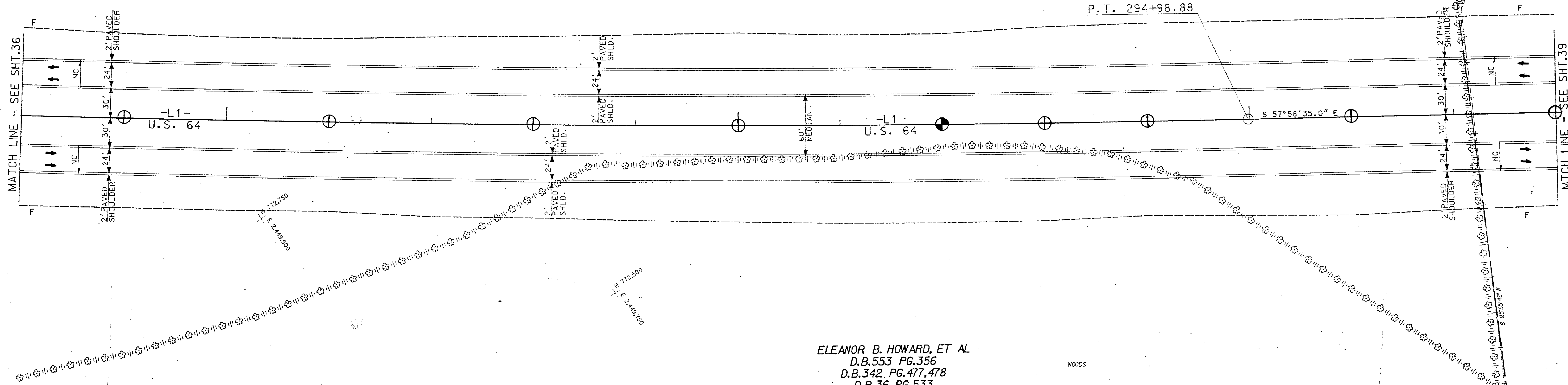


285

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.477,478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 P.B.6 PG.75  
 264.80 Ac. (TOTAL)

290

295



ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.477,478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 P.B.6 PG.75  
 264.80 Ac. (TOTAL)

HENRY TURNER BASS, ET AL  
 D.B.832 PG.802  
 P.B.1 PG.124  
 644.63 Ac. (TOTAL)

FOR -L1- (U.S.64) PROFILE, SEE SHT. 37

-L1-  
 PI STA 288+18.65  
 $\Delta = 3^{\circ} 24' 07.7''$ , LT  
 D = 0' 15'  
 L = 1360.8561'  
 R = 22918.3118'  
 T = 680.6280'  
 Se = NC

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: *
	PROJECT NO.: 91024
	SHEET OF

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	18	20
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

HENRY TURNER BASS, ET AL  
 D.B. 832 PG. 802  
 P.B. 1 PG. 124  
 644.63 Ac. (TOTAL)

W.G. CLARK, III  
 W.B. P PG. 51

HENRY TURNER BASS, ET AL  
 D.B. 832 PG. 802  
 P.B. 1 PG. 124  
 644.63 Ac. (TOTAL)

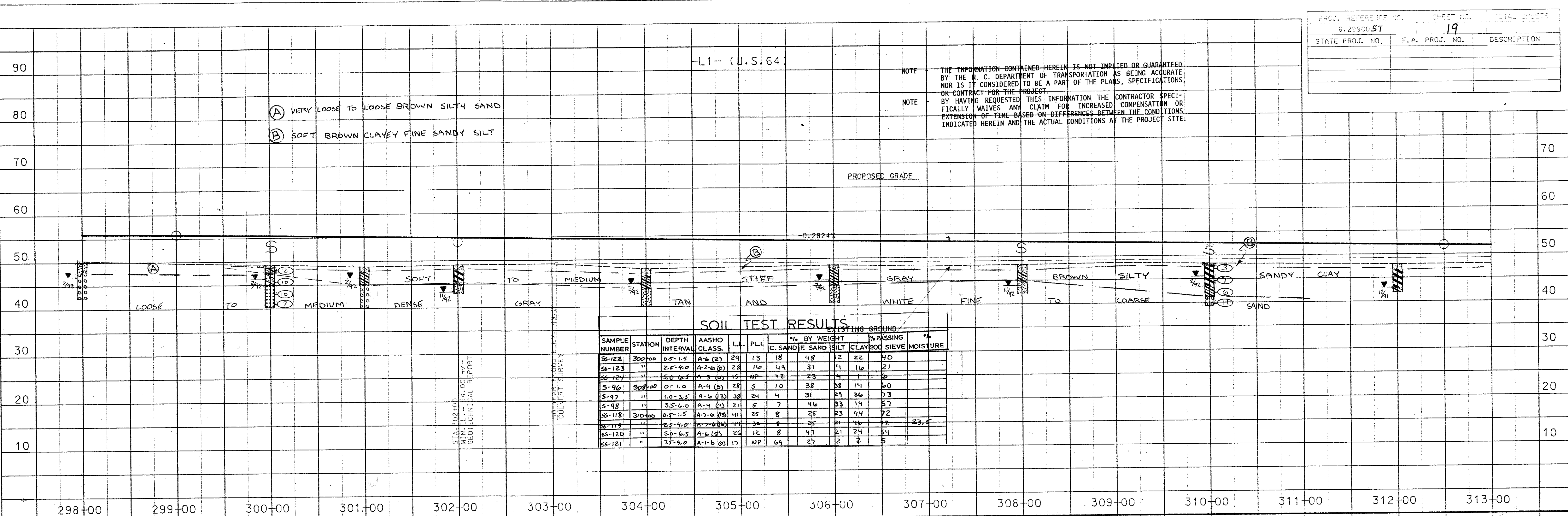
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W.G. CLARK, III  
 W.B. P PG. 51

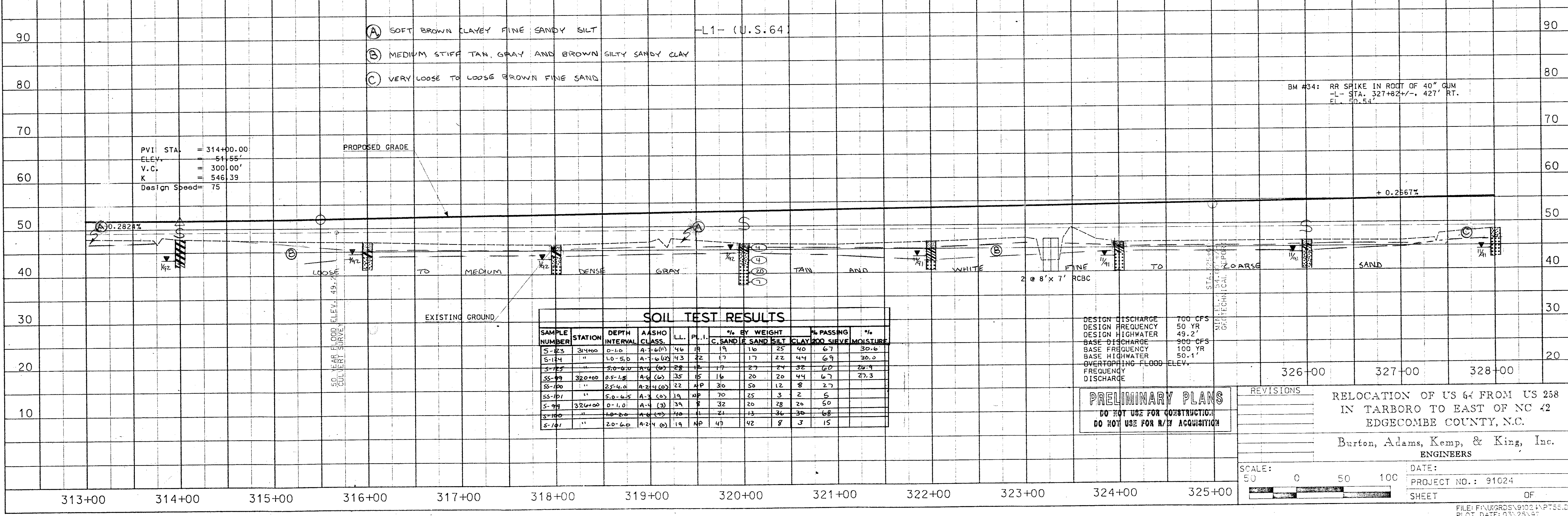
FOR -L1- (U.S. 64) PROFILE, SEE SHT. 40

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF



NOTE: THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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PVI STA = 314+00.00  
 ELEV. = 51.55'  
 V.C. = 300.00'  
 K = 546.39  
 Design Speed = 75

BM #34: RR SPIKE IN ROOT OF 40" GUM  
 - STA. 327+82 +/- .427' RT.  
 EL. 50.54'

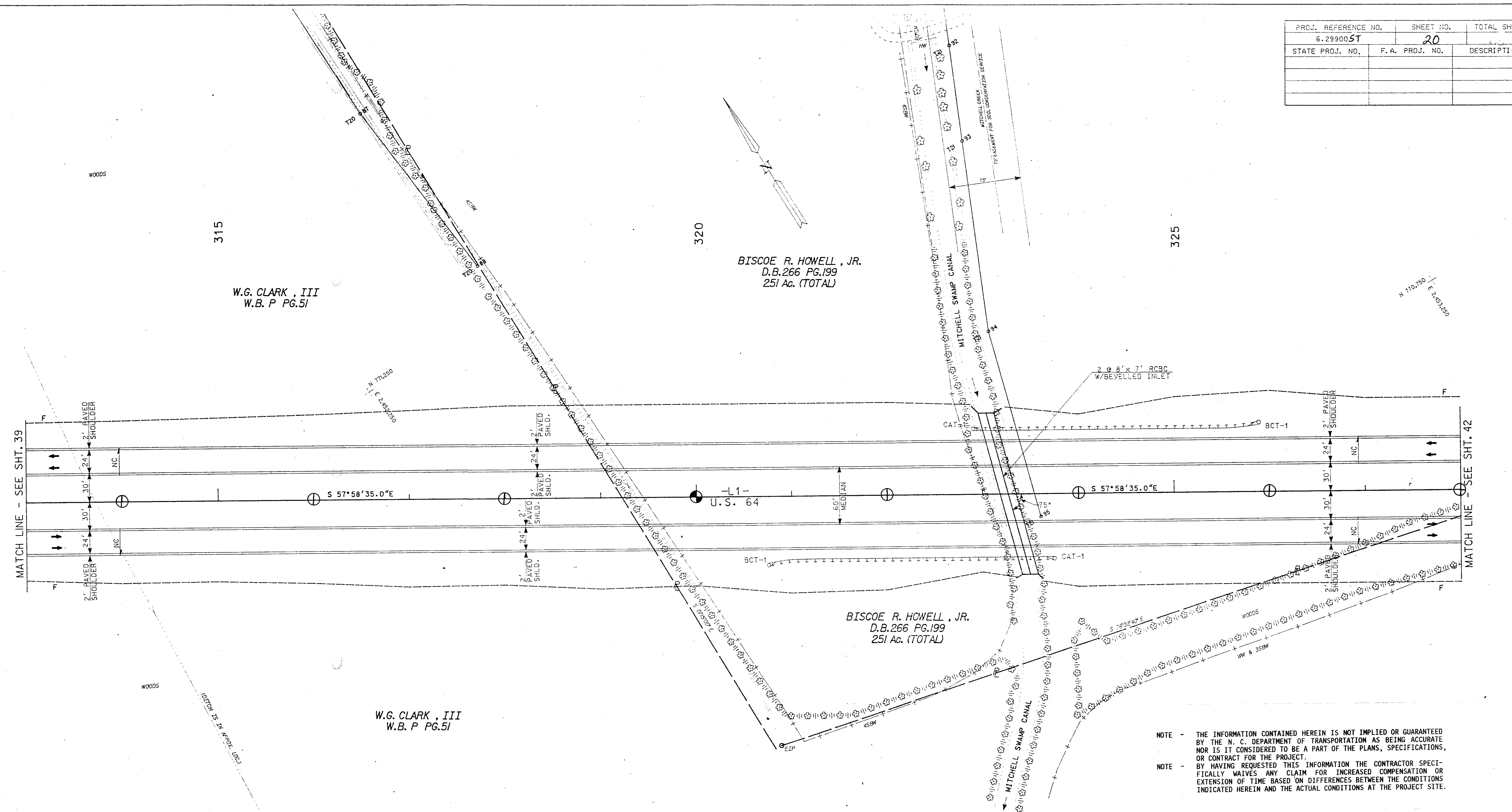
DESIGN DISCHARGE 700 CFS  
 DESIGN FREQUENCY 50 YR  
 DESIGN HIGHWATER 49.2'  
 BASE DISCHARGE 300 CFS  
 BASE FREQUENCY 100 YR  
 BASE HIGHWATER 50.1'  
 OVERTOPPING FLOOD ELEV. 50.1'  
 FREQUENCY DISCHARGE

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS  
 RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	20	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



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FOR -L1- (U.S.64) PROFILE, SEE SHT. 40

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	21	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

BISCOE R. HOWELL, JR.  
DEED BOOK 266 PAGE 199  
251 Ac (TOTAL)

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

W. G. CLARK, III  
WILL BOOK P PAGE 51

W. G. CLARK, III  
WILL BOOK P PAGE 51

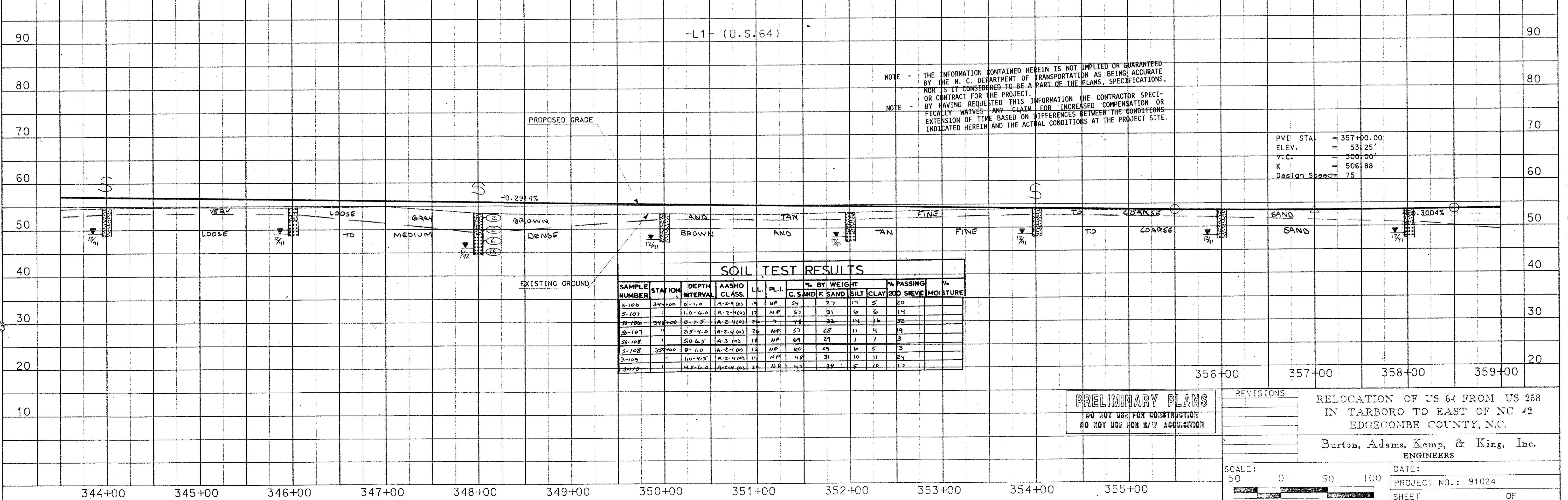
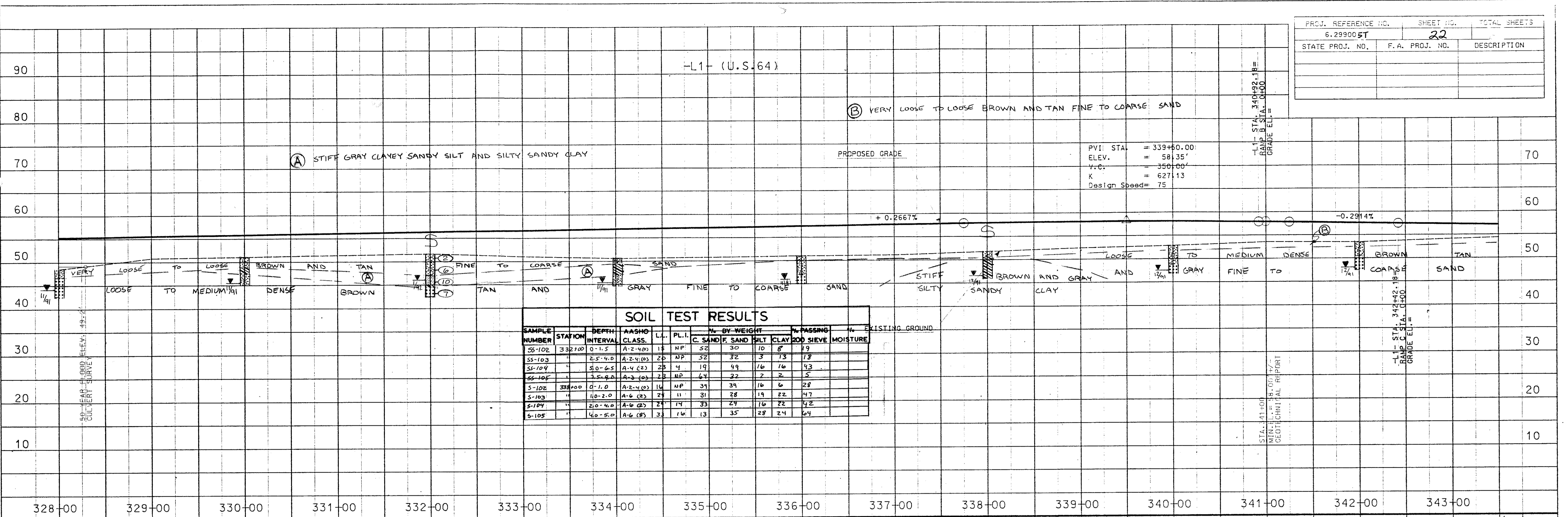
LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

FOR -L1- (U.S.64) PROFILE, SEE SHT. 43

-L1-	RAMP B	RAMP C
PI STA 352+59.74	PI STA 1+80.00	PI STA 1+00.01
$\Delta T = 29^{\circ}32'36"$ , LT.	$\theta_s = 5^{\circ}37'58.8"$	$\Delta T = 01^{\circ}30'00"$ , LT.
$D_c = 0^{\circ}45'$	$L_s = 300'$	$D_c = 0^{\circ}45'$
$\theta_s = 0^{\circ}45'$	$SU = 180.0026'$	$L = 200'$
$L_s = 200'$	$V = 120.2220'$	$R = 7639.4373'$
$L_c = 3739.1108'$	$D1 = 03^{\circ}00'$	$T = 100.0057'$
$R_c = 7639.4373'$	$D2 = 0^{\circ}45'19.2"$	$S_e = 0.03$ FT/FT
$T_s = 2114.4424'$		
$U = 133.3345'$		
$V = 66.6678'$		
$S_e = 0.03$ FT/FT		

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET _____ OF _____



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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

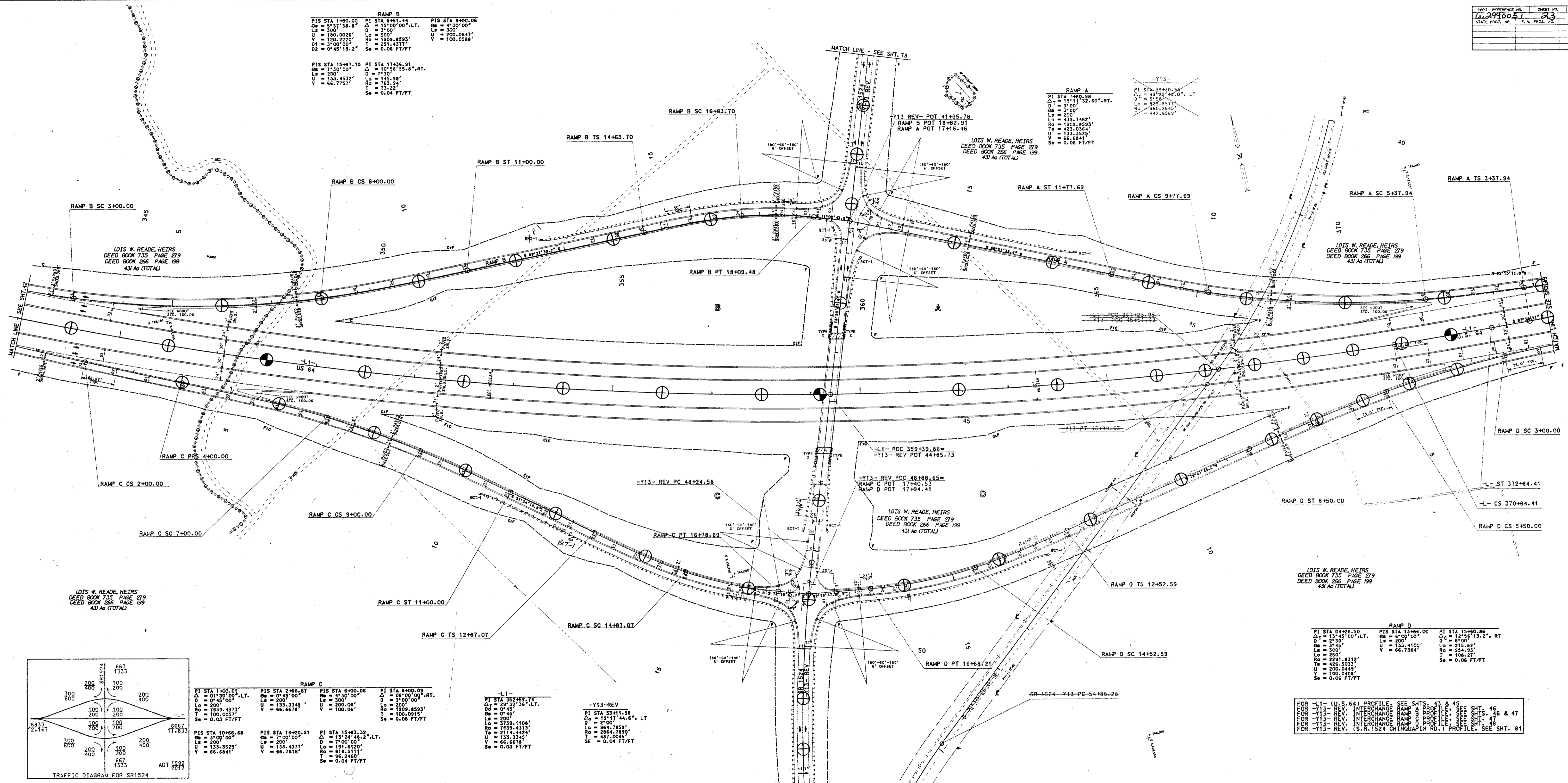
DATE: PROJECT NO.: 91024

SHEET OF

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PROJECT NO.	SHEET NO.	TOTAL SHEETS
2990051	23	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**RAMP B**  
 PT STA 1+80.00 PI STA 5+81.44 PIS STA 3+00.06  
 Δ = 5°37'58.41" Δ = 10°00'00" RT.  
 D = 300' D = 300' D = 300'  
 L = 180.0026' L = 300' L = 300'  
 U = 120.2225' U = 180.0026' U = 180.0026'  
 V = 37.0000' V = 251.4377' V = 100.0588'  
 T = 0' T = 100.0588' T = 100.0588'  
 S<sub>e</sub> = 0.04 FT/FT S<sub>e</sub> = 0.04 FT/FT S<sub>e</sub> = 0.04 FT/FT

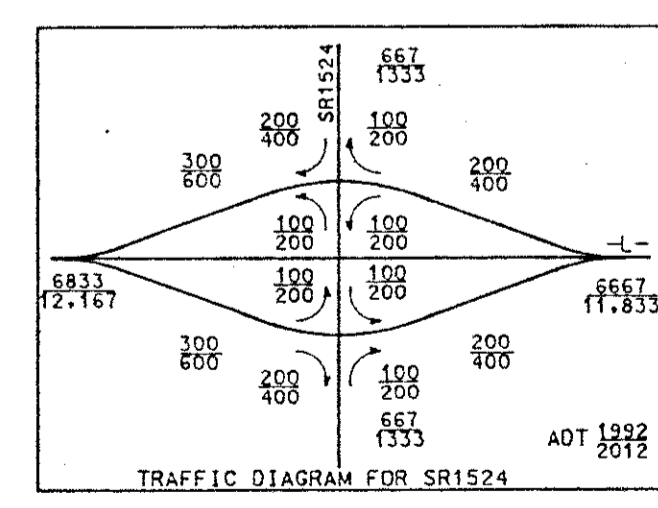
**RAMP A**  
 PI STA 7+60.38  
 Δ = 12°11'32.60" RT.  
 D = 300'  
 L = 200'  
 U = 133.3525'  
 V = 66.7157'  
 T = 0'  
 S<sub>e</sub> = 0.04 FT/FT

**RAMP D**  
 PT STA 0+26.50 PIS STA 13+66.00 PI STA 15+60.86  
 Δ = 13°45'00" LT. Δ = 8°00'00" RT. Δ = 13°15'13.27" RT.  
 D = 270' D = 200' D = 610'  
 L = 300' L = 133.4100' L = 300'  
 U = 225' U = 66.7364' U = 225'  
 V = 2251.8312' V = 200.0449' V = 100.0449'  
 T = 0' T = 0' T = 0'  
 S<sub>e</sub> = 0.06 FT/FT S<sub>e</sub> = 0.06 FT/FT S<sub>e</sub> = 0.06 FT/FT

**RAMP C**  
 PT STA 1+00.01 PIS STA 2+66.87 PI STA 6+00.06 PI STA 8+00.09  
 Δ = 0°30'00" LT. Δ = 0°45'00" RT. Δ = 4°30'00" RT.  
 D = 0' D = 0' D = 300'  
 L = 0' L = 0' L = 300'  
 U = 0' U = 0' U = 0'  
 V = 0' V = 0' V = 0'  
 T = 0' T = 0' T = 0'  
 S<sub>e</sub> = 0.03 FT/FT S<sub>e</sub> = 0.03 FT/FT S<sub>e</sub> = 0.03 FT/FT

**L-1**  
 PT STA 352+59.74  
 Δ = 13°29'56" LT.  
 D = 270'  
 L = 200'  
 U = 133.3525'  
 V = 66.7157'  
 T = 0'  
 S<sub>e</sub> = 0.04 FT/FT

**Y13-REV**  
 PI STA 53+11.58  
 Δ = 12°11'32.60" LT.  
 D = 300'  
 L = 200'  
 U = 133.3525'  
 V = 66.7157'  
 T = 0'  
 S<sub>e</sub> = 0.04 FT/FT



FOR L-1 (U.S. 64) PROFILE, SEE SHTS. 43 & 45  
 FOR Y13-REV INTERCHANGE RAMP A PROFILE, SEE SHT. 46  
 FOR Y13-REV INTERCHANGE RAMP B PROFILE, SEE SHTS. 46 & 47  
 FOR Y13-REV INTERCHANGE RAMP C PROFILE, SEE SHTS. 47 & 48  
 FOR Y13-REV INTERCHANGE RAMP D PROFILE, SEE SHT. 48  
 FOR L-1 (S.R. 1524 CHINAUM IN N.J.) PROFILE, SEE SHT. 81

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR Bidding

INTERCHANGE AT	REVISIONS	RELOCATION OF US 64 FROM US 256 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
Y13-REV (SR1524)		Burton, Adams, Kemp, & King, Inc. ENGINEERS
EDGEcombe COUNTY	SCALE: 0 50 100	DATE: PROJECT NO.: 91024
		SHEET 23 OF

-L1- (U.S. 64)

- (A) SOFT TO MEDIUM STIFF DARK BROWN AND BLACK CLY. SANDY SILT
- (B) SOFT TO MEDIUM STIFF GRAY SILTY SANDY CLAY
- (C) MEDIUM STIFF TO STIFF GRAY BROWN SILTY FINE SANDY CLAY AND CLAYEY SANDY SILT

PVI STA. = 368+75.00  
 ELEV. = 56.78'  
 V.C. = 350.00'  
 K = 568.91  
 Design Speed = 70

PVI STA. = 374+50.00  
 ELEV. = 54.97'  
 V.C. = 300.00'  
 K = 487.89  
 Design Speed = 75

+ 0.3004%

-0.3148%

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	359+20	0-1.5	A-2-4 (0)	18	NP	56	27	7	13	21	
SS-2	"	1.5-2.1	A-3 (0)	18	NP	52	31	3	4	9	
SS-3	"	2.1-2.2	A-1-4 (0)	22	NP	88	0	0	2	2	
SS-4	"	2.2-2.3	A-3 (0)	18	NP	67	24	1	3	4	
SS-5	"	2.3-2.3	A-3 (0)	17	NP	70	25	1	4	6	
SS-6	"	4.8-4.2	A-4 (0)	32	19	9	33	45	12	68	25.8
SS-7	"	4.8-4.2	A-2-4 (0)	31	NP	11	68	15	2	27	
SS-8	"	5.8-5.2	A-2-4 (0)	24	NP	45	44	3	8	13	
SS-9	"	5.8-5.2	A-2-4 (0)	31	A	64	7	11	8	20	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-111	361+00	0-1.0	A-2-4 (0)	15	NP	33	32	9	6	17	
S-112	"	1.0-2.0	A-2-4 (0)	23	7	45	24	8	18	27	
S-113	"	2.0-6.0	A-1-4 (0)	88	NP	81	3	2	6	5	72
S-114	362+00	0-1.0	A-4 (0)	32	8	37	19	24	24	52	
S-115	"	1.0-4.0	A-2-4 (0)	28	12	32	18	20	30	52	
SS-91	372+00	0-1.5	A-4 (0)	26	7	24	38	20	18	45	31.2
SS-92	"	2.5-4.7	A-4 (0)	31	16	9	29	20	42	70	33.2
SS-93	"	5.0-6.7	A-4 (0)	17	NP	81	2	2	26	58	22.9
SS-94	"	7.5-9.0	A-3 (0)	22	NP	49	2	2	4	5	
S-1	370+00	0.0-1.5	A-4 (0)	18	NP	27	39	18	16	37	
S-2	"	1.5-4.5	A-2-4 (0)	18	5	13	81	2	4	7	
S-3	"	4.5-6.0	A-2-4 (0)	22	NP	32	38	10	20	33	

(D) MEDIUM STIFF TO STIFF GRAY BROWN SILTY FINE SANDY CLAY AND CLAYEY SANDY SILT -L1- (U.S. 64)

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PVI STA. = 383+50.00  
 ELEV. = 58.00'  
 V.C. = 350.00'  
 K = 583.23  
 Design Speed = 70

PROPOSED GRADE

-L1- STA. 381+71.14 LB= LA  
 -L1- STA. 380+61.18 LA  
 GRADE EL. =

+ 0.3001%

+ 0.3001%

-0.3000%

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-60	375+00	0-1.0	A-2-4 (0)	16	NP	46	29	15	10	24	
S-61	"	1.0-3.0	A-2 (0)	32	17	36	21	17	26	47	
S-62	"	3.0-8.0	A-2-4 (0)	16	NP	66	23	5	6	15	
SS-95	376+00	0-1.5	A-4 (0)	28	7	21	55	22	22	49	28.1
SS-96	"	2.5-4.0	A-2-4 (0)	14	NP	9	65	14	12	34	
SS-97	"	5.0-6.5	A-3 (0)	21	NP	62	34	1	3	5	
SS-98	"	12.5-14.0	A-3 (0)	16	NP	72	24	1	3	5	
S-9	380+00	0-2.5	A-1-4 (0)	24	NP	32	42	15	7	33	
S-10	"	2.5-6.0	A-1-4 (0)	17	NP	24	28	7	16	15	
S-11	"	4.0-6.0	A-3 (0)	18	NP	68	26	2	4	6	

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

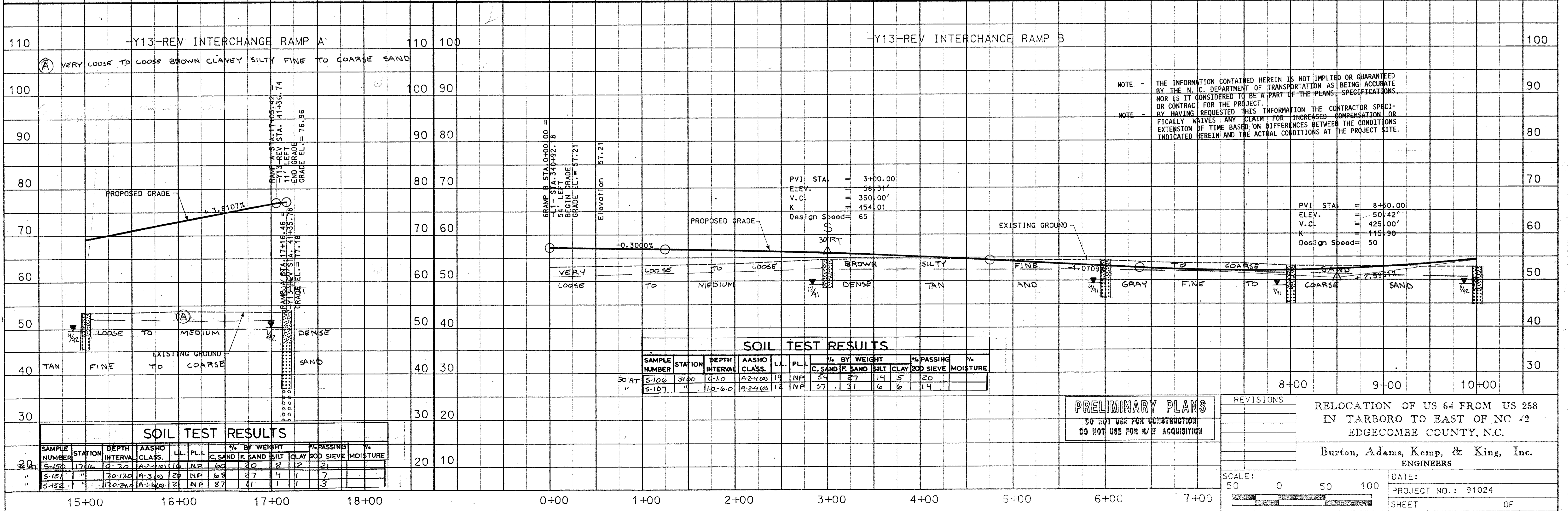
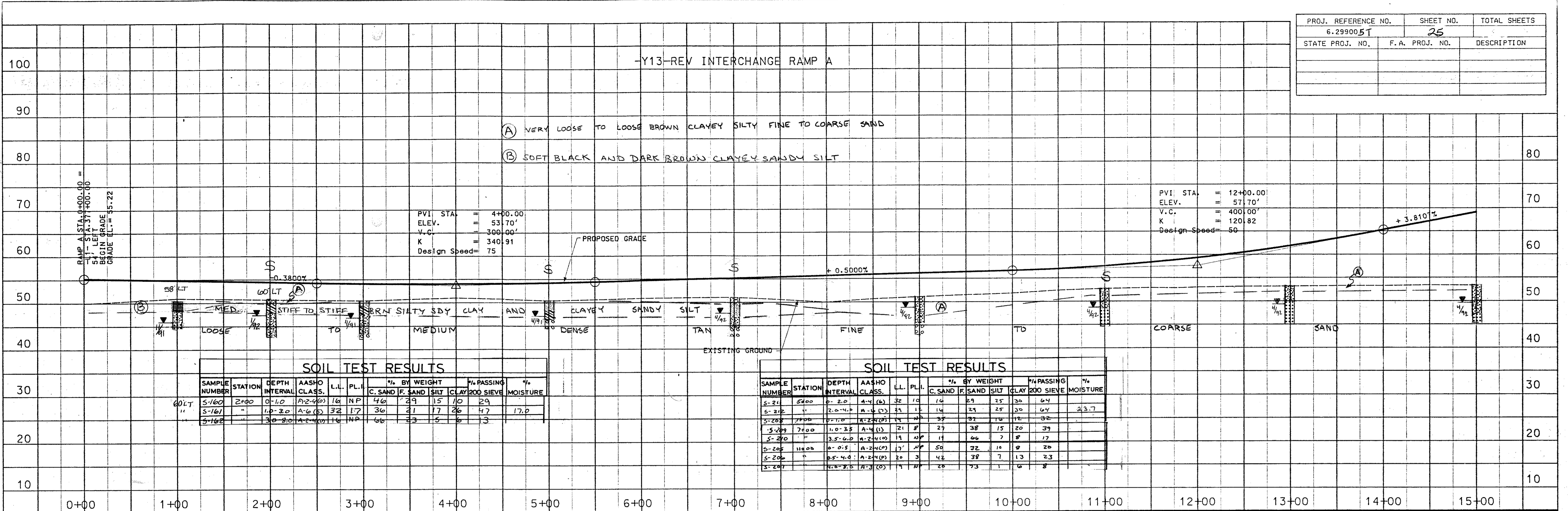
RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	25	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

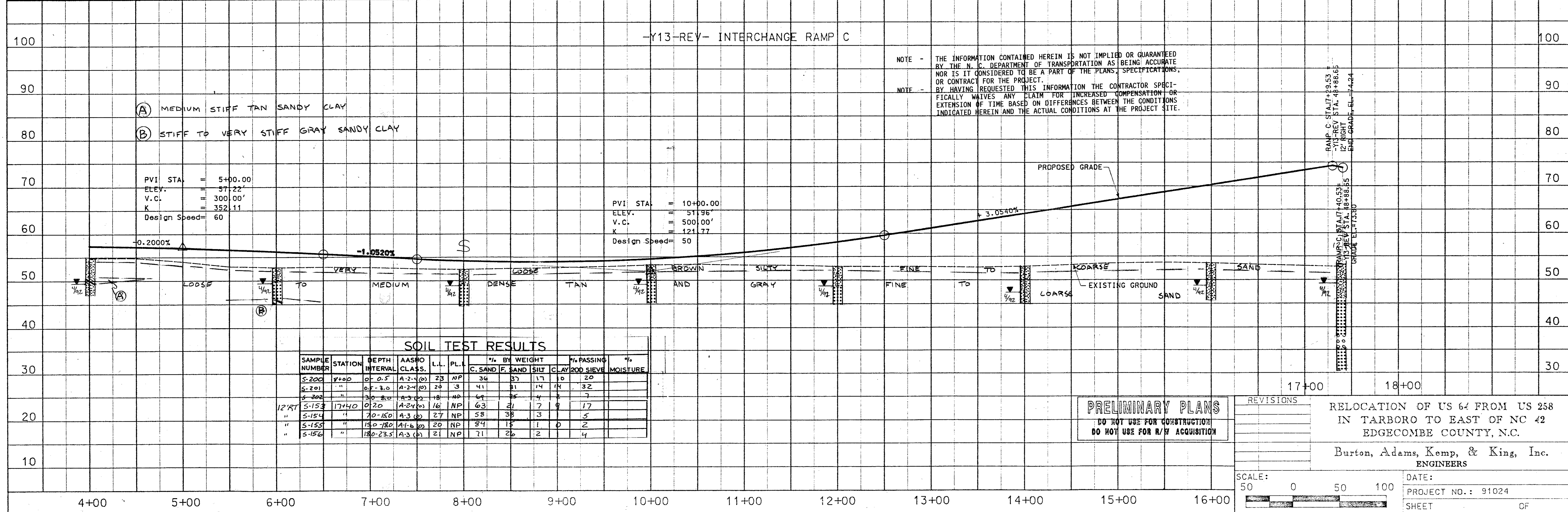
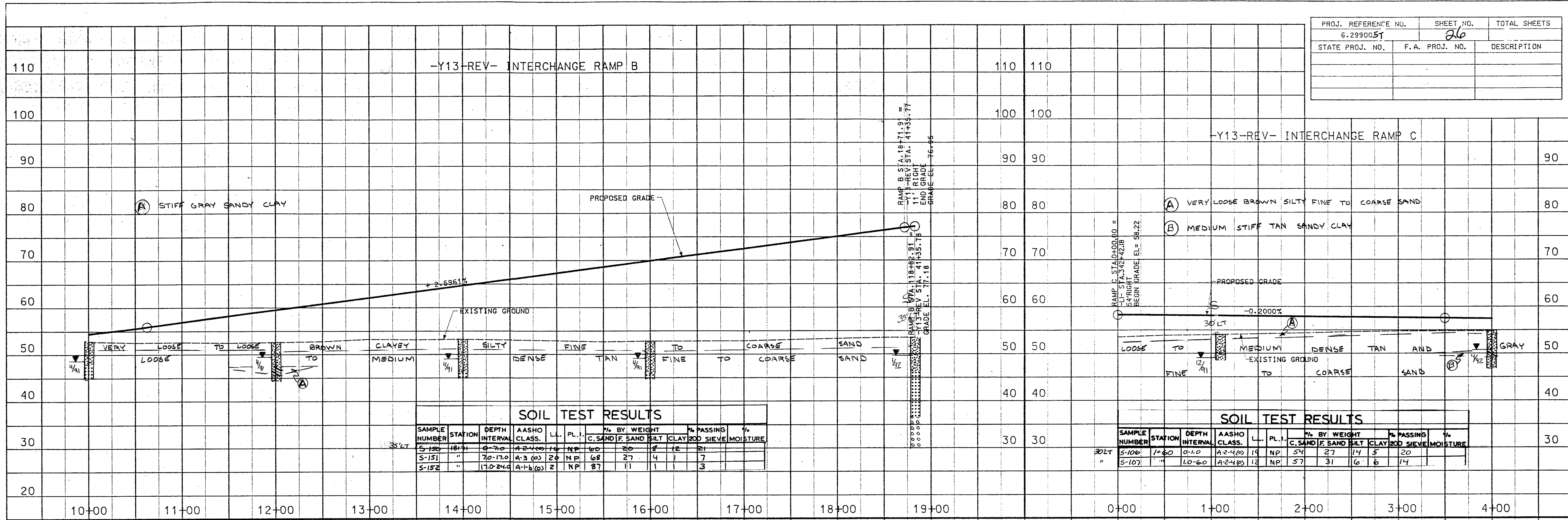
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	26	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

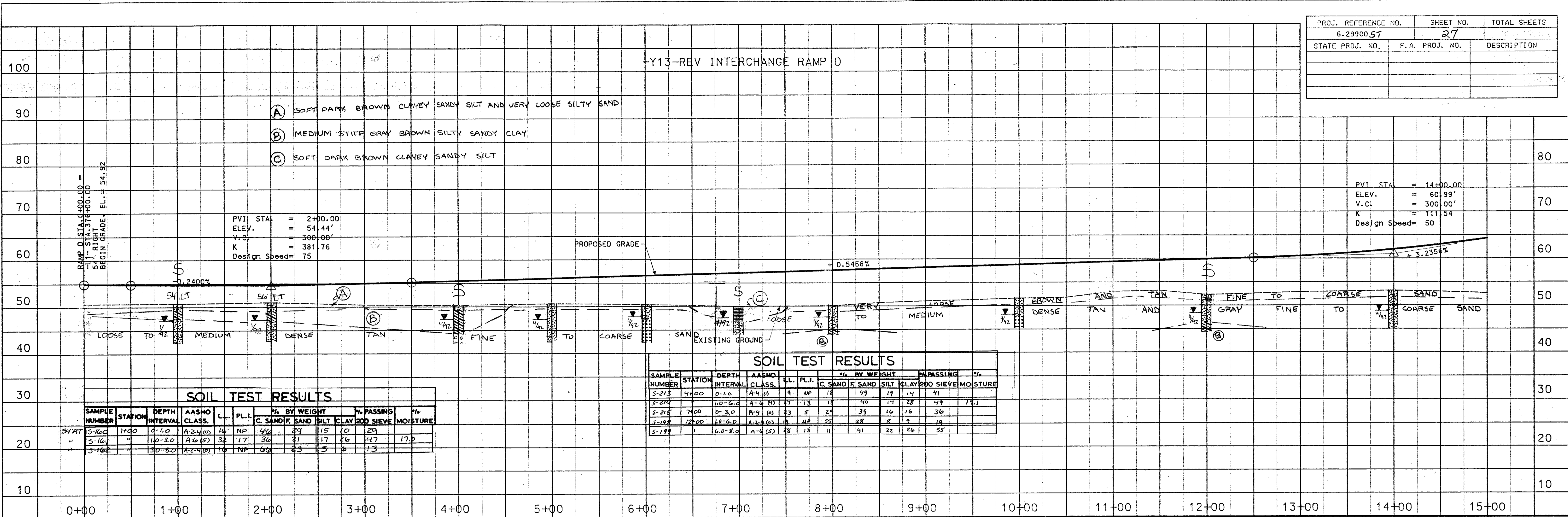
RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6-29900.5T	27	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



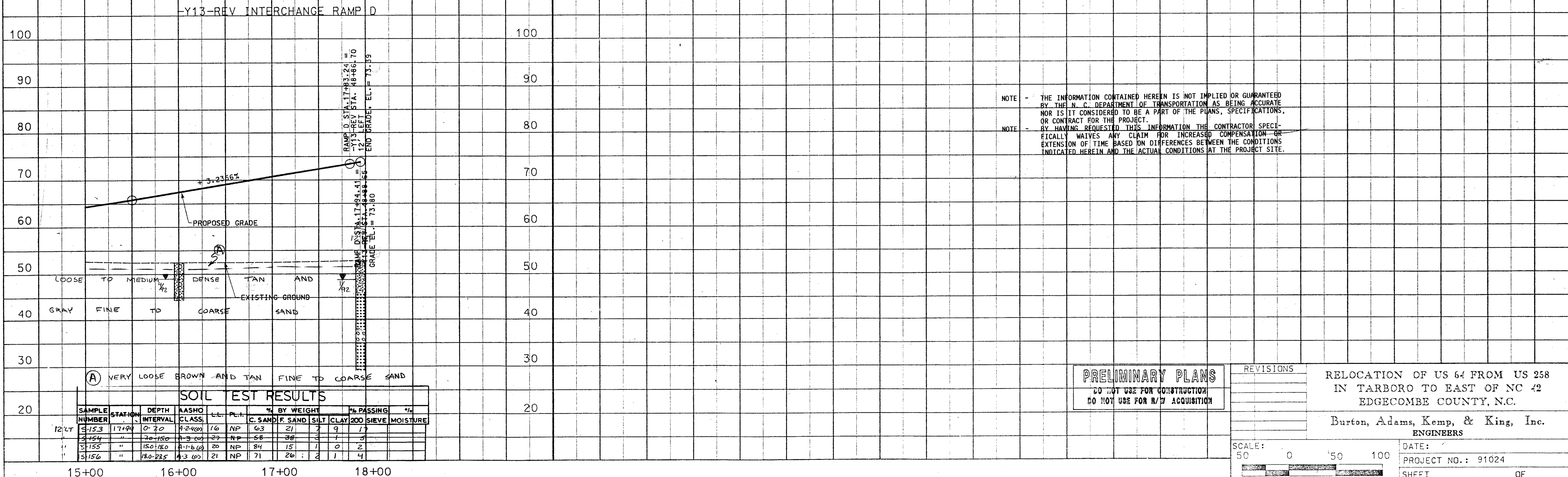
SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5-160	1+00	0-1.0	A-2(4)	14	NP	46	29	15	10	29	
5-161	"	1.0-3.0	A-6(5)	33	17	36	21	17	26	47	17.0
5-162	"	3.0-5.0	A-2(4)	14	NP	60	23	3	6	13	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5-213	4+00	0-1.0	A-4(4)	9	NP	12	49	19	19	41	
5-214	"	1.0-3.0	A-6(5)	27	13	18	40	14	28	49	12.1
5-215	7+00	0-3.0	A-4(4)	23	5	24	39	16	16	36	
5-198	12+00	0-3.0	A-2(4)	14	NP	55	28	8	9	19	
5-199	"	3.0-5.0	A-4(4)	28	13	11	41	22	26	55	

Y13-REV INTERCHANGE RAMP D



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5-153	17+00	0-1.0	A-2(4)	16	NP	63	21	7	9	7	
5-154	"	1.0-3.0	A-2(4)	16	NP	58	38	3	1	3	
5-155	"	3.0-5.0	A-1(6)	20	NP	84	15	1	0	2	
5-156	"	5.0-7.0	A-3(6)	21	NP	71	26	2	1	4	

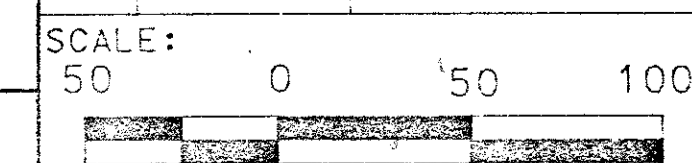
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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

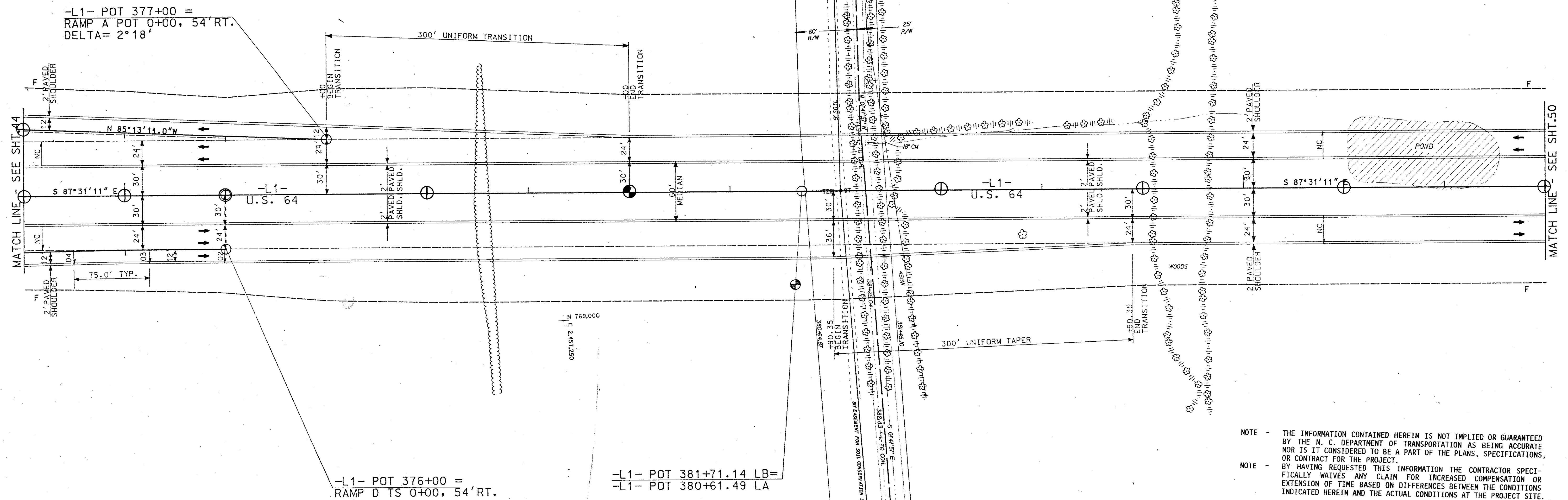


DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	28	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

ARCHIE R. BURNETTE  
DEED BOOK 342 PAGE 523  
DEED BOOK 266 PAGE 296  
DEED BOOK 334 PAGE 321  
743 Ac (TOTAL)  
653.70 Ac (LEFT OF -L-)



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR CONTRACT FOR THE PROJECT.  
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ARCHIE R. BURNETTE  
DEED BOOK 342 PAGE 523  
DEED BOOK 266 PAGE 296  
DEED BOOK 334 PAGE 321  
743 Ac (TOTAL)  
89.30 Ac (RIGHT OF -L-)

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

RAMP D

PI STA	04+26.50
ΔT	13°45'00", LT.
D	2°30'
θs	3°45'
Ls	300'
Lc	250'
Rc	2291.8312'
Ts	425.5033'
U	200.0449'
V	100.0408'
Se	0.06 FT/FT

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 45

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
SCALE: 50 0 50 100	Burton, Adams, Kemp, & King, Inc. ENGINEERS
DATE:	PROJECT NO.: 91024
SHEET	OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	29	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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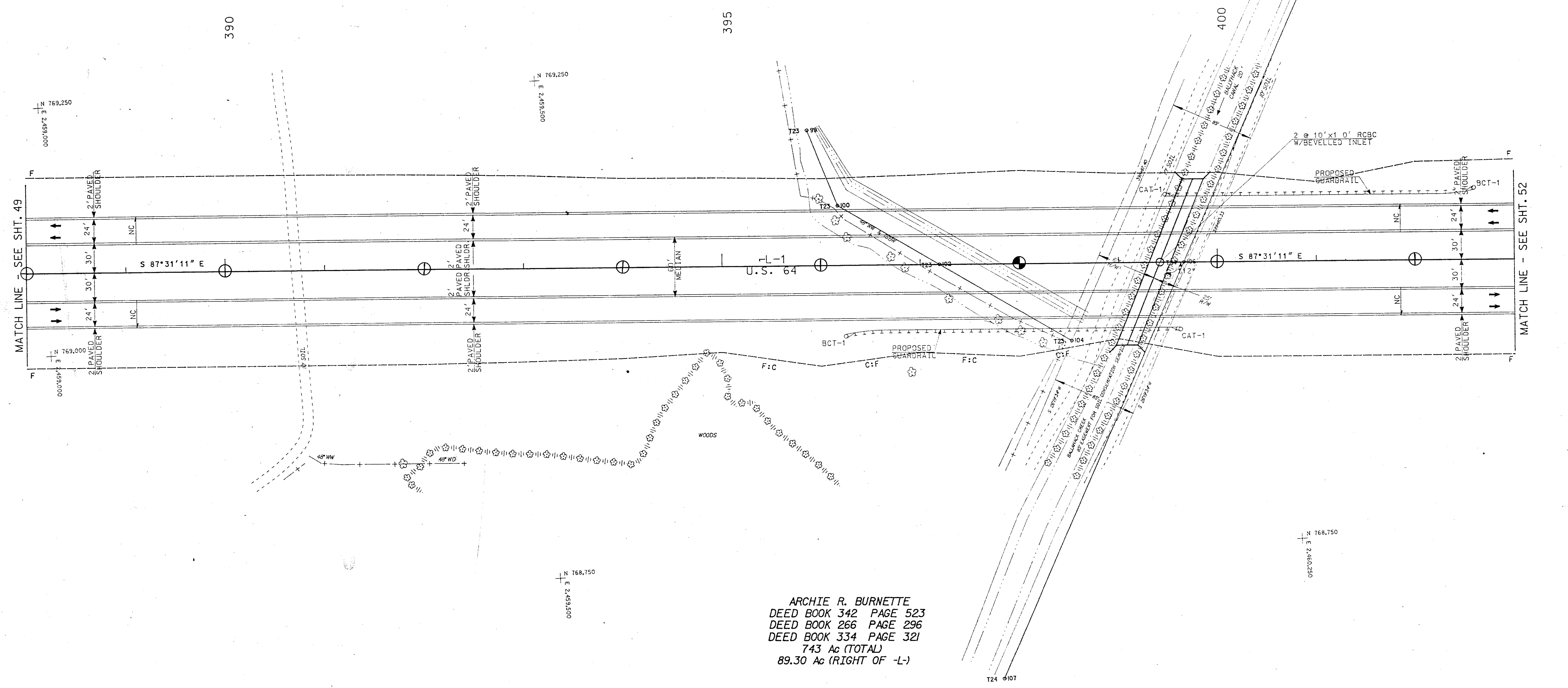
ARCHIE R. BURNETTE  
 DEED BOOK 342 PAGE 523  
 DEED BOOK 266 PAGE 296  
 DEED BOOK 334 PAGE 321  
 743 Ac (TOTAL)  
 653.70 Ac (LEFT OF -L-)

ARCHIE R. BURNETTE  
 DEED BOOK 342 PAGE 523  
 DEED BOOK 266 PAGE 296  
 DEED BOOK 334 PAGE 321  
 743 Ac (TOTAL)  
 89.30 Ac (RIGHT OF -L-)

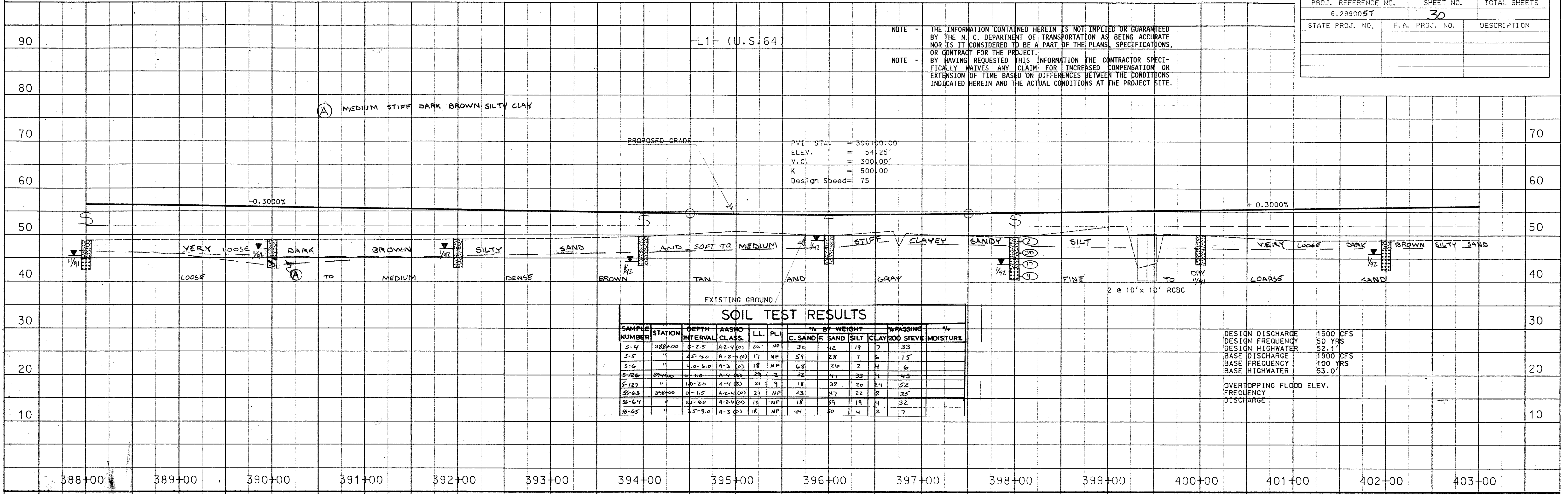
FOR -L1- (U.S. 64) PROFILE, SEE SHT. 51

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	30	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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-L1- (U.S. 64)

(A) MEDIUM STIFF DARK BROWN SILTY CLAY

PVI STA = 396+00.00  
ELEV. = 54.25'  
V.C. = 300.00'  
K = 500.00  
Design Speed = 75

-0.3000%

+0.3000%

VERY LOOSE TO LOOSE  
DARK BROWN TO MEDIUM DENSE  
SAND AND SOFT TO MEDIUM TAN AND GRAY  
SANDY SILT FINE TO DRY SAND  
VERY LOOSE TO LOOSE  
DARK BROWN TO MEDIUM DENSE  
SANDY SILT FINE TO DRY SAND

2 @ 10' x 10' RCBC

388+00 389+00 390+00 391+00 392+00 393+00 394+00 395+00 396+00 397+00 398+00 399+00 400+00 401+00 402+00 403+00

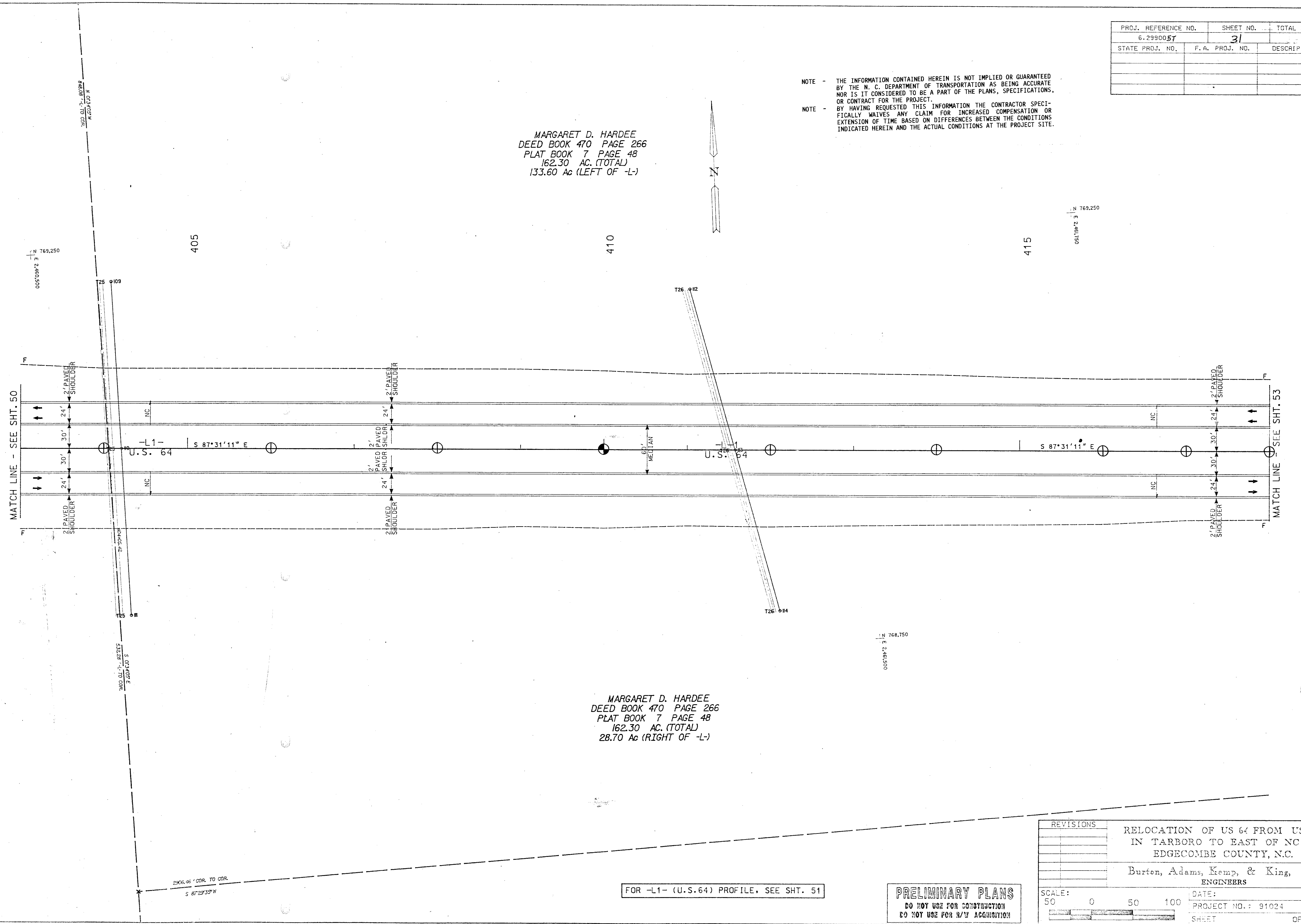
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990057	31	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 Ac (LEFT OF -L-)

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 28.70 Ac (RIGHT OF -L-)



REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 51

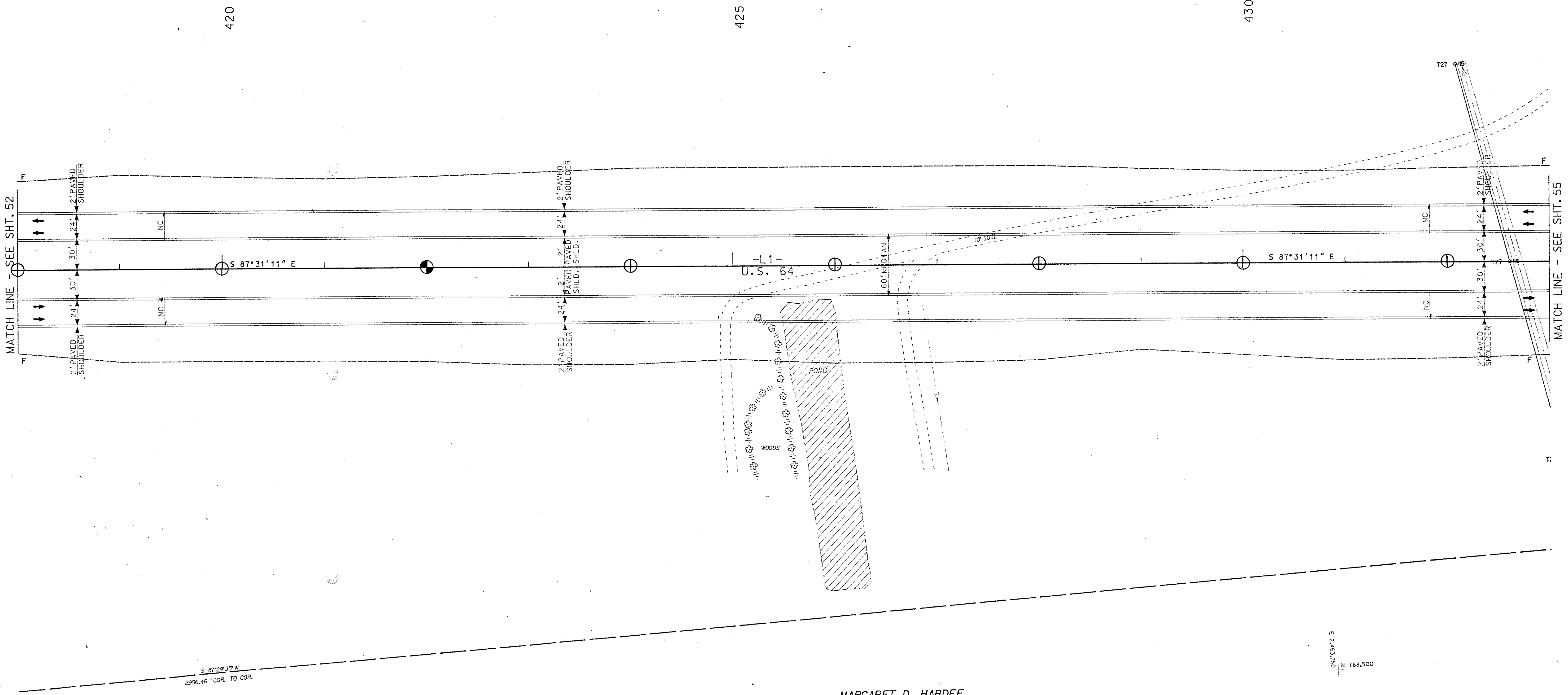
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	32	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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MARGARET D. HARDEE  
DEED BOOK 470 PAGE 266  
PLAT BOOK 7 PAGE 48  
162.30 AC. (TOTAL)  
133.60 Ac (LEFT OF -L-)



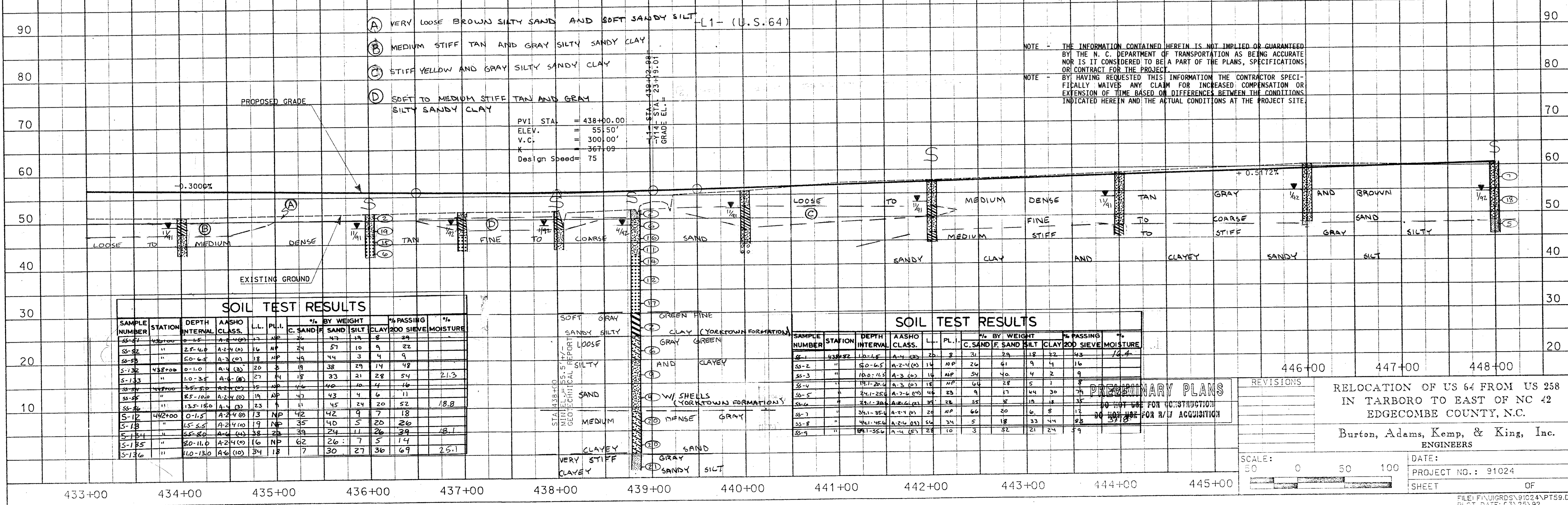
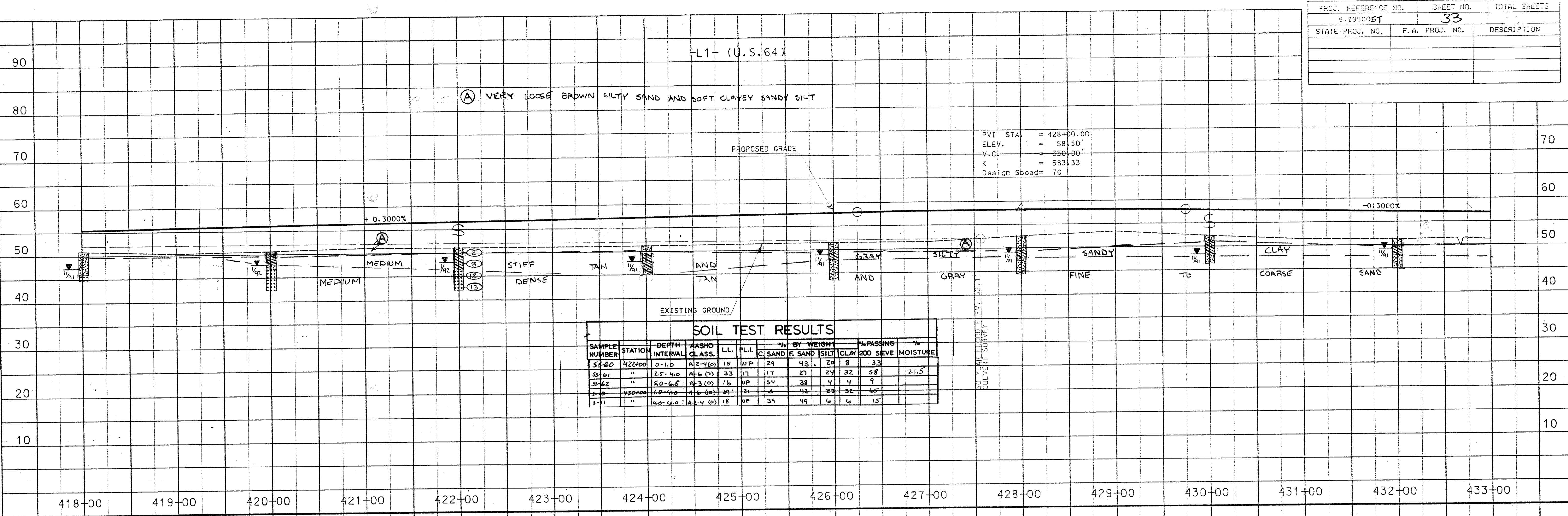
MARGARET D. HARDEE  
DEED BOOK 470 PAGE 266  
PLAT BOOK 7 PAGE 48  
162.30 AC. (TOTAL)  
28.70 Ac (RIGHT OF -L-)

FOR -L1- (U.S.64) PROFILE, SEE SHT. 54

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	33	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 1" = 50'

DATE: PROJECT NO.: 91024 SHEET OF

FILE: F:\NCRD\S\91024\PT59.DGN  
PLOT DATE: 03/25/92



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	34	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 AC (LEFT OF -L-)

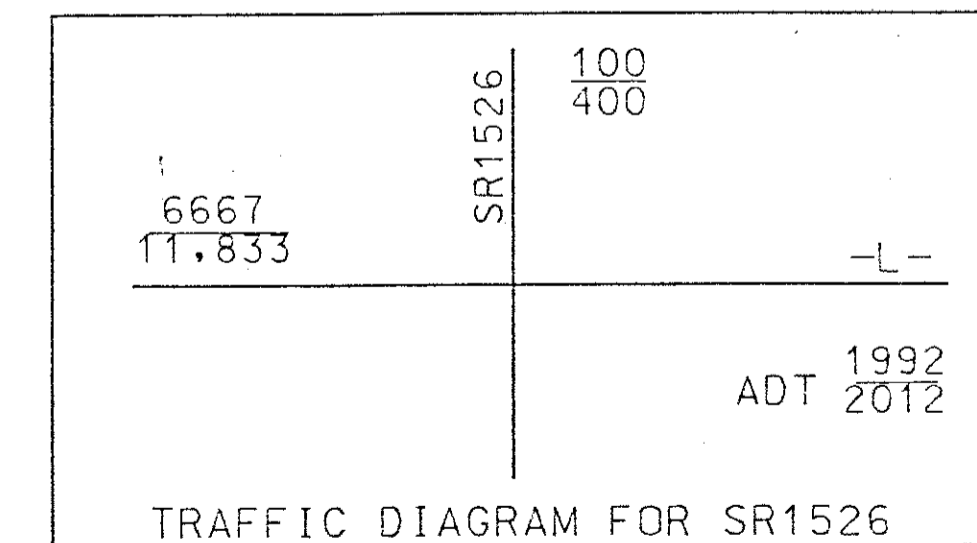
MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 28.70 AC (RIGHT OF -L-)

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

-L1-  
 PI STA 458+61.17  
 $\Delta T = 25^{\circ}56'33.0''$  RT.  
 D = 0°45'  
 $\theta_s = 0^{\circ}45'$   
 Ls = 200'  
 Lc = 3259.0000'  
 Rc = 7639.4373'  
 Ts = 1859.7156'  
 U = 133.3345'  
 V = 66.6678'  
 Se = 0.03 FT/FT

-Y14-  
 PI STA 27+82.82  
 $\Delta = 9^{\circ}11'38.0''$  LT.  
 D = 2°45'  
 Lc = 334.3232'  
 Rc = 2083.4830'  
 T = 167.5022'



FOR -L1- (U.S.64) PROFILE, SEE SHT. 54  
 FOR -Y14- (S.R. 1526) PROFILE, SEE SHT. 83

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

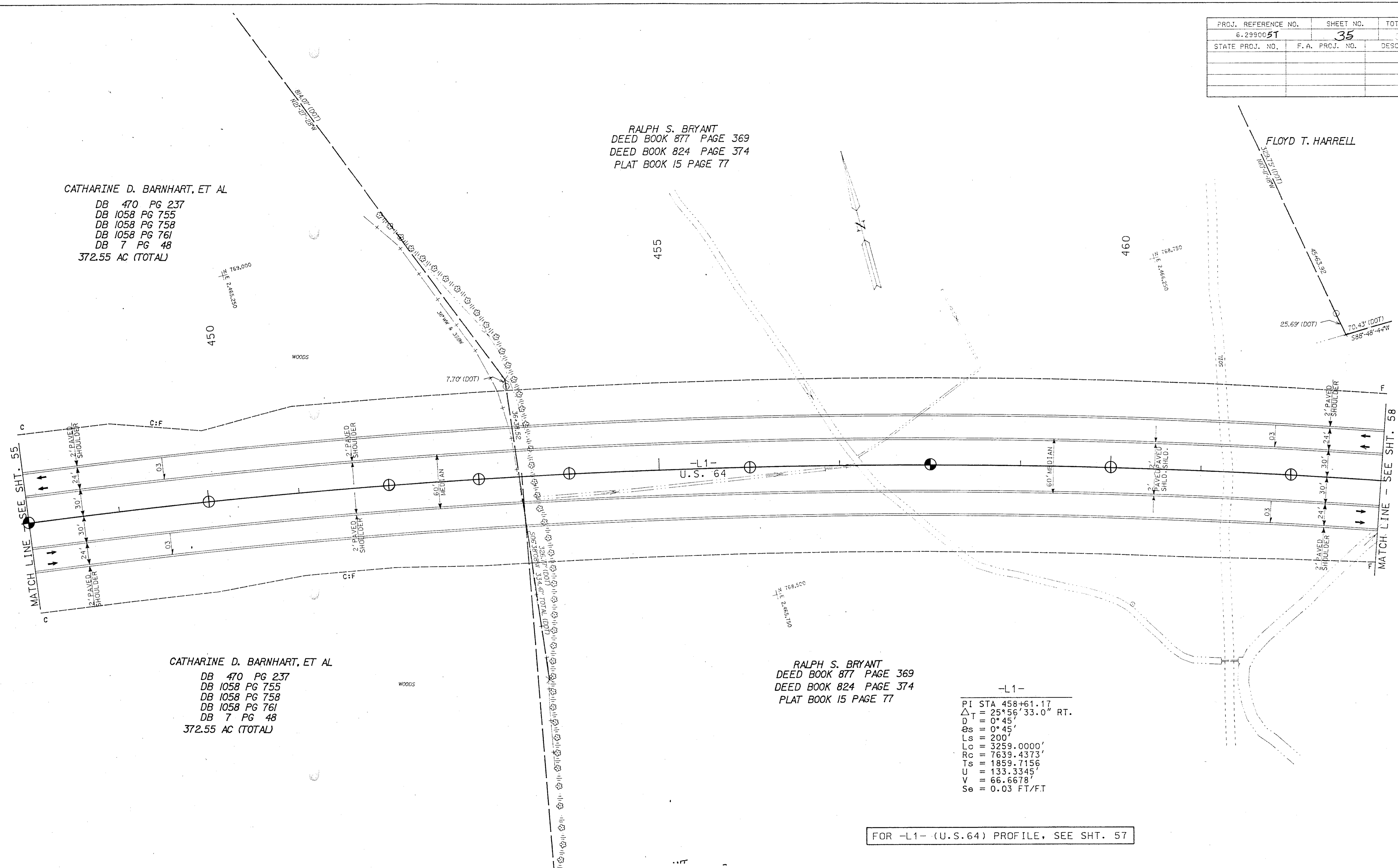
REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	35	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

RALPH S. BRYANT  
 DEED BOOK 877 PAGE 369  
 DEED BOOK 824 PAGE 374  
 PLAT BOOK 15 PAGE 77

FLOYD T. HARRELL



CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

RALPH S. BRYANT  
 DEED BOOK 877 PAGE 369  
 DEED BOOK 824 PAGE 374  
 PLAT BOOK 15 PAGE 77

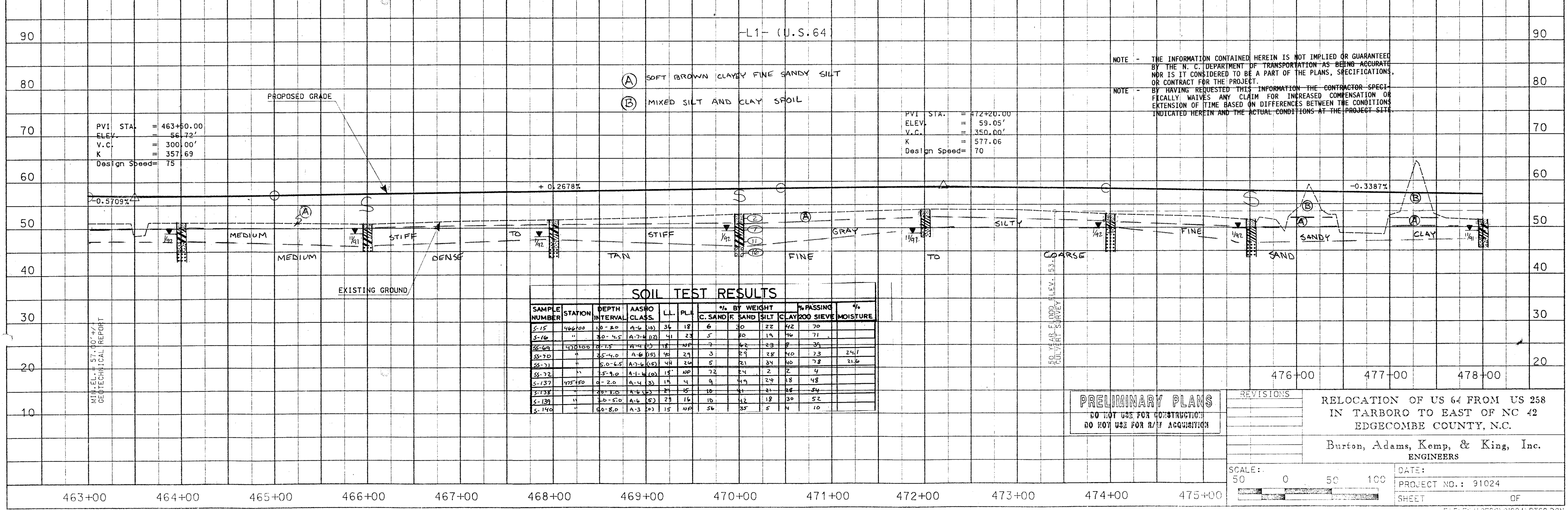
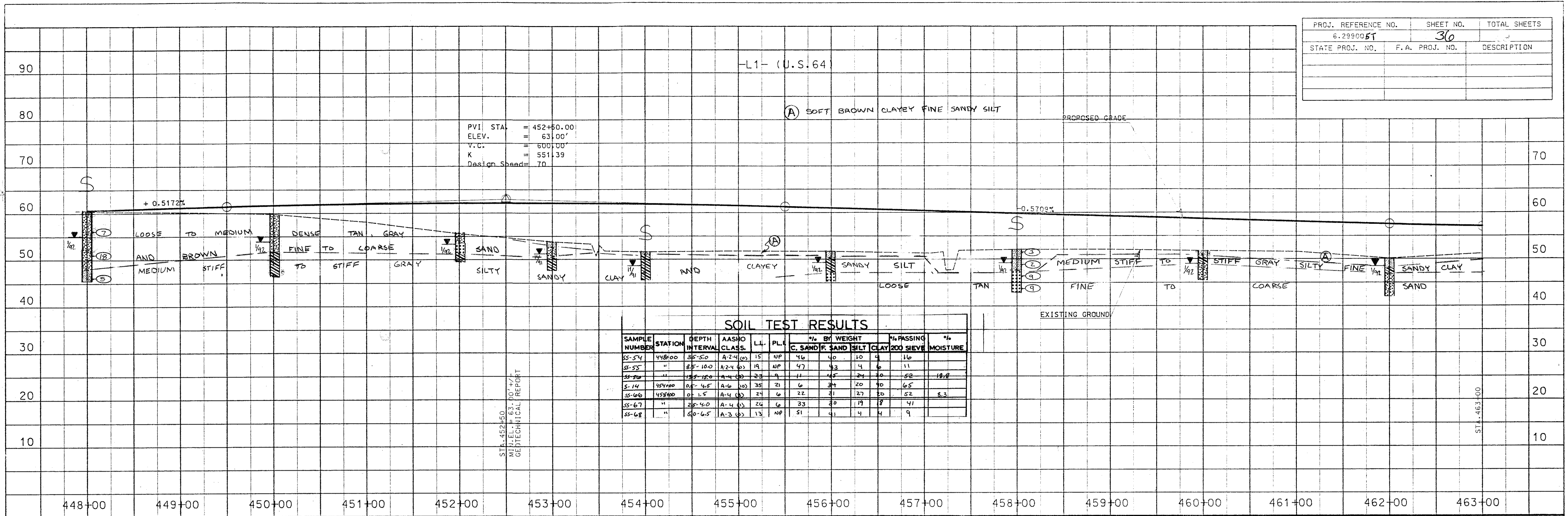
-L1-  
 PI STA 458+61.17  
 $\Delta_T = 25^\circ 56' 33.0''$  RT.  
 $D = 0^\circ 45'$   
 $\theta_s = 0^\circ 45'$   
 $L_s = 200'$   
 $L_c = 3259.0000'$   
 $R_c = 7639.4373'$   
 $T_s = 1859.7156'$   
 $U = 133.3345'$   
 $V = 66.6678'$   
 $S_e = 0.03$  FT/FT

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 57

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	30	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



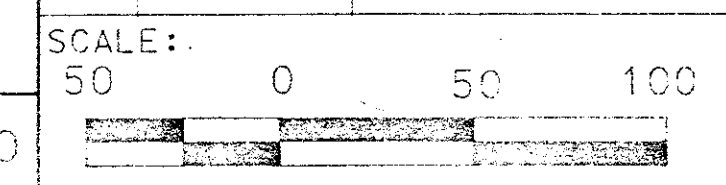
NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

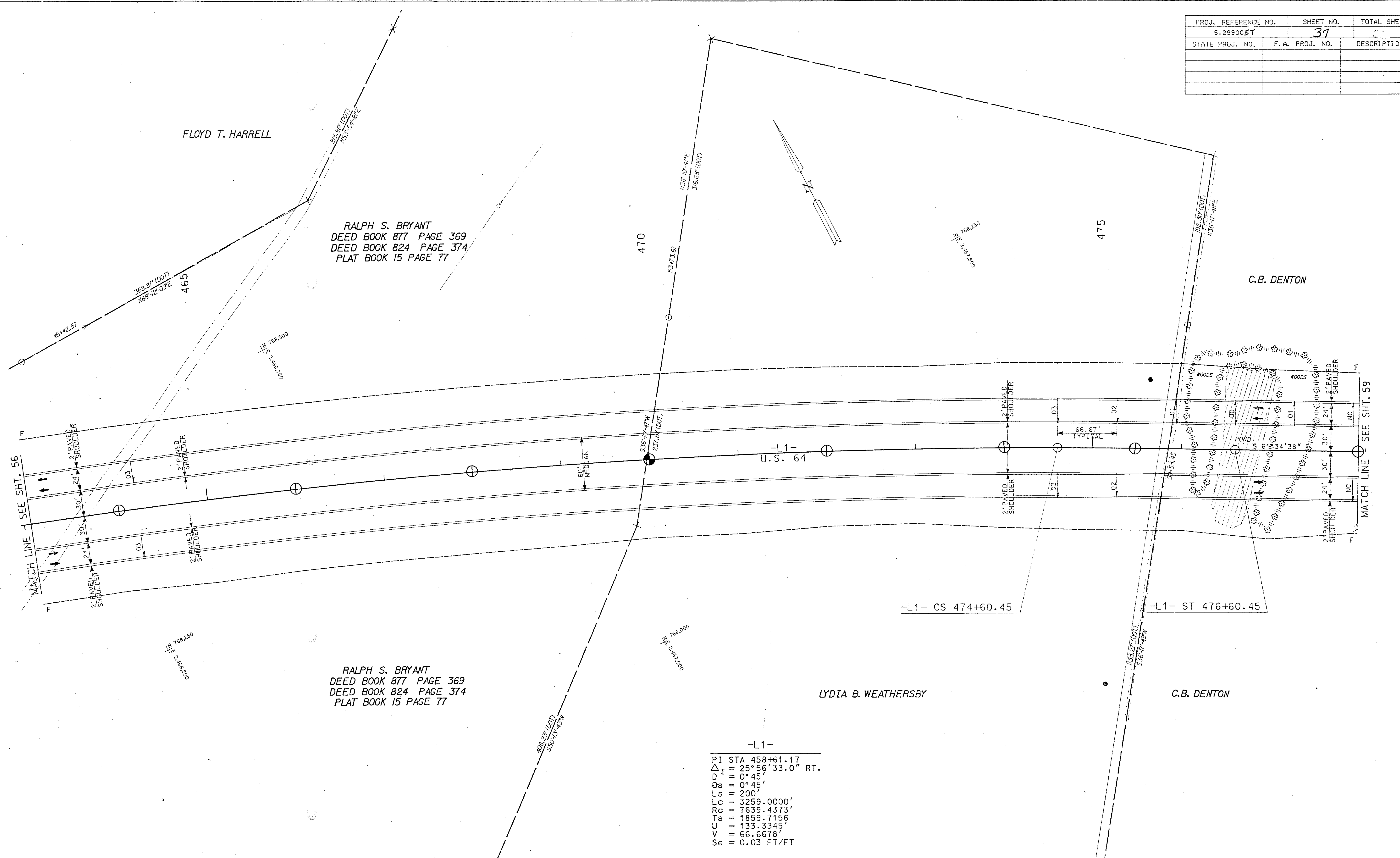
REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc. ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	37	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

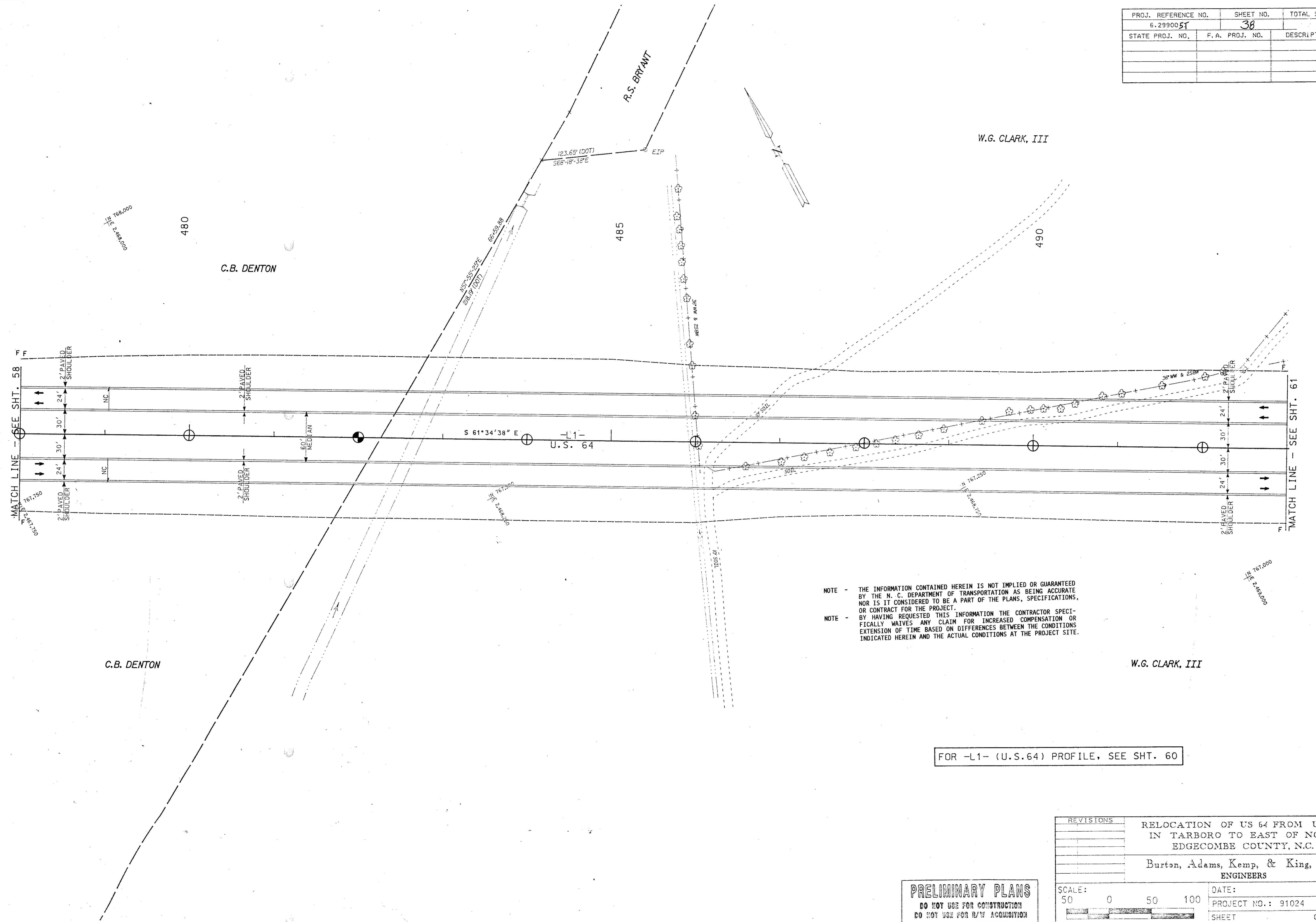


FOR -L1- (U.S.64) PROFILE, SEE SHT. 57

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR 1/3 ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	38	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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FOR -L1- (U.S. 64) PROFILE, SEE SHT. 60

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	39	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

PVI STA. = 481+00.00  
 ELEV. = 551.90'  
 V.C. = 300.00'  
 K = 469.70  
 Design Speed = 75

PVI STA. = 491+00.00  
 ELEV. = 581.75'  
 V.C. = 350.00'  
 K = 583.33  
 Design Speed = 70

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-73	482+00	0-1.5	A-4 (2)	24	8	6	32	38	24	68	24.1
S-74	"	3.5-4.0	A-4 (1)	24	7	4	37	33	26	68	20.9
S-75	"	6.0-6.5	A-2 (10)	24	10	6	32	33	11	14	2.4
S-141	482+00	0-1.0	A-4 (3)	16	NP	8	50	34	8	51	
S-142	"	1.0-2.5	A-7-6 (6)	45	28	4	23	31	42	72	24.2
S-143	"	3.5-4.0	A-6 (10)	30	19	5	34	27	34	68	
S-144	"	4.0-6.0	A-7-6 (7)	48	27	2	16	32	50	86	
S-17	483+00	0-1.0	A-4 (2)	14	NP	12	44	35	11	16	
S-18	"	1.0-2.0	A-6 (8)	29	16	9	32	23	36	64	
S-19	"	2.0-5.0	A-7-6 (14)	44	28	9	28	21	42	67	
S-20	"	5.0-6.0	A-4 (6)	35	19	8	31	19	42	66	

(A) SOFT BROWN CLAYEY FINE SANDY SILT

-L1- (U.S.64)

PVI STA. = 500+00.00  
 ELEV. = 561.05'  
 V.C. = 300.00'  
 K = 500.00  
 Design Speed = 75

PVI STA. = 509+00.00  
 ELEV. = 58.75'  
 V.C. = 300.00'  
 K = 666.67  
 Design Speed = 75

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-76	494+00	0-1.0	A-4 (4)	14	1	7	45	24	14	55	22.4
S-77	"	2.5-4.0	A-7-6 (13)	53	34	3	23	24	30	78	24.1
S-78	495+00	0-1.5	A-4 (2)	24	6	6	37	36	22	64	17.3
S-79	"	3.5-4.0	A-7-6 (1)	48	22	3	30	23	44	73	24.1
S-21	502+00	0-2.0	A-7-6 (1)	57	22	5	18	39	38	74	
S-22	"	3.0-5.0	A-7-6 (13)	4	22	3	31	30	14	78	
S-23	"	5.0-6.0	A-4 (4)	26	10	11	36	25	28	53	
S-130	502+00	0-2.5	A-4 (1)	27	7	7	37	24	12	34	
S-131	"	2.5-6.0	A-2-4 (2)	2	NP	8	83	5	4	12	

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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

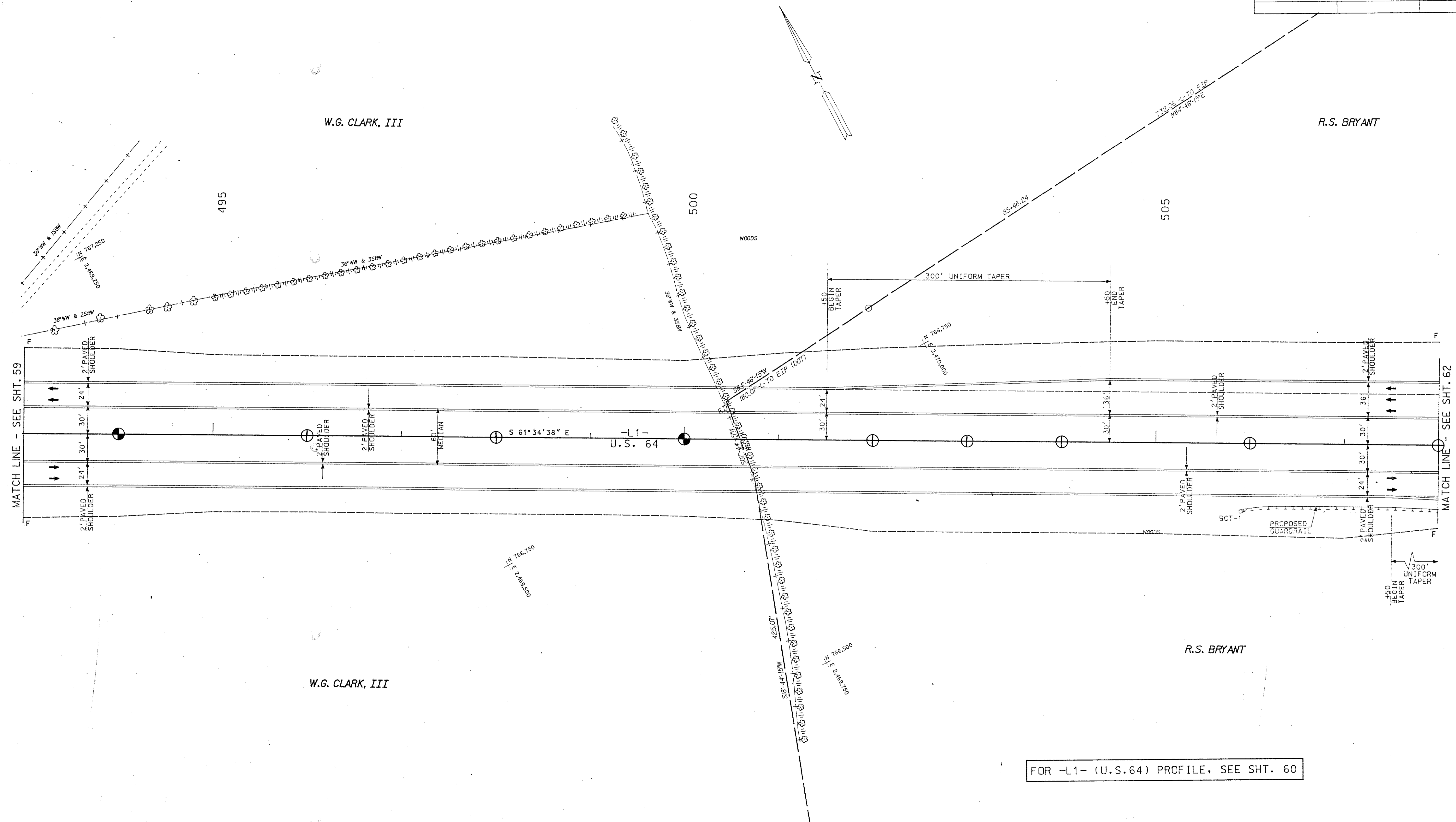
Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990C5T	40	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



MATCH LINE - SEE SHT. 59

MATCH LINE - SEE SHT. 62

FOR -L1- (U.S.64) PROFILE, SEE SHT. 60

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
Burton, Adams, Kemp, & King, Inc. ENGINEERS	
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJECT NO.	61-299005T	SHEET NO.	1	TOTAL SHEETS	1
STATE PROJ. NO.	F.A. PROJ. 1	SECTION			

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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RAMP B

PI STA 4+74.48	PI STA 14+23.96	PI STA 15+99.13
$\Delta = 19^{\circ}10'14.74"$	$\Delta = 5^{\circ}15'15.15"$	$\Delta = 11^{\circ}21'42.66"$ RT.
$D = 3^{\circ}00'$	$D = 3^{\circ}00'$	$D = 5^{\circ}15'$
$LC = 4^{\circ}30'$	$LC = 133.3920'$	$LC = 216.4158'$
$LC = 300'$	$LC = 66.7200'$	$LC = 1031.3482'$
$LC = 350'$		$LC = 102.5639'$
$R = 1909.8593'$		$R = 1031.3482'$
$T = 478.4803'$		$T = 102.5639'$
$U = 200.0647'$		$U = 100.0588'$
$V = 100.0588'$		$V = 0.06 FT/FT$
$S = 0.06 FT/FT$		

RAMP A

PI STA 6+24.64	PI STA 11+33.39	PI STA 13+48.71
$\Delta = 16^{\circ}21'04.99"$ RT.	$\Delta = 14^{\circ}41'19.17"$ RT.	$\Delta = 5^{\circ}00'$
$D = 3^{\circ}00'$	$D = 3^{\circ}00'$	$D = 3^{\circ}00'$
$LC = 4^{\circ}30'$	$LC = 133.3866'$	$LC = 263.8833'$
$LC = 300'$	$LC = 66.7151'$	$LC = 1145.9156'$
$LC = 350'$		$LC = 148.7150'$
$R = 1909.8593'$		$R = 1031.3482'$
$T = 478.4803'$		$T = 102.5639'$
$U = 200.0647'$		$U = 100.0588'$
$V = 100.0588'$		$V = 0.07 FT/FT$
$S = 0.06 FT/FT$		

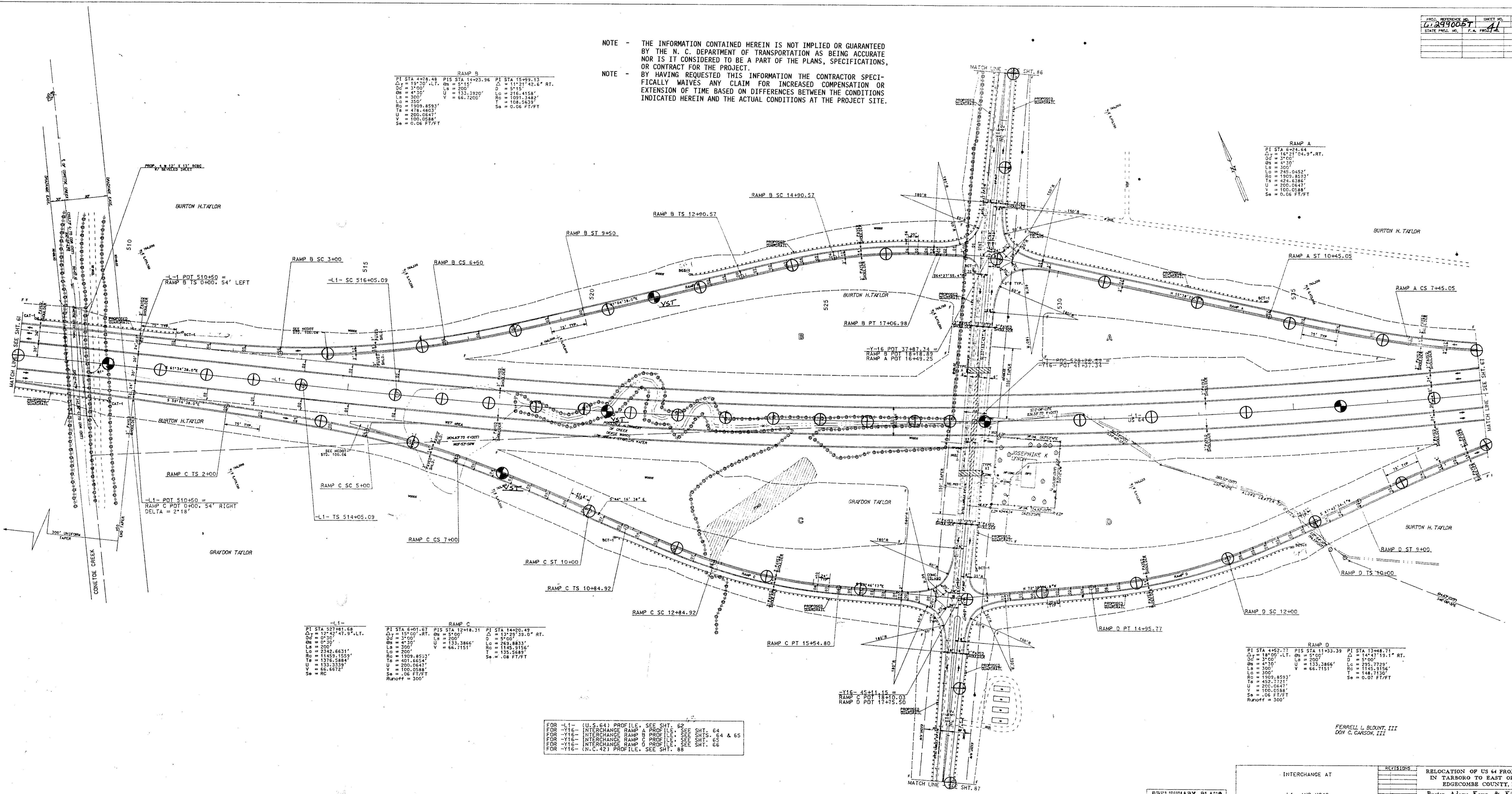
RAMP C

PI STA 6+01.67	PI STA 12+18.31	PI STA 14+50.49
$\Delta = 15^{\circ}00'$ RT.	$\Delta = 5^{\circ}00'$	$\Delta = 13^{\circ}29'39.0"$ RT.
$D = 3^{\circ}00'$	$D = 3^{\circ}00'$	$D = 5^{\circ}00'$
$LC = 4^{\circ}30'$	$LC = 133.3866'$	$LC = 263.8833'$
$LC = 300'$	$LC = 66.7151'$	$LC = 1145.9156'$
$LC = 350'$		$LC = 148.7150'$
$R = 1909.8593'$		$R = 1031.3482'$
$T = 478.4803'$		$T = 102.5639'$
$U = 200.0647'$		$U = 100.0588'$
$V = 100.0588'$		$V = 0.07 FT/FT$
$S = 0.06 FT/FT$		

RAMP D

PI STA 4+92.77	PI STA 11+33.39	PI STA 13+48.71
$\Delta = 18^{\circ}00'$ LT.	$\Delta = 5^{\circ}00'$	$\Delta = 14^{\circ}41'19.17"$ RT.
$D = 3^{\circ}00'$	$D = 3^{\circ}00'$	$D = 3^{\circ}00'$
$LC = 4^{\circ}30'$	$LC = 133.3866'$	$LC = 263.8833'$
$LC = 300'$	$LC = 66.7151'$	$LC = 1145.9156'$
$LC = 350'$		$LC = 148.7150'$
$R = 1909.8593'$		$R = 1031.3482'$
$T = 478.4803'$		$T = 102.5639'$
$U = 200.0647'$		$U = 100.0588'$
$V = 100.0588'$		$V = 0.07 FT/FT$
$S = 0.06 FT/FT$		

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 62  
 FOR -Y16- INTERCHANGE RAMP A PROFILE, SEE SHT. 64  
 FOR -Y16- INTERCHANGE RAMP B PROFILE, SEE SHT. 64 & 65  
 FOR -Y16- INTERCHANGE RAMP C PROFILE, SEE SHT. 64 & 65  
 FOR -Y16- INTERCHANGE RAMP D PROFILE, SEE SHT. 64 & 65  
 FOR -Y16- (N.C. 42) PROFILE, SEE SHT. 68



FERRELL L. BLOUNT, III  
 DON C. CARSON, III

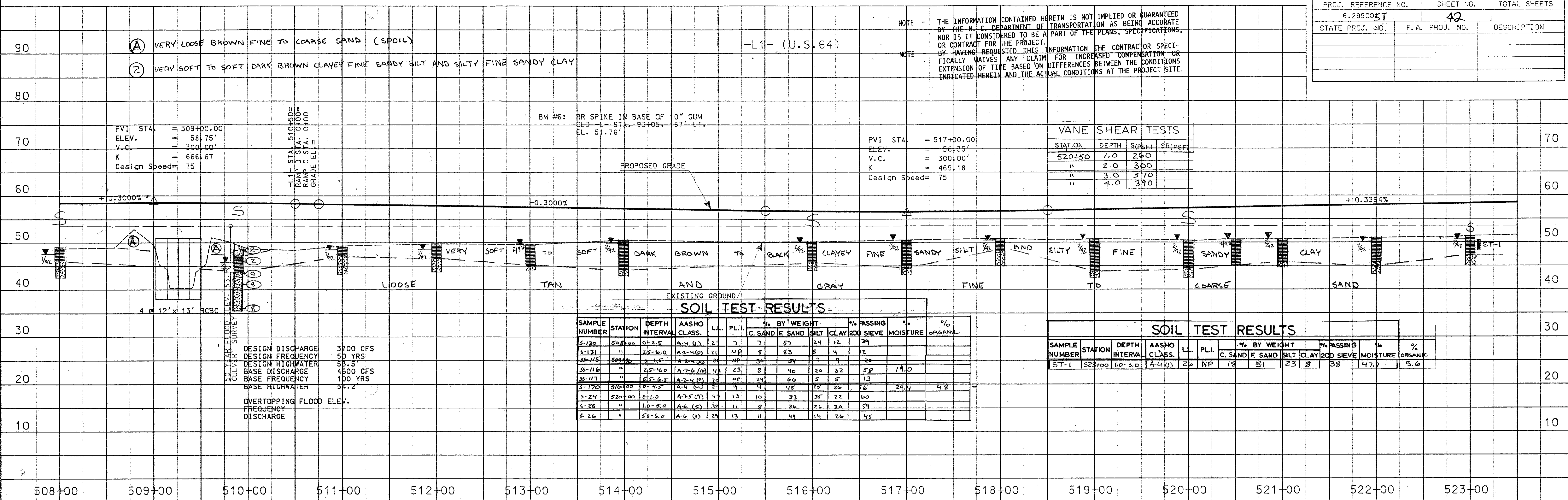
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR BIDDING

INTERCHANGE AT	-L1- AND NC42	EDGECOMBE COUNTY
REVISIONS	RELOCATION OF US 64 FROM US 218 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C. Burton, Adams, Kemp, & King, Inc. EDGECOMBE	
SCALE:	DATE:	PROJECT NO.: 61024
50 0 50 100		SHEET 1 OF 1



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	42	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

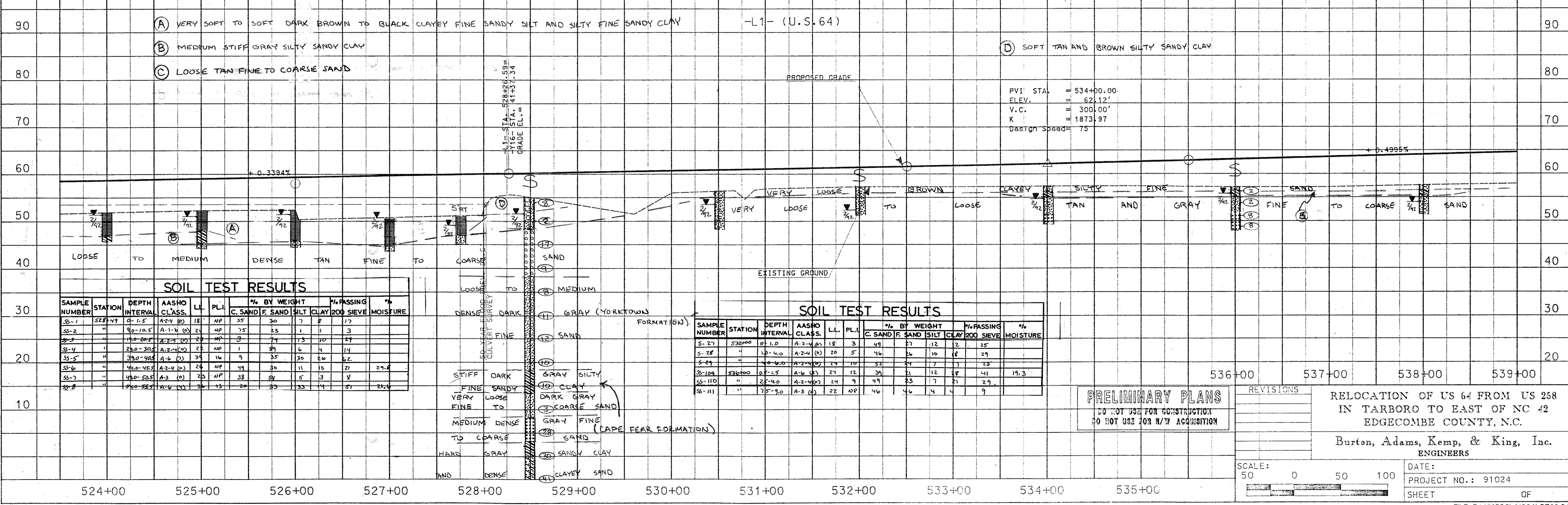
NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT. BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.



STATION	DEPTH	S (PSF)	SR (PSF)
520+50	1.0	240	
"	2.0	300	
"	3.0	570	
"	4.0	390	

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	% ORGANIC
						C. SAND	F. SAND	SILT	CLAY			
S-120	508+00	0-2.5	A-1 (G)	27	7	7	57	24	12	29		
S-131	"	2.5-6.0	A-2 (M)	31	NP	8	83	5	4	2		
S-115	509+00	0-1.5	A-2 (M)	24	NP	30	54	7	7	20		
S-116	"	2.5-4.0	A-7 (G)	42	23	8	40	20	32	59	19.0	
S-117	"	5.5-6.5	A-7 (G)	26	NP	24	66	5	5	13		
S-170	516+00	0-1.5	A-4 (G)	27	9	4	45	25	20	76	29.4	4.8
S-24	520+00	0-1.0	A-7 (G)	47	13	10	33	36	22	60		
S-25	"	1.0-5.0	A-6 (G)	32	11	2	76	24	20	59		
S-26	"	5.0-6.0	A-6 (G)	24	13	11	49	14	26	45		

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	% ORGANIC
						C. SAND	F. SAND	SILT	CLAY			
ST-1	523+00	1.0-3.0	A-4 (G)	26	NP	18	51	23	8	38	47.7	5.6



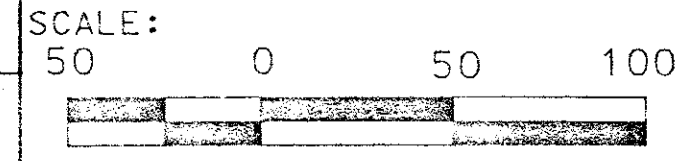
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-1	528+49	0-1.5	A-2 (M)	18	NP	55	30	7	8	17		
S-2	"	9.0-10.5	A-1 (G)	21	NP	75	25	1	1	3		
S-3	"	11.0-20.5	A-2 (M)	22	NP	3	71	13	10	29		
S-4	"	21.0-30.5	A-2 (M)	22	NP	1	39	6	4	19		
S-5	"	31.0-40.5	A-6 (G)	34	16	9	37	30	20	22		
S-6	"	41.0-45.5	A-2 (M)	26	NP	49	30	11	10	27	29.8	
S-7	"	46.0-52.5	A-3 (G)	25	NP	32	54	5	3	9		
S-8	"	53.0-58.5	A-6 (G)	30	13	20	65	33	11	37	22.0	

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-27	532+00	0-1.0	A-2 (M)	18	3	49	27	12	2	25		
S-28	"	1.0-4.0	A-2 (M)	20	5	46	26	10	8	29		
S-29	"	4.0-6.0	A-2 (M)	24	10	52	24	7	7	23		
S-109	533+00	0-1.5	A-6 (G)	27	12	30	21	12	38	41	19.3	
S-110	"	2.5-4.0	A-2 (M)	24	9	49	23	7	21	29		
S-111	"	7.5-9.0	A-3 (G)	22	10	46	46	4	4	9		

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

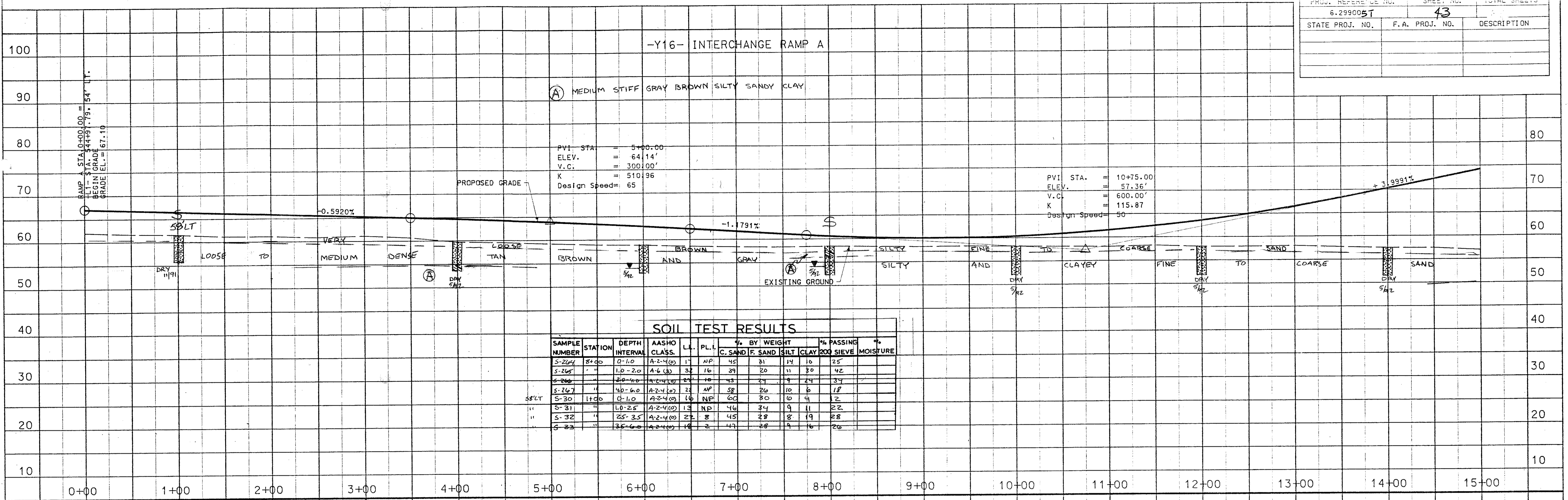
NO.	DATE	DESCRIPTION

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc. ENGINEERS

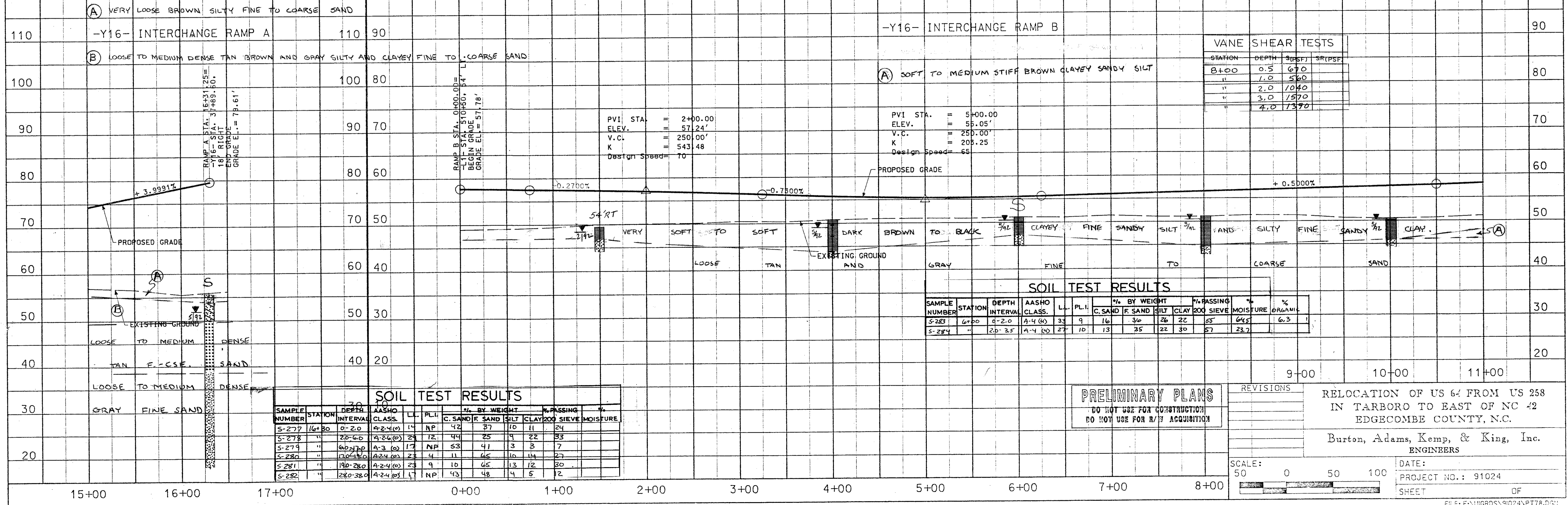


DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900BT	43	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-264	8+00	0-1.0	A-2-4(0)	17	NP	45	31	14	10	25	
S-265	"	1.0-2.0	A-6(0)	32	16	39	20	11	30	42	
S-266	"	2.0-4.0	A-2-4(0)	24	10	43	21	9	24	34	
S-267	"	4.0-6.0	A-2-4(0)	21	NP	58	26	10	6	18	
S-30	11+00	0-1.0	A-2-4(0)	16	NP	60	30	10	4	12	
S-31	"	1.0-2.5	A-2-4(0)	13	NP	46	34	9	11	22	
S-32	"	2.5-3.5	A-2-4(0)	21	8	45	28	8	19	28	
S-33	"	3.5-6.0	A-2-4(0)	18	2	47	28	4	16	26	



STATION	DEPTH	SP(SF)	SR(PSP)
8+00	0.5	670	
"	1.0	560	
"	2.0	1040	
"	3.0	1570	
"	4.0	1370	

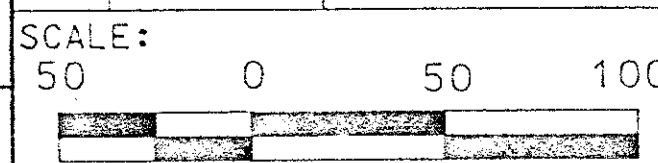
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	% ORGANIC
						C. SAND	F. SAND	SILT	CLAY			
S-283	6+00	0-2.0	A-4(0)	33	9	16	36	26	22	65	6.3	
S-284	"	2.0-3.5	A-4(0)	27	10	13	35	22	30	57	23.7	

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-277	16+30	0-2.0	A-2-4(0)	14	NP	42	37	10	11	24	
S-278	"	2.0-6.0	A-2-4(0)	29	12	44	25	9	22	33	
S-279	"	6.0-12.0	A-3(0)	17	NP	63	41	3	3	7	
S-280	"	12.0-15.0	A-2-4(0)	23	4	45	46	10	14	27	
S-281	"	15.0-28.0	A-2-4(0)	23	9	43	45	13	12	30	
S-282	"	28.0-38.0	A-2-4(0)	17	NP	43	48	4	5	12	

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

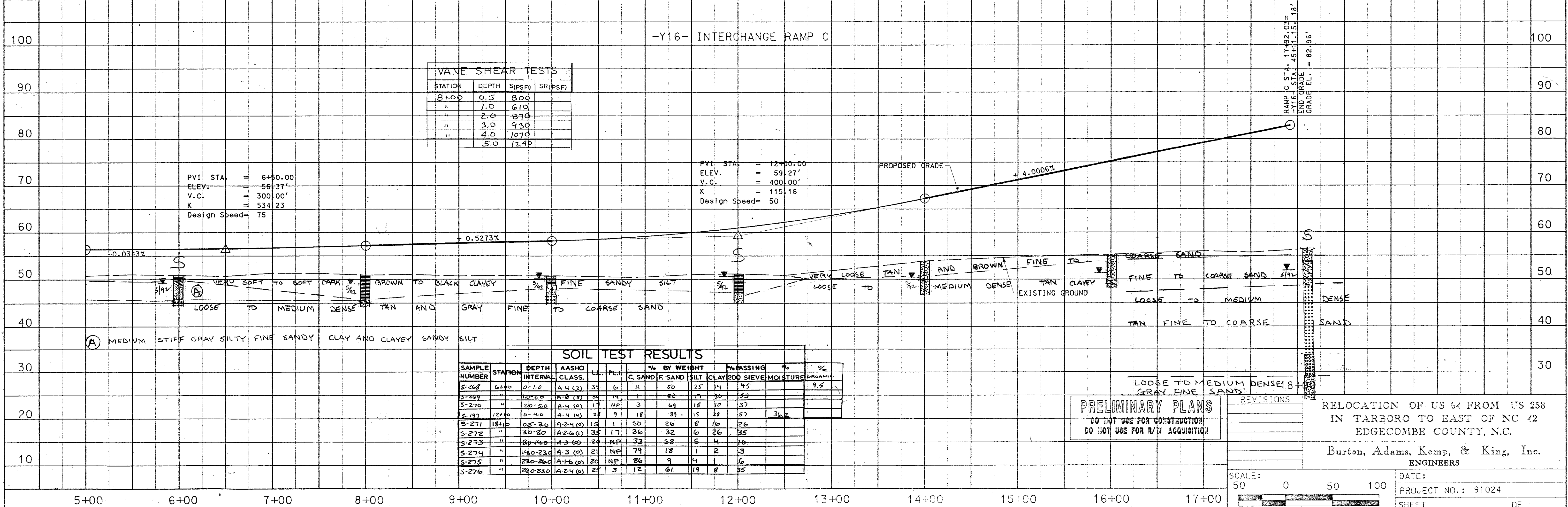
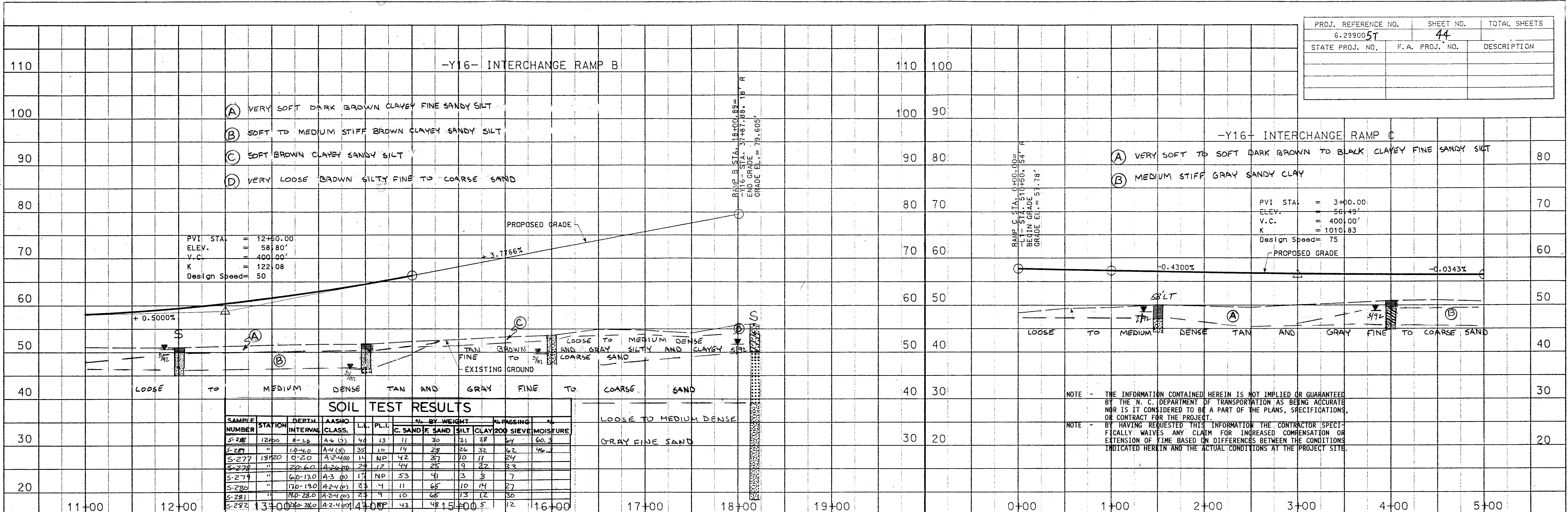
REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	44	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

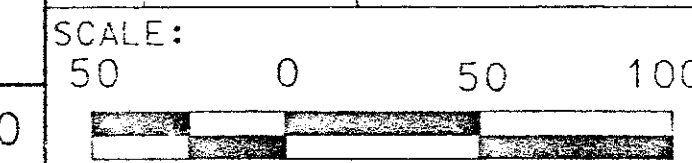


**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

REVISIONS

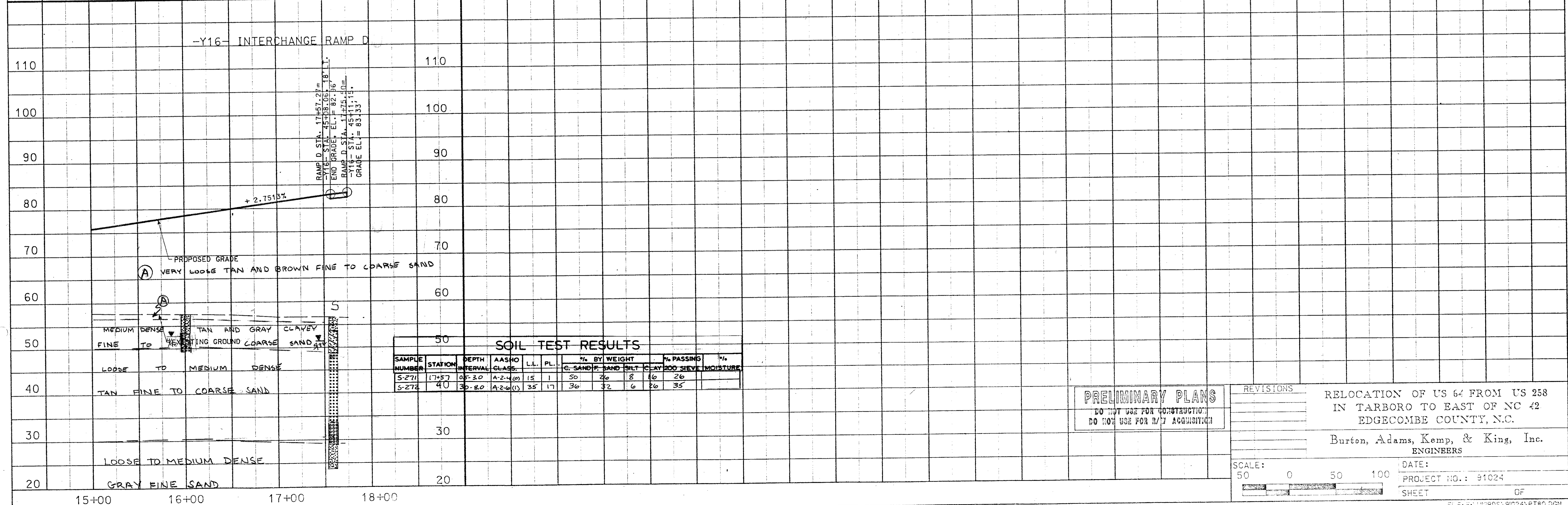
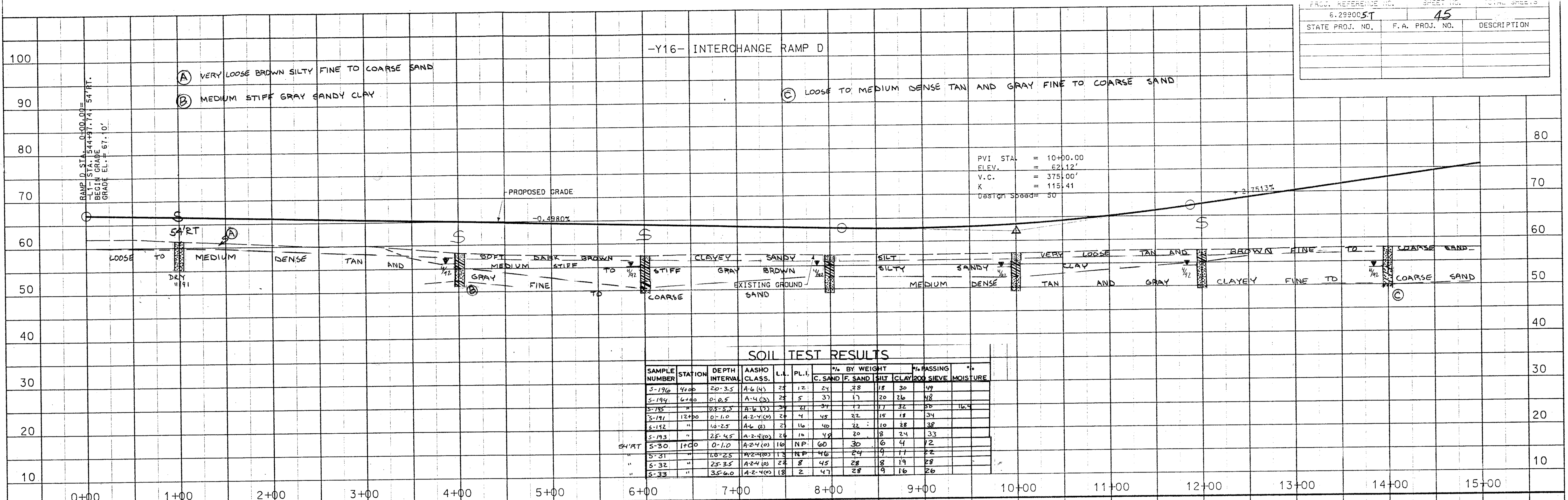
RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	45	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE:  
50 0 50 100

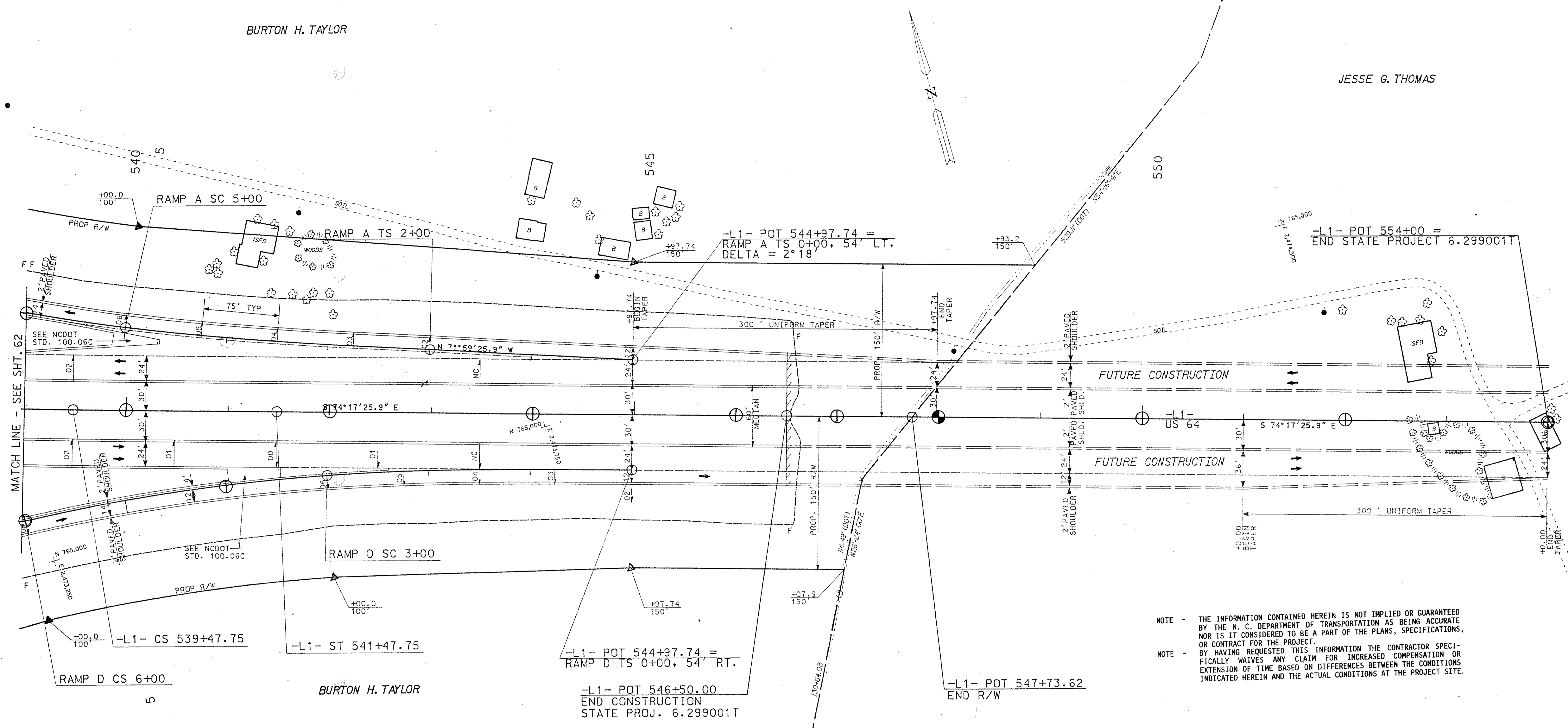
DATE:  
PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	46	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

BURTON H. TAYLOR

JESSE G. THOMAS



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-L1-	RAMP A	RAMP D
PI STA 527+81.68	PI STA 6+24.64	PI STA 4+52.77
$\Delta_T = 12^\circ 42' 47.9"$ , LT.	$\Delta_T = 16^\circ 21' 04.9"$ , RT.	$\Delta_T = 18^\circ 00'$ , LT.
Dc = 0° 30'	Dc = 3° 00'	Dc = 3° 00'
Os = 0° 30'	Os = 4° 30'	Os = 4° 30'
Ls = 200'	Ls = 300'	Ls = 300'
Lc = 2342.6631'	Lc = 245.0452'	Lc = 300'
Rc = 11459.1559'	Rc = 1909.8593'	Rc = 1909.8593'
Ts = 1376.5884'	Ts = 424.6386'	Ts = 452.7721'
U = 133.3339'	U = 200.0647'	U = 200.0647'
V = 66.6672'	V = 100.0588'	V = 100.0588'
Se = RC	Se = .06 FT/FT	Se = .06 FT/FT
	Runoff = 300'	

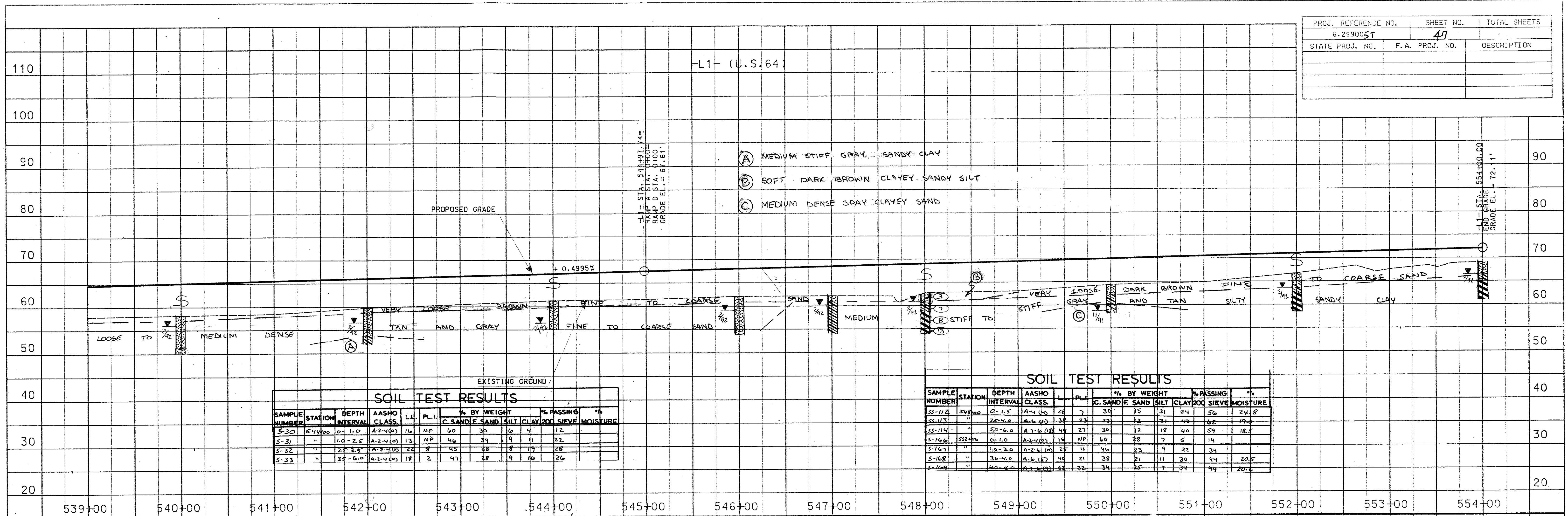
JESSE G. THOMAS

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 68

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE:
	PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6-299005T	47	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-30	544+00	0-1.0	A-2-4(0)	16	NP	60	30	6	4	12	
S-31	"	1.0-2.5	A-2-4(0)	13	NP	46	34	9	11	22	
S-32	"	2.5-3.5	A-2-4(0)	24	8	45	28	8	17	28	
S-33	"	3.5-6.0	A-2-4(0)	18	2	47	28	9	16	26	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	L	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-112	548+00	0-1.5	A-4 (45)	28	7	30	15	31	24	50	24.8
S-113	"	2.5-4.0	A-4 (45)	38	23	23	12	21	48	62	19.0
S-114	"	5.0-6.0	A-2-4 (0)	44	27	30	12	18	40	59	18.5
S-166	552+00	0-1.0	A-2-4(0)	14	NP	60	28	7	5	14	
S-167	"	1.0-3.0	A-2-4 (0)	25	11	46	23	9	21	34	
S-168	"	3.0-6.0	A-6 (62)	45	21	38	21	11	30	44	20.5
S-169	"	6.0-8.0	A-2-4 (0)	52	30	34	25	7	34	49	20.2

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS


SCALE: 1" = 50'

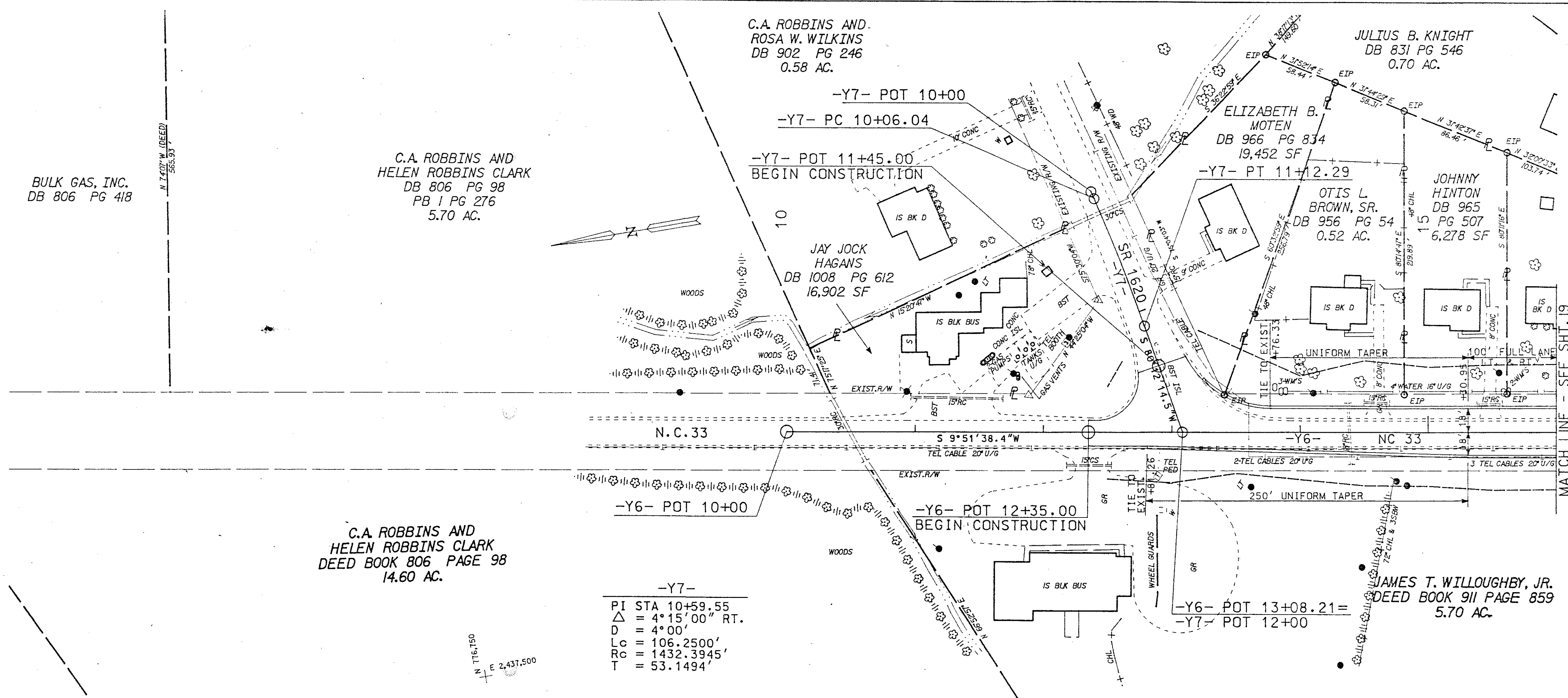
RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

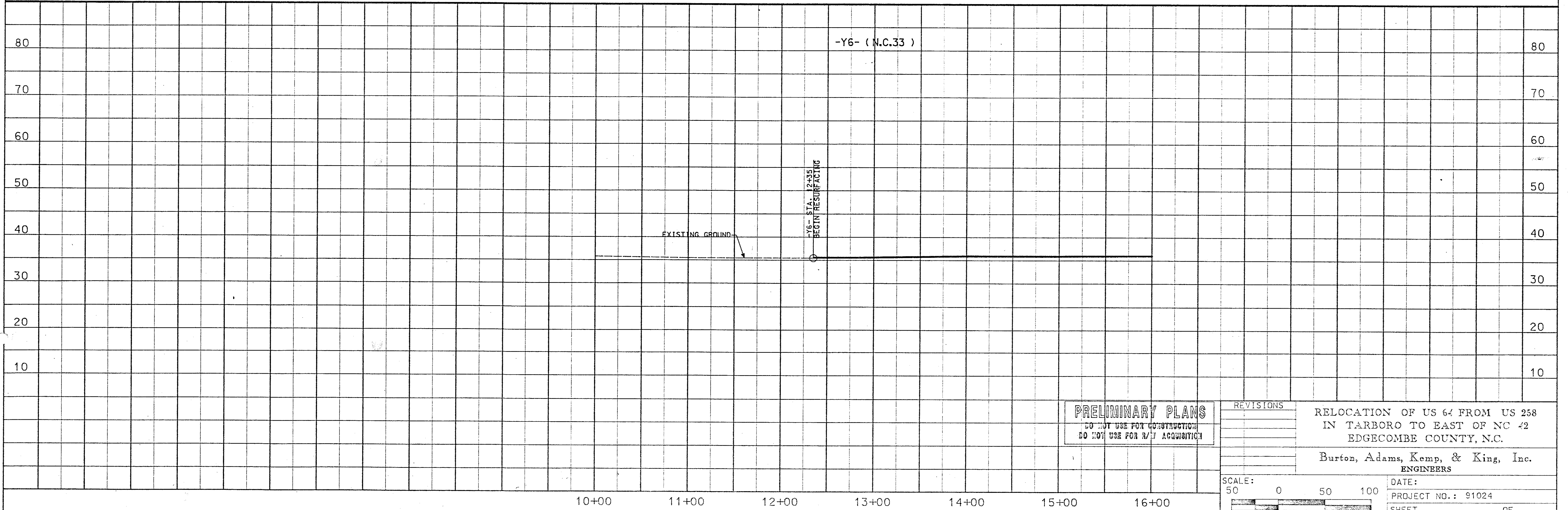
DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	49	100
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



-Y7-	
PI STA	10+59.55
Δ	4° 15' 00" RT.
D	4' 00"
Lc	106.2500'
Rc	1432.3945'
T	53.1494'

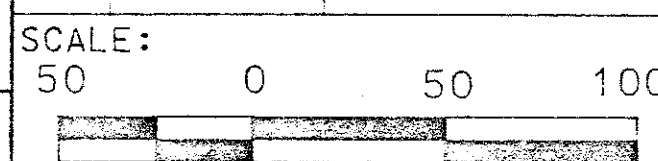


**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE:	
PROJECT NO.:	91024
SHEET	OF



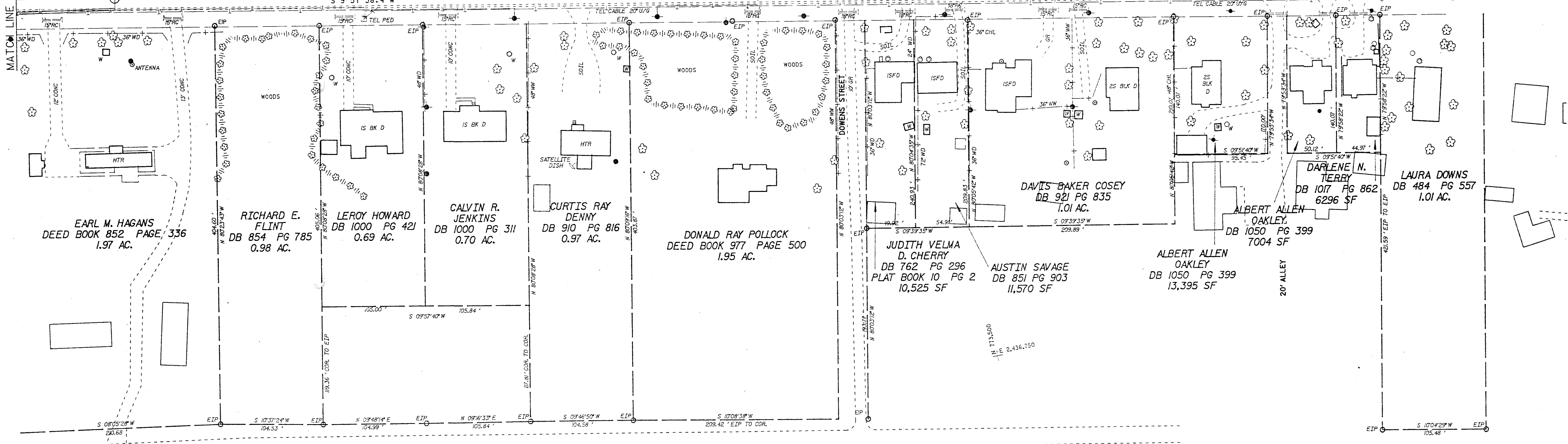
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	50	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

EDGEcombe-MARTIN COUNTY ELECTRIC  
MEMBERSHIP CORPORATION  
DEED BOOK 910 PAGE 911  
13.40 AC.

-Y6- POT 32+00.00  
END CONSTRUCTION

-Y6- POT 45+00

MATCH LINE - SEE SHT. 19



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

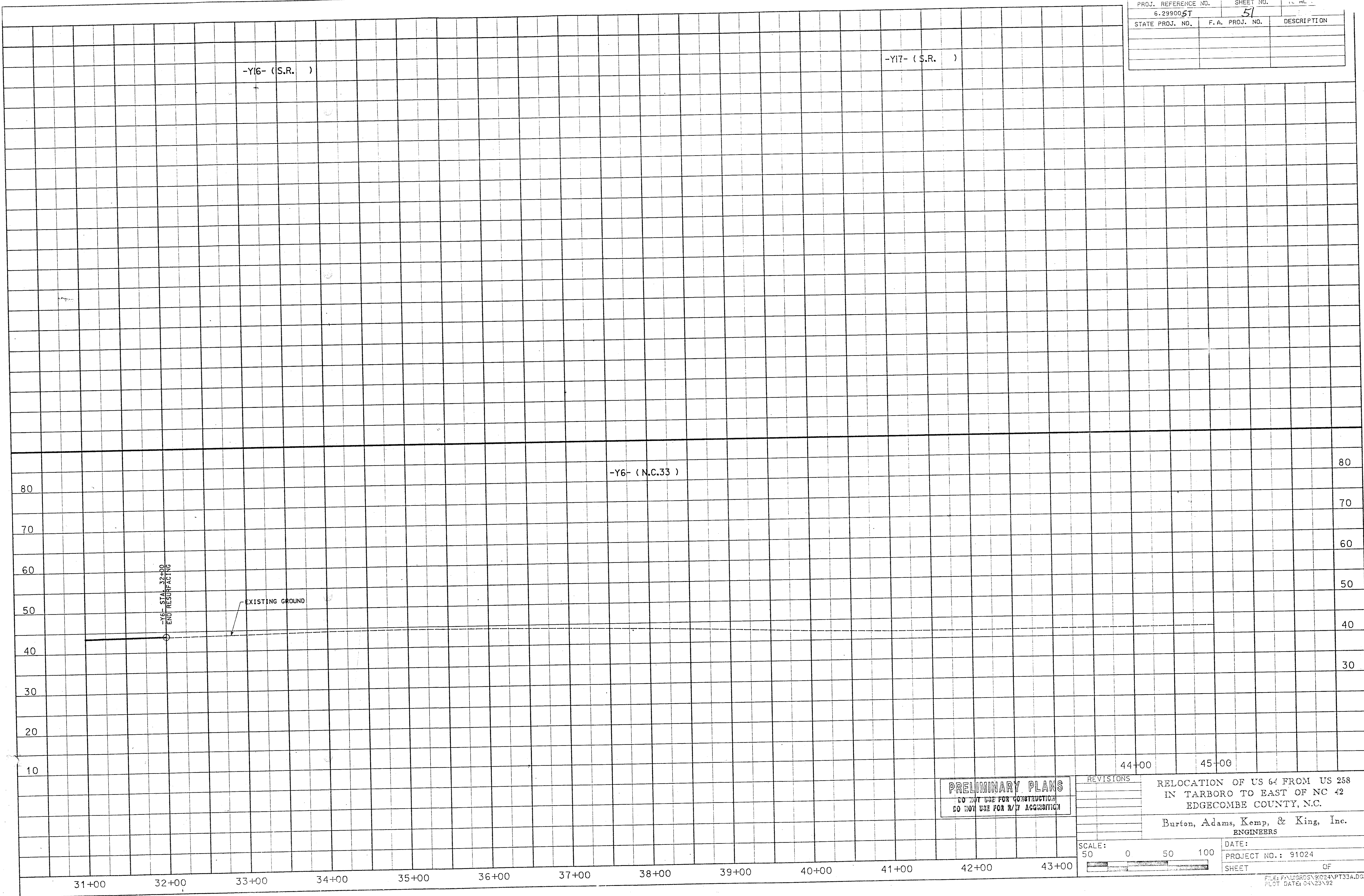
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

FOR -Y6- (N.C.33) PROFILE, SEE SHT. 74  
FOR -Y16- (S.R. ) PROFILE, SEE SHT. 74  
FOR -Y17- (S.R. ) PROFILE, SEE SHT. 74

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET CF

PROJ. REFERENCE NO.	SHEET NO.	DATE
6.299005T	51	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE:  
 50 0 50 100

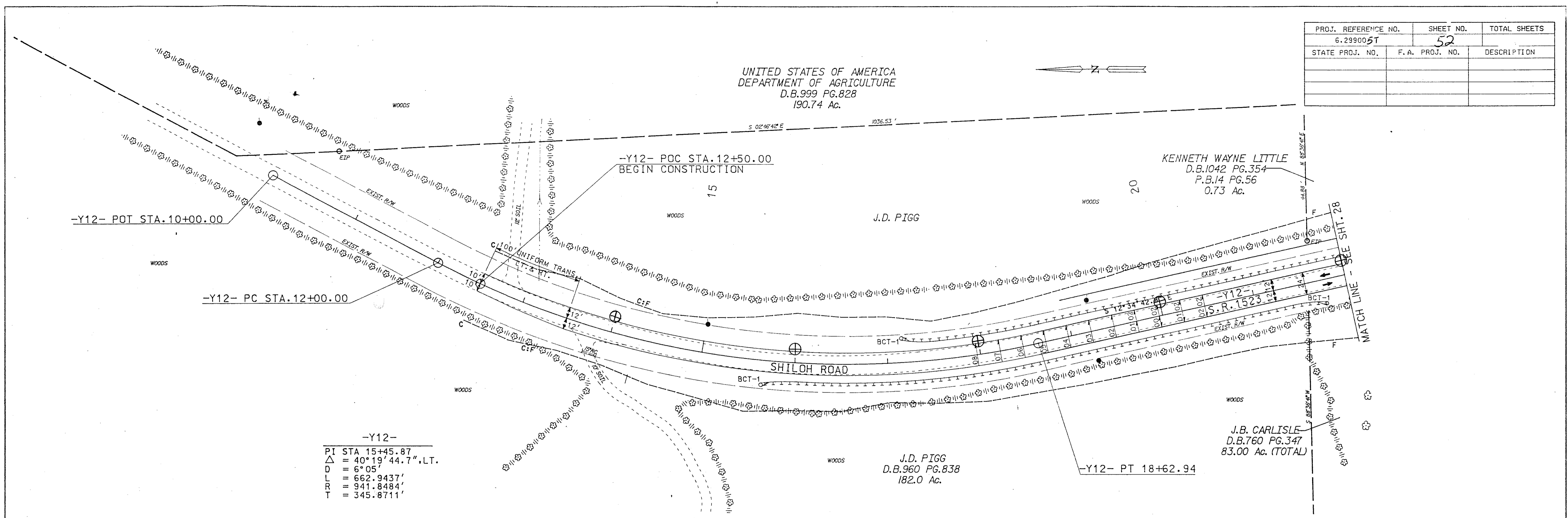
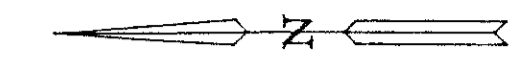
DATE:  
 PROJECT NO.: 91024



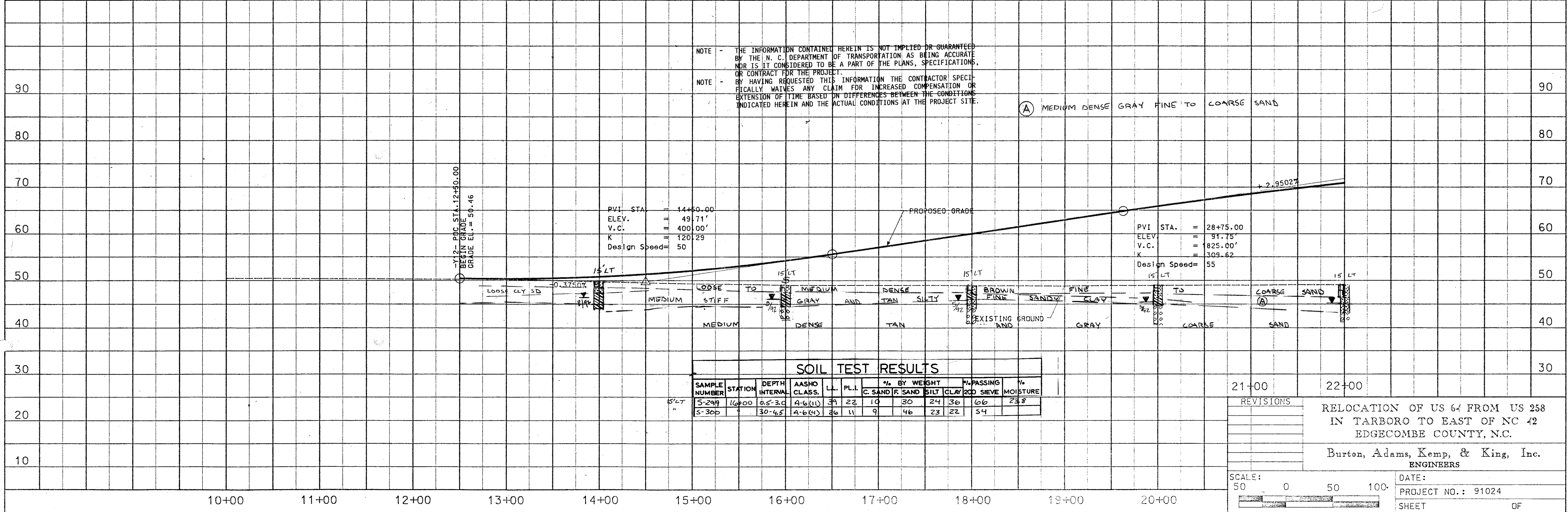
SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	52	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

UNITED STATES OF AMERICA  
DEPARTMENT OF AGRICULTURE  
D.B.999 PG.828  
190.74 Ac.



-Y12-  
PI STA 15+45.87  
Δ = 40°19'44.7", LT.  
D = 6°05'  
L = 662.9437'  
R = 941.8484'  
T = 345.8711'



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING NO. 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-297	10+00	0.5-3.0	A-6(1)	39	22	10	30	24	36	66	23.8
S-305	"	30-4.5	A-6(4)	36	11	9	46	23	22	54	

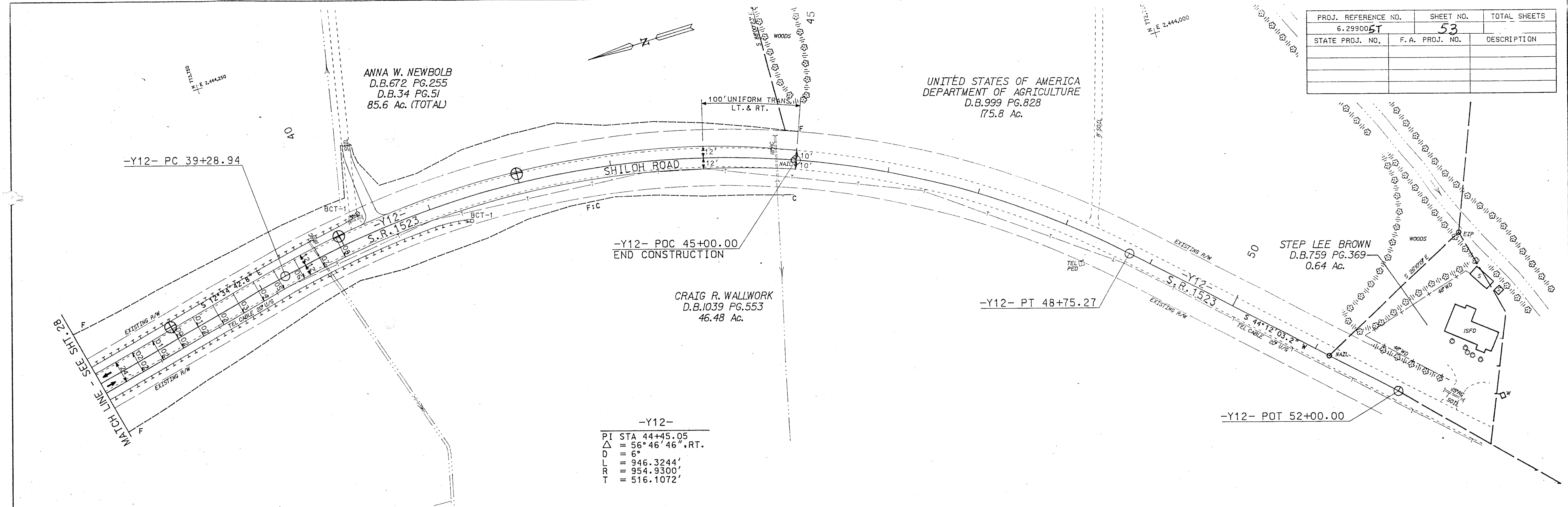
REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

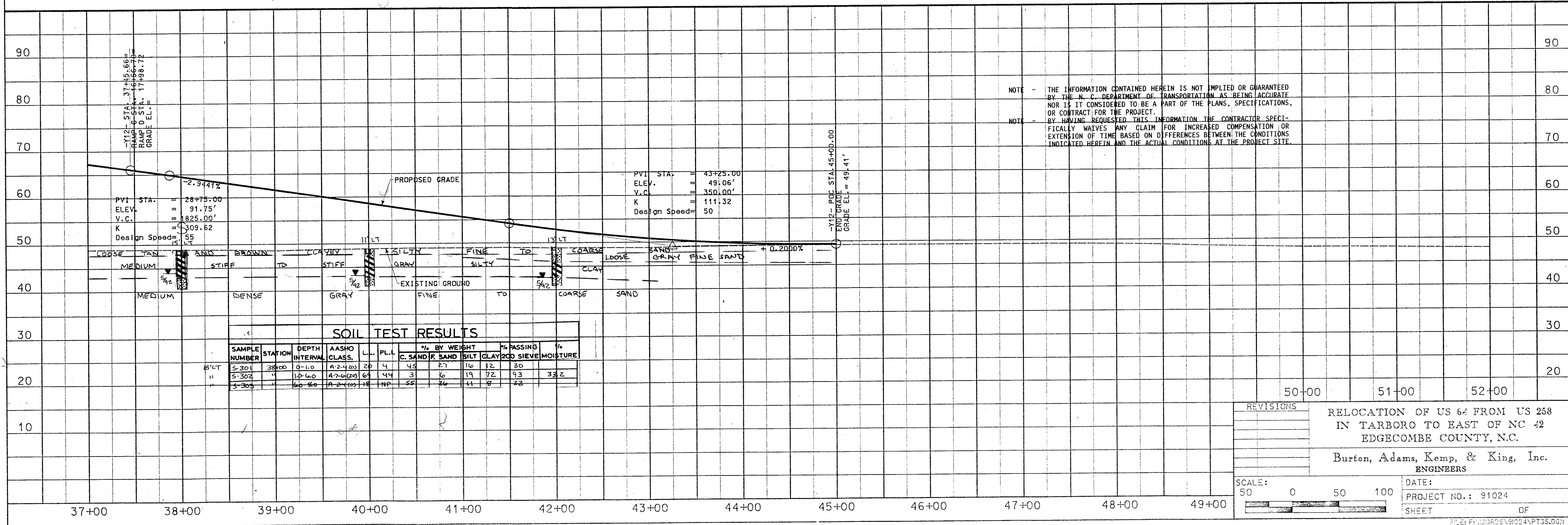
SCALE: 50 0 50 100  
SHEET OF

DATE:  
PROJECT NO.: 91024

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	53	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



-Y12-  
 PI STA 44+45.05  
 $\Delta = 56^{\circ} 46' 46''$ , RT.  
 D = 6'  
 L = 946.3244'  
 R = 954.9300'  
 T = 516.1072'



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
 NOTE - BY AWARING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

SOIL TEST RESULTS										
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.L.	% BY WEIGHT			% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT CLAY		
S-301	38+00	0-1.0	A-2-4 (6)	20	4	43	27	16	12	30
S-302	"	1.0-6.0	A-2-4 (20)	69	44	3	6	19	72	33.2
S-303	"	6.0-8.0	A-2-4 (6)	18	NP	55	26	11	8	22

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF

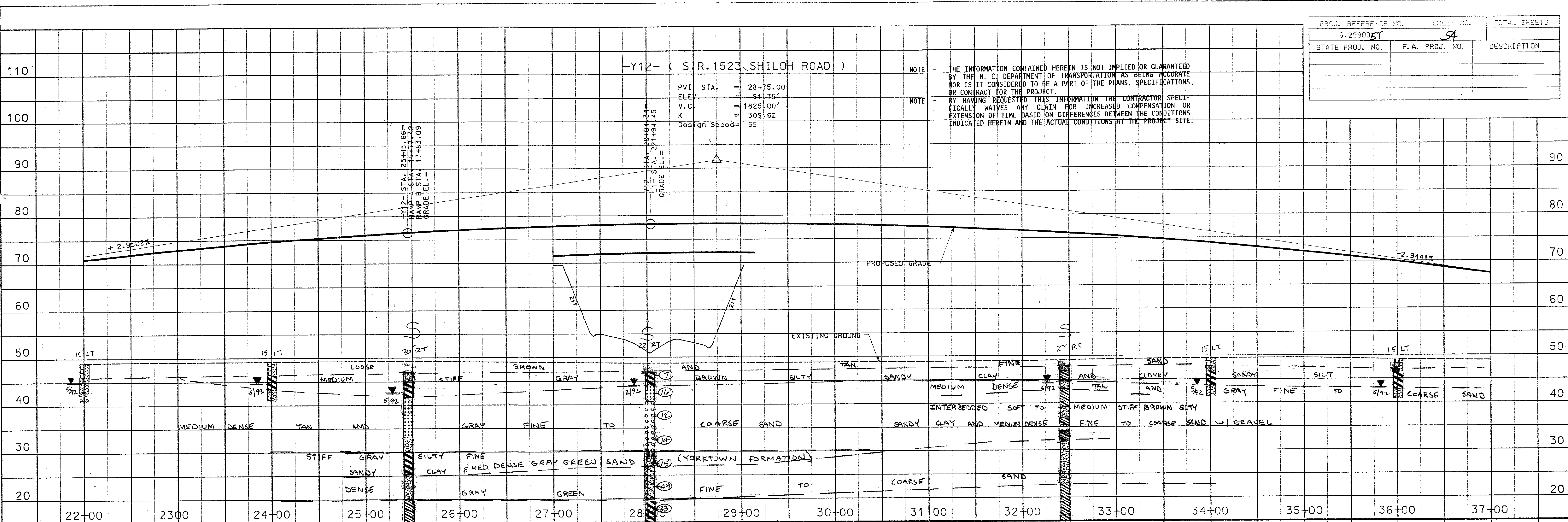
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	54	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-Y12- ( S.R.1523 SHILOH ROAD )

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

PVI STA. = 28+75.00  
 ELE. = 91.75'  
 V.C. = 1825.00'  
 K = 309.62  
 Design Speed = 55



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-290	25+45	0-1.0	A-4 (5)	21	2	19	34	37	10	38	
S-291	"	1.0-2.0	A-4 (2)	25	10	14	27	37	22	70	
S-292	"	2.0-3.5	A-7 (1)	47	28	8	21	24	42	79	24.8
S-293	"	3.5-14.0	A-3 (0)	14	NP	71	20	7	2	9	
S-294	"	14.0-17.0	A-2.4 (0)	21	3	57	26	11	6	17	
S-295	"	17.0-22.0	A-2.4 (0)	47	28	6	45	33	16	54	23.5
S-296	"	22.0-27.0	A-2.4 (0)	35	5	43	39	16	2	20	
S-297	"	27.0-32.0	A-6 (0)	31	14	20	31	34	10	58	21.4
S-298	"	36.0-38.0	A-2.4 (0)	23	3	60	26	10	4	16	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S5-1	28+04	0-1.5	A-7.4 (0)	49	28	23	19	19	40	62	24.9
S5-2	"	4.0-5.5	A-3 (0)	18	NP	63	33	3	1	6	
S5-3	"	8.0-10.3	A-1.6 (0)	18	NP	78	18	2	2	4	
S5-4	"	18.8-19.8	A-2.4 (0)	21	NP	44	37	13	6	15	
S5-5	"	23.8-25.3	A-2.4 (0)	30	12	26	44	15	10	25	
S5-6	"	28.8-30.3	A-7.5 (0)	44	14	13	24	43	20	71	25.0

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-304	32+45	0-1.0	A-4 (2)	28	8	30	30	26	14	47	
S-305	"	1.0-3.0	A-6 (0)	31	16	24	28	18	30	54	21.7
S-306	"	3.0-8.0	A-2 (0)	16	NP	67	26	9	6	18	
S-307	"	8.0-9.0	A-6 (0)	40	13	22	35	29	14	49	43.6
S-308	"	9.0-11.0	A-2.4 (0)	19	NP	54	34	10	2	15	
S-309	"	11.0-12.5	A-6 (0)	34	12	16	43	29	2	48	53.8
S-310	"	12.5-14.0	A-1.6 (0)	16	NP	76	19	4	1	6	
S-311	"	14.0-16.5	A-6 (0)	34	18	48	0	26	8	43	
S-312	"	16.5-25.0	A-2.4 (0)	24	7	48	30	16	6	20	
S-313	"	25.0-33.0	A-6 (0)	33	19	11	26	43	20	70	

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE:  
 50 0 50 100

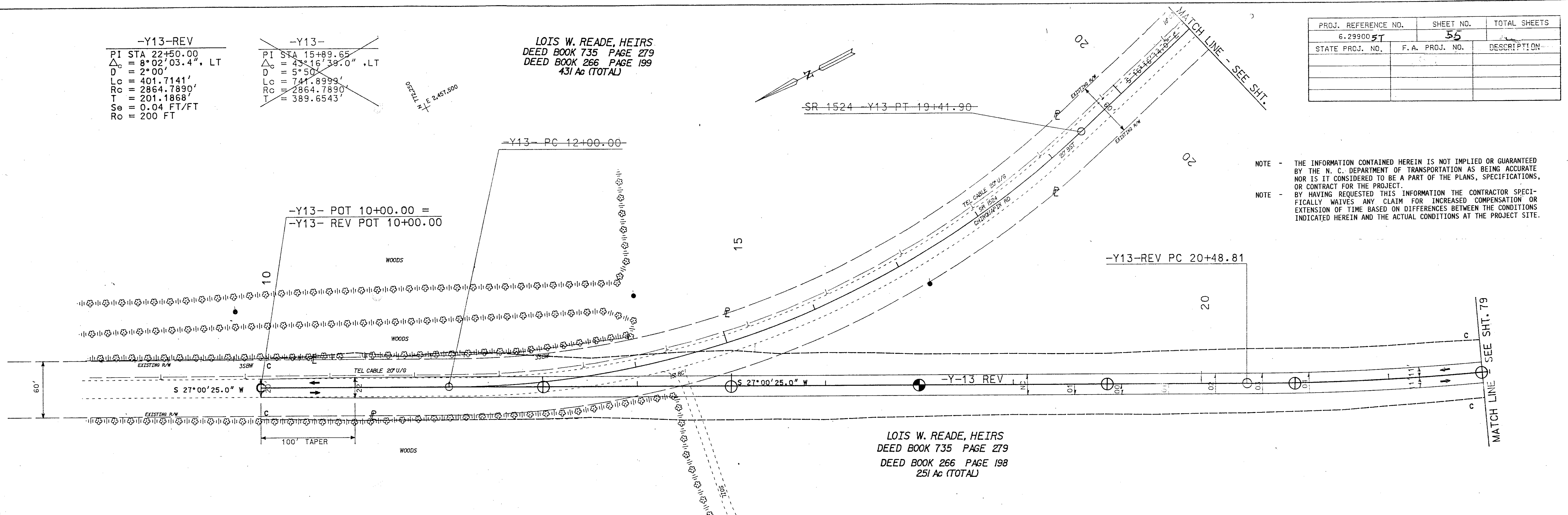
DATE:  
 PROJECT NO.: 91024  
 SHEET OF

-Y13-REV  
 PI STA 22+50.00  
 $\Delta_c = 8^\circ 02' 03.4''$ , LT  
 $D_c = 2' 00''$   
 $L_c = 401.7141'$   
 $R_c = 2864.7890'$   
 $T = 201.1868'$   
 $S_e = 0.04$  FT/FT  
 $R_o = 200$  FT

~~-Y13-~~  
~~PI STA 15+89.65~~  
 ~~$\Delta_c = 4^\circ 16' 39.0''$ , LT~~  
 ~~$D_c = 5' 50''$~~   
 ~~$L_c = 741.8999'$~~   
 ~~$R_c = 2864.7890'$~~   
 ~~$T = 389.6543'$~~

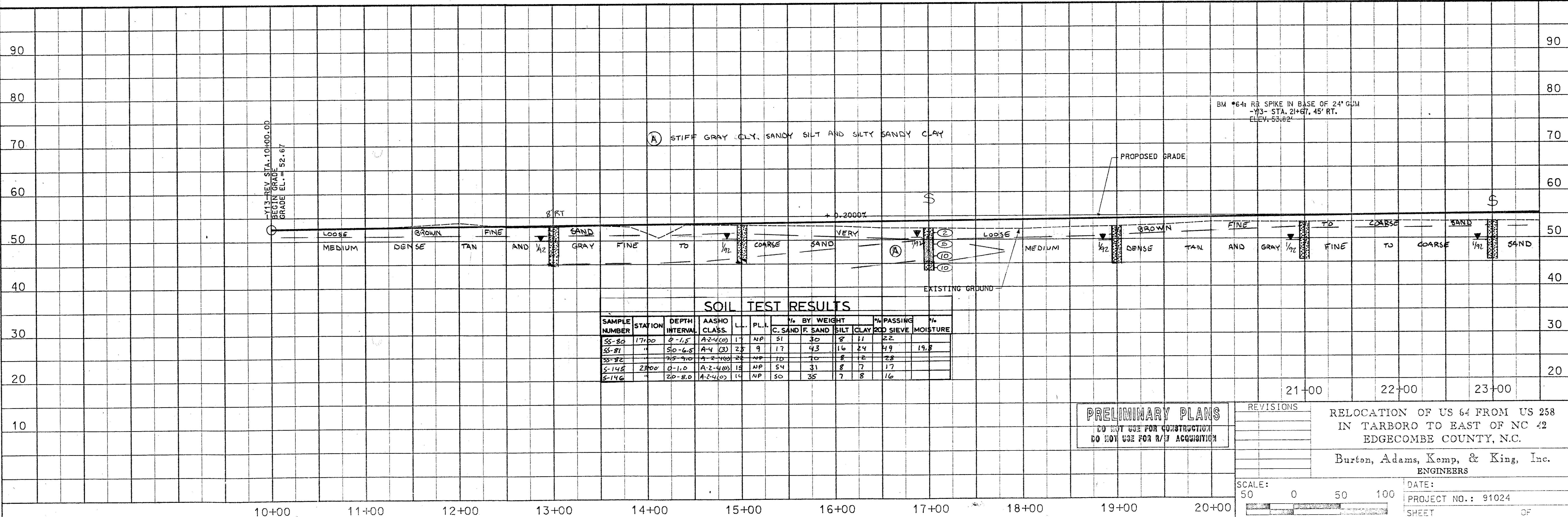
LOIS W. READE, HEIRS  
 DEED BOOK 735 PAGE 279  
 DEED BOOK 266 PAGE 199  
 431 Ac (TOTAL)

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900 5T	55	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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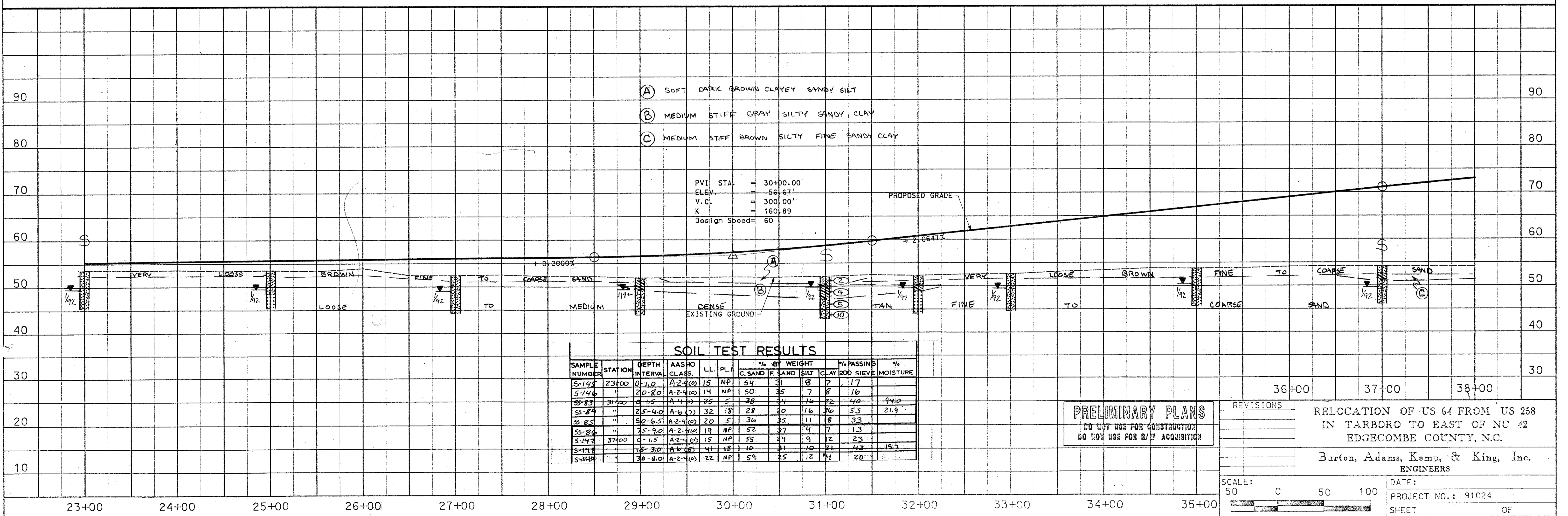
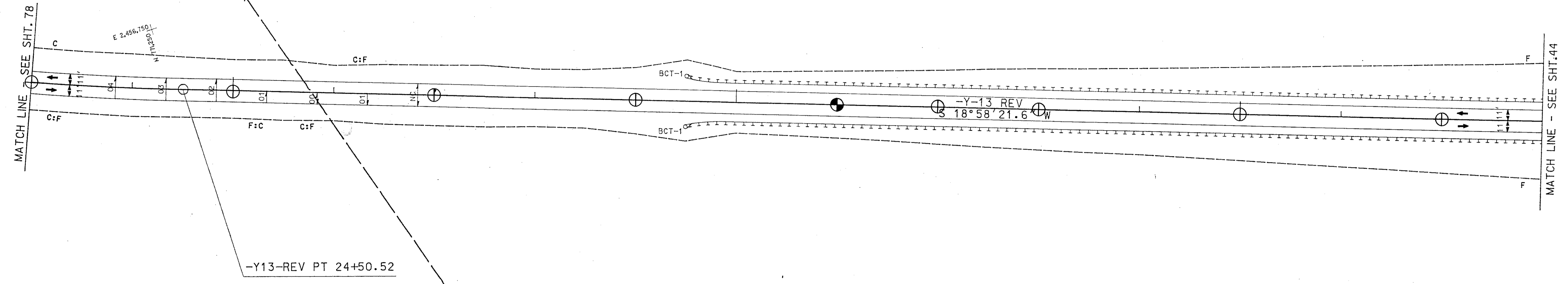


PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900ST	56	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 198  
251 Ac (TOTAL)

-Y13-REV  
PI STA 22+50.00  
 $\Delta = 8^{\circ}02'03.4''$ , LT  
D = 2'00'  
Lc = 401.7141'  
Rc = 2864.7890'  
T = 201.1868'  
S<sub>e</sub> = 0.04 FT/FT  
R<sub>o</sub> = 200 FT

LOIS W. READE, HEIRS  
DB 735 PG 279  
DB 266 PG 199  
431 Ac (TOTAL)

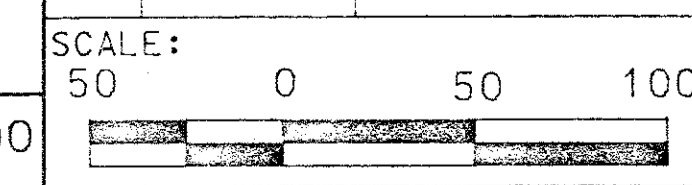


**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

NO.	DATE	DESCRIPTION

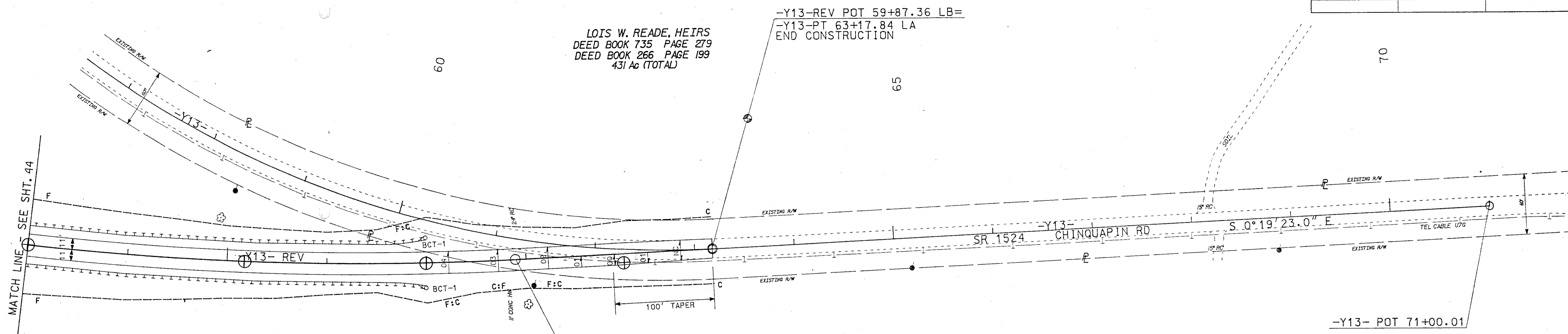
RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	57	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

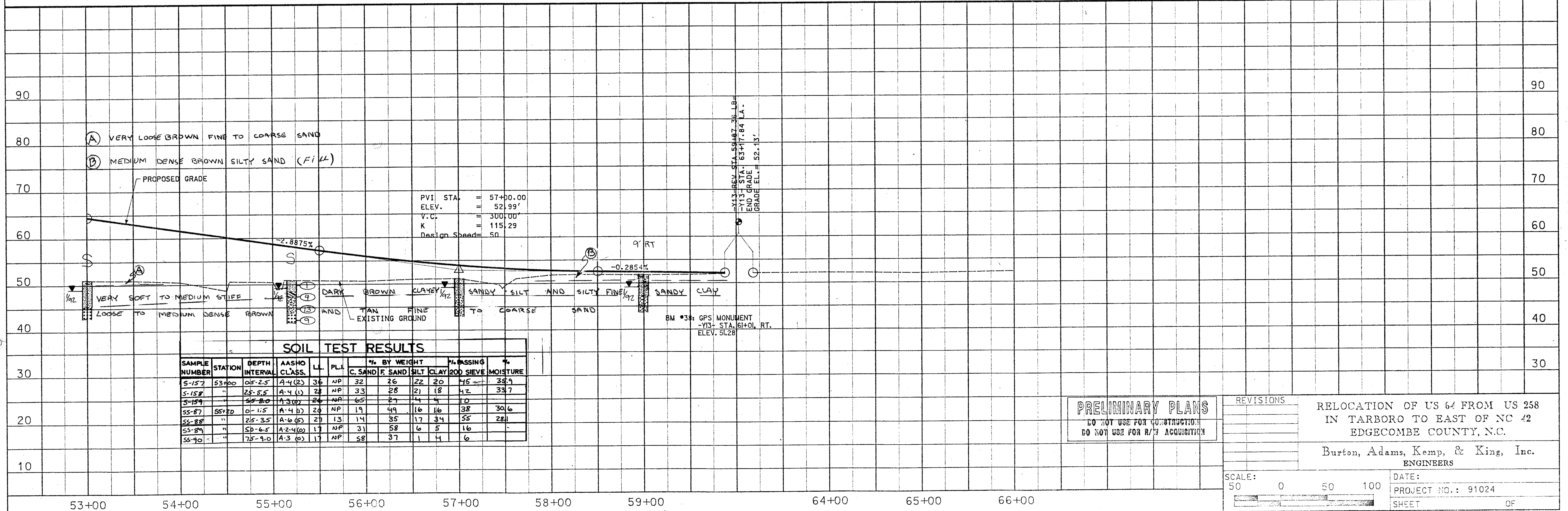


LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

**-Y13-REV**  
PI STA 53+11.58  
 $\Delta_c = 19^\circ 17' 44.6''$ , LT  
D = 2'00"  
Lc = 964.7859'  
Rc = 2864.7890'  
T = 487.0045'  
SE = 0.04 FT/FT  
RO = 133.33 FT

~~**-Y13-**  
PI STA 59+30.94  
 $\Delta_c = 49^\circ 29' 49.0''$ , LT  
D = 5'58"  
Lc = 828.5577'  
Rc = 960.2645'  
T = 442.6569'~~



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC #2  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

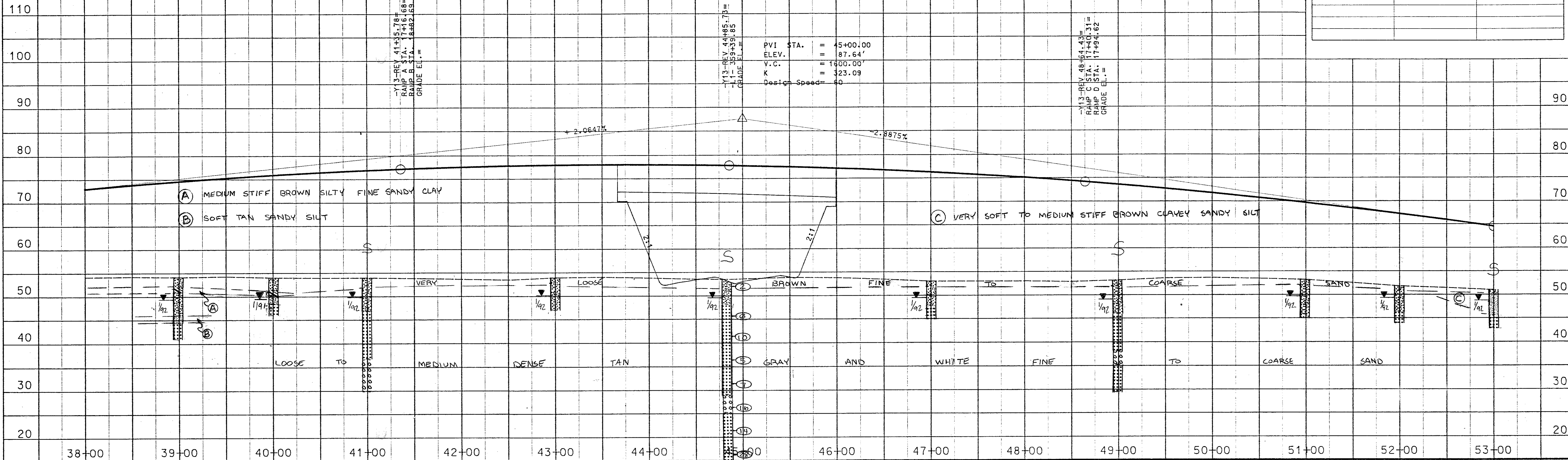
DATE: PROJECT NO.: 91024

SHEET OF



-Y13-REV- ( S.R.1524 CHINCUAPIN ROAD )

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	58	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-150	41+00	0-7.0	A-2-4 (6)	16	NP	60	20	8	12	21	
S-151	"	7.0-17.0	A-3 (6)	20	NP	68	27	4	1	7	
S-152	"	17.0-24.0	A-1-B (6)	21	NP	87	11	1	1	3	
S-153	49+00	0-7.0	A-2-4 (6)	16	NP	63	21	7	9	7	
S-154	"	7.0-15.0	A-3 (6)	22	NP	58	38	3	1	5	
S-155	"	15.0-18.0	A-1-B (6)	20	NP	84	15	1	0	2	
S-156	"	18.0-23.5	A-3 (6)	21	NP	71	26	2	1	4	
S-157	53+00	0-2.5	A-4 (6)	34	NP	32	26	22	20	45	35.7
S-158	"	2.5-5.5	A-4 (6)	28	NP	33	28	21	18	42	33.7
S-159	"	5.5-8.0	A-3 (6)	26	NP	65	27	4	4	10	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	44+85	0-1.5	A-2-4 (6)	18	NP	56	24	7	13	21	
SS-2	"	1.5-8.1	A-3 (6)	14	NP	52	41	3	4	9	
SS-3	"	8.1-22.3	A-1-B (6)	23	NP	89	10	0	2	2	
SS-4	"	22.3-32.3	A-3 (6)	17	NP	67	29	1	3	4	
SS-5	"	32.3-37.3	A-3 (6)	17	NP	70	25	1	4	6	
SS-6	"	37.3-42.3	A-6 (6)	32	19	9	33	40	18	68	
SS-7	"	42.3-47.3	A-2-4 (6)	31	NP	11	68	15	6	27	25.8
SS-8	"	47.3-52.3	A-2-4 (6)	26	NP	45	44	3	8	13	
SS-9	"	52.3-57.3	A-2-4 (6)	32	9	64	17	11	8	20	

VERY STIFF GRAY SILTY FINE SANDY CLAY (CAPE FEAR FORMATION)  
 DENSE TO VERY DENSE GRAY  
 FINE TO COARSE SAND

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS


RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	59	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

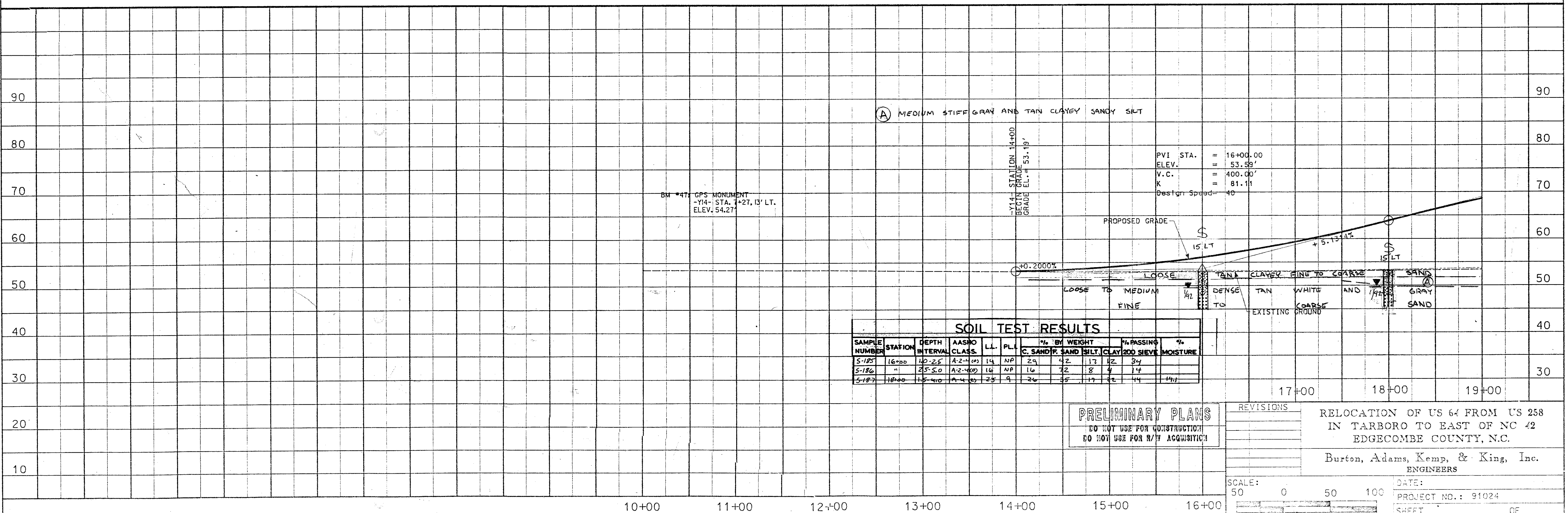
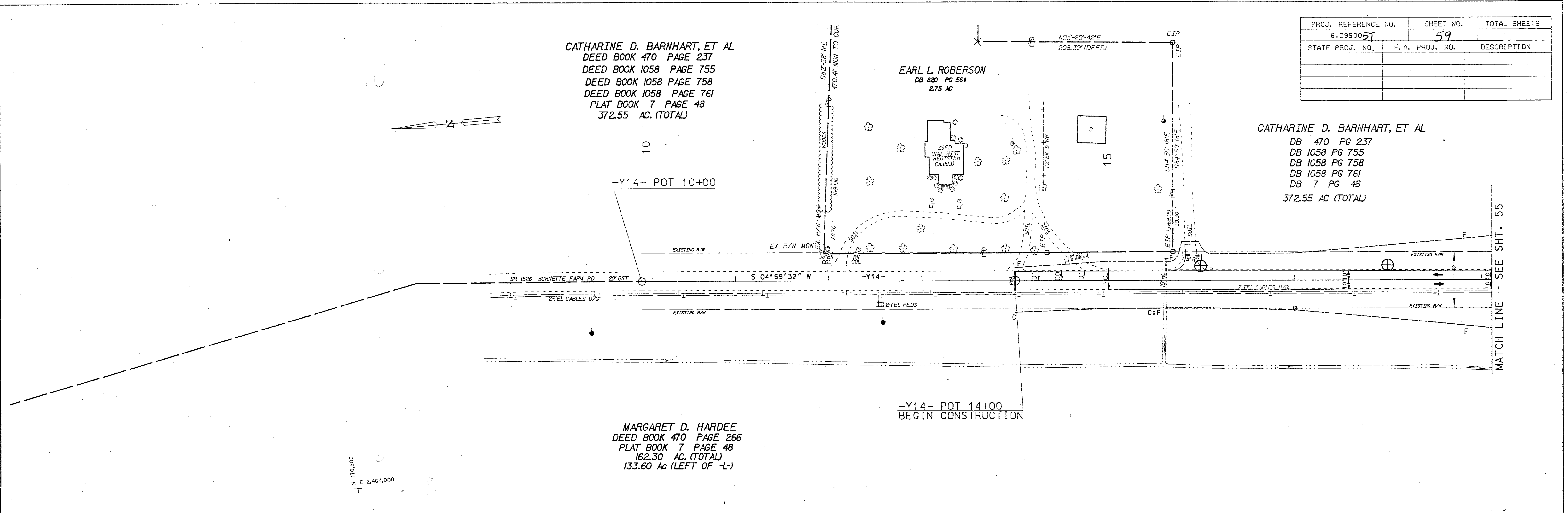
CATHARINE D. BARNHART, ET AL  
 DEED BOOK 470 PAGE 237  
 DEED BOOK 1058 PAGE 755  
 DEED BOOK 1058 PAGE 761  
 PLAT BOOK 7 PAGE 48  
 372.55 AC. (TOTAL)

EARL L. ROBERSON  
 DB 820 PG 564  
 275 AC

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 AC (LEFT OF -L-)

N 710,500  
 E 2,464,000



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

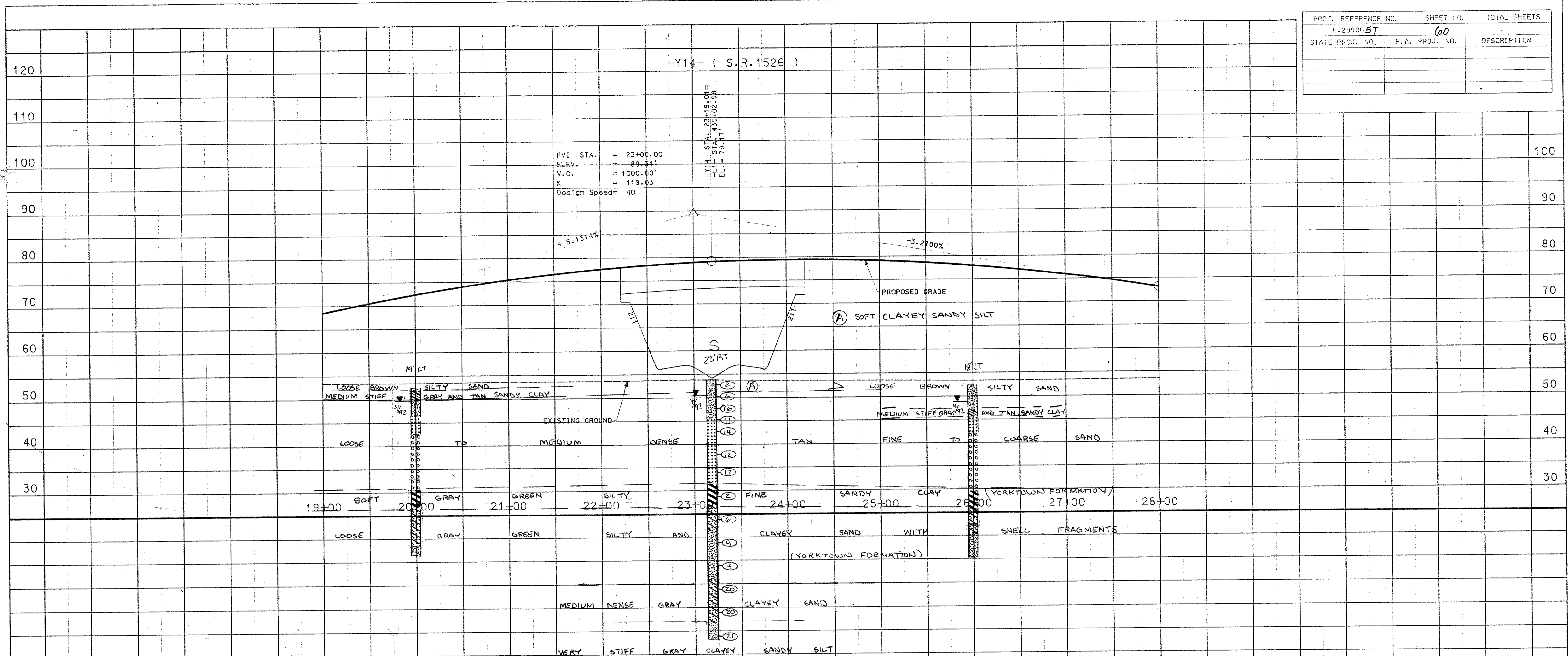
REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE:  
 50 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET 59 OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	60	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



PVI STA. = 23+00.00  
 ELEV. = 89.54'  
 V.C. = 1000.00'  
 K = 119.03  
 Design Speed = 40

-Y14- ( S.R.1526 )  
 STA. 23+19.01 =  
 STA. 439+02.98 =  
 ELEV. = 78.17

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L	PLI.	% BY WEIGHT				% PASSING	
						C. SAND	F. SAND	SILT	CLAY	NO. 20	NO. 40
23-R1	SS-1	10-15	A-4 (2)	20	8	31	29	18	22	43	10.4
"	SS-2	50-6.5	A-2.4 (5)	14	NP	26	61	9	4	16	
"	SS-3	100-11.5	A-3 (5)	10	NP	24	40	14	2	9	
"	SS-4	19.1-20.6	A-3 (2)	18	NP	66	28	5	1	8	
"	SS-5	29.1-25.6	A-7.6 (4)	46	23	9	17	44	30	79	47.5
"	SS-6	29.1-20.6	A-2.4 (2)	38	22	55	8	19	18	35	
"	SS-7	34.1-35.6	A-2.4 (2)	20	NP	66	20	6	8	12	
"	SS-8	44.1-45.6	A-2.6 (2)	20	34	5	18	33	74	83	37.8
"	SS-9	54.1-55.6	A-4 (5)	28	10	3	52	21	24	59	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 0 50 100

DATE: PROJECT NO.: 91024

SHEET OF

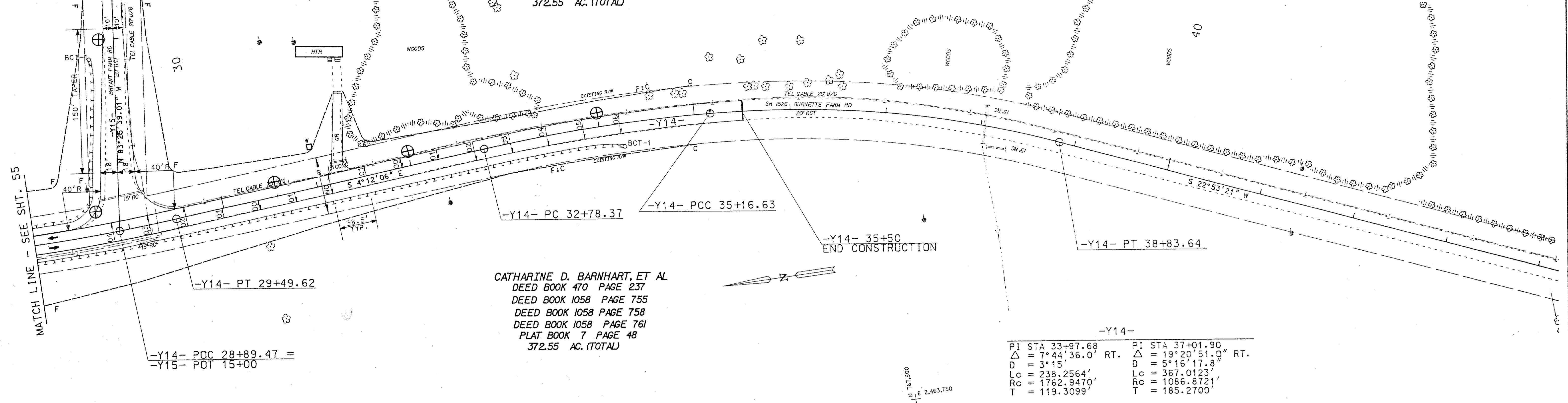
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	61	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

CATHARINE D. BARNHART, ET AL  
 DEED BOOK 470 PAGE 237  
 DEED BOOK 1058 PAGE 755  
 DEED BOOK 1058 PAGE 758  
 DEED BOOK 1058 PAGE 761  
 PLAT BOOK 7 PAGE 48  
 372.55 AC. (TOTAL)

CATHARINE D. BARNHART, ET AL  
 DEED BOOK 470 PAGE 237  
 DEED BOOK 1058 PAGE 755  
 DEED BOOK 1058 PAGE 758  
 DEED BOOK 1058 PAGE 761  
 PLAT BOOK 7 PAGE 48  
 372.55 AC. (TOTAL)

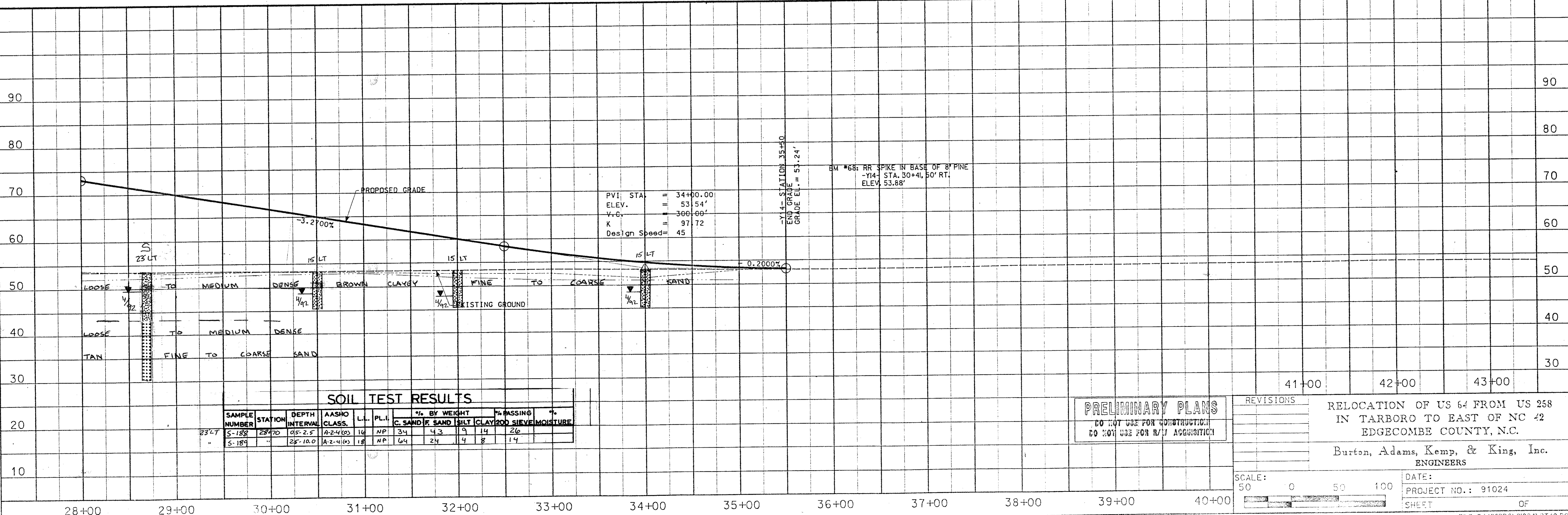
MATCH LINE - SEE SHT. 85

MATCH LINE - SEE SHT. 55



-Y14-

PI STA 33+97.68	PI STA 37+01.90
$\Delta = 7^\circ 44' 36.0''$ RT.	$\Delta = 19^\circ 20' 51.0''$ RT.
D = 3°15'	D = 5°16'17.8"
Lc = 238.2564'	Lc = 367.0123'
Rc = 1762.9470'	Rc = 1086.8721'
T = 119.3099'	T = 185.2700'



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING	
						C. SAND	F. SAND	SILT	CLAY	200	SIEVE
S-188	28+70	05'-2.5'	A-2.4(0)	14	NP	34	43	9	14	26	
S-189	"	25'-10.0'	A-2.4(0)	18	NP	64	24	4	8	14	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS


RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGECOMBE COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50' = 1" 0' 50' 100'	DATE: PROJECT NO.: 91024
	SHEET OF

RALPH S. BRYANT  
DEED BOOK 877 PAGE 369  
DEED BOOK 824 PAGE 374  
PLAT BOOK 15 PAGE 77

-Y15-  
PI STA 2+62.26  
Δ = 16°55'23.0" LT.  
D = 3°15'  
Lc = 520.7094'  
Rc = 1762.9470'  
T = 262.2641'

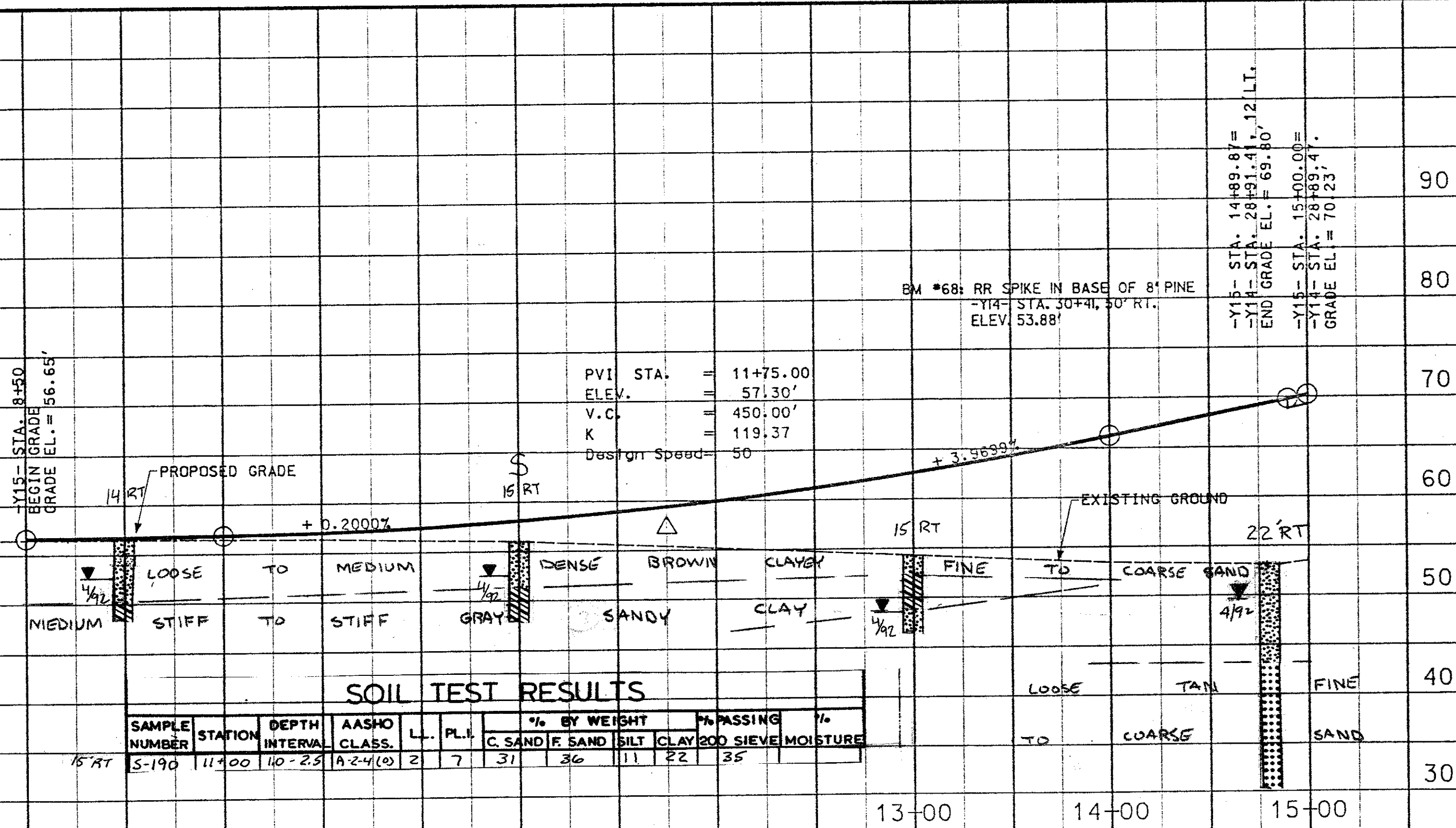
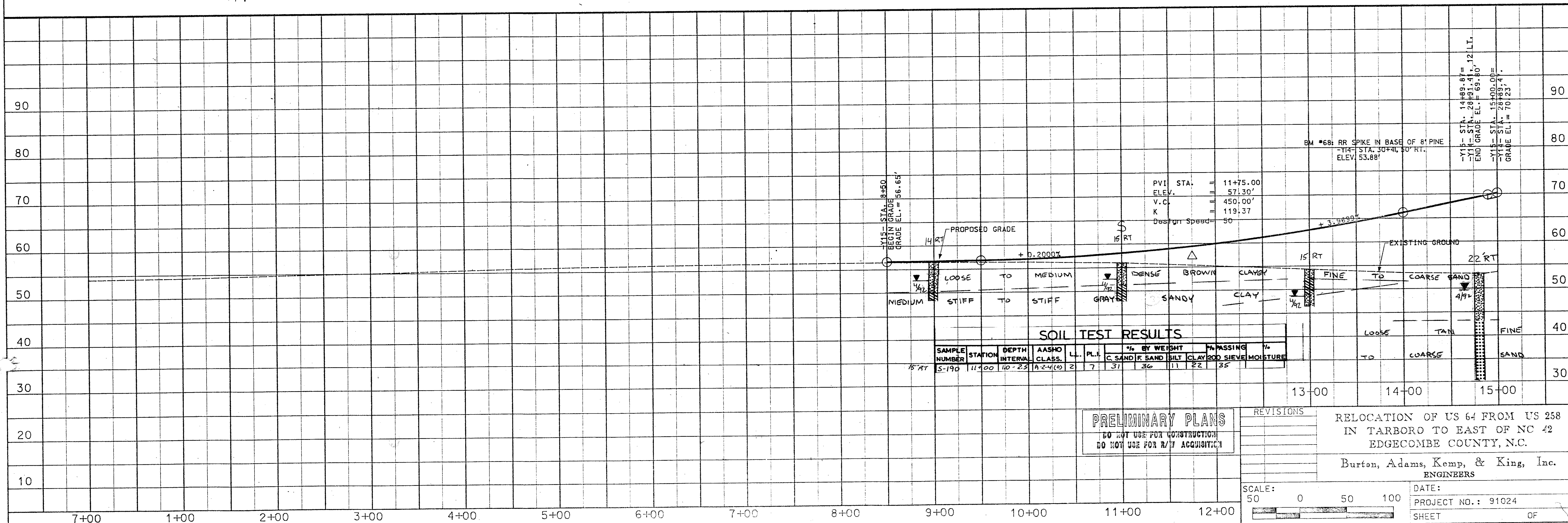
-Y15- PT 5+20.71  
-Y15- POT 8+50  
BEGIN CONSTRUCTION

CATHARINE D. BARNHART, ET AL  
DEED BOOK 470 PAGE 237  
DEED BOOK 1058 PAGE 755  
DEED BOOK 1058 PAGE 758  
DEED BOOK 1058 PAGE 761  
PLAT BOOK 7 PAGE 48  
372.55 AC. (TOTAL)

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	62	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

RALPH S. BRYANT  
DEED BOOK 877 PAGE 369  
DEED BOOK 824 PAGE 374  
PLAT BOOK 15 PAGE 77

CATHARINE D. BARNHART, ET AL  
DB 470 PG 237  
DB 1058 PG 755  
DB 1058 PG 758  
DB 1058 PG 761  
DB 7 PG 48  
372.55 AC (TOTAL)



SOIL TEST RESULTS										
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT			PASSING #200 SIEVE	% MOISTURE
						C SAND	F SAND	SILT		
5-190	11+00	10-25	A-2-4(2)	2	7	37	36	11	22	35

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE:  
50 0 50 100

DATE:  
PROJECT NO.: 91024

SHEET OF

FILE: F:\NUGRO5\91024\PT40A.DGN  
PLOT DATE: 04/24/92

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	63	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

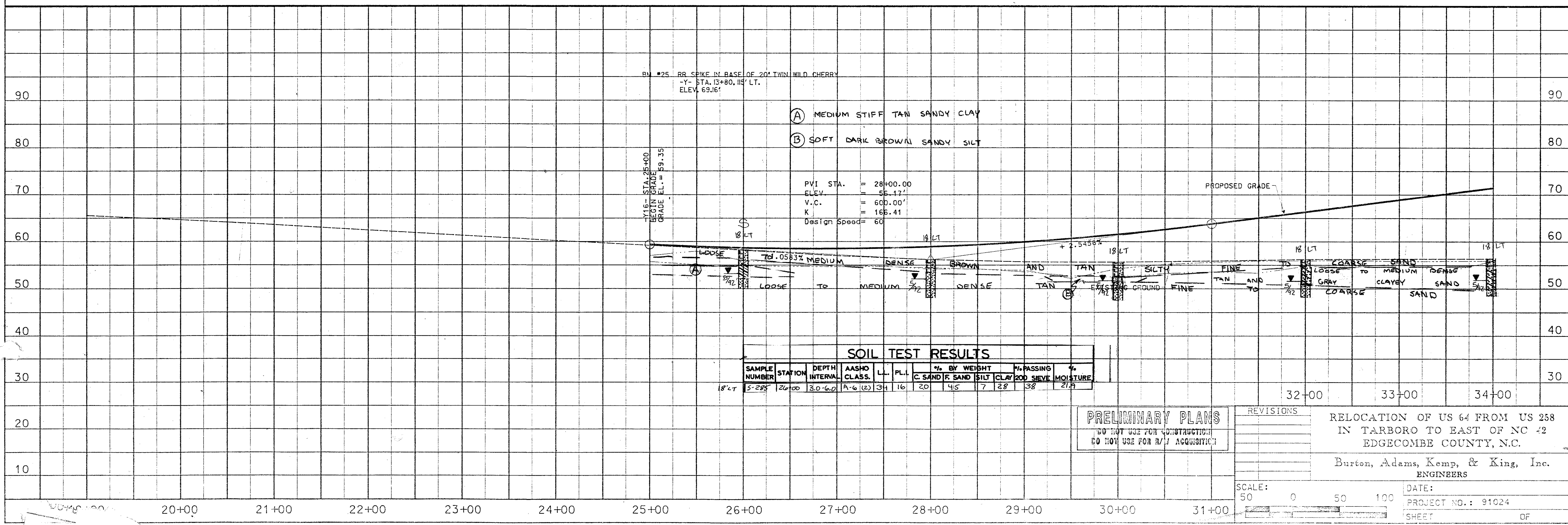
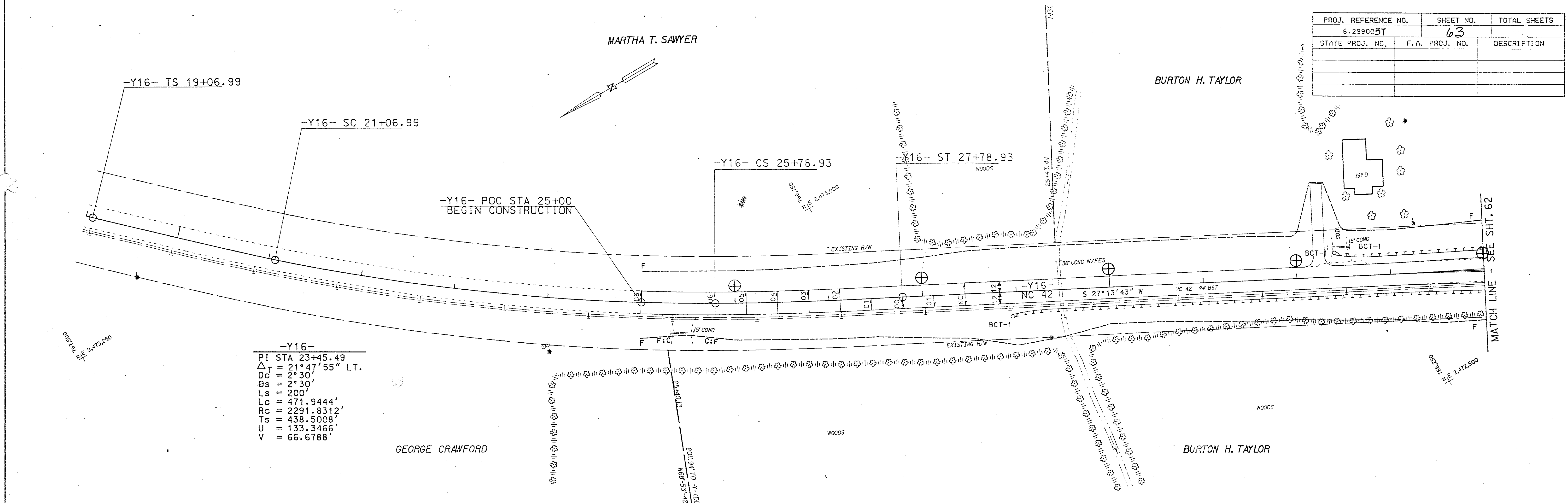
MARTHA T. SAWYER

BURTON H. TAYLOR

GEORGE CRAWFORD

BURTON H. TAYLOR

-Y16-  
 PI STA 23+45.49  
 $\Delta T = 21^{\circ}47'55''$  LT.  
 $D_c = 2^{\circ}30'$   
 $G_s = 2^{\circ}30'$   
 $L_s = 200'$   
 $L_c = 471.9444'$   
 $R_c = 2291.8312'$   
 $T_s = 438.5008'$   
 $U = 133.3466'$   
 $V = 66.6788'$

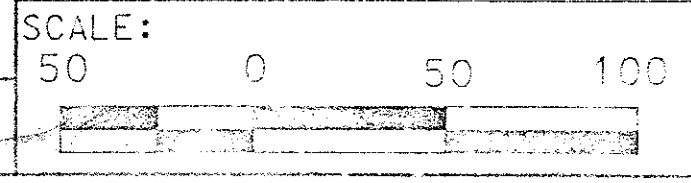


SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING	%	
						C. SAND	F. SAND	SILT	CLAY	200 SIEVE	MOISTURE	
18 LT	25+285	26+00	A-6 (2)	34	16	20	45	7	28	38	21.8	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

NO.	DATE	DESCRIPTION

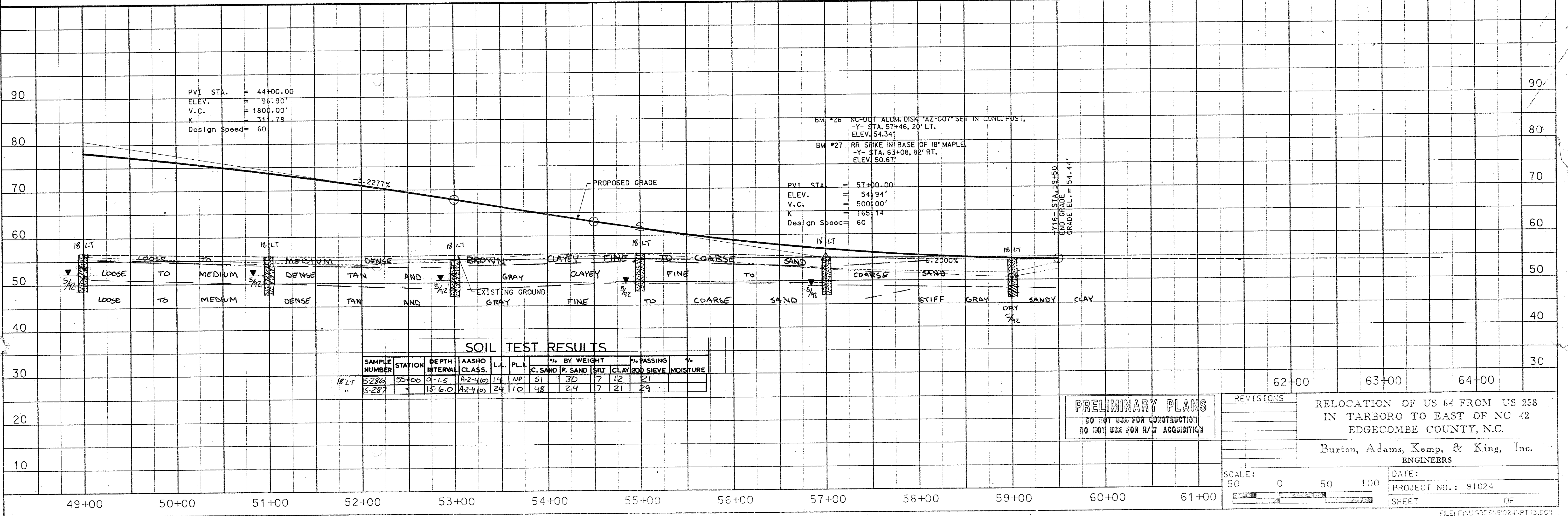
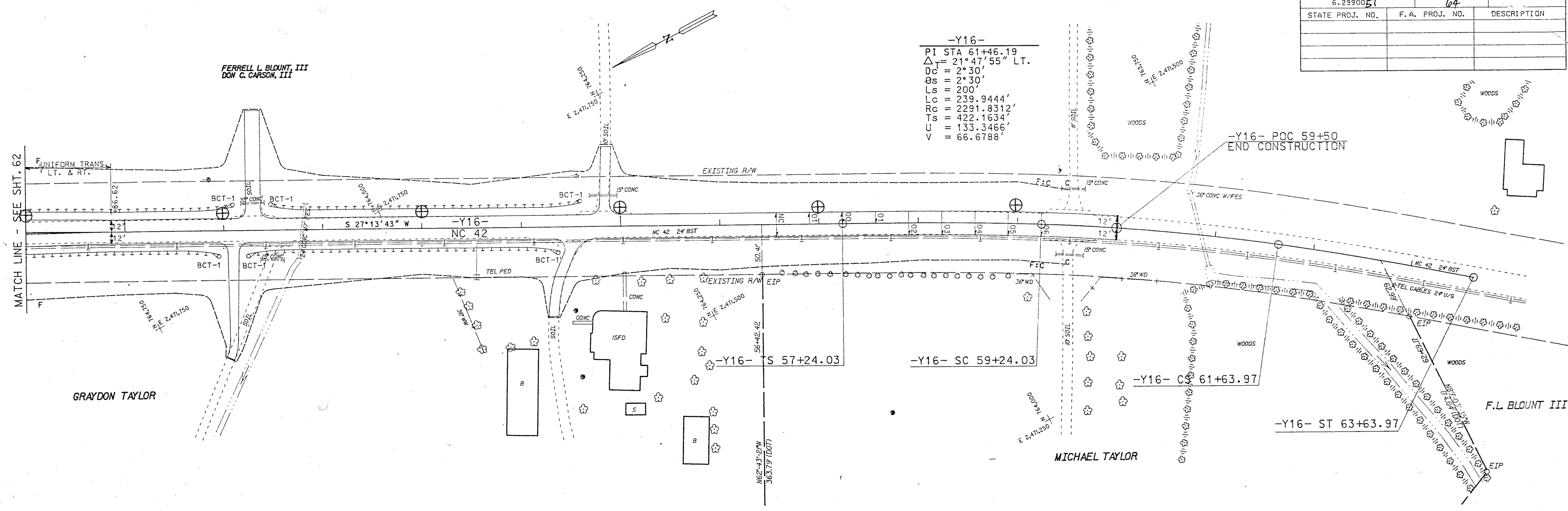
RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS



SCALE: 50 0 50 100  
 DATE:  
 PROJECT NO.: 91024  
 SHEET 63 OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005	64	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

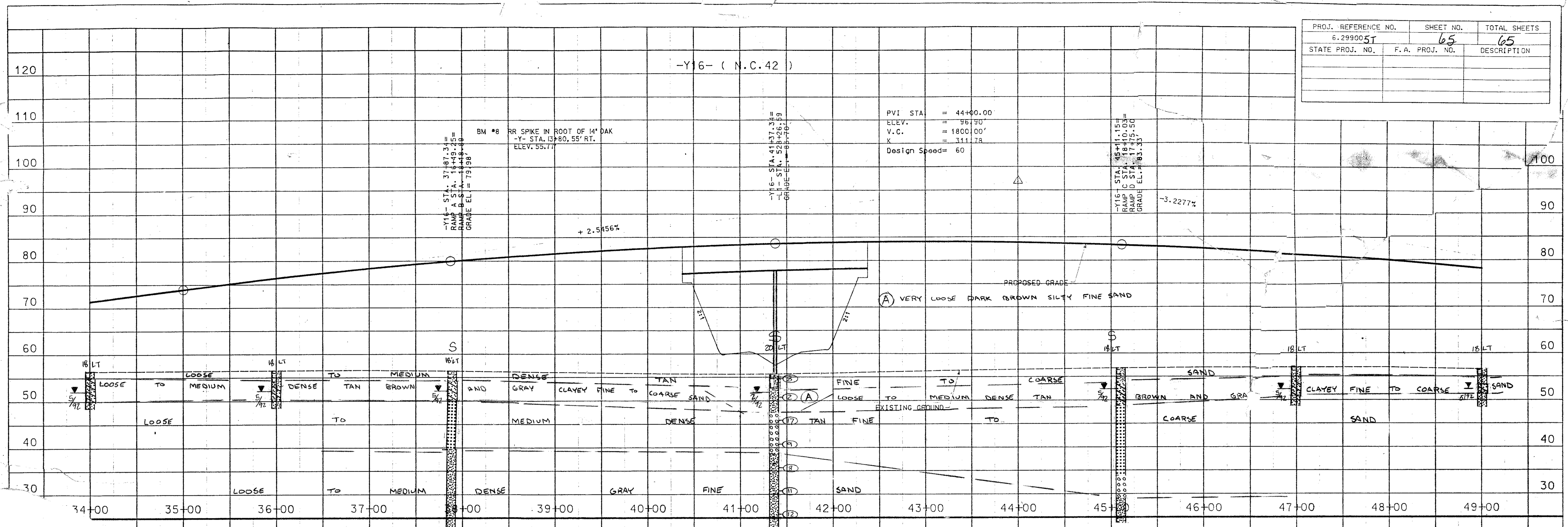
-Y16-  
 PI STA 61+46.19  
 $\Delta = 21^\circ 47' 55''$  LT.  
 $D_c = 2^\circ 30'$   
 $S_s = 2^\circ 30'$   
 $L_s = 200'$   
 $L_c = 239.9444'$   
 $R_c = 2291.8312'$   
 $U = 422.1634'$   
 $T = 133.3466'$   
 $V = 66.6788'$



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
Burton, Adams, Kemp, & King, Inc. ENGINEERS	
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
SHEET	OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	65	65
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5-277	37+90	0-2.0	A-2.4 (0)	14	NP	42	37	10	11	24	
5-278	"	2.0-6.0	A-2.6 (0)	29	12	44	25	9	22	33	18.3
5-279	"	6.0-17.0	A-3 (0)	17	NP	53	41	8	3	7	
5-280	"	17.0-19.0	A-2.4 (0)	23	4	11	65	10	14	27	
5-281	"	19.0-28.0	A-2.4 (0)	23	9	10	65	13	12	30	
5-282	"	28.0-38.0	A-2.4 (0)	17	NP	43	48	4	5	12	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
55-1	41+37	0-1.5	A-2.4 (0)	18	NP	55	30	7	7	17	
55-2	"	1.5-10.5	A-1.4 (0)	21	NP	75	23	1	1	3	
55-3	"	10.5-20.5	A-2.4 (0)	23	NP	3	74	13	10	27	
55-4	"	20.5-30.5	A-2.4 (0)	22	NP	1	39	6	11	14	
55-5	"	30.5-40.5	A-6 (0)	39	16	9	35	30	26	62	
55-6	"	40.5-45.5	A-2.4 (0)	26	NP	49	30	11	10	21	
55-7	"	45.5-50.5	A-3 (0)	23	NP	38	54	5	3	8	
55-8	"	50.5-55.5	A-6 (0)	30	13	20	33	33	14	31	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5-271	45+10	0-3.0	A-2.4 (0)	15	1	50	26	8	16	26	
5-272	"	3.0-8.0	A-2.6 (0)	35	17	36	32	6	26	35	20.9
5-273	"	8.0-14.0	A-3 (0)	30	NP	33	47	5	1	10	
5-274	"	14.0-20.0	A-3 (0)	21	NP	79	17	2	2	3	
5-275	"	20.0-32.0	A-3 (0)	13	NP	21	73	6	2	6	

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 22



PROJECT: 6.299005T ID. R-2111AB

PROJECT 6.299005T  
TIP R-2111AB  
LETTING DATE

STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6.299005T	1	65

CAUTION NOTICE

The Subsurface information and the Subsurface Investigation on which it is based was made for the purpose of study, planning and design, and not for construction or pay purposes. Some data obtained may be omitted from this release.

Additional information may be available, including, but not limited to the following:

- Field Boring Logs
- Rock Cores
- Soil & Rock Test Data
- Subsurface Report

This information may be viewed by appointment by contacting the N. C. Department of Transportation, Geotechnical Unit @ (919) 250-4088. Neither the Subsurface plans and reports, nor the field boring logs, rock cores, or soil test data is part of the contract.

General soil and rock strata descriptions and indicated boundaries are based on a geotechnical interpretation of all available subsurface data and may not necessarily reflect the actual subsurface conditions between borings or between sampled strata within the borehole. The laboratory sample data and the in situ (in-place) test data can be relied on only to the degree of reliability inherent in the standard test method. The observed water levels or soil moisture conditions indicated in the subsurface investigations are as recorded at the time of the investigation. These water levels or soil moisture conditions may vary considerably with time according to climatic conditions including temperature, precipitation and wind, as well as other non-climatic factors.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE INFORMATION ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPTIONS OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

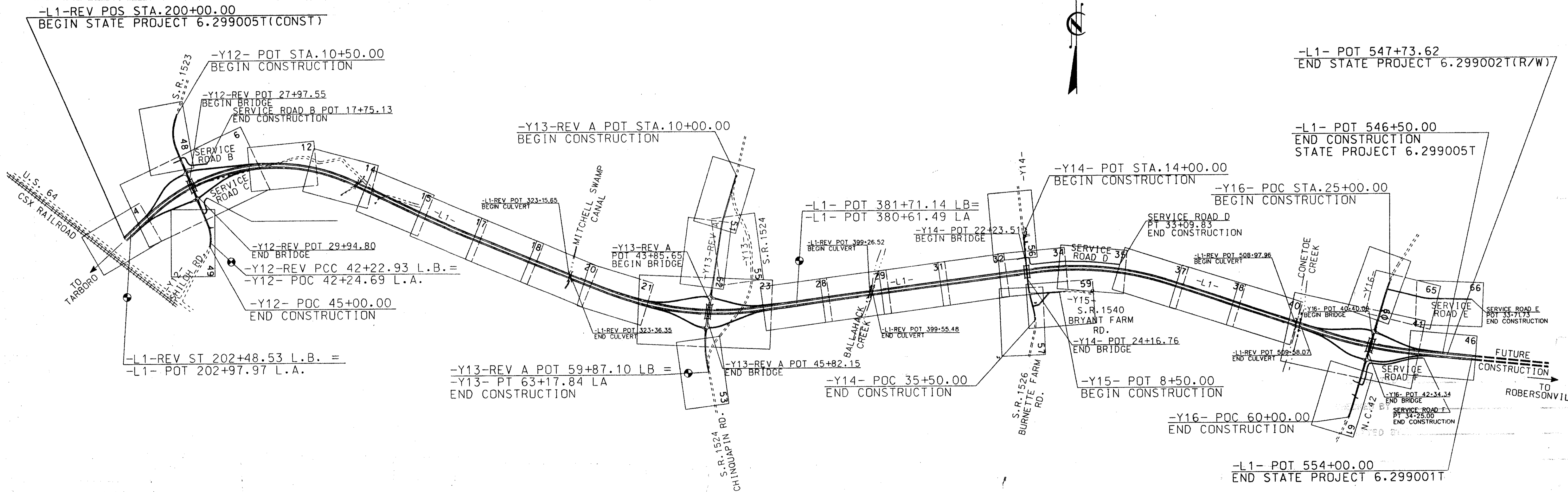
NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

# SUBSURFACE INVESTIGATION

STATE PROJECT 6.299005T ID. No. R-2111AB  
 F.A. PROJECT \_\_\_\_\_  
 COUNTY EDGEcombe  
 DESCRIPTION U.S. 64 RELOCATION FROM EAST OF CSX RAILROAD TO EAST OF NC-42  
(INVENTORY)



DRAWN BY: \_\_\_\_\_

SEAL  
Signature \_\_\_\_\_

N.C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6.299005T	2	

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

### SOIL DESCRIPTION

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 B.P.F. ACCORDING TO THE STANDARD PENETRATION TEST (ASTM-D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY OF STRUCTURE, PLASTICITY, ETC. EXAMPLE: *VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, BLEGELY PLASTIC, A-7-G.*

### SOIL LEGEND AND CLASSIFICATION

GENERAL CLASS.	GRANULAR MATERIALS (35% LESS PASSING NO. 200)							SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)							ORGANIC SOILS				
	A-1	A-3	A-2-4	A-2-5	A-2-6	A-2-7	A-4	A-5	A-6	A-7	A-1	A-2	A-4	A-5	A-6	A-7	A-1	A-2	A-3
GROUP CLASS.	A-1-1	A-1-2	A-2-4-1	A-2-5-1	A-2-6-1	A-2-7-1	A-4-1	A-5-1	A-6-1	A-7-1	A-1-1	A-2-1	A-4-1	A-5-1	A-6-1	A-7-1	A-1-1	A-2-1	A-3-1
SYMBOL																			
% PASSING																			
# 10	50 MX							40 MX							GRANULAR SOILS				
# 40	30 MX 50 MX 51 MM							35 MX 35 MM 35 MM 35 MM 36 MM 36 MM 36 MM 36 MM							SILT-CLAY SOILS				
# 200	15 MX 25 MX 10 MX							40 MX 41 MM 40 MX 41 MM 40 MX 41 MM 40 MX 41 MM 40 MX 41 MM 40 MX 41 MM							MUCK, PEAT				
LIQUID LIMIT	6 MAX.							10 MAX. 10 MAX. 11 MM 11 MM 10 MX 10 MX 11 MM 11 MM							WITH LITTLE OR MODERATE AMOUNT OF ORGANIC MATTER				
PLASTIC INDEX	0							4 MAX. 8 MAX. 12 MX 16 MX 20 MX							HIGHLY ORGANIC SOIL				
GROUP INDEX	0							0											
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL & SAND							SILTY OR CLAYEY GRAVEL & SAND							SILTY CLAYEY SOILS				
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD							FAIR TO POOR							FAIR TO POOR POOR UNSUITABLE				

P.I. OF A-7-G < L.L. -30; P.I. OF A-7-G > L.L. -30

### CONSISTENCY OR DENSENESS

PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH
COARSE GRAINED SOILS	VERY LOOSE LOOSE MED. DENSE DENSE VERY DENSE	LESS THAN 4 B.P.F. 4 TO 10 10 TO 30 30 TO 50 MORE THAN 50	N/A
FINE GRAINED SOILS	VERY SOFT SOFT MED. STIFF STIFF VERY STIFF HARD	LESS THAN 2 B.P.F. 2 TO 4 4 TO 8 8 TO 15 15 TO 30 MORE THAN 30	LESS THAN .25 TSF 0.25 TO 0.5 0.5 TO 1.0 1.0 TO 2.0 2.0 TO 4.0 MORE THAN 4.0

1 SEE STANDARD PENETRATION TEST

### TEXTURE OR GRAIN SIZE

U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.0	0.42	0.25	0.075	0.053

BOULDER	COBBLE	GRAVEL	COARSE SAND	MED. SAND	FINE SAND	SILT	CLAY
GRAIN SIZE MM	305	76	2	0.6	0.25	0.2	.05
SIZE IN.	12"	3"					.005

### SOIL MOISTURE SCALE (ATTERBERG LIMITS)

SOIL MOISTURE SCALE (ATTERBERG LIMITS)	PHYSICAL STATE	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
LL - LIQUID LIMIT	LIQUID	SATURATED	VERY WET, USUALLY FROM BELOW GROUND WATER TABLE
PL - PLASTIC LIMIT (P.I.)	SEMI-SOLID	WET (W)	REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
OM - OPT. MOISTURE	SOLID	MOIST (M)	AT OR NEAR OPTIMUM MOISTURE
SL - SHRINKAGE LIMIT		DRY (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

### PLASTICITY

NONPLASTIC	PLASTICITY INDEX	DRY STRENGTH
LOW PLASTICITY	0-5	VERY LOW
MED. PLASTICITY	6-15	SLIGHT
HIGH PLASTICITY	16-25	MEDIUM
	26 OR MORE	HIGH

### COLOR

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

### GRADATION

WELL-GRADED INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.  
UNIFORM INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)  
GAP-GRADED INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.

### ANGULARITY OF GRAINS

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

### MINERALOGICAL COMPOSITION

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

### COMPRESSIBILITY

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 30
MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

### ROCK DESCRIPTION

IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:

TERM	SYMBOL	DESCRIPTION
WEATHERED ROCK (HWR) (SWR)		MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. VALUES >100 B.P.F. BUT <S.P.T. REFUSAL.
HARD ROCK (HR)		MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. REFUSAL.
CORED ROCK		MATERIAL SUCH THAT IT CANNOT BE PENETRATED BY POWER AUGER, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING SAMPLE.

\* S.P.T. REFUSAL (ASTM) = 1" OF PENETRATION PER 50 BLOWS.  
AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. WHEN ROCK IS CORED, THE HARD ROCK SYMBOL IS SHOWN TO THE DEPTH CORED. A FULL DESCRIPTION OF ROCK USING APPROPRIATE TERMS (SEE DEFINITION OF TERMS)-INCLUDES PERCENT OF CORE RECOVERY (% REC) AND ROCK QUALITY DESIGNATION (RQD).

### GROUND WATER

DATE: WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING-  
DATE: STATIC WATER LEVEL AFTER 24 HOURS  
DATE: PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA  
SPR: SPRING

### MISCELLANEOUS SYMBOLS AND ABBREVIATIONS

	ROADWAY EMBANKMENT WITH SOIL DESCRIPTION		ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS
	SOIL SYMBOL		CORE BORING
	AUGER BORING		PIEZOMETER INSTALLATION
	TEST BORING		SLOPE INDICATOR INSTALLATION
	STRIKE AND DIP OF BEDS		INFERRED SOIL BOUNDARIES
	SPT N-COUNT		APPARENT DIP (NORMAL TO)

SAMPLE DESIGNATION: ST - 3 - SHELBY TUBE SAMPLES  
S - BULK SAMPLE  
SS - SPLIT SPOON SAMPLE  
WS - WASH BORING SAMPLE

### TERMS AND DEFINITIONS

ALLUVIUM (alluv.) - Soils which have been transported by flowing water.  
APPARENT DIP - The dip of rock strata not perpendicular to strike.  
AQUIFER - A water-bearing formation or strata.  
AUGER REFUSAL (A.R.) - Point at which power augers will not actually or practically penetrate.  
BEDDED - Soil or rock lying in a position essentially parallel.  
BEDROCK - Rock of relatively great thickness and extent in its original location.  
CALCAREOUS (calc.) - Soils which contain appreciable amounts of calcium carbonate.  
COHESIVE SOIL - A soil that when unconfined has considerable dry strength and significant cohesion when submerged.  
COLLUVIUM - Rock fragments mixed with soil deposited by gravity on slope or at bottom of slope.  
CORE RECOVERY (% Rec.) - Total length of all rock divided by total length of core run expressed as a percentage.  
COQUINA - A rock type composed essentially of marine shells cemented by calcium carbonate.  
DIKE - Igneous rock intrusive which is narrow compared with its other dimensions.  
DIP - The angle between a bedding plane, joint plane or fault plane and the horizontal, measured perpendicular to the strike.  
DUMPS - Uncovered deposits of waste materials such as wood, masonry debris or garbage.  
FAULT - A break in the continuity of a body of rock, attended by a movement on either or both sides of the break.  
FINES - Portion of a soil finer than No. 200 U. S. Standard Sieve.  
FISSILITY OR FISSILE - A property of splitting easily along closely spaced parallel planes.  
FLOAT - Rock fragments on surface near their original position dislodged from parent material.  
FLOODPLAIN - Land bordering a stream, built of sediments deposited by the stream.  
FORMATION - A mappable unit that can be recognized and traced in the field.  
FRACTURE - A crack large enough to be visible to unaided eye.  
FRIABLE - Easy to break or crumble.  
GRANULAR SOIL - Soil that when unconfined has little or no dry strength and has little or no cohesion when submerged.  
GROUND WATER - (Free Water) (G. W.) - Water that is free to move through soil mass under influence of gravity.  
GROUNDWATER LEVEL - Level at which the pressure in water is zero with respect to the atmospheric pressure.  
HARDPAN - A general term used to describe a hard cemented soil layer which does not soften when wet.  
INDURATED - Earth material hardened by heat, pressure or cementation.  
INTERBEDDED - Alternating lenses or layers of soil and/or rock materials.  
JOINT - Fracture in rock along which no appreciable movement has occurred.  
LAMINATED - Very thin alternating layers less than 1" in thickness.  
LAYER - Subject material greater than 1" thick.  
LEDGE - A shelf-like ridge or projection of rock whose thickness is small compared to its lateral extent.  
LENS - A body of soil or rock that thins out in one or more directions.  
MARL - A non-indurated, calcareous deposit of clays, silts and sand, often containing shells.  
MICACEOUS SOIL (mic.) - A soil or rock containing an appreciable amount of mica.  
MUCK (mk.) - An highly organic soil of very soft consistency, generally found on tidal flats, lakes or stream floodplains.  
PEAT (pt) - A fibrous mass of organic matter in various stages of decomposition.

### ABBREVIATIONS

Boulder - bldr.	Organic - org.
Clay - cl.	Plastic Limit - P.L.
Cobble - cob.	Plasticity Index - P.I.
Coarse - cse.	Porosity - n
Fine - f.	Sand - sd.
Fossiliferous - foss.	Saturated - sat.
Fractured - frac.	Silt, Silty - si.
Gravel - gr.	Slightly - sli.
Liquid Limit - LL	Specific Gravity - G <sub>s</sub>
Medium - med.	Unconfined Compressive Strength - qu
Moisture Content - w	Unit Weight (wet unit weight) - γ
Mottled - mot.	Dry Unit Weight - γ <sub>d</sub>
Optimum Moisture - OM	Saturated Unit Weight - γ <sub>sat</sub>
	Void Ratio - e
	Very - V.
	Estimated - Est.

### EQUIPMENT USED ON SUBJECT PROJECT

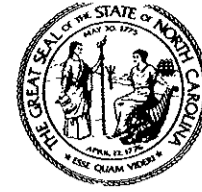
DRILL UNITS:  
 MOBILE B-52  MOBILE B-56  CME - 550  PORTABLE HOIST

AUGER TOOLS:  
 6" CONTINUOUS FLIGHT W/  HARD FACED FINGER BITS  CLAY BITS  
 8" HOLLOW AUGERS  TUNG.-CARBIDE INSERTS

CORE BORING TOOLS:  -AX  -BX  -NX

HAND TOOLS:  POST HOLE DIGGER  HAND AUGER  SOUNDING ROD

NOTES:



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
P.O. BOX 25201  
RALEIGH 27611-5201

JAMES G. MARTIN  
GOVERNOR  
September 8, 1992

DIVISION OF HIGHWAYS

THOMAS J. HARRELSON  
SECRETARY

WILLIAM G. MARLEY, JR., P.E.  
STATE HIGHWAY ADMINISTRATOR

STATE PROJECT: 6.299001T R-2111A  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44) Interchange  
in Tarboro to East of NC 42

SUBJECT: Geotechnical Report - Inventory

The project consists of upgrading US 64 to a four (4) lane divided facility along a new location. The project begins at the US 64/US 258 interchange at Tarboro and proceeds 9.98 miles in an easterly direction to a point northeast of Conetoe and 0.49 mile east of NC 42. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

Line	Station
-L1- WBL	45+00 to 117+00
-L1- EBL	73+20 to 107+94
-L1-	117+00 to 117+76
-L1- Rev.	117+76 to 202+48
-L1-	202+48 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 59+50

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp A Rev.	0+00 to 11+57
Ramp E	12+63 to 28+11

-6-

Physiography and Geology

The project corridor is located in eastern Edgecombe County between Tarboro and a point northeast of Conetoe. Topography is typical of the Coastal Plain Physiographic Province, and ranges from nearly level to moderately sloping. Elevations along the project range from a high of 80+ feet at the beginning of the project to a low of 10+ feet in the Tar River Channel. Elevations on the Tar River flood plain and adjacent terrace range from 20 to 40 feet M.S.L. The remainder of the project generally lies at an elevation between 40 and 60 feet.

The project corridor is drained by the Tar River and several small tributary streams which include Cromwell Canal, Knight Canal, Mitchell Swamp Canal, Ballahack Canal and Conetoe Creek.

Surface drainage conditions along the project corridor range from poor in the flood plains and nearly level interstream areas to good in areas with moderate topographic relief. However, most of the project generally has only fair to poor surface drainage. In areas with abundant surficial granular soils, much of the water drains by infiltration into the underlying sand.

The geology of the project area generally consists of coastal plain sand and clay beds overlying the Yorktown Formation of Upper Pliocene age and the Cape Fear Formation of Upper Cretaceous age. The Yorktown Formation within the project area typically lies at an elevation of 25 to 35 feet and consists of interbedded marine sands and clays. Thickness of the Yorktown ranges from less than 5 feet to 15 feet or more. The Cape Fear Formation underlies the Yorktown Formation and consists of sand and clay beds of probable deltaic origin.

Ground Water Properties

Ground water data was collected during the fall, winter and spring seasons of 1991-1992 during average rainfall conditions. Ground water is high along most of the project corridor with the water table typically lying at a depth of 6 feet or less. Areas where ground water depths exceed 6 feet are mainly located on the prominent bluff and wide fluvial terrace adjacent to the Tar River.

Soil Properties

Based on origin and occurrence, three main soil groups were encountered along the project corridor.

1. Upland Soils

Most of the upland soils found along the project corridor were formed from sediments deposited by marine, fluvial and eolian action in the geologic past. Upland soils typically consist of fine to

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NC 33 (-Y6-) Interchange

Line	Station
Ramp A	0+00 to 17+89
Ramp B	0+00 to 15+06
Ramp C	0+00 to 22+07
Ramp D	0+00 to 14+48

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	0+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	0+00 to 17+57

Areas of Special Geotechnical Interest

1. The following sections were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

Line	Station
-L1- WBL	64+50 to 69+00
-L1- WBL	70+00 to 77+25
-L1- WBL	79+50 to 85+00
-L1- WBL	113+00 to 114+00
-L1- EBL	92+00 to 96+50
-L1- EBL	100+00 to 106+00
-L1- Rev.	130+25 to 141+00
-L1- Rev.	161+00 to 175+00

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coarse sand (A-2-4, A-3, A-1-b), clayey sand (A-2-6), sandy silt (A-4) and sandy clay (A-6, A-7-6). The granular soils occur mainly as surficial beds and interbeds with clay. Cohesive soils occur as topsoil, surficial beds and as interbeds with sand. Typically, the granular soils range from a very loose to medium dense compactness and the cohesive soils range in consistency from soft to stiff. Engineering properties generally range from good to excellent for the granular material and from fair to poor for cohesive soils. The clay granular soils typically have between 50 and 90 percent passing the No. 200 sieve, high moisture contents and plasticity indices ranging from slight to high. Clayey sands (A-2-6) generally exhibit slight to medium plasticity indices.

2. Stream Terrace Soils

Stream terrace soils are found in a band approximately 0.5 miles wide roughly paralleling the eastern boundary of the Tar River flood plain. Granular soils consisting of fine to coarse sand with gravel (A-2-4, A-3, A-1-b) are the predominant soil type in this area. These soils exhibit excellent engineering properties.

3. Flood Plain Soils

Flood plain soils are found associated with major drainage features along the project corridor. Typically, the flood plain soils consist of silty and fine sandy clay (A-6, A-7-5, A-7-6), clayey sandy silt (A-4) and fine to coarse sand (A-2-4, A-1-b). Soils in the Tar River flood plain generally do not have significant organic contents. However, the flood plains of several tributary streams contain soils with slight to moderate organic contents. Engineering properties of flood plain soils are generally poor.

Rootmat in wooded portions of the project averages 0.2 feet in thickness.

Geotechnical Descriptive Analysis of the Project

-L1- WBL Station 45+00 to 81+00

This segment begins on moderately sloping upland topography west of the Tar River and proceeds in an easterly direction crossing the Tar River and the Tar River flood plain. Soils on the upland section typically consist of 1 to 6 feet or more of very loose to loose (2 to 4 BPF) fine to coarse sand (A-2-4) overlying medium stiff to very stiff (7 to 16 BPF) silty sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 16 to 24 and a natural moisture content of 16 percent. Flood plain soils generally occur from station 65+00 to 81+00 and consist of 1 to 6 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6) underlain by loose to medium dense (7 to 24 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils have plasticity indices which range from 13 to 38. A sample of flood plain clay was tested at 42 percent natural moisture.

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Line Station

-L1- Rev.	177+50 to 184+50
-L1- Rev.	191+00 to 202+48
-L1-	202+97 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 54+00

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp E	18+50 to 26+00

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	0+00 to 17+89
Ramp B	2+00 to 8+50
Ramp B	11+00 to 15+06
Ramp C	1+00 to 14+00
Ramp C	18+00 to 20+00
Ramp D	0+00 to 2+50
Ramp D	6+00 to 9+00
Ramp D	11+00 to 14+48

SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

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The water table generally lies at a depth of 6 feet or more on the upland. In the Tar River flood plain, ground water depths vary considerably depending on rainfall conditions. Typically, either the area is flooded or ground water levels are at a depth of 3 feet or less.

-L1- WBL Station	81+00 to 117+00
-L1- EBL Station	73+20 to 107+94
-L1-	117+00 to 117+76
-L1- Rev. Station	117+76 to 185+00

This segment crosses the nearly level to moderately sloping Tar River alluvial terrace. Soils typically consist of very loose to medium dense (2 to 13 BPF) fine to coarse sand with gravel (A-2-4, A-3, A-1-b). The flood plain of a minor tributary stream between -L1- Rev. Station 181+25 and 184+25 contains up to 4 feet of moderately organic (9%) soft silty sandy clay (A-7-5) and very loose (2 BPF) clayey silty sand (A-2-5). The moisture content of a tested organic sample was near 60 percent. Ground water depths through this segment range from less than 1 foot to 6 feet or more.

-L1- Rev. Station	185+00 to 202+48
-L1-	202+97 to 327+00

This segment crosses nearly level to gently sloping topography. Soils typically consist of 0.5 to 3 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) or very loose (2 BPF) sand (A-2-4) underlain by 1 to 5 feet or more of soft to stiff (2 to 11 BPF) silty sandy clay (A-6, A-7-6). The clay soils generally have plasticity indices ranging from 15 to 34, and natural moisture contents of 16 to 32 percent. Loose to medium dense (4 to 20 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) underlies the clay soils. The surficial clay soils are absent in several areas along this segment where there is a slight rise in topographic relief. Very loose to medium dense (3 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) generally occurs in the slightly elevated areas. Ground water depths typically range from 1 to 6 feet through the segment, however, several poorly drained areas often contain standing water.

-L1- Station	327+00 to 367+60
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This segment crosses nearly level topography. Soils typically consist of very loose to medium dense (2 to 15 BPF) fine to coarse sand (A-2-4, A-3). Ground water was measured at depths ranging from 4 to 8 feet.

-L1- Station	367+60 to 442+00
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This segment crosses nearly level topography. Soils generally consist of 1 to 5 feet of very loose sand (2 BPF) or soft to medium stiff (2 to 4 BPF) clayey sandy silt (A-4) underlain by discontinuous

-4-

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	5+00 to 9+00
Ramp A	15+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	3+00 to 17+57

2. The following sections contain surficial clay soils with medium to high plasticity indices:

Line	Station
-L1- WBL	55+50 to 64+00
-L1- WBL	72+00 to 77+25
-L1- WBL	79+25 to 80+50

-L1- Rev. Station 185+00 to 200+50

-L1-	207+50 to 222+25
-L1-	225+25 to 231+00
-L1-	249+50 to 259+50
-L1-	261+50 to 275+25
-L1-	283+25 to 293+50
-L1-	299+50 to 327+00
-L1-	371+00 to 375+50
-L1-	419+50 to 435+00
-L1-	439+50 to 442+25
-L1-	450+00 to 502+50
-L1-	546+50 to 554+00

-Y5- Rev.	24+26 to 26+50
-Y12-	12+50 to 20+25
-Y12-	23+00 to 45+00
-Y13- Rev.	28+75 to 32+25
-Y13- Rev.	36+50 to 40+25
-Y15-	8+50 to 14+00
-Y16-	25+00 to 26+50

US 258 (-L- & -Y2-) Interchange

Line	Station
Ramp A Rev.	1+75 to 11+57
Ramp E	18+00 to 25+75

NC 33 (-Y6-) Interchange

Line	Station
Ramp A	10+50 to 15+00

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beds of medium stiff to stiff (5 to 15 BPF) silty sandy clay (A-6) and very loose to medium dense (2 to 30 BPF) fine to coarse sand (A-2-4, A-3). The surficial silt soils occurring between station 367+60 and 381+50 are slightly organic. The moisture content of a tested silt sample was near 30 percent and organic contents are estimated to be less than 5 percent. Clay soils through this section typically have plasticity indices ranging from 12 to 21 and natural moisture contents of 18 to 33 percent. Ground water depths typically range from 1 foot or less to 6 feet.

-L1- Station 442+00 to 453+00

This segment crosses moderately sloping topography. Soils generally consist of loose to medium dense (7 to 18 BPF) fine to coarse sand (A-2-4). Ground water depths typically range from 4 to 6 feet.

-L1- Station 453+00 to 501+25

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) underlain by interbedded medium stiff to stiff (6 to 11 BPF) silty sandy clay (A-6, A-2-6) and clayey sandy silt (A-4). Loose to medium dense (6 to 16 BPF) sand (A-2-4, A-1-b) underlies the cohesive soils. The clay soils have plasticity indices ranging from 15 to 34 and natural moisture contents of 22 to 26 percent. Ground water depths range from 1 to 6 feet or more.

-L1- Station 501+25 to 528+00

This segment crosses the flood plain of Conetoe Creek. Soils consist of 1 to 7 feet of very soft to soft, dark brown to black, moderately organic (5 to 10 percent), clayey fine sandy silt (A-4) and silty fine sandy clay (A-6, A-7-5, A-7-6). Moisture contents of tested organic samples typically range between 30 and 50 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 250 to 600 psf. An undisturbed (Shelby Tube) sample was taken in the cohesive soil and submitted for Triaxial CU and Consolidation testing. Loose to medium dense sand (A-2-4) underlies the organic soil. This area is either flooded or has ground water at a depth of 1 foot or less.

-L1- Station 528+00 to 554+00

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 to 3 feet of very loose (2 BPF) fine to coarse sand (A-2-4) and soft (3 BPF) clayey sandy silt (A-4) underlain by interbedded very loose to medium dense (2 to 8 BPF) fine to coarse sand (A-2-4, A-3) and medium stiff to stiff (7 to 13 BPF) sandy clay (A-6, A-7-6). The clay soils have plasticity indices ranging from 12 to 21 and natural moisture contents of 16 to 19 percent. Ground water was measured at depths ranging from 1 to 5 feet.

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	3	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

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SR 1523 (-Y12-) Interchange

Line	Station
Ramp A	8+50 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	8+50 to 17+98

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	1+50 to 8+00
Ramp D	0+00 to 4+50

NC 42 (-Y16-) Interchange

Line	Station
Ramp A	7+50 to 8+50
Ramp D	3+25 to 12+50

3. The following sections contain slightly to moderately organic soils:

Line	Station
-L1- Rev.	181+25 to 184+25
-L1-	367+60 to 381+50
-L1-	501+25 to 528+00

SR 1524 (-Y13- Rev.) Interchange

Line	Station
Ramp A	0+00 to 1+50
Ramp D	3+00 to 4+50
Ramp D	6+50 to 7+50

NC 42 (-Y16-) Interchange

Line	Station
Ramp B	0+00 to 14+75
Ramp C	0+00 to 12+75

-Y5- Rev. Station 24+26 to 29+81

Topography is nearly level. At the beginning of the relocated segment, soils consist of approximately 2 feet of soft to medium stiff fine sandy clay (A-6) underlain by loose to medium dense sand (A-2-4, A-1-b). The clay has a plasticity index of 22 and a moisture content of 35 percent. From station 26+50 to the end of the segment, soils consist of loose to medium dense sand (A-2-4, A-1-b). Ground water was measured at depths ranging from 0.5 to 4.0 feet.

-Y12- Station 12+50 to 45+00

This segment follows the alignment of SR 1523 (Shiloh Road). Soils generally consist of 1 to 3 feet of loose sand (A-2-4) fill underlain by 3 to 5 feet of interbedded medium stiff (7 BPF) sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The cohesive soils are underlain by medium dense (12 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils typically have plasticity indices ranging from 16 to 44 and natural moisture contents of 22 to 33 percent. Ground water was measured at depths ranging from 3 to 8 feet.

-Y13- Rev. Station 10+00 to 59+87

This relocated segment crosses nearly level to very gently sloping topography. Soils typically consist of 1 to 2 feet of very loose, (1 to 2 BPF) fine to coarse sand (A-2-4) or soft sandy silt (A-4) underlain by loose to medium dense (5 to 10 BPF) fine to coarse sand (A-2-4, A-3). Portions of this segment contain interbeds of soft to medium stiff (4 to 5 BPF) silty sandy clay (A-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 13 to 18 and natural moisture contents of 20 to 28 percent. Ground water was measured at depths ranging from 2 to 4 feet.

-Y14- Station 14+00 to 35+50

This segment follows the alignment of SR 1526. Soils generally consist of 1 to 5 feet of loose silty sand, soft sandy silt (2 BPF) and medium stiff sandy clay (A-6) underlain by loose to medium dense (6 to 17 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). Ground water was measured at a depth of 3 to 5 feet.

-Y15- Station 8+50 to 14+89

This segment follows the alignment of SR 1524. Soils typically consist of 2 to 6 feet of loose to medium dense clayey sand (A-2-4) underlain by medium stiff to stiff sandy clay (A-6). Ground water was measured at depths ranging from 4 to 6 feet.

Culverts

Based on available Culvert Survey and Hydraulic Design Reports, reinforced concrete box culverts (RCBC) are proposed at the following locations:

- 1. Cromwell Canal at -L1- Station 264+92
2. Mitchell Swamp Canal at -L1- Station 323+26
3. Ballahack Canal at -L1- Station 399+41
4. Conetoe Creek at -L1- Station 509+28

Borings made in the immediate vicinity of the above sites show that soils underlying the proposed culvert beds should consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b).

California Bearing Ratio (CBR) Samples

Bulk samples were taken at the following locations along the project and submitted for testing:

Table with columns: Sample, Station, Depth. Rows for CBR-1 and CBR-2.

Respectively submitted,

Signature of E. A. Witort

E. A. Witort, Project Geologist

-Y16- Station 25+00 to 59+50

This segment follows the alignment of NC 42. Soils typically consist of loose to medium dense clayey fine to coarse sand (A-2-4, A-2-6) with interbeds of very loose (2 BPF) silty sand (A-2-4), soft sandy silt (A-4) and medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

US 258 (-L- & -Y2-) Interchange

Ramp A Rev. Station 0+00 to 11+57

This segment closely parallels existing Ramp A at the US 258 interchange. Soils consist of loose to medium dense fine to coarse sand and clayey sand (A-2-4), stiff clayey sandy silt (A-4) and very stiff sandy silty clay (A-6, A-7-6). The clay has a plasticity index of 41 and a natural moisture content of 27 percent. The water table lies at a depth of 8 feet or more.

Ramp E Station 12+63 to 28+11

This segment crosses a portion of the Tar River flood plain. Soils typically consist of 1 to 7 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6) underlain by medium dense fine to coarse sand (A-2-4, A-1-b). The clay soils typically have plasticity indices ranging from 13 to 38. A sample of clay was tested at 42 percent natural moisture. Ground water depths through this section vary with the amount of rainfall and the level of the Tar River. During this investigation, ground water depths ranged from 0 to 6 feet or more.

NC 33 (-Y6-) Interchange

Ramp A Station 0+00 to 17+89

Ramp B Station 0+00 to 15+06

Ramp C Station 0+00 to 22+07

Ramp D Station 0+00 to 14+48

This interchange area is located on nearly level to gently sloping topography. Soils typically consist of very loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) with some interbeds of medium stiff to stiff clayey sandy silt (A-4) and silty sandy clay (A-6). Ground water depths range from 2 to 6 feet or more.

SR 1523 (-Y12-) Interchange

Ramp A Station 0+00 to 19+65

This segment crosses nearly level topography. Soils generally consist of 1 1/2 feet of very loose silty sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 2 feet of medium stiff silty sandy clay (A-6, A-7-6), clayey sandy silt (A-4) or clayey sand (A-2-4). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soils typically have plasticity indices of 17 to 28 and natural moisture contents of 24 to 29 percent. Ground water was measured at depths ranging from 0 to 3 feet.

Ramp B Station 0+00 to 17+83

Ramp C Station 0+00 to 16+44

This segment crosses nearly level topography. Soils typically consist of 1 to 2 feet of soft clayey sandy silt (A-4) underlain by 1 to 5 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6). Medium dense fine to coarse sand (A-2-4) underlies the surficial soils. The clay soils typically have plasticity indices of 16 to 29 and natural moisture contents of 21 to 29 percent. Ground water was measured at depths ranging from 1 to 5 feet.

Ramp D Station 0+00 to 17+98

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of very loose clayey sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 3 feet of soft to medium stiff sandy clay (A-6). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soil has plasticity indices of 16 to 19 and natural moisture contents of 21 to 24 percent. Ground water was measured at a depth of 1 to 3 feet.

SR 1524 (-Y13- Rev.) Interchange

Ramp A Station 0+00 to 17+05

This segment crosses nearly level to very gently sloping topography. Surficial soils consist of 2 1/2 feet of soft slightly organic clayey sandy silt (A-4) to station 1+50ft, and 3 1/2 feet of medium stiff sandy clay (A-6) or clayey sandy silt (A-4) to station 8+00ft. Loose to medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The remaining soils throughout this segment consist of very loose to coarse granular deposits (A-2-4). The clay soils have plasticity indices of 12 to 17 and natural moisture contents of 17 to 24 percent. Ground water was measured at depths ranging from 2 to 5 feet.

Ramp B Station 0+00 to 18+71

Ramp C Station 0+00 to 17+29

This segment crosses nearly level topography. Soils consist of 1 to 2 feet of very loose to loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense fine to coarse sand (A-2-4, A-3). Ground water was measured at a depth of 3 to 5 feet.

Ramp D Station 0+00 to 17+83

This segment crosses nearly level to gently sloping topography. Soils to station 7+50ft typically consist of 0.5 to 3 feet of soft, slightly organic clayey sandy silt (A-4) and very loose silty sand (A-2-4) underlain by medium stiff sandy clay. Loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) underlies the surficial soils. Soils through the remainder of the segment consist of very loose to medium dense fine to coarse sand (A-2-4, A-3). The clay soils have plasticity indices of 13 to 17 and natural moisture contents of 17 to 19 percent. The water table typically lies at a depth of 3 to 4 feet.

NC 42 (-Y16-) Interchange

Ramp A Station 0+00 to 16+31

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 1/2 feet of very loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense silty and clayey fine to coarse sand (A-2-4) with interbeds of medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

Ramp B Station 0+00 to 18+00

This segment is located in the flood plain of Conetoe Creek to station 15+00ft and on very gently sloping upland to station 18+00ft. Flood plain soils generally consist of up to 7 feet of very soft to soft moderately organic (6%) clayey sandy silt (A-4) and silty sandy clay (A-6) underlain by loose to medium dense sand (A-2-4). The moisture content of tested organic samples range from 24 to 65 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 550 to 1400 psf. Upland soils consist of loose to medium dense silty and clayey fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. In the flood plain, water is typically near or at the ground surface.

Ramp C Station 0+00 to 17+92

This segment is located in the flood plain of Conetoe Creek to station 12+75 and on very gently sloping upland to station 17+92. Flood plain soils generally consist of up to 3 feet of very soft to soft moderately organic (10%) clayey sandy silt (A-4) underlain by medium stiff sandy clay, clayey sandy silt, and loose to medium dense fine to coarse sand (A-2-4, A-3). Moisture content of a tested organic sample is near 36 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 600 to 1100 psf. Upland soils consist of very loose to medium dense fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. On the flood plain, water is typically near or at the ground surface.

Ramp D Station 0+00 to 17+57

This segment crosses nearly level topography. Soils consist of 1 1/2 feet of very loose fine to coarse sand (A-2-4) or soft clayey sandy silt (A-4) underlain by interbedded loose to medium dense sand (A-2-4, A-2-6) and medium stiff to stiff silty sandy clay (A-6, A-7-6). The clay soils have plasticity indices of 12 to 21. A sample of clay was tested at 16 percent natural moisture. Ground water depths range from 2 to 6 feet or more.

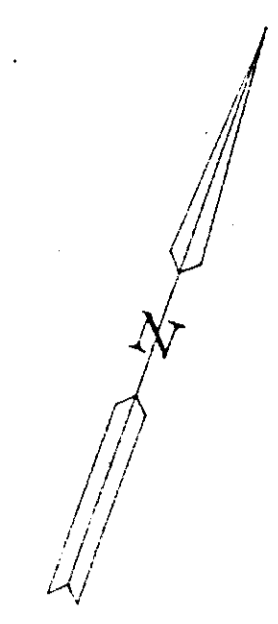
Summary table for PROJECT 6.29905 T (R-2111AB) showing excavation and embankment volumes for various stations and materials like rock, earth, and borrow.

Summary table for PROJECT 6.29905 T (R-2111AB) showing excavation and embankment volumes for various stations and materials like rock, earth, and borrow.

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900 ST	5	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

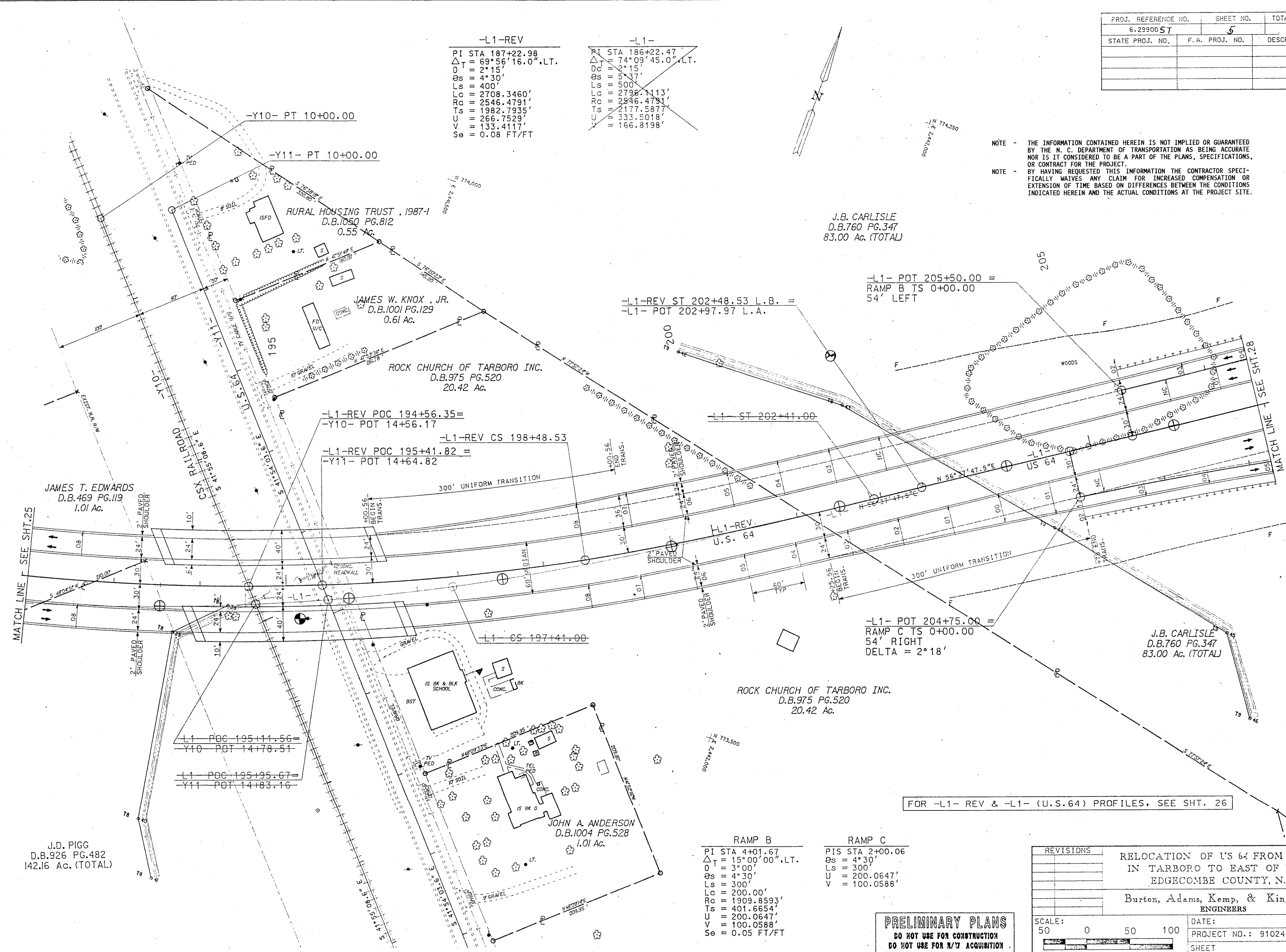
**-L1-REV**  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0"$  LT.  
 $D = 2^{\circ}15'$   
 $\theta_s = 4^{\circ}30'$   
 $L_s = 400'$   
 $L_c = 2708.3460'$   
 $R_c = 2546.4791'$   
 $T_s = 1982.7935'$   
 $U = 266.7529'$   
 $V = 133.4117'$   
 $S_e = 0.08$  FT/FT

**-L1-**  
 PI STA 186+22.47  
 $\Delta T = 74^{\circ}09'45.0"$  LT.  
 $D = 2^{\circ}15'$   
 $\theta_s = 5^{\circ}37'$   
 $L_s = 500'$   
 $L_c = 2796.1113'$   
 $R_c = 2546.4791'$   
 $T_s = 2177.5877'$   
 $U = 333.5018'$   
 $V = 166.8198'$



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR CONTRACT FOR THE PROJECT.  
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J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)



MATCH LINE SEE SHT. 25

MATCH LINE SEE SHT. 28

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

**RAMP B**  
 PI STA 4+01.67  
 $\Delta T = 15^{\circ}00'00"$  LT.  
 $D = 3^{\circ}00'$   
 $\theta_s = 4^{\circ}30'$   
 $L_s = 300'$   
 $L_c = 200.00'$   
 $R_c = 1909.8593'$   
 $T_s = 401.6654'$   
 $U = 200.0647'$   
 $V = 100.0588'$   
 $S_e = 0.05$  FT/FT

**RAMP C**  
 PIS STA 2+00.06  
 $\theta_s = 4^{\circ}30'$   
 $L_s = 300'$   
 $U = 200.0647'$   
 $V = 100.0588'$

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/17 ACQUISITION

FOR -L1- REV & -L1- (U.S. 64) PROFILES, SEE SHT. 26

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900ST	6	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

-L1- REV. (U.S. 64)

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SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	% ORGANIC
						C. SAND	F. SAND	SILT	CLAY			
S-123	182+00	0-1.0	A-2-6(0)	40	15	43	23	16	18	35		
S-124	"	1.0-2.0	A-2-5(4)	44	13	33	20	19	28	48	32.5	
S-125	"	2.0-3.0	A-2-5(0)	42	NP	42	29	19	10	31	60.2	8.0
S-20	184+00	0-1.5	A-4(3)	23	6	25	32	25	18	48		
S-21	"	1.5-4.0	A-2-5(0)	42	NP	48	32	14	6	22		
S-22	"	5.0-6.5	A-1-6(0)	16	NP	78	17	3	2	5		
S-23	"	7.5-9.0	A-2-4(0)	23	6	54	23	9	14	21		

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-63	184+58	0-1.0	A-4(0)	19	2	20	36	32	12	54		
S-64	"	1.0-2.5	A-2-6(0)	51	30	6	19	31	44	32		
S-65	"	2.5-6.0	A-2-6(0)	37	22	55	21	7	17	25		

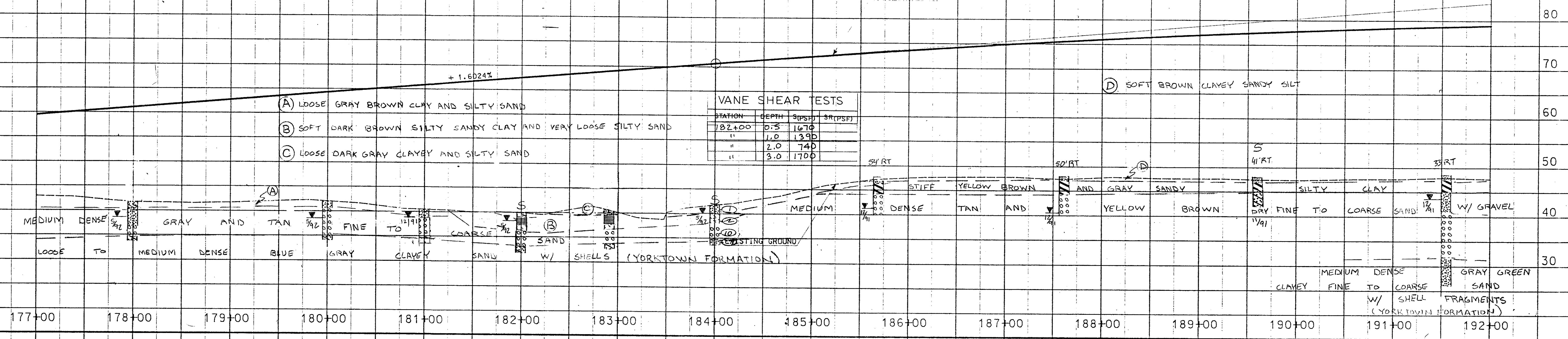
BM #18: RR SPIKE IN BASE OF 10' WILD CHERRY  
 LT - STA. 185+38.34' LT.  
 ELEV. 47.13'

VANE SHEAR TESTS

STATION	DEPTH	SIPSH	SR(PSP)
182+00	0.5	1670	
"	1.0	1390	
"	2.0	740	
"	3.0	1700	

- (A) LOOSE GRAY BROWN CLAY AND SILTY SAND
- (B) SOFT DARK BROWN SILTY SANDY CLAY AND VERY LOOSE SILTY SAND
- (C) LOOSE DARK GRAY CLAYEY AND SILTY SAND

(D) SOFT BROWN CLAYEY SANDY SILT



-L1-REV. & -L1- (U.S. 64)

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-1	195+11	0-1.5	A-2-4	18	NP	50	21	19	10	29		
S-2	195+11	3.8-5.3	A-2-6(0)	52	28	2	15	27	36	87	26.9	
S-3	195+11	8.8-10.3	A-3(0)	15	NP	55	40	3	2	6		
S-4	195+11	15.8-19.8	A-2-4(0)	24	8	40	39	9	12	21		
S-5	195+11	23.8-25.3	A-2-4(0)	31	10	15	59	18	8	30	24.2	
S-6	195+11	28.8-30.3	A-6(7)	37	14	7	42	39	30	24.2		
S-7	195+11	34.8-36.3	A-2-6(0)	44	22	4	20	46	30	39		
S-8	195+11	38.3-40.3	A-2-4(0)	24	NP	24	66	9	2	15		
S-9	195+11	48.8-50.3	A-2-4(0)	32	NP	13	72	13	2	9		

PVI STA. = 94+00.00  
 ELEV. = 86.72'  
 V.C. = 2000.00'  
 K = 713.57  
 Design Speed = 75

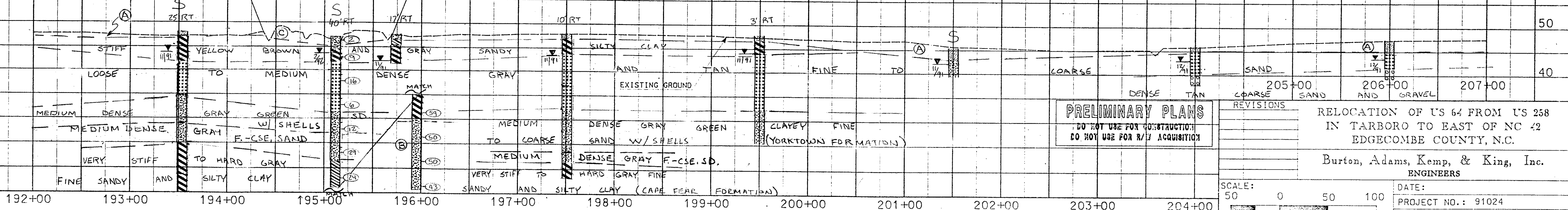
BM #21: RR SPIKE IN BASE OF 20'  
 LT - STA. 206+52.78' LT.  
 ELEV. 51.12'

- (A) SOFT BROWN CLAYEY SANDY SILT
- (B) DENSE TO VERY DENSE GRAY GREEN FINE SAND
- (C) VERY LOOSE BROWN CLAYEY SILTY SAND

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-173	193+53	0-1.0	A-4(2)	22	5	7	44	31	8	62		
S-178	193+65	1.0-6.5	A-7-6(0)	61	43	4	23	21	52	78		
S-179	193+73	6.5-13.5	A-3(0)	14	NP	43	5	5	7	8		
S-180	193+73	13.5-19.5	A-2-4(0)	21	NP	48	34	12	6	17		
S-181	193+73	19.5-23.5	A-2-4(0)	34	10	53	27	19	11	22	22.1	

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE	
						C. SAND	F. SAND	SILT	CLAY			
S-66	204+50	0-1.0	A-4(3)	27	5	23	32	31	14	50		
S-67	204+50	1.0-2.5	A-4(0)	18	2	30	33	23	14	41		
S-68	204+50	2.5-6.0	A-2-4(0)	18	NP	61	24	7	3	12		



PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

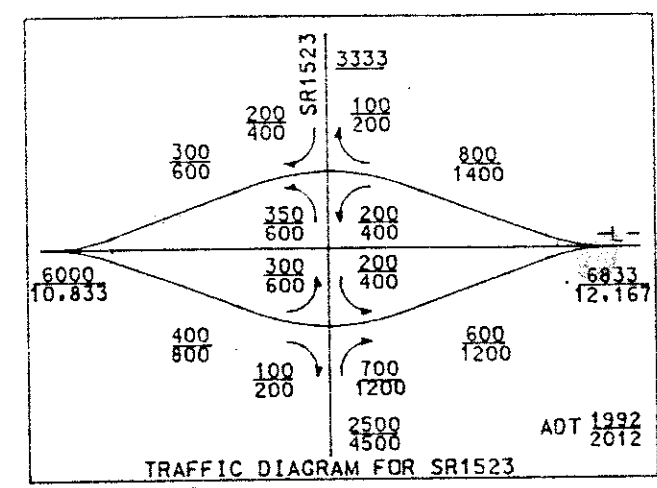
Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE:  
 PROJECT NO.: 91024  
 SHEET OF

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
12990057	7	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

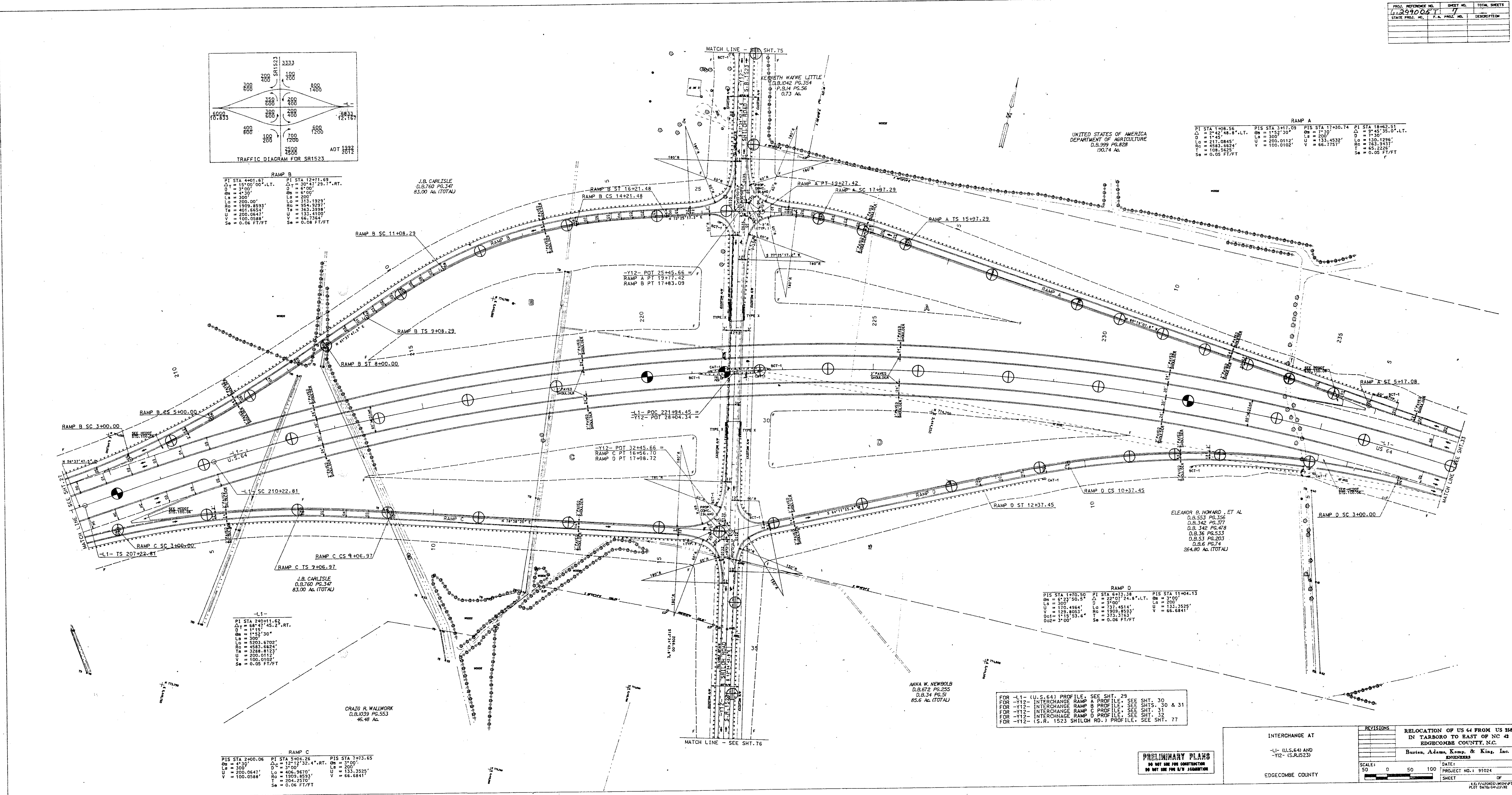


RAMP B

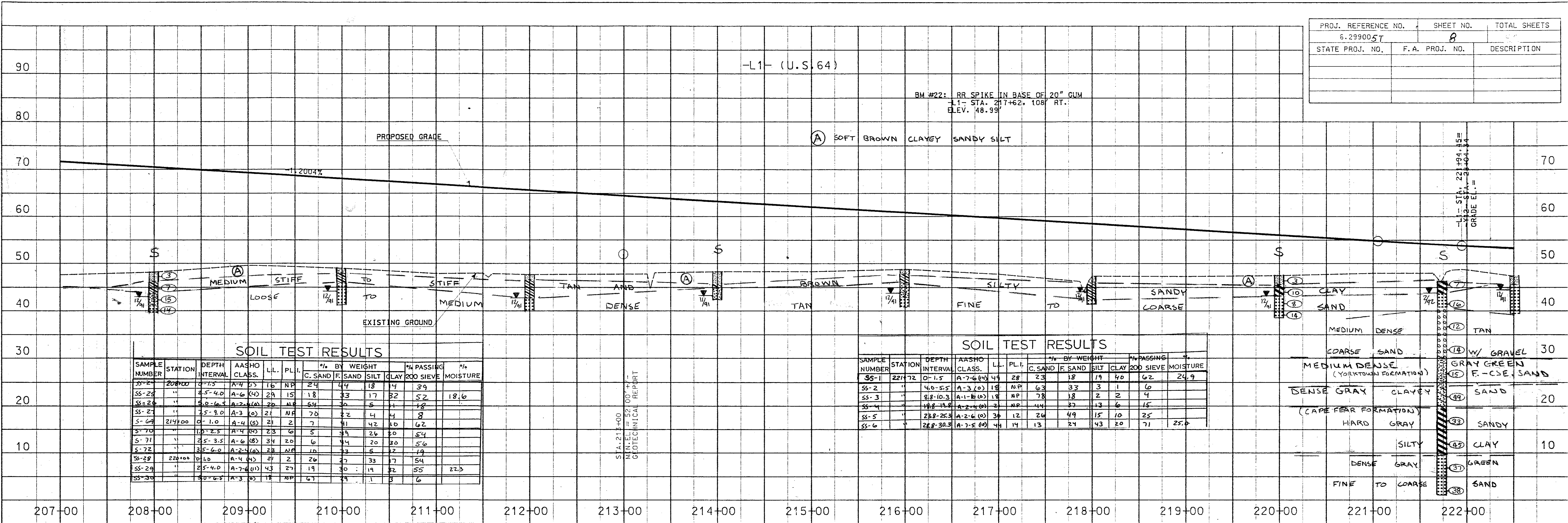
PI STA 4401.61	PI STA 12471.63
Δ = 120°00'00" L.T.	Δ = 20°47'23.77" R.T.
D = 3700'	D = 6700'
Δs = 4°30'	Δs = 6°00'
Ls = 300'	Ls = 200'
Rs = 200.00'	Rs = 131.1923'
Ro = 1909.8593'	Ro = 954.9297'
Ts = 401.8554'	Ts = 363.3938'
U = 200.0647'	U = 133.4100'
I = 100.0324'	I = 66.7364'
Se = 0.06 FT/FT	Se = 0.08 FT/FT

RAMP A

PI STA 1408.56	PI STA 3417.09	PI STA 11430.74	PI STA 18462.61
Δ = 27°42'48.87" L.T.	Δ = 115°37'30"	Δ = 7°00'	Δ = 8°45'36.07" L.T.
D = 1745'	D = 300'	D = 203.4532'	D = 120.1296'
Δs = 1°08'45"	Δs = 100°01'12"	Δs = 23°45'32"	Δs = 130.1296'
Rs = 4583.8624'	Rs = 100.0102'	Rs = 66.7757'	Rs = 763.2423'
Ts = 108.5625'	Ts = 100.0102'	Ts = 66.7757'	Ts = 45.2227'
U = 108.5625'	U = 100.0102'	U = 66.7757'	U = 45.2227'
Se = 0.05 FT/FT	Se = 0.05 FT/FT	Se = 0.05 FT/FT	Se = 0.05 FT/FT

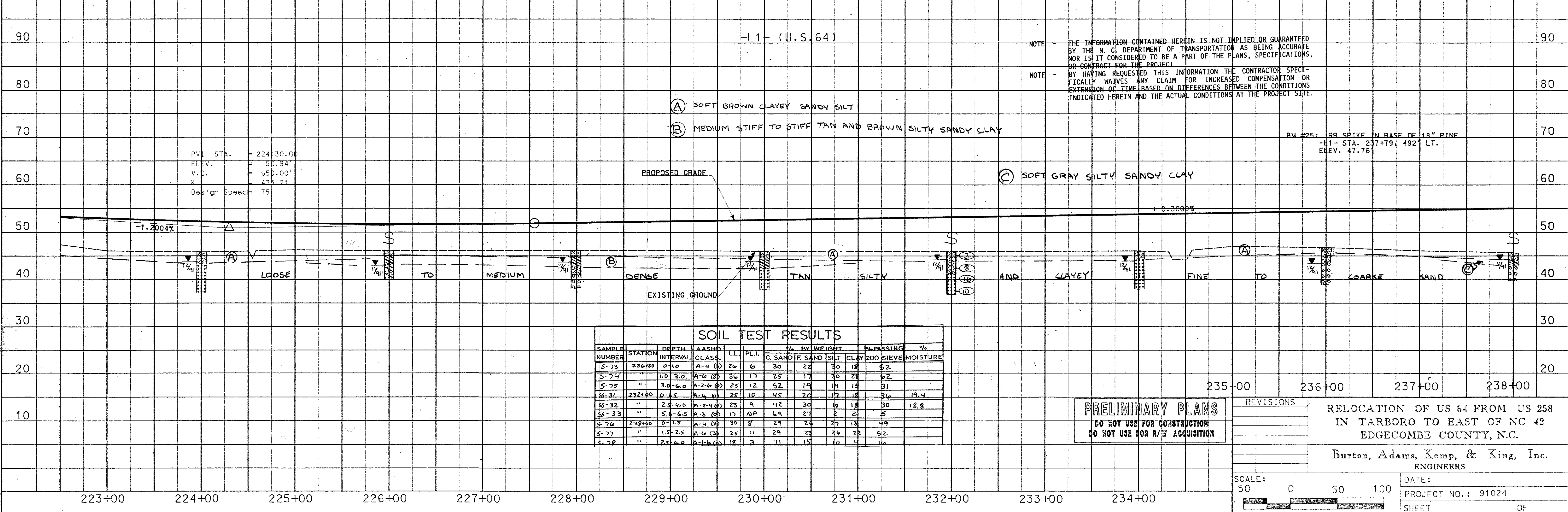


PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	8	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
SS-2	207+00	0-1.5	A-4 (S)	16	NP	24	44	18	14	39
SS-24	"	2.5-4.0	A-6 (M)	29	15	18	33	17	32	52
SS-26	"	5.0-6.5	A-2-4 (A)	20	NP	54	36	8	1	18
SS-27	"	7.5-9.0	A-3 (M)	21	NP	70	22	4	4	8
SS-69	217+00	0-1.0	A-4 (S)	21	2	7	41	42	10	62
SS-70	"	1.0-2.5	A-4 (M)	23	6	5	39	26	20	54
SS-71	"	2.5-3.5	A-6 (M)	34	2.0	6	44	20	20	5.0
SS-72	"	3.5-6.0	A-2-4 (M)	28	NP	10	73	5	2	19
SS-28	220+00	0-1.0	A-4 (M)	27	2	26	27	33	17	54
SS-29	"	2.5-4.0	A-7-6 (U)	43	27	19	30	19	32	55
SS-30	"	5.0-6.5	A-3 (M)	18	NP	67	24	1	3	6

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
SS-1	221+72	0-1.5	A-7-6 (M)	49	28	23	18	19	40	62
SS-2	"	4.0-5.5	A-3 (M)	18	NP	63	33	3	1	6
SS-3	"	6.8-10.3	A-1-B (M)	18	NP	78	18	2	2	4
SS-4	"	14.8-19.8	A-2-4 (M)	2	NP	44	37	13	6	15
SS-5	"	23.8-25.3	A-2-6 (M)	36	12	26	49	15	10	25
SS-6	"	28.8-30.3	A-7-5 (M)	44	14	13	24	43	20	71



SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
SS-73	226+00	0-1.0	A-4 (M)	26	6	30	24	30	18	52
SS-74	"	1.0-3.0	A-6 (M)	36	17	25	17	30	28	62
SS-75	"	3.0-6.0	A-2-6 (M)	25	12	52	14	14	15	31
SS-31	232+00	0-1.5	A-4 (M)	25	10	45	20	17	18	19.4
SS-32	"	2.5-4.0	A-2-4 (M)	23	9	42	30	10	18	30
SS-33	"	5.0-6.5	A-3 (M)	17	NP	69	27	2	2	5
SS-76	233+00	0-1.5	A-4 (M)	30	8	24	24	27	18	49
SS-77	"	1.5-2.5	A-6 (M)	25	11	29	23	24	22	52
SS-78	"	2.5-6.0	A-1-B (M)	18	3	71	15	10	4	16

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P.V.E. STA. = 224+30.00  
 ELEV. = 50.94  
 V.C. = 650.00'  
 K = 433.21  
 Design Speed = 75

BM #25: RR SPIKE IN BASE OF 18" PINE  
 -L1- STA. 237+79: 492' LT.  
 ELEV. 47.76'

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100

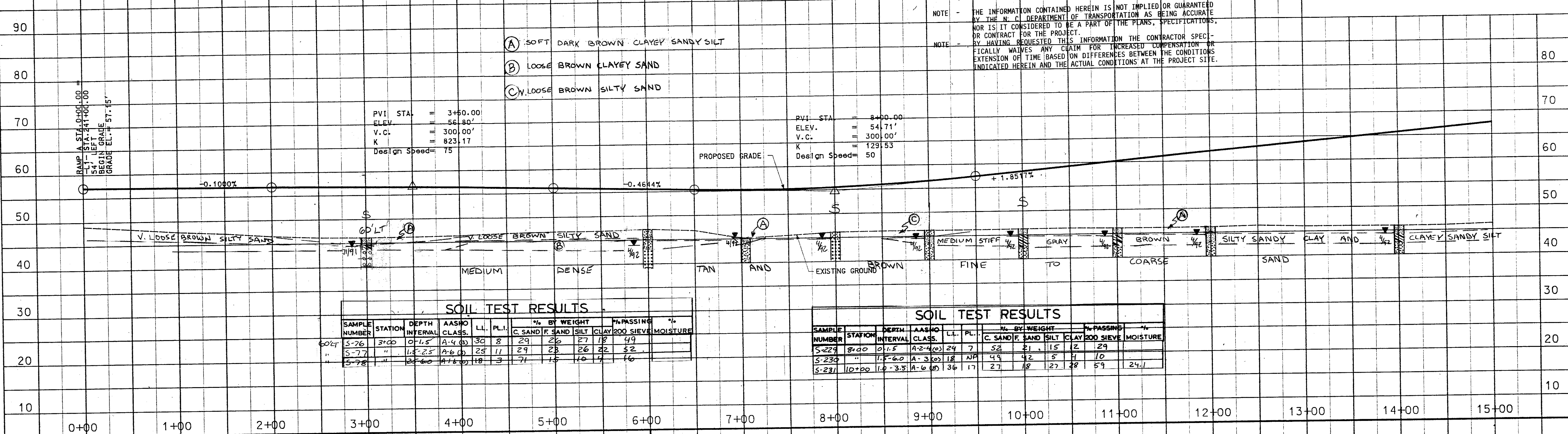
DATE: PROJECT NO.: 91024

SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.293005T	9	10
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-Y12- INTERCHANGE RAMP A



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PVI STA. = 3+00.00  
 ELEV. = 56.80'  
 V.C. = 300.00'  
 K = 823.17  
 Design Speed = 75

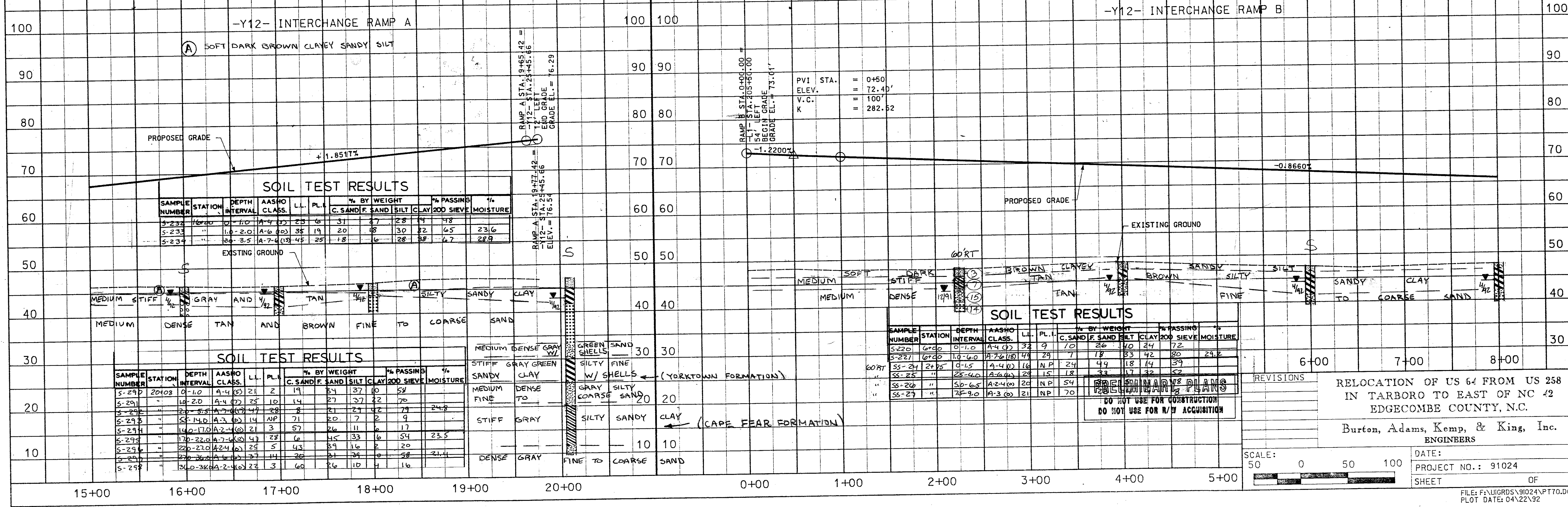
PVI STA. = 8+00.00  
 ELEV. = 54.71'  
 V.C. = 300.00'  
 K = 1291.53  
 Design Speed = 50

**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-76	3+00	0-1.5	A-4 (S)	30	8	29	26	27	18	49	
S-77	"	1.5-2.5	A-6 (S)	28	11	29	28	26	22	52	
S-78	"	2.5-6.0	A-7.6 (S)	18	3	7	15	10	12	16	

**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-229	8+00	0-1.5	A-2.4 (S)	29	7	52	21	15	2	29	
S-230	"	1.5-6.0	A-3 (S)	18	NP	49	42	5	4	10	
S-231	10+00	1.0-3.5	A-6 (S)	36	17	27	18	27	28	59	24.1



-Y12- INTERCHANGE RAMP A

-Y12- INTERCHANGE RAMP B

**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-232	16+00	0-1.0	A-4 (S)	25	6	31	27	28	11	78	
S-233	"	1.0-2.0	A-6 (S)	35	19	20	48	30	32	65	23.6
S-234	"	2.0-3.5	A-7.6 (S)	45	25	18	16	28	38	67	28.9

PVI STA. = 0+50  
 ELEV. = 72.40'  
 V.C. = 100'  
 K = 282.52

**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-220	6+00	0-1.0	A-4 (S)	32	9	10	26	40	24	72	
S-221	6+00	1.0-6.0	A-7.6 (S)	49	29	7	18	83	42	80	23.2
S-222	"	2+05	A-4 (S)	16	NP	24	44	18	14	39	
S-223	"	25-40	A-6 (S)	29	15	18	33	17	32	52	
S-224	"	50-65	A-2.4 (S)	20	NP	54					
S-225	"	75-90	A-3 (S)	21	NP	70					

**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-290	20+08	0-1.0	A-4 (S)	21	2	19	84	37	10	59	
S-291	"	1.0-2.0	A-4 (S)	25	10	14	27	37	22	70	
S-292	"	2.0-5.5	A-7.6 (S)	47	28	8	21	24	42	79	24.8
S-293	"	5.5-14.0	A-3 (S)	14	NP	71	20	7	2	9	
S-294	"	14.0-17.0	A-2.4 (S)	21	3	57	26	11	6	17	
S-295	"	17.0-22.0	A-7.6 (S)	40	47	28	6	45	33	6	54
S-296	"	22.0-27.0	A-2.4 (S)	29	5	43	39	16	2	20	
S-297	"	27.0-36.0	A-4 (S)	37	14	26	21	24	0	58	21.4
S-298	"	36.0-38.0	A-2.4 (S)	23	3	60	26	10	4	16	

DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

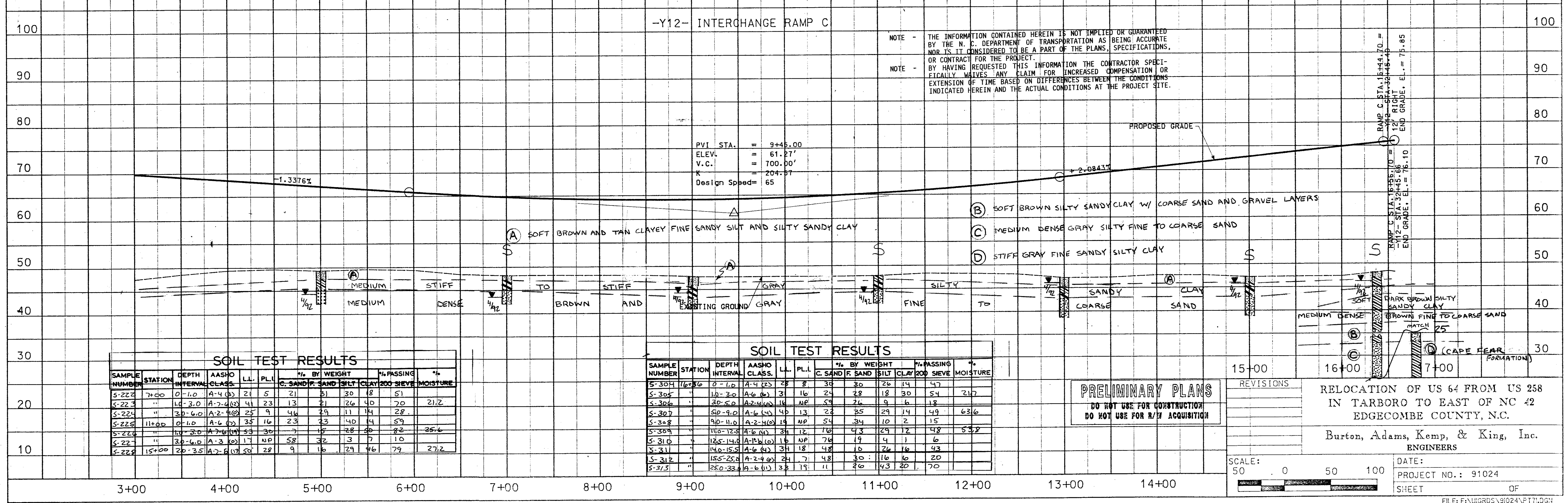
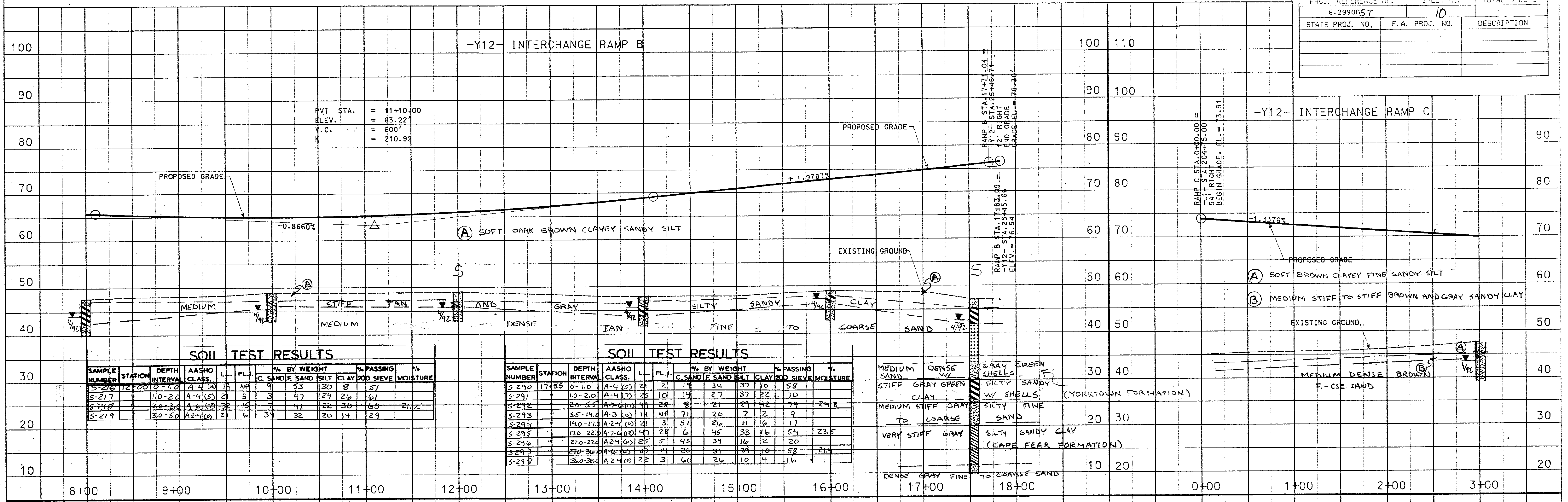
DATE: \_\_\_\_\_

PROJECT NO.: 91024

SHEET \_\_\_\_\_ OF \_\_\_\_\_

FILE: F:\UGRDS\91024\PT70.DGN  
 PLOT DATE: 04/22/92

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	10	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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PVI STA. = 9+45.00  
 ELEV. = 61.27'  
 V.C. = 700.00'  
 X = 204.57'  
 Design Speed = 65

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 1" = 50'

DATE: PROJECT NO.: 91024 SHEET OF

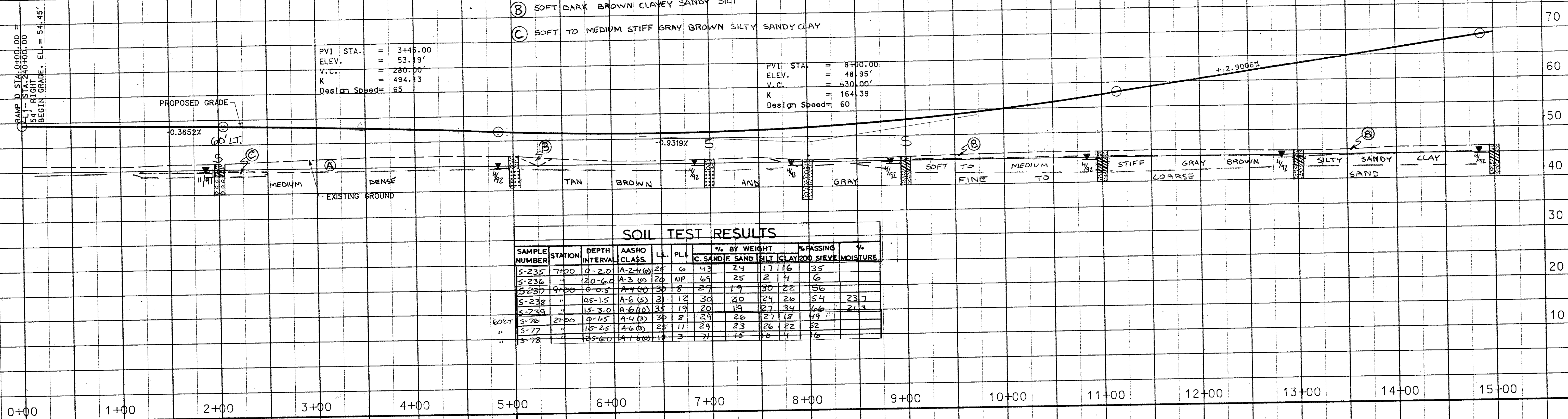
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990057	11	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-Y12- INTERCHANGE RAMP D

- (A) LOOSE BROWN SILTY CLAYEY SAND
- (B) SOFT DARK BROWN CLAYEY SANDY SILT
- (C) SOFT TO MEDIUM STIFF GRAY BROWN SILTY SANDY CLAY

PVI STA. = 3+45.00  
 ELEV. = 53.19'  
 V.C. = 280.00'  
 K = 494.13  
 Design Speed = 65

PVI STA. = 8+00.00  
 ELEV. = 48.95'  
 V.C. = 630.00'  
 K = 164.39  
 Design Speed = 60



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING #100 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-235	7+00	0-2.0	A-2-4(0)	24	6	43	24	17	16	35
S-236	"	2.0-6.0	A-3(0)	20	NP	67	25	2	4	6
S-237	9+00	0-0.5	A-4(0)	30	8	27	19	30	22	56
S-238	"	0.5-1.5	A-6(5)	31	12	30	20	24	26	54
S-239	"	1.5-3.0	A-6(10)	35	19	20	19	27	34	66
S-70	2+00	0-1.5	A-4(3)	30	8	29	26	27	18	49
S-77	"	1.5-2.5	A-6(3)	25	11	29	23	26	22	52
S-78	"	2.5-6.0	A-1(0)	12	3	71	15	0	4	16

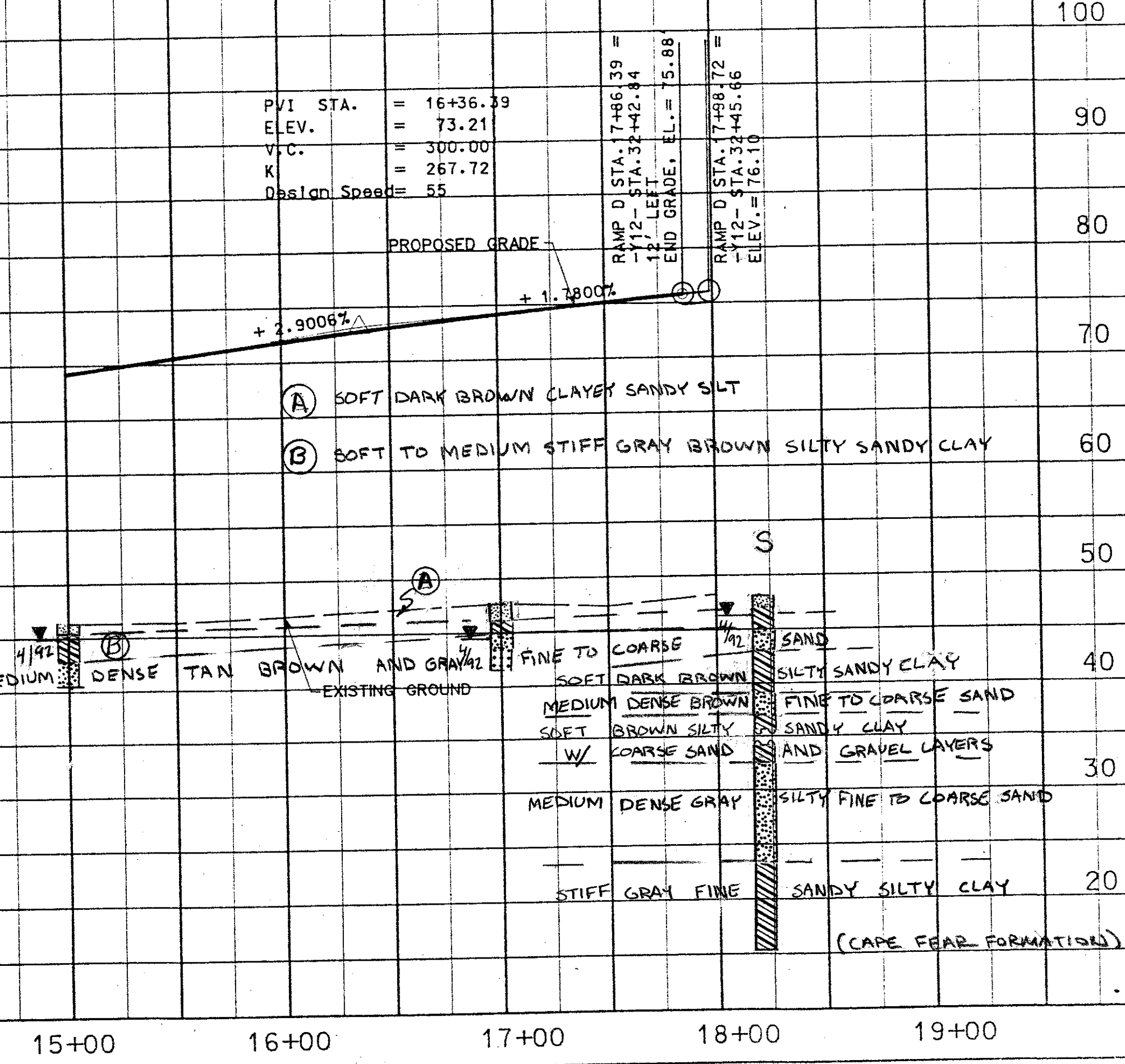
-Y12- INTERCHANGE RAMP D

PVI STA. = 16+36.39  
 ELEV. = 73.21  
 V.C. = 300.00'  
 K = 267.72  
 Design Speed = 55

RAMP D STA. 17+08.172 =  
 Y12- STA. 32+42.84 =  
 LEFT LEAD GRADE, EL. = 5.88

RAMP D STA. 17+08.172 =  
 Y12- STA. 32+45.66 =  
 RIGHT LEAD GRADE, EL. = 16.10

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SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			% PASSING #100 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT		
S-304	18+20	0-1.0	A-4(2)	28	8	30	26	4	47	
S-305	"	1.0-3.0	A-6(0)	31	16	24	28	18	30	
S-306	"	3.0-5.0	A-2-4(0)	16	NP	57	26	9	6	
S-307	"	5.0-9.0	A-6(4)	40	13	22	35	21	41	
S-308	"	9.0-11.0	A-2-4(0)	19	NP	54	34	10	15	
S-309	"	11.0-12.5	A-6(4)	34	12	16	43	27	2	
S-310	"	12.5-14.0	A-1(0)	16	NP	76	9	4	6	
S-311	"	14.0-15.2	A-6(4)	34	18	48	16	26	16	
S-312	"	15.2-25.0	A-2-4(0)	29	7	48	20	16	6	
S-313	"	25.0-33.0	A-6(10)	33	19	11	26	43	20	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	12	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

RAMP A  
 PI STA 1+08.56    PIS STA 3+17.09  
 $\Delta = 2^\circ 42' 48.8''$ , LT.     $\theta_s = 1^\circ 52' 30''$   
 D = 1' 45"    Ls = 300  
 Lc = 217.0845'    U = 200.0112'  
 Rc = 4583.6624'    V = 100.0102'  
 T = 108.5625'  
 Se = 0.05 FT/FT

-L1-  
 PI STA 240+11.62  
 $\Delta_T = 68^\circ 47' 45.2''$ , RT.  
 Dc = 1' 15"  
 $\theta_s = 1^\circ 52' 30''$   
 Ls = 300'  
 Lc = 5203.6702'  
 Rc = 4583.6624'  
 Ts = 3288.8123'  
 U = 200.0112'  
 V = 100.0102'  
 Se = 0.05 FT/FT

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
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-L1- POC 241+00.00 =  
 RAMP A POC 0+00.00  
 54' RIGHT  
 DELTA = 2° 18'

-L1- POC 240+00.00 =  
 RAMP D CS 0+00.00  
 54' LEFT

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

ANNA W. NEWBOLB  
 D.B.672 PG.255  
 D.B.34 PG.51  
 85.6 Ac. (TOTAL)

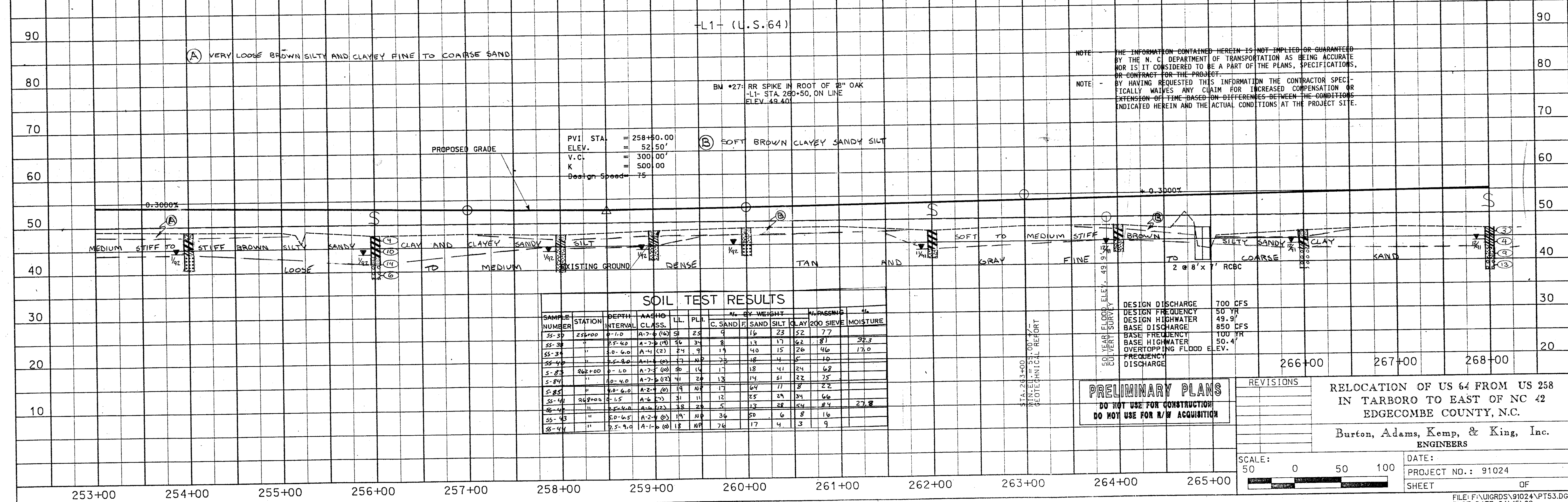
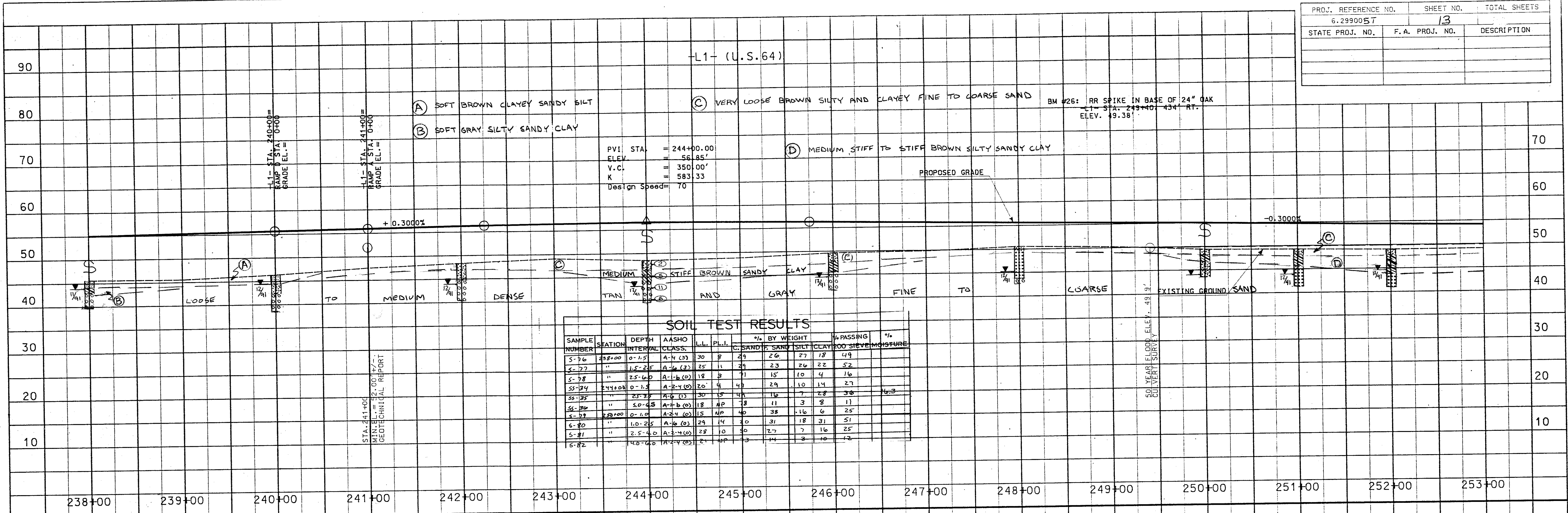
FOR -L1- (U.S.64) PROFILE, SEE SHT. 34

RAMP D  
 PIS STA 1+70.50  
 $\theta_s = 6^\circ 23' 50.5''$   
 Ls = 300'  
 U = 170.4964'  
 V = 129.8053'  
 Dc1 = 1° 15' 53.6"  
 Dc2 = 3° 00"

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	13	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE: THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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DESIGN DISCHARGE: 700 CFS  
 DESIGN FREQUENCY: 50 YR  
 DESIGN HIGHWATER: 49.9'  
 BASE DISCHARGE: 850 CFS  
 BASE FREQUENCY: 100 YR  
 BASE HIGHWATER: 50.4'  
 OVERTOPPING FLOOD ELEV.: 50.4'  
 FREQUENCY DISCHARGE:

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
0.293057	14	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac. (TOTAL)

ANNA W. NEWBOLD  
 D.B.672 PG.255  
 D.B.34 PG.51  
 85.6 Ac. (TOTAL)

-L1-  
 PI STA 240+11.62  
 $\Delta T = 68^{\circ}47'45.2''$  RT.  
 Dc = 1'15"  
 $\theta_s = 1^{\circ}52'30''$   
 Ls = 300'  
 Lc = 5203.6702'  
 Rc = 4583.6624'  
 Ts = 3288.8123'  
 U = 200.0112'  
 V = 100.0102'  
 Se = 0.05 FT/FT

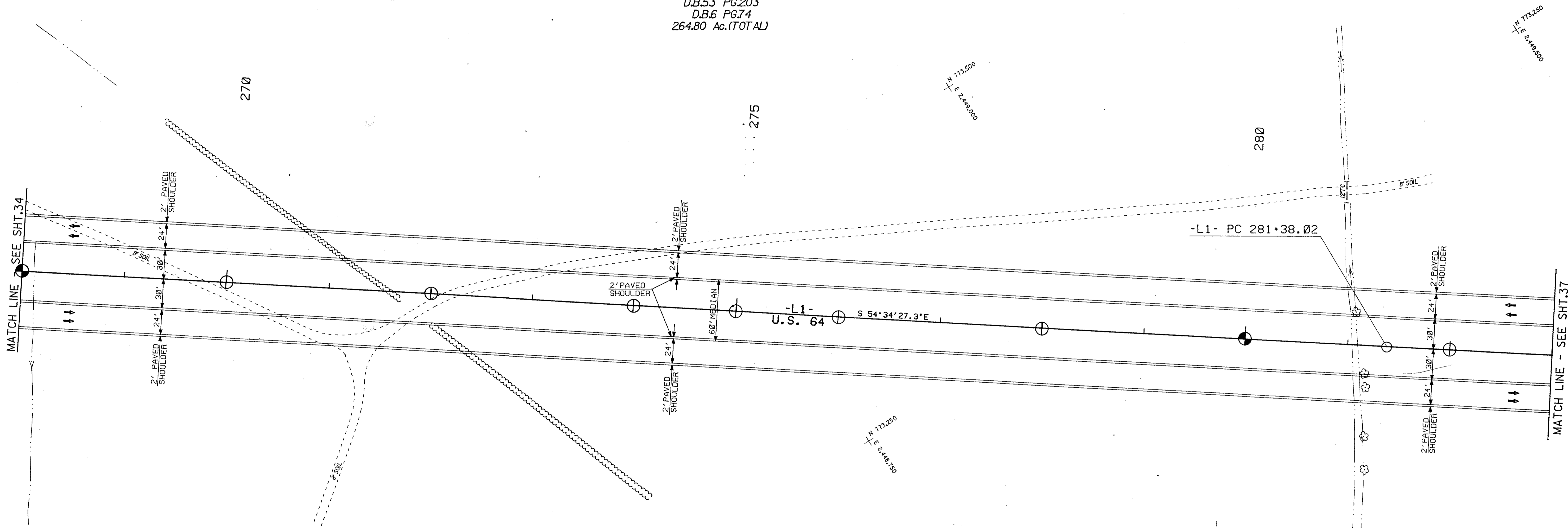
FOR -L1- (U.S.64) PROFILE, SEE SHT. 34

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	15	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac.(TOTAL)



MATCH LINE - SEE SHT.34

MATCH LINE - SEE SHT.37

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.377  
 D.B.342 PG.478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 D.B.6 PG.74  
 264.80 Ac.(TOTAL)

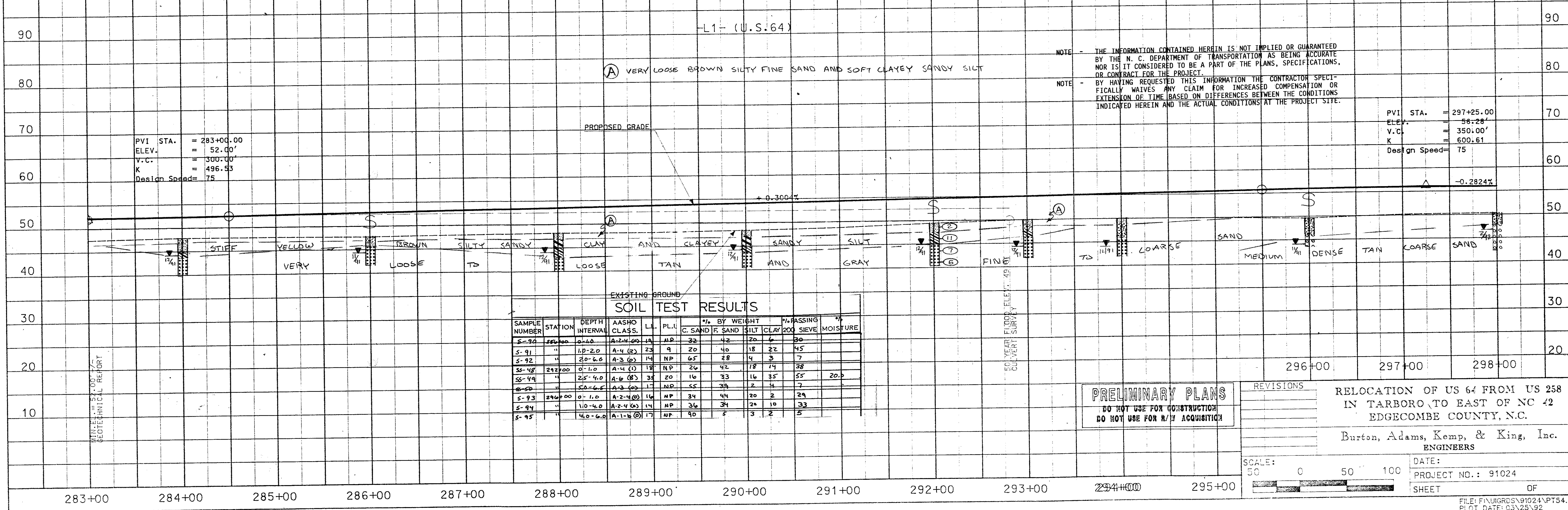
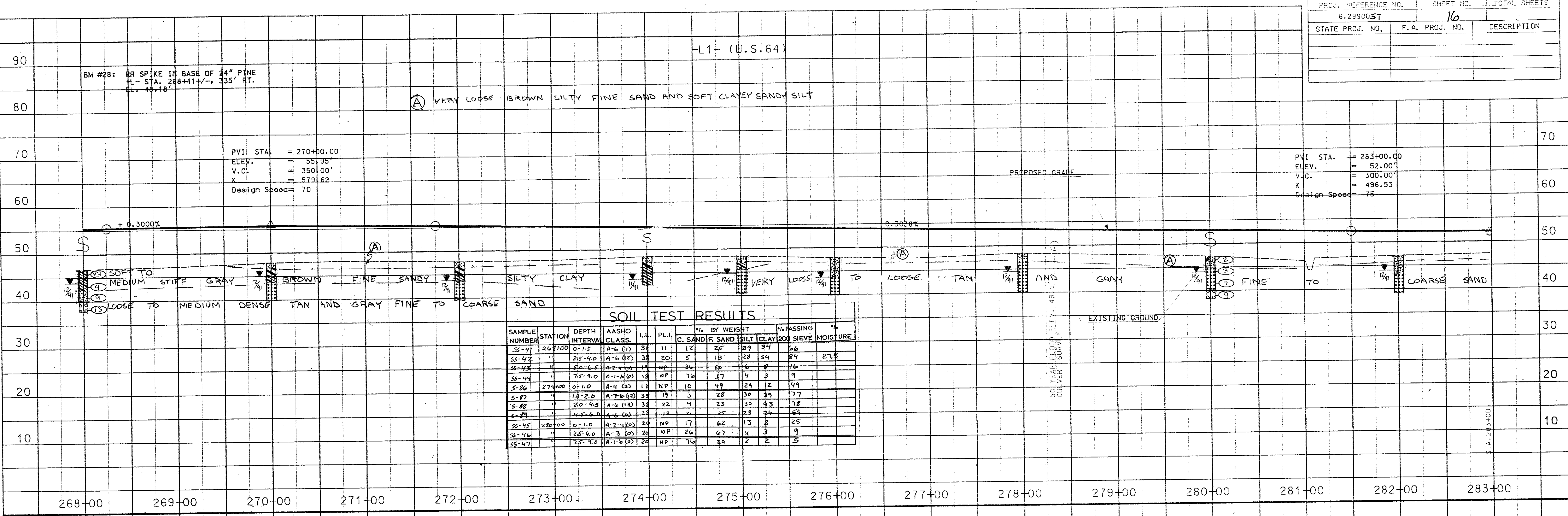
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-L1-  
 PI STA 288+18.65  
 $\Delta T = 3'24''07.7''$ , RT.  
 D = 0'15'  
 L = 1360.8561'  
 RC = 22918.3118'  
 T = 680.6280'  
 SE = NC

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	16	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50' 0" 50' 100'

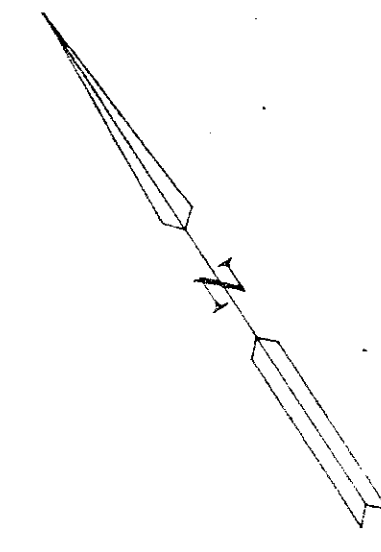
DATE: PROJECT NO.: 91024 SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.259005J	17	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

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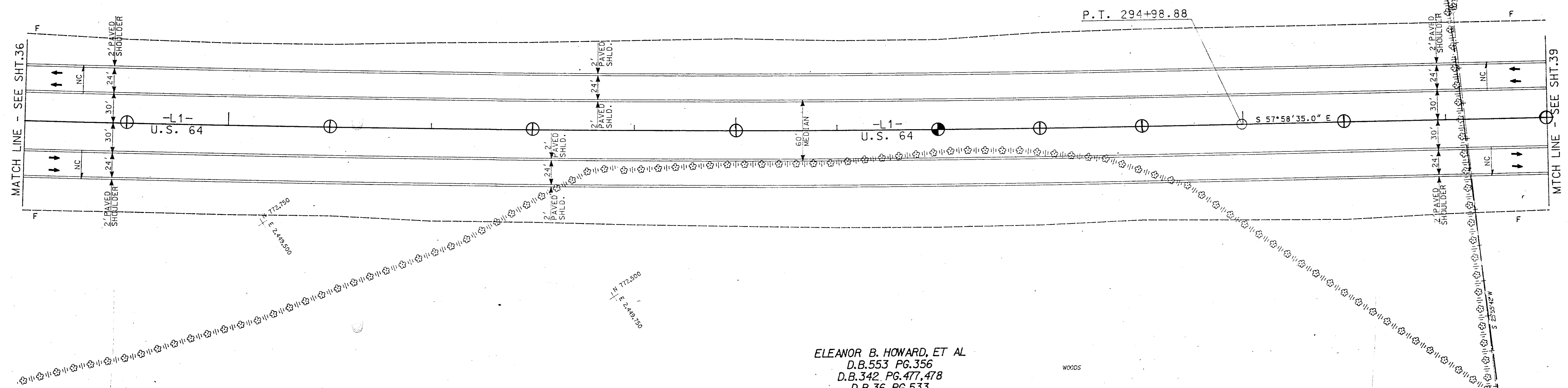


285

ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.477,478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 P.B.6 PG.75  
 264.80 Ac. (TOTAL)

290

295



ELEANOR B. HOWARD, ET AL  
 D.B.553 PG.356  
 D.B.342 PG.477,478  
 D.B.36 PG.533  
 D.B.53 PG.203  
 P.B.6 PG.75  
 264.80 Ac. (TOTAL)

HENRY TURNER BASS, ET AL  
 D.B.832 PG.802  
 P.B.1 PG.124  
 644.63 Ac. (TOTAL)

FOR -L1- (U.S.64) PROFILE, SEE SHT. 37

-L1-  
 PI STA 288+18.65  
 $\Delta = 3^\circ 24' 07.7''$ , LT  
 D = 0' 15'  
 L = 1360.8561'  
 R = 22918.3118'  
 T = 680.6280'  
 So = NC

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: *
	PROJECT NO.: 91024
	SHEET OF

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	18	20
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

HENRY TURNER BASS, ET AL  
D.B. 832 PG. 802  
P.B. 1 PG. 124  
644.63 Ac. (TOTAL)

W.G. CLARK, III  
W.B. P PG. 51

HENRY TURNER BASS, ET AL  
D.B. 832 PG. 802  
P.B. 1 PG. 124  
644.63 Ac. (TOTAL)

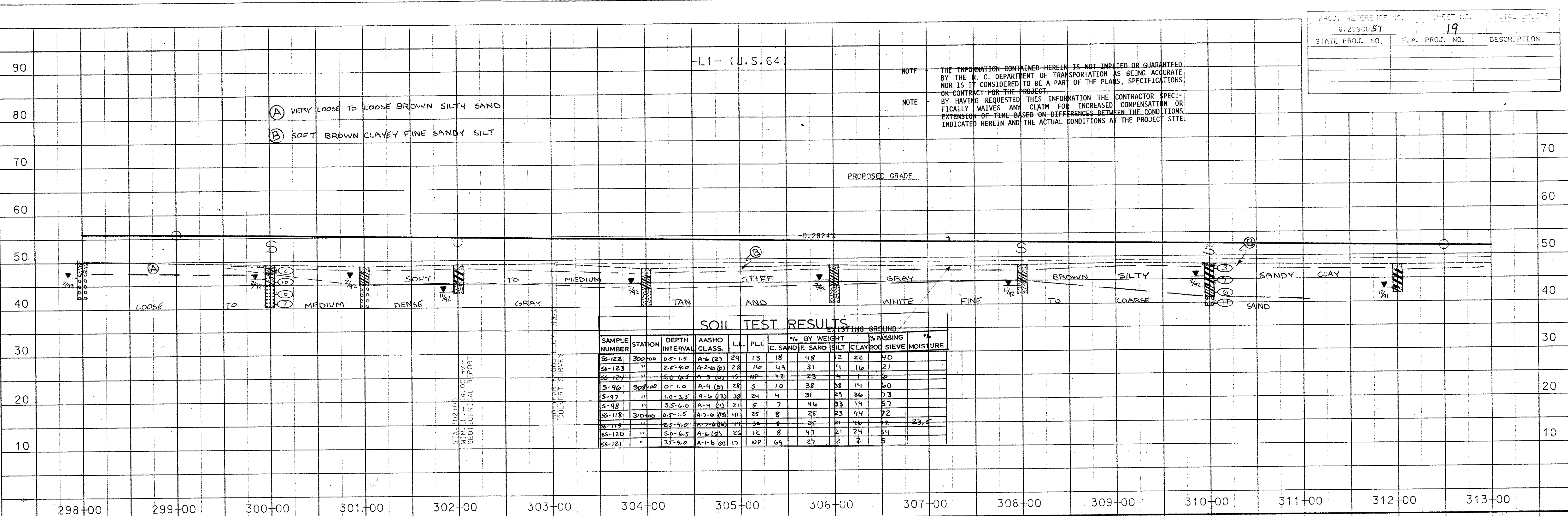
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W.G. CLARK, III  
W.B. P PG. 51

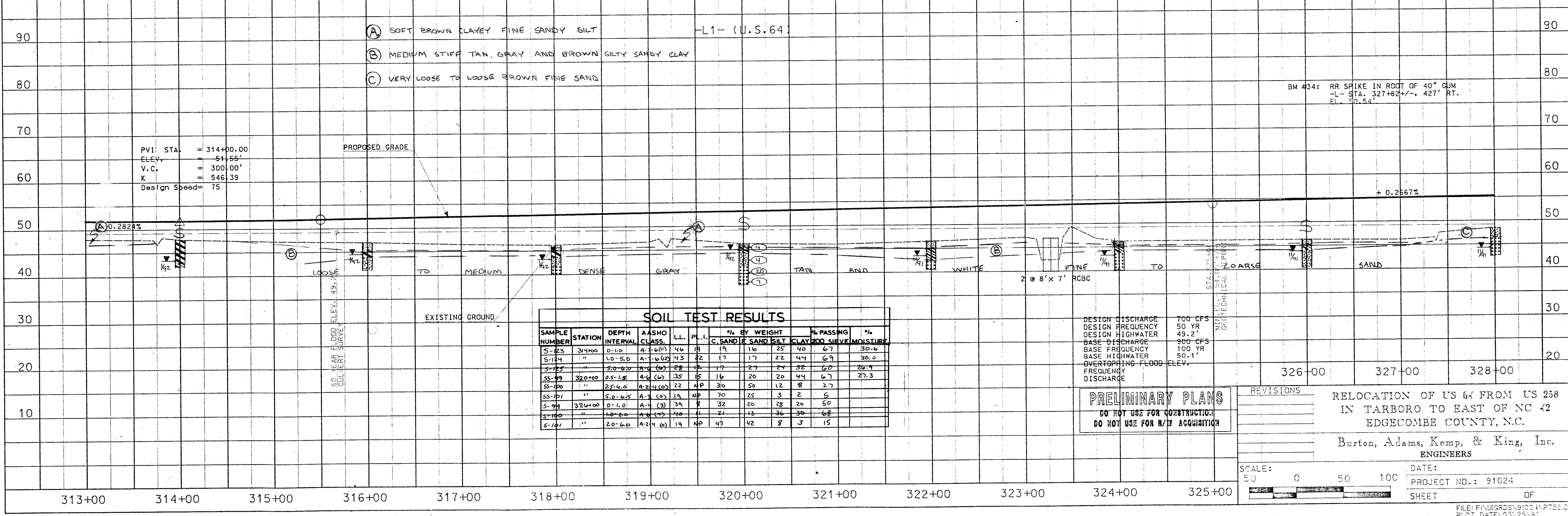
FOR -L1- (U.S. 64) PROFILE, SEE SHT. 40

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF



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PVI STA. = 314+00.00  
 ELEV. = 51.55'  
 V.C. = 300.00'  
 K = 546.39  
 Design Speed = 75

BM #34: RR SPIKE IN ROOT OF 40" GUM  
 - STA. 327+82 +/- .427' RT.  
 EL. 50.54'

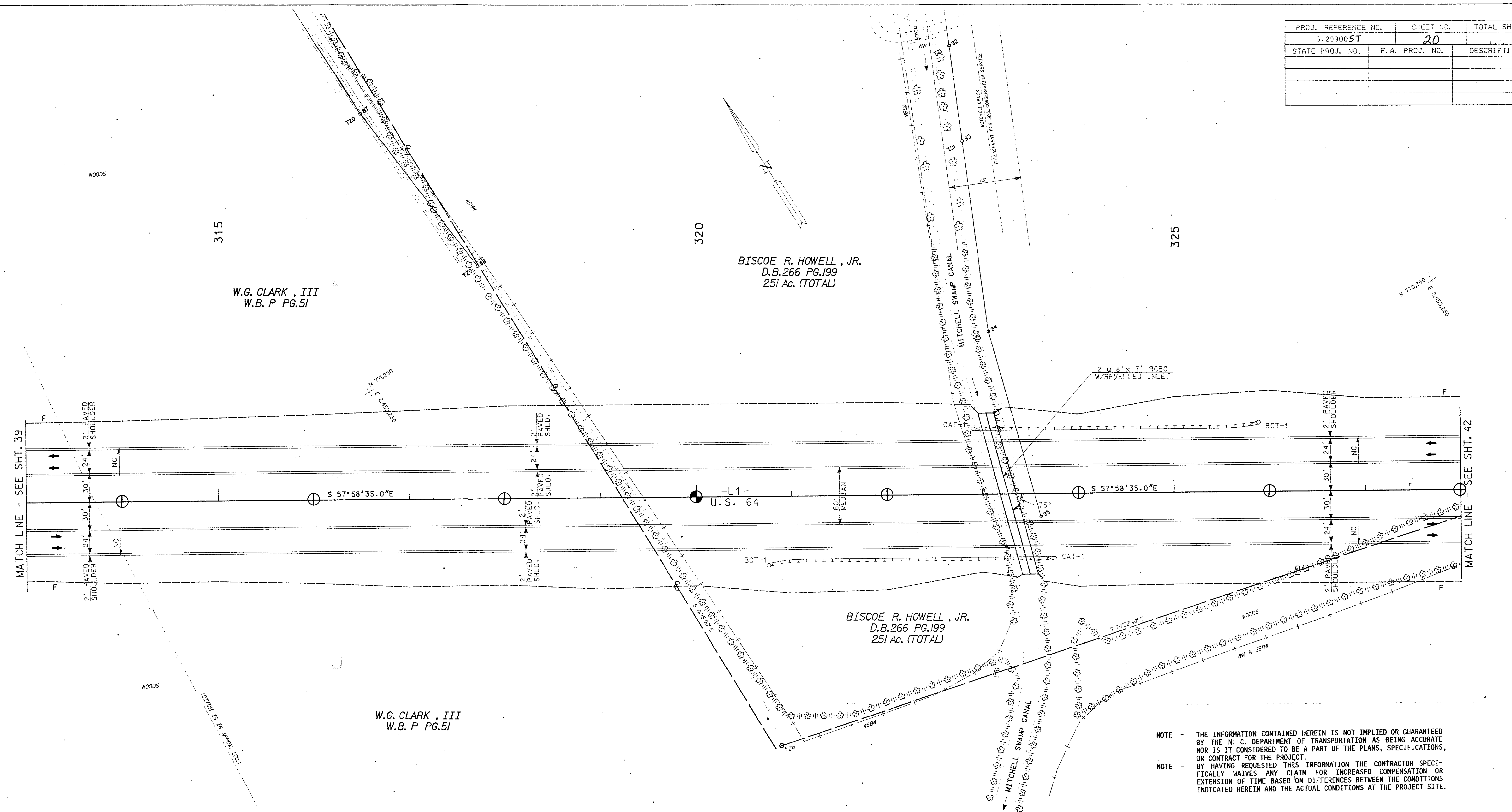
DESIGN DISCHARGE 700 CFS  
 DESIGN FREQUENCY 50 YR  
 DESIGN HIGHWATER 49.2'  
 BASE DISCHARGE 300 CFS  
 BASE FREQUENCY 100 YR  
 BASE HIGHWATER 50.1'  
 OVERTOPPING FLOOD ELEV. 50.1'  
 FREQUENCY DISCHARGE

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS  
 RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 1" = 50'  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	20	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



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FOR -L1- (U.S.64) PROFILE, SEE SHT. 40

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET _____ OF _____

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	21	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

BISCOE R. HOWELL, JR.  
DEED BOOK 266 PAGE 199  
251 Ac (TOTAL)

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

W. G. CLARK, III  
WILL BOOK P PAGE 51

W. G. CLARK, III  
WILL BOOK P PAGE 51

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

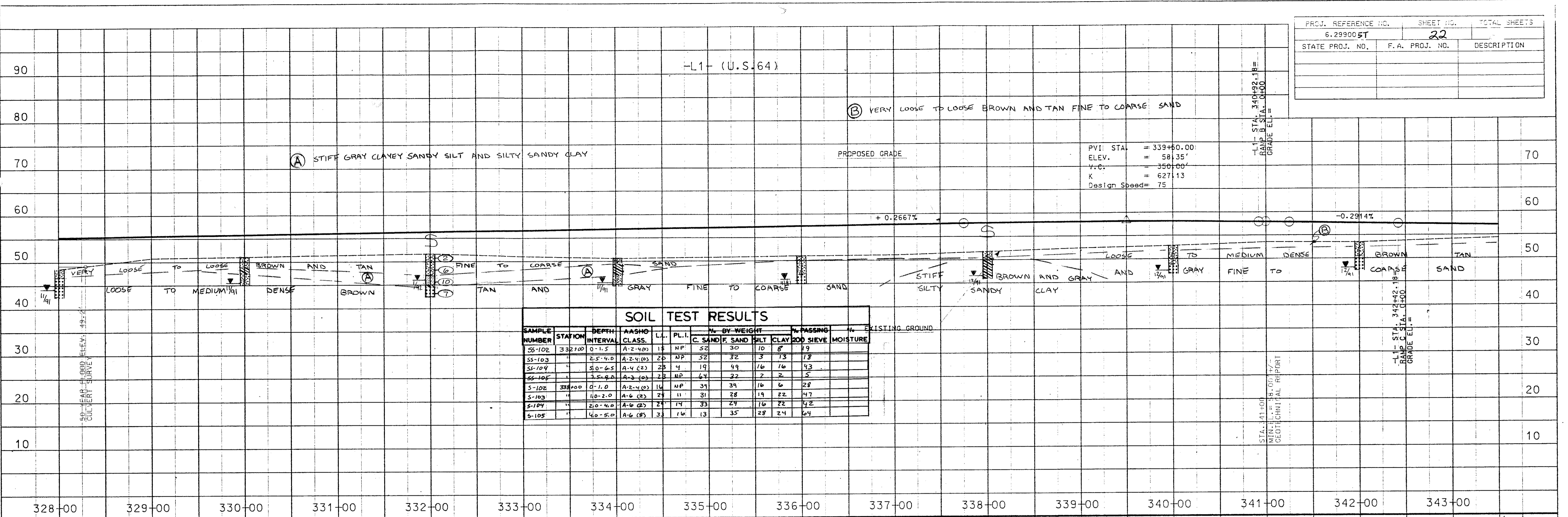
FOR -L1- (U.S.64) PROFILE, SEE SHT. 43

-L1-	RAMP B	RAMP C
PI STA 352+59.74	PI STA 1+80.00	PI STA 1+00.01
$\Delta T = 29^{\circ}32'36"$ , LT.	$\theta_s = 5^{\circ}37'58.8"$	$\Delta T = 01^{\circ}30'00"$ , LT.
$D_c = 0^{\circ}45'$	$L_s = 300'$	$D_c = 0^{\circ}45'$
$\theta_s = 0^{\circ}45'$	$SU = 180.0026'$	$L = 200'$
$L_s = 200'$	$V = 120.2220'$	$R = 7639.4373'$
$L_c = 3739.1108'$	$D1 = 03^{\circ}00'$	$T = 100.0057'$
$R_c = 7639.4373'$	$D2 = 0^{\circ}45'19.2"$	$S_e = 0.03$ FT/FT
$T_s = 2114.4424'$		
$U = 133.3345'$		
$V = 66.6678'$		
$S_e = 0.03$ FT/FT		

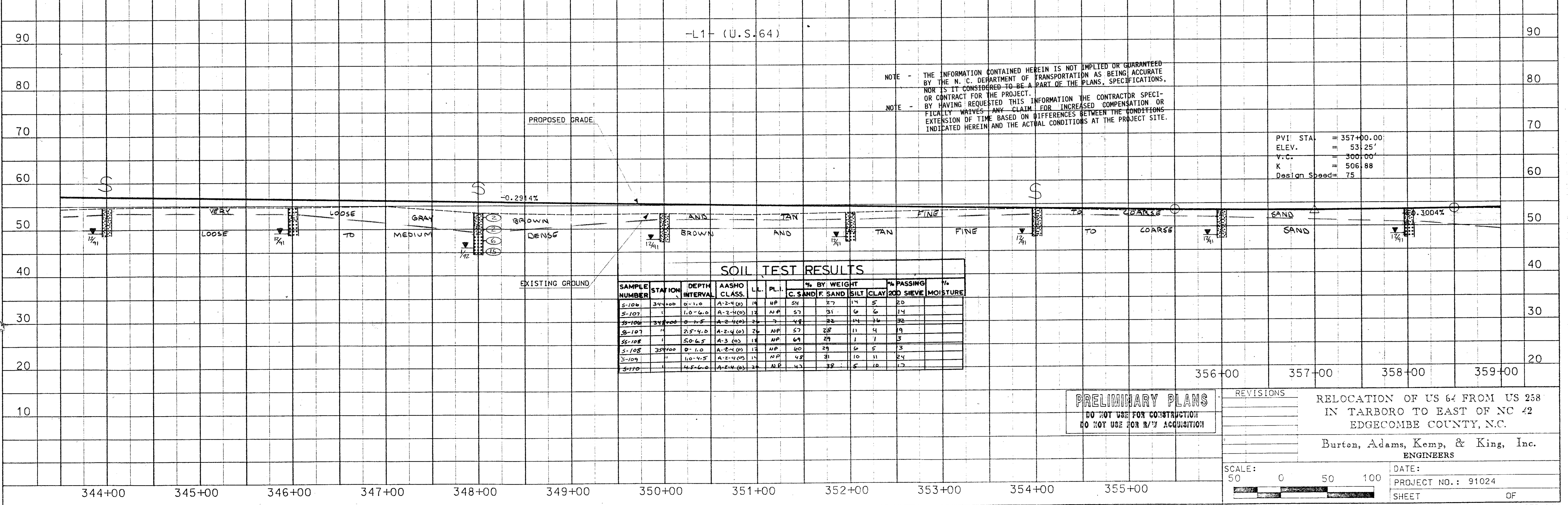
**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET _____ OF _____

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	22	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-102	332+00	0-1.5	A-2-4(0)	18	NP	52	30	10	8	19	
SS-103	"	2.5-4.0	A-2-4(0)	20	NP	32	32	3	13	13	
SS-104	"	5.0-6.5	A-4(2)	23	4	19	49	16	16	43	
SS-105	"	3.5-9.0	A-3(0)	23	NP	64	22	2	2	5	
S-102	338+00	0-1.0	A-2-4(0)	16	NP	39	39	16	6	28	
S-103	"	1.0-2.0	A-6(2)	29	11	31	28	19	22	47	
S-104	"	2.0-4.0	A-6(2)	29	14	33	24	16	22	42	
S-105	"	4.0-5.0	A-6(2)	33	16	13	35	28	24	64	



SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-106	344+00	0-1.0	A-2-4(0)	19	NP	34	27	14	5	20	
S-107	"	1.0-6.0	A-2-4(0)	13	NP	57	31	6	6	14	
S-108	348+00	0-1.5	A-2-4(0)	26	7	48	22	14	16	38	
S-107	"	2.5-4.0	A-2-4(0)	26	NP	57	28	11	4	19	
SS-108	"	5.0-6.5	A-3(0)	18	NP	69	29	1	1	5	
S-108	354+00	0-1.0	A-2-4(0)	15	NP	60	29	6	5	13	
S-109	"	1.0-4.5	A-2-4(0)	14	NP	48	31	10	11	24	
S-110	"	4.5-6.0	A-2-4(0)	24	NP	43	32	5	10	17	

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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

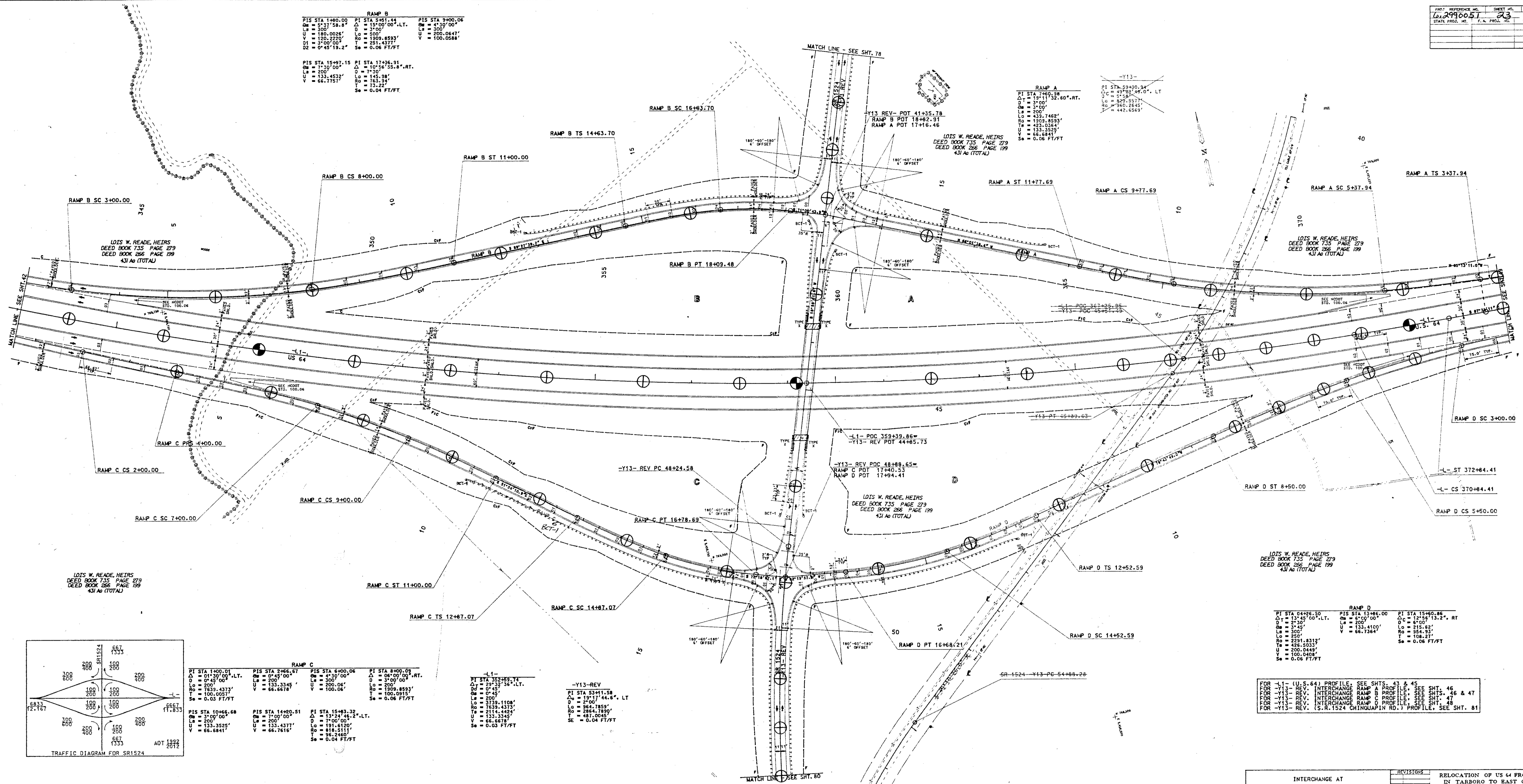
SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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PROJECT NO.	SHEET NO.	TOTAL SHEETS
2990051	23	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

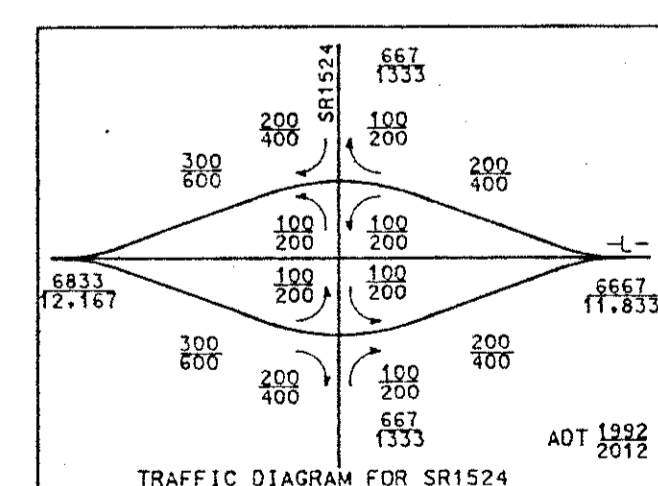


**RAMP B**

PI STA 1+80.00	PI STA 5+81.44	PI STA 9+00.00
Δ = 5°37'58.41"	Δ = 10°00'00" LT.	Δ = 4°30'00"
L = 300'	D = 3°00'	L = 300'
U = 180.0026'	U = 180.0000'	U = 180.0047'
V = 120.2223'	R = 1809.8593'	V = 100.0588'
Q = 3°00'00"	T = 251.4377'	T = 100.0588'
SE = 0.04 FT/FT	SE = 0.04 FT/FT	SE = 0.04 FT/FT

**RAMP A**

PI STA 7+60.38	PI STA 12+60.00
Δ = 12°11'32.60" RT.	Δ = 12°11'32.60" RT.
L = 300'	L = 300'
U = 180.0000'	U = 180.0000'
V = 120.0000'	V = 120.0000'
Q = 3°00'00"	Q = 3°00'00"
SE = 0.04 FT/FT	SE = 0.04 FT/FT



**RAMP C**

PI STA 1+00.01	PI STA 2+66.87	PI STA 6+00.06	PI STA 8+00.09
Δ = 0°13'00" LT.	Δ = 0°45'00"	Δ = 0°45'00"	Δ = 0°45'00" RT.
D = 0°45'00"	L = 300'	L = 300'	L = 300'
U = 180.0000'	U = 133.3345'	U = 180.0000'	U = 180.0000'
R = 1839.4373'	R = 66.6676'	R = 1809.8593'	R = 100.0915'
V = 100.0927'	V = 66.6676'	V = 100.0000'	V = 100.0915'
Q = 0.03 FT/FT	Q = 0.03 FT/FT	Q = 0.03 FT/FT	Q = 0.03 FT/FT

**-L1-**

PI STA 352+59.74	PI STA 353+11.58
Δ = 0°45'00" LT.	Δ = 12°11'32.60" LT.
L = 300'	L = 120.0000'
U = 180.0000'	U = 120.0000'
V = 100.0000'	V = 100.0000'
Q = 0.03 FT/FT	Q = 0.04 FT/FT

**RAMP D**

PI STA 0+26.50	PI STA 13+66.00	PI STA 15+60.86
Δ = 13°45'00" LT.	Δ = 8°00'00"	Δ = 13°13'27" RT.
D = 2°30'	L = 200'	L = 6°00'
U = 120.0000'	U = 133.4100'	U = 235.8212'
R = 225'	R = 66.7364'	R = 364.931'
V = 80.0000'	V = 66.7364'	V = 108.0000'
Q = 0.06 FT/FT	Q = 0.06 FT/FT	Q = 0.06 FT/FT

FOR -L1- (U.S. 64) PROFILE, SEE SHTS. 43 & 45  
 FOR -Y13- REV. INTERCHANGE RAMP A PROFILE, SEE SHT. 46  
 FOR -Y13- REV. INTERCHANGE RAMP B PROFILE, SEE SHTS. 46 & 47  
 FOR -Y13- REV. INTERCHANGE RAMP C PROFILE, SEE SHTS. 47  
 FOR -Y13- REV. INTERCHANGE RAMP D PROFILE, SEE SHT. 48  
 FOR -L1- (S.R. 1524 CHINAUM IN NO.) PROFILE, SEE SHT. 81

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR BIDDING

INTERCHANGE AT	REVISIONS	RELOCATION OF US 64 FROM US 256 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
-L1- (US 64)		Burton, Adams, Kemp, & King, Inc.
EDGEcombe COUNTY	SCALE: 1" = 50'	DATE: 11/02/04
		PROJECT NO.: 91024
		SHEET 23 OF 24

-L1- (U.S. 64)

- (A) SOFT TO MEDIUM STIFF DARK BROWN AND BLACK CLY. SANDY SILT
- (B) SOFT TO MEDIUM STIFF GRAY SILTY SANDY CLAY
- (C) MEDIUM STIFF TO STIFF GRAY BROWN SILTY FINE SANDY CLAY AND CLAYEY SANDY SILT

PVI STA. = 368+75.00  
 ELEV. = 56.78'  
 V.C. = 350.00'  
 K = 568.91  
 Design Speed = 70

PVI STA. = 374+50.00  
 ELEV. = 54.97'  
 V.C. = 300.00'  
 K = 487.89  
 Design Speed = 75

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	359+20	0-1.5	A-2-4 (0)	18	NP	56	27	7	13	21	
SS-2	"	1.5-2.1	A-3 (0)	18	NP	52	31	3	4	9	
SS-3	"	2.1-2.2	A-1-4 (0)	22	NP	88	0	0	2	2	
SS-4	"	2.2-2.3	A-3 (0)	18	NP	67	24	1	3	4	
SS-5	"	2.3-2.3	A-3 (0)	17	NP	70	25	1	4	6	
SS-6	"	4.8-4.2	A-4 (0)	32	19	9	33	45	12	68	25.8
SS-7	"	4.8-4.2	A-2-4 (0)	31	NP	11	68	15	2	27	
SS-8	"	5.8-5.2	A-2-4 (0)	24	NP	45	44	3	8	13	
SS-9	"	5.8-5.2	A-2-4 (0)	31	A	64	7	11	8	20	

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-111	366+00	0-1.0	A-2-4 (0)	15	NP	33	32	9	6	17	
S-112	"	1.0-2.0	A-2-4 (0)	23	7	45	24	8	18	27	
S-113	"	2.0-6.0	A-1-4 (0)	88	NP	81	3	2	6	5	72
S-114	368+00	0-1.0	A-4 (0)	32	8	37	19	26	24	52	
S-115	"	1.0-4.0	A-2-4 (0)	28	12	32	18	20	30	52	
SS-91	372+00	0-1.5	A-4 (0)	26	7	24	38	20	18	45	31.2
SS-92	"	2.5-4.0	A-4 (0)	31	16	9	29	20	42	70	33.2
SS-93	"	5.0-6.0	A-4 (0)	17	NP	81	2	2	26	58	22.9
SS-94	"	7.5-9.0	A-3 (0)	22	NP	49	2	2	4	5	
S-1	370+00	0.0-1.5	A-4 (0)	18	NP	27	39	18	16	37	
S-2	"	1.5-4.5	A-2-4 (0)	18	5	13	81	2	4	7	
S-3	"	4.5-6.0	A-2-4 (0)	22	NP	32	38	10	20	33	

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PVI STA. = 383+50.00  
 ELEV. = 58.00'  
 V.C. = 350.00'  
 K = 583.23  
 Design Speed = 70

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-60	375+00	0-1.0	A-2-4 (0)	16	NP	46	29	15	10	24	
S-61	"	1.0-3.0	A-2 (0)	32	17	36	21	17	26	47	
S-62	"	3.0-8.0	A-2-4 (0)	16	NP	66	23	5	6	15	
SS-95	378+00	0-1.5	A-4 (0)	28	7	21	55	22	22	49	28.1
SS-96	"	2.5-4.0	A-2-4 (0)	19	NP	9	65	14	12	34	
SS-97	"	5.0-6.5	A-3 (0)	21	NP	62	34	1	3	5	
SS-98	"	12.5-14.0	A-3 (0)	16	NP	72	24	1	3	5	
S-9	380+00	0-2.5	A-1-4 (0)	24	NP	32	42	19	7	33	
S-10	"	2.5-6.0	A-1-4 (0)	17	NP	24	28	7	16	15	
S-11	"	4.0-6.0	A-3 (0)	18	NP	68	26	2	4	6	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

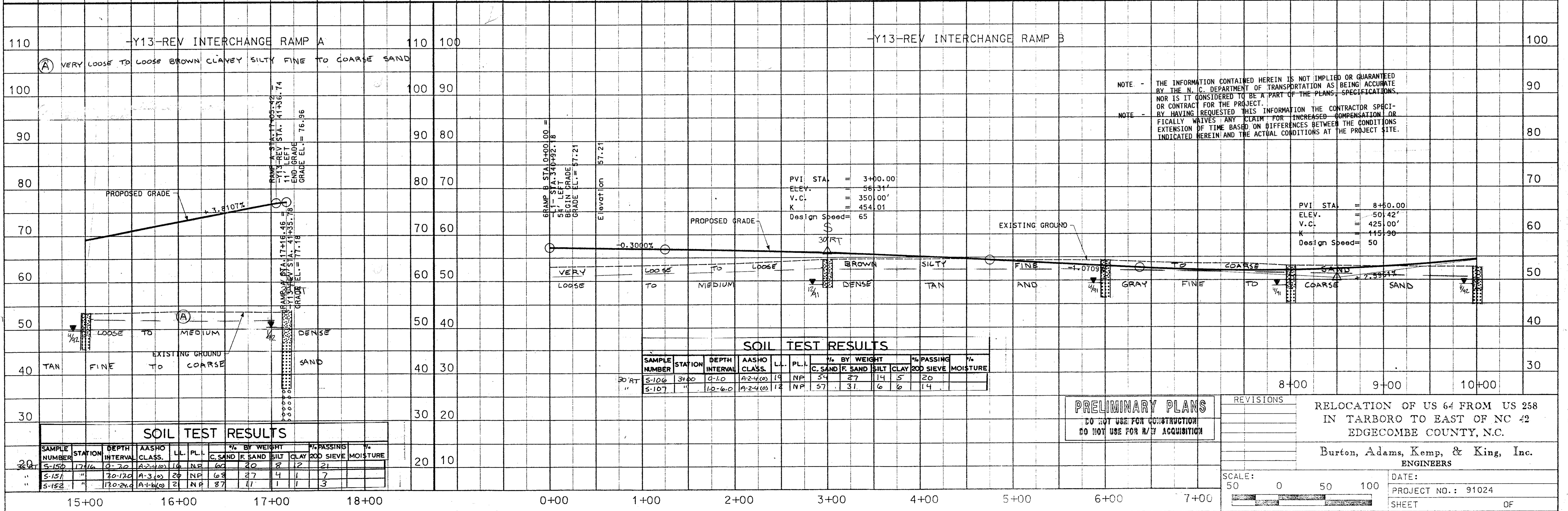
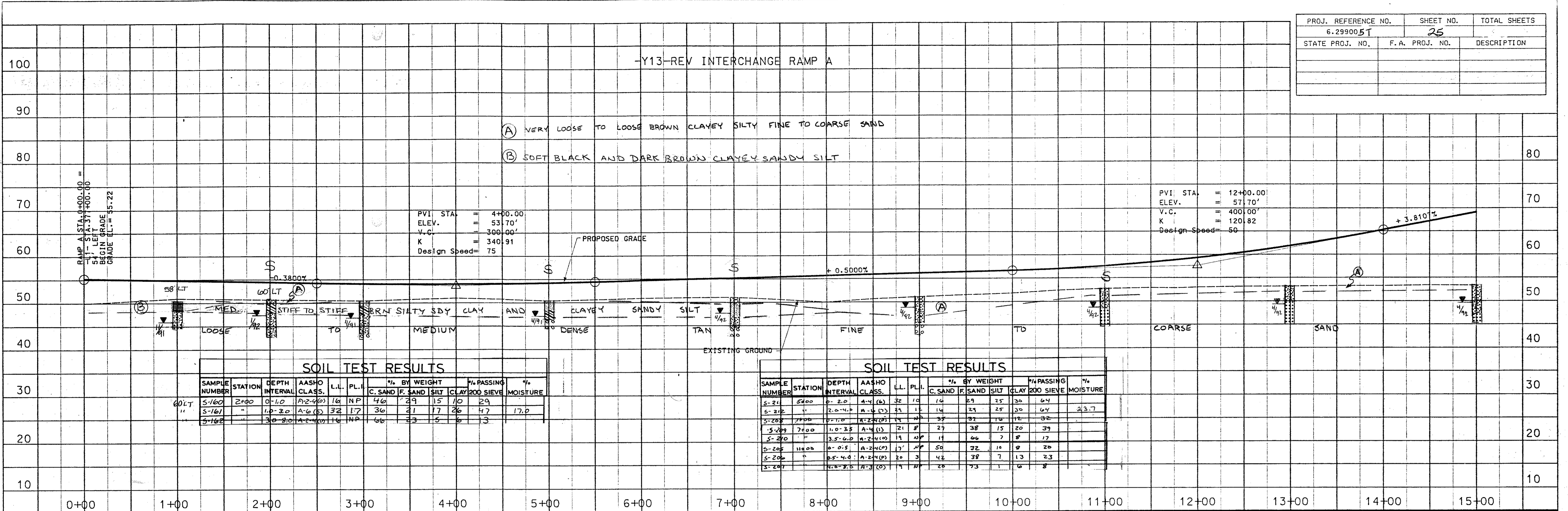
Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900.5T	25	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

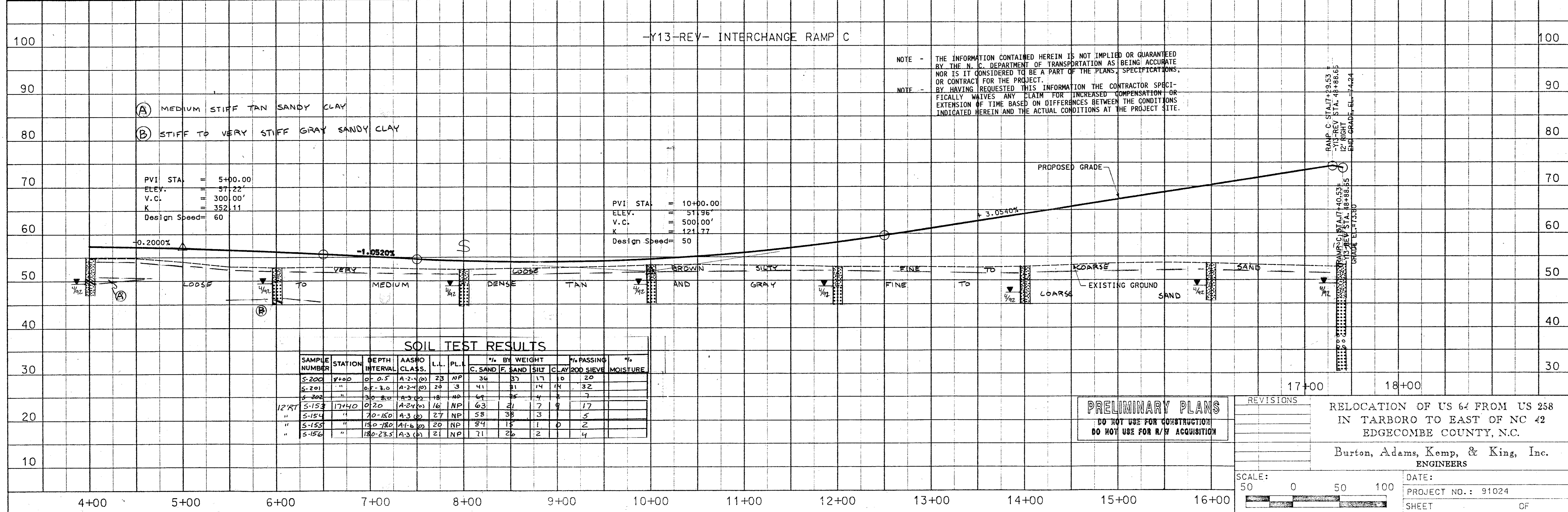
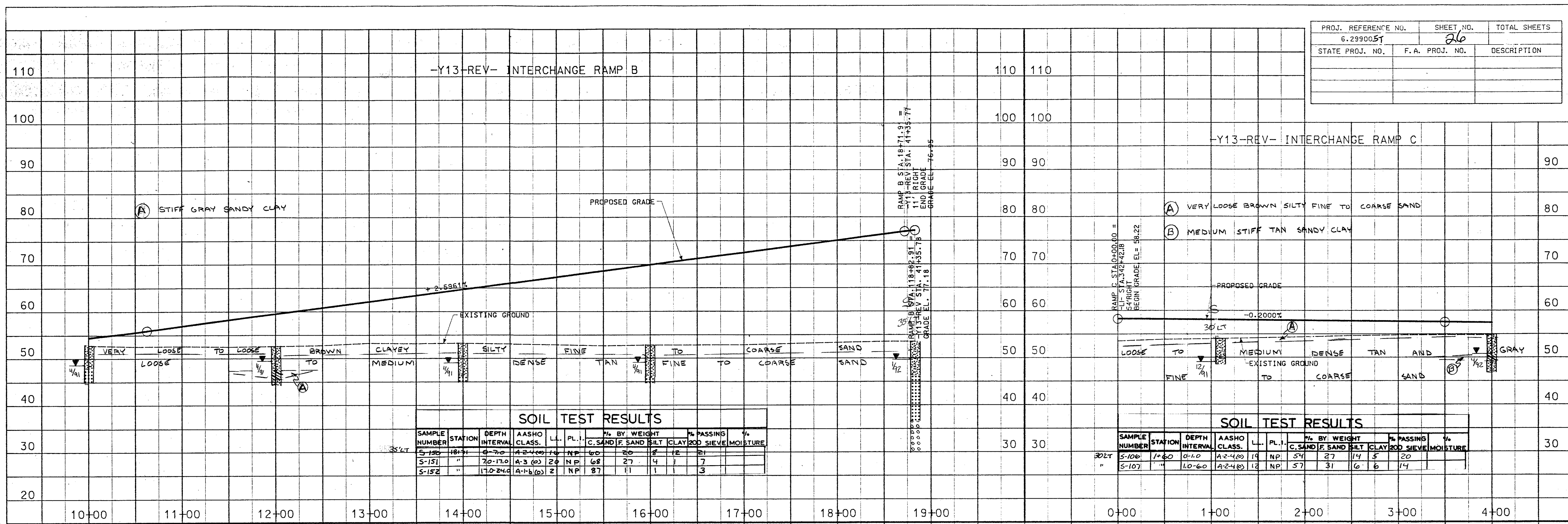
RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	26	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

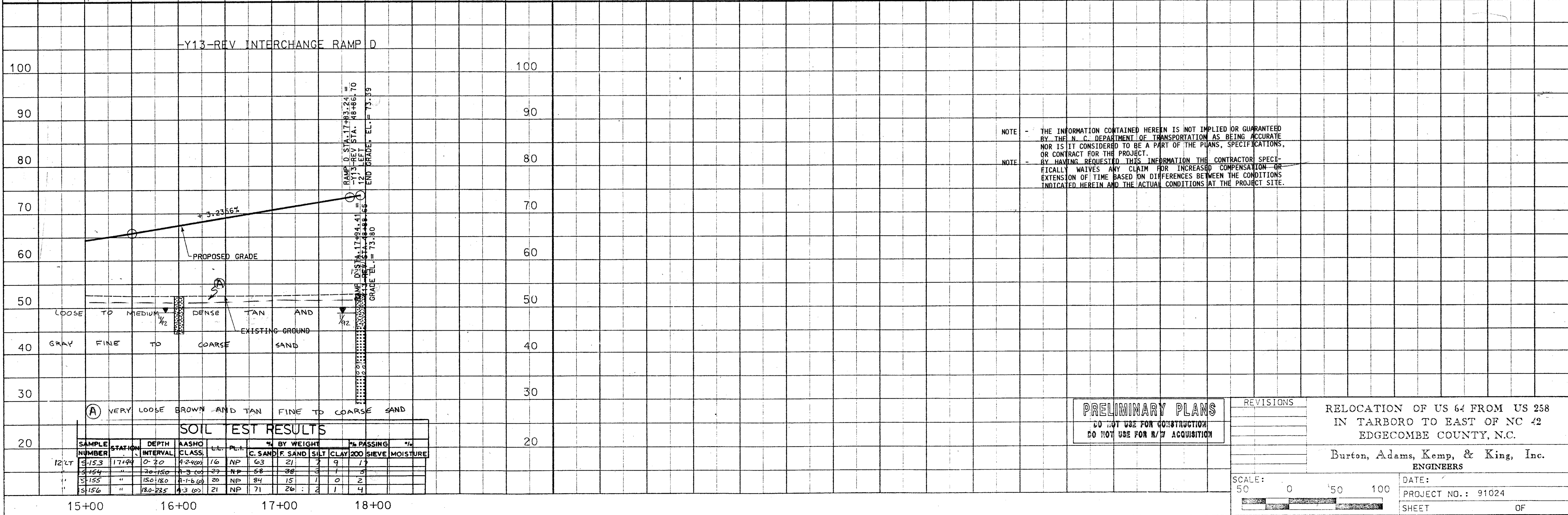
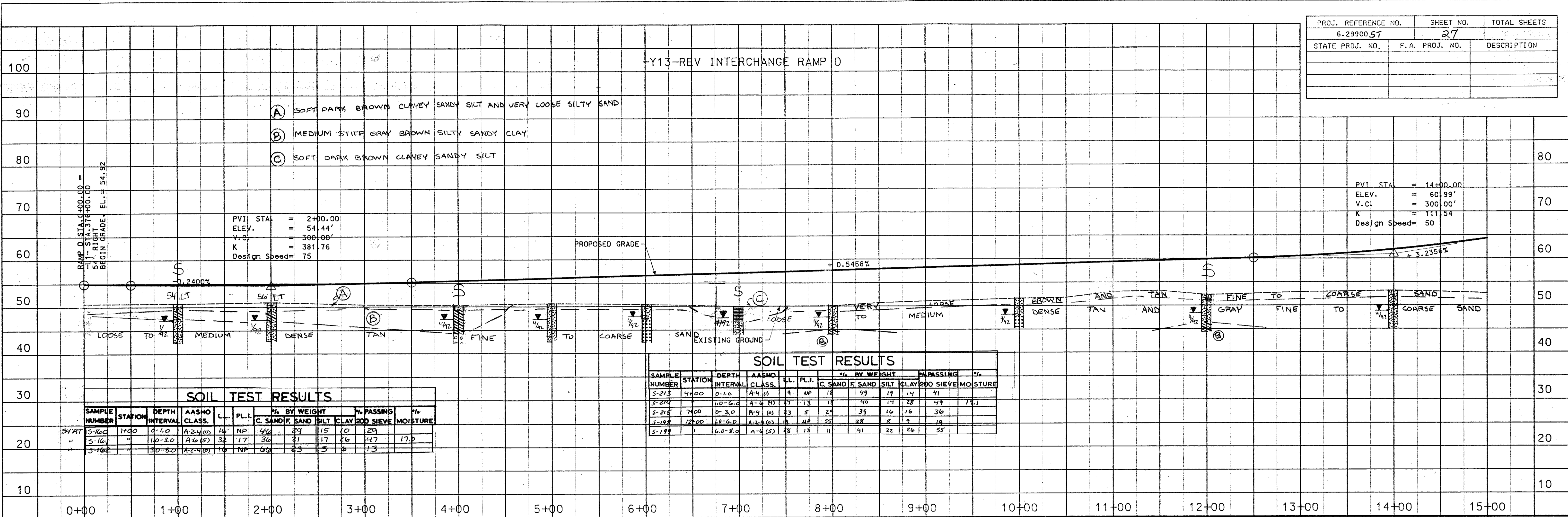
RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6-29900.5T	27	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

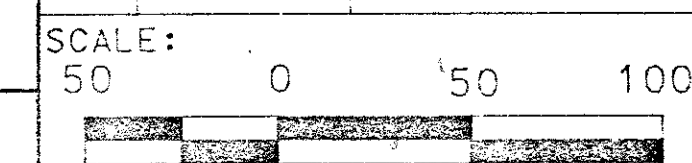
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

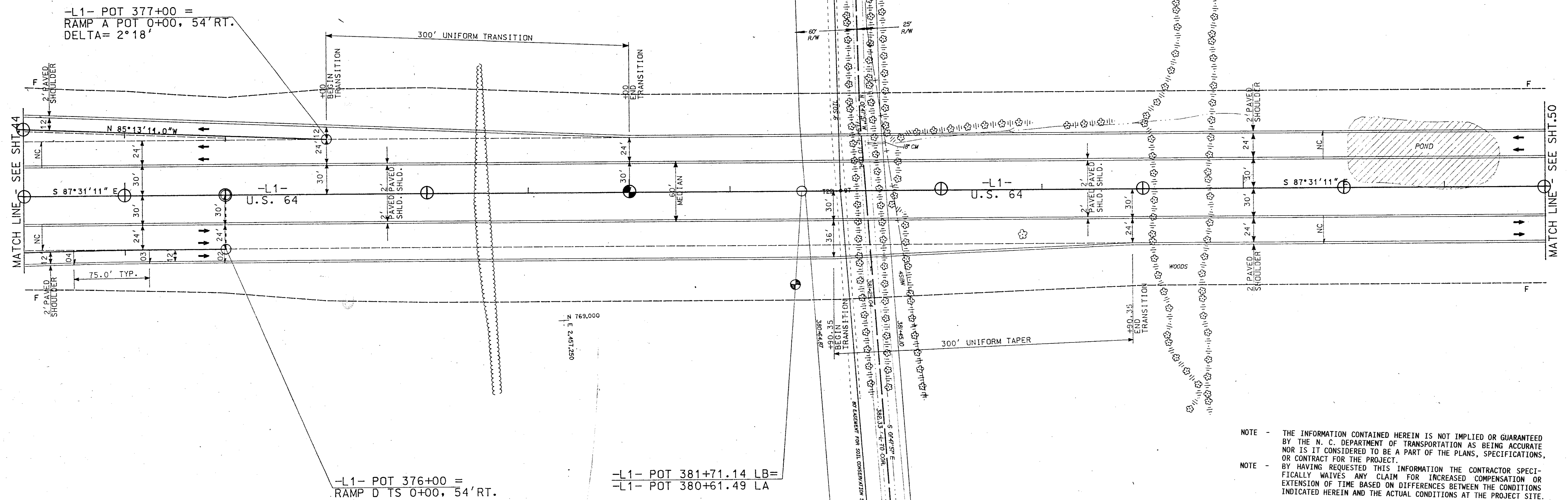


DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	28	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

ARCHIE R. BURNETTE  
DEED BOOK 342 PAGE 523  
DEED BOOK 266 PAGE 296  
DEED BOOK 334 PAGE 321  
743 Ac (TOTAL)  
653.70 Ac (LEFT OF -L-)



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ARCHIE R. BURNETTE  
DEED BOOK 342 PAGE 523  
DEED BOOK 266 PAGE 296  
DEED BOOK 334 PAGE 321  
743 Ac (TOTAL)  
89.30 Ac (RIGHT OF -L-)

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 199  
431 Ac (TOTAL)

RAMP D

PI STA	04+26.50
ΔT	13°45'00", LT.
D	2°30'
θs	3°45'
Ls	300'
Lc	250'
Rc	2291.8312'
Ts	425.5033'
U	200.0449'
V	100.0408'
Se	0.06 FT/FT

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 45

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
SCALE: 50 0 50 100	Burton, Adams, Kemp, & King, Inc. ENGINEERS
DATE:	PROJECT NO.: 91024
SHEET	OF

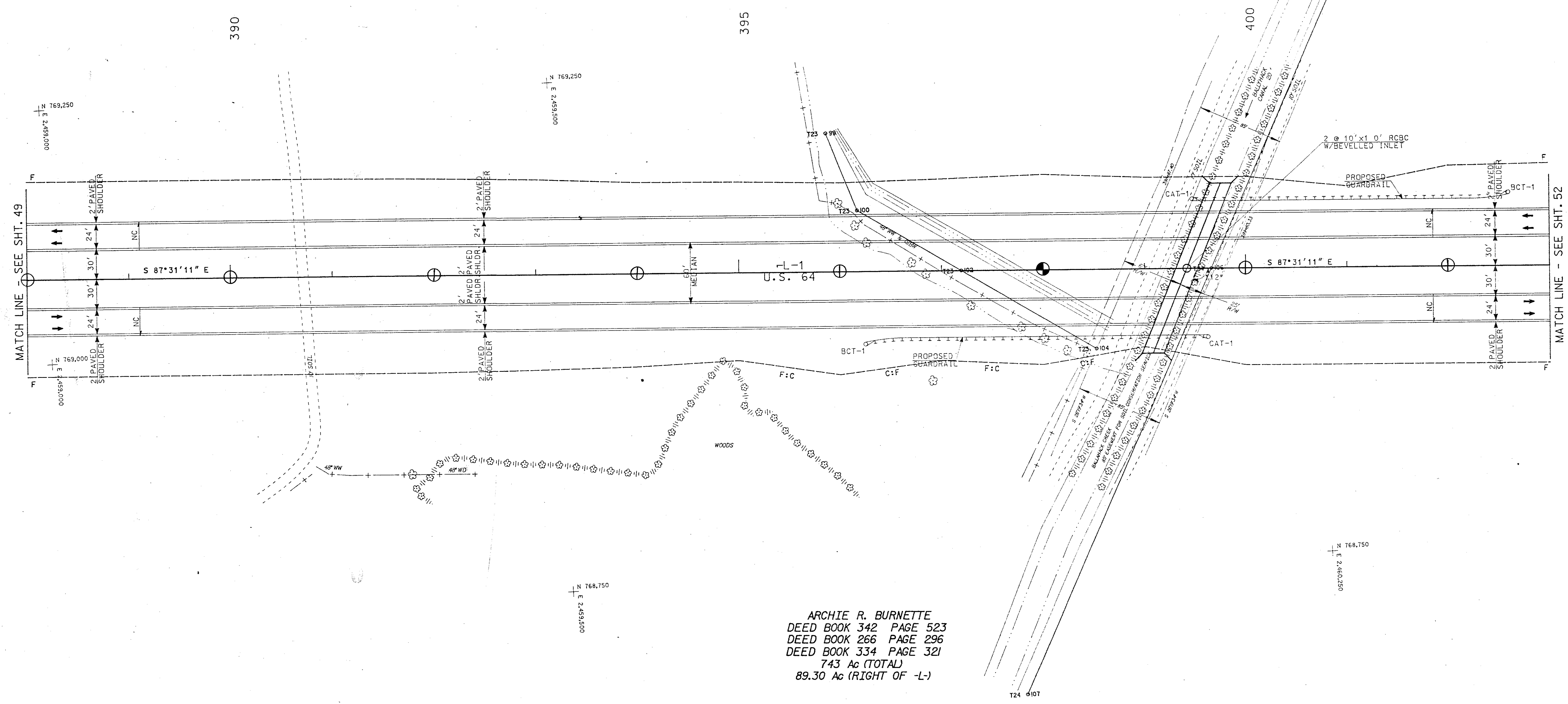
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	29	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE OR CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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ARCHIE R. BURNETTE  
 DEED BOOK 342 PAGE 523  
 DEED BOOK 266 PAGE 296  
 DEED BOOK 334 PAGE 321  
 743 Ac (TOTAL)  
 653.70 Ac (LEFT OF -L-)

ARCHIE R. BURNETTE  
 DEED BOOK 342 PAGE 523  
 DEED BOOK 266 PAGE 296  
 DEED BOOK 334 PAGE 321  
 743 Ac (TOTAL)  
 89.30 Ac (RIGHT OF -L-)

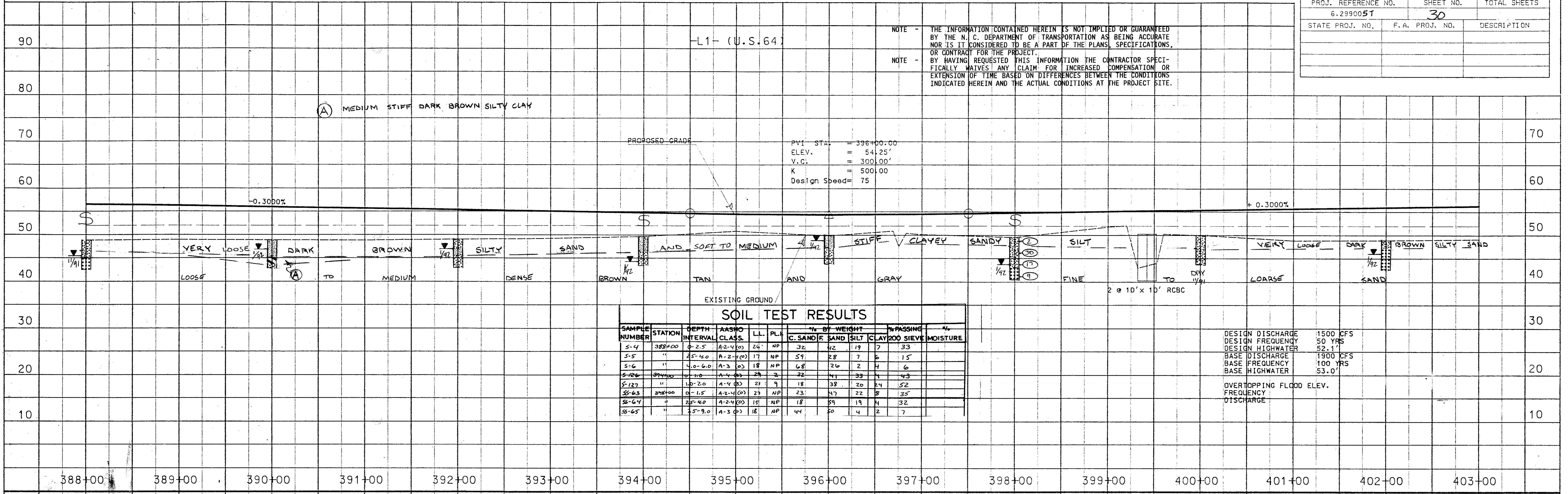


FOR -L1- (U.S. 64) PROFILE, SEE SHT. 51

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	30	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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-L1- (U.S. 64)

(A) MEDIUM STIFF DARK BROWN SILTY CLAY

PVI STA = 396+00.00  
ELEV. = 54.25'  
V.C. = 300.00'  
K = 500.00  
Design Speed = 75

-0.3000%

+0.3000%

VERY LOOSE TO LOOSE  
DARK BROWN TO MEDIUM DENSE

SAND AND SOFT TO MEDIUM BROWN TAN AND GRAY

STIFF CLAYEY SANDY SILT

VERY LOOSE TO LOOSE  
DARK BROWN TO MEDIUM DENSE  
SANDY SILT

2 @ 10' x 10' RCBC

388+00 389+00 390+00 391+00 392+00 393+00 394+00 395+00 396+00 397+00 398+00 399+00 400+00 401+00 402+00 403+00

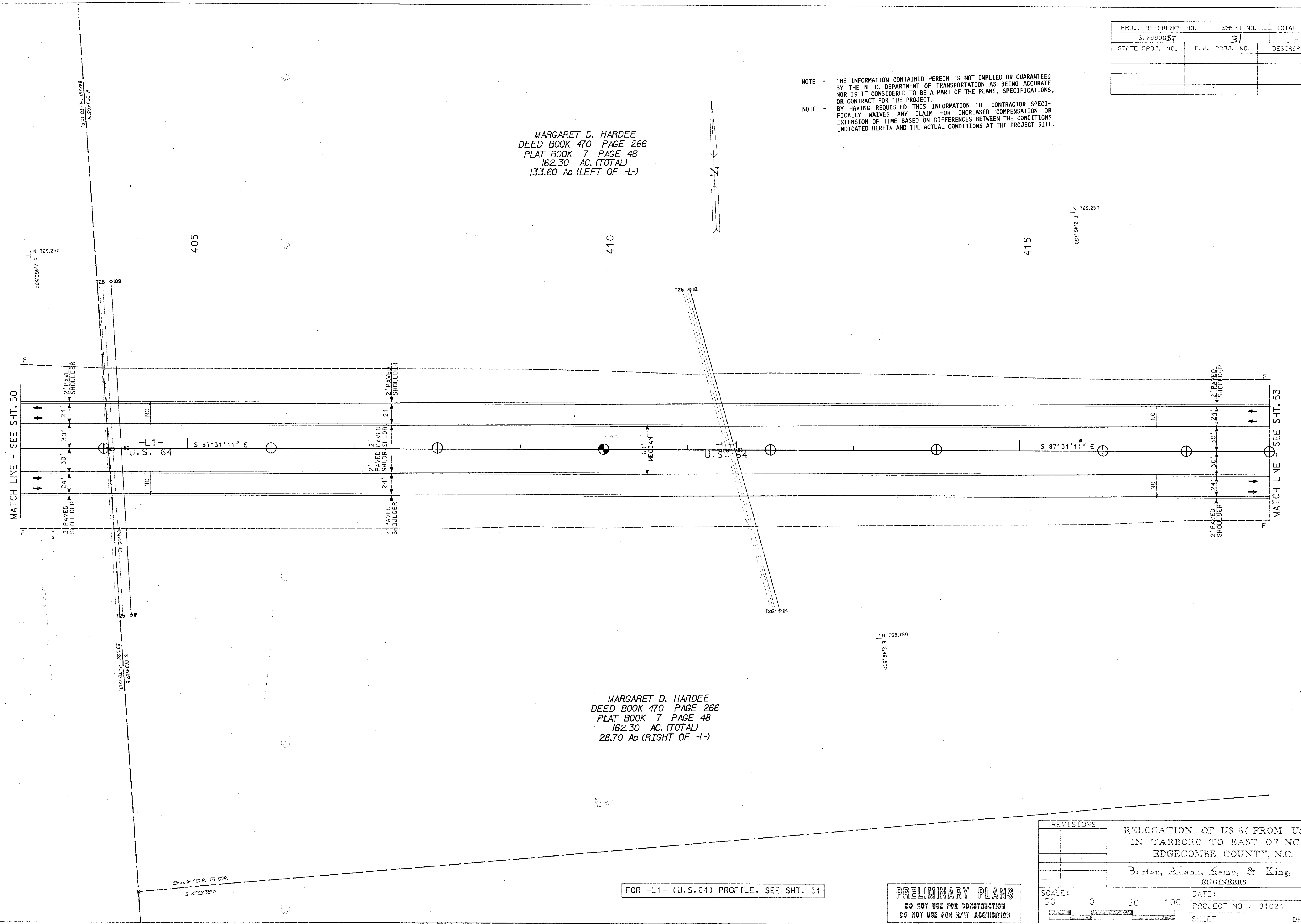
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990057	31	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 Ac (LEFT OF -L-)

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 28.70 Ac (RIGHT OF -L-)



FOR -L1- (U.S. 64) PROFILE, SEE SHT. 51

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

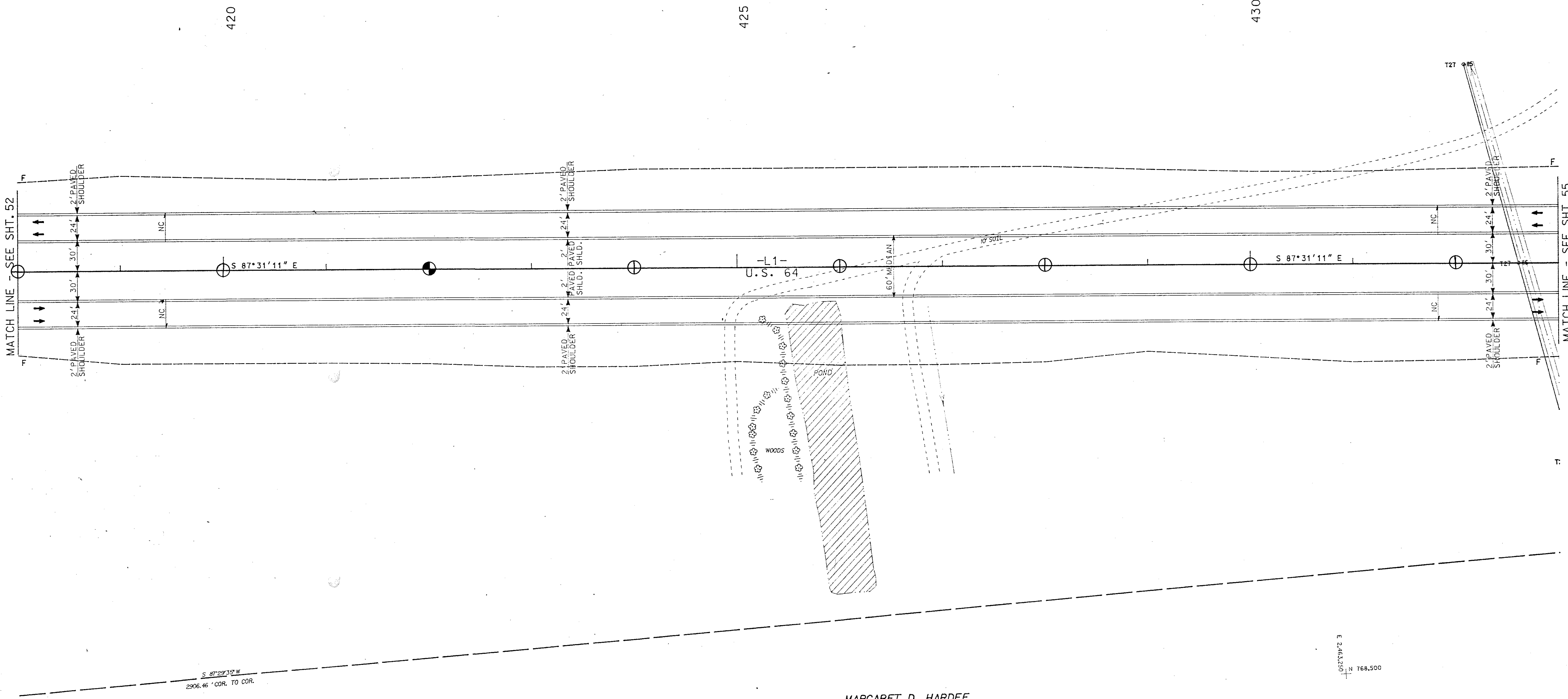
REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	32	32
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 Ac (LEFT OF -L-)



MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 28.70 Ac (RIGHT OF -L-)

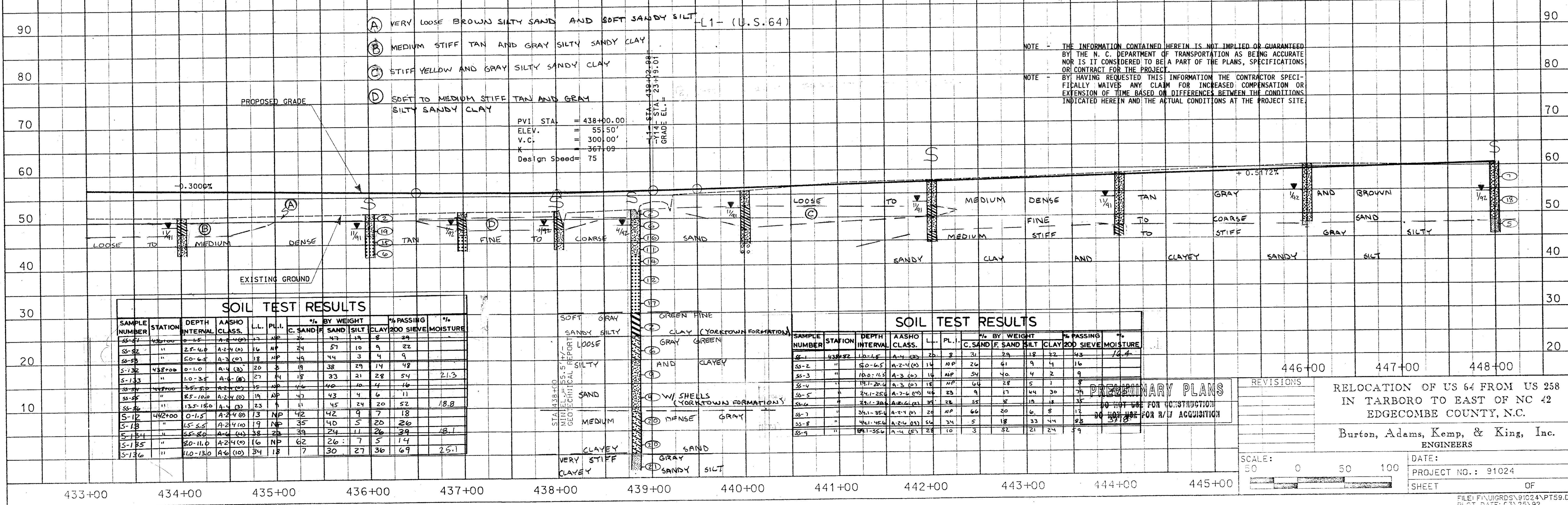
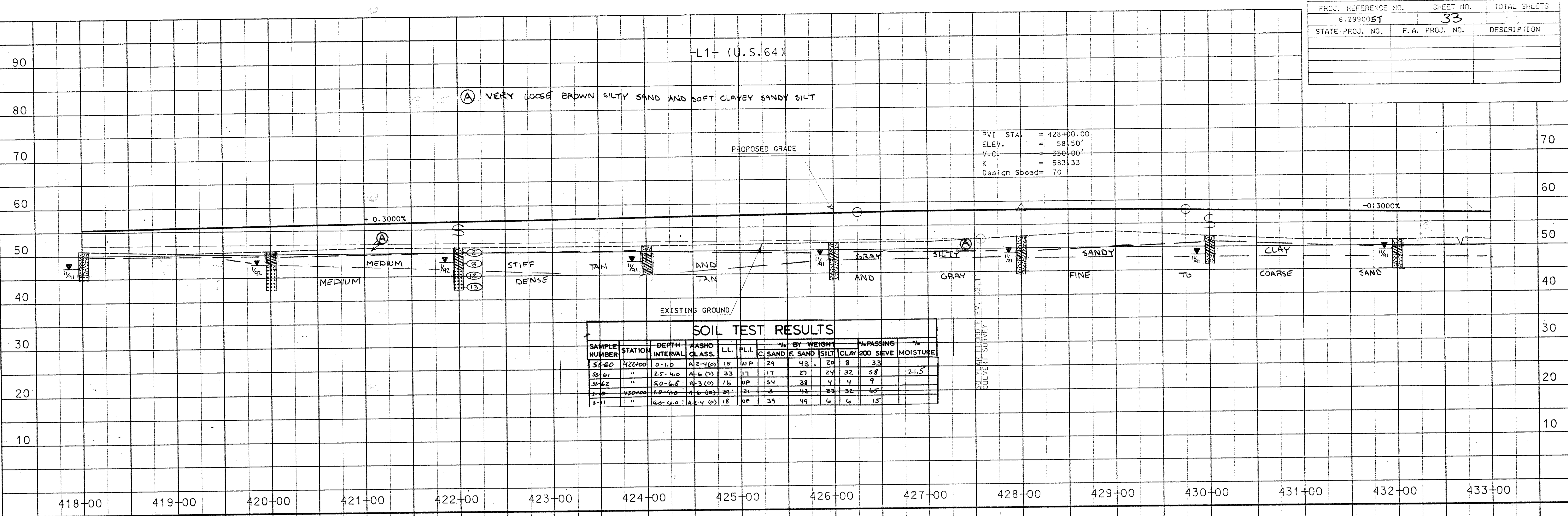
FOR -L1- (U.S. 64) PROFILE, SEE SHT. 54

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	33	35
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



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NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 1" = 40'

DATE: PROJECT NO.: 91024 SHEET OF

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	34	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

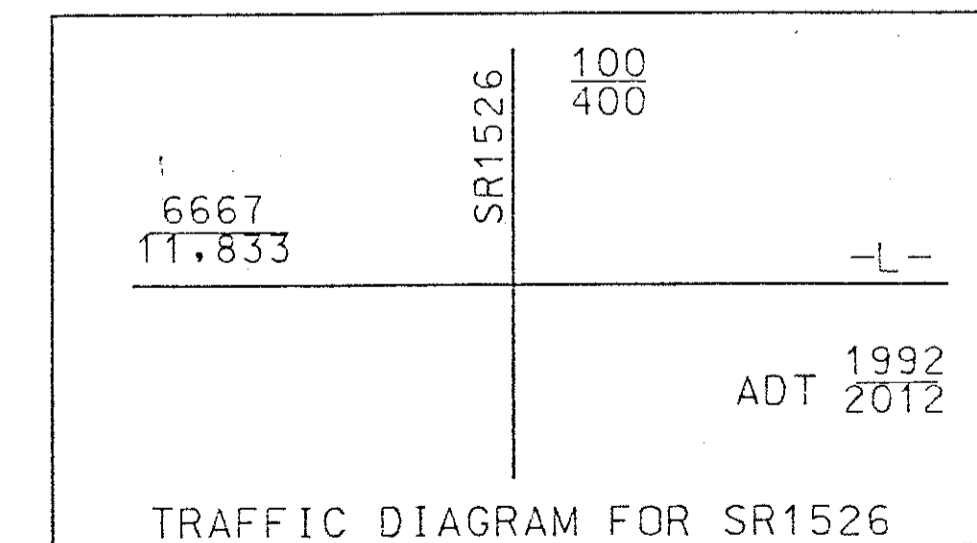
MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 AC (LEFT OF -L-)

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 28.70 AC (RIGHT OF -L-)

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

-L1-  
 PI STA 458+61.17  
 $\Delta T = 25^{\circ}56'33.0''$  RT.  
 D = 0°45'  
 $\theta_s = 0^{\circ}45'$   
 Ls = 200'  
 Lc = 3259.0000'  
 Rc = 7639.4373'  
 Ts = 1859.7156'  
 U = 133.3345'  
 V = 66.6678'  
 Se = 0.03 FT/FT

-Y14-  
 PI STA 27+82.82  
 $\Delta = 9^{\circ}11'38.0''$  LT.  
 D = 2°45'  
 Lc = 334.3232'  
 Rc = 2083.4830'  
 T = 167.5022'



FOR -L1- (U.S.64) PROFILE, SEE SHT. 54  
 FOR -Y14- (S.R. 1526) PROFILE, SEE SHT. 83

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

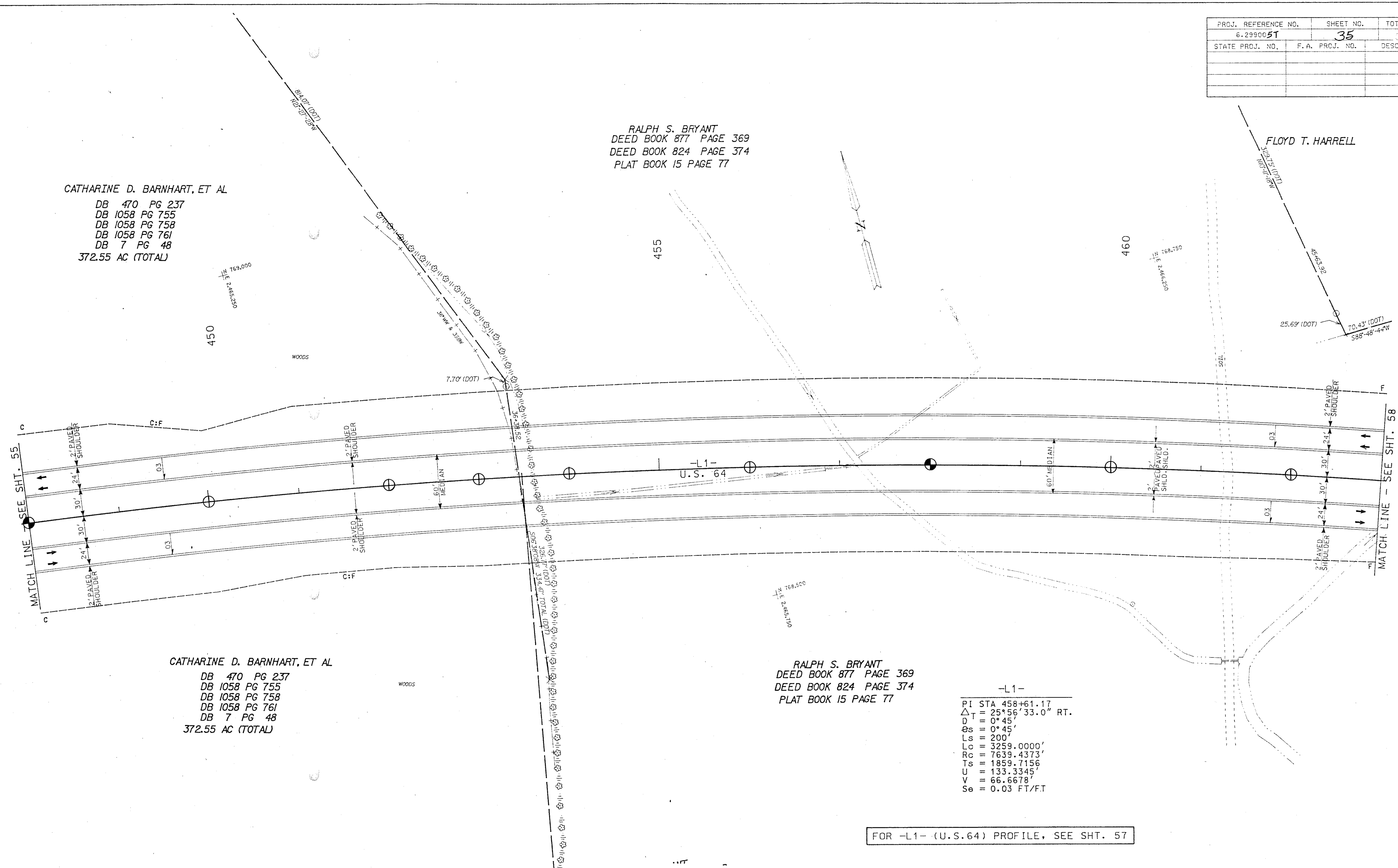
REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	35	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

RALPH S. BRYANT  
 DEED BOOK 877 PAGE 369  
 DEED BOOK 824 PAGE 374  
 PLAT BOOK 15 PAGE 77

FLOYD T. HARRELL



CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 758  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

RALPH S. BRYANT  
 DEED BOOK 877 PAGE 369  
 DEED BOOK 824 PAGE 374  
 PLAT BOOK 15 PAGE 77

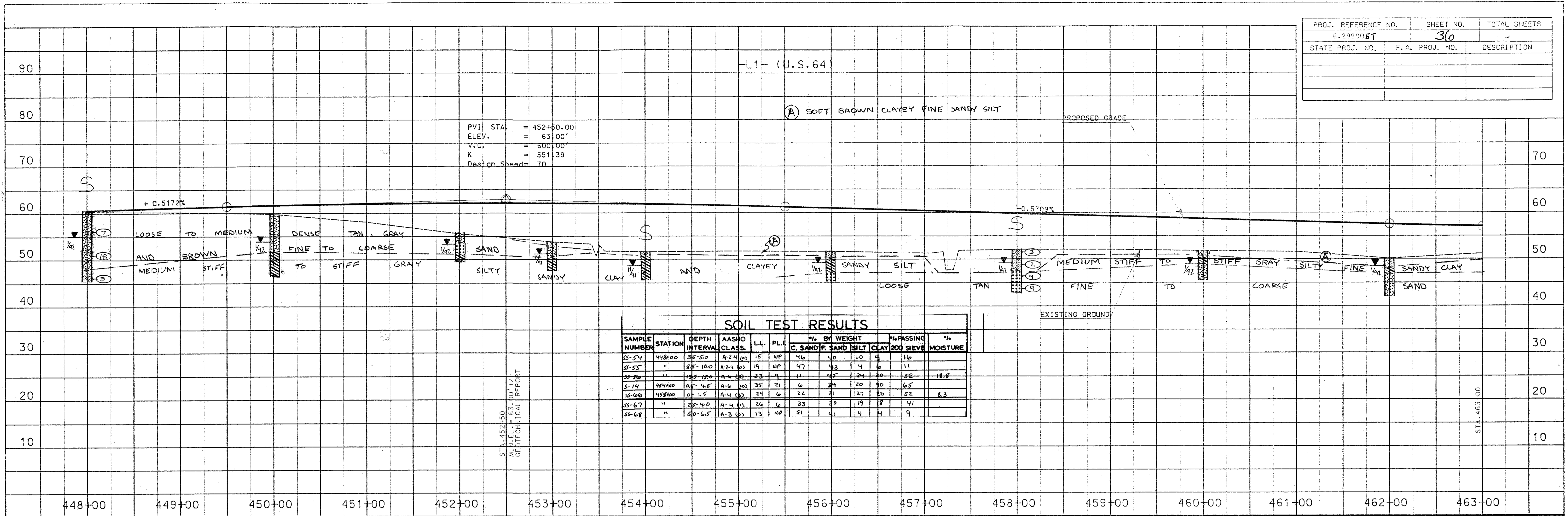
-L1-  
 PI STA 458+61.17  
 $\Delta_T = 25^\circ 56' 33.0''$  RT.  
 $D = 0^\circ 45'$   
 $\theta_s = 0^\circ 45'$   
 $L_s = 200'$   
 $L_c = 3259.0000'$   
 $R_c = 7639.4373'$   
 $T_s = 1859.7156'$   
 $U = 133.3345'$   
 $V = 66.6678'$   
 $S_e = 0.03$  FT/FT

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 57

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

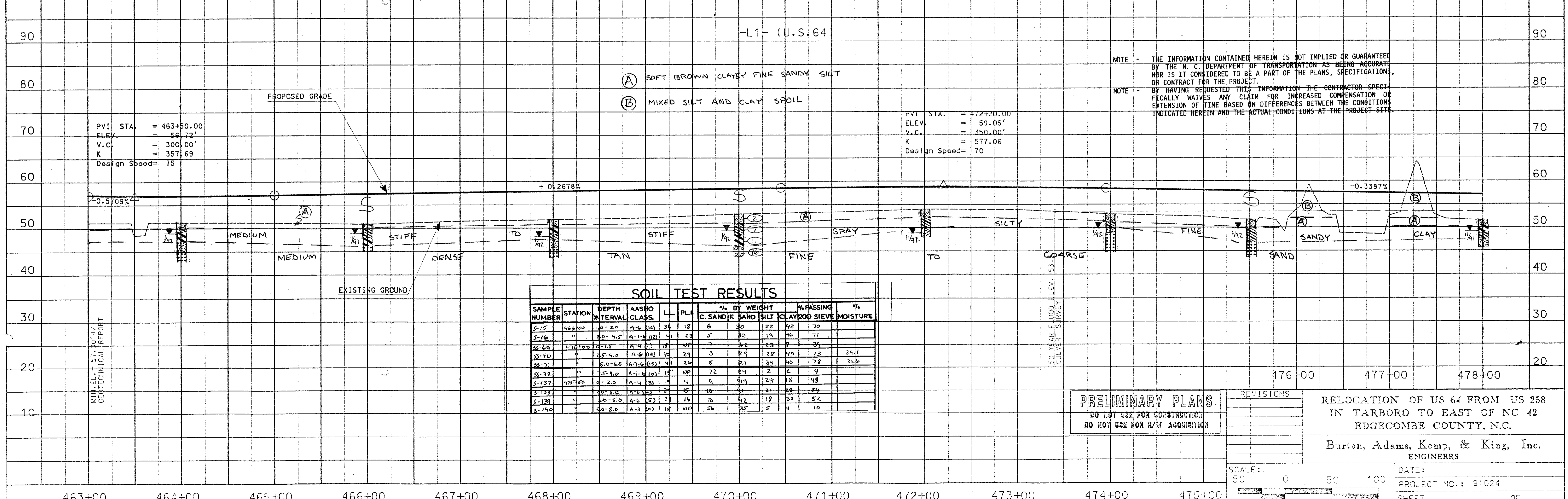
REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	30	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-54	448+00	25'-50"	A-2.4 (2)	15	NP	46	40	10	4	116	
SS-55	"	25'-100"	A-2.4 (2)	19	NP	47	32	4	6	111	
SS-56	"	75'-150"	A-4 (2)	23	9	11	45	24	10	52	18.8
S-14	452+00	0'-4.5'	A-6 (1)	35	21	6	31	20	40	65	
SS-66	458+00	0'-1.5'	A-4 (2)	24	6	22	31	27	20	52	8.3
SS-67	"	25'-4.0'	A-4 (2)	24	6	33	20	19	2	41	
SS-68	"	60'-6.5'	A-3 (2)	13	NP	51	41	4	4	9	



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-15	466+00	10'-8.0'	A-6 (1)	34	18	6	30	22	42	70	
S-16	"	30'-4.5'	A-7.4 (1)	41	23	5	20	14	46	71	
SS-69	470+00	0'-1.5'	A-4 (1)	18	NP	7	62	23	8	39	
SS-70	"	3.5'-4.0'	A-6 (1)	48	29	3	29	28	40	73	24.1
SS-71	"	5.0'-6.5'	A-7.4 (1)	48	26	5	21	34	40	78	21.6
SS-72	"	1.5'-2.0'	A-1.4 (1)	15	NP	72	24	2	2	4	
S-137	475+00	0'-2.0'	A-4 (1)	19	4	9	49	24	18	48	
S-138	"	20'-3.0'	A-6 (1)	29	16	10	21	21	24	54	
S-139	"	3.0'-5.0'	A-6 (1)	29	16	10	21	18	30	52	
S-140	"	60'-8.0'	A-3 (1)	15	NP	56	35	5	4	10	

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**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

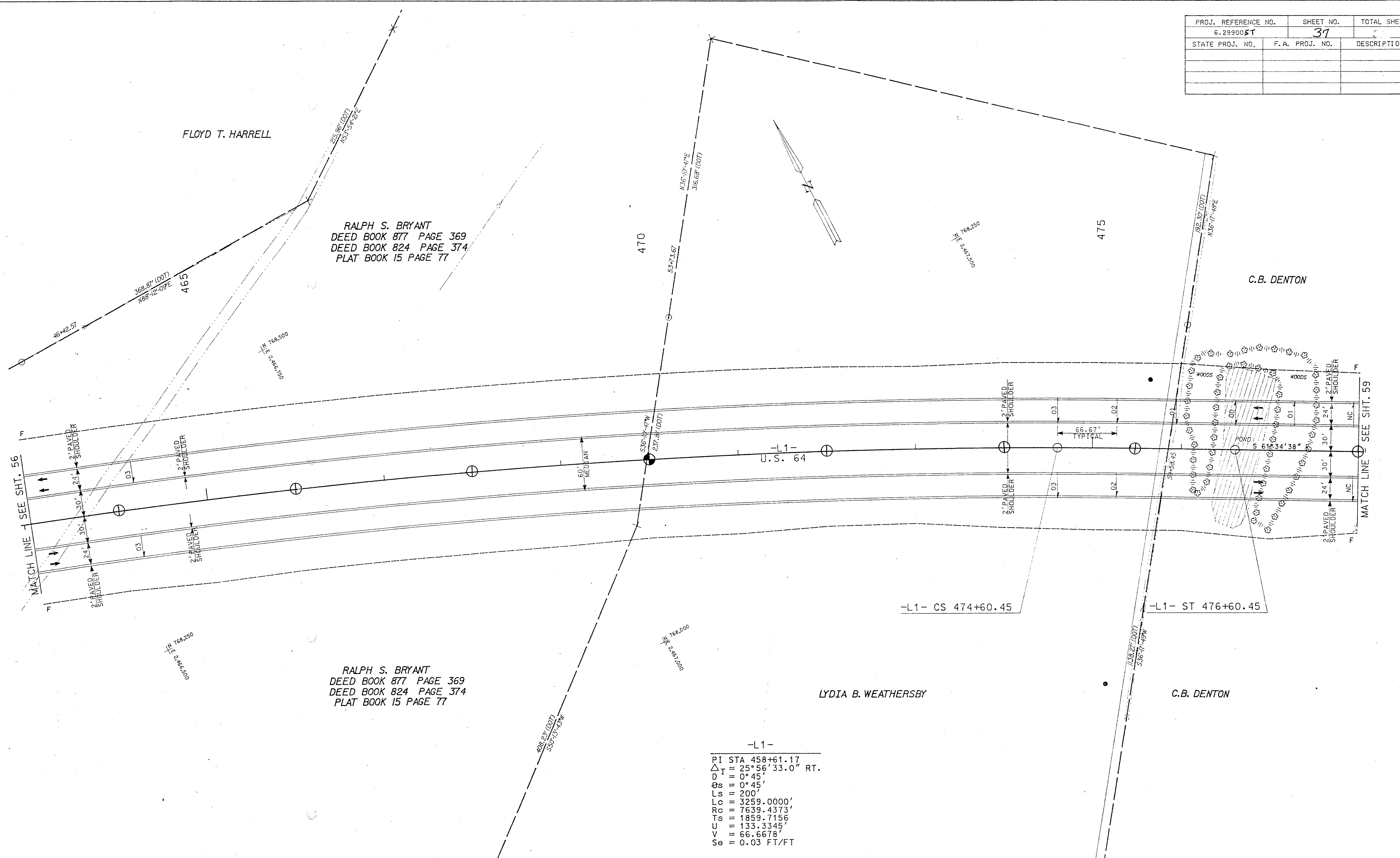
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	37	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

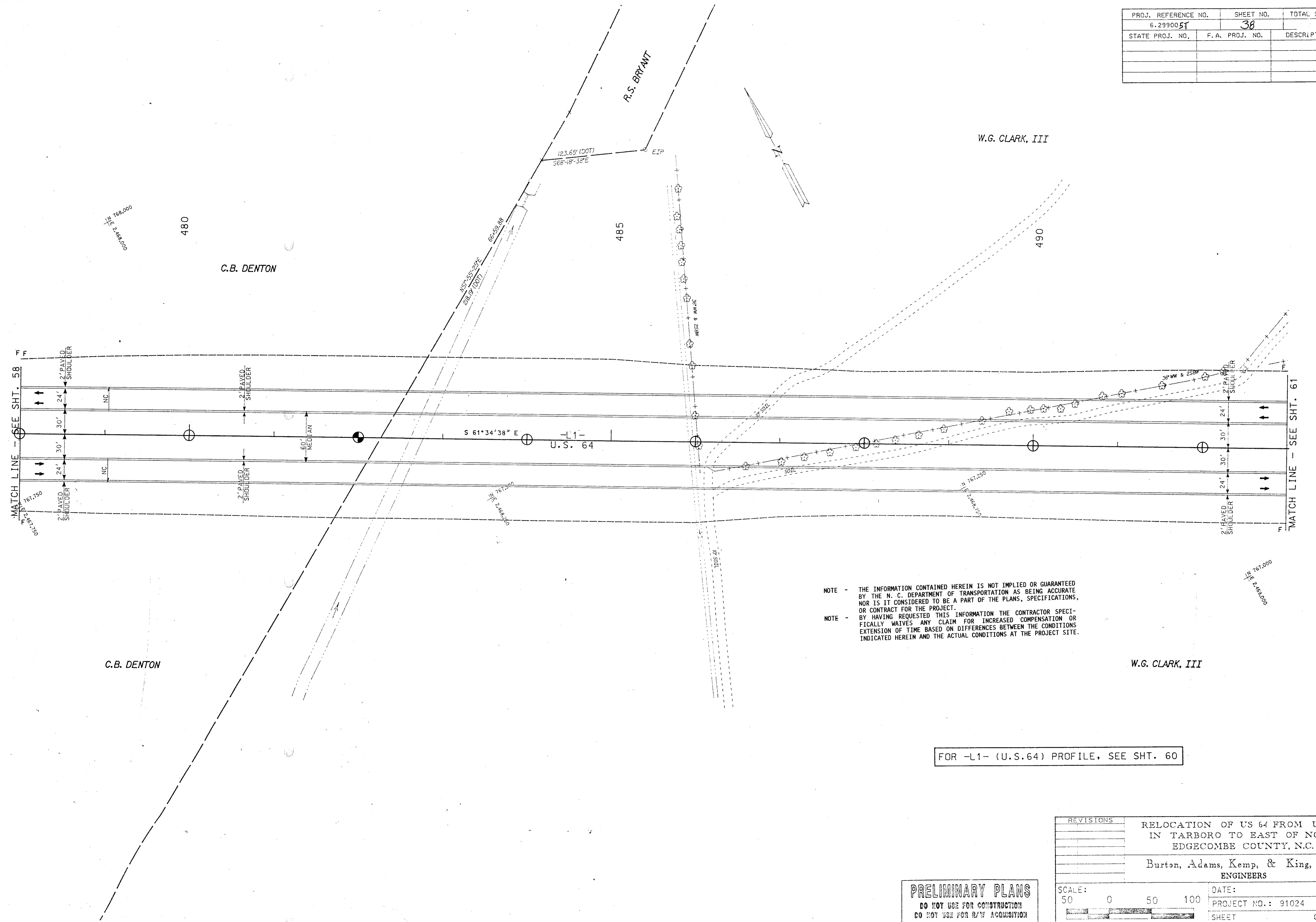


FOR -L1- (U.S.64) PROFILE, SEE SHT. 57

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR 1/3 ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	38	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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FOR -L1- (U.S. 64) PROFILE, SEE SHT. 60

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	39	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

PVI STA. = 481+00.00  
 ELEV. = 551.90'  
 V.C. = 300.00'  
 K = 469.70  
 Design Speed = 75

PVI STA. = 491+00.00  
 ELEV. = 581.75'  
 V.C. = 350.00'  
 K = 583.33  
 Design Speed = 70

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-73	482+00	0-1.5	A-4 (2)	24	8	6	32	38	24	68	24.1
S-74	"	3.5-4.0	A-4 (1)	24	7	4	37	33	26	68	20.9
S-75	"	6.0-6.5	A-2 (10)	24	10	6	32	33	11	14	2.4
S-141	482+00	0-1.0	A-4 (3)	16	NP	8	50	34	8	51	
S-142	"	1.0-2.5	A-7-6 (6)	45	28	4	23	31	42	72	24.2
S-143	"	3.5-4.0	A-6 (10)	30	19	5	34	27	34	68	
S-144	"	4.0-6.0	A-7-6 (7)	48	27	2	16	32	50	86	
S-17	483+00	0-1.0	A-4 (2)	14	NP	12	44	35	11	16	
S-18	"	1.0-2.0	A-6 (8)	29	16	9	32	23	36	64	
S-19	"	2.0-5.0	A-7-6 (10)	44	28	9	28	21	42	67	
S-20	"	5.0-6.0	A-4 (2)	35	19	8	31	19	42	66	

(A) SOFT BROWN CLAYEY FINE SANDY SILT

-L1- (U.S.64)

PVI STA. = 500+00.00  
 ELEV. = 561.05'  
 V.C. = 300.00'  
 K = 500.00  
 Design Speed = 75

PVI STA. = 509+00.00  
 ELEV. = 58.75'  
 V.C. = 300.00'  
 K = 666.67  
 Design Speed = 75

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-76	494+00	0-1.0	A-4 (1)	14	1	7	45	24	14	55	22.4
S-77	"	2.5-4.0	A-7-6 (1)	53	34	3	23	24	30	78	24.1
S-78	495+00	0-1.5	A-4 (2)	22	6	6	37	36	22	64	17.3
S-79	"	3.5-4.0	A-7-6 (1)	43	22	3	30	23	44	73	24.1
S-21	502+00	0-2.0	A-7-6 (1)	57	22	5	18	39	38	74	
S-22	"	3.0-5.0	A-7-6 (1)	4	22	3	31	30	14	78	
S-23	"	5.0-6.0	A-4 (1)	20	10	11	36	25	28	53	
S-130	502+00	0-2.5	A-4 (1)	27	7	7	37	24	12	34	
S-131	"	2.5-6.0	A-2-4 (2)	2	NP	8	83	5	4	12	

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**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

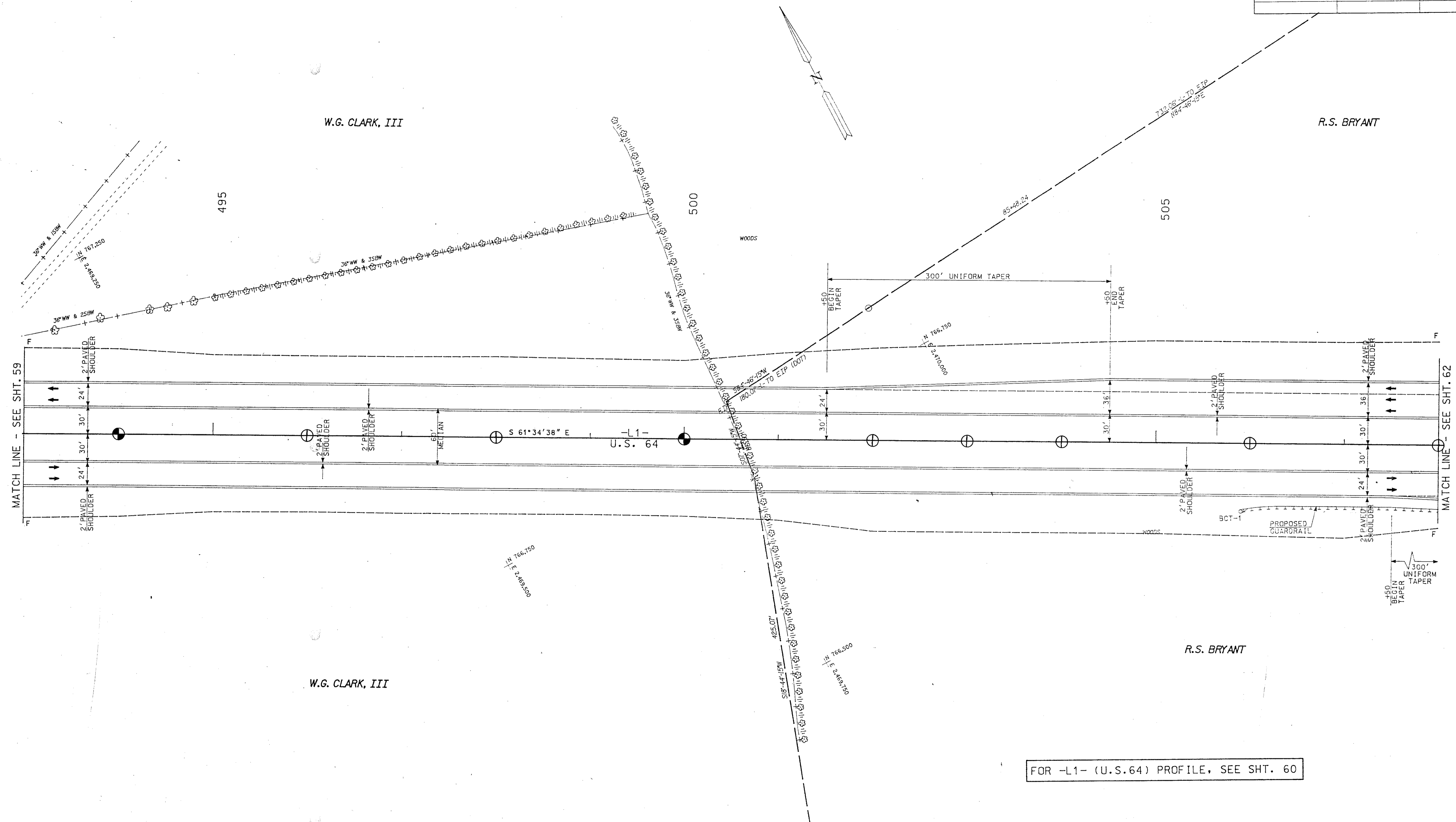
Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990C5T	40	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



FOR -L1- (U.S.64) PROFILE, SEE SHT. 60

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE:	DATE:
50 0 50 100	PROJECT NO.: 91024
	SHEET OF



PROJECT NO.	61-299005T	SHEET NO.	1	TOTAL SHEETS	1
STATE PROJ. NO.	F.A. PROJ. 1	SECTION			

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

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RAMP B

PI STA 4474.48	PI STA 14223.96	PI STA 15492.13
$\Delta = 19^{\circ}10'14.74"$	$\Delta = 5^{\circ}15'11.11"$	$\Delta = 11^{\circ}21'42.64"$ RT.
DC = 3700'	LS = 200'	D = 5115'
OB = 4'30"	LC = 133.3920'	LO = 216.4158'
LE = 300'	V = 66.7200'	RO = 1031.3482'
LC = 350'		T = 102.5639'
RO = 1909.8593'		Se = 0.06 FT/FT
Ts = 478.4803'		
U = 200.0647'		
V = 100.0588'		
Se = 0.06 FT/FT		

RAMP A

PI STA 6224.64	PI STA 11704.97	PI STA 13448.71
$\Delta = 16^{\circ}21'04.97"$ RT.	$\Delta = 14^{\circ}41'19.17"$ RT.	$\Delta = 5^{\circ}00'00.00"$
DC = 3700'	LS = 200'	D = 5115'
OB = 4'30"	LC = 133.3866'	LO = 269.8833'
LE = 300'	V = 66.7151'	RO = 1148.3156'
LC = 300'		T = 148.7150'
RO = 1909.8593'		Se = 0.07 FT/FT
Ts = 452.7121'		
U = 200.0647'		
V = 100.0588'		
Se = 0.06 FT/FT		

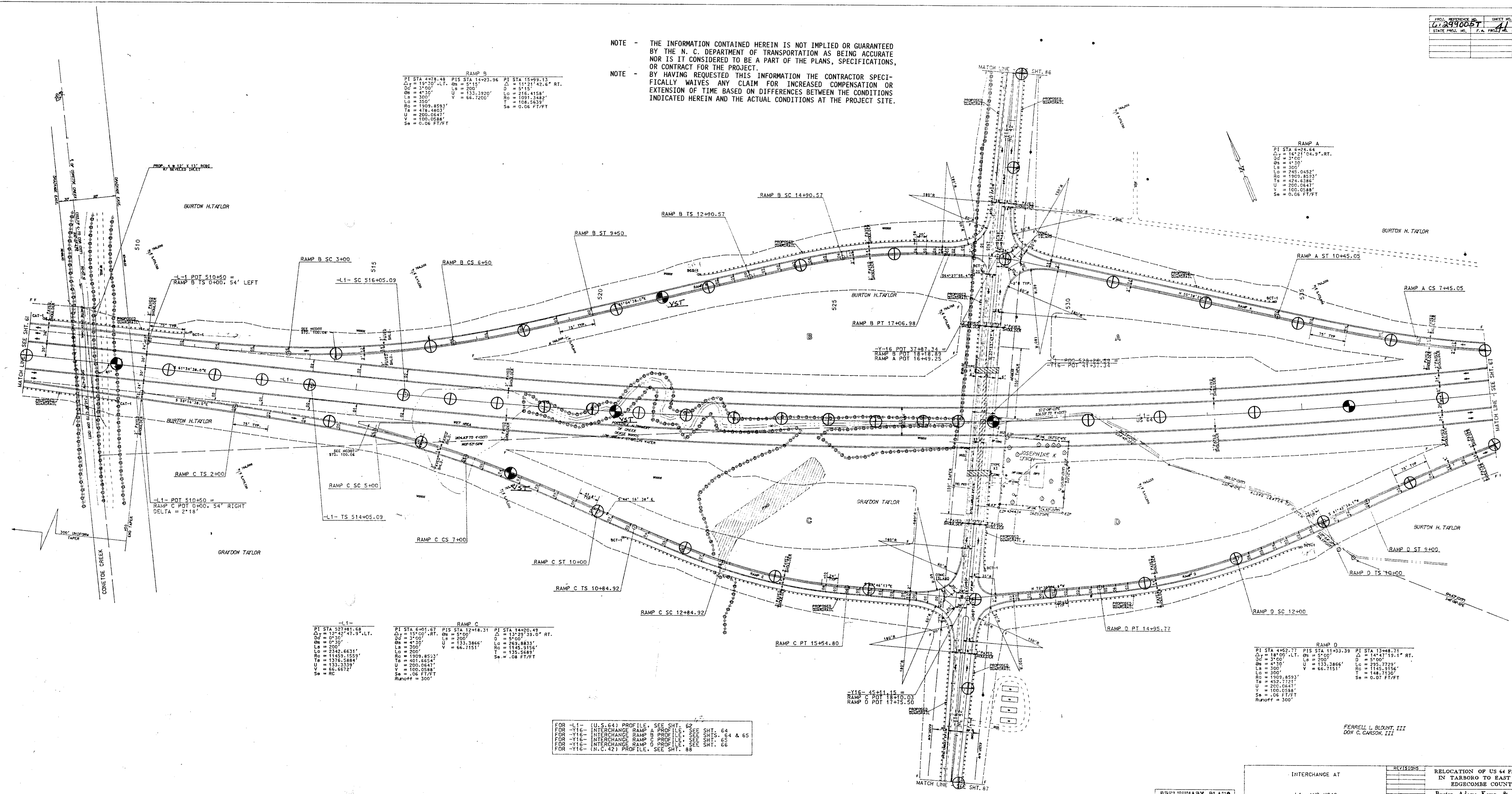
RAMP C

PI STA 527191.68	PI STA 6401.67	PI STA 12418.31	PI STA 14430.49
$\Delta = 12^{\circ}49'47.93"$ LT.	$\Delta = 15^{\circ}00'00.00"$ RT.	$\Delta = 9^{\circ}00'00.00"$	$\Delta = 13^{\circ}29'39.07"$ RT.
DC = 3700'	LS = 200'	D = 5115'	D = 5115'
OB = 0'30"	LC = 133.3866'	LO = 269.8833'	LO = 269.8833'
LE = 300'	V = 66.7151'	RO = 1148.3156'	RO = 1148.3156'
LC = 300'		T = 148.7150'	T = 148.7150'
RO = 1909.8593'		Se = 0.07 FT/FT	Se = 0.07 FT/FT
Ts = 1429.1559'			
U = 1376.5888'			
V = 133.3333'			
Se = 66.6672'			
Se = RC			

RAMP D

PI STA 4952.77	PI STA 11433.39	PI STA 13448.71
$\Delta = 18^{\circ}00'00.00"$ LT.	$\Delta = 5^{\circ}00'00.00"$	$\Delta = 14^{\circ}41'19.17"$ RT.
DC = 3700'	LS = 200'	D = 5115'
OB = 4'30"	LC = 133.3866'	LO = 269.8833'
LE = 300'	V = 66.7151'	RO = 1148.3156'
LC = 300'		T = 148.7150'
RO = 1909.8593'		Se = 0.07 FT/FT
Ts = 452.7121'		
U = 200.0647'		
V = 100.0588'		
Se = 0.06 FT/FT		
Runoff = 300'		

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 62  
 FOR -Y16- INTERCHANGE RAMP A PROFILE, SEE SHT. 64  
 FOR -Y16- INTERCHANGE RAMP B PROFILE, SEE SHT. 64 & 65  
 FOR -Y16- INTERCHANGE RAMP C PROFILE, SEE SHT. 64 & 65  
 FOR -Y16- INTERCHANGE RAMP D PROFILE, SEE SHT. 64 & 65  
 FOR -Y16- (N.C. 42) PROFILE, SEE SHT. 68



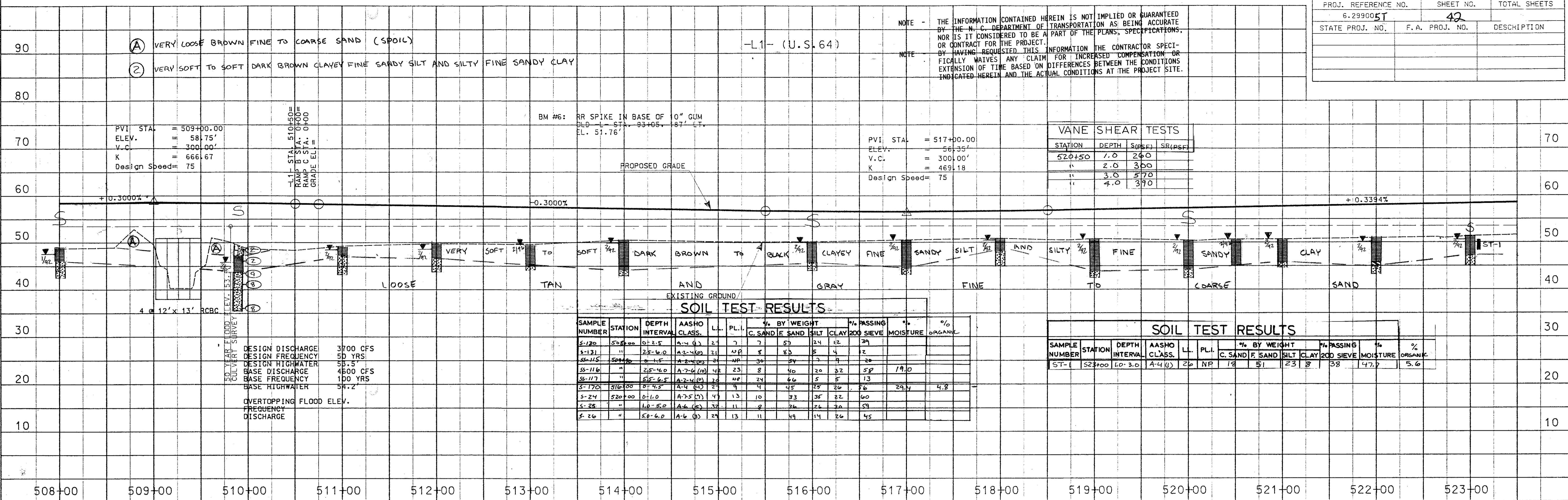
FERRILL L. BLOUNT, III  
 DON C. CARSON, III

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR BIDDING

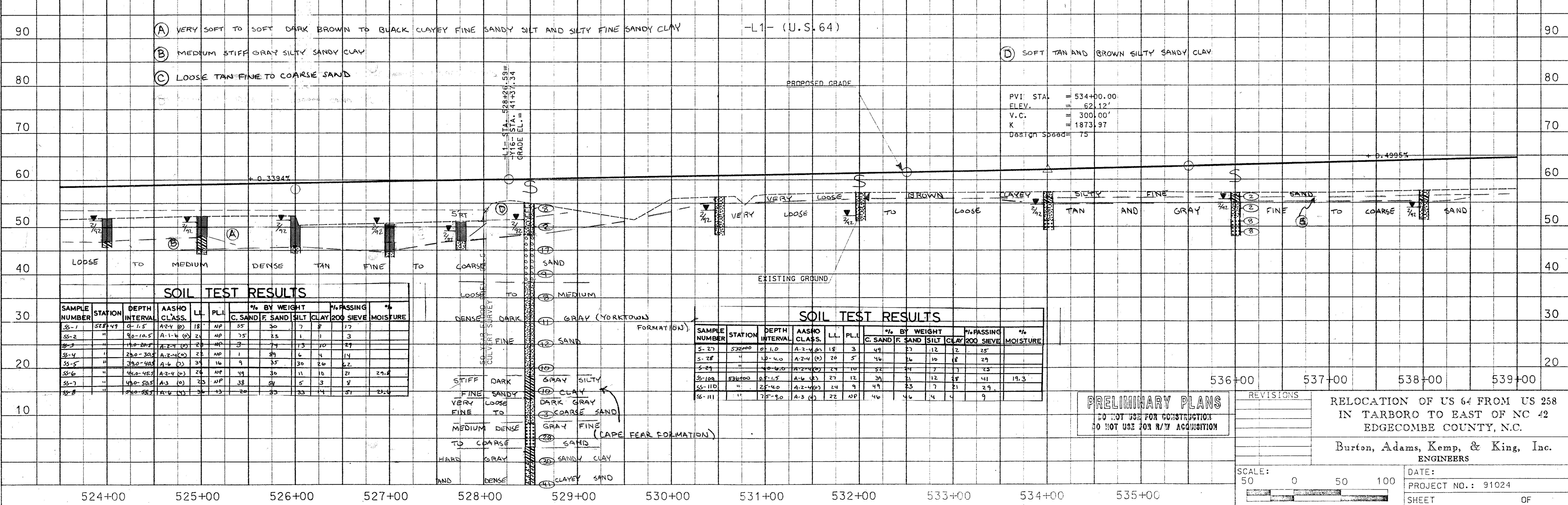
INTERCHANGE AT	-L1- AND NC42	EDGECOMBE COUNTY
REVISIONS	DATE	BY
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PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	42	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

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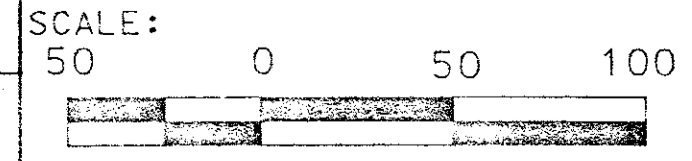
STATION	DEPTH	S (PSF)	SR (PSF)
520+50	1.0	240	
"	2.0	300	
"	3.0	570	
"	4.0	390	



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

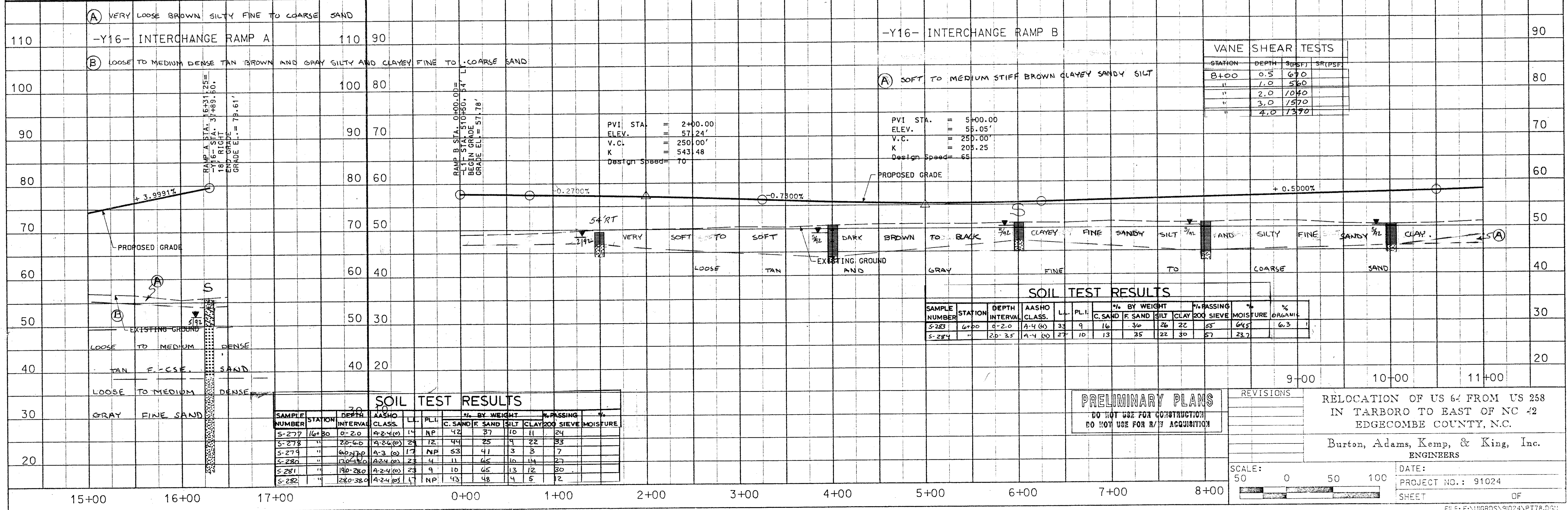
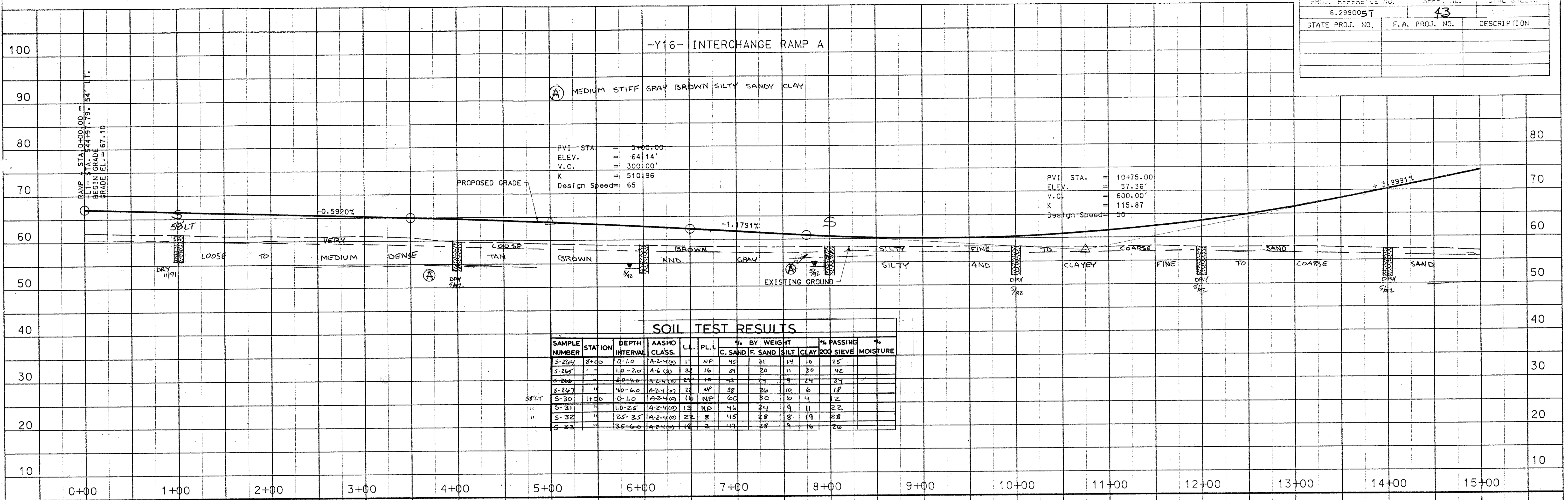
NO.	DESCRIPTION

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc. ENGINEERS



SCALE: 1" = 50'  
DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

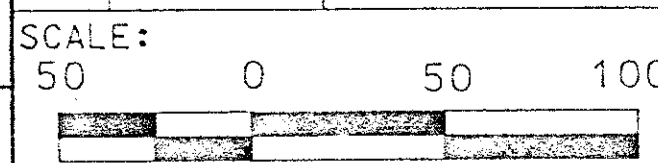
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900BT	43	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

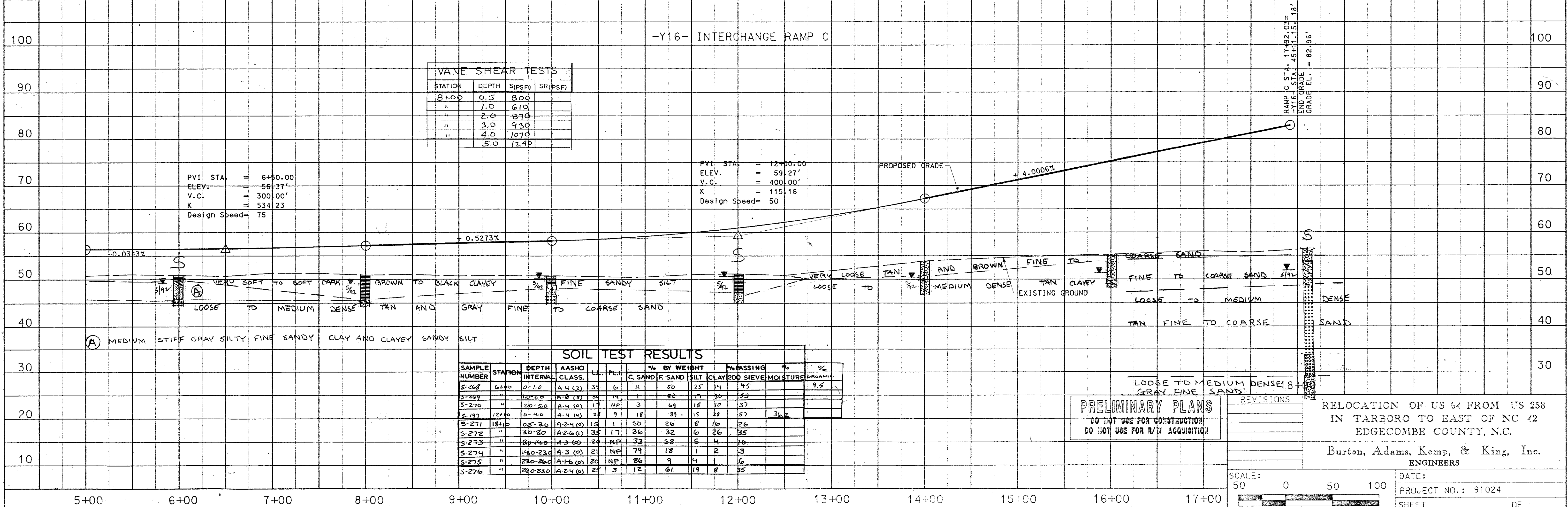
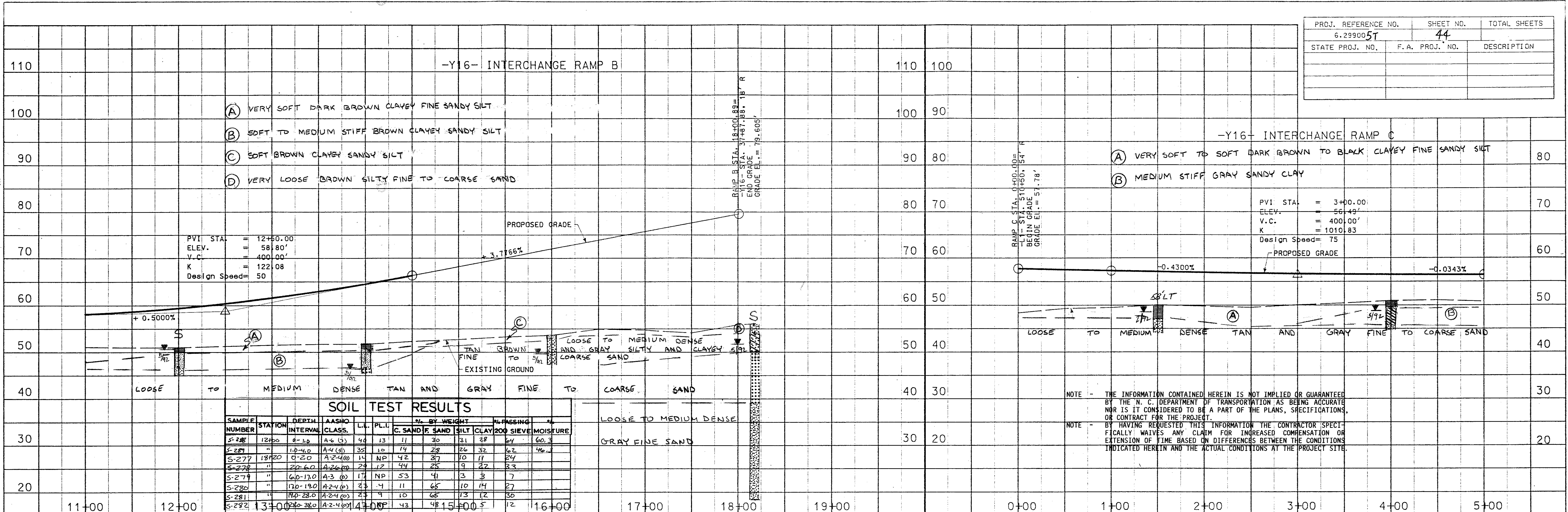
REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	44	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

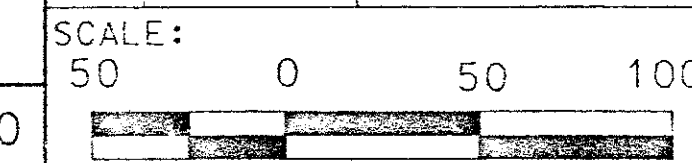


**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

REVISIONS

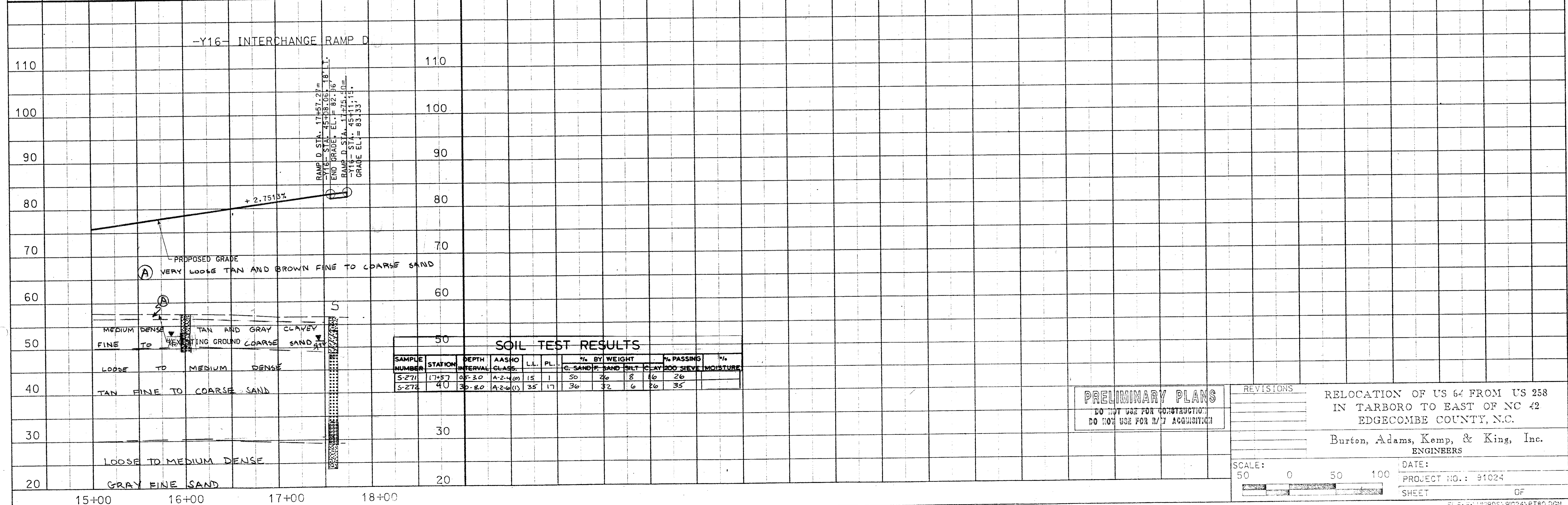
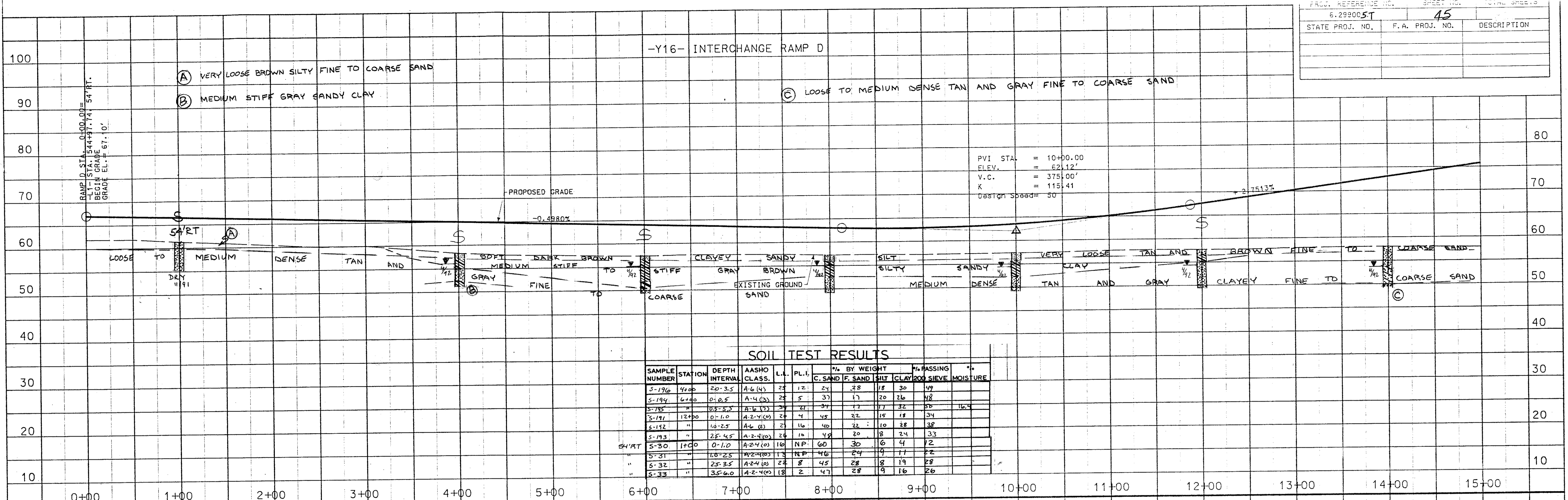
RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	45	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE:  
50 0 50 100

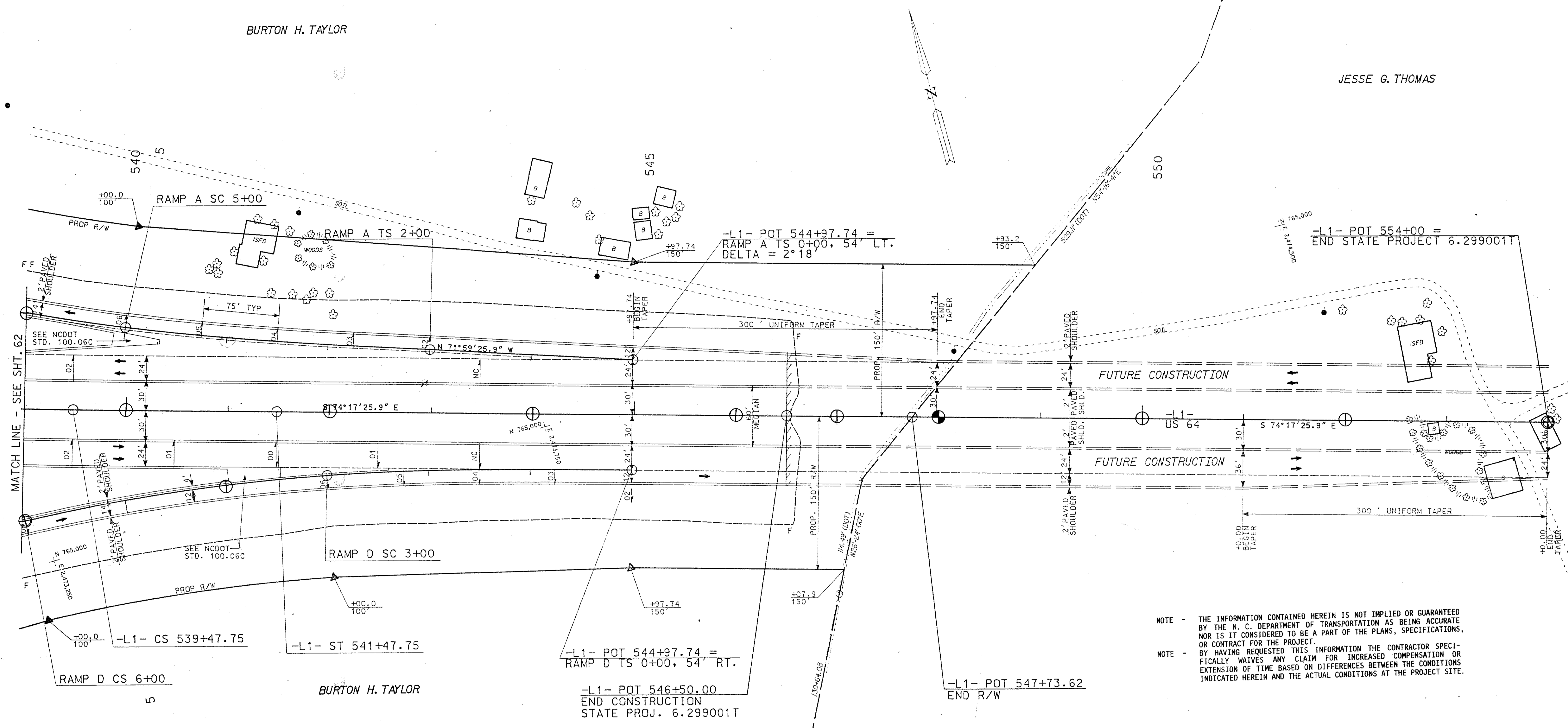
DATE:  
PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	46	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

BURTON H. TAYLOR

JESSE G. THOMAS



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-L1-	RAMP A	RAMP D
PI STA 527+81.68	PI STA 6+24.64	PI STA 4+52.77
ΔT = 12°42'47.9", LT.	ΔT = 16°21'04.9", RT.	ΔT = 18°00', LT.
Dc = 0°30'	Dc = 3°00'	Dc = 3°00'
Øs = 0°30'	Øs = 4°30'	Øs = 4°30'
Ls = 200'	Ls = 300'	Ls = 300'
Lc = 2342.6631'	Lc = 245.0452'	Lc = 300'
Rc = 11459.1559'	Rc = 1909.8593'	Rc = 1909.8593'
Ts = 1376.5884'	Ts = 424.6386'	Ts = 452.7721'
U = 133.3339'	U = 200.0647'	U = 200.0647'
V = 66.6672'	V = 100.0588'	V = 100.0588'
Se = RC	Se = .06 FT/FT	Se = .06 FT/FT
	Runoff = 300'	

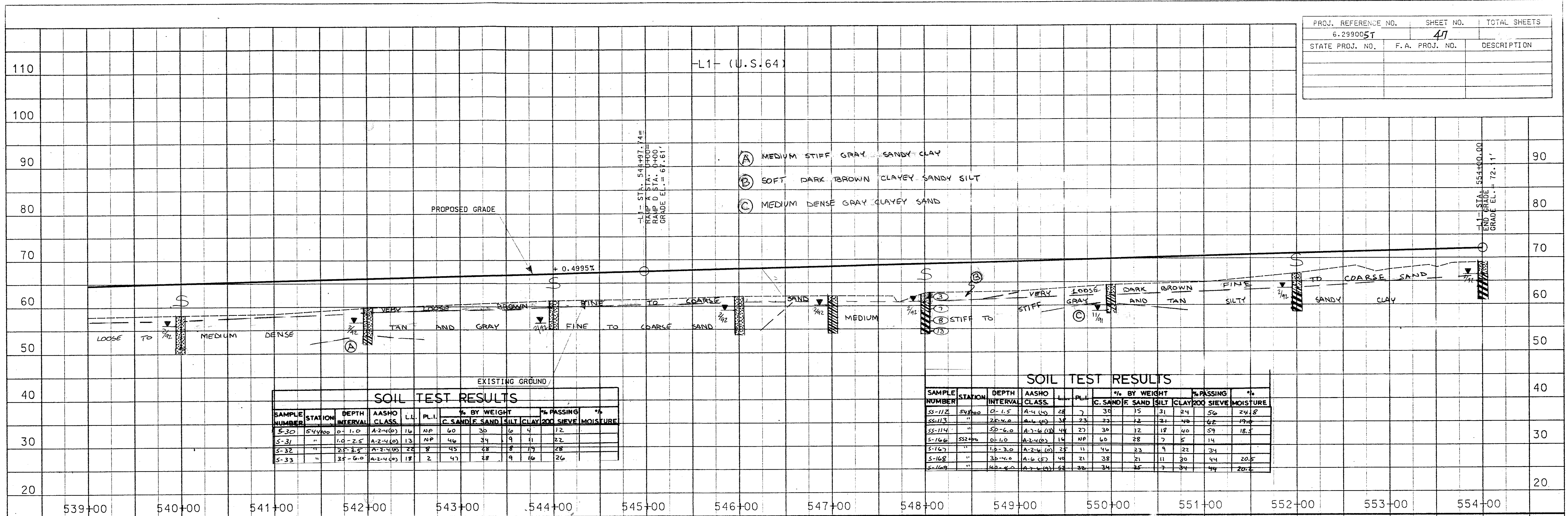
JESSE G. THOMAS

FOR -L1- (U.S. 64) PROFILE, SEE SHT. 68

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE:
	PROJECT NO.: 91024
	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6-299005T	47	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



- (A) MEDIUM STIFF GRAY SANDY CLAY
- (B) SOFT DARK BROWN CLAYEY SANDY SILT
- (C) MEDIUM DENSE GRAY CLAYEY SAND

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-30	544+00	0-1.0	A-2-4(0)	16	NP	60	30	6	4	12	
S-31	"	1.0-2.5	A-2-4(0)	13	NP	46	34	9	11	22	
S-32	"	2.5-3.5	A-2-4(0)	24	8	45	28	8	17	28	
S-33	"	3.5-6.0	A-2-4(0)	18	2	47	28	9	16	26	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	L	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-112	548+00	0-1.5	A-4(4)	28	7	30	15	31	24	56	24.8
S-113	"	2.5-4.0	A-4(4)	38	23	23	12	21	48	62	19.6
S-114	"	5.0-6.0	A-2-4(0)	44	27	30	12	18	40	59	18.5
S-166	552+00	0-1.0	A-2-4(0)	14	NP	60	28	7	5	14	
S-167	"	1.0-3.0	A-2-4(0)	25	11	46	23	9	22	34	
S-168	"	3.0-6.0	A-6(6)	45	21	38	21	11	30	44	20.5
S-169	"	6.0-8.0	A-2-4(0)	52	30	34	25	7	34	49	20.2

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS


SCALE: 50 0 50 100

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

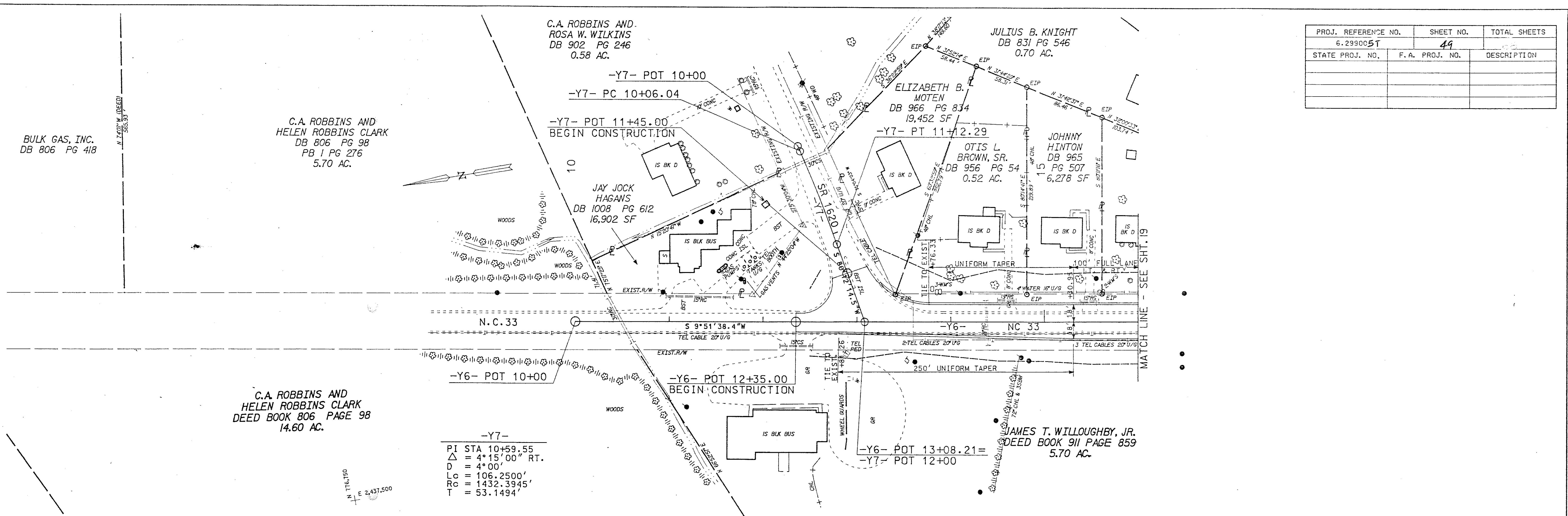
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

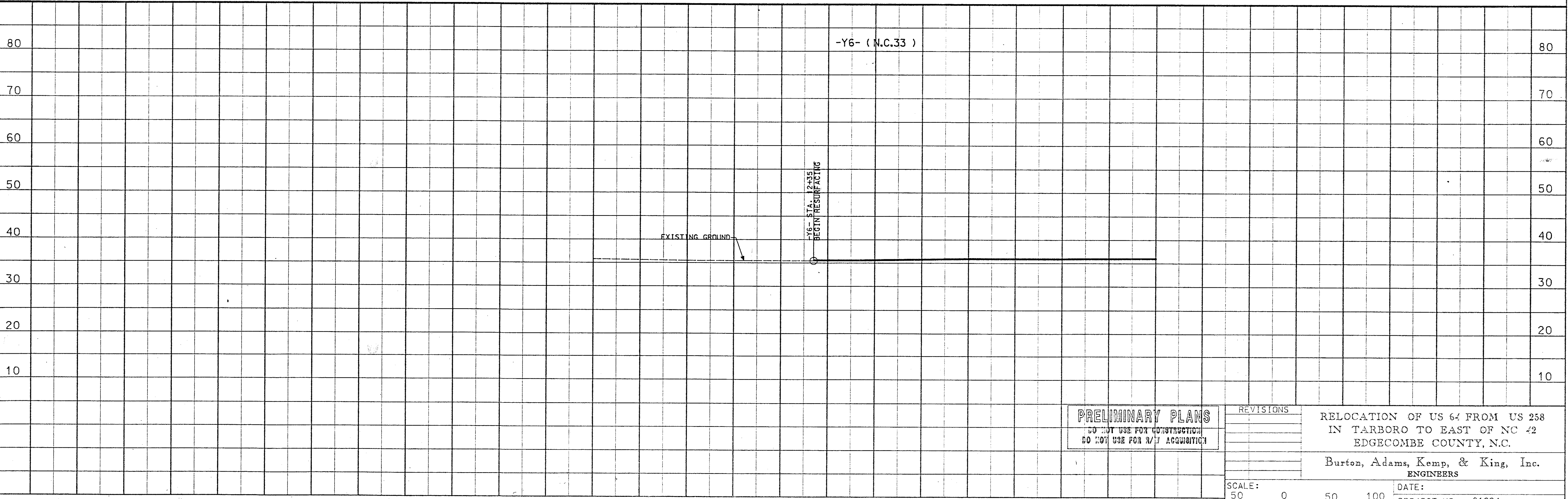




PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	49	100
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



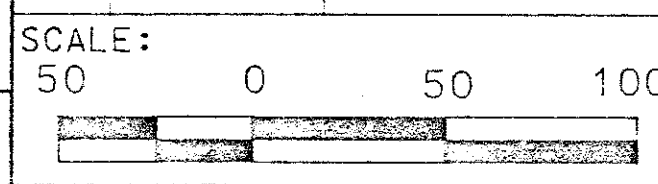
-Y7-  
 PI STA 10+59.55  
 Δ = 4° 15' 00" RT.  
 D = 4° 00'  
 Lc = 106.2500'  
 Rc = 1432.3945'  
 T = 53.1494'



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS



DATE:  
 PROJECT NO.: 91024  
 SHEET OF

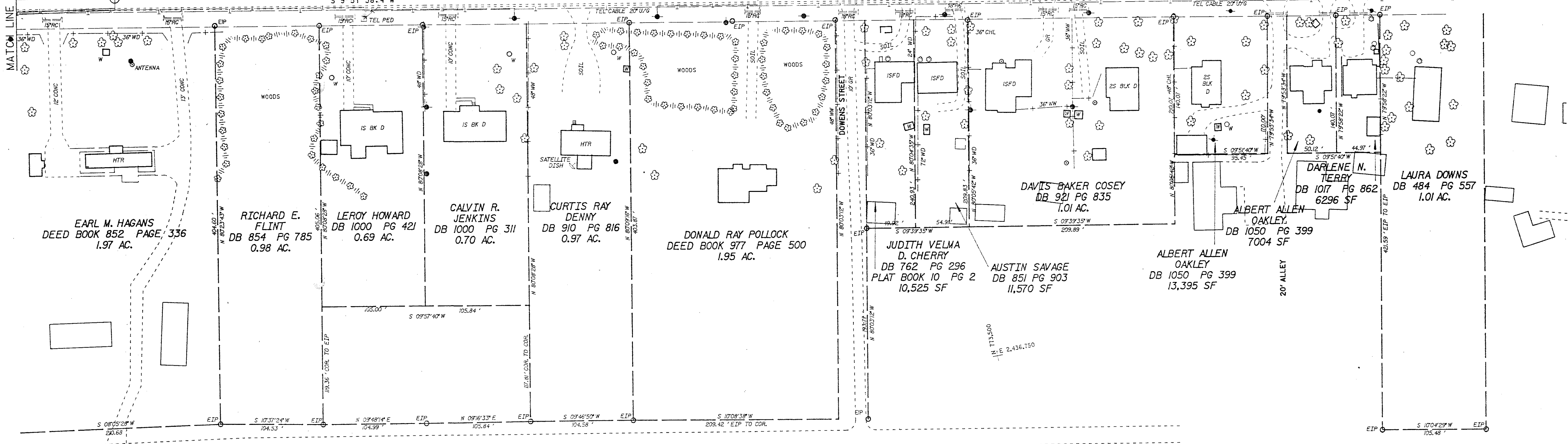
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	50	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

EDGEcombe-MARTIN COUNTY ELECTRIC  
MEMBERSHIP CORPORATION  
DEED BOOK 910 PAGE 911  
13.40 AC.

-Y6- POT 32+00.00  
END CONSTRUCTION

-Y6- POT 45+00

MATCH LINE - SEE SHT. 19



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FOR -Y6- (N.C.33) PROFILE, SEE SHT. 74  
FOR -Y16- (S.R. ) PROFILE, SEE SHT. 74  
FOR -Y17- (S.R. ) PROFILE, SEE SHT. 74

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET CF

PROJ. REFERENCE NO.	SHEET NO.	DATE
6.299005T	51	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

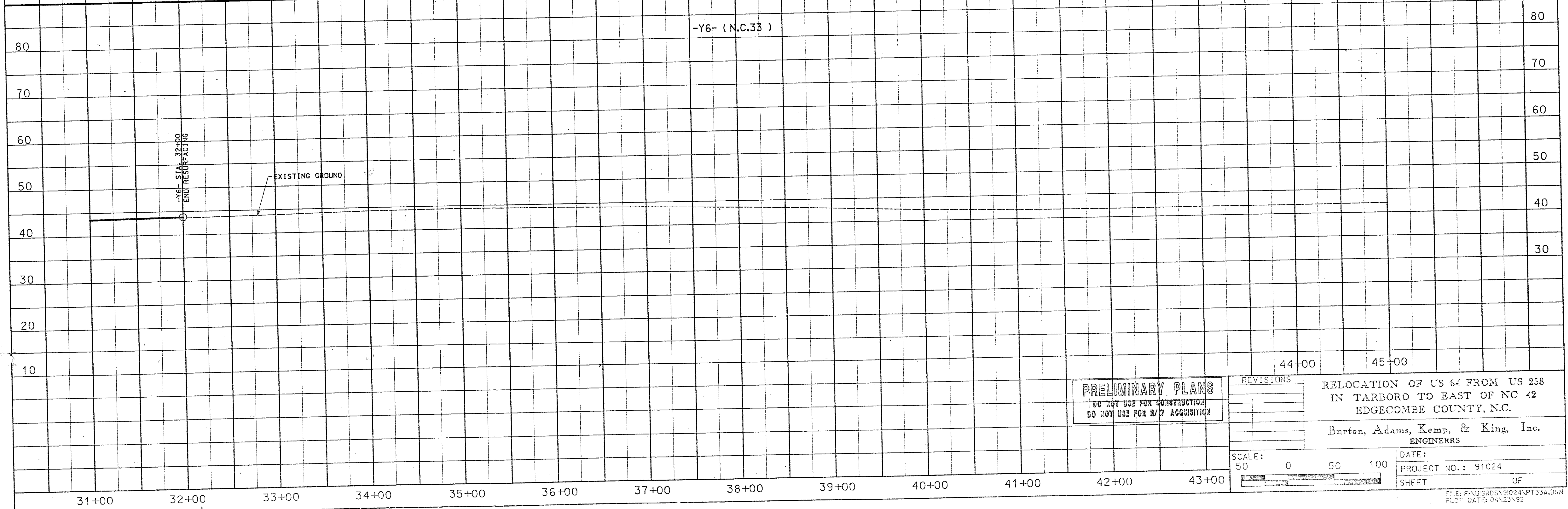
-Y16- (S.R. )

-Y17- (S.R. )

-Y6- (N.C.33 )

-Y6- STA. 32+00  
END RESURFACING

EXISTING GROUND



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE:  
50 0 50 100

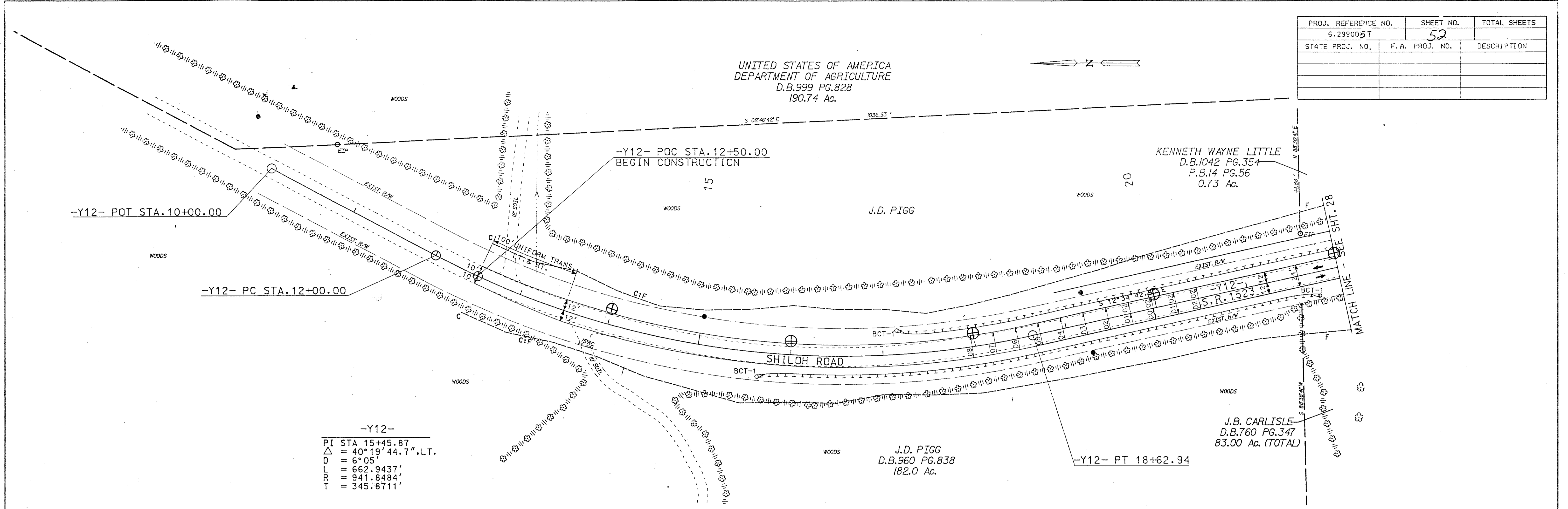
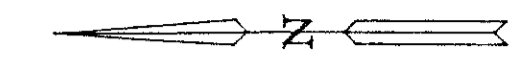
DATE:  
PROJECT NO.: 91024

SHEET OF

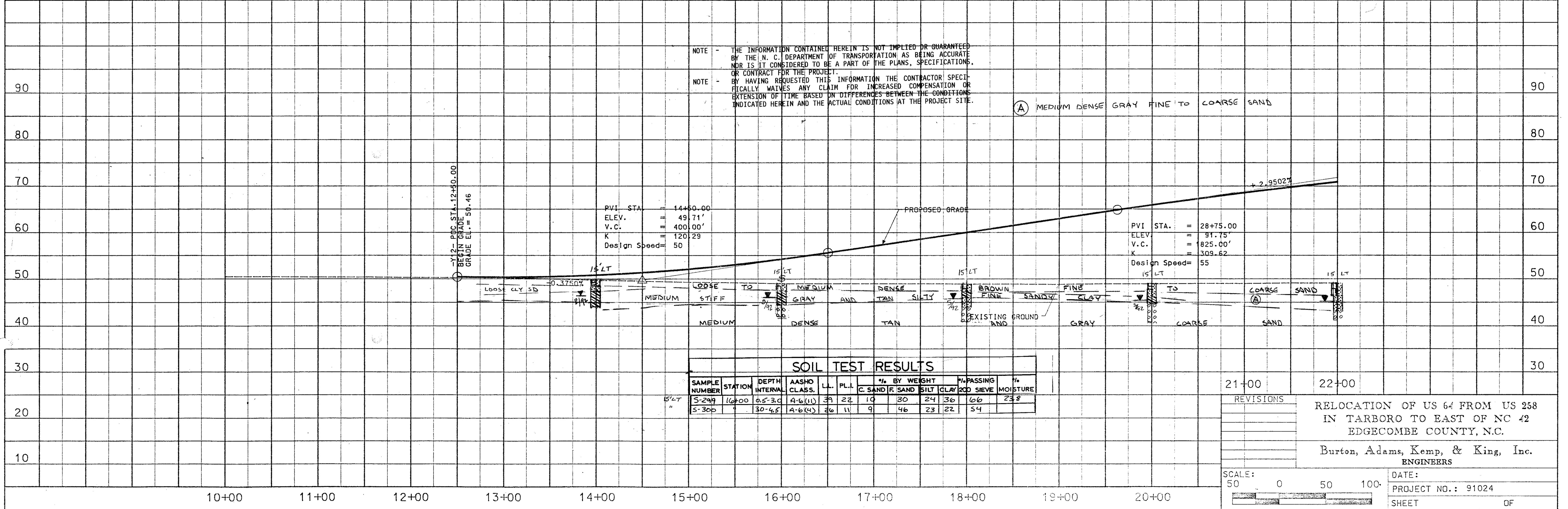
FILE: FAXIGRDS\91024\PT33A.DGN  
PLOT DATE: 04/23/92

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	52	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

UNITED STATES OF AMERICA  
DEPARTMENT OF AGRICULTURE  
D.B.999 PG.828  
190.74 Ac.



-Y12-  
PI STA 15+45.87  
Δ = 40°19'44.7", LT.  
D = 6°05'  
L = 662.9437'  
R = 941.8484'  
T = 345.8711'

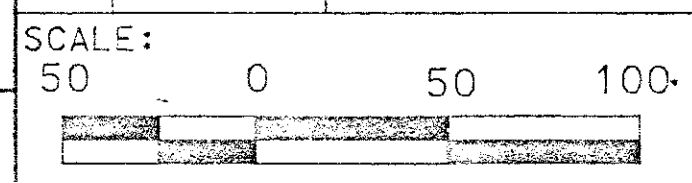


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SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING NO. 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-297	10+00	0.5-3.0	A-6(1)	39	22	10	30	24	36	66	23.8
S-305	"	30-4.5	A-6(4)	36	11	9	46	23	22	54	

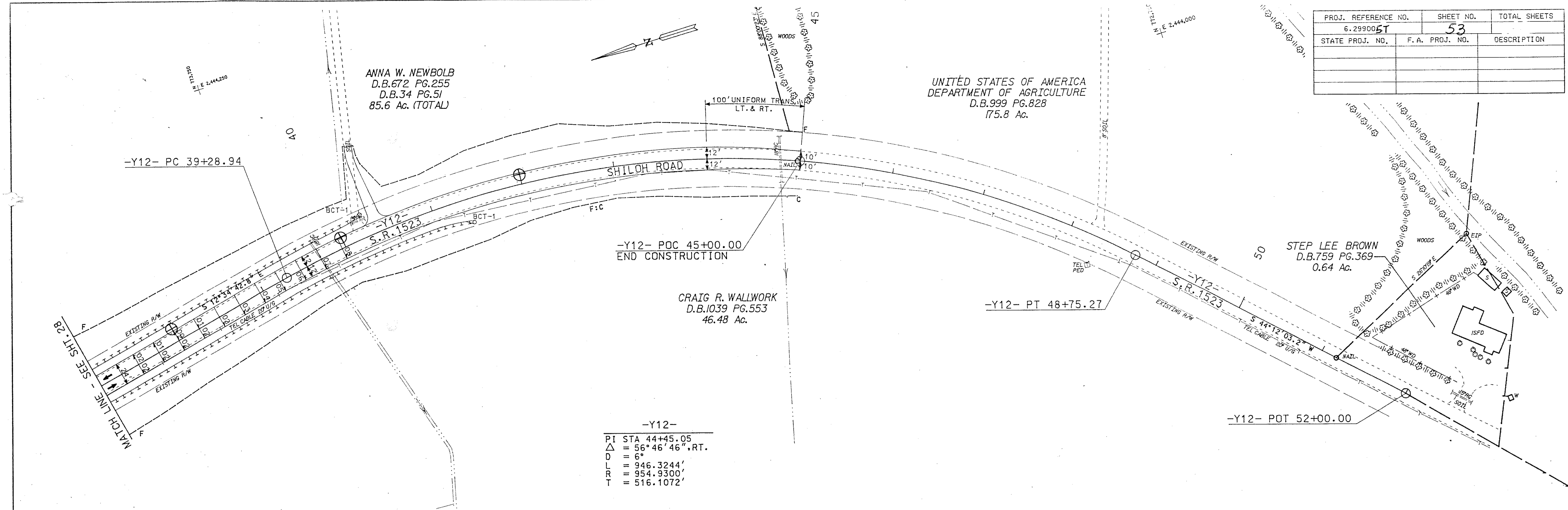
REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.  
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

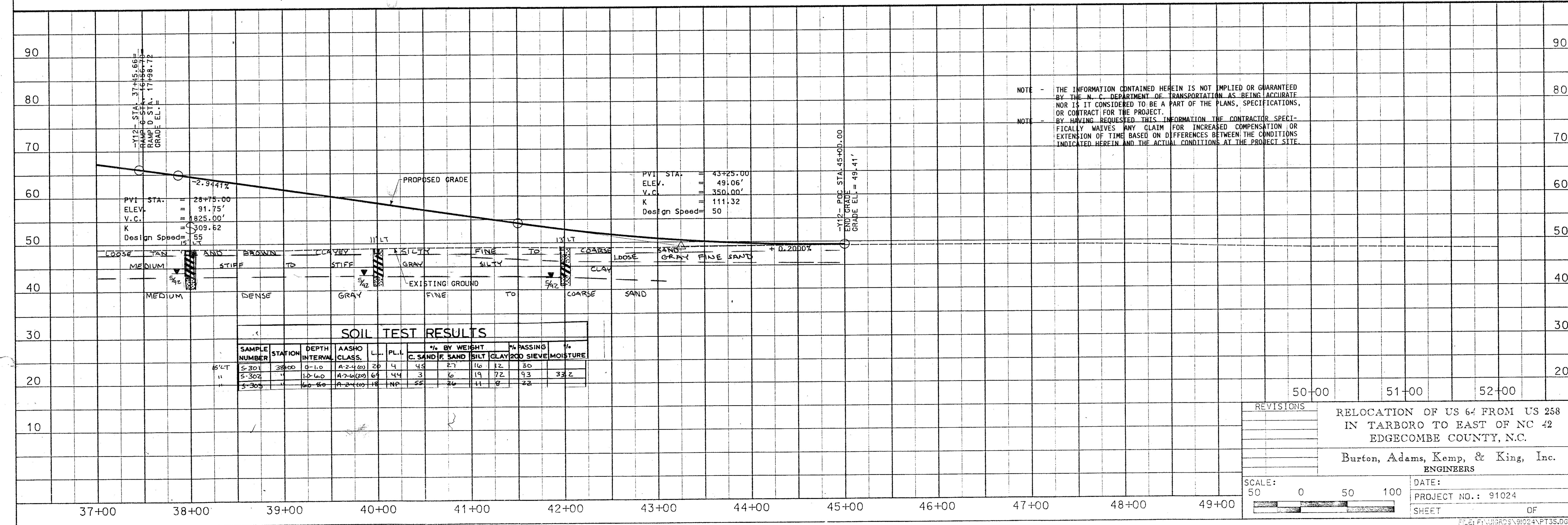


DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	53	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



-Y12-  
 PI STA 44+45.05  
 $\Delta = 56^{\circ} 46' 46''$ , RT.  
 D = 6'  
 L R = 946.3244'  
 R = 954.9300'  
 T = 516.1072'



SOIL TEST RESULTS										
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.L.	% BY WEIGHT			% PASSING #200 SIEVE	
						C. SAND	F. SAND	SILT CLAY		
S-301	38+00	0-1.0	A-2-4 (6)	20	4	43	27	16	12	30
S-302	"	1.0-6.0	A-2-4 (20)	69	44	3	6	19	72	93
S-303	"	6.0-8.0	A-2-4 (6)	18	NP	55	26	11	8	22

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024 SHEET OF

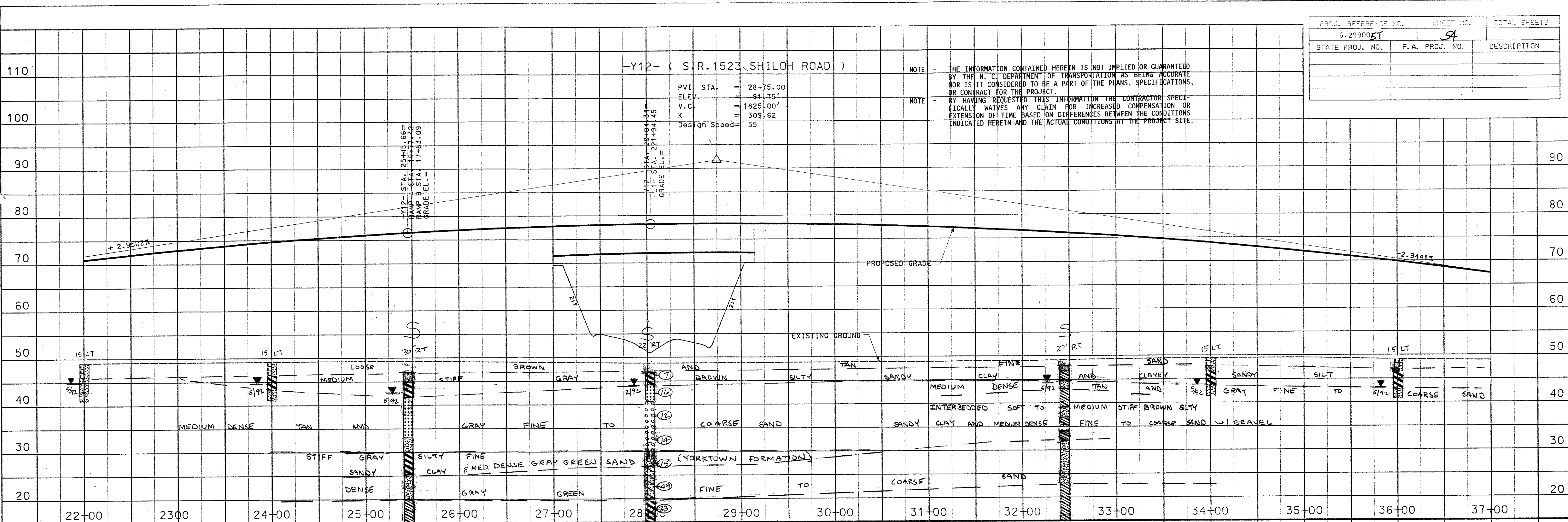
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	54	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-Y12- ( S.R.1523 SHILOH ROAD )

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PVI STA. = 28+75.00  
 ELE. = 91.75'  
 V.C. = 1825.00'  
 K = 309.62  
 Design Speed = 55



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-290	25+45	0-1.0	A-4 (5)	21	2	19	34	37	10	38	
S-291	"	1.0-2.0	A-4 (2)	25	10	14	27	37	22	70	
S-292	"	2.0-3.5	A-7 (1)	47	28	8	21	24	42	79	24.8
S-293	"	3.5-14.0	A-3 (0)	14	NP	71	20	7	2	9	
S-294	"	14.0-17.0	A-2.4 (0)	21	3	57	26	11	6	17	
S-295	"	17.0-22.0	A-2.4 (0)	47	28	6	45	33	16	54	23.5
S-296	"	22.0-27.0	A-2.4 (0)	35	5	43	39	16	2	20	
S-297	"	27.0-32.0	A-6 (0)	31	14	20	31	34	10	58	21.4
S-298	"	32.0-38.0	A-2.4 (0)	23	3	60	26	10	4	16	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S5-1	28+04	0-1.5	A-7.4 (0)	49	28	23	19	19	40	62	24.9
S5-2	"	4.0-5.5	A-3 (0)	18	NP	63	33	3	1	6	
S5-3	"	5.5-10.3	A-1.6 (0)	18	NP	78	18	2	2	4	
S5-4	"	18.8-19.8	A-2.4 (0)	21	NP	44	37	13	6	15	
S5-5	"	23.8-25.3	A-2.4 (0)	30	12	26	44	15	10	25	
S5-6	"	28.8-30.3	A-7.5 (0)	44	14	13	24	43	20	71	25.0

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-304	32+45	0-1.0	A-4 (2)	28	8	30	30	26	14	47	
S-305	"	1.0-3.0	A-6 (0)	31	16	24	28	18	30	54	21.7
S-306	"	3.0-8.0	A-2 (0)	16	NP	67	26	9	6	18	
S-307	"	8.0-9.0	A-6 (0)	40	13	22	35	29	14	49	43.6
S-308	"	9.0-11.0	A-2.4 (0)	19	NP	54	34	10	2	15	
S-309	"	11.0-12.5	A-6 (0)	34	12	16	43	29	2	48	53.8
S-310	"	12.5-14.0	A-1.6 (0)	16	NP	76	19	4	1	6	
S-311	"	14.0-16.5	A-6 (0)	34	18	48	0	26	8	43	
S-312	"	16.5-25.0	A-2.4 (0)	24	7	48	30	16	6	20	
S-313	"	25.0-33.0	A-6 (0)	33	19	11	26	43	20	70	

PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE:  
 50 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF

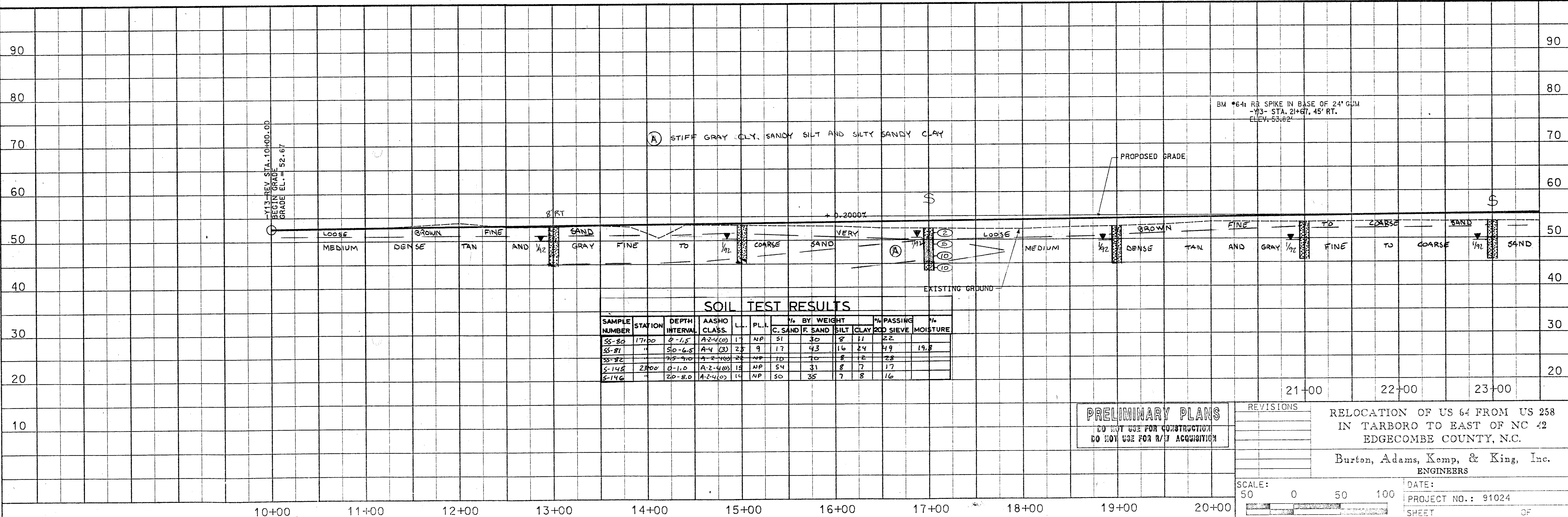
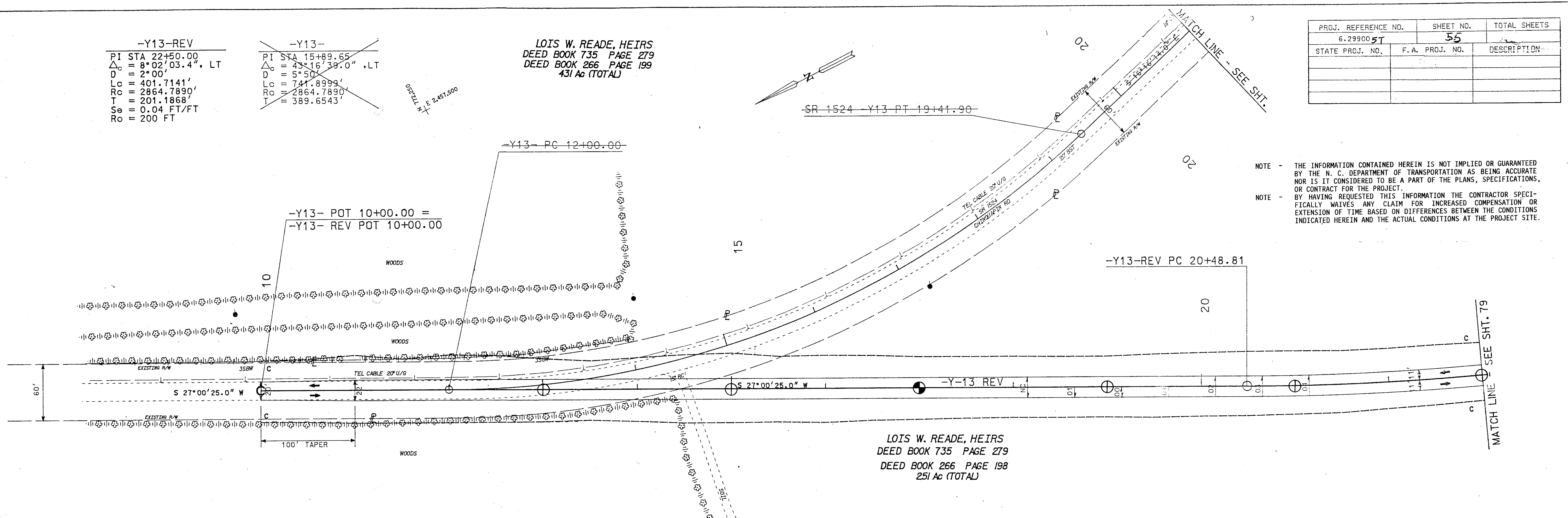
-Y13-REV  
 PI STA 22+50.00  
 $\Delta_c = 8^\circ 02' 03.4''$ , LT  
 $D_c = 2' 00''$   
 $L_c = 401.7141'$   
 $R_c = 2864.7890'$   
 $T = 201.1868'$   
 $Se = 0.04$  FT/FT  
 $Ro = 200$  FT

~~-Y13-  
 PI STA 15+89.65  
 $\Delta_c = 4^\circ 16' 39.0''$ , LT  
 $D_c = 5' 50''$   
 $L_c = 741.8999'$   
 $R_c = 2864.7890'$   
 $T = 389.6543'$~~

LOIS W. READE, HEIRS  
 DEED BOOK 735 PAGE 279  
 DEED BOOK 266 PAGE 199  
 431 Ac (TOTAL)

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900 5T	55	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE A PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.  
 NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIM FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

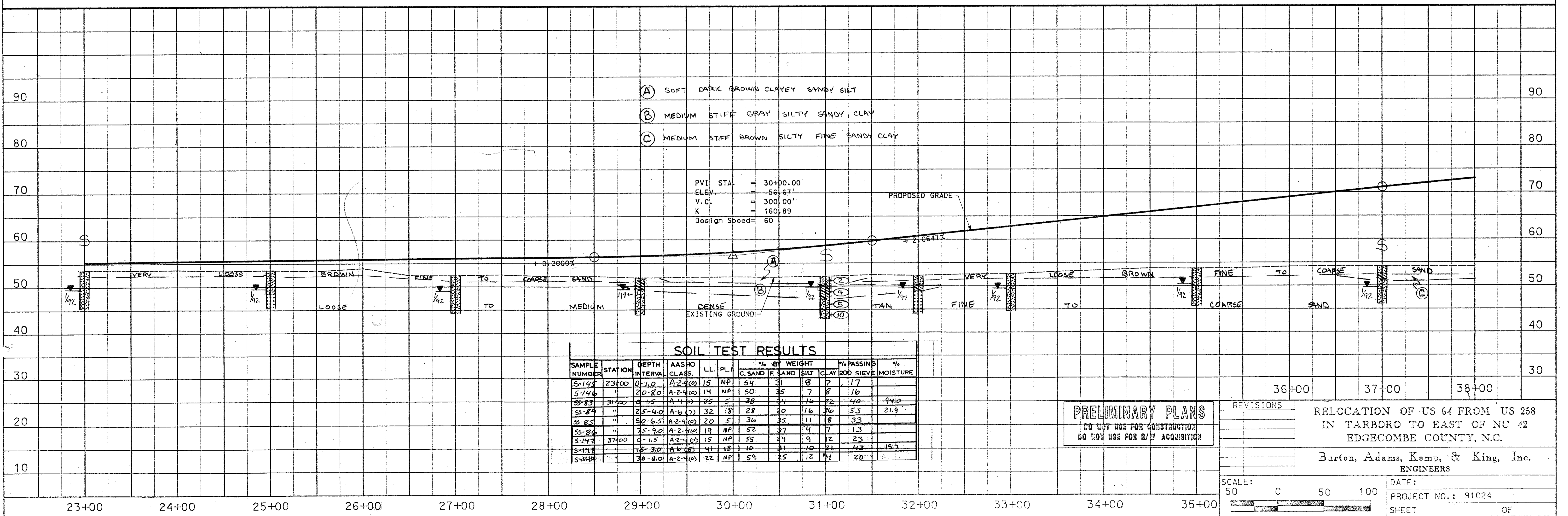
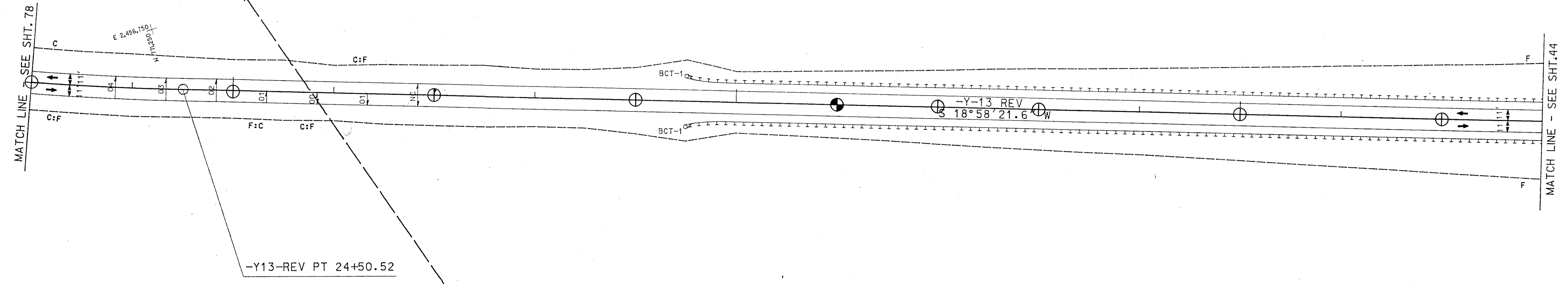


PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.29900ST	56	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

LOIS W. READE, HEIRS  
DEED BOOK 735 PAGE 279  
DEED BOOK 266 PAGE 198  
251 Ac (TOTAL)

-Y13-REV  
PI STA 22+50.00  
 $\Delta = 8^{\circ}02'03.4''$ , LT  
D = 2'00'  
Lc = 401.7141'  
Rc = 2864.7890'  
T = 201.1868'  
S<sub>e</sub> = 0.04 FT/FT  
R<sub>o</sub> = 200 FT

LOIS W. READE, HEIRS  
DB 735 PG 279  
DB 266 PG 199  
431 Ac (TOTAL)



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

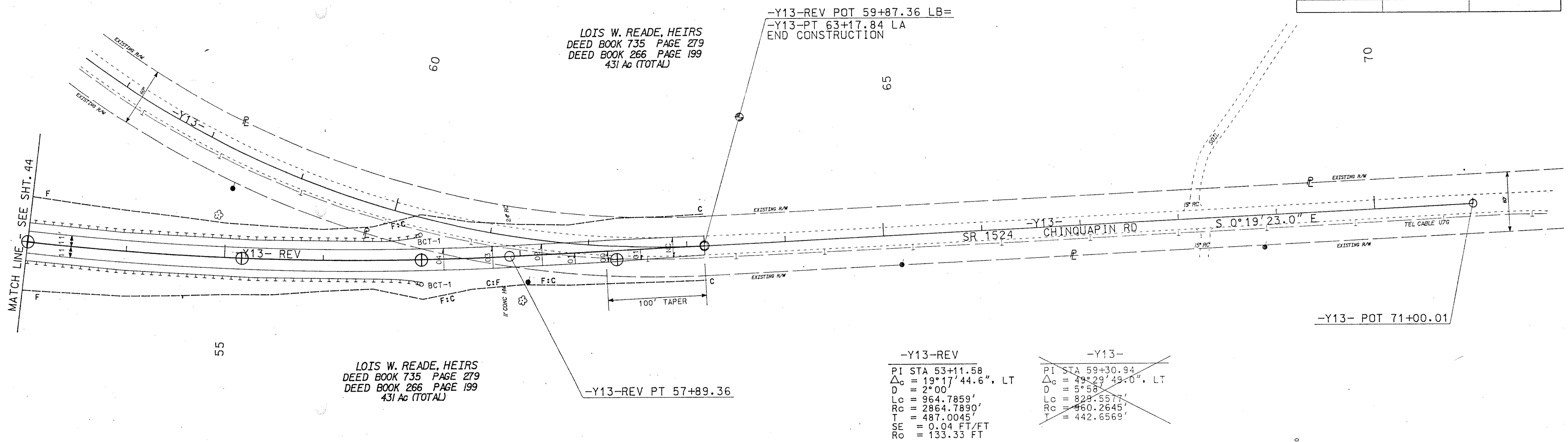
Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

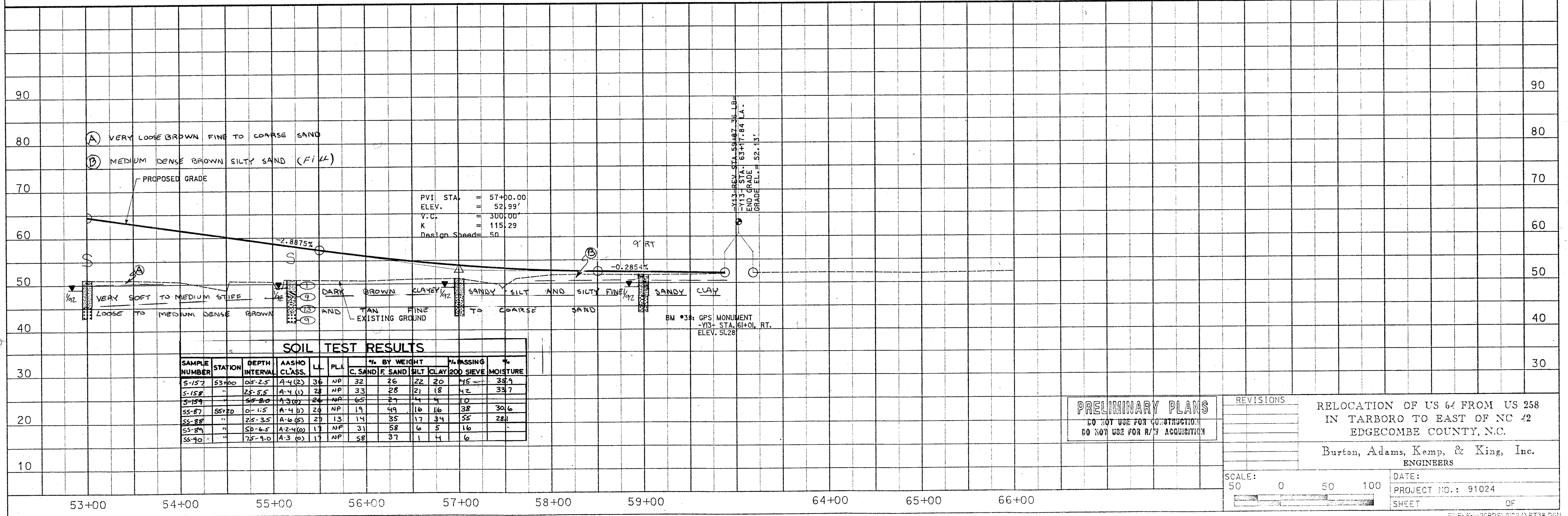
DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	57	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



-Y13-REV	-Y13-
PI STA 53+11.58	PI STA 59+30.94
$\Delta_c = 19^\circ 17' 44.6''$ , LT	$\Delta_c = 49^\circ 29' 49.0''$ , LT
D = 2' 00"	D = 5' 58"
Lc = 964.7859'	Lc = 828.5577'
Rc = 2864.7890'	Rc = 860.2645'
T = 487.0045'	T = 442.6569'
SE = 0.04 FT/FT	
RO = 133.33 FT	



PVI STA = 57+00.00  
 ELEV. = 52.99'  
 V.C. = 300.00'  
 K = 115.29  
 Design Speed = 50

SOIL TEST RESULTS												
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING		% MOISTURE
						C. SAND	F. SAND	SILT	CLAY	200	SIEVE	
S-157	53+00	0'-2.5'	A-4 (2)	36	NP	32	26	22	20	15		38.9
S-158	"	2.5'-5.5'	A-4 (1)	28	NP	33	28	21	18	12		33.7
S-159	"	5.5'-8.0'	A-3 (2)	24	NP	65	27	14	4	10		
SS-87	SS-20	0'-1.5'	A-4 (2)	24	NP	19	49	16	16	38		30.6
SS-88	"	1.5'-3.5'	A-6 (5)	27	13	14	35	17	34	55		28.1
SS-89	"	3.5'-6.5'	A-2-4 (6)	17	NP	31	58	6	5	16		
SS-90	"	6.5'-9.0'	A-3 (6)	17	NP	58	37	1	4	6		

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

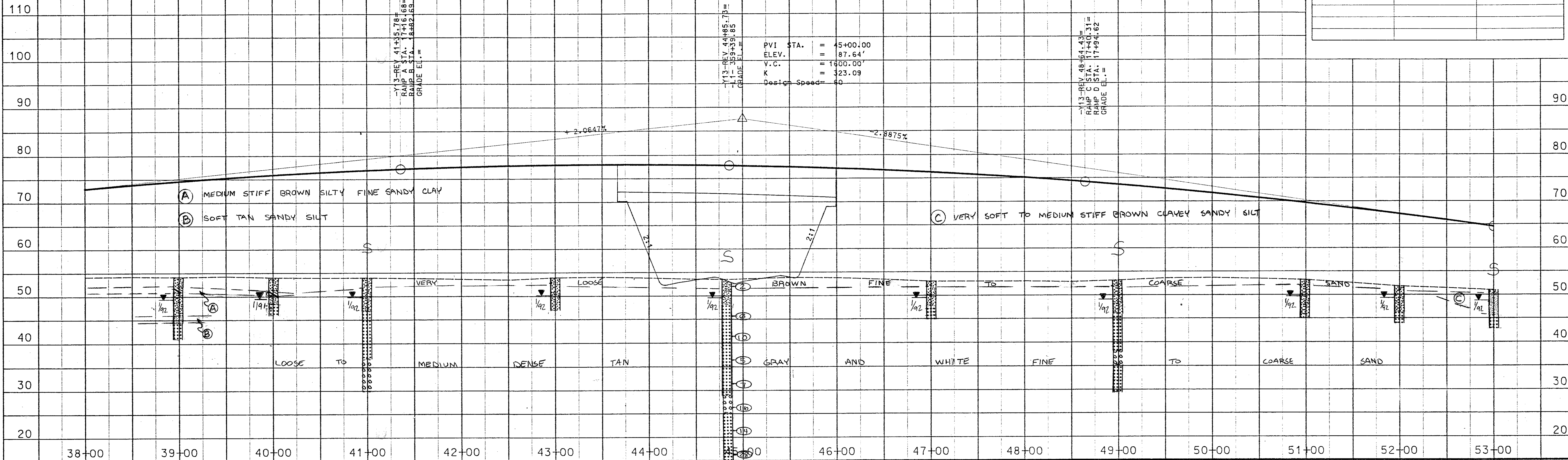
RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC #2  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF

-Y13-REV- ( S.R.1524 CHINCUAPIN ROAD )

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	58	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-150	41+00	0-7.0	A-2-4 (6)	16	NP	60	20	8	12	21	
S-151	"	7.0-17.0	A-3 (6)	20	NP	68	27	4	1	7	
S-152	"	17.0-24.0	A-1-B (6)	21	NP	87	11	1	1	3	
S-153	49+00	0-7.0	A-2-4 (6)	16	NP	63	21	7	9	7	
S-154	"	7.0-15.0	A-3 (6)	22	NP	58	38	3	1	5	
S-155	"	15.0-18.0	A-1-B (6)	20	NP	84	15	1	0	2	
S-156	"	18.0-23.5	A-3 (6)	21	NP	71	26	2	1	4	
S-157	53+00	0-2.5	A-4 (6)	34	NP	32	26	22	20	45	35.7
S-158	"	2.5-5.5	A-4 (6)	28	NP	33	28	21	18	42	33.7
S-159	"	5.5-8.0	A-3 (6)	26	NP	65	27	4	4	10	

SOIL TEST RESULTS

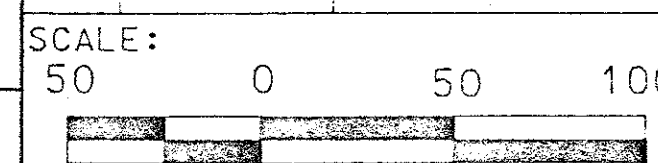
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	44+85	0-1.5	A-2-4 (6)	18	NP	56	24	7	13	21	
SS-2	"	1.5-8.1	A-3 (6)	14	NP	52	41	3	4	9	
SS-3	"	8.1-22.3	A-1-B (6)	23	NP	89	10	0	2	2	
SS-4	"	22.3-32.3	A-3 (6)	17	NP	67	29	1	3	4	
SS-5	"	32.3-37.3	A-3 (6)	17	NP	70	25	1	4	6	
SS-6	"	37.3-42.3	A-6 (6)	32	19	9	33	40	18	68	
SS-7	"	42.3-47.3	A-2-4 (6)	31	NP	11	68	15	6	27	25.8
SS-8	"	47.3-52.3	A-2-4 (6)	26	NP	45	44	3	8	13	
SS-9	"	52.3-57.3	A-2-4 (6)	32	9	64	17	11	8	20	

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS


RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS



DATE: \_\_\_\_\_  
PROJECT NO.: 91024  
SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.2990051	59	
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

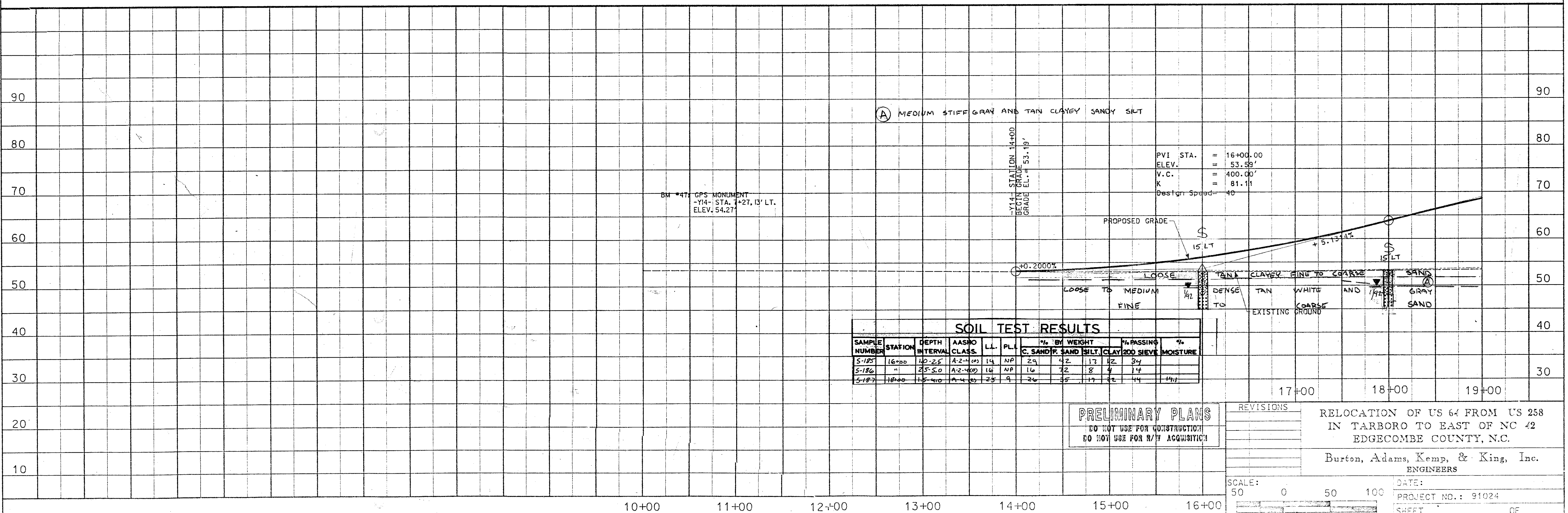
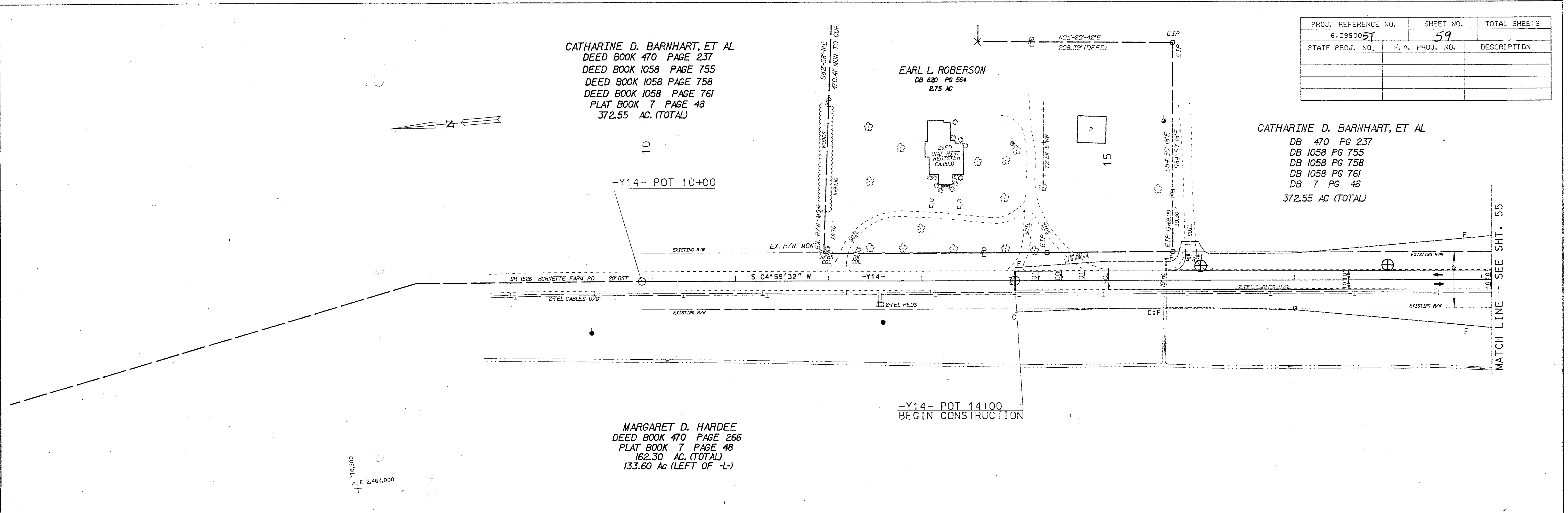
CATHARINE D. BARNHART, ET AL  
 DEED BOOK 470 PAGE 237  
 DEED BOOK 1058 PAGE 755  
 DEED BOOK 1058 PAGE 761  
 PLAT BOOK 7 PAGE 48  
 372.55 AC. (TOTAL)

EARL L. ROBERSON  
 DB 820 PG 564  
 275 AC

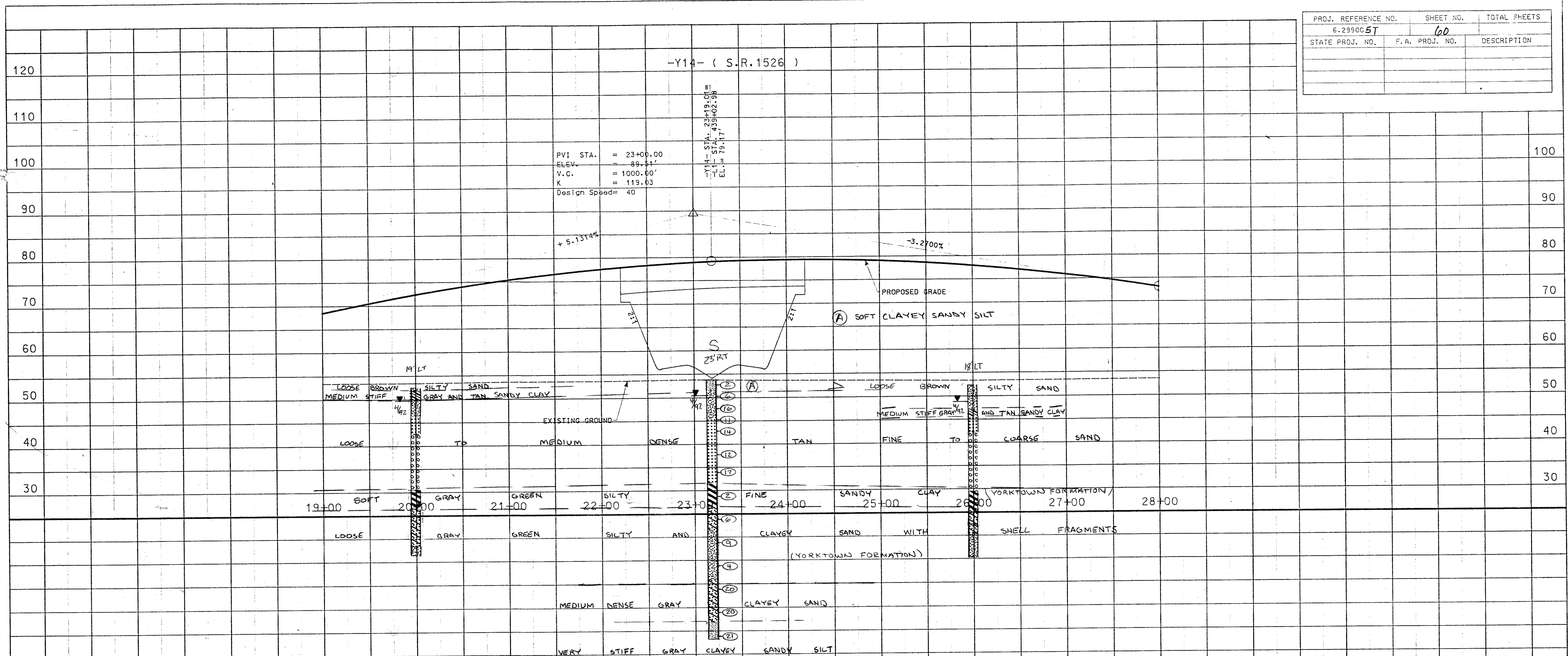
CATHARINE D. BARNHART, ET AL  
 DB 470 PG 237  
 DB 1058 PG 755  
 DB 1058 PG 761  
 DB 7 PG 48  
 372.55 AC (TOTAL)

MARGARET D. HARDEE  
 DEED BOOK 470 PAGE 266  
 PLAT BOOK 7 PAGE 48  
 162.30 AC. (TOTAL)  
 133.60 AC (LEFT OF -L-)

N 770,500  
 E 2,464,000



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	60	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING		% MOISTURE
						C. SAND	SILT	CLAY	NO. 20	NO. 40	
23+RT SS-1	23+19	1.0-1.5	A-4 (2)	20	8	31	29	18	22	43	14.4
SS-2	"	5.0-6.5	A-2.4 (5)	14	NP	26	61	9	4	16	
SS-3	"	10.0-11.5	A-3 (5)	10	NP	34	40	4	2	9	
SS-4	"	19.1-20.6	A-3 (2)	18	NP	66	28	5	1	8	
SS-5	"	29.1-25.6	A-7.6 (4)	46	23	9	17	44	30	79	47.5
SS-6	"	29.1-30.6	A-2.4 (2)	38	22	55	8	19	18	35	
SS-7	"	39.1-35.6	A-2.4 (2)	20	NP	66	20	6	8	12	
SS-8	"	44.1-45.6	A-2.6 (2)	36	34	5	18	33	74	83	31.8
SS-9	"	54.1-55.6	A-4 (5)	28	10	3	52	21	24	59	

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE: 50 0 50 100

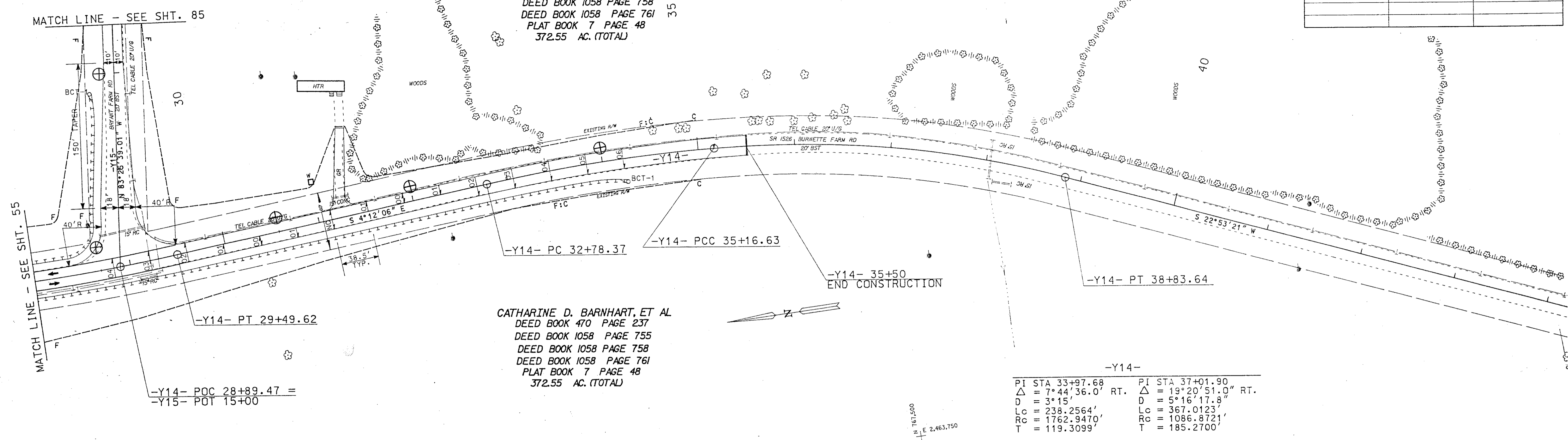
DATE: PROJECT NO.: 91024

SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	61	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

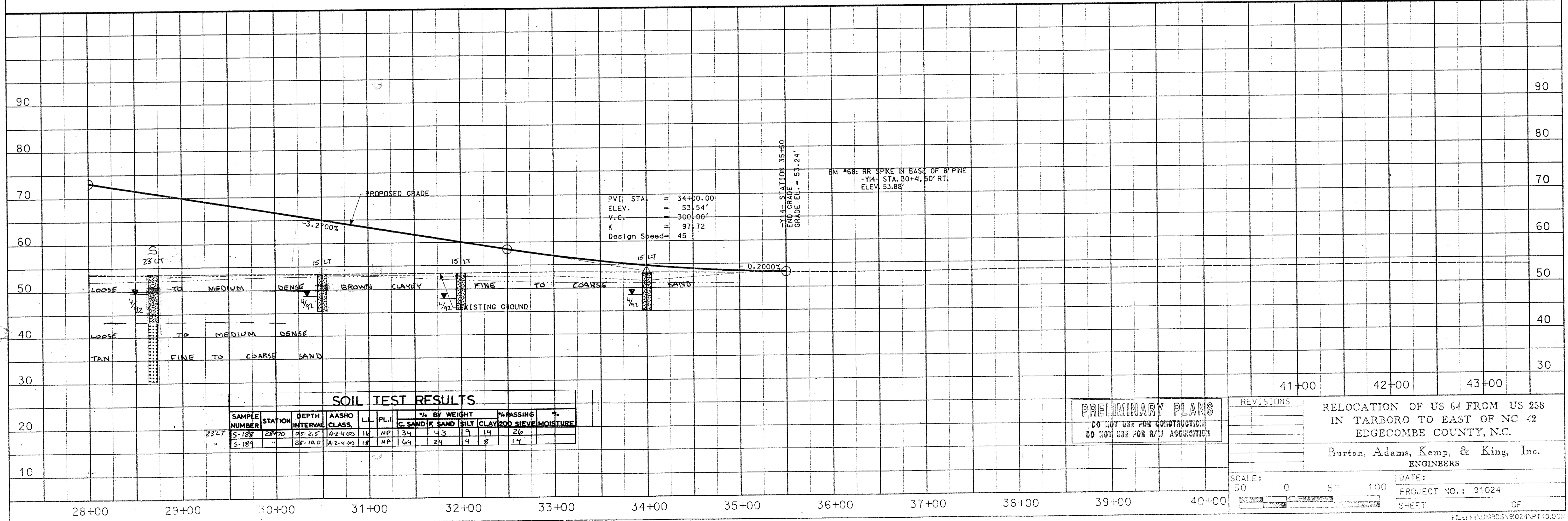
CATHARINE D. BARNHART, ET AL  
 DEED BOOK 470 PAGE 237  
 DEED BOOK 1058 PAGE 755  
 DEED BOOK 1058 PAGE 758  
 DEED BOOK 1058 PAGE 761  
 PLAT BOOK 7 PAGE 48  
 372.55 AC. (TOTAL)

CATHARINE D. BARNHART, ET AL  
 DEED BOOK 470 PAGE 237  
 DEED BOOK 1058 PAGE 755  
 DEED BOOK 1058 PAGE 758  
 DEED BOOK 1058 PAGE 761  
 PLAT BOOK 7 PAGE 48  
 372.55 AC. (TOTAL)



-Y14-

PI STA 33+97.68	PI STA 37+01.90
$\Delta = 7^{\circ}44'36.0''$ RT.	$\Delta = 19^{\circ}20'51.0''$ RT.
D = 3'15'	D = 5'16'17.8"
Lc = 238.2564'	Lc = 367.0123'
Rc = 1762.9470'	Rc = 1086.8721'
T = 119.3099'	T = 185.2700'



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGECOMBE COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

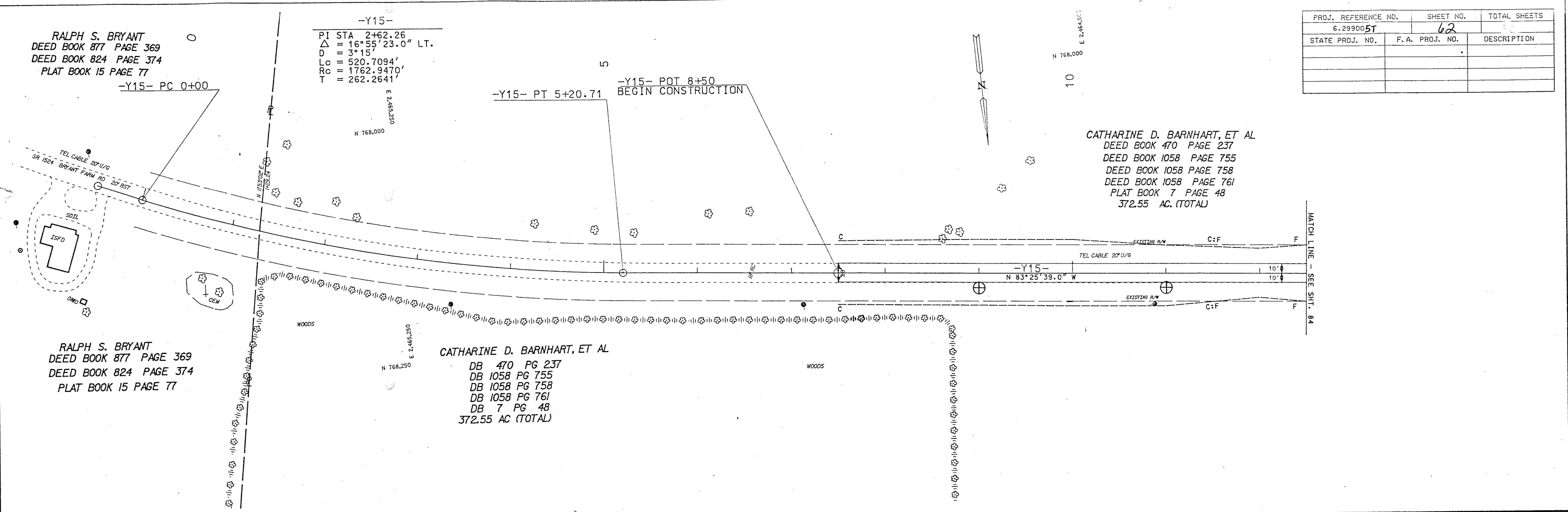
SCALE: 50 0 50 100  
 DATE: PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	62	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

RALPH S. BRYANT  
DEED BOOK 877 PAGE 369  
DEED BOOK 824 PAGE 374  
PLAT BOOK 15 PAGE 77

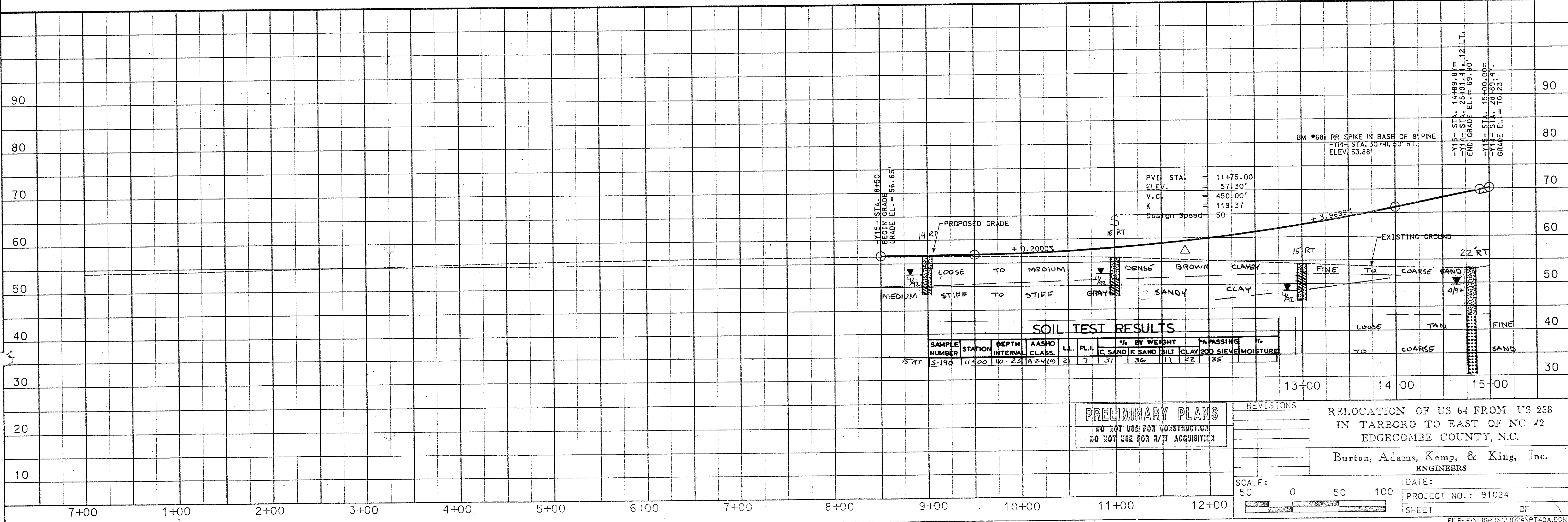
-Y15-  
PI STA 2+62.26  
Δ = 16°55'23.0" LT.  
D = 3°15'  
Lc = 520.7094'  
Rc = 1762.9470'  
T = 262.2641'

CATHARINE D. BARNHART, ET AL  
DEED BOOK 470 PAGE 237  
DEED BOOK 1058 PAGE 755  
DEED BOOK 1058 PAGE 758  
DEED BOOK 1058 PAGE 761  
PLAT BOOK 7 PAGE 48  
372.55 AC. (TOTAL)

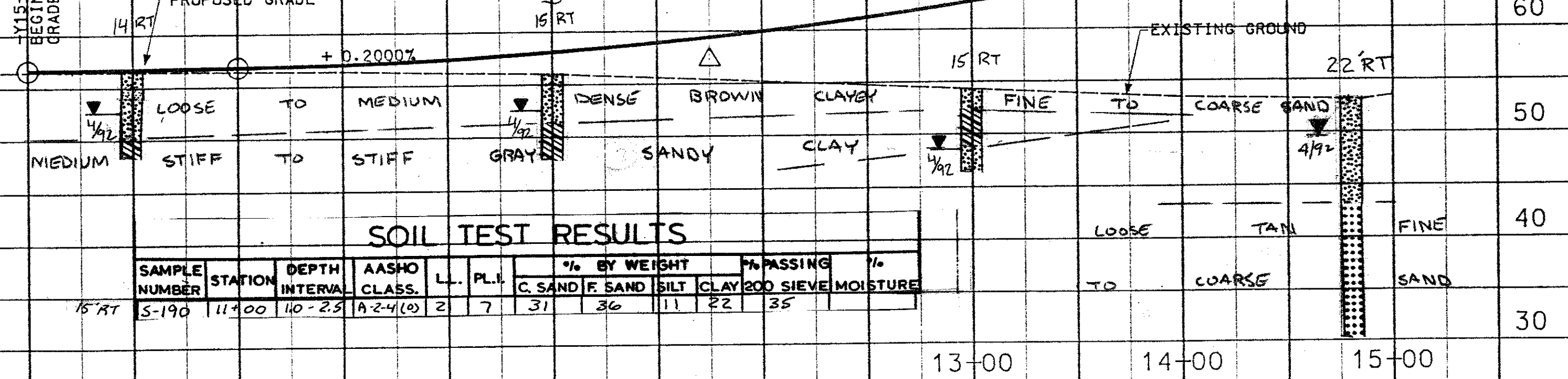


RALPH S. BRYANT  
DEED BOOK 877 PAGE 369  
DEED BOOK 824 PAGE 374  
PLAT BOOK 15 PAGE 77

CATHARINE D. BARNHART, ET AL  
DB 470 PG 237  
DB 1058 PG 755  
DB 1058 PG 758  
DB 1058 PG 761  
DB 7 PG 48  
372.55 AC (TOTAL)



PVI STA. = 11+75.00  
ELEV. = 571.30'  
V.C. = 450.00'  
K = 119.37  
Design Speed = 50



SOIL TEST RESULTS										
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT			PASSING #200 SIEVE	% MOISTURE
						C SAND	F SAND	SILT		
5-190	11+00	10-25	A-2-4(2)	2	7	37	36	11	22	35

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

SCALE:  
50 0 50 100

DATE:  
PROJECT NO.: 91024  
SHEET OF

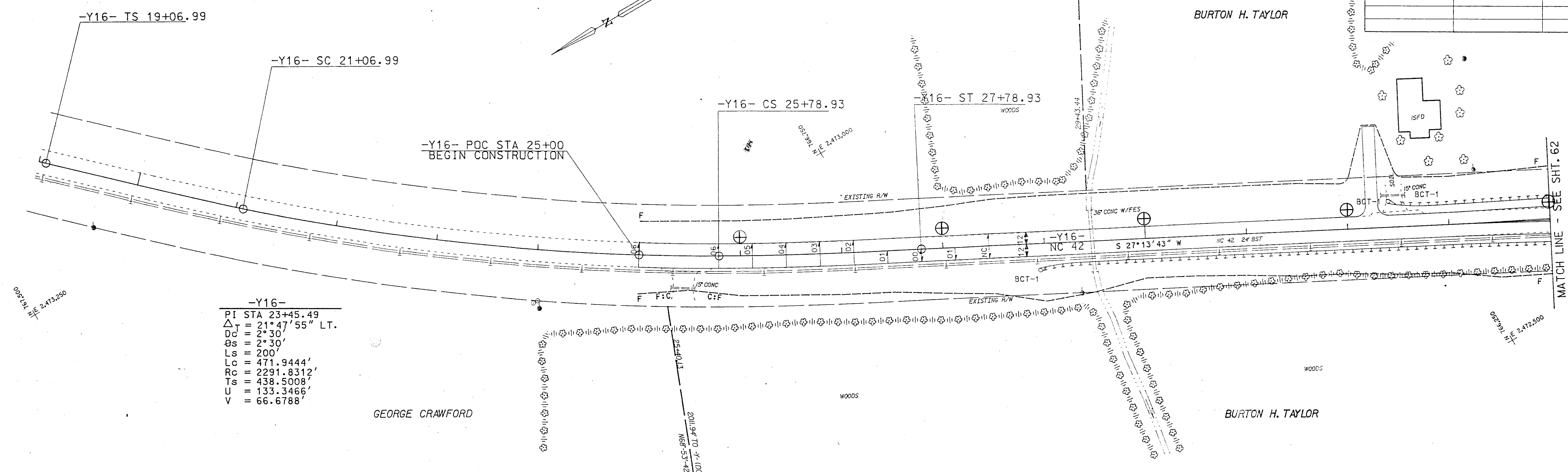
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	63	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

MARTHA T. SAWYER

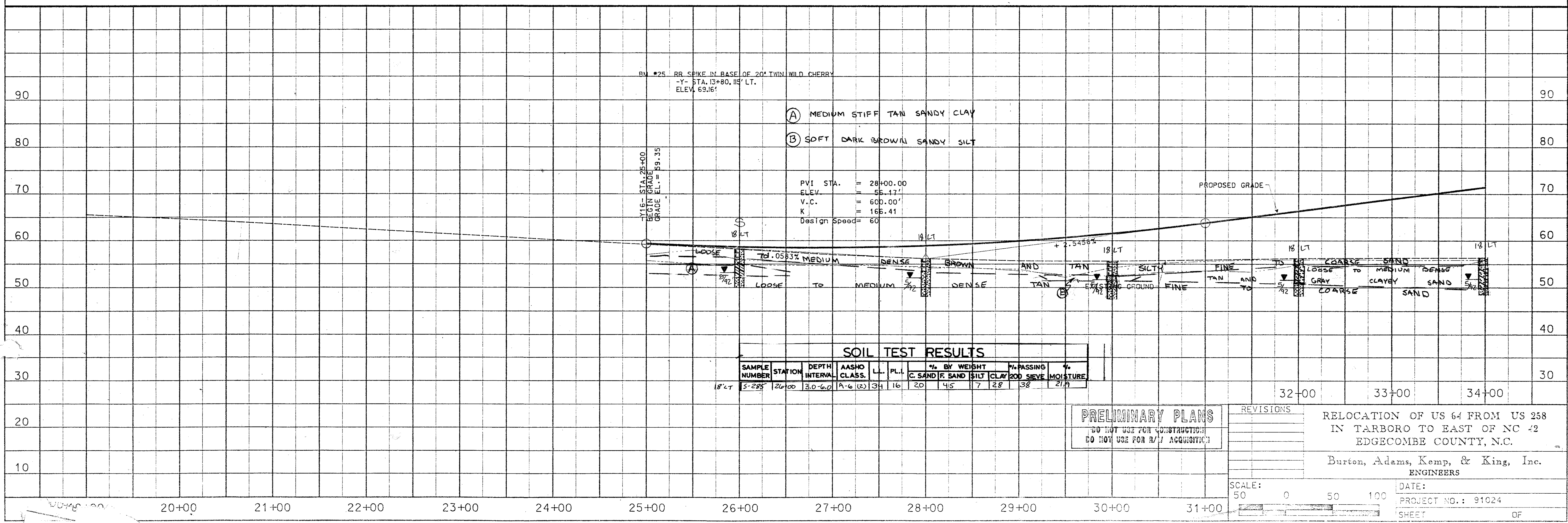
BURTON H. TAYLOR

GEORGE CRAWFORD

BURTON H. TAYLOR



-Y16-  
 PI STA 23+45.49  
 $\Delta T = 21^{\circ}47'55''$  LT.  
 $D_c = 2^{\circ}30'$   
 $G_s = 2^{\circ}30'$   
 $L_s = 200'$   
 $L_c = 471.9444'$   
 $R_c = 2291.8312'$   
 $T_s = 438.5008'$   
 $U = 133.3466'$   
 $V = 66.6788'$



BM #25 RR SPIKE IN BASE OF 20" TWIN WILD CHERRY  
 -Y- STA. 13+80.115' LT.  
 ELEV. 69.16'

- (A) MEDIUM STIFF TAN SANDY CLAY
- (B) SOFT DARK BROWN SANDY SILT

PVI STA. = 28+00.00  
 ELEV. = 55.17'  
 V.C. = 600.00'  
 K = 165.41  
 Design Speed = 60

SOIL TEST RESULTS												
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.	% BY WEIGHT				% PASSING	%	
						C. SAND	F. SAND	SILT	CLAY	200 SIEVE	MOISTURE	
18 LT	25-285	26-200	A-6 (2)	34	16	20	45	7	28	38	21.8	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

NO.	DATE	DESCRIPTION

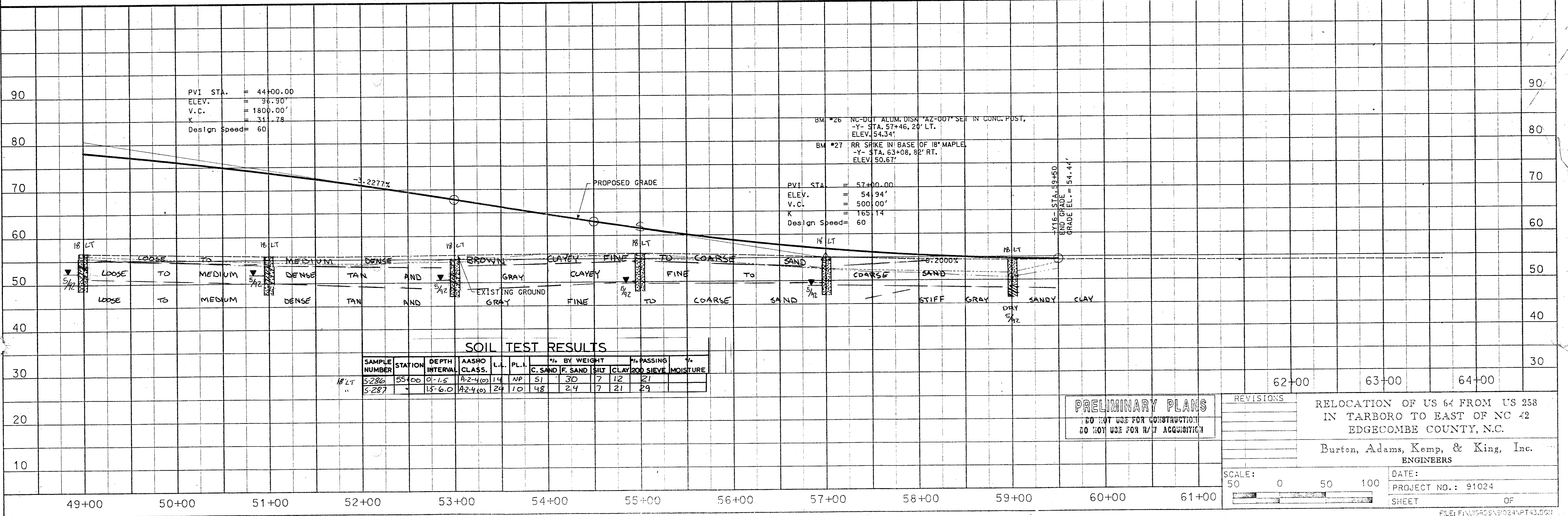
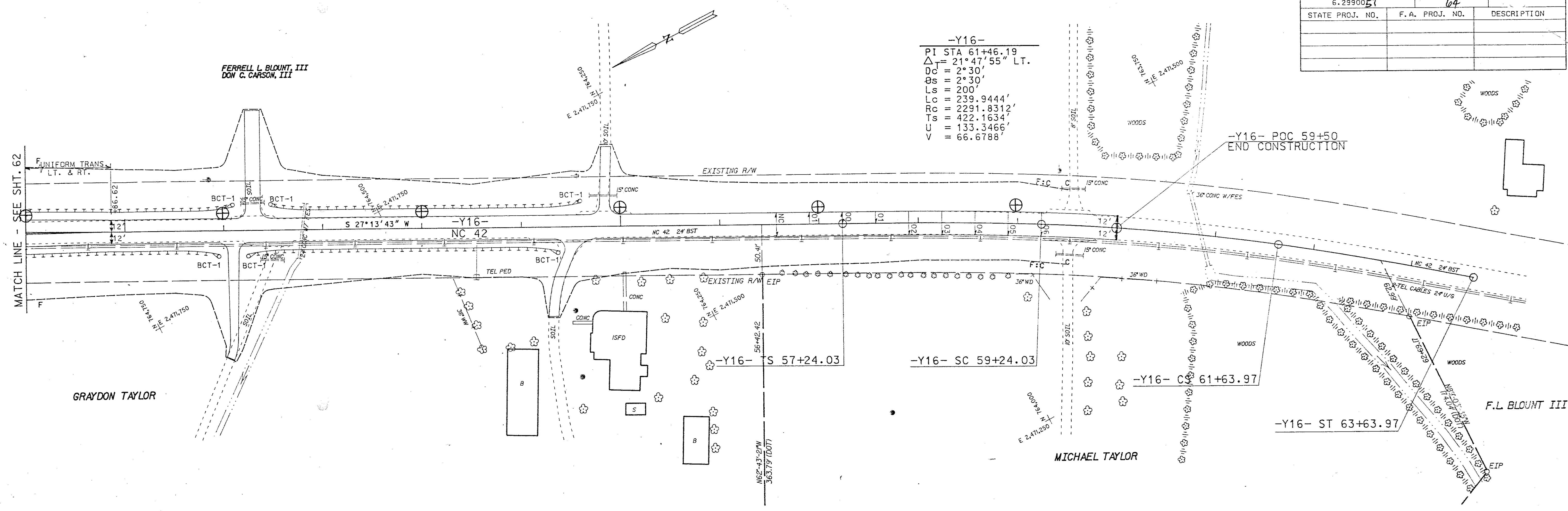
RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC #2  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE:  
 50 0 50 100

DATE:  
 PROJECT NO.: 91024  
 SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005	64	
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

-Y16-  
 PI STA 61+46.19  
 $\Delta = 21^{\circ}47'55''$  LT.  
 Dc = 2'30'  
 Bs = 2'30'  
 Ls = 200'  
 Lc = 239.9444'  
 Rc = 2291.8312'  
 Tc = 422.1634'  
 U = 133.3466'  
 V = 66.6788'



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

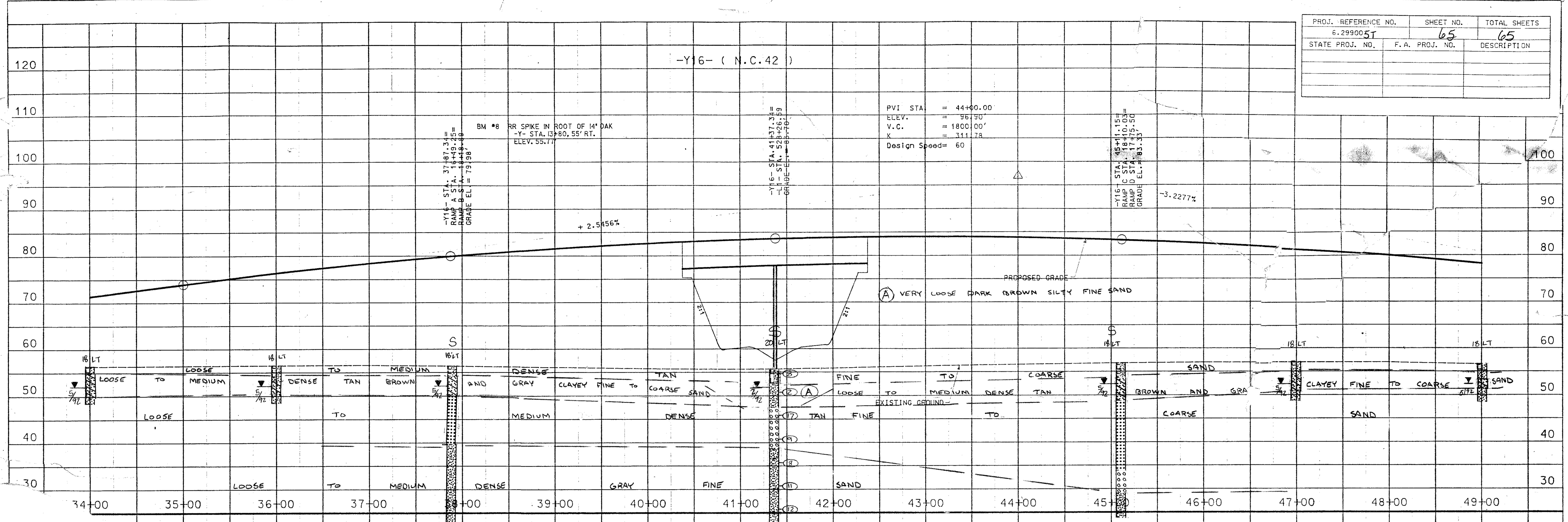
SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024

SHEET OF



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299005T	65	65
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



PVI STA. = 44+00.00  
 ELEV. = 56.50'  
 V.C. = 1800.00'  
 K = 311.78  
 Design Speed = 60

-Y16- STA. 37+87.34 =  
 RAMP A STA. 16+49.25 =  
 RAMP D STA. 16+49.25 =  
 GRADE EL. = 73.98'

BM #8 RR SPIKE IN ROOT OF 14" DAK  
 -Y- STA. 13+80, 55' RT.  
 ELEV. 55.77'

-Y16- STA. 41+37.34 =  
 RAMP D STA. 16+49.25 =  
 GRADE EL. = 55.77'

-Y16 STA. 45+11.15 =  
 RAMP D STA. 16+49.25 =  
 RAMP D STA. 17+15.50 =  
 GRADE EL. = 83.33'

-3.2277%

+2.5456%

(A) VERY LOOSE DARK BROWN SILTY FINE SAND

EXISTING GROUND

(YORKTOWN FORMATION)

STIFF DARK GRAY SILTY CLAY

VERY LOOSE DARK GRAY FINE TO COARSE SAND

MEDIUM DENSE GRAY FINE TO COARSE SAND

(CAPE FEAR FORMATION)

HARD GRAY SANDY CLAY AND

MEDIUM DENSE CLAYEY SAND

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-277	37+90	0-2.0	A-2.4 (0)	14	NP	42	37	10	11	24	
S-278	"	2.0-6.0	A-2.6 (0)	29	12	44	25	9	22	33	18.3
S-279	"	6.0-17.0	A-3 (0)	17	NP	53	41	8	3	7	
S-280	"	17.0-19.0	A-2.4 (0)	23	4	11	65	10	14	27	
S-281	"	19.0-28.0	A-2.4 (0)	23	9	10	65	13	12	30	
S-282	"	28.0-38.0	A-2.4 (0)	17	NP	43	48	4	5	12	

SOIL TEST RESULTS

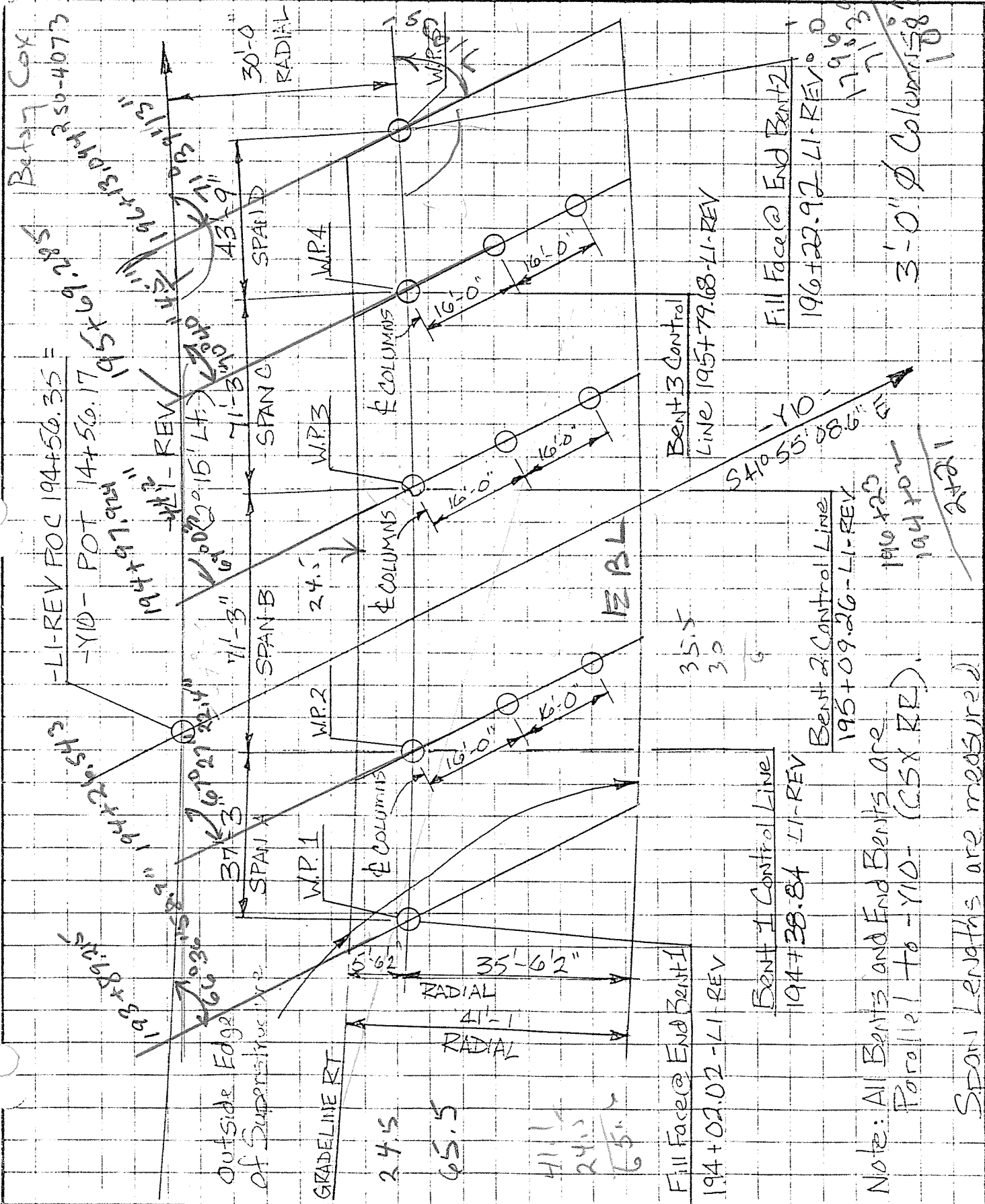
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	41+37	0-1.5	A-2.4 (0)	18	NP	55	30	7	7	17	
SS-2	"	1.5-10.5	A-1.6 (0)	21	NP	75	23	1	1	3	
SS-3	"	10.5-20.5	A-2.4 (0)	23	NP	3	74	13	10	27	
SS-4	"	20.5-30.5	A-2.4 (0)	22	NP	1	39	6	11	14	
SS-5	"	30.5-40.5	A-6 (0)	39	16	9	35	30	26	62	
SS-6	"	40.5-45.5	A-2.4 (0)	26	NP	49	30	11	10	21	
SS-7	"	45.5-50.5	A-3 (0)	23	NP	38	54	5	3	8	
SS-8	"	50.5-55.5	A-6 (0)	30	13	20	33	33	14	31	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-271	45+10	0-3.0	A-2.4 (0)	15	1	50	26	8	16	26	
S-272	"	3.0-8.0	A-2.6 (0)	35	17	36	32	6	26	35	20.9
S-273	"	8.0-14.0	A-3 (0)	20	NP	33	47	5	1	10	
S-274	"	14.0-20.0	A-3 (0)	21	NP	79	17	2	2	3	
S-275	"	20.0-30.0	A-3 (0)	13	NP	21	57	12	3	27	

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 22



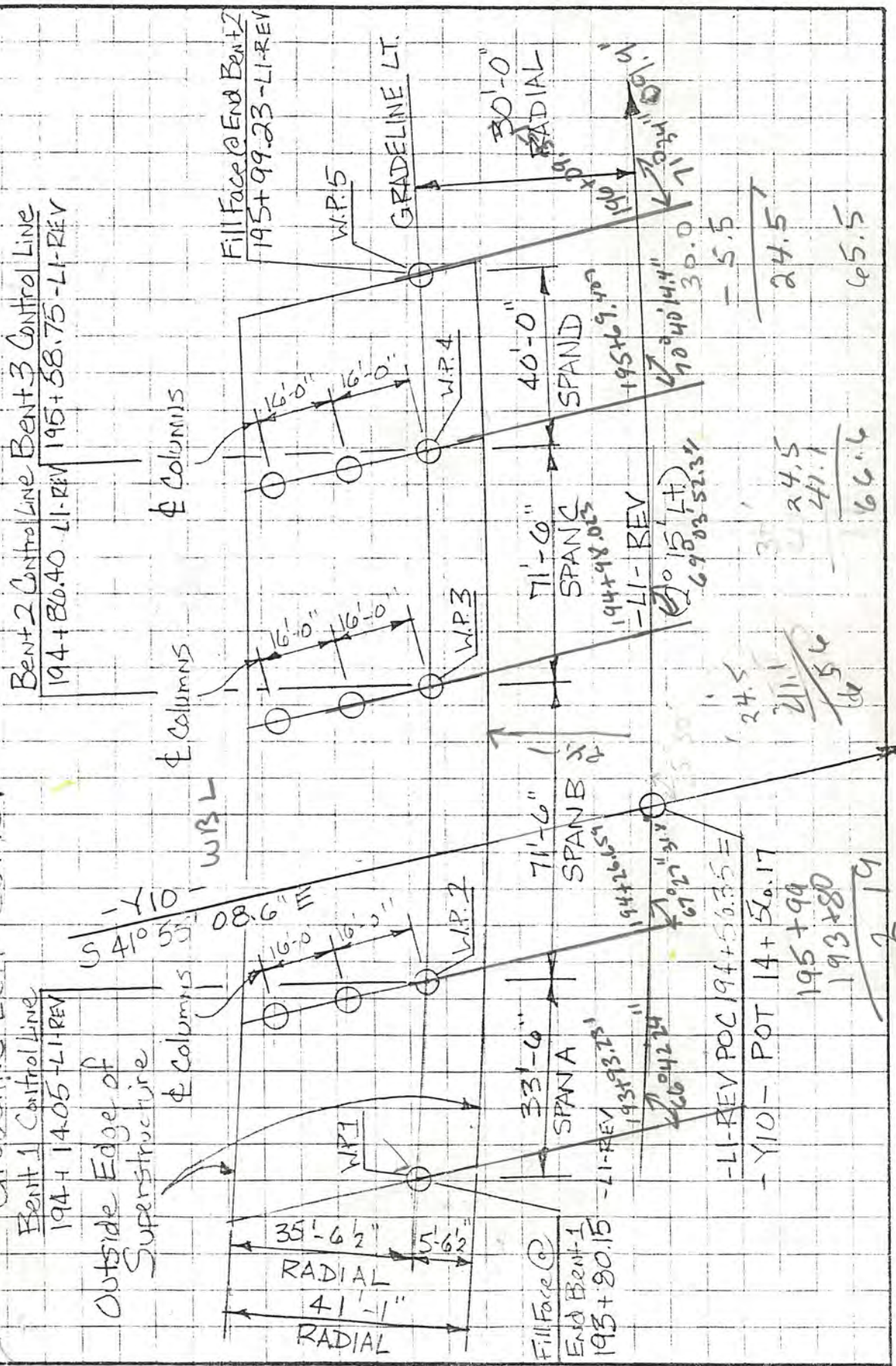
BM #19 RR spike in Base of PP S-196  
 -LI- STA. 195+97, 243' LT ELEV. 491.05

21111A

Note: All Bents and End Bents are Parallel to -Y10- (CSX RR).

Span Lengths are measured along Gradeline Left Curve.

3'-0"  $\phi$  Columns  
 Betsy Cox  
 250-4070



Bent 2 Control Line  
 194+80.40 - LI-REV

Bent 1 Control Line  
 194+14.05 - LI-REV

Outside Edge of Superstructure

Fill Face @ End Bent 1  
 193+80.15

Fill Face @ End Bent 2  
 195+99.23 - LI-REV

-LI-REV POC 194+56.35 =  
 -Y10- POT 14+56.17  
 195+99  
 193+80  
2 19

24.5  
 21.1  
45.6

24.5  
 24.5  
49.0

66.6  
 41.1  
107.7

65.5

MAGNITUDE OF SETTLEMENT

FRS 1  
L REU / Y10

RE-21111719  
COUNTY: Edgemoor  
STATION: 193+91 FRS 1

ANALYZED BY: EMR  
DATE: 6-4-93

LAYER	THICKNESS OF LAYER $H_c$	DEPTH TO MID-POINT Z	INITIAL EFFECTIVE STRESS $P_0$	INFLUENCE FACTOR $I_{LT} + I_{RT}$	$\gamma \cdot H_f$	$I \cdot q$	$P_0 + \Delta p$	$C_c$	SETTLEMENT S
1	6	3	200 0.11T	1	4160	4160	4360 2.2T	0.05	0.22'
S TOTAL: 0.22'									

SKETCH TO SCALE AND CALCULATIONS:

$C_c = \frac{\Delta e}{\Delta \log p} = \frac{0.74}{2.2 - 0.11} = 0.05$

$S = \frac{0.05}{1 + e_0} \left[ \frac{4360}{200} \right] H = 0.22'$

$S = 0.027 [1.3385] H = 0.22'$

COMPRESSION INDEX  $C_c$

- 1)  $C_c$  from  $e \log p$  curve =  $\frac{\Delta e}{\Delta \log p}$
  - 2)  $C_c = 0.0054 (26w - 35)$
  - 3)  $C_c = 0.009 (LL - 10)$
- w = Nat. Moisture Content %  
LL = Liq. Limit

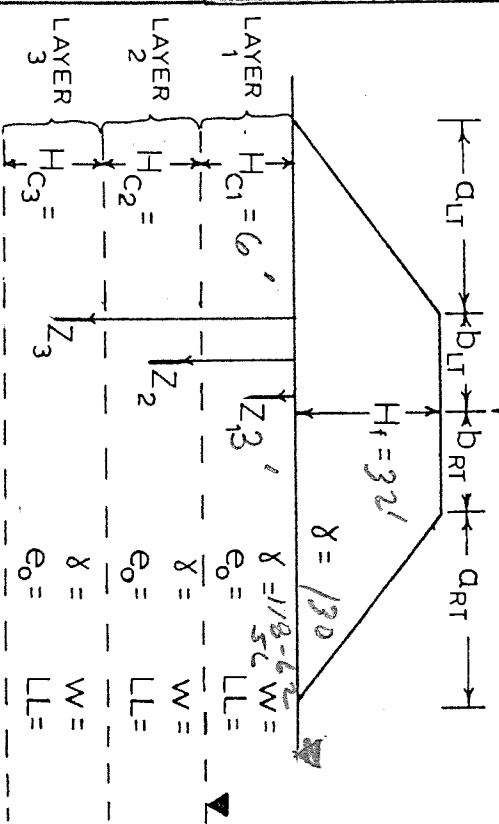
INFLUENCE FACTOR FOR EACH LAYER

1)  $\frac{b_{LT}}{Z} = \frac{q_{LT}}{Z} = I_{LT}$  (From Chart)

$\frac{b_{RT}}{Z} = \frac{q_{RT}}{Z} = I_{RT}$  (From Chart)

$I = I_{LT} + I_{RT} = 0.22$

CHOSEN POINT OF INTEREST



$S = \frac{C_c}{1 + e_0} \left[ \log_{10} \left( \frac{P_f}{P_i} \right) \right] H$

# MAGNITUDE OF SETTLEMENT

EWB2  
L<sub>REX</sub> / y<sub>10</sub>

COUNTRY: Edinburgh  
STATION: 19C+11  
ANALYZED BY: BAJ  
DATE: 6-7-92

LAYER	THICKNESS OF LAYER	DEPTH TO MID-POINT	INITIAL EFFECTIVE STRESS $\sum \gamma z$	INFLUENCE FACTOR $I_{LT} + I_{RT}$	$\gamma \cdot H_f$	$I \cdot q$	$P_0 + \Delta p$	SETTLEMENT
1	$H_c$	Z	200 D.17	1	4160	4160	$P_f$ 4340 2.27	0.18
S TOTAL: 0.18'								

SKETCH TO SCALE AND CALCULATIONS:

$$C_c = \frac{\Delta e}{\Delta \log p} = \frac{0.950}{2.11} = 0.45$$

$$S = \frac{C_c}{1+e_0} \left[ \log_{10} \left( \frac{P_f}{P_0} \right) \right] H$$

$$S = \frac{0.04}{1.8350} [1.3385] H$$

$$S = 0.18$$

COMPRESSION INDEX  $C_c$

1)  $C_c$  from  $e$  vs  $\log p$  curve =  $\frac{\Delta e}{\Delta \log p}$

2)  $C_c = 0.0054(26w - 35)$

3)  $C_c = 0.009(LL - 10)$

w = Nat. Moisture Content %

LL = Liquid Limit

INFLUENCE FACTOR FOR EACH LAYER

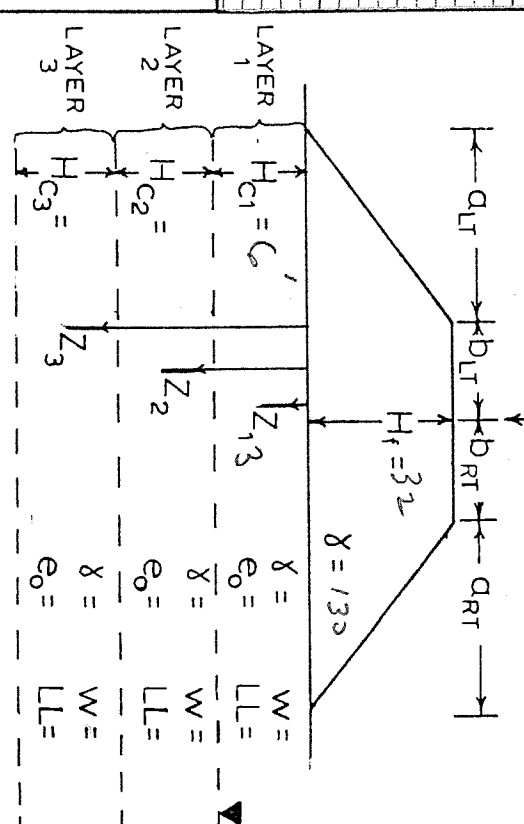
1)  $\frac{b_{LT}}{Z} = \frac{d_{LT}}{Z} = I_{LT}$  (From Chart)

$\frac{b_{RT}}{Z} = \frac{d_{RT}}{Z} = I_{RT}$  (From Chart)

$I = I_{LT} + I_{RT}$

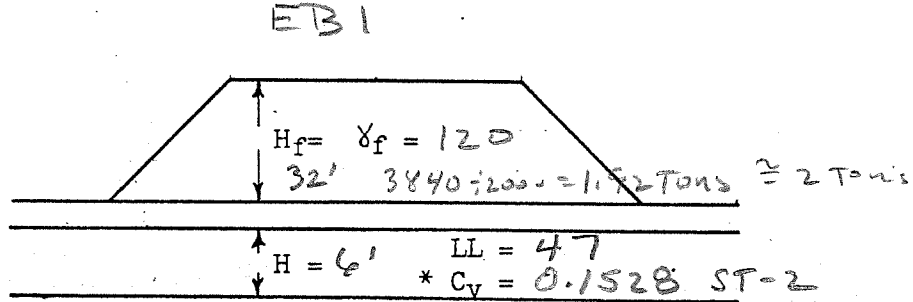
$$S = \frac{C_c}{1+e_0} \left[ \log_{10} \left( \frac{P_f}{P_0} \right) \right] H$$

CHOSEN POINT OF INTEREST



TIME RATE OF SETTLEMENT

STATE PROJECT: R-21117A  
 COUNTY: Edgewood  
 STATION: 194+19  
 ANALYZED BY: FAW  
 DATE: 6-4-93

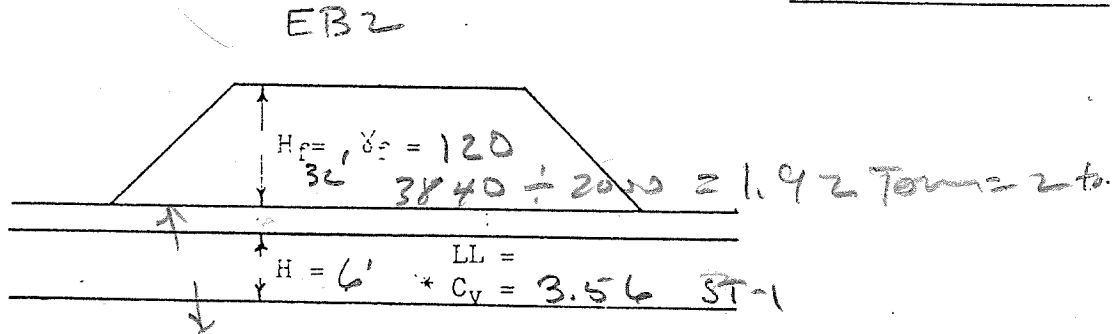


C <sub>v</sub> (Ft <sup>2</sup> /day) from LL chart		$t = T \frac{H^2}{N C_v}$	% Consol. vs Time	
LL	C <sub>v</sub>		U	T
32	0.614	t = Time in days T = % Consolidation vs Time factor H = Thickness of compressible layer (ft) N = Number of drainage surfaces N = 1 if permeable above <u>or</u> below N = 2 if permeable above <u>and</u> below C <sub>v</sub> = Coefficient of Consolidation (ft <sup>2</sup> /day)	25	0.049
34	0.475		50	0.196
36	0.372		75	0.477
38	0.298		90	0.848
40	0.238		95	1.129
42	0.193		(cm <sup>2</sup> /sec X 93) = ft <sup>2</sup> /day	
44	0.158			
46	0.130			
48	0.109			
50	0.095			
52	0.081			
54	0.071		SKETCH AND CALCULATIONS $t = \frac{0.848 \left(\frac{6}{2}\right)^2}{0.1528}$ $t = \frac{0.848 (3)^2}{0.1528}$ $t = 49 \text{ days}$ $t = 1.6 \text{ month}$ $t = \frac{0.848 \left(\frac{6}{2}\right)^2}{0.120} = 63 \text{ days}$	
56	0.061			
58	0.053			
60	0.047			
62	0.041			
64	0.035			
66	0.032			
68	0.029			
70	0.026			
75	0.021			
80	0.018			
85	0.015			
90	0.013			
95	0.012			
100	0.010			
110	0.009			
120	0.008			

\* If lab test is available, use C<sub>v</sub> for load increment corresponding to the stress range of interest. (q = H<sub>f</sub> γ<sub>f</sub>)

TIME RATE OF SETTLEMENT

STATE PROJECT: R-2111A  
 COUNTY: Edgewood  
 STATION: 196 + 19 ±  
 ANALYZED BY: RAM  
 DATE: \_\_\_\_\_



C <sub>v</sub> (Ft <sup>2</sup> /day) from LL chart		$t = T \frac{(\frac{H}{N})^2}{C_v}$	% Consol. vs Tim	
LL	C <sub>v</sub>		U	T
32	0.614	t = Time in days T = % Consolidation vs Time factor H = Thickness of compressible layer (ft) N = Number of drainage surfaces N = 1 if permeable above <u>or</u> below N = 2 if permeable above <u>and</u> below C <sub>v</sub> = Coefficient of Consolidation (ft <sup>2</sup> /day)	25	0.049
34	0.475		50	0.196
36	0.372		75	0.477
38	0.298		90	0.848
40	0.238		95	1.129
42	0.193		(cm <sup>2</sup> /sec X 93) = ft <sup>2</sup> /day	
44	0.158			
46	0.130			
48	0.109			
50	0.095			
52	0.081			
54	0.071			
56	0.061			
58	0.053			
60	0.047			
62	0.041			
64	0.035			
66	0.032			
68	0.029			
70	0.026			
75	0.021			
80	0.018			
85	0.015			
90	0.013			
95	0.012			
100	0.010			
110	0.009			
120	0.008			

SKETCH AND CALCULATIONS

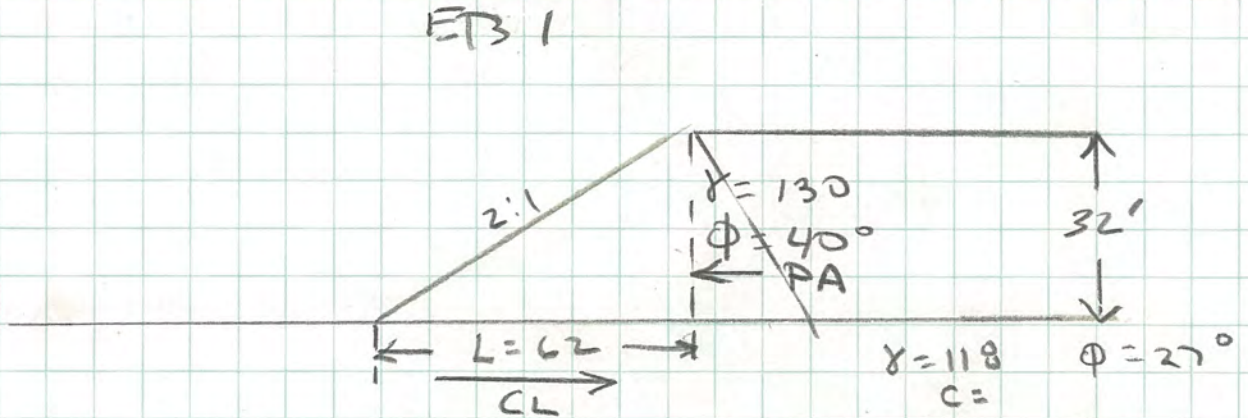
$$t = \frac{0.848 \left(\frac{6}{2}\right)^2}{0.158}$$

from LL  $t = \frac{0.848 (3)^2}{0.158} = 48 \text{ days}$

from ST-1  $t = \frac{0.848 \left(\frac{6}{2}\right)^2}{3.56} = 2.14 \text{ days}$

$t = \frac{0.848 \left(\frac{6}{2}\right)^2}{0.053} = 144 \text{ days}$   
 5 month

\* If lab test is available, use C<sub>v</sub> for load increment corresponding to the stress range of interest. (q = H<sub>f</sub>γ<sub>p</sub>)



$$K_A = \tan^2\left(45 - \frac{40}{2}\right) = \tan^2(25^\circ) = .22$$

$$P_A \textcircled{1} = \gamma_1 h_1 K_A = (130 \times 32') \times (.22) = 915 \text{ PSF}$$

$$K_p \textcircled{2} \text{ CL} = (216 \times 62' \times 1') = 13392$$

$$FS = \frac{13392}{915} = 14.6$$

EB 2

$$P_A = 915$$

$$K_p \text{ CL} = 432 \times 62 \times 1 = 26784$$

$$FS = \frac{26784}{915} = 29.3$$



# GEOTECHNICAL UNIT SOIL SAMPLE TRANSMITTAL

R-2111A

PROJECT NO. 6.299001T ROUTE us 64 RELOC. COUNTY Edgecombe

PROJECT GEOLOGIST E.A. Witort DATE 9-15-92

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<u>ST-1</u> PRIMARY <input checked="" type="checkbox"/> ALT. FOR _____	STA. <u>196+19.4 REV</u> OFFSET <u>25' RT</u> SAMP. DEPTH _____ <u>2.0-4.0</u> G.W. DEPTH <u>3.3'</u>	TRIAXIAL CU <input checked="" type="checkbox"/> UU _____ CD _____ CONSOLIDATION <input checked="" type="checkbox"/> PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. <u>Gray E. Sdy Silty Clay</u> SOIL STRUCTURE <u>Mottled</u> EST. BLOWS/FT. <u>5</u> OTHER _____ WHERE USED: - UNDER <u>32</u> FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____

**GEOTECHNICAL UNIT  
SOIL SAMPLE TRANSMITTAL**

R-2111AA

PROJECT NO. 6.299001T ROUTE US 6 + Reloc. COUNTY Edgecombe

PROJECT GEOLOGIST E.A. Wilentz DATE 4-2-93

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<p><b>ST-2</b> PRIMARY <input checked="" type="checkbox"/> ALT. FOR _____</p>	<p>STA. <u>194+19 LREV</u> OFFSET <u>65' RT</u> SAMP. DEPTH <u>2.0-4.0'</u> G.W. DEPTH <u>2.0</u></p>	<p>TRIAxIAL CU <input checked="" type="checkbox"/> UU _____ CD _____ CONSOLIDATION <input checked="" type="checkbox"/> PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____</p>	<p>SOIL DESC. <u>Silly Clay</u> SOIL STRUCTURE <u>homogeneous, stiff</u> EST. BLOWS/FT. <u>9</u> OTHER _____ WHERE USED: - UNDER <u>32</u> FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____ ALT. FOR _____</p>	<p>STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____</p>	<p>TRIAxIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____</p>	<p>SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____ ALT. FOR _____</p>	<p>STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____</p>	<p>TRIAxIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____</p>	<p>SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____ ALT. FOR _____</p>	<p>STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____</p>	<p>TRIAxIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____</p>	<p>SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____ ALT. FOR _____</p>	<p>STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____</p>	<p>TRIAxIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____</p>	<p>SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____</p>

County

Edgecombe

NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
GEOTECHNICAL UNIT

LEVEL NOTES FOR FOUNDATION BORINGS

6.299001T R-2111A -L'REV / Y10; Y11

BENCH MARK BM #19 RE spike in base of  
P.P. S-196 L'S + 195+79, 243' LT  
ELEVATION 49.45

INSTRUMENTMAN RLE  
RODMAN MGW  
DATE 8-31-92

STATION	(+)BS	H.I.	(-)FS.	(-)ROD	ELEV.	NOTES
BM	2.61	52.06				49.45
EB2-A WBL				4.94	47.12	Hub ✓
EB2-B WBL				4.99	47.07	
196+11 <sup>L'REV</sup>				4.73	47.33	EB2 ♀
EB2-A EBL				4.20	47.86	Hub ✓
EB2-B EBL				3.70	48.36	Hub
B3-B EBL				3.89	48.17	Hub offset 10'
B3-A EBL				4.54	47.52	Hub offset 10'
195+79				5.04	47.02	B3 ♀ offset 10'
B3-B WBL				5.03	47.03	Hub
B3-A WBL				5.17	46.89	Hub
B2-A EBL				4.66	47.40	Hub
B2-B EBL				4.14	47.92	
B2-A WBL				4.34	47.72	Hub
B2-B WBL				4.26	47.80	Hub
TBM				2.75	49.31	195+11 <sup>56</sup> L'
	4.90	56.96	4.94		52.02	
BM			2.57		49.45	
	7.51		7.51			



NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 RLE GEOTECHNICAL UNIT  
 LEVEL NOTES FOR FOUNDATION BORINGS

BENCH MARK 195+11.56 ← Tack PT.  
on RR Tie.  
 ELEVATION 49.31

INSTRUMENTMAN LWD  
 RODMAN mtw  
 DATE 9/1/97

STATION	(+)BS	H.I.	(-)FS.	(-)ROD	ELEV.	NOTES
	3.58	52.89			49.31	
BI-B WBL				4.97	47.92	
BI-A WBL				4.55	48.34	
EBI-A WBL				5.72	47.17	
EBI-B WBL				5.78	47.11	
BI-A EBL				5.16	47.73	
BI-B EBL				5.85	47.04	
EBI-B EBL				6.94	45.95	
EBI-A EBL				5.54	47.35	
T.P 1	5.47	58.36	5.54		52.82	
	9.05		3.51		49.31	NO ERROR
			9.05			
	Run # 2					
TACK POINT 195+11.56	3.51	52.82			49.31	
BI-A EBL				5.10	47.72	
BI-B WBL				4.90	47.92	
BI-A WBL				4.48	48.34	
EBI-A WBL				5.64	47.18	
EBI-B WBL				5.72	47.10	
BI-B EBL				5.78	47.04	
BI-B EBL				6.88	45.94	
EBI-A EBL				5.47	47.35	
T.P 1	5.46	58.28	5.47		52.81	
	8.97		3.50		49.31	NO ERROR
			8.97			

NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
GEOTECHNICAL UNIT

LEVEL NOTES FOR FOUNDATION BORINGS

note BLE

BENCH MARK TAC 12 PT. LI 195+11.56  
ON RR Tie  
ELEVATION 49.31

INSTRUMENTMAN LWD  
RODMAN MELW  
DATE 9/1/92

cross-section S

STATION	(+)BS	H.I.	(-)FS.	(-)ROD	ELEV.	NOTES
	3.27	52.58	B2		49.31	
31 LT LIE REV B2-A WBL ON SKEW				5.76	46.82	shoulder point of ditch
11 LT OF 132-A WBL				4.64	47.94	
25 LT B2-B WBL				4.77	47.81	
LIE REV				7.07	45.51	middle of ditch
51 RT OF LIE				5.72	46.86	shoulder of ditch
16 RT OF LIE ON SKEW				5.13	47.45	
31 RT-LI B2-A EBL				5.17	47.41	
		B-1	3.27			
194+37		all shots on skew				
TAC 12 PT TBM	3.35	52.66			49.31	RR
B1-A 194+37 25 RT OF STA 194+27 U REV			4.93	4.93	47.73	shoulder point of ditch
30 RT-LIE	"		7.53	7.53	45.13	middle of ditch
34 RT LIE	"		5.70	5.70	46.96	shoulder point
EB1-A EBL 194+02 41 RT LIE REV			5.68	5.68	46.98	shoulder point
A0 RT LIE			7.49	7.49	45.17	middle of ditch
36 RT LIE STA 194+00			5.85	5.85	46.81	shoulder point
194+02 U REV EB1-A EBL			5.30	5.30	47.36	
			3.35		49.31	NO ERROR

CH Witort

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MATERIALS & TEST UNIT  
SOILS LABORATORY

T.I.P. ID NO. R-2111 A

REPORT ON SAMPLES OF: SOIL FOR QUALITY

PROJECT: 6.299001T COUNTY: EDGEcombe OWNER:  
DATE: SAMPLED: 9/1/92 RECEIVED: 9/25/92 REPORTED: 9/29/92  
SAMPLES FROM: L REV, Y-10 BY: E. A. WITORT  
SUBMITTED BY: W. H. JOHNSON (T-2726) 1990 STANDARD SPECIFICATIONS

9/30/92

TEST RESULTS

EV32

Proj. Sample No.	ST-1			
Lab. Sample No. 560	554			
Retained #4 Sieve %	--			
Passing #10 Sieve %	100			
Passing #40 Sieve %	99			
Passing #200 Sieve %	86			

MINUS #10 FRACTION

SOIL MORTAR -	100%			
Coarse Sand Ret-#60 %	2			
Fine Sand Ret -#270 %	17			
Silt 0.05-0.005 MM %	22			
Clay < 0.005 MM %	59			
Passing #40 Sieve %	--			
Passing #200 Sieve %	--			
L.L.	58			
P.I.	37			
AASHTO Classification	A-7-6(20)			
Texture	25' RT			
Station	196+19			
Hole No.				
Depth (Ft)				
	to			

cc: W. L. MOORE  
J. F. LEDBETTER  
E. A. WITORT ✓  
W. H. JOHNSON  
SOILS FILE

*E. A. Witort*  
Soils Engineer

One Dimensional Consolidation Test

Project # 6.299001T County Edgecombe Lab. No. T-2726

Sample No. ST-1 Depth 2.0-4.0 Sp. Gr. 2.678 Solid Hto .5430

Sta. 196+19 L Rev 25'RT

AASHTO Class: A-7-6(20) L.L. 58 P.I. 37

Remarks: Tan Grey Clay

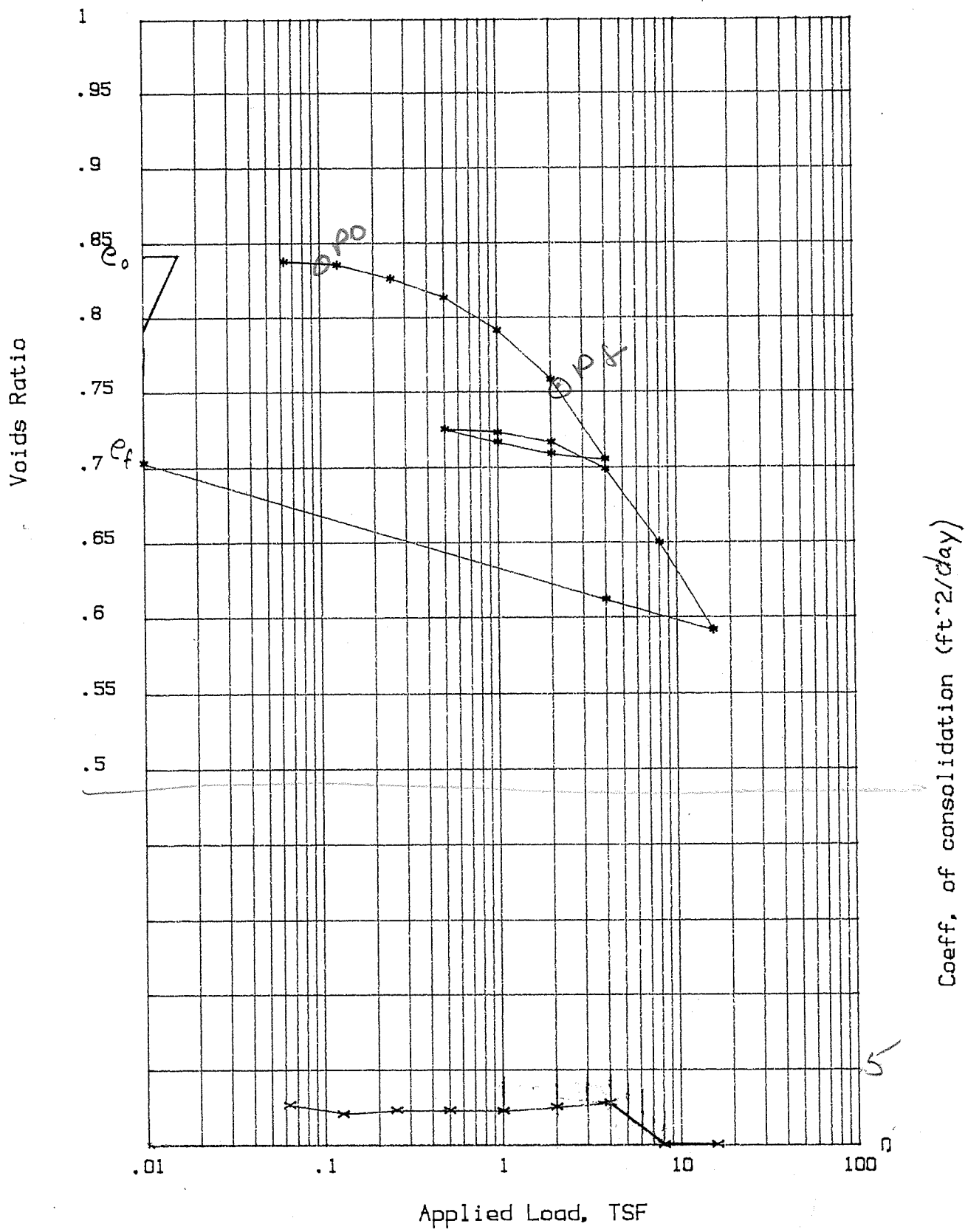
Acc. Load Ton	Spec. Ht @F.D.R. inches	Void Ratio e	Time @ % Compression		C <sub>v</sub> : Consolidation in Ft. <sup>2</sup> /day	
			Sq. Rt.	MINUTES Semi-Log	.212 Ht <sup>2</sup> /t90	.197 Ht <sup>2</sup> /t50
	1.0	.8440	—	—	—	—
.06	.9965	.8370	.5625		3.76	
.13	.9954	.8350	.7225		2.91	
.25	.9905	.8250	.64		3.28	
.50	.9837	.8130	.64		3.25	
1.00	.9720	.7910	.64		3.21	
2.00	.9543	.7570	.5625		3.56	
4.00	.9256	.7040	.49		3.94	
1.00	.9358	.7220	—		—	
2.00	.9323	.7160	—		—	
4.00	.9228	.6980	—		—	
8.00	.8961	.6490	20.25		.09	
16.00	.8646	.5900	16.00		.11	
4.00	.8757	.6100	—		—	
.01	.9256	.7020	—		—	

Density Data \* Data at 16 TSF

	PreTest	*Post Test
Moisture, %	29.57	22.12
Dry Unit Wt. (PCF)	90.54	104.72
Void Ratio, e	.8440	.5900
Saturation, %	94.07	100.00

$\gamma_w = (90.54 \times 1.2957) =$   
 $\gamma_w = 117 \text{ PSF}$



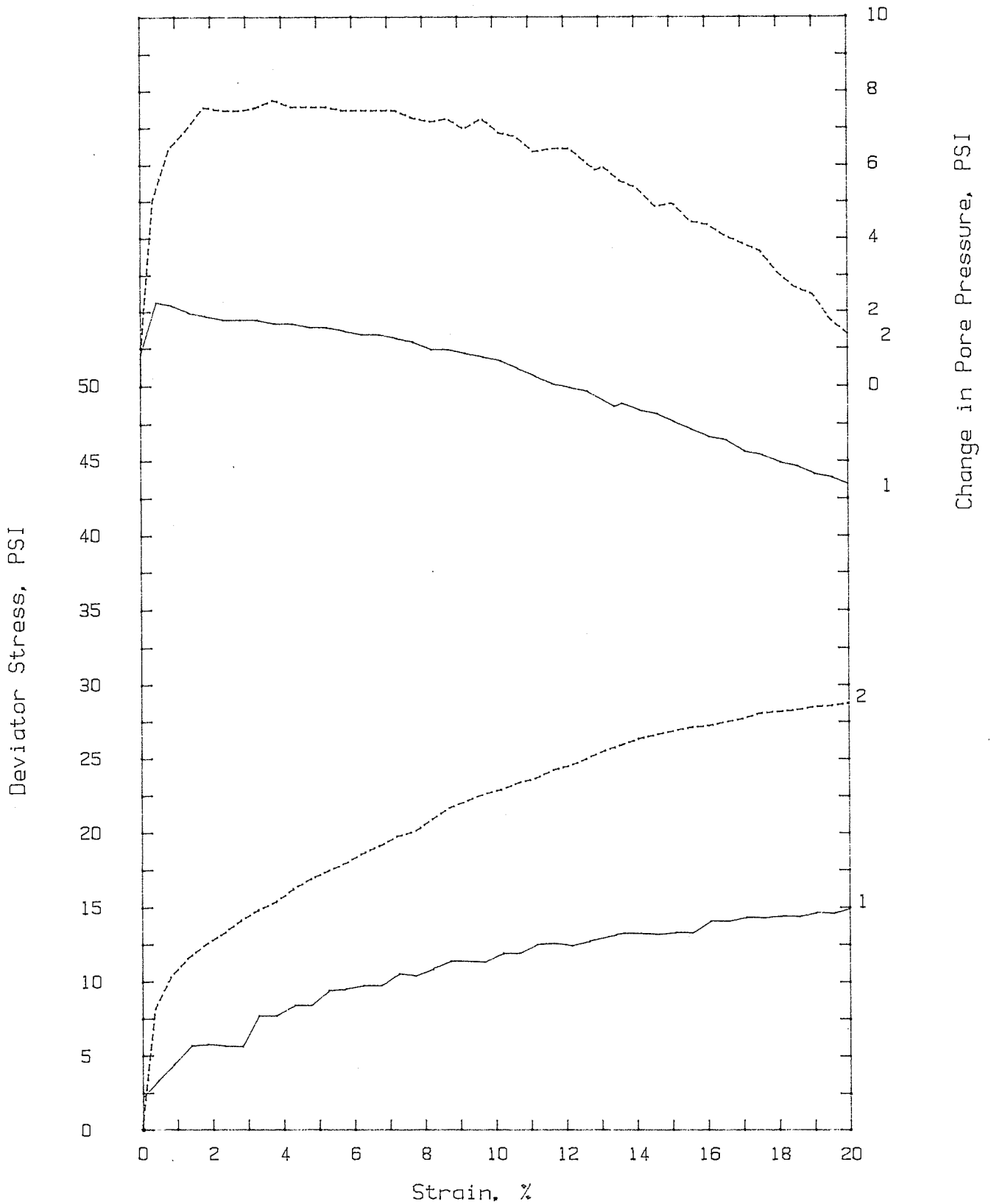


Project number: 6.299001T  
 Borehole number: 196+19

Sample number: ST-1 T-2726  
 Sample depth: 2.0-4.0 Feet

NORTH CAROLINA D. O. T.

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST



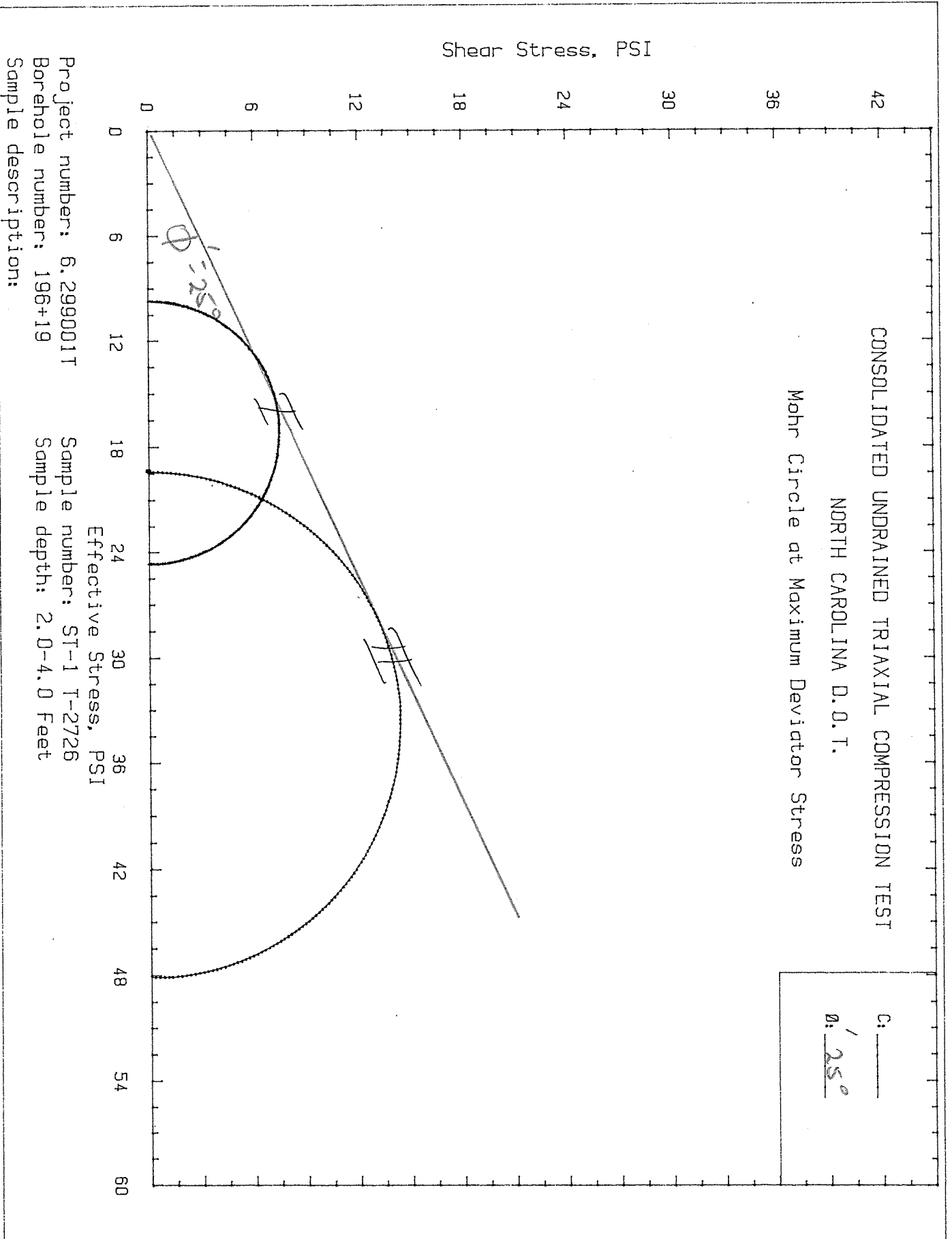
Project number: 6.299001T  
Borehole number: 196+19

Sample number: ST-1 T-2726  
Sample depth: 2.0-4.0 Feet

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
 NORTH CAROLINA D.O.T.

Mohr Circle at Maximum Deviator Stress

C: \_\_\_\_\_  
 φ: 25°



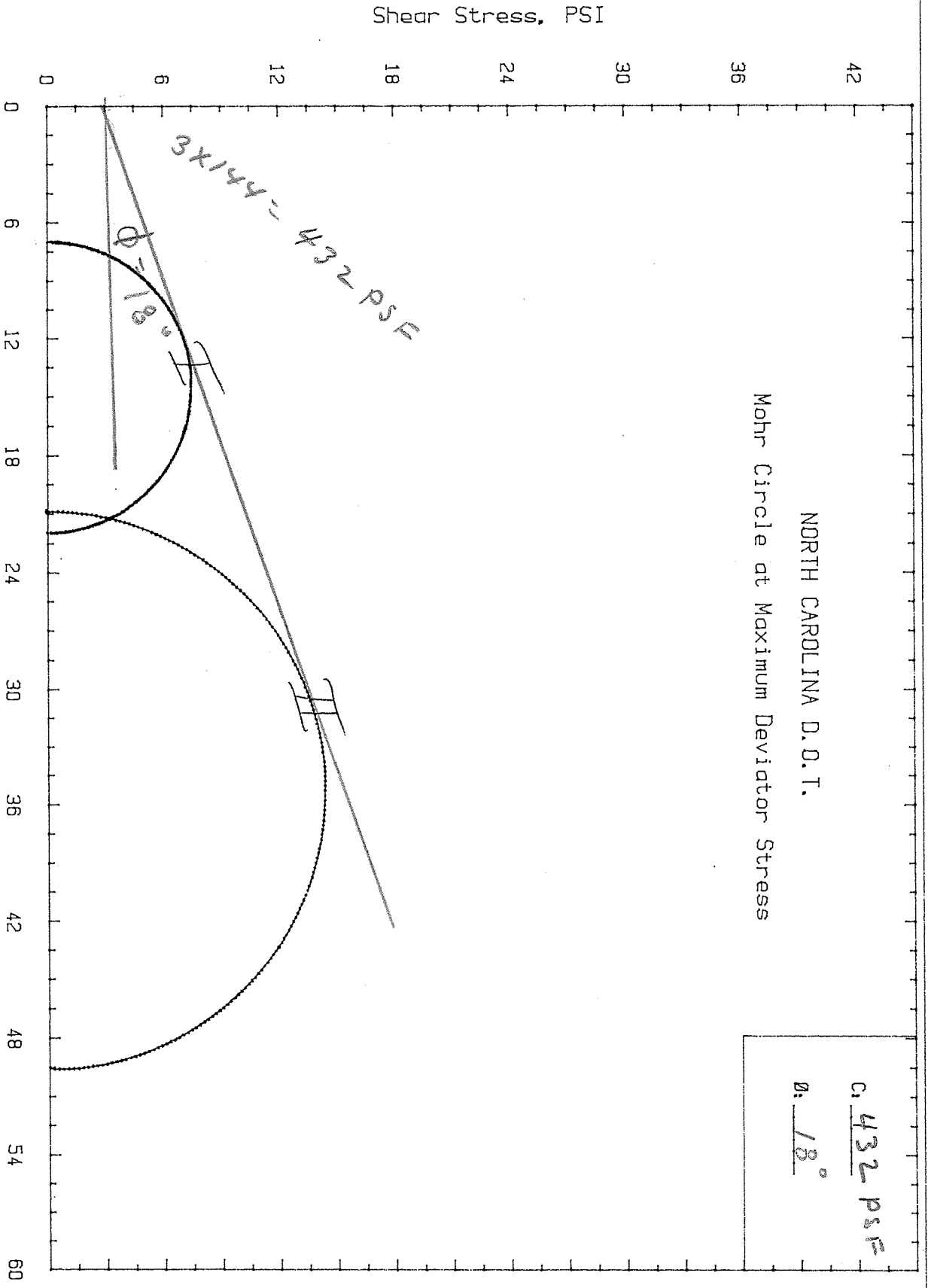
Project number: 6.299001T  
 Borehole number: 196+19  
 Sample description:

Sample number: ST-1 T-2726  
 Sample depth: 2.0-4.0 Feet

NORTH CAROLINA D.O.T.

Mohr Circle at Maximum Deviator Stress

$c: 432 \text{ PSF}$   
 $\phi: 18^\circ$



Project number: 6.299001T  
Borehole number: 196+19  
Sample description:  
Sample number: ST-1 T-2726  
Sample depth: 2.0-4.0 Feet  
Total Stress, PSI

T-2726  
10#1

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 1

Project Number: 6.2990017  
 Station Number: 196+19  
 Sample Number: ST-1 T-2726  
 Sample Depth: 2.0-4.0 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.00	0.00	6.94	0.00
0.000	0.00	100.50	.50	6.44	
.001	14.00	100.80	.80	6.14	.36
.027	21.00	102.20	2.20	4.74	.66
.054	28.00	102.10	2.10	4.84	.47
.083	36.00	101.90	1.90	5.04	.33
.111	37.00	101.80	1.80	5.14	.31
.141	36.00	101.70	1.70	5.24	.30
.170	36.00	101.70	1.70	5.24	.30
.198	50.00	101.70	1.70	5.24	.22
.227	50.00	101.60	1.60	5.34	.21
.258	55.00	101.60	1.60	5.34	.19
.287	55.00	101.50	1.50	5.44	.18
.316	62.00	101.50	1.50	5.44	.16
.345	63.00	101.40	1.40	5.54	.15
.375	65.00	101.30	1.30	5.64	.13
.405	65.00	101.30	1.30	5.64	.13
.435	71.00	101.20	1.20	5.74	.11
.463	70.00	101.10	1.10	5.84	.11
.493	74.00	100.90	.90	6.04	.08
.523	78.00	100.90	.90	6.04	.08
.552	78.00	100.80	.80	6.14	.07
.582	78.00	100.70	.70	6.24	.06
.612	83.00	100.60	.60	6.34	.05
.641	83.00	100.40	.40	6.54	.03
.670	88.00	100.20	.20	6.74	.02
.699	89.00	100.00	0.00	6.94	0.00
.729	88.00	99.90	-.10	7.04	-.01
.759	91.00	99.80	-.20	7.14	-.02
.805	95.00	99.40	-.60	7.54	-.05
.818	96.00	99.50	-.50	7.44	-.04
.848	96.00	99.30	-.70	7.64	-.05
.878	96.00	99.20	-.80	7.74	-.06
.906	98.00	99.00	-1.00	7.94	-.08
.935	98.00	98.80	-1.20	8.14	-.09
.965	105.00	98.60	-1.40	8.34	-.10
.995	105.00	98.50	-1.50	8.44	-.11
1.025	108.00	98.20	-1.80	8.74	-.13
1.055	108.00	98.10	-1.90	8.84	-.13
1.086	110.00	97.90	-2.10	9.04	-.15
1.115	110.00	97.80	-2.20	9.14	-.15
1.143	113.00	97.60	-2.40	9.34	-.16
1.173	113.00	97.50	-2.50	9.44	-.17
1.203	117.00	97.30	-2.70	9.64	-.19

1-6166  
20A1

AXIAL STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	6.94	-0.52
0.00	0.00	0.00	6.44	1.00
.02	2.24	1.12	7.26	1.37
.45	3.35	1.67	6.41	1.71
.90	4.44	2.22	7.06	1.92
1.38	5.68	2.84	7.88	2.13
1.85	5.81	2.91	8.05	2.13
2.35	5.63	2.81	8.05	2.07
2.83	5.60	2.80	8.04	2.07
3.30	7.74	3.87	9.11	2.48
3.78	7.70	3.85	9.19	2.44
4.30	8.43	4.21	9.55	2.58
4.78	8.38	4.19	9.63	2.54
5.27	9.40	4.70	10.14	2.73
5.75	9.51	4.75	10.29	2.72
6.25	9.76	4.88	10.52	2.73
6.75	9.70	4.85	10.49	2.72
7.25	10.54	5.27	11.01	2.84
7.72	10.34	5.17	11.01	2.77
8.22	10.87	5.44	11.48	2.80
8.72	11.40	5.70	11.74	2.89
9.20	11.34	5.67	11.81	2.83
9.70	11.28	5.64	11.88	2.81
10.20	11.93	5.97	12.31	2.88
10.68	11.87	5.93	12.47	2.81
11.17	12.52	6.26	13.00	2.86
11.65	12.59	6.29	13.23	2.81
12.15	12.38	6.19	13.23	2.76
12.65	12.73	6.36	13.50	2.78
13.42	13.17	6.58	14.12	2.75
13.63	13.27	6.64	14.08	2.78
14.13	13.20	6.60	14.24	2.73
14.63	13.12	6.56	14.30	2.70
15.10	13.32	6.66	14.60	2.68
15.58	13.25	6.62	14.76	2.63
16.08	14.11	7.05	15.39	2.69
16.58	14.02	7.01	15.45	2.66
17.08	14.34	7.17	15.91	2.64
17.58	14.25	7.13	15.97	2.61
18.10	14.42	7.21	16.25	2.60
18.58	14.34	7.17	16.31	2.57
19.05	14.65	7.32	16.66	2.57
19.55	14.56	7.28	16.72	2.54
20.05	14.98	7.49	17.13	2.55

T-2726  
1 of 2

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 2  
=====

Project Number: 6.299001T  
Station Number: 196+19  
Sample Number: ST-1 T-2726  
Sample Depth: 2.0-4.0 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.20	0.00	20.63	0.00
CHANNEL 2	14:08:43	+3541			
0.000	2.00	100.90	.70	19.93	2.17
.022	51.00	105.20	5.00	15.63	.61
.050	65.00	106.60	6.40	14.23	.62
.079	73.00	107.10	6.90	13.73	.59
.106	79.00	107.70	7.50	13.13	.60
.138	84.00	107.60	7.40	13.23	.56
.167	90.00	107.60	7.40	13.23	.52
.197	95.00	107.70	7.50	13.13	.51
.227	99.00	107.90	7.70	12.93	.50
.256	105.00	107.70	7.50	13.13	.46
.286	110.00	107.70	7.50	13.13	.44
.315	114.00	107.70	7.50	13.13	.43
.345	118.00	107.60	7.40	13.23	.41
.374	123.00	107.60	7.40	13.23	.40
.403	127.00	107.60	7.40	13.23	.39
.433	132.00	107.60	7.40	13.23	.37
.463	135.00	107.40	7.20	13.43	.36
.492	141.00	107.30	7.10	13.53	.34
.521	147.00	107.40	7.20	13.43	.33
.550	151.00	107.10	6.90	13.73	.31
.580	155.00	107.40	7.20	13.43	.32
.610	158.00	107.00	6.80	13.83	.30
.639	162.00	106.90	6.70	13.93	.29
.668	165.00	106.50	6.30	14.33	.27
.699	170.00	106.60	6.40	14.23	.26
.728	173.00	106.60	6.40	14.23	.26
.773	180.00	106.00	5.80	14.83	.23
.786	182.00	106.10	5.90	14.73	.23
.816	186.00	105.70	5.50	15.13	.21
.845	190.00	105.50	5.30	15.33	.20
.875	193.00	105.00	4.80	15.83	.18
.904	196.00	105.10	4.90	15.73	.18
.934	199.00	104.60	4.40	16.23	.16
.964	201.00	104.50	4.30	16.33	.16
.993	204.00	104.20	4.00	16.63	.15
1.022	207.00	104.00	3.80	16.83	.14
1.052	211.00	103.80	3.60	17.03	.13
1.082	213.00	103.20	3.00	17.63	.11
1.111	215.00	102.80	2.60	18.03	.09
1.141	218.00	102.60	2.40	18.23	.08
1.171	220.00	101.90	1.70	18.93	.06

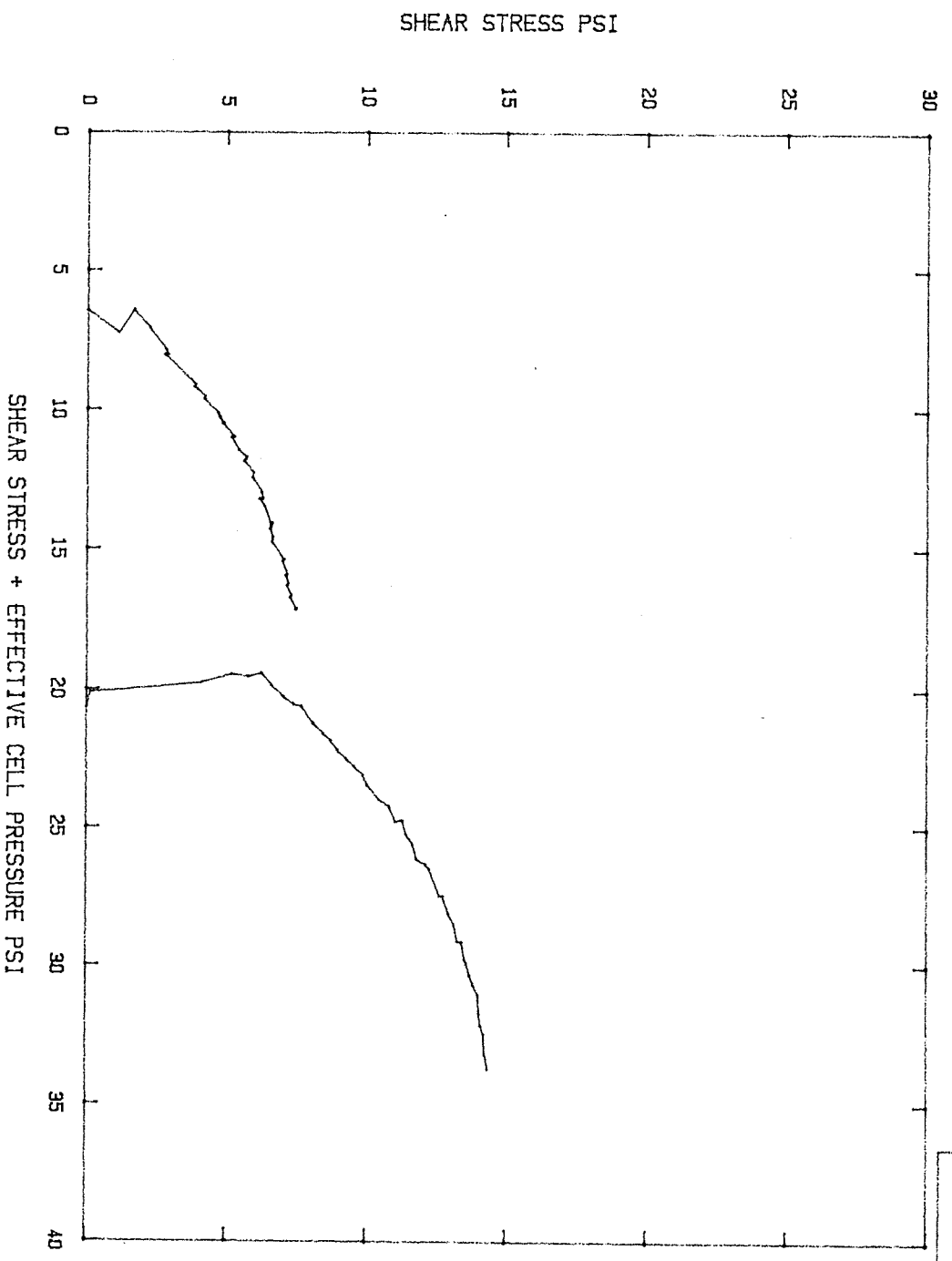
T-2720  
20P2

AXIAL, STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	20.63	-2.01
0.00	0.00	0.00	20.63	1.00
0.00	.32	.16	20.09	1.02
.37	8.19	4.10	19.73	1.52
.53	10.37	5.20	19.43	1.73
1.32	11.62	5.81	19.54	1.85
1.80	12.51	6.25	19.38	1.95
2.30	13.23	6.62	19.85	2.00
2.78	14.11	7.05	20.28	2.07
3.28	14.82	7.41	20.54	2.13
3.78	15.36	7.68	20.61	2.19
4.27	16.21	8.10	21.23	2.23
4.77	16.89	8.45	21.58	2.29
5.25	17.42	8.71	21.84	2.33
5.75	17.93	8.97	22.20	2.36
6.23	18.60	9.30	22.53	2.41
6.72	19.10	9.55	22.78	2.44
7.22	19.75	9.87	23.10	2.49
7.72	20.09	10.04	23.47	2.50
8.20	20.87	10.44	23.97	2.54
8.68	21.65	10.82	24.25	2.61
9.17	22.12	11.06	24.79	2.61
9.67	22.58	11.29	24.72	2.68
10.17	22.89	11.44	25.27	2.65
10.65	23.34	11.67	25.60	2.68
11.13	23.64	11.82	26.15	2.65
11.65	24.22	12.11	26.34	2.70
12.13	24.51	12.26	26.49	2.72
12.88	25.29	12.64	27.47	2.71
13.10	25.50	12.75	27.48	2.73
13.60	25.91	12.96	28.09	2.71
14.08	26.32	13.16	28.49	2.72
14.58	26.58	13.29	29.12	2.68
15.07	26.84	13.42	29.15	2.71
15.57	27.09	13.55	29.76	2.67
16.07	27.20	13.60	29.93	2.67
16.55	27.45	13.73	30.36	2.65
17.03	27.69	13.85	30.68	2.65
17.53	28.06	14.03	31.06	2.65
18.03	28.15	14.08	31.71	2.60
18.52	28.25	14.12	32.15	2.57
19.02	28.47	14.23	32.46	2.56
19.52	28.55	14.28	33.21	2.51
20.03	28.75	14.38	33.71	2.49



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

C: \_\_\_\_\_  
D: \_\_\_\_\_



PROJECT NUMBER: 6.299001T STATION NUMBER: 196+19  
SAMPLE NUMBER: ST-1 T-2726 DEPTH: 2.0-4.0feet

Project: 6.299001T

Station: 196 + 19

County: Edgecombe

Sample No: ST-1

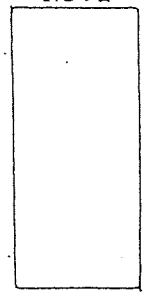
Depth: 2-4

SPECIMEN NUMBER		1	2	3
PRE-TEST	WATER CONTENT %	W	29.09	27.37
	DRY DENSITY, PCF	$\gamma_d$	93.03	93.61
	SATURATION, %	$S_o$	98.30	93.80
	VOID RATIO	$e_o$	.7925	.7814
	DIAMETER, IN.	$D_o$	2.835	2.830
POST-TEST	HEIGHT, IN	$H_o$	6.020	6.075
	TIME TO ( $G_1-G_3$ ) Max. Min.	$t$	133.67	133.53
	WATER CONTENT %	$W_1$	29.42	27.26
	DRY DENSITY, PCF	$\gamma_{d1}$	93.28	96.39
	SATURATION, %	$S_1$	100.00	100.00
	VOID RATIO	$e_1$	.7878	.7301
STRAIN RATE mm/minute			.2286	.2286

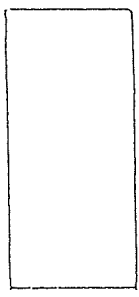
LL: 58  
PL: 21  
PI: 37  
G: 2.678

PRE-TEST  
Specimen Condition

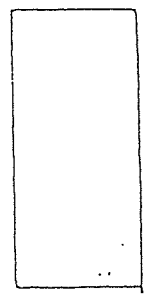
Specimen No. 1



Specimen No. 2



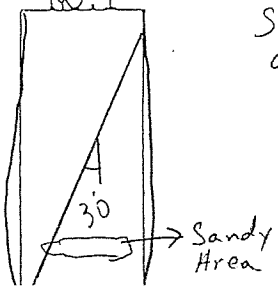
Specimen No. 3



not enough material for #3

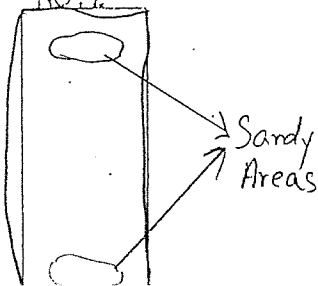
FAILURE MODE:

Specimen No. 1

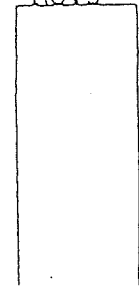


same as #1

Specimen No. 2



Specimen No. 3



Tan Grey Clay

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MATERIALS & TEST UNIT  
SOILS LABORATORY

T.I.P. ID NO. R-2111 AA

REPORT ON SAMPLES OF: SOIL FOR QUALITY

PROJECT: 6.299001T	COUNTY: EDGECOMBE	OWNER:
DATE: SAMPLED: 3/26/93	RECEIVED: 5/24/93	REPORTED: 5/26/93
SAMPLES FROM: -L- REV/Y-10		BY: E. A. WITORT
SUBMITTED BY: W. H. JOHNSON (T-2804)		1990 STANDARD SPECIFICATIONS

5/27/93

## TEST RESULTS

Proj. Sample No.	ST-2			
Lab. Sample No. 568	334			
Retained #4 Sieve %	--			
Passing #10 Sieve %	100			
Passing #40 Sieve %	98			
Passing #200 Sieve %	84			

MINUS #10 FRACTION

SOIL MORTAR - 100%				
Coarse Sand Ret-#60 %	4			
Fine Sand Ret -#270 %	16			
Silt 0.05-0.005 MM %	21			
Clay < 0.005 MM %	59			
Passing #40 Sieve %	--			
Passing #200 Sieve %	--			
L.L.	47			
P.I.	26			
AASHTO Classification	A-7-6(16)			
Texture	65' RT			
Station	194+19			
Hole No.	EB1-B			
Depth (Ft)	2.0			
to	4.0			

cc: W. L. MOORE  
J. F. LEDBETTER  
E. A. WITORT  
W. H. JOHNSON  
SOILS FILE

*E. A. Witort*  
Soils Engineer

N.C.D.O.T. - Materials & Tests Lab

One Dimensional Consolidation Test

Project # 6.299001T County Edgecombe Lab. No. T-2804

Sample No. ST-2 Depth 2.0-4.0' Sp. Gr. 2.640 Solid Hto .5425

Sta. 194+19 65'RT

AASHTO Class: A-7-6(16) L.L. 47 P.I. 26

Remarks: Grey Clay

Acc. Load Ton	Spec. Ht @F.D.R. inches	Void Ratio e	Time @ % Compression Sq. MINUTES Rt.	Semi- Log	C <sub>v</sub> : Consolidation in Ft <sup>2</sup> /day Coefficient	
					.212 Ht <sup>2</sup> /t <sub>90</sub>	.197 Ht <sup>2</sup> /t <sub>50</sub>
	1.0	.8480	—		—	
.063	.9960	.8410	.790		2.671	
.125	.9930	.8360	4.46		0.47	
.25	.9870	.8250	10.38		0.201	
.50	.9770	.8070	26.12		0.079	
1.00	.9650	.7860	13.44		0.150	
2.00	.9440	.7500	12.64		0.1528	
0.5	.9530	.7630	—		—	
1.0	.9500	.7580	—		—	
2.0	.9430	.7460	—		—	
4.0	.9210	.7060	27.28		0.0675	
8.0	.8910	.6530	28.44		0.0620	
16.0	.8590	.5970	26.12		0.0630	
4.0	.8710	.6130	—		—	
1.01	.9250	.7100	—		—	

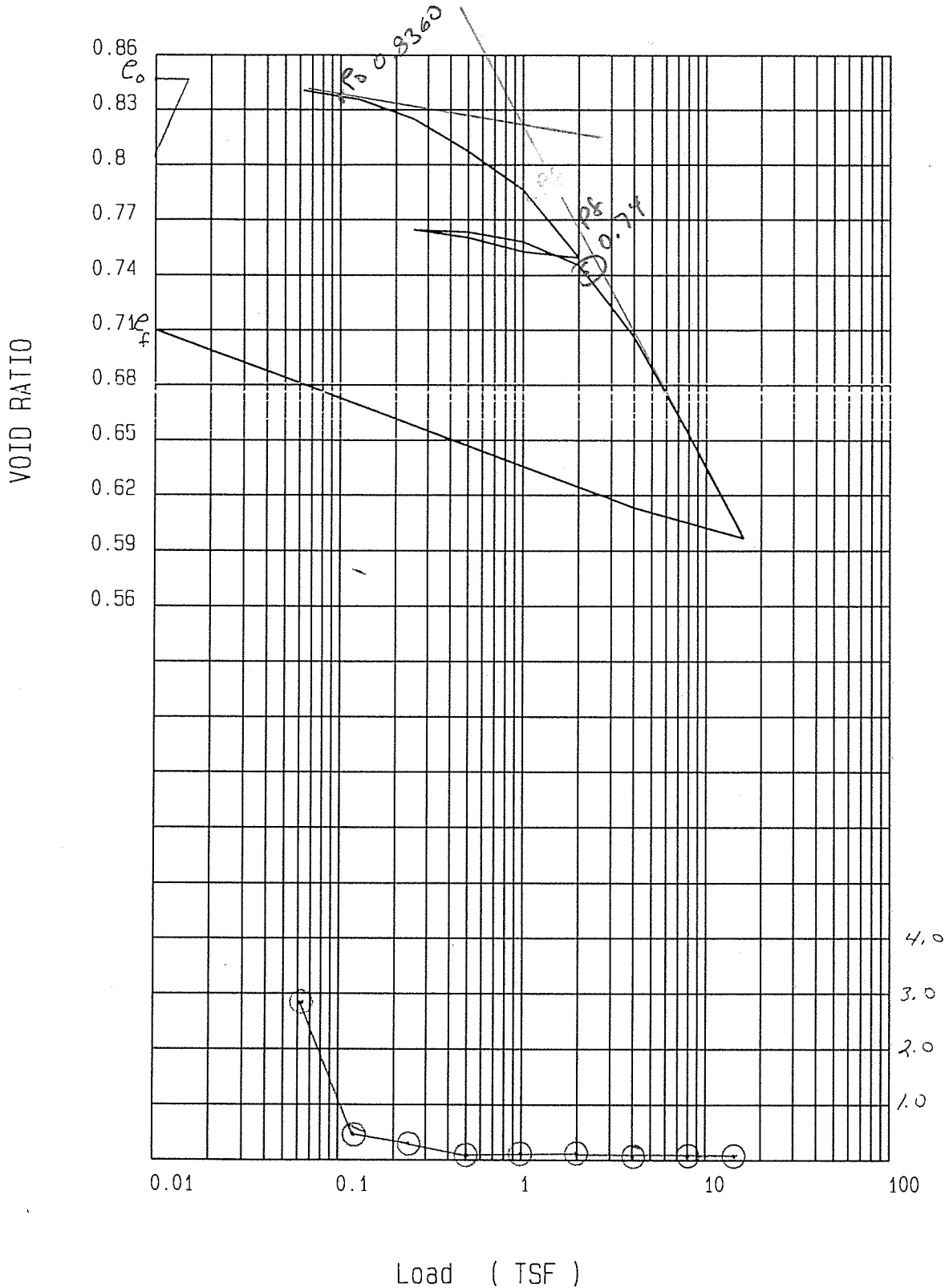
$\gamma_w = (8.918)(1.32) = 11.8 \text{ pcf}$        $\gamma_w = (89.18)(1.32) = 118 \text{ pcf}$

Density Data \* Data at 16 TSF

	PreTest	* Post Test
Moisture, %	32.12	22.10
Dry Unit Wt. (PCF)	89.18	103.82
Void Ratio, e	.8480	.5970
Saturation, %	100.00	100.00

# OEDOMETER TEST RESULTS

Oedometer Serial Number 18



Sample type

Sample Description

Borehole No : ST-2

Sample No: 1

Depth : 2.0-4.0

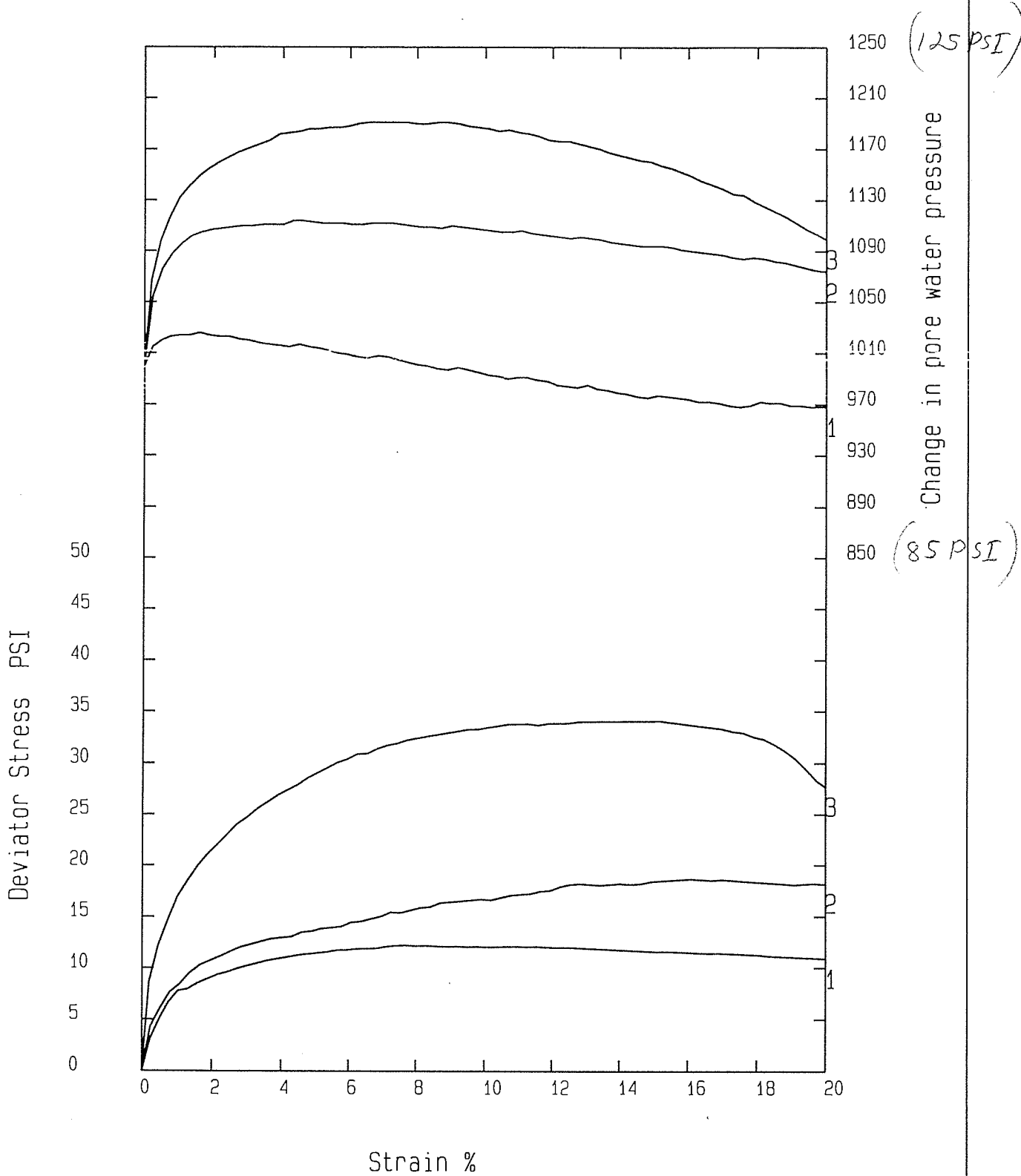
NCDOT

Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19

Job No : T-2804

Fig No :

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

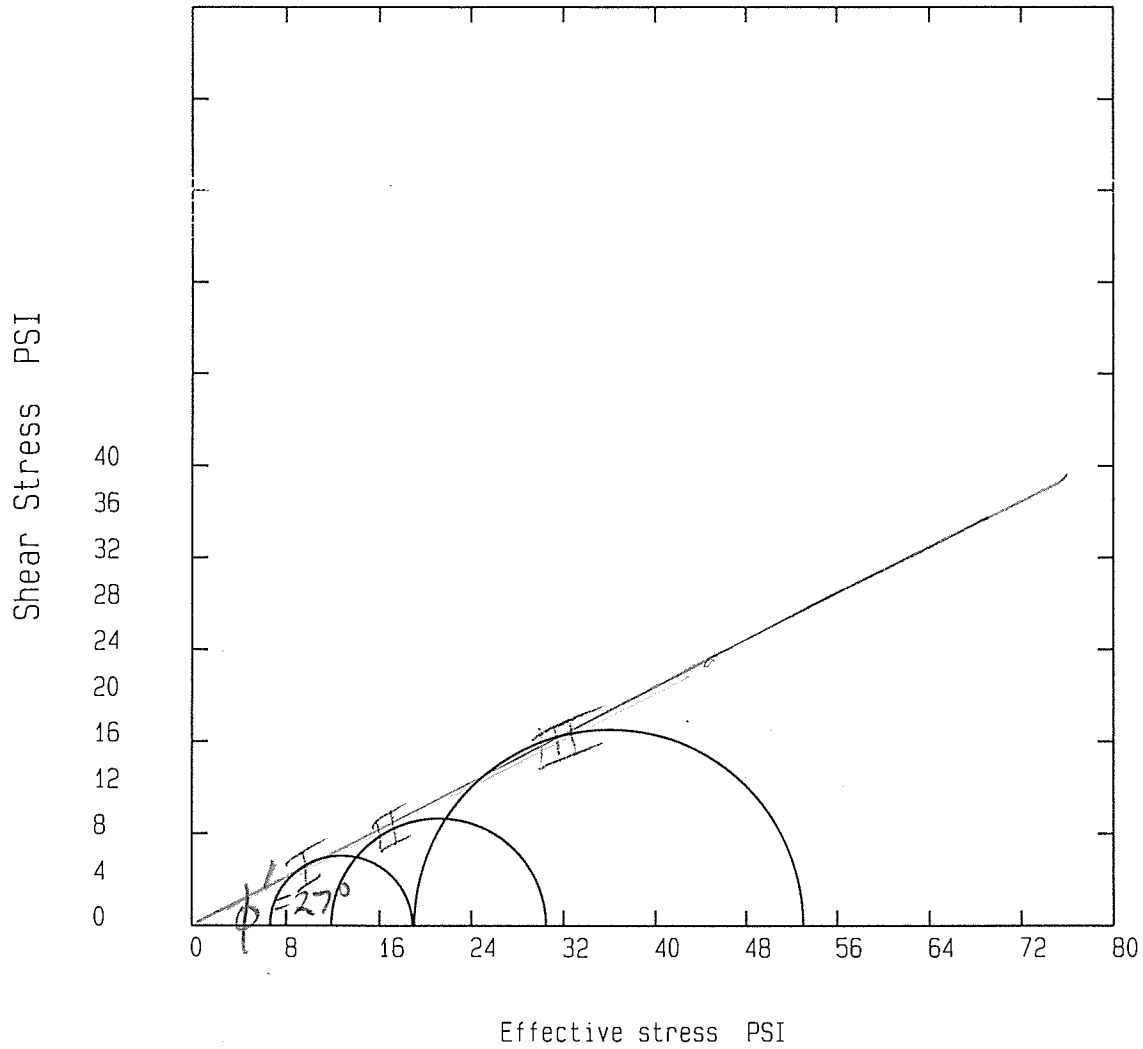


Sample type		
Sample Description		
Borehole No : ST-2	Sample No: 1	Depth : 2.0-4.0
NCDOT	Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19	Job No : T-2804 Fig No :

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST SHEAR STAGE

C = 0 psi

PHI = 27 Degrees

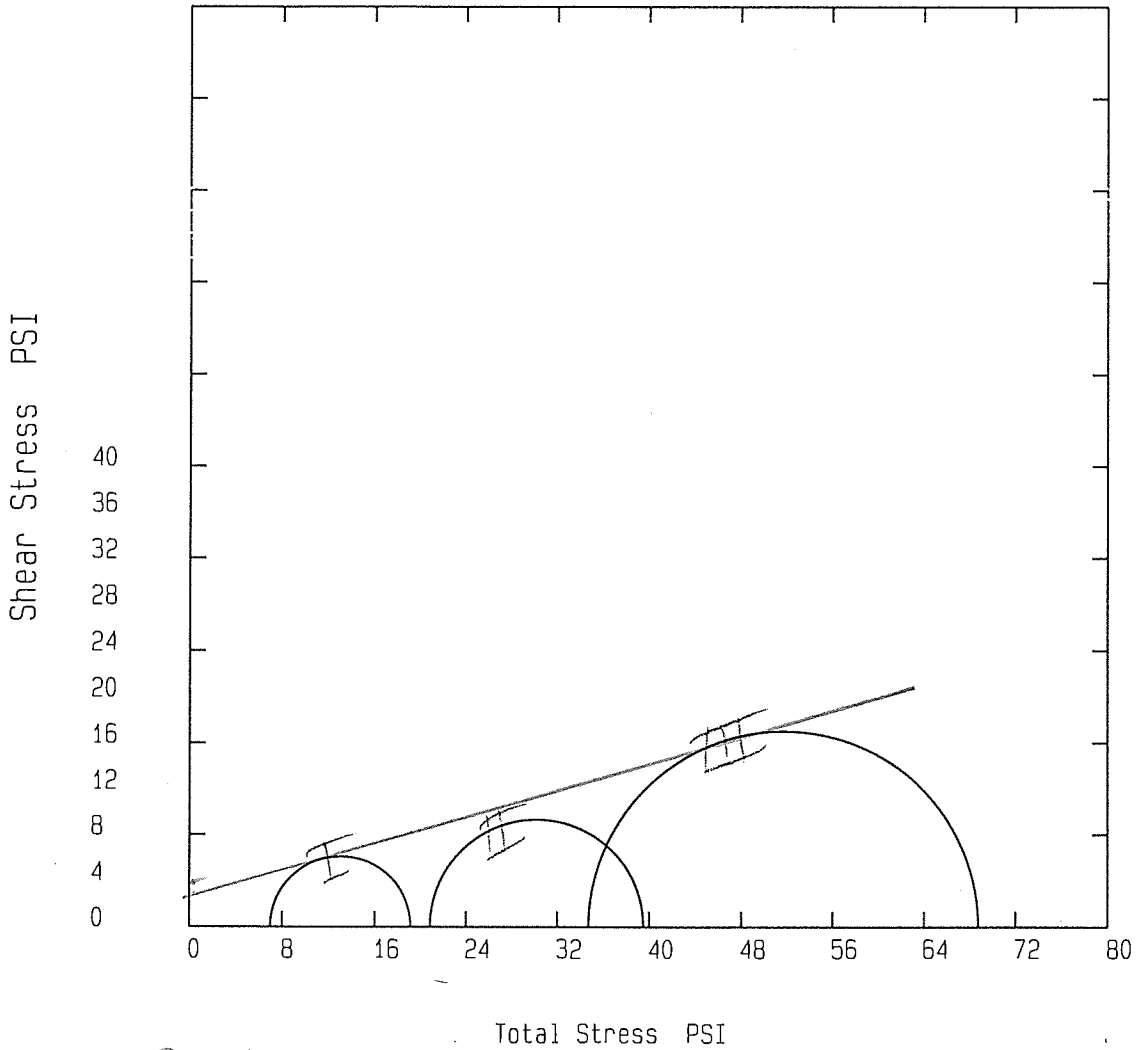


Sample type	Sample Description		
Borehole No : ST-2	Sample No: 1	Depth : 2.0-4.0	
NCDOT	Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19	Job No : T-2804	
		Fig No :	

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

C =       psi

PHI =       Degrees



$c = 1.5 \times 144 = 216 \text{ PSF}$

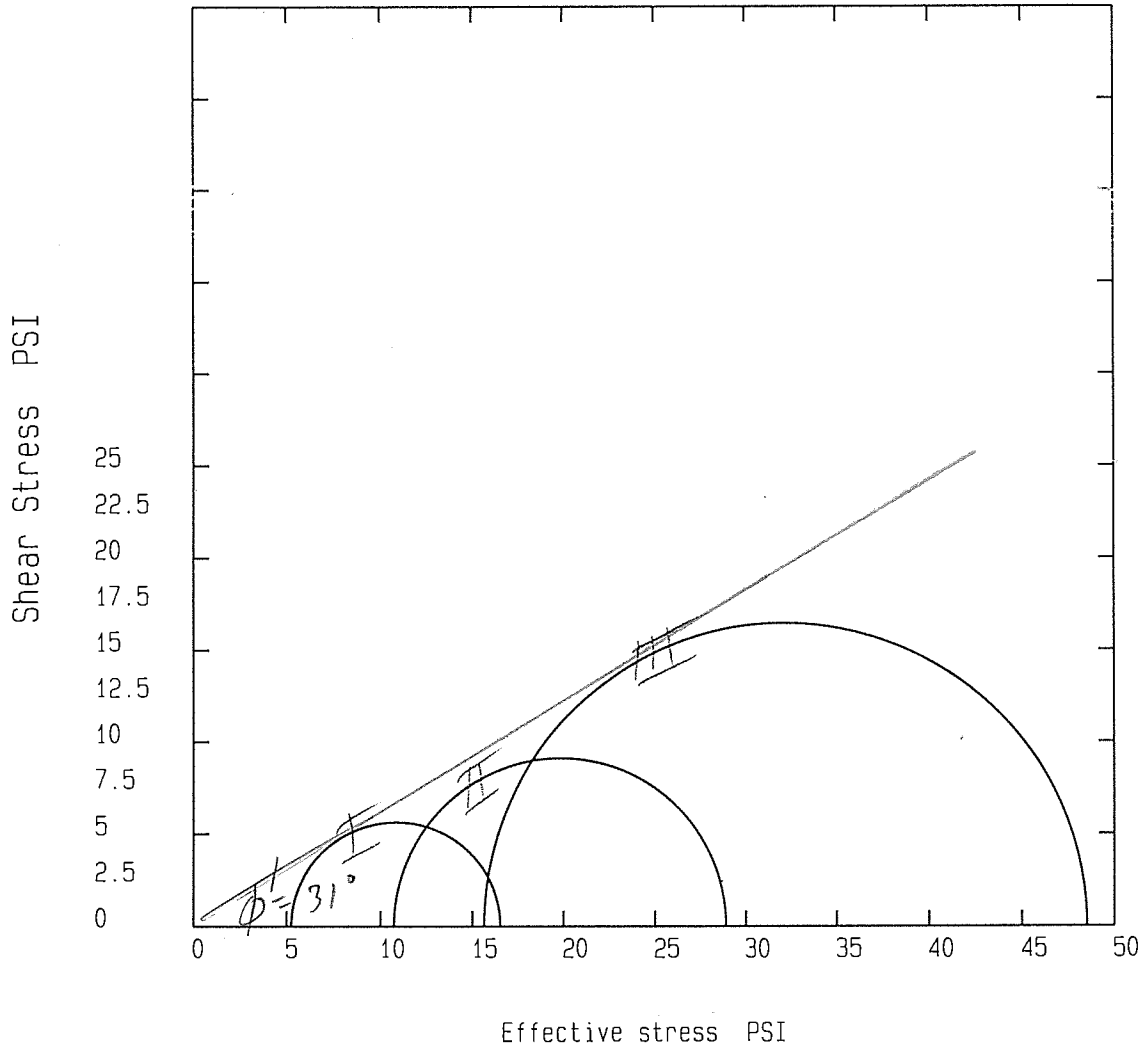
Sample type		
Sample Description		
Borehole No : ST-2	Sample No: 1	Depth : 2.0-4.0
NCDOT	Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19	Job No : T-2804 Fig No :



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

C =       psi

PHI = 31 Degrees



AT  
Max. Stress Ratio

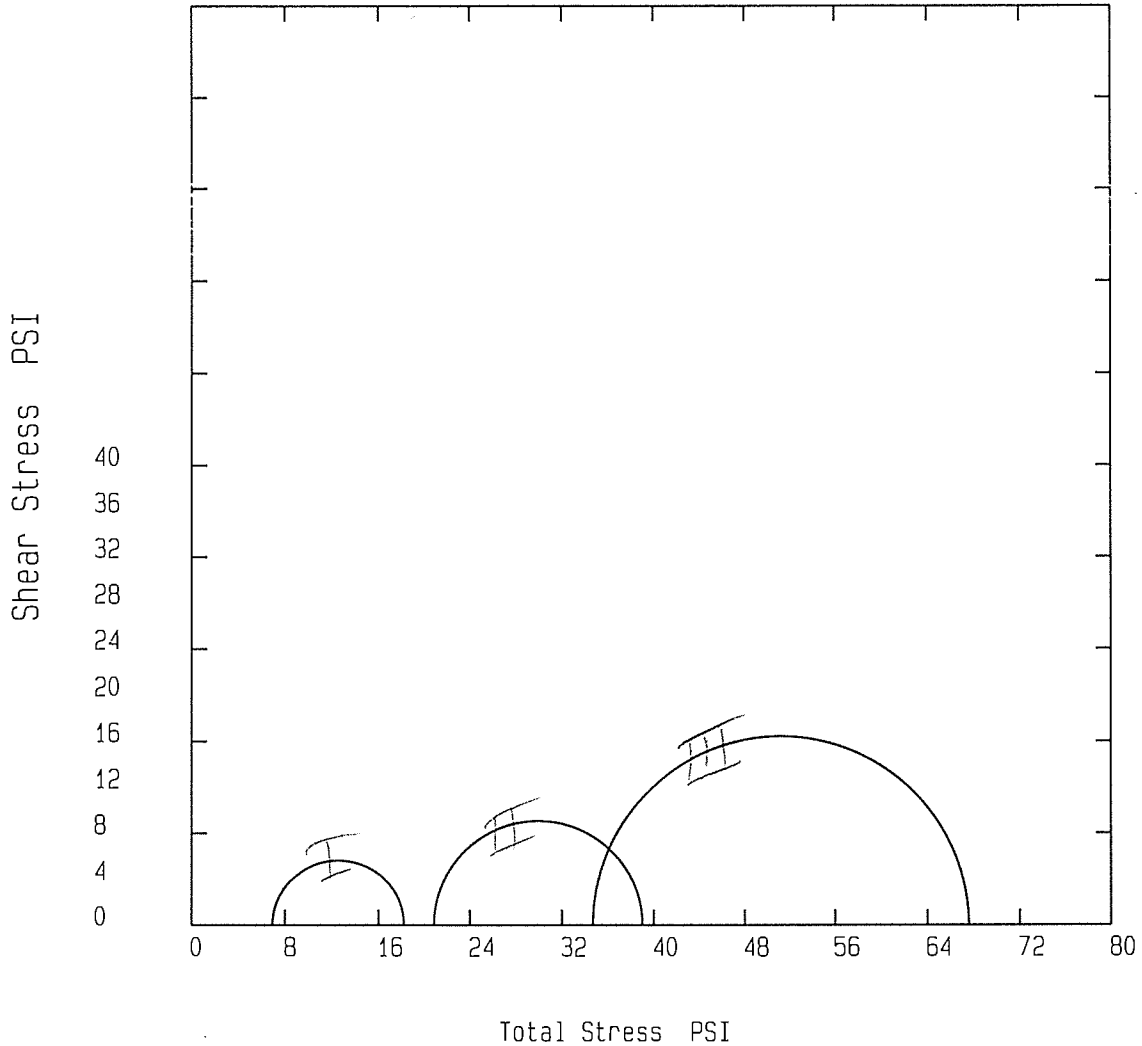
Sample type		
Sample Description		
Borehole No : ST-2	Sample No: 1	Depth : 2.0-4.0
NCDOT	Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19	Job No : T-2804 Fig No :

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

## SHEAR STAGE

C =       psi

PHI =     Degrees



*A+*  
*Max. Stress Ratio*

Sample type	Sample Description	
Borehole No : ST-2	Sample No: 1	Depth : 2.0-4.0
NCDOT	Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19	Job No : T-2804 Fig No :

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

Test specimen No.	1	[ 1 ]	STRAIN	inches
		[ 2 ]	LOAD	Lbs
Corrected Area	6.2497	[ 3 ]	PORE WATER	PRESSURE PSI
Corrected Height	6.1048	[ 4 ]	PORE WATER	PRESS. DIFF. PSI
Cell Pressure PSI	106.94	[ 5 ]	EFFECTIVE	CELL PRESS. PSI
Pore Pressure PSI	100	[ 6 ]	A VALUE	
% Water Content	0	[ 7 ]	STRAIN %	
Machine Speed in/min	0.009	[ 8 ]	DEVIATOR	STRESS PSI
Upthrust Correction Lbs	0	[ 9 ]	SHEAR	STRESS PSI
		[ 10 ]	(P)	(P) PSI
		[ 11 ]	STRESS	RATIO

[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]	[ 7 ]	[ 8 ]	[ 9 ]	[ 10 ]	[ 11 ]
0.001	2.6	100	0	6.941	0	0	0	0	6.941	1
0.015	22.36	101.5	1.5	5.441	0.477	0.238	3.146	1.573	7.014	1.578
0.031	34.32	102	2	4.941	0.397	0.495	5.033	2.517	7.458	2.019
0.047	44.72	102.3	2.3	4.641	0.345	0.755	6.663	3.332	7.973	2.436
0.064	52	102.4	2.4	4.541	0.308	1.03	7.788	3.894	8.435	2.715
0.081	53.28	102.4	2.4	4.541	0.302	1.309	7.959	3.98	8.521	2.753
0.098	57.12	102.6	2.6	4.341	0.305	1.592	8.532	4.266	8.607	2.965
0.115	60	102.4	2.4	4.541	0.268	1.877	8.95	4.475	9.016	2.971
0.133	62.88	102.3	2.3	4.641	0.246	2.164	9.365	4.683	9.324	3.018
0.15	64.8	102.3	2.3	4.641	0.239	2.451	9.629	4.814	9.455	3.075
0.168	67.2	102.1	2.1	4.841	0.211	2.739	9.965	4.982	9.823	3.058
0.185	69.12	102	2	4.941	0.196	3.027	10.22	5.112	10.05	3.069
0.203	71.04	101.8	1.8	5.141	0.172	3.315	10.48	5.241	10.38	3.039
0.221	72.96	101.7	1.7	5.241	0.158	3.604	10.74	5.369	10.61	3.049
0.238	74.4	101.6	1.6	5.341	0.147	3.895	10.92	5.459	10.8	3.044
0.256	75.84	101.5	1.5	5.441	0.135	4.189	11.1	5.548	10.99	3.039
0.274	77.28	101.7	1.7	5.241	0.151	4.48	11.27	5.637	10.88	3.151
0.292	78.24	101.5	1.5	5.441	0.132	4.773	11.38	5.689	11.13	3.091
0.31	79.2	101.4	1.4	5.541	0.122	5.067	11.48	5.74	11.28	3.072
0.328	80.16	101.2	1.2	5.741	0.104	5.358	11.58	5.791	11.53	3.017
0.346	81.6	101	1	5.941	0.085	5.651	11.75	5.877	11.82	2.979
0.364	82.08	100.9	0.9	6.041	0.076	5.945	11.78	5.891	11.93	2.95
0.381	83.04	100.7	0.7	6.241	0.059	6.236	11.88	5.941	12.18	2.904
0.399	83.52	100.6	0.6	6.341	0.05	6.529	11.91	5.954	12.29	2.878
0.417	84	100.8	0.8	6.141	0.067	6.821	11.93	5.967	12.11	2.943
0.435	85.44	100.7	0.7	6.241	0.058	7.114	12.1	6.051	12.29	2.939
0.453	86.4	100.5	0.5	6.441	0.041	7.404	12.2	6.1	12.54	2.894
0.471	86.88	100.3	0.3	6.641	0.025	7.702	12.22	6.112	12.75	2.841
0.489	86.88	100.1	0.1	6.841	0.008	7.999	12.18	6.088	12.93	2.78
0.507	87.36	100	0	6.941	0	8.295	12.2	6.1	13.04	2.758
0.525	87.36	99.8	-0.2	7.141	-0.02	8.592	12.15	6.076	13.22	2.702
0.543	87.36	99.7	-0.3	7.241	-0.02	8.887	12.11	6.053	13.29	2.672
0.561	87.84	99.9	-0.1	7.041	-0.01	9.185	12.13	6.064	13.11	2.723
0.579	87.84	99.7	-0.3	7.241	-0.02	9.481	12.08	6.041	13.28	2.669
0.597	88.32	99.5	-0.5	7.441	-0.04	9.774	12.1	6.052	13.49	2.627
0.615	88.32	99.3	-0.7	7.641	-0.06	10.07	12.06	6.029	13.67	2.578
0.633	88.8	99.2	-0.8	7.741	-0.07	10.36	12.08	6.04	13.78	2.561
0.651	89.28	99	-1	7.941	-0.08	10.66	12.1	6.051	13.99	2.524
0.669	89.76	99.1	-0.9	7.841	-0.07	10.95	12.12	6.062	13.9	2.546
0.687	89.76	99.1	-0.9	7.841	-0.07	11.25	12.08	6.039	13.88	2.54
0.705	90.24	98.9	-1.1	8.041	-0.09	11.54	12.1	6.049	14.09	2.505

0.724	90.24	98.8	-1.2	8.141	-0.1	11.84	12.05	6.025	14.17	2.48
0.742	90.24	98.5	-1.5	8.441	-0.12	12.14	12	6.002	14.44	2.422
0.76	90.72	98.4	-1.6	8.541	-0.13	12.43	12.02	6.012	14.55	2.408
0.778	90.72	98.3	-1.7	8.641	-0.14	12.73	11.98	5.988	14.63	2.386
0.796	90.72	98.5	-1.5	8.441	-0.13	13.03	11.93	5.965	14.41	2.413
0.814	90.72	98.2	-1.8	8.741	-0.15	13.33	11.88	5.941	14.68	2.359
0.832	90.72	98.1	-1.9	8.841	-0.16	13.62	11.84	5.918	14.76	2.339
0.85	90.72	97.9	-2.1	9.041	-0.18	13.92	11.79	5.895	14.94	2.304
0.868	90.72	97.8	-2.2	9.141	-0.19	14.21	11.74	5.871	15.01	2.285
0.886	90.72	97.6	-2.4	9.341	-0.21	14.51	11.7	5.848	15.19	2.252
0.904	90.72	97.5	-2.5	9.441	-0.21	14.8	11.65	5.825	15.27	2.234
0.922	90.72	97.7	-2.3	9.241	-0.2	15.1	11.6	5.802	15.04	2.256
0.941	91.2	97.6	-2.4	9.341	-0.21	15.4	11.62	5.811	15.15	2.244
0.959	91.2	97.5	-2.5	9.441	-0.22	15.7	11.58	5.788	15.23	2.226
0.977	91.2	97.4	-2.6	9.541	-0.23	15.99	11.53	5.764	15.31	2.208
0.995	91.2	97.2	-2.8	9.741	-0.24	16.29	11.48	5.741	15.48	2.179
1.013	91.2	97.2	-2.8	9.741	-0.24	16.59	11.44	5.718	15.46	2.174
1.032	91.68	97.1	-2.9	9.841	-0.25	16.89	11.45	5.727	15.57	2.164
1.05	91.68	96.9	-3.1	10.04	-0.27	17.18	11.41	5.704	15.74	2.136
1.068	91.68	96.8	-3.2	10.14	-0.28	17.48	11.36	5.681	15.82	2.12
1.086	91.68	96.9	-3.1	10.04	-0.27	17.78	11.32	5.658	15.7	2.127
1.104	91.68	97.2	-2.8	9.741	-0.25	18.07	11.27	5.635	15.38	2.157
1.122	91.2	97.1	-2.9	9.841	-0.26	18.37	11.16	5.581	15.42	2.134
1.14	91.2	97.1	-2.9	9.841	-0.26	18.67	11.12	5.558	15.4	2.13
1.158	91.2	96.9	-3.1	10.04	-0.28	18.96	11.07	5.535	15.58	2.103
1.176	91.2	96.9	-3.1	10.04	-0.28	19.26	11.03	5.513	15.55	2.098
1.195	91.2	96.8	-3.2	10.14	-0.29	19.56	10.98	5.49	15.63	2.083
1.213	91.2	96.8	-3.2	10.14	-0.29	19.86	10.93	5.467	15.61	2.078
1.227	91.2	96.8	-3.2	10.14	-0.29	20.09	10.9	5.45	15.59	2.075

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

Test specimen No.	2	[ 1 ]	STRAIN	inches
		[ 2 ]	LOAD	Lbs
Corrected Area	6.2357	[ 3 ]	PORE WATER	PRESSURE PSI
Corrected Height	6.0294	[ 4 ]	PORE WATER	PRESS. DIFF. PSI
Cell Pressure PSI	120.83	[ 5 ]	EFFECTIVE	CELL PRESS. PSI
Pore Pressure PSI	100	[ 6 ]	A VALUE	
% Water Content	0	[ 7 ]	STRAIN %	
Machine Speed in/min	0.009	[ 8 ]	DEVIATOR	STRESS PSI
Upthrust Correction Lbs	0	[ 9 ]	SHEAR	STRESS PSI
		[ 10 ]	(P)	(P) PSI
		[ 11 ]	STRESS	RATIO

[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]	[ 7 ]	[ 8 ]	[ 9 ]	[ 10 ]	[ 11 ]
0.001	16	100.1	0	20.73	0	0	0	0	20.73	1
0.015	43	105.5	5.4	15.33	1.253	0.242	4.311	2.156	17.49	1.281
0.032	54.08	107.6	7.5	13.23	1.238	0.516	6.058	3.029	16.26	1.458
0.049	64.29	108.8	8.7	12.03	1.137	0.798	7.655	3.827	15.86	1.636
0.066	69.39	109.6	9.5	11.23	1.127	1.083	8.432	4.216	15.45	1.751
0.083	76.53	110.2	10.1	10.63	1.06	1.37	9.528	4.764	15.4	1.896
0.101	81.63	110.5	10.4	10.33	1.01	1.66	10.3	5.148	15.48	1.997
0.118	84.69	110.7	10.6	10.13	0.987	1.95	10.74	5.369	15.5	2.06
0.136	87.76	110.8	10.7	10.03	0.957	2.242	11.18	5.588	15.62	2.114
0.153	90.82	110.9	10.8	9.931	0.93	2.534	11.61	5.806	15.74	2.169
0.171	93.88	111	10.9	9.831	0.905	2.833	12.04	6.022	15.85	2.225
0.189	95.92	111	10.9	9.831	0.885	3.126	12.32	6.158	15.99	2.253
0.207	97.96	111.1	11	9.731	0.874	3.418	12.59	6.293	16.02	2.293
0.224	100	111.1	11	9.731	0.856	3.712	12.85	6.426	16.16	2.321
0.242	101	111.1	11	9.731	0.849	4.004	12.96	6.481	16.21	2.332
0.26	102	111.4	11.3	9.431	0.865	4.297	13.07	6.534	15.96	2.386
0.277	105.1	111.4	11.3	9.431	0.838	4.591	13.48	6.741	16.17	2.43
0.295	106.1	111.3	11.2	9.531	0.824	4.886	13.59	6.793	16.32	2.425
0.313	108.1	111.2	11.1	9.631	0.802	5.18	13.84	6.921	16.55	2.437
0.331	109.1	111.2	11.1	9.631	0.796	5.476	13.94	6.972	16.6	2.448
0.349	110.1	111.2	11.1	9.631	0.79	5.772	14.04	7.022	16.65	2.458
0.366	113.1	111.1	11	9.731	0.761	6.067	14.45	7.224	16.96	2.485
0.384	114.1	111.1	11	9.731	0.756	6.362	14.55	7.273	17	2.495
0.402	116.2	111.2	11.1	9.631	0.75	6.657	14.8	7.398	17.03	2.536
0.42	118.2	111.2	11.1	9.631	0.738	6.954	15.04	7.521	17.15	2.562
0.438	121.2	111.2	11.1	9.631	0.719	7.246	15.44	7.719	17.35	2.603
0.455	121.2	111.1	11	9.731	0.715	7.54	15.38	7.69	17.42	2.581
0.473	123.2	111	10.9	9.831	0.698	7.83	15.62	7.812	17.64	2.589
0.49	125.3	110.9	10.8	9.931	0.681	8.122	15.86	7.932	17.86	2.597
0.508	126.3	110.9	10.8	9.931	0.677	8.414	15.95	7.977	17.91	2.607
0.526	129.3	110.8	10.7	10.03	0.655	8.709	16.34	8.17	18.2	2.629
0.544	130.3	111	10.9	9.831	0.664	9.004	16.43	8.213	18.04	2.671
0.561	131.3	110.9	10.8	9.931	0.654	9.301	16.51	8.256	18.19	2.663
0.579	132.3	110.8	10.7	10.03	0.645	9.596	16.6	8.299	18.33	2.655
0.597	133.3	110.7	10.6	10.13	0.635	9.893	16.68	8.341	18.47	2.647
0.615	133.3	110.6	10.5	10.23	0.632	10.19	16.62	8.31	18.54	2.624
0.633	135.4	110.5	10.4	10.33	0.617	10.49	16.85	8.424	18.75	2.631
0.651	137.4	110.5	10.4	10.33	0.609	10.78	17.07	8.537	18.87	2.653
0.669	138.4	110.6	10.5	10.23	0.612	11.08	17.15	8.577	18.81	2.677
0.686	139.4	110.4	10.3	10.43	0.598	11.37	17.24	8.618	19.05	2.652
0.704	141.4	110.3	10.2	10.53	0.584	11.66	17.46	8.729	19.26	2.658

0.721	142.4	110.2	10.1	10.63	0.576	11.95	17.54	8.769	19.4	2.65
0.739	145.5	110.1	10	10.73	0.559	12.24	17.9	8.95	19.68	2.668
0.757	147.5	110	9.9	10.83	0.546	12.54	18.12	9.058	19.89	2.673
0.775	148.5	110.1	10	10.73	0.55	12.84	18.19	9.095	19.83	2.695
0.793	148.5	110	9.9	10.83	0.546	13.13	18.12	9.06	19.89	2.673
0.811	148.5	109.9	9.8	10.93	0.543	13.43	18.05	9.026	19.96	2.651
0.828	149.5	109.7	9.6	11.13	0.53	13.73	18.12	9.062	20.19	2.628
0.846	150.5	109.6	9.5	11.23	0.522	14.02	18.19	9.097	20.33	2.62
0.864	150.5	109.5	9.4	11.33	0.519	14.32	18.13	9.063	20.39	2.6
0.882	151.5	109.4	9.3	11.43	0.511	14.62	18.19	9.097	20.53	2.592
0.9	153.5	109.4	9.3	11.43	0.505	14.92	18.4	9.2	20.63	2.61
0.918	154.5	109.4	9.3	11.43	0.504	15.21	18.47	9.235	20.67	2.616
0.936	155.6	109.3	9.2	11.53	0.496	15.51	18.54	9.268	20.8	2.607
0.954	156.6	109.1	9	11.73	0.484	15.8	18.6	9.301	21.03	2.586
0.972	157.6	109	8.9	11.83	0.477	16.1	18.67	9.333	21.16	2.578
0.989	157.6	108.9	8.8	11.93	0.473	16.4	18.6	9.298	21.23	2.559
1.007	157.6	108.8	8.7	12.03	0.47	16.7	18.52	9.262	21.29	2.54
1.025	158.6	108.7	8.6	12.13	0.463	16.99	18.59	9.293	21.42	2.532
1.043	158.6	108.5	8.4	12.33	0.454	17.29	18.51	9.257	21.50	2.501
1.061	158.6	108.4	8.3	12.43	0.45	17.59	18.44	9.221	21.65	2.484
1.079	158.6	108.5	8.4	12.33	0.457	17.89	18.37	9.185	21.52	2.49
1.098	158.6	108.4	8.3	12.43	0.454	18.19	18.3	9.149	21.58	2.472
1.116	158.6	108.2	8.1	12.63	0.444	18.49	18.23	9.113	21.74	2.443
1.134	158.6	108.1	8	12.73	0.441	18.79	18.15	9.077	21.81	2.426
1.151	158.6	107.9	7.8	12.93	0.431	19.08	18.08	9.042	21.97	2.398
1.169	159.6	107.7	7.6	13.13	0.419	19.38	18.14	9.072	22.2	2.382
1.187	160.6	107.5	7.4	13.33	0.407	19.68	18.2	9.101	22.43	2.365
1.205	160.6	107.4	7.3	13.43	0.403	19.97	18.13	9.065	22.5	2.35
1.21	161.6	107.3	7.2	13.53	0.395	20.06	18.24	9.119	22.65	2.348

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

1st specimen No.	3	[ 1 ]	STRAIN	inches
Corrected Area	6.2571	[ 2 ]	LOAD	Lbs
Corrected Height	6.149	[ 3 ]	PORE WATER	PRESSURE PSI
Cell Pressure PSI	134.72	[ 4 ]	PORE WATER	PRESS. DIFF. PSI
Pore Pressure PSI	100	[ 5 ]	EFFECTIVE	CELL PRESS. PSI
% Water Content	0	[ 6 ]	A VALUE	
Machine Speed in/min	0.009	[ 7 ]	STRAIN	%
Upthrust Correction Lbs	0	[ 8 ]	DEVIATOR	STRESS PSI
		[ 9 ]	SHEAR	STRESS PSI
		[ 10 ]	(P)	(P) PSI
		[ 11 ]	STRESS	RATIO

[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]	[ 7 ]	[ 8 ]	[ 9 ]	[ 10 ]	[ 11 ]
0.001	13.63	100	0	34.72	0	0	0	0	34.72	1
0.013	68.14	106.7	6.7	28.02	0.771	0.2	8.688	4.344	32.37	1.31
0.029	90.53	109.8	9.8	24.92	0.802	0.459	12.22	6.109	31.03	1.49
0.046	106.1	111.7	11.7	23.02	0.799	0.73	14.65	7.324	30.34	1.636
0.063	120.8	113.2	13.2	21.52	0.78	1.008	16.93	8.463	29.98	1.786
0.08	130.6	114.1	14.1	20.62	0.766	1.291	18.42	9.209	29.83	1.893
0.098	140.5	114.9	14.9	19.82	0.749	1.576	19.9	9.95	29.77	2.004
0.115	148.3	115.5	15.5	19.22	0.736	1.862	21.07	10.53	29.75	2.096
0.133	155.2	116	16	18.72	0.725	2.15	22.07	11.03	29.76	2.179
0.151	162.1	116.4	16.4	18.32	0.711	2.439	23.07	11.53	29.85	2.259
0.169	168	116.8	16.8	17.92	0.698	2.731	24.06	12.03	29.95	2.342
0.187	173.9	117.1	17.1	17.62	0.691	3.023	24.74	12.37	29.99	2.404
0.204	179.8	117.4	17.4	17.32	0.681	3.314	25.57	12.78	30.1	2.476
0.222	184.7	117.7	17.7	17.02	0.675	3.607	26.24	13.12	30.14	2.541
0.24	189.6	118.2	18.2	16.52	0.677	3.897	26.9	13.45	29.97	2.628
0.258	193.5	118.3	18.3	16.42	0.668	4.191	27.41	13.71	30.13	2.669
0.276	197.4	118.4	18.4	16.32	0.659	4.48	27.92	13.96	30.28	2.711
0.294	202.4	118.6	18.6	16.12	0.651	4.775	28.57	14.29	30.41	2.772
0.312	206.3	118.6	18.6	16.12	0.64	5.069	29.07	14.54	30.66	2.803
0.33	210.2	118.7	18.7	16.02	0.632	5.362	29.57	14.78	30.81	2.846
0.348	214.1	118.7	18.7	16.02	0.622	5.655	30.06	15.03	31.05	2.876
0.367	217.1	118.8	18.8	15.92	0.618	5.951	30.4	15.2	31.12	2.91
0.385	221	119	19	15.72	0.615	6.245	30.89	15.44	31.16	2.965
0.403	221.9	119.1	19.1	15.62	0.618	6.539	30.92	15.46	31.08	2.979
0.421	225.8	119.1	19.1	15.62	0.608	6.834	31.4	15.7	31.32	3.01
0.439	228.8	119.1	19.1	15.62	0.602	7.13	31.72	15.86	31.48	3.031
0.457	230.7	119.1	19.1	15.62	0.599	7.424	31.9	15.95	31.57	3.042
0.475	233.6	119.1	19.1	15.62	0.593	7.72	32.22	16.11	31.73	3.063
0.494	235.6	119	19	15.72	0.586	8.018	32.4	16.2	31.92	3.061
0.512	237.5	119	19	15.72	0.583	8.312	32.57	16.29	32.01	3.072
0.53	239.5	119.1	19.1	15.62	0.583	8.608	32.74	16.37	31.99	3.096
0.548	241.4	119.1	19.1	15.62	0.58	8.907	32.91	16.46	32.08	3.107
0.567	243.4	119	19	15.72	0.574	9.205	33.08	16.54	32.26	3.104
0.585	245.3	118.8	18.8	15.92	0.566	9.504	33.24	16.62	32.54	3.088
0.603	246.3	118.7	18.7	16.02	0.562	9.802	33.27	16.63	32.65	3.076
0.622	248.2	118.6	18.6	16.12	0.556	10.1	33.43	16.72	32.84	3.074
0.64	250.2	118.4	18.4	16.32	0.548	10.4	33.59	16.8	33.12	3.058
0.658	252.1	118.5	18.5	16.22	0.548	10.7	33.75	16.87	33.1	3.081
0.677	253.1	118.3	18.3	16.42	0.542	10	33.77	16.88	33.3	3.056
0.695	254.1	118.2	18.2	16.52	0.539	11.29	33.79	16.89	33.41	3.045
0.713	254.1	118	18	16.72	0.535	11.59	33.67	16.83	33.55	3.013

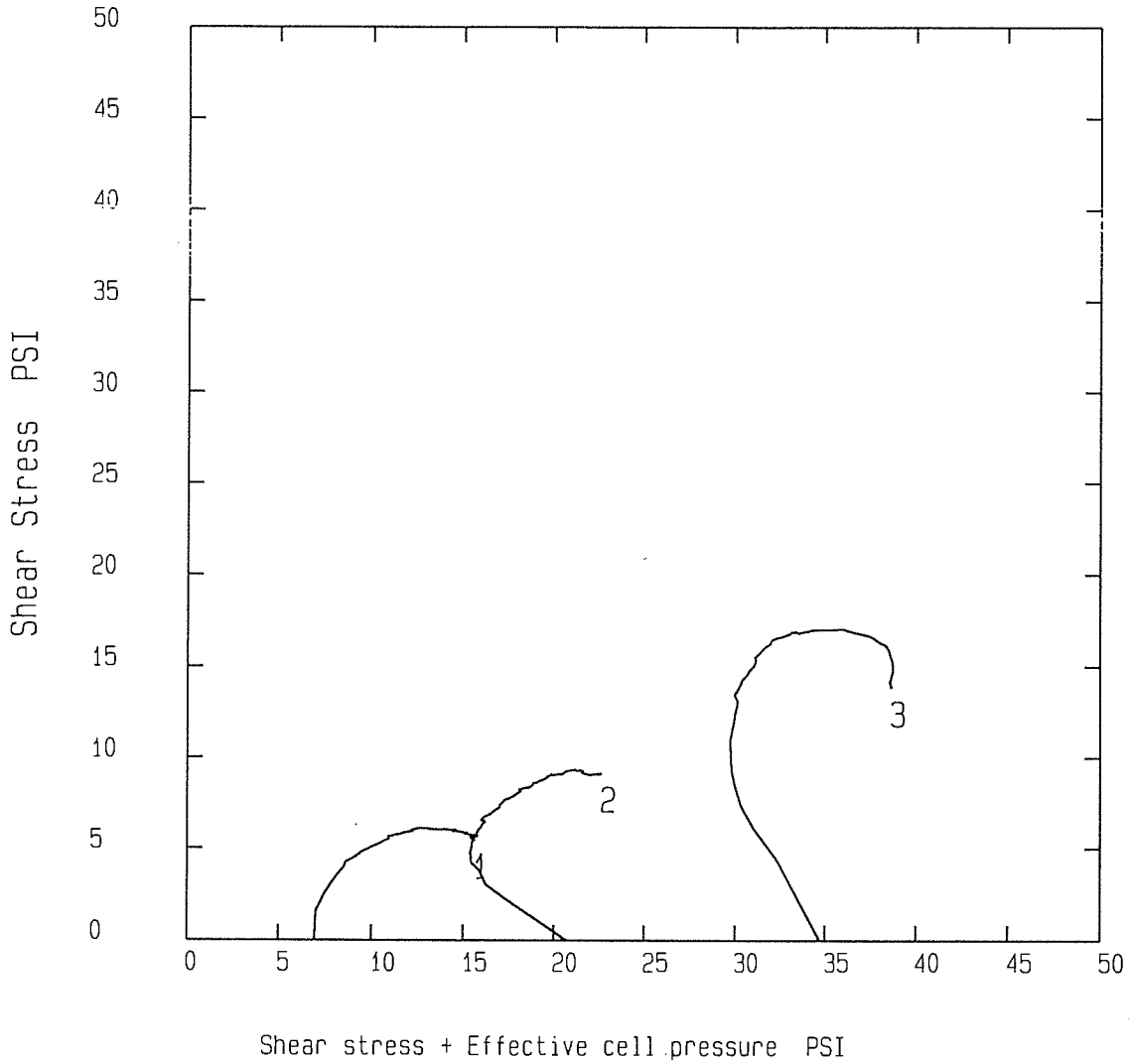
0.732	256	117.7	17.7	17.02	0.523	11.89	33.82	16.91	33.93	2.987
0.75	256	117.6	17.6	17.12	0.52	12.19	33.84	16.92	34.04	2.976
0.768	257	117.6	17.6	17.12	0.52	12.48	33.85	16.93	34.05	2.977
0.787	259.9	117.4	17.4	17.32	0.512	12.79	33	16	34.32	2.963
0.805	260.9	117.2	17.2	17.52	0.506	13.09	34.01	17.01	34.53	2.941
0.824	261.9	117	17	17.72	0.5	13.39	34.02	17.01	34.73	2.92
0.842	262.8	116.7	16.7	18.02	0.491	13.69	34.03	17.02	35.04	2.888
0.861	263.8	116.5	16.5	18.22	0.485	13.99	34.04	17.02	35.24	2.868
0.879	264.8	116.3	16.3	18.42	0.479	14.29	34.05	17.02	35.45	2.848
0.898	265.8	116.1	16.1	18.62	0.473	14.59	34.06	17.03	35.65	2.829
0.916	266.7	116	16	18.72	0.47	14.89	34.06	17.03	35.75	2.82
0.935	267.7	115.7	15.7	19.02	0.461	15.19	34.07	17.04	36.06	2.791
0.953	267.7	115.5	15.5	19.22	0.457	15.49	33.94	16.97	36.19	2.766
0.971	267.7	115.2	15.2	19.52	0.449	15.78	33.82	16.91	36.43	2.732
0.99	267.7	114.9	14.9	19.82	0.442	16.08	33.69	16.85	36.67	2.7
1.008	267.7	114.5	14.5	20.22	0.432	16.38	33.57	16.78	37.01	2.66
1.027	267.7	114.2	14.2	20.52	0.425	16.68	33.44	16.72	37.24	2.63
1.045	267.7	113.9	13.9	20.82	0.417	16.99	33.31	16.66	37.48	2.6
1.064	266.7	113.5	13.5	21.22	0.408	17.29	33.06	16.53	37.75	2.558
1.083	266.7	113.4	13.4	21.32	0.407	17.59	32.93	16.47	37.79	2.545
1.101	264.8	112.9	12.9	21.82	0.396	17.9	32.55	16.27	38.1	2.492
1.12	263.8	112.5	12.5	22.22	0.387	18.2	32.3	16.15	38.37	2.453
1.139	260.9	112.1	12.1	22.62	0.381	18.51	31.79	15.9	38.52	2.405
1.158	256	111.7	11.7	23.02	0.375	18.81	31.16	15.58	38.6	2.354
1.176	252.1	111.2	11.2	23.52	0.368	19.12	30.41	15.2	38.73	2.293
1.195	245.3	110.7	10.7	24.02	0.364	19.43	29.41	14.71	38.73	2.224
1.214	237.5	110.3	10.3	24.42	0.364	19.74	28.29	14.15	38.57	2.159
1.232	233.6	109.9	9.9	24.82	0.358	20.03	27.69	13.84	38.67	2.116



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

C = psi

PHI = Degrees



Sample type		
Sample Description		
Borehole No : ST-2	Sample No: 1	Depth : 2.0-4.0
NCDOT	Site ref : P. N.O. 6.299001T EDGECOMBE CO. STA. 194+19	Job No : T-2804 Fig No :

Project: 6.299001T

Station: 194+19

County: Edgemoor

Sample No: ST-2

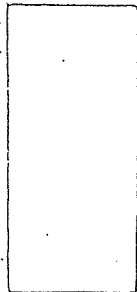
Depth: 2'-4"

SPECIMEN NUMBER		1	2	3
PRE-TEST	WATER CONTENT %	W 28.57	30.41	28.44
	DRY DENSITY, PCF	$\gamma_d$ 95.52	91.39	95.00
	SATURATION, %	S <sub>o</sub> 100.00	100.00	100.00
	VOID RATIO	e <sub>o</sub> .7211	.7988	.7306
	DIAMETER, IN.	D <sub>o</sub> 2.830	2.827	2.830
	HEIGHT, IN	H <sub>o</sub> 6.125	6.050	6.165
TIME TO (G <sub>1</sub> -G <sub>3</sub> ) Max. Min.		t 52.25	107.87	103.80
POST-TEST	WATER CONTENT %	W <sub>1</sub> 28.26	28.98	25.54
	DRY DENSITY, PCF	$\gamma_{d1}$ 94.15	93.14	98.18
	SATURATION, %	S <sub>1</sub> 100.00	100.00	100.00
	VOID RATIO	e <sub>1</sub> .7461	.7650	.6743
	STRAIN RATE mm/minute		.2286	.2286

LL: 47  
 PL: 21  
 PI: 26  
 G: 2.640

PRE-TEST  
Specimen Condition

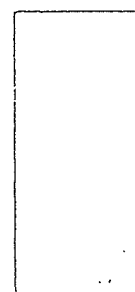
Specimen No. 1



Specimen No. 2

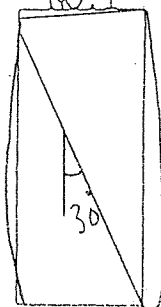


Specimen No. 3



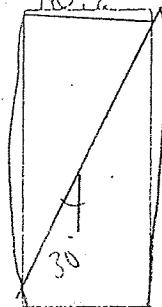
FAILURE MODE:

Specimen No. 1



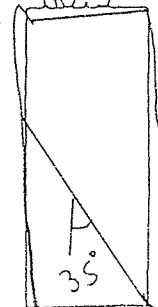
Same as #1

Specimen No. 2



Same as #1

Specimen No. 3



Grey Clay

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

CONTENTS :

SHEET NO.

-LI-	REV.	WBL	STA.	59 + 00	TO	63 + 02	9, 10
-LI-	REV.		STA.	65 + 54	TO	104 + 00	9, 10, 13, 14
RAMP	E		STA.	16 + 89	TO	30 + 84	9, 11
LOOP	F		STA.	0 + 00	TO	25 + 29	9, 12

CROSS SECTIONS:

RAMP	E	STA.	24 + 00	TO	25 + 00	129
RAMP	E	STA.	25 + 50	TO	26 + 00	130
RAMP	E	STA.	26 + 91	TO	27 + 93	20

# SUBSURFACE INVESTIGATION

STATE PROJECT 6.299001T ID.No. R-2111AA

F.A. PROJECT \_\_\_\_\_

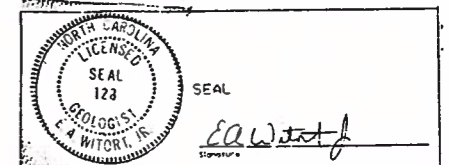
COUNTY EDGEcombe

DESCRIPTION US 64 RELOCATION EAST OF  
US 258 (NC 44) INTERCHANGE TO EAST OF CSX RAILROAD  
(ADDENDUM TO INVENTORY)

PROJECT: ID.

DRAWN BY: GHL

INVESTIGATED BY EAW PERSONNEL \_\_\_\_\_  
CHECKED BY EAW *zlw* \_\_\_\_\_  
SUBMITTED BY RRW *RRW* \_\_\_\_\_  
DATE APRIL, 1993



N.C. DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

**SOIL DESCRIPTION**

SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 B.P.F. ACCORDING TO THE STANDARD PENETRATION TEST (ASTM-D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY STRUCTURE, PLASTICITY, ETC. EXAMPLE: *VERY STIFF, GRAY SILT CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HEAVY PLASTIC, A-7-6.*

SOIL LEGEND AND CLASSIFICATION												
GENERAL CLASS.	GRANULAR MATERIALS (35% LESS PASSING NO. 200)						SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)				ORGANIC SOILS	
	A-1	A-3	A-2		A-4	A-5	A-6	A-7	A-1	A-2	A-4	A-5
GROUP CLASS.	A-1-a	A-1-b	A-2-4	A-2-5	A-2-6	A-2-7			A-7-5	A-3	A-6	A-7
SYMBOL												
5 PASSING	50 NX	30 NX	50 NX	51 NX	35 NX	35 NX	35 NX	35 NX	36 NX	36 NX	36 NX	36 NX
# 10	30 NX	30 NX	50 NX	51 NX	35 NX	35 NX	35 NX	36 NX	36 NX	36 NX	36 NX	36 NX
# 40	15 NX	25 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX
# 200	15 NX	25 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX	10 NX
LIQUID LIMIT	0 MAX.	0 MAX.	40 NX	41 NX	40 NX	41 NX	40 NX	41 NX	40 NX	41 NX	40 NX	41 NX
PLASTIC INDEX	0	0	10 NX	10 NX	11 NX	11 NX	10 NX	10 NX	11 NX	11 NX	10 NX	11 NX
GROUP INDEX	0	0	0	0	4 MAX.	8 MAX.	12 MAX.	18 NX	20 NX			
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL & SAND		SILTY OR CLAYEY GRAVEL & SAND		SILTY SOILS		CLAYEY SOILS		WITH LITTLE OR MODERATE AMOUNT OF ORGANIC MATTER		HIGHLY ORGANIC SOIL	
GEN. RATING AS A SUBGRADE	EXCELLENT TO GOOD				FAIR TO POOR				FAIR TO POOR	POOR	UNSUITABLE	

P.I. OF A-1-5 & A-1-6: -30; P.I. OF A-7-5 & A-7-6: >L.L. -30

CONSISTENCY OR DENSENESS			
PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH
COARSE GRAINED SOILS	VERY LOOSE LOOSE MED. DENSE DENSE VERY DENSE	LESS THAN 4 B.P.F. 4 TO 10 10 TO 30 30 TO 50 MORE THAN 50	N/A
FINE GRAINED SOILS	VERY SOFT SOFT MED. STIFF STIFF VERY STIFF HARD	LESS THAN 2 B.P.F. 2 TO 4 4 TO 8 8 TO 15 15 TO 30 MORE THAN 30	LESS THAN .25 TSF 0.25 TO 0.5 0.5 TO 1.0 1.0 TO 2.0 2.0 TO 4.0 MORE THAN 4.0

1 SEE STANDARD PENETRATION TEST

TEXTURE OR GRAIN SIZE						
U.S. STD. SIEVE SIZE	4	10	40	60	200	270
OPENING (MM)	4.76	2.0	0.42	0.25	0.075	0.053
BOULDER	COBBLE	GRAVEL	COARSE SAND	MED. SAND	FINE SAND	CLAY
GRAIN SIZE IN.	3"	3"	2	0.6	0.25	0.2
GRAIN SIZE MM	305	76	2	0.6	0.25	0.2
GRAIN SIZE IN.	12"	3"				

SOIL MOISTURE - CORRELATION OF TERMS			
SOIL MOISTURE SCALE (ATTERBERG LIMITS)	PHYSICAL STATE	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
LL - LIQUID LIMIT	LIQUID	SATURATED	VERY WET, USUALLY FROM BELOW GROUND WATER TABLE
PL - PLASTIC LIMIT	SEMI-SOLID	WET (W)	REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
OM - OPT. MOISTURE	SOLID	MOIST (M)	AT OR NEAR OPTIMUM MOISTURE
SL - SHRINKAGE LIMIT		DRY (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

PLASTICITY		
NONPLASTIC	PLASTICITY INDEX	DRY STRENGTH
LOW PLASTICITY	0-5	VERY LOW
MED. PLASTICITY	6-15	SLIGHT
HIGH PLASTICITY	16-25	MEDIUM
	26 OR MORE	HIGH

DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.

**GRADATION**

WELL-GRADED INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE.  
 UNIFORM INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED)  
 GAP-GRADED INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.

**ANGULARITY OF GRAINS**

THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.

**MINERALOGICAL COMPOSITION**

MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.

**COMPRESSIBILITY**

SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 30
MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50
HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50

**ROCK DESCRIPTION**

IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:

TERM	SYMBOL	DESCRIPTION
WEATHERED ROCK (HWR) (SWR)		MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. VALUES >100 B.P.F. BUT <S.P.T. REFUSAL.
HARD WEATHERED ROCK (HR)		MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGER AND YIELDS S.P.T. REFUSAL.
CORED ROCK		MATERIAL SUCH THAT IT CANNOT BE PENETRATED BY POWER AUGER, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING SAMPLE.
INFERRED ROCK LINE		AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. WHEN ROCK IS CORED, THE HARD ROCK SYMBOL IS SHOWN TO THE DEPTH CORED. A FULL DESCRIPTION OF ROCK USING APPROPRIATE TERMS (SEE DEFINITION OF TERMS)-INCLUDES PERCENT OF CORE RECOVERY (% REC) AND ROCK QUALITY DESIGNATION (ROD).

**GROUND WATER**

DATE: WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING -   
 DATE: STATIC WATER LEVEL AFTER 24 HOURS -   
 : SPRING

**MISCELLANEOUS SYMBOLS AND ABBREVIATIONS**

	ROADWAY EMBANKMENT WITH SOIL DESCRIPTION		ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS
	SOIL SYMBOL		CORE BORING
	AUGER BORING		PIEZOMETER INSTALLATION
	TEST BORING		SLOPE INDICATOR INSTALLATION
	STRIKE AND DIP OF BEDS		INFERRED SOIL BOUNDARIES
	SPT N-COUNT		APPARENT DIP (NORMAL TO)

SAMPLE DESIGNATION: ST - SHELBY TUBE SAMPLES  
 S - BULK SAMPLE  
 SS - SPLIT SPOON SAMPLE  
 WS - WASH BORING SAMPLE

**EQUIPMENT USED ON SUBJECT PROJECT**

DRILL UNITS:  MOBILE B-52  MOBILE B-56  CME - 550  PORTABLE HOIST  
 CME - 45B  MINUTEMAN

AUGER TOOLS:  6" CONTINUOUS FLIGHT W/  HARD FACED FINGER BITS  CLAY BITS  
 8" HOLLOW AUGERS  TUNG.-CARBIDE INSFRTS

CORE BORING TOOLS:  -AX  -BX  -NX

HAND TOOLS:  POST HOLE DIGGER  HAND AUGER  SOUNDING ROD

**TERMS AND DEFINITIONS**

ALLUVIUM (alluv.) - Soils which have been transported by flowing water.  
 APPARENT DIP - The dip of rock strata not perpendicular to strike.  
 AQUIFER - A water-bearing formation or strata.  
 AUGER REFUSAL (A.R.) - Point at which power augers will not actually or practically penetrate.  
 BEDDED - Soil or rock lying in a position essentially parallel.  
 BEDROCK - Rock of relatively great thickness and extent in its original location.  
 CALCAREOUS (calc.) - Soils which contain appreciable amounts of calcium carbonate.  
 COHESIVE SOIL - A soil that when unconfined has considerable dry strength and significant cohesion when submerged.  
 COLLUVIUM - Rock fragments mixed with soil deposited by gravity on slope or at bottom of slope.  
 CORE RECOVERY (% Rec.) - Total length of all rock divided by total length of core run expressed as a percentage.  
 COQUINA - A rock type composed essentially of marine shells cemented by calcium carbonate.  
 DIKE - Igneous rock intrusive which is narrow compared with its other dimensions.  
 DIP - The angle between a bedding plane, joint plane or fault plane and the horizontal, measured perpendicular to the strike.  
 DUMPS - Uncovered deposits of waste materials such as wood, masonry debris or garbage.  
 FAULT - A break in the continuity of a body of rock, attended by a movement on either or both sides of the break.  
 FINES - Portion of a soil finer than No. 200 U. S. Standard Sieve.  
 FISSILITY OR FISSILE - A property of splitting easily along closely spaced parallel planes.  
 FLOAT - Rock fragments on surface near their original position dislodged from parent material.  
 FLOODPLAIN - Land bordering a stream, built of sediments deposited by the stream.  
 FORMATION - A mappable unit that can be recognized and traced in the field.  
 FRACTURE - A crack large enough to be visible to unaided eye.  
 FRIABLE - Easy to break or crumble.  
 GRANULAR SOIL - Soil that when unconfined has little or no dry strength and has little or no cohesion when submerged.  
 GROUND WATER - (Free Water) (G. W.) - Water that is free to move through soil mass under influence of gravity.  
 GROUNDWATER LEVEL - Level at which the pressure in water is zero with respect to the atmospheric pressure.  
 HARDPAN - A general term used to describe a hard cemented soil layer which does not soften when wet.  
 INDURATED - Earth material hardened by heat, pressure or cementation.  
 INTERBEDDED - Alternating lenses or layers of soil and/or rock materials.  
 JOINT - Fracture in rock along which no appreciable movement has occurred.  
 LAMINATED - Very thin alternating layers less than 1" in thickness.  
 LAYER - Subject material greater than 1" thick.  
 LEDGE - A shelf-like ridge or projection of rock whose thickness is small compared to its lateral extent.  
 LENS - A body of soil or rock that thins out in one or more directions.  
 MARL - A non-indurated, calcareous deposit of clays, silts and sand, often containing shells.  
 MICACEOUS SOIL (mic.) - A soil or rock containing an appreciable amount of mica.  
 MUCK (mk.) - An highly organic soil of very soft consistency, generally found on tidal flats, lakes or stream floodplains.  
 PEAT (pt) - A fibrous mass of organic matter in various stages of decomposition.

**ABBREVIATIONS**

Boulder - bldr.	Organic - org.
Clay - cl.	Plastic Limit - P.L.
Cobble - cob.	Plasticity Index - P.I.
Coarse - cse.	Porosity - n
Fine - f.	Sand - sd.
Fossiliferous - foss.	Saturated - sat.
Fractured - frac.	Silt - silty - sl.
Gravel - gr.	Slightly - sll.
Liquid Limit - LL.	Specific Gravity - G <sub>s</sub>
Medium - med.	Unconfined Compressive St.
Moisture Content - w	Unit Weight (wet unit wt)
Mottled - mot.	Dry Unit Weight - γ <sub>d</sub>
Optimum Moisture - OM	Saturated Unit Weight - γ <sub>s</sub>
	Void Ratio - e
	Very - 'V.
	Estimated - Est.

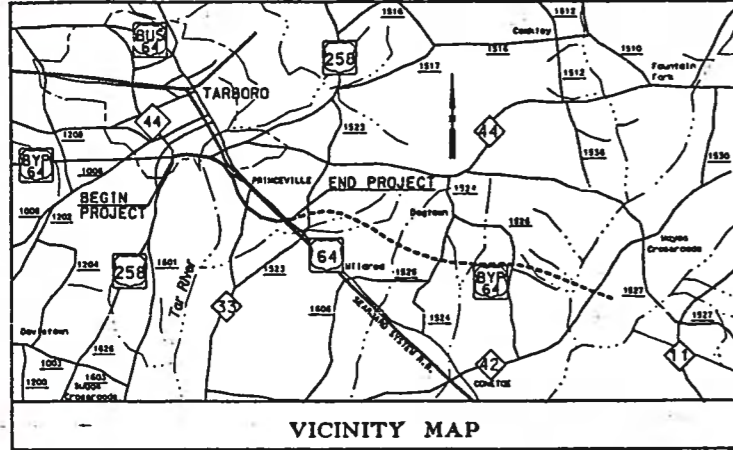
**NOTES:**

R-211AA

SENT TO R/W:  
09/01/92

PROJECT: 6.299???

See Sheet I-A For Index of Sheets  
See Sheet I-B For Symbology



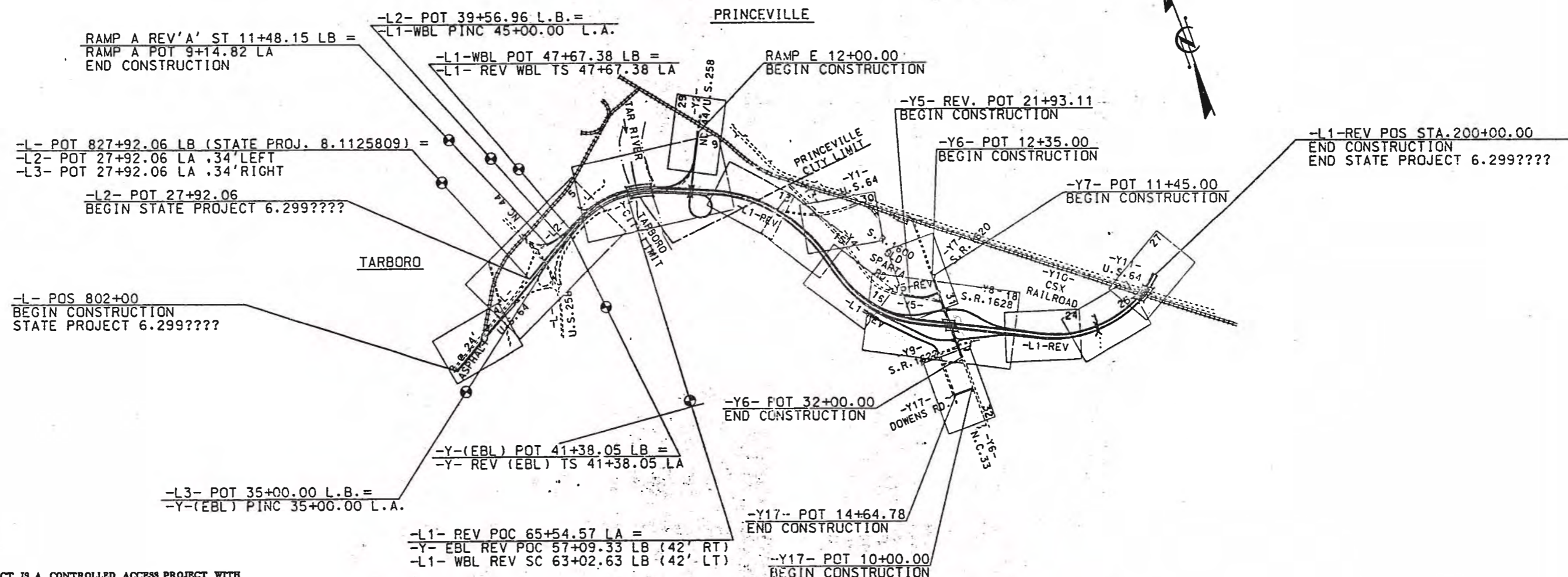
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

PLAN AND PROFILE OF PROPOSED  
STATE HIGHWAY

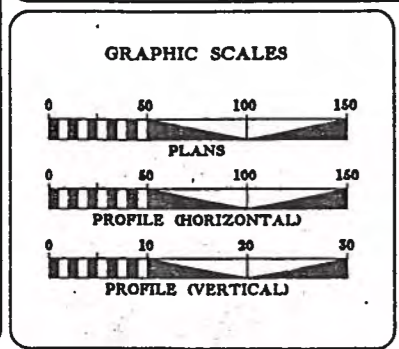
EDGECOMBE COUNTY

LOCATION: U.S. 64 RELOCATION EAST OF U.S. 258(NC 44) INTERCHANGE  
IN TARBORO TO EAST CSX RAILROAD  
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES

STATE	STATE PROJECT REFERENCE NO.
N.C.	6.2997777
STATE PROJ. NO.	P.A. PROJ. NO.
6.299001T	
6.299002T	



NOTES: THIS PROJECT IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III.



DESIGN DATA	
ADT	9,400 (1992)
ADT	17,100 (2012)
DHV	10 %
D	60 %
T	8 %
V	70 MPH

PROJECT LENGTH	
LENGTH ROADWAY PROJECT 6.299	= MI.
LENGTH STRUCTURES PROJECT 6.299	= MI.
TOTAL LENGTH STATE PROJECT 6.299	= MI.
1990 STANDARDS SPECIFICATIONS	W. S. HOOD, P.E. BAKK PROJECT MANAGER
LETTING DATE: JULY 1994	C. CASEY, P.E. NCDOT DESIGN SERVICES CONTACT
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

Prepared in the Office of:

**BAKK ENGINEERS**  
*(a subsidiary of SEC Danhua)*

RALEIGH - RICHMOND - COLUMBIA  
BIRMINGHAM - JACKSONVILLE

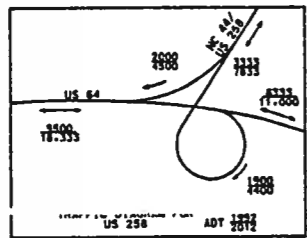
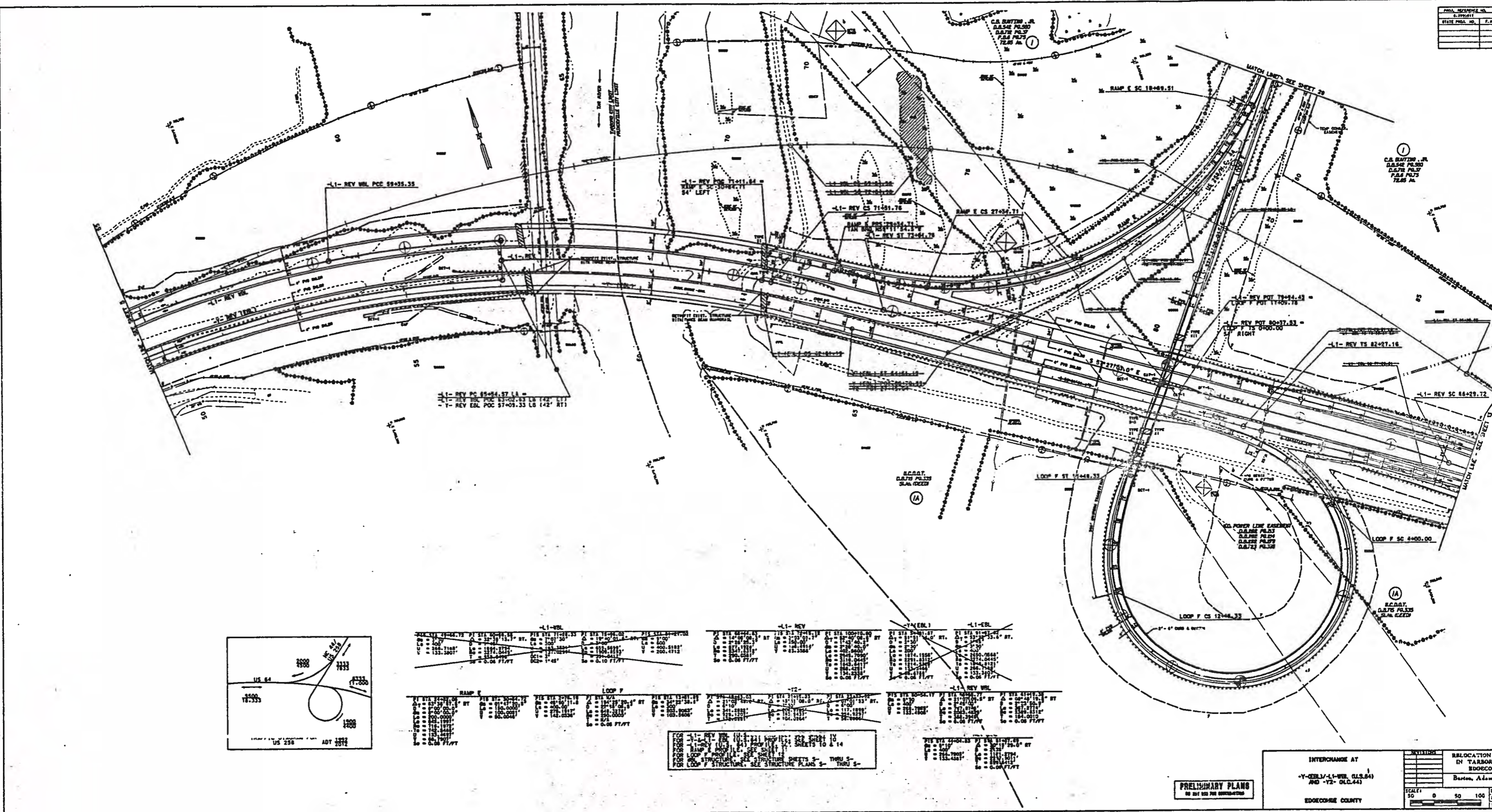
Post Office Box 31  
224 Fayetteville Street Mail  
Raleigh, N.C. 27602-0311  
919 859-4777  
FAX 919 859-2883

HYDRAULICS BY:  
R.N. SCARCE & ASSOC., INC.  
9300 CAPITAL BOULEVARD  
RALEIGH, NORTH CAROLINA 27604  
919 - 876 - 3195

ROADWAY DESIGN ENGINEER	
SIGNATURE _____	P.E.
HYDRAULICS ENGINEER	
SIGNATURE _____	P.E.

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA	
APPROVED _____	STATES HIGHWAY ENGINEER
DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION	
APPROVED _____	DIVISION ADMINISTRATOR

PROJECT NUMBER	
DATE	
STATE ROAD NO.	
F.A.	



STATION	PC	PT	PI	STATION	PC	PT	PI	STATION	PC	PT	PI
17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00
17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00	17+33.00

FOR LOOP F STRUCTURE, SEE STRUCTURE SHEETS S-1 THRU S-5  
FOR LOOP F STRUCTURE, SEE STRUCTURE SHEETS S-1 THRU S-5

PRELIMINARY PLANS  
NO USE FOR CONSTRUCTION

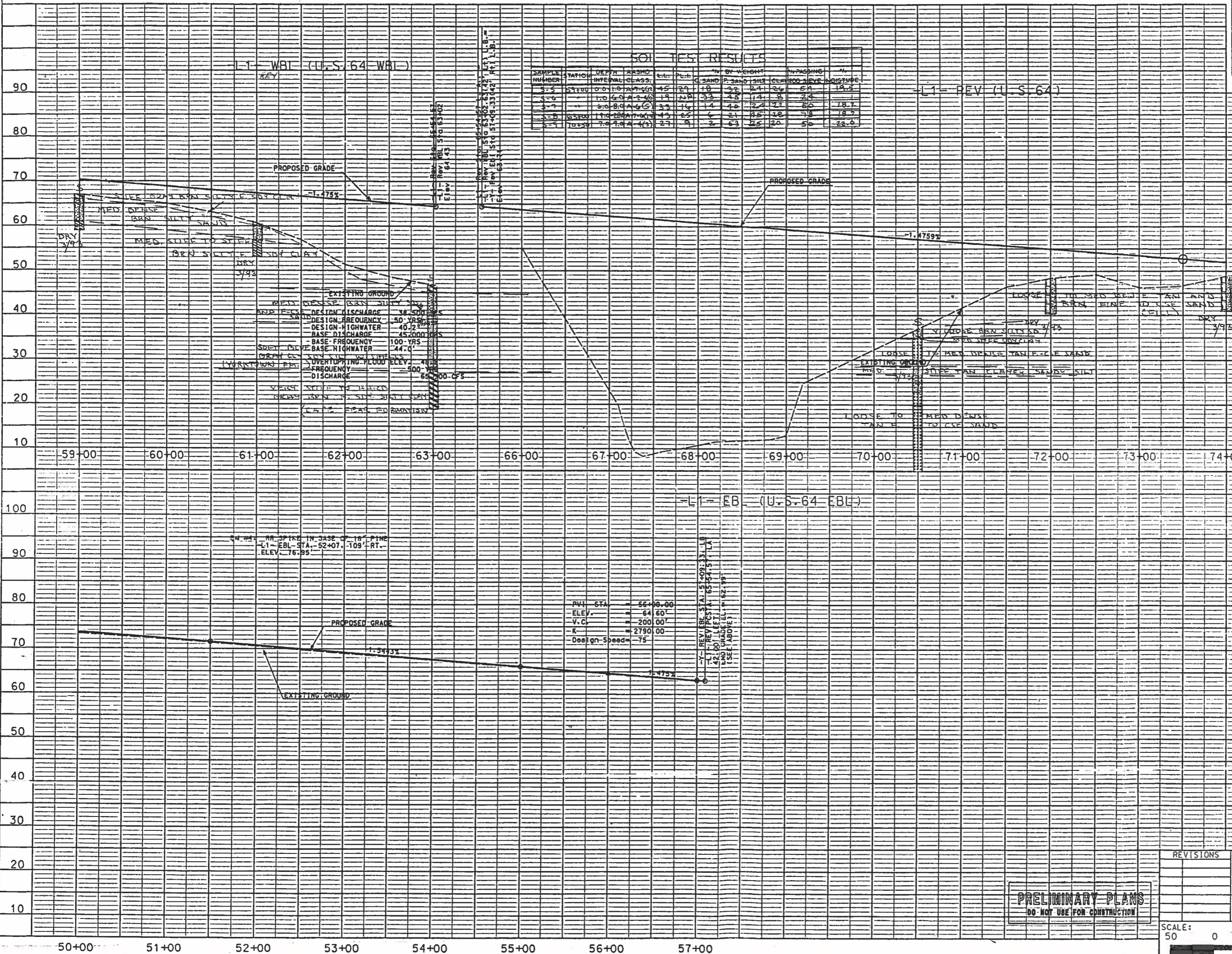
INTERCHANGE AT  
Y-CRBL/11-WB (CL.S.84)  
AND -Y2- (CL.S.44)

EDGECORSE COUNTY

RELOCATION  
IN TARBOROUGH  
EDGECORSE  
Barton Adams

SCALE: 1" = 50'

SAMPLE NUMBER	DATE	DEPTH INTERVAL	CLASS.	Wt. %	LIQ. LIMIT	PL. LIMIT	C SAND	F SAND	SILT	CLAY	W PASSING #20	W PASSING #40	W PASSING #60	W PASSING #100	MOISTURE %
S-5	5/10/01	0.0-1.0	A7-6	15	27	18	32	24	24	24	51	19.2			
S-6	5/10/01	1.0-2.0	A7-6	19	19	14	33	45	14	3	24				
S-7	5/10/01	2.0-3.0	A7-6	23	15	14	16	42	22	3	20				18.7
S-8	5/10/01	3.0-4.0	A7-6	13	15	14	21	35	28	1	18				18.5
S-9	5/10/01	4.0-5.0	A7-6	27	9	2	63	25	20		50				22.0



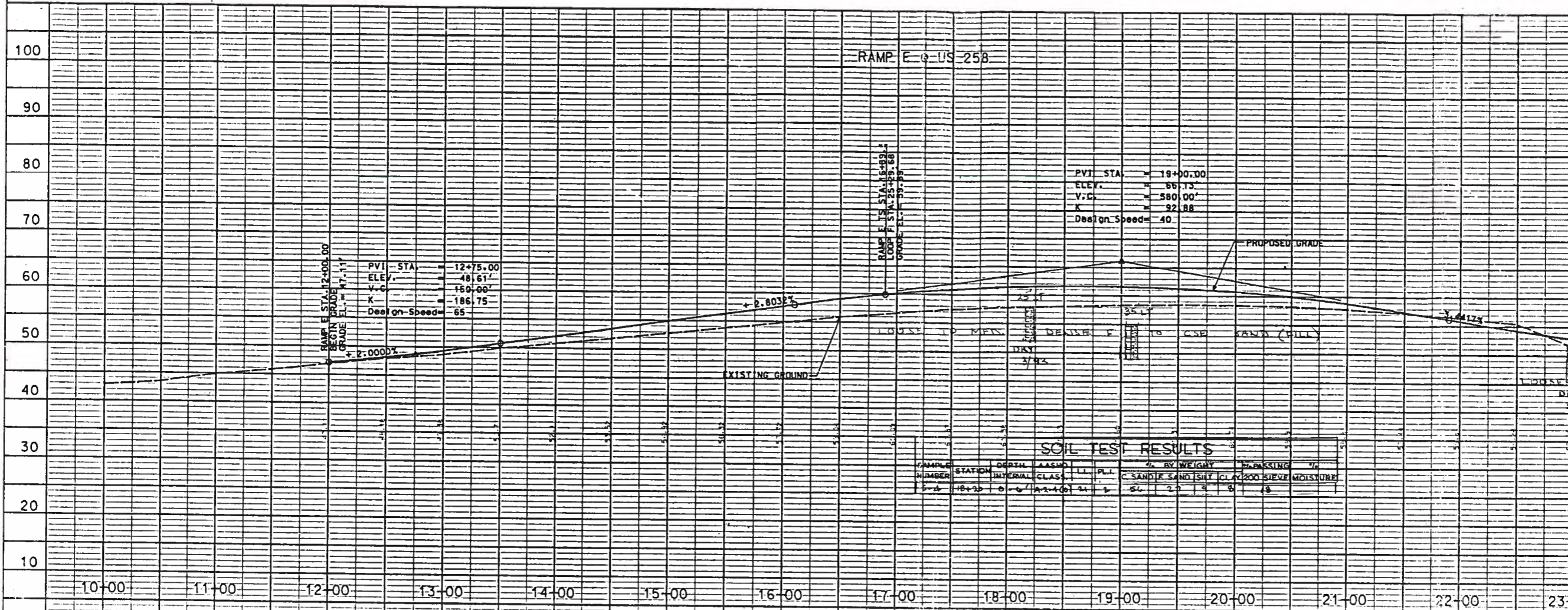
DESIGN DISCHARGE	48,500 CFS
DESIGN FREQUENCY	50 YRS
DESIGN HIGHWATER	40.2'
BASE DISCHARGE	45,000 CFS
BASE FREQUENCY	100 YRS
BASE HIGHWATER	44.0'
OVERTOPPING FLOOD ELEV.	48.8'
OVERTOPPING FREQ.	500 YRS
DISCHARGE	65,000 CFS

PVI STA	56+00.00
ELEV.	64.60'
V.C.	200.00'
K	2790.00
Design Speed	75

REV. EBL STA. 54+09.33, L.S.  
 REV. POS. A 65+54.57, L.S.  
 42.00' LEVEL, L.S.  
 42.00' LEVEL, L.S.  
 (SEE ABOVE)

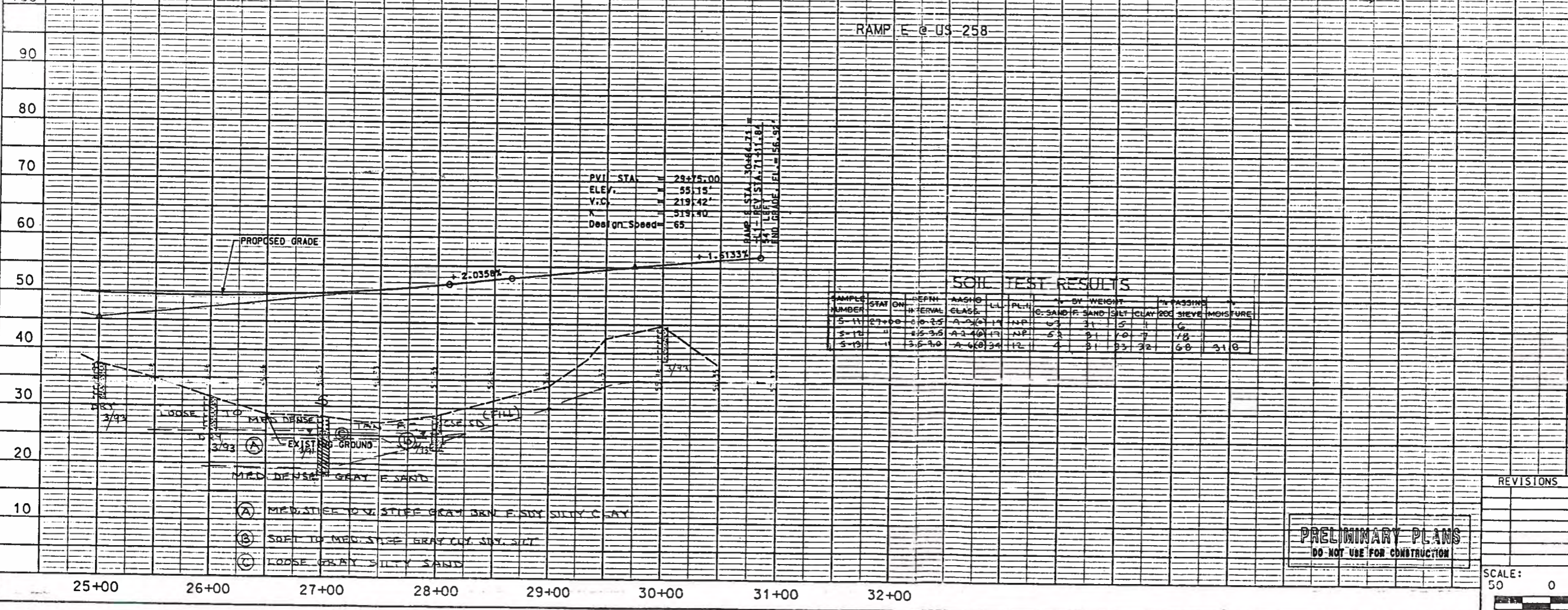
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

REVISIONS	
<b>RELOCATION OF US 64 FROM TARBORO TO EAST EDGECOMBE COUNTY</b>	
<b>Burton, Adams, Kemp, &amp; ENGINEERS</b>	
SCALE: 50 0 50 100	DATE:
	PROJECT NO.: 91
	SHEET



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH (FEET)	AASHO		LL		PL		% BY WEIGHT			PASSING #200 SIEVE	MOISTURE
			INTERNAL CLASS.	CLAS.	LL	PL	C. SAND	F. SAND	SILT	CLAY	ROE		
S-11	10+30	0-6	A-2	40	24	5	5	5	2	9	8	18	



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH (FEET)	AASHO		LL		PL		% BY WEIGHT			PASSING #200 SIEVE	MOISTURE
			INTERNAL CLASS.	CLAS.	LL	PL	C. SAND	F. SAND	SILT	CLAY	ROE		
S-11	27+00	0-2.5	A-2	17	NP	6	3	5	1	6	18		
S-12	"	2.5-3.5	A-2	17	NP	5	3	7	1	18			
S-13	"	3.5-7.0	A-6	34	12	4	3	23	32	60	310		

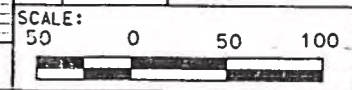
- (A) MED. STIFF TO V. STIFF GRAY BRN F. Silt SILTY CLAY
- (B) SOFT TO MED. STIFF GRAY CLY. Silt SILT
- (C) LOOSE GRAY SILTY SAND

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

REVISIONS

RELOCATION OF US 64 FROM  
 IN TARBORO TO EAST C  
 EDGEcombe COUNTY.

Burton, Adams, Kemp, & F  
 ENGINEERS



DATE: \_\_\_\_\_  
 PROJECT NO.: 9  
 SHEET



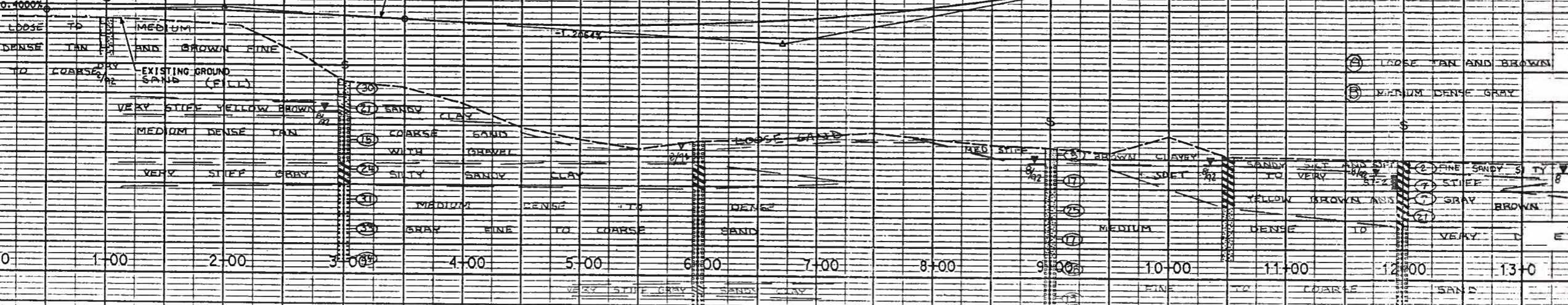
-L1- REV LOOP-

### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	CLASS	LL	PL	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C SAND	F SAND	SILT		
SS-3	11+00	0-6.0	A-2-4	18	NP	56	4	34	14	
SS-8	11+00	6.0-12.0	A-2-4	18	NP	46	4	50	14	
SS-9	11+00	12.0-18.0	A-2-4	17	NP	27	3	70	42	
SS-10	11+00	18.0-24.0	A-2-4	17	NP	28	3	69	37	
SS-17	9+00	10.0-15.0	A-4-0	29	9	36	30	18	16	20.8
SS-18	11+00	6.0-12.0	A-4-0	18	NP	37	14	49	10	
SS-1	12+00	0.0-1.5	A-3-6	11	NP	5	16	38	4	82
SS-2	11+00	1.5-3.0	A-3-6	11	NP	36	15	49	10	77.5
SS-1	15+00	0.0-1.5	A-2-4	16	NP	65	23	12	8	22.7
SS-2	11+00	1.5-3.0	A-2-4	16	NP	33	14	53	10	37.0
SS-3	11+00	3.0-4.5	A-2-4	16	NP	26	6	68	4	22
SS-4	11+00	4.5-6.0	A-2-4	16	NP	26	6	68	4	22
SS-5	11+00	6.0-7.5	A-2-4	16	NP	26	6	68	4	22
SS-6	11+00	7.5-9.0	A-2-4	16	NP	26	6	68	4	22
SS-7	11+00	9.0-10.5	A-2-4	16	NP	26	6	68	4	22

PVI STA = 2400.00  
 ELEV. = 49.67'  
 V.C. = 300.00'  
 K = 186.76  
 Design Speed = 50

PVI STA = 8470.00  
 ELEV. = 44.00'  
 V.C. = 640.00'  
 K = 127.42  
 Design Speed = 50

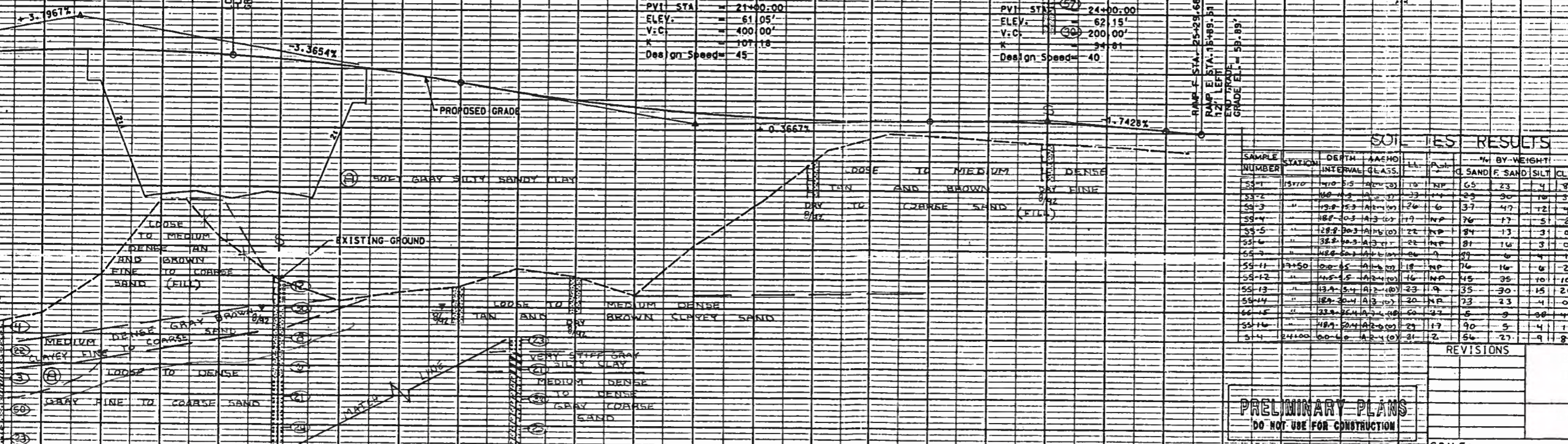


- (A) LOOSE TAN AND BROWN SAND
- (B) MEDIUM DENSE GRAY SAND

PVI STA = 15+80.00  
 ELEV. = 78.55'  
 V.C. = 640.00'  
 K = 89.36  
 Design Speed = 40

PVI STA = 21+00.00  
 ELEV. = 61.05'  
 V.C. = 400.00'  
 K = 107.18  
 Design Speed = 45

PVI STA = 24+00.00  
 ELEV. = 62.15'  
 V.C. = 200.00'  
 K = 34.81  
 Design Speed = 40

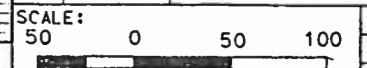


### SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	CLASS	LL	PL	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C SAND	F SAND	SILT		
SS-1	15+00	0-1.0	A-2-4	19	NP	65	23	12	8	12
SS-2	15+00	1.0-2.0	A-2-4	19	NP	23	30	47	31	48
SS-3	15+00	2.0-3.0	A-2-4	20	6	37	17	46	7	22
SS-4	15+00	3.0-4.0	A-2-4	19	NP	76	17	7	2	7
SS-5	15+00	4.0-5.0	A-2-4	22	NP	84	13	3	0	3
SS-6	15+00	5.0-6.0	A-2-4	22	NP	81	14	3	0	3
SS-7	15+00	6.0-7.0	A-2-4	26	6	87	6	7	1	5
SS-11	17+50	0-1.5	A-2-4	18	NP	26	16	58	2	7
SS-12	17+50	1.5-3.0	A-2-4	16	NP	45	35	10	10	21
SS-13	17+50	3.0-4.5	A-2-4	23	19	35	30	15	20	35
SS-14	17+50	4.5-6.0	A-2-4	20	NP	73	23	4	0	4
SS-15	17+50	6.0-7.5	A-2-4	20	NP	5	9	86	14	69
SS-16	17+50	7.5-9.0	A-2-4	21	17	90	5	4	1	5
SS-17	17+50	9.0-10.5	A-2-4	21	12	56	27	17	8	18

REVISIONS

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION



PROJ. REFERENCE NO.	SHEET NO.
6.299001T	13
STATE PROJ. NO.	F. A. PROJ. NO.

EDGECOMBE - MARTIN COUNTY EMC  
 D.B.447 PG.445  
 D.B.824 PG.803  
 D.B.827 PG.182  
 D.B.842 PG.685  
 P.B.16 PG.53  
 3.67 Ac.

C.B. BUNTING, JR.  
 D.B.542 PG.560  
 D.B.712 PG.37  
 P.B.6 PG.75  
 72.65 Ac.

JOSEPH H. GLASS, JR.  
 D.B.420 PG.206  
 D.B.996 PG.316  
 11250 s.f. (DEED)

ROOSEVELT POWELL  
 D.B.820 PG.110  
 9000 s.f. (Q.M.D.)  
 ANNIE BELL HEIRS  
 D.B.53 PG.346  
 9000 s.f. (DEED)

MARSHALL W. ALEN  
 D.B.1056 PG.826  
 9589 s.f. (Q.M.D.)

HENRY BRIDGERS HEIRS  
 D.B.117 PG.351  
 7714 s.f. (Q.M.D.)

C.E. PUTNAM AGENCY, INC.  
 D.B.885 PG.206  
 1 Ac. (DEED)

C.B. BUNTING, JR.  
 D.B.542 PG.560  
 D.B.712 PG.37  
 P.B.6 PG.75  
 72.65 Ac.

N.C.D.O.T.  
 D.B.715 PG.335  
 51 Ac. (DEED)

N.C.D.O.T.  
 D.B.715 PG.335  
 51 Ac. (DEED)

MARY E. VINES HEIRS  
 D.B.574 PG.301  
 P.B.6 PG.75  
 34.10 Ac. (TOTAL)

~~-L1- EBL~~  
 PI STA 91+67.62  
 $\Delta T = 53^{\circ}22'33.6"$  RT.  
 D = 1'45"  
 $\theta_s = 3^{\circ}30'$   
 Ls = 400'  
 Lc = 2650.0500'  
 Rc = 3274.8445'  
 Ts = 1846.8121'  
 U = 266.7188'  
 V = 133.3807'  
 Se = 0.06 FT/FT

~~-L1- REV~~  
 PI STA 100+70.80  
 $\Delta T = 52^{\circ}40'08.6"$  RT  
 D = 1'43'40.2"  
 $\theta_s = 3^{\circ}28'40.0"$   
 Ls = 402.5600'  
 Lc = 2645.7090'  
 Rc = 3316.0445'  
 Ts = 1843.6417'  
 U = 268.4251'  
 V = 134.2338'  
 Se = 0.06 FT/FT

~~-Y-~~  
 PI STA 82+82.60  
 $\Delta T = 26^{\circ}26'31.0"$  RT.  
 D = 3'00"  
 $\theta_s = 3^{\circ}00'$   
 Ls = 200'  
 Lc = 241.9816'  
 Rc = 1909.8593'  
 Ts = 444.5079'  
 U = 133.3525'  
 V = 66.6841'

~~-L1- WBL~~  
 PI STA 94+43.37  
 $\Delta T = 21^{\circ}48'00"$  LT.  
 D = 2'00"  
 $\theta_s = 2^{\circ}00'$   
 Ls = 200'  
 Lc = 950.0000'  
 Rc = 2864.7890'  
 Ts = 651.7794'  
 U = 133.3418'  
 V = 66.6744'

~~-L1- WBL~~  
 PI STA 104+95.47  
 $\Delta T = 33^{\circ}18'02.3"$  RT.  
 D = 3'00"  
 $\theta_s = 9^{\circ}00'$   
 Ls = 600'  
 Lc = 510.0216'  
 Rc = 1909.8593'  
 Ts = 873.2889'  
 U = 400.5182'  
 V = 200.4712'  
 Se = 0.10 FT/FT

FOR -L1- REV (U.S.64) PROFILE, SEE SHEET 14

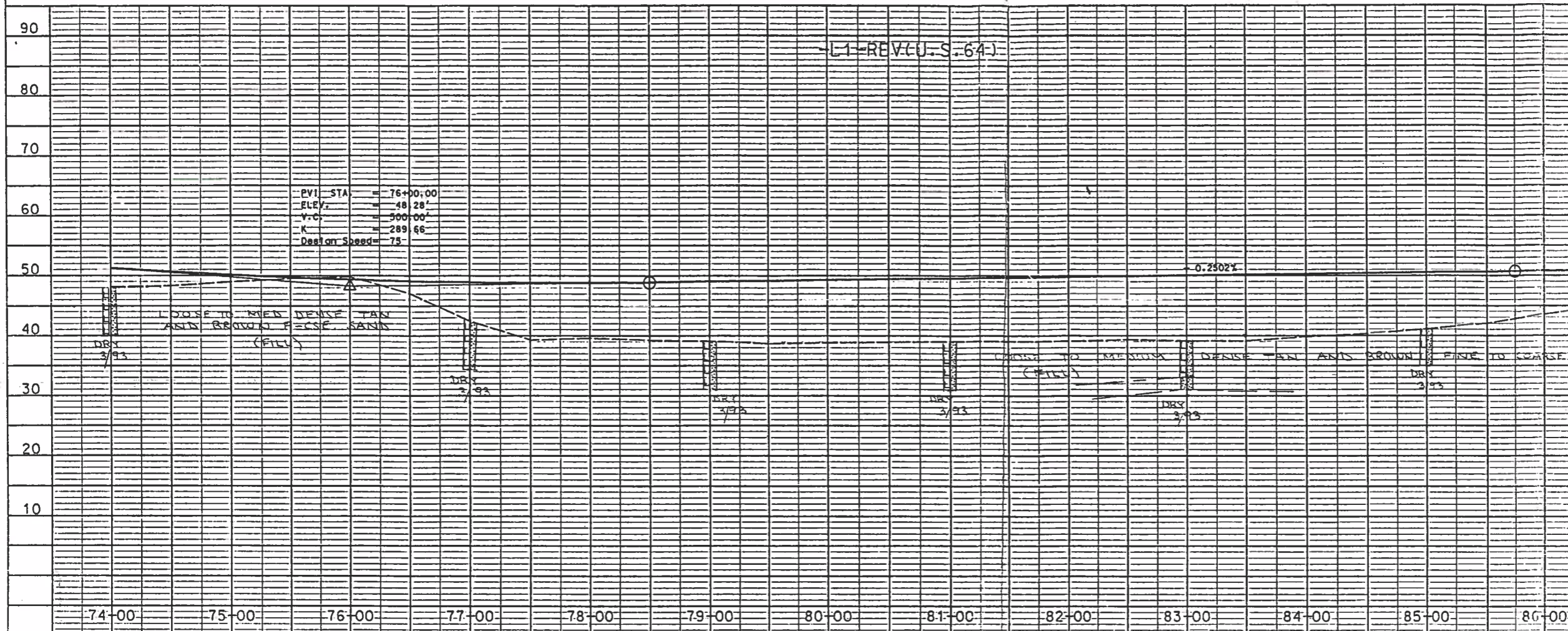
REVISIONS	DATE

RELOCATION OF US 64 FRC  
 IN TARBORO TO EAST OF  
 EDGECOMBE COUNTY,  
 Burton, Adams, Kemp, & K  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE: PROJECT NO.: 91C  
 SHEET

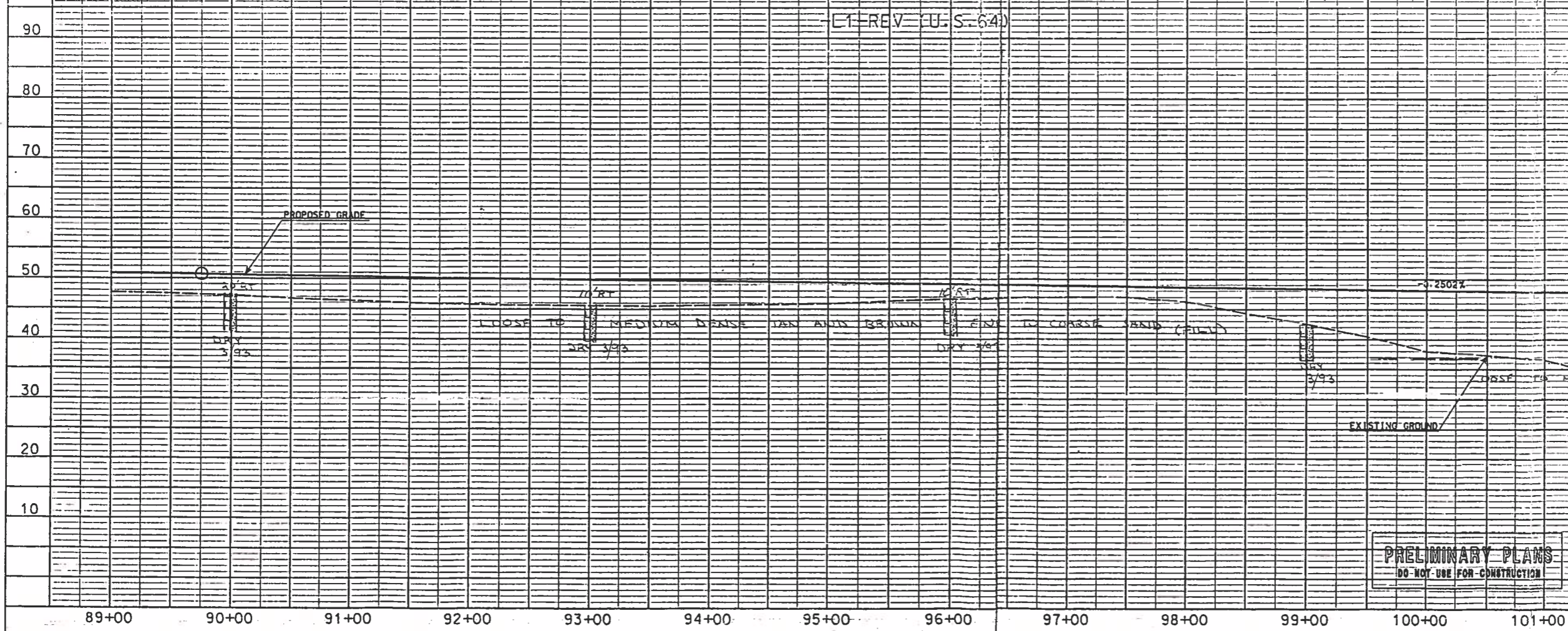
PRELIMINARY PLANS  
 DO NOT USE FOR CONSTRUCTION

PROJ. REFERENCE NO.	SHEET NO.
6.299001T	14
STATE PROJ. NO.	F. A. PROJ. NO.



PVI STA = 76+00.00  
 ELEV. = 48.28'  
 V.C. = 300.00'  
 K = 289.66  
 Design Speed = 75

PVI STA = 87+75.00  
 ELEV. = 51.22'  
 V.C. = 400.00'  
 K = 799.34  
 Design Speed = 75



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION

REVISIONS

**RELOCATION OF US 64 FR  
 IN TARBORO TO EAST  
 EDGEcombe COUNTY**  
 Burton, Adams, Kemp, &  
 ENGINEERS

SCALE: 1" = 50'  
 0 50 100

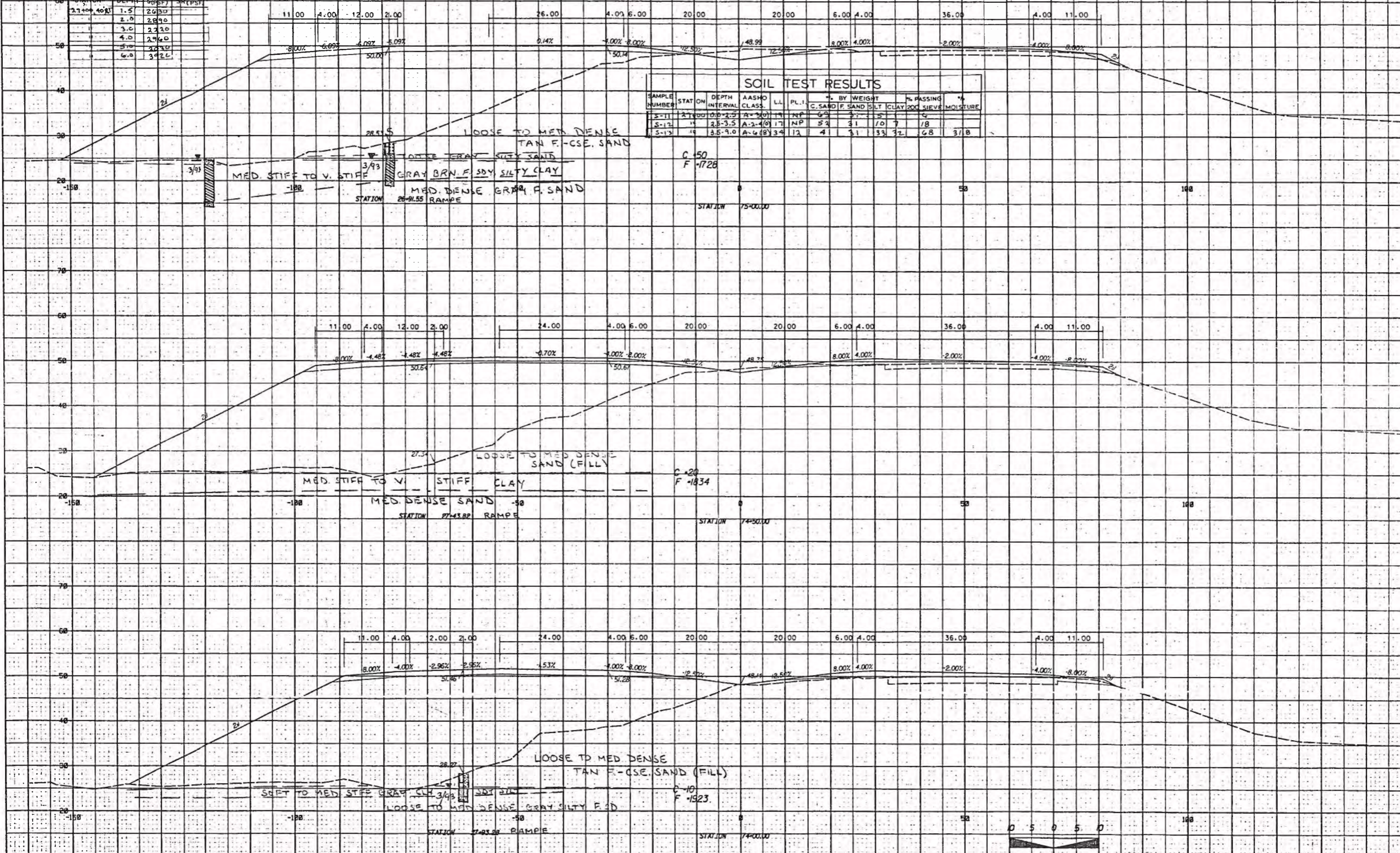
DATE:  
 PROJECT NO.: 9  
 SHEET

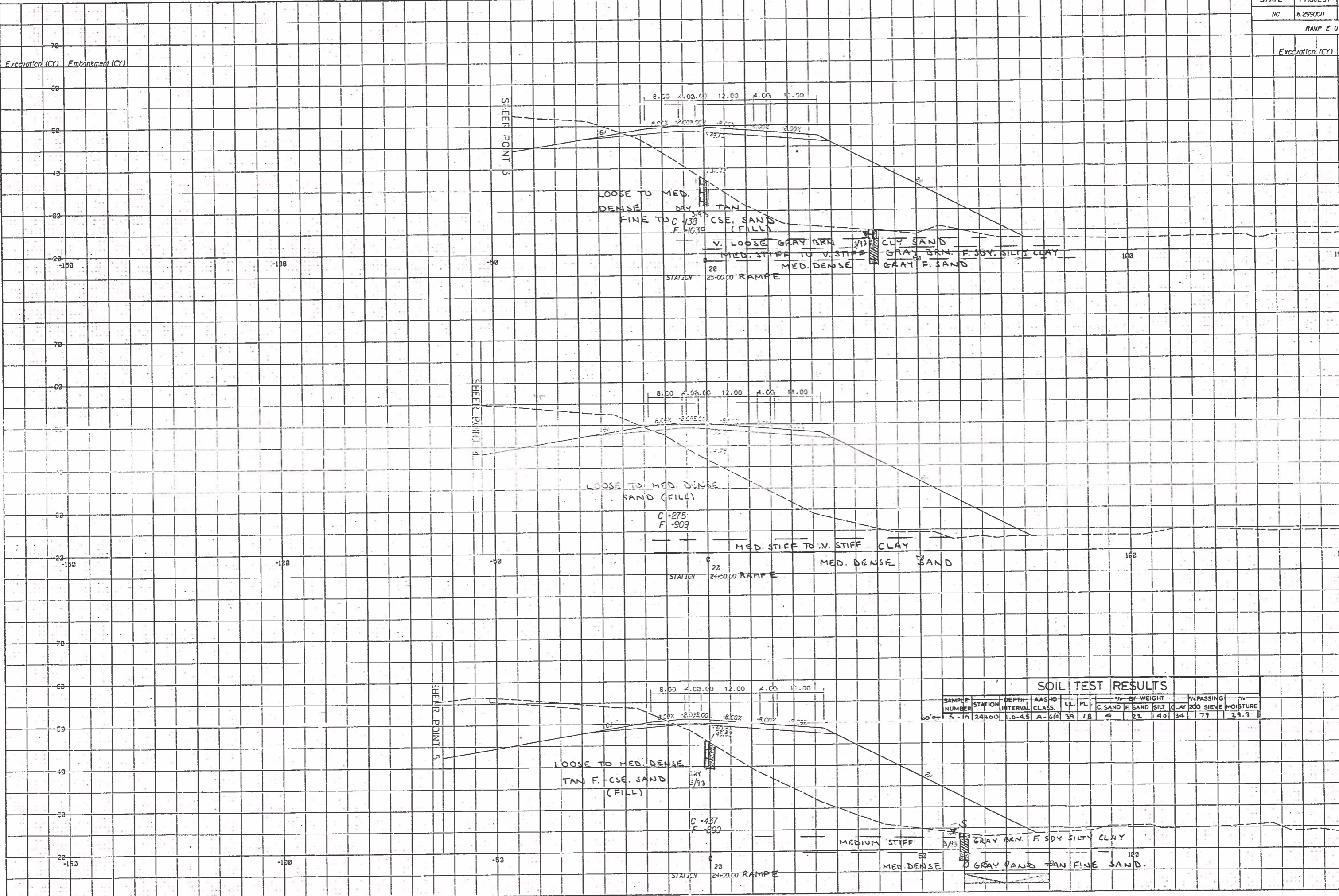
FILE: F:\MIG  
 PLOT DATE

Excavation (CY)    Embankment (CY)

VAINE SHEAR TESTS			
STATION	DEPTH	Q (PSF)	Q <sub>u</sub> (PSF)
21+00	1.5	2630	
	2.0	2890	
	3.0	2730	
	4.0	2760	
	5.0	2830	
	6.0	3420	

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-11	21+00	0.0-2.5	A-2(0)19	NP		63	31	5	1	6	
S-12	"	2.5-3.5	A-2(0)17	NP		52	31	10	7	18	
S-13	"	3.5-9.0	A-4(8)34	12		4	31	33	32	68	31.8





**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				PASSING 200 SIEVE	MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
5-1a	24+00	1.0-4.5	A-2(6)	39	18	4	22	40	34	179	29.3

LOOSE TO MED. DENSE  
TAN F.-CSE. SAND  
(FILL)

C-437  
F-809

MEDIUM STIFF  
MED. DENSE

GRAY BRN. F. SDY SILTY CLAY  
GRAY SAND TAN FINE SAND.

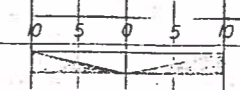
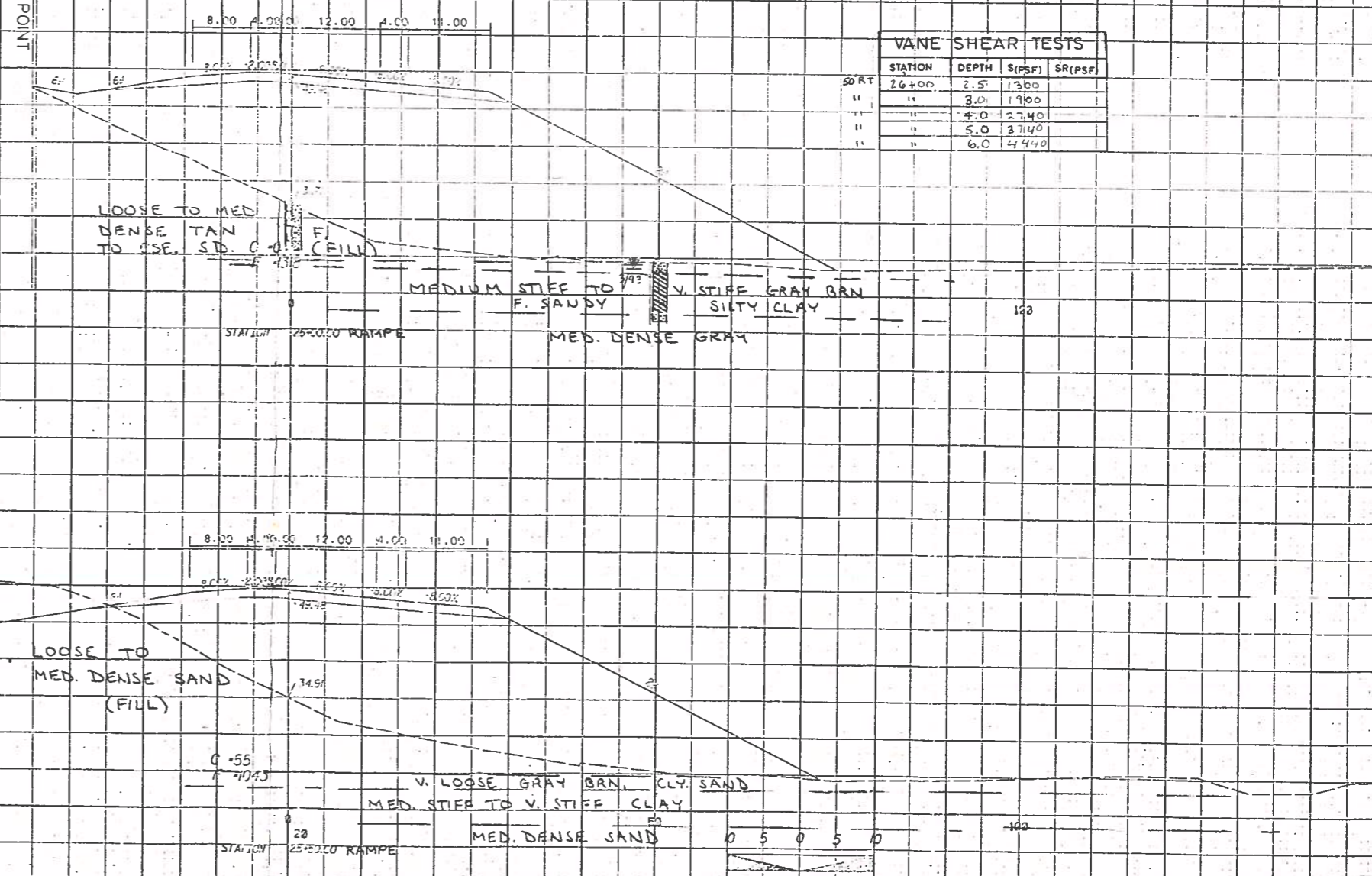
STATION 24+00.00 RAMP E

Excavation (CY)    Embankment (CY)

SHEER POINT

SHEER POINT 2

VANE SHEAR TESTS			
STATION	DEPTH	S(PSF)	SR(PSF)
26+00	2.5'	1360	
"	3.0'	1900	
"	4.0'	2740	
"	5.0'	3740	
"	6.0'	4440	





STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
P.O. BOX 25201  
RALEIGH 27611-5201

JAMES G. MARTIN  
GOVERNOR

September 8, 1992

DIVISION OF HIGHWAYS

THOMAS J. HARRELSON  
SECRETARY

WILLIAM G. MARLEY, JR., P.E.  
STATE HIGHWAY ADMINISTRATOR

STATE PROJECT: 6.299001T R-2111A  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44) Interchange  
in Tarboro to East of NC 42  
SUBJECT: Geotechnical Report - Inventory

The project consists of upgrading US 64 to a four (4) lane divided facility along a new location. The project begins at the US 64/US 258 interchange at Tarboro and proceeds 9.98 miles in an easterly direction to a point northeast of Conetoe and 0.49 mile east of NC 42. The investigation of subsurface conditions was confined to the corridor of proposed new construction.

The following base lines were investigated for this project:

<u>Line</u>	<u>Station</u>
-L1- WBL	45+00 to 117+00
-L1- EBL	73+20 to 107+94
-L1-	117+00 to 117+76
-L1- Rev.	117+76 to 202+48
-L1-	202+97 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 59+50

US 258 (-L- & -Y2-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A Rev.	0+00 to 11+57
Ramp E	12+63 to 28+11

NC 33 (-Y6-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 17+89
Ramp B	0+00 to 15+06
Ramp C	0+00 to 22+07
Ramp D	0+00 to 14+48

SR 1523 (-Y12-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

NC 42 (-Y16-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	0+00 to 17+57

Areas of Special Geotechnical Interest

1. The following sections were found to exhibit a high water table, seasonal high ground water or the potential for ground water related construction problems:

<u>Line</u>	<u>Station</u>
-L1- WBL	64+50 to 69+00
-L1- WBL	70+00 to 77+25
-L1- WBL	79+50 to 85+00
-L1- WBL	113+00 to 114+00
-L1- EBL	92+00 to 96+50
-L1- EBL	100+00 to 106+00
-L1- Rev.	130+25 to 141+00
-L1- Rev.	161+00 to 175+00



<u>Line</u>	<u>Station</u>
-L1- Rev.	177+50 to 184+50
-L1- Rev.	191+00 to 202+48
-L1-	202+97 to 554+00
-Y5- Rev.	24+26 to 29+81
-Y12-	12+50 to 45+00
-Y13- Rev.	10+00 to 59+87
-Y14-	14+00 to 35+50
-Y15-	8+50 to 14+89
-Y16-	25+00 to 54+00

US 258 (-L- & -Y2-) Interchange

<u>Line</u>	<u>Station</u>
Ramp E	18+50 to 26+00

NC 33 (-Y6-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 17+89
Ramp B	2+00 to 8+50
Ramp B	11+00 to 15+06
Ramp C	1+00 to 14+00
Ramp C	18+00 to 20+00
Ramp D	0+00 to 2+50
Ramp D	6+00 to 9+00
Ramp D	11+00 to 14+48

SR 1523 (-Y12-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	0+00 to 17+98

SR 1524 (-Y13- Rev.) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 17+05
Ramp B	0+00 to 18+71
Ramp C	0+00 to 17+29
Ramp D	0+00 to 17+83

NC 42 (-Y16-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	5+00 to 9+00
Ramp A	15+00 to 16+31
Ramp B	0+00 to 18+00
Ramp C	0+00 to 17+92
Ramp D	3+00 to 17+57

2. The following sections contain surficial clay soils with medium to high plasticity indices:

<u>Line</u>	<u>Station</u>
-L1- WBL	55+50 to 64+00
-L1- WBL	72+00 to 77+25
-L1- WBL	79+25 to 80+50
-L1- Rev.	185+00 to 200+50
-L1-	207+50 to 222+25
-L1-	225+25 to 231+00
-L1-	249+50 to 259+50
-L1-	261+50 to 275+25
-L1-	283+25 to 293+50
-L1-	299+50 to 327+00
-L1-	371+00 to 375+50
-L1-	419+50 to 435+00
-L1-	439+50 to 442+25
-L1-	450+00 to 502+50
-L1-	546+50 to 554+00
-Y5- Rev.	24+26 to 26+50
-Y12-	12+50 to 20+25
-Y12-	23+00 to 45+00
-Y13- Rev.	28+75 to 32+25
-Y13- Rev.	36+50 to 40+25
-Y15-	8+50 to 14+00
-Y16-	25+00 to 26+50

US 258 -L- & -Y2- Interchange

<u>Line</u>	<u>Station</u>
Ramp A Rev.	1+75 to 11+57
Ramp E	18+00 to 25+75

NC 33 (-Y6-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	10+50 to 15+00

SR 1523 (-Y12-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	8+50 to 19+65
Ramp B	0+00 to 17+83
Ramp C	0+00 to 16+44
Ramp D	8+50 to 17+98

SR 1524 (-Y13- Rev.) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	1+50 to 8+00
Ramp D	0+00 to 4+50

NC 42 (-Y16-) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	7+50 to 8+50
Ramp D	3+25 to 12+50

3. The following sections contain slightly to moderately organic soils:

<u>Line</u>	<u>Station</u>
-L1- Rev.	181+25 to 184+25
-L1-	367+60 to 381+50
-L1-	501+25 to 528+00

SR 1524 (-Y13- Rev.) Interchange

<u>Line</u>	<u>Station</u>
Ramp A	0+00 to 1+50
Ramp D	3+00 to 4+50
Ramp D	6+50 to 7+50

NC 42 (-Y16-) Interchange

<u>Line</u>	<u>Station</u>
Ramp B	0+00 to 14+75
Ramp C	0+00 to 12+75

### Physiography and Geology

The project corridor is located in eastern Edgecombe County between Tarboro and a point northeast of Conetoe. Topography is typical of the Coastal Plain Physiographic Province, and ranges from nearly level to moderately sloping. Elevations along the project range from a high of 80± feet at the beginning of the project to a low of 10± feet in the Tar River Channel. Elevations on the Tar River flood plain and adjacent terrace range from 20 to 40 feet M.S.L. The remainder of the project generally lies at an elevation between 40 and 60 feet.

The project corridor is drained by the Tar River and several small tributary streams which include Cromwell Canal, Knight Canal, Mitchell Swamp Canal, Ballahack Canal and Conetoe Creek.

Surface drainage conditions along the project corridor range from poor in the flood plains and nearly level interstream areas to good in areas with moderate topographic relief. However, most of the project generally has only fair to poor surface drainage. In areas with abundant surficial granular soils, much of the water drains by infiltration into the underlying sand.

The geology of the project area generally consists of coastal plain sand and clay beds overlying the Yorktown Formation of Upper Pliocene age and the Cape Fear Formation of Upper Cretaceous age. The Yorktown Formation within the project area typically lies at an elevation of 25 to 35 feet and consists of interbedded marine sands and clays. Thickness of the Yorktown ranges from less than 5 feet to 15 feet or more. The Cape Fear Formation underlies the Yorktown Formation and consists of sand and clay beds of probable deltaic origin.

### Ground Water Properties

Ground water data was collected during the fall, winter and spring seasons of 1991-1992 during average rainfall conditions. Ground water is high along most of the project corridor with the water table typically lying at a depth of 6 feet or less. Areas where ground water depths exceed 6 feet are mainly located on the prominent bluff and wide fluvial terrace adjacent to the Tar River.

### Soil Properties

Based on origin and occurrence, three main soil groups were encountered along the project corridor.

#### 1. Upland Soils

Most of the upland soils found along the project corridor were formed from sediments deposited by marine, fluvial and eolian action in the geologic past. Upland soils typically consist of fine to

coarse sand (A-2-4, A-3, A-1-b), clayey sand (A-2-6), sandy silt (A-4) and sandy clay (A-6, A-7-6). The granular soils occur mainly as surficial beds and interbeds with clay. Cohesive soils occur as topsoil, surficial beds and as interbeds with sand. Typically, the granular soils range from a very loose to medium dense compactness and the cohesive soils range in consistency from soft to stiff. Engineering properties generally range from good to excellent for the granular material and from fair to poor for cohesive soils. The clay soils typically have between 50 and 90 percent passing the No. 200 sieve, high moisture contents and plasticity indices ranging from slight to high. Clayey sands (A-2-6) generally exhibit slight to medium plasticity indices.

## 2. Stream Terrace Soils

Stream terrace soils are found in a band approximately 0.5 miles wide roughly paralleling the eastern boundary of the Tar River flood plain. Granular soils consisting of fine to coarse sand with gravel (A-2-4, A-3, A-1-b) are the predominant soil type in this area. These soils exhibit excellent engineering properties.

## 3. Flood Plain Soils

Flood plain soils are found associated with major drainage features along the project corridor. Typically, the flood plain soils consist of silty and fine sandy clay (A-6, A-7-5, A-7-6), clayey sandy silt (A-4) and fine to coarse sand (A-2-4, A-1-b). Soils in the Tar River flood plain generally do not have significant organic contents. However, the flood plains of several tributary streams contain soils with slight to moderate organic contents. Engineering properties of flood plain soils are generally poor.

Rootmat in wooded portions of the project averages 0.2 feet in thickness.

# Geotechnical Descriptive Analysis of the Project

## -L1- WBL Station 45+00 to 81+00

This segment begins on moderately sloping upland topography west of the Tar River and proceeds in an easterly direction crossing the Tar River and the Tar River flood plain. Soils on the upland section typically consist of 1 to 6 feet or more of very loose to loose (2 to 4 BPF) fine to coarse sand (A-2-4) overlying medium stiff to very stiff (7 to 16 BPF) silty sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 16 to 24 and a natural moisture content of 16 percent. Flood plain soils generally occur from station 65+00 to 81+00± and consist of 1 to 6 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6) underlain by loose to medium dense (7 to 24 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils have plasticity indices which range from 13 to 38. A sample of flood plain clay was tested at 42 percent natural moisture.

The water table generally lies at a depth of 6 feet or more on the upland. In the Tar River flood plain, ground water depths vary considerably depending on rainfall conditions. Typically, either the area is flooded or ground water levels are at a depth of 3 feet or less.

- L1- WBL Station 81+00 to 117+00
- L1- EBL Station 73+20 to 107+94
- L1- Station 117+00 to 117+76
- L1- Rev. Station 117+76 to 185+00

This segment crosses the nearly level to moderately sloping Tar River alluvial terrace. Soils typically consist of very loose to medium dense (2 to 13 BPF) fine to coarse sand with gravel (A-2-4, A-3, A-1-b). The flood plain of a minor tributary stream between -L1- Rev. Station 181+25 and 184+25 contains up to 4 feet of moderately organic (9%) soft silty sandy clay (A-7-5) and very loose (2 BPF) clayey silty sand (A-2-5). The moisture content of a tested organic sample was near 60 percent. Ground water depths through this segment range from less than 1 foot to 6 feet or more.

- L1- Rev. Station 185+00 to 202+48
- L1- Station 202+97 to 327+00

This segment crosses nearly level to gently sloping topography. Soils typically consist of 0.5 to 3 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) or very loose (2 BPF) sand (A-2-4) underlain by 1 to 5 feet or more of soft to stiff (2 to 11 BPF) silty sandy clay (A-6, A-7-6). The clay soils generally have plasticity indices ranging from 15 to 34, and natural moisture contents of 16 to 32 percent. Loose to medium dense (4 to 20 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) underlies the clay soils. The surficial clay soils are absent in several areas along this segment where there is a slight rise in topographic relief. Very loose to medium dense (3 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b) generally occurs in the slightly elevated areas. Ground water depths typically range from 1 to 6 feet through the segment, however, several poorly drained areas often contain standing water.

- L1- Station 327+00 to 367+60

This segment crosses nearly level topography. Soils typically consist of very loose to medium dense (2 to 15 BPF) fine to coarse sand (A-2-4, A-3). Ground water was measured at depths ranging from 4 to 8 feet.

- L1- Station 367+60 to 442+00

This segment crosses nearly level topography. Soils generally consist of 1 to 5 feet of very loose sand (2 BPF) or soft to medium stiff (2 to 4 BPF) clayey sandy silt (A-4) underlain by discontinuous

beds of medium stiff to stiff (5 to 15 BPF) silty sandy clay (A-6) and very loose to medium dense (2 to 30 BPF) fine to coarse sand (A-2-4, A-3). The surficial silt soils occurring between station 367+60 and 381+50 are slightly organic. The moisture content of a tested silt sample was near 30 percent and organic contents are estimated to be less than 5 percent. Clay soils through this section typically have plasticity indices ranging from 12 to 21 and natural moisture contents of 18 to 33 percent. Ground water depths typically range from 1 foot or less to 6 feet.

-L1- Station 442+00 to 453+00

This segment crosses moderately sloping topography. Soils generally consist of loose to medium dense (7 to 18 BPF) fine to coarse sand (A-2-4). Ground water depths typically range from 4 to 6 feet.

-L1- Station 453+00 to 501+25

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of soft (2 to 3 BPF) clayey sandy silt (A-4) underlain by interbedded medium stiff to stiff (6 to 11 BPF) silty sandy clay (A-6, A-2-6) and clayey sandy silt (A-4). Loose to medium dense (6 to 16 BPF) sand (A-2-4, A-1-b) underlies the cohesive soils. The clay soils have plasticity indices ranging from 15 to 34 and natural moisture contents of 22 to 26 percent. Ground water depths range from 1 to 6 feet or more.

-L1- Station 501+25 to 528+00

This segment crosses the flood plain of Conetoe Creek. Soils consist of 1 to 7 feet of very soft to soft, dark brown to black, moderately organic (5 to 10 percent), clayey fine sandy silt (A-4) and silty fine sandy clay (A-6, A-7-5, A-7-6). Moisture contents of tested organic samples typically range between 30 and 50 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 250 to 600 psf. An undisturbed (Shelby Tube) sample was taken in the cohesive soil and submitted for Triaxial CU and Consolidation testing. Loose to medium dense sand (A-2-4) underlies the organic soil. This area is either flooded or has ground water at a depth of 1 foot or less.

-L1- Station 528+00 to 554+00

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1 to 3 feet of very loose (2 BPF) fine to coarse sand (A-2-4) and soft (3 BPF) clayey sandy silt (A-4) underlain by interbedded very loose to medium dense (2 to 8 BPF) fine to coarse sand (A-2-4, A-3) and medium stiff to stiff (7 to 13 BPF) sandy clay (A-6, A-7-6). The clay soils have plasticity indices ranging from 12 to 21 and natural moisture contents of 16 to 19 percent. Ground water was measured at depths ranging from 1 to 5 feet.

-Y5- Rev. Station 24+26 to 29+81

Topography is nearly level. At the beginning of the relocated segment, soils consist of approximately 2 feet of soft to medium stiff fine sandy clay (A-6) underlain by loose to medium dense sand (A-2-4, A-1-b). The clay has a plasticity index of 22 and a moisture content of 35 percent. From station 26+50 to the end of the segment, soils consist of loose to medium dense sand (A-2-4, A-1-b). Ground water was measured at depths ranging from 0.5 to 4.0 feet.

-Y12- Station 12+50 to 45+00

This segment follows the alignment of SR 1523 (Shiloh Road). Soils generally consist of 1 to 3 feet of loose sand (A-2-4) fill underlain by 3 to 5 feet of interbedded medium stiff (7 BPF) sandy clay (A-6, A-7-6) and clayey sandy silt (A-4). The cohesive soils are underlain by medium dense (12 to 16 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). The clay soils typically have plasticity indices ranging from 16 to 44 and natural moisture contents of 22 to 33 percent. Ground water was measured at depths ranging from 3 to 8 feet.

-Y13- Rev. Station 10+00 to 59+87

This relocated segment crosses nearly level to very gently sloping topography. Soils typically consist of 1 to 2 feet of very loose, (1 to 2 BPF) fine to coarse sand (A-2-4) or soft sandy silt (A-4) underlain by loose to medium dense (5 to 10 BPF) fine to coarse sand (A-2-4, A-3). Portions of this segment contain interbeds of soft to medium stiff (4 to 5 BPF) silty sandy clay (A-6) and clayey sandy silt (A-4). The clay soils typically have plasticity indices of 13 to 18 and natural moisture contents of 20 to 28 percent. Ground water was measured at depths ranging from 2 to 4 feet.

-Y14- Station 14+00 to 35+50

This segment follows the alignment of SR 1526. Soils generally consist of 1 to 5 feet of loose silty sand, soft sandy silt (2 BPF) and medium stiff sandy clay (A-6) underlain by loose to medium dense (6 to 17 BPF) fine to coarse sand (A-2-4, A-3, A-1-b). Ground water was measured at a depth of 3 to 5 feet.

-Y15- Station 8+50 to 14+89

This segment follows the alignment of SR 1524. Soils typically consist of 2 to 6 feet of loose to medium dense clayey sand (A-2-4) underlain by medium stiff to stiff sandy clay (A-6). Ground water was measured at depths ranging from 4 to 6 feet.



-Y16- Station 25+00 to 59+50

This segment follows the alignment of NC 42. Soils typically consist of loose to medium dense clayey fine to coarse sand (A-2-4, A-2-6) with interbeds of very loose (2 BPF) silty sand (A-2-4), soft sandy silt (A-4) and medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

US 258 (-L- & -Y2-) Interchange

Ramp A Rev. Station 0+00 to 11+57

This segment closely parallels existing Ramp A at the US 258 interchange. Soils consist of loose to medium dense fine to coarse sand and clayey sand (A-2-4), stiff clayey sandy silt (A-4) and very stiff sandy silty clay (A-6, A-7-6). The clay has a plasticity index of 41 and a natural moisture content of 27 percent. The water table lies at a depth of 8 feet or more.

Ramp E Station 12+63 to 28+11

This segment crosses a portion of the Tar River flood plain. Soils typically consist of 1 to 7 feet of medium stiff to stiff silty sandy clay (A-6, A-7-5) underlain by medium dense fine to coarse sand (A-2-4, A-1-b). The clay soils typically have plasticity indices ranging from 13 to 38. A sample of clay was tested at 42 percent natural moisture. Ground water depths through this section vary with the amount of rainfall and the level of the Tar River. During this investigation, ground water depths ranged from 0 to 6 feet or more.

NC 33 (-Y6-) Interchange

Ramp A Station 0+00 to 17+89

Ramp B Station 0+00 to 15+06

Ramp C Station 0+00 to 22+07

Ramp D Station 0+00 to 14+48

This interchange area is located on nearly level to gently sloping topography. Soils typically consist of very loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) with some interbeds of medium stiff to stiff clayey sandy silt (A-4) and silty sandy clay (A-6). Ground water depths range from 2 to 6 feet or more.

SR 1523 (-Y12-) Interchange

Ramp A Station 0+00 to 19+65

This segment crosses nearly level topography. Soils generally consist of 1± foot of very loose silty sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 2 feet of medium stiff silty sandy clay (A-6, A-7-6), clayey sandy silt (A-4) or clayey sand (A-2-4). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soils typically have plasticity indices of 17 to 28 and natural moisture contents of 24 to 29 percent. Ground water was measured at depths ranging from 0 to 3 feet.

Ramp B Station 0+00 to 17+83  
Ramp C Station 0+00 to 16+44

This segment crosses nearly level topography. Soils typically consist of 1 to 2 feet of soft clayey sandy silt (A-4) underlain by 1 to 5 feet of medium stiff to stiff silty sandy clay (A-6, A-7-6). Medium dense fine to coarse sand (A-2-4) underlies the surficial soils. The clay soils typically have plasticity indices of 16 to 29 and natural moisture contents of 21 to 29 percent. Ground water was measured at depths ranging from 1 to 5 feet.

Ramp D Station 0+00 to 17+98

This segment crosses nearly level topography. Soils generally consist of 1 to 2 feet of very loose clayey sand (A-2-4) or soft clayey sandy silt (A-4) underlain by 1 to 3 feet of soft to medium stiff sandy clay (A-6). Medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The clay soil has plasticity indices of 16 to 19 and natural moisture contents of 21 to 24 percent. Ground water was measured at a depth of 1 to 3 feet.

SR 1524 (-Y13- Rev.) Interchange

Ramp A Station 0+00 to 17+05

This segment crosses nearly level to very gently sloping topography. Surficial soils consist of 2± feet of soft slightly organic clayey sandy silt (A-4) to station 1+50±, and 3± feet of medium stiff sandy clay (A-6) or clayey sandy silt (A-4) to station 8+00±. Loose to medium dense fine to coarse sand (A-2-4, A-3) underlies the surficial soils. The remaining soils throughout this segment consist of very loose to loose granular deposits (A-2-4). The clay soils have plasticity indices of 12 to 17 and natural moisture contents of 17 to 24 percent. Ground water was measured at depths ranging from 2 to 5 feet.

Ramp B Station 0+00 to 18+71  
Ramp C Station 0+00 to 17+29

This segment crosses nearly level topography. Soils consist of 1 to 2 feet of very loose to loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense fine to coarse sand (A-2-4, A-3). Ground water was measured at a depth of 3 to 5 feet.

Ramp D Station 0+00 to 17+83

This segment crosses nearly level to gently sloping topography. Soils to station 7+50± typically consist of 0.5 to 3 feet of soft, slightly organic clayey sandy silt (A-4) and very loose silty sand (A-2-4) underlain by medium stiff sandy clay. Loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b) underlies the surficial soils. Soils through the remainder of the segment consist of very loose to medium dense fine to coarse sand (A-2-4, A-3). The clay soils have plasticity indices of 13 to 17 and natural moisture contents of 17 to 19 percent. The water table typically lies at a depth of 3 to 4 feet.

NC 42 (-Y16-) Interchange

Ramp A Station 0+00 to 16+31

This segment crosses nearly level to very gently sloping topography. Soils generally consist of 1± foot of very loose silty fine to coarse sand (A-2-4) underlain by loose to medium dense silty and clayey fine to coarse sand (A-2-4) with interbeds of medium stiff sandy clay (A-6). Ground water depths range from 4 to 6 feet or more.

Ramp B Station 0+00 to 18+00

This segment is located in the flood plain of Conetoe Creek to station 15+00± and on very gently sloping upland to station 18+00. Flood plain soils generally consist of up to 7 feet of very soft to soft moderately organic (6%) clayey sandy silt (A-4) and silty sandy clay (A-6) underlain by loose to medium dense sand (A-2-4). The moisture content of tested organic samples range from 24 to 65 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 550 to 1400 psf. Upland soils consist of loose to medium dense silty and clayey fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. In the flood plain, water is typically near or at the ground surface.

Ramp C Station 0+00 to 17+92

This segment is located in the flood plain of Conetoe Creek to station 12+75 and on very gently sloping upland to station 17+92. Flood plain soils generally consist of up to 5 feet of very soft to soft moderately organic (10%) clayey sandy silt (A-4) underlain by medium stiff sandy clay, clayey sandy silt, and loose to medium dense fine to coarse sand (A-2-4, A-3). Moisture content of a tested organic sample is near 36 percent. Vane Shear tests performed in the organic deposits indicated shear strengths of 600 to 1100 psf. Upland soils consist of very loose to medium dense fine to coarse sand (A-2-4, A-2-6). Ground water is at a depth of 3 to 4 feet in the upland area. On the flood plain, water is typically near or at the ground surface.

Ramp D Station 0+00 to 17+57

This segment crosses nearly level topography. Soils consist of 1± foot of very loose fine to coarse sand (A-2-4) or soft clayey sandy silt (A-4) underlain by interbedded loose to medium dense sand (A-2-4, A-2-6) and medium stiff to stiff silty sandy clay (A-6, A-7-6). The clay soils have plasticity indices of 12 to 21. A sample of clay was tested at 16 percent natural moisture. Ground water depths range from 2 to 6 feet or more.

Culverts

Based on available Culvert Survey and Hydraulic Design Reports, reinforced concrete box culverts (RCBC) are proposed at the following locations:

1. Cromwell Canal at -L1- Station 264+92
2. Mitchell Swamp Canal at -L1- Station 323+26
3. Ballahack Canal at -L1- Station 399+41
4. Conetoe Creek at -L1- Station 509+28

Borings made in the immediate vicinity of the above sites show that soils underlying the proposed culvert beds should consist of loose to medium dense fine to coarse sand (A-2-4, A-3, A-1-b).

California Bearing Ratio (CBR) Samples

Bulk samples were taken at the following locations along the project and submitted for testing:

<u>Sample</u>	<u>Station</u>	<u>Depth</u>
CBR-1	441+00 -L1-	0.0 - 3.0'
CBR-2	176+00 -L1- Rev.	0.0 - 10.0'

Respectively submitted,



E. A. Witort, Project Geologist

EAW:gr

# R-2111A SOIL SAMPLE TRANSMITTAL

PROJECT NO. 6.299001T ROUTE US 64 Reloc. COUNTY Edgewood

PROJECT GEOLOGIST E.A. Witont DATE 3-9-92

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<u>ST-1</u> PRIMARY <input checked="" type="checkbox"/> ALT. FOR _____	STA. <u>523+00</u> OFFSET <u>9</u> SAMP. DEPTH <u>1.0 - 3.0'</u> G.W. DEPTH <u>0.5'</u>	TRIAXIAL CU <input checked="" type="checkbox"/> UU _____ CD _____ CONSOLIDATION <input checked="" type="checkbox"/> PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. <u>V. SOFT SLI. ORG. SILTY CLAY</u> SOIL STRUCTURE _____ EST. BLOWS/FT. <u>1-2</u> OTHER _____ WHERE USED: - UNDER <u>8</u> FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____

*File*

**GEOTECHNICAL UNIT  
SOIL SAMPLE TRANSMITTAL**

R-2111A

PROJECT NO. 6.299001T ROUTE US 64 RELOC. COUNTY Edgecombe

PROJECT GEOLOGIST E.A. Winton DATE 9-3-92

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<u>ST-2</u> PRIMARY <input checked="" type="checkbox"/> ALT. FOR _____	STA. <u>12+00 LPF</u> OFFSET <u>E</u> SAMP. DEPTH <u>2.5-4.5'</u> G.W. DEPTH <u>1.0'</u>	TRIAXIAL CU <input checked="" type="checkbox"/> UU _____ CD _____ CONSOLIDATION <input checked="" type="checkbox"/> PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. <u>YEL BRN F. SDY SILTY CLAY</u> SOIL STRUCTURE _____ EST. BLOWS/FT. <u>5-7</u> OTHER _____ WHERE USED: - UNDER <u>50</u> FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ %COMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 MATERIALS & TEST UNIT  
 SOILS LABORATORY

T.I.P. ID NO.

REPORT ON SAMPLES OF: SOIL FOR QUALITY

PROJECT: 6.299001T COUNTY: EDGECOMBE OWNER:  
 DATE: SAMPLED: 3/24/92 RECEIVED: 4/23/92 REPORTED: 4/27/92  
 SAMPLES FROM: -L1- BY: E. A. WITORT  
 SUBMITTED BY: W. H. JOHNSON (T-2608) 1990 STANDARD SPECIFICATIONS

4/28/92

TEST RESULTS

Proj. Sample No.	ST-1(1)	ST-1(2&3)			
Lab. Sample No. 553	924	925			
Retained #4 Sieve %	--	--			
Passing #10 Sieve %	100	100			
Passing #40 Sieve %	92	94			
Passing #200 Sieve %	38	48			

MINUS #10 FRACTION

SOIL MORTAR - 100%					
Coarse Sand Ret-#60 %	18	13			
Fine Sand Ret -#270 %	51	44			
Silt 0.05-0.005 MM %	23	29			
Clay < 0.005 MM %	8	14			
Passing #40 Sieve %	--	--			
Passing #200 Sieve %	--	--			
L.L.	26	33			
P.I.	NP	NP			
AASHTO Classification	A-4(1)	A-4(3)			
Texture					
Station	523+00	523+00			
Hole No.					
Depth (Ft)	1.0	1.0			
to	3.0	3.0			
Organic Content	5.6				

cc: W. L. Moore  
 J. F. Ledbetter  
 E. A. Witort  
 W. H. Johnson  
 File

W 3/8  
 47.71

*E. A. Witort*  
 Soils Engineer

191  
 3 73

N.C.D.O.T. - Materials & Tests Lab

One Dimensional Consolidation Test

Project # 6.299-001T County Edgecombe Lab. No. T-2608

Sample No. ST-1 Depth 1.0-3.0 Sp. Gr. 2.535 Solid Hto .4311

Sta. 523+00

AASHTO Class: A-4(3) L.L. 33 P.I. NP

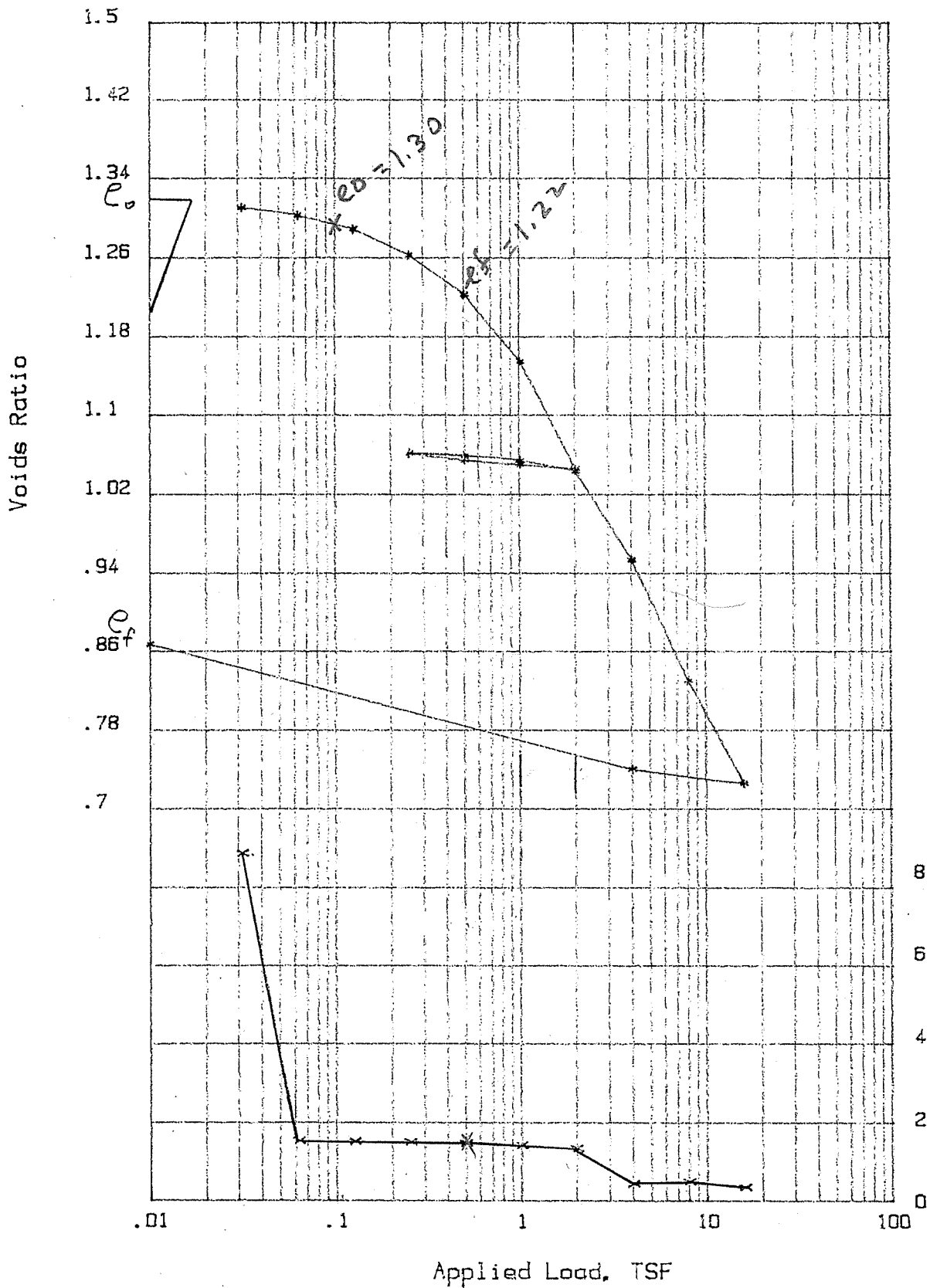
Remarks: Black Silt

Acc. Load Ton	Spec. Ht @F.D.R. inches	Void Ratio e	Time @ % Compression		C <sub>v</sub> : Consolidation in Ft <sup>2</sup> /day	
			Sq. Rt.	MINUTES Semi-Log	.212 Ht <sup>2</sup> /t90	.197 Ht <sup>2</sup> /t50
	1.000	1.323	—		—	
.03	.9949	1.3100	.25		8.43	
.06	.9914	1.3020	1.44		1.46	
.13	.9855	1.2880	1.44		1.45	1.44
.25	.9744	1.2620	1.44		1.43	
.50	.9573	1.2220	1.44		1.40	
1.00	.9280	1.1540	1.44		1.35	
2.00	.8814	1.0450	1.44		1.27	
.50	.8871	1.0580	—		—	
1.00	.8850	1.0530	—		—	
2.00	.8806	1.0430	—		—	
4.00	.8417	.9520	4.0		.41	
8.00	.7887	.8290	3.24		.47	
16.00	.7437	.7240	4.0		.33	
4.0	.7498	.7380	—		—	
.01	.8047	.8660	—		—	

Density Data \* Data at 16TSF

	PreTest	*Post Test
Moisture, %	47.71	28.60
Dry Unit Wt. (PCF)	68.04	91.49
Void Ratio, e	1.3230	.7240
Saturation, %	91.66	100.00





Coeff. of consolidation ( $\text{ft}^2/\text{day}$ )  $\swarrow$

Project number: 6.299001T

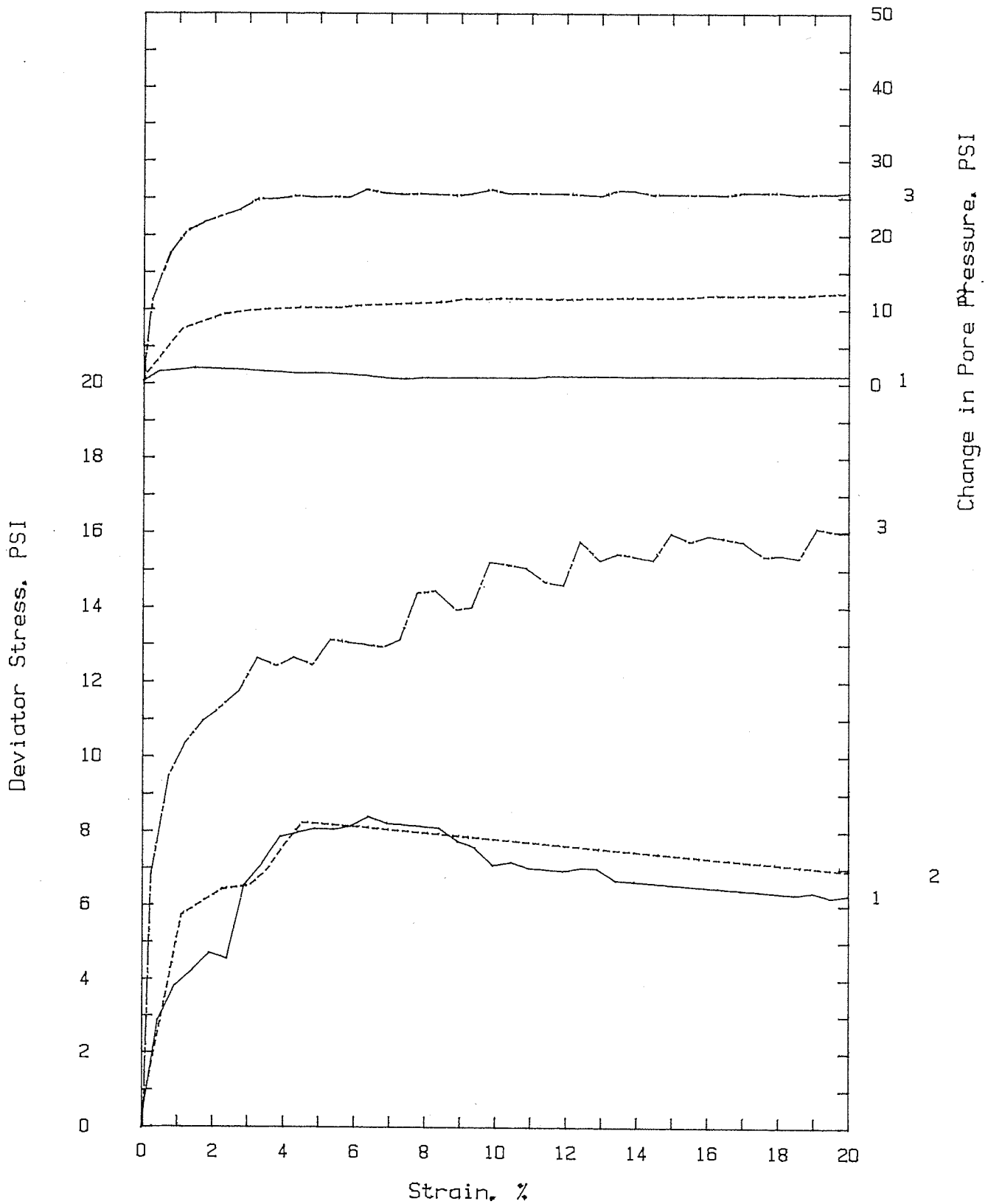
Sample number: ST-1 T-2608

Borehole number: 523+00

Sample depth: 1.0-3.0 Feet

NORTH CAROLINA D. O. T.

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST



Project number: 6,99001T  
 Borehole number: 523+00

Sample number: ST-1 T-2608  
 Sample depth: 1-3 Feet

28

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

NORTH CAROLINA D. O. T.

Mohr Circle at Maximum Deviator Stress

C: \_\_\_\_\_  
σ: \_\_\_\_\_

24

20

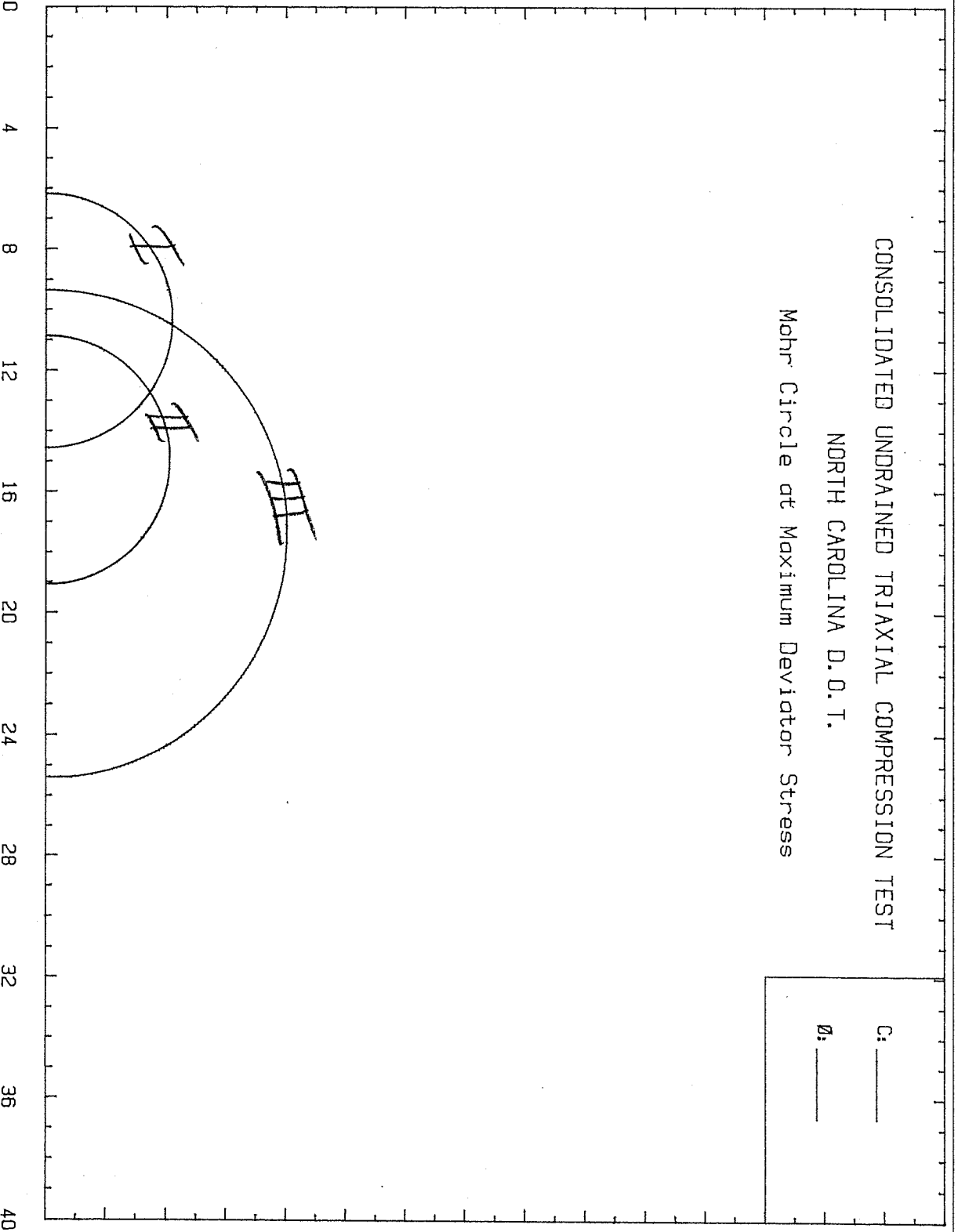
16

12

8

4

0



Project number: 6299001T

Borehole number: 523+00

Sample description:

Sample number: ST-1 T-2608

Sample depth: 1-3 Feet

Effective Stress, PSI

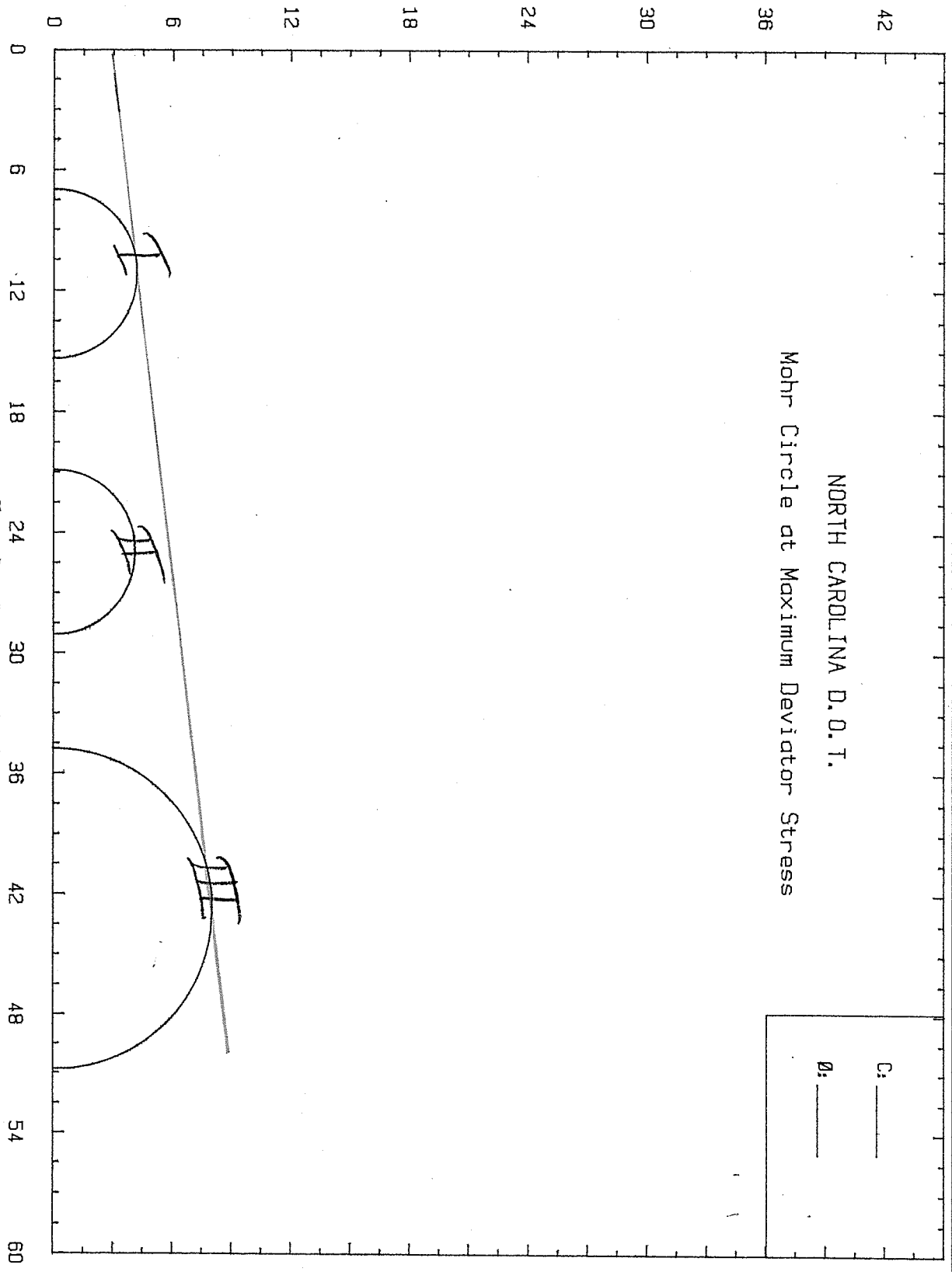
Shear Stress, PSI

NORTH CAROLINA D. O. T.

Mohr Circle at Maximum Deviator Stress

C: \_\_\_\_\_  
0: \_\_\_\_\_

Shear Stress, PSI  $3 \times 144 = 432 \text{ PSF}$



Project number: 6299001T  
Borehole number: 523+00  
Sample description:

Sample number: ST-1 T-2608  
Sample depth: 1-3 Feet  
Total Stress, PSI

T-2608  
1 of 1

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 1

Project Number: 6299001T  
 Station Number: 523+00  
 Sample Number: ST-1 T-2608  
 Sample Depth: 1-3 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.10	0.00	6.84	0.00
0.000	0.00	100.20	.10	6.74	
0.000	1.00	100.20	.10	6.74	.62
.027	18.00	101.50	1.40	5.44	.49
.055	24.00	101.70	1.60	5.24	.42
.086	27.00	102.00	1.90	4.94	.45
.114	30.00	101.80	1.70	5.14	.36
.144	29.00	101.70	1.60	5.24	.35
.174	42.00	101.60	1.50	5.34	.23
.204	46.00	101.40	1.30	5.54	.18
.234	51.00	101.30	1.20	5.64	.15
.263	52.00	101.10	1.00	5.84	.13
.293	53.00	101.30	1.20	5.64	.15
.323	53.00	101.10	1.00	5.84	.12
.353	54.00	101.00	.90	5.94	.11
.383	56.00	100.80	.70	6.14	.08
.415	55.00	100.50	.40	6.44	.05
.445	55.00	100.40	.30	6.54	.04
.474	55.00	100.70	.60	6.24	.07
.505	55.00	100.60	.50	6.34	.06
.535	53.00	100.60	.50	6.34	.06
.565	52.00	100.70	.60	6.24	.08
.595	49.00	100.70	.60	6.24	.08
.626	50.00	100.70	.60	6.24	.08
.656	49.00	100.60	.50	6.34	.07
.686	49.00	100.90	.80	6.04	.12
.714	49.00	100.90	.80	6.04	.12
.744	50.00	100.80	.70	6.14	.10
.773	50.00	100.90	.80	6.04	.11
.804	48.00	100.80	.70	6.14	.11
.835	48.00	100.70	.60	6.24	.09
.865	48.00	100.90	.80	6.04	.12
.896	48.00	100.90	.80	6.04	.12
.926	48.00	100.80	.70	6.14	.11
.955	48.00	100.80	.70	6.14	.11
.986	48.00	100.80	.70	6.14	.11
1.016	48.00	100.80	.70	6.14	.11
1.046	48.00	100.70	.60	6.24	.09
1.077	48.00	100.90	.80	6.04	.13
1.107	48.00	100.90	.80	6.04	.13
1.137	49.00	100.80	.70	6.14	.11
1.168	48.00	100.90	.80	6.04	.13
1.198	49.00	100.80	.70	6.14	.11

T-2608  
20A1

AXIAL STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	6.84	-6.19
0.00	0.00	0.00	6.74	1.00
0.00	.16	.08	6.82	1.02
.45	2.87	1.43	6.87	1.53
.92	3.81	1.90	7.14	1.73
1.43	4.26	2.13	7.07	1.86
1.90	4.71	2.36	7.50	1.92
2.40	4.53	2.27	7.51	1.86
2.90	6.53	3.26	8.60	2.22
3.40	7.11	3.56	9.10	2.28
3.90	7.85	3.92	9.56	2.39
4.38	7.96	3.98	9.82	2.36
4.88	8.07	4.04	9.68	2.43
5.38	8.03	4.01	9.85	2.37
5.88	8.14	4.07	10.01	2.37
6.38	8.39	4.20	10.34	2.37
6.92	8.20	4.10	10.54	2.27
7.42	8.15	4.08	10.62	2.25
7.90	8.11	4.06	10.30	2.30
8.42	8.06	4.03	10.37	2.27
8.92	7.73	3.86	10.20	2.22
9.42	7.54	3.77	10.01	2.21
9.92	7.07	3.53	9.77	2.13
10.43	7.17	3.59	9.83	2.15
10.93	6.99	3.49	9.83	2.10
11.43	6.95	3.47	9.51	2.15
11.90	6.91	3.46	9.50	2.14
12.40	7.01	3.51	9.65	2.14
12.88	6.97	3.49	9.53	2.15
13.40	6.66	3.33	9.47	2.08
13.92	6.62	3.31	9.55	2.06
14.42	6.58	3.29	9.33	2.09
14.93	6.54	3.27	9.31	2.08
15.43	6.50	3.25	9.39	2.06
15.92	6.46	3.23	9.37	2.05
16.43	6.42	3.21	9.35	2.05
16.93	6.38	3.19	9.33	2.04
17.43	6.35	3.17	9.41	2.02
17.95	6.31	3.15	9.19	2.04
18.45	6.27	3.13	9.17	2.04
18.95	6.36	3.18	9.32	2.04
19.47	6.19	3.09	9.13	2.02
19.97	6.28	3.14	9.28	2.02
20.47	6.11	3.06	9.30	1.98

T-2608  
10P2

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 2  
=====

Project Number: 6299001T  
Station Number: 523+00  
Sample Number: ST-1 T-2608  
Sample Depth: 1-3 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.00	0.00	20.83	0.00
.001	0.00	100.40	.40	20.43	
.003	4.00	100.90	.90	19.93	1.44
.067	37.00	107.20	7.20	13.63	1.26
.137	42.00	109.10	9.10	11.73	1.41
.183	43.00	109.60	9.60	11.23	1.47
.213	46.00	109.80	9.80	11.03	1.41
.243	51.00	109.90	9.90	10.93	1.29
.272	55.00	110.00	10.00	10.83	1.21
.303	55.00	110.00	10.00	10.83	1.22
.333	55.00	110.00	10.00	10.83	1.23
.363	55.00	110.30	10.30	10.53	1.27
.393	55.00	110.40	10.40	10.43	1.29
.424	55.00	110.50	10.50	10.33	1.31
.453	55.00	110.60	10.60	10.23	1.33
.485	55.00	110.70	10.70	10.13	1.35
.515	55.00	110.80	10.80	10.03	1.37
.545	55.00	111.20	11.20	9.63	1.43
.575	55.00	111.20	11.20	9.63	1.44
.606	55.00	111.30	11.30	9.53	1.46
.635	55.00	111.30	11.30	9.53	1.47
.665	55.00	111.20	11.20	9.63	1.46
.695	55.00	111.10	11.10	9.73	1.46
.724	55.00	111.10	11.10	9.73	1.46
.754	55.00	111.30	11.30	9.53	1.50
.785	55.00	111.30	11.30	9.53	1.51
.815	55.00	111.40	11.40	9.43	1.53
.845	55.00	111.40	11.40	9.43	1.54
.875	55.00	111.40	11.40	9.43	1.55
.905	55.00	111.40	11.40	9.43	1.56
.935	55.00	111.50	11.50	9.33	1.58
.965	55.00	111.70	11.70	9.13	1.62
.995	55.00	111.60	11.60	9.23	1.61
1.026	55.00	111.70	11.70	9.13	1.64
1.056	55.00	111.70	11.70	9.13	1.65
1.086	55.00	111.70	11.70	9.13	1.66
1.116	55.00	111.70	11.70	9.13	1.67
1.147	55.00	111.90	11.90	8.93	1.71
1.177	55.00	112.00	12.00	8.83	1.73
1.206	55.00	112.00	12.00	8.83	1.74
1.237	56.00	112.00	12.00	8.83	1.72
1.267	55.00	112.00	12.00	8.83	1.76
1.297	55.00	112.00	12.00	8.83	1.78

T-2608  
2092

AXIAL STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	20.83	-1.31
.02	0.00	0.00	20.43	1.00
.05	.63	.31	20.24	1.03
1.12	5.74	2.87	16.50	1.42
2.28	6.43	3.22	14.95	1.55
3.05	6.53	3.27	14.50	1.58
3.55	6.95	3.48	14.51	1.63
4.05	7.67	3.84	14.77	1.70
4.53	8.23	4.12	14.95	1.76
5.05	8.19	4.09	14.92	1.76
5.55	8.14	4.07	14.90	1.75
6.05	8.10	4.05	14.58	1.77
6.55	8.06	4.03	14.46	1.77
7.07	8.01	4.01	14.34	1.78
7.55	7.97	3.99	14.22	1.78
8.08	7.92	3.96	14.09	1.78
8.58	7.88	3.94	13.97	1.79
9.08	7.84	3.92	13.55	1.81
9.58	7.80	3.90	13.53	1.81
10.10	7.75	3.88	13.41	1.81
10.58	7.71	3.85	13.38	1.81
11.08	7.67	3.83	13.46	1.80
11.58	7.62	3.81	13.54	1.78
12.07	7.58	3.79	13.52	1.78
12.57	7.54	3.77	13.30	1.79
13.08	7.49	3.75	13.28	1.79
13.58	7.45	3.73	13.16	1.79
14.08	7.41	3.70	13.13	1.79
14.58	7.36	3.68	13.11	1.78
15.08	7.32	3.66	13.09	1.78
15.58	7.28	3.64	12.97	1.78
16.08	7.23	3.62	12.75	1.79
16.58	7.19	3.60	12.83	1.78
17.10	7.15	3.57	12.70	1.78
17.60	7.10	3.55	12.68	1.78
18.10	7.06	3.53	12.66	1.77
18.60	7.02	3.51	12.64	1.77
19.12	6.97	3.49	12.42	1.78
19.62	6.93	3.47	12.30	1.78
20.10	6.89	3.44	12.27	1.78
20.62	6.97	3.48	12.31	1.79
21.12	6.80	3.40	12.23	1.77
21.62	6.76	3.38	12.21	1.77
22.12	6.71	3.36	12.19	1.76



T-2608  
10f3

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 3

Project Number: 6J99001T  
 Station Number: 523+00  
 Sample Number: ST-1 T-2608  
 Sample Depth: 1-3 Feet

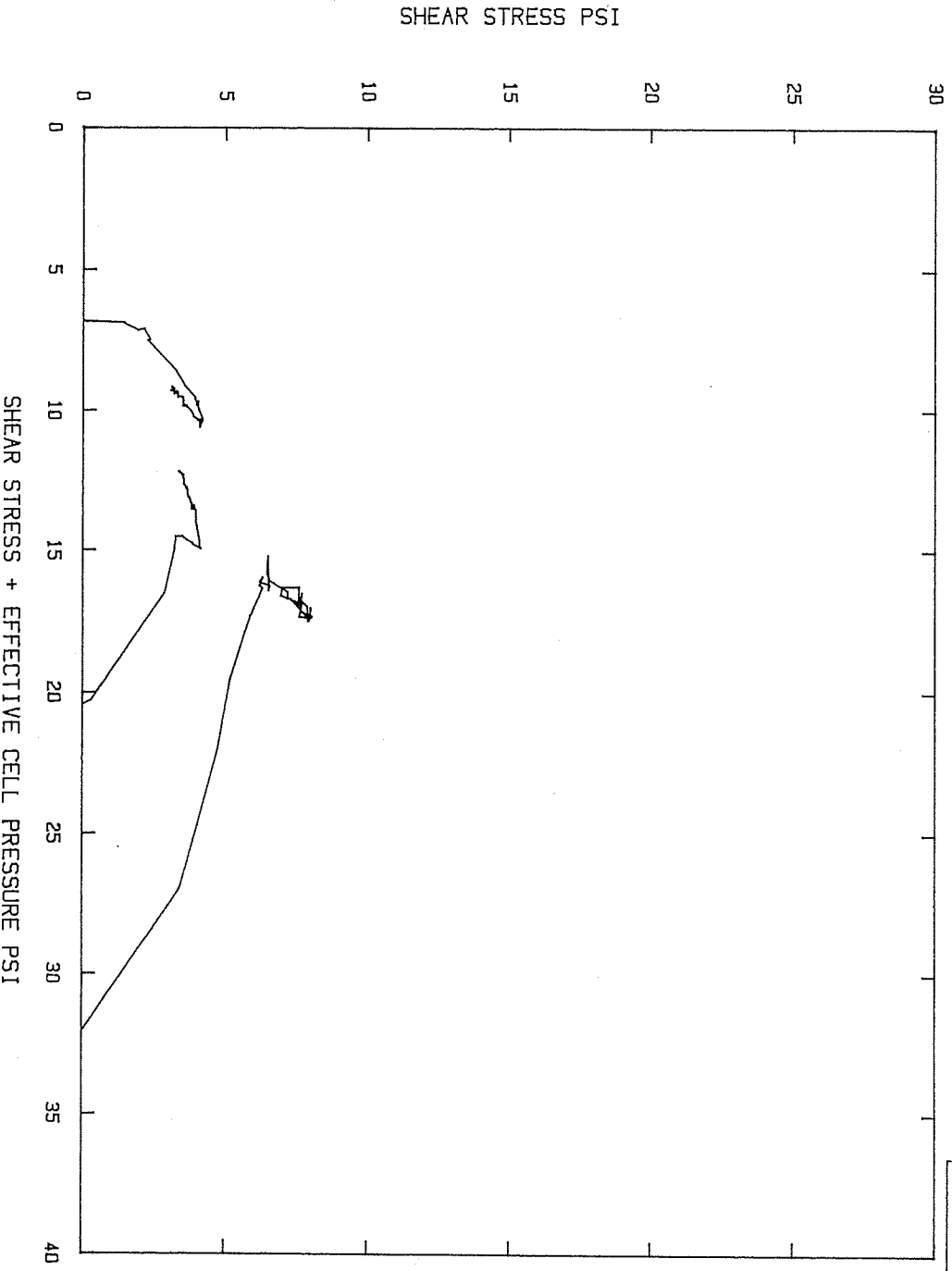
DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.10	0.00	34.62	0.00
.002	-3.00	101.70	1.60	33.02	-3.36
.002	-3.00	102.10	2.00	32.62	-4.19
.015	43.00	111.20	11.10	23.52	1.63
.044	60.00	117.40	17.30	17.32	1.83
.072	66.00	120.40	20.30	14.32	1.96
.101	70.00	121.60	21.50	13.12	1.97
.133	73.00	122.50	22.40	12.22	1.97
.162	76.00	123.30	23.20	11.42	1.97
.192	82.00	124.70	24.60	10.02	1.95
.223	81.00	124.70	24.60	10.02	1.99
.252	83.00	125.10	25.00	9.62	1.98
CHANNEL 5 10:59:11 +1625					
.283	82.00	124.80	24.70	9.92	1.99
.313	87.00	125.00	24.90	9.72	1.90
.342	87.00	124.80	24.70	9.92	1.90
.371	87.00	126.00	25.90	8.72	2.00
.401	87.00	125.40	25.30	9.32	1.96
.430	89.00	125.20	25.10	9.52	1.91
.459	98.00	125.40	25.30	9.32	1.76
.489	99.00	125.20	25.10	9.52	1.74
.523	96.00	125.10	25.00	9.62	1.80
.550	97.00	125.40	25.30	9.32	1.81
.580	106.00	126.00	25.90	8.72	1.70
.611	106.00	125.30	25.20	9.42	1.67
.641	106.00	125.40	25.30	9.32	1.68
.673	104.00	125.30	25.20	9.42	1.72
.703	104.00	125.30	25.20	9.42	1.73
.731	113.00	125.20	25.10	9.52	1.59
.764	110.00	125.00	24.90	9.72	1.64
.792	112.00	125.90	25.80	8.82	1.67
.822	112.00	125.70	25.60	9.02	1.67
.853	112.00	125.20	25.10	9.52	1.65
.883	118.00	125.30	25.20	9.42	1.58
.914	117.00	125.20	25.10	9.52	1.60
.944	119.00	125.20	25.10	9.52	1.58
.973	119.00	125.10	25.00	9.62	1.58
1.004	119.00	125.60	25.50	9.12	1.62
1.037	117.00	125.60	25.50	9.12	1.66
1.064	118.00	125.60	25.50	9.12	1.66
1.096	118.00	125.20	25.10	9.52	1.64
1.126	125.00	125.40	25.30	9.32	1.57
1.156	125.00	125.30	25.20	9.42	1.58

T-2608  
2 of 3

AXIAL CHANNEL STRAIN	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	34.62	-.35
.03	-.48	-.24	32.78	.99
.03	-.48	-.24	32.38	.99
.25	6.82	3.41	26.93	1.29
.75	9.47	4.73	22.05	1.55
1.22	10.36	5.18	19.50	1.72
1.71	10.94	5.47	18.59	1.83
2.25	11.34	5.67	17.89	1.93
2.75	11.75	5.88	17.30	2.03
3.25	12.61	6.31	16.33	2.26
3.78	12.39	6.20	16.22	2.24
4.27	12.63	6.32	15.94	2.31
4.80	12.41	6.21	16.13	2.25
5.31	13.10	6.55	16.27	2.35
5.80	13.03	6.51	16.43	2.31
6.29	12.96	6.48	15.20	2.49
6.80	12.89	6.45	15.77	2.38
7.29	13.12	6.56	16.08	2.38
7.78	14.37	7.18	16.50	2.54
8.29	14.43	7.22	16.74	2.52
8.86	13.91	6.95	16.57	2.45
9.32	13.98	6.99	16.31	2.50
9.83	15.20	7.60	16.32	2.74
10.36	15.11	7.55	16.97	2.60
10.86	15.02	7.51	16.83	2.61
11.41	14.65	7.32	16.74	2.55
11.92	14.56	7.28	16.70	2.55
12.39	15.74	7.87	17.39	2.65
12.95	15.22	7.61	17.33	2.57
13.42	15.42	7.71	16.53	2.75
13.93	15.32	7.66	16.68	2.70
14.46	15.23	7.62	17.14	2.60
14.97	15.95	7.98	17.40	2.69
15.49	15.72	7.86	17.38	2.65
16.00	15.89	7.95	17.47	2.67
16.49	15.80	7.90	17.52	2.64
17.02	15.70	7.85	16.97	2.72
17.58	15.33	7.67	16.79	2.68
18.03	15.38	7.69	16.81	2.69
18.58	15.27	7.64	17.16	2.60
19.08	16.08	8.04	17.36	2.73
19.59	15.98	7.99	17.41	2.70
20.08	16.01	8.00	17.02	2.77
20.61	16.03	8.01	17.13	2.76

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

C: \_\_\_\_\_  
Ø: \_\_\_\_\_



PROJECT NUMBER: 6,099001T  
SAMPLE NUMBER: ST-1 T-2608

STATION NUMBER: 523+00  
DEPTH: 1-3feet

Project: 6,299001T

Station: 523+00

County: Edgecombe

Sample No: ST-1

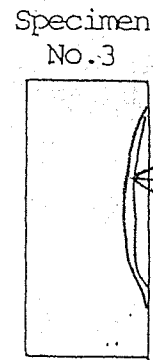
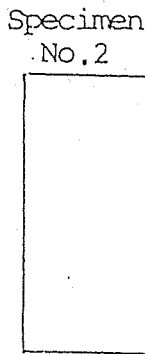
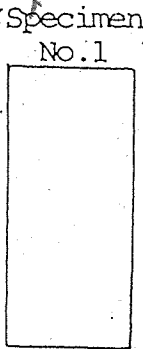
Depth: 1-3

SPECIMEN NUMBER		1	2	3
PRE-TEST	WATER CONTENT %	W <sub>1</sub> 43.54	53.46	47.35
	DRY DENSITY, PCF	γ <sub>d1</sub> 75.72	65.24	67.76
	SATURATION %	S <sub>1</sub> 100.00	95.51	90.32
	VOID RATIO	e <sub>1</sub> 1.1055	1.4189	1.3289
	DIAMETER, IN.	D <sub>1</sub> 2.840	2.850	2.850
	HEIGHT, IN	H <sub>1</sub> 6.020	6.215	5.975
	TIME TO (G <sub>1</sub> -G <sub>3</sub> ) Max. Min.	t 42.53	30.20	125.08
POST-TEST	WATER CONTENT %	W <sub>1</sub> 33.51	35.20	35.10
	DRY DENSITY, PCF	γ <sub>d1</sub> 85.80	83.40	83.50
	SATURATION %	S <sub>1</sub> 100.00	100.00	100.00
	VOID RATIO	e <sub>1</sub> .8582	.8923	.8899
		STRAIN RATE mm/minute	.2286	.2286

	#1	#2+3
LL:	26	33
PL:	—	—
PI:	NP	NP
G:	2.561	2.535

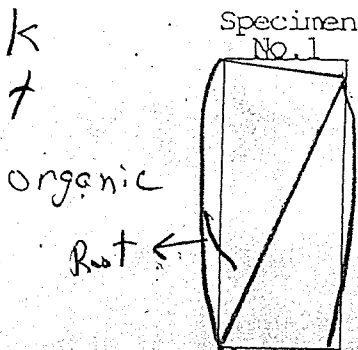
PRE-TEST  
Specimen Condition

$\gamma_w = (\gamma_d (1+w))$   
 $\gamma_w = (75.72)(1.5346)$   
 $\gamma_w = 116$



FAILURE MODE:

Black Silt



Black Silt



Black Silt



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MATERIALS & TEST UNIT  
SOILS LABORATORY

T.I.P. ID NO. R-2111 A

REPORT ON SAMPLES OF: SOIL FOR QUALITY

PROJECT: 6.299001T COUNTY: EDGEcombe  
DATE: SAMPLED: 8/27/92 RECEIVED: 9/17/92  
SAMPLES FROM: LOOP F  
SUBMITTED BY: W. H. JOHNSON (T-2719)

OWNER:  
REPORTED: 9/21/92  
BY: E. A. WITORT  
1990 STANDARD SPECIFICATIONS

9/23/92

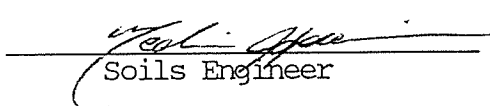
## TEST RESULTS

Proj. Sample No.		ST-2			
Lab. Sample No.	560	325			
Retained #4 Sieve %		--			
Passing #10 Sieve %		98			
Passing #40 Sieve %		92			
Passing #200 Sieve %		72			

MINUS #10 FRACTION

SOIL MORTAR -	100%				
Coarse Sand Ret-#60 %	9				
Fine Sand Ret -#270 %	22				
Silt 0.05-0.005 MM %	26				
Clay < 0.005 MM %	43				
Passing #40 Sieve %	--				
Passing #200 Sieve %	--				
L.L.	36				
P.I.	14				
AASHTO Classification	A-6(8)				
Texture					
Station	12+00				
Hole No.					
Depth (Ft)	2.5				
to	4.5				

cc: W. L. MOORE  
J. F. LEDBETTER  
E. A. WITORT ✓  
W. H. JOHNSON  
SOILS FILE

  
Soils Engineer

Project # 6.299001T County Edgecombe Lab. No. T-2719

Sample No. ST-2 Depth 2.5-4.5 Sp. Gr. 2.642 Solid Hto .5595

Sta. 12+00

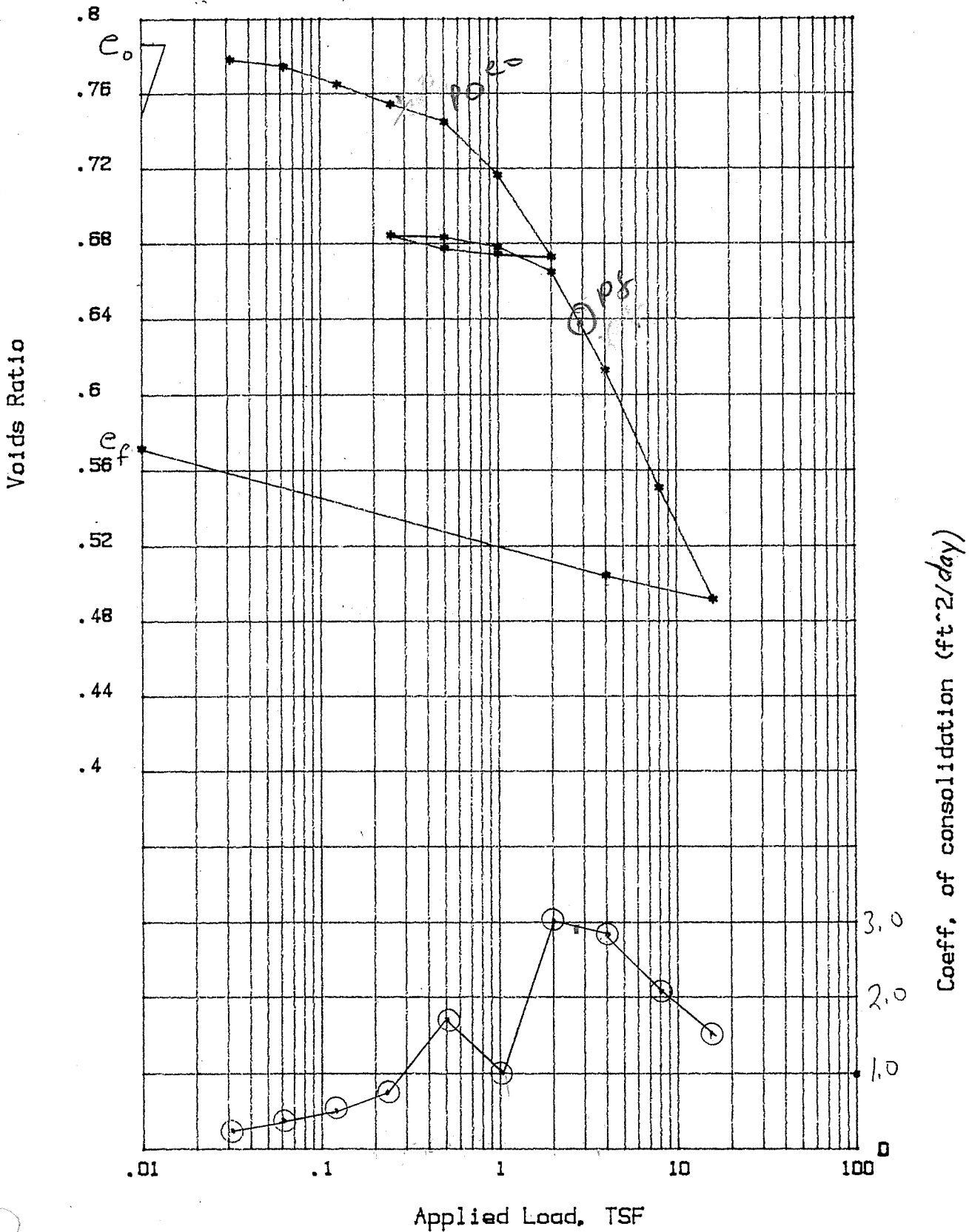
ASHTO Class: A-6(8) L.L. 36 P.I. 14

Remarks: Yellow Brown Silty Clay

Acc. Load Ton	Spec.Ht @F.D.R. inches	Void Ratio e	Time @ % Compression Sq. MINUTES Rt.	Semi- Log	C <sub>v</sub> : Consolidation in Ft <sup>2</sup> /day Coefficient	
					.212 Ht <sup>2</sup> /t90	.197 Ht <sup>2</sup> /t50
	1.0	.7890	—		—	
.03	.9936	.7770	10.24		.21	
.06	.9915	.7740	5.76		.36	
.13	.9860	.7640	4.16		.50	
.25	.9801	.7540	2.56		.81	
.50	.9749	.7440	1.21		1.68	
.00	.9595	.7160	1.96		1.03	
2.00	.9351	.6720	.64		3.05	
.50	.9413	.6820	—		—	
1.00	.9388	.6770	—		—	
2.00	.9314	.6640	—		—	
4.00	.9024	.6120	.64		2.87	
8.00	.8675	.5500	.81		2.13	
16.00	.8344	.4900	1.0		1.60	
4.0	.8416	.5030	—		—	
.01	.8793	.5710	—		—	

$\gamma_w = (\gamma_{d_{16}})(1+w) = 92.04(1.2182) = 117.6$   
 Density Data \* Data at 16 TSF

	PreTest	*Post Test
Moisture, %	27.82	18.60
Dry Unit Wt. (PCF)	92.04	110.31
Void Ratio, e	.7890	.4900
Saturation, %	93.34	100.00



Project number: 6.299001T

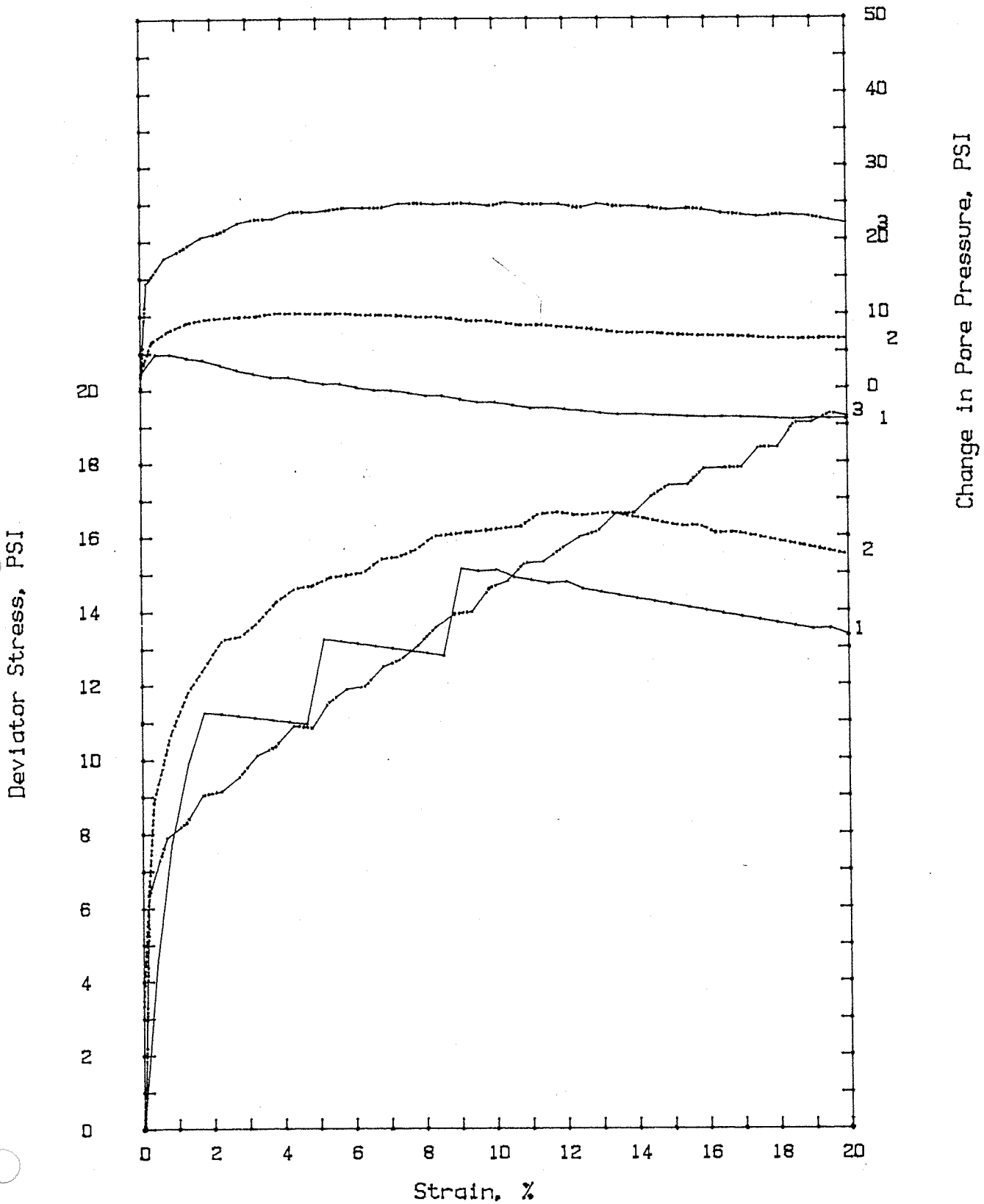
Borehole number: 12+00

NORTH CAROLINA D. O. T.

Sample number: ST-2 T-2719

Sample depth: 2.5-4.5 Feet

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST



Project number: 6.299001T  
Borehole number: 12+00

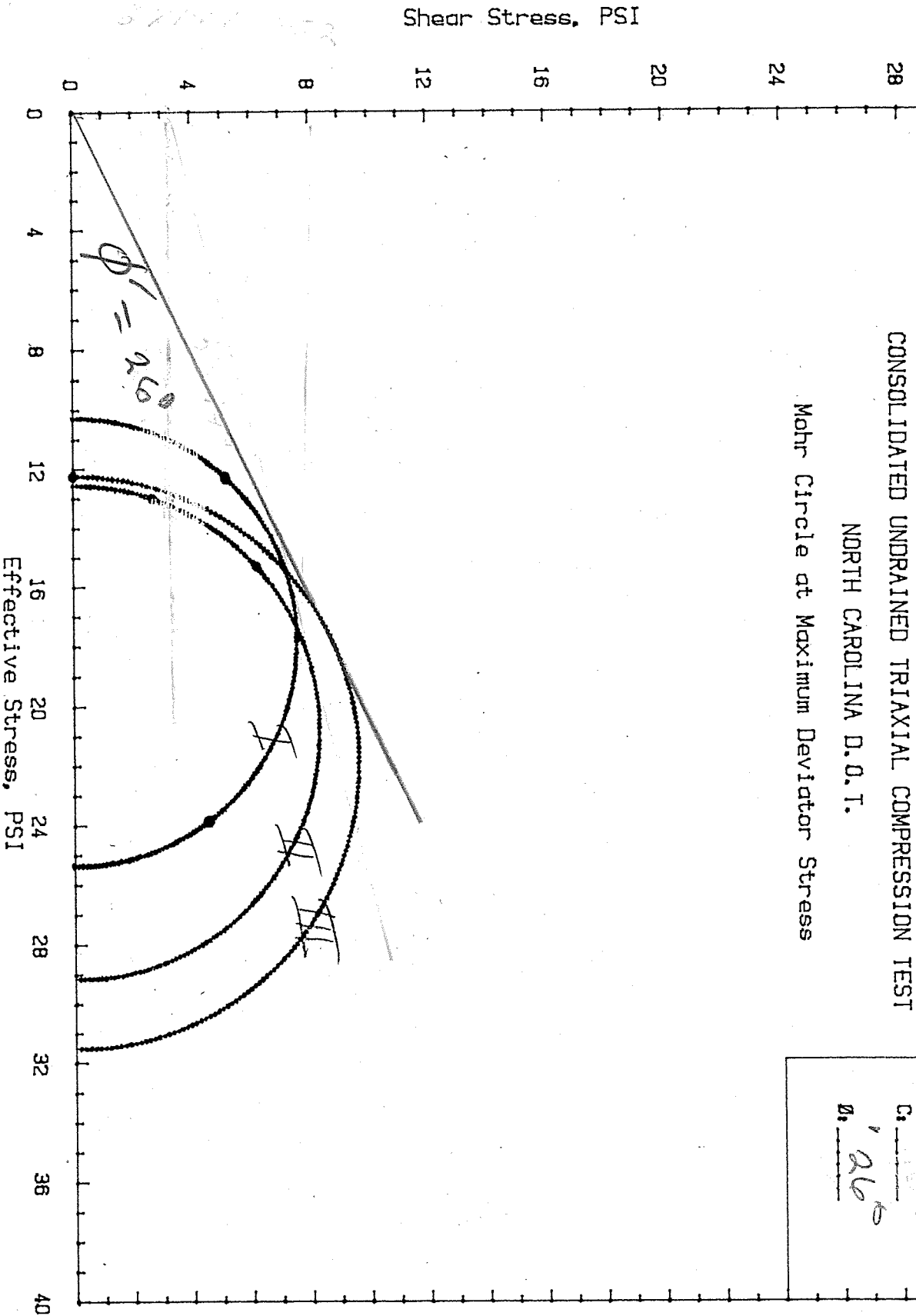
Sample number: ST-2 T-2719  
Sample depth: 2.5-4.5 Feet



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
 NORTH CAROLINA D.O.T.

Mohr Circle at Maximum Deviator Stress

C:             
 $\phi'$ : 26°

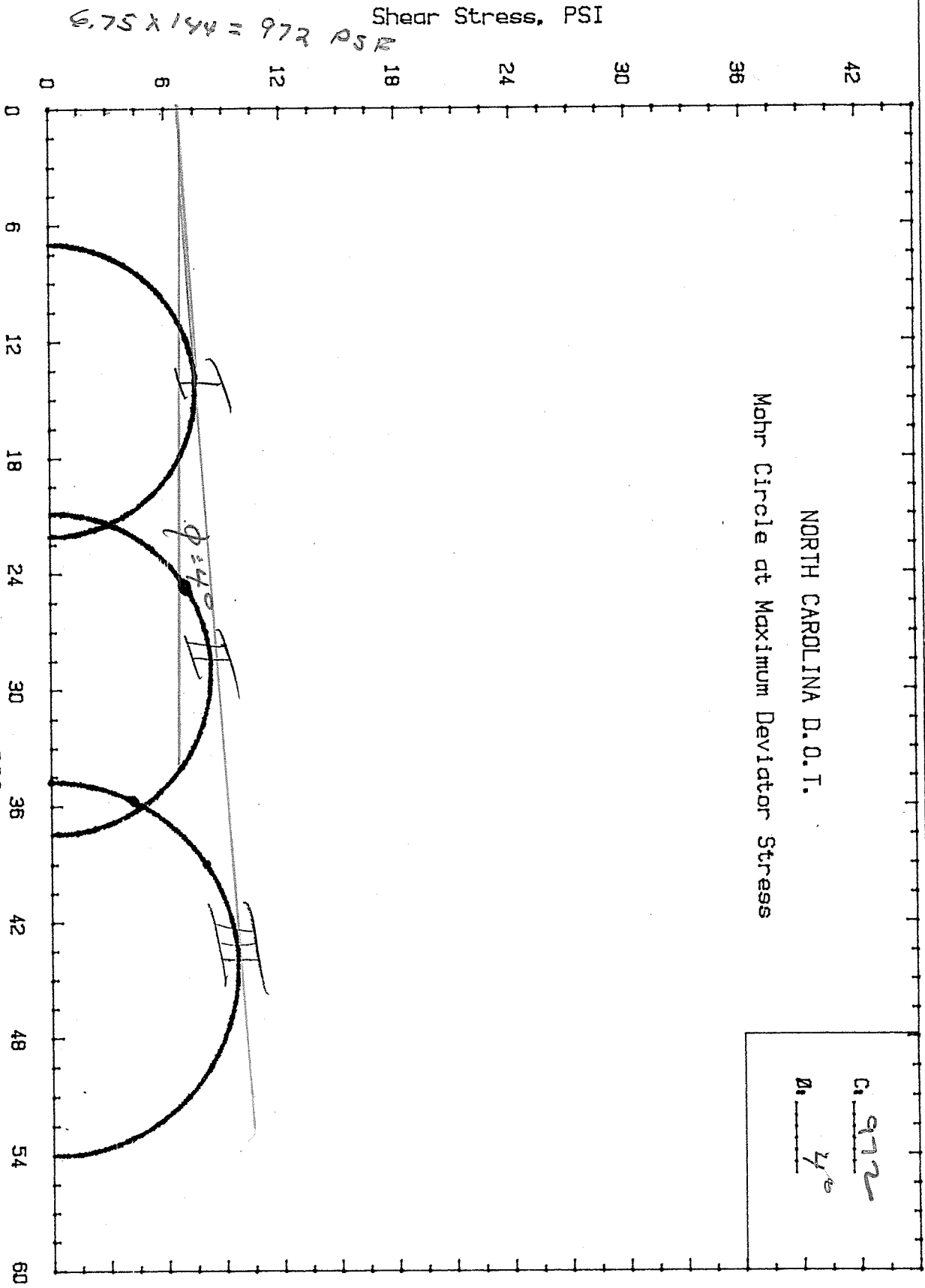


Project number: 6.299001T  
 Borehole number: 12+00  
 Sample description:

Sample number: ST-2 T-2719  
 Sample depth: 2.5-4.5 Feet

NORTH CAROLINA D.O.T.  
 Mohr Circle at Maximum Deviator Stress

$c = 972$   
 $\phi = 4^\circ$



Project number: 6.299001T  
 Borehole number: 12+00  
 Sample number: ST-2 T-2719  
 Sample depth: 2.5-4.5 Feet  
 Sample description:

T-2719  
10/1

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 1

Project Number: 6.299001T  
 Station Number: 12+00  
 Sample Number: ST-2 T-2719  
 Sample Depth: 2.5-4.5 Feet

DEPTH INFORMATION	LOAD	PORE WATER PRESSURE	PORE WATER PRESS. DIFF	EFFECTIVE CELL PRESS.	'A' VALUE
inches	lbs	PSI	PSI	PSI	
0.000	0.00	98.50	0.00	8.44	0.00
0.000	-1.00	100.20	1.70	6.74	-10.84
CHANNEL 5 11:54:11 +4159					
.025	29.00	103.10	4.60	3.84	1.02
.050	50.00	103.10	4.60	3.84	.59
.078	64.00	102.50	4.00	4.44	.40
.105	73.00	102.20	3.70	4.74	.33
.134	73.00	101.50	3.00	5.44	.27
.163	73.00	100.80	2.30	6.14	.21
.191	73.00	100.30	1.80	6.64	.16
.221	73.00	99.80	1.30	7.14	.12
.250	73.00	99.80	1.30	7.14	.12
.279	73.00	99.30	.80	7.64	.07
.309	89.00	98.90	.40	8.04	.03
.338	89.00	98.90	.40	8.04	.03
.366	89.00	98.40	-.10	8.54	-.01
.396	89.00	98.00	-.50	8.94	-.04
.425	89.00	98.00	-.50	8.94	-.04
.455	89.00	97.60	-.90	9.34	-.07
.484	89.00	97.20	-1.30	9.74	-.10
.512	89.00	97.20	-1.30	9.74	-.10
.543	106.00	96.70	-1.80	10.24	-.12
.572	106.00	96.30	-2.20	10.64	-.15
.602	107.00	96.30	-2.20	10.64	-.15
.632	106.00	95.90	-2.60	11.04	-.17
.662	106.00	95.50	-3.00	11.44	-.20
.691	106.00	95.60	-2.90	11.34	-.20
.720	107.00	95.30	-3.20	11.64	-.22
.749	106.00	95.10	-3.40	11.84	-.23
.780	106.00	94.80	-3.70	12.14	-.26
.810	106.00	94.60	-3.90	12.34	-.27
.840	106.00	94.70	-3.80	12.24	-.27
.870	106.00	94.50	-4.00	12.44	-.28
.898	106.00	94.40	-4.10	12.54	-.29
.928	106.00	94.30	-4.20	12.64	-.30
.958	106.00	94.20	-4.30	12.74	-.31
.987	106.00	94.40	-4.10	12.54	-.30
1.019	106.00	94.20	-4.30	12.74	-.31
1.050	106.00	94.10	-4.40	12.84	-.32
1.079	106.00	94.00	-4.50	12.94	-.33
1.109	106.00	93.90	-4.60	13.04	-.34
1.139	106.00	94.20	-4.30	12.74	-.32
1.169	107.00	94.00	-4.50	12.94	-.33

7-2117  
20A1

AXIAL TRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	8.44	-2.60
0.00	-1.16	-1.08	6.66	.98
.02	0.00	0.00	6.34	1.00
.42	4.53	2.26	6.10	2.18
.83	7.77	3.89	7.73	3.02
1.30	9.90	4.95	9.39	3.23
1.75	11.24	5.62	10.36	3.37
2.23	11.19	5.59	11.03	3.06
2.72	11.13	5.57	11.71	2.81
3.18	11.08	5.54	12.18	2.67
3.68	11.02	5.51	12.65	2.54
4.17	10.97	5.48	12.62	2.54
4.65	10.91	5.46	13.10	2.43
5.15	13.23	6.62	14.66	2.65
5.63	13.17	6.58	14.62	2.64
6.10	13.10	6.55	15.09	2.53
6.60	13.03	6.52	15.46	2.46
7.08	12.96	6.48	15.42	2.45
7.58	12.89	6.45	15.79	2.38
8.07	12.83	6.41	16.15	2.32
8.53	12.76	6.38	16.12	2.31
9.05	15.11	7.56	17.80	2.48
9.53	15.03	7.52	18.16	2.41
10.03	15.09	7.54	18.18	2.42
10.53	14.87	7.43	18.47	2.35
11.03	14.78	7.39	18.83	2.29
11.52	14.70	7.35	18.69	2.30
12.00	14.76	7.38	19.02	2.27
12.48	14.54	7.27	19.11	2.23
13.00	14.46	7.23	19.37	2.19
13.50	14.37	7.19	19.53	2.16
14.00	14.29	7.14	19.38	2.17
14.50	14.21	7.10	19.54	2.14
CHANNEL 4 11:55:17		+1852		
14.97	14.13	7.06	19.60	2.13
15.47	14.05	7.02	19.66	2.11
15.97	13.96	6.98	19.72	2.10
16.45	13.88	6.94	19.48	2.11
16.98	13.79	6.90	19.64	2.08
17.50	13.71	6.85	19.69	2.07
17.98	13.63	6.81	19.75	2.05
18.48	13.54	6.77	19.81	2.04
18.98	13.46	6.73	19.47	2.06
19.48	13.50	6.75	19.69	2.04
19.98	13.30	6.65	19.59	2.03

T-2719  
10A2

SOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 2

Project Number: 6.299001T  
 Station Number: 12+00  
 Sample Number: ST-2 T-2719  
 Sample Depth: 2.5-4.5 Feet

DEFORMATION	LOAD	PORE WATER PRESSURE	PORE WATER PRESS. DIFF	EFFECTIVE CELL PRESS.	'A' VALUE
inches	lbs	PSI	PSI	PSI	
0.000	0.00	100.20	0.00	20.63	0.00
.004	7.00	101.00	.80	19.83	.73
.004	14.00	101.40	1.20	19.43	.55
.019	57.00	106.50	6.30	14.33	.71
.047	69.00	108.00	7.80	12.83	.73
.077	77.00	109.00	8.80	11.83	.74
.106	82.00	109.50	9.30	11.33	.74
.134	87.00	109.70	9.50	11.13	.72
.164	88.00	109.80	9.60	11.03	.72
.193	91.00	109.90	9.70	10.93	.71
.223	95.00	110.30	10.10	10.53	.71
.253	98.00	110.20	10.00	10.63	.69
.284	99.00	110.10	9.90	10.73	.67
.313	101.00	110.20	10.00	10.63	.67
.342	102.00	110.10	9.90	10.73	.66
.371	103.00	109.90	9.70	10.93	.65
.399	106.00	109.90	9.70	10.93	.63
.429	107.00	109.80	9.60	11.03	.62
.459	109.00	109.60	9.40	11.23	.60
.488	112.00	109.60	9.40	11.23	.59
.517	113.00	109.40	9.20	11.43	.57
.546	114.00	109.10	8.90	11.73	.55
.576	115.00	109.10	8.90	11.73	.55
.605	116.00	108.80	8.60	12.03	.53
.634	117.00	108.50	8.30	12.33	.51
.663	120.00	108.60	8.40	12.23	.51
.694	121.00	108.30	8.10	12.53	.49
.723	121.00	108.10	7.90	12.73	.48
.753	122.00	107.90	7.70	12.93	.46
.781	123.00	107.60	7.40	13.23	.45
.811	123.00	107.40	7.20	13.43	.44
.840	123.00	107.50	7.30	13.33	.44
.869	123.00	107.30	7.10	13.53	.43
.899	123.00	107.10	6.90	13.73	.43
.929	124.00	107.00	6.80	13.83	.42
.958	123.00	107.00	6.80	13.83	.42
.987	124.00	106.90	6.70	13.93	.42
1.016	124.00	106.80	6.60	14.03	.41
1.046	124.00	106.60	6.40	14.23	.40
CHANNEL 5 11:56:11 +4158					
1.076	124.00	106.60	6.40	14.23	.41
1.105	124.00	106.50	6.30	14.33	.40
1.135	124.00	106.70	6.50	14.13	.42

T-2719  
20A2

XYIAL TRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	20.63	-.77
-.07	1.09	.55	20.38	1.05
-.07	2.18	1.09	20.52	1.11
.32	8.84	4.42	18.75	1.62
.80	10.66	5.33	18.16	1.83
1.31	11.83	5.91	17.74	2.00
1.80	12.53	6.27	17.60	2.11
2.27	13.23	6.62	17.75	2.19
2.78	13.32	6.66	17.69	2.21
3.27	13.70	6.85	17.78	2.25
3.78	14.23	7.11	17.64	2.35
4.32	14.60	7.30	17.93	2.37
4.81	14.67	7.33	18.06	2.37
5.31	14.89	7.44	18.07	2.40
5.80	14.96	7.48	18.21	2.39
6.29	15.02	7.51	18.44	2.37
6.76	15.38	7.69	18.62	2.41
7.27	15.44	7.72	18.75	2.40
7.78	15.65	7.82	19.05	2.39
8.27	15.99	8.00	19.23	2.42
8.76	16.08	8.02	19.45	2.40
9.25	16.10	8.05	19.78	2.37
9.76	16.15	8.08	19.81	2.38
10.25	16.21	8.10	20.13	2.35
10.75	16.26	8.13	20.46	2.32
11.24	16.58	8.29	20.52	2.36
11.76	16.62	8.31	20.84	2.33
12.25	16.53	8.26	20.99	2.30
12.76	16.57	8.28	21.21	2.28
13.24	16.61	8.31	21.54	2.26
13.75	16.51	8.26	21.69	2.23
14.24	16.42	8.21	21.54	2.23
14.73	16.33	8.16	21.69	2.21
15.24	16.23	8.11	21.84	2.18
15.75	16.26	8.13	21.96	2.18
16.24	16.04	8.02	21.65	2.16
16.73	16.07	8.04	21.97	2.15
17.22	15.98	7.99	22.02	2.14
17.73	15.88	7.94	22.17	2.12
18.24	15.78	7.89	22.12	2.11
18.73	15.69	7.84	22.17	2.09
19.24	15.59	7.79	21.92	2.10
19.75	15.49	7.75	21.98	2.09
20.24	15.40	7.70	22.03	2.07

T-2719  
10A3

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 3

Project Number: 6.299001T  
 Station Number: 12+00  
 Sample Number: 5T-2 T-2719  
 Sample Depth: 2.5-4.5 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.30	0.00	34.42	0.00
0.000	-2.00	101.90	1.60	32.82	-5.14
.002	-3.00	103.40	3.10	31.32	-6.64
.011	41.00	114.40	14.10	20.32	2.21
CHANNEL 6 11:57:08 +3552					
.041	51.00	117.80	17.50	16.92	2.22
.074	54.00	119.20	18.90	15.52	2.28
.102	59.00	120.60	20.30	14.12	2.25
.134	60.00	121.20	20.90	13.52	2.29
.165	63.00	122.50	22.20	12.22	2.33
.194	67.00	123.00	22.70	11.72	2.25
.225	69.00	123.10	22.80	11.62	2.21
.256	73.00	124.00	23.70	10.72	2.18
.288	73.00	123.90	23.60	10.82	2.18
CHANNEL 4 11:57:17 +1849					
.316	78.00	124.20	23.90	10.52	2.08
.347	81.00	124.50	24.20	10.22	2.04
.378	82.00	124.50	24.20	10.22	2.02
.408	86.00	124.50	24.20	10.22	1.94
.440	88.00	125.10	24.80	9.62	1.95
.468	91.00	125.10	24.80	9.62	1.90
.499	95.00	124.80	24.50	9.92	1.81
.530	98.00	125.10	24.80	9.62	1.78
.561	99.00	124.90	24.60	9.82	1.76
.591	104.00	124.60	24.30	10.12	1.67
.622	106.00	125.20	24.90	9.52	1.68
.651	110.00	124.80	24.50	9.92	1.60
.683	111.00	124.80	24.50	9.92	1.60
.712	114.00	124.80	24.50	9.92	1.57
.743	117.00	124.30	24.00	10.42	1.50
.776	119.00	125.00	24.70	9.72	1.53
.805	123.00	124.50	24.20	10.22	1.46
.837	124.00	124.50	24.20	10.22	1.46
.865	128.00	124.30	24.00	10.42	1.41
.895	131.00	124.00	23.70	10.72	1.37
.928	132.00	124.30	24.00	10.42	1.38
.955	136.00	124.00	23.70	10.72	1.33
.987	137.00	123.50	23.20	11.22	1.30
1.019	138.00	123.30	23.00	11.42	1.29
1.048	143.00	123.00	22.70	11.72	1.24
1.081	144.00	123.40	23.10	11.32	1.26
1.109	150.00	123.20	22.90	11.52	1.20
1.139	151.00	123.00	22.70	11.72	1.19

T-2719  
20A3

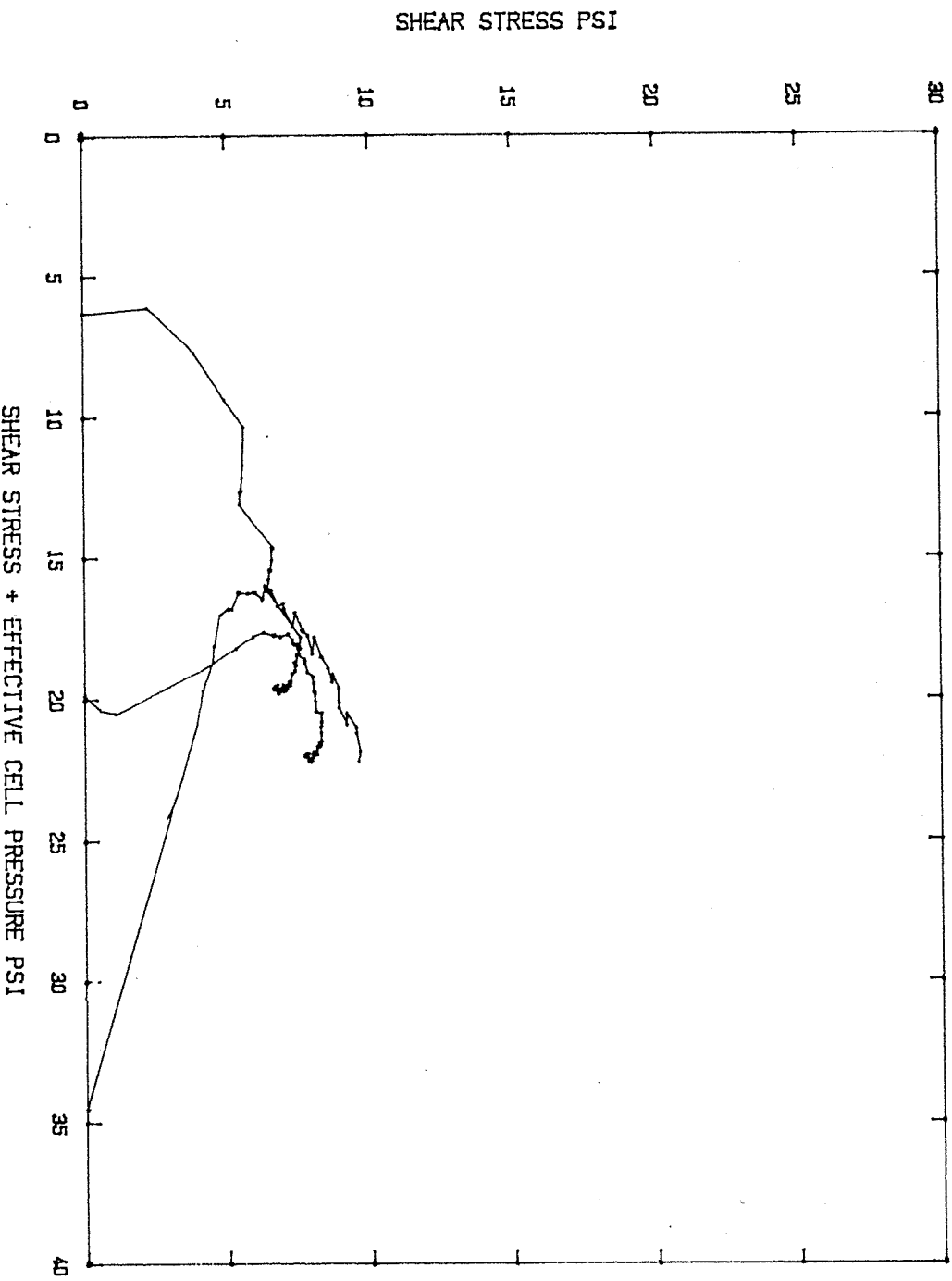
AXIAL STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	34.42	-.31
0.00	-.31	-.16	32.66	.99
.03	-.47	-.23	31.09	.99
.18	6.37	3.19	23.51	1.31
.68	7.88	3.94	20.86	1.47
1.23	8.30	4.15	19.67	1.53
1.70	9.03	4.51	18.63	1.64
2.23	9.13	4.57	18.09	1.68
2.75	9.54	4.77	16.99	1.78
3.23	10.09	5.05	16.77	1.86
3.75	10.34	5.17	16.79	1.89
4.27	10.88	5.44	16.16	2.01
4.80	10.82	5.41	16.23	2.00
5.27	11.50	5.75	16.27	2.09
5.78	11.88	5.94	16.16	2.16
6.30	11.96	5.98	16.20	2.17
6.80	12.48	6.24	16.46	2.22
7.33	12.69	6.35	15.97	2.32
7.80	13.06	6.53	16.15	2.36
8.32	13.56	6.78	16.70	2.37
8.83	13.91	6.95	16.57	2.45
9.35	13.97	6.98	16.80	2.42
9.85	14.59	7.30	17.42	2.44
10.37	14.79	7.39	16.91	2.55
10.85	15.26	7.63	17.55	2.54
11.38	15.31	7.66	17.58	2.54
11.87	15.64	7.82	17.74	2.58
12.38	15.96	7.98	18.40	2.53
12.93	16.13	8.06	17.78	2.66
13.42	16.58	8.29	18.51	2.62
13.95	16.61	8.30	18.52	2.63
14.42	17.05	8.53	18.95	2.64
14.92	17.35	8.67	19.39	2.62
15.47	17.37	8.68	19.10	2.67
15.92	17.80	8.90	19.62	2.66
16.45	17.82	8.91	20.13	2.59
16.98	17.83	8.92	20.34	2.56
17.47	18.37	9.19	20.91	2.57
18.02	18.38	9.19	20.51	2.62
18.48	19.03	9.52	21.04	2.65
18.98	19.04	9.52	21.24	2.62
19.52	19.29	9.65	21.87	2.58
20.00	19.18	9.59	22.21	2.52

CHANNEL 5 11:58:11 --4159



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

C: \_\_\_\_\_  
D: \_\_\_\_\_



PROJECT NUMBER: 6.299001T  
SAMPLE NUMBER: ST-2 T-2719

STATION NUMBER: 12+00  
DEPTH: 2.5-4.5feet

Project: 6,299001T

Station: 12+00

County: Edgecombe

Sample No: ST-2

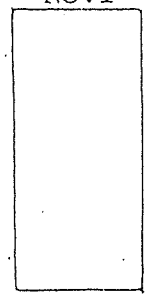
Depth: 2.5-4.5'

SPECIMEN NUMBER		1	2	3
WATER CONTENT %	w	26.63	33.02	32.05
DRY DENSITY, PCF	$\gamma_d$	95.66	86.26	84.52
SATURATION, %	$s_w$	97.74	96.15	89.45
VOID RATIO	$e_o$	.7198	.9073	.9466
DIAMETER, IN.	$D_o$	2.860	2.835	2.860
HEIGHT, IN	$H_o$	6.075	5.975	6.020
TIME TO ( $G_1-G_3$ ) Max. Min.	t	60.33	77.09	130.07
WATER CONTENT %	$w_1$	23.88	28.34	22.61
DRY DENSITY, PCF	$\gamma_{d1}$	100.88	94.08	102.99
SATURATION, %	$s_1$	100.00	100.00	100.00
VOID RATIO	$e_1$	.6308	.7487	.5974
TRAIN RATE mm/minute		.2286	.2286	.2286

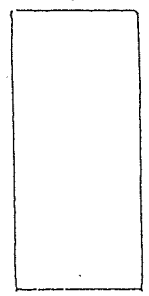
LL: 36  
 PL: 22  
 PI: 14  
 G: 2.642

PRE-TEST  
Specimen Condition

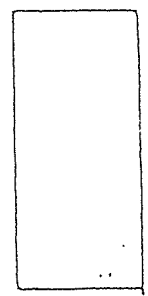
Specimen No. 1



Specimen No. 2



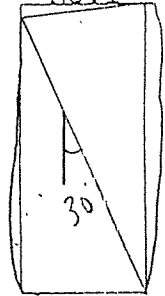
Specimen No. 3



FAILURE MODE:

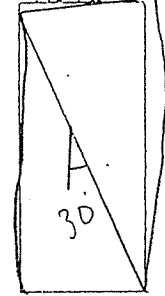
Yellow  
Brown  
Silty clay

Specimen No. 1



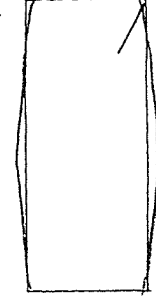
Same as #1

Specimen No. 2



Same as #1

Specimen No. 3



**GEOTECHNICAL UNIT  
SOIL SAMPLE TRANSMITTAL**

PROJECT NO. R-2111A 6.299001T ROUTE US 64 RELOC. COUNTY Edgecombe

PROJECT GEOLOGIST EA Witort DATE 5-8-92

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<u>CBR-1</u> PRIMARY <input checked="" type="checkbox"/> ALT. FOR _____	STA. <u>44100</u> OFFSET <u>4</u> SAMP. DEPTH <u>0-3'</u> G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER <u>CBR</u>	SOIL DESC. <u>SAND</u> SOIL STRUCTURE <u>FINE TO COARSE</u> EST. BLOWS/FT. <u>1-4</u> OTHER <u>SUBGRADE</u> WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____

*FILE*

**GEOTECHNICAL UNIT  
SOIL SAMPLE TRANSMITTAL**

R-2111A

PROJECT NO. G. 299001T ROUTE US 64 Reloc. COUNTY Edgecombe

PROJECT GEOLOGIST E.A. Wifont DATE 5-19-92

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<p><u>CBR-2</u>                      PRIMARY <input checked="" type="checkbox"/>                      ALT. FOR _____</p>	<p>STA. <u>176+00</u>                      OFFSET <u>4</u>                      SAMP. DEPTH <u>0-10'</u>                      G.W. DEPTH _____</p>	<p>TRIAXIAL CU _____                      UU _____                      CD _____                      CONSOLIDATION _____                      PROCTOR _____                      %COMPACT. _____                      PERMEABILITY _____                      OTHER <input checked="" type="checkbox"/>  <u>CBR</u></p>	<p>SOIL DESC. <u>Sand</u>                      SOIL STRUCTURE <u>Fine to coarse</u>                      EST. BLOWS/FT. <u>2-10</u>                      OTHER _____                      WHERE USED:                      - UNDER _____ FT. HIGH EMBANKMENT                      - IN _____ FT. HIGH EMBANKMENT                      - CUT SLOPE _____                      - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____                      ALT. FOR _____</p>	<p>STA. _____                      OFFSET _____                      SAMP. DEPTH _____                      G.W. DEPTH _____</p>	<p>TRIAXIAL CU _____                      UU _____                      CD _____                      CONSOLIDATION _____                      PROCTOR _____                      %COMPACT. _____                      PERMEABILITY _____                      OTHER _____</p>	<p>SOIL DESC. _____                      SOIL STRUCTURE _____                      EST. BLOWS/FT. _____                      OTHER _____                      WHERE USED:                      - UNDER _____ FT. HIGH EMBANKMENT                      - IN _____ FT. HIGH EMBANKMENT                      - CUT SLOPE _____                      - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____                      ALT. FOR _____</p>	<p>STA. _____                      OFFSET _____                      SAMP. DEPTH _____                      G.W. DEPTH _____</p>	<p>TRIAXIAL CU _____                      UU _____                      CD _____                      CONSOLIDATION _____                      PROCTOR _____                      %COMPACT. _____                      PERMEABILITY _____                      OTHER _____</p>	<p>SOIL DESC. _____                      SOIL STRUCTURE _____                      EST. BLOWS/FT. _____                      OTHER _____                      WHERE USED:                      - UNDER _____ FT. HIGH EMBANKMENT                      - IN _____ FT. HIGH EMBANKMENT                      - CUT SLOPE _____                      - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____                      ALT. FOR _____</p>	<p>STA. _____                      OFFSET _____                      SAMP. DEPTH _____                      G.W. DEPTH _____</p>	<p>TRIAXIAL CU _____                      UU _____                      CD _____                      CONSOLIDATION _____                      PROCTOR _____                      %COMPACT. _____                      PERMEABILITY _____                      OTHER _____</p>	<p>SOIL DESC. _____                      SOIL STRUCTURE _____                      EST. BLOWS/FT. _____                      OTHER _____                      WHERE USED:                      - UNDER _____ FT. HIGH EMBANKMENT                      - IN _____ FT. HIGH EMBANKMENT                      - CUT SLOPE _____                      - BRIDGE FOUNDATION _____</p>
<p>PRIMARY _____                      ALT. FOR _____</p>	<p>STA. _____                      OFFSET _____                      SAMP. DEPTH _____                      G.W. DEPTH _____</p>	<p>TRIAXIAL CU _____                      UU _____                      CD _____                      CONSOLIDATION _____                      PROCTOR _____                      %COMPACT. _____                      PERMEABILITY _____                      OTHER _____</p>	<p>SOIL DESC. _____                      SOIL STRUCTURE _____                      EST. BLOWS/FT. _____                      OTHER _____                      WHERE USED:                      - UNDER _____ FT. HIGH EMBANKMENT                      - IN _____ FT. HIGH EMBANKMENT                      - CUT SLOPE _____                      - BRIDGE FOUNDATION _____</p>

File:

NORTH CAROLINA DEPARTMENT  
DIVISION OF  
MATERIALS  
SOILS LABORATORY

Post-It™ brand fax transmittal memo 7671 # of pages ▶ 4

To L. Packer	From E. Witort
Co.	Co.
Dept.	Phone #
Fax # 733-1613	Fax # 830-6593

T.I.P. ID NO. R-2111 A

REPORT ON SAMPLES OF: SOIL FOR QUALITY & CBR

PROJECT: 6.299001T  
DATE: SAMPLED: --  
SAMPLES FROM: -L-  
SUBMITTED BY: W. L. MOORE

COUNTY: EDGEcombe  
RECEIVED: 7/1/92

OWNER:  
REPORTED: 7/6/92  
BY: E. A. WITORT  
1990 STANDARD SPECIFICATIONS

7/8/92

TEST RESULTS

Proj. Sample No.	CBR-1				
Lab. Sample No.	557	370			
Retained #4 Sieve %		--			
Passing #10 Sieve %		100			
Passing #40 Sieve %		87			
Passing #200 Sieve %		14			

MINUS #10 FRACTION

SOIL MORTAR -	100%				
Coarse Sand Ret-#60 %		44			
Fine Sand Ret -#270 %		45			
Silt 0.05-0.005 MM %		5			
Clay < 0.005 MM %		6			
Passing #40 Sieve %		--			
Passing #200 Sieve %		--			
L.L.		17			
P.I.		NP			
AASHTO Classification		A-2-4(0)			
Texture					
Station		441+00			
Hole No.		CL			
Depth (Ft)		0.0			
	to	3.0			

cc: W. L. MOORE  
H. W. LANDRUM  
R. O. BLACK  
E. A. WITORT  
TODD ROBERTS  
FILE

*E. A. Witort*  
Soils Engineer

CALIFORNIA BEARING RATIO

DATE 7/24/92 LAB NO. 557370  
 T.I.P. ID# R-2111A SAMPLE NO. CBR-1  
 PROJECT # 6.299001T AASHTO CLASS A-2-4(0)  
 COUNTY Edgecombe LIME raw %  
 DENSITY 111.1 PCF OPTIMUM MOISTURE 11.9 %

CBR MOLD NO.	BEARING RATIO		MOISTURE	DENSITY
	0.1" PEN	0.2" PEN		
11735	27.1	36.1	12.0	109.4
11736	29.0	38.7	12.0	109.1
AVG.	28.1	37.4	12.0	109.2

MOISTURE AFTER SOAKING  
 AS MADE 12.00 % PERCENT OF AASHTO DENSITY 98.10 %  
 AFTER SOAKING 13.35 % PERCENT OF OPTIMUM MOISTURE 112.18 %

$$\frac{62.355}{108.99} = 0.5721 \qquad \frac{1}{2.65} = 0.3774$$

$$0.5721 - 0.3774 = 0.1948 \times 100 = 19.48 \% \text{ ABSORPTION}$$

$$\frac{13.35}{19.48} \times 100 = 68.54 \% \text{ SARURATED}$$

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MATERIALS & TEST UNIT  
SOILS LABORATORY

T.I.P. ID NO. R-2111 A

REPORT ON SAMPLES OF: SOIL FOR QUALITY &amp; CBR

PROJECT: 6.299001T      COUNTY: EDGEcombe      OWNER:  
DATE: SAMPLED: 5/12/92      RECEIVED: 5/26/92      REPORTED: 5/28/92  
SAMPLES FROM: L1 REV      BY: E. A. WITORT  
SUBMITTED BY: W. L. MOORE      1990 STANDARD SPECIFICATIONS

6/2/92

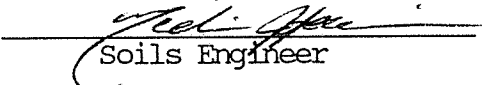
## TEST RESULTS

Proj. Sample No.	CBR-2			
Lab. Sample No. 555	730			
Retained #4 Sieve %	--			
Passing #10 Sieve %	100			
Passing #40 Sieve %	80			
Passing #200 Sieve %	12			

MINUS #10 FRACTION

SOIL MORTAR - 100%				
Coarse Sand Ret-#60 %	49			
Fine Sand Ret -#270 %	42			
Silt 0.05-0.005 MM %	7			
Clay < 0.005 MM %	2			
Passing #40 Sieve %	--			
Passing #200 Sieve %	--			
L.L.	20			
P.I.	NP			
AASHTO Classification	A-2-4(0)			
Texture				
Station	176+00			
Hole No.	CL			
Depth (Ft)	0-10			
to				

cc: W. L. Moore  
H. W. Landrum  
R. O. Black  
E. A. Witort ✓  
Todd Roberts  
File

  
Soils Engineer

CALIFORNIA BEARING RATIO

DATE 6-29-92 LAB NO. 555730  
 T.I.P. ID# R-2111A SAMPLE NO. CBR-2  
 PROJECT # 6.299001T AASHTO CLASS A-2-4(0)  
 COUNTY EDGECOMBE LIME raw %  
 DENSITY 106 PCF OPTIMUM MOISTURE 13.4 %

CBR MOLD NO.	BEARING RATIO		MOISTURE	DENSITY
	0.1" PEN	0.2" PEN		
11653	27.3	33.4	13.6	106.1
11654	28.5	34.1	13.6	105.8
AVG.	27.9	33.7	13.6	106.0

MOISTURE AFTER SOAKING

AS MADE 13.60 % PERCENT OF AASHTO DENSITY 99.32 %

AFTER SOAKING 15.57 % PERCENT OF OPTIMUM MOISTURE 116.17 %

$$\frac{62.355}{105.28} = 0.5923$$

$$\frac{1}{2.66} = 0.3759$$

$$0.5923 - 0.3759 = 0.2163$$

0.2163 x 100 = 21.63 % ABSORPTION

$$\frac{15.57}{21.63} x 100 = 71.96 % SARURATED$$



PROJECT 6.29900 IT DATE 3/3/82  
 COUNTY EDGEcombe  
 NOTES BY WRC

LINE

- 4" EBL

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
83+00	0.0-3.0		LOOSE-MED DNS ORANGE SL F-CSE SD	M	A-2-4
	3.0-8.5		LOOSE-MED DNS F-CSE SD DHR H <sub>2</sub> O = DRY	M	A-3
81+00	0.0-4.0		LOOSE-MED DNS BROWN TAN ORANGE GRAY SL F-CSE SD (FILL)	M	A-2-4
	4.0-8.5		LOOSE-MED DNS ORANGE TAN F-CSE SD DHR H <sub>2</sub> O = DRY	M	A-3
79+00	0.0-6.0		LOOSE-MED DNS BROWN TAN GRAY SL F-CSE SD (FILL) DHR H <sub>2</sub> O = DRY 24 HR H <sub>2</sub> O = DRY	M	A-2-4
75+00	0.0-6.0	S-124	LOOSE-MED DNS SL F-CSE SD w/ some SMALL CL layers (FILL) DHR H <sub>2</sub> O = DRY 24 HR H <sub>2</sub> O = DRY	M	A-2-4
25 RT					

BEGIN L EBL 73+20

LINE  
EBL

PROJECT 6.29900 IT DATE 2/3/92  
 COUNTY EDGE CDM BE  
 NOTES BY NRC

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
91+00	0.0-2.0		(FILL) LOOSE-MED DNS TAN GRAY SL F-CSE SD	M	A-2-4
	2.0-5.5		LOOSE-MED DNS GRAY-TAN SL F-CSE SD	M/W	A-2-4
	5.5-8.5		LOOSE-MED DNS ORANGE F-CSE SD <sup>small gravel</sup>	SAT	A-1-L
			DHR H <sub>2</sub> O = 5.8 6.0		
90+00	0.0-2.5		(FILL) LOOSE-MED DNS ORANGE GRAY SL F SD	M	A-2-4
	2.5-5.0		LOOSE-MED DNS BROWN-TAN SL F-CSE SD	M/W	A-2-4
	5.0-8.5		LOOSE-MED DNS TAN-ORANGE F-UCSE SD	SAT	A-3
			DHR H <sub>2</sub> O = 6.5 6.5		
SPT 89+00	0.0-1.5	SS-132	1/4/7 TAN SL F-CSE SD FILL?	M	A-2-4
	2.5-4.0	SS-132	5/3/3 GRAY-DK BROWN ORG SD SL	M	<del>A-2-4</del>
	5.0-6.5	SS-134	1/1/4 BROWN-GRAY SL F-CSE SD	W	A-2-4
	7.5-9.0		3/3/4 TAN F-UCSE SD W/ <sup>small</sup> gravel	SAT	A-1-L
			DHR H <sub>2</sub> O = 6.7 6.5		
88+00	0.0-3.0		(FILL) LOOSE-MED DNS SL F-CSE SD	M	A-2-4
	3.0-4.0		LOOSE-MED DNS LT GRAY SL F-CSE SD	M	A-2-4
	4.0-7.0		SEF-MED STIFF-DK BROWN SD OLG SL	W	A-4
	7.0-8.5		LOOSE-MED DNS TAN F-CSE SD	W	A-3
			DHR H <sub>2</sub> O = 6.9		
87+00	0.0-1.5		(FILL) LOOSE-MED DNS ORANGE SL F-CSE SD	M	A-2-4
	1.5-6.0		LOOSE-MED DNS GRAY-BROWN SL <sup>level layers</sup> UCSE SD	W	A-2-4
	6.0-8.5		LOOSE-MED DNS TAN F-UCSE SD	W	A-3
			DHR H <sub>2</sub> O = WET 7.5		
85+00	0.0-3.5		(FILL) LOOSE-MED DNS ORANGE SL F-CSE SD	M	A-2-4
	3.5-8.5		LOOSE-MED DNS F-CSE SD	M/W	A-3
			DHR H <sub>2</sub> O = WET AT 8.5		

FILL (0.0-1.5)  
 (L) A-2-4 CHANGE TO SK BROWN A-4 AT 3.0  
 A-2-4 CHANGE TO A-2-4 AT 4.5

LINE \_\_\_\_\_ PROJECT 6.299001T DATE 3/3/92  
 EBL COUNTY EDGEcombe  
 NOTES BY WRC, RLE

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
97+00	0.0-8.5		LOOSE BROWN-TAN SL F-CSE SD OHR = $H^2 = \text{DRY } 8.0$	M	A-2-4 (D)
95+00	0-1		M. DNS DK. GRAY F-CSE SP/W	M	A-2-A (E)
	-6		CLY LAYER M. DNS TANGRY F-CSE SP/W gravel H <sub>2</sub> O = 2.5 1.0	SAT	A-1-B (I)
93+00	0-1		LOOSE TAN BRN F-CSE SD	m	A-3 (F) <del>A-1-B</del>
	-3		M. DNS DK. GRAY F-CSE SD/W gravel's	m	A-3 (F) <del>A-1-B</del>
	-6		M. DNS TAN CSE SP/W gravel's OHR = 2.7 2.5	SAT	A-1-B (F)



LINE  
EBL

PROJECT 6.2990017 DATE 3/4/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC

STATION DEPTH SAMP. DESCRIPTION

MOISTURE  
ESTIMATED  
CLASS

107+00	0.0-3.0	LOOSE-MED DNS TAN SL F SD	M	A-2-4	(1)
	3.0-8.5	LOOSE-MED DNS TAN SL F-CSE SD 0 HR H <sub>2</sub> O = DRY 24 HR H <sub>2</sub> O = DRY	M	A-3	(2)
105+80	0.0-1.5	1' GRAY SDY SL	WET	A-4	(3)
Ditch	1.5-3.5	MED STIFF GREEN-GRAY CL	M	A-6	(4)
Drove	3.5-5.0	MED DNS TAN E-CSE SD	SAT	A-3	(5)
105+00	0.0-3.0	LOOSE-MED DNS BROWN SL F. CSE SD	M	A-2-4	(6)
	3.0-6.0	LOOSE-MED DNS TAN F-CSE SD	SAT	A-3	(7)
	6.0-8.5	LOOSE MED DNS TAN F. VCSE SDW/STAVES 0 HR H <sub>2</sub> O = 2.9 24 HR H <sub>2</sub> O = 2.8	SAT	A-1-6	(8)

Ea Witort B

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS  
MATERIALS & TESTS UNIT

SOILS LABORATORY 7

T.I.P. No. ....

REPORT ON SAMPLES OF Soil For Moisture

Project 6.2990017 County Edgecombe Owner .....

Date: Sampled 3/3/92 Received 3/6/92 Reported .....

Sampled from EBL By E.A. Witort

Submitted by W.L. Moore 19 90 Standard Specifications

~~SS-133~~ EBL

TEST RESULTS

Proj. Sample No.	<del>SS-133</del>							
Lab. Sample No.	551 264							
Retained #4 Sieve	%							
Passing #10 Sieve	%							
Passing #40 Sieve	%							
Passing #200 Sieve	%							
Minus #10 Fraction	Soil Mortar—100%							
	Coarse Sand—2.0 to 0.25 mm. Ret. #60	%						
	Fine Sand—0.25 to 0.05 mm. Ret. #270	%						
	Silt—0.05 to 0.005 mm.	%						
	Clay—Less than 0.005 mm.	%						
	Minus #270							
Passing #40 Sieve	%							
Passing #200 Sieve	%							
L. L.								
P. I.								
AASHO Classification								
Texture								
Station	89100							
Hole No.								
Depth (ft.)	3.3							
	To 4.0							
	Moisture 29.0							

cc: E.A. Witort ✓  
File

*E.A. Witort*  
Soils Engineer

PROJECT L.299001T DATE 12-10-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

LINE  
-WBL-

STATION DEPTH SAMP. DESCRIPTION

WBL 102+50	0-2		M. DNS TAN BRN F-CSE SD	mo	A-3	1
-5.9 lower than STA 102+00	-5		M. DNS DK GRAY SILTY FSD	"	A-2-A	1
	-7		SOFT DK GRAY CLY F SDY SILT	"	A-4	3
	-8.5		M. DNS TAN F-CSE SD, gravels	WET	A-1-B	1

OHR = Dry 8.5  
 24hrs = Dry

WBL 100+00	0-1		M. DNS TAN BRN CLY SILTY FSD	mo	A-2-A	1
7' LT	-12	S-119	DNS TAN BRN F-CSE SD	"	A-3	1
-0.2	-13.5	S-120	M. DNS DK BRN SILTY FSD	"	A-2-A	1
	-15.5	S-121	SOFT DK GRAY CLY F SDY SILT	WET	A-4	2
	-18.5	S-122	M. DNS TAN F-CSE SD/w gravels	sat	A-1-B	1

OHR 18.3  
 24hrs = 18.1

WBL 98+00	0-1		M. DNS TAN BRN CLY SILTY FSD	mo	A-2-A	1
8RT	-12		DNS TAN GRAY F-CSE SD	"	A-3	1
+3.8 higher than E	-18.5		M. DNS TAN F-CSE SD	"	A-3	1

OHR = Dry 18.0  
 24hrs = Dry 18.0

-L- 96+00	0-1		M. DNS TAN BRN SILTY FSD	mo	A-2-A	1
8RT	-11		DNS TAN F-CSE SD	"	A-3	1
+3.0 higher than E	-18.5		M. DNS TAN F-CSE SD	"	A-3	1

OHR DRY 18.0  
 24hrs = Dry 18.0

LINE

COUNTY EMERSONNOTES BY RLEMO  
TURESTIMATE  
CLASSWBL  
STATION

DEPTH SAMP.

DESCRIPTION

118+00

0-3

S&amp;G

LOOSE-M. DENTAN BRN SILTY FSD

mol

A-2-A

-6

S&amp;G

M. DENTAN F-CSE SD

11

A-3/A-2-A-N

0HR = Dry 6.0

12hr = Dry 6.0

BEGIN - L<sup>1</sup> STA 117-00~~112+00~~~~0-6~~~~LOOSE TAN BRN SILTY FSD~~~~mol~~~~A-2-A~~~~0HR = Dry 6.0~~~~2A Dry at 6.0~~

106+00

0-25 S-AA

LOOSE TAN BRN SILTY FSD

mol

A-2-6

-6 S-AA

M. DENTAN BRN F-CSE SD

11

A-3

2hr Dry 6.0

10A+75

0-6

LOOSE / M. DENTAN BRN SILTY FSD

dry

A-2-A

RD WY FILL

TOP OF BERM



PROJECT G.29900 IT DATE 12-10-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
 WBL

SPT

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
112+00	0-1.5	SS-7	1-1-TAN F-CSE SD	mol	<del>A-3</del> A-2-A
	2-5-4		2-2-A Same "	"	A-3
	5-6.5	SS-8	3-3-A TAN BRN F-CSE SD	"	<del>A-3</del> A-2-A
	7.5-9	SS-9	2-3-A TAN CSE SD / gravels	SAT	A-1-B
			OHR = 8.0		
			24hrs = 6.6		
110+00	0-2		LOOSE DR BRN SILTY F SD	mol	A-2-A
	-7		M. DNS TAN F-CSE SD	"	A-3
	-8		M. DNS TAN CSE SD / gravels	WET	A-1-B
			OHR DR 8.0		
			24hrs = 7.7		
108+00	0-2		LOOSE DR BRN SILTY F SD	mol	A-2-A
	-7		M. DNS TAN F-CSE SD	"	A-3
	-8		M. DNS White TAN CSE SD / gravels	WET	A-1-B
			OHR = 7.3		
			24hrs = 7.3		
104+00	0-7		M. DNS TAN F-CSE SD	mol	A-3
WBL	-8		M. DNS TAN BRN F-CSE SD / gravels	WET	A-1-B
			OHR = 7.8		
			24hrs = 7.6		

PROJECT 6.29900IT DATE 12-10-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE	STATION	DEPTH	SAMP.	DESCRIPTION	MOIST.	ESTIMATED CLASS
-L1-	122+00	0-2		LOOSE TAN BRN SILTY F SD	mol	A-2-A
	EL=39.5	-3		M. DNS BRN F-CSE CLY SD	"	A-2-B
	3' RT	-8		MIDNS TAN F-CSE SD	"	A-3
				OHR DRY		
				24hrs = Dry 8.0		
	120+00	0-1		LOOSE TAN BRN SILTY F SD	mol	A-2-A
	-L1-	-7		M. DNS TAN F-CSE SD	"	A-3
	EL=40.5	8		DNS WHITE TAN CSE SD, Gravels	"	A-1-B
	1' RT			OHR = DRY		
				24hrs = Dry 8.0		
	118+00			already y sample		
				-L1- start at 117+00		
	116+00	0-25		LOOSE TAN BRN SILTY F SD	mol	A-2-A
	WBL	-8		M. DNS TAN F-CSE SD	"	A-3
				OHR DRY 8.0		
				24hrs = Dry 8.0		
	114+00	0-3		LOOSE BRN SILTY F SD	mol	A-2-A
	WBL	-5.5		SOFT DR. BRN CLV F SDY SILT	wet	A-4
		-8		DNS TAN GRAY CSE SD, Gravels	"	A-1-B
				H2O mol at 8.0		
				24hrs 3.6		

PROJECT 6.299001T DATE 12-10-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
122+00	0-2		LOOSE TAN BRN SILTY F SD	mol	A-2-A	(1)
	-3		M.DNS BRN F-CSE CLV SD	"	A-2-B	(A-2-A)
	-8		MIDNS TAN F-CSE SD	"	A-3	(1)
			OHR DRY (24hrs - Dry 0.0)			
120+00	0-1		LOOSE TAN BRN SILTY F SD	mol	A-2-A	1
-L1-	-7		M.DNS TAN F-CSE SD	"	A-3	1
	8		DNS WHITE TAN CSE SD / Gravels	"	A-1-B	1
			OHR - DRY (24hrs - Dry 0.0)			
118+00			already sample			
			-L1- start at 117+00			
116+00	0-25		LOOSE TAN BRN SILTY F SD	mol	A-2-A	1
WBL	-8		M.DNS TAN F-CSE SD	"	A-3	1
			OHR DRY 0.0 (24hrs - Dry 0.0)			
11A+00	0-3		LOOSE BRN SILTY F SD	mol	A-2-A	1
WBL	-5.5		SOFT DR BRN CLV F SDY SILT	wet	A-A	3
	-8		DNS TAN GRAY CSE SD / Gravels	"	A-1-B	1
			H2O mol at 8.0 (24hrs 3-x)			

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY EDGEcombe GEOLOGIC PROVINCE CP  
 BRIDGE ON \_\_\_\_\_ OVER \_\_\_\_\_  
 BORING LOCATION (STA.) 67+50 WBL \_\_\_\_\_ OFFSET 20' RT  
 BORING NO. \_\_\_\_\_ GEOLOGIST WRC GROUND WATER 0 HRS. 24 HRS. 14'  
 COLLAR ELEV. \_\_\_\_\_ DATE STARTED 3/2/92 DRILL EQUIPMENT CME 45 B  
 TOTAL DEPTH 50.3 DATE COMPLETED 1 ROT MUD

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0	1	0	1	SS-1	BROWN-TAN SL F SD <u>A-2-4</u> w/some mica	M	01
	3.9	4	3	4		SAME AS ABOVE <u>A-2-4</u>	M	07
	8.8	2	3	4	SS-2	TAN SL F SD w/mica <del>A-2-4</del> <u>A-3</u>	W	07
	13.8	3	3	4		SAME AS ABOVE <u>A-2-4</u>	SAT	07 ALUMINUM
	18.8	4	6	6	SS-3	TAN F-CSE SD <u>A-3</u>	SAT	012
	23.8	10	13	10		SAME	"	023
	28.8	8	11	13	SS-4	GRAY CSE SAND	"	024
	33.8	6	8	8		INTERBEDDED GRAY SILTY F SAND w/ CARBONIZED WOOD / GRAY CSE SD <u>A-1-B</u> <u>A-2-4</u> <u>A-3</u>	"	016 ALUMINUM to 33' ±
	38.8	9	11	19	SS-5	GRAY CSE SAND F SD at bottom	"	030
	43.8	17	26	26		GRAY F-CSE SAND CLAY AT 47.4'	"	052
	48.8	11	19	20	SSL	GRAY SILTY CLAY <u>A-4</u>	MOI	039

5.5 5.0  
 7 1.8  
 6.2 1.3  
 2.3 2.3  
 4.9 3.8

PRELIMINARY FOUNDATION INFO.

6.2 casing set at 3.9

PROJECT 6.29900 IT DATE 12-9-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE

MOISTURE

ESTIMATED CLASS

STATION

DEPTH SAMP.

DESCRIPTION

MOI

A-2-A

RD WY FILL

94+00

0-1.5

2-3-3 TAN BRN CLY SILTY F SD

"

A-2-A

SPT

3.5-5 SS-4

9-15-19 TAN F-CSE SD

"

A-3

RD WY FILL

+ A-2

8.5-10 SS-5

13-26-27 TAN F-CSE SD

"

A-2-A

10RT

13.5-15 SS-6

5-7-8 TAN BRN F-CSE SD

"

"

18.5-20

6-6-7 SAME " "

"

"

DRY 18.0 24hrs DRY 18.0

92+00

0-2

LOOSE DK BRN SILTY F SD

MOI

A-2-A

RD WY FILL

-9

M. DNSTAN F-CSE SD

"

A-3

0HR DRY AT 9.0

24hrs = DRY 9.0

90+00

0-1.5

LOOSE BRN SILTY F SD

MOI

A-2-A

-L-

-8

M. DNSTAN F-CSE SD

"

A-3

0HR = DRY AT 8.0

24hrs = DRY 8.0

85+00

0-1.5 SS-1

1/1/2 DK BRN SILTY F SD

MOI

A-2-A

WBL

2.5-4 SS-2

1/3/3 TAN BRN F-CSE CLY SD

"

A-2-G

5-6.5 SS-3

3/5/5 TAN F-CSE SD

"

A-3/A-1-B

7.5-9

2/8/8 SAME w GRAVELS

SAT

A-1-B

0HR = 6.8

24hrs = 6.8

LINE

PROJECT 6.299001T DATE 6-11-92  
 COUNTY Edgarcombe  
 NOTES BY RLE

MOISTURE

ESTIMATED CLASS

WBL

STATION

DEPTH SAMP

DESCRIPTION

74+00

0-38

MED STIFF TAN BRN SI-SDY CL

m

A-6

35-45

MED STIFF / STIFF RED GRAY BRN

MICA SDY SI-CL

m

A-7-6

45-7

MED DNS GRAY CLY SI-F SD

m

A-2-6

dry 7.0

RAMPE 23+45

0-2

SOFT-MED STIFF TAN BRN SL

m

A-6/A-7

SDY CL

35-6

MED STIFF / STIFF RED GRAY

BRN MICA SDY SI-CL

m

A-7-6

6-7

MED DNS GRAY CLY SI-F SD

S&T

A-6-6

HR 0.69

STAS 13+00

0-1.5

OFF

SOFT DARK BRN SI-ORG CLY

m

A-6

SDY SILT

1.5-4.5

OFF

MED STIFF DARK GRAY SI-ORG

m

A-7-5

SDY SI-CLY

4.5-6

MED DNS BRN SI-F SD

S&T

A-2-6

OH2 = 3.3

BEFORE 5% ORGANIC

LINE

WBL

PROJECT 6.29900 IT DATE 2/28/92  
COUNTY EDGEcombe  
NOTES BY WRC

STATION

DEPTH SAMP

DESCRIPTION

MOISTURE

ESTIMATED  
CLASS

56+00

0.0-3.0

LOOSE ORANGE F-CSE SO w/<sup>small</sup> GRAVELS

M

A-2-4

E WBL

3.0-6.0

LOOSE-MED DMS ORANGE SL F-CSE SO

M

A-2-4

6.0-8.5

SFT LT GRAY RED mottled CL

M

A-7-6

OHR H<sub>2</sub>O = DRY

52+00

0.0-2.0

LOOSE ORANGE TAN SL FSD (Fill)

M

A-2-4

7 LT

2.0-8.0

LOOSE ORANGE TAN F-CSE SO

M

A-3

WBL

OHR H<sub>2</sub>O = 6.0

PROJECT 6.299001T DATE 2/28/92  
 COUNTY EDGECOMBE  
 NOTES BY WRC

MOISTURE  
ESTIMATED  
CLASS

LINE  
WBL  
STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
6.2+00	1.0-1.0		SPT-MED STIFF FSDY SL Silt & FS	M	A-4 (2)
4 WBL	1.1-2.5		MED-STIFF JKY CLY SL	M	A-4 (3)
	2.5-5.5		MED-STIFF-STIFF FSL SDY CL	M	A-6 (4)
	5.5-8		M. DNS DK BRN SI-F SD	SAT	A-2-6 (1)
			OHR=5.0		
5.0+15	0.0-1.5	SS-125	1/1/1/ KODSE BRN-TAN SL F SD	M	A-2-4 (1) CHANGE TO A-6 A-F R-5
4 WBL	2.5-4.0	SS-126	1/3/4 Med-DNS ORANGE TAN SDY CLY SL	M	A-4/A-6 (2) MOI: 15.9
	5.0-6.5	SS-127	2/3/6 Lt GRAY SDY CL	M	A-6 (3)
	7.5-9.0		2/3/13 SAME AS ABOVE	M	A-6 (4)
			O HR H <sub>2</sub> O = DRY		



PROJECT Ce. 2990017 DATE 11/91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE	STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
✓	603465	0-1.5	S35	STIFF TAN GRAY BRN FSDY SILTY CL	m	A-7-6 (1)
		-4	S36	STIFF TAN BRN SILTY FSDY CL	m	A-6/A-7-6 (3)
		-6	S37	M. DEN TAN GRAY SPY SILTY CL W CLY LAYERS		A-6 (3)
				OHR : OHR = Dry 6.0 <u>Dry 24hr Dry 6.0</u>		
✓	60400	0-1		LOOSE TAN SILTY F SD	m	A-2-4 (1)
		-4		STIFF TAN BRN FSDY SILTY CL	m	A-7-6 (1)
		5		STIFF GRAY BRN SILTY FSDY CL	m	A-6 (3)
		6		M. DEN TAN GRAY SILTY F SD	m	A-2-4 (1)
				OHR = 6.0 Dry <u>Dry 24hr</u>		
✓	54400	0-9	S3A	MED DWS & WHITE LOOSE YEL BRN SILTY F CLY SD wet @ 7.5' T.B. <u>Caved at 7.2' WT</u>	mo	A-2-4 (1)

11/10 SL

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE \_\_\_\_\_  
 BRIDGE ON \_\_\_\_\_ OVER \_\_\_\_\_  
 BORING LOCATION (STA.) 71+50 WBL \_\_\_\_\_ OFFSET 8'  
 BORING NO. \_\_\_\_\_ GEOLOGIST WRC GROUND WATER 0 HRS. \_\_\_\_\_ 24 HRS. 35'  
 COLLAR ELEV. \_\_\_\_\_ DATE STARTED 3/2/92 DRILL EQUIPMENT CME 45R  
 TOTAL DEPTH 30.3 DATE COMPLETED 3/3/92 \_\_\_\_\_ Rot mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0							
	3.8	1	2	2	SS-128 0.3 topsoil BROW-TAN F SDY SL A-4	MOIST	④ 4	
	8.8	3	4	5	SS-129 TAN F SD W/MCA A-2-4	M	④ 9	
	13.8	2	3	2	SAME AS ABOVE A-2-4	SAT	④ 5	
	18.8	1	7	12	change 1 (13.8-14.2 A-6 TAN) 14.2-15.3 13 TAN F-CSE SD A-3	SAT	④ 19 13.8-14.2 A-6 all layer	
	23.8	7	8	9	SS-130 LT GRAY F-VCSE SD W/ GRAVELS A-3	SAT	④ 17	
	28.8	5	5	4	SAME AS ABOVE A-3	SAT	④ 9	
	30.3	6	7	7	SS-131 LT GRAY F-VCSE SD W/ some carbonized wood fragments A-3	SAT	④ 14	

22.8  
1.5  
3  
2

3 4 5 5.5 5  
5.2 5.8  
6.0 6.2  
6.2 6.5  
4.8 5.2

PRELIMINARY FOUNDATION INFO.  
6.2 casing set at 4.0

LINE

PROJECT 6, 299001 T DATE 11-13-91COUNTY EdgecombeNOTES BY RLE

-WBL

STATION

DEPTH SAMP.

DESCRIPTION

MOISTURE

ESTIMATED  
CLASS

77+00

0-1

0-1

0.-0.2 Root mat

SOFT DK. BRN CLY F SDY SILT

wet

A-A

3

-6

M. DEN GRAY BRN SILTY F-CE SD

SAT

A-2/A-2

OHR = 0.7

24hr = 0.5

73+00

0-1

S-38

M. STIFF BRN CLY F SDY SILT

mol

A-A/A-6

3

-2

S-39

M. STIFF TAN BRN SILTY F SDY CL

"

A-6

3

-6

S-40

M. DEN TAN BRN SILTY F SD W

"

A-2/A

1

CLY LAYERS OHR 6.0

24hr = Dry 6.0

69+60

0-6

OFF

M. DEN TAN BRN SILTY F SD

mol

A-2/A

1

TOP OF BRN

Dry AT 6.0

24hr 6.0 Dry

68+50

0-1

LOOSE BRN SILTY F SD

mol

A-2/A

1

-6

M. DEN TAN BRN SILTY F SD

"

A-2/A

1

OHR Dry 6.0

24hr = Dry 6.0

LINE  
WBL

PROJECT 6.299001T DATE 2/5/92  
 COUNTY EDGEcombe  
 NOTES BY WRC, RLE

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
80+00	0.0-25		SFT-MED STIFF BRN SDY SL	W	A-4
WBL	45		MED STIFF GRAY TAN SDY CL	W	A-6
	60		MED-DNS TAN F-CSE SD	SAT	A-6
			0 HR H <sub>2</sub> O = 1.0		
			24 HR H <sub>2</sub> O = 1.0		
78+85	0.0-60		LOOSE - BRN-TAN GRAY SL F-CSE SD w clay layers	M	A-2-4
			0 HR H <sub>2</sub> O = DRY		
			24 HR = DRY		
77+85	0-6		LOOSE SI F-CSE SD w CLY LAYERS	mol	A-2-4
			H <sub>2</sub> O = 5.2		
72+85	0.0-45		SFT-MED STIFF TAN GRAY SDY CL	W	A-6
	60		MED DNS TAN SL F SD	SAT	A-2-4
			0 HR H <sub>2</sub> O = .3		
			24 HR H <sub>2</sub> O = .3		
71+00	0.0-6.0		Loose - med dns BRN TAN SL F SD		A-2-4
			0 HR H <sub>2</sub> O = DRY		

(2-3)

(1) F.W.

(1) RD WY FILL

72+10 creek

(3-4)

(1)

(1)

LINE  
WBL

PROJECT 6.299001T DATE 12-9-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

81700 0-1 01-Rootmat  
 LOOSE VEL-BRN SILTY F SD mol A-2-4 (1)  
 -3 M-DNS TAN BRN SILTY F CLY SD 11 A-2-6 (1)  
 -5 M-DNS GRAY F-CSE SD 11 A-3 (1)  
 -6 DNS TAN URIC F-CSE SD gravels sat A-1-B (1)  
 OHR = 5.8  
 24hrs = 5.6

79700 0-15 5-116 loose TAN BRN F-CSE SD Dry A-3 (1) ROW R1  
 -4.5 5-117 MED DNS TAN BRN F-CSE SD M A-2-4 (1) Natural Ground  
 -6 5-118 MED DNS TAN BRN CSE SD M A-3 (1) A-1-B (1)  
 OHR DRY  
 24hrs = Dry 0.0

75700 0-2 MED STIFF TAN BRN SILTY FSD CLY M A-6 (1)  
 -5 MED DNS TAN BRN SILTY FSD M A-2-4 (1)  
 -6 MED DNS TAN GRAY F-CSE SD SAT A-3 (1)  
 OHR 5.3  
 24hrs = 5.2

PROJECT 6.299001 T DATE 11-13-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE

-L-

STATION

DEPTH SAMP.

DESCRIPTION

MOISTURE

ESTIMATED CLASS

STATION	DEPTH SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
<del>70700</del>	<del>0-4</del>	<del>LOOSE M-DEN TAN BRN SILTY FSD</del>	<del>mo</del>	<del>A-2-A</del>
		<del>OHR Dry 6.0</del>		
		<del>24hr Dry 6.0</del>		
<del>94700</del>	<del>0-6</del>	<del>LOOSE M-DEN TAN BRN SILTY FSD</del>	<del>mo</del>	<del>A-2-A (RED WY FILL)</del>
		<del>OHR Dry 6.0</del>		
		<del>24hr Dry 6.0</del>		
88700	0-1.5 S-41	LOOSE TAN BRN SILTY FSD	mo	A-2-A (H)
-L-	-3 S-42	M-DEN TAN BRN CLY F-CSE SD	"	A-2-A (H)
	-6 S-43	M-DEN TAN F-CSE SD	"	A-3 (H)
		OHR = Dry 6.0		
		24hr = Dry 6.0		
45100		SPT		
88700	0-1	LOOSE TAN BRN SILTY FSD	mo	A-2-A (H)
WBL	-3	M-DEN TAN BRN CLY F-CSE SD	mo	A-2-A (H)
	-4	M-DEN TAN F-CSE SD / W CLY LAYERS	"	A-2-A (H)
	-6	DEN TAN F-CSE SD w gravels	wet	A-3
		OHR H <sub>2</sub> O = 5.9		
		24hr = 5.8		

LINE  
-L WBL

PROJECT G.299001T DATE 3/2/93  
 COUNTY Edgecomb  
 NOTES BY RLG

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
60					
59					
59	0-1	S-5	MED STIFF / STIFF GRAY BRN SDY SL CL	m	A-7-6
	-6	S-6	MED DNS / DNS TAN BRN CLY SL F-ESBD	"	A-2-6
	-8	S-7	MED STIFF / STIFF TAN BRN SL SDY CL	"	A-6
			OH RDY		
			24 hr Dry 8.0		
57	0-5		MED STIFF GRAY BRN SDY SL CL	m	A-7-6
	5-50		MED DNS / DNS TAN BRN CLY SL F-ESBD	m	A-2-6 / A-2-6
	-8		MED STIFF / STIFF RED GRAY SDY SL CL	"	A-7-6
			OH RDY		
			24 hr Dry 8.0		

LINE  
-L-WBL

PROJECT 6.299001T DATE 3/2/92  
 COUNTY Edgewood  
 NOTES BY RLE

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
63	0-1.5		MED STIFF / STIFF GRAY BRN SDY SL CL M		A-7-6 (5)
	-3		MED DNS BRN SL F SD	"	A-2-A (1)
	-6		MED DNS TAN GRAY SL F CSE CLY SD SAT	"	A-2-6 (2)
	-9		LOOSE TAN BRN F CSE SD / gravel	"	A-1-B (3)
	-19		SOFT / MED STIFF BLUE GRAY CLY SDY SL W	"	A-A / A-2-A (3)
	-28	S-8	V. STIFF / HARD BRN GRAY SL CL DHR = 3.8 Zahr = 3.0	M	A-7-6 (4)
62	0-1.5		MED STIFF / STIFF GRAY BRN SDY SL CL M		A-7-6 (5)
	-3		MED DNS BRN SL F SD	"	A-2-A (1)
	-6		MED DNS TAN GRAY SL F CSE CLY SD SAT	"	A-2-6 (2)
			LOOSE TAN BRN F CSE SD / gravel	"	A-1-B (3)
61	0-5		MED STIFF GRAY BRN SDY SL CL M		A-7-6 (5)
	5-15		LOOSE BRN SL F SD / MIXED	M	A-2-A (1)
	-2.5		MED STIFF / STIFF TAN BRN CLY SDY SL W	M	A-A (3)
	-4		MED DNS TAN BRN CLY SL F SD	M	A-2-6 (2)
	-8		MED STIFF / STIFF RED TAN SDY SL CL M	M	A-7-6 (5)
			DHR = Dry 24hr Dry 8.0		





LINE  
L' REV

PROJECT 6.29900 IT DATE 3/2, 93  
 COUNTY Edgemoor  
 NOTES BY RLE

STATION	DEPTH SAMPL	DESCRIPTION	MOISTL	ESTIMATED CLASS
81	0-4 -8	LOOSE TAN BRN CLY SLF-LSESD MED DNS / DNS LIGHT GRAYS I-F-CSESD MIXED (RDWYFII) OHR Dry 2ahr = Dry at 8.0	m "	A-2-A A-3
80				
79	0-8	LOOSE TAN SLF-CSESD (RDWYFII) OHR Dry 2ahr = Dry at 8.0	m	A-2-A / A-3
78				
77	0-15 -8	LOOSE BRN SLF.SD MIXED MED DNS TAN SLF-CSESD / W MIXED CLY LAYERS RDWYFII OHR = DRY 2ahr Dry at 8.0	m "	A-2-A A-2-A
76				

LINE  
-LL REV

PROJECT 6.299001T DATE 3/2,93  
 COUNTY Edgemoor  
 NOTES BY RLS

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
87	0-5		LOOSE DR. BRN FSD/SILT T/S	M	A-2-4/A-3
	-6		LOOSE/MED DNS TAN SL F-CSESD OHR=DRY (RDWY FILL)	"	A-2-4/A-3
			(RDWY FILL)		
85	0-6		LOOSE/MED DNS TAN SL F-CSESD OHR=DRY 24hr DRY 6.0	M	A-2-4/A-3
			(RDWY FILL)		
83	0-3		LOOSE TAN BRN SL F-CSESD	M	A-2-4
	-6		MED DNS IDNS BRN CLY SL F SD	M	A-2-4
	-8		MED DNS LIGHT GRAY CLY SL F SD	"	A-2-4
	-9		MED STIFF / STIFF BRN GRAY SDY SL CL OHR=D-Y 24hr = DRY at 8.6	"	A-2-4
			(RDWY FILL)		

PROJECT 6.299001T DATE 3/2, 93  
 COUNTY Edgewood  
 NOTES BY RLE

LINE  
 - LLREV

STATION	DEPTH	SAMP	DESCRIPTION (RDWYFII)	MOIST	ESTIMATED CLASS
96	0-1		LOOSE TAN BRN CLY SLF SD	m	A-2-4
10' RT	-6		LOOSE / MED DNS TAN SLF-CSE SD	"	A-2-4/A-3
			OHR Dry		
			24hr Dry 6.0		
93	0-1		Guardrail (RDWYFII)	m	A-2-4
10' RT	-6		LOOSE / MED DNS TAN SLF-CSE SD	"	A-2-4/A-3
			OHR = Dry		
			24hr Dry 6.0		
90	0-1		Guardrail (RDWYFII)	m	A-2-4
20' RT	-6		LOOSE TAN BRN SLF-CSE SD MIXED CLY LAYER S	"	A-2-4/A-3
			LOOSE MED DNS TAN SLF-CSE SD	"	A-2-4/A-3
			OHR = Dry		
			24hr = Dry at 6.0		



PROJECT 6.299001T DATE 11-11-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

LINE  
STATION DEPTH SAMP. DESCRIPTION

118+00 0-3 S&L LOOSE-M. DENTAN BRN SILTY FSD mol A-2-A (1)  
 EL = 41.3 -6 S&L M. DENTAL F-CSE SD 11" A-3/A-2 (1)

0HR = Dry 6.0  
 24hr = Dry 6.0

BEGIN -1' - STA 117+00

~~112+00 0-6 LOOSE TAN BRN SILTY FSD mol A-2-A (1)~~  
~~0HR = Dry 6.0~~  
~~24 Dry at 6.0~~

WBL  
 106+00 0-25 S-AA LOOSE TAN BRN SILTY FSD mol A-2-A  
 -6 S-AA M. DENTAN BRN F-CSE SD 11" A-3  
 24hr Dry 6.0

10A+75 0-6 LOOSE / M. DENTAN BRN SILTY FSD Dry A-2-A (1) RE W/FILL  
 TOP OF BERM

LINE  
L1-REV

PROJECT 6.2990DIT DATE 5/1/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
STA-140+00	0.0-1.5	S-255	LOOSE BROWN-TAN SL F-SD	PRX	A-2.4 (1-2)
	1.5-4.0	S-256	LOOSE-MED DNS BROWN TAN SL F-CSE SD w/ small clay layers 1.5-2.0	M	A-1.6 (3)
	4.0-6.0		LOOSE MED DNS F-VLSE SD OHR H <sup>2</sup> D = 3.9	SAT	A-1.6 (4)
STA-135+00	0.0-2.5		SOFT-MED STIFF/SDy SL DK BROWN	M	A-4 (2)
	2.5-5.0		MED DNS BROWN GRAY SL F-CSE SD	SAT	A-2.4/A-3 (3)
	5.0-6.0		MED DNS GRAY F-VLSE SD w/ <sup>poa</sup> gravels OHR H <sup>2</sup> D = 3.7	SAT	A-1.6 (4)

LINE  
L1-REV

PROJECT 6.2990017 DATE 5/13/92  
 COUNTY EDGE COMBE  
 NOTES BY EAH

MOISTURE

ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

SPT

170+00	0-1.5	NS	0/1/1	BRN F. SAND	M	A-2-Y
	2.5-4.0	NS	3/5/6	TAN F-CLAY SD GHS	M	A-2-Y
	5.0-6.5	NS	2/3/3	BRN F-CLAY SAND	SAT	A-2-Y
	7.5-9.0	see	2/2/4	SAND		

HD 4.2 DM  
5.0

167+00	0-1/2			LOOSE BRN F. SDY SILT/SI F. SD	D	A-4
	-2.5			STIFF D. GRAY SILTY CLAY	M	A-7
	-7			LOOSE MED DNS BRN F-CLAY SD	SAT	A-2-Y
	-8			MED DNS BLK F. CLAY SD	"	A-2-Y

HD dh 2.1

#41/15

164+00	0-1/2			V. LOOSE BRN SILTY F. SD	M	A-2-Y
	-1.0			STIFF L. BRN SI SDY CL	M	A-6
	-8			MED. DNS TAN F-CLAY SAND	SAT	A-2-Y

H<sub>2</sub>O 0m  
3.3'



LINE  
LI-REV

PROJECT L299001T DATE 5/13/92  
 COUNTY EDGEcombe  
 NOTES BY EA W Y

MOISTURE  
ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

176+00

0.0-10.0 CBR#2  
10.0-13.0

LOOSE BROWN F-CSE SD  
 MED DNG GRAY CLY CSE SD w/shell  
 fragments (yorktown)  
 DTR H<sub>2</sub>O = 6.0  
 6.5

M/SAT A-2-4/A-3  
A-2-6/A-2-4

①  
①-2

173+00

0-1/2  
-2  
-8

LOOSE BRN SILTY SAND  
 MED STIFF YELLOW SDY CLAY  
 LOOSE - MED DNG GRAY F-CSE SD  
 H<sub>2</sub>O 3.5 T.O

m A-2-4  
m A-C  
M/SAT A-2-4/A-1-B



PROJECT U.299001T DATE 12-10-91

COUNTY Edgemoor  
 NOTES BY RLE

LINE

MOISTURE

ESTIMATED CLASS

STATION	DEPTH SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
122+00	0-2	LOOSE TAN BRN SILTY F SD	mol	A-2-A
EL=39.5	-3	M. DNS BRN F-CSE CLY SD	"	A-2-B
3' RT	-8	MIDNSTAN F-CSE SD	"	A-3
		OHR DRY 24hrs = Dry 8.0		
120+00	0-1	LOOSE TAN BRN SILTY F SD	mol	A-2-A
-L1-	-7	M. DNS TAN F-CSE SD	"	A-3
EL=40.5	8	DNS WHITE TAN CSE SD / gravels	"	A-1-B
1' RT		OHR DRY 24hrs = Dry 8.0		
118+00		already / sample		
		-L1 - start at 117+00		
116+00	0-25	LOOSE TAN BRN SILTY F SD	mol	A-2-A
WBL	-8	M. DNS TAN F-CSE SD	"	A-3
		OHR DRY 8.0 24hrs = Dry 8.0		
114+00	0-3	LOOSE BRN SILTY F SD	mol	A-2-A
WBL	-5.5	SOFT DR BRN CLY F SDY SILT	wet	A-2
	-8	DNS TAN GRAY CSE SD / gravels	"	A-1-B
		H2O mol at 8.0 24hrs 3.4		

(1)  
 (1) A-2-A (1)  
 (1)

1  
 1  
 1

1  
 1

1  
 3  
 1

PROJECT 6.2990DTT DATE 11-18-91

COUNTY Edgecombe

NOTES BY RLE

LINE

L-1-

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

EL= 43.5  
142+00 0-1.5 S-50 LOOSE BRN SILTY F SD mol A-2-A (1)  
-6 S-51 M.DENTAN BRN SILTY F-LSE SD " A-3/A-2-A (1)  
142+70L' OHR DRY 6.0  
90' LT 24 DRY 6.0

*cut sample B*

136+00 0-1 LOOSE DK BRN SILTY F SD T.S mol A-2-A (1)  
EL= 38.5 -3 M.STIFF TAN BRN CLY F SDY SILT " A-4 (2)  
4+00 RPB -6 M.DENTAN BRN SILTY F-CSE SD sat A-3/A-2-A (1)  
15' LT OHR= 5.0  
136+20 24hr A-3  
80' LT

EL= 42.5  
130+00 0-2 S-48 LOOSE DK BRN SILTY F SD mol A-2-A (1)  
-6 S-49 M.DENTAN BRN F-LSE SD mol A-3 (1)  
35' LT OHR DRY 6.0

EL= 44.0  
129+80 0-6 LOOSE TAN BRN SILTY F SP mol A-2-A/A-3 (1)  
TOP OF SPERM

~~12A+00 0-1.5 LOOSE BRN SILTY F SD T.S mol A-2-A (1)  
M.DENTAN BRN SILTY F-CSE SD " A-3/A-2-A (1)  
OHR= Dry at 1.0  
24hr Dry 6.0~~

PROJECT 6.29900 IT DATE 12-10-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

LINE	STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
	130+00			already done sample		
	EL = 42.5					
	17' LT					
	128+00	0-1		LOOSE BRN. SILTY F SD T.S	mol	A-2-A
	EL = 39.0	-6		M. DNS TAN F - CSE SD	"	A-3
	5' LT	-8		M. DNS White TAN CSE SD / gravels	"	A-1-B
				OHR = Dry		
				24hrs = 7.1		
	126+00	0-1		LOOSE DRK BRN SILTY F SD T.S	mol	A-2-A
	<del>EL = 40.8</del>	-2		MIDNS BRN SILTY F CLY SD	"	A-2-6
	EL = 39.8	-8		MIDNS TAN F - CSE SK	"	A-3 / A-1-B
	Q1 RDV			Dry		
				24hrs = Dry 8.0		
	124+00	0-1.5	SS-10	Top of SILTY F SD T.S.		
		2-5-2	SS-11	0-1-1 DRK BRN SILTY F SD	mol	A-2-6
	SPT	5-6.5		1-1-1 TAN F - CSE SD	"	A-3
	EL = <del>39.8</del>	7.5-9	SS-12	3-5-6 SAME "	"	A-3
	EL = 39.8			3-5-5 TAN CSE SD / gravels	"	A-1-B / A-3
	4' RT			OHR = Dry		
				24hrs = Dry 8.0		



PROJECT 629900IT DATE 12-6-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE -L1-

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
140+00	0-1		LOOSE DR. BRN SILTY F SD T.S	moi	A-2-A
EL = <del>40.0</del>	-6		M. DNS TAN F-CSE SD	SAT	A-3
EL = 38.5			24HR 3.7 OHR = 5.1		
8+05 RPB					
28' RT					
140+25 L'REV					
100' LT					
138+00	0-1		LOOSE DR. BRN SILTY F SD T.S.	moi	A-2-A
EL = 39.0	-2.5		M. DNS TAN BRN CLY SILTY FSD	ii	A-2-A
6+02 RPB	-6		M DNS TAN F-CSE SD	SAT	A-3
5' LT			24HR 4.4 OHR = 4.8		
138+20					
98' LT					
134+00			SPT AT 134+70		
132+00			0.1 FOOT MAT		
EL = 40.0	0.1-1		LOOSE DR. BRN SILTY F SD	moi	A-2-A
132+40 L'REV	-6		M. DNS TAN BRN F-CSE SD	ii	A-3
40' LT			24HR Dry 6.0 OHR = Dry		
0+30 RPB					
15' RT					

Plot on R

①  
②  
③

LINE  
- 21 -

PROJECT 6.29900 IT DATE 12-6-91  
 COUNTY Edgecombe  
 NOTES BY RLE

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
EL = 44.0 152+00 152+25 18' LT	0-1		LOOSE CLY SILTY FSD TS	mo	A-2-4	(2)
	-2.5		M. DNS TAN BRN SILTY FSD	"	A-2-4	(1)
	-6		M. DNS TAN F-CSE CLY SD	"	A-2-6	(1)
			<u>24HR Dry</u> OHR = Dry 6.0			
			See deep hole on other notes			
EL = 43.8 150+00 150+25 30' LT	0-1		LOOSE DR BRN SILTY F SA T.S.	mo	A-2-4	1
	-2.5		M. STIFF TAN BRN SILTY F SD YCL	"	A-6	3
	-6		M. DNS TAN F-CSE CLY SD U	"	A-2-6	(1)
			GRAVELS OHR = 5.9			
			<u>24HR Dry 6.0</u>			
EL = 41.3 146+00 146+25 60' LT	0-1		LOOSE DR BRN SILTY F SD TS	mo	A-2-4	(1)
	-4		M. DNS DR GRAY SILTY F SD	"	A-2-4	(1)
	-6		M. DNS TAN F-CSE SD		A-3	
			<u>24HR 5.5</u> OHR = 5.6			
EL = 42.0 144+00 144+25 75' LT	0-1		LOOSE BRN SILTY F SD T.S.	mo	A-2-4	
	-6		M. DNS TAN BRN F-CSE SD		A-3	
			<u>24HR Dry at 6.0</u> OHR = DAMP AT 6.0			



LINE

PROJECT 6.299001T DATE 2-19-92  
 COUNTY Edgocombe  
 NOTES BY RLE & WRC

STATION DEPTH SAMP DESCRIPTION

MOISTURE

ESTIMATED CLASS

194+00	0D-1.0	S-177	SFT TAN F SDY SL	S	A-4	(4)
	6.5	S-178	MED-STIFF-STIFF TAN-GRY FSDY CL	W	A-6/A-7-A	(4-5)
	13.5	S-179	LOOSE-MED-DNS white F. CSE SD	SAT	A-3	(3)
	19.5	S-180	LOOSE-MED-DNS GRAY GREEN SL F SDY/sl	SAT	A-2-4	(2)
	23.5	S-181	MED-DNS GRAY GREEN SL F SD	W	A-2-4	(1)
	29.0	S-182	MED STIFF-VSTIFF GRAY SDY CL w/straws	M	A-6	(4)
	34.5	S-183	VSTIFF-HD GRAY BRN SL CL	M	A-7.6	(4)

0 HR H<sub>2</sub>O = 1.6

24 HR H<sub>2</sub>O = 1.6

3.5  
5.5  
13.5  
13.5  
25.5  
28.5  
34.0

WATER AT SURFACE

DNL STA 1 19'  
 stopped hole at 23.5'  
 23'-34' DNS HAVE APPEARING

152+00	0-1.5	S-171	LOOSE TAN BRN SI-F SD	m	A-2-A	(1)
	-A	S-172	M. ST. RED BRN CSE SI CLY SD	m	A-2-6	(2) (3)
152+25 L'RB	-13	S-173	M. DNS TAN CSE SD w/ gravels	SAT	A-1-B	(1)
15' LT	-21	S-174	LOOSE GREEN GRAY F SI-SD/shells	SP	A-2-X	(2) (3) (4)
	-26	S-175	M. DNS. DNS GRAY CLY SI-F-CSE SD	"	A-2-A	(1)
	-37	S-176	DNS GREEN GRAY SI-F-CSE SD	"	A-2-A	(1)
	-38		M. ST GREEN GRAY SI-CSE CLY SD	"	A-2-6/A-3	(2) (3)

0 HR = 2.9

24 HR = 5.5

DNS GRAY SD AT 21.0

4

PROJECT 6-299001T DATE 12-12-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

LINE	STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
-L1-	160+00	0-15	SS-15	0-1-1 TAN BRN SILTY F SD	mol	A-2-A (I)
	SPT	25-4	SS-16	1-2-2 TAN F-CSE SD	"	A-3 (II)
EL=47.0		5-6.5		2-4-4 same "	"	A-3 (III)
	160+20	75-9		2-5-7 TAN CSE SD / w gravels	SAT	A-1-B (IV)
	42' RT			OHR=7.3 2Ahrs=7.3		
	158+00	0-2		LOOSE-M.DNS SILTY F SD	mol	A-2-A (I)
EL=45.0		-7		M.DNS TAN F-CSE SD	"	A-3 (II)
	158+20	-8		M.DNS TAN CSE SD / gravels	SAT	A-1-B (III)
	28' RT			OHR=6.5 2Ahrs=6.3		
	156+00	0-3		LOOSE-M.DNS TAN BRN SILTY SD	mol	A-2-A (I)
EL=45.5		-7		M.DNS TAN F-CSE SD		A-3 (II)
	156+20	-8		M.DNS WHIT TAN CSE SD / w gravels	SAT	A-1-B (III)
	13' RT			OHR=7.0 2Ahrs=6.9		

PROJECT 6.299001T DATE 11-18-91  
 COUNTY Edgecombe  
 NOTES BY MLE

LINE  
 L-1

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
106+00 EL=40.5	0-1	S-55	LOOSE DK. BRN SILTY F. SD TS.	mol	A-2-A
	-2.5	S-56	SOFT DK. BRN F. SPY SILT	WET	A-4
	-4	S-57	V. SOFT BLK SLI-OFA CLY F. SPY SILT. II		A-4/A-6
	-6		M. DENTAN GRAY F. CSE SD	SAT	A-3
					OHR 3.0 2Ahr 1.3
					See SPT at the bottom
100+00 EL=47.0	0-1		LOOSE BRN SILTY F. SD	mol	A-2-A
			M. DENTAN F. CSE SD	"	A-3/A-4
					OHR Dry 6.0 2Ahr 6.0
15A+00 EL=44.0	0-1	S-52	LOOSE BRN SILTY F. SD TS.	mol	A-2-A
	-3	S-53	M. DENTAN BRN CSE SD w/ gravels	"	A-4
	ZLT	-6	M. DENTAN F. CSE SD	SAT	A-3
					OHR 5.5 2Ahr 5.0
1A8+00 EL=43.3	0-1.5		LOOSE DK. BRN SILTY F. SD	mol	A-2-A
	-2.5		M. DENTAN BRN CLY F. SILTY SD	"	A-2-A
	-4.5		M. STIFF TAN BRN SILTY F. SD CL	"	A-6
	45' LT	-6	M. DEN GRAY BRN SILTY F. CSE SD	WET	A-3/A-4
					OHR 5.9 2Ahr 5.9

720

PROJECT G.299001F DATE 12-12-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
-L1-

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTUF	ESTIMATED CLASS
168+00	0-2		SOFT DARK BRN CLY SDY SILT	W	A-4
EL= 40.0	-7		LOOSE TO MED DUS BRN CSE SD	SAT	A-1-A
168+20	-8		BLUE GRAY SHALLY CLY SD M DUS	"	A-2-4
97' RT			YORKTOWN (24hr)	1.5	
167+50			edge canal		
EL= 40.3	0-1		LOOSE BRN SI F-CSE SD	M	A-2-4
167+70	-7		LOOSE-MED DUS BRN CSE SAND	SAT	A-1-A
96' RT	-8		BLUE GRAY SHALLY CLY SD MED DUS	"	A-2-4
			See other sheet for samples		
166+00	0-1		LOOSE BRN SI F-CSE SD (24hr=2.0)	M	A-2-4
EL= 40.5	-3		" GRAY F-CSE SD	W	A-4
166+20	-7		LOOSE-MED. DUS BRN CSE SD	SAT	A-1-A
87' RT	-8		MED DUS GRAY SHALLY SAND	"	A-2-4
10+75 KPD		H <sub>2</sub> O	1.8 TB YORKTOWN FM AT 7 (24hr=2.3)		
143+90	0-1.5		LOOSE BRN SILTY F SD	MOI	A-2-A
Same elev.	-3		M. STIFF GRAY SDY SILTY CL	WET	A-7-W
EL= 41.8	-8		M. DUS TAN F-CSE SD GRAVELS	SAT	A-1-B
164+08			OHR= 2.8		
73' RT			24hr= 2.7		
2+60 KPD					
162+00	0-2.5		LOOSE-M. DUS TAN BRN SILTY F SD	MOI	A-2-A
EL= 45.0	-3		LOOSE DR. BRN F SDY SILT	MOI	A-2/A-2-4
162+20	-4		M. STIFF YEL-TAN SILTY F SDY CL	"	A-6
59' RT	-8		DUS GRAY F-CSE SD	SAT	A-3/A-1-B
			OHR= 1.5		
			24hr= 6.1		

168+00 25 ft  
 0-1' - loose  
 -2' - loose  
 -3' - loose  
 -7' - BRN CSE SD

166+00  
 soft wet at 166+00  
 166+00  
 166+00

3-1  
 1

PROJECT U.299001T DATE 12-12-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
 -L1-

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
176+00	0-1		LOOSE BRN SILTY F SAND	M	A-2-4
EL=43.0	-5		LOOSE-MED DNS TAN F-CSE SD	D	A-3
175+96	-7		" " CSE SD	W	A-1-B
87' RT			H <sub>2</sub> O 3.2' Oh 24hr= 3.1		
17A+00	0-2.5		LOOSE BRN SILTY F SAND	M	A-2-4
EL=41.8	-8		" MED DNS BRN CSE SAND	SAT	A-1-B
174+01			H <sub>2</sub> O 2.8 Oh 24hr 2.8		
91' RT					
172+00	0-1.5	SS-17	BRN SILTY F SAND	M	A-2-4
SPT	2.5-4.0	SS-18	4 1/6 TAN CSE SD <sup>pea</sup> GRAVELS	SAT	A-1-B
EL 41.8	5-6.5		2 1/6 SAME " "	"	A-1-B
172+08	7.5-9.0	SS-19	2 1/6 BLUE GRAY CLY SILTY SD	"	A-2-4
96' RT			H <sub>2</sub> O 2.8 Oh, Yorktown 24hr 2.7		
170+00	0-1.5		LOOSE BRN + TAN SILTY F SAND	M	A-2-4
EL=41.3	-5		LOOSE-MED DNS TAN F-CSE SAND	SAT	A-2-4
170+15	-8		" TAN CSE SD	"	A-1-B
100' RT			H <sub>2</sub> O 3.6' Oh 24hr 2.5		
			Soils Change at 169+00		

PROJECT C.29900 IT DATE 12-12-91  
 COUNTY Edgcombe  
 NOTES BY RLE

LINE  
L1

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
186+00	0-1/2		LOOSE BRN SILTY F. SAND	M	A-2-4
EL 47.5	-1 1/2		" TAN SILT & SAND	M	A-2-4
185+68	-3 1/2		STIFF YEL. BRN SILTY F. SAND/CL	M	A-7-6
54' RT	-8		MED. DENSE TAN. C&E SAND Wt at 4.5 24hr 6.4	M	A-2-4
+50	0-1/2		D. BRN SI. F. C&E SD. LOOSE	M	A-2-4
EL 43.0	-3		LOOSE GRAY BRN CLY SAND	M	A-2-4
184+22 61' RT	-8		MED. DENSE TAN. C&E SD H <sub>2</sub> O 3.0' dh. 24hr 3.0	SAT	A-1-B
184+00	0-1.5	SS-20	0/0/1 DARK BRN CLY SAND/SILT	M	A-4
SPT	2.5-4.0	SS-21	1/1/1 D. BRN ORG CLY SAND/SILT	A-2	MUCK
EL 42.0	5.0-6.5	SS-22	6/6/4 TAN C&E SAND	SAT	A-1-B
183+70	7.5-9	SS-23	1/2/5 TAN SI-F SD H <sub>2</sub> O 1.5 dh. 24hr 1.3		A-2-4
64' RT					
183+00	0-1		SOFT DARK GRAY CLY SAND/SILT		A-4
EL 46.5	-3		V. LOOSE DK GRAY CLY SAND SPT 6' dh		A-2-6
182+73	-8		MED. DENSE TAN C&E SD Yorkton at 8' H <sub>2</sub> O 2.7 dh. 24hr = 2.7	SAT	A-1-B
67' RT					
182+00	0-1	S-123	LOOSE D. GRAY CLY SD	W	A-2-6
EL 40.0	-2	S-124	V. SOFT D. GRAY SILTY ORG CLAY	W	A-2-6
181+75	-3	S-125	V. SOFT D. BRN ORG CLY SAND/SILT	A-2	MUCK
70' RT	-6		MED DUS BRN C&E SAND	SAT	A-1-B
	-8		" GRAY-DUNE SHELLY CLY SD		A-2-4
181+00			BELOW UC 25' YORK TOWN		
EL 40.5	0-1 1/2		LOOSE D. GRAY CLY SAND	M	A-2-6
180+78	-6		" TAN C&E SD	SAT	A-1-B
73' RT	-8		BLUE GRAY SHELLY SD H <sub>2</sub> O 1.8 dh. 24hr 1.8		
180+00	0-1'		LOOSE BRN SILTY F. SAND	M	A-2-4
EL 42.5	-3		" GRAY FINE SAND	M	A-1-4
179+80	-8		LOOSE TO MED DNE. BRN C&E SD YORKTOWN AT 8'	SAT	A-1-B
76' RT			H <sub>2</sub> O 4' dh. 24hr = 3.5		
			178+00 see other page		

PONDS

H<sub>2</sub>O 1.5 dh

181+75 0-1 SOFT GRAY MUCK 32.5

-2 V. SOFT GRAY MUCK

-3 MUCK

-7 MED DNE TAN C&E SAND

-8 SHELLY SD

LINE

L1

PROJECT 6.29900 RT DATE 12-16-91COUNTY EdgecombeNOTES BY BAW

MOISTURE

ESTIMATED  
CLASS

STATION

DEPTH SAMP.

DESCRIPTION

MOI

II

II

SAT

II

M

M

M

M

M

191+00

EL=48.5

See other notes  
deep hole  
34'

192+00

22' deep

EL=48.5

191+56

33' RT

0-1

-3.5

-7.5

-17

-24

M.DNS BRN. F SDY SILT  
M. STIFF YEL-BRN F SDY SILTY CL  
M. STIFF TAN GRAY CLY F SDY  
M.DNS TAN CSE SD / gravels  
DNS BLUE GRAY shells SILTY CLYSD  
DHR=513 Yorktown

24hr=510

A-2

A-7-6

A-2-4 / A-42

A-3 / A-1-5

A-2-6

A-2-7

A-2-8

A-2-9

A-2-10

A-2-11

A-2-12

A-2-13

A-2-14

A-2-15

A-2-16

A-2-17

A-2-18

A-2-19

A-2-20

A-2-21

A-2-22

A-2-23

A-2-24

A-2-25

A-2-26

A-2-27

A-2-28

A-2-29

A-2-30

190+00

other sheet supplied

EL=48.0

189+58

41' RT

188+00

EL=48.0

187+62

50' RT

0-1/2

-3 1/2

-8

V. LOOSE BRN F SDY SILT  
STIFF YEL BRN F SDY SILTY CL  
MED DNS YEL BRN TAN CSE SD  
wet at 7.5' bh

24hr=7.5

A-2

A-7-6

A-1-12

A-1-13

A-1-14

A-1-15

A-1-16

A-1-17





195+11  
40' RT

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

Good hole  
R-211A

SS-11-SS

PROJECT NO. 6.299001T COUNTY EDGEcombe GEOLOGIC PROVINCE Coastal PL  
BRIDGE ON US 64 RLOC OVER Y10-RT  
BORING LOCATION (STA.) 195+11 OFFSET 37  
BORING NO. EBL GEOLOGIST WRC GROUND WATER 0 HRS. 24 HRS. 3.5  
COLLAR ELEV. 47.6 DATE STARTED 2/21/92 DRILL EQUIPMENT CME 45-B  
TOTAL DEPTH 50.3 DATE COMPLETED 11 Rot mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0								
	3.8	1	1	1	SS-1 BAN TAN SL F SD (A-2-4)	m 2.5		
	8.8	2	4	5	SS-2 M GRAY-TAN SL CL (A-7-6)	m 26.4	SD AT 6.5	
	13.8	7	8	8	SS-3 GRAY TAN F-CSE SD (A-3)	SAT		
	18.8	9	4	2	SAME AS ABOVE (A-3)	SAT 14.8	14.8 CHANGED TO DARK GRAY	
	23.8	1	3	9	SS-4 GREEN GRAY-CLY SL F SD W/ SHAL FRAG CL LAYERS (A-2-4)	SAT 19.8	CHANGED AT 19.8 GOLF HAND	
	28.8	9	12	17	SS-5 M GRAY-GREEN SDY CL (A-6) (A-2-4)	m 25.8 24.2		
	33.8	8	10	14	SS-6 GRAY SL CL (A-7-6) (A-4)	m	HARDER AT 25.8	
	38.8	7	20	39	SS-7 M GRAY RED BRN SL CL (A-7-6)	m 30.6	0.59 CORRECTION AT 41.8 TO RED BRN	
	43.8	12	21	29	SS-8 GRAY-GREEN F SD (A-2-4/A-3)	SAT 39.8	0.50	
	48.8	15	22	28	SAME AS ABOVE (A-2-4/A-3)	SAT	0.50	
		16	19	24	SS-9 DR GREEN F SD w/some mica (A-2-4)	SAT	0.43	

L1  
2.2  
3.9  
2.9  
6.0  
2.2  
3.8

5.5  
5x  
6.0

ELEV. -1.6 lower than STA 196+00  
7.7  
1.1  
-1.1

PRELIMINARY FOUNDATION INFO.  
6.2 casing set at 4.0'

PROJECT 6.299001T DATE 12-16-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
-L1-

MOISTURE  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

~~202+00~~ already sample.

EL= 45.8  
201+50  
♀

~~200+00~~ already sample.

~~200+00~~ 0-1 SOFT DR. BRN FSDY SILT mol A-2 3  
 22' deep -4 M. STIFF GRAY BRN FSDY SILTY CLY " A-7-6 A  
 EL= 47.5 -16 DNS TAN F-CSE SD SAT A-3/A-2  
 199+50 -23 DNS BLUE GRAY shells SI-CLYSD WET A-2-6/A-6  
 24hr=3.6 OHR=3.7

~~198+00~~ 0-15 SOFT DR. BRN FSDY SILT mol A-2 3  
 EL= 42.0 -6.5 M. STIFF VEL-BRN FSDY SILTY CL " A-7-6/A-2  
 197+51 -16 DNS TAN CSE SD / gravels SAT A-1-B  
 -18 DNS BLUE GRAY shells SILTY CLYSD " A-2-6  
 OHR=3.1  
 24hr=3.0

~~194+25~~ already done  
 EL= 47.5  
 195+73

56

PROJECT 6.29900 IT DATE 11-19-91  
 COUNTY Edgecombe  
 NOTES BY RL

LINE

L-1-

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	OR SP/SILT	MOISTURE	ESTIMATED CLASS
190+00 EL = 48.0	0-1	S-63	LOOSE DK. BRN SILTY F. SD T.S.		MOI	A-2-A
			M. STIFF / STIFF YEL-BRN FSDY			A-2-A
	-2.5	S-64	SILTY CL		"	A-7-U
	-6	S-65	M. DEN TAN BRN CSE CLY SD / gravel		SAT	A-1-B
			OHR = DRY 6.0			
			24hr Dry 6.0			
184+00 EL = 42.0	0-4.5		SOFT DK. BRN CLY FSDY / SILT		MOI	A-4
	-5	S-62	SOFT BLACK SLT-DEN FSDY / CLY SILT		Wet	A-7-S
	-6		M. DNS BRN F-CSE SD / gravel		SAT	A-1-B
			H <sub>2</sub> O 2.2			
			24hr = 1.3			
			182+00 - 184+00 low wet marshy area			Pond running cross-c- 183+00 - 183+79
178+12 EL = 43.8	0-11.5	S-58	LOOSE DK. BRN SILTY F SD T.S.		MOI	A-2-A
	-2.5	S-59	M. STIFF DK. GRAY CLAY FSDY SILT		"	A-2-A
	-4	S-60	M. STIFF TAN GRAY FSDY SILTY CL		"	A-7-U
	-6	S-61	M. DEN TAN GRAY F-CSE SD		SAT	A-3 / A-1-B
178+00			OHR 5.0			
83' RT			24hr 4.2			
172+00 EL = 41.8	0-11.5		LOOSE DK. BRN SILTY F-SD		M	A-4
	-3		M. DNS TAN BRN F-CSE SN		M	A-3
	-4.5		MED DNS GRAY SILTY F SD		W	A-1-U
	-6		MED DNS TAN GRAY F-CSE SD		SAT	A-3 / A-1-B
				OHR 3.0		

S-62  
not plotted  
SPT at  
same

BRN field

51

PROJECT 6-299001T DATE 2-24-92  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE

STATION

DEPTH SAMPL.

DESCRIPTION

MOISTURE

ESTIMATED CLASS

STATION	DEPTH SAMPL.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
STA		148+22 ELEV 7.2 lower than sta 148+42.66 H2O = 24hr = 5.3	7.3 6.1 6.2	
		195+66 ELEV 1.6 lower than STA 196+00 H2O 24hr = 3.6	7.7 6.1 -1.6	
198+00	0-1	SOFT DK BRN F SDY SILT	m	A-4
el = 48.0	-4	m. STIFF / STIFF GRY BRN FSDY SIL	"	A-7-6
	-16	DNS TAN F-CSE SD / w gravel	sat	A-3 / A-2
	-25	DNS Blue GRAY CLY / SI-F SD / w shells Frag.	wet	A-2-a / A-2-b
	-29	V. DNS GRY MIC. STA-CSE SD, w gravels	sat	A-2-a
	-33	V. STIFF / HARD RED GRY F SDY SI-CL <del>Residual</del>	m	A-7-6
	-35	V. DNS GRAY CLY / F-CSE SD	sat	A-2-a

(3)  
(4)  
(5)  
(6)

PROJECT 6.299001T DATE 11-2091  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE

1-1

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
214+00	0-1	S-69	LOOSE DK BRN SILTY F SD	mol	A-2-A
	-2.5	S-70	M. STIFF TAN BRN CLW F SDY SILT	"	A-4
	-3.5	S-71	M. STIFF VEL-BRN SILTY F SDY CL	"	A-6
	-6	S-72	M. IDENTAN GRAY SILTY F SD	f1	A-2-A
			OHR 5.6		
			24hr 5.2		
<del>208+00</del>	<del>0-2</del>	<del>A</del>	<del>LOOSE DK BRN SILTY F SD T.S.</del>	<del>mol</del>	<del>A-2-A</del>
	<del>-1</del>		<del>M. STIFF TAN BRN SILTY F SDY CL</del>	<del>"</del>	<del>A-6</del>
			<del>M. IDENTAN GRAY SILTY F-CE SD</del>	<del>SAT</del>	<del>A-2-A</del>
			<del>OHR=5.5</del>		
			<del>24hr 5.3</del>		
202+00	0-1	S-66	SOFT DR BRN F SDY SILT	mol	A-4
	-2.5	S-67	M. IDENTAN BRN SILTY F SD	"	A-2-A
	-6	S-68	M. IDENTAN GRAY F-CE SD	SAT	A-3
			OHR 3.9		
			24hr 3.6		
<del>196+25</del>	0-1		LOOSE DK BRN SILTY F SD	mol	A-2-A
	-2		M. STIFF TAN GRAY CLW F SDY SILT	"	A-4
	-6	OFF	STIFF BRN GRAY F SDY SILTY CL	"	A-7-U
			OHR = DRY 10.0		
			24hr 5.0		

EL = 45.8  
201+50

EL = 47.5  
195+75

LINE

 PROJECT 6.299001T DATE 12-17-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE

ESTIMATED CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
210700	0-1		LOOSE BRN SILTY F SD	moist	A-2-A
SIT	-3		MIDN TAN BRN SILTY F SDY CL	"	A-6 / ME-3
	-8		DNSTAN F-CSE SD	SAT	A-3
			H <sub>2</sub> O = 5.1		
			24hr = 5.0		
208700	0-1.5	SS-20	1-1-2 DR. BRN ST. F SD	moist	A-2-A (A-1)
	2.5-2	SS-25	m2-3-A TAN BRN SILTY F SDY CLT	"	A-6 ME-1A-6
	5-6.5	SS-26	5-6-9 TAN GRAY SILTY F SD	"	A-2-A
	7.5-9	SS-27	5-6-8 TAN F-CSE SD	SAT	A-3
			OH = 5.6		
			24hr = 5.2		
206700	0-1		SOFT DR. BRN F SDY SILT	moist	A-A
	-3		M. STIFF TAN BRN CLY F SDY SILT	"	A-2
	-6		M. DNS TAN F-CSE SD	SAT	A-3 / A-2-A (1)
	-8		DNSTAN CSE SD / GRAVELS	"	A-1-B
			24hr = 4.0		
			DHR = 4.6		
20A700	0-1		SOFT DR. BRN F SDY SILT	moist	A-2
	-6		M. DNS TAN F-CSE SD	SAT	A-3 / A-2-A
	-8		DNSTAN CSE SD / GRAVELS	"	A-1-B
			24hr = 3.0		
			H <sub>2</sub> O = 3.9		

PROJECT 6.299001T DATE 12-17-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

220+00 0-1.5 SS-28 0-1-2 DR. BRN FSDY SILT 0-10  
 SPT 2.5-4 SS-29 2-A-6 TAN BRN SI-SDY CL  
 5-4.5 SS-30 2-3-5 TAN F-CSE SD  
 7.5-9 3-6-8 same "

mul A-4  
 " A-6 A-7-6 M.O.I. 22.3  
 SAT A-3/A-2-4  
 " A-3

OHR = 4.5  
 24hr = 4.4

218+00 0-1 SOFT DR. BRN CLY FSDY SILT  
 -5 M. STIFF DR. GRAY SI-SDY CL  
 6 DNS TAN F-CSE SD

mul A-4  
 " A-6  
 SAT A-3

OHR = 6.0  
 24hr = 3.5

216+00 0-1 SOFT DR. BRN FSDY SILT  
 -3 M. STIFF TAN BRN SI-FSDY CL  
 -6 DNS TAN SI-F SD  
 -8 DNS TAN F-CSE SD, gravels

mul A-4  
 " A-6  
 SAT A-2-4  
 " A-3/A-1-7.5

OHR = 5.3  
 24hr = 5.2

212+00 0-1 SOFT DR. BRN FSDY SILT  
 -5 M. STIFF TAN GRAY FSDY CLY  
 8 DNS TAN GRAY F-CSE SD

mul A-4  
 " A-6  
 SAT A-3

OHR = 5.7  
 24hr = 5.0

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON SR OVER L'  
 BORING LOCATION (STA.) 221+72 - L' - OFFSET E  
 BORING NO. Hole 1 GEOLOGIST RLE GROUND WATER 0 HRS. 24 HRS. 2.5'  
 COLLAR ELEV. 47.4 DATE STARTED 2-24-92 DRILL EQUIPMENT CME 45B  
 TOTAL DEPTH 50.3 DATE COMPLETED 2-26-92 drilling mud, tri-cone

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0							
2.5	4.0	23	A	SS-1	Ground Surface TAN BRN F SDY SI-CL <u>A-7-6</u>	m 249	HARD AT 2.5 SD	
	8.8	67	9	SS-2	TAN F-CSE SD <u>A-3</u>	SAT	Q16	
	13.8	45	7	SS-3	TAN CSE SD / W GRAVELS <u>A-1-B</u>	"	Q12	
	18.8	45	9		SAME AS ABOVE A-1-B	"	Q14	
	23.8	13	12	SS-4	GREEN GRAY SI-F SD / W CLY LAYERS <u>A-3-A</u>	SAT	Q15	
	28.8	15	23	26	SS-5	GRY MIC. CLY SI-F SD <u>A-2-4</u> <u>A-2-A</u>	"	Q19
	33.8	11	16	17	SS-6	RED BRN GRY F SDY SI CL RESIDUAL <u>A-1-2</u> <u>A-7-5</u>	MOI 25.0	Q33
	38.8	13	19	26		SAME AS ABOVE SD AT 37.0	MOI	Q45
	43.8	12	16	21	SS-7	GREEN GRAY CLY F-CSE SI-SD <u>A-2-4</u> <u>A-3</u>	SAT	Q37
	48.8	13	12	24		SAME	"	Q38
	50.3	13	21	25		SAME	"	Q46

ELEV. -2.2 lower than STA 222+00

6.2	11.0	7.1
-2.2	2.2	4.9
<u>4.0</u>	<u>8.8</u>	<u>-2.2</u> lower ELEV.

PRELIMINARY FOUNDATION INFO.






LINE

PROJECT 6.29900IT DATE 12-17-91  
COUNTY Edgecombe  
NOTES BY RLE

MOISTUF

ESTIMATED CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTUF	ESTIMATED CLASS
236+00	0-1		LOOSE DK BRN SI-SD / SDY SILT	mol	A-2-A
	-3		MIDNS BRN SI-F SD	SAT	A-2-A
	-8		MIDNS TAN CSESD / gravels OHR = 3.6 <u>24HR 3.2</u>	LI	A-1-B
234+00	0-1.5		SOFT DK BRN CLY SI-F SDY SILT	wet	A-4
	-8		MIDNSTAN F-CSE SD H2O = 2.6 <u>24HR 2.1</u>	SAT	A-2-A
232+00	0-1.5	SS-31	0-1-1 DK BRN CLY F SDY SILT	mol	<u>A-4</u>
	2.5-4	SS-32	1-3-5 BRN SI-F-CSE CLY SD	SAT	A-2-A
	5-6.5	SS-33	5-9-7 TAN CSESD / gravels	"	A-1-B
	7.5-9		3-5-5 Same "	"	A-1-B
			OHR = 3.0 <u>24HR 2.0</u>		
230+00	0-1.5		SOFT DL BRN F SDY SILT	mol	A-4
	-3.5		M. STIFF GRAY BRN SI-F SDY CL	LI	A-6
	8		MIDNS TAN F-CSESD OHR = 2.9 <u>24hr = 2.1</u>	SAT	A-3

(1)

A-3

A-3

MOIST 17.11  
A-4 H2O = 18.8

LINE

PROJECT 6-299001T DATE 11-20-91  
 COUNTY Edgecombe  
 NOTES BY RLE

-11-

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
238+00	0-1.5	S-76	SOFT DK. BRN CLY SDY SILT	WET	A-6
	-2.5	S-77	SOFT TAN GRAY SILTY SDY CL	"	A-6
	-6	S-78	M. DEN TAN CSE SD / w gravel	SAT	A-2-B
			H <sub>2</sub> O 1.9		
			24hr 1.8		
232+00	0-1.5		<del>SOFT D/L BRN F SDY SILT T.S.</del>	<del>MOI</del>	<del>A-A</del>
	-3		<del>M. STIFF GRAY BRN SILTY F SDY CL</del>	<del>WET</del>	<del>A-6</del>
	-6		<del>M. DEN TAN GRAY SILTY F CSE SD</del>	<del>SAT</del>	<del>A-2-B</del>
			<del>w/ CLY LAYERS</del>		
			OHR = 2.3		
			24hr 2.1		
226+00	0-1	S-73	SOFT DK. BRN F SDY SILT T.S.	MOI	A-A
	-3	S-74	M. STIFF GRAY BRN SILTY F SDY CL	WET	A-U
	-6	S-75	M. DEN TAN GRAY CLY F CSE SD	SAT	A-2-B
			w/ CLY LAYERS		
			OHR = 3.5		
			24hr 3.2		
220+00	0-1.5		<del>LOOSE DK. BRN SILTY F SD T.S.</del>	<del>mol</del>	<del>A-2-B</del>
	-3.5		<del>M. STIFF DK. BRN F SDY SILTY CL</del>	<del>"</del>	<del>A-6</del>
	-5		<del>M. DEN TAN GRAY SILTY F SD / w</del>	<del>"</del>	
			<del>CLY LAYER</del>		
	-6		<del>DEN LGT. GRAY SILTY F CSE SD</del>	<del>SAT</del>	<del>A-2-B</del>
			OHR = 4.9		

LINE

PROJECT 6.29900 IT DATE 12-18-91  
 COUNTY Edgecombe  
 NOTES BY RLE

-21-

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS
2A1+00	0-1.5	SS-3A	0-1-1 DK BRN SI-F SD	mol	A-2-A
SPT	2.5-4	SS-35	1-3-2 TAN BRN SI-F SDY CLY	11	A-6
	5-6.5	SS-36	2-5-6 TAN CSE SD / gravels	SAT	A-1-B
	7.5-9		2-3-3 SAND	4	A-1-B
			0HR = 5.8		
			24hr = 5.7		
2A2+00	0-1		LOOSE DR BRN SI-F SD	mol	A-2-A
	-35		M. DNS GRAY BRN SI-F SD	11	A-2-A
	-8		DNS TAN BRN CSE SD / gravel	SAT	A-1-B
			0HR = 4.6		
			24hr = 4.3		
2A0+00	0-2		SOFT DR BRN F SDY SILT	WET	A-4
	-4		M. DNS GRAY BRN SI-F SD	SAT	A-2-A
	-8		M. DNS TAN CSE SD / gravel	11	A-1-B
			0HR = 2.8		
			24hr = 2.0		
238+00			already sample		

2.5 - 3.5 say CL MOI 16.2

LINE  
-L1-

PROJECT 6.29900IT DATE 12-18-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTUR  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTUR	ESTIMATED CLASS	
252+00	0-1		Loose DR BRN FSDY silt	M	A-4-24	(1)
	0-2		MED STIFF TAN GRAY SDY silty clay	M	A-6	(2)
	-3.5		STIFF TAN GRAY silty clay	M	A-7-6	(3)
	-5.0		STIFF GRAY silty F clay SD	M	A-6	(3)
	-8		DNS TAN GRAY F-USE SD	SAT	A-7-A-B	(4)
			OHR 4.2 (2.1HR 4.1)			
254+00	0-1		Loose DR BRN FSDY silt	M	A-4-24	(1)
	-3.5		STIFF TAN GRAY silty clay	M	A-7-6	(3)
258+00	3.0		MED DNS TAN GRAY F-USE SD	SAT	A-5	(4)
air			OHR 5.5 (2.4HR 5.0)			
250+00			Already sample			
2A8+00	0-1		V. LOOSE BRN SI-F SD	moi	A-2-4	(1)
	-7.0		MED DNS TAN BRN F-USE SD	M	A-7-24	(4)
	-4.0		MED DNS TAN-BRN F-USE SD	SAT	A-1-B	
			OHR 5.5 (2.4hr = 5.5)			
2A6+00	0-1.5		V. LOOSE DR BRN SI-F SD	moi	A-2-A	(1)
	-2.5		M. DNS TAN BRN SI-F clay SD	"	A-2-6	(1) (3)
	-4		M. STIFF TAN GRAY SI-SDY CL	"	A-6	(3)
	-8		M. DNS TAN SI-F SD	SAT	A-2-A	
			OHR = 5.6 (2.5hr = 5.1)			

LINE  
L1-

PROJECT 6.299001T DATE 1-2-92  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
260+00			0-0.2 Rootmat			
	0.2-1		SOFT DR. BRN F SDY SILT	moI	A-4	(3)
	1-3		M. DNS TAN BRN SI-F SP	SAT	A-2-4	(1)
	3-6		M. DNS TAN F-CSE SD	"	A-3	H <sub>2</sub> O = 3.5 24hr = 3.8
259+00	0-0.2		ROOTMAT			
	0.2-1		SOFT DR. BRN F SDY SILT	moI	A-4	(3)
	-3		M. STIFF TAN BRN SI-F SDY CL	moI	A-6	(3)
	-6		M. DNS TAN SI-F SD	SAT	A-2-4	
						24hr = 3.7
258+00	0-2		ROOTMAT			
2	2-1		SOFT DR. BRN CLY F SDY SILT	moI	A-4	3
	1-2.5		M. STIFF BRN GRAY SI-F SDY CL	"	A-6	3
	-8		M. DNS TAN SI-F SD	SAT	A-2-A	(1)
						OHR = 3.6
						24hr = 3.4
			0-0.2 ROOTMAT			
			1.0+ SILTY CLY			
256+00	0-1.5	SS-37	1-1-3 DR. BRN CLY F SDY SILT	moI	A-4	A-7-6 (A)
SPT	2.5-4	SS-38	2-2-6 DR. GRAY SI-CLY	"	A-7-6	(A)
	5-6.5	SS-39	3-2-10 TAN GRAY SI-SDY CL	WET	A-6	(A)
	7.5-9	SS-40	3-3-3 TAN CSE SD / GRAVELS	SAT	A-1-B	(1)
						MOI = 32.3
						CSE SDY GRAVELS start at 6.0 MOI
						24HR 3.9 H <sub>2</sub> O 4.0
254+00	0-1		LOOSE OR BRN F SDY SILT	M	A-7/A-25	(3)
	-3.5		SL. TAN GR. SILTY CLY	M	A-7-6	(3)
	-4.5		ST. PF. GR. SDY SILTY CLY	M	A-6	(3)
	-8		DN. BRN F-CSE SD	SAT	A-3	(1)
						OHR = 4.3 24HR = 4.3

LINE

PROJECT 6.29900IT DATE 11-25-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE

ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
262+00	0-1	S-83	SOFT DR. BRN CLY F SDY SILT	MOI	<del>A-4</del>
	-4	S-84	STIFF DR. GRAY FSDY SILTY CL	II	<del>A-7-6</del>
	-6	S-85	M. DENTAN BRN SILTY F SD	SAT	<del>A-2-A</del>
			OHR = 4.9		
			2Ahr = 4.1		
<del>256+00</del>	<del>0-1</del>	<del>S-83</del>	<del>SOFT DR. BRN FSDY SILT</del>	<del>M</del>	<del>A-4</del>
	<del>-2</del>	<del>S-84</del>	<del>MED. STIFF GRAY SILTY SDY CL</del>	<del>M</del>	<del>A-6</del>
	<del>-4</del>	<del>S-85</del>	<del>STIFF DR. GRAY SILTY CL</del>	<del>M</del>	<del>A-7-6</del>
	<del>-6</del>	<del>S-86</del>	<del>MED DR. TAN GRAY CLY SILTY F SD</del>	<del>M</del>	<del>A-2-4</del>
			<del>OHR = 5.5</del>		
			<del>2Ahr = 4.3</del>		
250+00	0-1	S-79	LOOSE DR. BRN SILTY F SD	MOI	<del>A-2-A</del>
	-2.5	S-80	M. STIFF TAN BRN SILTY FSDY CL	II	<del>A-6</del>
	-4	S-81	M. DENTAN CLY SILTY F SD	II	<del>A-2-A</del>
	-6	S-82	M. DENTAN GRAY CSED / gravel	II	<del>A-6</del>
			OHR = dry 6.0		
			2Ahr = 5.4		
244+00	0-1		LOOSE DR. BRN SILTY F SD	MOI	A-2-A
	-3		M. STIFF TAN BRN SILTY FSDY CL	II	A-6
	-6		M. DENTAN BRN CLY SILTY F SD	II	A-2-A
			OHR H <sub>2</sub> O = 5.0		
			2Ahr = 4.4		

A-7-5

(14)  
(13)  
(12)  
(11)

(1)  
(2)  
(3)

A-2-E

(1)  
(2)

LINE

PROJECT 6.299001T DATE 11-25-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE

ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
286400	0-1	S-90	LOOSE DR BRN SILT / F-SD	MOI	A-2-6
	-2	S-91	M. DENTAN CLY SILTY F SD / SDY CL	"	A-4
	-6	S-92	M. DENTAN F-CE SD	SAT	A-3
			OHR = 4.0		
			24hr = 3.3		
280400	0-4		LOOSE TAN BRN SILTY F SD	MOI	A-2-6
	-6		M. DENTAN F-CE SD	SAT	A-3
			OHR = 4.0		
			24hr = 3.1		
27A400	0-1	S-86	LOOSE DR BRN F SILTY SD	WET	A-2-6
	-2	S-87	M. STIFF BRN GRAY F SDY SILTY CL	"	A-7-6
	-4.5	S-88	STIFF BRN GRAY SILTY SDY CL	"	A-7-6
	-6	S-89	STIFF BRN GRAY SILTY F SDY CL	"	A-6
			OHR = 6.0		
			24hr = 4.9		
<del>268400</del>	<del>0-1</del>		<del>SOFT DR. BRN F SDY SILT</del>	<del>MOI</del>	<del>A-4</del>
	<del>-2</del>		<del>M. STIFF DR. GRAY SILTY F SDY CL</del>	<del>"</del>	<del>A-6</del>
	<del>-3.5</del>		<del>M. STIFF TAN GRAY F SDY SILTY CL</del>	<del>"</del>	<del>A-7-6</del>
			<del>M. DENTAN F-CE SD</del>	<del>SAT</del>	<del>A-3</del>
			<del>OHR = 4.3</del>		
			<del>24hr = 3.3</del>		



PROJECT 6299001T DATE 12-30-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
268+00	0-1.5	SS-A1	1-1-2 DK BRN F SDY SILT/SDY	MOI	A-4 (A-1-B)
SPT	2.5-A	SS-A2	1-2-2 DR GRAY SDY SI-CL	11	A-7-6 (A-6-B)
	5-6.5	SS-A3	3-3-6 TAN BRN SI-F SD	SAT	A-2-2
	7.5-9	SS-AA	3-6-7 TAN CSE SD/gravels	11	A-1-B
			24HR 3.0 H2O		
266+00	0-1.5		SOFT DR BRN F SDY SILT	MOI	A-4
	-3		M. STIFF DR GRAY SDY SI CLY	11	A-7-6
	-A		M. STIFF TAN BRN SI SDY CLY	WET	A-6
	-8		M. DNS TAN CSE SD/gravels	SAT	A-1-B
			24HR 2.6 H2O 3.0		
264+00	0-0.2		Root mat		
	0.2-1		SOFT TAN BRN F SDY SILT	MOI	A-4
	-2		M. STIFF YEL-BRN F SDY SI-CL	11	A-7-6
	-3		M. STIFF TAN GRAY SI-F SDY CL	11	A-6
	-6		M. DNS TAN SI-F SD	SAT	A-2A
			0HR = A.3		
			24hr = 3.9		
262+00			already sample		

MOI 2.7.8

LINE

 PROJECT 6.29900IT DATE 12-18-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE

ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
276400	0-1		LOOSE DR BRN silty F-SO	M	A-2-4	①
	-4.0		MED DNS Gray silty F SO	M	A-2-4	①
	-8.0		DNS Gray F-LSE SO	SAT	A-3	①
			OHR 3.9 (24HR 3.9)			
275100	0-1		LOOSE DR BRN silty F-SO	M	A-2-4	①
	-2.5		MED STIFF TAN-BRN silty SOY CLY	M	A-6	①
	-7.0		MED DNS TAN-GRY silty FCSO	M	A-2-4/3	①
	-8		DNS GRAY F-LSE SO	SAT	A-3	
274100			OHR 3.9 (24HR 3.9)			
274100			SAMPLE			
272400	0-1		LOOSE DR BRN silty F-SO	M	A-2-4	①
	-3		STIFF TAN-GRY silty CLY	M	A-7-6	①
	-4		STIFF TAN-GRY silty SOY CLY	M	A-6	①
	-8		DNS GRAY F-LSE SO	SAT	A-3/A-3	①
			OHR 4.1 (24hr = 3.9)			
270700	0-1		LOOSE DR BRN silty F SO	M	A-2-4	①
	-2		STIFF TAN-GRY silty CLY	M	A-7-6	①
	-4		STIFF TAN GRY silty SOY CLY	W	A-6	①
	-8		DNS GRAY F-LSE SO	SAT	A-3/A-3	①
			OHR 3.1 (24hr 3.1)			

LINE

-L-

PROJECT 6.299001T DATE 12-19-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
282+00	0-1		LOOSE DR. BRN SI-F SD	mo	A-2-A
	-3		M. STIFF GRAY BRN CLY FSDYSIT	"	A-A
	-4		M. STIFF GRAY SI SDV CL	"	A-G
	-8		M. DNS TAN F-CSE SD	sat	A-3
			OHR = 4.0		
			24hr 3.5		
282+00	0-1		LOOSE DR. BRN SI-F SD or SPHSIT	mo	A-2-A / A-A
	-3.5		M. DNS TAN BRN SI-F SD	"	A-2-A
	-8		M. DNS TAN F-CSE SD	SAT	A-3
			OHR = 3.0		
			24hr 3.0		
280+00	0-1.5	SS-A5	1-1-1 DR BRN SI-F SD 0-1.0	mo	A-2-A
SPT	2.5-4	SS-A6	1-1-2 TAN BRN SI-F SD	"	A-2-A / A-3
	5-6.5		2-3.1 SAME "	SAT	A-2-A / A-3
	7.5-9	SS-A7	2-4.5 TAN F-CSE SD / gravels	"	A-3 / A-1-B
			24HR 3.3 OHR = 3.3		
278+00	0-1		LOOSE DR BRN silty F-SD	m	A-2-A
	-8		MED DR GR F-CSE SD	m	A-2-A / A-3
			OHR 3.8 24HR 3.8		



LINE  
LI-

PROJECT G.299001T DATE 12-19-91  
 COUNTY Edgecombe  
 NOTES BY RLÉ

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
290700			already sample		
29A700	0-1		SOFT DK. BRN F SD Y SILT	mol	A-4
	-A		M. DNS GRAY BRN SI-F SD	LI	A-2-A
	-8		M DNS TAN F-CSE SD	SAT	A-3
			ONR = 5.9		
			24hr = 5.5		
293700	0-1		SOFT DK BRN F SD Y SILT	mol	A-4
	-2		M. DNS TAN BRN SI-F SD	"	A-2-A
	-3.5		M. STIFF YEL-BRN SI-F SD YCL	"	A-6
	-8		M. DNS TAN F-CSE S P	SAT	A-3
			ONR = 5.8		
			24hr = 5.1		

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①  
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③

PROJECT 6.2990017 DATE 11-26-91  
 COUNTY Edgecombe  
 NOTES BY Calle

LINE  
 -4-

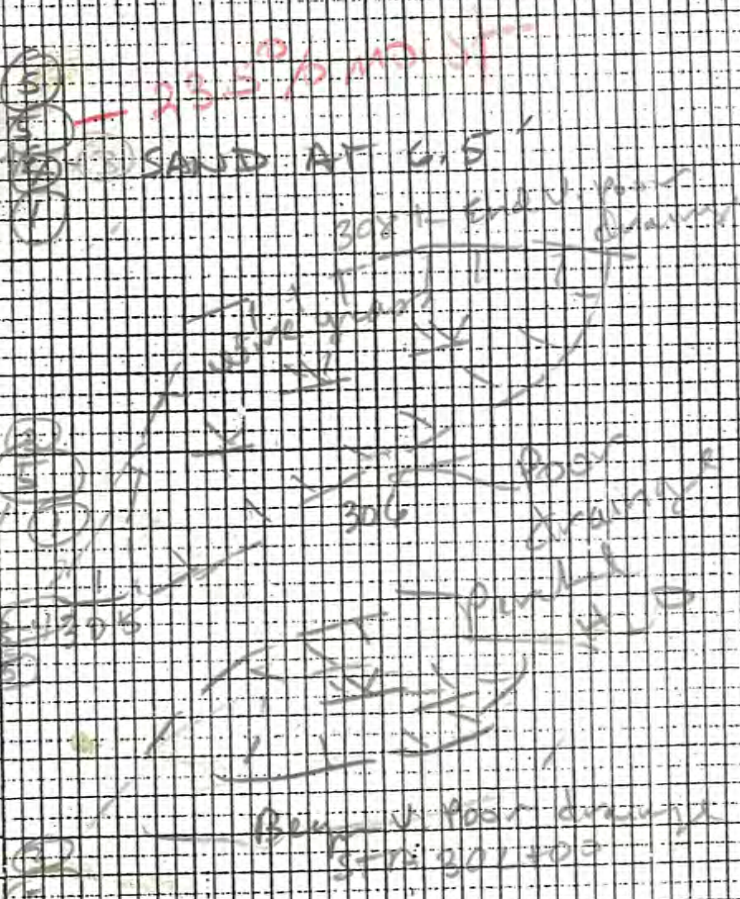
STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
308F00	0-1	S-96	SOFT DK BRN F-SDY SILT	m	A-4	(4)
	-3.5	S-97	MED STIFF TAN BRN F-SDY SILTY CLY	m	A-2-6	(5) A-1-10
	-6.0	S-98	MED DNS TAN GRY SILTY F-SD	m	A-2-4	(6) A-4
			DHR 5.9			
			(24 hr. = 4.6')			
307Z00	0-1		SOFT BRN F-SDY SILT	m	A-4	(4)
	-3.5		MED STIFF TAN BRN F-SDY SILTY CLY	m	A-2-6	(5)
	-6.0		MED DNS TAN BRN SILTY F SAND	m	A-2-4	(6)
			With thin clay layers			
			DHR 5.7			
			(24 hr. = 5.1')			
296+00	0-1	S-93	LOOSE DK BRN F-SDY SILT	m	A-4	(3) A-2-2
	-3.5	S-94	MED DNS TAN BRN SILTY F-SD	m	A-2-4	(4)
	-6.0	S-95	MED DNS TAN BRN F-CSE SD	SAT	A-1-B	(5)
			DHR 5.8			
			(24 hr. = 5.6')			
292+00	0-1		LOOSE DK BRN F-SDY SILT	m	A-4	(4)
	-3.5		MED STIFF TAN SILTY F-SDY CLY	m	A-2-6	(5)
	-5.5		MED DNS TAN GRY SILTY F-SD	m	A-2-4	(6)
	-6.0		MED DNS TAN GRY F-CSE SD	m	A-3	(7)
			DHR 5.7			
			(24 hr. = 5.0')			

LINE  
-L<sup>2</sup>

PROJECT 6.299001T DATE 2-14-92  
 COUNTY Edgcomb  
 NOTES BY RMS

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
310+00	0-1.5	SS-118	1/1/2 0-1/2 DACT GRAY CLY SDY SILT -1.5 GRAY - YEL-BRN MOT SDY SILT	M	A-7-6
	2.5-4.0	SS-119	1/3/4 GRAY-BRN MOT SILTY CLAY	W	A-7-6
	5.0-6.5	SS-120	2/3/3 GRAY SANDY CLAY	M	A-6-A
	7.5-9.0	SS-121	4/4/7 GRAY-BRN CSE SD	SAT	A-1-B
308	done		H <sub>2</sub> O <u>oh = 2.6' 244R</u>		
307			Hand tool hole Surface		
300+00	0-1/2		SOFT GRAY CLY SDY SILT	W	A-4
	-4		M. STIFF GRAY BRN MOT SILTY CL	M	A-6
	-8		MED. DNS LT. GRAY F-CSE SD	SAT	A-2-4
			H <sub>2</sub> O @ <u>3.2 DM 244R</u>		
304+00	0-1		SOFT GRAY BRN CLY SDY SILT	W	A-4
	-4		MED STIFF GRAY BRN SILTY CLAY	W	A-6
	-8		MED. DNS GRAY BRN F-CSE SAND	SAT	A-2-4
			H <sub>2</sub> O @ <u>3.0 DM 244R</u>		
302+00			done		
301+00	0-1		SOFT GRAY BRN CLY F SDY SILT	M	A-4
	-3.5		MED STIFF GRAY BRN SILTY CL	W	A-6
	-8		LOOSE-MED DNS BRN CSE SD	SAT	A-1-B
SPT			H <sub>2</sub> O 2.4' oh 0-1/2 BRN SILTY F SAND	M	A-4/A-2-4
300+00	0-1.5	SS-122	1/1/1 -1.5 YEL BRN CLY SDY SILT	M	A-4/A-2-4
	2.5-4.0	SS-123	2/4/6 YEL BRN CLY SAND	M	A-2-4
	5.0-6.5	SS-124	2/4/6 LT GRAY & WHITE CSE SD	SAT	A-1-B
	7.5-9.0		1/2/5 SAME	"	"
			H <sub>2</sub> O 3.1' oh		
298+00	0-1		LOOSE BRN SILTY F. SAND	M	A-2-4
	-2 1/2		LOOSE BRN CLY CSE SAND	M	A-2-4/A-2-4-5
	-8		LOOSE-MED DNS BRN CSE SAND	SAT	A-1-B
	done		H <sub>2</sub> O @ 3.6' oh		
296					



SAND AT 6.5  
 Poor drainage  
 Bent & poor drainage  
 SPT 307+00  
 SAND AT 2'

LINE

-L1-

PROJECT 6.299 DDIT DATE 2/14/92  
COUNTY EDGE COMBE  
NOTES BY WRC

MOISTURE

ESTIMATED  
CLASS

STATION

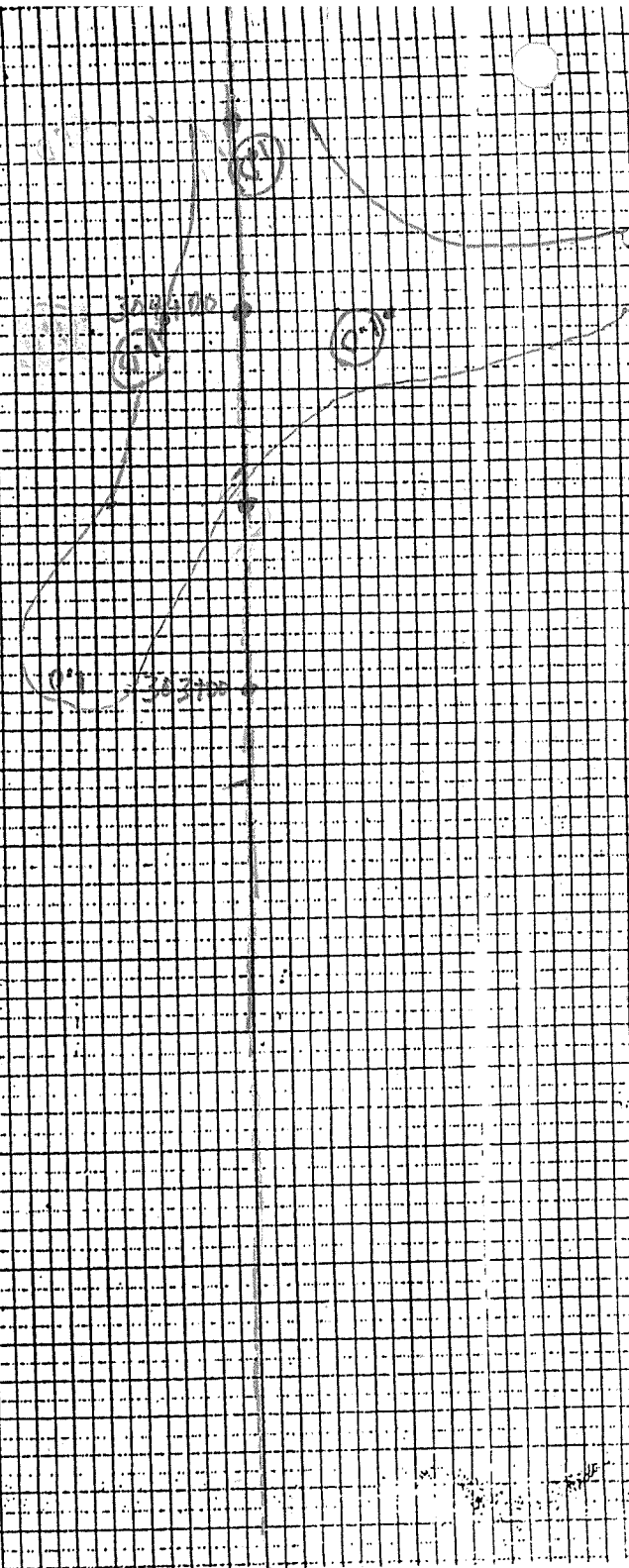
DEPTH SAMP.

DESCRIPTION

304+00

303+50

303+00







PROJECT G-299001T DATE 1-2-92  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

LINE -L1-  
STATION DEPTH SAMP. DESCRIPTION

318+00 0-1 SOFT DK. GRAY SI-F SDY CL mol A-6  
 -2.5 M. STIFF TAN GRAY FSDY SI-CL " A-7-6  
 -4 M. DNS TAN GRAY SI-F SD SAT A-2-A  
 -6 M. DNS TAN F-LSE SD " A-3

OHR = A-0  
24HR = 2.9

316+00 0-1.5 SOFT DR. BRN CLV F. SDY SILT mol A-4/A-6  
 -3 M. STIFF TAN GRAY FSDY SI-CL WET A-7-6  
 -6 M. DNS TAN BRN SI-F SD SAT A-2-A

OHR = 2.4  
 24HR 2.4

314+00 0-1 <sup>m</sup> 5-123 SOFT DK. GRAY SI-F SDY CL/SI-CL mol A-6/A-7-6  
 -5 5-12A M. STIFF TAN GRAY FSDY SI-CL " A-7-6  
 -6 5-125 M. STIFF GRAY BRN SI-F SDY CL " A-6

OHR = Dry 6.0  
24HR = 4.5

MOI 30.6  
 MOI 30.0  
 MOI 26.9

(3)  
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(1)

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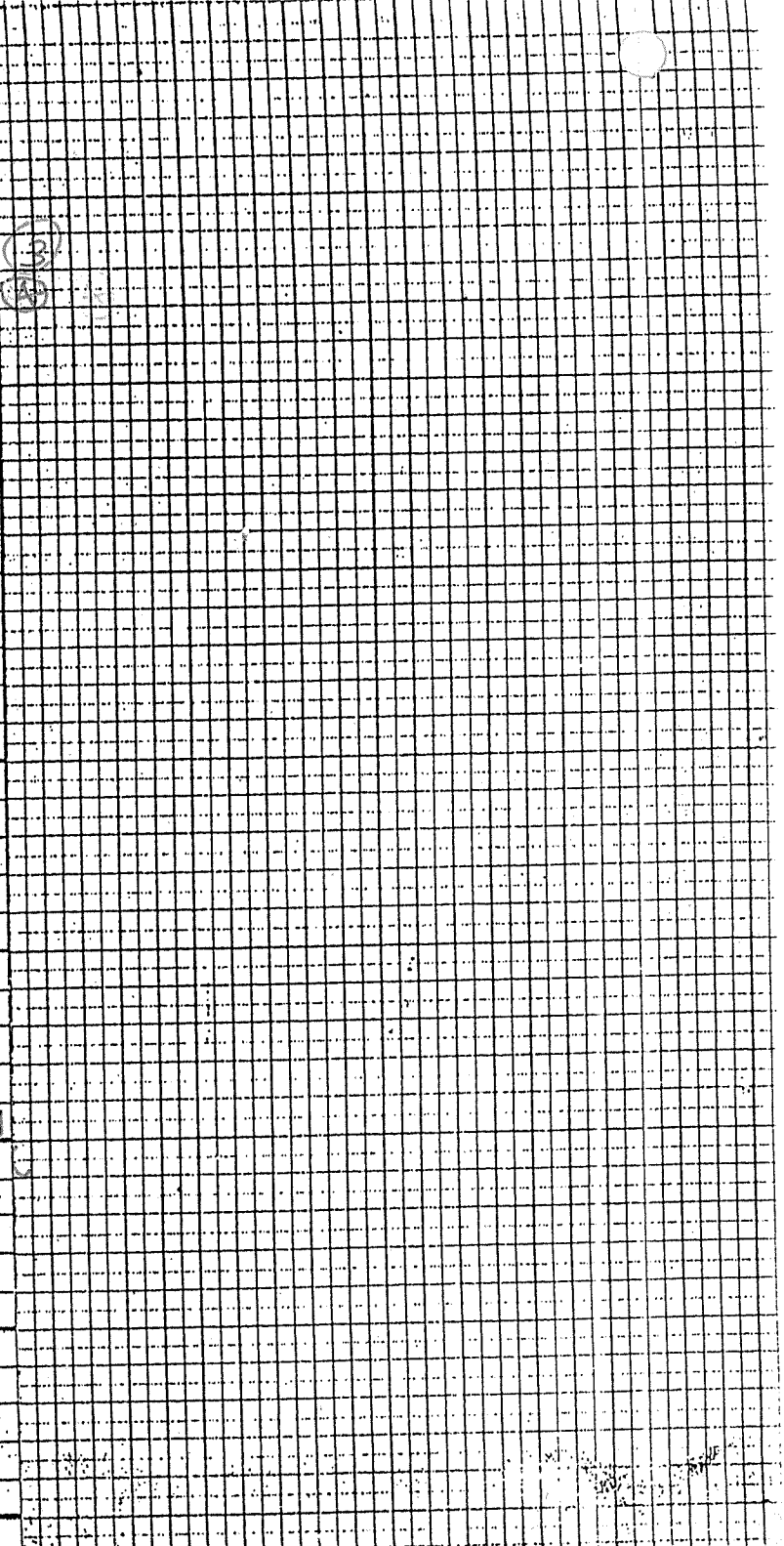
(3)  
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LINE

PROJECT 6.29900 IT DATE 12 91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
312+00	0-0.2		Root mat		
	0.2-1		SOFT DR BRN F SDY SILT	mo1	A-4
	1-5		M. STIFF YEL-BRN F SDY SILTY CL	"	A-7-6
	5-6		M. STIFF BRN GRAY SILTY FSDY CL	"	A-6
			ONR WRT AT 6.0		
310+00			See other sheet		
308+00			already sample		
307	0-1		SOFT BRN CLY SDY SILT	W	A-4
	-2.5		MED STIFF TAN-GRY ORG SDY CL	W	A-7-6
	-4.0		" " GRY TAN SDY CL	W	A-4
	-6.0		MED DWS TAN F-CSE SD	SAT	A-3
306+00			oh = 0.0' H <sub>2</sub> O		



PROJECT 6.299001T DATE 11-27-91  
 COUNTY Edgecombe  
 NOTES BY RLB

MOISTURE ESTIMATED CLASS

LINE  
-L1

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION
326+00	0-1	S-99	LOOSE DR. BRN SILTY F SD
	-2	S-100	M. STIFF DR. BRN SILTY F SD VCL
	-6	S-101	M. DEN. TAN F-CSE SD w gravels
			OH = 4.3 24 hr = 2.5
324+00	0-1		LOOSE DR. BRN SILTY F SD T.S.
	-2.5		M. STIFF TAN BRN SILTY F SD VCL
	-6		M. DEN TAN F-CSE SD
			OH = 3.9 24 hr = 2.8
320+00			SPT
318+00	0-1		<del>SOFT DR. BRN CLY F SD VCLT</del>
	-2.5		<del>M. STIFF DR. GRAY F SD VCLT</del>
	-4		<del>M. DEN TAN GRAY SILTY F SD</del>
	-6		<del>DEN TAN F-CSE SD</del>
			<del>OH = 4.0 24 hr = 2.9</del>
31A+00	0-1		<del>SOFT DL. GRAY F SD VCLT</del>
	-4		<del>M. STIFF TAN GRAY F SD VCL</del>
	-6		<del>M. STIFF DR. GRAY SILTY F SD VCL</del>
			<del>OH = 4.0 24 hr = 4.5</del>

on next sheet

MOISTURE	ESTIMATED CLASS
moist	A-2.4/A-6
"	A-6
sat	A-3/A-6
moist	A-2.4/A-6
"	A-6
sat	A-3
moist	A-4/A-6
"	A-6
sat	A-3
moist	A-4/A-6
"	A-6
"	A-6

LINE

 PROJECT 6.299001T DATE 11/31/92  
 COUNTY EDGEWATER  
 NOTES BY WRC

MOISTURE

ESTIMATED  
CLASS

STATION

DEPTH SAMP

DESCRIPTION

348+00

00-1.5 SS-106

1/1/1 BLACK-DK BRN SDY SL

M

A-4

2.5-4.0 SS-107

1/1/1 GRAY CLY F-CSE SD

SAT

A-2.4

5.0-6.5 SS-108

1/3/3 ORANGE TAN F-CSE SD

SAT

A-3

7.5-9.0

1/4/11 SAMP

SAT

A-3

24 HR H<sub>2</sub>O = 4.8

332+00

0.0-1.5 SS-102

1/1/1 BRN TAN SL F SD

M

A-2.4

2.5-4.0 SS-103

3/3/3 TAN CLY CL F-SD

M

A-2.4

5.0-6.5 SS-104

2/4/6 GRAY CLY F SD

M

A-2.4

7.5-9.0 SS-105

3/3/4 TAN-ORANGE F-CSE SD

SAT

A-3

24 HR H<sub>2</sub>O = 5.5

320+00

0.0-1.5 SS-99

1/1/3 0.5-2.5 SOFT GRAY SDY CL

W

A-6

2.5-4.0 SS-100

2/2/2 DK BRN-TAN SL F-CSE SD

SAT

A-2.4

5.0-6.5 SS-101

3/9/11 TAN F-CSE SD

SAT

A-3

7.5-9.0

2/3/4 SAME

SAT

A-3

24 HR H<sub>2</sub>O = 1.6

① A-2.4

②

③

④

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Change AT 6.5 to A-1 to A-3

① 0.0-2.5 SOFT BLACK SDY SL ③

PROJECT 6.299001T DATE 11-27-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

LINE

-L-1

STATION

DEPTH SAMP.

DESCRIPTION

322+00	0-15	SOFT DK. BRN F SDY SILTY S.	moil	A-4	2
	-4	SOFT-M. STIFF TAN BRN SILTY F			
		SDY CL	"	A-6	3
	-6	M. DEN TAN F-CSE SD	sat	A-3	
		OCR=3.6	28/12 = 2.33		
321+00					

PROJECT 6,2990017 DATE 11-27-91  
 COUNTY Edgecombe  
 NOTES BY GHL + RLE

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

STATION	DEPTH SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
334+00	0-1	Loose DK Brn F-sdy silt	M	A-4
	-3.5	MED STIFF Gray silty F SOY CLY	M	A-6
	-6.0	MED DNS GRAY CLY SILTY F-SO	M	A-2-4
		OHR 5.9 24 hr = 5.3		
332+00		SPT		
332		SPT		
330+00	0-2.0	Loose TAN silty F-SO	M	A-2-4
	-3.0	MED STIFF TAN Brn silty F SOY CLY	M	A-6
	-6.0	MED DNS TAN-GRY silty F SO	M	A-2-4
		OHR Dry 24 hr = 5.5		
328+00	0-2.0	Loose DK Brn silty F-SO	M	A-2-4
	-6.0	MED DNS TAN Silty F-USE ST	M	A-3
		OHR 5.3 24 hr = 4.4		

PROJECT 6.29900 IT DATE 12-3-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
 - 11 -

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
342+00	0-1		LOOSE DR. BRN SILTY F SD	mol	A-2-A
	-3		M. DNS TAN BRN CLY F SDY SILT	"	A-2-A
	-6		M. DNS BRN GRAY F-CSE SD	"	A-3
			OHR= Dry 6.0 <u>24hr = 5.4</u>		
340+00	0-1		LOOSE DR. BRN SILTY F SD	mol	A-2-A
	-A		M. DEN TAN CLY SILTY F SD	"	A-2-A
	-6		M. DEN TAN BRN F-CSE SD	"	A-3
			OHR= Dry 6.0 <u>24hr = 5.4</u>		
338+00	0-1	S-102	LOOSE DR BRN SILTY F SD T.S.	mol	<del>A-2-A</del> A-2-A
	-2	S-103	M. STIFF YEL BRN SILTY F SDY CL	"	<del>A-6</del> A-6
	-A	S-104	M. STIFF TAN BRN CLY F SDY SILT	"	<del>A-2/A-2-A</del> A-2-A
	-5	S-105	STIFF BRN GRAY F SDY SILTY CL	"	<del>A-2-A</del> A-2-A
	-6		M. DNS TAN F-CSE SD	Sat	A-3
			OHR= 5.6 <u>24hr = 5.5</u>		
336+00	0-1		LOOSE DR BRN SILTY F SD T.S.	mol	A-2-A
	-A		M. DNS TAN BRN SILTY F-CSE SD	"	A-2-A
	-6		M. DNS TAN CSE SD	Sat	A-3
			OHR= 5.3 <u>24hr = 5.1</u>		



PROJECT 6.299001T DATE 12-3-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
 -L1-

MOISTURE  
 ESTIMATED CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
352410	0-1		Loose dk. brn silty f sd T.S.	mol	A-2-A
	-2		m. dns tan brn cly silty f sd	"	A-2-A
	6		m. dns brn f-cse sd	"	A-3
			OHR = 5.9		
			24hr = 5.1		
350700	0-1		Loose dk. brn silty f sd T.S.	mol	A-2-A
	-6		m. dns tan brn silty f-cse sd	"	A-2-A
			OHR = 5.7		
			24hr = 5.8		
348100			SPT		
346100	0-1.5		Loose tan brn f-cse sd	mol	A-3
	-2.5		m. dns brn cly silty f sd	"	A-2-A
	-6		m. dns tan brn f-cse sd	"	A-3
			24hr = 5.7 OHR = Dry		
344100	0-1	S-106	Loose dr. brn silty f sd	mol	A-2-A
	-6	S-107	m. dns tan f-cse sd	"	A-3
			OHR Dry at 6.0		
			24hr = 5.5		

(1)  
 (1)

8

A-3-D  
 A-3-D



LINE

PROJECT 6.299001T DATE 12-3-91COUNTY EdgecombeNOTES BY RLE

MOIST

ESTIMATED  
CLASSSTATION<sup>no</sup> DEPTH SAMP. DESCRIPTION

360+00

x<sub>y</sub>

SPT

air

359+20

see other  
sheet

358+00

0-1.5

LOOSE DK. BRN SILTY F SPT IS

mo

A-2-A

-3

M. DNS TAN BRN CLY SILTY F SD

"

A-2-A

-6

M. DNS TAN F-CSE SD

"

A-3

#20 5.7

24hr = 5.3

356+00

0-1

LOOSE DK. BRN SILTY F SD TIS

mo

A-2-A

-4

M. DNS TAN BRN CLY SILTY F SD

wet

A-2-A

6

M. DNS DK. BRN SILTY F SD

SAT

A-2-A

DHR = 5.2

24hr = 5.3

354+00

0-1

S-108

LOOSE BRN SILTY F SD TIS

mo

A-2-A

-4.5

S-109

M. DNS TAN BRN CLY SILTY F SD

"

A-2-A

-6

S-110

M. DNS GRAY BRN F-CSE SD

SET

A-3

DHR = 5.8

24hr = 5.6

PROJECT 6.299001T DATE 12-A-91  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE	STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
-21	368+00	0-1	S-11A	SOFT DK BRN CLY F. SDYSILT	mol	A-4
		-3	S-11S	SOFT-M STIFF DK GRAYSILTY SDYCL	WET	A-6
		-6		M. DNS BRN F-CSE SD	SAT	A-3
						24hr 3.2 OHR=A-6
						SOFT SILT START at sta 367+5.7
	367+00	0-1		LOOSE DK BRN SILTY FSD	mol	A-2-4
		-4.5		M. DNS TAN BRN CLY SILTY FSD	"	A-2-4
		-6		M. DNS TAN F-CSE SD	"	A-3
						24hr Dry 6.0
	366+00	0-1	S-111	LOOSE DK BRN SILTY FSD T.S.	mol	A-2-4
		-3	S-112	M. DNS TAN BRN CLY SILTY FSD	"	A-2-4
		-6	S-113	M. DNS TAN F-CSE SD	"	A-3
						OHR Dry 6.0
						24hr Dry 6.0
						or SDYSILT
	364+00	0-1		LOOSE DK BRN SILTY FSD T.S.	mol	A-2-4
		-3		M. DNS TAN BRN CLY SILTY FSD	"	A-2-4
		-6		M. DNS TAN F-CSE SD	"	A-3
						OHR 5.6
						24hr 5.3
	362+00	0-1		LOOSE DK BRN SILTY FSD T.S.	mol	A-2-4
		-4		M. DNS TAN BRN CLY SILTY FSD	"	A-2-4
		-6		M. DNS TAN F-CSE SD	"	A-3
						OHR=5.7
						24hr 5.6

Check  
 A-2-4  
 A-2-4



LINE

PROJECT 6.299001T DATE 1/30/92  
COUNTY EDGEcombe  
NOTES BY WRC

MOISTURE

ESTIMATED  
CLASS

STATION

DEPTH SAMP.

DESCRIPTION

76  
5  
126

380+00

0.0-1.5

SS-95

WDH/1/1 DK BLACK SDY SL

M

A-4

③

change at 3.0 to A-2-4

2.5-4.0

SL-96

3/7/8 GRAY SL F SD

SAT

A-2-4

①

5.0-6.5

SS-97

WDH/1/1 TAN F-CSE SD

A-2-4

SAT

A-3

①

7.5-9.0

3/6/6 SAME

SAT

A-3

①

GRAY A-6/A-7-6 from 12.0-12.5

12.5-14.0

SS-98

4/8/11 TAN F-CSE SD

SAT

A-3

①

D HR  $H^2D = 2.0$   
24 HR  $H^2D = 2.0$ 

378+00

0.0-3.0

SFT DK BLACK SDY SL

M/W

A-4

③

5.0

MED DNS TAN SL F-CSE SD

SAT

A-2-4

①

8.0

MED DNS TAN F-CSE SD

SAT

A-3

①

0 HR  $H^2D = 3.5$   
24 HR  $H^2D = 2.9$

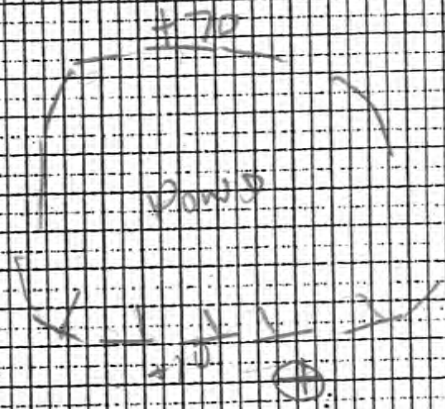


LINE  
-L

PROJECT 6.29900IT DATE 1-6-92  
 COUNTY Edgecombe  
 NOTES BY RLE, EAU

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
390+00	0-3 1/2	M. STIFF D. BRN CLY SDY SILT	W	A-4
	-5 1/2	MED DENSE TAN SIEM F SAND	SAT	A-2-4
	-5 1/2	MED. STIFF D. BRN SI CL	W	A-7-2
	-6	MED DNS F-CSE SAND	SAT	A-2-4
		ALSO 1.5' 2.4'		
388+00		sampled see other notes		
		Edge of Pond		
386+00	0-3	LOOSE D. BRN SI F SAND T.S	M	A-2-4
	-6	MED. DNS F-CSE SAND	SAT	A-3
		H <sub>2</sub> O @ 2.3 2.1		
384+00	0-2	M. STIFF D. BRN <sup>CLY</sup> F SDY SILT T.S	M	A-4
	-4	LOOSE-MED DNS TAN SI F-CSE SD	SAT	A-2-4
	-6	" " TAN F-CSE SAND	"	A-3
		H <sub>2</sub> O @ 1.8 after heavy rain		





LINE  
L'

PROJECT 6.297001T DATE 1-6-92  
 COUNTY Edgewood  
 NOTES BY AK, KAW, WCL

MOISTURE

ESTIMATED CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
398+00			Get SPT HERE		
396+00	0-2 1/2		CLY DARK BRN OR SDY SILT	M	A-4/A-5
	-6		MED DNS BRN SILTY F-CSE SAND	SAT	A-2-U
			H <sub>2</sub> O @ 1.0' 24		
394+00	0-1	S-126	MED. STIFF D. BRN SALTY SILT	M	A-4
	-2	S-127	" " GRAY BRN CLY SDY SILT	W	A-4/A-5
	-3		" " SDY SILT	M	A-4
	-5		MED DNS GRAY SILTY F-SAND	"	A-2-U
	-6		" TAN F-CSE SAND	SAT	"
			H <sub>2</sub> O @ 5.3' 24		
392+00	0-2		MED DENSE BRN CLY SAND	WET	A-2-U
	-3 1/2		MED STIFF BRN CLY SDY SILT	WET	A-4/A-5
	-6		MED DENSE BRN F-SAND	SAT	A-2-U
			H <sub>2</sub> O 1.6 T.B. 24		
			CLY <sup>2</sup> NEAR RAIN		

A-1

LINE

PROJECT 6.299001T DATE 1/16/92  
COUNTY EDGEcombe  
NOTES BY WRC

MOISTURE

ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION
398+00	0-1.5	SS-63	0/1/1 DK BROWN FSDY SILTY <sup>0-2.5-11*</sup>
	2.5-4.0	SS-64	6/15/15 TAN SIL F SD
	5.0-6.5		3/7/10 SAME "
	7.5-9.0	SS-65	3/3/6 TAN F-CSE SD

M  
M  
M  
M

~~A-4~~  
A-2-4  
~~A-2-4~~  
A-3

~~A-2-4~~  
①  
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①

0 HR H<sub>2</sub>O = 6.2  
24 HR H<sub>2</sub>O = 6.0

LINE

- L' -

 PROJECT 6:299001T DATE 1-6-92  
 COUNTY Edgemere  
 NOTES BY RAW

MOISTURE

ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
406			done - see other note		
404	0-1 $\frac{1}{2}$	S-128	LOOSE DARK BROWN SILTY F.S.D.	M	A-2-4
	-3	S-129	" Br. SILTY F.SAND	M	"
	-6		MED. DNS. WHITE-TAN F-CSE SAND w/ thin silt & cl lgn H <sub>2</sub> O @ 3.7' 24h	SAT	A-3
402	0-1 $\frac{1}{2}$		LOOSE DARK BROWN SILTY F.S.D.	M	A-2-4
	-6		LOOSE-MED DNS TAP F-CSE SAND H <sub>2</sub> O @ 2.8' 24h	SAT	A-3
400			done see other note		

PROJECT 6.299001 T DATE 11-5-91  
 COUNTY Edgcombe  
 NOTES BY RLE

LINE  
-L-

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
A18+00	0-1		LOOSE TAN BRN SILTY FSD	mol	A-2-A
	-2		M. DEN TAN BRN CLY SILTY FSD	11	A-2-A
	-5		M. DEN TAN GRAY SILTY FSD	11	A-2-A
	-6		DEN TAN GRAY F-CSE SD	SAT	A-3
			OHR = 4.8		
			(24 hr = 3.7)		
A12+00	0-1.5	S-7	SOFT DK BRN F SPV SILT	mol	A-A
	-4.5	S-8	M. DEN TAN GRAY CLY FSD Y SILT	WET	A-A
	-6	S-9	M. STIFF TAN GRAY SILTY FSD Y CL	WET	A-G
			OHR = 5.9		
			(24 hr = 3.8)		
A06+00	0-2		LOOSE DK BRN SILTY FSD	mol	A-2-A
	-6		M. DEN TAN F-CSE SD	SAT	A-3
			OHR = 5.6		
			(24 hr = 4.7)		
A00+00	0-3		LOOSE DK BRN SILTY F SD	mol	A-2-A
	-6		M. DEN TAN SILTY F SD	mo	A-2-A
			OHR Dry 6.0		
			(24 Dry 6.0)		

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LINE  
-L1-

PROJECT W. 29900 IT DATE 1-15-92  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
414400	0-1.5		soft dk brown F SDY SILT	W	A-4
	3		mod den dk brown - TAN SILTY F-SD	SAT	A-2-4
	4.5		red stiff-stiff gray TAN SD CL	W	A-6
	6		mod den TAN-orange F-CSE SD	SAT	A-3
			0 HR $H^2_0 = 2.5$ 24 HR $H^2_0 = 1.8$		
A10+00	0-1.5	SS-57	0/1/1 DK-BRN CLY F SDY SILT	m	A-4
	2.5-4	SS-58	5/7/8 TAN BRN SI-F SD	SAT	A-2-4
	5-6.5	SS-59	6/7/9 TAN F-CSE SD	"	A-3
	2.5-9		4/6/8 same "	"	A-3
			0 HR = 3.6 24 HR = 3.0		
A08+00	0-1		SOFT DK-BRN F SDY SILT	m	A-4
	-2.5		MISTIFF GRAY BRN SI-SDY CL	m	A-6
	-5		M. DNS TAN BRN SI-F SD	SAT	A-2-4
	-8		DNS TAN F-CSE SD	"	A-3
			0 HR = 4.2 24 HR = 3.0		

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PROJECT 6.29900 IT DATE 1/16/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

LINE  
L-1

MOISTU

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

423+00

0-1

SS-60

DESCRIPTION

1/1/1 BROWN-TAN SIL F SD

M

A-2-4

①

2.5-4.0

SS-61 M

2/2/6 TAN GRAY ORANGE FSDY CL

M

A-6

②

5.0-6.5

SS-62

3/4/8 TAN GRAY SILTY F-CSE SD

SAT

A-3

③

7.5-9.0

3/6/7 SAME "

"

A-3

④

0 HR H<sub>2</sub>O = 3.5  
24 HR H<sub>2</sub>O = 3.0

MOIST. 21.5-4.3 21.5

420+00

0-1

SOFT DK BROWN F-SDY SILT

W

A-4

②

3

med stiff TAN ORANGE SDY CL

W

A-6

③-④

4

med den gray SILTY F-CSE SD

SAT

A-2-4

①

8

Med Dense TAN - F-CSE SD

SAT

A-3

①

0 HR H<sub>2</sub>O = 3.0 (24 HR = 2.5)

417+00

0-1

Loose TAN SILTY F SD

M

A-2-4

①

2.5

med den TAN SILTY CL F-SD

M

A-2-4

①

5

med den TAN LTGRAY SILTY F SD

W

A-2-4

①

6

med den LTGRAY F-CSE SD

SAT

A-3

①

0 HR H<sub>2</sub>O 4.2  
24 HR H<sub>2</sub>O 3.5

416+00

0-1

SOFT DK BROWN SDY SILT

W

A-4

①

4

loose-med dense TAN SILTY F-SD

SAT

A-2-4

①

6

med dense TAN - F-CSE SD

SAT

A-3

①

0 HR H<sub>2</sub>O 3.5  
24 HR H<sub>2</sub>O 2.5

PROJECT 6.299001T DATE 11-5-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
<del>A-36+00</del>	<del>0-1.5</del>	<del>LOOSE DR. BRN SILTY F SD</del>	<del>mol</del>	<del>A-2-4</del>
	<del>-2.5</del>	<del>M. STIFF TAN GRAY SILTY F SOYCL</del>	<del>"</del>	<del>A-6</del>
	<del>-6</del>	<del>M. DEN TAN SILTY F SD</del>	<del>SAT</del>	<del>A-2-4</del>
		<del>OHR = 4.0</del>		
434	0-1	LOOSE DK <del>GRAY</del> SILTY F SD	M	A-2-4
	-3.5	MED STIFF GRAY SOYCL	M	A-6
	-8.2	MED DKS TAN F-CSE SAND	SAT	A-3/A-2-4
		H <sub>2</sub> O 3.5 TIB		
		<u>24 HR 2.0</u>		
432	0-1.5	SOFT D. BRN & GRAY CLY SDY SILT	M	A-4
	-3.5	MED STIFF GRAY SILTY SOYCL	M	A-6
	-6	MED DKS TAN SI F-CSE SD	SAT	A-2-4
		H <sub>2</sub> O 3.6 TIB		
		<u>24 HR 2.2</u>		
<del>A-30+00</del>	0-1	LOOSE DK BRN SILTY F SD	mol	A-2-4
	-4.5-10	M. STIFF TAN BRN SILTY F SD VCL	"	A-6
	-6.5-11	M. DEN TAN GRAY SILTY F SD	SAT	A-2-4
		OHR = 4.9		
		<u>24 hr = 3.8</u>		
428	0-1'	LOOSE DRW TAN SILTY F SAND	M	A-2-4
	-3	" YEL DRW CLY SILTY F SD	M	A-2-4
	-4.5	MED STIFF YEL DRW TAN SI SOYCL	M	A-6
	-8	LOOSE - MED DKS TAN F-CSE SAND	SAT	A-2-4
		H <sub>2</sub> O 4.2 TIB		
		<u>24 HR 3.5</u>		
A-24+00	0-1	LOOSE DK BRN SILTY F SD	mol	A-2-4
	-6	M. STIFF DL GRAY FSD V SILTY CL	"	A-7-6
		OHR = DRY L&D		
		<u>24 hr = 3.1</u>		
426	0-1	LOOSE D. DRW SI F. SAND	W	A-2-4
	-2	MED DKS TAN BRN CLY SILTY F SD	W	"
	-3.5	MED STIFF GRAY BRN SI. F. SOYCL	W	A-6
	-8	DKS TAN F-CSE SAND	SAT	A-2-4
		H <sub>2</sub> O 3.6 TIB		
		<u>24 HR = 2.6</u>		

See SPT Log



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299 001T COUNTY EDGEcombe GEOLOGIC PROVINCE CP  
 BRIDGE ON OVER  
 BORING LOCATION (STA.) 438 + 82 -1- OFFSET 8  
 BORING NO. WRC GEOLOGIST WRC GROUND WATER O HRS. 24 HRS. 3.2  
 COLLAR ELEV. DATE STARTED 4/15/92 DRILL EQUIPMENT OME 45 B  
 TOTAL DEPTH 55.6 DATE COMPLETED 4/15/92 RPT MUD

ELEV.	DEPTH	BLOW COUNT			SAMP NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
7.0	0.0	1	1	1	0.2 TOPSOIL 0.2-1.0 DK BROWN TAN SL F-CSE SD 1.0-1.5 GRAY TAN SL SDY CL 1.5-2.0 TAN SL F-CSE SD	M	Change of 4.2	
5.0	2.5	1	2	4	TAN SL F-CSE SD	M		
7.5	5.0	5	7	9	TAN VE-GSE SL SA	SAT		
4.2	7.5	5	5	6	TAN V-F-SD	SAT		
	10.0	7	7	7	TAN-WHITE F-CSE SD	SAT		
	14.1	6	6	6	TAN-WHITE F-CSE SD	SAT		
	19.1	7	7	10	TAN-WHITE F-CSE SD small gravel, old small gravel	SAT	Drilling 2.2.1	
	24.1	1	1	1	ORANGE-DR GRAY-GREEN CL A-2-6 (part of soil)	M		
	27	2	3	3	DR GRAY SLY CL W/ SCLL intermediate boundary	M		
	32	5	5	4	ORANGE-DR GRAY-GREEN CL A-2-6 A-2-6	M		
	34.1	4	2	2	DR GRAY SL F-CSE SD intermediate boundary	M		
	39.1	7	7	13	DR GRAY CL intermediate boundary	M		
	43	7	9	11	DR GRAY CL intermediate boundary	M		
	49.1	7	9	12	DR GRAY CL intermediate boundary	M		
	54.1	7	9	12	DR GRAY CL intermediate boundary	M		

15.3  
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5.8  
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1.1  
0.2

PRELIMINARY FOUNDATION INFO.  
 1.2 casing set at 4.2



PROJECT 6.29500 IT DATE 1-14-92  
 COUNTY Edgecombe  
 NOTES BY KJAV

LINE  
 - 6

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
441+00	0-3'	CBR1			
440	0-1'		LOOSE BRN F. SAND T.S	M	A-2-1
	-3.0		LOOSE TAN FINE - CSE SAND	"	A-2-4
	-8		MED STIFF GRAY SILTY SANDY CLAY	"	A-6
	-18		LOOSE TO MED DNS GRAY F. SAND	SAT	A-2-4
	-13		" LT. GRAY CSE SAND	"	A-1-B
480	0-5		LOOSE BRN CLY SAND H <sub>2</sub> O 4.9	W	A-2-4
	-4		SOFT TO M. GRAY SANDY CLAY T.M	W	A-6
	-8		MED DNS TAN SILTY CSE SAND	W	A-2-4
			H <sub>2</sub> O 4.2 T.B		
			(24 HR H <sub>2</sub> O = 2.0)		
438	0-1	S-132	SOFT BRN CLY SDY SILT T.S	M	A-4
	-3 1/2	S-133	SOFT TO MED STIFF GRAY BRN SILTY CL	W	A-6
	-8	M	LOOSE TO MED DNS YEL TAN F-CSE SAND	SAT	A-2-4
			H <sub>2</sub> O @ 3' T.B		
			(24 HR H <sub>2</sub> O = 2.2)		
437	0-1		LOOSE TAN-DK SILTY F. SD	M	A-2-4
	-3 1/2		MED STIFF GRN BRN F. SDY CL	W	A-6
	-5		LOOSE - MED DNS GRAY TAN F-CSE SAND	SAT	A-2-4
	-8		MED DNS YEL BRN CSE SD	"	A-1-B
			H <sub>2</sub> O @ 3.7 T.B		
			(24 HR H <sub>2</sub> O = 2.5)		
SPT 436	0-1.5	SS-51	1/1/1 LOOSE BRN SILTY SAND	M	A-4
	2.5-4.0	SS-52	5/8/11 MED DNS GRAY SILTY SD	M	A-2-4
	5.0-6.5	SS-53	4/6/9 TAN CSE SAND	SAT	A-3/A-4
	7.5-9.0		2/2/4 TAN CSE SAND		
			H <sub>2</sub> O 4.0 T.M		
			(24 HR H <sub>2</sub> O = 1.9)		

MOISTURE ESTIMATED CLASS

24 HR H<sub>2</sub>O = 3.5

MOI 1-3.5 21.3

24 HR H<sub>2</sub>O = 2.5

24 HR H<sub>2</sub>O = 2.5



LINE

-L-

PROJECT 6.29900 IT DATE 1-18-92  
 COUNTY Felton  
 NOTES BY RAW

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

450 0-8 LOOSE BRN & TAN F-CSE SAND M A-2-4  
 -13 STIFF GRAY BRN F SDY SIL CLAY W A-7-6

H<sub>2</sub>O @ 6.4'  
 24 HR H<sub>2</sub>O = 6.1

SPT  
 448 3.5-5.0 SS-54 3/3/4 BRN & TAN F-CSE SAND M A-2-4  
 8.5-10.0 SS-55 5/8/10 YEL BRN F-CSE SAND SAT A-7-6  
 13.5-15.0 SS-56 2/2/3 GRAY SANDY CLAY W A-4

H<sub>2</sub>O @ 6.5'  
 24 HR H<sub>2</sub>O = 6.2

20' sand  
 20 LT  
 446 0-12<sup>1/2</sup> LOOSE TAN <sup>AND</sup> SILTY F-CSE SAND M/SAT A-2-4  
 -13 SOFT-MED STIFF YEL BRN SILTY CL W A-7-6

H<sub>2</sub>O @ 7.0' TUB  
 24 HR H<sub>2</sub>O = 5.5  
 < 0.1 cm in the washed

443 0-3<sup>1/2</sup> LOOSE TAN SILTY F-CSE SAND M A-2-4  
 -4<sup>1/2</sup> MED STIFF GRAY SDY CLAY M A-6  
 -11 LOOSE-MED DWS TAN SILTY F-CSE SD SAT A-2-4  
 -13 MED STIFF GRAY AND SILTY F-CSE CL W A-7-6

24 HR H<sub>2</sub>O = 4.0

11.1  
 18.8

check  
 water  
 to  
 tub

PROJECT G.299001T DATE 1-6-92  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE  
- L1 -

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
452	0-2		0.1 RM Loose TAN F-CSE silty SD	M	A-2-4
	2-4		Loose TAN F-CSE SD	SAT	A-3
	4-6		Stiff LT GRAY SDY CL - Barometer SDY at bottom 0 HR H <sub>2</sub> O = 2.3	W	A-6
450	0-6		0.1 RM Loose TAN F-CSE SD Dr. with 6' See other notes	M	A-2-4
448			done see other notes		
446	0-2		0.1 RM Loose-MED. DWY TAN F-CSE SD	M	A-2-4
	-6		MED DWY TAN SILTY F-CSE SAND Sweet at 6' T.B. 24 HR H <sub>2</sub> O =	"	"

PROJECT 6.299001T DATE 11/7/91  
 COUNTY EDGE COMBE  
 NOTES BY WRC

LINE	STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
-L1-	464+00	0.0-1.0		SOFT DK BROWN SDY SILT	M	A-4	③
		2		med stiff DK BROWN SDY CL	M	A-4/A-6	④
		4		med stiff-stiff DK BROWN CL	M	A-7-6	⑤
		6		MEDDEN GRAY TAN SILTY F-CSE SD	SAT	A-2-4	⑥
		8		MED-DE TAN F-CSE SD	SAT	A-3	⑦
							$D_{HR} H_2O = 3.2$ <u>24 2.5</u>
	462+00	0.0-1.0		SOFT DK BROWN F SDY SILT	M	A-4	③
		2.0		SOFT-MED STIFF F SDY CLY SILT	M	A-4	④
		3.0		MED STIFF GRAY SDY CL	M	A-6	⑤
		8.0		MED DEN TAN F-CSE SILTY SD	SAT	A-2-4	⑦
							$D_{HR} H_2O = 3.5$ <u>24 1.4</u>
SPT	458+00	0-1.5	SS-66	1/1/2 DK BROWN F SDY SILT	M	A-4	③
		2.5-4.0	SS-67	0/1/1 DK BROWN F SDY CLY SILT	M	A-4	④
		5.0-6.5	SS-68	2/3/6 TAN F-CSE SD	SAT	A-2-4	⑥
		7.5-9.0	OS	5/4/5 SAME	SAT	A-2-4	⑦
							$D_{HR} H_2O = 3.2$ <u>24 2.6</u>
	456+00	0-1.5		SOFT DK BROWN SDY SILT	M	A-4	③
		4.5		med stiff-stiff DK GRAY SDY CL	M	A-6	④
		6.0		med den TAN F-CSE SD	SAT	A-3	⑦
							$D_{HR} H_2O = 4.2$ <u>24 1.6 2.6</u>

PROJECT G. 299001 T DATE 11-7-91  
 COUNTY Edgecombe  
 NOTES BY RLB

LINE	STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
-L-	A78+00	0-1		LOOSE DK. BRN SILTY F SD	mo	A-2-U	(1)
		-2.5		M-STIFF / STIFF TAN GRAY F SDY SILTY CL	"	A-7-6	(2)
		-4		M-STIFF TAN GRAY SILTY F SDY CL	"	A-6	(3)
		-6		M-DEN TAN GRAY / SILTY F SD	sat	A-2-A	(4)
				OHR = 5.0			
				24hr = 2.6			
	A72+00	0-1.5		LOOSE TAN BRN SILTY F SD	mo	A-2-A	(1)
		-4		M-STIFF YEL BRN SILTY F SDY CL	"	A-6	(2)
		-6		M-DEN TAN GRAY SILTY F SD	sat	A-2-A	(3)
				OHR H <sub>2</sub> O = 5.6			
				24hr = 5.2			
	+12	0-2.7		MED STIFF M-DEN STIFF GRAY SDY CL	M	A-6	(1)
		-6		LOOSE TAN F-CSE SAND		A-3	(2)
				PM 24h			
	A66+00	0-1		M-STIFF DK. BRN F SDY SILT	mo	A-4	(3)
		-3	S-15	M-STIFF GRAY SILTY F SDY CL	"	A-6/A-7	(3) (4)
		-4.5	S-14	STIFF TAN GRAY F SDY SILTY CL	"	A-7-6	(4)
		-6		DEN TAN GRAY CLY SILTY F SD	sat	A-2-A	(1)
				OHR = 5.0			
				24hr = 2.1			
	A60+00	0-1		LOOSE TAN BRN SILTY F SD	mo	A-2-A	(1)
		-2.5		M-STIFF YEL-BRN SILTY F SDY CL	"	A-6	(3)
		-6		M-DEN TAN GRAY F-CSE SD	sat	A-2-A	(4)
				OHR = 4.0			
				24hr = 3.7			

LINE

PROJECT L. 2990017 DATE 2-18-92

COUNTY Edgecombe

NOTES BY RLE

MOISTURE

ESTIMATED CLASS

STATION

DEPTH SAMP.

DESCRIPTION

A77+28

0-12

LOOSE TAN WHITE SI-F SD W,  
CLY LAYER MIXED

M A-2-A

(1)

LINE

-L1-

PROJECT 6.299001T DATE 11/22/91  
 COUNTY EDGEcombe  
 NOTES BY WRC

MOISTURE

ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION
475+50	0-2	S-137	DK BRN SDY SL
	3	S-138	DK BRN GRAY SL SDY CL SPT-MED
	5	S-139	GRAY SDY CL SPT-MED STIFF
	8	S-140	TAN MED DEN SL F-CSE SD

M  
W  
W  
SAT

A-4  
A-6  
A-7-6  
A-2-4

③ SEE WHAT 138 IS  
 ④  
 ⑤  
 ⑥  
 ⑦

0 HR H<sub>2</sub>O = 2.8  
 24 HR H<sub>2</sub>O = 2.0

474+00	0-1.5		DK BRN MED DEN SL SD
	3		MED STIFF ORANGE TAN SDY CL
	4		MED DEN TAN SL SD
	8		MED DEN TAN-ORANGE F-CSE SD

M  
M  
SAT  
SAT

A-2-4  
A-6  
A-2-4  
A-3

0 HR H<sub>2</sub>O = 3.0  
 24 HR H<sub>2</sub>O =

SPT

476+00	0-1.5	SS-69	1/1/1 DK BROWN SDY SILT
	2.5-4.0	SS-70	1/3/4 TAN ORANGE GRAY SDY CL
	5.0-6.5	SS-71	1/4/7 TAN ORANGE GRAY CL
	7.5-9	SS-72	4/7/9 TAN WHITE F-CSE SDW/GRAUW

M  
M  
M  
SAT

A-4  
A-6  
A-7-6  
A-1-6

③ 0-1 FSDY SILT 1.0-A-6  
 ④  
 ⑤  
 ⑥

0 HR H<sub>2</sub>O = 3.5  
 24 HR H<sub>2</sub>O =

468+00	0-1		SOFT DK BROWN SDY SILT
	2		MED-STIFF-STIFF SDY CL GRAY
	4		MED-STIFF-STIFF GRAY
	6		MED DEN <sup>TAN</sup> SILTY F-CSE SD
	8		MED DEN TAN F-CSE SD

M  
M  
M  
SAT  
SAT

A-4  
A-7-6  
A-4  
A-2-4  
A-3

③  
 ④  
 ⑤  
 ⑥

24 HR H<sub>2</sub>O =  
 2.0



LINE

PROJECT 6.299001T DATE 1/22/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC

MOISTUF

ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTUF	ESTIMATED CLASS
488+00	0.0-1		MED DEN TAN SL F SD	M	A-2-4
6' RT	8		ST-HD ORANGE TAN GRAY CL 0 HR H <sub>2</sub> O = DRY 24 HR H <sub>2</sub> O = 7.0	M	A-7-6
SAMPLE 486+00	0-1.0	S-141	LOOSE TAN SL F SD	M	A-2-4
	2.5	S-142	MED ST ORANGE TAN CL	M	A-7-6
	4.0	S-143	MED ST ORANGE TAN GRAY SDY CL	M	A-6
	6.0	S-144	ST ORANGE TAN GRAY CL 0 HR H <sub>2</sub> O = DRY 24 HR H <sub>2</sub> O = 6.0	M	A-7-6
SPT 482+00	0-1.5	SS-73	W 1/1 DK BRN CLY SL	W	A-4
	2.5-4.0	SS-74	2/2/4 BRN SDY CL	SAT	A-6
	5.0-6.5	SS-75	3/3/3 GRAY GREEN CLY CSE SD	SAT	A-16
	7.5-9		3/5/3 SAME AS ABOVE	SAT	A-16
					0 HR H <sub>2</sub> O = .5 24 HR H <sub>2</sub> O = .6
480+00	0-1		SFT DK BRN SDY SL	M	A-4
	3		MED STIFF TAN GRAY CL	M	A-7-6
	5		MED DEN TAN-BRN SL F SD	SAT	A-2-4
	8		MED DEN TAN F CSE SD	SAT	A-3
					0 HR H <sub>2</sub> O = 6.0

MOI 27.2

MOI 23.1

STARTS NET

POOR SOIL AT 480+00

STARTS NET

POOR SOIL AT 480+00

STARTS NET

POOR SOIL AT 480+00

LINE

PROJECT 6.2990017 DATE 11-7-91COUNTY EdgecombeNOTES BY RLE

MOISTURE

ESTIMATED

CLASS

STATION

DEPTH SAMP.

DESCRIPTION

A96+00

0-1  
-6LOOSE BRN SILTY F SD  
M. STIFF / ST BRN GRAY F SDY SILTY CL  
OHR H<sub>2</sub>O Dry 6.0  
2Ahr 4.9

WLT A-2-4

" A-7-6

High PI.

SEE OTHER NOTES

STARTED AT STA.

A92+00 to assist poor drainage  
SILTY CL AT 1.0 A-7-6

CLY TO BE STANDING WATER

w/ve get  
thick w/ve  
mass of yon

A90+00

0-1 S-17  
-2 S-18  
-5 S-19  
-6 S-20LOOSE BRN SILTY F SD / SDY SILTY CL  
M. STIFF TAN BRN SILTY F SDY CL  
STIFF BRN GRAY F SDY SILTY CL  
STIFF TAN GRAY SILTY F SDY CL  
OHR H<sub>2</sub>O Dry 6.0  
2Ahr Dry 6.0

mo

~~A-2-4~~~~A-6~~

①

4

A-6

"

A-7-6

"

A-6

A88+00

0-1  
-45  
-6LOOSE DK. GRAY SILTY F SD  
M. STIFF TAN GRAY F SDY SILTY CL  
M. STIFF TAN BRN SILTY F SDY CL  
OHR = 5.9  
2Ahr = 2.0

mo

A-2-4

"

A-7-6

"

A-6

A  
3

LINE

 PROJECT 6.29900 IT DATE 1/22/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

MOISTURE

ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
498+00	0-1		SDFT DK BRN SDY SILT	M	A-4
	8		MED ST-TAN ORANGE GRAY-GREEN CL 0 HR H <sub>2</sub> O = DRY 24hr 5.3	M	A-7-6
496+00	0-1		SOFT DR. BRN F SDY SILT	M	A-4
	-8		MIST-ST TAN RED GRAY mottled SI-CL 0HR = DRY 8.0 24hr 4.9	M	A-7-6
494+00	0.0-1.5	SS-76	1/1/2 BRN- SL F SD	M	A-2-4
	2.5-4.0	SS 57	1/4/5 TAN ORANGE GRAY CL	M	A-7-6
	5.0-6.5		1/3/5 same	M	A-7-6
	7.5-9.0	OS	1/5/9 same L	M	A-7-6
					0HR = DRY 24hr 5.0
492+00	0-1		MED DEN BRN-TAN SL F SD	M	A-2-4
	8		ST-HD TAN DRANGE GRAY CL 0 HR H <sub>2</sub> O = DRY 24 HR H <sub>2</sub> O = 6.5	M	A-7-6

③

④

②

④

②

④

④

④

①

②

check notes see note on page

 (A-4) (MSE 22.9)  
 (MSE 24.5)

SPT

LINE

PROJECT 6.299 00 VT DATE 1/22/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

MOISTUR

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOISTUR	ESTIMATED CLASS
500+00	0.0-1.5	SS-78	WOM/1/1 DK BRN-TAN SDY CL	M	A-7.6
	2.5-4.0	SS-79	2/4/4 ORANGE-TAN GRAY CL	M	A-7.6
	5.0-6.5		2/5/6 SAME	M	A-7.6
	7.5-9	OS	1/4/4 SAME	M	A-7.6
			0 HR H <sub>2</sub> O = DRY		
			24 HR H <sub>2</sub> O = 51		



WATER 17.3  
 MOISTURE 56.1

PROJECT 6299001T DATE 2-3-92  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE	STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
L1						
				OR SOY SILT		
	536+00	0-1.5	SS-109	1-1-1 D-BRN SILTY F-SO	m	A-2-4 (1)
	SPT			0.5-1.5 TAN-BRN SILTY F-SOy CLY	m	A-6 (3)
		2.5-4.0	SS-110	0-1-1 Gray SILTY F-SO	SAT	A-2-4 (1)
		5.0-6.5		1-3-5 Gray SILTY F-SO	SAT	A-2-4 (1)
		7.5-9.0	SS-111	2-3-5 TAN-Gray F-CSC SO		A-3/A-2-4 (1)
				OHR 1.8 24 HR = 1.6		
	53A+00	0-1		Loose DK BRN SILTY F-SO	m	A-2-4 (1)
		-3		MED STIF TAN BRN SILTY F-SOy CLY	m	A-6 (2)
		-6		MED DNS GRAY SILTY F-SO	wet	A-2-4 (1)
		-8		MED DNS GRAY F-CSC SO	SAT	A-3 (1)
				OHR 2.6 24 HR = 2.5		
	533+00	0-1		Loose DK BRN SILTY F-SO	m	A-2-4 (1)
		-2		Med STIF TAN BRN SILTY F-SOy CLY	m	A-6 (3)
		-6		MED DNS GRAY SILTY F-SO	w	A-2-4 (1)
		-8		MED DNS TAN F-CSC SO	SAT	A-3
				OHR 3.1 24 HR = 2.9		
	532+00			See Notes		
	530+50	0-1		Loose DK-BRN SILTY F-SO	m	A-2-4 (2)
		-3		MED DNS TAN BRN CLY SILTY F-SO	m	A-2-K (A-A) (2)
		-8		MED DNS GRAY SILTY F-SO	SAT	A-2-K (1)
				OHR = XID 24 HR 2.8		

PROJECT 6.299001T DATE 11-18-91  
 COUNTY Edgecombe  
 NOTES BY RLE

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTUR	ESTIMATED CLASS
544+00	0-1	S-30	LOOSE DK. BRN SILTY FSD T.S.	moi	A-2-A (1)
	-2.5	S-31	M. DENTAN SILTY FSD	"	A-2-A (1)
	-3.5	S-32	M. STIFF TAN BRN CLY FSD VSILT	"	A-2-A (2) A-2-A
	-6	S-33	M. DEN RED BRN SILTY CLY FSD	"	A-2-A (1) A-2-A
					OHR = Dry 6.0 <u>2Ahr = Dry 6.0</u>
538+00	0-1		LOOSE DK. BRN SILTY FSD / SD VSILT T.S.	moi	A-2-A (1) A-2-A (2)
	-2		M. STIFF TAN BRN SILTY FSD CL	"	A-6 (3)
	-4		M. DENTAN GRAY SILTY FSD / W CLY WET LAYERS	wet	A-2-A (1) A-2-A
	-6		M. DENTAN F-CSE SD	SOFT	A-2-A (1)
					OHR = 3.8 <u>2Ahr = 3.6</u>
532+00	0-1	S-27	LOOSE DK. BRN SILTY FSD T.S.	moi	A-2-A (1)
	-4	S-28	M. DEN TAN BRN CLY SILTY FSD	"	A-2-A (1) A-2-A (2)
	-6	S-29	M. DEN TAN GRAY SILTY FSD / W CLY WET LAYERS	wet	A-2-A (1) A-2-A (2)
					OHR 5.3 <u>2Ahr = 4.9</u>
526+00	0-2	OFF	SOFT DK. GRAY CLY FSD VSILT	wet	A-6 (1) FSD
	-5		SOFT DK. GRAY SILTY FSD / CLY	"	A-4 (1)
	-6		M. STIFF TAN GRAY CLY FSD VSILT	"	A-2-A (1)
					OHR = 2.2 <u>2Ahrs 2.0</u>

PROJECT 6.2990017 DATE 11-14-91

LINE

COUNTY Edgecombe

NOTES BY RLE

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

POINT 553+40.21  
END OF PROJECT 553+67

550+00

0-1

LOOSE DR. BRN SILTY F SD T.S.

mol

A-2-A

-2

M. DENTAN CLY SILTY F SD

"

A-2-A

-4

M. STIFF TAN BRN CLY F SD / SIFT

"

A-2 / A-6

6

M. DEN RED BRN SILTY CLY F SD

"

A-2-A / A-2-B

OHR = Dry 6.0

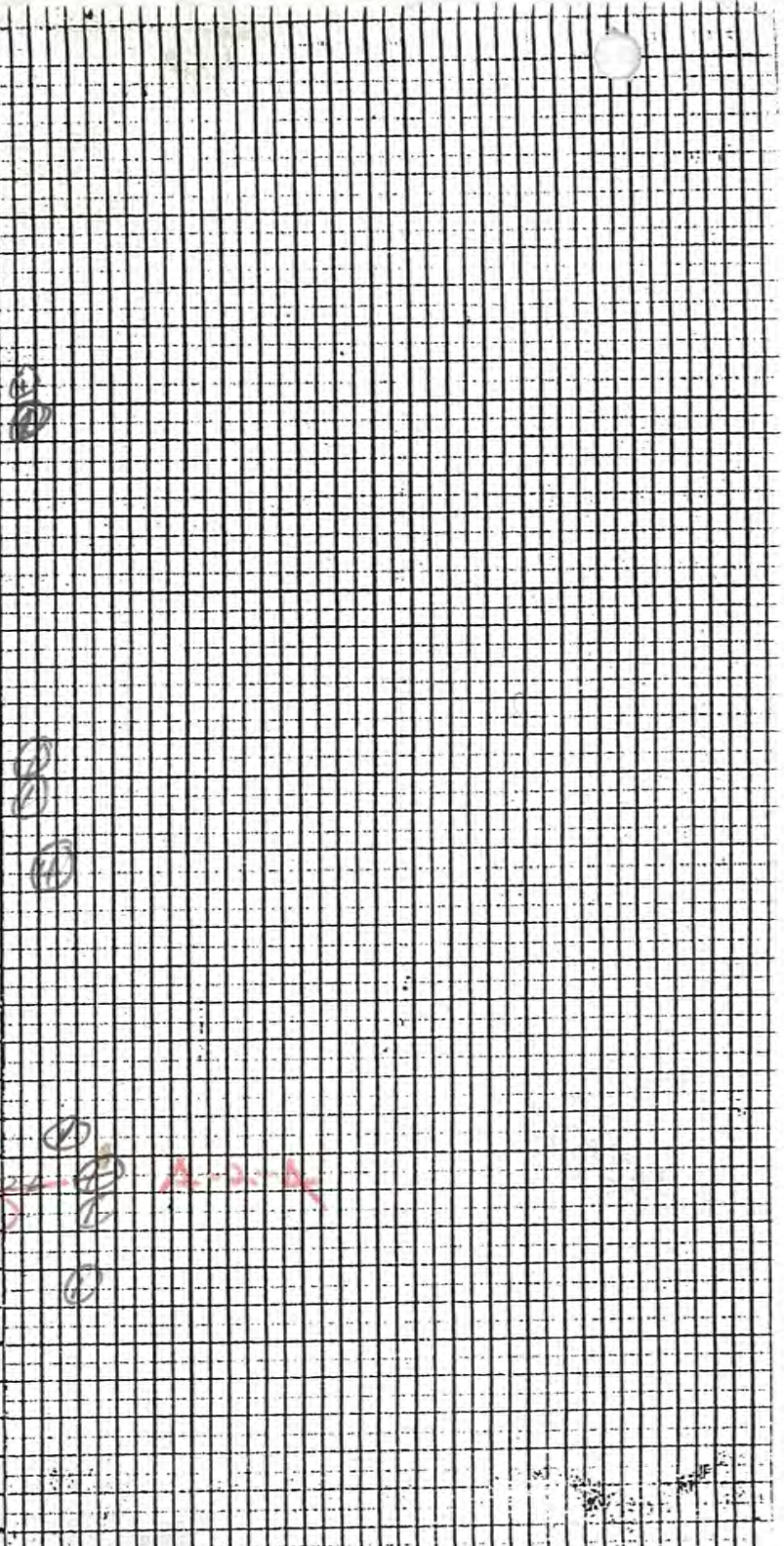
2amps = 5.6

PROJECT 6.299 00 IT DATE 2/4/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC

LINE  
 - L1 -

MOISTURE  
 ESTIMATED  
 CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
546-00	0.0-1.0		LOOSE BRN SL F SD	M	A-2-4
	1.0-8.0		MED-DNS TAN RED-GRAY CLY SHF-CSE SD OHR H <sub>2</sub> O = 4.8 24 HR H <sub>2</sub> O = 2.8	M/SAT	A-2-4
547+00	0.0-1.0		LOOSE BRN SL F-CSE SD	M	A-2-4
	1.0-6.0		MED DNS TAN ORANGE SL F-CSE SD w/CL Layers	M	A-2-4
	6.0-8.0		MED-STIFF GRAY SDY CL	M/SAT	A-6
			OHR H <sub>2</sub> O = 5.7 24 HR H <sub>2</sub> O = 3.2		
540+00	0.0-1.0	163	LOOSE DK BRN SL F-CSE SD	M	A-2-4
	1.0-2.5	164	SFT-MED STIFF TAN SDY CL	M	A-6/A-2-4
	2.5-7.0	165	MED DEN GRAY TAN SLF-CSE SD w/some small CL-LAYERS	SAT	A-2-4
	7.0-8.0		MED DNS ORANGE F-CSE SD OHR H <sub>2</sub> O = 3.6 24 HR H <sub>2</sub> O = 2.2	SAT	A-3





PROJECT G.299001T DATE 1-7-92  
 COUNTY Edgecombe  
 NOTES BY RLE

LINE	STATION	DEPTH	SAMP	DESCRIPTION	MOISTUR	ESTIMATED CLASS
✓	508+00	0-2.5	S-130	0-0.2 R.m V. SOFT DR. BRN SLI-ORG FSDYSILT	WET	A-2 / A-7.5 (4)
		-6	S-131	M. DNS TAN BRN SI-F SD OHR=1.1 24hr=1.0	SAT	A-2-A
✓	506+00	0-1.5		ROOT MAT		
		1.5-2		SOFT DR. BRN SLI-ORG FSDYSILT	WET	A-2 / A-7.5 (4)
		-6		M. DNS TAN GRAY SI-F SD OHR=0.5 24hr=0.4		A-2-A
✓	504+00	0-2		0.2 R.m V. SOFT BLK SLI-ORG. CLYF SDYSILT	WET	A-7.5 (4) (5)
		-6		M. DNS TAN GRAY SI-F SD OHR=.7 24hr=.6	SAT	A-2-A (1)
✓	503+00	0-3		0.2 R.m V. SOFT BLK SLI-ORG. CLYF SDYSILT	WET	A-7.5 (4) (5)
		-6		M. DNS TAN GRAY SI-F SD OHR=1.0 24hr=1.0	SAT	A-2-A (1)
	502+00			already sample see note		

PROJECT 6.29900 IT DATE 7/4/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

LINE

-L1-

STATION

DEPTH SAMP.

DESCRIPTION

MOISTURE

ESTIMATED CLASS

509+90	0.0-1.5	SS-115	WOM 1/1/1 BRN SL F-CSE SD FILL	M	A-2-4	change at 2.0 to A-4
	2.5-4.0	SS-116	1/1/1 DK BRN FSDY SL A-2-6	W	A-4/A-6	change at 3.5 to A-6
	5.0-6.5	SS-117	3/4/5 TAN SL F-CSE SD	SAT	A-2-4	change at 5.5 to A-2-4
	7.5-9.0		3/4/4 SAME AS ABOVE	SAT	A-2-4	
	12.5-14.0		1/3/5 TAN SL F-CSE SD	SAT	A-2-4	
			0.0R H <sub>2</sub> O = 3.8			
			24 HR H <sub>2</sub> O = 3.5			

11

154



PROJECT G. 299001 T DATE 11-12-91  
 COUNTY Edgecombe  
 NOTES BY RLE

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
✓ S20+00	0-1	S-24	SOFT DK. BRN F SDV SILT	WET	A-4
	-5	S-25	SOFT DK. GRAY SILTY F SDV CL	"	A-6
	-6	S-26	M. STIFF TAN GRAY CLV F SDV SILT	"	A-2/A-4
	-7		M. DNS BRN SI-SD	SAT	A-2-A
			(24hr Surface)		
✓ S1A+00	0-3		SOFT DK. BRN F SDV SILT	MOI	A-4
	-6.5		M. STIFF TAN GRAY SILTY F SDV CL	WAT	A-6
	-7.5		M. DNS BRN CLY SI-F SD	SAT	A-2-A
			(24hr 0.8)		
S08+00	0-2		SOFT DK. BRN F SDV SILT	MOI	A-4
	-6		M. DENTAN SILTY F SD	"	A-2-A
			OHR = Dry 6.0 24hr = 5.3		
✓ S02+00	0-2	S-21	SOFT DK. BRN CLV F SDV SILT	MOI	A-4
	-5	S-22	M. STIFF DK. GRAY SILTY CL	"	A-7-6
	-6	S-23	M. STIFF TAN GRAY SILTY F SDV CL	"	A-6
			OHR = Dry 6.0 24hr 4.3		

MOI = 0.77%  
 15.8%  
 barometer at surface  
 poor poor drainage

~~sampled see sheet~~  
 OHR = Dry 6.0  
 24hr = 5.3  
 dur & semi  
 now 0.5  
 plus heavy rain

MOI

0.77%

15.8%

barometer at surface  
 poor poor drainage

+

+

+

+



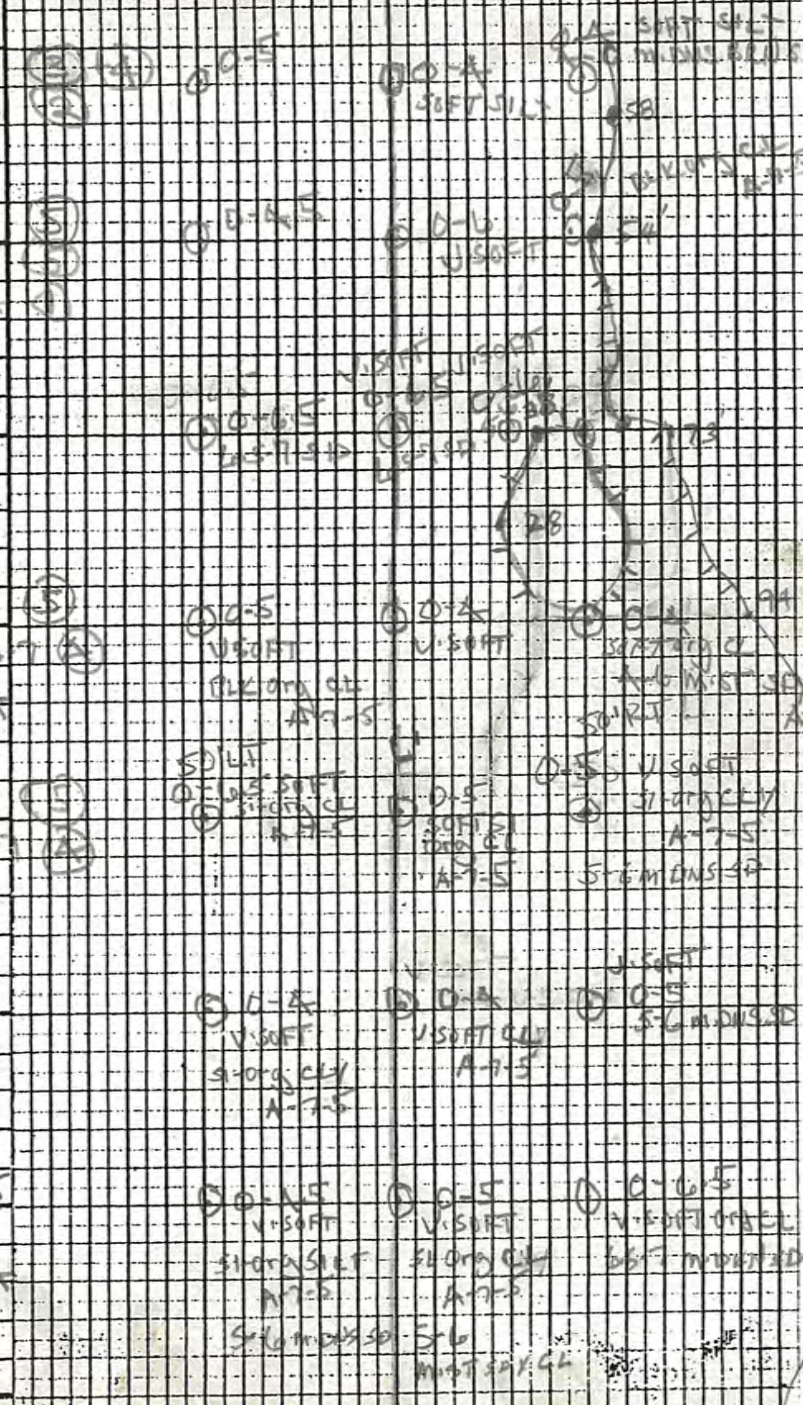
LINE

PROJECT 6.2990017 DATE 2-17-98  
COUNTY Edgecombe  
NOTES BY RLE / WRC

MOISTURE  
ESTIMATED  
CLASS

CROSS SECTION  
SCALING

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
527+05	0-4		SOFT DR. BRN CLY/F SDY SILT	WET	A-4
SRT	A-6		M. DNS TAN GRAY SI-F SD 24hr = 2.0	SAT	A-2-4
527+07	0-4		SOFT DR. BRN CLY/F SDY SILT	WET	A-4
	-6		SOFT BLK SL-ORG SDY CL	"	A-7-5
	-7		M. DNS BRN SI-F SD OHR SURFACE	SAT	A-2-4
526+00	0-6.5		V. SOFT BLK SL-ORG SDY CL	W	A-7-5
	-7		M. DNS BRN SI-F SD OHR = 1.1	SAT	
525+00	0-4		V. SOFT BLK SI-ORG SDY CL	W	A-7-5
	A-7		M. ST GRAY SI-F SDY CL	W	A-6/A-7
	-8		M. DNS BRN SI-F SD 24hr = 1.2	SAT	A-2-4
524+00	0-5		V. SOFT BLK SL-ORG SDY CL	W	A-7-5
	5-6		M. ST. GRAY SI-SDY CL OHR = 0.5	W	A-6/A-7
523+00	0-4		V. SOFT BLK SI-ORG CL	W	A-7-5
	-6		M. DNS BRN SI-F SD 24hr = 0.6	SAT	A-2-4
			NO. 2.0 ST-1		
522+00	0-5		V. SOFT BLK SI-ORG CL	W	A-7-5
	-6		M. ST GRY BRN F SI-SDY CL	W	A-6
	-7.5		M. DNS BRN SI-F SP 24hr = 0.8	SAT	A-2-4
521+00					





LINE

PROJECT 6209001T R.2111AA DATE 3-A-93

COUNTY Edgecombe

NOTES BY RLE

Borings for Unclassified Recreation

MOISTURE

ESTIMATED CLASS

STATION

DEPTH SAMP

DESCRIPTION

96+00

EXIST US64

-Y-

0-6

LOOSE/MED DNS SL F-LSE SD/W gravel  
24hr-Dry wt. 6.0

m

A-2-A

126+00

230' RT EMB

0-4

-17

-13

V. LOOSE TAN SL F-SD  
MED DNS TAN F-USE SD/W gravel  
LOOSE GRAY BRN F-CSE SD GRAVE  
ONR 11.5

m

A-2-A/A-3

m

A-3/A-3A

SAT

A-1-B

OK

113+00

SORT EMB

0-3

-8.5

-11.5

13

V. LOOSE TAN SL F-CSE SD  
MED DNS TAN BRN F-CSE SD/W gravel  
MED STIFF DWE GRAY SDY SL CL, wood  
MED DNS LIGHT GRAY SL F-CSE SD  
ONR = 3.2  
24hr = 3.0

m

A-2-4

SAT

A-2-4/A-3

v

A-7-6

OK





LINE  
RPA Rev.

PROJECT G. 299001 T DATE 5-12-72  
 COUNTY Edgecombe  
 NOTES BY EMW

STATION DEPTH SAMP DESCRIPTION MOIST

ESTIMATED CLASS

11+57.55 LB = RP A-9+08 LA

SAID  
20' LT

10' =

10' inside cut

0-2' MED DNE YEL BRN SILTY SD fill  
 -3 STIFF BRN CLAY SD SILT  
 -7 LOOSE-MED DNE TAN F. SD  
 -8 STIFF GRY BRN SDY CLAY

M A-2-7  
 M A-4  
 M A-2-4  
 M A-6

SDY TIB

SAID  
10' LT  
8'

10' +

inside cut  
 = 45' LT STA 45+20 LI LWB

0-6 MED DNE YEL BRN CLY SD  
 -8 MED STIFF YEL BRN FSDY CLAY

M A-2-4  
 M A-6

LINE  
Ramp E

PROJECT 6.299001T DATE 4-29-12  
 COUNTY Edgecombe  
 NOTES BY PAW

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
18					-36
✓ 17	0-6'		LOOSE - MED. DNS BRN & GRAY F-CSE SAND FILL Dry T13 24h	M	A 2-7
16					-17
✓ 15	0-6'		BRN & GRAY LOOSE - MED DNS F-CSE SAND MIXED w/ SOME STIFF SILTY CLAY Dry T13 Dry 24h	M	A 2-7
14					-11
13					-8
12+63	=	-Y2	-12+63, 2' LT Basin Grad		-7

LINE  
Ramp E

PROJECT 6.299001T DATE 4-29-92  
 COUNTY Edgecombe  
 NOTES BY FEAW

MOISTURE  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
145 =	73+00		WBL See WBL Notes FOR REMAINDER OF RAMP		
24					-22
23+4'S	0-6		MED STIFF TO STIFF YEL BRN SILT CL	M	A-7-6
77, 70	-7 1/2		STIFF BLUE GRAY SILTY CL	M	A-7-6
	-8		MED DNS GRAY F-CSE SD	SAT	A-2-4
23			H <sub>2</sub> O of 4 1/2' 24h		
	0-3		SOFT-MED STIFF GRAY SILTY CL		
22+30	0-2 1/2		SOFT TO MED STIFF YEL BRN SILT CL	M	A-7-6
75, 70	-4		MED DNS YEL BRN SILTY SAND	M	A-2-6
22	-6		MED DNS GRAY CSE SAND	SAT	A-1-12
150	0-2 1/2		SOFT GRAY SILTY CLAY	W	A-7-6
	-3 1/2		V. LOOSE GRAY CSE SD	SAT	A-2-1
	+		MED DNS GRAY SD CL		
21+20	0-1		MED STIFF M STIFF BRN SDY SILT	M	A-4
70, 130	-2 1/2		STIFF YEL BRN SI F. SDY CL	M	A-6
	-3 1/2		MED DNS YEL BRN CLY F-CSE SD	M	A-2-4
	-6		" BRN CSE SAND	SAT	A-1-12
			H <sub>2</sub> O of 3.0' 24h		
20	0-1		V. SOFT GRAY SDY CLAY	W	A-6
	-2		V. LOOSE SD	SAT	
	+		MED DNS CSE SD	SAT	
			H <sub>2</sub> O surf		
19	0-1		MED STIFF-SOFT BRN SDY SILT	M	A-4
	-3 1/2	24h	STIFF YEL BRN SI SDY CL	M	A-7-6
	-6	m	MED DNS GRAY CSE SD w/ GRAVEL	SAT	A-1-12
			H <sub>2</sub> O 3.5' 24h		



LINE  
Ramp E

PROJECT C. 29900T DATE 3/4/93  
 COUNTY Ed. Combe  
 NOTES BY RL

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
			25' from End of Culvert		
			25' from Culvert		
			on approx. mid pt slope		
25					X-SECT 40' RT
25+00	0-6		LOOSE / MED DNS TAN SLF-CSESD	MOL	A-2-A
AORT	0-2		OHRL DRY		24hr DRY
	-4		V. LOOSE TAN SLF-CSESD RDWY FILL	MOL	A-2-B
	-7		LOOSE GRAY BRN CLY SLFSD	"	"
	-8		MED STIFF / STIFF BRN GRAY SL CL	W	A-7-6
			MED DNS LIGHT GRAY SLFSD	SAT	A-2-A
			OHRL = 7.5 24hr = 1.9		
			RDWY FILL		
24	0-1		V. LOOSE BRN SLFSD / W	M	A-2-A
			CLY LAYER		
	-6		LOOSE / MED DNS TAN SLF-CSESD		A-2-A
			W/ CLY LAYERS MIXED H2O DRY	24hr DRY	24hr DRY
24+00	0-1		V. LOOSE BRN CLY SLF-CSESD	SAT	A-2-A
BORT	-4.5	5-10	SOFT / MED STIFF BRN GRAY SL CL	W	A-7-6
CROSS SECTION	-6		MED DNS LIGHT GRAY SLFSD	SAT	A-2-A
			OHRL = 1.0	24hr = 0.5	
			RDWY FILL		
23	0-1		LOOSE BRN CLY SLFSD	M	A-2-A
	-6		LOOSE / MED DNS TAN SLF-CSESD		A-3/A-2
			OHRL = DRY 24hr DRY at 6.0		
2			Ramp E 21+80 = 78+00 =		-L-W/B/L
					OLD SURVEY

LINE  
Ramp E

PROJECT 6.29900 RT DATE 3/1/93  
 COUNTY Edgemoor  
 NOTES BY RLB

STATION	DEPTH	SAMP	DESCRIPTION
29			
28	0-3		60 LT. 74+00-L-REV LOOSE MED DNS TAN BRN SL F-CSE SD
	-5		W. CLY LAYER MIXED SOFT GRAY CLY F SDY SILT
	-6		LOOSE LIGHT GRAY CLY SL F SD OHR = 4.5 24hr 0.5
27	0-26	S-11	V. LOOSE TAN SL F SD (RDW/FILL)
	-28	S-12	LOOSE LIGHT GRAY CLY SL F-CSE SD
	-9	S-13	MED STIFF / STIFF BRN GRAY SL CL
	-10		MED DNS LIGHT GRAY SL F SD OHR = 3.5 24hr 1.1
27+00 PORT	0-1		V. LOOSE BRN SL ORG F-CSE SD
	-95		MED STIFF / STIFF BRN GRAY SL CL
	-105		MED DNS LIGHT GRAY SL F SD OHR = 0.3 24hr 0.1
26	0-6		40' in Channel (RDW/FILL) LOOSE MED DNS TAN SL F-CSE SD OHR = DRY 24hr 10 dry
26+00 SORT	0-1		V. LOOSE TAN BRN SL F-CSE SD
	-2		V. LOOSE LIGHT GRAY CLY SL F-CSE SD
	-7.5		MED STIFF / STIFF BRN GRAY SL CL
	-80		MED DNS LIGHT GRAY SL F SD OHR = 0.8

MOISTURE	ESTIMATED CLASS
W	A-2-4
SOFT	A-2-4
"	A-2-4
M	A-2-4 / A-2-3
SOFT	A-2-2
W	A-7-6
SOFT	A-2-4
SOFT	A-2-4
W	A-7-6
W	A-7-6
SOFT	A-2-2
SOFT	A-2-2
W	A-7-6
SOFT	A-2-2

③ FULL

X-SECTION 40' RT

A-6 with 3.1, 2.8, 1.0

X-SECTION 60' RT



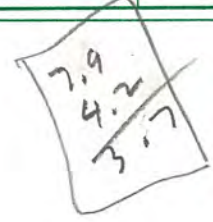
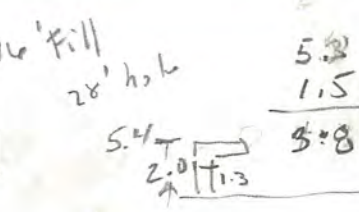
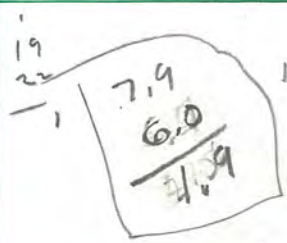




NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET \_\_\_ OF \_\_\_

PROJECT NO. G.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CP  
 BRIDGE ON \_\_\_\_\_ OVER \_\_\_\_\_  
 BORING LOCATION (STA.) 3+00 Loop F OFFSET E  
 BORING NO. \_\_\_\_\_ GEOLOGIST ERW GROUND WATER 0 HRS. 4.5 24 HRS. \_\_\_\_\_  
 COLLAR ELEV. \_\_\_\_\_ DATE STARTED 8-19-92 DRILL EQUIPMENT CME 45 B  
 TOTAL DEPTH 30.3' DATE COMPLETED " ROT-MUD

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0							
	2.1	11	19		BRN & GRAY F-CSE SD TO 3.5' FILL A-2-4	M	⊙30	
	3.8	3	9	12	YEL BRN Silty Clay change 5.5' A-4	W	⊙21	
	8.8	6	7	8	TAN CSE SD w/ PEA GRUL A-1-B change 13.5' ±	SAT	⊙15	
	13.8	7	10	14	GRAY SILTY CLAY w/ GRAVEL A-7-4	WET	⊙24	
	18.8	20	19	22	LT. GRAY F-CSE SAND A-3	SAT	⊙31	
	23.8	10	18	15	SAMPZ	LI	⊙33	
	28.8	6	9	15	GRAY CSE SAND	II	⊙24	



PRELIMINARY FOUNDATION INFO.	
Tri Cone	0.9
wash test	0.7
FluShoe	0.13
Spoon	2.9

LINE

LOOP F

PROJECT 6.299001T DATE 8-27-92  
 COUNTY Edgecombe  
 NOTES BY RLE

MOIST

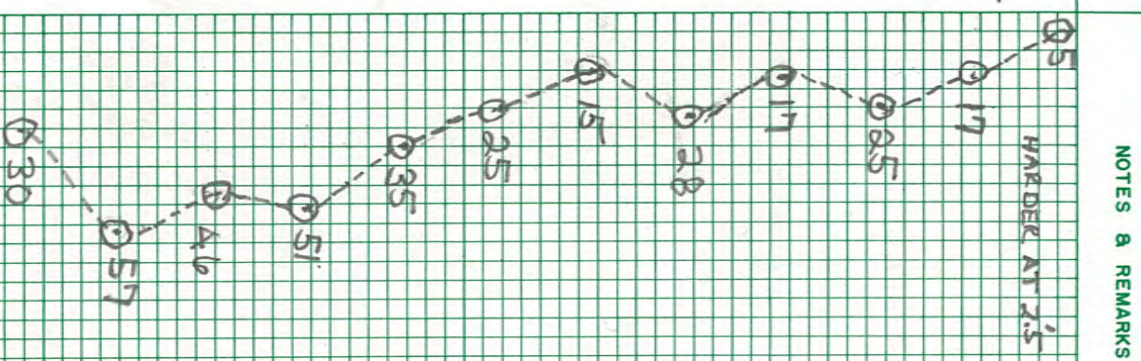
ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
12+00	0-1.5	S-1	SOFT DL BRN SI F-SDY CL <span style="color:red">A-7-6</span>	mol	A-6
Push SIT. 2	-11	C-2	MEDSTIFF/STIFF/YEL/BRN SDY SI-CL <span style="color:red">A-7-6</span>	"	A-7-6
2.5-4.5			W/SD LAYER		
Rec. 2.0	-22		DNS TAN GRAY SI-F-CSESD gravel	SAT	A-2-A
SI-CL	-48		DNS/V DNS GRAY F-CSESD	"	A-3/4
12+00	0-1.5		1/1/1 SD OHR=1.7		
	3-4.5		3/3/2 24hr 1.0		
	5.65		3/2/5		
	8-9.5		6/9/2		
9+00			SEE SPT LOG 24hr = 2.4		
6+00	0-4		LSE TAN BRN F-CSESD/gravel	SAT	A-1-B / A-2-4
	-8		STIFF/V STIFF BRN GRAY mica SDY SI-CL	WET	A-7-6
	-24		DNS TAN GRAY/SI-F-CSESD	SAT	A-2-A
cut W at 32	-25.5		STIFF/V STIFF DK GRAY SDY SI-CL	mol	A-7-6
	-38		DNS/V DNS TAN GRAY SI-F-CSESD	SAT	A-2-A
			OHR = w/gravel		
			24hrs = Surface		
3+00			SEE SPT LOG 24hr = 0.5		

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6-29900T COUNTY Edgecombe GEOLOGIC PROVINCE CIP  
 BRIDGE ON \_\_\_\_\_ OVER \_\_\_\_\_  
 BORING LOCATION (STA.) 9700 LOOP F OFFSET ± GROUND WATER O HRS. 24  
 BORING NO. \_\_\_\_\_ GEOLOGIST RLE DATE STARTED 8/25/92 DRILL EQUIPMENT CME 45B  
 COLLAR ELEV. \_\_\_\_\_ DATE COMPLETED 8/25/92 AU ROT, H-W casing, mud  
 TOTAL DEPTH 55.5

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0	0.0	1	2	3	55-17 m	m01	Ground Surface DRINKBLY SILT-SDY SILT A-4	
4.2	4.2	7	9	8	55-18	50T	BRN SILT-CSE SD A-1-B A-2-A / A-3 CL SD BEGAN AT 7.0 A-2-4 / A-2-4	
9.0	9.0	9	13	12	55-19	"	GRAY SILT-CSE CLY SD A-2-4 / A-2-4	
14.0	14.0	9	9	9		"	GRAY BRN SILT-CSE SD A-2-A 18	
19.0	19.0	10	15	13	55-20	"	GRAY SILT-CSE SD/WGRW CL A-1-B A-1-B / A-2-4	
24.0	24.0	6	5	10		"	SAME AS ABOVE	
29.0	29.0	11	12	13		"	SAME 32	
34.0	34.0	8	12	13	55-21	"	TAN GRAY F-CSE SD A-3 A-3 / A-2-4	
39.0	39.0	11	22	29		"	SAME	
44.0	44.0	12	19	27		"	SAME	
49.0	49.0	11	27	30	55-22	"	TAN GRAY F-CSE SD A-3 A-3 / A-2-4	
54.0	54.0	9	13	17	55-23	m01	SDY GRAY SILT-CSE SD GRAY SILT-CSE SD / CL A-4 A-6	



PRELIMINARY FOUNDATION INFO.

LINE  
Loop F

PROJECT 6.299001T DATE 8/28-97  
 COUNTY Edgecombe  
 NOTES BY RLE

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
13+50	0-0.5		U.SOFT DK.BRN SI-SDY CL	WET	A-6/A-7 (5)
	-3		MEDSTIFFVEL-BRN FSDY SI-CL	"	A-7-6 (5)
	-6		LSE/MEDDNS BRN CLY SI-F-CSE	SAT	A-1-B (5)
			SD / W grave		
	-11.0		MEDSTIFF / STIFF BRN GRAY F SDY SI-CL	WET	A-7-6 (5)
	-23		MED DNS / DNS TAN GRAY / SI-F-CSE SD	SAT	A-2-A / A-3
			04R = 5.2		
			24hrs = 1.8		
10+50	0-1		SOFT DK.BRN SI-SDY CL	WET	A-6/A-7 (5)
	-8		MEDSTIFFVEL-BRN FSDY SI-CL	"	A-7-6 (5)
	14		MEDDNS / DNS TAN GRAY / SI-F-CSE SD	SAT	A-2-A / A-3 (5)
	-17		MEDNS / DNS TAN BRN CLY CSE SD		A-1-B (5)
		-23		W grave MEDDNS / DNS GRAY SI-F-CSE SD	SAT
			04R = 5.0		
			24hr 1.1		

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6-299001T COUNTY Edgemcombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON \_\_\_\_\_ OVER \_\_\_\_\_  
 BORING LOCATION (STA.) 15T10 LOOP E OFFSET ±  
 BORING NO. \_\_\_\_\_ GEOLOGIST RLE GROUND WATER O HRS. 3<sup>9</sup> 24 HRS. \_\_\_\_\_  
 COLLAR ELEV. \_\_\_\_\_ DATE STARTED 8-18-92 DRILL EQUIPMENT cm2 ASB  
 TOTAL DEPTH 60'3 DATE COMPLETED 8-18-92 tn-cone, A-UPROT - mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0	0.0	1	1	3	BRN SI-F-CSESD RDWY FILL A-2-A	SOAT	0A	
A+0	8	10	12	55-1	GRAY BRN SI-F-CSESD A-2-A	"	0-2A 0-2A 0-2A CLAY began at 8.0	
8.8	2	1	2	55-2 m	DR. GRAY SI-SOY began at 8.0 GRAY BRN SI-SOY CL A-6	"	0-3 CLAY began at 8.0	
13.8	13	19	31	55-3	DR. GRAY SI-F-CSESD CLYSD A-2-4 A-2-4 A-2-6/A-2-B	MOI	0-50 DIPNED ORIGIN. 13/0	
18.8	12	13	10	55-A	GRAY SI-F-CSESD/gravel A-3 A-2-A/A-1-B	SOAT	0-23	
23.8	9	15	16		SAME AS ABOVE	"	0-31	
28.8	11	9	10	55-5	GRAY CSESD P-gravel A-4-B	"	0-19	
33.8	10	11	12		GRAY SI-F-CSESD W/CLY ENERL A-2-A	"	0-23	
38.8	10	11	15	55-6	HGT GRAY SI-F-CSESD W/gravel A-2-4 A-3	"	0-26	
43.8	8	15	14		SAME AS ABOVE	"	0-29	
48.8	9	11	13	55-7	LIGHT GRAY SI-F-CSESD W/gravel A-1-B/A-2-A	"	0-24	
53.8	8	10	13		SAME	"	0-23	
58.8	8	11	14		SAME	"	0-25	

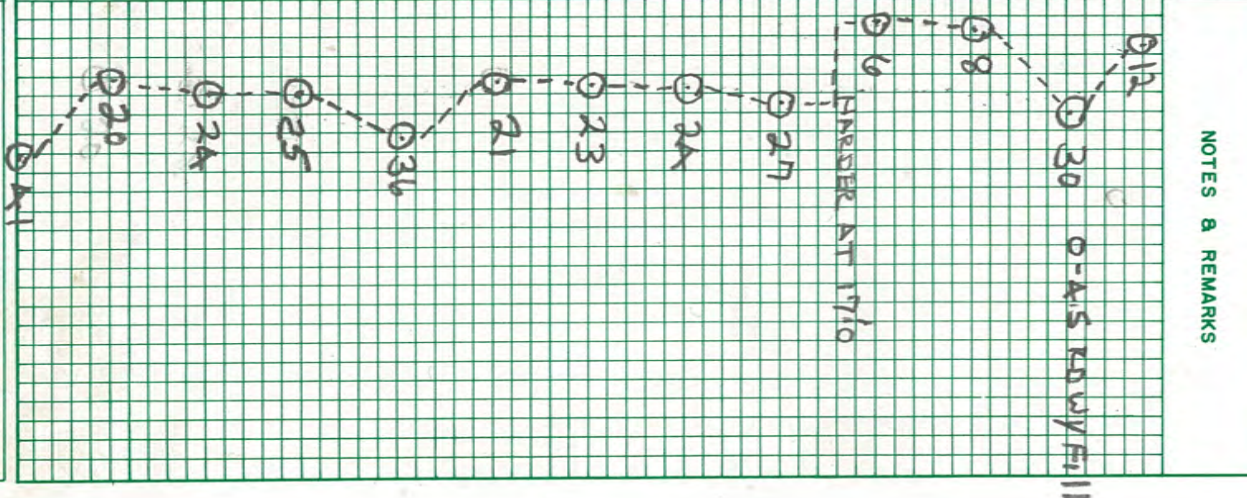
G.D 10.9  
 -2.0 2.1  
 4.0 8.8

PRELIMINARY FOUNDATION INFO.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON \_\_\_\_\_ OVER \_\_\_\_\_  
 BORING LOCATION (STA.) 17+50 LOOP E OFFSET E  
 COLLAR ELEV. \_\_\_\_\_ GEOLOGIST RJE DATE STARTED 8/24/92 GROUND WATER O HRS. 6.0 24 HRS. \_\_\_\_\_  
 TOTAL DEPTH 60.4 DATE COMPLETED 8/24/92 DRILL EQUIPMENT CME 45 B, A-W ROT  
Mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0	0.0	1	5	7	55-11			
							Ground Surface TANBRN SI-F-CSE SD A-2-A / A-1-B / RD WY FILL	
A-0	11.0	11	14	16	55-12		GRAY BRN CLY SI-F-CSE SD FIRST FILL A-2-A	
							A-2-4	
8.9	2.0	3	3	5			SAME AS ABOVE	
							SDY CLY BEGAN AT 11.0	
13.9	2.0	3	3	55-13			DK. GRAY SI-F SDY CL CLY END AT 17.0 A-2-4	
							A-2-4	
18.4	12.0	13	14	55-14			GRAY BRN F-CSE SD / GRAVEL A-3	
							A-2-A / A-1-B	
23.9	13.0	14	10				SAME	
							A-2-A / A-1-B	
28.9	10.0	11	12				SAME	
							SI-CL BEGAN AT 32.5	
33.9	6.0	10	11	55-15			DK. GRAY SDY SI-CL BLK CR. CLY END AT 36.0	
							A-2-4	
38.9	10.0	15	21				GRAY SI-F-CSE SD A-2-A	
							50T	
A-3.9	6.0	8	17				GRAY SI-F-CSE SD / W Weds A-2-A	
							A-2-A	
A-8.9	8.0	9	15	55-16			GRAY SI-F-CSE SD / GRAVEL A-2-C A-2-A / A-1-B	
							A-2-A	
53.9	7.0	9	9	11			SAME	
							A-2-A	
58.9	11.0	18	21				SAME	
							A-2-A	



6.2  
2.2  
A-0

PRELIMINARY FOUNDATION INFO.

LINE

PROJECT 62990017 DATE 8-24-92

COUNTY Edgecombe

NOTES BY RLE

LOOP F

STATION

DEPTH

SAMP

DESCRIPTION

MOIST

ESTIMATED CLASS

19+00

0-15

LSE TAN BRN CLY SI-F SD/gravel

MOI

A-2-4

(1)

-6

MED DNS TAN SI-F-CSE SD

SAT

A-2-4/A-3

0HR = 4-3

24hrs = A-10

18+00

0-1

LSE TAN BRN CLY/SI-F SD

MOI

A-2-6

(1)

-6

MED DNS TAN SI-F-CSE SD

"

A-2-4/A-3 (1)

0HR MOIST AT 610

24hrs = Dry AT 610

17+00

See SPT LOG

24hrs = A-3

39

15+10

See SPT LOG

24hrs = 311

A-3



LINE  
LOOP F

PROJECT 6299001T DATE 8/27-92  
 COUNTY Edgecombe  
 NOTES BY RLE

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
26+00	0-6		LSE-MED DNSTANBRNSI-F-CSE SD gravel (RD WY FILL) OHR = DRY at 60 24 hrs = Dry		A-2-A / A-3
24+00	0-6	S-A	LSE-MED DNS-TANBRNSI-F-CSESP mol (RD WY FILL) A-2-4 OHR = Dry 60 24 hrs = Dry		A-2-A / A-3
22+00	0-6		LSE-MED DNSTANBRNSI-F-CSESD (RD WY FILL) WILLY LAYERS OHR = Dry at 60 24 hrs = Dry		
20+00	0-6		LSE-MED DNSTANBRNSI-F-CSESD OHR = Dry 60 24 hrs Dry		

LINE  
Y5 Rev.

PROJECT 6.299001T DATE 4-28-92  
 COUNTY Edgecombe  
 NOTES BY BAW

STATION	DEPTH	SAMP	DESCRIPTION
+81			End grade
+50	0-1/2		M. DWS DARK BRN F. SAND
	-3		LOOSE - MED DWS TAN F-CSE SD
	-6		" " BRN CSE SAND
29			H <sub>2</sub> O at 3.4' TIB 2.9
28			
+50	0-1		M. DWS D. BRN SILTY F. SAND
	-2		" GRAY FINE SAND
27	-3		" GRAY F-CSE SAND
	-4		" TAN CSE SAND
			H <sub>2</sub> O at 3.8' TIB 3.6
26E	0-2 1/2	S-243	SOFT - MED STICK SAND
	-4	S-244	LOOSE - MED DWS GRAY FINE SD
	-7		MED DWS GRAY CSE SAND
+50, 16L			H <sub>2</sub> O at 2.3' TIB 1.0
	0-2		LOOSE - MED DWS BRN F-CSE SD FILL
25	-3		STIFF GRAY FISSILE SILTY CLAY
	-6		MED DWS GRAY BRN F-CSE SD
			H <sub>2</sub> O at 3.4' TIB 2.9
24+26	YS REV = 24+26 Y5 LB		

MOIST	ESTIMATED CLASS
M	A-2-4
M	A-2-4
SAT	A-1-B
M	A-2-4
M	A-2-4
SAT	A-1-B
W	A-2-4
SAT	A-2-4
SAT	A-1-B
M	A-2-4
M/W	A-2-4
SAT	A-2-4

Handwritten notes and diagrams on the right side of the grid, including circled numbers and symbols.

LINE

Y12

PROJECT 6.299001T DATE 5/11/92  
 COUNTY Edgecombe  
 NOTES BY WRC

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

20 J	0.0-1.0	LOOSE TAN SL F-CSE SD (Fill)	M	A-2-4	①	-13
15' LT	1.0-1.5	SFT-MED STIFF DK BROWN SLY SL	M	A-4	②	
	1.5-2.5	MED DNS GRAY SLIGHTLY CLY F-CSE SD	M <sub>w</sub>	A-2-4	③	
	2.5-4.0	MED STIFF ORANGE SLY CL	M	A-6	④	
	4.0-8.0	MED DNS GRAY F-VCSE SD	SAT	A-1-6	⑤	
		Ø HR H <sub>2</sub> O = 4.2 3.6				

18 8'	0.0-1.5	LOOSE TAN BROWN SL F-CSE SD	M	A-2-4	①	-6
15' LT	1.5-3.0	MED STIFF GRAY SLY CL	M	A-6	④	
	3.0-5.0	MED DNS GRAY SL F-CSE SD w/CL layers	SAT	A-2-4	②	
	5.0-8.0	MED-DNS GRAY F-VCSE SD	SAT	A-1-6	③	
		Ø HR H <sub>2</sub> O = 3.9 3.1				

16 8'	0.0-1.5	LOOSE MED-DNS TAN BROWN SL F-CSE SD (Fill)	M	A-2-4	①	-2
15' LT	1.5-3.0	S-299 MED STIFF ORANGE TAN SL CL	M	A-2-4	③	U = 23.8
	3.0-4.5	S-300 MED STIFF V.S. SLY SL TAN GRAY	M	A-2-4	④	
	4.5-8.0	MED DNS TAN SL F-VCSE SD	SAT	A-2-4	⑤	
		Ø HR H <sub>2</sub> O = 3.9 3.1				

14+00 Begin Const

LINE

PROJECT 6.299001T DATE 3-9-93

COUNTY Edgcombe

NOTES BY RLE

-Y12-REV

STATION DEPTH SAMP DESCRIPTION R211AA

MOISTURE

ESTIMATED CLASS

RDWYFIII

12+00

0-15

MED DNS TAN BRN CLY SLFSD

M

A-2-4

11RTE

-2.5

MED DNS TAN GRAY SLFSD/W CLY LAYER

"

A-2-4

-6

MED STIFF / STIFF BRN GRAY SL CL

"

A-7-6

DWTC = DW

LINE

Y12

PROJECT G. 29900IT DATE 5-92  
 COUNTY Edgecombe  
 NOTES BY WRC

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

28           Sat SPT at LI Sta 221+72

-29

24

-27

25+45

day Aug Hrb 38'2

30 RT 00-10 S-290 LOOSE DK BROWN F-SD SL (F.11) M A-4 (1)

1.0-2.0 S-291 MED DNS ORANGE TAN CL F-CSE SD M ~~A-2-4~~ (1-2)

2.0-5.5 S-292 MED STIFF-GRAY TAN CL M A-7-6 (5)

47 10 5.5-14.0 S-293 MED DNS TAN F-V CSE SD SAT A-7-6 (1-3)

14.0-17 S-294 MED DNS-DNS GRAY GREEN CLY F-CSE SD SAT A-2-4 (1-2)

17-22 S-295 MED-STIFF-VSTIFF GRAY GREEN CL M A-7-6 (1-3)

22.0-27 S-296 MED DNS GRAY F-V-CSE CLY SD SAT A-2-4 (1-2)

27-30 S-297 MED STIFF-VSTIFF SL CL M A-7-6 (1-3)

20-22 36-38 S-298 MED DEN GRAY F-CSE SD SAT A-2-4 (1-3)

O HR H<sub>2</sub>O = 4.6 4.3

24+00 00-2.5 LOOSE BROWN TAN SL F-CSE SD (FILL) M A-2-4 (1-2)

16' LT 2.5-6.0 MED STIFF-VSTIFF TAN M A-7-6 (5)

6.0-8.0 MED DNS GRAY S F-CSE SD w/ shell frags %SAT A-2-4 (1-2)

O HR H<sub>2</sub>O = 6.0 4.7

23 3.0-3.0 LOOSE TAN DK BROWN SL F-SD (F.11) M A-2-4 (1-2)

15 LT 3.0-6.0 MED DNS GRAY SL F-CSE SD %SAT A-2-4 (1)

6.0-8.0 MED DNS GRAY F-V CSE SD w/ shell frags SAT A-1-6 (1)

O HR H<sub>2</sub>O = 5.0 4.2

-19

MOI = 24.8

MOI = 23.5 24

MOI = 21.4

LINE  
Y12

PROJECT 6.299001 T DATE 5/11/92  
 COUNTY Edgecombe  
 NOTES BY USRC

STATION	DEPTH	SAMP.	DESCRIPTION	MOIST	ESTIMATED CLASS	
36 Y 15' LT	0.0-1.5		LOOSE BROWN TAN SL F SD	M	A-2-4	
	1.5-2.5		MED STIFF GRAY SDY SL	M	A-4	
	2.5-6.0		MED STIFF - STIFF ORANGE TAN CL	M	A-7-6	
	6.0-8.0		MED-DNS GRAY TAN SL F-LSE SD DAR H <sup>2</sup> = 5.8 5.2	SAT	A-2-4	
34+00 15' LT	0.0-1.5		LOOSE BROWN SL F SD (Fill)	M	A-2-4	
	1.5-2.5		MED DNS GRAY TAN SL F-CSE SD	M	A-2-4	
	2.5-5.5		MED STIFF - V STIFF ORANGE TAN CL	M	A-7-6	
	5.5-7.0		MED DNS SL F SD	M	A-2-4	
32+45	7.0-8.0		MED DNS SL F-CSE SD GRAY DAR H <sup>2</sup> = 6.0 5.6	SAT	A-2-4	
			DAR H <sup>2</sup> = 5.2 ±			
27 RT FELDEN 48	0.0-1.0	S-304	LOOSE BROWN TAN SL F SD	M	A-4	
	1.0-3.0	S-305	SOFT-MED STIFF TAN GRAY F SDY CL	M	A-6	
	3.0-5.0	S-306	MED-DNS GRAY F-CSE SL SL	W	A-2-4	
	5.0-9.0	S-307	SOFT DK BROWN F SDY SLIGHTLY ORG CLAY	W	A-6	
	9.0-11.0	S-308	LOOSE-MED DNS BROWN SL F-CSE SD	SAT	A-2-4	
	11.0-12.5	S-309	SOFT BROWN F SDY SL	W	A-6	
	12.5-14.0	S-310	MED DNS F-CSE SD W/ small gravel	SAT	A-1-6	
	14.0-15.5	S-311	SOFT-MED STIFF SDY CL	W	A-6	
	15.0-25.0	S-312	MED-DNS GRAY GRAY F-CSE SL CLY SDY/ shell fragments	SAT	A-2-4	
	25.0-33.0	S-313	STIFF GRAY SDY CL DAR H <sup>2</sup> = 3.3 1.9	M	A-6	
	32400 30+00					

mo1 = 21.7  
 mo1 = 63.6  
 mo1 = 53.8

A  
 -18  
 -22  
 -27  
 -29

PROJECT 6.299001T DATE 5/11/92  
 COUNTY Edgcomb  
 NOTES BY WJRC

LINE  
 Y12

STATION DEPTH SAMP DESCRIPTION MOIST ESTIMATED CLASS

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
43+25			End Grade		
42	0.0-1.5		LOOSE TAN GRAY SL F-SD (F.11)	M	A-2-4
13 LT	1.5-3.0		LOOSE-MED DNS TAN-GRAY SLY SL F-SD	M	A-2-4
	3.0-6.0		MED STIFF TAN GRAY SL CL	M	A-7-6
	6.0-8.0		MED DNS GRAY SL F-CSE SD	SAT	A-2-4
			DHR H <sub>2</sub> O = 7.0 6.5		
40	0.0-1.5		LOOSE TAN BROWN CLY SL F SD	M	A-2-4
16 LT	1.5-6.0		SOFT-MED STIFF DK GRAY F SD YSL CL	N	A-7-6
	6.0-8.0		MED DNS GRAY SL F-CSE SD w/ SMALL CL LAYERS 5.8		A-2-4
			DHR H <sub>2</sub> O = 6.6		
38	0.0-1.0	S-301	BROWN-TAN CLY SL F SD (1.5FH)	M	A-2-4
15 LT	1.0-6.0	S-302	MED STIFF-STIFF GRAY TAN CL	M	A-7-6
	6.0-8.0	S-303	MED-DNS SL F-CSE SD	SAT	A-2-4
			DHR H <sub>2</sub> O = 6.5 4.9		

4

0

1

4

A-2-4  
 A-7-6  
 A-2-4  
 3.5 2.0 1.0

PROJECT 6.299001T DATE 8/24/92  
 COUNTY Edgecombe  
 NOTES BY WRC

LINE  
 y 13REV

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

18+00

①

SPT

17+00

0-1.5 SS-80

WOP/1/1 DK BRN SIL F SD

M

A-2-4

①

2.5-5.0

1/1/4 DEBRN TAN SIL F-SD

M

A-2-4

②

5.0-6.5 SS-81

2/2/8 LT GRAY TAN SIL SPY CL

M

A-6

③

MOIS = 19.8

7.5-9.0 SS-82

3/2/8 LT TAN-ORANGE SIL F-CSE SD

SAT

A-2-4

④

0 HR  $H^2O = 3.5$

16+00

24 HR  $H^2O = 2.7$

①

15+00

0-1

Loose DK BRN SL F SD

M

A-2-4

①

7

MED DNS TAN-GRAY SIL F-CSE SD

M

A-2-4

②

8

SFT-MED-STIFF GRAY TAN SDY-SLCL

W

A-7-6

⑤

0 HR  $H^2O = 3.7$

24 HR  $H^2O = 3.0$

14+00

①

1-12X

13+00

0-2

Loose DK BRN SL F SD (FILL)

M

A-2-4

①

8 RT

6

MED-DNS BRN-TAN SL F-CSE SD

SAT

A-2-4

②

7.5

MED DNS TAN F-CSE SD

SAT

A-3

③

8

Soft LT GRAY GREEN CL

W

A-7-6

④

0 HR  $H^2O = 3.2$

12+00

24 HR  $H^2O = 3.0$

①



PROJECT G. 299001T DATE 1/24/92  
 COUNTY Edgecombe  
 NOTES BY WRC

LINE  
 -413-Res

MOISTURE  
 ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

26+00

25+00

0-1  
 5  
 8

LOOSE DK BRN SIL F SD  
 MED DNS TAN SL F-CSE SD  
 MED DNS TAN F-CSE SD

M A-2-4  
 SAT A-2-4  
 SAT A-3

24+00

0 HR  $H^2O = 4.8$   
 24 HR  $H^2O = 4.0$

SAMP

23+00

0-1 S-1A5  
 8 S-1A6

LOOSE DK BRN SIL F SD  
 MED DEN TAN SIL F SD  
 0 HR  $H^2O = 5.0$   
 24 HR  $H^2O = 4.0$

M A-2-4  
 M A-2-4

22+00

21+00

0-1  
 3  
 8

LOOSE BRN SL F SD  
 MED-DEN ORANGETAN CLY SL F-CSE SD  
 MED-DEN TAN GRAY SL F-CSE SD  
 0 HR  $H^2O = 5.5$   
 24 HR  $H^2O = 4.0$

M A-2-4  
 M A-2-4  
 SAT A-2-4

20+00

0-2  
 3  
 8

LOOSE DK BRN SIL F SD  
 MED DEN TAN CLY SL F SD  
 MED DEN TAN W/SL F-CSE SD  
 0 HR  $H^2O = 3.8$   
 24 HR  $H^2O = 4.0$

M A-2-4  
 M A-2-4  
 SAT A-2-4/A-3

19 400

PROJECT 6.299001T DATE 1/24/92  
 COUNTY Edgecombe  
 NOTES BY WRC/RIE

LINE	STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
-Y13 REV	34+00					
	33+00	0-1		LOOSE DK BRN SI-F SD	m	A-2-A
		-7		MED DNS TAN SI-F-CSE SD	m	A-2-A
		-8		MED DNS TAN GRV CLY SI-F SD	SAT	A-2-A
				0 HR = 3.8 24 HR = 3.0		
	32+00	0-1		LOOSE DK BRN SI-F SD	m	A-2-A
		-2		MED DNS TAN GRV CLY SI-F SD	m	A-2-A
		-3		MED STIFF TAN GRV SI-SDY CL	m	A-6
		-8		MED DNS TAN SI-F-CSE SD	SAT	A-3
				0 HR = 3.1 24 HR H <sub>2</sub> O = 2.7		
SPT	31+00	0-1.5	SS-83	0/1/1 DK BRN SDY SL	m	A-4
		2.5-4.0	SS-84	1/1/3 DK BRN-GRAY SDY CL	m	A-6
		5.0-6.5	SS-85	1/2/3 TAN-GRAY CLY F-CSE SD	w	A-2-4
		7.5-9	SS-86	2/4/6 TAN-BRN F-CSE SD	SAT	A-3
				0 HR H <sub>2</sub> O = 4.0 24 HR H <sub>2</sub> O = 2.6		
	30+00					
	29+00	0-1.5		Loose MED DEN DK BRN SL FSD	m	A-2-4
		2.5		med stiff-GRAY SDY CL	m	A-6/A-4
		8		MED DNS SL F-CSE SD	SAT	A-2-4
				0 HR H <sub>2</sub> O = 3.0 24 HR H <sub>2</sub> O = 2.5		
	28+00	0-1		LOOSE DK BROWN SIL F SD	m	A-2-4
		8		MED DEN BRN SIL F-CSE SD	SAT	A-2-4
				0 HR H <sub>2</sub> O = 3.8 24 HR H <sub>2</sub> O = 3.2		

MPI = 94.0  
 CL A-6 to 570 MCI = 27.9

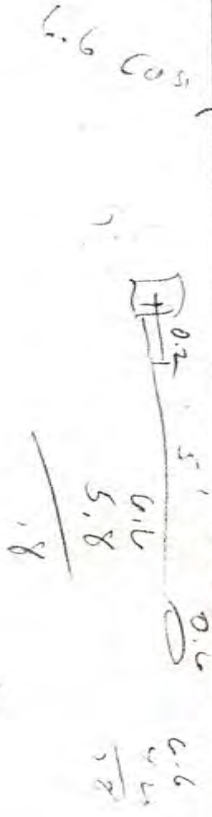


NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET \_\_\_ OF \_\_\_

PROJECT NO. 6.299001T COUNTY Edgemont GEOLOGIC PROVINCE CP  
 BRIDGE ON Y13 R/W OVER -2'-  
 BORING LOCATION (STA.) 44+85 OFFSET 20' RT = 359+20 ± -2'-  
 BORING NO. \_\_\_\_\_ GEOLOGIST EMW GROUND WATER OTRS. 1.24 HRS. 3.0  
 COLLAR ELEV. \_\_\_\_\_ DATE STARTED 1-27-92 DRILL EQUIPMENT CME 45B  
 TOTAL DEPTH 57.3 DATE COMPLETED " ROT-MUD

ELEV.	DEPTH	BLOW COUNT		SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"				
0.0		6"	6"		GROUND SURFACE		
5.0	1	1	1	SS-1	D.B.M. - TAN SILTY CLAY SAND <u>A-2-Y</u>	M	02 FIELD
6.6	2	4	SS-2	TAN F-CSE SAND <u>A-3</u>	SATT	06	
10.8	4	4			SANDY WHITE F-CSE SN	"	010
15.8	2	2	3		TAN F-CSE SAND A-3	"	05 7.75 FT
20.8	3	3	4	SS-3	TAN LSE SD <u>A-1-B</u> Change to 25' + 10' to 10' 10'	"	07 4.13 FT 4.27 FT 8.68 FT
25.8	2	6	10		LT GRAY SILTY F-SD Change to 26' 26'	SAT	016 2.65 7.45
30.8	5	7	7	SS-4	LT GRAY - WHITE F-SAND <u>A-3</u>	"	014 7.44 8.4 11.6
35.8	8	13	15	SS-5	LT. GRAY LSE SAND CLAY AT 40.8 <u>A-3</u>	"	028 7.80 FT
40.8	7	10	16	SS-6	DK GRAY SILTY F-SDY CLAY MOI <u>A-5</u>	MOI	026 12.50 FT
44.0	8	13	15	SS-7	GRAY OLIVE BDN SLT CLAYS F. SANDY CLAY <u>A-2-Y</u>	MOI	028 7.80 FT
45.8	7	12	11	SS-8	GRAY F-CSE SAND CLAY @ 52 <u>A-2-Y</u>	SAT	023 067
50.8	2	3	4	SS-9	GRAY F-CSE SD <u>A-2-X</u>		067
55.8	2	3	4	SS-9			

PRELIMINARY FOUNDATION INFO.  
Bottom of casing of 6.6



PROJECT 6.299001T DATE 1/28/92  
 COUNTY Edgecombe  
 NOTES BY WRC

LINE  
 y13 Rev

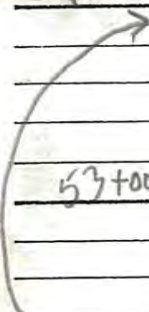
STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
50+00						-19
49+00	0-1	S-153	Loose DK BRN SL F SD	M	A-2-4	-21
25'	7		MED DNS DK BRN-TAN SL F-CSE SD	SAT	A-2-4	
Auger'	15	S-154	MED DNS TAN-ORANGE F-CSE SD	SAT	A-3	
	18	S-155	MED DNS TAN ORANGE F-CSE SD	SAT	A-3	
	23.5	S-156	MED. DNS TAN F-CSE SD	SAT	A-3	
48+00			6 HR H <sub>2</sub> O = 4.0 24 HR H <sub>2</sub> O = 4.0			-23
47+00	0-1		Loose DK BRN SL F SD		A-2-4	slightly clay from 3.0-3.5
	5		MED DNS DK BRN-TAN SL F-CSE SD		A-2-4	
	8		MED DNS TAN-ORANGE F-CSE SD		A-3	
			6 HR H <sub>2</sub> O = 4.0 24 HR H <sub>2</sub> O = 3.5			-25
46+00						
45+00						-25
SPT						
40'						
44+00						-23
	0-1		Loose DK BRN SL F SD	M	A-2-4	
	7		MED DNS DK BRN-TAN SL F-CSE SA	SAT	A-2-4	
	8		med stiff LT GRAY SOY CL	M	A-4	
43+00			0 HR H <sub>2</sub> O = 4.7			

PROJECT 6.29900IT DATE 1/29/92  
 COUNTY Edgecombe  
 NOTES BY WRG

LINE	STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
	58+00					
	57+00	0.0-3.5		SOFT BLACK CLY F-SDY SL	%	A-4/A-3
		B		MED DNS BRN-TAN SL F-CSE SD	SAT	A-2-4
				0 HR H <sub>2</sub> O = 2.7		
				24 HR H <sub>2</sub> O = 2.0		
	56+00					
SPT	55+20	0.0-1.5	SS-87	1/0/1 DK BRN BLACK SDY SL	M	A-4
		2.5-4.0	SS-88	1/1/3 DK GRAY SDY CL	W	A-6
		5.0-6.5	SS-89	3/5/8 TAN-SL F-SD	SAT	A-2-4
		7.5-9.0	SS-90	2/5/4 TAN-WHITE F-CSE SD	SAT	A-3
				0 HR H <sub>2</sub> O = 3.7		
				24 HR H <sub>2</sub> O = 1.5		
	54+00	0.0-0.5		LOOSE DK BRN SL F-SD	M	A-2-4
		5.5		MED DNS DK BRN-TAN SIL F-SD	SAT	A-2-4
		8.0		MED DNS TAN F-CSE SD	SAT	A-3
				0 HR H <sub>2</sub> O = 2.8		
				0 HR H <sub>2</sub> O = 2.5		
	53+00	0.0-0.5		LOOSE DK BRN SL F-SD	M	A-2-4
		2.5	S-157	SFT DK BLACK SLIGHTLY SDY SL	M	A-4
		5.5	S-158	SFT DK BLACK-GRY SDY SL	W	A-4
		8	S-159	MED DNS BRN-TAN SL-SD	SAT	A-2-4
				0 HR H <sub>2</sub> O = 2.0		
				24 HR H <sub>2</sub> O = 2.0		
	52+00					
	51+00	0-1		LOOSE DK BRN SL F-SD	M	A-2-4
		2		MED DNS DK BRN-TAN SL SLIGHTLY	M	A-2-4
				F-CSE SD		
		8		MED DNS TAN SL F-CSE SD	SAT	A-2-4
				0 HR H <sub>2</sub> O = 3.5		

MOI = 30.6  
 SMOI = 28.1  
 SD AT 3.5

MOI = 35.9  
 MOI = 33.7





LINE  
-Y 14 -

PROJECT G:299001T DATE 4-92  
 COUNTY Edgcomb  
 NOTES BY \_\_\_\_\_

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
			<u>Auger 28'</u>			
20	00-0.5		Topsoil 1DK BROWN CL F-CSE SD	M	A-2-4	① -22
19' WT in	0.5-2.5		MED STIFF ORANGE TAN SDY CL	M	A-6	②
Pitch Approx	2.5-6.0		LOOSE-MED DNS SL F-CSE SD	M SAT	A-2-4	③
1' Below Surf	6.0-10.0		LOOSE-MED DNS-TAN-WHITE F-CSE SD	SAT	A-3	④
26	10.0-22.0		LOOSE-MED DNS TAN WHITE F-VCSE SD w/ small frags	SAT	A-1-2	⑤
30'	22.0-26.0		<del>SAT</del> ORANGE-GRAY CL	W	A-7-6	⑥
30	27.0-34.0		<del>SAT</del> MED STIFF GRAY SDY CL w/ large shell frags	W	A-2-4	⑦
	34.0-36.0		LOOSE-MED DNS GRAY CL F-CSE SD w/ large shell fragments OHR H <sup>2</sup> O = 2.8 24HR H <sup>2</sup> O = 2.8		A-2-4	⑧
18	0.0-1.0		LOOSE & DK BROWN SL F SD	M	A-2-4	⑨ = 13
	1.0-1.5		LOOSE-MED OR GRAY TAN SL F SD	M	A-2-4	⑩
	1.5-4.0	5-187	MED STIFF GRAY TAN SDY CL	M	A-4	⑪
	4.0-5.5		MED DNS TAN SL F-CSE SD	SAT	A-2-4	⑫
	5.5-8.0		LOOSE-MED-TAN WHITE SL F-VCSE SD OHR H <sup>2</sup> O = 3.9 24HR H <sup>2</sup> O = 3.5	SAT	A-3	⑬
single						
16	0.0-1.0		LOOSE-MED-DNS TAN SL F-SD (RILLW)	M	A-2-4	⑭ -3
	1.0-2.5	5-185	LOOSE-MED DNS DARK BROWN PSL <sup>to 50'</sup>	M	A-4 A-2-4	⑮
	2.5-5.0	5-186	LOOSE-MED-DNS TAN-GRAY-WHITE SL VCSE SD	M/SAT	A-2-4	⑯
	5.0-8.0		LOOSE-MED DNS WHITE VF-CSE SD OHR H <sup>2</sup> O 4.1 24HR H <sup>2</sup> O = 3.5	SAT	A-3	⑰
14+00			Begin Grade			⑱





PROJECT 6.299001T DATE 4-16-92  
 COUNTY Edgewood  
 NOTES BY KRW

LINE  
 - 414 -

MOISTURE  
 ESTIMATED  
 CLASS

STATION DEPTH SAMP. DESCRIPTION

	35+50		End Cwd		
	34	0-1.5	M. DNS BRN SILTY SD FILL	M	A-2-4
	15' LT	-3	1" DBN - BLK SILTY F. SD	M	A-2-4
		-8	LOOSE - MED DNS BRN TAN F. SAND	M/W	A-2-4
			H <sub>2</sub> O @ 7.5' T.B		
			24HR H <sub>2</sub> O = 5.0		
	32	0-2	LOOSE BRN SILTY F. SAND	M	A-2-4
	15' LT	-8	" TAN FINE - CSE SAND	M	"
			H <sub>2</sub> O @ 7' T.B		
			24HR H <sub>2</sub> O = 5.0		
	30+50	0-2 1/2	LOOSE TAN SILTY F. CSD	M	A-2-4
	15' LT	-3 1/2	MED STIFF YEL BROWN CLY SD SILT	M	A-4
		-8	LOOSE LT GRAY F. CSE SD	M/W	A-2-4
	30		WGT AT 5'		
			H <sub>2</sub> O 5.0 T.B		
			24HR H <sub>2</sub> O = 4.9		
	28+91 =	14+88	415-		
	28+10	0-1 1/2	LOOSE TAN F. SDY SILT TS	M	A-4
	23' LT	-2 1/2	LOOSE TO MED DNS BRN SILTY SD	"	A-2-4
		-10	" TAN F-CSE SAND	M/W	A-2-4
		-23	" YEL-TAN CSE SAND	SAT	A-2-4
			" n = 2.5 - 2.4		

-1.0

-7

-15

A-4  
 A-2-4  
 A-2-4  
 A-2-4

PROJECT 6.299001T DATE 4/16-92  
 COUNTY Edgecombe  
 NOTES BY \_\_\_\_\_

LINE  
-Y15-

MOISTURE  
 ESTIMATED  
 CLASS

STATION	DEPTH SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS
14+78 22' RT		14+88 = 28+91 See 28+70, 23' LT Y14	Y15	End End
13+00 15' RT	0-20 -5 1/2 -8	LOOSE TAN SILTY F. SD MED STIFF YELLOW-GRAY SDY CL LOOSE TAN F-CSE SAND H <sub>2</sub> O @ 6.0' 24"	M M SAT	A-2-4 A-6 A-2-7
12				
11+00 15' RT	0-1 -2 1/2 -4 1/2 -8	LOOSE TAN SILTY F. SAND MED STIFF BRN CLY SDY SILT LOOSE TAN F-CSE SD STIFF GRAY SIF SDY CLAY D <sub>50</sub> T <sub>13</sub> 24" RT #10 = 3.8	M M W M	A-2-4 A-2-4 A-2-4 A-7-5
10				
9+400 14' RT	0-1 1/2 -2 1/2 -6 1/2 -8	LOOSE BRN F-CSE SAND FILL MED STIFF D. BRN CLY SDY SILT LOOSE TAN GRAY CLY SD STIFF GRAY SANDY CLAY 24" RT #3 = 3.9 D <sub>50</sub> T <sub>13</sub> Begin Grad	M M W M	A-2-7 A-4 A-2-4 A-6
8+50				

USE TRENCH EXCAVATION  
 9' RT  
 9' RT

-13

15

0

0

LINE  
-Y16-

PROJECT 6.29900IT DATE 5/6/92  
 COUNTY Edgecombe  
 NOTES BY WRC

STATION DEPTH SAMP DESCRIPTION

MOISTURE  
ESTIMATED  
CLASS

29

-3

8' ✓

28  
18' LT

0.0-2.5  
2.5-4.0  
4.0-8.0

(FILL)  
 LOOSE-MED DNS GRAY-BROWN TAN SL F-CSE SD  
 LOOSE-MED DNS GRAY SL F-CSE SD TOPSOIL  
 MED DNS LT GRAY TAN ORANGE SL F-CSE SD  
 OHR HD = 4.5 (24)HR = 4.2

M A-2-4  
M A-2-4  
M/A A-2-4

(1)  
(1-2)  
(1)

-2

is clay

27

-1

8' ✓

26  
18' LT

0.0-2.0  
2.0-3.0  
3.0-6.0  
6.0-8.0

LOOSE-MED DNS BROWN-TAN SL F-CSE SD  
 MED DNS TAN ORANGE SL CLY F-CSE SD  
 MED-STIFF-STIFF ORANGE TAN  
 MED DNS ORANGE TAN SLIGHTLY CLY SL F-CSE SD  
 OHR HD = 7.0 24 HR HD = 4.9  
 Begin Construction

M A-2-4  
M A-2-4  
M (A-6)  
M/A A-2-4

(1)  
(1)  
(3-4)  
(1)

0

0

LINE  
Y14

PROJECT 6.299001T DATE 5/5/92  
 COUNTY Edgewood  
 NOTES BY WRC

STATION DEPTH SAMP DESCRIPTION

MOISTURE  
ESTIMATED  
CLASS

33

11

4'

32

0-15

LOOSE BROWN TAN SL F-CSE SD

M

A-2-4

9

18' LT

15-50

SAME AS 285

MED STIFF-STIFF ORANGE TAN

M

A-6

50-80

MED DNS LT GRAY SLIGHTLY CLY F-CSE SD

SAT

A-2-4

60-80

MED DNS ORANGE DRANGE SL F-VISE SD

SAT

A-2-4

DAR H<sub>2</sub>O = 4.6

24HR H<sub>2</sub>O = 4.5

31

6

1'

30

0-30

LOOSE-BROWN SL F-CSE SD (FILL)

M

A-2-4

5

18' LT

30-40

SOFT-DK BROWN CLY SOY SL

M

A-4

40-8

MED DNS TAN S F-CSE SD

A-2-4/A-3

DAR H<sub>2</sub>O = 4.0

24 HR H<sub>2</sub>O = 4.0

LINE  
-Y15-

PROJECT 6.299001T DATE \_\_\_\_\_  
 COUNTY Edgecombe  
 NOTES BY \_\_\_\_\_

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
37						-20
8' ✓						
36	0.0-2.0		(FILL) LOOSE-MED DNS BROWN TAN SL F-CSE SD	M	A-2-4	-18
18' LT	2.0-3.0		MED. DNS ORANGE TAN CLY F-CSE SD	M	A-2-4	
	3.0-6.0		MED. STIFF - STIFF ORANGE GRAY SD CL	M	A-6	
	6.0-8.0		MED DNS GRAY-TAN SL F-CSE SD	SAT	A-2-4	
			0 HR H <sup>2</sup> O = 7.5			
			24 HR H <sup>2</sup> O = 4.3			
35						-16
8' ✓						
34	0.0-1.5		LOOSE-MED DNS BROWN TAN SL F-SD (FILL)	M	A-2-4	-14
18' LT	1.5-7.0		MED STIF-STIFF ORANGE GRAY SD, CL	M	A-6	
	7.0-8.0		MED-DNS LT GRAY SL F-LST SD	SAT	A-2-4	
			0 HR H <sup>2</sup> O = 7.5			
			24 HR H <sup>2</sup> O = 4.7			

50

LINE

Y 16

PROJECT 6299001T DATE 5/5/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC

MOISTURE

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

45+10	0.0-0.5		LOOSE BROWN TAN TOPSOIL SL F-SD	VL	A-2-4	(1)
18LT	0.5-3.0	S-271	LOOSE-MED DNS TAN SL F-CSE SD	M	A-2-4	(1)
	3.0-8.0	S-272	SOFT-MED STIFF TAN GRAY ORANGE MOTTLED			
		M	SDY CL	M	A-2-6	(3)
	8.0-14.0	S-273	MED DNS TAN V F SD	SAT	A-2-4	(1)
	14.0-23.0	S-274	MED DNS- DNS ORANGE F-VOSE SD	SAT	A-3	(1)
	23.0-26.0	S-275	MED DNS ORANGE TAN VCSE SD w/ <sup>SMALL</sup> CLAY	SAT	A-1-6	(1)
	26.0-33.0	S-276	MED DNS GRAY CLY F-CSE SD w/ CLAY	SAT	A-2-4	(3)

0 HR  $H^2O = 5.5$   
 24 HR  $H^2O = 4.5$

37+90	0-2	S-277	LOOSE TAN SI-F SD ROW FILL	MOI	A-2-4	(1)
18LT	-6	S-278	MED STIFF TAN BRN SI-F SDY CL	"	A-2-6	(3)
	-17	S-279	LOOSE BRN SI-F-CSE SD	SAT	<del>A-2-4</del>	(1)
	-19	S-280	SOFT YEL BRN CLY F SDY SILT	WET	A-2-4	(3)
	-28	S-281	SOFT DK GRAY MICA CLY F SDY SILT	"	<del>A-2-4</del>	(3)
	-38	S-282	MED DNS DK GRAY MICA SI-F SDY	SAT	A-2-4	(1)

W CLY LAYERS  
 $H^2O$  0HR = 4.5 T.B.  
 $H^2O$  24HR = 4.1

A-3





LINE

- Y16 -

PROJECT 6:29900 IT DATE \_\_\_\_\_

COUNTY Edgecombe

NOTES BY \_\_\_\_\_

STATION

DEPTH SAMP.

DESCRIPTION

MOISTURE

ESTIMATED

CLASS

45+11

=

18+10 RPL

√ 45+10, 18' LT

17+75 RPD

35-39'

Down

26

13

39

44

43

-27

42

Down SPT

-27

+37

See L' sta 528+49

20' LT

LI  
-Y16-

PROJECT 6.299001T DATE 5/6/97  
 COUNTY Edgecombe  
 NOTES BY WRC

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
8 ✓ 49 18' LT	0.0-1.0		LOOSE TAN BROWN SL-F-CSE SD ALL	M	A-2-4	①
	1.0-2.0		LOOSE-MED DNS TAN SL F SD	M	A-2-4	①
	2.0-3.0		MED DNS-DNS ORANGE SLIGHT CLY F-CSE SD	M	A-2-4	①-②
	3.0-5.0		MED STIFF-STIFF ORANGE-GRAY SDY CL	M	A-6	①-②
	5.0-8.0		MED DNS GRAY ORANGE SL-F-CSE SD D+R H <sup>2</sup> O = 7.0 24HR H <sup>2</sup> O = 4.3	M/ST	A-2-4	①
48						-22
✓ 8' 47 18' LT	0.0-2.0		LOOSE - BROWN TAN SL F SD	M	A-2-4	①
	2.0-3.0		MED DNS CLY SL F SD	M	A-2-4	①
	3.0-6.0		MED STIFF ORANGE SOY CL	M	A-6	③
	6.0-8.0		MED DNS ORANGE TAN SL-F-CSE SD D+R H <sup>2</sup> O = 7.0 24HR H <sup>2</sup> O = 4.8	M/ST	A-2-4	①
46						-25

LINE  
-Y16-

PROJECT 6.299001T DATE 5/6/92  
 COUNTY Edgecombe  
 NOTES BY WRC

MOIST  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

8'  
53  
18' CT

0.0-1.5	LOOSE BROWN-TAN SL F-SD (F.11)
1.5-3.0	MED DNS TAN SL F-CSE SD
3.0-4.0	MED STIFF ORANGE TAN SBY CL
4.0-6.5	MED DNS GRAY CLY F-CSE SD
6.5-8.0	MED DNS GRAY-TAN-ORANGE F-V CSE SD

0 HR H<sub>2</sub>O = 5.9  
 24 HR H<sub>2</sub>O = 4.6

M A-2-4  
 M A-2-4  
 M A-6  
 W/S A-2-4  
 SAT A-3/A-1-5

-12

52

-15

8'  
51  
18' CT

0.0-1.5	LOOSE TAN BROWN SL F-SD (F.11)
1.5-2.0	LOOSE-MED DNS BROWN SL F SD
2.0-6.0	MED STIFF ORANGE-GRAY SBY CL
6.0-8.0	MED DNS GRAY SL F-CSE SD

0 HR H<sub>2</sub>O = 4.6  
 24 HR H<sub>2</sub>O = 4.1

M A-2-4  
 M A-2-4  
 M A-6  
 W/S A-2-4

-17

50

-19

LINE  
-414-

PROJECT G.29900 TT DATE \_\_\_\_\_  
 COUNTY Edgecombe  
 NOTES BY \_\_\_\_\_

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
✓ 57 18' LT	0.0-2.0		LOOSE TAN BROWN MED DNS (FILL) SLT FSD	M	A-2-4	-2
	2.0-3.0		LOOSE-MED DNS BROWN GRAY F-CSE SD	M	A-2-4	
	3.0-6.5		MED DNS-DNS CLY <sup>BRN</sup> F-CSE SD	M	A-2-4 / A-2-4 (3-2)	
	6.5-8.0		MED DNS GRAY F-CSE SD	SL	A-2-4	
			DHR H <sup>2</sup> O = 7.5			
			DHR #3 = 6.4			
56						-3
✓ 55 18' LT	0.0-1.5	S-286	0.0-1.0 (FILL) LOOSE-BROWN TAN SLT F-CSE SD	M	A-2-4	-5
	1.5-6.0	S-287	MED-DNS-DNS ORANGE GRAY CLY F-CSE SD	M	<del>A-2-4</del> A-2-4 (3-2)	
	6.0-8.0		MED DNS ORANGE GRAY SLT-V CSE SD	M	A-2-4	
			DHR H <sup>2</sup> O = 7.0			
			24 HR H <sup>2</sup> O = 6.3			
54						-8

PROJECT 6.299001T DATE 5/6/92  
 COUNTY Edgecombe  
 NOTES BY WRC

LINE

416-

STATION

DEPTH SAMP.

DESCRIPTION

MOISTURE

ESTIMATED CLASS

+50

End Grad

8 ✓  
59

00-30

LOOSE-MED DNS BRNGE TAN SL-F-USE SO

U A-2-4

18 LT

30-40

SOFT-LX BRNWN CLY SDY SL

W A-4

40-55

LOOSE-MED DN SDR BRNWN SL F SD

M A-2-4

55-80

MED STIFF-STIFF GRAY SDY CL

W A-6

0 HR H<sup>2</sup>O = DRY

24HR H<sup>2</sup>O = DRY

+50

58



Y-12-  
LINE  
RAMP A

PROJECT 6.299001T DATE 4/27/92  
COUNTY EDGEcombe  
NOTES BY WRC + RLE

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
13+00					
12+00	0.0-1.0		LOOSE BRN SL F-CSE SD	M	A-2-4
	1.0-3.0		SOFT-MED STIFF GRAY SDY CLY SL	M/S	A-4
	3.0-6.0		MED DNS SL F-CSE SD w/ <sup>small</sup> gravel OHR H <sub>2</sub> O = 2.1 <del>2.1</del> 1.6	SAT	A-2-4/A-1-6
11+00	0-1.5		SOFT DR BRN CLY F SDY SILT	m	A-4 (2)
	-2.5		SOFT/MED STIFF GRY/BRN SI-SPVCL	m/w	A-6 (1)
	-3.5		MED STIFF VEL-GRY SDY SI-CL	w	A-7-6 (3)
	-6		MED DNS BRN CSE SD w/ gravel OHR = 1.7	SAT	A-2-4 / A-1-6 (1)
10+00	0-1	m	SOFT DR BRN CLY F SDY SILT	m	A-4 (2)
	-3.5	S-231	SOFT GRY BRN SI-F SDY CL	w/t	A-6 (1) <span style="margin-left: 20px;">Prob: 24.1</span>
	-6		MED DNS BRN SI-F-CSE SD OHR = 1.5 1.5	SAT	A-2-4 / A-3
9+00	0.0-1.0		LOOSE BK BROWN SL F-CSE SD	M	A-2-4 (2)
	1.0-2.5		SOFT-GRAY BROWN SDY SL	M/w	A-4 (3)
	2.5-6.0		LOOSE-MED DNS TAN-GRAY SL F-CSE SD OHR H <sub>2</sub> O = 1.8 1.6	SAT	A-2-4 (1)
8+00	0-1.5	S-229	LOOSE DR BRN CLY SI-F SD	m	A-2-4 (3) (2)
	-6	S-230	MED DNS TAN SI-F-CSE SD 14 OHR = 1.5	SAT	A-2-4 / A-3 (1)

Y-12-

LINE  
RAMP A-

PROJECT G.299001T DATE 4/27/92  
 COUNTY EDGEcombe  
 NOTES BY WRC & RLE

MOIST

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS	NOTES
19+77 =						
✓ 18+40	0.0-2.0		SOFT DK BROWN SDY CLY SL	%w	A-1-4	(3)
	2.0-2.5		MED DNS BROWN GRAY CLY SL F-CSE SD	SAT	A-2-4	(2)
	2.5-6.0		LOOSE-MED DNS TAN F-CSE SD w/ <sup>SMALL</sup> gravel	SAT	A-3/A-1-6	(1)
17+00	0.0-0.5		SOFT DK BROWN CLY SDY SL	%w	A-4	(2) LIKE S-232
	0.5-2.0		SOFT-MED STIFF SDY CLY GRAY	%w	A-6	(4) LIKE S-233
	2.0-4.0		MED-STIFF-STIFF TAN	%w	A-7-6	(5) LIKE S-234
	4.0-6.0		MED DNS SL F-CSE SD	SAT	A-2-4/A-3	(1)
16+00	0-1	S-232	SOFT DR. BRN CLY F SDY SILT	m	A-2	(3) (4) HATS DUCK
	-2	S-233	SOFT DR. GRAY SI-SDY CL M <sub>10</sub> = 23%	m <sub>10</sub>	A-6	(4) (5) POOR S-1 SOFT DR. BRN CLY F SDY SILT
	-3.5	S-232	MED STIFF VEL-GRAY SI-CL M <sub>10</sub> = 26%	w	A-7-6	(5) POOR 1-2 SOFT DR. GRAY SI-SDY CL
	-6		MED DNS BRN CSE SD	SAT	A-1-B	(1) 2-3 MED STIFF VEL-GRAY SI-CL 3-4 MED DNS F-CSE SD
15+00						OHR = 2.6
						2.6 1.6
14+00	0.0-1.5		SOFT-DK BROWN-GRAY CL SDY SL	M	A-4	(3)
	2.0-3.5		SOFT-MED STIFF GRAY TAN SDY CL	M	A-6	(4)
	3.5-6.0		LOOSE-MED DNS GRAY TAN SL F-CSE SD	SAT	A-2-4/A-3	(1)
						OHR = 2.1 2.1 1.5



LINE  
Y12  
Ramp B  
STATION

PROJECT 612990015 DATE 4/27/92  
 COUNTY Edgcomb  
 NOTES BY WRC + RLE

DEPTH SAMP.

DESCRIPTION

MOIST

ESTIMATED CLASS

DEPTH SAMP.	DESCRIPTION	MOIST	ESTIMATED CLASS
0.0-1.5	Loose Tan SL F-CSE SD.	M	A-2-4
1.5-3.0	MED STIFF-STIFF GRAY TAN CL	M	A-7
3.0-7.0	MED DNS GRAY SL F-VCSE SD w/ <sup>small</sup> gravel	SPT	A-2-4

layers  
4.3 4.0

+50 See 208100 SPT  
SS-24, 25, 26 & 27

2

0+00

Y12  
LINE

Ramp B

PROJECT 6.295001T DATE 4/23/92  
COUNTY Edgeland  
NOTES BY WRC

STATION	DEPTH	SAMP	DESCRIPTION
12	0.0-1.0	S-216	LOOSE BROWN-TAN SL F SD
sample	1.0-2.0	S-217	MED STIFF ORANGE TAN SDY SL
	2.0-3.0	S-218 M	MED STIFF ORANGE TAN SDY CL
	3.0-5.0	S-219	MED DNS TAN ORANGE SL F-CSE SD
	5.0-6.0		MED DNS F-VCSE SD W / <small>small gravel</small>
			DHR H <sub>2</sub> O = 3.5 24 HR H <sub>2</sub> O = 3.2 3.2
10 ✓	0.0-0.5		LOOSE BROWN SL F-CSE SD
	0.5-1.5		MED STIFF-TAN-ORANGE SDY SL
	1.5-2.5		MED STIFF TAN ORANGE SDY CL
	3.5-5.5		MED DNS TAN GRAY SL F-CSE SD W /
			Small CL layers
	5.5-6.0		MED DNS SL F-VCSE
			DHR H <sub>2</sub> O = 5.2 24 HR H <sub>2</sub> O = 3.2 3.2
8 ✓	0.0-0.5		LOOSE DARK BROWN SDY SL
	0.5-1.0		MED-STIFF GRAY TAN SDY CL
	1.0-5.5		MED-STIFF-STIFF GRAY TAN CL
	5.5-6.5		MED DNS GRAY TAN SL F-CSE SA
	6.5-8.0		MED DNS GRAY F-CSE SD
			DHR H <sub>2</sub> O = 5.5 3.7
sample 6 ✓	0-1	S-220	SOFT DK BRN F SDY SILT
	-6	S-221	M. STIFF / STIFF YEL GRAY SDY SI-CL
	-8	S-222	M. DENSE BRN SL F SD SD
			OHR = 4.2 3.6

MOISTURE

ESTIMATED CLASS

M	A-2.4	①
W	A-4	②
W	A-6	③
M/SAT	A-2.4	④
SAT	A-3/A-4	⑤
W	A-2.4	⑥
W	A-4	⑦
W	A-6	⑧
W	A-2.4	⑨
SL	A-1	⑩
SAT	A-3/A-4	⑪
M	A-4	⑫
m	A-6	⑬
1/2 W	A-7-6	⑭
SAT	A-2-4	⑮
SAT	A-3	⑯
m	A-4	⑰
m	A-7-6	⑱
SOFT	A-3-4	⑲

MED 21.2

MOI = 29.2

Y12  
LINE  
Ramp B

PROJECT 6,299001T DATE 4/23/92  
 COUNTY Edgemont  
 NOTES BY WRC

STATION	DEPTH SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
+83	= Y12	25+45.66 Deep Auger Hole Sample		
17+00				
16+00	0.0-05	SOFT-TAN SDY SL	M	A-4 (2)
	05-20	MED STIFF ORANGE TAN SDY CL	M	A-7-6 (3)
	2.0-60	MED DNS TAN GRAY SL F-CSE SD OH#20=3.0 24H#1.9 1.9	SAT	A-2-4 (4)
14	0.0-1.0	LOOSE DK BROWN SL F-CSE SD	M	A-2-4 (5)
	1.0-2.0	MED STIFF STIFF GRAY SDY CL	M	A-6/A-7-6 (6)
	2.0-4.0	STIFF GRAY SDY CL	M	A-7-6 (5)
	4.0-5.0	MED-DNS GRAY CLY F-CSE SD	SAT	A-2-4 (6)
	5.0-6.0	MED DNS GRAY F-V CSE SD DWR-H#20=3.9 24HR #20=2.2 2.2	SAT	A-2-4/A-1-6 (7)

DI. FCH. A12B E  
 W DE B1A 1-5  
 2-0 CSE SD

Y-12-  
LINE  
RAMP C

PROJECT 6.299 00 1 T DATE 4/27/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC + RLE

MOISTU  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

✓ 3+00

0-1  
-2  
-3  
-8

LOOSE BRN SI-F SD  
 MED DNS TAN BRN CLY/SI-FSD  
 STIFF BRN GRV SI-F SDY CL  
 MED DNS TAN GRV SI-F LGEST

MOI A-2-A  
 11 A-2-A  
 11 A-6  
 SAT A-2-A

OHR=5.6 4.1  
 SD

2+00

1+00

(A-2-A)  
 (A-6)  
 (A-2-A)

Y-12-  
LINE  
RAMPC

PROJECT 6.29900 IT DATE 4/27/52  
COUNTY EDGE COMBE  
NOTES BY WRC + RLF

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS
7+00	0-1		SOFT DK BRN. F. SPY SILT	m	A-2
	-2		LOOSE TAN BRN CLY SI-F SD	m	A-2-4
	-4.5		M. STIFF / STIFF TAN GRY SDY SI-CL	m	A-7-6
	-7		M. DNS TAN SI-F-CSE SD	SAT	A-2-4
			OHR = 6.1		
8+00					3.6
7+00	0-1	S-222	LOOSE TAN <sup>CLY</sup> SI-F SD	m	A-4
	-3	S-223	MED STIFF / STIFF TAN GRY SDY SI-CL	m	A-7-6
	-6	S-224	MED DNS BRN GRY SI-F-CSE SD	SAT	A-2-4
			OHR = 4.7		
6+00					4.7
5+00	0.0-1.5		LOOSE BROWN-TAN SL F-CSE SD	M	A-2-4
	1.5-3.5		MED-STIFF ORANGE-TAN SDY CL	M	A-6
	3.5-7.0		MED DNS TAN ORANGE F-VCS ESDW <sup>part</sup>	SAT	A-3/A-1-6
			OHR H <sup>2</sup> = 5.3		5.0
4+00					

(3)  
(2)  
(1) (5)  
(1)

(1) (5)  
(4) (5) MOI = 21.2  
(1)

(1) (3)  
(1)

Y12

LINE  
RAMPC

PROJECT 6.299001T DATE 4/27/92  
 COUNTY EDGEcombe  
 NOTES BY WRC + RNE

MOISTURE

ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
-Y12- POT 32+45.66 = RAMPC 16+56.70						
✓ 5400	0-1		SOFT DR. BRN CLY F SDY SILT	m	A-4	③
	-2		SOFT-MED STIFF DR. GRYSI-SPYCL	m	A-6	⑤
	-3.5	S-228	MED STIFF / STIFF TAN BRN SDY SI-CL	m	A-7-6	⑤
	-8		MED DNS BRN SI-F-CSE SD	SAT	A-2-4	①
			DHR = 3.0			
14						1.4
✓ 13	0.0-2.0		SOFT TAN-GRAY BROWN FSDY SL	M	A-4	③
	2.0-3.5		SOFT-MED STIFF GRAY SDY CL	M	A-6	⑤
	3.5-4.5		MED-STIFF-STIFF	W	A-7-6	⑤
	4.5-6.0		MED-DNS GRAY CLY F-CSE SD	SAT	A-2-4	①
	6.0-8.5		LOOSE-MED DNS SL F-CSE SD	SAT	A-2-4	①
12						DHR = 3.2 1.5
✓ 11+00	0.0-1.0	S-225	SOFT BROWN FSDY SL	m	A-6	⑤
	1.0-3.0	S-226	MED STIFF-STIFF GRAY TAN CL	M	A-7-6	⑤
	3.0-6.0	S-227	MED DNS TAN GRAY SL F-CSE SD	SAT	A-2-4	①
			8 HR H <sub>2</sub> O = 45			3.5
10						

Page MOI = 27.2

MOI = 25.6

Y 12  
LINE  
RAMP D

PROJECT G. 299 O.D. IT DATE 4/28/92  
 COUNTY EDGEWATER  
 NOTES BY WRC/AR

STATION DEPTH SAMP DESCRIPTION *NEXT = 235*

STATION	DEPTH	SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
10+00					
9+00	0.0-0.5	S-235	SOFT DK BROWN SDY SL	M	A-2
	0.5-1.5	S-235	SOFT DK BROWN-GRAY SDY CL	M	A-2
	1.5-3.0	S-235	SOFT-MED STIFF CL	M/W	A-2-4
	3.0-6.0		LOOSE MEDIUM DNS SL F-VCSB SD OHR H <sub>2</sub> O = 1.6 1.3	SAT	A-2-4
8+00	0-1.5		SOFT DK BRN CLY F SDY SILT	m	A-2
	1.5-8.0		LOOSE/MED DNS SI-F-CSE SD OHR H <sub>2</sub> O = 1.7 1.0	SAT	A-2-A
7+00	0.0-2.0	S-235	SOFT-DK BROWN SDY SL / SILTY SD	M	A-2-4
	2.0-6.0	S-236	LOOSE MED-DNS F-VCSB SD w/ small cracks OHR H <sub>2</sub> O = 1.8 1.2	SAT	A-3/A-2-4
6+00					
5+00	0-1.5		LOOSE DK BRN F SI-SD	m	A-2-A
	-2.5		LOOSE TAN CLY F SI-SD	m	A-2-A
	-6		MED DNS TAN F-CSE SD OHR = 2.5 2.4	SAT	A-2-A
2+00	See		Sta 238 to 0 - 6'		

MOISTURE = 23.7  
 MOISTURE = 21.3

STATION EDGEWATER  
 0.0-1.5 CLY SL  
 1.5- A-2-4  
 1.0 WATER DEPTH  
 5/15

Y 12  
LINE  
RAMP D

PROJECT 6.29900 IT DATE 4/28/92  
COUNTY EDGE COMBE  
NOTES BY WRL + RLE

17+98 STATION

DEPTH SAMP DESCRIPTION

MOIST

ESTIMATED CLASS

STATION	DEPTH SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
17+00	0.0-1.5	LOOSE - MED DNS DK BROWN SL F-CSE SD	M	A-2-4
	1.5-2.5	SOFT - MED STIFF SDY CL	M	A-6
	2.5-4.1	MED DNS SL F-CSE SA	%SAT	A-2-4
	4.0-6.0	LOOSE - MED DNS F-CSE SD	SAT	A-3
16+00		Ø HR H <sup>2</sup> = 3.1		
		3.0		
15+00	0.0-1.0	LOOSE DK BROWN SDY SL	M	A-4
	1.0-3.5	SOFT - MED STIFF GRAY-BROWN TAN	M/W	A-6
	3.5-6.0	LOOSE - MED DNS SL F-CSE SD	SAT	A-2-4
		Ø HR H <sup>2</sup> = 1.6		
		1.4		
14+00				
13+00	0.0-1.0	SOFT DK BROWN SDY SL	M	A-4
	1.0-2.0	SOFT - MED STIFF DK BROWN GRAY	M	A-6
	2.0-3.0	SOFT - MED STIFF TAN GRAY CL	M/W	A-7-6
	3.0-6.0	LOOSE - MED DNS SL F-CSE SD	SAT	A-2-4/A-3
		Ø HR H <sup>2</sup> = 1.5		
12+00		1.5		
11+00	0.0-1.0	SOFT DK BROWN SDY SL	M	A-4
	1.0-2.0	SOFT - MED STIFF GRAY-TAN SDY CL	M/W	A-6
	2.0-3.0	SOFT - MED STIFF ORANGE TAN GRAY CL	W	A-7-6
	3.0-6.0	MED DNS SL F-CSE SD	SAT	A-2-4/A-3
		Ø HR H <sup>2</sup> = 1.8 1.6		

Grid area with handwritten notes and circled numbers (1-5) in the right margin.



-Y6-  
Ramp A

PROJECT 6.299001T DATE 4/20/42  
 COUNTY Edgecombe  
 NOTES BY \_\_\_\_\_

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS
6					-12
✓ 5	0-2 <sup>1</sup> / <sub>2</sub>		LOOSE BRN. F-CSE SAND	M	A-2-4 (1)
	-4		LOOSE - MED DUS YEL TAW CLYECSE	M	"
	-6		1' GRN BRN F-CSE SD	"	"
			Dry T.B 2442 S.O.		
4					-12
3			see -L-		-12
2					-11
1			+80 see 164+80 L Rev.		-9
ADDD	-11-		REF. STA. 164+81.65		-8

-Y6-  
LINE

Ramp A

PROJECT 6.299001T DATE \_\_\_\_\_  
 COUNTY Edgcomb  
 NOTES BY \_\_\_\_\_

MOIST

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

STATION	DEPTH SAMP.	DESCRIPTION	MOIST	ESTIMATED CLASS
12				
11	0-1'	S-246 MED STIFF TAN CLY SILTY SALT	M	A-4 (2)
	-3	S-247 STIFF YEL BRN SILTY CLAY	M	A-6 (3)
	-5	S-248 MED DNS TAN F-CSE SAND	W	A-2-6
	-6	" TAN CSR SD Wt at 6 T.B	SALT	A-1-3
10		Soils Chap 6.0		
9	0-3"	LOOSE BRN SILTY F SAND	M	A-2-4 / A-1-1
	-6	MED DNS YEL BRN <sup>SILTY</sup> CSR SAND H <sub>2</sub> O 5.0' ± 4.9	M / SALT	A-2-4 / A-1-1
8				
7	0-2"	LOOSE TAN F-CSE SAND	M	A-2-4 (1)
	-6	MED DNS TAN CLY CSR S H <sub>2</sub> O 4.8 T.B 5.5	M	A-2-4 / A-1-1 (1)

76

-Y6-

PROJECT 6.29900 IT DATE 4/30/92

LINE

COUNTY Edgecombe

NOTES BY EAW

Ramp A

STATION

DEPTH SAMP.

DESCRIPTION

MOISTU

ESTIMATED CLASS

+89 = Y6 st-20+96, 18 AT

17

16 +50

0-1

LOOSE BRN SILTY SAND T.S. m A-2-7 (1)

-2

" TAN SILTY F SAND m A-2-7 (1)

-3

MED STIFF YEL BRN CLY SDY SILT m A-4 (1) (2-3)

16

-5

MED DNS GRN F. LSE SAND m A-2-7 (1)

-6

" GRN CSE SAND SAT A-3/A-4 (1)

H<sub>2</sub>O 5.0 T.B.  
5.0

15

14

0-1

MED STIFF TAN CLY F SDY SILT m A-4 (1)

-2

STIFF YEL-BRN SI-F SDY CL m A-6 (1)

-6

MED DNS TAN BRN F- LSE SD m A-2-7 (1)

DWR = 5.9 T.B.  
2.4hr = 5.7

13

-Y6-

LINE

Ramp B

PROJECT 6.2990017 DATE

COUNTY Edycambe

NOTES BY

MOISTU

ESTIMATED CLASS

STATION DEPTH SAMP. DESCRIPTION

+02 = 138+00 - L' -

-15

6

5

-14

+00 See 136+00 L'

-14

3

-14

+70 See 134+70 L'

2

-11

1

-8

+30 See L' Rev 132+40

0+00 = L' REV. STA 132+00, 5' 4" LT

- Y6 -  
LINE

Ramp B

PROJECT 6.299001T DATE \_\_\_\_\_  
COUNTY Edgemoor  
NOTES BY \_\_\_\_\_

MOISTU

ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS
12					8
11					9
10					8
9					13
8					16
7	0.0-1.5	S-252	LOOSE-MED DNS BROWN TAN SL F SD	DRY/M	A-2-4
	1.5-3.5	S-253	SOFT-MED STIFF GRAY TAN SOY CL	M	A-6
	3.5-6.0	S-254	LOOSE-MED DNS TAN F-LCE SD	SAT	A-3
			0.4R H <sub>2</sub> O = 4.7		
			4.3		

+05 = 140 + 25 L' Rev.

(2)  
(4)  
(2)

8  
9  
8  
13  
16  
15



-Y4-  
LINE

PROJECT G.295001T DATE 4/12  
COUNTY Feddercombe  
NOTES BY \_\_\_\_\_

Ramp C

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS	
6+70	0.0-1.5	S-260	LOOSE DK BROWN VSL FSD	1/2	A-2-4	17
	1.5-3.0	S-261	MED-DNS TAN CLY F-SD	1/2	<del>A-2-4</del>	
	3.0-6.0	S-262	MED-DNS TAN F-CSE	SAT	<del>A-2-4</del> A-1-b	
			$\Delta HR H_2O = 4.6$			
6+00			3.8			
5						17
4	0-6'		Brn F-cse Sd $H_2O$		A-2-4	15
3						16
2						15
1	0-6'		Brn F-cse Sand $H_2O$ 5'		A-2-7	5
0+00	=	L' Rev Sta 129+00	54' RT			9

→ 46 =  
LINE  
Ramp C

PROJECT 6.299001T DATE 5/1/92  
 COUNTY Edgcomb  
 NOTES BY J WRC

STATION DEPTH SAMP. DESCRIPTION

MOISTU  
ESTIMATED  
CLASS

STATION	DEPTH	SAMP.	DESCRIPTION
12	0.0-2.0	S-257	LOOSE BROWN CL F SD
	2.0-3.0	S-258	MED DNS BROWN-TAN-CLY FCSE SD
	3.0-6.0	S-259	MED DNS TAN F-VCSE SD
			DHR #3 = 4.6
			4.3
11			
10	0-6'		LOOSE TO MED DNS ORN-TAN FCSE SAND H2O 16'
9			
8			
7			

PRX A-2-4  
 M A-2-4  
 SAT A-1-6

-14

-9

-16

-18

-20

-20



Y6-  
LINE  
Ramp C

PROJECT 6.299001T DATE \_\_\_\_\_  
COUNTY Edgecombe  
NOTES BY \_\_\_\_\_

MOISTU

ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS
18					
17					
16					
15					
14					
13					

2

-4

-6

-6

-8

-12

-13



Y6  
LINE  
Rays D

PROJECT L. 299001T DATE 4-30-92  
 COUNTY Edgecombe  
 NOTES BY KAW

MOISTU  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTU	ESTIMATED CLASS
6	0-1		V. LOOSE BRN. SILTY F SAND	M	A-2-1
	-3		MED. DUS. BRN F-CSE SD	M	A-2-4
	-4		" " CSE SD	STAT	M
			with S.S. TIB		
			Silt		
5					
4	0-1		V. LOOSE BRN SILTY F-CSE SAND	M	A-2-4
	-3		LOOSE TAN F-CSE SAND	M	II
	-6		" TAN CSE SAND	M	II
			Dry TIB		
			Dump of C'		
3			Dry		
160			see 162+00-2'		
2					
1					
175			see 163+90 C'		
0+00			= C' Rev Sta 164+91, 54' RL		





STATE PROJECT: G.299001T

FEDERAL PROJECT: \_\_\_\_\_

COUNTY: EDGECOMBE

DEPTH TO WATER IN BORE HOLES

DESCRIPTION: 24 HR #3

Y6 Ramp L1 Rev

MEASURED BY: RLE, mtu 5-4-92

Date of Boring	Boring Location	Time Lapse	Depth to Water	Time Lapse	Depth to Water	Notes
4/30/92	Y6- RAMP-A- STA-16+50	0HR	5.0	24 HR	5.0	
"	Y6 RAMP A STA-14+00	"	5.7	"	DRY	
"	Y6- RAMP A STA-11+00	"	WET AT 6.0	"	WET AT 6.0	
"	Y6- RAMP A STA-9+00	"	5.0	"	4.9	
"	Y6 RAMP A STA-7+00	"	4.8	"	5.5	
"	Y6 RAMP A STA-5+00	"	DRY	"	5.0	
4/30/92	Y6- RAMP D STA-14+40	0HR	?	24 HR	4.3	
"	Y6- RAMP D STA-11+70	"	5.9	"	4.9	
"	Y6- RAMP D STA-9+70	"	DRY	"	DRY	
"	Y6- RAMP D STA-8+00	"	5.0	"	5.0	
"	Y6- RAMP D STA-6+00	"	WET AT 5.5	"	5.1	
"	Y6- RAMP D STA-4+00	"	DRY AT 6	"	DRY	
5/1/92	Y6 RP B					
"	STA 7+00	ok	4.7		4.3	
"	" 14+00	"	3.8		3.4	
"	Y6 RP C					
"	C+70	"	4.6		3.8	wood
"	12+50		4.6		4.3	SHILL D. 0.1
"	RP C				5.0	trailer
5/1/92	L1 Rev.					
"	STA 140+00	ok	3.9		3.7	
"	" 135+00	"	3.7		3.6	

Y13 Rev

LINE

Ramp A

PROJECT 6.299001 T DATE 4/22/91  
 COUNTY Edgecombe  
 NOTES BY WRE

MOIST

ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS	
6						-2
✓ 5	0-2'	S-211	MED STIFF DK BRN CLY SILT	W	A-4	(4) <del>A-4</del> -2
	-4'	S-212	" " GRAY SILTY CLAY	W	A-6	(5) <del>A-6</del> <del>MOL A-6</del> -2
		M				
	-6'		MED DNS WHITE CSF SAND	SAT	A-1-G	1/13
4			H <sub>2</sub> O @ 3.5'			3.3
✓ 3	0.0-1.0		MED STIFF DK BROWN CLY SL	M	A-4	(2) -3
	1.0-3.0		STIFF GRAY TAN SDY LN	M	A-6	(2) -3
	3.0-5.0		MED DNS LT GRAY CLY F-CSF SD	W	A-2-4	(1) -3
	5.0-7.0		MED DNS BDRY TAN SL F-CSF SD	SAT	A-2-4	(1) -3
	7.0-8.0		MED DNS TAN F-VCSF SD w/ sand Gravel	SAT	A-1-L	(1) -3
2			P <sub>r</sub> H <sub>2</sub> O = 4.8			3.7
1						-3
0+00 RPA			L' 377+00, 54' LT			

413 Rev.  
LINE  
Ramp A

PROJECT 0.249001T DATE 4/22/92  
COUNTY Englecombe  
NOTES BY WRC

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS	
✓ 13	0.0-1.0		LOOSE BROWN-TAN SL F-CSE SD	W	A-2-4	10
	1.0-2.0		LOOSE-MED DNS SL TAN F-CSE SD	W	A-2-4	10
	3.0-8.0		LOOSE MED DNS F-CSE SL SD 0 HR H <sub>2</sub> O = 4.1 3.6	SAT	A-3	11
12						11
✓ 11	0.0-0.5	S-205	LOOSE DK BROWN SL F-SD	M	A-2-4	13
	0.5-4.0	S-206	LOOSE-MED DNS SL CLY F-CSE SD	W	A-2-4	13
	4.0-8.0	S-207	LOOSE MED DNS F-CSE SD	SAT	A-3	13
			0 HR H <sub>2</sub> O = 5.4 4.0			
10						13
✓ 9	0.0-1.0		LOOSE DK BROWN SL CLY F-CSE SD	W	A-2-4	11
	1.0-4.5		LOOSE GRAY CLY F-CSE SD	SAT	A-2-4	11
	4.5-5.5		LOOSE-MED DNS SL F-CSE SD	SAT	A-2-4	11
	5.5-8.0		MED STIFF GRAY SDY CL 0 HR H <sub>2</sub> O = 2.2 2.2	SAT	A-6	11
8						15
	0.0-1.0	S-208	LOOSE DK BROWN TAN CLY F-SD	M	A-2-4	11
	1.0-3.5	S-209	MED STIFF YELLOW BROWN SDY CL	W	A-4	11
	3.5-6.0	S-210	MED DNS LT TAN SL F-CSE SD	SAT	A-2-4	11
	6.0-8.0		MED DNS YELLOW DRANGE F-CSE SD/WG 0 HR H <sub>2</sub> O = 5.5 3.6	SAT	A-1-2	11
7						13



1/13 Rev.  
LINE  
Ramp A

PROJECT 6.299001T DATE 4/20/92  
COUNTY Edgecombe  
NOTES BY \_\_\_\_\_

STATION DEPTH SAMP DESCRIPTION

MOISTU

ESTIMATED CLASS

Y-13-REV DT 41 +35.78 =  
RAMP A PDT 17+16.68

17

28

16

25

✓ 15

0.0-1.0  
1.0-2.0  
2.0-3.0

LOOSE DK BROWN SL F SD  
LOOSE - MED DNS ORNGE TAN SL-CSEAD  
LOOSE - MED DNS F-CSE ORANGE TAN SD  
DAR H<sub>2</sub>O = 4.7

W A-24 (1)  
W A-24 (2)  
SAT A-3 (1)

23

14

3.6

19

413 Rev.

LINE  
Ramp B

PROJECT 0.299001T DATE 4/22/41  
COUNTY Edgecombe  
NOTES BY WRC

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
✓ 6	00-02		LOOSE DK BROWN SL F SD	M	A-2-4
	02-40	S-203	LOOSE MED DNS TAN SL DRANGE FGSE SD	M	A-2-4
	40-80	S-204	LOOSE MED DNS TAN DHR H <sub>2</sub> O = 5.0	SAT	A-3
5			S.O		
4					
3					
2					
1					
0+00	RFB =		LT-STA. 340+92.18		

4/13 Rev.  
LINE  
Ramp B

PROJECT 6.299001T DATE 4/22/91  
COUNTY Edgecombe  
NOTES BY BAW/lwrc

MOIST  
ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS	
13					-19
✓ 12	0.0-4.0	LOOSE DK BLACK SL F SD	M	A-2-4	(E) -18
	1.0-5.0	LOOSE-MED DNS GRAY CLY SL F-CSE SD	M/W	A-2-4	(F) -18
	5.0-7.0	STIFF LT GRAY TAN SBY CL	W	A-6	(G) -18
	7.0-8.0	MED DNS GRAY TAN SL F-CSE SD	M	A-2-4	(H) -18
		O.H.R. H <sub>2</sub> O = 4.0			
14		3.0			-16
✓ 10	0-1/4	V. LOOSE DARK BRN CLY SILTY F. SD	M	A-2-4	(I) -15
	- 5	LOOSE-MED DNS TAN CLY F. W. SD	M	A-2-4	(J) -15
	- 8	LOOSE-MED DNS TAN F. CSE SD	SAT	A-3/A-4	(K) -15
		H <sub>2</sub> O 5.0 T.B			
		3.8			
9					-19
✓ 8	0.0-1.0	V. LOOSE DK BROWN <sup>CLY</sup> SL F SD	M	A-2-4	(L) -11
	1.0-5.0	LOOSE GRAY BROWN CLY F SD	M	A-2-4	(M) -11
	5.0-8.0	LOOSE-MED DNS F-CSE SD	SAT	A-3/A-4	(N) -11
		O.H.R. H <sub>2</sub> O = 5.0			
		4.2			
7					-9

413 Rev.

LINE  
Ramp B

PROJECT 6.299001T DATE 4/22/91  
COUNTY Edgecombe  
NOTES BY TWRC

MOISTU  
ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

18 + 82 = 41735 = 4.13 Rev

4

17

-21

✓ 16

AD-05

LOOSE DK BROWN SL F SD

M A-2-4

15.70

LOOSE-MED DNS GRAY-TAN SL F-CSE SD

M A-2-4

7.0-80

MED STIFF-STIFF GRAY TAN SOY CL

W A-4

15+00

OHR H<sub>2</sub>O = 4.5

~~3.7~~ 3.7

14+00

0.0-05

LOOSE DK BROWN SL F-CSE SD

M A-2-4

0.5-2.0

LOOSE-MED DNS GRAY CLW SL F-CSE SD

M A-3-4

3.0-7.0

LOOSE-MED DNS TAN SL F-CSE SD

SAT A-2-4

7.0-8.0

LOOSE-MED DNS TAN ORANGE F-CSE SD

SAT A-3

OHR H<sub>2</sub>O = 6.0

~~4.3~~ 4.3

✓ 14

-19

Y13 Key.

LINE  
Ramp C

PROJECT 6.2990017 DATE 4/27/92  
COUNTY Edgecombe  
NOTES BY WRC

MOISTURE  
ESTIMATED CLASS

STATION DEPTH SAMP DESCRIPTION

✓ 4

0.0-0.5  
0.5-3.0  
3.0-7.0  
7.0-8.0

DK BROWN LOOSE SL F-CSE SD  
LOOSE-MED DNS SL CLY F-CSE SD  
LOOSE-MED DNS F-CSE SD  
STIFF-VSTIFF CL  
DHR #2 = 4.0

M A-2-4  
M A-2-4  
W A-3  
W A-2-6

(D)  
(D)

-9

5

3.5

-13

✓ 4

0.0-0.5  
0.5-4.0  
4.0-5.5  
5.0-8.0

346+40 L' 70' R'  
LOOSE DK BROWN SL F-CSE SD (topsoil)  
LOOSE-MED DNS TAN SL F-CSE SD  
MED STIFF ORANGE TAN SDU CL  
MED DNS ORANGE TAN SL F-CSE SD  
DHR #2 = DRY

M A-2-4  
M A-2-4  
M A-6  
M A-2-4

(D)  
(D)

-7

3

5.5

-8

2

-9

1

-9

0100 RP-C -LT- STA. 342+42.18

-8

113 Ker.  
LINE  
Camp C

PROJECT G. 2990017 DATE 4/22/92  
 COUNTY Edgecombe  
 NOTES BY wpc

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS	
13						18
✓ 12	0.0-0.5		TOPSOIL LOOSE BROWN SL F-SD	M	A-2-4 (1)	12
	0.5-4.0		LOOSE-MED DNS TAN-ORANGE SL F-CSE SD	M	A-2-4 (1)	
	4.0-8.0		LOOSE-MED DNS TAN F-CSE SD	SAT	A-3 (1)	
			DHR HD = 5.2			
			3.9			
11						14
✓ 10	0.0-1.0		LOOSE BK BROWN SL F SD	M	A-2-4 (1)	12
	1.0-3.0		LOOSE-MED DNS ORANGE T	M	A-2-4 (1)	
	3.0-8.0		LOOSE-MED-DNS TAN F-CSE SD	SAT	A-3	
			DHR HD = 5.0			
9						10
✓ 8	0-0.5	S-200	VI LOOSE D. BRN CLY SILTY F SD	M	A-2-4 (1)	10
	-3	S-201	LOOSE GRAY CLY SAND	M	A-2-4 (1)	
	-8	S-202	LOOSE BRN CLY SAND	SAT	A-3 (1)	
			DHR HD = 4.4			
			3.4			
7						9

Y13 Rev.

PROJECT 6,299001 T DATE 4/20/91  
COUNTY Edgecomb  
NOTES BY \_\_\_\_\_

LINE  
Ramp C

MOIST  
ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
18					
+40 ROC	=		48+64 Y13Rw sed - Y13 - Sta 49100		
17					
✓ 16	8 0.0-8.0		LOOSE TAN-ORANGE SL F-CSE SD DHR H <sub>2</sub> O = 4.9 Push.	M	A-2-4
#5 14100	0.0-1.0 1.0-3.0 3.0-		LOOSE DK BROWN TOPSOIL SL F-SD LOOSE-MED DNS TAN GRAY SL CLY F-CSE LOOSE-MED DNS GRAY TAN SL F-CSE DHR H <sub>2</sub> O = 5.5	M M	A-2-4 A-2-4 A-2-4
14					

LINE  
Ramp D

PROJECT 6.299001T DATE 4/22/92  
 COUNTY Edgecombe  
 NOTES BY WRC

STATION DEPTH SAMP DESCRIPTION

MOISTURE

ESTIMATED CLASS

✓ 6	0.0-1.0		LOOSE DK BROWN SL F-CSE SD	M	A-2-4	5
	1.0-3.0		LOOSE-MED DNS GRAY CLY F-CSE SD	M	A-2-4	5
	3.0-8.0		" " GRAY F-CSE SD	SAT	A-3	5
			DHR H <sub>2</sub> O = 3.6			
			2.6			
5	0.0-0.5		LOOSE DK BROWN SL F-CSE SD	M	A-2-4	5
	0.5-7.0		LOOSE-MED DNS SL F-CSE SD	SAT	A-2-4	5
	7.0-8.0		LOOSE-MED DNS F-CSE SD	SAT	A-1-3	5
			DHR H <sub>2</sub> O = 5.6			
			3.2			
✓ 4	0.0-1.0	S-213	MED STIFF DK BROWN SDY CLY SL	M	A-4	4
	1.0-6.0	S-214	MED STIFF GRAY-TAN SDY CL	M	A-4	4
	6.0-8.0		MED DNS TAN F-CSE SD W/ <small>small gravel</small>	SAT	A-1-6	4
			DHR H <sub>2</sub> O = 3.6			
			3.0			
3						3
2						2
1						1
0+00	RP D		STA. 17+82.43			3

NOTE 11.1



V13 Rev.  
LINE  
Lamp D

PROJECT 6.299001T DATE 4/22/92  
COUNTY Edgecombe  
NOTES BY WRE

MOISTU  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

STATION	DEPTH SAMP.	DESCRIPTION	MOISTU	ESTIMATED CLASS	
13					-12
✓ 12	0.0-0.1	LOOSE DK BROWN SL F-CSE SD		A-14	(1) 10
	1.0-2.0	LOOSE TAN BROWN SL F-CSE SD		A-2-4	(1) 10
	2.0-4.0	LOOSE-MED DNS TAN-BROWN GRAY SL SD		A-2-4	(1) 10
	4.0-8.0	SOFT-MED STIFF GRAY SDY CL DHR #30 = 4.0		A-6/A-7	(3) 10
11					-8
✓ 10	0.0-1.0	LOOSE-VLOOSE DK BROWN SL F-CSE SD	M	A-2-4	(1) 8
	1.0-3.5	LOOSE-MED DNS TAN F-CSE SL SD	SAT	A-2-4	(1) 8
	3.5-6.0	LOOSE-MED DNS TAN F-CSE DHR #30 = 3.7 3.2		A-3	(1) 8
8	0.0-1.0	LOOSE-VLOOSE DK BROWN SL F SD	M	A-2-4	(1) 8
	1.0-5.0	LOOSE-MED DNS GRAY CLY F-CSE SD	SAT	A-2-4	(1) 8
	5.0-6.0	MED-STIFF GRAY SDY CL DHR #30 = 2.4 2.4	W	A-6/A-7	(1) 8
✓ 7+00	0.0-3.0	SOFT DK BROWN SDY SL	M	A-4	(1) 8
	3.0-6.0	LOOSE-MED DNS SL F-CSE SD DHR #30 = 2.5 2.3	SAT	A-2-4	(1) 8
					-7

Y13 Rev:  
Ramp D

PROJECT 6.2990017 DATE 4/22/92  
 COUNTY Egerombe  
 NOTES BY \_\_\_\_\_

MOISTU  
ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

17+94.62 = 48 + 64 Y13 REV. (see Y13-REV STA 49+00)  
 = RAMP C 17+40

17

22

✓ 16 0-3 LOOSE DARK BRN SILTY SAND M A-2-7  
 -4.5 " " CLY SAND W A-2-7  
 -8 LOOSE-MED DNS F. CSIS SD SAT A-2-7

20

15

H.D. 4.5 T.M.  
 3.5

14+00 0.0-0.5 LOOSE BROWN SILTY LB T.S. M A-2-7  
 -2.5 LOOSEYAL BRN CLY SD M A-2-7  
 -8 LOOSE-MED DNS TAN F-CSKSD SAT A-2-7

19

4.6

✓ 14

5.5 H.D. T.M.

14



RAMP A  
LINE  
Y 16

PROJECT Co. 299001 J DATE 5/1/92  
COUNTY Edmund  
NOTES BY WRC

16+

STATION	DEPTH	SAMP	DESCRIPTION	MOIST	ESTIMATED CLASS
14+00	0.0-0.5		MED STIFF BROWN SDY SL	S/M	A-4 (3) A-2-4
	0.5-2.0		LOOSE-MED TAN SL F SD	M	A-2-4 (1-2)
	2.0-3.0		MED DNS TAN ORANGE CLY F-SD	M	A-2-4 (2)
	3.0-4.0		MED DNS GRAY V CLY F-CSE SD	M	A-2-4 (1)
	4.0-6.0		MED DNS GRAY F-CSE SL SD	W	A-2-4 (1)

Dry T.B

12+00	0-1/2		LOOSE BRN SILTY R SANDS	M	A-2-4 (2)
	-2 1/2		LOOSE-MED DNS TAN SL F-CSE SD	M	A-2-4 (1)
	-6		11 GRN BRN CLY F-CSE SD	M/W	A-2-4 (1) R-2-4

Dry T.B

10+00	0-1		LOOSE BRN SI-F SD / SDY SILT	m	A-2-A (1) A-2 (2)
	-2		LOOSE-MED DNS TAN SI-F-CSE SD	m	A-2-A (1)
	-3.5		MED DNS TAN BRN SI-F-CSE CLY SD	m	A-2-A (1) A-2-6 (2)
	-4.5		MED DNS TAN F-CSE SD	m	A-2-A (1)
	-6		MED DNS TAN GRAY CLY SI-F-CSE SD	M/W	A-2-A (1) (2)

T.B. Dry 6.0

8+00	0-1	S-264	LOOSE BRN SILT SAND	M	A-2-4 (1) R-2-4 (2)
	-2	S-265	MED STIFF GRN BRN SD GRAY	M	A-6 (1)
	-4	S-266	MED DNS GRN BRN CLY SD	M	A-2-4 (1) R-2-4 (2)
	-6	S-267	MED DNS GRN BRN F-CSE SD	MAT	A-2-4 (1)

H2O 4.5 T.B

WATER TABLE

5' 264

PROJECT 6.29900 IT DATE \_\_\_\_\_  
 COUNTY EDGE COMBE  
 NOTES BY \_\_\_\_\_

LINE  
 RAMP A  
 -Y 16-

STATION DEPTH SAMP DESCRIPTION

MOISTURE  
 ESTIMATED  
 CLASS

37+87 =  
 END RAMP A STA 16+31.25 = 16+79  
 Y 16 STA 37+89.60 18' RT 3 18  
 +30 2 See 37+90 7/10/10 31

16+00

15+00

14+00

13+00

12+00

22.5'  
 21.0'  
 16.0'  
 12.5'  
 9.5'  
 6.0'

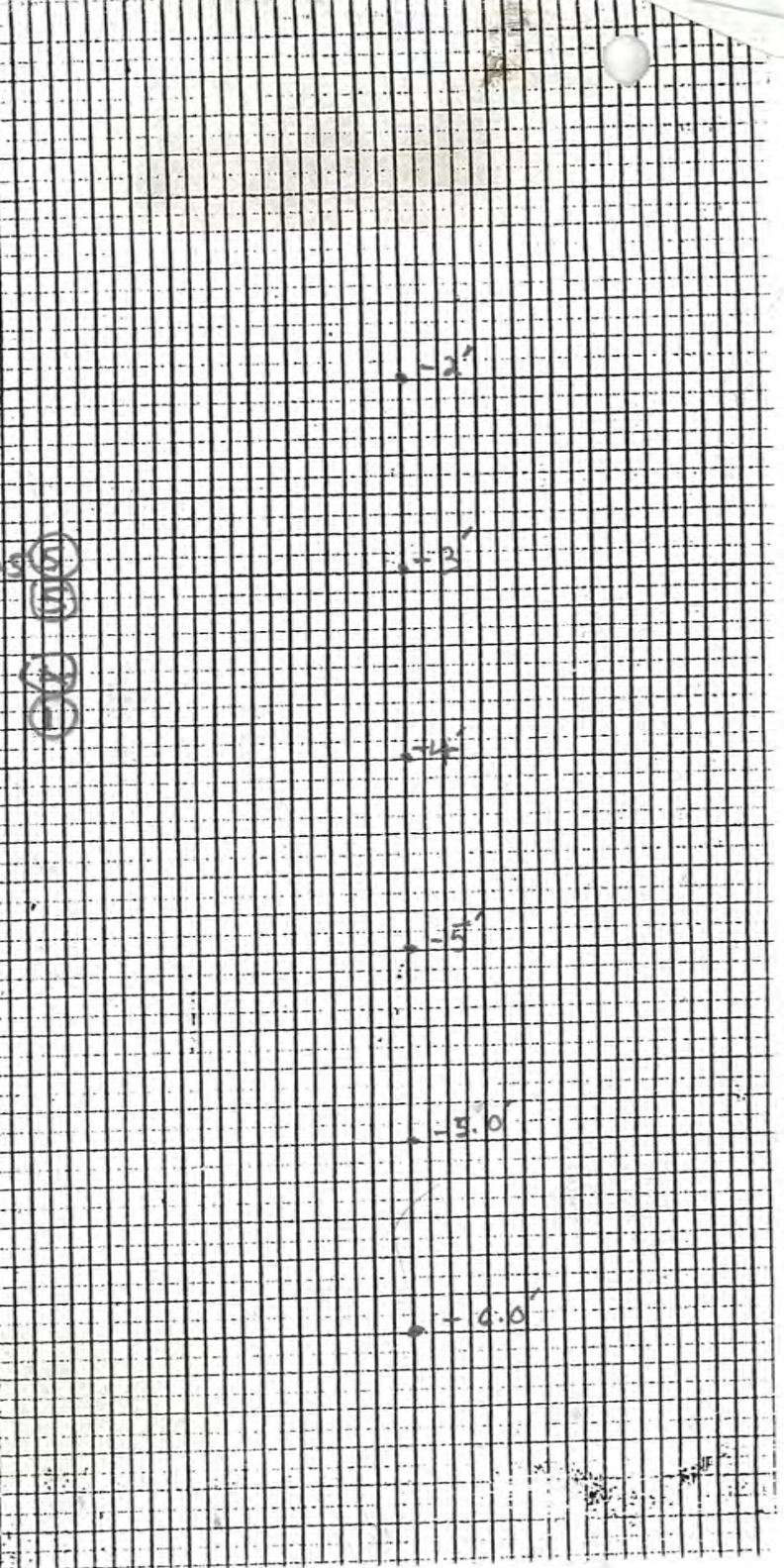
LINE  
RAMP B  
-y 16-

PROJECT 6.299001T DATE 5/5/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

MOISTURE  
ESTIMATED  
CLASS

STATION DEPTH SAMP DESCRIPTION

STATION	DEPTH SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
5+00				
4+00	0-1	SI-OFA V. SOFT DR. BRN CLY F. SDY SILT	W	A-2/A-3
	3.5	SOFT-MED STIFF DR. BRN GRAY	W	A-7.5
	-7	SI-OFA SDY SI CL		
		STIFF YEL-BRN SDY SI-CL	W	A-7-6
	8	MED DNS BRN SI-F-CSE SD	SAT	A-2-4
3+00		OH <sub>R</sub> = 1.7 TIB. 24hrs = 115		
2+00				
1+50		See 512+05 L1 - 54' LT		
1+00				
RAMP B STA 0+00 =				
-L1- STA-510+50 54' LT				



PROJECT 6.299001T DATE 5/5/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

LINE  
RAMPB  
Y16-

MOISTU  
ESTIMATED  
CLASS

STATION DEPTH SAMP. DESCRIPTION

11+00

-3'

10+00

0.0-0.5

SOFT DARK BLACK-BROWN SL

W

A-5

(5)

-2'

\* 600D

0.5-5.0

SOFT DK BROWN-BLACK SL ORG SDY SL CL

W

A-7-5

(5)

VANE  
PLACE

5.0-6

MED-TAN BROWN F-CSE SD

SAT

A-2-4

(1-2)

0 HR H<sup>2</sup>O = .2  
24 HR H<sup>2</sup>O = .2

9+00

-1'

8+00

0.0-1.0

SOFT DK BROWN ORGANIC FSDY SL

W

A-5

(5)

-1'

good

1.0-6.5

SOFT DK BROWN BLACK SL ORG SDY SL CL

W

A-7-5

(5)

vane

6.5-

MED DNS TAN SL F-CSE SD

SAT

A-2-4

(1-2)

0 HR H<sup>2</sup>O = .5  
24 HR H<sup>2</sup>O = .5

7+00

-1'

6+00

0.0-2.0

ORG  
5-283

SOFT DK BROWN SL ORG FSDY SL

W

A-4

(5)

A-4 MOI = 64.5

-2'

2.0-3.5

SOFT DK BROWN SL ORG SDY SL CL

W

A-7-5

(5)

A-4 MOI = 23.7

3.5-6.0

MED DNS TAN BROWN SL F-CSE SD

SAT

A-2-4

(1-2)

0 HR H<sup>2</sup>O = .9  
24 HR H<sup>2</sup>O = .9

LINE  
RAMP B  
-Y 16-

PROJECT 6.299 001T DATE 5-3-92  
 COUNTY EDGEcombe  
 NOTES BY EWJ

RAMP B STA 18+60.892  
 -Y 16- STA 37+87.88 18KT

STATION	DEPTH	SAMP	DESCRIPTION	MOISTUR	ESTIMATED CLASS	
17+00						-22'
16+00	0-1 -6		5.2 RM SOFT D. BRN CLY ESDY SILT LOOK- MED DNS GRP F- (SIE SAND) H <sub>2</sub> O 4.0 TD	M	A-4 A-2-4	-17'
15+00						-15'
14+00	0-1 -3 -5 -6		SLI ORG SOFT D. BRN CLY SILT STIFF GRAY SILTY CLAY LT. GRAY SILTY CLAY MED DNS TRU F- (SIE SAND) H <sub>2</sub> O 5.4	M M W SOFT	A-4 A-7-6 A-7-6 A-3	-12'
13+00						-8'
12+00	0-1 -4 -6	S-288	SLI ORG SOFT D. BRN CLY SILT SOFT-M. STIFF D BRN SI CLAY MED. DNS F- (SIE SAND) H <sub>2</sub> O 0.4	M W SAT	A-6 <del>A-7-6</del> A-3/A-7-4	-6'

A-6 mo = 60.3  
 A-4 mo = 46.3

WINDY

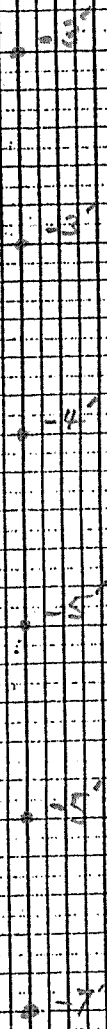


LINE  
RAMP C  
#16-

PROJECT 6.29900 IT DATE 5-3-92  
 COUNTY EDGE COMBE  
 NOTES BY KAW

STATION	DEPTH	SAMP	DESCRIPTION	MOISTU	ESTIMATED CLASS
5+00					
			0-2 RM.		
			SLT ORG		
4+00	0-1 1/2		VSORT D. BRN F. SDY CLY/SILT	W	A-5 (4-5)
	-4		MED STIFF TO STIFF FINE GRN F. SDY CL	W	A-7 (6-7)
	-5		" " GRAY SANDY CLAY	M	A-6 (6)
	-6		MED. DNE GRAY F. - (S) SD	M	A-2-4 (2)
			D <sub>z</sub> T/B		
3+00					
2+00					
1+50			See L' 512+00		
1+00					

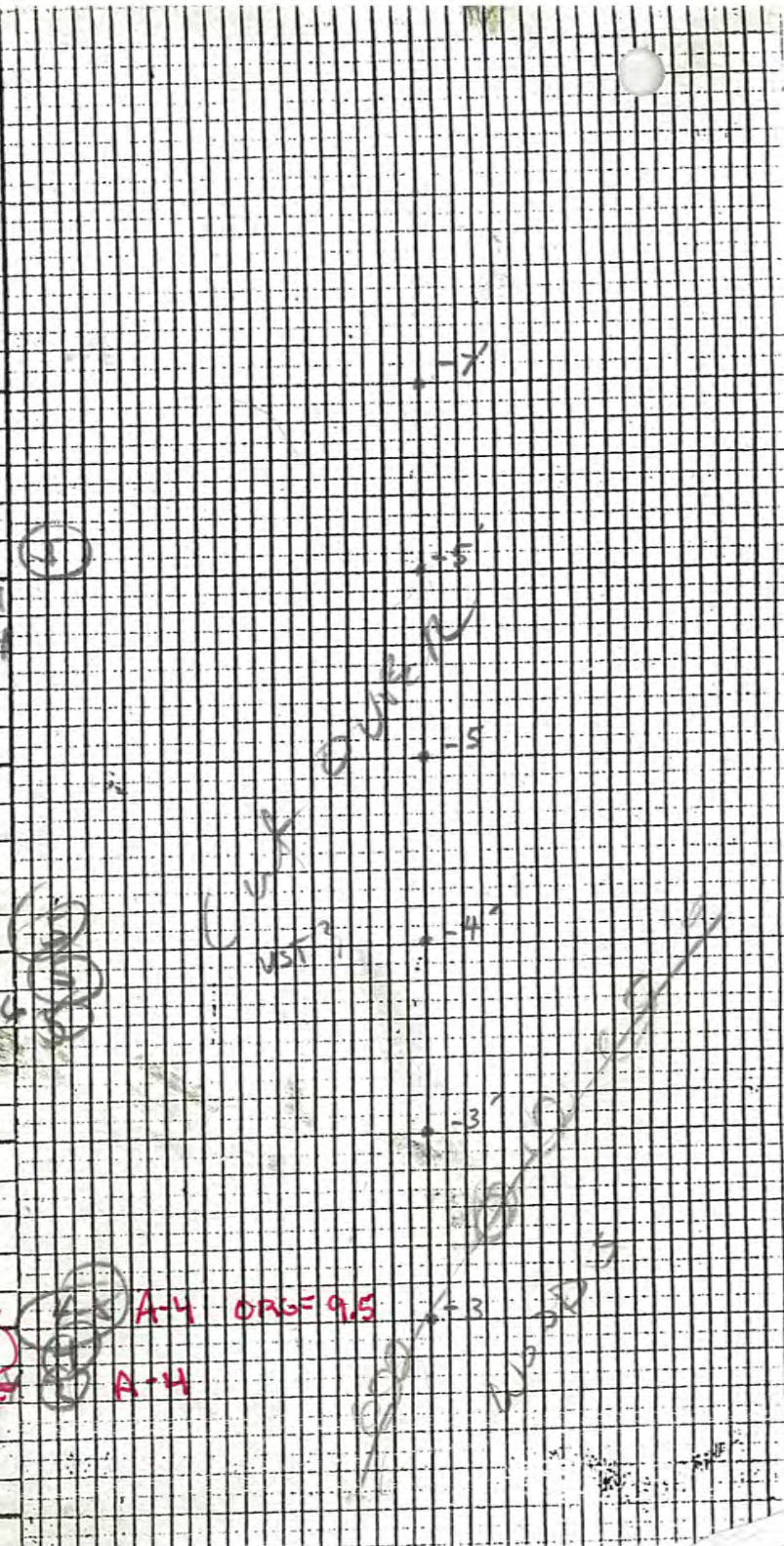
RAMP C - STA 0+00 E  
 - LT STA 510+50 - 54' RT



PROJECT 6.299001T DATE 5-3-92  
 COUNTY EDGEcombe  
 NOTES BY HOW

LINE  
 RAM  
 -416-

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTUR	ESTIMATED CLASS
11+00					
10+00	0-2		V. SOFT D. BRN BK CLY SILT ORG	W	A-5
	-3		LOOSE MD. BRN SH ORG CLY SD	SAT	A-2-4
	-4		LOOSE-MED. DNS BRN F-CSE SD	"	A-2-4
	-6		MED DNS BRN F-CSE SD	"	A-3
			H <sub>2</sub> O 0.5		
9+00					
8+00	0-2		V. SOFT D. BRN BK CLY SILT ORG	W	A-5
	-3		SOFT TO MED STIFF BRN ORG SILT CL	W	A-7-5
	-4		MED STIFF BRN SILT F. SDY CL	W	A-7-4
			MED. DNS SAND		
			H <sub>2</sub> O 2.0		
7+00					
6+00	0-1.5	S-268	V. SOFT BLK. D. BRN CLY SILT	W	<del>A-5</del>
	1.5-2.0	S-269	MED. STIFF GRAY SILT F. SDY CL	W	<del>A-6</del>
	2.0-2.5	S-270	MED DNS TAN CLY SILT F. SD	MOI	<del>A-3</del>
	2.5-3.0		" TAN F-CSE SAND	SAT	A-3
			H <sub>2</sub> O 15.5 TB		



LINE  
RAMP C  
-Y16-

PROJECT 6.29900 IT DATE 4/21/92  
 COUNTY EDGEcombe  
 NOTES BY WRP

RAMP C STA 17+92.03  
 -Y16- STA 45+11.15 AT  
 See 45+10

STATION	DEPTH SAMP.	DESCRIPTION
17+00		
16+00	0.0-1.0	LOOSE <sup>DK</sup> <sup>TAN</sup> BROWN SL F-CSE SD
	1.0-4.0	LOOSE - MED DNS ORANGE TAN SL F-CSE SD
	4.0-5.0	MED - DNS GRAY CLY F-CSE SD
	5.0-6.0	MED STIFF GRAY TAN SOY CL
	6.0-7.0	MED DNS TAN F-CSE SD
15+00		DHR H <sup>2</sup> = 4.4 4.0
14+00	0.0-1.0	LOOSE DK BROWN SL F SD
	1.0-3.5	LOOSE TAN F-CSE SD
	3.5-4.5	MED DNS GRAY CLY F-CSE SD
	4.5-7.0	MED DNS GRAY F-CSE SL SD
		DHR H <sup>2</sup> = 4.4 3.8
13+00		
12+00	0.0-4.15-197	SOFT - MED STIFF DK BROWN SL CL
	1.5-3.0	Slightly ORGANIC
	4.0-5.0	MED DNS GRAY F-CSE CLY SD
		DHR H <sup>2</sup> = 0.5

MOISTURE	ESTIMATED CLASS	
		-26'
		-22'
M	A-2-4	-19'
M	A-2-4	
M/W	A-2-4	
W	A-6	
SAT	A-2-4	
		-15'
M	A-2-4	-12'
M	A-2-4	
W	A-2-4	
SAT	A-2-4	
		-11'
		13+00 EDGE OF WOODS LOW AREA SWAMP
W	A-4	-9'
SAT	A-2-4	

13+00 EDGE OF WOODS  
LOW AREA SWAMP

MOIST = 36.4

X

LINE  
RAMP D  
-Y 16-

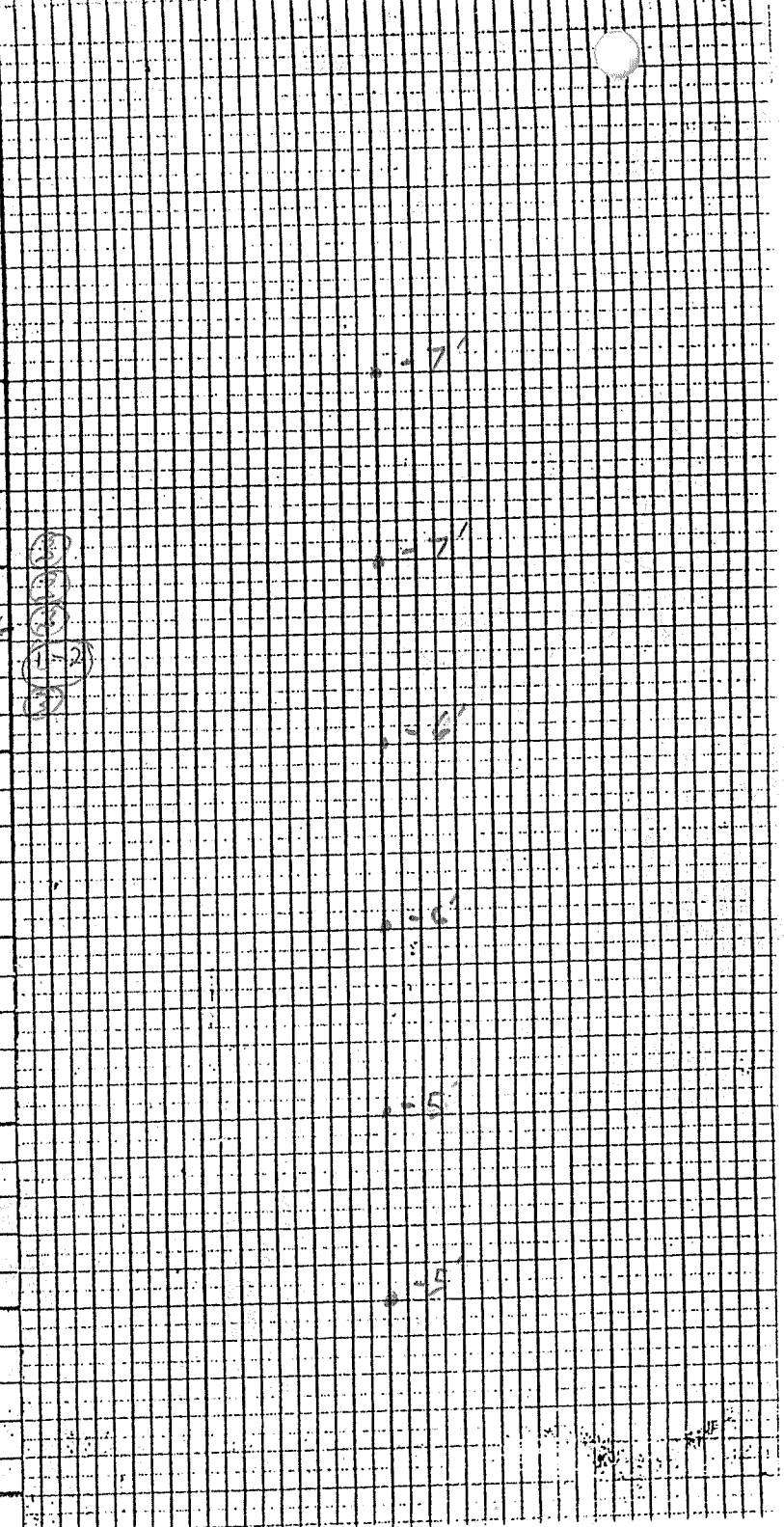
PROJECT 6.299001T DATE 4/21/92  
 COUNTY EDGEcombe  
 NOTES BY WJRC

STATION DEPTH SAMP DESCRIPTION

MOISTURE

ESTIMATED CLASS

STATION	DEPTH SAMP	DESCRIPTION	MOISTURE	ESTIMATED CLASS
5+00				
4+00	0.0-1.0	LOOSE TAN SDY SL	M 4-4	(3)
	1.0-2.0	MED STIFF TAN BROWN GRAY SDY CL	M A-6	(2)
	2.0-3.5	5-194 MED STIFF TAN GRAY SDY CL	M (A-2-4)	(3)
	3.5-6.0	MED DNS SL P-CSE SD	M A-2-4	(1-2)
	6.0-7.0	MED STIFF SDY CL	SAT A-6	(3)
3+00		$\phi_{cr} = 4.2$ 2.3 SW		
2+00				
1+00		= 54+00 LI 54 RT		



RAMP D STA-0+00  
 -LI- STA 54+97.74 54 RT

LINE  
RAMP D  
Y 16

PROJECT L. 29900 IT DATE 4/21/92  
 COUNTY EDGE COMBE  
 NOTES BY WRC RAE

STATION	DEPTH	SAMP.	DESCRIPTION	MOISTURE	ESTIMATED CLASS	
11+00						-5'
10+00	0.0-1.0		LOOSE DK BROWN F SDY SL	M	A-4 (3)	-5'
	1.0-1.5		LOOSE DK BROWN GL F SD	M	A-2-LL (3)	
	1.5-5.0		SOFT-MED STIFF GRAY SDY CL	M/W	A-4/A-2-LL (3)	
	5.0-8.0		MED DNS TAN SL F-CSE SD DHR #3 = 3.5      2.8	SAT	A-2-4/A-3 (3)	
9+00						-6'
8+00	0-1		LOOSE DK GRAY CLY F SI-SD	m	A-2-A (3)	-6'
	-2		M. STIFF YEL GRAY SI-F SDY CL	m	A-6 (3)	
	-4.5		M. STIFF TAN GRAY SI-F CLY SD / SDY CL	M/W	A-2-6 / A-6-A (3)	
	-8		M. DNS BRN SI-F-CSE SD DHR = 2.8	SAT	A-2-4	
7+00						-6'
6+00	0-5	S-19A	LOOSE DK BRN F SI-SD T.S.	m	<del>A-4</del> / A-4 (3)	-6'
	-5.5	S-19B	M. STIFF YEL GRAY SI SDY CL	m	(A-6) (3) 16.4 MOX	
	-7		STIFF TAN F SDY SI-CL	WET	A-7-6 (3)	
	-8		M. DNS TAN SI-F CLY SD 2.1      DHR = 2.5	SAT	A-2-4 / A-2-4	

LINE  
RAMP D  
-Y16-

PROJECT 6.29900IT DATE 4/29/92  
 COUNTY EDGEcombe  
 NOTES BY WRC

RAMP STA 17+57.27 =  
 -Y16-79 45+08.06 18 LF

STATION DEPTH SAMP DESCRIPTION  
 See 45+10 - Y16 = 17+60 ±

MOISTURE  
ESTIMATED CLASS

✓

16+00	0.0-0.5		LOOSE DK BROWN SL F-SD	M	A-2-4	(1)	-19'
	0.5-1.0		LOOSE-MED DNS TAN ORANGE SL CLY F-CSE SD	W	A-2-4	(2)	
	1.0-7.0		MED STIFF GRAY SDY CL	M	A-6/A-2-4	(3)	
	7.0-		MED DNS GRAY F-CSE SD	W	A-3	(4)	
			D HR H <sub>2</sub> O = 5.0 4.8				

15+00

✓

14+00	0.0-1.0		LOOSE DK BROWN SL F-CSE SD		A-2-4	(1)	-11'
	1.0-4.0		LOOSE-MED DNS TAN ORANGE SL F-CSE SD		A-2-4	(2)	
	4.0-8.0		MED STIFF GRAY SDY CL		A-6/A-2-4	(3)	
	8.0-		LOOSE MED DNS		A-3	(4)	
			D HR H <sub>2</sub> O = 5.5 4.2				

13+00

12+00	0.0-1.0	S-191	LOOSE DK BROWN SL F-SD	M	A-2-4	(1)	-7'
	1.0-2.5	S-192	MED-STIFF BROWN GRAY SDY CL	M	A-6/A-2-4	(2)	
	2.5-4.5	S-193	MED DNS GRAY CLY F-CSE SD	M/SAT	A-2-4	(3)	
	4.5-8.0		MED DNS GRAY SL F-CSE SD	SAT	A-2-4	(4)	
			D HR H <sub>2</sub> O = 3.9 3.3				

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MATERIALS & TEST UNIT  
SOILS LABORATORY

T.I.P. ID NO. R-2111 AA

REPORT ON SAMPLES OF: SOIL FOR QUALITY

PROJECT: 6.299001T COUNTY: EDGEcombe OWNER:  
DATE: SAMPLED: 7/21/93 RECEIVED: 10/4/93 REPORTED: 10/7/93  
SAMPLES FROM: LOOP F BY: E. A. WITORT  
SUBMITTED BY: W. H. JOHNSON (T-2887) 1990 STANDARD SPECIFICATIONS

10/8/93

## TEST RESULTS

Proj. Sample No.	ST-1				
Lab. Sample No. 574	322				
Retained #4 Sieve %	--				
Passing #10 Sieve %	100				
Passing #40 Sieve %	96				
Passing #200 Sieve %	70				
MINUS #10 FRACTION					

SOIL MORTAR - 100%					
Coarse Sand Ret-#60 %	10				
Fine Sand Ret -#270 %	29				
Silt 0.05-0.005 MM %	22				
Clay < 0.005 MM %	39				
Passing #40 Sieve %	--				
Passing #200 Sieve %	--				
L.L.	38				
P.I.	20				
AASHTO Classification	A-6(11)				
Texture					
Station	16+03				
Hole No.	11' LT				
Depth (Ft)	15.9				
to	17.9				

cc: W. L. MOORE  
J. F. LEDBETTER  
E. A. WITORT  
W. H. JOHNSON  
SOILS FILE

*E. A. Witort*  
Soils Engineer

N.C.D.O.T. - Materials & Tests Lab  
 One Dimensional Consolidation Test

Project # 6.299001T County Edgecombe Lab. No. T-2887

Sample No. ST-1 Depth 15.9-17.9 Sp. Gr. 2.720 Solid Hto .5647

Sta. 16 + 03 11'LT

AASHTO Class: A-6(11) L.L. 38 P.I. 20

Remarks: Tan Grey Silty Clay

Acc. Load Ton	Spec.Ht @F.D.R. inches	Void Ratio e	Time @ % Compression		C <sub>v</sub> : Consolidation in Ft <sup>2</sup> /day	
			Sq. MINUTES Rt.	Semi-Log	.212 Ht <sup>2</sup> /t90	.197 Ht <sup>2</sup> /t50
	1.00	.775	—		—	
.063	.999	.774	1.0		2.12	
.125	.997	.772	26.12		.081	
.250	.992	.764	41.53		.051	
.50	.984	.749	30.86		.067	
1.0	.972	.729	26.12		.078	
2.0	.955	.698	19.75		.1	
4.0	.932	.659	19.75		.096	
1.0	.9424	.676	—		—	
2.0	.9374	.668	—		—	
4.0	.9284	.654	—		—	
8.0	.9024	.608	21.78		.082	
16.0	.8674	.548	21.78		.077	
4.0	.8774	.562	—		—	
.01	.9374	.665	—		—	

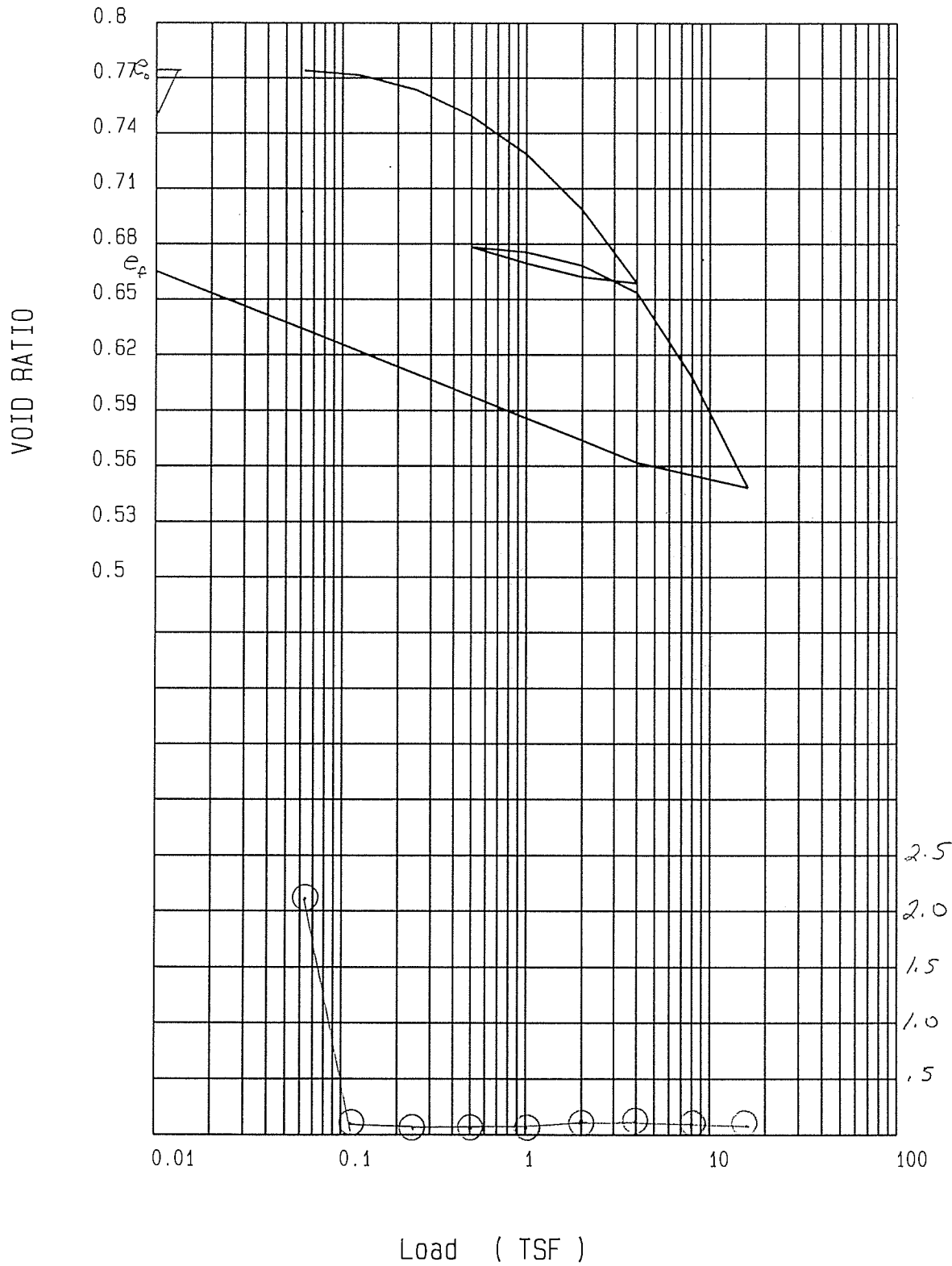
Density Data \* Data at 16 TSF

	PreTest	*Post Test
Moisture, %	27.92	19.71
Dry Unit Wt. (PCF)	95.64	110.26
Void Ratio, e	.7750	.5480
Saturation, %	98.51	100.00



# OEDOMETER TEST RESULTS

Oedometer Serial Number 21



COEFFICIENT OF CONSOLIDATION Ft<sup>2</sup>/DAY

Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

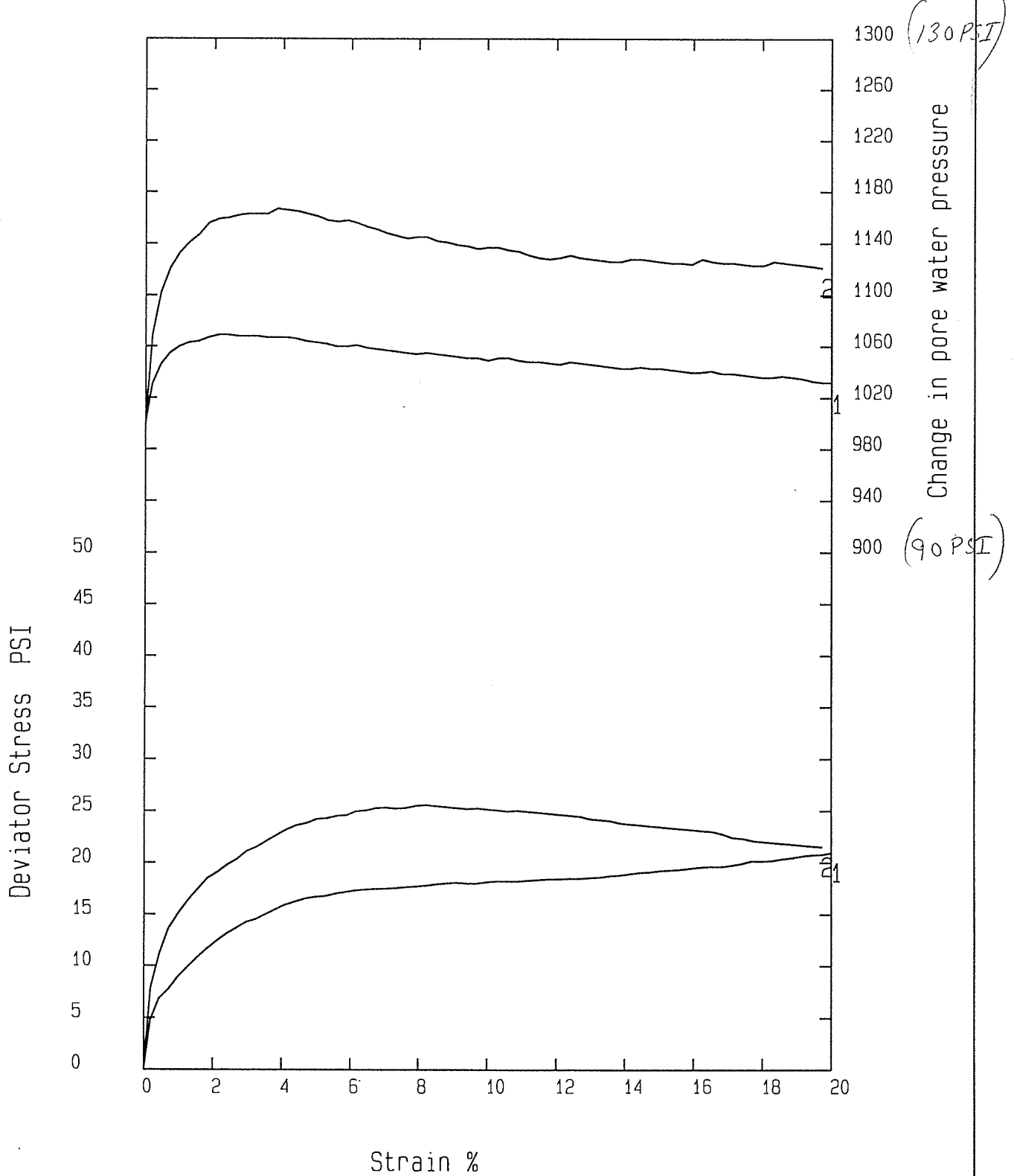
NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

Job No : T-2887

Fig No :

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE



Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

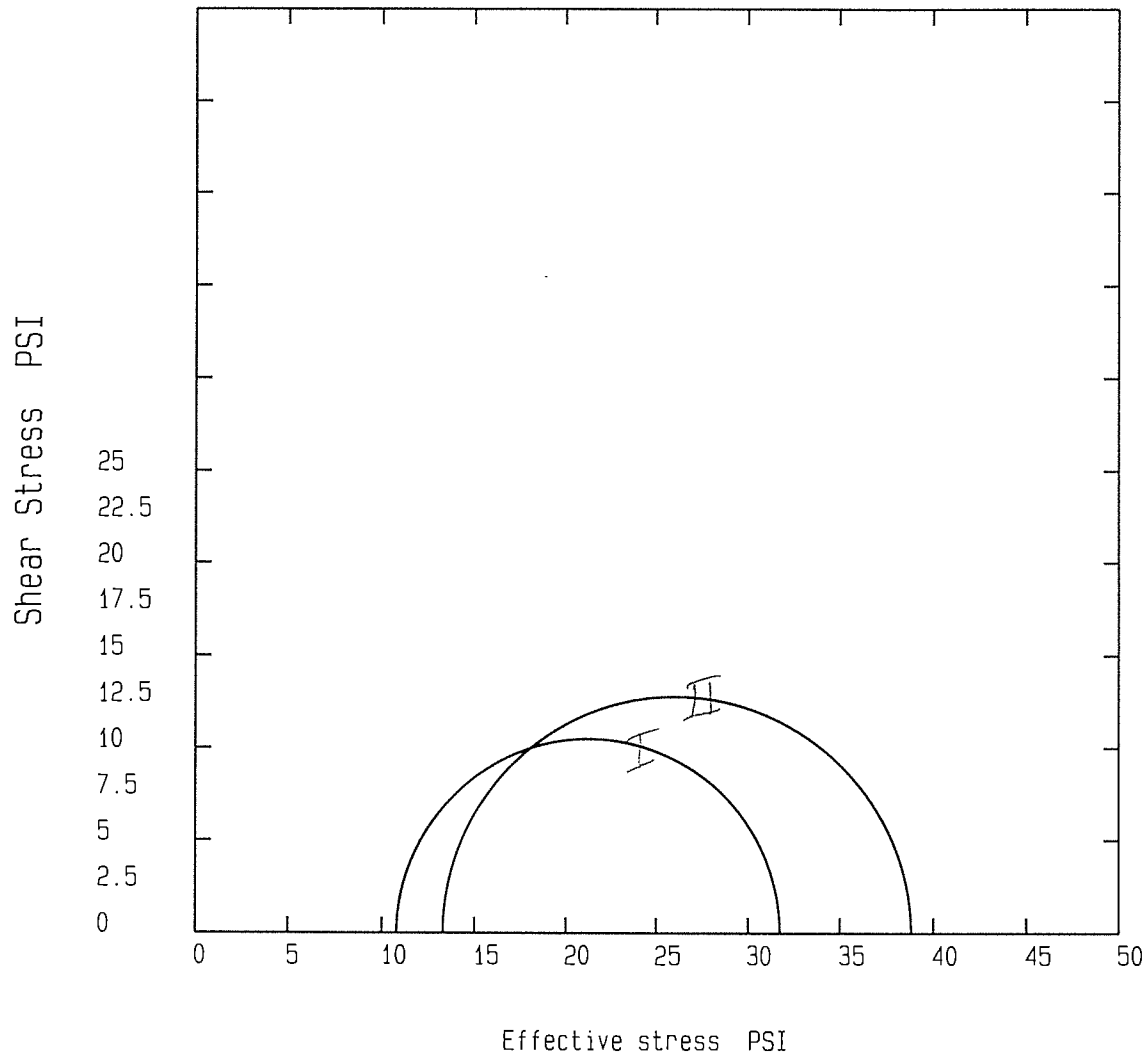
Job No : T-2887

Fig No :

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST SHEAR STAGE

C =       psi

PHI =     Degrees



Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

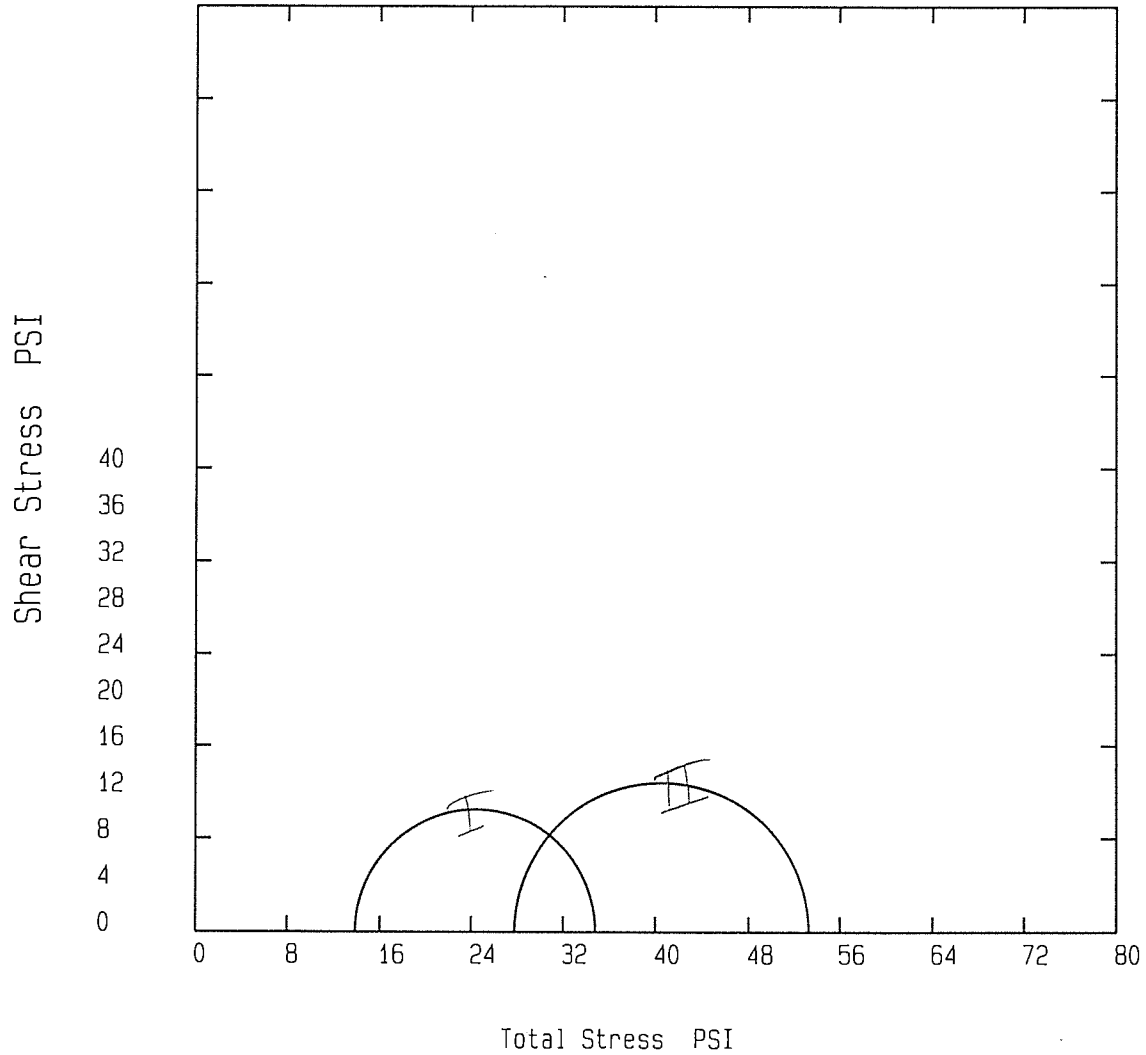
Job No : T-2887

Fig No :

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

C =       psi

PHI =     Degrees



Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

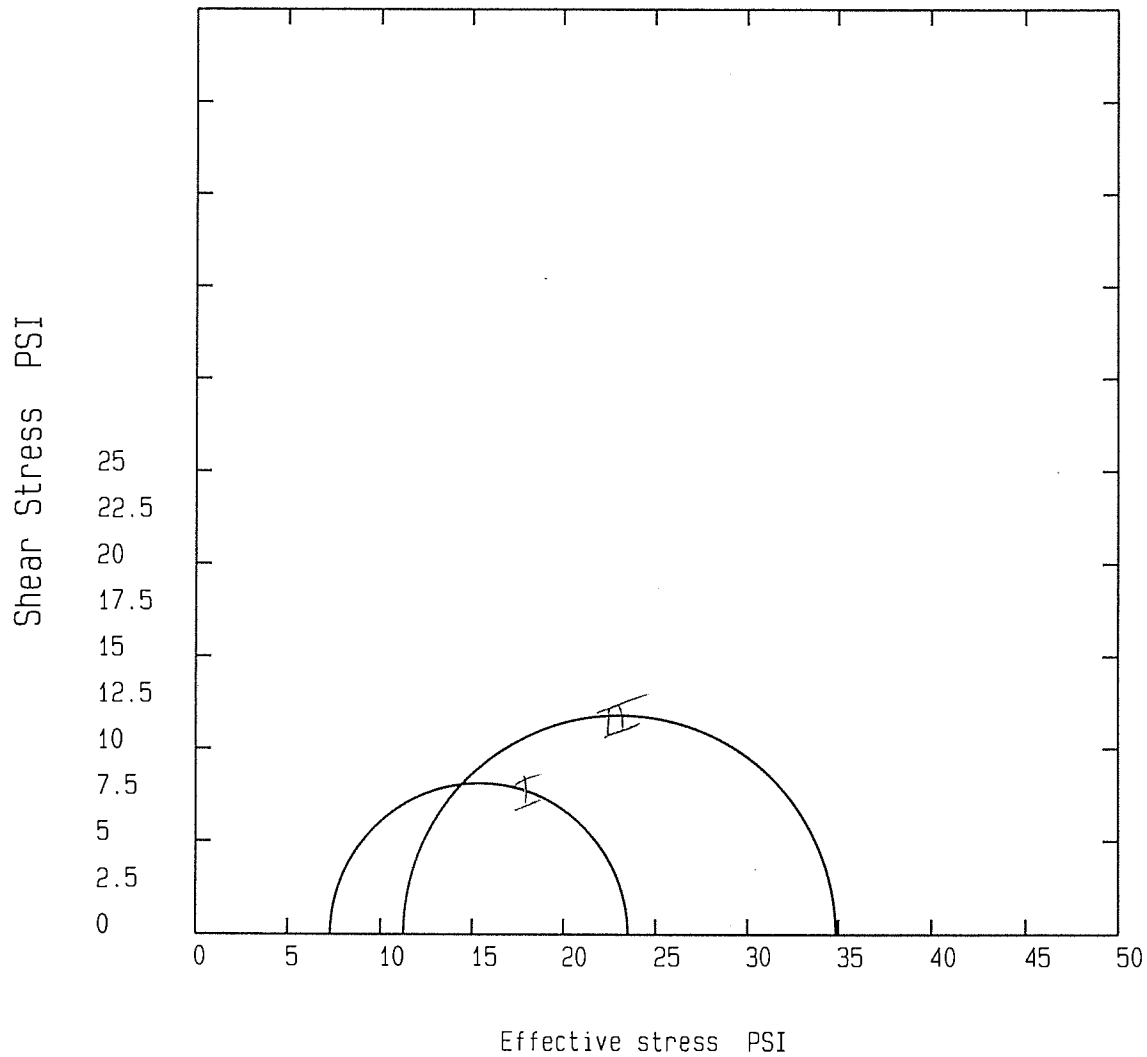
Job No : T-2887

Fig No :

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST SHEAR STAGE

C =       psi

PHI =     Degrees



@  
max stress ratio

Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

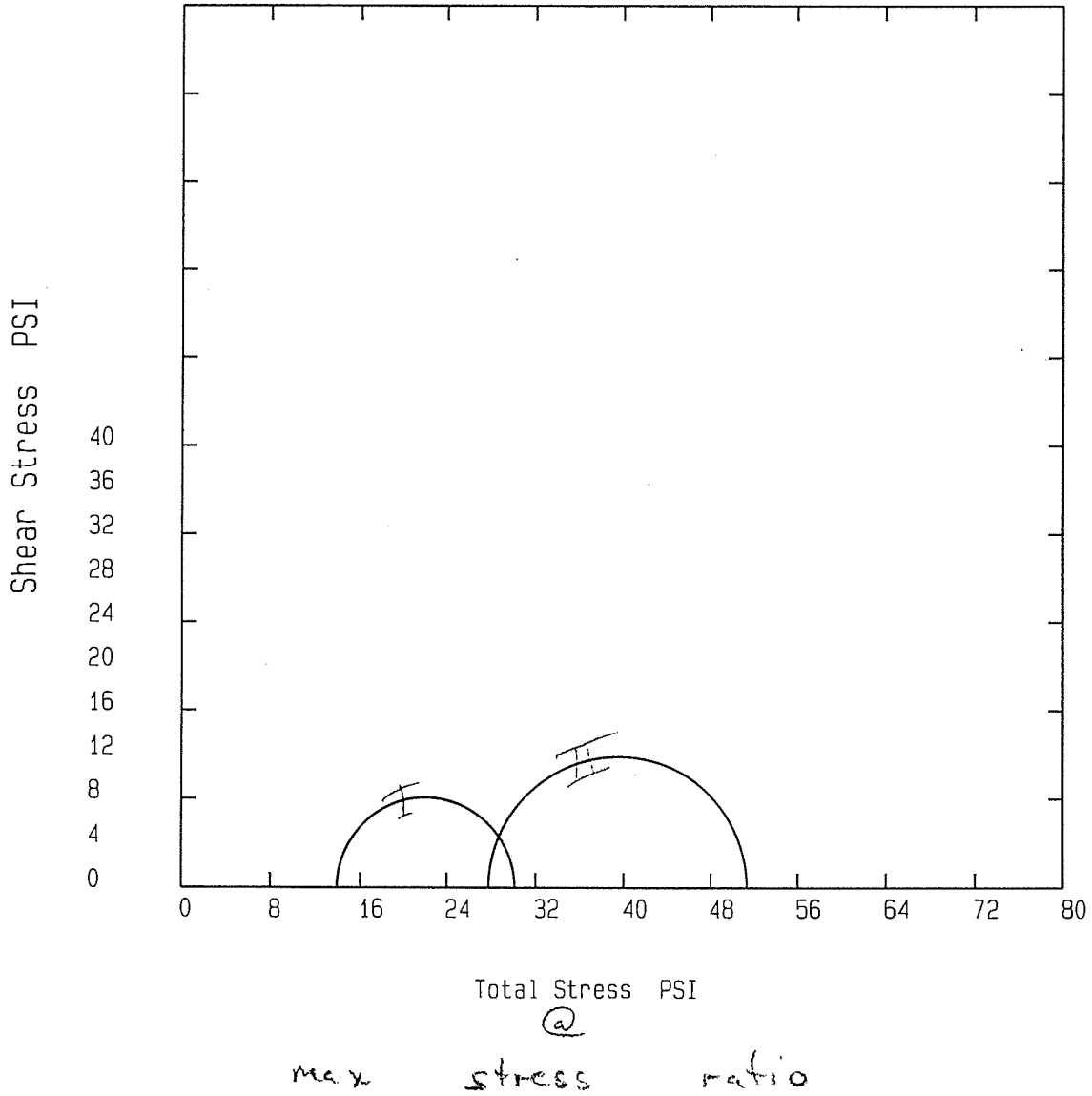
Job No : T-2887

Fig No :

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST SHEAR STAGE

C =        psi

PHI =      Degrees



Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

Job No : T-28B7

Fig No :

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

Test specimen No.	1	[ 1 ]	STRAIN	inches
		[ 2 ]	LOAD	Lbs
Corrected Area	6.2414	[ 3 ]	PORE WATER	PRESSURE PSI
Corrected Height	5.9844	[ 4 ]	PORE WATER	PRESS. DIFF. PSI
Cell Pressure	PSI 113.88	[ 5 ]	EFFECTIVE	CELL PRESS. PSI
Pore Pressure	PSI 100	[ 6 ]	A	VALUE
% Water Content	0	[ 7 ]	STRAIN	%
Machine Speed	in/min 0.009	[ 8 ]	DEVIATOR	STRESS PSI
Upthrust Correction	Lbs 0	[ 9 ]	SHEAR	STRESS PSI
		[ 10 ]	(P)	(P) PSI
		[ 11 ]	STRESS	RATIO

[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]	[ 7 ]	[ 8 ]	[ 9 ]	[ 10 ]	[ 11 ]
0.001	2.6	100	0	13.88	0	0	0	0	13.88	0
0.013	32.76	103.1	3.1	10.78	0.644	0.201	4.816	2.408	13.19	1.447
0.028	45.76	104.6	4.6	9.281	0.67	0.456	6.868	3.434	12.72	1.74
0.044	51.36	105.5	5.5	8.381	0.711	0.724	7.731	3.866	12.25	1.922
0.06	59.04	106	6	7.881	0.673	0.994	8.92	4.46	12.34	2.132
0.077	65.28	106.3	6.3	7.581	0.638	1.268	9.873	4.936	12.52	2.302
0.093	71.52	106.4	6.4	7.481	0.592	1.551	10.82	5.41	12.89	2.446
0.11	77.28	106.7	6.7	7.181	0.573	1.833	11.69	5.843	13.02	2.627
0.127	82.56	106.9	6.9	6.981	0.553	2.116	12.47	6.235	13.22	2.786
0.144	87.36	106.9	6.9	6.981	0.524	2.396	13.18	6.588	13.57	2.887
0.161	91.2	106.8	6.8	7.081	0.495	2.675	13.73	6.864	13.95	2.939
0.178	95.04	106.8	6.8	7.081	0.476	2.959	14.28	7.139	14.22	3.016
0.195	97.14	106.8	6.8	7.081	0.467	3.245	14.55	7.276	14.36	3.055
0.212	100.5	106.7	6.7	7.181	0.446	3.531	15.02	7.508	14.69	3.091
0.229	103.8	106.7	6.7	7.181	0.433	3.812	15.48	7.739	14.92	3.155
0.246	107.1	106.7	6.7	7.181	0.42	4.094	15.94	7.968	15.15	3.219
0.263	109.5	106.6	6.6	7.281	0.406	4.385	16.24	8.122	15.4	3.231
0.281	111.9	106.4	6.4	7.481	0.387	4.679	16.55	8.274	15.76	3.212
0.298	113.3	106.3	6.3	7.581	0.377	4.968	16.71	8.354	15.93	3.204
0.316	114.3	106.2	6.2	7.681	0.369	5.264	16.79	8.396	16.08	3.186
0.333	116.2	106	6	7.881	0.353	5.561	17.02	8.509	16.39	3.159
0.351	117.6	106	6	7.881	0.349	5.855	17.17	8.586	16.47	3.179
0.369	119	106.1	6.1	7.781	0.352	6.151	17.32	8.662	16.44	3.227
0.387	120	105.9	5.9	7.981	0.339	6.448	17.4	8.702	16.68	3.181
0.404	120	105.8	5.8	8.081	0.332	6.746	17.48	8.742	16.82	3.163
0.422	121.4	105.7	5.7	8.181	0.326	7.043	17.49	8.745	16.93	3.138
0.44	122.4	105.6	5.6	8.281	0.319	7.339	17.57	8.784	17.07	3.121
0.458	123.3	105.5	5.5	8.381	0.312	7.635	17.65	8.823	17.2	3.105
0.475	124.3	105.4	5.4	8.481	0.305	7.932	17.72	8.861	17.34	3.089
0.493	125.2	105.5	5.5	8.381	0.309	8.226	17.8	8.898	17.28	3.123
0.511	126.7	105.4	5.4	8.481	0.301	8.524	17.94	8.97	17.45	3.115
0.529	127.6	105.3	5.3	8.581	0.294	8.821	18.01	9.007	17.59	3.099
0.546	128.6	105.2	5.2	8.681	0.287	9.117	18.09	9.044	17.72	3.084
0.564	128.6	105.1	5.1	8.781	0.283	9.418	18.02	9.01	17.79	3.052
0.582	129	105.1	5.1	8.781	0.283	9.717	18.02	9.011	17.79	3.052
0.6	130.5	104.9	4.9	8.981	0.27	10.01	18.16	9.081	18.06	3.022
0.618	131.4	105.1	5.1	8.781	0.28	10.31	18.23	9.116	17.9	3.076
0.636	131.9	105.1	5.1	8.781	0.28	10.61	18.23	9.116	17.9	3.076
0.653	132.4	104.9	4.9	8.981	0.269	10.91	18.23	9.116	18.1	3.03
0.671	133.3	104.8	4.8	9.081	0.262	11.2	18.3	9.15	18.23	3.015
0.689	134.3	104.8	4.8	9.081	0.261	11.5	18.37	9.184	18.26	3.023

0.707	135.2	104.7	4.7	9.181	0.255	11.8	18.43	9.217	18.4	3.008
0.724	135.7	104.6	4.6	9.281	0.25	12.09	18.43	9.216	18.5	2.986
0.742	136.7	104.8	4.8	9.081	0.259	12.39	18.5	9.249	18.33	3.037
0.76	137.1	104.7	4.7	9.181	0.254	12.68	18.5	9.248	18.43	3.015
0.777	138.1	104.6	4.6	9.281	0.248	12.98	18.56	9.28	18.56	2
0.795	139	104.5	4.5	9.381	0.242	13.28	18.62	9.311	18.69	2.985
0.813	140.5	104.4	4.4	9.481	0.235	13.57	18.75	9.375	18.86	2.978
0.831	141.4	104.3	4.3	9.581	0.229	13.87	18.81	9.405	18.99	2.963
0.848	142.9	104.3	4.3	9.581	0.227	14.16	18.94	9.469	19.05	2.977
0.865	144.3	104.4	4.4	9.481	0.231	14.45	19.06	9.532	19.01	3.011
0.883	145.2	104.3	4.3	9.581	0.225	14.75	19.12	9.561	19.14	2.996
0.901	146.7	104.3	4.3	9.581	0.223	15.04	19.24	9.622	19.2	3.009
0.918	147.6	104.2	4.2	9.681	0.218	15.33	19.3	9.651	19.33	2.994
0.936	148.6	104.1	4.1	9.781	0.212	15.63	19.36	9.679	19.46	2.979
0.953	149	104	4	9.881	0.205	15.92	19.48	9.739	19.62	2.971
0.971	151.4	104	4	9.881	0.204	16.21	19.6	9.798	19.68	2.983
0.989	152.4	104.1	4.1	9.781	0.209	16.51	19.65	9.825	19.61	3.009
1.006	152.9	103.9	3.9	9.981	0.199	16.8	19.64	9.819	19.8	2.968
1.024	154.3	103.9	3.9	9.981	0.197	17.1	19.75	9.876	19.86	2.979
1.042	156.2	103.8	3.8	10.08	0.191	17.4	19.93	9.964	20.05	2.977
1.059	158.6	103.7	3.7	10.18	0.183	17.68	20.17	10.08	20.27	2.981
1.077	159	103.6	3.6	10.28	0.179	17.98	20.15	10.08	20.36	2.96
1.094	159	103.6	3.6	10.28	0.178	18.27	20.2	10.1	20.38	2.965
1.112	161.9	103.7	3.7	10.18	0.182	18.56	20.37	10.19	20.37	3.001
1.129	163.3	103.6	3.6	10.28	0.176	18.86	20.48	10.24	20.52	2.992
1.147	165.2	103.5	3.5	10.38	0.17	19.15	20.65	10.32	20.71	2.989
1.164	166.7	103.3	3.3	10.58	0.159	19.44	20.75	10.38	20.96	2.961
1.182	167.6	103.2	3.2	10.68	0.154	19.74	20.8	10.4	21.08	2.947
1.199	169.5	103.2	3.2	10.68	0.153	20.03	20.96	10.48	21.16	2.962
1.206	169	103.1	3.1	10.78	0.148	20.14	20.99	10.49	21.28	2.947



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

Test specimen No.	2	[ 1 ]	STRAIN	inches
		[ 2 ]	LOAD	Lbs
Corrected Area	6.0874	[ 3 ]	PORE WATER	PRESSURE PSI
Corrected Height	6.0812	[ 4 ]	PORE WATER	PRESS. DIFF. PSI
Cell Pressure	PSI 127.76	[ 5 ]	EFFECTIVE	CELL PRESS. PSI
Pore Pressure	PSI 100	[ 6 ]	A	VALUE
% Water Content	0	[ 7 ]	STRAIN	%
Machine Speed	in/min 0.009	[ 8 ]	DEVIATOR	STRESS PSI
Upthrust Correction	Lbs 0	[ 9 ]	SHEAR	STRESS PSI
		[ 10 ]	(P)	(P) PSI
		[ 11 ]	STRESS	RATIO

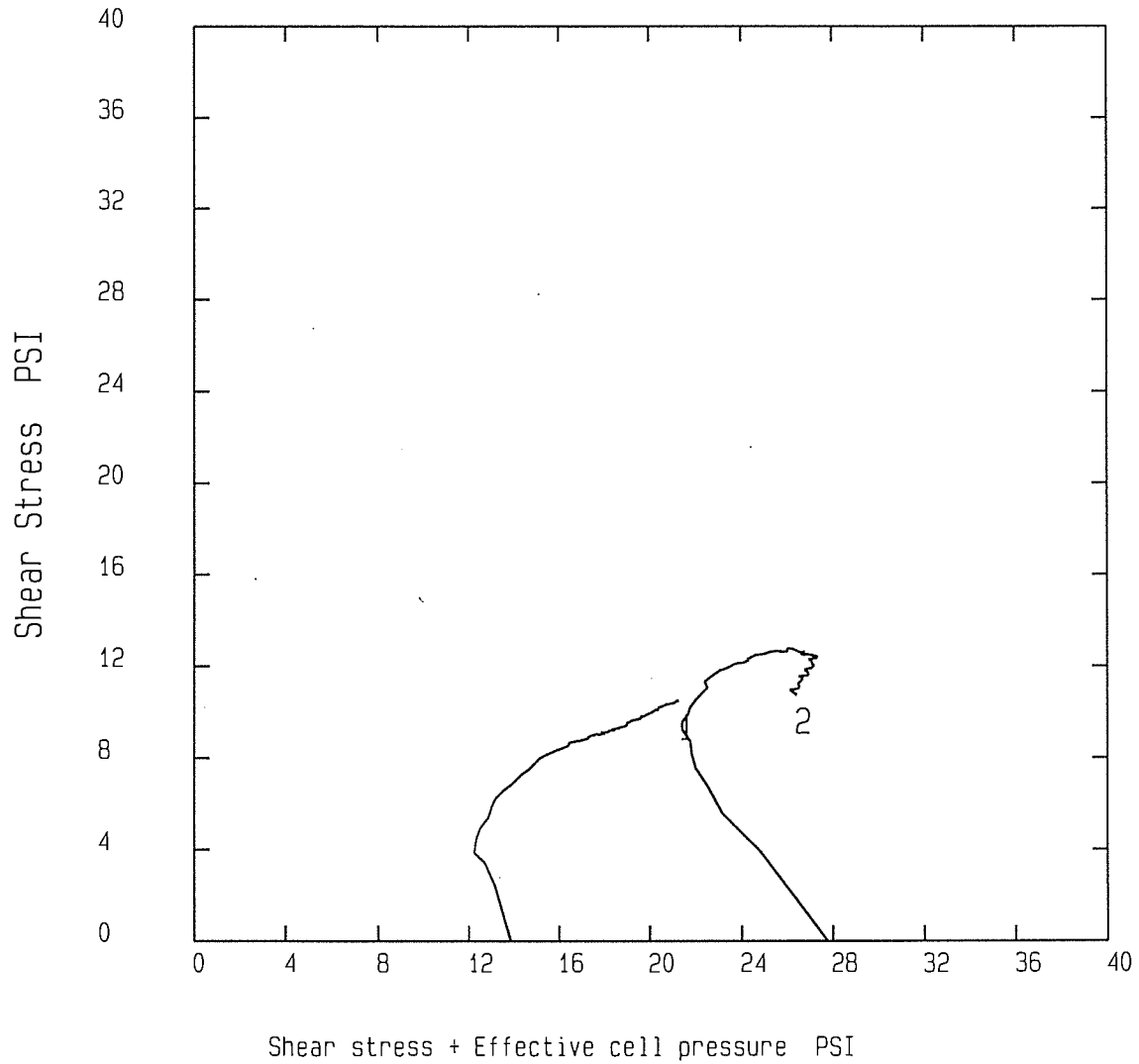
[ 1 ]	[ 2 ]	[ 3 ]	[ 4 ]	[ 5 ]	[ 6 ]	[ 7 ]	[ 8 ]	[ 9 ]	[ 10 ]	[ 11 ]
0.001	11	100	0	27.76	0	0	0	0	27.76	1
0.013	59.18	106.9	6.9	20.86	0.875	0.202	7.89	3.945	24.81	1.378
0.029	79.59	110.2	10.2	17.56	0.911	0.46	11.19	5.597	23.16	1.637
0.045	94.9	112.1	12.1	15.66	0.887	0.728	13.65	6.824	22.48	1.871
0.062	104	113.3	13.3	14.46	0.882	1.005	15.08	7.542	22	2.043
0.079	112.1	114.1	14.1	13.66	0.863	1.284	16.34	8.169	21.83	2.196
0.096	119.2	114.7	14.7	13.06	0.844	1.562	17.42	8.712	21.77	2.334
0.113	126.3	115.6	15.6	12.16	0.843	1.842	18.5	9.251	21.41	2.521
0.13	130.3	115.9	15.9	11.86	0.833	2.126	19.08	9.542	21.4	2.609
0.147	135.4	116	16	11.76	0.807	2.411	19.83	9.913	21.67	2.686
0.165	139.4	116.2	16.2	11.56	0.794	2.697	20.4	10.2	21.76	2.765
0.182	144.4	116.3	16.3	11.46	0.771	2.983	21.13	10.57	22.03	2.844
0.2	147.5	116.3	16.3	11.46	0.757	3.269	21.54	10.77	22.23	2.879
0.217	151.5	116.3	16.3	11.46	0.737	3.557	22.1	11.05	22.51	2.929
0.235	155.6	116.7	16.7	11.06	0.737	3.845	22.66	11.33	22.39	3.049
0.252	159.6	116.6	16.6	11.16	0.715	4.136	23.22	11.61	22.77	3.08
0.27	162.6	116.5	16.5	11.26	0.699	4.427	23.61	11.81	23.07	3.097
0.288	164.6	116.3	16.3	11.46	0.684	4.718	23.84	11.92	23.38	3.081
0.305	167.7	116.1	16.1	11.66	0.664	5.011	24.23	12.12	23.78	3.078
0.323	168.7	115.8	15.8	11.96	0.65	5.3	24.3	12.15	24.11	3.032
0.341	170.7	115.7	15.7	12.06	0.64	5.593	24.53	12.27	24.33	3.034
0.359	171.7	115.8	15.8	11.96	0.642	5.884	24.6	12.3	24.26	3.057
0.376	174.7	115.6	15.6	12.16	0.625	6.175	24.98	12.49	24.65	3.054
0.394	175.8	115.3	15.3	12.46	0.611	6.469	25.04	12.52	24.98	3.01
0.412	177.8	115.1	15.1	12.66	0.598	6.762	25.26	12.63	25.29	2.995
0.43	178.8	114.8	14.8	12.96	0.584	7.056	25.33	12.66	25.63	2.954
0.448	178.8	114.6	14.6	13.16	0.579	7.352	25.24	12.62	25.78	2.918
0.466	179.8	114.4	14.4	13.36	0.569	7.648	25.3	12.65	26.01	2.893
0.484	181.8	114.5	14.5	13.26	0.568	7.943	25.51	12.76	26.02	2.924
0.502	182.8	114.5	14.5	13.26	0.567	8.242	25.57	12.79	26.05	2.928
0.52	182.8	114.2	14.2	13.56	0.557	8.539	25.48	12.74	26.3	2.879
0.538	182.8	114.1	14.1	13.66	0.555	8.834	25.38	12.69	26.35	2.858
0.556	182.8	113.9	13.9	13.86	0.55	9.13	25.29	12.65	26.51	2.825
0.574	182.8	113.8	13.8	13.96	0.548	9.424	25.2	12.6	26.56	2.805
0.592	183.8	113.6	13.6	14.16	0.538	9.72	25.26	12.63	26.79	2.784
0.61	183.8	113.7	13.7	14.06	0.544	10.01	25.16	12.58	26.64	2.79
0.628	183.8	113.7	13.7	14.06	0.546	10.31	25.07	12.54	26.6	2.783
0.646	183.8	113.5	13.5	14.26	0.54	10.61	24.98	12.49	26.75	2.752
0.664	184.8	113.4	13.4	14.36	0.535	10.9	25.04	12.52	26.88	2.743
0.682	184.8	113.1	13.1	14.66	0.525	11.2	24.94	12.47	27.13	2.701
0.7	184.8	112.9	12.9	14.86	0.519	11.5	24.85	12.42	27.29	2.672

0.718	184.8	112.8	12.8	14.96	0.517	11.79	24.76	12.38	27.34	2.655
0.736	184.8	112.9	12.9	14.86	0.523	12.09	24.66	12.33	27.19	2.66
0.754	184.8	113.1	13.1	14.66	0.533	12.39	24.57	12.29	26.95	2.676
0.772	184.8	112.9	12.9	14.86	0.527	12.69	24.48	12.24	27.1	2.647
0.79	183.8	112.8	12.8	14.96	0.528	12.98	24.24	12.12	27.08	2.62
0.808	183.8	112.7	12.7	15.06	0.526	13.28	24.15	12.08	27.14	2.603
0.826	183.8	112.6	12.6	15.16	0.524	13.58	24.06	12.03	27.19	2.587
0.844	182.8	112.6	12.6	15.16	0.529	13.87	23.83	11.91	27.07	2.572
0.862	182.8	112.8	12.8	14.96	0.539	14.17	23.74	11.87	26.83	2.586
0.88	182.8	112.8	12.8	14.96	0.541	14.47	23.64	11.82	26.78	2.58
0.898	182.8	112.7	12.7	15.06	0.539	14.76	23.55	11.78	26.84	2.564
0.917	182.8	112.6	12.6	15.16	0.537	15.06	23.46	11.73	26.89	2.548
0.935	182.8	112.5	12.5	15.26	0.535	15.36	23.37	11.69	26.95	2.532
0.953	182.8	112.5	12.5	15.26	0.537	15.65	23.29	11.64	26.9	2.526
0.971	182.8	112.4	12.4	15.36	0.535	15.95	23.19	11.6	26.96	2.51
0.989	182.8	112.8	12.8	14.96	0.554	16.25	23.1	11.55	26.51	2.544
1.007	182.8	112.6	12.6	15.16	0.547	16.55	23.01	11.51	26.67	2.518
1.025	181.8	112.5	12.5	15.26	0.549	16.84	22.79	11.39	26.65	2.493
1.043	179.8	112.5	12.5	15.26	0.557	17.14	22.42	11.21	26.47	2.469
1.061	179.8	112.4	12.4	15.36	0.555	17.44	22.34	11.17	26.53	2.454
1.079	178.8	112.3	12.3	15.46	0.556	17.73	22.11	11.06	26.52	2.43
1.097	178.8	112.3	12.3	15.46	0.558	18.03	22.03	11.01	26.47	2.425
1.115	178.8	112.6	12.6	15.16	0.574	18.33	21.94	10.97	26.13	2.447
1.133	178.8	112.5	12.5	15.26	0.572	18.62	21.85	10.93	26.19	2.432
1.151	178.8	112.4	12.4	15.36	0.57	18.92	21.77	10.88	26.24	2.417
1.169	178.8	112.3	12.3	15.46	0.567	19.22	21.68	10.84	26.3	2.402
1.187	178.8	112.2	12.2	15.56	0.565	19.51	21.59	10.8	26.36	2.388
1.201	178.8	112.1	12.1	15.66	0.562	19.74	21.53	10.76	26.43	2.375

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST SHEAR STAGE

C =       psi

PHI =     Degrees



Sample type

Sample Description

Borehole No : ST-1

Sample No: 1

Depth : 15.9-17.9

NCDOT

Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+03

Job No : T-2887

Fig No :

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
SHEAR STAGE

Job No : T-2887 05/30/36  
 Borehole No : ST-1  
 Site ref : PROJ.# 6.299001T EDGECOMBE CO. STA. 16+0  
 Sample No: 1  
 Sample depth 15.9-17.9  
 Sample type  
 Sample Description

	1	2
INITIAL CONDITIONS		
Water content %		
Wet density PCF		
SHEARING STAGE		
Initial cell pressure PSI	113.9	127.8
Initial pore pressure PSI	100	100
Initial Effective pressure PSI	13.88	27.76
Strain Rate in/min	0.009	0.009
AT MAXIMUM DEVIATOR STRESS		
Strain %	20.14	8.242
Deviator Stress PSI	20.99	25.57
Shear Stress PSI	10.49	12.79
A value	0.148	0.567
Stress ratio	1.973	1.964
AT MAXIMUM STRESS RATIO		
Strain %	4.385	4.427
Deviator Stress PSI	16.24	23.61
Shear Stress PSI	8.122	11.81
A value	0.406	0.699
Stress ratio	2.115	2.048
FINAL CONDITIONS		
Water content %		
Wet density PCF		

T-2887

Project: 6.299001T

Station: 16+03

County: Edgecombe

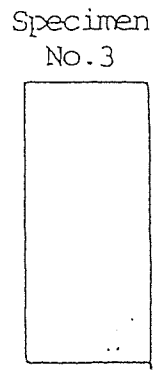
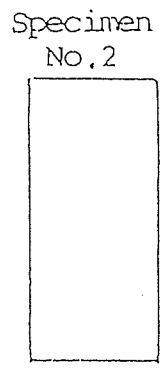
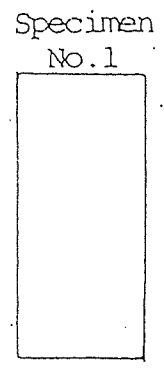
Sample No: ST-1

Depth: 15.9-17.9

SPECIMEN NUMBER		1	2	3
PRE-TEST	WATER CONTENT %	w 28.90	27.24	
	DRY DENSITY, PCF	$\gamma_d$ 89.82	97.03	
	SATURATION, %	$S_o$ 88.53	99.09	
	VOID RATIO	$e_o$ .8899	.7494	
	DIAMETER, IN.	$D_o$ 2.850	2.820	
	HEIGHT, IN	$H_o$ 6.050	6.160	
	TIME TO ( $G_1-G_3$ ) Max. Min.	t 133.92	55.69	
POST-TEST	WATER CONTENT %	$w_1$ 30.55	24.18	
	DRY DENSITY, PCF	$\gamma_{d1}$ 92.62	102.31	
	SATURATION, %	$S_1$ 100.00	100.00	
	VOID RATIO	$e_1$ .8328	.6592	
		STRAIN RATE mm/minute	.2286	.2286

LL: 38  
 PL: 18  
 PI: 20  
 G: 2.726

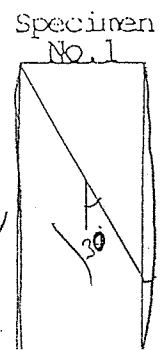
PRE-TEST  
Specimen Condition



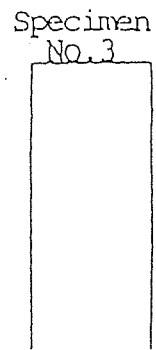
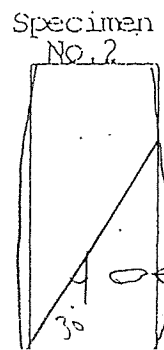
not enough material for #3

Tan Grey Silty Clay

FAILURE MODE:



same as #1



Roots & wood & carbon Inside

PROJECT PRODUCTIVITY SUMMARY REPORT

STATE PROJECT: 6.299001T ID. NO.: R2111AA PROJECT GEOLOGIST EAW

COUNTY: EDGEcombe

DESCRIPTION: US 64 RELOC. EAST of US258(NC44) INTERCHANGE in Tarboro to EAST of C.S.X. R.R. (BFI for LOOP F over -L1- REV (US64) at LOOP F STA.17+09

ROADWAY SUBSURFACE INVESTIGATION

- |   |       |
|---|-------|
| 1. Length (miles) of Roadway Investigated including "Y" lines, ramps, loops, service roads and channel changes  | N/A   |
| 2. Linear feet of auger borings   | _____ |
| 3. Linear feet of in-situ soil test borings (S.P.T, V.S.T., penetrometer test, etc.)  | _____ |
| 4. Linear feet of core borings  | _____ |
| 5. Total time (man hours) for completion of project (i.e. total time charged against this project for completion of roadway investigation)  | _____ |
| 6. Total time (man-hours) for completion of office work on this project   | _____ |
| 7. Non-productive time (man-hours). Include all time charged to project which accomplished nothing toward completion of project (i.e. time lost due to equipment breakdown, inclement weather, commuting time, to/from project site, etc.). Do not include SL, AL or Holidays | _____ |

BRIDGE FOUNDATION INVESTIGATION

- |   |       |
|---|-------|
| 1. Total Number of bents                                | 5     |
| 2. Linear feet of auger borings                         | -0-   |
| 3. Linear feet of insitu soil test borings              | 311.8 |
| 4. Linear feet of core borings                          | -0-   |
| 5. Total time (man hours) for completion                | 304   |
| 6. Total time for completion of office work (man hours) | 30    |
| 7. Non-productive time (man hours)                      | 50    |

PROJECT PRODUCTIVITY SUMMARY REPORT

STATE PROJECT: 6.29900IT ID. NO.: R2111AA PROJECT GEOLOGIST EAW

COUNTY: Edgecombe

DESCRIPTION: US 64 Reloc. East of US 258 (NK 44) Interchange in Tarboro  
to E. of CSX RR (BFI for Loop F over -LI- Rev (US 64) @ Loop F  
STA. 17+09

ROADWAY SUBSURFACE INVESTIGATION

- |   |                             |
|---|-----------------------------|
| 1. Length (miles) of Roadway Investigated including "Y" lines, ramps, loops, service roads and channel changes  | <u>NA</u>                   |
| 2. Linear feet of auger borings   | <u>                    </u> |
| 3. Linear feet of in-situ soil test borings (S.P.T, V.S.T., penetrometer test, etc.)  | <u>                    </u> |
| 4. Linear feet of core borings  | <u>                    </u> |
| 5. Total time (man hours) for <u>completion</u> of project (i.e. total time charged against this project for completion of roadway investigation)   | <u>                    </u> |
| 6. Total time (man-hours) for completion of office work on this project   | <u>                    </u> |
| 7. Non-productive time (man-hours). Include all time charged to project which accomplished nothing toward completion of project (i.e. time lost due to equipment breakdown, inclement weather, commuting time, to/from project site, etc.). Do not include SL, AL or Holidays | <u>                    </u> |

BRIDGE FOUNDATION INVESTIGATION

- |   |              |
|---|--------------|
| 1. Total Number of bents                                | <u>5</u>     |
| 2. Linear feet of auger borings                         | <u>-0-</u>   |
| 3. Linear feet of insitu soil test borings              | <u>311.8</u> |
| 4. Linear feet of core borings                          | <u>-0-</u>   |
| 5. Total time (man hours) for completion                | <u>304</u>   |
| 6. Total time for completion of office work (man hours) | <u>30</u>    |
| 7. Non-productive time (man hours)                      | <u>50</u>    |



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT, JR.  
GOVERNOR

DIVISION OF HIGHWAYS  
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

SAM HUNT  
SECRETARY

September 17, 1993

STATE PROJECT: 6.299001T R-2111AA  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44)  
Interchange in Tarboro to East of CSX Railroad  
SUBJECT: Geotechnical Report - Foundation Investigation  
for Bridge on Loop F over -L1- Rev. (US 64)  
at Loop F Station 17+09

Site Description

The bridge site is located at the proposed Loop F flyover of US 64 just east of Tarboro. Based on the proposed design, the structure will consist of four spans with an overall length of 200 feet. The bents will have a skew of 85 degrees, 21 minutes and 49 seconds.

One Standard Penetration Test (SPT) boring was made at or close to each of the five proposed bent locations to provide subsurface information relative to foundation design. The SPT borings were made with an ATV mounted CME-45B drill machine and advanced by rotary drilling methods using bentonite drilling fluid.

The proposed structure is located on and adjacent to the existing US 64 embankment approximately 1,000 feet east of the Tar River. Elevations at the site typically range from 30 to 48 feet above MSL. Ground water was measured at elevations ranging from 22 to 24 feet above MSL.

Foundation Description

Subsurface conditions at the bridge site are generally uniform. Geologically, the site consists of approximately 55 feet of Pleistocene to Recent age alluvium underlain by the Cape Fear Formation of Upper Cretaceous age. The existing US 64 embankment, which is up to 24 feet high and constructed of loose to very dense (9 to 100+ BPF) fine to coarse sand (A-2-4, A-1-b), overlies natural ground at End Bent 1, Bent 1 and Bent 2. Approximately 2 to 3 feet of ditch spoil consisting of very loose to loose (2 to 8 EPF) fine to coarse sand (A-3) overlies the natural ground surface at Bent 3 and





End Bent 2. A 4 to 9 foot thick surficial bed of soft to very stiff (3 to 22 BPF) silty fine sandy clay (A-6, A-7-6) and clayey fine sandy silt (A-4) underlies the embankment material and ditch spoil at End Bent 1 through Bent 3. A sample of fine sandy clay taken at End Bent 1 was tested at 38 percent natural moisture. An undisturbed (Shelby Tube) sample was also obtained in the clay layer and submitted for Triaxial CU and Consolidation testing. Medium dense to very dense (11 to 100+ BPF) fine to coarse alluvial sand (A-2-4, A-3, A-1-B) underlies the surficial soils at an elevation of 18 to 31 feet. A 4 to 5 foot thick interbed of very stiff (22 BPF) silty fine sandy clay (A-6) occurs within the granular alluvium at Bent 3 and End Bent 2 at an elevation of 5± feet. The Cape Fear Formation consisting of hard (35 to 41 BPF) silty and sandy clay (A-6, A-7-6) was encountered in borings B3-B and EB2-A at an elevation of -24 to -26 feet above MSL.

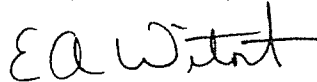
#### Geologic Foundation Recommendations

A pile foundation is recommended for this structure. An excess of 30 tons bearing with 12-inch concrete piles should be achieved at an elevation of 9 to 14 feet in medium dense to very dense sand. Preboring, jetting or other means may be necessary to penetrate the dense to very dense embankment material at End Bent 1, Bent 1 and Bent 2.

#### End Bent Slopes

Based on the proposed design, the fill height will be approximately 38 feet at the end bents. End bent slopes of 1.5:1 are recommended for this structure. No stability or settlement problems are anticipated at the end bents. Soil which meets Coastal Plain Criteria is available in nearby areas. Slope protection should be used on the end slopes.

Respectfully submitted,



E. A. Witort  
Transportation Engineering Geologist III

EAW:ts

A-1  
**NORTH CAROLINA DIVISION OF HIGHWAYS**  
**GEOTECHNICAL UNIT**

**SOIL AND ROCK CLASSIFICATION, LEGEND, AND ABBREVIATIONS**

SOIL LEGEND AND AASHTO CLASSIFICATION										CONSISTENCY OR DENSENESS				
GENERAL CLASS.	GRANULAR MATERIALS (≤ 35% PASSING #200)			SILT-CLAY MATERIALS (> 35% PASSING #200)				ORGANIC MATERIALS			PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (BLOWS PER FOOT)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (qu) (TONS/FT <sup>2</sup> )
GROUP CLASS.	A-1	A-3	A-2	A-4	A-5	A-6	A-7	A-1-A-2	A-4, A-5	A-6, A-7				
SYMBOL														
% PASSING	#10 #40 #200	50 MX 30 MX 50 MX 15 MX 25 MX	51 MN 10 MX	35 MX 35 MX	35 MX 35 MX	35 MX 35 MX	36 MN 36 MN	36 MN 36 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN
(PASSING #40)	LL PI	6 MX	N.P.	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	40 MX 41 MN 10 MX 10 MX	41 MN 41 MN 11 MN 11 MN	
GROUP INDEX	0	0	0	4 MX	8 MX	12 MX	16 MX	NO MX						
USUAL TYPES OF MAJOR MATERIALS	STONE FRAGS. GRAVEL & SAND	FINE SAND	SILTY OR CLAYEY GRAVEL AND SAND	SILTY SOILS		CLAYEY SOILS		SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER			GRANULAR SOILS	SILT-CLAY SOILS	MUCK, PEAT	HIGHLY ORGANIC SOILS

\* PI OF A-7-5 ≤ (LL-30); PI OF A-7-6 > (LL-30)

TEXTURE OR GRAIN SIZE						
BOULDER	COBBLE	GRAVEL	COARSE SAND	MED. SAND	FINE SAND	SILT CLAY
GRAIN (MM)	305	75	2	0.6	0.425	0.2 0.075 0.002
SIZE (IN)	12'	3'				

SOIL MOISTURE - CORRELATION OF TERMS		
SOIL MOISTURE SCALE (ATTERBERG LIMITS)	FIELD MOISTURE DESCRIPTION	GUIDE FOR FIELD MOISTURE DESCRIPTION
LL LIQUID LIMIT	-SATURATED- (SAT.)	USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE
PLASTIC RANGE (PI) PL PLASTIC LIMIT	-WET- (W)	SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE
OM OPTIMUM MOISTURE	-MOIST- (M)	SOLID; AT OR NEAR OPTIMUM MOISTURE
SL SHRINKAGE LIMIT	-DRY- (D)	REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE

ROCK DESCRIPTION		
<p>IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF 'WEATHERED ROCK'. FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:</p>		
TERM	SYMBOLS	DESCRIPTION
HARD ROCK (HR)	 	MATERIAL THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE
WEATHERED ROCK (WR)		MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGERS AND YIELDS SPT REFUSAL
		MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGERS AND YIELDS SPT VALUES > 100 BPF BUT < SPT REFUSAL

<sup>1</sup> SPT REFUSAL ≤ 1 INCH OF PENETRATION PER 50 BLOWS.  
<sup>2</sup> AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. THE HARD ROCK SYMBOL IS SHOWN WHEN ROCK IS CORED AND ONLY TO THAT DEPTH CORED. A DESCRIPTION OF ROCK IS GIVEN, INCLUDING:

CORE RECOVERY (REC.) - TOTAL LENGTH OF ROCK RECOVERED IN THE CORE BARREL DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.

ROCK QUALITY DESIGNATION (ROQ) - TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 4" DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.

SEAL

E.A. Witort, Jr.

Signature

CONSISTENCY OR DENSENESS			
PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (BLOWS PER FOOT)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (qu) (TONS/FT <sup>2</sup> )
GENERALLY GRANULAR MATERIAL	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A
GENERALLY SILT-CLAY MATERIAL	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	< 2 2 TO 4 4 TO 8 8 TO 15 15 TO 30 > 30	< .25 .25 TO .5 .5 TO 1 1 TO 2 2 TO 4 > 4

GROUND WATER	
	WATER LEVEL IN BORE HOLE [IMMEDIATELY AFTER DRILLING (I.A.D.) SOON AFTER DRILLING (S.A.D.) HRS.]
	STATIC WATER LEVEL (AFTER 24 HRS.)
	PERCHED WATER (PW), SATURATED ZONE, OR WATER BEARING STRATA
	SPRING OR SEEPAGE

MISCELLANEOUS SYMBOLS AND ABBREVIATIONS			
	ROADWAY EMBANKMENT WITH SOIL DESCRIPTION		TEST BORING
	SOIL SYMBOL		AUGER BORING
	ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS		CORE BORING
	INFERRED SOIL BOUNDARIES		PIEZOMETER INSTALLATION
	STRIKE AND DIP OF BEDS		SLOPE INDICATOR INSTALLATION
	APPARENT DIP (NORMAL TO _____)		SPT N-COUNT
	ROD SOUNDING		

ABBREVIATIONS			
ALLUV.	ALLUVIUM	MIC.	MICACEOUS
AR	AUGER REFUSAL	MOT.	MOTTLED
BLDR.	BOULDER	NS	NO SAMPLE TAKEN
BPF	BLOWS PER FOOT	ORG.	ORGANIC
CALC.	CALCAREOUS	REF.	REFER TO
CL.	CLAY	RES.	RESIDUAL
CLY.	CLAYEY	S.	SOFT
COB.	COBBLE	SAT.	SATURATED
CSE.	COARSE	SD.	SAND
DPT	DYNAMIC PENETRATION TEST	SOY.	SANDY
EST.	ESTIMATED	SED(S).	SEDIMENT(S)
F.	FINE	SL.	SILT, SILTY
FOSS.	FOSSILIFEROUS	SLL.	SLIGHTLY
FRAC.	FRACTURED	SPT	STANDARD PENETRATION TEST
FRAG(S).	FRAGMENT(S)	TS.	TOPSOIL
GR.	GRAVEL	VST	VANE SHEAR TEST
GS	SPECIFIC GRAVITY	V.	VERY
GW	GROUND WATER	W/	WITH
MED.	MEDIUM		

BENCH MARK: #6 RAILROAD SPIKE IN BASE OF 15" PINE -LI- EBL STATION 74+84, 115' RT. ELEVATION: 35.65'

STATE PROJECT NO. 6.29900IT

T.I.P. NO. R-2111AA F.A. NO. \_\_\_\_\_

COUNTY EDGECOMBE ROUTE US 64

SITE DESCRIPTION LOOP F OVER -LI- REV. (US 64)

PROJECT GEOLOGIST EAW SUBMITTED BY RRW

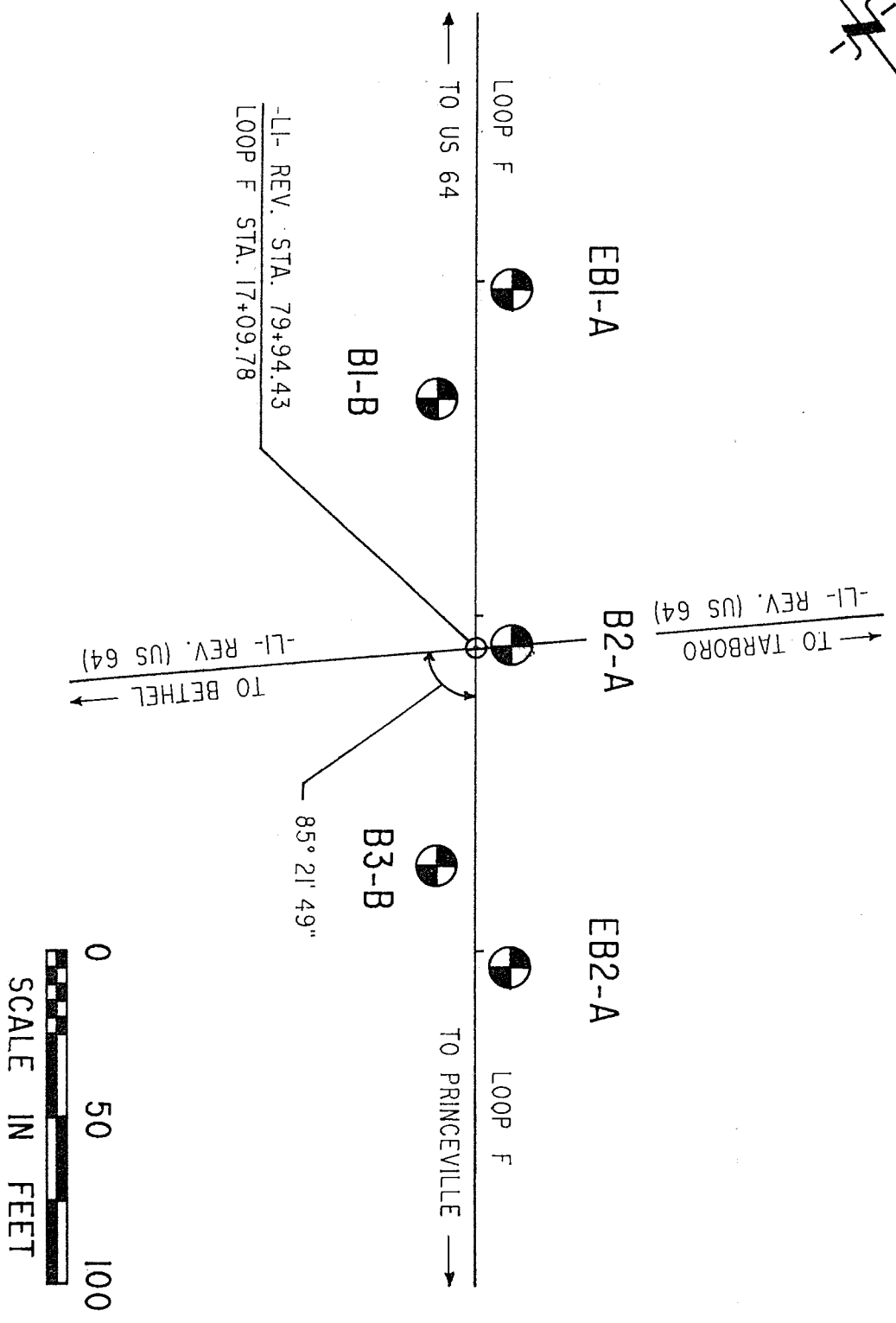
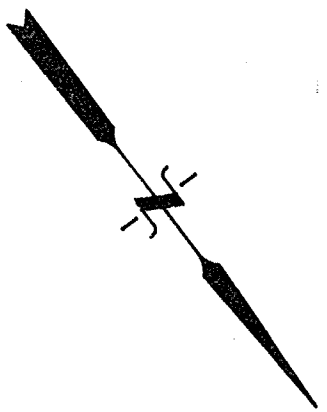
PERSONNEL RLE  
LWD  
MGW  
JBM

DATE SUBMITTED 9/93



# LOOP F OVER -LI- REV. (US 64)

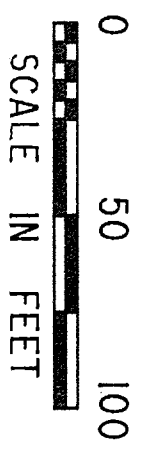
6.29900IT R-211IAA  
EDGECOMBL CO.  
(A-2)



16+00

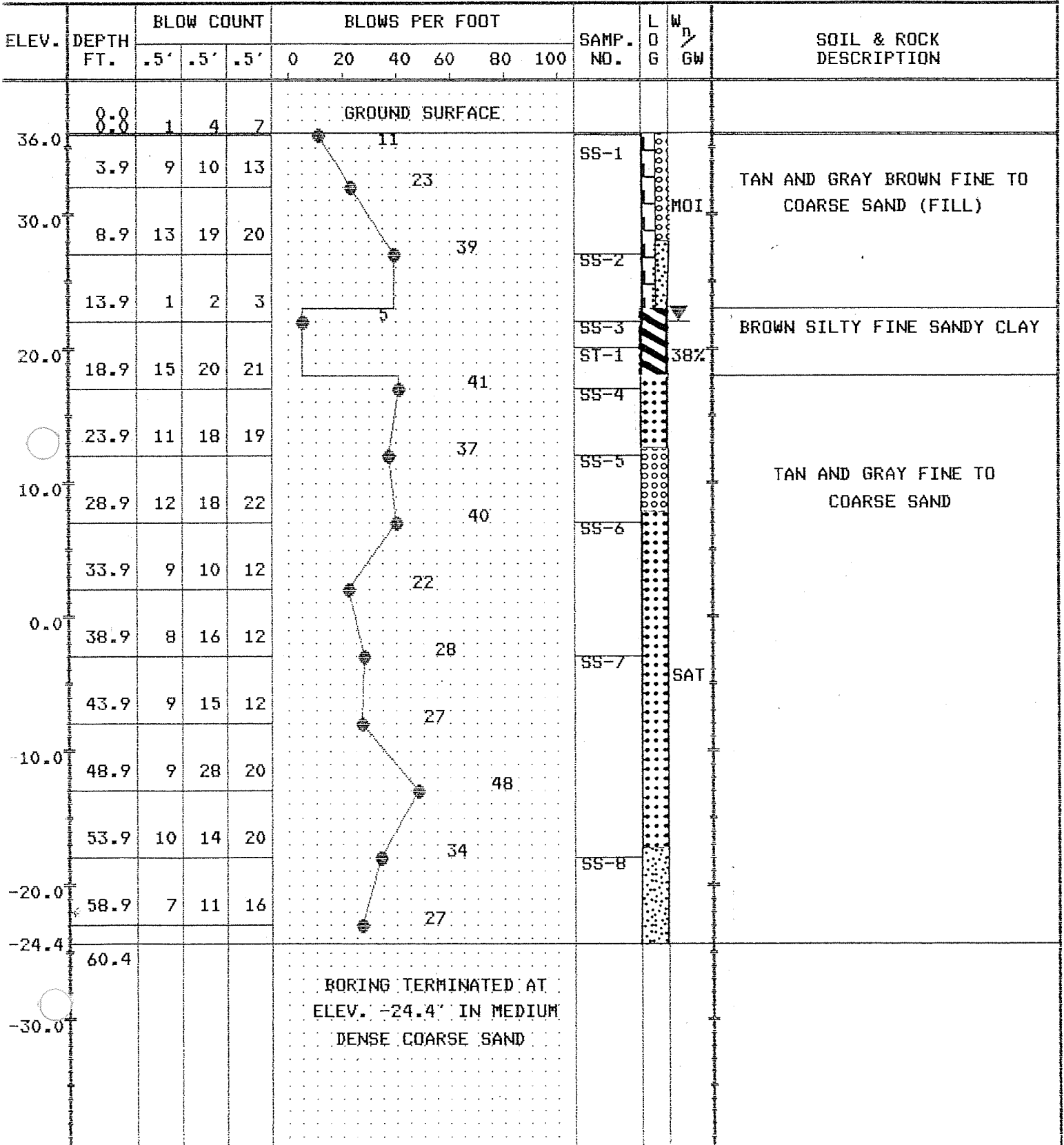
17+00

18+00



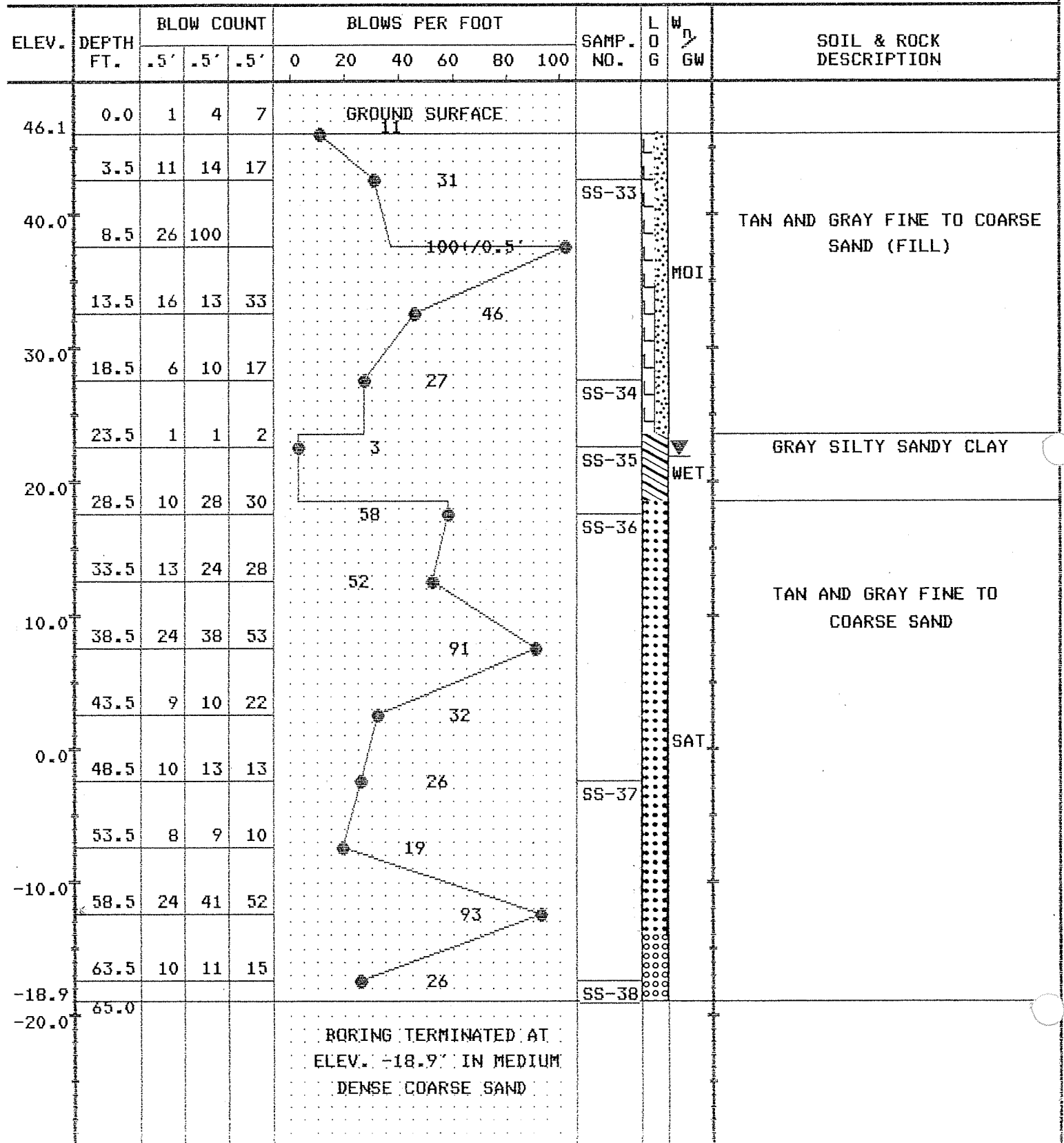
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R.L. EDWARDS
SITE DESCRIPTION LOOP F OVER -L1- REV. (US 64)			
BORING NO. EB1-A	BORING LOCATION (STA.) 16+03		OFFSET 11' LT.
COLLAR ELEV. 36.0'	DATE STARTED 7/21/93	DRILL MACHINE CME-45B	GROUND WATER 0 HR. N.M.
TOTAL DEPTH 60.4'	DATE COMPLETED 7/21/93	DRILL METHOD ROT-MUD	24 HR. 14.0



# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST E.A. WITORT
SITE DESCRIPTION LOOP F OVER -L1- REV. (US 64)			
BORING NO. B1-B	BORING LOCATION (STA.) 16+35	OFFSET 11' RT.	GROUND WATER
COLLAR ELEV. 46.1'	DATE STARTED 8/3/93	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 65.0'	DATE COMPLETED 8/3/93	DRILL METHOD ROT-MUD	24 HR. 24.2







**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R.L. EDWARDS
SITE DESCRIPTION LOOP F OVER -LI- REV. (US 64)			
BORING NO. EB2-A	BORING LOCATION (STA.) 18+05	OFFSET 11' LT.	GROUND WATER
COLLAR ELEV. 33.2'	DATE STARTED 8/2/93	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 60.5'	DATE COMPLETED 8/2/93	DRILL METHOD ROT-MUD	24 HR. 10.0

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W / G W	SOIL & ROCK DESCRIPTION
		.5'	.5'	.5'	0	20	40	60	80				
33.2	0.0	0	1	1	GROUND SURFACE								
30.0	4.0	8	7	8	15					SS-26	MOI	DRY	TAN COARSE SAND (DITCH SPOIL)
	9.0	4	5	6	11					SS-27			TAN BROWN AND GRAY FINE TO COARSE SAND
20.0	14.0	9	9	11	20					SS-28			
	19.0	5	7	19	26							SAT	
10.0	24.0	10	16	19	35								
	29.0	5	9	13	22					SS-29		WET	GRAY SILTY FINE SANDY CLAY
0.0	34.0	8	21	18	39					SS-30			
	39.0	48	74	26	100/0.7'					SS-31			GRAY FINE TO COARSE SAND
-10.0	44.0	9	10	13	23							SAT	
	49.0	6	7	17	24								
-20.0	54.0	9	16	16	32								
	59.0	12	16	19	35					SS-32		WET	DARK BROWN SILTY FINE SANDY CLAY
-27.3	60.5				BORING TERMINATED AT ELEV. -27.3' IN HARD SILTY FINE SANDY CLAY								



12 No.  
1/19/93

NUMBER	SAMPNUMBER	PASS10	PASS40	PASS200	CS SAND	FINE SAND	SI	CL	LL	PI	CLASS	DEPTH	MOISTURE	ORGANIC
1-A	SS-1	84	49	12	66	21	5	8	17	NP	A1B(0)	0.0-1.5	37.5	
	SS-2	91	54	13	62	25	5	8	16	NP	A24(0)	8.9-10.4		
	SS-3	100	97	68	7	29	24	40	41	20	A76(11)	13.9-15.4		
	SS-4	99	57	6	72	22	3	3	20	NP	A3(0)	18.9-20.4		
	SS-5	82	36	9	77	13	4	6	17	NP	A1B(0)	23.9-25.4		
	SS-6	100	65	5	78	18	2	2	17	NP	A3(0)	28.9-30.4		
	SS-7	99	64	8	67	26	4	3	18	NP	A3(0)	38.9-40.4		
	SS-8	90	21	8	84	8	4	4	25	7	A24(0)	53.9-55.4		
-A	SS-9	97	68	11	61	28	5	6	16	NP	A24(0)	0.0-1.5		
	SS-10	92	61	17	50	32	8	10	15	NP	A24(0)	9.0-10.5		
	SS-11	100	94	56	20	25	21	34	33	12	A6(5)	14.0-15.5		
	SS-12	99	68	17	55	29	7	9	23	NP	A24(0)	19.0-20.5		
	SS-13	96	56	5	76	19	2	3	20	NP	A3(0)	24.0-25.5		
	SS-14	100	92	4	50	46	1	3	21	NP	A3(0)	39.0-40.5		
	SS-15	100	33	3	93	4	1	2	19	NP	A1B(0)	54.0-55.5		
	SS-16	96	49	11	75	14	5	6	18	NP	A1B(0)	64.0-65.5		
-B	SS-17	94	53	9	69	22	5	4	20	NP	A3(0)	0.0-1.5		
	SS-18	100	98	52	10	42	32	16	20	2	A4(3)	3.9-5.4		
	SS-19	100	95	59	8	40	42	10	35	13	A6(7)	8.9-10.4		
	SS-20	100	73	18	52	31	13	4	19	NP	A24(0)	13.9-15.4		
	SS-21	94	30	5	87	8	3	2	17	NP	A1B(0)	18.9-20.4		
	SS-22	100	95	76	9	25	52	14	38	14	A6(10)	28.9-30.4		
	SS-23	100	82	8	59	33	4	4	15	NP	A3(0)	33.9-35.4		
	SS-24	100	50	7	80	13	4	3	21	NP	A3(0)	48.9-50.4		
	SS-25	99	97	72	5	28	49	18	42	28	A76(15)	58.9-60.4		
	SS-26	100	97	18	29	56	7	8	18	NP	A24(0)	4.0-5.5		
2-A	SS-27	96	60	8	59	35	3	3	15	NP	A3(0)	9.0-10.5		
	SS-28	100	87	9	55	36	6	3	18	NP	A3(0)	14.0-15.5		
	SS-29	100	98	80	3	27	37	33	36	16	A6(10)	29.0-30.5		
	SS-30	100	82	5	62	34	2	2	18	NP	A3(0)	34.0-35.5		
	SS-31	100	88	8	49	45	4	2	20	NP	A3(0)	39.0-40.2		
	SS-32	100	98	55	6	51	35	8	36	18	A6(7)	59.0-60.5		
	SS-33	98	67	15	54	33	5	8	17	NP	A24(0)	3.5-5.0		
	SS-34	93	60	25	54	22	10	14	20	5	A24(0)	18.5-20.0		
	SS-35	97	88	56	20	24	17	39	39	19	A6(8)	23.5-25.0		
	SS-36	95	67	7	54	40	3	3	16	NP	A3(0)	28.5-30.0		
-B	SS-37	100	90	4	59	37	2	2	16	NP	A3(0)	48.5-50.0		
	SS-38	92	17	4	89	7	2	2	23	6	A1B(0)	63.5-65.0		

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

R.2111AA

PROJECT NO. G.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P  
 BRIDGE ON L00p F OVER L1 REV  
 BORING LOCATION (STA.) 16+03 OFFSET 11 LT  
 BORING NO. EB1-A GEOLOGIST RLC GROUND WATER 0 HRS. NM 24 HRS. 14.0'  
 COLLAR ELEV. 36.0 DATE STARTED 7-21-93 DRILL EQUIPMENT CME 45B  
 TOTAL DEPTH 60.4 DATE COMPLETED 7-21-93 Rot-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0	1	A	7	SS-1	TAN ISLN CLY SLF-CSESD m w/CLY LAYERS <del>A-2</del> (RDWY FILL)		⊙11	
3.9	9	10	13		A-1-b (FILL) SAME AS ABOVE	"	⊙23	
8.9	13	19	20	SS2	GRAY BRN SLF-CSESD (FILL) <del>A-1</del> & <del>A-2</del>	"	⊙39 (RDWY FILL)	
13.9	1	2	3	SS3	CL AT 13.0 BENJAMIN SL CL	"	⊙5 SOFTEN DRILLING AT 13.1	
18.9	15	20	21	SSA	REC. 1.16 SL CL MED STIFF - STIFF SL - PUSH 15.9 - 17.9 (A-7-b)	"	SD BEGAN AT 18.0 V. HARD AT 18.0	
23.9	11	18	19	SS5	GRAY TAN SLF-CSESD A-3/A-2	"	⊙A1	
28.9	11	18	19	SS5	GRAY TAN F-CSESD / GRAVEL A-1-b	"	⊙37	
33.9	12	18	22	SS6	GRAY SLF-CSESD TAN TO GRAY A-3	"	⊙40	
38.9	9	10	12		SAME AS ABOVE A-3	"	⊙22	
43.9	8	16	12	SS7	GRAY SLF-CSESD A-3	"	⊙28	
48.9	9	15	12		SAME AS ABOVE A-3	"	⊙27	
53.9	9	28	20		SAME AS ABOVE A-3	"	⊙48	
58.9	10	14	20	SS8	GRAY CSESD / GRAVEL w/CLY LAYERS <del>A-1</del> & <del>A-2</del>	"	⊙3A	
	7	11	16		SAME A-2-4	"	⊙27	

55  
116  
-----  
319

PRELIMINARY FOUNDATION INFO.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET \_\_\_ OF \_\_\_

R.2111A

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON LOOP F OVER F1 REV  
 BORING LOCATION (STA.) 16+35 OFFSET 11' RT  
 BORING NO. B1-B GEOLOGIST EAW GROUND WATER 0 HRS. UM 24 HRS. 24.2'  
 COLLAR ELEV. 46.1 DATE STARTED 8-3-93 DRILL EQUIPMENT CMEAS B  
 TOTAL DEPTH 65.0 DATE COMPLETED " ROT-MUD

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0								
	3.5	1	4	7	TAN CLY F-CSE SAND FILL	DRY	Q11	
	8.5	11	14	17	TAN SILTY F-CSE SD (FILL)	MOI	Q12	
	13.5	26	100		TAN F-CSE SD (FILL)	"	V. HARD AT 9.0' Q100	
	18.5	16	13	33	DARK GRAY F-CSE SD W/ CLAY LAMER (FILL)	MOI	Q14	
	23.5	6	10	17	DARK GRAY CLY SAND SUPPORT AT 22.5' (FILL)	"	Q27	
	28.5	1	1	2	DARK GRAY SILTY CLAY NAT FIRMER AT 27.5' ±	WET	Q3	
	33.5	10	28	30	TAN & GRAY F-CSE SD A3	SAT	Q58	
	38.5	13	24	28	SAME AS ABOVE A3	SAT	Q52	
	43.5	24	38	53	SAME AS ABOVE A3	"	Q41	
	48.5	9	10	22	SAME AS ABOVE A3	"	Q32	
	53.5	10	13	13	GRY GRN F-CSE SD A3	SAT	Q26	
	58.5	8	9	10	SAME AS ABOVE A3	"	Q14	
✓	65.0	24	41	52	SAME AS ABOVE A3		Q93	

5.9      5.5  
 2.4      1.4  
 ---      ---  
 3.5      3.9

PRELIMINARY FOUNDATION INFO.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 2

PROJECT NO. R.2111AA COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON LOOP F OVER -LI-REV  
 BORING LOCATION (STA.) 17+09 OFFSET 11'LT  
 BORING NO. B2-A GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 150  
 COLLAR ELEV. 39.0 DATE STARTED 7-22-93 DRILL EQUIPMENT CME 45B,  
 TOTAL DEPTH 65'5 DATE COMPLETED 7-22-93 ROT-MUD

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0							
	4.0	1	3	6	SS-9	TAN BRN SLF-CSESD A-3 (RDWY FILL)	m	W HARD AT 2'0
	9.0	16	27	31		SAME AS ABOVE A-3	"	58
	14.0	10	17	23	SS10	GRAY CLY SLF-CSESD W/ CLY LAYERS A-2-X (RDWY FILL) CLY AT 13.0	"	QAD (0-12.0 RDWY FILL)
	19.0	2	3	3	SS11	DR. GRAY SL SBY CL A-6/A-7-6	WET	06
	24.0	2	8	15	SS12	GRAY CLY SLF-CSESD A-2-A	SAT	022
	29.0	9	16	17	SS13	GRAY TAN SLF-CSESD A-3	SAT	033
	34.0	13	14	13		SAME AS ABOVE A-3	"	027
	39.0	6	9	10		SAME A-3	"	019
	44.0	6	8	17	SS14	GRAY TAN SLF-CSESD A-3	"	025
	49.0	15	20	26		SAME AS ABOVE	"	046
	54.0	10	16	26		SAME A-3	"	042
	59.0	6	11	13	SS15	GRAY TAN CLF-CSESD A-3	"	024
	65.0	9	10	13		SAME A-3	"	023

6.2  
2.2  
4.0

PRELIMINARY FOUNDATION INFO.



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

R.2111AA

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C/P  
 BRIDGE ON LOOP F OVER L-REV  
 BORING LOCATION (STA.) 17+75 OFFSET 11RT  
 BORING NO. B3-B GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 8.0'  
 COLLAR ELEV. 31.8 DATE STARTED 7-23-93 DRILL EQUIPMENT CME 45B  
 TOTAL DEPTH 60.4 DATE COMPLETED 7-23-93 Rot-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0	1	3	5	SS17	TAN SLT-F-CSE SD	m	Q8	
3.9					A-3			
14.2	14	12	10	SS18	TAN BRN CLY SLT SD	"	Q22	
8.9					A-2-A			
5.7	5	7	13	SS19	GRAY SLT SDY CL	"	Q20 CLY AT 8.9	
13.9					A-6/A-7-6		CLY END 12.0	
12.17	12	17	19	SS20	TAN GRAY SLT-F-CSE CLY SD	SAT	Q36	
18.9					A-2-6/A-2-4			
15.15	15	15	18	SS21	GRAY SLT-F-CSE SD/GRAVEL	"	Q23	
23.9					A-3			
15.17	15	17	19		SAME AS ABOVE	"	Q36	
28.9					A-3			
6.10	6	10	12	SS22	GRAY F SDY SL CL	W	Q27	
33.9					A-7-6 Change to SD at 32.0			
12.15	12	15	23	SS23	GRAY SLT-F-CSE SD	SAT	Q38	
38.9					A-3			
8.19	8	19	17		SAME AS ABOVE	"	Q36	
43.9					A-3			
9.10	9	10	14		SAME A-3	"	Q24	
48.9								
11.9	11	9	13	SS24	GRAY SLT-F-CSE SD/GRAVEL	"	Q22	
53.9					A-3/A-1-B			
10.13	10	13	15		SAME AS ABOVE A-3	"	Q28	
58.9								
12.20	12	20	21	SS25	SL CL 12% TAN AT 58.0 DIG. T. RE. V. M. C. F. SDY SL CL	K	Q21	

B2-A 24hr 12.0 A-7-6

PRELIMINARY FOUNDATION INFO.

Next Sample  
SS-2<sup>6</sup>

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET \_\_\_ OF \_\_\_

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CP  
BRIDGE ON LOOP F OVER -L'- REX.  
BORING LOCATION (STA.) 18+05 OFFSET 11' LT  
BORING NO. EB2-A GEOLOGIST FAW GROUND WATER 0 HRS. NM 24 HRS. 10.0'  
COLLAR ELEV. 33.2 DATE STARTED 8-2-93 DRILL EQUIPMENT CMIZ 45-B  
TOTAL DEPTH 60.5' DATE COMPLETED 11 ROT-MUD

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
		0	1	1				
	4.0	8	7	8	SS-26	0-1/2 TAN F-CSE SD DITCH SOIL TAN F. SDY SILT A-4	DRY	0.2
						BROWN F SAND A2-4	MOI	0.15
	9.0	4	5	6	SS-27	TAN F-CSE SAND A2-4/A-1-6	SAT	0.11
	14.0	9	9	11	SS-28	GRAY FINE SAND A3	"	0.20
	19.0	5	7	19		SAME AS ABOVE A3		0.26
	24.0	10	16	19		SAME AS ABOVE A3		0.35
	29.0	5	9	13	SS-29	28 GRY E-SANDY SILTY CLAY WET A7-16	WET	0.20
	34.0	28	21	18	SS-30	TAN-32 GRY E-CRS SD A3	SAT	HARDER A3 0.39 37.5
	39.0	48	74	28	SS-31	100/0.7 WET-GRY E-CRS SD A3	"	
	44.0	9	10	13		SAME AS ABOVE A3	SAT	0.23
	49.0	6	7	17		SAME AS ABOVE A3	SAT	0.24
	54.0	9	16	16		SAME AS ABOVE A3	SAT	0.32
	59.0				SS-32	57 K DURAN GRY SL CLY		0.35

Slapped \*  
AT 50"  
2.5" AT  
2M

5.9  
1.9  
4.0

5.6  
1.2  
1.3  
1.9

Next  
HLD of B3-P  
8'

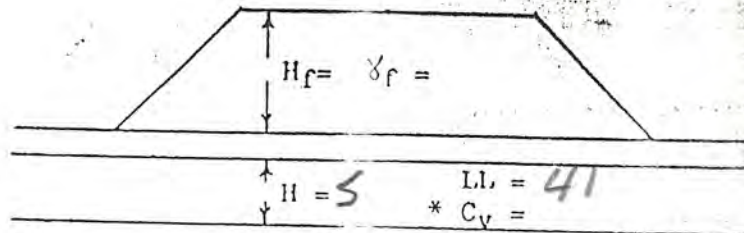
PRELIMINARY FOUNDATION INFO.






TIME RATE OF SETTLEMENT

STATION 61299001 T  
 ANALYZED R-2111 A/R  
 DATE Loop F  
 9-13-93



C <sub>v</sub> (ft <sup>2</sup> /day) from LL chart	
LL	C <sub>v</sub>
32	0.614
34	0.475
36	0.372
38	0.298
40	0.238
42	0.193
44	0.158
46	0.130
48	0.109
50	0.095
52	0.081
54	0.071
56	0.061
58	0.053
60	0.047
62	0.041
64	0.035
66	0.032
68	0.029
70	0.026
75	0.021
80	0.018
85	0.015
90	0.013
95	0.012
100	0.010
110	0.009
120	0.008

$t = T \left( \frac{H}{N} \right)^2 \frac{1}{C_v}$

t = Time in days  
 T = % Consolidation vs Time Factor  
 H = Thickness of compressible layer (ft)  
 N = Number of drainage surfaces  
     N = 1 if permeable above or below  
     N = 2 if permeable above and below  
 C<sub>v</sub> = Coefficient of Consolidation (ft<sup>2</sup>/day)

% U
25
50
75
90
95

(cm<sup>2</sup> =

SKETCH AND CALCULATIONS:

$t = \frac{0.475 \left( \frac{5}{2} \right)^2}{0.215} = 24 \text{ days}$

.215

.238  
 .193  
 -----  
 .045  
 2.25

.238  
 23  
 -----  
 215

\* If lab test is available, use C<sub>v</sub> for lo increment corresponding of interest. (q = H<sub>f</sub> \gamma<sub>f</sub>)

NORTH CAROLINA  
 DEPARTMENT OF TRANSPORTATION  
 GEOTECHNICAL UNIT

R-211 AA  
 LOOP

LEVEL NOTES FOR FOUNDATION BORINGS  
 Sheet 1

BENCH MARK \_\_\_\_\_  
 ELEVATION \_\_\_\_\_

INSTRUMENTMAN LWD  
 RODMAN RHE  
 DATE 7-30-93

STATION	(+)BS	H.I.	(-)FS.	(-)ROD	ELEV.	NOTES
	2.83	38.78			35.95	FB1-A
15+60				8.03	30.75	
15+71				5.39	33.39	
15+97				4.38	34.40	
16+00	11.78	46.79	3.77		35.01	TACK PT
16+36				0.24	46.55	SP
16+35	4.90	50.98	0.71		46.08	11' RT B1-B
16+40				3.56	47.42	EDP
16+62				3.09	47.89	2
16+78				3.58	47.40	EDP
16+88				4.60	46.38	
16+96				7.31	43.67	SP
17+09	2.22	41.24	11.94	39.04	39.04	11' LT B2-A
17+00				0.01	41.25	79+71 UREV
17+100				2.21	39.00	EQUALITY IRON PIN
17+20				4.58	36.68	
17+46				6.03	35.23	
17+50	2.51	36.76	7.01	7.0	34.25	IRON PIN
17+77				5.72	31.04	
17+82				7.49	29.27	
17+88				12.68	24.08	Ditch
17+90				12.68	24.08	
17+95				3.83	32.93	
17+98				2.95	33.81	





N.C. DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT

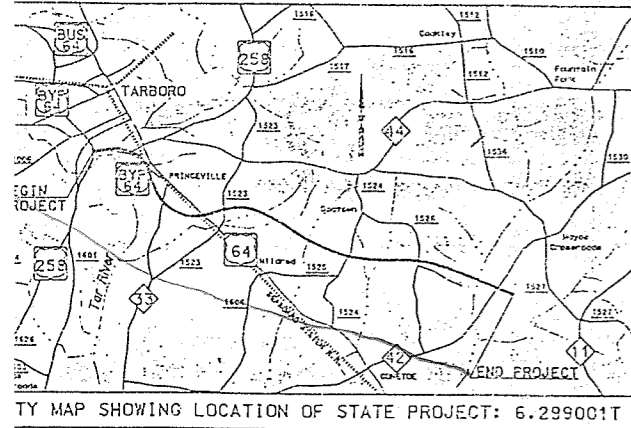
STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
6 299 001T	2	88

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION		TERMS AND DEFINITIONS																																																																																							
<p>BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED BY POWER AUGER, AND WHICH YIELDS LESS THAN 100 B.P.F. ACCORDING TO THE STANDARD PENETRATION TEST. CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL TYPE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY SILTY CLAY, MOIST WITH INTERBEDDED SILT PLASTIC, 1-7-6.</i></p>		<p>ALLUVIUM (alluv.) - Soils which have been transported by flowing water. APPARENT DIP - The dip of rock strata not perpendicular to strike. AQUIFER - A water-bearing formation or strata. AUGER REFUSAL (A.R.) - Point at which power augers will not actually or practically penetrate. BEDDED - Soil or rock lying in a position essentially parallel. BEDROCK - Rock of relatively great thickness and extent in its original location. CALCAREOUS (calc.) - Soils which contain appreciable amounts of calcium carbonate. COHESIVE SOIL - A soil that when unconfined has considerable dry strength and significant cohesion when submerged. COLLUVIUM - Rock fragments mixed with soil deposited by gravity on slope or at bottom of slope. CORE RECOVERY (% Rec.) - Total length of all rock divided by total length of core run expressed as a percentage. COQUINA - A rock type composed essentially of marine shells cemented by calcium carbonate. DIKE - Igneous rock intrusive which is narrow compared with its other dimensions. DIP - The angle between a bedding plane, joint plane or fault plane and the horizontal, measured perpendicular to the strike. DUMPS - Uncovered deposits of waste materials such as wood, masonry debris or garbage. FAULT - A break in the continuity of a body of rock, attended by a movement on either or both sides of the break. FINES - Portion of a soil finer than No. 200 U. S. Standard Sieve. FISSILITY OR FISSILE - A property of splitting easily along closely spaced parallel planes. FLOAT - Rock fragments on surface near their original position dislodged from parent material. FLOODPLAIN - Land bordering a stream, built of sediments deposited by the stream. FORMATION - A mappable unit that can be recognized and traced in the field. FRACTURE - A crack large enough to be visible to unaided eye. FRIABLE - Easy to break or crumble. GRANULAR SOIL - Soil that when unconfined has little or no dry strength and has little or no cohesion when submerged. GROUND WATER - (Free Water) (G. W.) - Water that is free to move through soil mass under influence of gravity. GROUNDWATER LEVEL - Level at which the pressure in water is zero with respect to the atmospheric pressure. HAROPAN - A general term used to describe a hard cemented soil layer which does not soften when wet. INDURATED - Earth material hardened by heat, pressure or cementation. INTERBEDDED - Alternating lenses or layers of soil and/or rock materials. JOINT - Fracture in rock along which no appreciable movement has occurred. LAMINATED - Very thin alternating layers less than 1" in thickness. LAYER - Subject material greater than 1" thick. LEDGE - A shelf-like ridge or projection of rock whose thickness is small compared to its lateral extent. LENS - A body of soil or rock that thins out in one or more directions. MARL - A non-indurated, calcareous deposit of clays, silts and sand, often containing shells. MICACEOUS SOIL (mic.) - A soil or rock containing an appreciable amount of mica. MUCK (mk.) - A highly organic soil of very soft consistency, generally found on tidal flats, lakes or stream floodplains. PEAT (pt) - A fibrous mass of organic matter in various stages of decomposition.</p>																																																																																							
<p><b>SOIL LEGEND AND CLASSIFICATION</b></p> <table border="1"> <tr> <th colspan="2">GRANULAR MATERIALS (5% LESS PASSING NO. 200)</th> <th colspan="2">SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)</th> <th colspan="2">ORGANIC SOILS</th> </tr> <tr> <td>A-1</td><td>A-2</td><td>A-3</td><td>A-4</td><td>A-5</td><td>A-6</td> </tr> <tr> <td>A-1</td><td>A-2</td><td>A-3</td><td>A-4</td><td>A-5</td><td>A-6</td> </tr> </table>		GRANULAR MATERIALS (5% LESS PASSING NO. 200)		SILT-CLAY MATERIALS (+ 35% PASSING NO. 200)		ORGANIC SOILS		A-1	A-2	A-3	A-4	A-5	A-6	A-1	A-2	A-3	A-4	A-5	A-6	<p><b>GRADATION</b></p> <p>WELL-GRADED INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.</p> <p><b>ANGULARITY OF GRAINS</b></p> <p>THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS; ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.</p> <p><b>MINERALOGICAL COMPOSITION</b></p> <p>MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, XADLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.</p> <p><b>COMPRESSIBILITY</b></p> <table border="1"> <tr> <td>SLIGHTLY COMPRESSIBLE</td> <td>LIQUID LIMIT LESS THAN 30</td> </tr> <tr> <td>MODERATELY COMPRESSIBLE</td> <td>LIQUID LIMIT 31-50</td> </tr> <tr> <td>HIGHLY COMPRESSIBLE</td> <td>LIQUID LIMIT GREATER THAN 50</td> </tr> </table> <p><b>ROCK DESCRIPTION</b></p> <p>IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:</p> <table border="1"> <tr> <th>SYMBOL</th> <th>DESCRIPTION</th> </tr> <tr> <td></td> <td>WEATHERED ROCK (HWR) (SWR)</td> </tr> <tr> <td></td> <td>HARD WEATHERED ROCK</td> </tr> <tr> <td></td> <td>INFERRED ROCK LINE</td> </tr> <tr> <td></td> <td>CORED ROCK</td> </tr> </table> <p>* S.P.T. REFUSAL (ASTM) <math>\leq</math> 1" OF PENETRATION PER 50 BLDWS. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. WHEN ROCK IS CORED, THE HARD ROCK SYMBOL IS SHOWN TO THE DEPTH CORED. A FULL DESCRIPTION OF ROCK USING APPROPRIATE TERMS (SEE DEFINITION OF TERMS)-INCLUDES PERCENT OF CORE RECOVERY (% REC) AND ROCK QUALITY DESIGNATION (R.Q.D.).</p>		SLIGHTLY COMPRESSIBLE	LIQUID LIMIT LESS THAN 30	MODERATELY COMPRESSIBLE	LIQUID LIMIT 31-50	HIGHLY COMPRESSIBLE	LIQUID LIMIT GREATER THAN 50	SYMBOL	DESCRIPTION		WEATHERED ROCK (HWR) (SWR)		HARD WEATHERED ROCK		INFERRED ROCK LINE		CORED ROCK																																																				
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	SOIL SYMBOL		CORE BORING																																																																																						
	AUGER BORING		PIEZOMETER INSTALLATION																																																																																						
	TEST BORING		SLOPE INDICATOR INSTALLATION																																																																																						
	STRIKE AND DIP OF BEDS		INFERRED SOIL BOUNDARIES																																																																																						
	SPT N-COUNT		APPARENT DIP (NORMAL TO)																																																																																						
<p><b>EQUIPMENT USED ON SUBJECT PROJECT</b></p> <p>DRILL UNITS: <input type="checkbox"/> MOBILE B-52 <input type="checkbox"/> MOBILE B-56 <input checked="" type="checkbox"/> CME - 550 <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> MI-NUTENAN</p> <p>AUGER TOOLS: <input checked="" type="checkbox"/> 6" CONTINUOUS FLIGHT W/ <input type="checkbox"/> HARD FACED FINGER BITS <input checked="" type="checkbox"/> CLAY BITS <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> TUNG-CARBIDE INSERTS</p> <p>CORE BORING TOOLS: <input type="checkbox"/> -AX <input type="checkbox"/> -9X <input type="checkbox"/> -HX</p> <p>HAND TOOLS: <input checked="" type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input checked="" type="checkbox"/> SOUNDING ROD</p>		<p><b>NOTES:</b></p>																																																																																							

SEE SHEET 1-A FOR INDEX OF SHEETS



LOCATION MAP SHOWING LOCATION OF STATE PROJECT: 6.299001T

# STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

## PLAN AND PROFILE OF PROPOSED STATE HIGHWAY

### EDGECOMBE COUNTY

LOCATION: U.S. 64 RELOCATION EAST OF U.S. 258(NC 44) INTERCHANGE  
IN TARBORO TO EAST OF NC 42

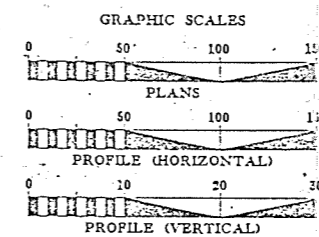
TYPE OF WORK: GRADING, DRAINAGE, PAVING, AND STRUCTURES

LENGTH ROADWAY PROJECT =            MILES  
LENGTH STRUCTURES PROJECT =        MILES  
TOTAL LENGTH STATE PROJECT = 9.98 MILES

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
NC	6.299001T	3	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
6.299001T		P.E.	

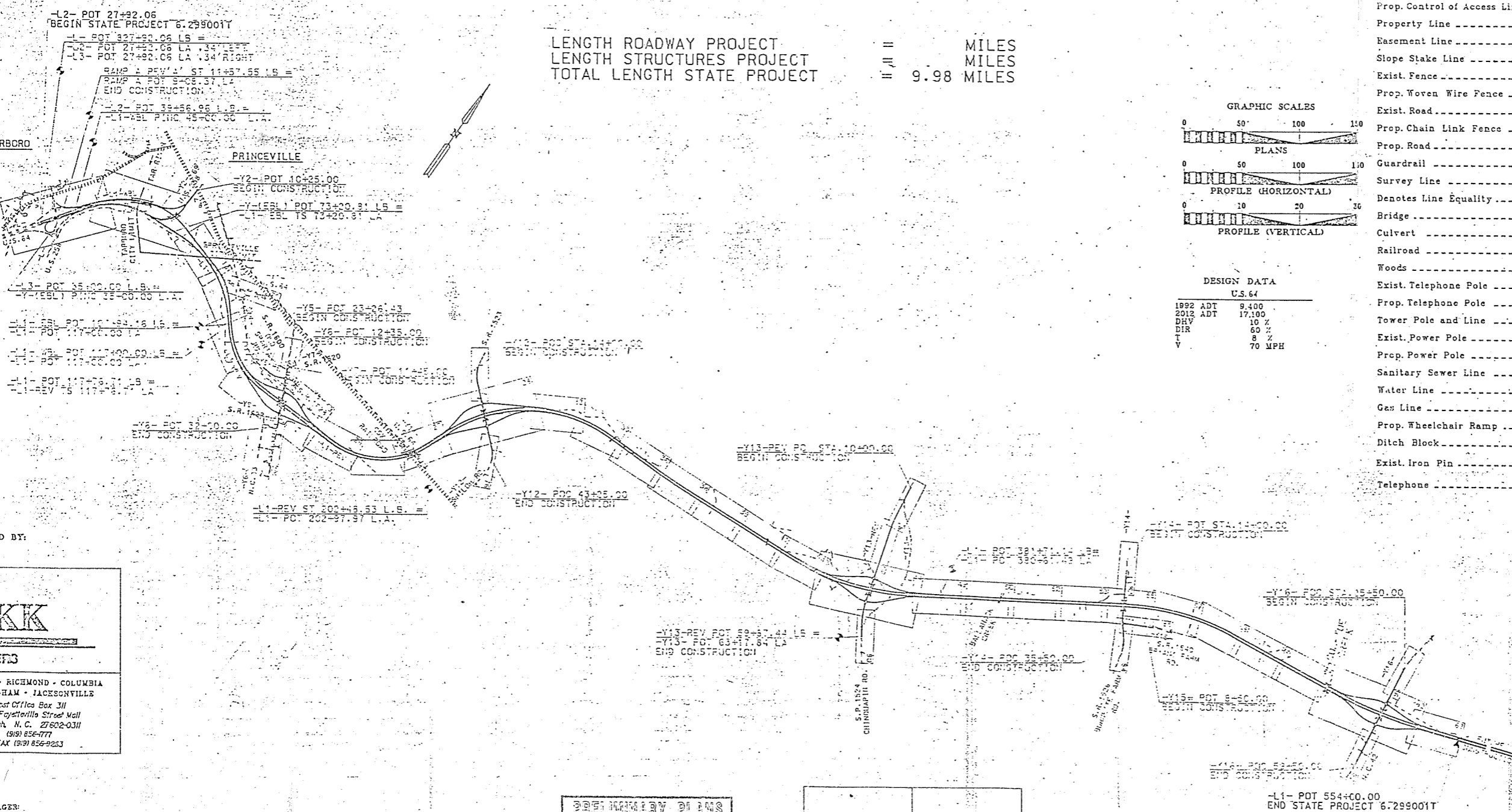
CONVENTIONAL SYMBOLS

County Line	-----	
City or Town Line	-----	
Exist. Right of Way Line Marker	-----	△
Prop. Right of Way Line Marker (By Others)	-----	△
Prop. Right of Way Line Marker (By Contract)	-----	△
Exist. Control of Access Line	-----	⊙
Prop. Control of Access Line	-----	⊙
Property Line	-----	P
Easement Line	-----	E
Slope Stake Line	-----	~
Exist. Fence	-----	X X X X
Prop. Woven Wire Fence	-----	⊙
Exist. Road	-----	⊙
Prop. Chain Link Fence	-----	⊙
Prop. Road	-----	⊙
Guardrail	-----	—
Survey Line	-----	—
Denotes Line Equality	-----	⊙
Bridge	-----	—
Culvert	-----	—
Railroad	-----	—
Woods	-----	—
Exist. Telephone Pole	-----	⊙
Prop. Telephone Pole	-----	⊙
Tower Pole and Line	-----	⊙
Exist. Power Pole	-----	⊙
Prop. Power Pole	-----	⊙
Sanitary Sewer Line	-----	SS
Water Line	-----	W
Gas Line	-----	GAS
Prop. Wheelchair Ramp	-----	WCR
Ditch Block	-----	⊙
Exist. Iron Pin	-----	⊙
Telephone	-----	⊙



DESIGN DATA  
U.S. 64

1992 ADT	9,400
2012 ADT	17,100
DIV	16 %
DIR	60 %
V	8 %
	70 MPH



PREPARED BY:

**BAKK**  
ENGINEERS

RALEIGH • RICHMOND • COLUMBIA  
BIRMINGHAM • JACKSONVILLE

Post Office Box 311  
224 Fayetteville Street Mall  
Raleigh, N. C. 27602-0311  
(919) 856-7777  
FAX (919) 856-9253

PROJECT MANAGER:

TELEPHONE SERVICES CONTACT: C. CLAY, P. E.

DATE:

NOTES: THIS PROJECT IS A CONTROLLED ACCESS PROJECT WITH ACCESS BEING LIMITED TO INTERCHANGES. CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD III, 1990 STANDARD SPECIFICATIONS

PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

ROADWAY	HYDRAULICS

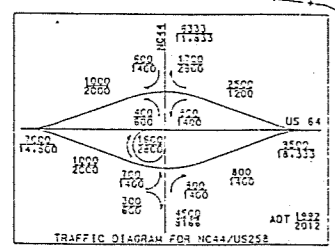
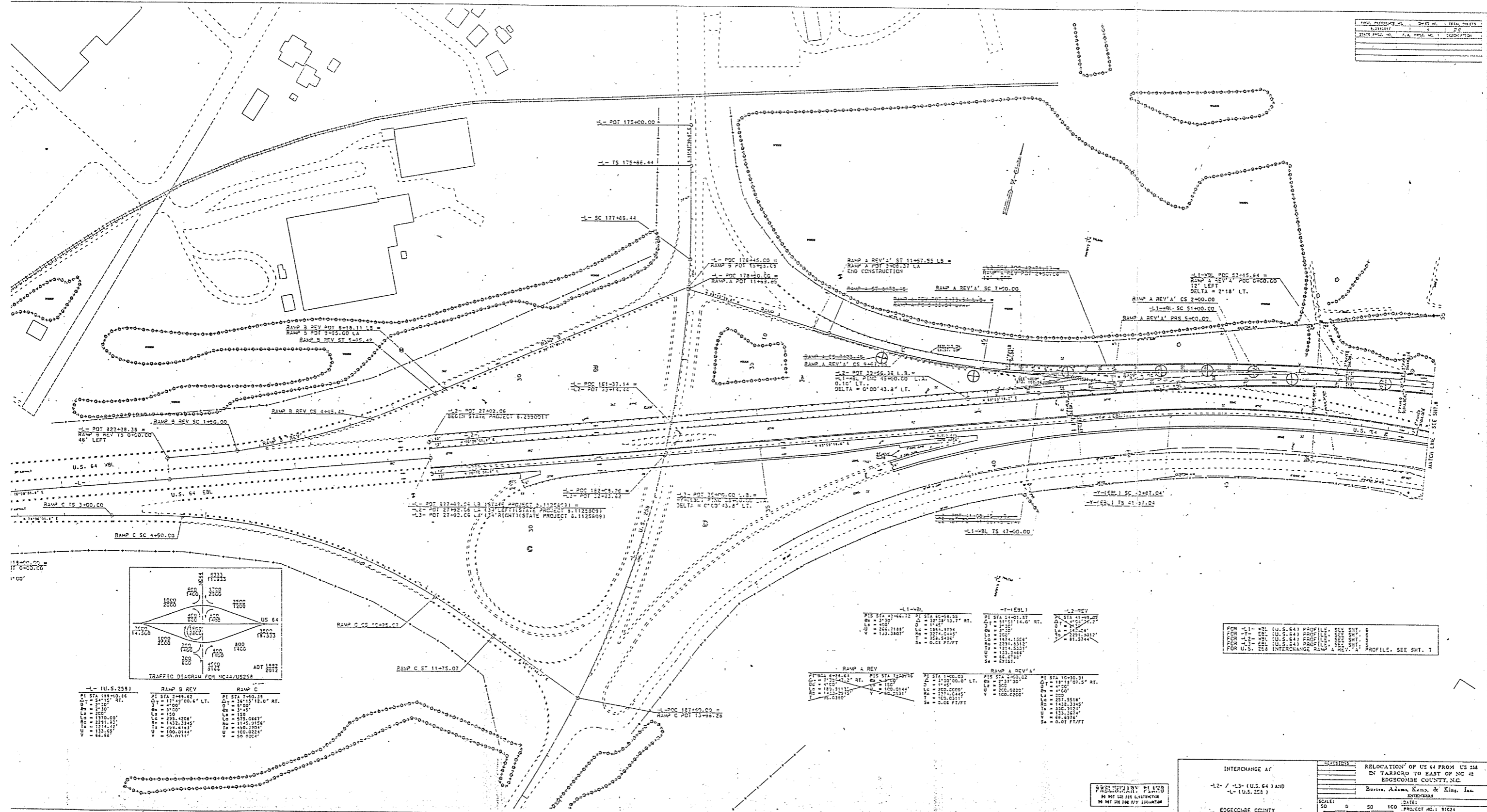
DIVISION OF HIGHWAYS  
STATE OF NORTH CAROLINA

APPROVED: \_\_\_\_\_ P.E.  
STATE HIGHWAY ENGINEER-DESIGN

DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

APPROVED: \_\_\_\_\_  
DIVISION ADMINISTRATOR                      DATE

PROJECT NO.	1122809	SHEET NO.	4	TOTAL SHEETS	12
STATE PROJ. NO.	1122809	F.A. PROJ. NO.		DESCRIPTION	



U.S. 258	RAMP B REV	RAMP C
PI STA 171+00.00	PI STA 2+49.42	PI STA 7+50.39
OT = 171+00.00' RT.	OT = 171+49.00' LT.	OT = 281+13' 11.0" RT.
CS = 2+30'	CS = 47'00"	CS = 57'00"
LS = 200.00'	LS = 150.00'	LS = 150'
RS = 200.00'	RS = 1432.334'	RS = 1145.3156'
TS = 171+00.00'	TS = 200.0000'	TS = 400.0000'
US = 133.15'	US = 100.0144'	US = 100.0221'
V = 62.62'	V = 62.6111'	V = 50.0000'

-L1-WBL	-Y-(EBL)	-L2-REV
PI STA 43+44.72	PI STA 40+38.58	PI STA 41+01.57
OT = 43+30'	OT = 39'28" 11.1" RT.	OT = 41'01" 11.0" RT.
CS = 133.3300'	CS = 117.45'	CS = 21.00'
LS = 133.3300'	LS = 117.45'	LS = 21.00'
RS = 133.3300'	RS = 117.45'	RS = 21.00'
TS = 43+30.00'	TS = 39'28" 11.1" RT.	TS = 41'01" 11.0" RT.
US = 133.3300'	US = 117.45'	US = 21.00'
V = 62.62'	V = 50.00'	V = 50.00'

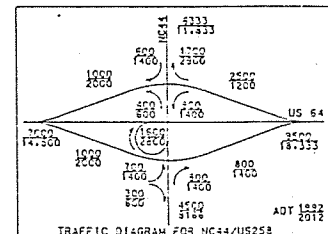
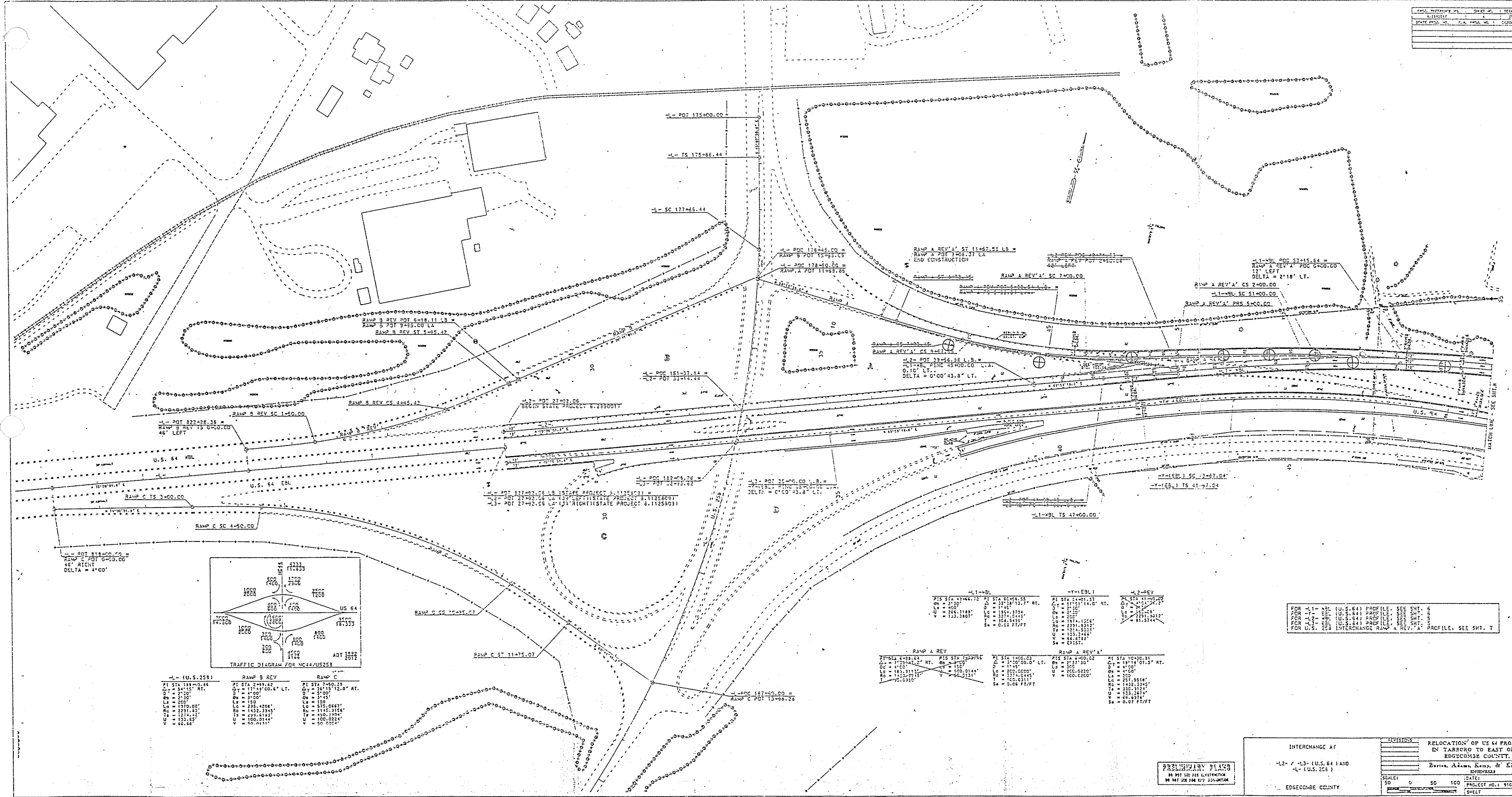
FOR -L1-WBL (U.S. 64) PROFILE, SEE SHIT. 6  
 FOR -Y-(EBL) (U.S. 64) PROFILE, SEE SHIT. 6  
 FOR -L2-REV (U.S. 64) PROFILE, SEE SHIT. 6  
 FOR U.S. 258 INTERCHANGE RAMP A REV. A PROFILE, SEE SHIT. 7

**PRELIMINARY PLANS**  
 FOR THE EXTENSION  
 OF THE STATE HIGHWAY SYSTEM

INTERCHANGE AT	REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARRBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
-L2- / -L3- (U.S. 64) AND -L- (U.S. 258)	DATE	DATE
EDGECOMBE COUNTY	SCALE: 50 0 50 100	PROJECT NO.: 1122809
		SHEET 4 OF 12



DATE	BY	REVISION
11/11/2011	J.P.	1
STATE PROJ. NO.	F.A. PROJ. NO.	CONTRACT



U.S. 253	RAMP B REV	RAMP C
PI STA 118+00.00	PI STA 2+19.62	PI STA 7+50.33
CI = 64'15" AT	CI = 17'48" CO. 4' LT.	CI = 36'15" 12.0' AT
OT = 3'20"	OT = 4'00"	OT = 5'00"
CS = 3'00"	CS = 3'00"	CS = 3'45"
LS = 200'	LS = 150'	LS = 150'
LC = 1970.00'	LC = 235.4208'	LC = 975.0663'
RC = 2291.42'	RC = 1432.3345'	RC = 1145.3126'
UC = 1274.22'	UC = 429.6143'	UC = 450.3304'
VC = 1334.62'	VC = 100.0144'	VC = 100.3324'
V = 48.687'	V = 40.0111'	V = 50.0324'

-L1-WBL		-Y-(EBL)		-L2-REV	
PI STA 43+46.32	PI STA 40+24.55	PI STA 4+00.00	PI STA 4+00.00	PI STA 10+30.91	PI STA 41+00.00
CI = 3'20"	CI = 32'38" 13.7' RT.	CI = 3'20"	CI = 3'20"	CI = 11'11" 01.5' AT	CI = 4'00"
OT = 3'00"	OT = 3'00"	OT = 3'00"	OT = 3'00"	OT = 3'00"	OT = 3'00"
CS = 284.3188'	CS = 1354.3374'	CS = 174.67'	CS = 174.67'	CS = 250.5518'	CS = 250.5518'
LC = 133.3807'	LC = 3274.2443'	LC = 1874.1508'	LC = 1874.1508'	LC = 1432.3345'	LC = 1432.3345'
RC = 133.3807'	RC = 3274.2443'	RC = 1231.3443'	RC = 1231.3443'	RC = 330.3924'	RC = 330.3924'
UC = 133.3807'	UC = 3274.2443'	UC = 1231.3443'	UC = 1231.3443'	UC = 133.3674'	UC = 133.3674'
V = 133.3807'	V = 3274.2443'	V = 1231.3443'	V = 1231.3443'	V = 48.6874'	V = 48.6874'
Sw = 0.03 FT/FT	Sw = 0.03 FT/FT	Sw = 0.03 FT/FT	Sw = 0.03 FT/FT	Sw = 0.03 FT/FT	Sw = 0.03 FT/FT

FOR -L1-WBL (U.S. 64) PROFILE SEE SHT. 6  
 FOR -Y-(EBL) (U.S. 64) PROFILE SEE SHT. 6  
 FOR -L2-REV (U.S. 64) PROFILE SEE SHT. 6  
 FOR U.S. 253 INTERCHANGE RAMP A REV. 'A' PROFILE, SEE SHT. 7

PRELIMINARY PLAN  
 IN PART FOR THE INTERSECTION  
 OF U.S. 64 AND U.S. 253

INTERCHANGE AT  
 -L2- / -L3- (U.S. 64) AND  
 -L- (U.S. 253)  
 EDGEcombe COUNTY

RELOCATION OF US 64 FROM 1  
 IN TARRORO TO EAST OF N  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King,  
 ENGINEERS

SCALE: 1" = 40'

DATE: 11/11/2011

PROJECT NO.: 11024

SHEET: 1 OF 1

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6-298001T	5	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

-L2- WBL (U.S. 64)

-L2- STA. 27+92.06  
BEGIN 2' RESURFACING

-L2- STA. 33+44.44  
L- STA. 181+77.14  
GRADE EL. = 42.5'

PROPOSED GROUND

PROPOSED GROUND

EXISTING GROUND

EXISTING GROUND

27+00 28+00 29+00 30+00 31+00 32+00 33+00 34+00 35+00 36+00 37+00 38+00 39+00

-L3- EBL (U.S. 64)

-L3- STA. 27+92.06  
BEGIN 2' RESURFACING

-L3- STA. 33+91.65  
L- STA. 182+04.28  
GRADE EL. = 42.47'

-L3- STA. 40+00.00  
END 2' RESURFACING  
BEGIN GRADE  
GRADE EL. = 81.0'

PROPOSED GROUND

EXISTING GROUND

33+00 34+00 35+00

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/I ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

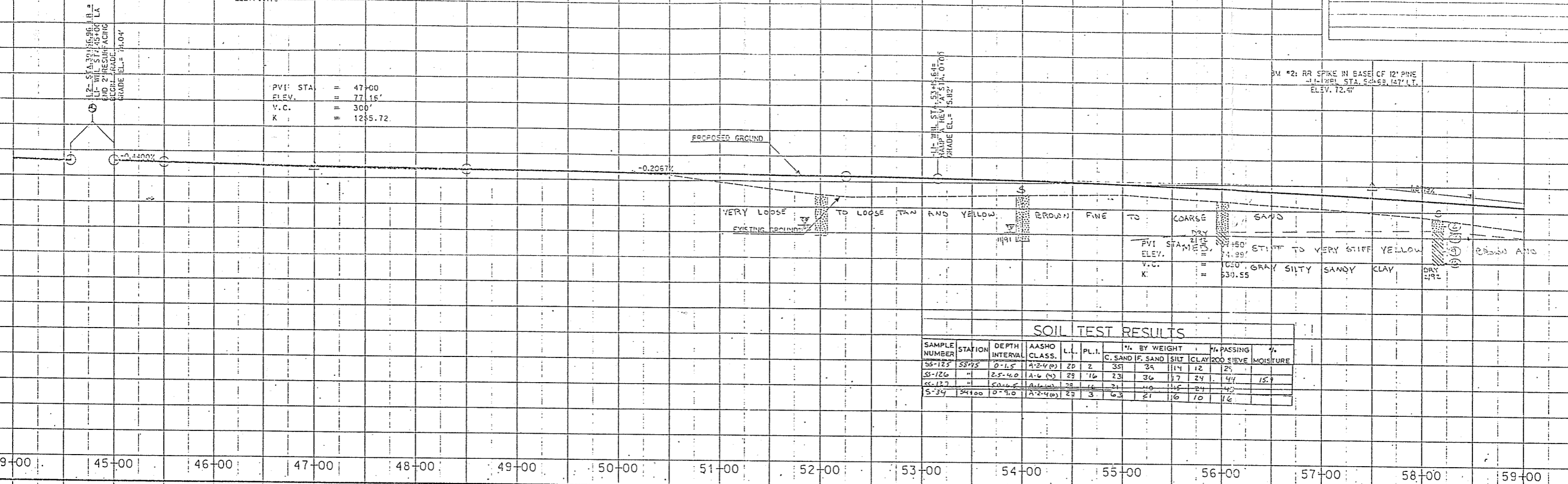
27+00 28+00 29+00 30+00 31+00 32+00

BM #1: RR SPIKE IN BASE OF 30' PECAN  
 -LI- REL. STA. 45+57.137' LT.  
 ELEV. 72.41'

-L1- WBL (U.S. 64)

PVI: STA. = 47+00  
 ELEV. = 77.16'  
 V.C. = 300'  
 K = 125.72

BM #2: RR SPIKE IN BASE OF 12' PINE  
 -LI- REL. STA. 52+66.137' LT.  
 ELEV. 72.41'



VERY LOOSE TO LOOSE TAN AND YELLOW BROWN FINE TO COARSE SAND  
 150' STIFF TO VERY STIFF YELLOW BROWN AND  
 530.55' DRY 14%

SOIL TEST RESULTS

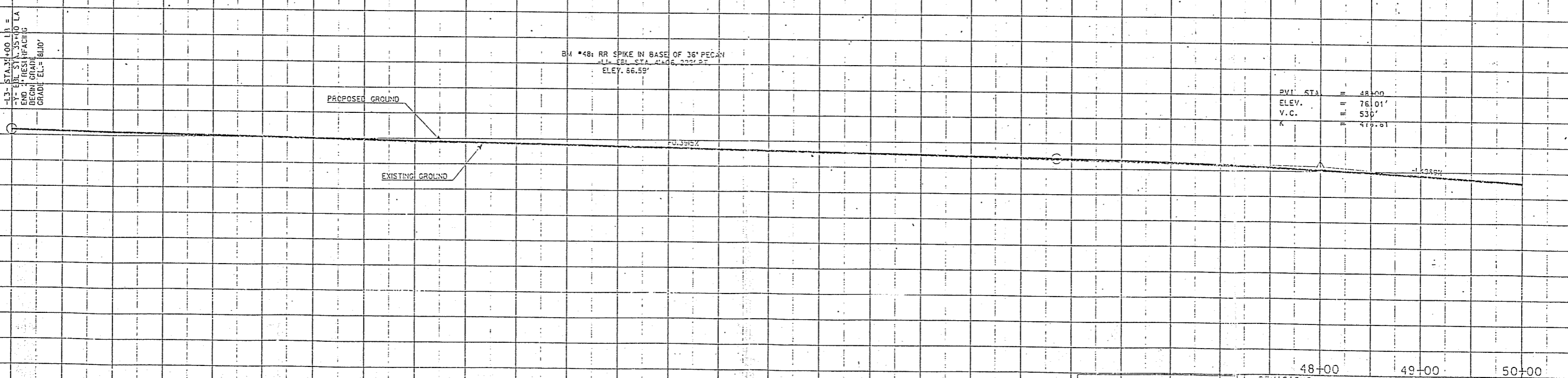
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING	
						C. SAND	F. SAND	SILT	CLAY	200 SIEVE
55-125	58+75	0-1.5	A-2-4 (P)	20	2	35	39	14	12	25
55-126	"	2.5-4.0	A-6 (M)	29	16	23	36	17	24	15.9
55-127	"	6.0-7.5	A-6 (M)	28	16	21	40	15	24	4.5
55-128	54+00	0-9.0	A-2-4 (M)	29	3	63	21	16	10	16

39+00 45+00 46+00 47+00 48+00 49+00 50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00

-Y- EBL (U.S. 64)

BM #48: RR SPIKE IN BASE OF 16' PECAN  
 -LI- REL. STA. 41+06.222' RT.  
 ELEV. 56.59'

PVI: STA. = 48+00  
 ELEV. = 76.01'  
 V.C. = 530'  
 K = 419.61



36+00 37+00 38+00 39+00 40+00 41+00 42+00 43+00 44+00 45+00 46+00 47+00 48+00 49+00 50+00

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS  
 RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS  
 SCALE: 1" = 20'  
 DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

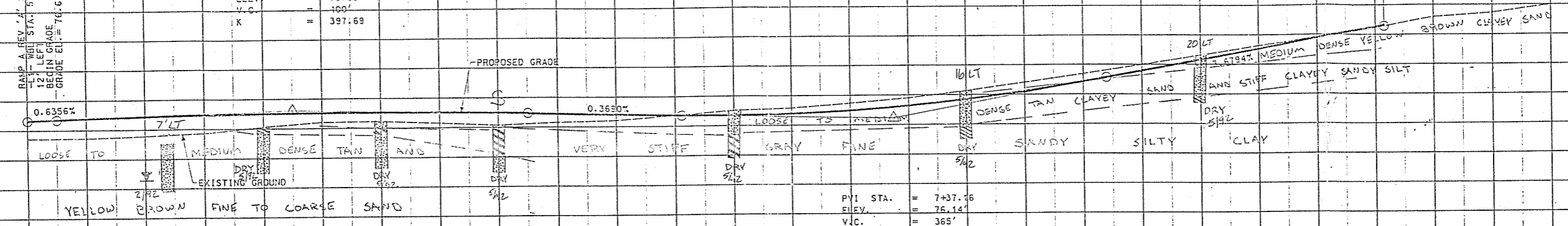
PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.292001T	7	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

U.S. 258 INTERCHANGE RAMP A REV 'A'

RAMP A REV 'A' STA. 11+57.55 LB =  
 RAMP A STA. 5+08.37 LA  
 END GRADE  
 GRADE EL. = 91.61'

RAMP A REV 'A' STA. 0+00 =  
 12' LEFT  
 BEGIN GRADE  
 GRADE EL. = 76.60

PVI STA. = 2+25  
 ELEV. = 78.03'  
 V.C. = 100'  
 K = 397.69



PVI STA. = 7+37.16  
 ELEV. = 76.14'  
 V.C. = 365'  
 K = 90.11

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT			PASSING 200 SIEVE	MOISTURE
						C. SAND	F. SAND	SILT CLAY		
S-314	4+00	0.5-5.0	A-7-6(2)	63	41	1	20	15	54	26.8

0+00      1+00      2+00      3+00      4+00      5+00      6+00      7+00      8+00      9+00      10+00      11+00      12+00      13+00

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 25  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc  
 ENGINEERS

SCALE:  
 50      0      50      100

DATE:  
 PROJECT NO.: 91024

SHEET      OF

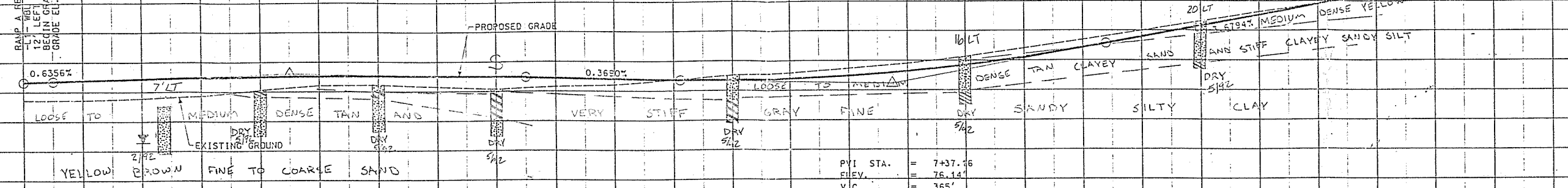
U.S. 258 INTERCHANGE RAMP A REV 'A'

STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

RAMP A REV 'A' STA. 11+57.55 LB =  
 RAMP A STA. 5+08.37 LA  
 END GRADE  
 GRADE EL. = 91.61'

RAMP A REV 'A' STA. 0+00 =  
 12' LIFT STA. 53+43.84  
 BEGIN GRADE  
 GRADE EL. = 76.60

PVI STA. = 2+25  
 ELEV. = 78.03'  
 V.C. = 100'  
 K = 397.69



PVI STA. = 7+37.46  
 ELEV. = 76.14'  
 V.C. = 365'  
 K = 90.11

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				PASSING 200 SIEVE	MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-214	4+00	0.5'-5.0'	A-7-6(20)	68	41	1	20	25	54	86	26.8

0+00      1+00      2+00      3+00      4+00      5+00      6+00      7+00      8+00      9+00      10+00      11+00      12+00      13+00

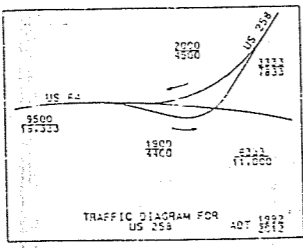
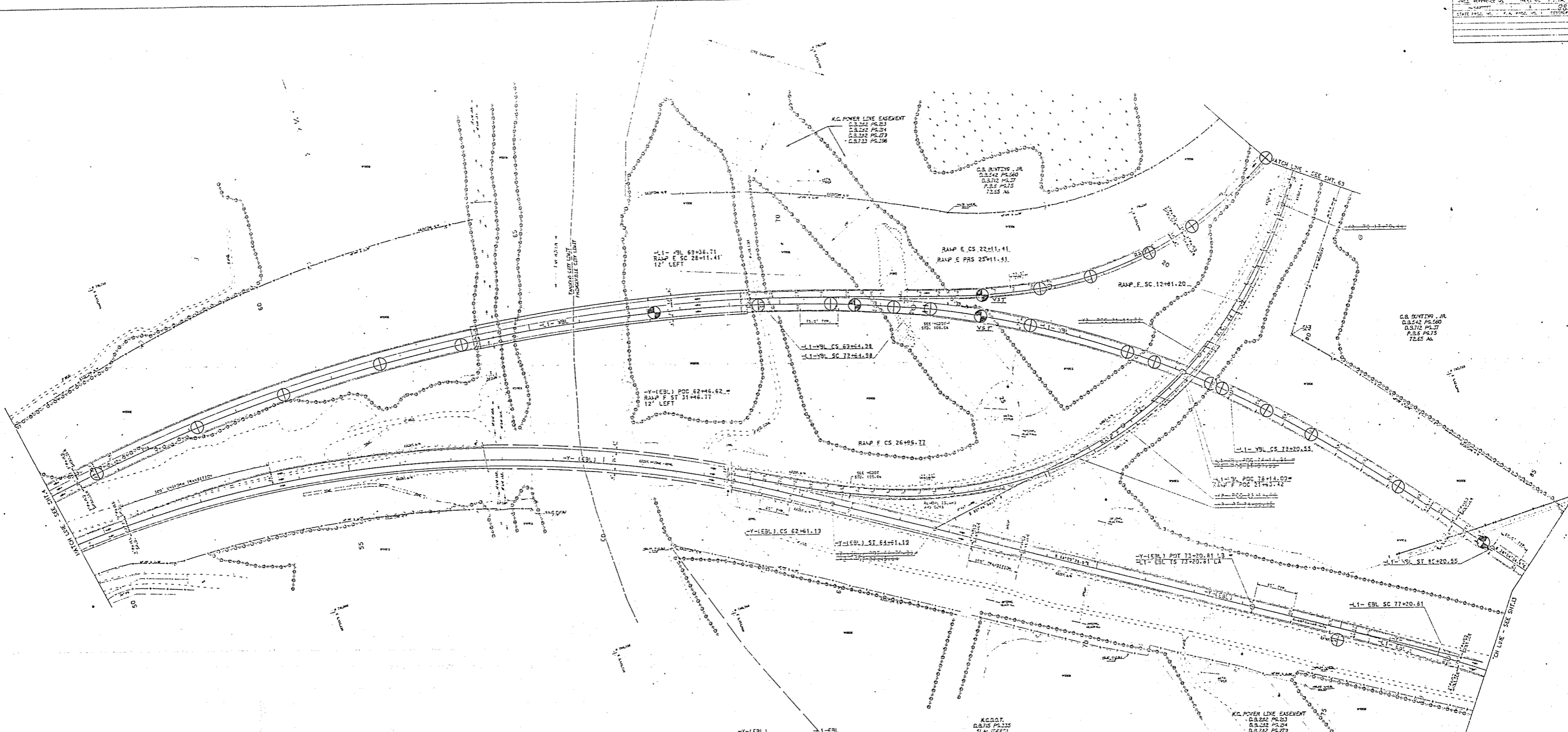
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC -2  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_



-L1-VBL				-Y-(EBL)				-L1-EBL			
PI STA	PI STA	PI STA	PI STA	PI STA	PI STA	PI STA	PI STA	PI STA	PI STA	PI STA	PI STA
49+99.72	60+26.33	11+26.33	15+76.33	11+26.33	15+76.33	11+26.33	15+76.33	11+26.33	15+76.33	11+26.33	15+76.33
0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"	0 = 11'00"
185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'	185.7188'
133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'	133.3407'
1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT	1 = 0.04 FT/FT

FOR -L1-VBL (U.S. 64) PROFILE, SEE SHTS. 9 & 10  
 FOR -Y- & -L1-EBL (U.S. 64) PROFILE, SEE SHTS. 9 & 10  
 FOR -L1-VBL RAMP F PROFILE, SEE SHT. 12  
 FOR -Y-EBL RAMP F PROFILE, SEE SHT. 11.

**PRELIMINARY PLANS**  
 10' HORIZ. SCALE  
 1" = 100' VERT. SCALE

INTERCHANGE AT  
 -Y-(EBL)/-L1-VBL (U.S. 64)  
 AND -Y2- (U.S. 44)  
 EDGEcombe COUNTY

RELOCATION OF US 44 FROM  
 IN BARBORO TO EAST OF N  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King  
 ENGINEERS

SCALE: 1" = 100' HORIZ. SCALE  
 1" = 10' VERT. SCALE

-L1- WBL (U.S. 64 WBL)

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #20 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	67+50	0-1.5	A-2-4 (U)	19	NP	7	82	5	5	13	
SS-2	"	8.5-10.3	A-3 (O)	17	NP	7	84	5	4	10	
SS-3	"	18.8-20.3	A-3 (O)	16	NP	5	41	2	1	14	
SS-4	"	28.8-30.3	A-3 (O)	16	NP	5	16	3	1	14	
SS-5	"	38.8-40.3	A-2-4 (O)	20	NP	5	33	14	6	11	
SS-6	"	48.8-50.3	A-4 (O)	40	"	35	32	29	4	11	

IVANE SHEAR TESTS

STATION	DEPTH	SP(SF)	SR(PSF)
71+00	1.0	12.00	
"	2.0	12.00	
"	3.0	12.00	

PVI STA. = 76+00  
 ELEV. = 40.38  
 V.C. = 600'  
 K = 258.41

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	LL	PLI	% BY WEIGHT				% PASSING #20 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-35	62+65	0-1.5	A-2-4 (U)	24	5	29	36	30	10		
S-36	"	1.5-4.0	A-6 (2)	29	14	5	58	15	22	37	
S-37	"	4.0-6.0	A-4 (3)	14	1	11	43	30	16	52	
SS-128	71+50	0-1.5	A-4 (2)	24	7	3	58	14	20	14	
SS-129	"	3.0-5.3	A-2-4 (O)	24	NP	3	87	5	5	14	
SS-130	"	16.8-20.3	A-1-1 (U)	14	NP	87	9	2	2	5	
SS-131	"	28.8-30.3	A-3 (O)	20	NP	64	27	4	3	7	
S-38	73+00	0-1.0	A-6 (8)	30	13	2	31	31	6	72	
S-39	"	1.0-2.0	A-6 (6)	3	13	1	43	22	34	60	
S-40	"	2.0-6.0	A-2-4 (O)	20	NP	1	77	10	12	26	

DESIGN DISCHARGE 38,500 CFS  
 DESIGN FREQUENCY 50 YRS  
 DESIGN HIGHWATER 40.2'  
 BASE DISCHARGE 45,000 CFS  
 BASE FREQUENCY 50 YRS  
 BASE HIGHWATER 44.0'

59+00 60+00 61+00 62+00 63+00 64+00 65+00 66+00 67+00 68+00 69+00 70+00 71+00 72+00 73+00 74+00

-L1- EB (U.S. 64 EB) (CAPE FEAR FORMATION)

PVI STA. = 48+00  
 ELEV. = 76.01'  
 V.C. = 530'  
 K = 478.61

DM 4" RR SPIKE IN CASE OF 8" PIPE  
 -L1- EB STA. 52+07.109 RT.  
 ELEV. 76.95'

RESURFACE EXIST. SURFACE & RETROFIT EXIST. BRIDGE RAILS  
 SEE DETAIL, SHEETS 2--

PVI STA. = 66+50.00  
 ELEV. = 48.28'  
 V.C. = 550'  
 K = 240.84

PRELIMINARY PLANS

DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 2  
 IN TARBORO TO EAST OF NC 45  
 EDGECOMBE COUNTY, NC

Burton, Adams, Kemp, & King, Inc  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

50+00 51+00 52+00 53+00 54+00 55+00 56+00 57+00 58+00 59+00 60+00 61+00 62+00

-L1- WBL (U.S. 64)

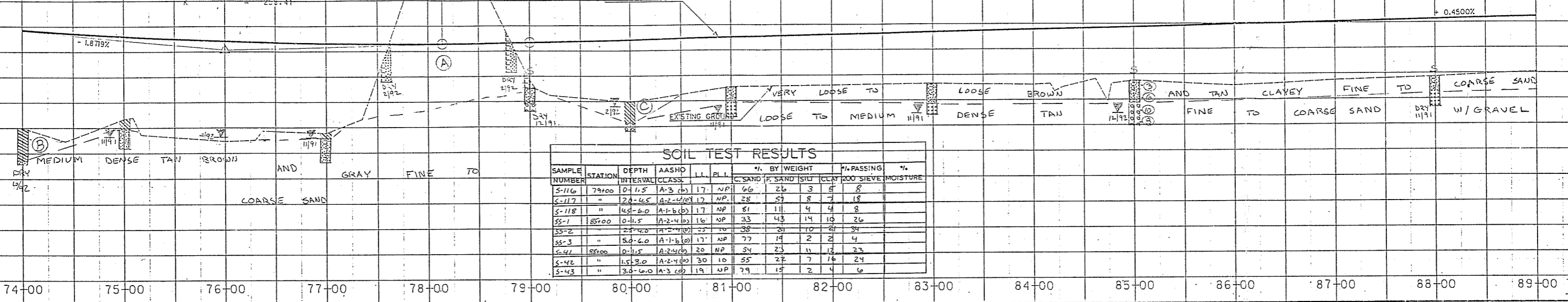
VANE SHEAR TESTS

STATION	DEPTH	S (psf)	SR (psf)
74+00	1.0	1200	
"	2.0	1200	
"	3.0	1200	

PVI STA. = 75+00  
 ELEV. = 401.36'  
 V.C. = 600'  
 K = 255.41

BM #7: RR SPIKE IN BASE OF 10' OAK  
 -L1- WBL STA. 80+66 152' LT.  
 ELEV. 33.11'

- (A) LOOSE TO MEDIUM DENSE BROWN AND TAN FINE TO COARSE SAND (FILL)
- (B) MEDIUM STIFF TO STIFF BROWN SILTY SANDY CLAY
- (C) MEDIUM STIFF TO STIFF BROWN AND GRAY SANDY CLAY



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-116	79+00	0-1.5	A-3 (b)	17	NP	66	26	3	8	8	
S-117	"	2.0-4.5	A-2-4 (b)	17	NP	28	57	8	7	18	
S-118	"	4.5-6.0	A-1-b (b)	17	NP	81	11	4	4	8	
S-1	85+00	0-1.5	A-2-4 (b)	16	NP	33	43	14	10	26	
S-2	"	2.5-4.0	A-2-4 (b)	22	10	38	21	10	21	34	
S-3	"	5.0-6.0	A-1-b (b)	17	NP	77	14	2	2	4	
S-41	85+00	0-1.5	A-2-4 (b)	20	NP	54	23	11	12	23	
S-42	"	1.5-3.0	A-2-4 (b)	30	10	55	22	7	16	24	
S-43	"	3.0-6.0	A-3 (b)	19	NP	79	15	2	4	6	

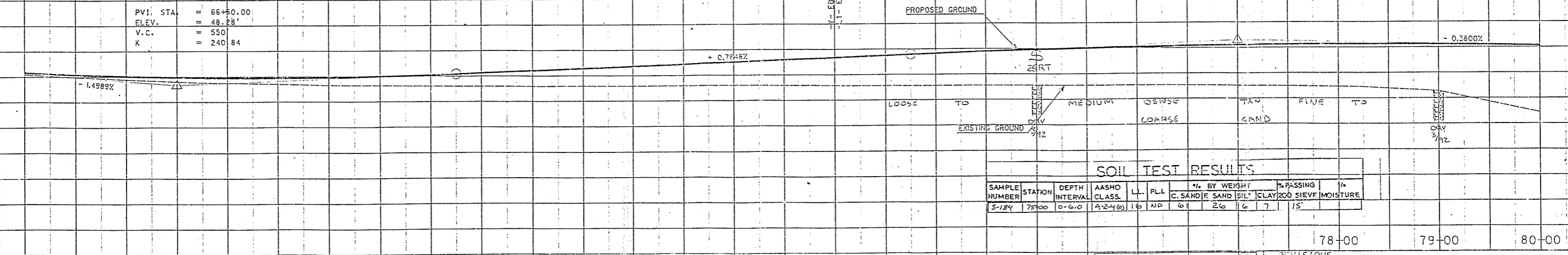
-Y- & -L1- EBL (U.S. 64)

TSM #1: RR SPIKE IN EP  
 -L1- EBL STA. 63+82, 30' LT.  
 ELEV. 52.11'

PVI STA. = 66+50.00  
 ELEV. = 48.88'  
 V.C. = 550'  
 K = 240.84

BM #6: RR SPIKE IN BASE OF 5' PINE  
 -L1- EBL STA. 74+84, 15' RT.  
 ELEV. 35.55'

PVI STA. = 77+00  
 ELEV. = 56.52'  
 V.C. = 650'  
 K = 556.02



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-184	75+00	0-6.0	A-2-4 (b)	16	NP	61	26	6	7	15	

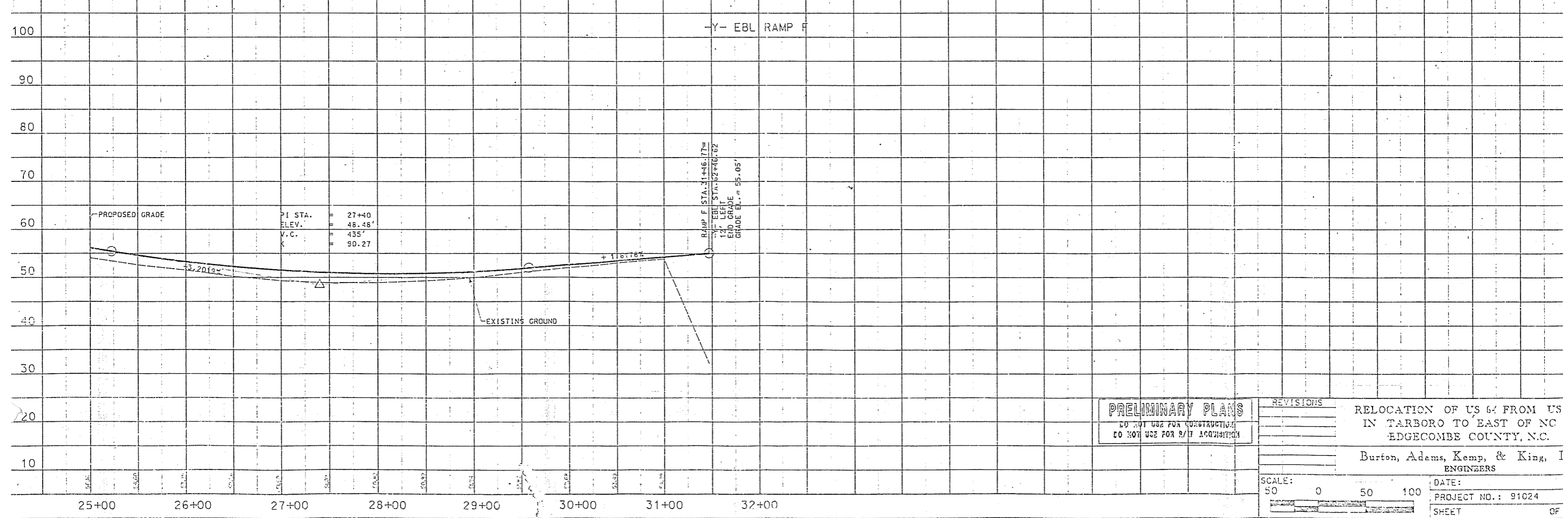
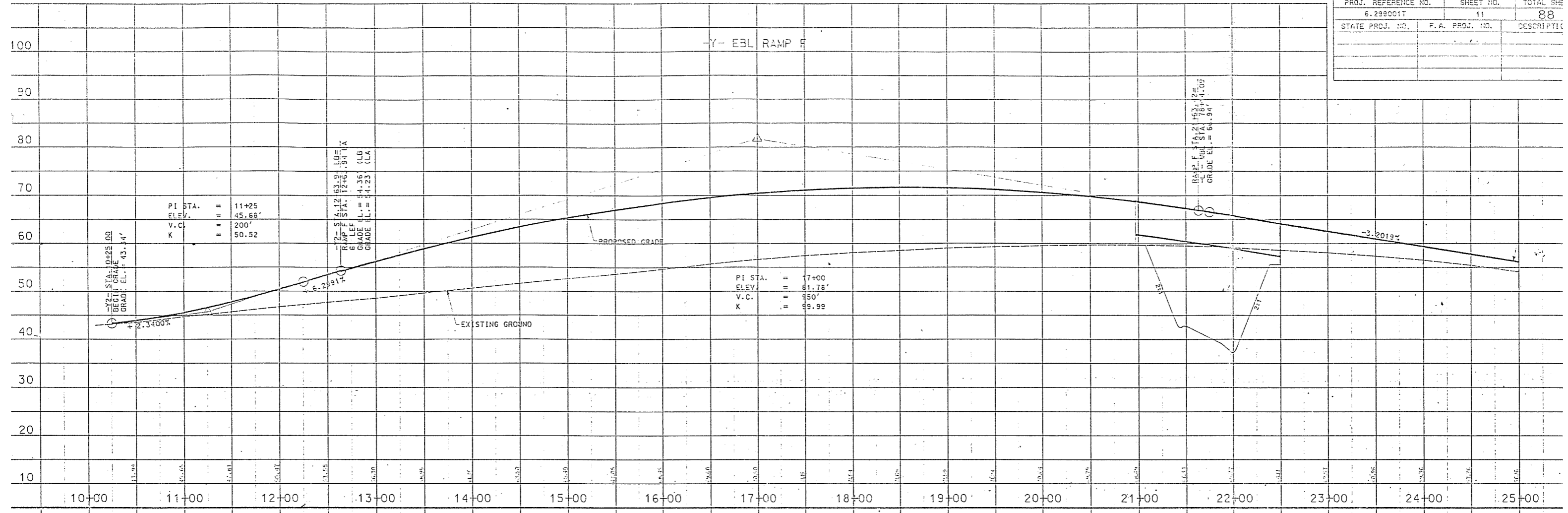
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS  
 RELOCATION OF US 64 FROM US 2  
 IN TARBORO TO EAST OF NC 4  
 EDGECOMBE COUNTY, N.C.  
 Barton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_



PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.239001T	11	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US  
 IN TARBORO TO EAST OF NC  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, I  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

-L1- WBL RAMP E (US25B)

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE		
				C. SAND	F. SAND	SILT	CLAY				
S-245	19+00	0.5-3.5	A-7.5 (M)	68	32	10	16	23	61	77	42.0
S-37	24+48	0-1.0	A-6 (S)	33	13	2	31	31	86	72	
S-371	"	1.0-2.0	A-6 (S)	31	13	1	43	22	84	60	
S-40	"	2.0-3.0	A-2 (W)	20	42	1	27	18	12	76	

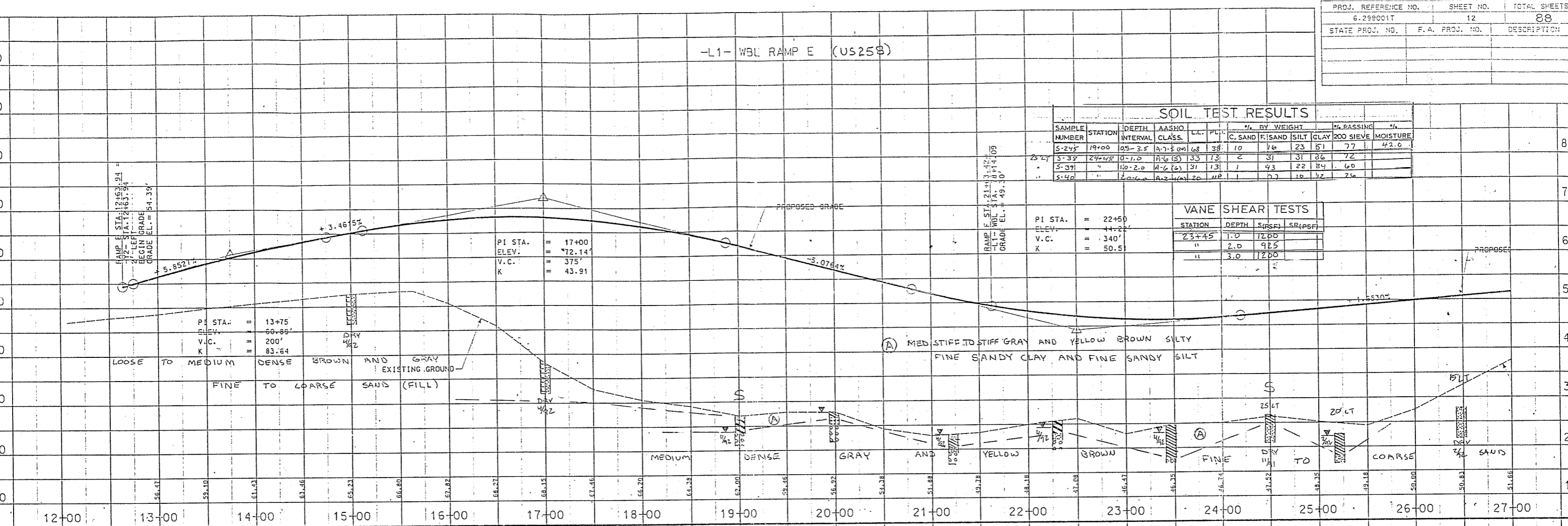
VANE SHEAR TESTS

STATION	DEPTH	S <sub>u</sub> (psf)	S <sub>r</sub> (psf)
23+45	1.0	1200	
"	2.0	925	
"	3.0	1200	

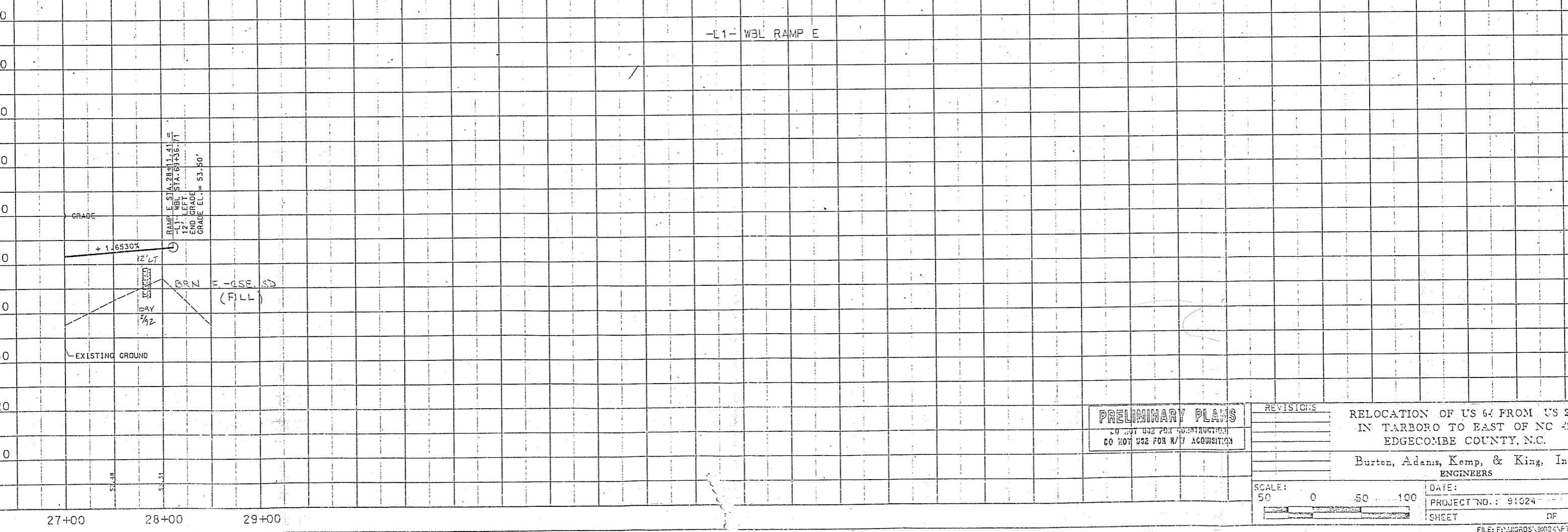
PI STA. = 17+00  
 ELEV. = 72.14'  
 V.C. = 375'  
 K = 43.91

PI STA. = 13+75  
 ELEV. = 60.85'  
 V.C. = 200'  
 K = 83.64

PI STA. = 22+50  
 ELEV. = 44.22'  
 V.C. = 340'  
 K = 50.51



-L1- WBL RAMP E

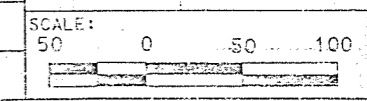


**PRELIMINARY PLANS**  
 DO NOT USE FOR ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 25 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc ENGINEERS



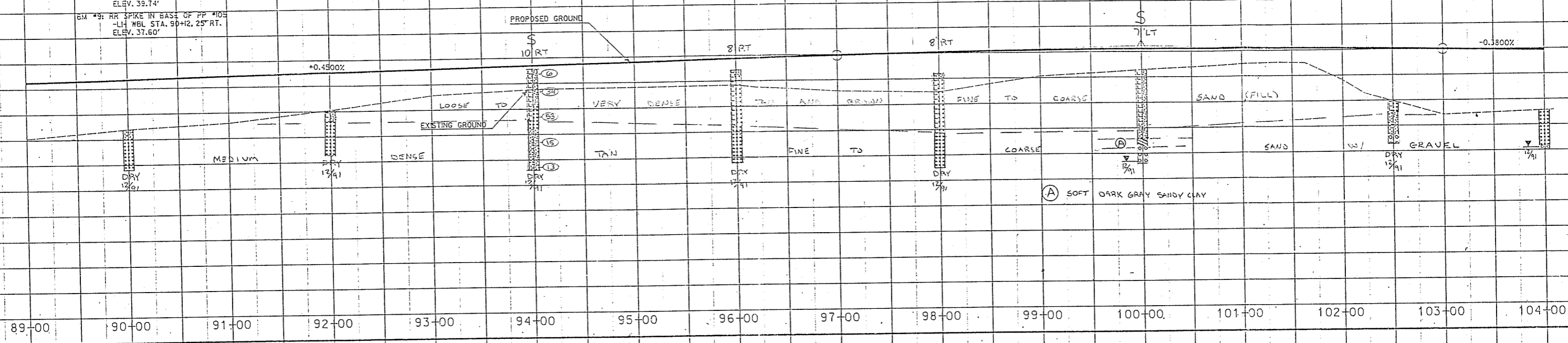
DATE: PROJECT NO.: 91024 SHEET OF

-L1- WBL (U.S. 64 WBL)

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-4	94+00	3.5-5.0	A-2-4(0)	17	NP	62	28	5	5	11	-
SS-5	97+00	9.0-10.0	A-3(0)	14	NP	64	28	4	4	5	-
SS-6	94+00	13.5-15.0	A-2-4(0)	18	NP	59	31	4	6	11	-
SS-119	100+00	0-3.0	A-2-4(0)	16	NP	61	29	4	6	11	-
SS-120	100+00	12.0-13.5	A-2-4(0)	19	NP	34	55	3	8	13	-
SS-121	100+00	13.5-15.5	A-6(0)	27	11	33	29	10	28	38	-
SS-122	100+00	15.5-18.5	A-7(0)	17	NP	67	33	2	1	4	-

BM #5: RR SPIKE IN BASE OF PP #105  
 -L1- WBL STA. 90+47, 200' LT.  
 ELEV. 39.74'  
 BM #9: RR SPIKE IN BASE OF PP #105  
 -L1- WBL STA. 90+12, 25' RT.  
 ELEV. 37.60'

PVI STA. = 100+00  
 ELEV. = 51.76  
 V.C. = 600  
 K = 722.89

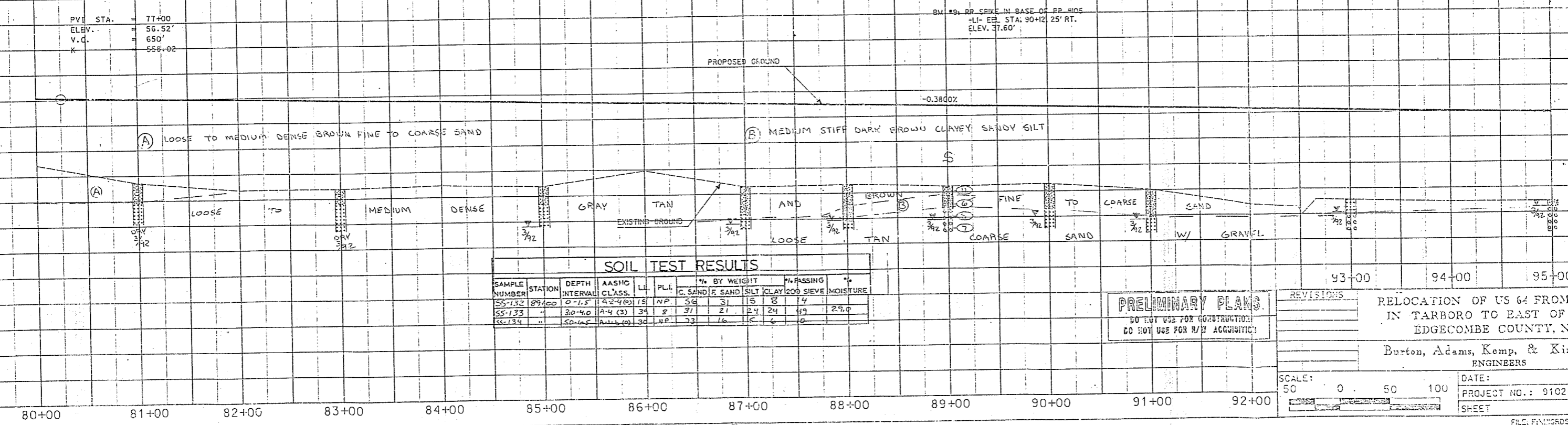


-L1- EBL (U.S. 64 EBL)

SOIL TEST RESULTS											
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L.L.	P.L.I.	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-132	89+00	0-1.5	A-2-4(0)	15	NP	56	31	5	8	14	-
SS-133	"	3.0-4.0	A-4(3)	34	8	31	21	24	24	29.0	-
SS-134	"	5.0-6.5	A-1-3(0)	30	NP	33	16	5	6	0	-

PVI STA. = 77+00  
 ELEV. = 56.52'  
 V.C. = 650  
 K = 556.02

BM #9: RR SPIKE IN BASE OF PP #105  
 -L1- EBL STA. 90+12, 25' RT.  
 ELEV. 37.60'



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 1 IN TARBORO TO EAST OF NC 4 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

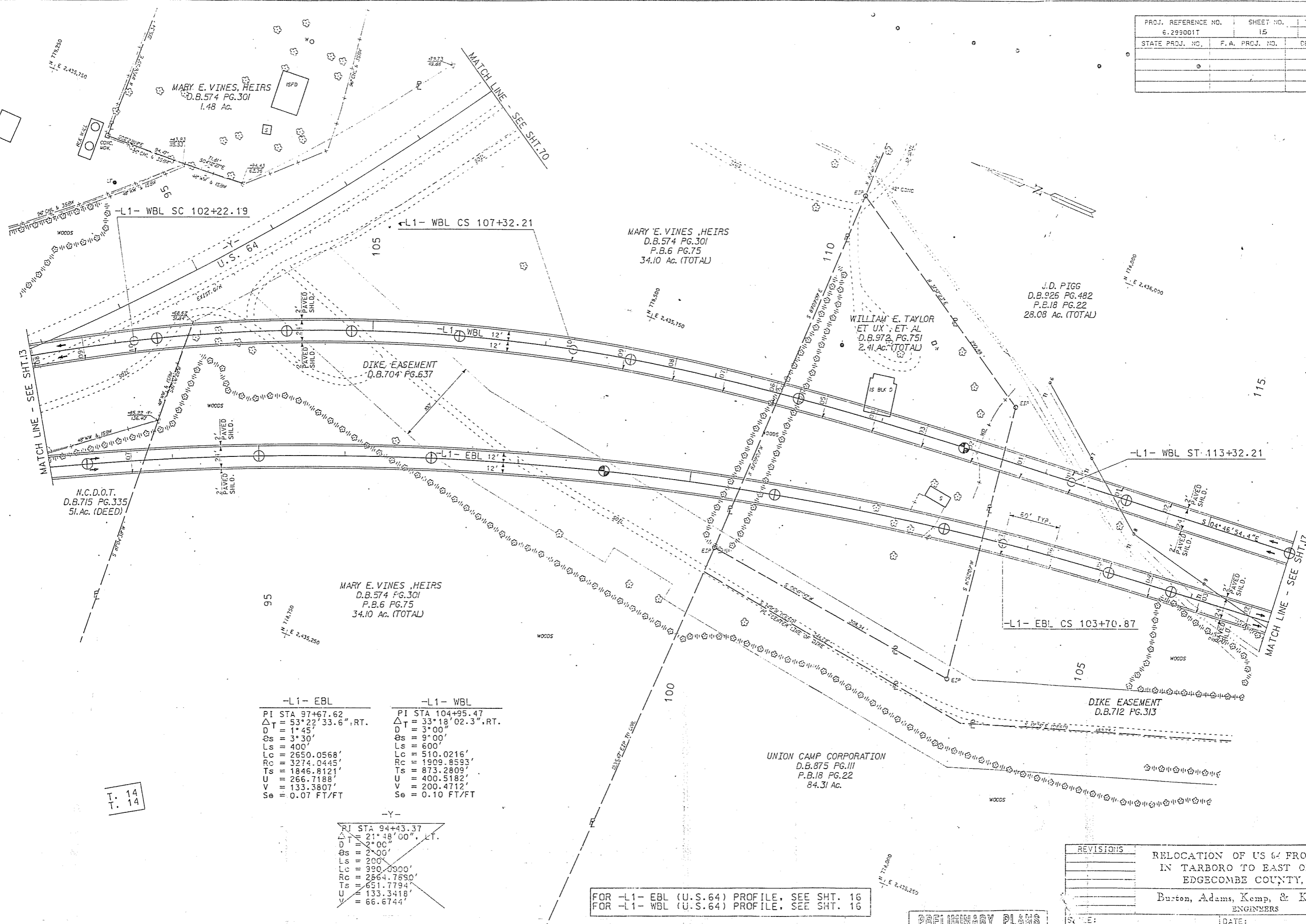
SCALE: 50 0 50 100

DATE: PROJECT NO.: 91024

SHEET OF

FILE: F:\WORK\91024\14.PLOT DATE: 04/24/92

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	15	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



-L1- EBL	-L1- WBL
PI STA 97+67.62	PI STA 104+95.47
$\Delta T = 53^{\circ}22'33.6''$ , RT.	$\Delta T = 33^{\circ}18'02.3''$ , RT.
D = 1'45"	D = 3'00"
$\theta_s = 3^{\circ}30'$	$\theta_s = 9^{\circ}00'$
Ls = 400'	Ls = 600'
Lc = 2650.0568'	Lc = 510.0216'
Rc = 3274.0445'	Rc = 1909.8593'
Ts = 1846.8121'	Ts = 873.2809'
U = 266.7188'	U = 400.5182'
V = 133.3807'	V = 200.4712'
Se = 0.07 FT/FT	Se = 0.10 FT/FT

-Y-
PI STA 94+43.37
$\Delta T = 21^{\circ}48'00''$ , LT.
D = 2'00"
$\theta_s = 2^{\circ}00'$
Ls = 200'
Lc = 990.0000'
Rc = 2664.7690'
Ts = 651.7794'
U = 133.3418'
V = 66.6744'

FOR -L1- EBL (U.S. 64) PROFILE, SEE SHT. 16  
 FOR -L1- WBL (U.S. 64) PROFILE, SEE SHT. 16

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR ANY ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 25 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc ENGINEERS
SCALE: 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

T. 14  
T. 14

-L1- WBL (U.S. 64 WBL)

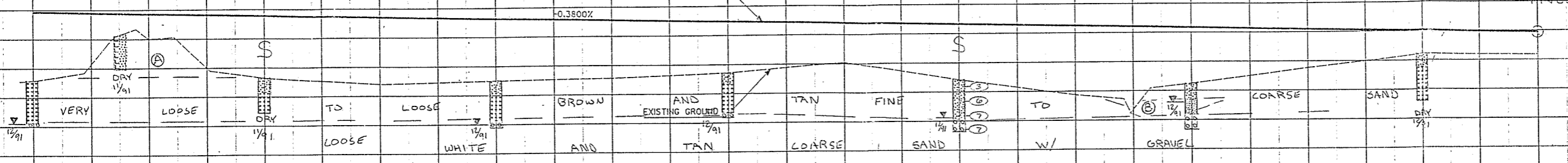
BM #10, BB SPIKE IN BASE OF DP #11-23-15  
 -L1- WBL STA. 110+31.72' LT.  
 ELEV. 40.21'

- (A) LOOSE TO MEDIUM DENSE TAN FINE TO COARSE SAND (FILL)
- (B) SOFT BROWN CLAYEY SANDY SILT

PROPOSED GROUND

-0.3800Z

-L1- WBL STA. 117+00, LBE  
 -L1- STA. 117+00, LA  
 42' RT.  
 GRADE EL. = 41.70' (LB)  
 GRADE EL. = 41.59' (LA)



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT CLAY		
5-44	106+00	0-2.5	A-2-4(0)	19	NP	36	49	8	7	18
5-45	106+00	2.5-6.0	A-3(0)	17	NP	71	26	1	2	4
55-7	112+00	0-1.5	A-2-4(0)	26	NP	28	64	5	3	12
55-8	112+00	5.0-6.5	A-2-4(0)	17	NP	71	26	1	2	4
55-9	112+00	7.5-9.0	A-1-6(0)	19	NP	78	17	1	4	5

104+00 105+00 106+00 107+00 108+00 109+00 110+00 111+00 112+00 113+00 114+00 115+00 116+00 117+00

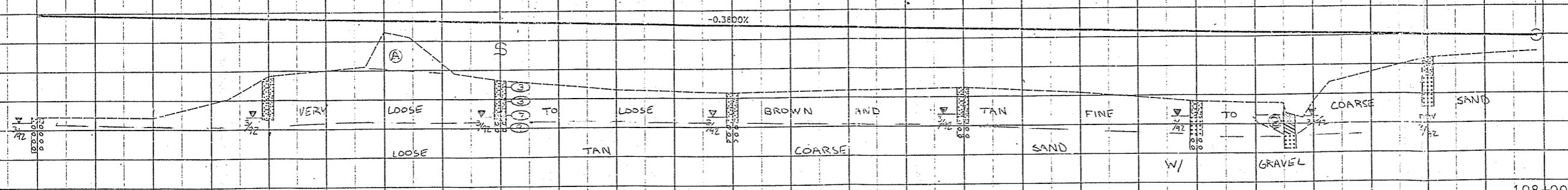
-L1- EBL (U.S. 64 EBL)

- (A) LOOSE TO MEDIUM DENSE SAND (FILL)

- (B) SOFT TO MEDIUM STIFF GRAY BROWN CLAYEY SANDY SILT AND SILTY SANDY CLAY

-0.3800Z

-L1- EBL STA. 107+99.16, LBE  
 -L1- STA. 110+00, LA  
 42' RT.  
 GRADE EL. = 44.74' (LB)  
 GRADE EL. = 44.57' (LA)



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT CLAY		
55-135	99+00	0-1.5	A-2-4(0)	17	NP	57	37	4	14	
55-136	99+00	5.0-6.5	A-4(0)	18	3	23	43	16	18	40
55-137	99+00	7.5-9.0	A-1-6(0)	15	NP	86	10	1	3	11

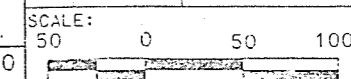
95+00 96+00 97+00 98+00 99+00 100+00 101+00 102+00 103+00 104+00 105+00 106+00 107+00

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 2  
 IN TARBORO TO EAST OF NC 45  
 EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS



DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	17	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

J.D. PIGG  
DEED BOOK 926 PAGE 482  
PLAT BOOK 18 PAGE 22  
28.08 AC. (TOTAL)

-Y5- PC 12+00

WOODS

SR-1600 -Y5-  
OLD SPARTA ROAD

ERNEST W. SHAW  
DB 889 PG 978  
1.15 AC.

CURTIS LEE WHITEHEAD  
DB 981 PG 910  
1.24 AC.

MEGELTON SHORT  
DB 951 PG 303  
0.74 AC.

-L1- POT 117+00 LA =  
-L1- WBL POT 117+00 LB, 42' RT.

-L1-REV TS 117+76.71 LA=  
-L1- POT 117+76.71 LB

-L1-REV SC 121+76.71

L1 SC 123+88.43

-L1-

-L1-REV

-L1- POT 117+00 LA =  
-L1- EBL POT 107+94.16 LB,  
42' LT.

-L1- EBL ST 107+70.87

DIKE EASEMENT  
D.B. 712 PG. 313

J.D. PIGG  
DEED BOOK 926 PAGE 482  
PLAT BOOK 18 PAGE 22  
28.08 AC. (TOTAL)

-L1-REV POC 129+00=  
RAMP C POC 0+00=  
54' RT.  
DELTA = 2° 18', RT.

UNION CAMP CORPORATION  
DEED BOOK 875 PAGE III  
PLAT BOOK 18 PAGE 22  
84.31 AC.

-L1- EBL

PI STA	91+67.62
ΔT	= 53° 22' 33.6", RT.
DC	= 1' 45'
OS	= 3' 30'
LS	= 400'
LC	= 2650.0568'
RC	= 3274.0445'
TS	= 1846.8121'
U	= 266.7188'
V	= 133.3807'
Se	= 0.08 FT/FT

-L1-

PI STA	128+71.29
ΔT	= 44° 25' 33.0", LT.
DC	= 3' 00'
OS	= 9' 00'
LS	= 600'
LC	= 880.8614'
RC	= 1909.8593'
TS	= 1082.8594'
U	= 400.5182'
V	= 200.4712'

-L1-REV

PI STA	131+28.99
ΔT	= 48° 39' 02.0", LT.
DC	= 2' 15'
OS	= 4' 30'
LS	= 400'
LC	= 1762.2471'
RC	= 2546.4791'
TS	= 1352.2796'
U	= 266.7529'
V	= 133.4117'
Se	= 0.08 FT/FT

RAMP C

PI STA	1+25.10
Δ	= 5° 37' 30", LT.
D	= 2' 15"
L	= 250'
R	= 2546.4791'
T	= 125.1005'
Se	= 0.08 FT/FT

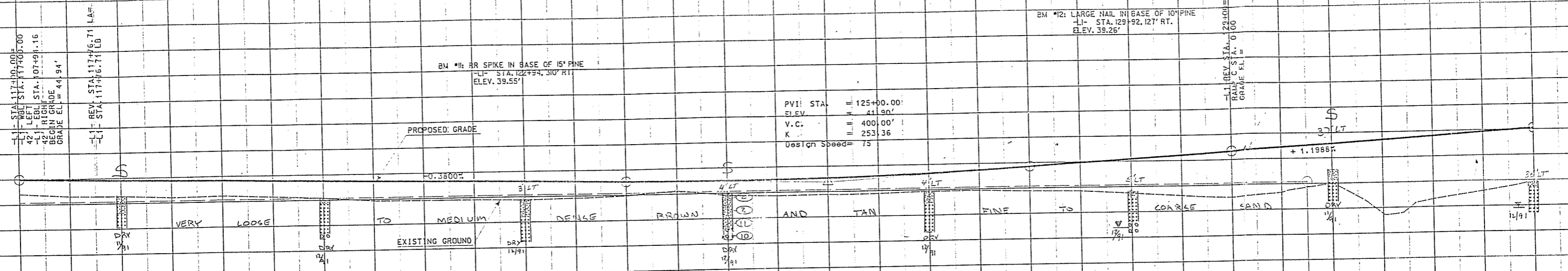
FOR -L1- & -L1- REV. (U.S.64) PROFILE, SEE SHT. 18

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 2 IN TARBORO TO EAST OF NC 44 EDGEcombe COUNTY, N.C.
SCALE: 50 0 50 100	Burton, Adams, Kemp, & King, Inc ENGINEERS
DATE: PROJECT NO.: 91024	SHEET OF

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	18	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

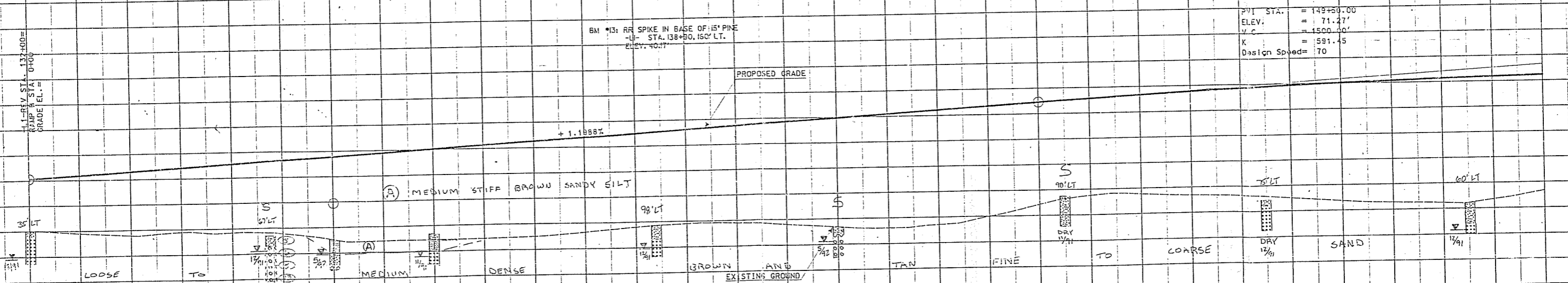
-L1- & -L1-REV. (U.S. 64)



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-46	118+00	0-3.0	A-2-4 (6)	16	NP	52	31	11	6	21	
S-47	"	3.0-6.0	A-3 (6)	19	NP	67	28	1	4	5	
S-48	122+00	0-1.0	A-2-4 (6)	18	NP	53	30	14	8	32	
S-49	"	1.0-2.0	A-2-4 (6)	14	NP	64	25	6	5	13	
S-50	"	2.0-4.0	A-2-4 (6)	14	NP	56	11	3	0	3	
S-51	"	4.0-7.0	A-1-6 (6)	14	NP	31	48	16	5	20	
S-52	130+00	0-2.0	A-2-4 (6)	15	NP	31	48	16	5	20	
S-53	"	2.0-6.0	A-3 (6)	20	NP	38	54	6	2	10	

-L1-REV (U.S. 64)



**SOIL TEST RESULTS**

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-54	134+74	0-1.5	A-2-4 (6)	27	9	37	35	12	16	49	
S-55	"	1.5-4.0	A-1-6 (6)	16	NP	30	42	2	1	3	
S-56	142+20	0-1.5	A-2-4 (6)	17	NP	30	54	11	5	21	
S-57	"	1.5-6.0	A-2-4 (6)	17	NP	37	47	8	7	18	
S-58	140+00	0-1.5	A-2-4 (6)	17	NP	48	36	12	4	20	
S-59	"	1.5-6.0	A-1-6 (6)	17	NP	70	20	5	5	12	

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 24 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc  
ENGINEERS

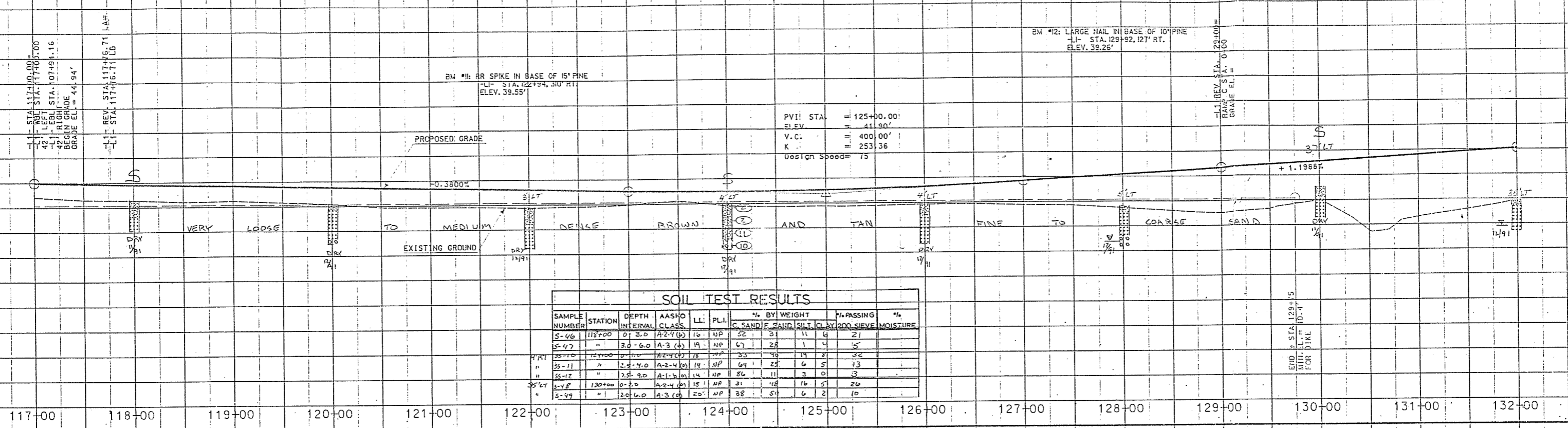
SCALE: 50' 0 50'

DATE: \_\_\_\_\_

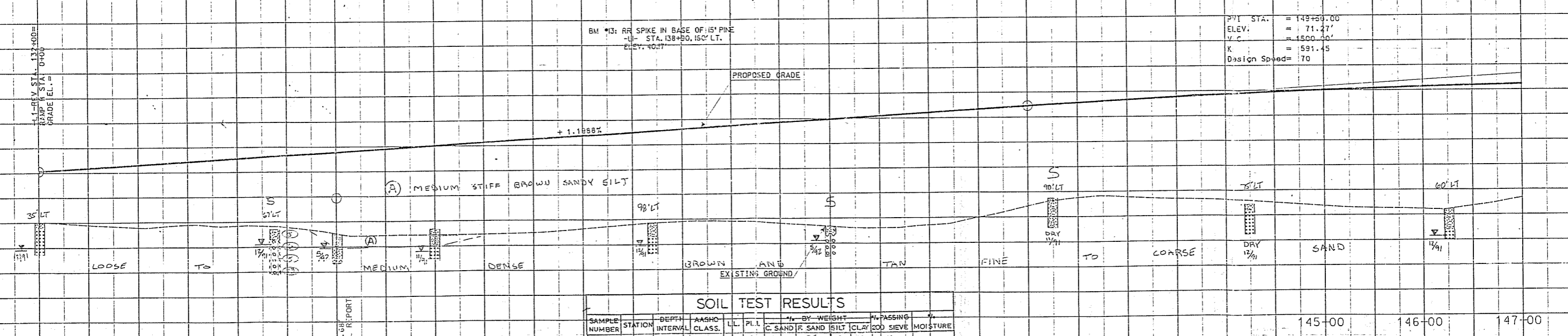
PROJECT NO.: 91024

SHEET \_\_\_\_\_ OF \_\_\_\_\_

-L1- & -L1-REV. (U.S. 64)



-L1-REV (U.S. 64)



**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

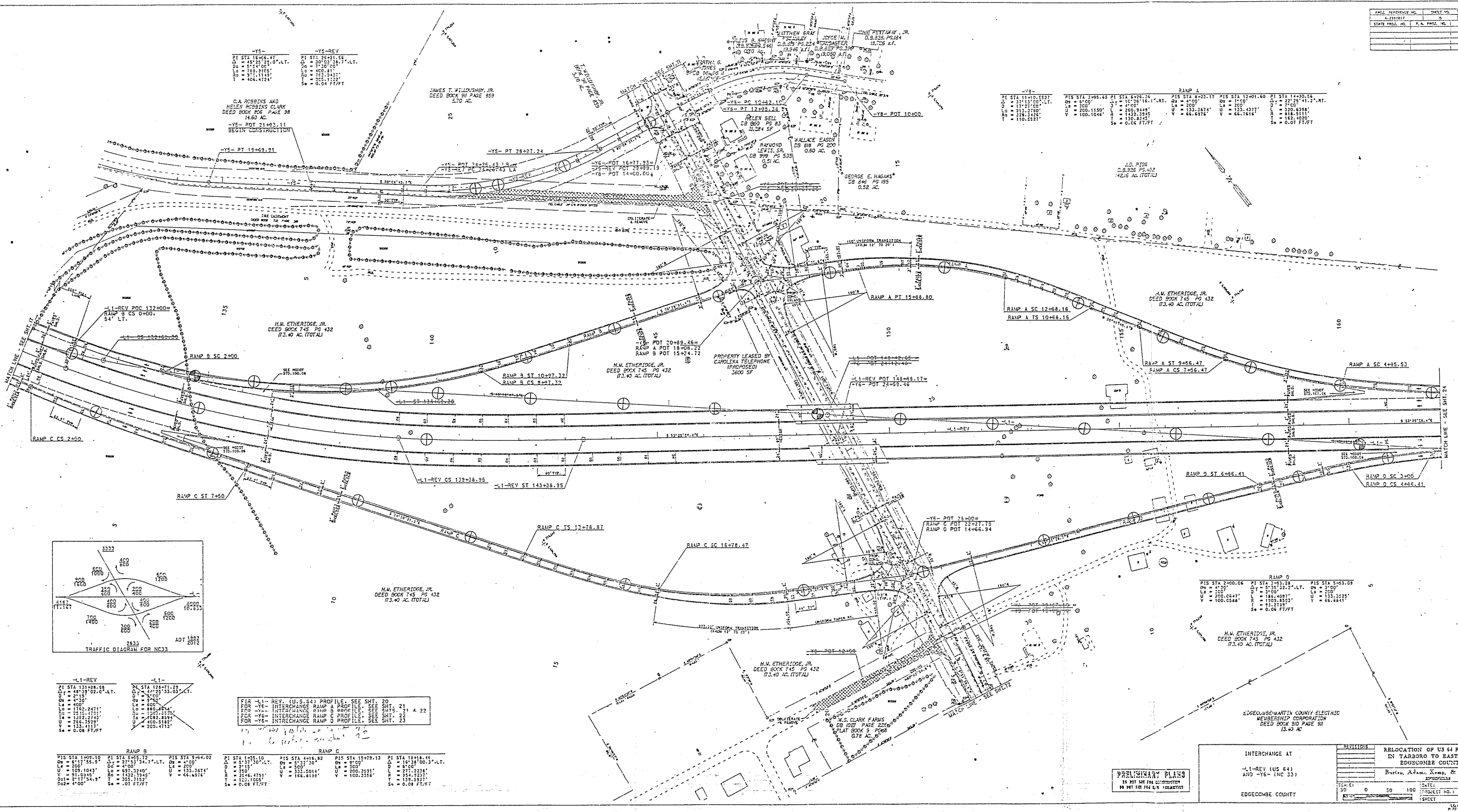
REVISIONS  
 RELOCATION OF US 64 FROM US 258  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

SCALE: 50' 0 50'  
 DATE:  
 PROJECT NO.: 91024  
 SHEET OF

132+00 133+00 134+00 135+00 136+00 137+00 138+00 139+00 140+00 141+00 142+00 143+00 144+00

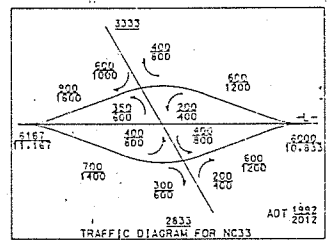


STATE	FED. AID PROJ. NO.	F.A. PROJ. NO.	CONTRACT NO.	SHEET NO.	TOTAL SHEETS
NC				1	1



-VE-		-VE-REV	
PI STA 14+06.47	PI STA 20+31.14	PI STA 20+31.14	PI STA 20+31.14
Δ = 45°22'25.0" LT.	Δ = 30°23'38.7" LT.	Δ = 30°23'38.7" LT.	Δ = 30°23'38.7" LT.
DS = 51.47'	DS = 51.47'	DS = 51.47'	DS = 51.47'
LS = 183.2105'	LS = 183.2105'	LS = 183.2105'	LS = 183.2105'
RS = 370.1149'	RS = 370.1149'	RS = 370.1149'	RS = 370.1149'
T = 68.4124'	T = 68.4124'	T = 68.4124'	T = 68.4124'
S = 0.04 FT/FT	S = 0.04 FT/FT	S = 0.04 FT/FT	S = 0.04 FT/FT

-VE-		RAMP A	
PI STA 11+00.00	PI STA 3+95.65	PI STA 6+26.14	PI STA 4+23.17
Δ = 37°17'00" LT.	Δ = 6°00'	Δ = 10°28'18.1" RT.	Δ = 4°00'
DS = 17.27'	DS = 17.27'	DS = 17.27'	DS = 17.27'
LS = 311.2160'	LS = 311.2160'	LS = 280.9448'	LS = 133.3674'
RS = 110.2527'	RS = 110.2527'	RS = 432.3846'	RS = 133.4377'
T = 110.2527'	T = 110.2527'	T = 46.6376'	T = 66.1016'
S = 0.04 FT/FT	S = 0.04 FT/FT	S = 0.04 FT/FT	S = 0.01 FT/FT



-L1-REV		-L1-	
PI STA 131+28.28	PI STA 131+28.28	PI STA 131+28.28	PI STA 131+28.28
Δ = 48°39'52.5" LT.	Δ = 48°39'52.5" LT.	Δ = 48°39'52.5" LT.	Δ = 48°39'52.5" LT.
DS = 41.00'	DS = 41.00'	DS = 41.00'	DS = 41.00'
LS = 180.00'	LS = 180.00'	LS = 180.00'	LS = 180.00'
RS = 129.2471'	RS = 129.2471'	RS = 129.2471'	RS = 129.2471'
US = 129.2471'	US = 129.2471'	US = 129.2471'	US = 129.2471'
TS = 166.1529'	TS = 166.1529'	TS = 166.1529'	TS = 166.1529'
SS = 166.1529'	SS = 166.1529'	SS = 166.1529'	SS = 166.1529'
S = 0.08 FT/FT	S = 0.08 FT/FT	S = 0.08 FT/FT	S = 0.08 FT/FT

FOR -L1-REV (U.S. 64) PROFILE, SEE SHT. 20  
 FOR -VE- INTERCHANGE RAMP A PROFILE, SEE SHT. 21  
 FOR -VE- INTERCHANGE RAMP B PROFILE, SEE SHT. 21 & 22  
 FOR -VE- INTERCHANGE RAMP C PROFILE, SEE SHT. 22  
 FOR -VE- INTERCHANGE RAMP D PROFILE, SEE SHT. 23

RAMP B		RAMP C	
PI STA 1+09.10	PI STA 2+00.00	PI STA 15+78.13	PI STA 13+01.14
Δ = 8°17'55.5"	Δ = 27°53'34.7" LT.	Δ = 16°38'00.3" LT.	Δ = 16°38'00.3" LT.
DS = 41.00'	DS = 41.00'	DS = 41.00'	DS = 41.00'
LS = 109.1043'	LS = 197.3240'	LS = 200.3331'	LS = 371.2238'
RS = 109.1043'	RS = 182.1846'	RS = 100.2356'	RS = 354.2331'
US = 27.1745'	US = 166.1529'	US = 166.1529'	US = 138.2921'
TS = 166.1529'	TS = 166.1529'	TS = 166.1529'	TS = 138.2921'
SS = 166.1529'	SS = 166.1529'	SS = 166.1529'	SS = 138.2921'
S = 0.01 FT/FT	S = 0.01 FT/FT	S = 0.08 FT/FT	S = 0.08 FT/FT

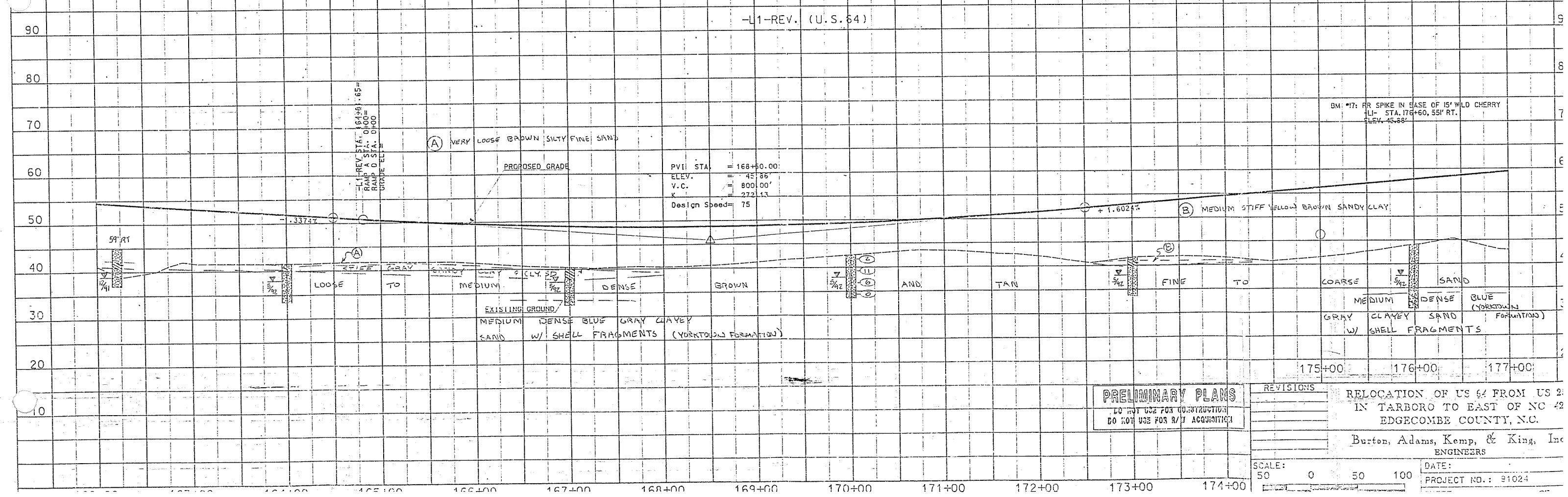
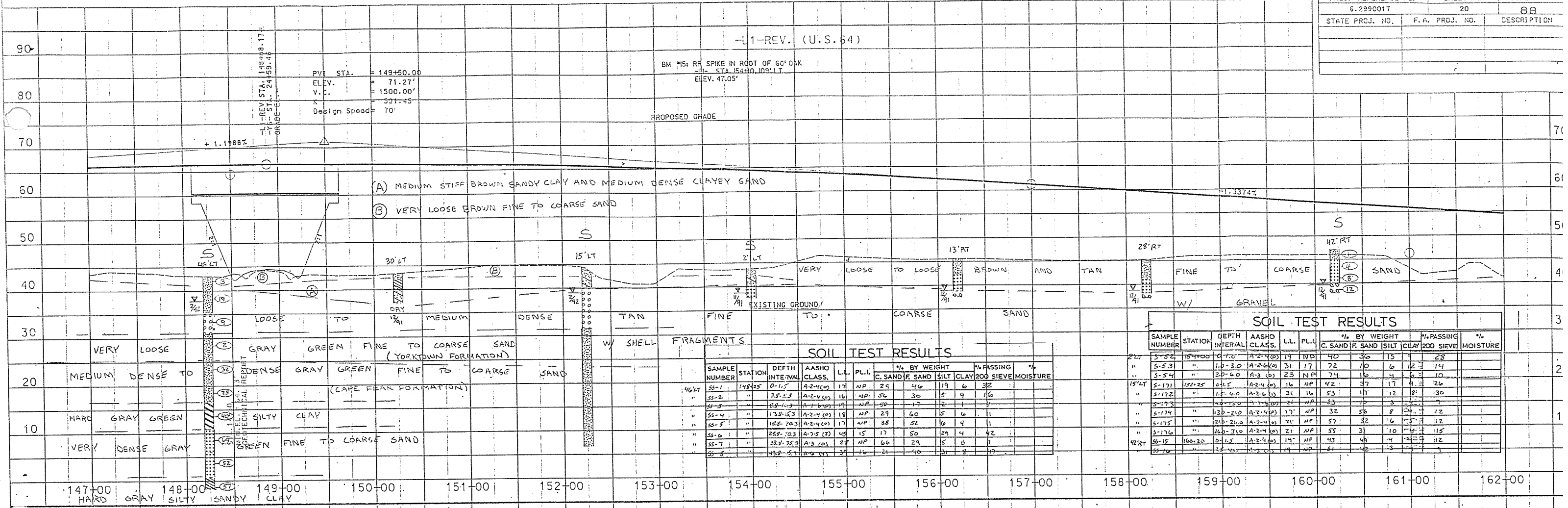
RAMP D	
PI STA 2+00.00	PI STA 3+93.28
Δ = 4°00'	Δ = 5°35'32.5" LT.
DS = 30.00'	DS = 30.00'
LS = 200.0000'	LS = 7.00'
RS = 100.0000'	RS = 186.4091'
US = 100.0000'	US = 1902.8503'
T = 21.2187'	T = 66.4841'
S = 0.06 FT/FT	S = 0.06 FT/FT

PRELIMINARY PLANS  
 IN PART FOR THE RELOCATION  
 OF U.S. 64 FROM  
 IN TARBORO TO EAST OF N  
 EDGECOMBE COUNTY, NC

INTERCHANGE AT  
 -L1-REV (US 64)  
 AND -VE- (NC 33)

EDGECOMBE COUNTY

DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET: \_\_\_\_\_



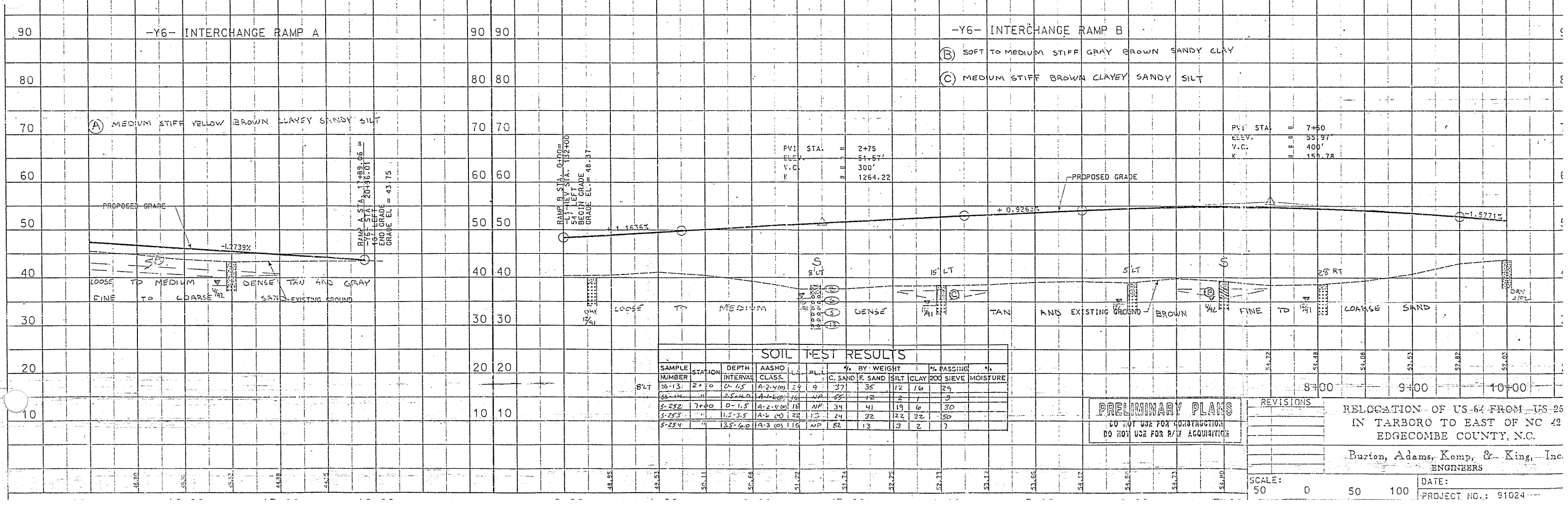
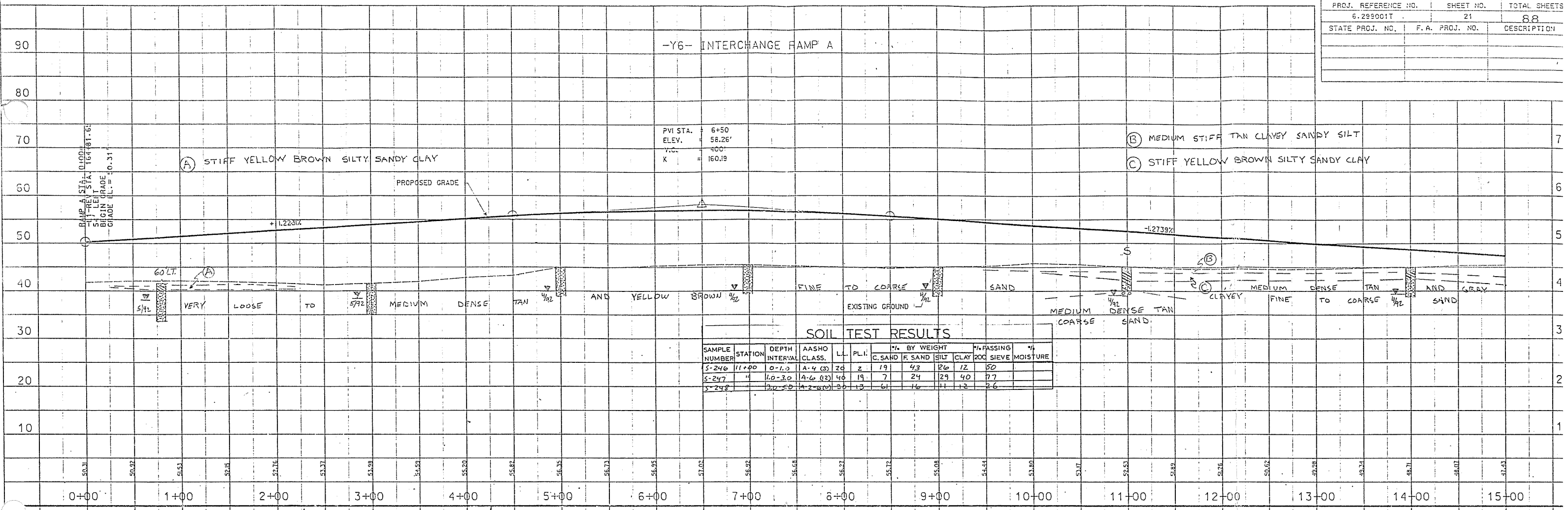
**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 2 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc  
 ENGINEERS

SCALE: 50 0 50 100  
 DATE: PROJECT NO.: 91024



**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

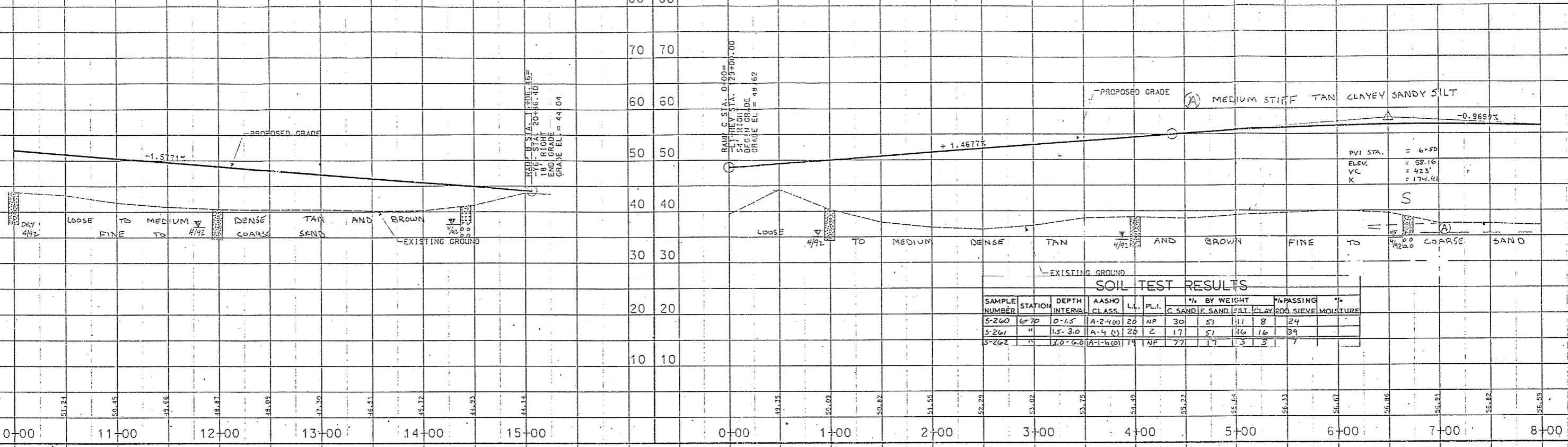
REVISIONS


RELOCATION OF US-64 FROM US-25  
IN TARBORO TO EAST OF NC 42  
EDGEcombe COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc.  
ENGINEERS

-Y6- INTERCHANGE RAMP B

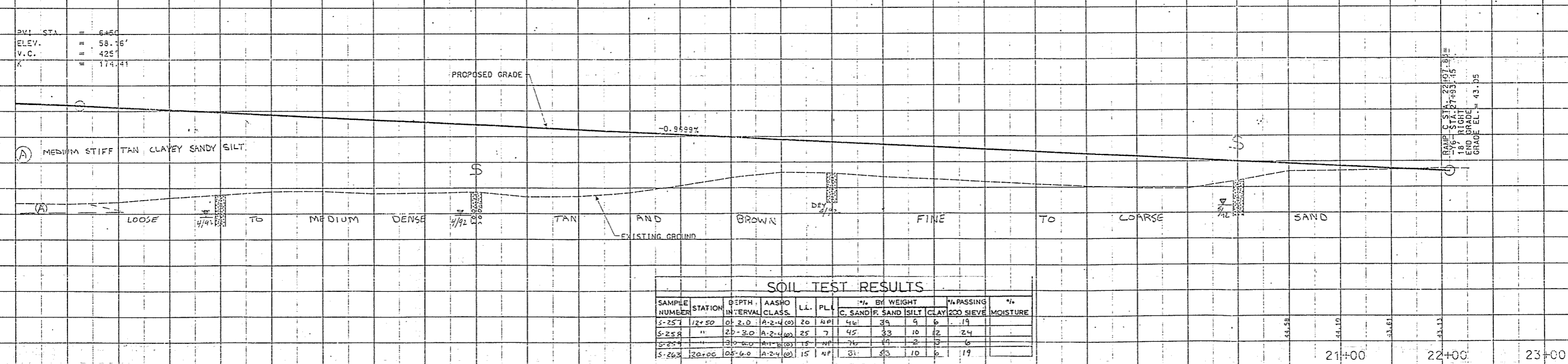
-Y6- INTERCHANGE RAMP C



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING		%
						C. SAND	F. SAND	SILT	CLAY	200 SIEVE	
S-260	6+70	0-1.5	A-2.4 (M)	20	NP	30	51	11	8	24	
S-261	"	1.5-3.0	A-4 (M)	26	Z	17	51	16	16	39	
S-262	"	3.0-6.0	A-1-b (M)	19	NP	77	17	3	3	7	

-Y6- INTERCHANGE RAMP C



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	L.L.	P.L.I.	% BY WEIGHT			% PASSING		%
						C. SAND	F. SAND	SILT	CLAY	200 SIEVE	
S-257	12+50	0-2.0	A-2.4 (M)	20	NP	46	39	9	6	19	
S-258	"	2.0-3.0	A-2.4 (M)	25	7	45	33	10	12	24	
S-259	"	3.0-6.0	A-1-b (M)	15	NP	76	19	2	3	6	
S-263	20+00	0.5-6.0	A-2.4 (M)	15	NP	51	53	10	6	19	

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS

RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42, EDGEcombe COUNTY, N.C.

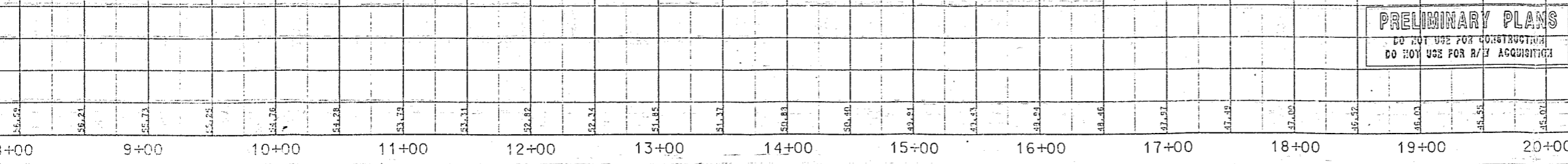
Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_

PROJECT NO.: 91024

SHEET \_\_\_\_\_ OF \_\_\_\_\_





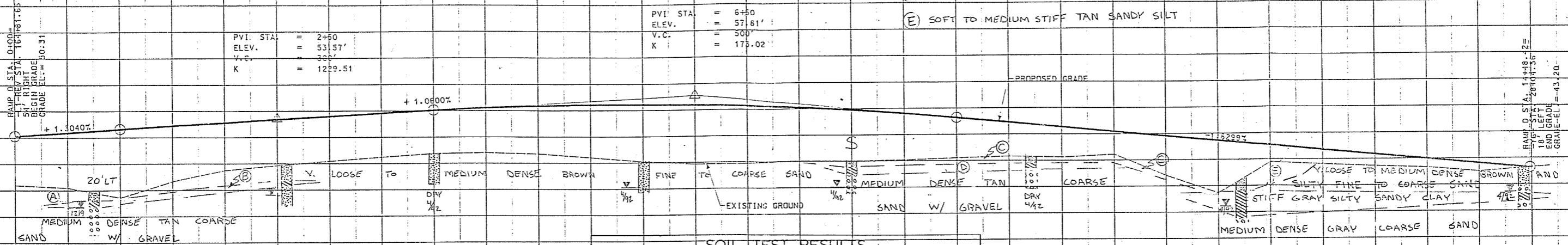
-Y6- INTERCHANGE RAMP D

- (A) LOOSE BROWN SILTY FINE SAND
- (B) MEDIUM STIFF GRAY SANDY CLAY

- (C) SOFT BROWN CLAYEY SANDY SILT
- (D) MEDIUM STIFF YELLOW BROWN SILTY FINE SANDY CLAY
- (E) SOFT TO MEDIUM STIFF TAN SANDY SILT

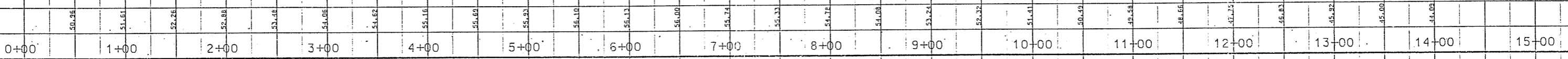
PVI STA. = 2+50  
 ELEV. = 53.57'  
 V.C. = 3.00'  
 K = 1229.51

PVI STA. = 6+50  
 ELEV. = 57.61'  
 V.C. = 500'  
 K = 173.02



SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHO CLASS.	L <sub>10</sub>	P <sub>100</sub>	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-249	8+00	0-1.0	A-4 (2)	14	3	26	38	24	12	44	
S-250	"	1.0-2.5	A-6 (3)	32	15	11	39	26	34	68	
S-251	"	2.5-6.0	A-1-6 (6)	17	NP	77	15	2	6	9	

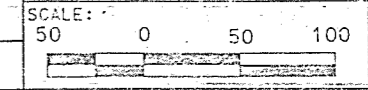


**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/I ACQUISITION

REVISIONS

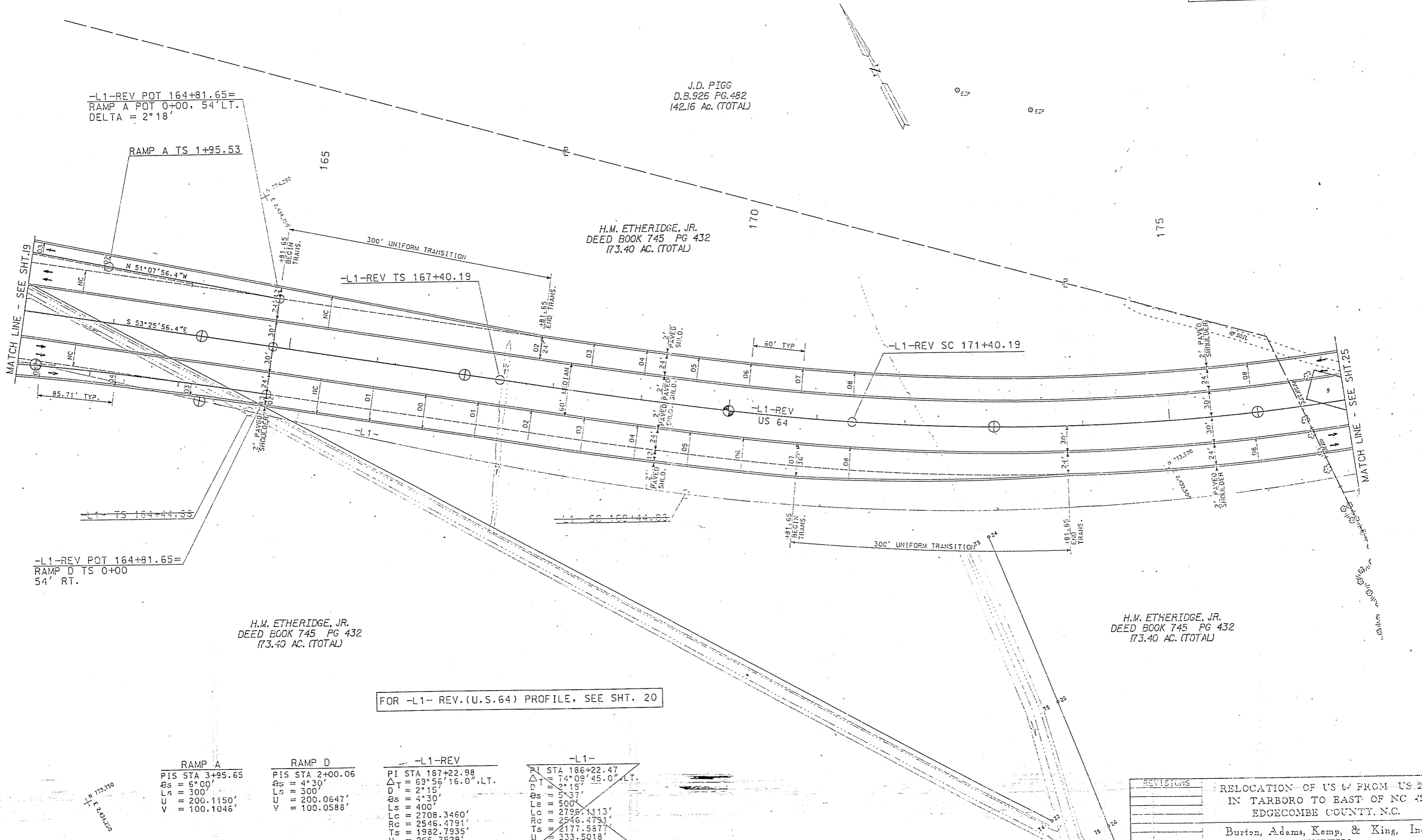
RELOCATION OF US 64 FROM US  
 IN TARBORO TO EAST OF NC  
 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, I.  
 ENGINEERS



DATE: \_\_\_\_\_  
 PROJECT NO.: 91024  
 SHEET \_\_\_\_\_ OF \_\_\_\_\_

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	24	88
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION



J.D. PIGG  
D.B.926 PG.482  
142.16 AC. (TOTAL)

H.M. ETHERIDGE, JR.  
DEED BOOK 745 PG 432  
173.40 AC. (TOTAL)

H.M. ETHERIDGE, JR.  
DEED BOOK 745 PG 432  
173.40 AC. (TOTAL)

H.M. ETHERIDGE, JR.  
DEED BOOK 745 PG 432  
173.40 AC. (TOTAL)

FOR -L1- REV. (U.S.64) PROFILE, SEE SHT. 20

RAMP A  
PIS STA 3+95.65  
θs = 6°00'  
Ls = 300'  
U = 200.1150'  
V = 100.1046'

RAMP D  
PIS STA 2+00.06  
θs = 4°30'  
Ls = 300'  
U = 200.0647'  
V = 100.0588'

-L1-REV  
PI STA 187+22.98  
ΔT = 69°56'16.0" LT.  
D = 2°15'  
θs = 4°30'  
Ls = 400'  
Lc = 2708.3460'  
Rc = 2546.4791'  
Ts = 1982.7935'  
U = 266.7529'  
V = 133.4117'  
Se = 0.08 FT/FT

-L1-  
PI STA 186+22.47  
ΔT = 74°09'45.0" LT.  
D = 2°15'  
θs = 5°37'  
Ls = 500'  
Lc = 2796.1113'  
Rc = 2546.4731'  
Ts = 2177.5877'  
U = 333.5018'  
V = 166.8198'

**PRELIMINARY PLANS**  
DO NOT USE FOR CONSTRUCTION  
DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 258 IN TARBORO TO EAST OF NC 42 EDGEcombe COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024
	SHEET OF

-L1-REV  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0''$ , LT.  
 D = 2\*15'  
 Os = 4\*30'  
 Ls = 400'  
 Lc = 2708.3460'  
 Rc = 2546.4791'  
 Ts = 1982.7935'  
 U = 266.7529'  
 V = 133.4117'  
 Ss = 0.08 FT/FT

~~-L1-~~  
~~PI STA 186+22.47~~  
 ~~$\Delta T = 74^{\circ}09'45.0''$ , LT.~~  
~~D = 2\*15'~~  
~~Os = 5\*37'~~  
~~Ls = 500'~~  
~~Lc = 2796.7113'~~  
~~Rc = 2546.4791'~~  
~~Ts = 2177.5877'~~  
~~U = 333.5018'~~  
~~V = 166.8198'~~

PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.298001T	25	88
STATE PROJ. NO.	F. A. PROJ. NO.	DESCRIPTION

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

185

190

JAMES T. EDWARDS  
 D.B.469 PG.119  
 1.01 Ac.

-L1-REV  
 US 64

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

FOR -L1- REV (U.S. 64) PROFILE, SEE SHT. 26

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/Y ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 25 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
SCALE: 50' 0' 50' 100'	DATE: PROJECT NO.: 91024
	SHEET OF

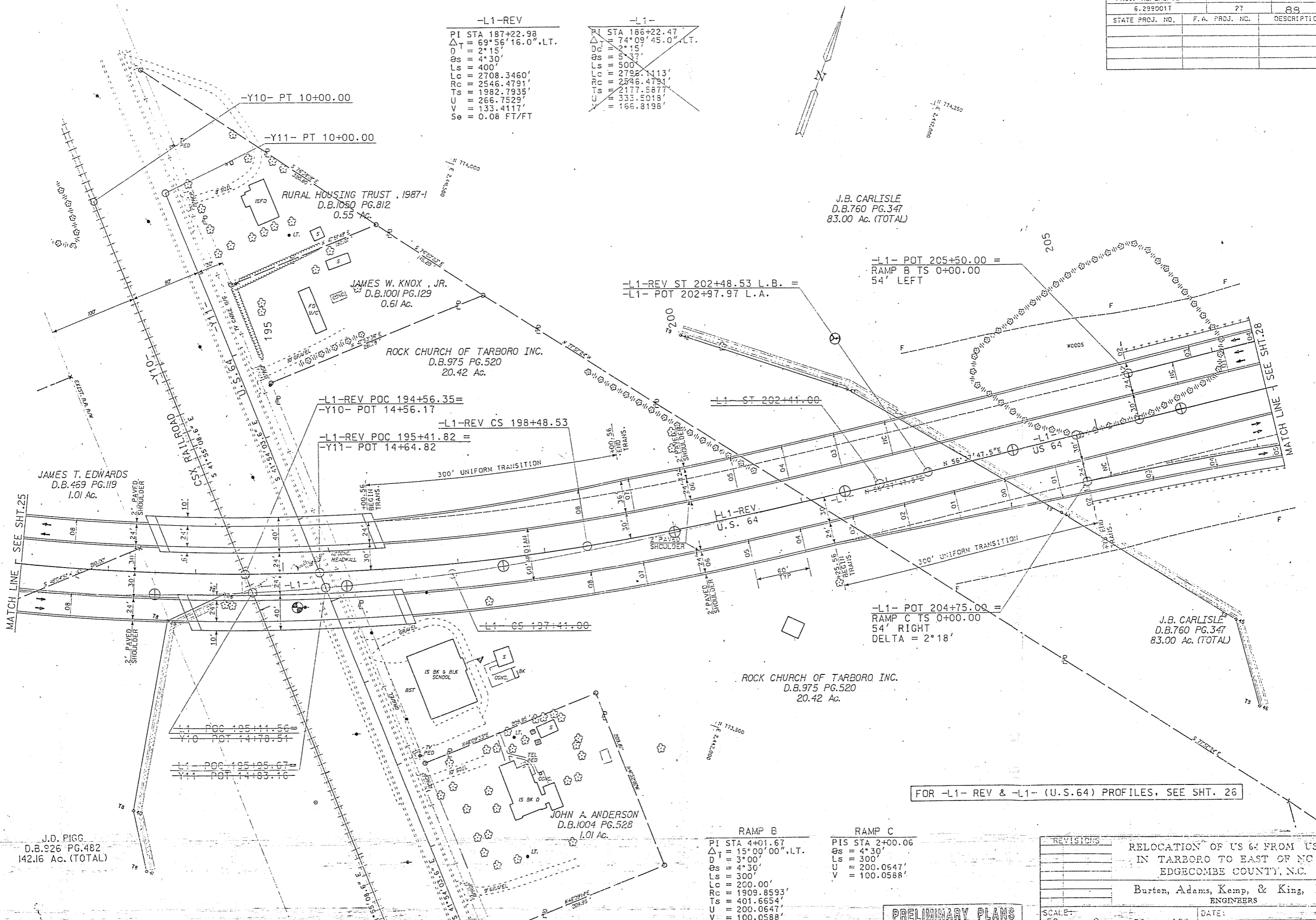
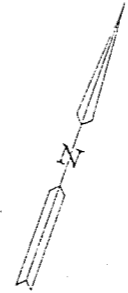




PROJ. REFERENCE NO.	SHEET NO.	TOTAL SHEETS
6.299001T	27	89
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION

**-L1-REV**  
 PI STA 187+22.98  
 $\Delta T = 69^{\circ}56'16.0''$  LT.  
 D = 2.15'  
 $\Delta s = 4^{\circ}30'$   
 Ls = 400'  
 Lc = 2708.3460'  
 Rc = 2546.4791'  
 Ts = 1982.7935'  
 U = 266.7529'  
 V = 133.4117'  
 Se = 0.08 FT/FT

**-L1-**  
 PI STA 186+22.47  
 $\Delta T = 74^{\circ}09'45.0''$  LT.  
 D = 2.15'  
 $\Delta s = 4^{\circ}30'$   
 Ls = 500'  
 Lc = 2792.1413'  
 Rc = 2546.4791'  
 Ts = 2177.5877'  
 U = 333.5018'  
 V = 166.8198'



J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)

J.B. CARLISLE  
 D.B.760 PG.347  
 83.00 Ac. (TOTAL)

JAMES T. EDWARDS  
 D.B.459 PG.119  
 1.01 Ac.

JAMES W. KNOX, JR.  
 D.B.1001 PG.129  
 0.61 Ac.

ROCK CHURCH OF TARBORO INC.  
 D.B.975 PG.520  
 20.42 Ac.

ROCK CHURCH OF TARBORO INC.  
 D.B.975 PG.520  
 20.42 Ac.

JOHN A. ANDERSON  
 D.B.1004 PG.528  
 1.01 Ac.

J.D. PIGG  
 D.B.926 PG.482  
 142.16 Ac. (TOTAL)

**RAMP B**  
 PI STA 4+01.67  
 $\Delta T = 15^{\circ}00'00''$  LT.  
 D = 3.00'  
 $\Delta s = 4^{\circ}30'$   
 Ls = 300'  
 Lc = 200.00'  
 Rc = 1909.8593'  
 Ts = 401.6654'  
 U = 200.0647'  
 V = 100.0588'  
 Se = 0.05 FT/FT

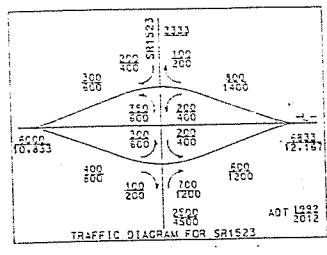
**RAMP C**  
 PIS STA 2+00.06  
 $\Delta s = 4^{\circ}30'$   
 Ls = 300'  
 U = 200.0647'  
 V = 100.0588'

FOR -L1- REV & -L1- (U.S.64) PROFILES, SEE SHT. 26

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

REVISIONS	RELOCATION OF US 64 FROM US 25 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.
	Burton, Adams, Kemp, & King, Inc. ENGINEERS
SCALE: 50 0 50 100	DATE: PROJECT NO.: 91024 SHEET OF

PROJ. REFERENCE NO.	DRAWING NO.	TOTAL SHEETS
4-111-011	38	88
STATE PROJ. NO.	F.A. PANEL NO.	DESCRIPTION

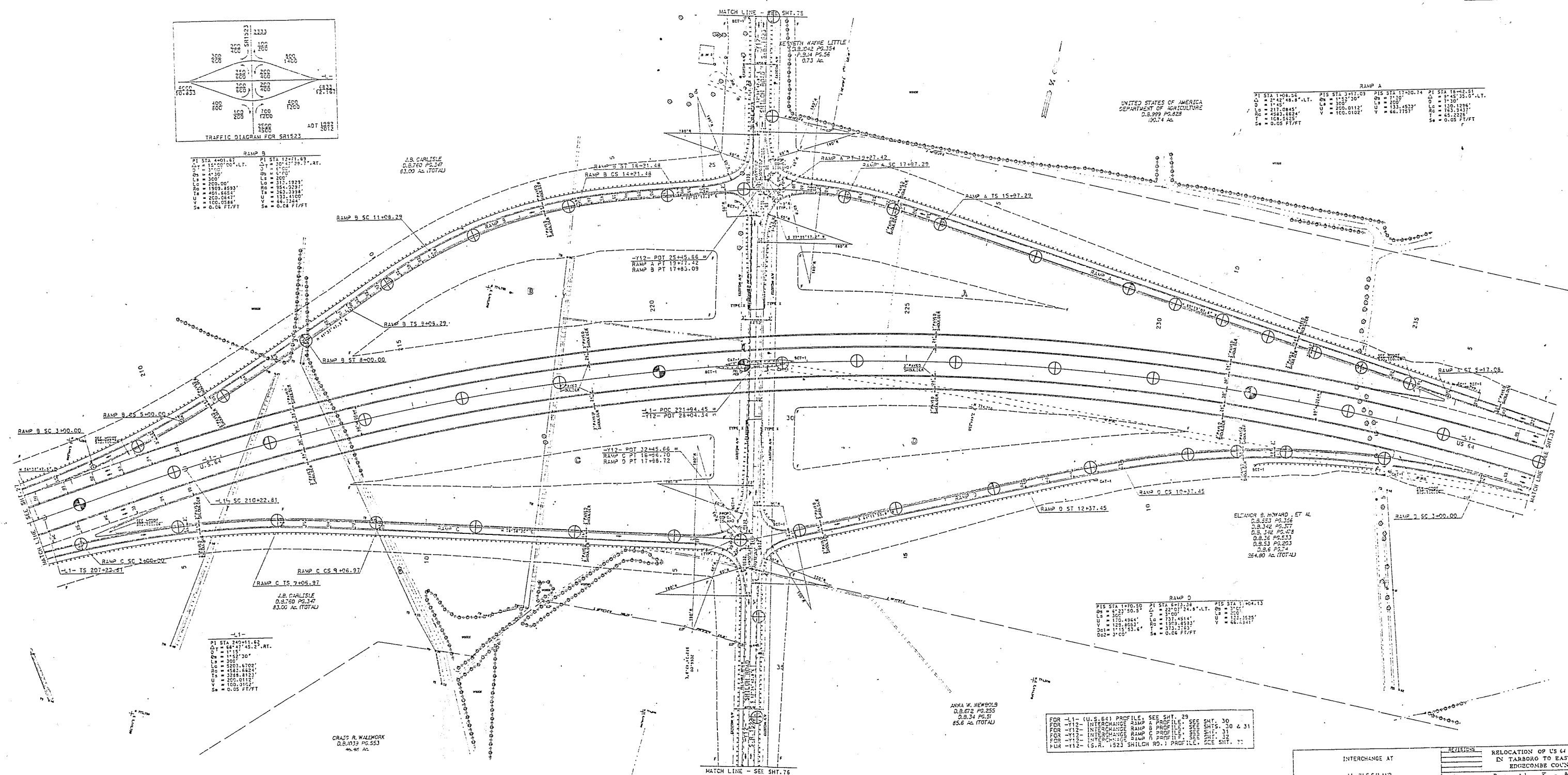


RAMP B

PI STA 4+01.87	PI STA 12+11.69
CL = 15° 00' 00" LT.	CL = 10° 47' 29.7" AT.
CS = 150'	CS = 200'
LS = 200.00'	LS = 310.1923'
LC = 1909.8933'	LC = 954.2091'
LC = 601.8833'	LC = 363.3394'
LC = 200.0647'	LC = 133.3108'
LC = 100.0588'	LC = 66.7364'
SE = 0.06 PI/FT	SE = 0.04 PI/FT

RAMP A

PI STA 1+08.58	PI STA 3+17.09	PI STA 17+10.74	PI STA 18+02.51
CL = 2° 42' 44.8" LT.	CL = 1° 53' 30"	CL = 1° 10'	CL = 1° 45' 35.0" LT.
CS = 150'	CS = 300'	CS = 200'	CS = 150'
LS = 200.00'	LS = 300.00'	LS = 333.4533'	LS = 100.1236'
LC = 1909.8933'	LC = 954.2091'	LC = 133.3108'	LC = 133.3108'
LC = 601.8833'	LC = 363.3394'	LC = 66.7364'	LC = 66.7364'
LC = 200.0647'	LC = 100.0588'	LC = 66.7364'	LC = 66.7364'
LC = 100.0588'	LC = 66.7364'	LC = 66.7364'	LC = 66.7364'
SE = 0.06 PI/FT	SE = 0.06 PI/FT	SE = 0.06 PI/FT	SE = 0.06 PI/FT



RAMP C

PI STA 2+00.06	PI STA 5+02.36	PI STA 2+75.65
CL = 4° 33'	CL = 12° 12' 32.4" AT.	CL = 1° 09'
CS = 300'	CS = 300'	CS = 300'
LS = 200.00'	LS = 400.9670'	LS = 137.3525'
LC = 1229.8123'	LC = 1509.8933'	LC = 66.7364'
LC = 100.0117'	LC = 204.1510'	LC = 66.7364'
LC = 100.0117'	LC = 100.0117'	LC = 66.7364'
SE = 0.06 PI/FT	SE = 0.06 PI/FT	SE = 0.06 PI/FT

RAMP D

PI STA 1+00.00	PI STA 6+13.38	PI STA 1+04.13
CL = 4° 33' 50.5"	CL = 22° 07' 54.4" LT.	CL = 1° 09'
CS = 300'	CS = 300'	CS = 300'
LS = 200.00'	LS = 337.4514'	LS = 137.3525'
LC = 1229.8123'	LC = 1509.8933'	LC = 66.7364'
LC = 100.0117'	LC = 204.1510'	LC = 66.7364'
LC = 100.0117'	LC = 100.0117'	LC = 66.7364'
SE = 0.06 PI/FT	SE = 0.06 PI/FT	SE = 0.06 PI/FT

FOR L-1 (U.S. 64) PROFILE, SEE SHT. 29  
 FOR L-10 INTERCHANGE RAMP C PROFILE, SEE SHT. 30  
 FOR L-12 INTERCHANGE RAMP B PROFILE, SEE SHTS. 30 & 31  
 FOR L-12 INTERCHANGE RAMP D PROFILE, SEE SHTS. 30 & 31  
 FOR L-12 INTERCHANGE RAMP A PROFILE, SEE SHT. 32  
 FOR L-12 (S.R. 1523) SHILCH RD. PROFILE, SEE SHT. 77

RELOCATION OF US 64 FROM EN TARBORO TO EAST OF EDGECOMBE COUNTY, N.C.

INTERCHANGE AT L-1 (U.S. 64) AND L-12 (S.R. 1523)

EDGECOMBE COUNTY

DATE: \_\_\_\_\_  
 PROJECT NO.: 31024  
 SHEET: \_\_\_\_\_

PRELIMINARY PLAN  
 IS NOT FOR CONSTRUCTION  
 IS NOT FOR PERMITS

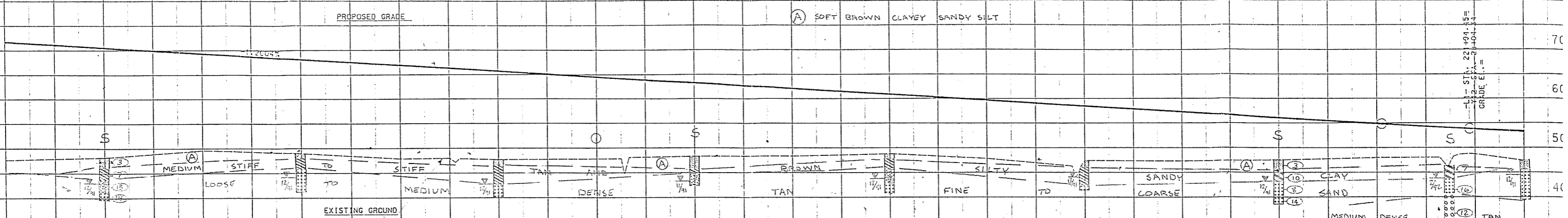
CRAIG R. WALLWORK  
 D.B. 1033 PG. 553  
 83.00 AC (TOTAL)

ANNA W. NEWBOLD  
 D.B. 672 PG. 251  
 65.0 AC (TOTAL)

UNITED STATES OF AMERICA  
 DEPARTMENT OF AGRICULTURE  
 D.S. 999 PG. 828  
 100.74 AC

-L1- (U.S. 64)

BM #22: BR SPIKE IN BASE OF 20" GUM  
 -L1- STA. 217+62.108 RT.  
 ELEV. 48.99'



SOIL TEST RESULTS

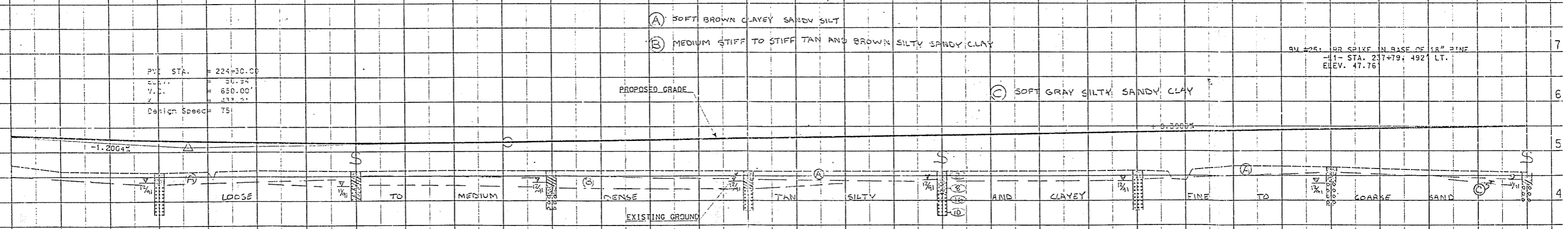
SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-21	208+00	0-1.5	A-4 (3)	16	NP	24	44	18	14	39	
SS-25	"	2.5-4.0	A-6 (4)	29	15	18	33	17	32	52	18.6
SS-26	"	5.0-6.5	A-2-4 (6)	20	NP	54	30	5	1	12	
SS-27	"	7.5-9.0	A-3 (6)	21	NP	70	22	4	4	8	
S-69	214+00	0-1.0	A-4 (5)	21	2	7	41	42	10	62	
S-70	"	1.0-2.5	A-4 (5)	23	0	5	44	24	20	54	
S-71	"	2.5-3.5	A-6 (8)	34	20	6	44	20	30	56	
S-72	"	3.5-6.0	A-2-4 (6)	23	NP	10	73	5	12	19	
SS-29	220+00	0-1.0	A-4 (4)	21	2	26	27	33	17	54	
SS-29	"	2.5-4.0	A-7-8 (11)	43	27	19	30	19	32	55	22.3
SS-24	"	5.0-6.5	A-3 (6)	18	NP	67	25	1	3	6	

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
SS-1	224+72	0-1.5	A-7-6 (4)	49	28	23	18	19	40	62	24.9
SS-2	"	4.0-5.5	A-3 (6)	18	NP	63	33	3	1	6	
SS-3	"	8.8-10.3	A-1-b (6)	18	NP	78	18	2	2	4	
SS-4	"	18.8-19.8	A-2-4 (6)	2	NP	44	37	13	6	15	
SS-5	"	23.8-25.3	A-2-6 (6)	36	12	26	49	15	10	25	
SS-6	"	28.8-30.3	A-2-5 (6)	44	14	13	24	43	20	71	25.7

207+00 208+00 209+00 210+00 211+00 212+00 213+00 214+00 215+00 216+00 217+00 218+00 219+00 220+00 221+00 222+00

-L1- (U.S. 64)



(A) SOFT BROWN CLAYEY SANDY SILT  
 (B) MEDIUM STIFF TO STIFF TAN AND BROWN SILTY SANDY CLAY

PVI STA. = 224+30.00  
 ELEV. = 50.34  
 V.C. = 650.00'  
 L = 133.21'  
 Design Speed = 75

BM #25: BR SPIKE IN BASE OF 18" PINE  
 -L1- STA. 237+19.492 LT.  
 ELEV. 47.76'

SOIL TEST RESULTS

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-73	226+00	0-1.0	A-4 (4)	26	6	30	23	30	18	52	
S-74	"	1.0-3.0	A-6 (6)	36	17	25	17	30	28	62	
S-75	"	3.0-6.0	A-2-6 (8)	25	12	52	14	14	19	31	
SS-31	232+00	0-1.5	A-4 (5)	25	10	45	20	17	12	26	15.4
SS-32	"	2.5-4.0	A-2-4 (6)	23	9	42	30	16	18	30	18.8
SS-33	"	5.0-6.5	A-3 (6)	17	NP	65	27	2	2	5	
S-76	232+00	0-1.5	A-4 (5)	30	8	24	20	27	14	49	
S-77	"	1.5-2.5	A-6 (5)	25	"	29	33	24	22	52	
S-78	"	2.5-4.0	A-1-b (6)	18	3	71	15	10	4	16	

**PRELIMINARY PLANS**  
 DO NOT USE FOR CONSTRUCTION  
 DO NOT USE FOR R/W ACQUISITION

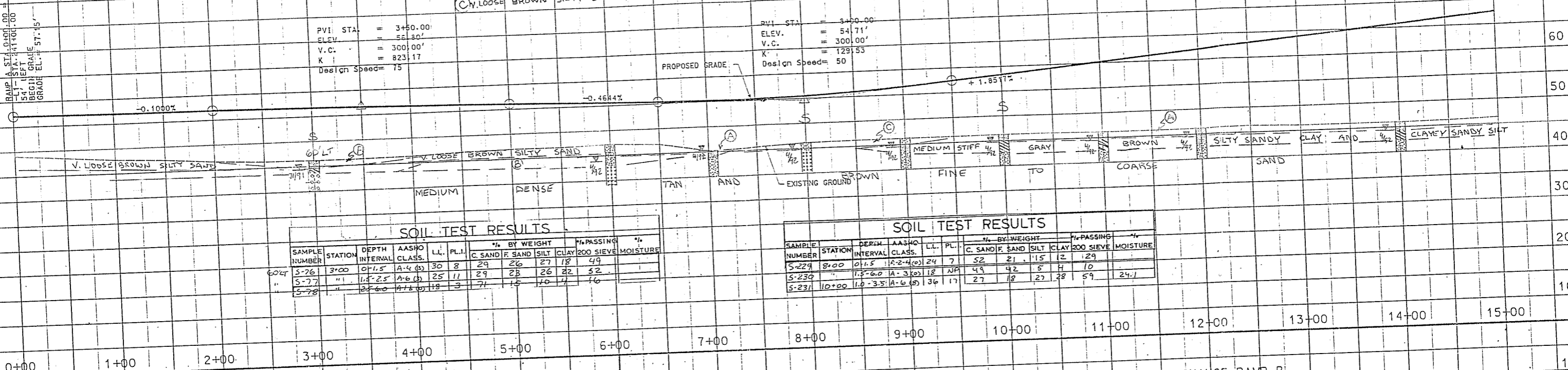
REVISIONS  
 RELOCATION OF US 64 FROM US 25  
 IN TARBORO TO EAST OF NC 42  
 EDGEcombe COUNTY, N.C.  
 Burton, Adams, Kemp, & King, Inc.  
 ENGINEERS

223+00 224+00 225+00 226+00 227+00 228+00 229+00 230+00 231+00 232+00 233+00 234+00

SCALE: 50 0 50 100  
 DATE:  
 PROJECT NO.: 91024  
 SHEET OF

-Y12- INTERCHANGE RAMP A

- (A) SOFT DARK BROWN CLAYEY SANDY SILT
- (B) LOOSE BROWN CLAYEY SAND
- (C) LOOSE BROWN SILTY SAND



PVI STA. = 3+50.00  
 ELEV. = 55.30'  
 V.C. = 300.00'  
 K = 823.17  
 Design Speed = 75

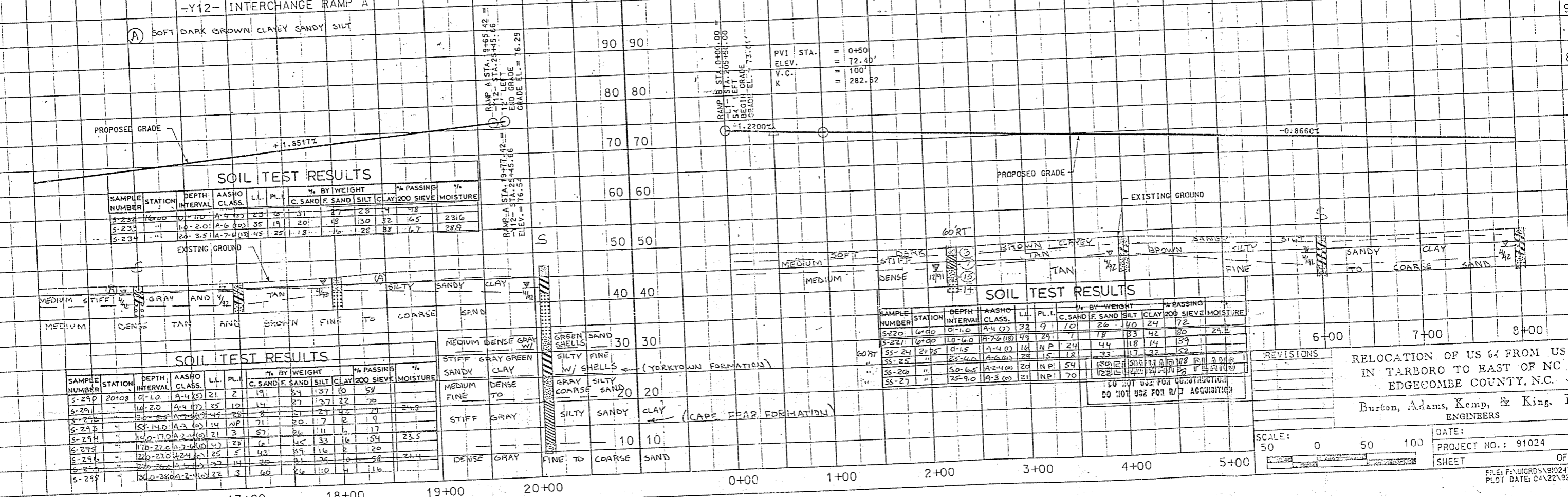
PVI STA. = 3+00.00  
 ELEV. = 54.71'  
 V.C. = 300.00'  
 K = 129.53  
 Design Speed = 50

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-76	3+00	0-1.5	A-4 (U)	30	8	29	26	27	18	49	
S-77	"	1.5-2.5	A-6 (U)	25	11	29	28	26	22	52	
S-78	"	2.5-6.0	A-6 (U)	18	3	71	15	10	14	16	

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-229	8+00	0-1.5	A-2-4 (U)	24	7	52	21	15	12	29	
S-230	"	1.5-6.0	A-3 (U)	18	NP	49	42	5	H	10	
S-231	10+00	1.0-3.5	A-6 (U)	36	17	27	18	27	28	59	24.1

-Y12- INTERCHANGE RAMP A

- (A) SOFT DARK BROWN CLAYEY SANDY SILT



PVI STA. = 0+50  
 ELEV. = 72.40'  
 V.C. = 100'  
 K = 282.52

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-232	6+00	0-1.0	A-4 (U)	23	6	31	27	28	14	48	
S-233	"	1.0-2.0	A-6 (U)	35	19	20	18	30	32	65	23.6
S-234	"	2.0-3.5	A-7 (U)	45	25	18	16	28	38	67	28.9

SAMPLE NUMBER	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PLI	% BY WEIGHT				% PASSING 200 SIEVE	% MOISTURE
						C. SAND	F. SAND	SILT	CLAY		
S-220	6+00	0-1.0	A-4 (U)	32	9	10	26	40	24	72	
S-221	6+00	1.0-6.0	A-7 (U)	49	29	1	18	33	42	30	29.8
S-224	"	0-1.5	A-4 (U)	16	NP	24	44	18	14	39	
S-225	"	2.5-6.0	A-6 (U)	23	15	18	33	17	32	52	
S-226	"	5.0-6.5	A-2 (U)	20	NP	54	23	14	11	18	
S-227	"	2.5-9.0	A-3 (U)	21	NP	70	12	14	14	18	

REVISIONS

RELOCATION OF US 64 FROM US 255 IN TARBORO TO EAST OF NC 42 EDGECOMBE COUNTY, N.C.

Burton, Adams, Kemp, & King, Inc. ENGINEERS

SCALE: 50 0 50 100

DATE: \_\_\_\_\_

PROJECT NO.: 91024

SHEET \_\_\_\_\_ OF \_\_\_\_\_



STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

JAMES B. HUNT, JR.  
GOVERNOR

DIVISION OF HIGHWAYS  
P.O. BOX 25201, RALEIGH, N.C. 27611-5201

SAM HUNT  
SECRETARY

March 24, 1993

STATE PROJECT: 6.299001T R-2111AA  
FEDERAL PROJECT:  
COUNTY: Edgecombe  
DESCRIPTION: US 64 Relocation East of US 258 (NC 44)  
Interchange in Tarboro to East of CSX Railroad  
SUBJECT: Geotechnical Report - Foundation Investigation for  
Bridge on -L1- Rev. (US 64 Relocation) over -Y6-  
(NC 33) at Station 148+88 -L1- Rev.

Site Description

The bridge site is located at the proposed intersection of relocated US 64 and NC 33 east of Tarboro. Based on the proposed design, the dual structures will consist of 4 spans with an overall length of 148.5 feet. The bents will have a typical skew of 63 degrees, 17 minutes and 34.8 seconds.

Three Standard Penetration (SPT) borings were made at or close to each of the four proposed bent locations to provide subsurface information relative to foundation design. The borings were made with an ATV mounted CME-45B drill machine and advanced by rotary drilling methods using bentonite drilling fluid.

The proposed structures are located on nearly level upland topography with a ground surface elevation of 43 to 44 feet. The water table was measured at depths ranging from 3.5 to 5.1 feet.

Foundation Description

Subsurface conditions at the bridge site are uniform. Geologically, the site is covered by a layer of Pleistocene to Recent age alluvium underlain by marine and deltaic sediments belonging to the Yorktown Formation of Upper Pliocene age and the Cape Fear Formation of Upper Cretaceous age. Soils at the site typically consist of 2 to 3 feet of surficial very loose (2 to 3 BPF) silty sand (A-2-4) and soft (2 to 3 BPF) sandy silt (A-4) underlain by 10 to 15 feet of loose to medium dense (6 to 25 BPF) alluvial fine to coarse sand (A-2-4, A-3, A-1-B). A 2 to 5 foot thick discontinuous bed of soft (2 BPF) fine sandy silty clay (A-6, A-7-6) occurs within the sandy alluvium at End Bent 1, Bent 1, and End Bent 2 of the East Bound Lane structure. A sample of the



soft clay was tested at 48 percent natural moisture. In addition, an undisturbed (Shelby Tube) sample was obtained in the clay at EB1-B (EBL) and submitted for Triaxial CU and Consolidation testing. The Yorktown Formation underlies the alluvium at an elevation of 30± feet along much of the structure, but is missing at Bent 2 West Bound Lane and both lanes of End Bent 2. The Yorktown Formation at this site is typically 5 feet thick and consists of very loose to loose (2 to 5 BPF) fine to coarse sand (A-2-4, A-3). The Cape Fear Formation underlies the Yorktown deposits at an elevation of 25± feet and consists of interbedded medium dense to very dense (13 to 82 BPF) fine to coarse sand (A-2-4, A-3) and very stiff to hard (18 to 71) fine sandy silt (A-4) and silty sandy clay (A-6, A-7-5). Natural moisture contents of tested samples within this formation range from 19 to 23 percent.

#### Geologic Foundation Recommendations

A pile foundation is recommended for this structure. An excess of 30 tons bearing with 12-inch concrete piles should be achieved at an elevation of 12 to 17 feet in very stiff to hard fine sandy silt and silty fine sandy clay.

#### End Bent Slopes

Based on the proposed design, the fill height will be approximately 23 feet at the end bents. End-bent slopes of 1.5:1 are recommended for these structures. No stability or long term settlement problems are anticipated at the end bents. Soil which meets Coastal Plain Criteria for borrow is available in nearby areas. Slope protection should be used on the end slopes.

Respectfully submitted,

*E.A. Witort*

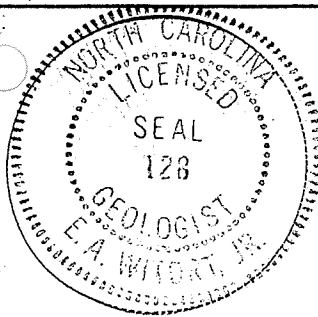
E.A. Witort, Project Geologist

EAW:ths

A-1  
GEOTECHNICAL UNIT

SOIL AND ROCK CLASSIFICATION, LEGEND, AND ABBREVIATIONS

SOIL LEGEND AND AASHTO CLASSIFICATION										CONSISTENCY OR DENSENESS							
GENERAL CLASS.		GRANULAR MATERIALS ( $\leq 35\%$ PASSING #200)			SILT-CLAY MATERIALS ( $> 35\%$ PASSING #200)			ORGANIC MATERIALS			PRIMARY SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF STANDARD PENETRATION RESISTANCE (BLOWS PER FOOT)	RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )			
GROUP CLASS.		A-1   A-3		A-2		A-4   A-5   A-6   A-7		A-1-A-2   A-4-A-5   A-3   A-6-A-7		GENERALLY GRANULAR MATERIAL	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	< 4 4 TO 10 10 TO 30 30 TO 50 > 50	N/A				
SYMBOL										SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER	HIGHLY ORGANIC SOILS						
% PASSING		#10 #40 #200		#10 #40 #200		#10 #40 #200		#10 #40 #200		SOILS WITH LITTLE OR MODERATE AMOUNTS OF ORGANIC MATTER	HIGHLY ORGANIC SOILS						
USUAL TYPES OF MAJOR MATERIALS		STONE FRAG. GRAVEL & SAND		FINE SAND		SILTY OR CLAYEY GRAVEL AND SAND		SILTY SOILS		CLAYEY SOILS							
GROUP INDEX		0		0		4 MX		8 MX   12 MX   16 MX   20 MX									
TEXTURE OR GRAIN SIZE		BOULDER		COBBLE		GRAVEL		COARSE SAND		FINE SAND		SILT		CLAY			
GRAIN SIZE (MM)		305		75		2		0.6		0.425		0.2		0.075		0.002	
GRAIN SIZE (IN)		12"		3"													
SOIL MOISTURE - CORRELATION OF TERMS																	
SOIL MOISTURE SCALE (ATTERBERG LIMITS)				FIELD MOISTURE DESCRIPTION				GUIDE FOR FIELD MOISTURE DESCRIPTION									
LL LIQUID LIMIT				-SATURATED- (SAT.)				USUALLY LIQUID; VERY WET, USUALLY FROM BELOW THE GROUND WATER TABLE									
PL PL PLASTIC LIMIT				-WET- (W)				SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE									
OM OPTIMUM MOISTURE				-MOIST- (M)				SOLID; AT OR NEAR OPTIMUM MOISTURE									
SL SHRINKAGE LIMIT				-DRY- (D)				REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE									
ROCK DESCRIPTION																	
IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED TO BE THAT INDURATED EARTH MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF "WEATHERED ROCK". FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:																	
TERM	SYMBOLS			DESCRIPTION													
HARD ROCK (HR)	CORED ROCK			MATERIAL THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE													
WEATHERED ROCK (WR)	HARD WEATHERED ROCK (HWR)			MATERIAL THAT CAN BE PENETRATED WITH GREAT DIFFICULTY USING POWER AUGERS AND YIELDS SPT REFUSAL													
	SOFT WEATHERED ROCK (SWR)			MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGERS AND YIELDS SPT VALUES > 100 BPF BUT < SPT REFUSAL													
<sup>1</sup> SPT REFUSAL $\leq 1$ INCH OF PENETRATION PER 50 BLOWS. <sup>2</sup> AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH AUGERS COULD NO LONGER PENETRATE. THE HARD ROCK SYMBOL IS SHOWN WHEN ROCK IS CORED AND ONLY TO THAT DEPTH CORED. A DESCRIPTION OF ROCK IS GIVEN INCLUDING: CORE RECOVERY (REC) - TOTAL LENGTH OF ROCK RECOVERED IN THE CORE BARREL DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%. ROCK QUALITY DESIGNATION (ROQ) - TOTAL LENGTH OF SOUND ROCK SEGMENTS RECOVERED THAT ARE LONGER THAN OR EQUAL TO 4" DIVIDED BY THE TOTAL LENGTH OF THE CORE RUN TIMES 100%.																	
ABBREVIATIONS																	
ALLUV.	ALLUVIUM			MIC.	MICACEOUS												
AR	AUGER REFUSAL			MOT.	MOTTLED												
BLDR.	BOULDER			NS	NO SAMPLE TAKEN												
BPF	BLOWS PER FOOT			ORG.	ORGANIC												
CALC.	CALCAREOUS			REF.	REFER TO												
CL	CLAY			RES.	RESIDUAL												
CLY.	CLAYEY			S.	SOFT												
COB.	COBBLE			SAT.	SATURATED												
CSE.	COARSE			SD.	SAND												
OPT	DYNAMIC PENETRATION TEST			SDY.	SANDY												
EST.	ESTIMATED			SED(S).	SEDIMENT(S)												
F.	FINE			SL	SILT, SILTY												
FOSS.	FOSSILIFEROUS			SLL	SLIGHTLY												
FRAC.	FRACTURED			SPT	STANDARD PENETRATION TEST												
FRAG(S).	FRAGMENT(S)			TS.	TOPSOIL												
GR.	GRAVEL			VST	VANE SHEAR TEST												
GS	SPECIFIC GRAVITY			V.	VERY												
GW	GROUND WATER			W/	WITH												
MED.	MEDIUM																
BENCH MARK: #15 RR. SPIKE IN ROOT OF 60" OAK																	
109' IT - LI- STA. 154+10																	
ELEV. 47.05'																	
STATE PROJECT NO. 6.299001T																	
T.O.P. NO. R-21111AA F.A. NO.																	
COUNTY EDGECOMBE ROUTE US 64																	
SITE DESCRIPTION -LI- REV. (US 64 RELOCATION) OVER -Y6- (NC 33)																	
PROJECT GEOLOGIST EAW SUBMITTED BY RRW																	
PERSONNEL RLE GHL LWD MGW																	
DATE SUBMITTED 3/93																	

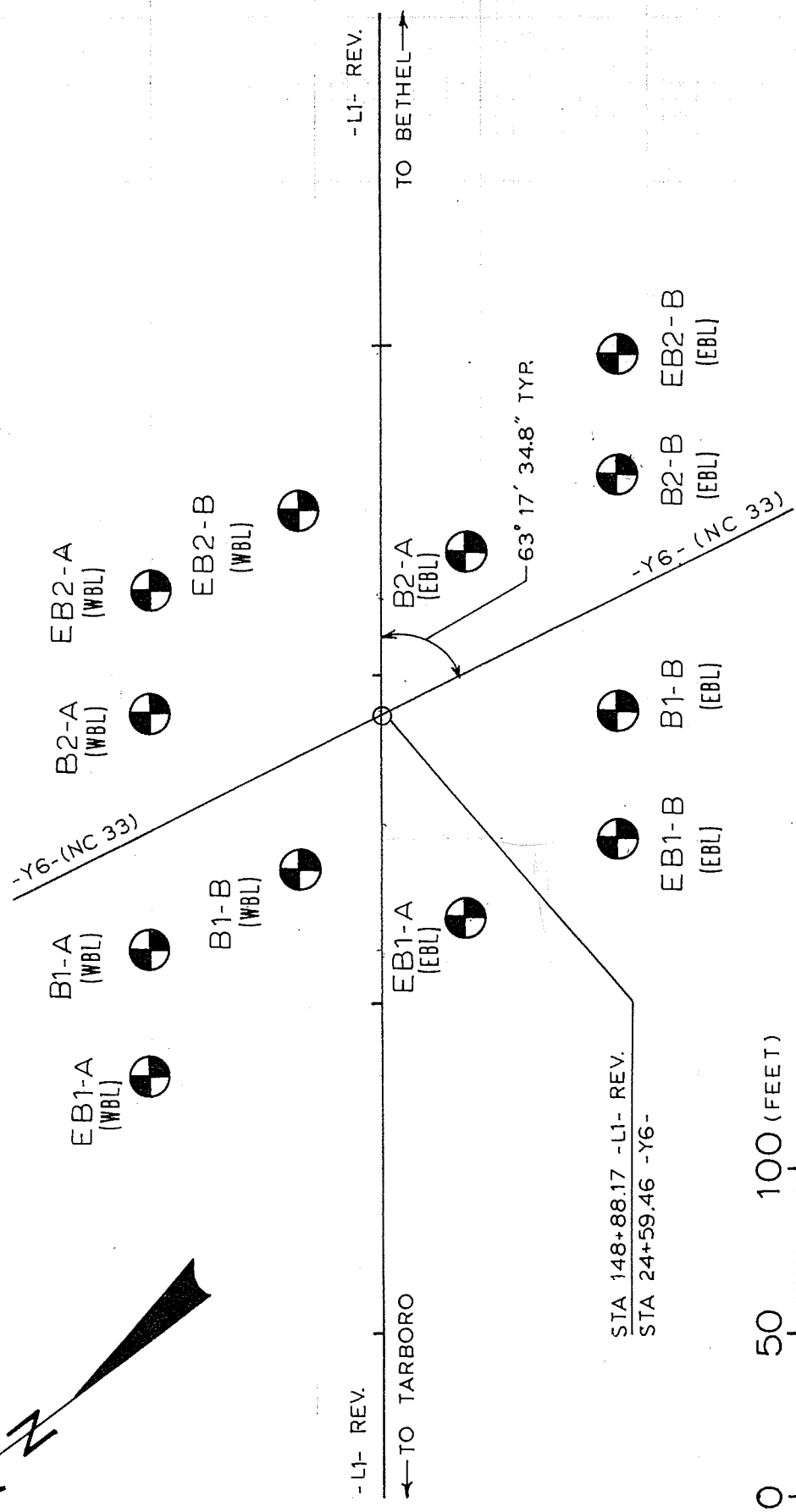
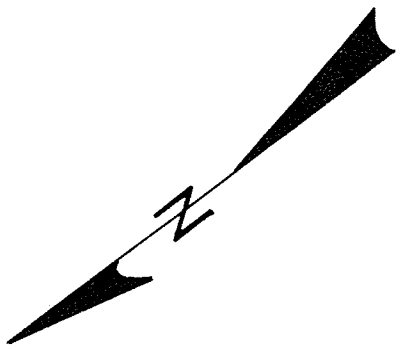


SEAL

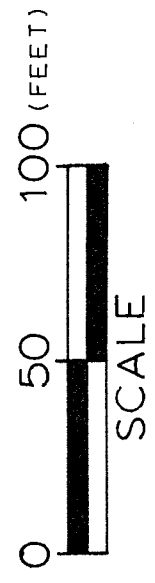
*E. A. Wilcott, Jr.*  
Signature



- L1- REV (US 64 RELOCATION) OVER -Y6- (NC 33)



STA 148+88.17 -L1- REV.  
STA 24+59.46 -Y6-

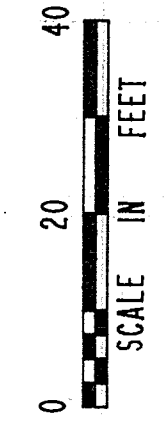
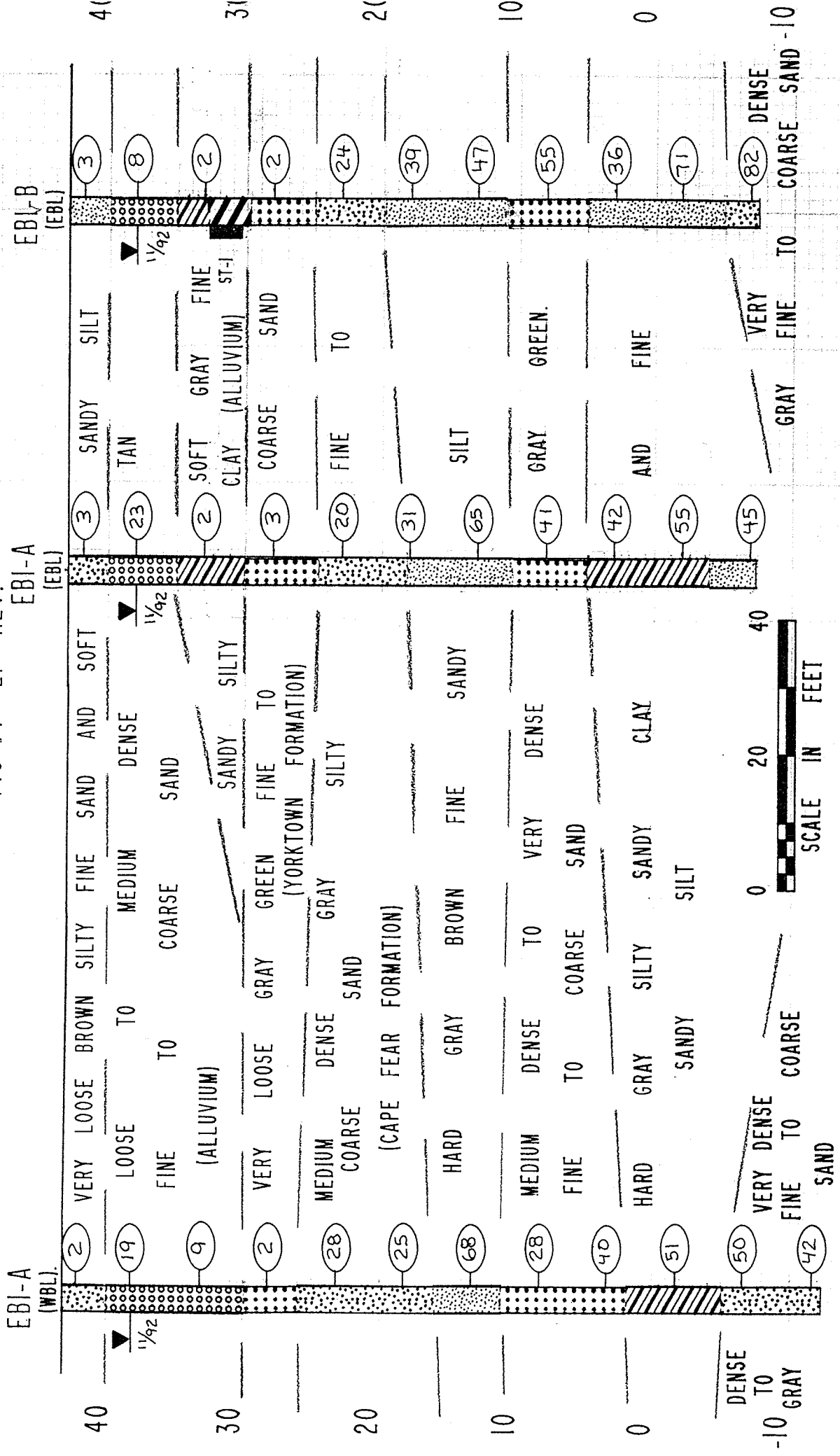


147+00                      148+00                      149+00                      150+00

ELEV. (FEET) 50  
 ELI (FEE) 51

CROSS SECTION THROUGH BORINGS AT EBI: WBL AND EBL

148+14 -LI- REV.



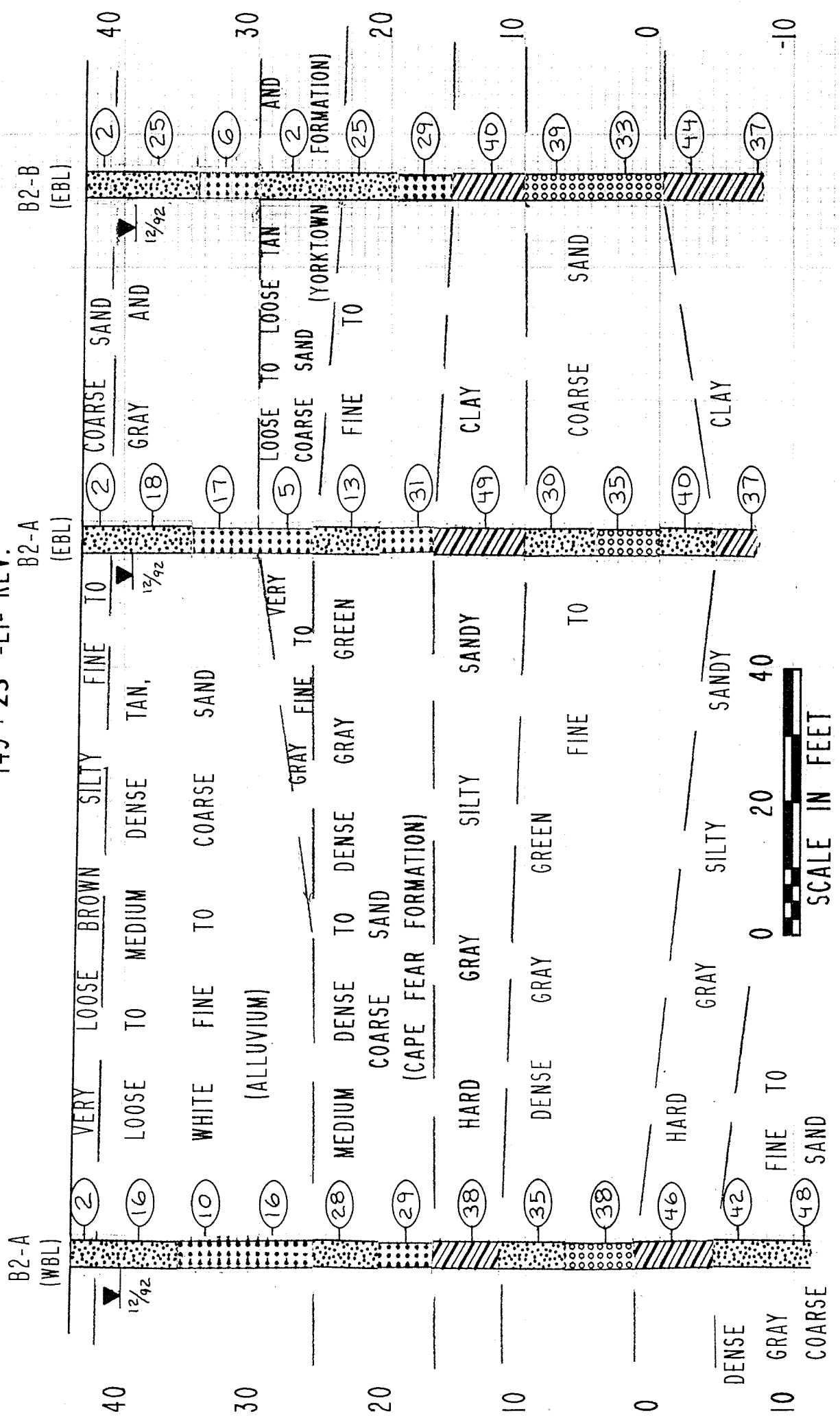


LEV. (FEET)  
 50

ELEV. (FEET)  
 50

CROSS SECTION THROUGH BORINGS AT B2: WBL AND EBL

149 + 23 -LI- REV.

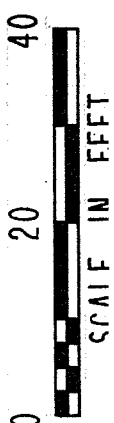
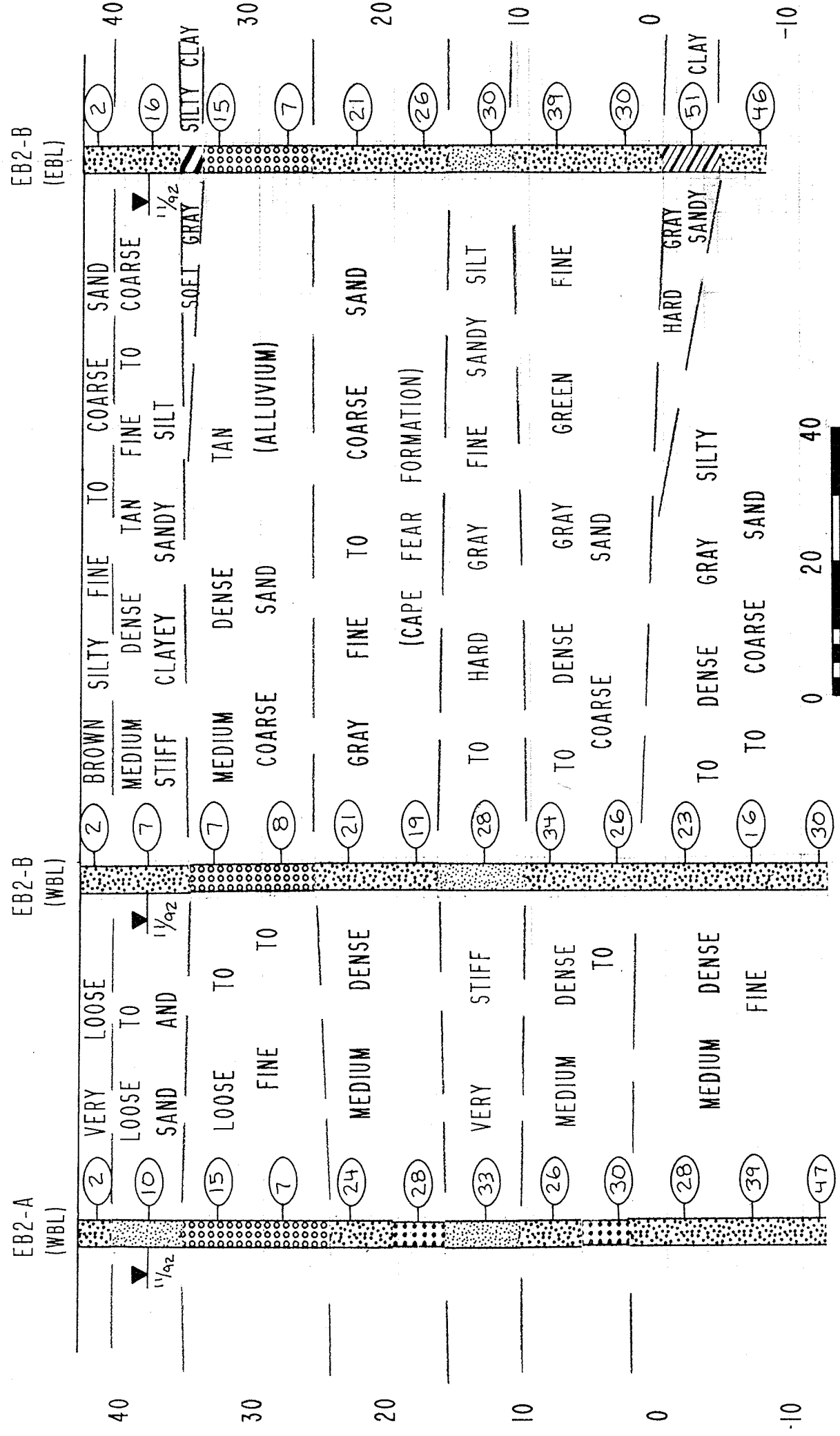


CROSS SECTION THROUGH BORINGS AT EB2: WBL AND EBL

ELEV.  
 (FEET)  
 50

ELEV.  
 FEET)  
 50

149 + 62 -LI- REV.



# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. EB1-A WBL	BORING LOCATION (STA.) 147+78	OFFSET 71' LT.	GROUND WATER
COLLAR ELEV. 43.3'	DATE STARTED 11/17/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 55.5'	DATE COMPLETED 11/17/92	DRILL METHOD ROT-MUD	24 HR. 5.1'

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	W/GW	SOIL & ROCK DESCRIPTION
		.5'	.5'	.5'	0	20	40	60	80				
43.3	0.0	1	1	1	GROUND SURFACE								
40.0	4.0	4	9	10	19						MOI		BROWN SILTY FINE SAND
	9.0	4	4	5	9						SAT		TAN FINE TO COARSE SAND
30.0	14.0	2	1	1	2						SAT		GRAY GREEN FINE TO COARSE SAND
	19.0	9	11	17	28						SAT		GRAY SILTY FINE TO COARSE SAND
20.0	24.0	9	12	13	25						SAT		
	29.0	19	33	35	68						MOI		GRAY BROWN FINE SANDY SILT
10.0	34.0	10	13	15	28						SAT		GRAY GREEN FINE TO COARSE SAND
	39.0	15	19	21	40						SAT		
0.0	44.0	17	21	30	51						MOI		GRAY SILTY SANDY CLAY
	49.0	16	23	27	50						SAT		
-10.0	54.0	13	19	23	42						SAT		GRAY FINE TO COARSE SAND
-12.2	55.5	BORING TERMINATED AT ELEV. -12.2' IN DENSE FINE TO COARSE SAND											
-20.0													

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. EB1-A EBL	BORING LOCATION (STA.) 148+26	OFFSET 25' RT.	GROUND WATER
COLLAR ELEV. 43.1'	DATE STARTED 11/16/92	DRILL MACHINE CME-45B	Ø HR. N.M.
TOTAL DEPTH 50.5'	DATE COMPLETED 11/16/92	DRILL METHOD ROT-MUD	24 HR. 5.0'

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W d / GW	SOIL & ROCK DESCRIPTION
		.5'	.5'	.5'	0	20	40	60	80				
43.1	0.0	1	1	2									GROUND SURFACE
	4.0	10	11	12		23						MOI	BROWN SILTY FINE SAND
	9.0	1	1	1		2						SAT	TAN FINE TO COARSE SAND
	14.0	1	1	2		3						WET	GRAY FINE SANDY SILTY CLAY
	19.0	6	9	11		20						SAT	GRAY GREEN FINE TO COARSE SAND
	24.0	9	15	16		31						SAT	GRAY SILTY FINE SAND
	29.0	17	29	36		65						MOI	GRAY BROWN FINE SANDY SILT
	34.0	14	19	22		41						SAT	GRAY FINE TO COARSE SAND
	39.0	13	19	23		42						WET	GRAY SANDY CLAY
	44.0	15	26	29		55						WET	GRAY SANDY SILT
	49.0	15	21	24		45						WET	GRAY SANDY SILT
	50.5												
	-7.4												
	-10.0												

BORING TERMINATED AT ELEV. -7.4' IN HARD SANDY SILT

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

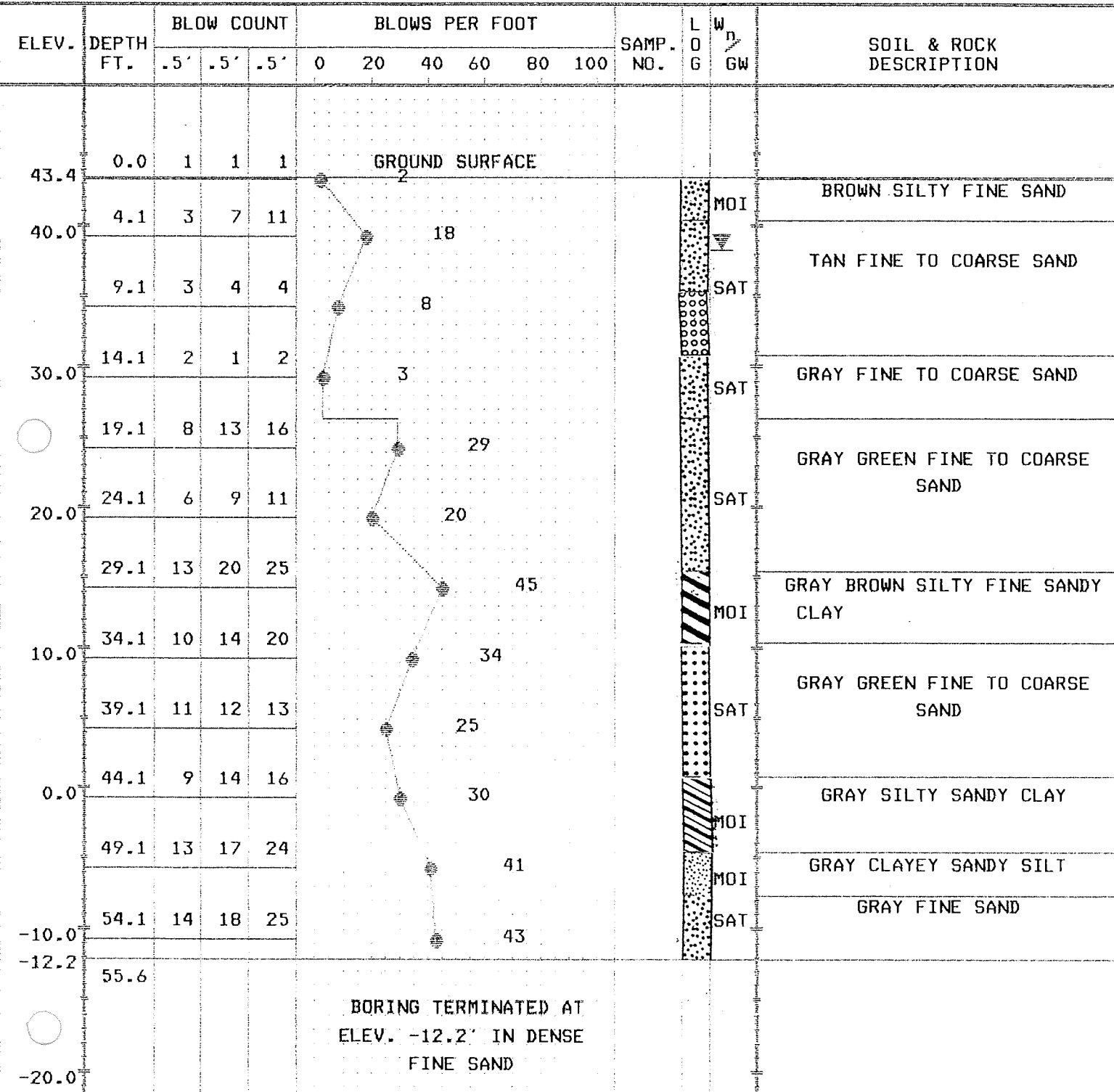
PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. EB1-B EBL	BORING LOCATION (STA.) 148+50	OFFSET 71' RT.	GROUND WATER
COLLAR ELEV. 42.9'	DATE STARTED 11/16/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 50.4'	DATE COMPLETED 11/16/92	DRILL METHOD ROT-MUD	24 HR. 4.9'

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	W/GW	SOIL & ROCK DESCRIPTION
		.5'	.5'	.5'	0	20	40	60	80				
42.9	0.0	1	1	2									GROUND SURFACE
40.0	3.9	5	4	4		8				SS-10	MOI		BROWN CLAYEY SANDY SILT
	8.9	0	1	1		2				SS-11	SAT		TAN FINE TO COARSE SAND
30.0	13.9	2	1	1		2				SS-12	48%		GRAY FINE SANDY SILTY CLAY
	18.9	9	10	14		24				ST-1			GRAY GREEN FINE TO COARSE SAND
20.0	23.9	13	17	22		39				SS-13	SAT		GRAY SILTY FINE TO COARSE SAND
	28.9	15	21	26		47				SS-14	SAT		GRAY BROWN FINE SANDY SILT
10.0	33.9	13	23	32		55				SS-15	23%		GRAY GREEN FINE TO COARSE SAND
	38.9	11	17	19		36				SS-16	SAT		GRAY FINE SANDY SILT
0.0	43.9	20	30	41		71				SS-17	23%		GRAY FINE SANDY SILT
-7.5	48.9	12	29	53		82				SS-18	SAT		GRAY FINE TO COARSE SAND
-10.0	50.4												BORING TERMINATED AT ELEV. -7.5' IN VERY DENSE FINE TO COARSE SAND



# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. B1-A WBL	BORING LOCATION (STA.) 148+17	OFFSET 71' LT.	GROUND WATER
COLLAR ELEV. 43.4'	DATE STARTED 11/17/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 55.6'	DATE COMPLETED 11/17/92	DRILL METHOD ROT-MUD	24 HR. 5.2'



# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.299001T	ID: R-2111AA	COUNTY EDGEcombe	GEOLOGIST W R CREW
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)		BORING LOCATION (STA.) 148+41	OFFSET 25' LT.
BORING NO. B1-B WBL	DATE STARTED 2/20/92	DRILL MACHINE CME-45B	GROUND WATER 0 HR. N.M.
COLLAR ELEV. 43.3'	DATE COMPLETED 2/20/92	DRILL METHOD ROT-MUD	24 HR. 5.3'
TOTAL DEPTH 50.3'			

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W / GW	SOIL & ROCK DESCRIPTION
		.5'	.5'	.5'	0	20	40	60	80				
43.3	0.0	1	2	1	GROUND SURFACE								
40.0	3.8	9	8	11		19				SS-1	MOI		BROWN SILTY FINE TO COARSE SAND
	8.8	4	4	5		9				SS-2	SAT		TAN FINE TO COARSE SAND
30.0	13.8	1	1	1		2				SS-3	SAT		GRAY FINE TO COARSE SAND
	18.8	9	13	19		32				SS-4	SAT		GRAY GREEN FINE TO COARSE SAND
20.0	23.8	8	10	15		25				SS-5	SAT		GRAY BROWN SILTY FINE SANDY CLAY
	28.8	12	18	22		40				SS-6	MOI		GRAY GREEN FINE TO COARSE SAND
10.0	33.8	15	22	42		64				SS-7	SAT		GRAY SILTY SANDY CLAY
	38.8	18	21	31		52				SS-8	MOI		GRAY CLAYEY SANDY SILT
0.0	43.8	14	23	34		57				SS-9	MOI		
	48.8	7	7	11		18							
-7.0	50.3				BORING TERMINATED AT ELEV. -7.0' IN VERY STIFF CLAYEY SANDY SILT								
-10.0													



# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO: 6.299001T	ID: R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)		BORING LOCATION (STA.) 148+89	OFFSET 71' LT.
BORING NO. B2-A WBL	DATE STARTED 12/8/92	DRILL MACHINE CME-45B	GROUND WATER 0 HR. N.M.
COLLAR ELEV. 44.0'	DATE COMPLETED 12/8/92	DRILL METHOD ROT-MUD	24 HR. 3.6'
TOTAL DEPTH 55.5'			

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W D GW	SOIL & ROCK DESCRIPTION	
		.5'	.5'	.5'	0	20	40	60	80					100
	0.0				GROUND SURFACE									
44.0	0.0	1	1	1		2							MOI	BROWN SILTY FINE TO COARSE SAND
40.0	4.0	6	7	9		16								
	9.0	4	5	5		10							SAT	TAN FINE TO COARSE SAND
30.0	14.0	6	7	9		16								
	19.0	9	13	15		28								
20.0	24.0	10	13	16		29							SAT	GRAY GREEN FINE TO COARSE SAND
	29.0	10	17	21		38							MOI	GRAY SILTY SANDY CLAY
10.0	34.0	9	16	19		35								
	39.0	14	20	18		38							SAT	GRAY GREEN FINE TO COARSE SAND
0.0	44.0	15	22	24		46							MOI	GRAY SILTY SANDY CLAY
	49.0	13	19	23		42								
	54.0	14	23	25		48							SAT	GRAY FINE TO COARSE SAND
-10.0	55.5				BORING TERMINATED AT ELEV. -11.5' IN DENSE FINE TO COARSE SAND									
-11.5														
-20.0														

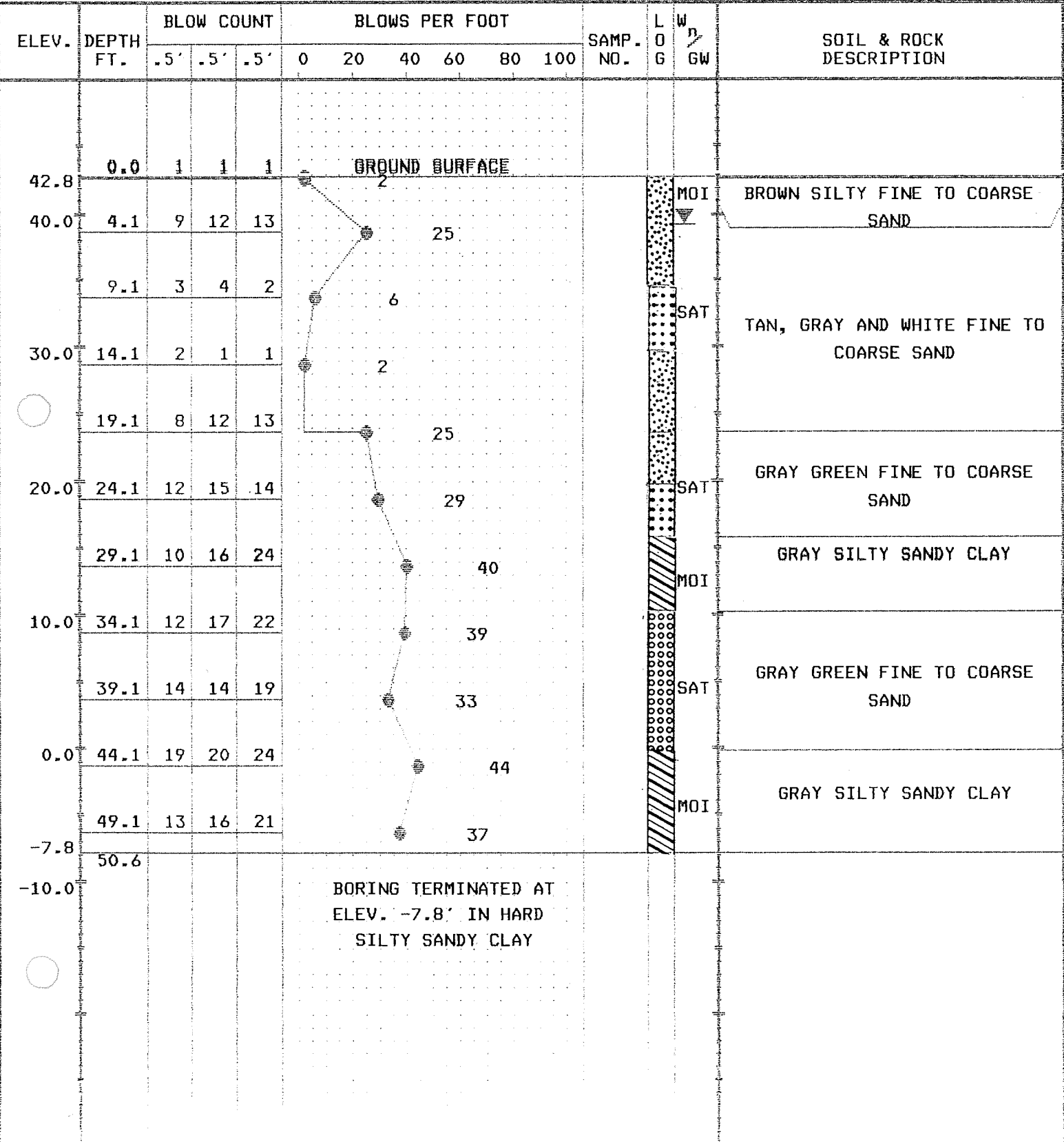
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. B2-A EBL	BORING LOCATION (STA.) 149+38	OFFSET 25' RT.	GROUND WATER
COLLAR ELEV. 42.9'	DATE STARTED 12/7/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 50.5'	DATE COMPLETED 12/7/92	DRILL METHOD ROT-MUD	24 HR. 3.6'

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W / GW	SOIL & ROCK DESCRIPTION	
		.5'	.5'	.5'	0	20	40	60	80					100
42.9	0.0	1	1	1	GROUND SURFACE									
40.0	4.0	8	9	9	2					SS-29	MOI		BROWN SILTY FINE TO COARSE SAND	
	9.0	3	7	10	18					SS-30				
30.0	14.0	3	3	2	17					SS-31	SAT		TAN, BROWN AND WHITE FINE TO COARSE SAND	
	19.0	3	4	9	5									
20.0	24.0	10	15	16	13					SS-32	SAT		GRAY GREEN FINE TO COARSE SAND	
	29.0	15	23	26	31					SS-33				
10.0	34.0	9	15	15	49					SS-34	MOI		GRAY SILTY SANDY CLAY	
	39.0	9	15	20	30					SS-35				
0.0	44.0	12	17	23	35					SS-36	SAT		GRAY GREEN FINE TO COARSE SAND	
	49.0	12	16	21	40					SS-37				
-7.6	50.5				37					SS-38	MOI		GRAY SILTY SANDY CLAY	
-10.0					BORING TERMINATED AT ELEV. -7.6' IN HARD SILTY SANDY CLAY									

# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. B2-B EBL	BORING LOCATION (STA.) 149+61	OFFSET 71' RT.	GROUND WATER
COLLAR ELEV. 42.8'	DATE STARTED 12/7/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 50.6'	DATE COMPLETED 12/7/92	DRILL METHOD ROT-MUD	24 HR. 3.5'



**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. EB2-A WBL	BORING LOCATION (STA.) 149+26	OFFSET 71' LT.	GROUND WATER
COLLAR ELEV. 43.7'	DATE STARTED 11/18/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 55.5'	DATE COMPLETED 11/18/92	DRILL METHOD ROT-MUD	24 HR. 5.0'

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	W/GW	SOIL & ROCK DESCRIPTION
		.5'	.5'	.5'	0	20	40	60	80				
43.7	0.0	0	1	1	GROUND SURFACE								
	4.0	2	4	6		10				SS-19	MOI		BROWN SILTY FINE TO COARSE SAND
	9.0	5	7	8		15				SS-20	WET		TAN CLAYEY FINE SANDY SILT
	14.0	2	3	4		7				SS-21	SAT		TAN FINE TO COARSE SAND
	19.0	10	11	13		24				SS-22			GRAY FINE TO COARSE SAND
	24.0	9	13	15		28				SS-23	SAT		GRAY FINE SANDY SILT
	29.0	8	15	18		33				SS-24	21%		GRAY FINE SANDY SILT
	34.0	9	11	15		26				SS-25	SAT		GRAY GREEN FINE TO COARSE SAND
	39.0	16	17	13		30				SS-26			GRAY SILTY FINE TO COARSE SAND
	44.0	9	12	16		28				SS-27	19%		GRAY SILTY FINE TO COARSE SAND
	49.0	13	19	20		39							
	54.0	13	21	26		47				SS-28			
	55.5												
	-10.0												
	-11.8												
	-20.0												

BORING TERMINATED AT  
ELEV. -11.8' IN DENSE  
SILTY FINE TO COARSE  
SAND

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT BORING LOG**

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. EB2-B WBL	BORING LOCATION (STA.) 149+50	OFFSET 25' LT.	GROUND WATER
COLLAR ELEV. 43.4	DATE STARTED 11/20/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 55.5'	DATE COMPLETED 11/20/92	DRILL METHOD ROT-MUD	24 HR. 5.0'

ELEV. FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W D / GW	SOIL & ROCK DESCRIPTION	
	.5'	.5'	.5'	0	20	40	60	80					100
43.4	0.0	0	1	2	GROUND SURFACE								
40.0	4.0	4	3	4	7						MOI	BROWN SILTY FINE TO COARSE SAND	
	9.0	3	3	4	7								
30.0	14.0	3	4	4	8						SAT	TAN FINE TO COARSE SAND	
	19.0	5	10	11	21								
20.0	24.0	11	8	11	19						SAT	GRAY FINE TO COARSE SAND	
	29.0	6	13	15	28								
10.0	34.0	10	14	20	34						MOI	GRAY FINE SANDY SILT	
	39.0	6	11	15	26						SAT	GRAY GREEN FINE TO COARSE SAND	
0.0	44.0	7	10	13	23								
	49.0	7	8	8	16						SAT	GRAY SILTY FINE TO COARSE SAND	
-10.0	54.0	10	14	16	30								
-12.1	55.5	BORING TERMINATED AT ELEV. -12.1' IN DENSE SILTY FINE TO COARSE SAND											
-20.0													



# NORTH CAROLINA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS GEOTECHNICAL UNIT BORING LOG

PROJECT NO. 6.299001T	ID. R-2111AA	COUNTY EDGEcombe	GEOLOGIST R L EDWARDS
SITE DESCRIPTION -L1- REV. OVER -Y6- (NC 33)			
BORING NO. EB2-B EBL	BORING LOCATION (STA.) 149+98	OFFSET 71' RT.	GROUND WATER
COLLAR ELEV. 43.0'	DATE STARTED 12/3/92	DRILL MACHINE CME-45B	0 HR. N.M.
TOTAL DEPTH 50.6'	DATE COMPLETED 12/4/92	DRILL METHOD ROT-MUD	24 HR. 4.9'

ELEV. FT.	DEPTH FT.	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	L O G	W n / GW	SOIL & ROCK DESCRIPTION	
		.5'	.5'	.5'	0	20	40	60	80					100
	0.0													
	0.0	1	1	1		2								GROUND SURFACE
43.0	4.1	6	6	10		16						MOI		BROWN SILTY FINE TO COARSE SAND
40.0	9.1	2	4	11		15						SAT		TAN FINE TO COARSE SAND
	14.1	1	3	4		7						WET		GRAY SILTY CLAY
30.0	19.1	3	9	12		21						SAT		TAN FINE TO COARSE SAND
	24.1	14	12	14		26						SAT		GRAY FINE TO COARSE SAND
20.0	29.1	9	15	15		30						MOI		GRAY FINE SANDY SILT
10.0	34.1	10	16	23		39						SAT		GRAY GREEN FINE TO COARSE SAND
	39.1	9	13	17		30						SAT		GRAY SANDY CLAY
0.0	44.1	13	23	28		51						MOI		GRAY SANDY CLAY
	49.1	12	21	25		46						SAT		GRAY SILTY FINE TO COARSE SAND
-7.6	50.6													
-10.0														BORING TERMINATED AT ELEV. -7.6' IN DENSE SILTY FINE TO COARSE SAND

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HOLENUMBER	SAMPNUMBER	PASS10	PASS40	PASS200	CSBAND	FINEBAND	SI	CL	LL	PI	CLASS	DEPTH	MOISTURE	ORGANIC
B1-B WBL	SS-1	100	84	32	29	46	19	6	17	NP	A24(0)	0.0-1.5		
	SS-2	100	64	16	56	30	5	9	16	NP	A24(0)	3.8-5.3		
	SS-3	91	37	4	80	17	2	1	19	NP	A1B(0)	8.8-10.3		
	SS-4	98	91	11	29	60	5	6	18	NP	A24(0)	13.8-15.3		
	SS-5	90	82	11	38	52	6	4	17	NP	A24(0)	18.8-20.3		
	SS-6	100	91	42	17	50	29	4	45	15	A75(3)	28.8-30.3		
	SS-7	96	55	7	66	29	5	0	28	NP	A3(0)	33.8-35.3		
	SS-8	100	90	47	21	40	31	8	39	16	A6(4)	43.8-45.3		
	SS-9	100	96	45	12	51	27	10	29	10	A4(2)	48.8-50.3		
EB1-B EBL	SS-10	100	86	45	25	35	24	16	23	3	A4(2)	0.0-1.5		
	SS-11	90	40	13	71	16	6	7	18	NP	A1b(0)	3.9-5.4		
	SS-12	100	99	92	1	17	48	34	40	17	A6(11)	3.9-10.4	48.1	
	SS-13	90	79	9	35	55	8	2	19	NP	A3(0)	13.9-15.4		
	SS-14	98	93	15	33	50	10	7	32	5	A24(0)	18.9-20.4		
	SS-15	100	91	51	16	43	33	8	39	7	A4(3)	23.9-25.4	22.7	
	SS-16	97	85	9	34	59	7	0	26	NP	A3(0)	33.9-35.4		
	SS-17	100	91	51	19	43	32	6	37	6	A4(3)	38.9-40.4	22.8	
EB2-A WBL	SS-18	100	88	18	36	49	11	4	21	NP	A24(0)	48.9-50.4		
	SS-19	100	84	33	29	47	18	6	17	NP	A24(0)	0.0-1.5		
	SS-20	96	69	39	40	26	18	16	24	9	A4(1)	4.0-5.5		
	SS-21	88	37	5	80	16	3	1	17	NP	A1b(0)	9.0-10.5		
	SS-22	82	66	22	46	29	16	9	27	9	A24(0)	19.0-20.5		
	SS-23	100	55	5	78	19	2	1	21	NP	A3(0)	24.0-25.5		
	SS-24	100	98	58	6	53	37	4	39	7	A4(5)	29.0-30.5	20.6	
	SS-25	100	74	12	59	32	8	1	25	NP	A24(0)	34.0-35.5		
	SS-26	96	64	6	65	30	4	1	25	NP	A3(0)	39.0-40.5		
	SS-27	100	87	34	31	42	21	6	26	7	A24(0)	44.0-45.5	18.9	
	SS-28	100	77	17	57	29	11	3	26	NP	A24(0)	54.0-55.5		
B2-A EBL	SS-29	100	87	31	29	49	18	4	18	NP	A24(0)	0.0-1.5		
	SS-30	100	83	12	53	35	4	8	21	NP	A24(0)	4.0-5.5		
	SS-31	95	60	5	67	28	3	2	17	NP	A3(0)	9.0-10.5		
	SS-32	93	76	13	54	33	8	5	23	NP	A24(0)	19.0-20.5		
	SS-33	95	62	9	71	21	6	2	22	NP	A3(0)	24.0-25.5		
	SS-34	99	77	42	31	36	29	4	38	17	A6(3)	29.0-30.5		
	SS-35	98	84	12	35	56	8	1	25	NP	A24(0)	34.0-35.5		
	SS-36	94	48	4	78	19	3	0	25	NP	A1B(0)	39.0-40.5		
	SS-37	100	92	24	23	58	17	2	26	NP	A24(0)	44.0-45.0		
	SS-38	100	84	45	25	40	31	4	37	1B	A6(4)	49.0-50.5		

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GEOTECHNICAL UNIT  
 FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON L-REV. OVER Y-6 (NC33)  
 BORING LOCATION (STA.) 148+26 OFFSET 25' RT  
 BORING NO. EB1-A EBL GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 5'0  
 COLLAR ELEV. 43.1 DATE STARTED 11/16/92 DRILL EQUIPMENT CME-45B  
 TOTAL DEPTH 50.5 DATE COMPLETED 11/16/92 Rot-Mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0	1	1	2				
	5.0				BRN SL-F SD A-2-A	mo	23 HARDER AT 2'S	
	10.0	10	11	12	TAN SL-F-CSE SD A-2-A	sat	23	
	11.0				SILT AT 8.0		SOFTER DRILLING AT 8.0	
	13.0	1	1	1	LT. GRAY F SDY CLY SILT A-A/A-6	w	22	
	14.0				SILT END 13.0			
	17.0	1	1	2	GRAY GREEN SL-F SD A-2-A	sat	23	
	19.0							
	22.0	6	9	11	GRAY CLY SL-F SD A-2-A	"	20 HARDER DRILLING AT 18.5	
	24.0							
	27.0	9	15	16	GRAY SL-F SD 24.0-25.0 LAST 3 OF DRILL HENGRY SILT SI-CL AT 25.0 A-2-A/A-7-6	sat	21	
	29.0							
	31.0	17	29	36	BEN GRAY MICA SDY SI-CL A-7-6	mo	65	
	34.0				SI-CL END AT 33.5			
	37.0	14	19	22	GRAY SL-F-CSE SD A-2-A	sat	41	
	39.0							
	41.0	13	19	23	GRAY SDY SI-CL A-7-6	miw	42	
	43.0							
	45.0	15	26	29	SAME AS ABOVE A-7-6	"	55	
	47.0							
	49.0	15	21	24	GREEN GRAY CLY F SDY SILT A-A/A-6	miw	45	

6.2  
-2.2  
A.0

PRELIMINARY FOUNDATION INFO.  
 Boring terminated at  
 ELEV - 7.4 17

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CIP  
 BRIDGE ON -L1-REV. OVER -Y6-(NC 33)  
 BORING LOCATION (STA.) 1A7+78-L1H REV. OFFSET 71' LT LT  
 BORING NO. EB1-A WBL GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 5.1  
 COLLAR ELEV. 43.3 DATE STARTED 11/17/92 DRILL EQUIPMENT CME-AS B  
 TOTAL DEPTH 55.5 DATE COMPLETED 11/17/92 Rot-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0	1	1	1	BRN SL-F SD A-2-A	MOI	2	
	4.0	4	9	10	TAN CLY SL-F-CSE SD A-2-A	SAT	19	
	9.0	4	4	5	TAN SL-F-CSE SD/W GRAVEL A-2-A/A-7-B	"	9	
	14.0	2	1	1	GRAY GREEN MICA SL-F SD A-2-A	"	2	
	19.0	9	11	17	LT. GRAY CLY SL-F SD A-2-A	SAT	28	
	24.0	9	12	13	SAME AS ABOVE A-2-A SL-CL AT 27'0	"	25	
	29.0	19	33	35	BRN GRAY MICA SDY SL-CL A-7-B	m/w	68	
	34.0	10	13	15	GRAY GREEN CLY SL-F SD A-2-A	SAT	28	
	39.0	15	19	21	SAME AS ABOVE A-2-A SDY CL AT 41'0	"	40	
	44.0	17	21	30	GRAY SL-SDY CL A-6	MOI	51	
	49.0	16	23	27	GRAY CLY SL-F SD A-2-A	SAT	50	
	54.5	13	19	23	SAME AS ABOVE A-2-A	"	47	

24hr EBI-B EBL 4.9 6.2  
 " EBI-A " 5.0 2.2  
 4.0

PRELIMINARY FOUNDATION INFO.

Boring terminated at  
 ELEV -12.2 in

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CIP  
 BRIDGE ON N-L'-REV OVER V-6 (NC 33)  
 BORING LOCATION (STA.) 1A8+50 -L'-REV. OFFSET 71' RT  
 BORING NO. EBI-B EBL GEOLOGIST RLE GROUND WATER 0 HRS. N/A 24 HRS. 4.9  
 COLLAR ELEV. 42.9 DATE STARTED 11-16-92 DRILL EQUIPMENT CME 45B, rot  
 TOTAL DEPTH 50.4 DATE COMPLETED 11-16-92

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
2.0	0.0	1	1	2	SS-10	BRN SL-F SD	MOI	3
	3.9	5	4	4	SS-11	TAN SL-F-CSE SD	SAT	8
8.0	8.9					SILT AT 8.0		
13.5	13.9	0	1	1	SS-12	LT. GRAY SDY CLY SILT	48.1%	2
						SILT END AT 13.5		
18.0	18.9	2	1	1	SS-13	GREEN GRAY SL-F SD	SAT	2
23.0	23.9	9	10	1A	SS-1A	GRAY CLY SL-F SD	"	2A
						SI-CL AT 23.0		
28.0	28.9	13	17	22	SS-15	BRN GRAY SDY SL-CL	MOI 22.7%	39
32.0	32.9	15	21	26		SAME AS ABOVE A-7-6	"	7
						SD AT 32.0		
37.5	37.9	13	23	32	SS-16	GREEN GRAY SL-F SD	SAT	55
43.9	43.9	11	17	19	SS-17	BRN GRAY MICA. SDY SL-CL	MOI 22.8%	36
47.5	47.5	20	30	41		SAME AS ABOVE A-7-6	"	71
	48.9	12	29	53	SS-18	TAN GRAY SL-F SD	SAT	82
						W/CLY LAYERS		

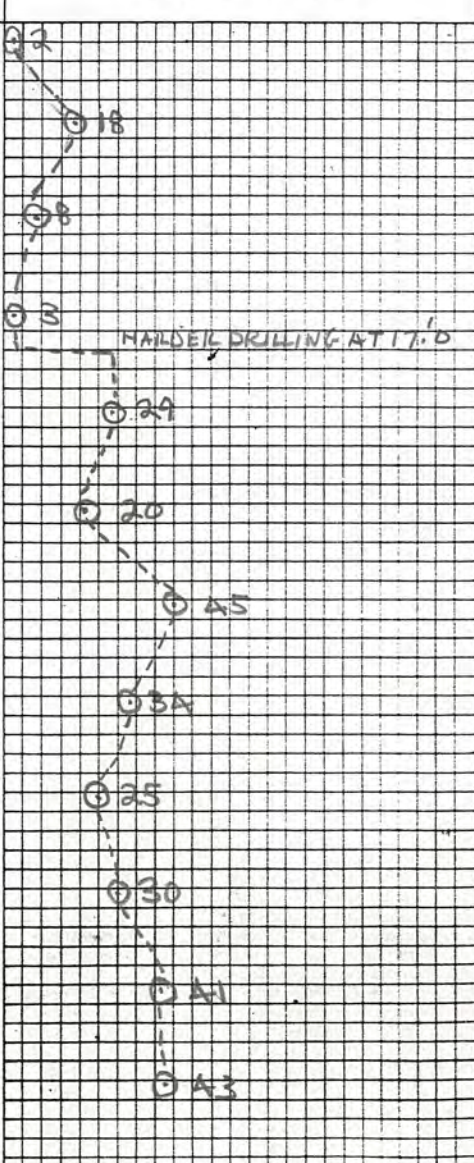
6.2  
2.3  
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3.9

PRELIMINARY FOUNDATION INFO.  
 Boring terminated at  
 ELEV - 7.5 in

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON 11-L'-REV. OVER -Y6-(NC33)  
 BORING LOCATION (STA.) 1A8+17 -L'-REV. OFFSET ~~RIGHT~~ 71' LT  
 BORING NO. B1A WBL GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 5.2  
 COLLAR ELEV. 43.4 DATE STARTED 11/17/92 DRILL EQUIPMENT CME-45B  
 TOTAL DEPTH 55'6" DATE COMPLETED 11/17/92 Rot-mud

ELEV.	DEPTH O.D.	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
		1	1	1		BRN SL-F SD A-2-A	MOI	
	3'					3'		
	9.1	3	7	11		TAN SL-F-CSE SD A-2-A	SAT	
						change of 8'		
	1A1	3	4	4		TAN BRN SL-F-CSE SD/gravel	"	
						A-1-B		
						change of 12.5'		
	19.1	2	1	2		GRAY GREEN MICA SL-F SD	"	
						A-2-A		
						17.0		
	24.1	8	13	16		LT. GRAY CLY SL-F SD	SAT	
						A-2-A		
	29.1	6	9	11		GRAY GREEN MICA SL-F SD	"	
						A-2-A		
						SI-CL AT 28'0"		
	34.1	13	20	25		BRN GRAY MICA SDY SL CL	MIW	
						A-7-6		
						SI-CL END 33'0"		
	39.1	10	14	20		GRAY GREEN CLY SL-F SD	SAT	
						A-2-A		
	44.1	11	12	13		GRAY GREEN SL-F SD	"	
						A-3/A-2-A		
						SDY CL AT 42.5'		
	49.1	9	14	16		GRAY SL-SDY CL	MOI	
						A-6		
						48'		
	54.1	13	17	24		GRAY CLY F SDY SILT	"	
						A-3/A-6		
						GRAY CLY SL-F SD	SAT	
						A-2-A		



6.2  
2.1  
4.1

PRELIMINARY FOUNDATION INFO.  
 Boring terminated at  
 ELEV - 12.2 in

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

LI-REV  
148+41 25' LT

PROJECT NO. 6.299001T COUNTY EDGEcombe GEOLOGIC PROVINCE Coastal Plain  
BRIDGE ON L'REV ~~411~~ ~~412~~ ~~413~~ OVER 46 (NC 33)  
BORING LOCATION (STA.) 148+41 - L'-REV OFFSET 25' LT  
BORING NO. B1-B WBL GEOLOGIST WRC GROUND WATER 0 HRS. NM 24 HRS. 5.3  
COLLAR ELEV. 43.3 DATE STARTED 2/20/92 DRILL EQUIPMENT CME-45B  
TOTAL DEPTH 50.3 DATE COMPLETED 2/20/92 Rot-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0								
	3.9	1	2	1	SS-1 BRN F-SL SD	M	③ HARD AT 3.0'	
	8.8	9	8	11	SS-2 TAN SIL F-CSE SD	SAT	④	
	13.8	4	4	5	SS-3 TAN DRABE F-CSE SD w/ gravels	SAT	⑤	
	18.8	1	1	1	SS-4 GRAY GREEN SLF SD w/ small gravels	SAT	⑥	
	23.8	9	13	19	SS-5 GRAY GREEN SLF SD w/ gravels + CL layers	SAT	⑦ HARD AT 15.0' stopped up with WRC	
	28.8	8	10	15	SAME AS ABOVE	SAT	⑧ HARD BRILLING	
	33.8	12	10	22	SS-6 GRAY GREEN SLF SDY CL	M	⑨	
	38.8	15	22	42	SS-7 GRAY GREEN SLF SD	SAT	⑩	
	43.8	18	21	31	SAME AS ABOVE	SAT	⑪ HARD AT 40.0'	
	48.8	14	23	34	SS-8 GRAY SLF SDY CL	M	⑫	
		7	7	11	SS-9 SAME AS ABOVE	M	⑬	

2.9 spoon  
5  
7.9  
3  
0.2  
3.2

1.8  
5.8  
3  
6.1  
3.2  
3.9

11  
2  
5.8  
2  
6.0  
2.2  
3.8

5x9  
5x19  
5x32

28  
37  
57

ELEV. -1.2 lower than STA 148+42

8.0  
8.9  
7.3  
6.7

PRELIMINARY FOUNDATION INFO.  
6.2 casing set at 4.0  
Boring terminated at  
ELEV -7.0 in

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6-299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
BRIDGE ON -L'-REV OVER -Y6- (NC 33)  
BORING LOCATION (STA.) 1A8+89 -L'-REV. OFFSET 71RT  
BORING NO. B1-B EBL GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 5.0'  
COLLAR ELEV. 43.7 DATE STARTED 11/18/92 DRILL EQUIPMENT CME-ASB  
TOTAL DEPTH 55.5 DATE COMPLETED 11/18/92 Rot-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0								
	4.0	1	1	1	BRN SL-F SD A-2-A 3'	mol	⊙ 0	
	9.0	5	4	6	TAN SL-F-LSE SD 8'	SAT	⊙ 10	
	14.0	4	2	2	TAN BLEN SL-F-LSE SD GRAVEL LAST 5' GRAY CLY SDY SILT SDY SILT 10.0-13.0	"	⊙ 11 SOFT SDY SILT AT 10.0	
	19.0	1	1	1	GRAY GREEN MICA. SL-F SD A-2-A	"	⊙ 2	
	24.0	9	15	15	LT. GRAY CLY SL-F SD A-2-A/A-2-L	SAT	⊙ 30 HARDER DRILLING AT 18.0	
	29.0	9	10	15	SAME AS ABOVE A-2-A SI-CL AT 26.0	"	⊙ 25 HARDER AT 26.0	
	34.0	16	23	30	BRN GRAY MICA. SDY SL-CL A-7-6 SL-SD AT 33.0	M/W	⊙ 53	
	39.0	10	15	19	GRAY GREEN SL-F SD A-2-A CHOP AT 39.5'	SAT	⊙ 34	
	44.0	13	23	29	BRN GRAY MICA. SDY SL-CL FIRST 5' SD A-7-6	m	⊙ 52	
	49.0	16	25	29	SAME AS ABOVE A-7-6	"	⊙ 5A	
	54.0	12	14	16	GRAY BRN SL-SDY CL A-6 5.2'	"	⊙ 30	
	55.5	15	18	23	GRAY CLY SL-F SD A-2-A	SAT	⊙ 41	

6.2  
-2.2  
4.0

24.0 H2O EB1-A WBL 5.1  
" " B1-A WBL 5.2

PRELIMINARY FOUNDATION INFO.

Boring Terminated At  
ELEV. - 11.8 in



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

R-2111AA

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P  
 BRIDGE ON L-REV OVER -46- (NC33)  
 BORING LOCATION (STA.) 148+89 -L-REV. OFFSET 71'LT  
 BORING NO. B2-A WBL GEOLOGIST RLF GROUND WATER 0 HRS. NA 24 HRS. 3.6  
 COLLAR ELEV. 44.0 DATE STARTED 12/8/92 DRILL EQUIPMENT CME45B  
 TOTAL DEPTH 55.5 DATE COMPLETED 12/8/92 Rot-mud

ELEV.	DEPTH D.O.	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	A1.0	1	1	1		BRN SL F SD (A-1-A) 2	moi	⊙ 2 HARDER AT 2.0
	9.0	6	7	9		TAN BRN SL CLY SL F SD 8 (A-2-A)	SAT	⊙ 16
	14.0	4	5	5		TAN F-CSE SD / GRAVEL (A-3) A-1-B 13	"	⊙ 10
	19.0	6	7	9		SAME AS ABOVE A-1-B (A-3) SDY SILT AT 18.0	"	⊙ 16
	24.0	9	13	15		GRAY GREEN CLY F SDY SILT (A-2-4) A-A Change to SD AT 23.0	m/w	⊙ 28
	29.0	10	13	16		GRAY GREEN SL F-CSE SD (A-3) Change at 27.0	SAT	⊙ 29
	34.0	10	17	21		GRAY GREEN MIL F SDY SILT 32 (A-4) (A-4)	MOI	⊙ 38
	39.0	9	16	19		GRAY GREEN MIL CLY SL F SD 37 (A-2-A)	SAT	⊙ 35
	44.0	14	20	18		GRAY GREEN F-CSE SD (A-1-B) A-3 SDY SL AT 42.5	"	⊙ 38
	49.0	15	22	24		DK. GRAY MIC. SL SDY CL A-6	MOI	⊙ 46
	54.0	13	19	23		GRAY SL F SD (A-2-4)	SAT	⊙ 42
		14	23	25		GRAY CLY SL F SD (A-2-4) F-CSE	"	⊙ 48

PRELIMINARY FOUNDATION INFO.

Boring Terminated At  
ELEV. - 11.5' IN

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GEOTECHNICAL UNIT  
 FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6-299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON NC 33 - L'-REV OVER -Y6- (NC 33)  
 BORING LOCATION (STA.) 149+38 - L'-REV. OFFSET 25RT  
 BORING NO. B2-A (EBL) GEOLOGIST RLB GROUND WATER 0 HRS. NA 24 HRS. 3.6  
 COLLAR ELEV. 42.9 DATE STARTED 12/7/92 DRILL EQUIPMENT CME-45B  
 TOTAL DEPTH 50.5 DATE COMPLETED 12/17/92 ROT-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0							
	1.0	1	1	1	SS-29	BRN SL-F SD	mo	2 HARDER AT 2.0
	2.0					A-2-4		
	8.0	8	9	9	SS-30	TAN BRN SL-F SD	sat	18
	9.0					A-2-4		
	14.0	3	7	10	SS-31	TAN WHITE F-CSE SD	"	17
	14.0					A-3 A-1-B		
	17.0	3	3	2		SAME AS ABOVE	"	5
	19.0					Change AT 17.0		
	24.0	3	4	9	SS-32	GRAY GREEN CLY SDY SILT	wet	13
	24.0					A-4 A-2-4		
	29.0	10	15	16	SS-33	GRAY GREEN SL-F-CSE SD	"	31
	29.0					A-3 A-3/A-2-4		
	34.0	15	23	26	SS-34	DR. GRAY MIC. CLY SDY SILT	mo	49
	34.0					A-4 A-4		
	39.0	9	15	15	SS-35	GRAY GREEN MIC. CLY SL-SD	sat	30
	39.0					A-2-4 A-2-4		
	44.0	9	15	20	SS-36	GRAY GREEN F-CSE SD	"	35
	44.0					A-1-B A-3		
	49.0	12	17	23	SS-37	GRAY GREEN CLY SL F SD	"	40
	49.0					A-2-4 A-2-4		
	50.5	12	16	21	SS-38	GRAY SL SDY CL	mo	37
	50.5					A-6 A-6		

6.2  
 -2.2  
 4.0

PRELIMINARY FOUNDATION INFO.

Boring Terminated at  
 ELEV -7.6" in

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
 DIVISION OF HIGHWAYS  
 GEOTECHNICAL UNIT  
 FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CIP  
 BRIDGE ON NIC 33 YIREV OVER -V6-  
 BORING LOCATION (STA.) 1A9+61 OFFSET 71RT  
 BORING NO. B2-B EBL GEOLOGIST RLE GROUND WATER 0 HRS. NA 24 HRS. 3.5  
 COLLAR ELEV. 42.8 DATE STARTED 12/7/92 DRILL EQUIPMENT CME45B  
 TOTAL DEPTH 50.6 DATE COMPLETED 11 ROT-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0	1	1	1				
	A-1	9	12	13		BRN SL F SD (A-3-A) 2	MOI 02 HARDER AT 2.0'	
	9.1	3	4	2		TAN WHITE F-CSESD/gravel (A-5) A-1-B 8'	SAT 025	
	14.1	2	1	1		GRAY CLY SL-F SD (A-2-A) 13'	" 06	
	19.1	8	12	13		SILT AT 18.5 GRAY GREEN CLY F SDY SILT (A-2-4) A-4 23'	" 02 HARDER AT 19.0'	
	24.1	12	15	14		GRAY GREEN SL F-CSESD (A-3) SILT AT 27.0	SAT 029	
	29.1	10	16	24		DR. GRAY W/CLAY SDY SILT change at 32.5 (A-4)	WET 040	
	34.1	12	17	22		GRAY GREEN F-CSESD A-1-B	SAT 039	
	39.1	14	14	19		SAMPLE change at 47	" 033	
	44.1	19	20	24		GRAY CL MICAL SI SDY CLAY (A-6)	WET 045 44	
	49.1	13	16	21		SAMPLE	" 037	

16  
24  
10  
17  
22  
39

6.2  
2.1  
4.1  
16  
21  
37

PRELIMINARY FOUNDATION INFO.  
 Boring Terminated At  
 ELEV - 7.8'

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CIP  
 BRIDGE ON TRC 33 - L1-REV. OVER Y6 - (NC 33)  
 BORING LOCATION (STA.) 149+50 - L1-REV. OFFSET 25 LT  
 BORING NO. EB2-B WBL GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 5.0'  
 COLLAR ELEV. 43.4 DATE STARTED 11/20/92 DRILL EQUIPMENT CMEASB  
 TOTAL DEPTH 55.5 DATE COMPLETED 11/20/92 Rot-mud

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
0.0		-	1	1				
	A1.0				BRN SL-F SD (A-2-A) 2'	mol	2	
	3.0	2	3	2	TAN SL-F - LSE SD (A-2-A) 2'	SAT	7	
	9.0							
	14.0	3	3	2	TAN SL-F - LSE SD / W GRANUL (A-1-B)	11	7	
	19.0	3	2	2	SAME AS ABOVE A-1-B	11	8	
	24.0	5	10	11	SL-F SD AT 17.0 GRAY GREEN CLY SL-F SD (A-2-A)	SAT	21	
	29.0	11	8	11	SAME AS ABOVE A-2-A SL-CL AT 26.5	11	19	
	34.0	6	13	15	GRAY GREEN MICK SPY SL-CL (A-4) (A-2-B)	mol	28	
	39.0	10	14	20	SL-SD AT 33.0 GRAY GREEN SL-F SD (A-2-A)	SAT	31	
	44.0	6	11	15	SAME AS ABOVE A-2-A 41'	11	26	
	49.0	7	10	13	GRAY SL SDY CL (A-6) (A-2-A)	m/w	23	
	54.0	7	8	8	GRAY CLY F SDY SILT (A-2-A) (A-2-A)	SAT	16	
		10	14	16	SAME		20	

EB2-A 510

PRELIMINARY FOUNDATION INFO.

Boring terminated at  
ELEV -12.1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE CIP.  
 BRIDGE ON N.C. 33 - L-REV OVER -Y6- (N.C. 33)  
 BORING LOCATION (STA.) 1A9+98 - L-REV. OFFSET 71' RT  
 BORING NO. EB2-B EBI GEOLOGIST RLE GROUND WATER 0 HRS. NM 24 HRS. 4.9'  
 COLLAR ELEV. 43.0 DATE STARTED 12/3/92 DRILL EQUIPMENT CME-45B  
 TOTAL DEPTH 50.6 DATE COMPLETED 12/4/92 ROT-MUD

ELEV.	DEPTH	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0							
	1	1	1		BRN SL F SD A-2-A	MOD	2	
	6	6	10		FIRM AT 2' YEL BRN CLY F-CSE SD/ WHITE CSE SD (A-1-B) 4' 5.0' A-2-A	M/SAT	11	
	9.1	2	4	11	GRAY SLTY CLAY 7.0-9.5/ GRAY F.SD A-2-A	WET SAT	15	
	14.1	1	3	4	WHITE CSE SAND A-1-B ALLUVIUM	SAT	17	
	19.1	3	9	12	GRAY BRN F-CSE SD A-2-A	SAT	21	
	24.1	14	12	14	SAME CSP AT 21'	SAT	28	
	29.1	9	15	15	GRAY GREEN SDY CLAY A-4/A-2-A (A-4)	MOD	30	
	34.1	10	16	23	CHANG AT 31.8'	SAT	39	
	39.1	9	13	17	GRAY GREEN F-CSE SD	SAT	30	
	44.1	13	23	28	SAME AS ABOVE SDY CL AT 43.0' DIC. GRAY SL SDY CL A-6	MOD	51	
	49.1	12	21	25	SDY CL ENDT AT 47.5' GRAY SL-F SD A-2-A	SAT	46	

PRELIMINARY FOUNDATION INFO.

Boring Terminated At  
ELEV -7.6 m

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL UNIT  
FOUNDATION BORING LOG SHEET 1 OF 1

PROJECT NO. 6.299001T COUNTY Edgecombe GEOLOGIC PROVINCE C.P.  
 BRIDGE ON L-REV OVER Y6-(NC33)  
 BORING LOCATION (STA.) 1A9+26 - L-REV. OFFSET 71' LT  
 BORING NO. EB2-A WBL GEOLOGIST RLE GROUND WATER 0 HRS. N/M 24 HRS. 5.0'  
 COLLAR ELEV. 43.7 DATE STARTED 11/18/92 DRILL EQUIPMENT LME-ASB  
 TOTAL DEPTH 55.5 DATE COMPLETED 11/18/92 Rot-mud

ELEV.	DEPTH 0.0	BLOW COUNT			SAMP. NO.	SOIL DESCRIPTION	MOIST.	NOTES & REMARKS
		6"	6"	6"				
	0.0	-	1	1	SS-19	BRN SL-F SD	mo	2
	4.0					2'		
	6.0	2	4	6	SS-20	TAN BRN SL-F CLY SD	w	10
	9.0					<del>A-2-6</del> A-4		
	14.0	5	7	8	SS-21	TAN F-CLY SD / W GRAVEL	sat	15
	18.0	2	3	A		SAME AS ABOVE	"	17
	19.0					18.5		HARBER DRILLING AT 18.5
	24.0	10	11	13	SS-22	LT. GRAY SL-F CLY SD	w	24
	27.0					<del>A-2-6</del> (A-2-4)		
	29.0	9	13	15	SS-23	GRAY SL-F-CLY SD	sat	28
	34.0					SI-CL AT 27.0		
	34.0	8	15	18	SS-24	GRAY GREEN MICH. SDY SL CL	mo	33
	39.0					A-4	20.6%	
	39.0	9	11	15	SS-25	GRAY GREEN MICH. CLY SL-F SD	sat	26
	44.0					37		
	44.0	16	17	13	SS-26	GRAY GREEN SL-F-CLY SD	"	30
	49.0					SDY CL AT 41.0		
	49.0	9	12	16	SS-27	GRAY SL SDY CL	mo	28
	54.0					A-6	18.9%	
	54.0	13	19	20		SAME AS ABOVE	"	39
	55.5	13	21	26	SS-28	GRAY EL SL-F SD	sat	47
						A-2-A		

6.2  
2.2  
4.0

PRELIMINARY FOUNDATION INFO.

Boring terminated at  
ELEV -11.8 in Dense

DIVISION OF HIGHWAYS

HIGHWAY BUILDING

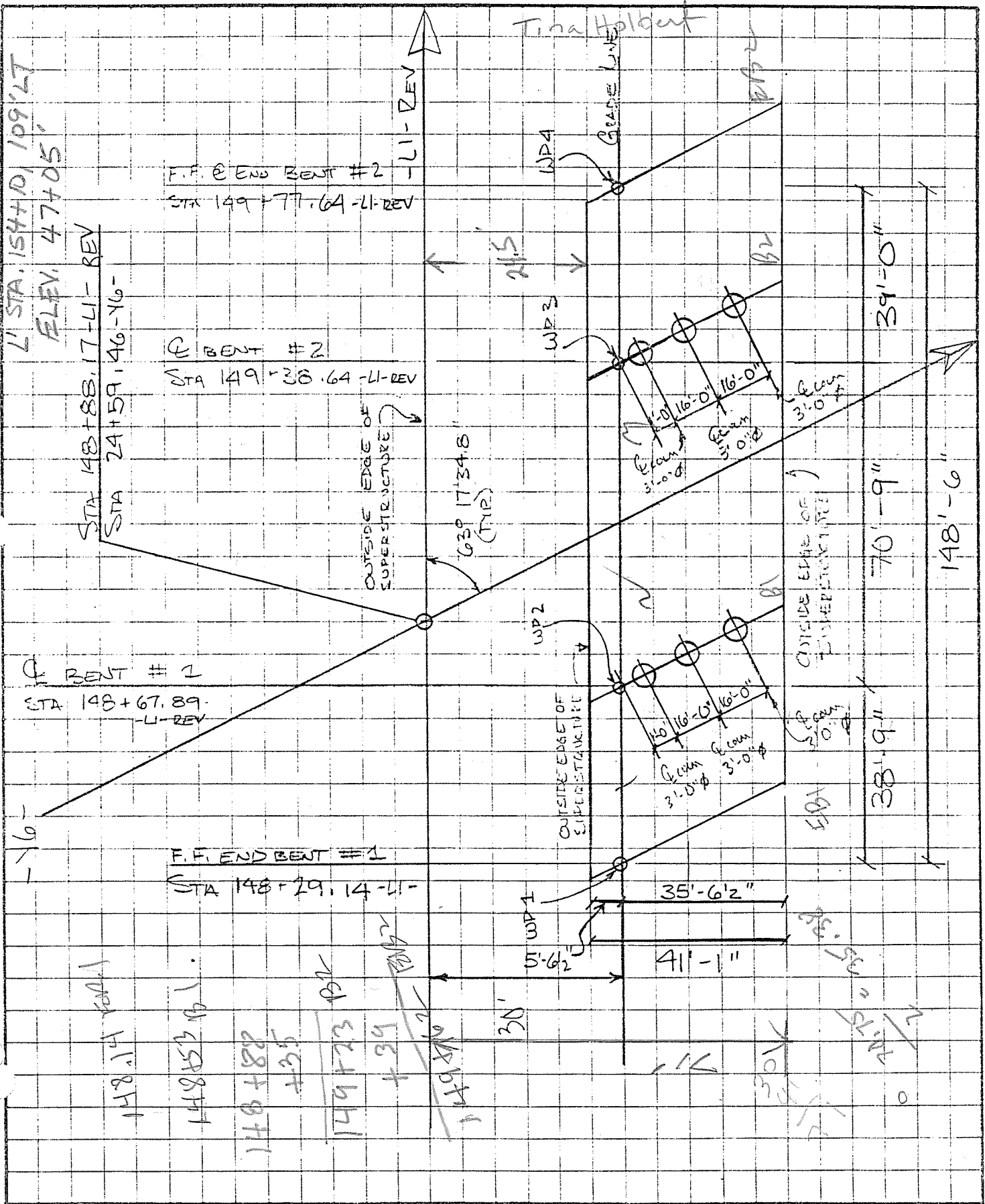
P. O. BOX 25201

EIGH. NORTH CAROLINA 27611

PREPARED BY CMW DATE 7-16-92 STATION 148+22.7

CHECKED BY Trini DATE 7-29-92 STR NO. 11 SHEET     OF    

BM # 15  
R.R. SPIKE in Root of 60" Dia



-L-KEY / Y6 (NC 33)

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

SUBJECT LAIDOUT FOR GEOLOGY PROJECT 6299001T

DIVISION OF HIGHWAYS

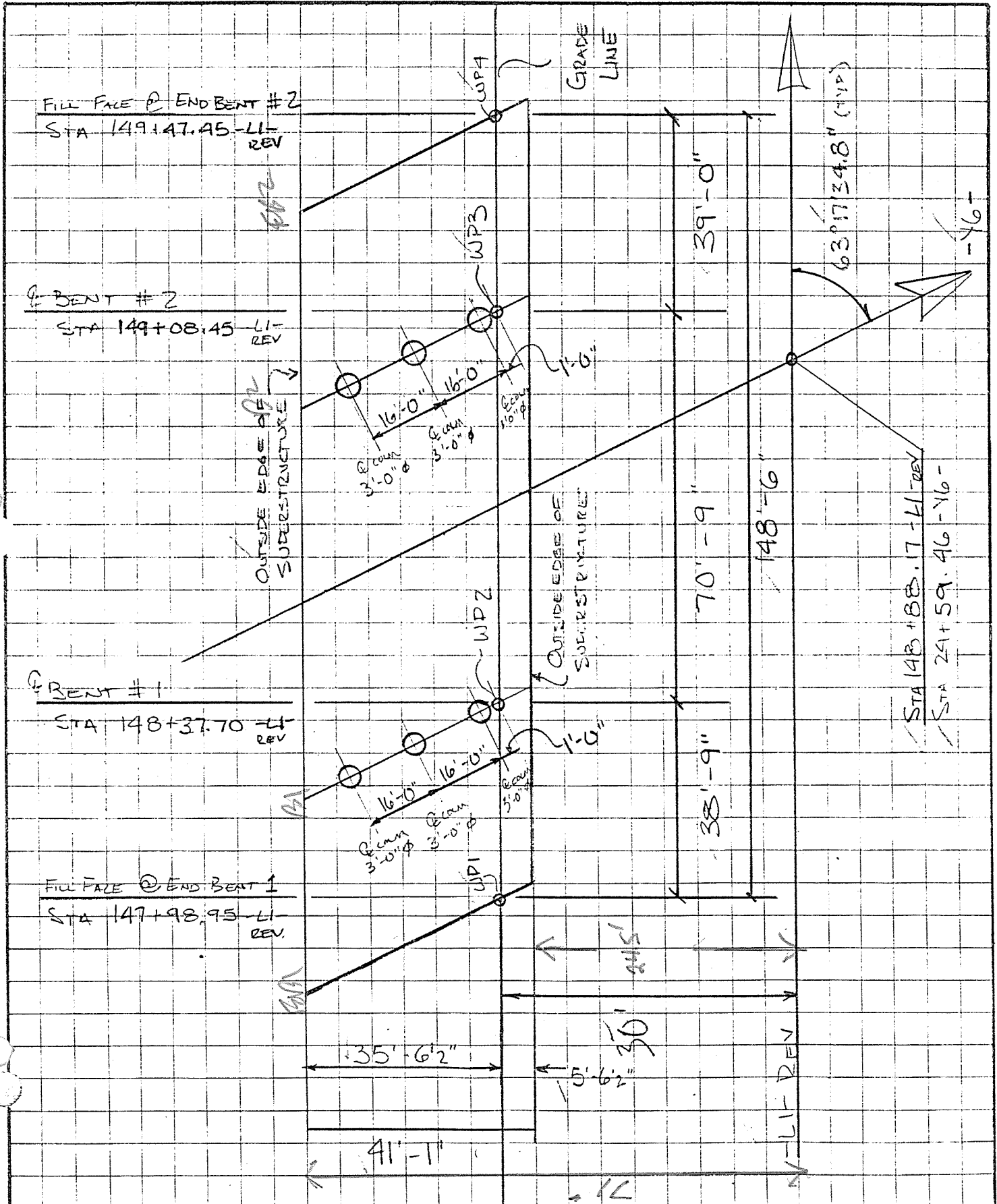
EDGECOMBLE COUNTY

HIGHWAY BUILDING  
P. O. BOX 25201

PREPARED BY CMH DATE 7-17-92 STATION 148+88.17

HIGH. NORTH CAROLINA 27611

CHECKED BY TMH DATE 7-29-92 STR NO. 4 SHEET      OF     





NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
GEOTECHNICAL UNIT

LEVEL NOTES FOR FOUNDATION BORINGS

G. 299001T R-2111AA

BENCH MARK #15 RR Spike in Root of 460"  
Oak, -L'- STA 154+10, 109' LT  
ELEVATION 47.05

INSTRUMENTMAN LWD  
RODMAN MDM  
DATE 11-13-92

STATION	(+)BS	H.I.	(-)F.S.	(-)ROD	ELEV.	NOTES
BM	2.15	49.20			47.05	
EB2-A WBL				5.47	43.73	✓
EB2-B WBL				5.77	43.43	✓
EB2-A EBL				6.08	43.12	✓
EB2-B EBL				6.17	43.03	
B2-B EBL				6.39	42.81	✓
B2-A EBL				6.27	42.93	✓
B2-B WBL				5.82	43.38	
B2-A WBL	4.43	48.42	5.21	5.2	43.99	✓
B1-A WBL				5.06	43.36	✓
B1-B WBL				5.09	43.33	✓
B1-A EBL				4.95	43.47	
B1-B EBL				4.71	43.71	✓
EB1-B EBL				5.49	42.93	✓
EB1-A EBL				5.34	43.08	✓
EB1-B WBL				5.07	43.35	
EB1-A WBL				5.08	43.34	✓
BM			1.35		47.07	0.2 error OK

**GEOTECHNICAL UNIT  
R-2111A SOIL SAMPLE TRANSMITTAL**

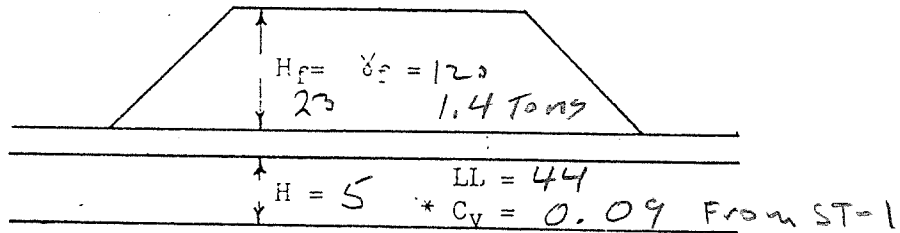
PROJECT NO. 6.299001T ROUTE US 64 RELOC. COUNTY EDGECLIFF

PROJECT GEOLOGIST E.A. WITORT DATE 12-9-92

SAMPLE NO.	LOCATION	TYPE TEST	COMMENTS
<u>ST-1</u> PRIMARY <input checked="" type="checkbox"/> ALT. FOR _____	<u>STA. 148+50 L'REV</u> OFFSET <u>71' RT</u> SAMP. DEPTH <u>10.4-12.4</u> G.W. DEPTH <u>4.9'</u>	TRIAXIAL CU <input checked="" type="checkbox"/> UU _____ CD _____ CONSOLIDATION <input checked="" type="checkbox"/> PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. <u>GRAY SILTY SANDY CLAY</u> SOIL STRUCTURE <u>SOFT</u> EST. BLOWS/FT. <u>2</u> OTHER _____ WHERE USED: - UNDER <u>33</u> FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____
PRIMARY _____ ALT. FOR _____	STA. _____ OFFSET _____ SAMP. DEPTH _____ G.W. DEPTH _____	TRIAXIAL CU _____ UU _____ CD _____ CONSOLIDATION _____ PROCTOR _____ XCOMPACT. _____ PERMEABILITY _____ OTHER _____	SOIL DESC. _____ SOIL STRUCTURE _____ EST. BLOWS/FT. _____ OTHER _____ WHERE USED: - UNDER _____ FT. HIGH EMBANKMENT - IN _____ FT. HIGH EMBANKMENT - CUT SLOPE _____ - BRIDGE FOUNDATION _____

TIME RATE OF SETTLEMENT

STATE PROJECT: R-2111AA  
 COUNTY: Fed. Columbia  
 STATION: 148+14  
 ANALYZED BY: Emil  
 DATE: 3-19-43



Cv (Ft <sup>2</sup> /day) from LL chart		$t = T \frac{\left(\frac{H}{N}\right)^2}{C_v}$	% Consol. vs Time	
LL	Cv		U	T
32	0.614	t = Time in days T = % Consolidation vs Time factor H = Thickness of compressible layer (ft) N = Number of drainage surfaces N = 1 if permeable above <u>or</u> below N = 2 if permeable above <u>and</u> below Cv = Coefficient of Consolidation (ft <sup>2</sup> /day)	25	0.049
34	0.475		50	0.196
36	0.372		75	0.477
38	0.298		90	0.848
40	0.238		95	1.129
42	0.193		(cm <sup>2</sup> /sec X 93) = ft <sup>2</sup> /day	
44	0.158			
46	0.130		SKETCH AND CALCULATIONS  $t = \frac{0.848 \left(\frac{5}{2}\right)^2}{0.09 \text{ from ST-1}} = 58 \text{ days say 2 months}$  $t = \frac{0.848 \left(\frac{5}{2}\right)^2}{0.158 \text{ from LL chart}} = 33 \text{ days}$  $FS \approx \frac{6 \times 400}{23 \times 120} = \frac{2400}{2760} = 0.87$	
48	0.109			
50	0.095			
52	0.081			
54	0.071			
56	0.061			
58	0.053			
60	0.047			
62	0.041			
64	0.035			
66	0.032			
68	0.029			
70	0.026			
75	0.021			
80	0.018			
85	0.015			
90	0.013			
95	0.012			
100	0.010			
110	0.009			
120	0.008			

\* If lab test is available, use Cv for load increment corresponding to the stress range of interest. (q = Hf γf)

MAGNITUDE OF SETTLEMENT

COUNTY: Edgecombe  
 STATION: 14 B+14  
 ANALYZED BY: EMW  
 DATE: 3-19-98

LAYER	THICKNESS OF LAYER	DEPTH TO MID-POINT	INITIAL EFFECTIVE STRESS $P_0$	INFLUENCE FACTOR $I_{LT} + I_{RT}$	$\gamma \cdot H_1$	$I \cdot q$	$P_0 + \Delta p$	SETTLEMENT
3	5	10.5	812, 411	1	2760	2760	3572, 1791	0.1
S TOTAL:								

SKETCH TO SCALE AND CALCULATIONS:

$$P_0 = \Sigma (5 \times 110) + (63 \times 48) + (2.5 \times 47)$$

$$P_0 = 550 + 144 + 118$$

$$P_0 = 812$$

$$C_c = \frac{1.18 - 1.08}{1.79 - 0.41} = \frac{0.1}{1.38} = 0.072$$

$$S = \frac{0.072}{18.18}$$

$$S = 0.00397 \left[ \log \frac{3572}{812} \right] \times 5 = 0.106'$$

$$S = \frac{C_c}{1+e_0} \left[ \log_{10} \left( \frac{P_1}{P_0} \right) \right] H$$

$$= \frac{0.072}{2.18} \left[ \log_{10} \left( \frac{3572}{812} \right) \right] 5 = 0.106'$$

COMPRESSION INDEX  $C_c$

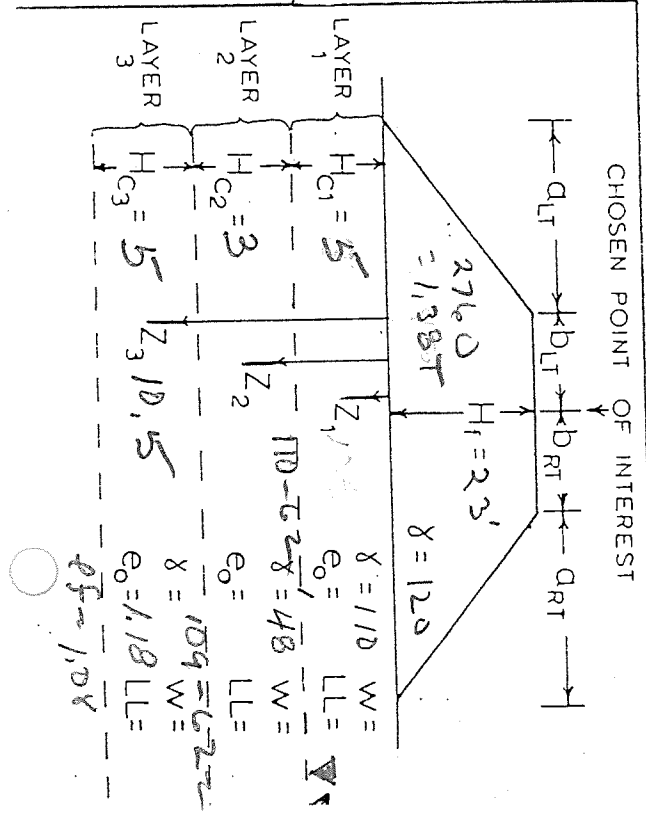
- $C_c$  from  $e \log p$  curve =  $\frac{\Delta e}{\Delta \log p}$
- $C_c = 0.0054 (25w - 35) \sqrt{e} = 0.056$
- $C_c = 0.009 (LL - 10) = 0.306$  NG

$w =$  Nat. Moisture Content %  
 $LL =$  Liquid Limit

INFLUENCE FACTOR FOR EACH LAYER

- $\frac{b_{LT}}{Z} = \frac{q_{LT}}{Z}$  (From Chart)
- $\frac{b_{RT}}{Z} = \frac{q_{RT}}{Z}$  (From Chart)

$I = I_{LT} + I_{RT}$



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
MATERIALS & TEST UNIT  
SOILS LABORATORY

T.I.P. ID NO. R-2111 A

REPORT ON SAMPLES OF: SOIL FOR QUALITY

PROJECT: 6.299001T COUNTY: EDGEcombe OWNER:  
DATE: SAMPLED: 12/8/92 RECEIVED: 12/21/92 REPORTED: 12/23/92  
SAMPLES FROM: -L- REV / Y-6 BY: E. A. WITORT  
SUBMITTED BY: W. H. JOHNSON (T-2760) 1990 STANDARD SPECIFICATIONS

12/28/92

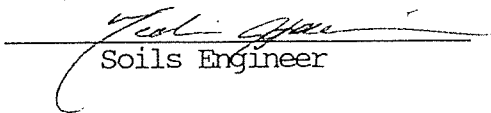
## TEST RESULTS

Proj. Sample No.	ST-1				
Lab. Sample No. 563.	607				
Retained #4 Sieve %	--				
Passing #10 Sieve %	100				
Passing #40 Sieve %	100				
Passing #200 Sieve %	94				

MINUS #10 FRACTION

SOIL MORTAR -	100%				
Coarse Sand Ret-#60 %	1				
Fine Sand Ret -#270 %	13				
Silt 0.05-0.005 MM %	52				
Clay < 0.005 MM %	34				
Passing #40 Sieve %	--				
Passing #200 Sieve %	--				
L.L.	44				
P.I.	22				
AASHTO Classification	A-7-6(14)				
Texture	71' RT				
Station	148+50				
Hole No.	EB1-B				
Depth (Ft)	10.4-				
	to				
	12.4				

cc: W. L. MOORE  
J. F. LEDBETTER  
E. A. WITORT ✓  
W. H. JOHNSON  
SOILS FILE

  
Soils Engineer

N.C.D.O.T. - Materials & Tests Lab

One Dimensional Consolidation Test

Object # 6,299001T County Edgecombe Lab. No. T-2760

Sample No. ST-1 Depth 10.4-12.4 Sp. Gr. 2.654 Solid Hto 1.4497

Sta. 148 + 50 - 71 RT

AASHTO Class: A-7-6 (14) L.L. 44 P.I. 22

Remarks: Green Gray Clay

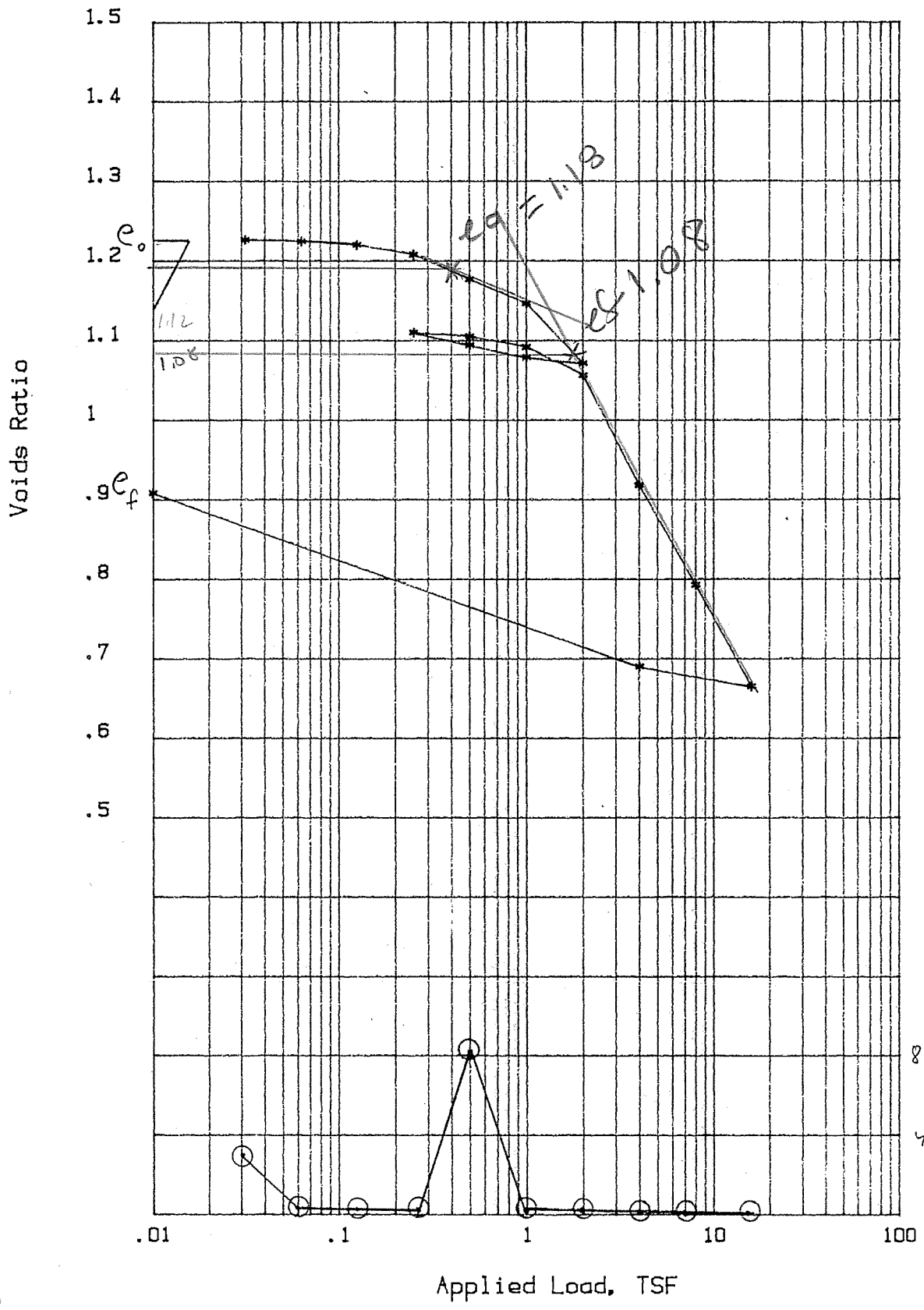
Acc. Load Ton	Spec. Ht @F.D.R. inches	Void Ratio e	Time @ % Compression		C <sub>v</sub> : Consolidation in Ft <sup>2</sup> /day	
			Sq. Rt.	MINUTES Semi-Log	.212 Ht <sup>2</sup> /t90	.197 Ht <sup>2</sup> /t50
	1.0	1.2260	—	—	—	—
.03	.9997	1.2260	.7056	—	3.00	—
.06	.9988	1.2240	7.56	—	.28	—
.13	.9969	1.2190	12.96	—	.16	—
.25	.9916	1.2070	27.04	—	.08	—
.50	.9776	1.1760	.25	—	8.35	—
1.00	.9640	1.1460	17.64	—	.11	—
2.00	.9300	1.0700	36.00	—	.05	.09 at 1.4 Ton
.50	.9457	1.1040	—	—	—	—
1.00	.9396	1.0900	—	—	—	—
2.00	.9239	1.0550	—	—	—	—
4.00	.8616	.9170	57.76	—	.03	—
8.00	.8053	.7910	49.00	—	.03	—
16.00	.7478	.6630	46.24	—	.03	—
4.0	.7592	.6880	—	—	—	—
.01	.8576	.9070	—	—	—	—

Density Data \* Data at 16 TSP

	PreTest	Post Test
Moisture, %	45.98	24.98
Dry Unit Wt. (PCF)	74.32	99.38
Void Ratio, e	1.2260	.6630
Saturation, %	99.71	100.00

$$Y_w = \gamma_d (1 + w) = 74.32 (1.46)$$

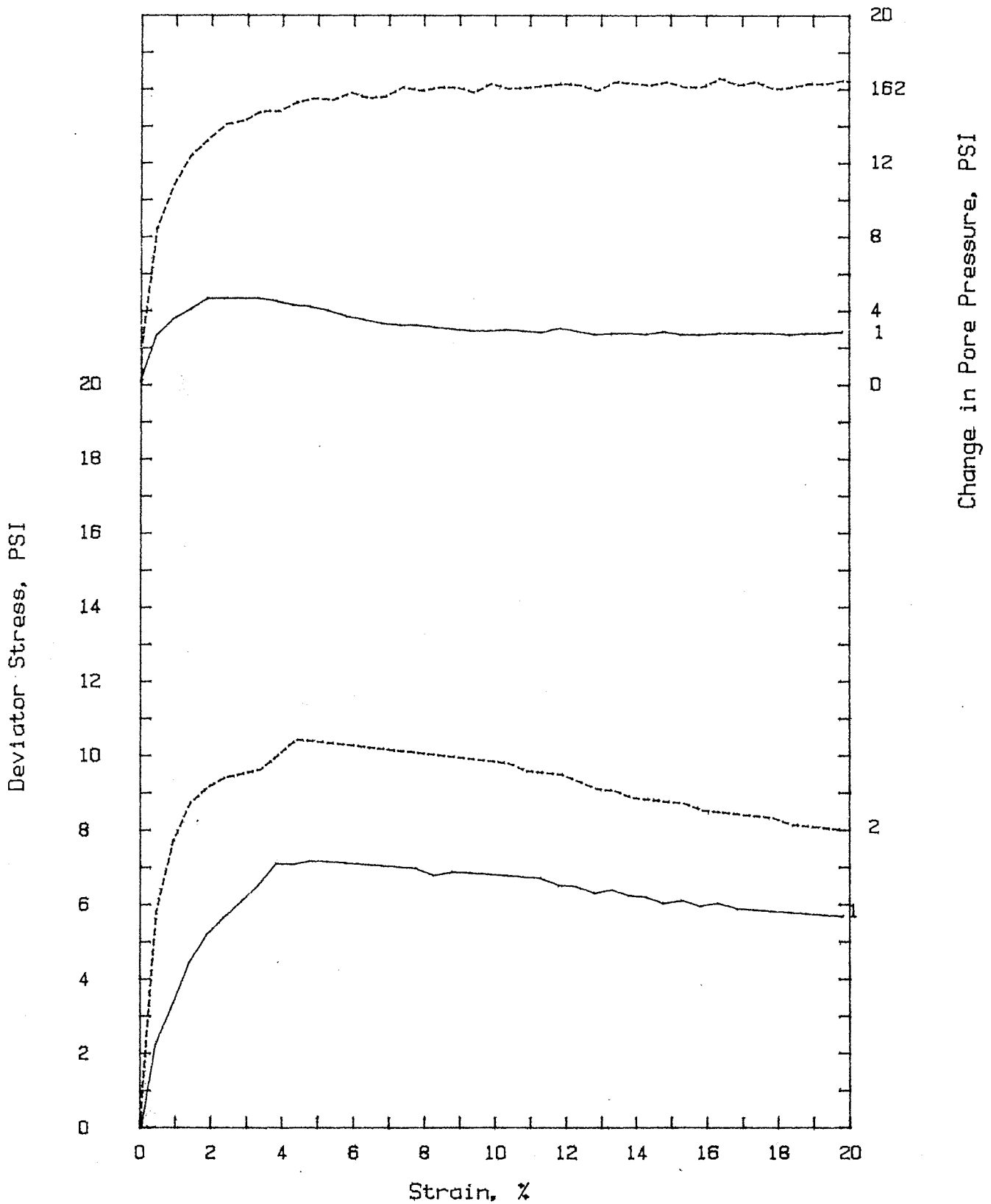
$$L.L. = 100$$



Coeff. of consolidation (ft<sup>2</sup>/day)

Project number: 6.299001T      Sample number: ST-1 T-2760  
 Borehole number: 148+50-71'RT      Sample depth: 10.4-12.4 Feet  
 NORTH CAROLINA D. O. T.

# CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST



Project number: 6.299001T  
Borehole number: 148+50

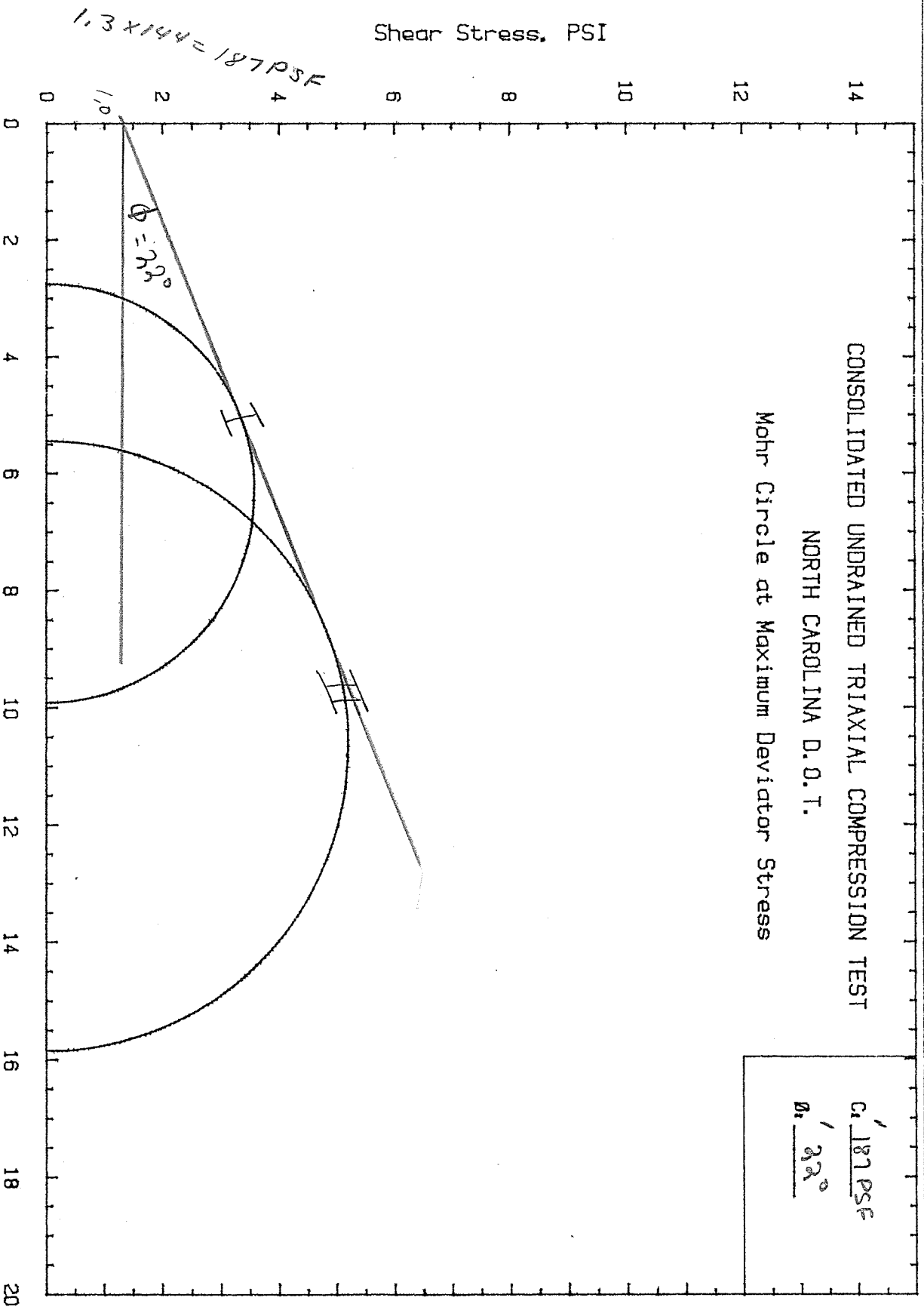
Sample number: ST-1 T-2760  
Sample depth: 10.4-12.4 Feet



CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST  
 NORTH CAROLINA D. O. T.

Mohr Circle at Maximum Deviator Stress

$c' = 187 \text{ PSF}$   
 $\phi = 32^\circ$



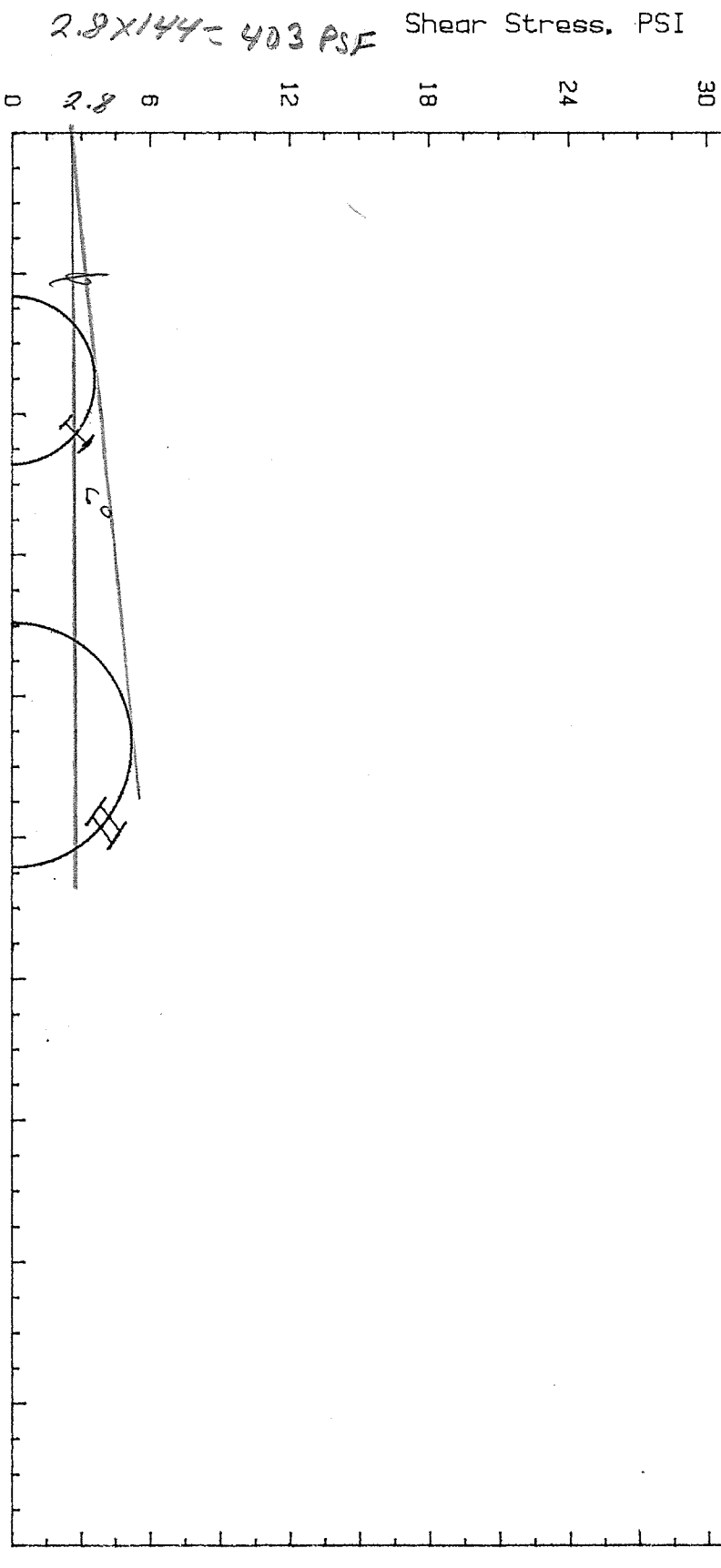
Project number: 6.299001T  
 Borehole number: 148+50  
 Sample description:  
 Sample number: ST-1 T-2760  
 Sample depth: 10.4-12.4 Feet

CONSOLIDATED DRAINED TRIAXIAL COMPRESSION TEST

NORTH CAROLINA D. O. T.

Mohr Circle at Maximum Deviator Stress

$c = \frac{403 \text{ PSI}}{2}$   
 $\phi = \frac{C_0}{\dots}$



Project number: 6.299001T  
 Borehole number: 148+50  
 Sample description:  
 Sample number: ST-1 T-2760  
 Sample depth: 10.4-12.4 Feet

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 1  
 =====

Project Number: 6.299001T  
 Station Number: 148+50  
 Sample Number: ST-1 T-2760  
 Sample Depth: 10.4-12.4 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.10	0.00	6.84	0.00
.001	-2.00	100.20	.10	6.74	-.31
.001	-1.00	100.40	.30	6.54	-1.87
.027	14.00	102.70	2.60	4.24	1.17
.057	21.00	103.60	3.50	3.34	1.05
.085	28.00	104.10	4.00	2.84	.90
.115	33.00	104.70	4.60	2.24	.89
.143	36.00	104.70	4.60	2.24	.82
.173	39.00	104.70	4.60	2.24	.76
.203	42.00	104.70	4.60	2.24	.71
.233	46.00	104.50	4.40	2.44	.62
.261	46.00	104.30	4.20	2.64	.60
.291	47.00	104.20	4.10	2.74	.57
.322	47.00	104.00	3.90	2.94	.55
.352	47.00	103.70	3.60	3.24	.51
.383	47.00	103.50	3.40	3.44	.48
.414	47.00	103.30	3.20	3.64	.46
.445	47.00	103.20	3.10	3.74	.44
.474	47.00	103.20	3.10	3.74	.45
.504	46.00	103.10	3.00	3.84	.44
.535	47.00	103.00	2.90	3.94	.42
.566	47.00	102.90	2.80	4.04	.41
.597	47.00	102.90	2.80	4.04	.41
.627	47.00	103.00	2.90	3.94	.43
.657	47.00	102.90	2.80	4.04	.42
.688	47.00	102.80	2.70	4.14	.40
.719	46.00	103.10	3.00	3.84	.46
.749	46.00	102.90	2.80	4.04	.43
.780	45.00	102.70	2.60	4.24	.41
.810	46.00	102.80	2.70	4.14	.42
.840	45.00	102.80	2.70	4.14	.43
.871	45.00	102.70	2.60	4.24	.42
.901	44.00	102.90	2.80	4.04	.47
.932	45.00	102.70	2.60	4.24	.43
.963	44.00	102.70	2.60	4.24	.44
.993	45.00	102.80	2.70	4.14	.45
1.026	44.00	102.80	2.70	4.14	.46
1.054	44.00	102.80	2.70	4.14	.46
1.085	44.00	102.80	2.70	4.14	.47
1.116	44.00	102.70	2.60	4.24	.45
1.145	44.00	102.80	2.70	4.14	.47
1.177	44.00	102.80	2.70	4.14	.47
1.207	44.00	102.90	2.80	4.04	.50

T-2760  
241

AXIAL STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	6.84	-6.25
.02	-.32	-.16	6.58	.95
.02	-.16	-.08	6.46	.98
.44	2.23	1.12	5.36	1.53
.93	3.33	1.67	5.01	2.00
1.39	4.42	2.21	5.05	2.56
1.89	5.18	2.59	4.83	3.31
2.34	5.63	2.81	5.05	3.51
2.84	6.07	3.03	5.27	3.71
3.33	6.50	3.25	5.49	3.90
3.82	7.08	3.54	5.98	3.90
4.28	7.05	3.52	6.16	3.67
4.77	7.17	3.58	6.32	3.62
5.28	7.13	3.56	6.50	3.42
5.77	7.09	3.55	6.79	3.19
6.28	7.05	3.53	6.97	3.05
6.79	7.01	3.51	7.15	2.93
7.30	6.98	3.49	7.23	2.87
7.77	6.94	3.47	7.21	2.86
8.26	6.76	3.38	7.22	2.76
8.77	6.87	3.43	7.37	2.74
9.28	6.83	3.41	7.45	2.69
9.79	6.79	3.39	7.43	2.68
10.28	6.75	3.38	7.32	2.71
10.77	6.71	3.36	7.40	2.66
11.28	6.68	3.34	7.48	2.61
11.79	6.50	3.25	7.09	2.69
12.28	6.46	3.23	7.27	2.60
12.79	6.28	3.14	7.38	2.48
13.28	6.39	3.19	7.33	2.54
13.77	6.21	3.11	7.25	2.50
14.28	6.18	3.09	7.33	2.46
14.77	6.00	3.00	7.04	2.49
15.28	6.10	3.05	7.29	2.44
15.79	5.93	2.97	7.21	2.40
16.28	6.03	3.02	7.16	2.46
16.82	5.86	2.93	7.07	2.42
17.28	5.83	2.91	7.05	2.41
17.79	5.79	2.90	7.04	2.40
18.30	5.76	2.88	7.12	2.36
18.77	5.72	2.86	7.00	2.38
19.30	5.69	2.84	6.98	2.37
19.79	5.65	2.83	6.87	2.40

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST - SPECIMEN 2

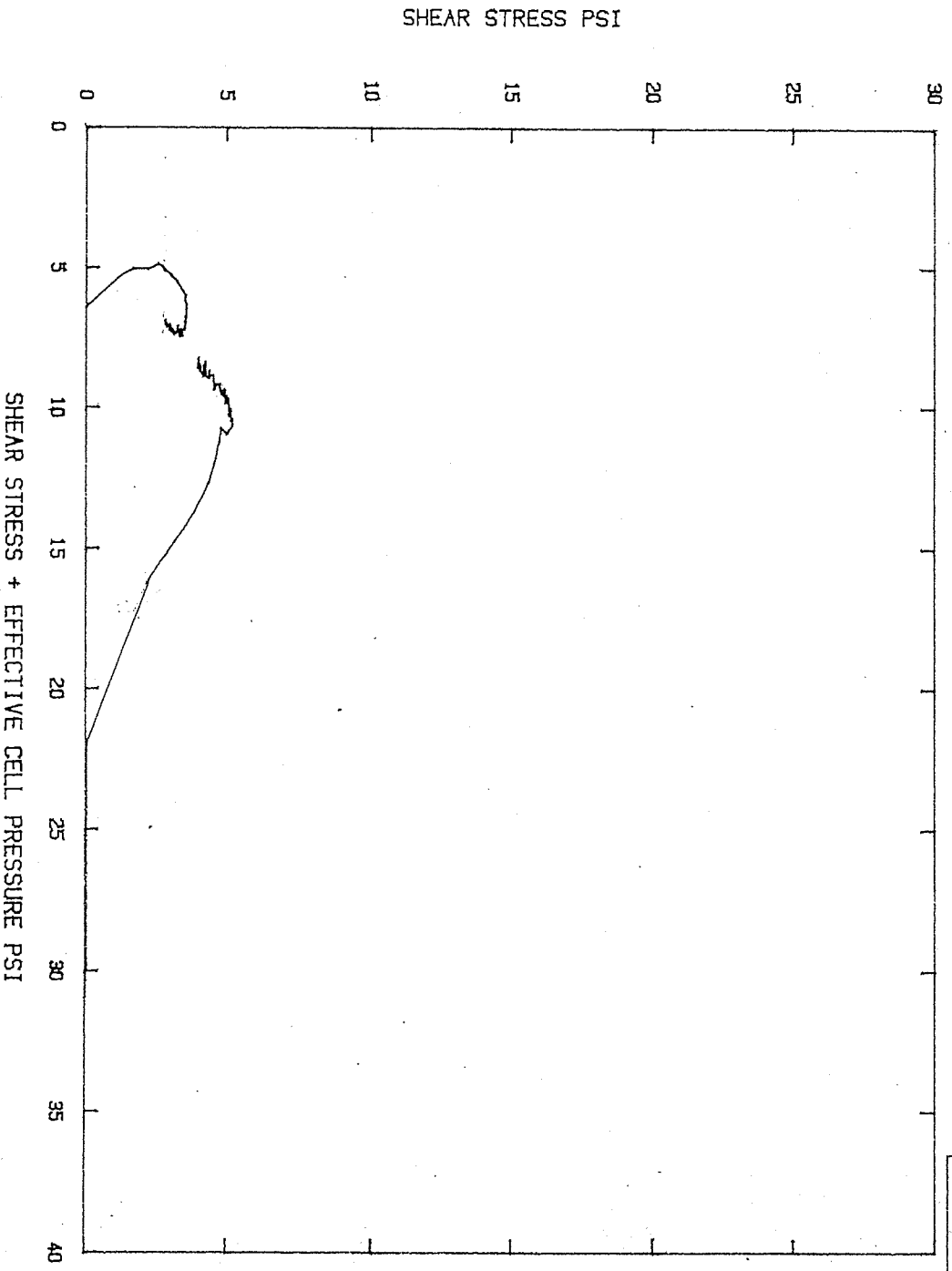
Project Number: 6.2990017  
 Station Number: 148+50  
 Sample Number: ST-1 T-2760  
 Sample Depth: 10.4-12.4 Feet

DEFORMATION	LOAD	PORE WATER	PORE WATER	EFFECTIVE	'A' VALUE
inches	lbs	PRESSURE PSI	PRESS. DIFF PSI	CELL PRESS. PSI	
0.000	0.00	100.20	0.00	20.63	0.00
.001	-2.00	101.30	1.10	19.53	-3.48
.002	3.00	102.20	2.00	18.63	4.22
.028	37.00	108.60	8.40	12.23	1.44
.056	49.00	110.90	10.70	9.93	1.40
.085	56.00	112.50	12.30	8.33	1.41
.114	59.00	113.40	13.20	7.43	1.44
.144	61.00	114.20	14.00	6.63	1.49
.174	62.00	114.40	14.20	6.43	1.49
.203	63.00	114.90	14.70	5.93	1.53
.234	66.00	114.90	14.70	5.93	1.47
.264	69.00	115.40	15.20	5.43	1.46
.293	69.00	115.60	15.40	5.23	1.49
.323	69.00	115.50	15.30	5.33	1.48
.354	69.00	115.90	15.70	4.93	1.53
.383	69.00	115.60	15.40	5.23	1.51
.413	69.00	115.70	15.50	5.13	1.53
.443	69.00	116.20	16.00	4.63	1.59
.473	69.00	116.00	15.80	4.83	1.57
.503	69.00	116.20	16.00	4.63	1.60
.533	69.00	116.20	16.00	4.63	1.61
.563	69.00	115.90	15.70	4.93	1.59
.593	69.00	116.40	16.20	4.43	1.65
.623	69.00	116.10	15.90	4.73	1.63
.653	68.00	116.20	16.00	4.63	1.67
.683	68.00	116.30	16.10	4.53	1.69
.713	68.00	116.40	16.20	4.43	1.71
.743	67.00	116.30	16.10	4.53	1.74
.773	66.00	116.00	15.80	4.83	1.74
.803	66.00	116.50	16.30	4.33	1.81
.833	65.00	116.40	16.20	4.43	1.83
.863	65.00	116.30	16.10	4.53	1.83
.893	65.00	116.50	16.30	4.33	1.87
.924	65.00	116.20	16.00	4.63	1.84
.952	64.00	116.20	16.00	4.63	1.88
.982	64.00	116.70	16.50	4.13	1.95
1.012	64.00	116.30	16.10	4.53	1.92
1.042	64.00	116.50	16.30	4.33	1.95
1.072	64.00	116.10	15.90	4.73	1.92
1.103	63.00	116.20	16.00	4.63	1.97
1.132	63.00	116.40	16.20	4.43	2.01
1.162	63.00	116.40	16.20	4.43	2.02

AXIAL STRAIN %	DEVIATOR STRESS PSI	SHEAR STRESS PSI	EFFECTIVE STRESS PSI	STRESS RATIO
0.00	0.00	0.00	20.63	-2.16
.02	-.32	-.16	19.37	.98
.03	.47	.24	18.67	1.03
.47	5.81	2.91	15.14	1.48
.93	7.66	3.83	13.76	1.77
1.42	8.71	4.36	12.69	2.05
1.90	9.14	4.57	12.00	2.23
2.40	9.40	4.70	11.33	2.42
2.90	9.50	4.75	11.18	2.48
3.38	9.61	4.80	10.73	2.62
3.90	10.01	5.01	10.94	2.69
4.40	10.41	5.21	10.64	2.92
4.88	10.36	5.18	10.41	2.98
5.38	10.31	5.15	10.48	2.93
5.90	10.25	5.12	10.05	3.08
6.38	10.20	5.10	10.33	2.95
6.88	10.14	5.07	10.20	2.98
7.38	10.09	5.04	9.67	3.18
7.88	10.03	5.02	9.85	3.08
8.38	9.98	4.99	9.62	3.16
8.88	9.92	4.96	9.59	3.14
9.38	9.87	4.94	9.87	3.00
9.88	9.82	4.91	9.34	3.22
10.38	9.76	4.88	9.61	3.06
10.88	9.57	4.78	9.41	3.07
11.38	9.51	4.76	9.29	3.10
11.88	9.46	4.73	9.16	3.14
12.38	9.27	4.63	9.16	3.05
12.88	9.08	4.54	9.37	2.88
13.38	9.02	4.51	8.84	3.08
13.88	8.84	4.42	8.85	2.99
14.38	8.79	4.39	8.92	2.94
14.88	8.73	4.37	8.70	3.02
15.40	8.68	4.34	8.97	2.87
15.87	8.50	4.25	8.88	2.84
16.37	8.45	4.22	8.35	3.05
16.87	8.40	4.20	8.73	2.85
17.37	8.35	4.17	8.50	2.93
17.87	8.30	4.15	8.88	2.75
18.36	8.12	4.06	8.69	2.75
18.87	8.07	4.03	8.46	2.82
19.37	8.02	4.01	8.44	2.81
19.87	7.97	3.98	8.21	2.88
20.37	7.92	3.96	8.59	2.71

CONSOLIDATED UNDRAINED TRIAXIAL COMPRESSION TEST

C: \_\_\_\_\_  
Ø: \_\_\_\_\_



PROJECT NUMBER: 6.299001T  
SAMPLE NUMBER: ST-1 T-2760

STATION NUMBER: 148+50  
DEPTH: 10.4-12.4 Feet

Project: 6.299001 T

Station: 148 + 50

County: Edgecombe

Sample No: ST-1

Depth: 10.4 - 12.4

SPECIMEN NUMBER		1	2	3
PRE-TEST	WATER CONTENT %	W	49.60	47.06
	DRY DENSITY, PCF	$\gamma_d$	71.92	73.01
	SATURATION, %	$S_o$	100.00	98.89
	VOID RATIO	$e_o$	1.2973	1.2630
	DIAMETER, IN.	$D_o$	2.835	2.860
POST-TEST	HEIGHT, IN	$H_o$	6.260	6.075
	TIME TO ( $G_1-G_3$ ) Max. Min.	t	32.86	29.33
	WATER CONTENT %	$w_1$	48.66	43.05
	DRY DENSITY, PCF	$\gamma_{d1}$	72.10	77.12
	SATURATION, %	$S_1$	100.00	100.00
	VOID RATIO	$e_1$	1.2916	1.1424
	STRAIN RATE mm/minute		.2286	.2286

LL: 44

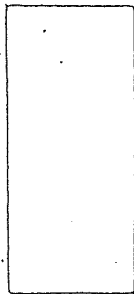
PL: 22

PI: 22

G: 2.654

PRE-TEST  
Specimen Condition

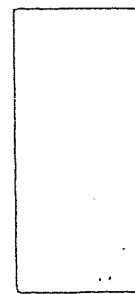
Specimen No. 1



Specimen No. 2

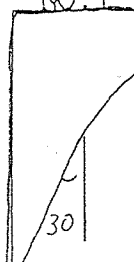


Specimen No. 3



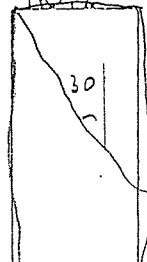
FAILURE MODE:

Specimen No. 1



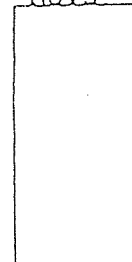
Shear Plane

Specimen No. 2



Same as #1

Specimen No. 3



Green Gray Clay



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	32782.1.1 (B-2965)	1	10

**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

PROJ. REFERENCE NO. 32782.1.1 (B-2965) F.A. PROJ. BRSTP-064B(1)  
COUNTY EDGECOMBE  
PROJECT DESCRIPTION BRIDGE NO. 24 ON US 64 BUSINESS OVER  
TAR RIVER AT -L- STA. 39+59

**CONTENTS**

<u>SHEET</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
8-II	BORE LOG RESULTS
12	SOIL AND TEST RESULTS

**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

**PROJECT: 32782.1.1 ID: B-2965**

PERSONNEL

JRS

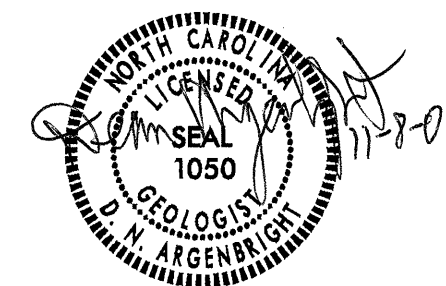
S&ME

INVESTIGATED BY D.N.ARGENBRIGHT

CHECKED BY D.N.ARGENBRIGHT

SUBMITTED BY D.N.ARGENBRIGHT

DATE NOVEMBER 2007



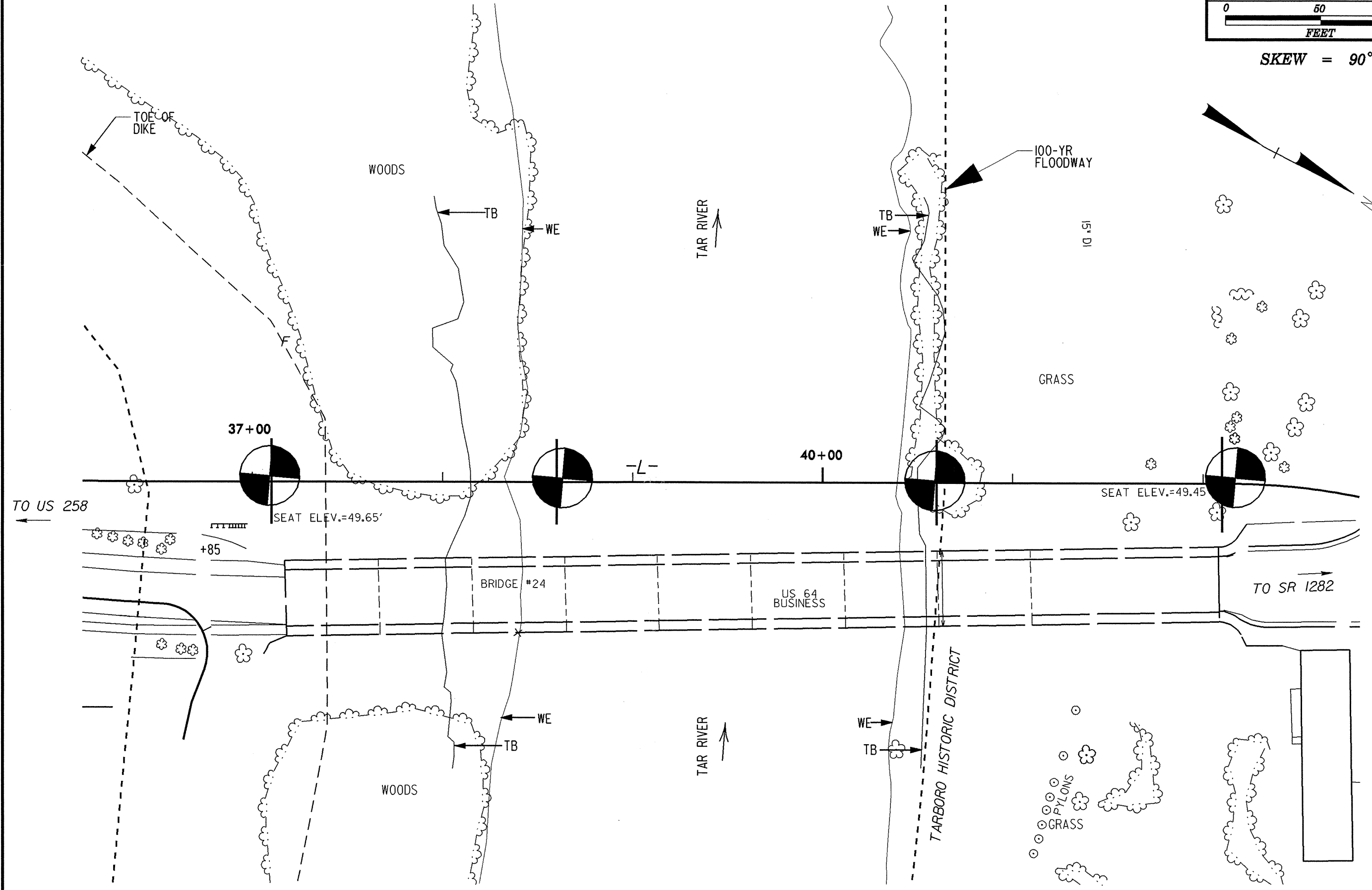
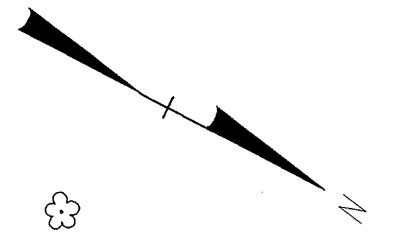
DRAWN BY: C. M. KENT

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.



SKEW = 90°

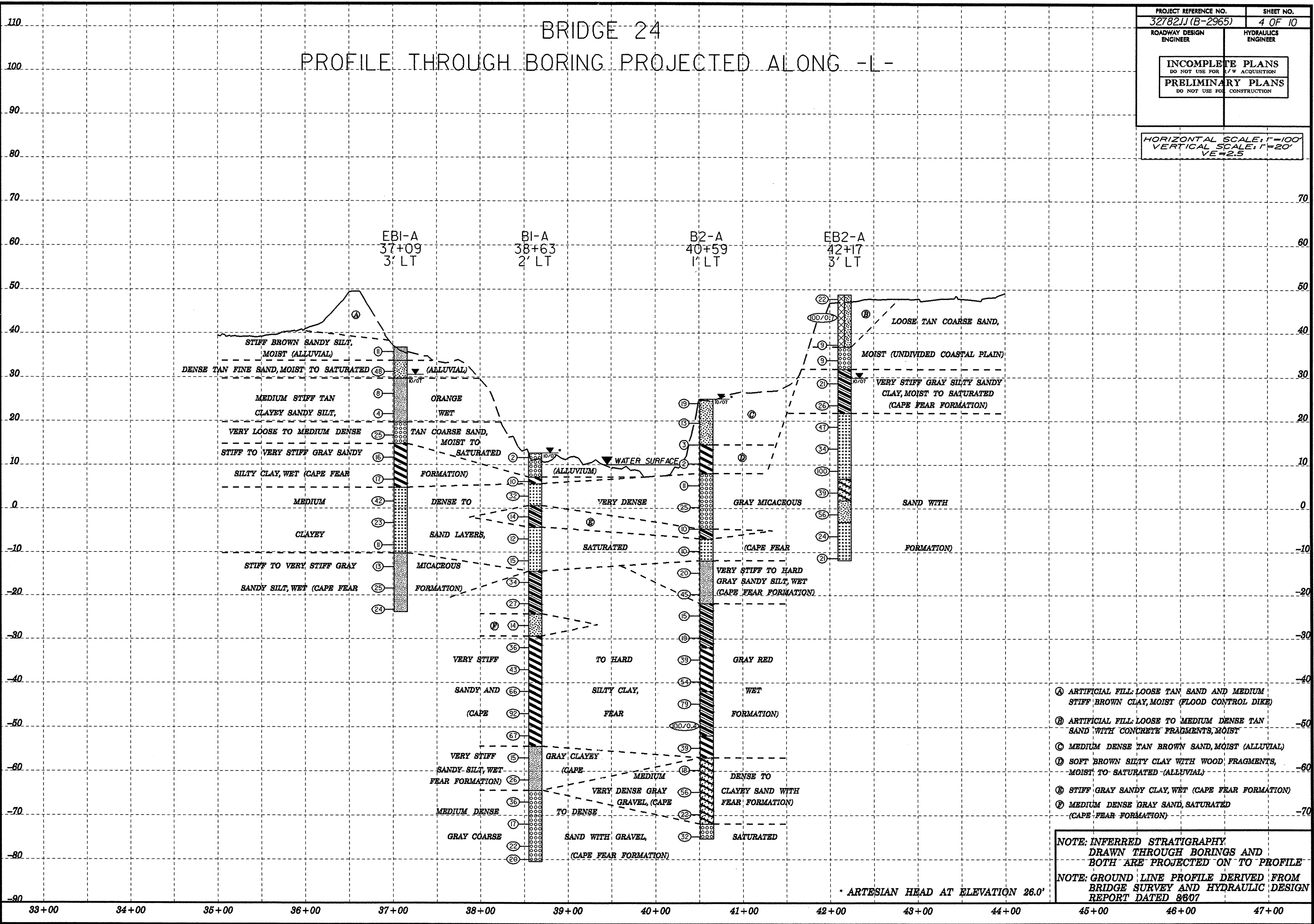


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# BRIDGE 24

## PROFILE THROUGH BORING PROJECTED ALONG -L-

PROJECT REFERENCE NO. <b>32782JJ(B-2965)</b>	SHEET NO. <b>4 OF 10</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR ACQUISITION</small>	
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	
HORIZONTAL SCALE: 1"=100' VERTICAL SCALE: 1"=20' VE=2.5	



- Ⓐ ARTIFICIAL FILL: LOOSE TAN SAND AND MEDIUM STIFF BROWN CLAY, MOIST (FLOOD CONTROL DIKE)
- Ⓑ ARTIFICIAL FILL: LOOSE TO MEDIUM DENSE TAN SAND WITH CONCRETE FRAGMENTS, MOIST
- Ⓒ MEDIUM DENSE TAN BROWN SAND, MOIST (ALLUVIAL)
- Ⓓ SOFT BROWN SILTY CLAY WITH WOOD FRAGMENTS, MOIST TO SATURATED (ALLUVIAL)
- Ⓔ STIFF GRAY SANDY CLAY, WET (CAPE FEAR FORMATION)
- Ⓕ MEDIUM DENSE GRAY SAND, SATURATED (CAPE FEAR FORMATION)

**NOTE: INFERRED STRATIGRAPHY**  
 DRAWN THROUGH BORINGS AND BOTH ARE PROJECTED ON TO PROFILE  
**NOTE: GROUND LINE PROFILE DERIVED FROM BRIDGE SURVEY AND HYDRAULIC DESIGN REPORT DATED 8/07**

\* ARTESIAN HEAD AT ELEVATION 26.0'



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

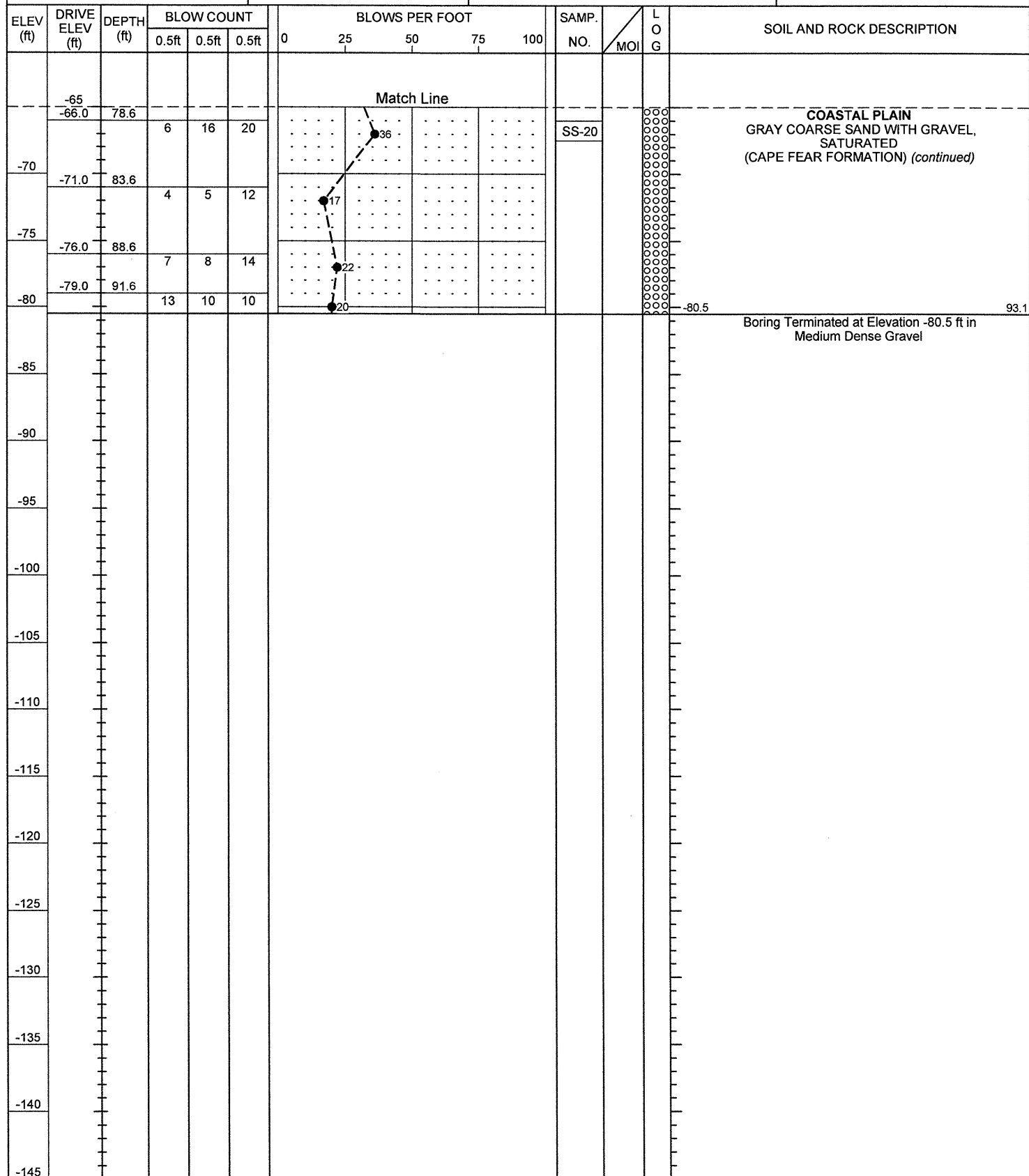
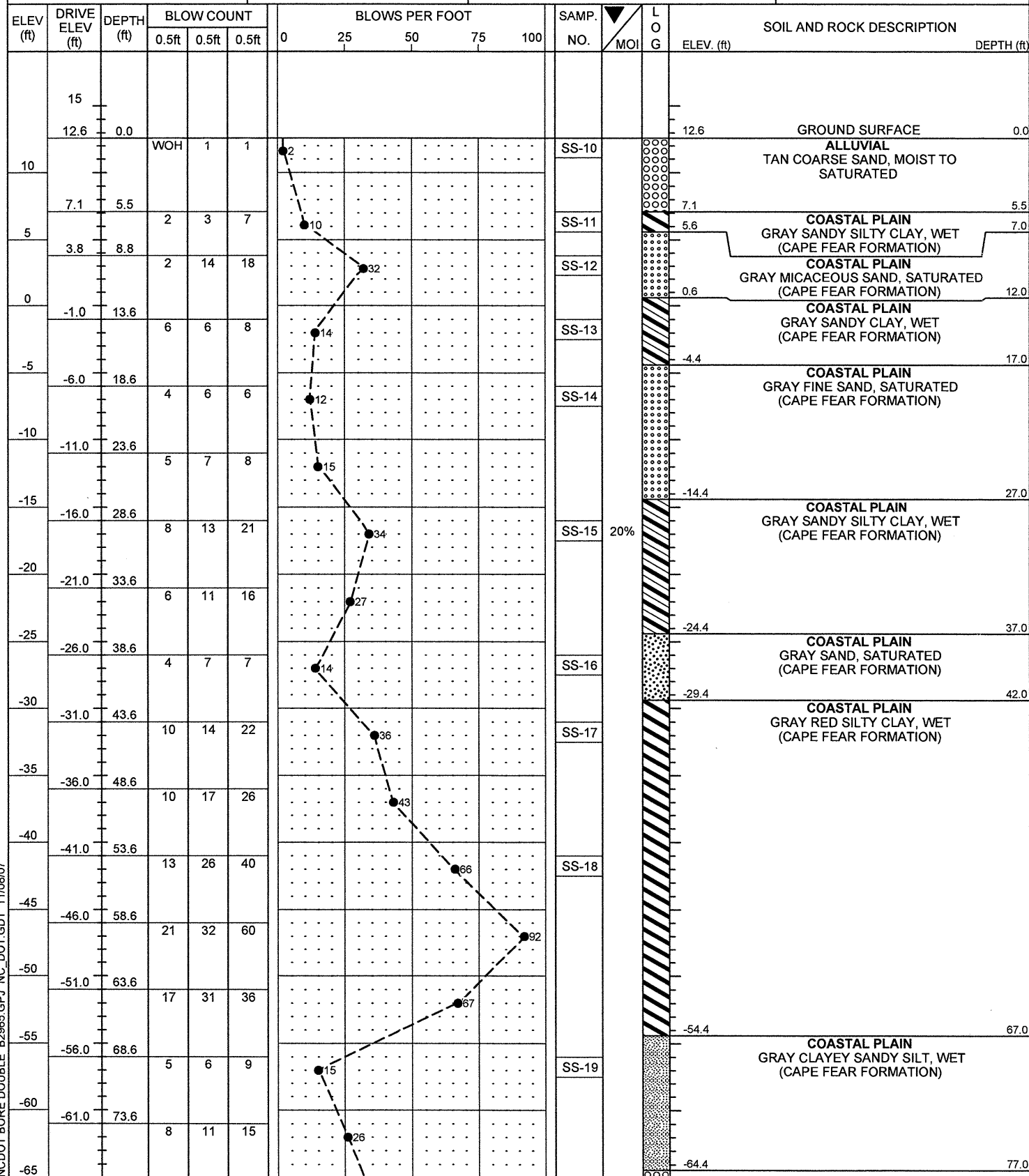
PROJECT NO. 32782.1.1	ID. B-2965	COUNTY Edgecombe	GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 24 ON -L- (US 64 BUS.) OVER TAR RIVER			GROUND WTR (ft)
BORING NO. EB1-A	STATION 37+09	OFFSET 3ft LT	ALIGNMENT -L-
COLLAR ELEV. 36.7 ft	TOTAL DEPTH 60.6 ft	NORTHING 783,191	EASTING 2,434,732
DRILL MACHINE CME-750	DRILL METHOD ROTARY W/ MUD	HAMMER TYPE Automatic	
START DATE 10/02/07	COMP. DATE 10/02/07	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT				SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75					
40														
36.7	36.7	0.0											GROUND SURFACE	0.0
35			5	6	5								ALLUVIAL BROWN SANDY SILT, MOIST	3.0
32.2	32.2	4.5	27	23	25								ALLUVIAL TAN FINE SAND, MOIST	7.0
30													ALLUVIAL TAN ORANGE CLAYEY SANDY SILT, WET	17.0
27.2	27.2	9.5	3	3	5									
25														
22.6	22.6	14.1	2	1	3									
20														
17.6	17.6	19.1	6	10	15								ALLUVIAL TAN COARSE SAND, SATURATED	22.0
15														
12.6	12.6	24.1	4	6	10								COASTAL PLAIN GRAY SANDY SILTY CLAY, WET (CAPE FEAR FORMATION)	32.0
10														
7.6	7.6	29.1	5	7	10									
5														
2.6	2.6	34.1	18	22	20								COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (CAPE FEAR FORMATION)	47.0
0														
-2.4	-2.4	39.1	10	13	10									
-5														
-7.4	-7.4	44.1	8	5	6									
-10														
-12.4	-12.4	49.1	3	6	7								COASTAL PLAIN GRAY MICACEOUS SANDY SILT, WET (CAPE FEAR FORMATION)	60.6
-15														
-17.4	-17.4	54.1	7	7	18									
-20														
-22.4	-22.4	59.1	6	10	14									
-25														
													Boring Terminated at Elevation -23.9 ft in Very Stiff Silt	
-30														
-35														
-40														

NCDOT BORE DOUBLE B2965.GPJ NC\_DOT\_GDT\_11/08/07

PROJECT NO. 32782.1.1	ID. B-2965	COUNTY Edgecombe	GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 24 ON -L- (US 64 BUS.) OVER TAR RIVER			GROUND WTR (ft)
BORING NO. B1-A	STATION 38+63	OFFSET 2ft LT	ALIGNMENT -L-
COLLAR ELEV. 12.6 ft	TOTAL DEPTH 93.1 ft	NORTHING 783,328	EASTING 2,434,663
DRILL MACHINE CME-750		DRILL METHOD ROTARY W/ MUD	HAMMER TYPE Automatic
START DATE 10/02/07	COMP. DATE 10/02/07	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

PROJECT NO. 32782.1.1	ID. B-2965	COUNTY Edgecombe	GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 24 ON -L- (US 64 BUS.) OVER TAR RIVER			GROUND WTR (ft)
BORING NO. B1-A	STATION 38+63	OFFSET 2ft LT	ALIGNMENT -L-
COLLAR ELEV. 12.6 ft	TOTAL DEPTH 93.1 ft	NORTHING 783,328	EASTING 2,434,663
DRILL MACHINE CME-750		DRILL METHOD ROTARY W/ MUD	HAMMER TYPE Automatic
START DATE 10/02/07	COMP. DATE 10/02/07	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A



NCDOT BORE DOUBLE B2965.GPJ NC\_DOT\_GDT\_11/08/07

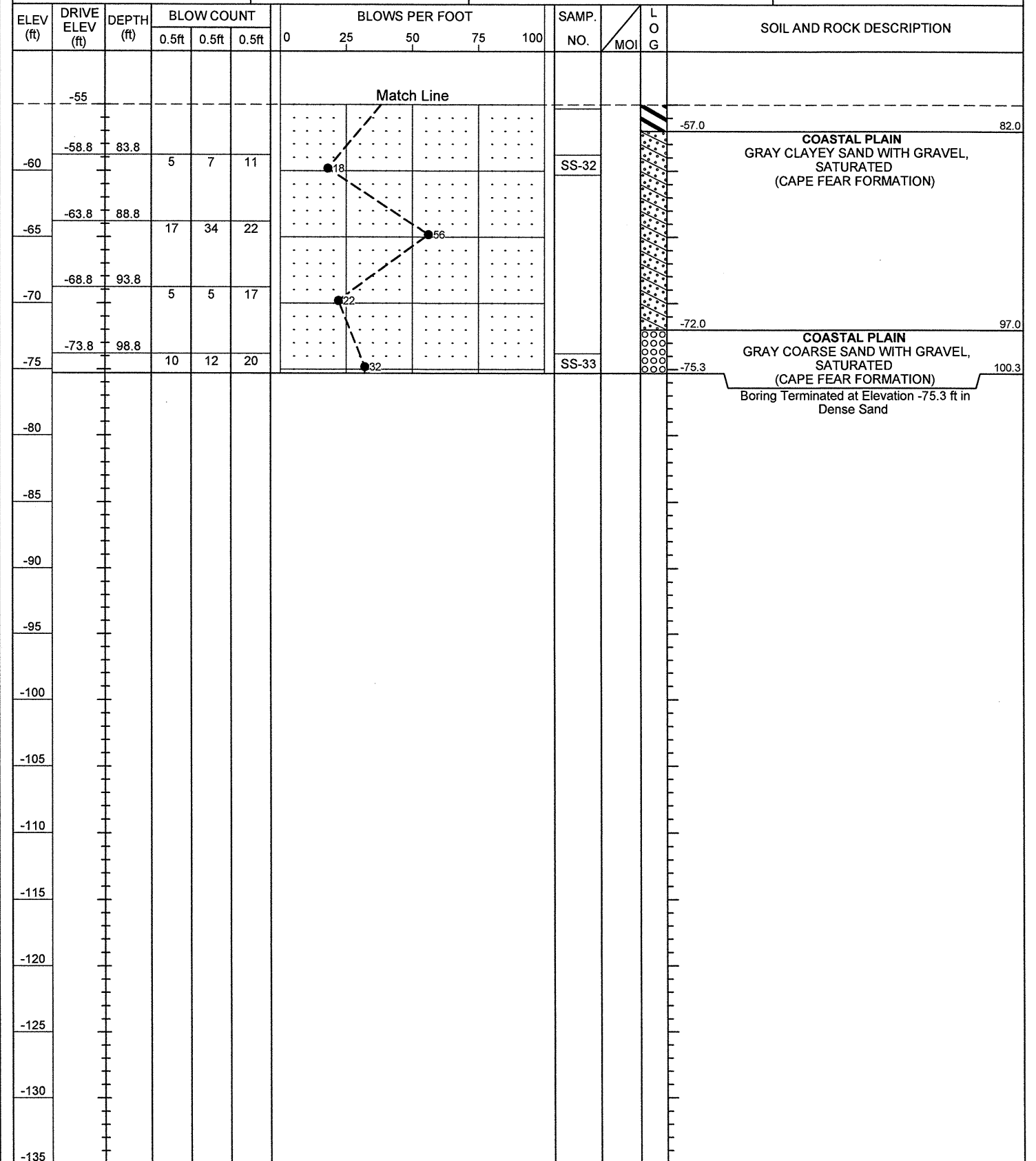
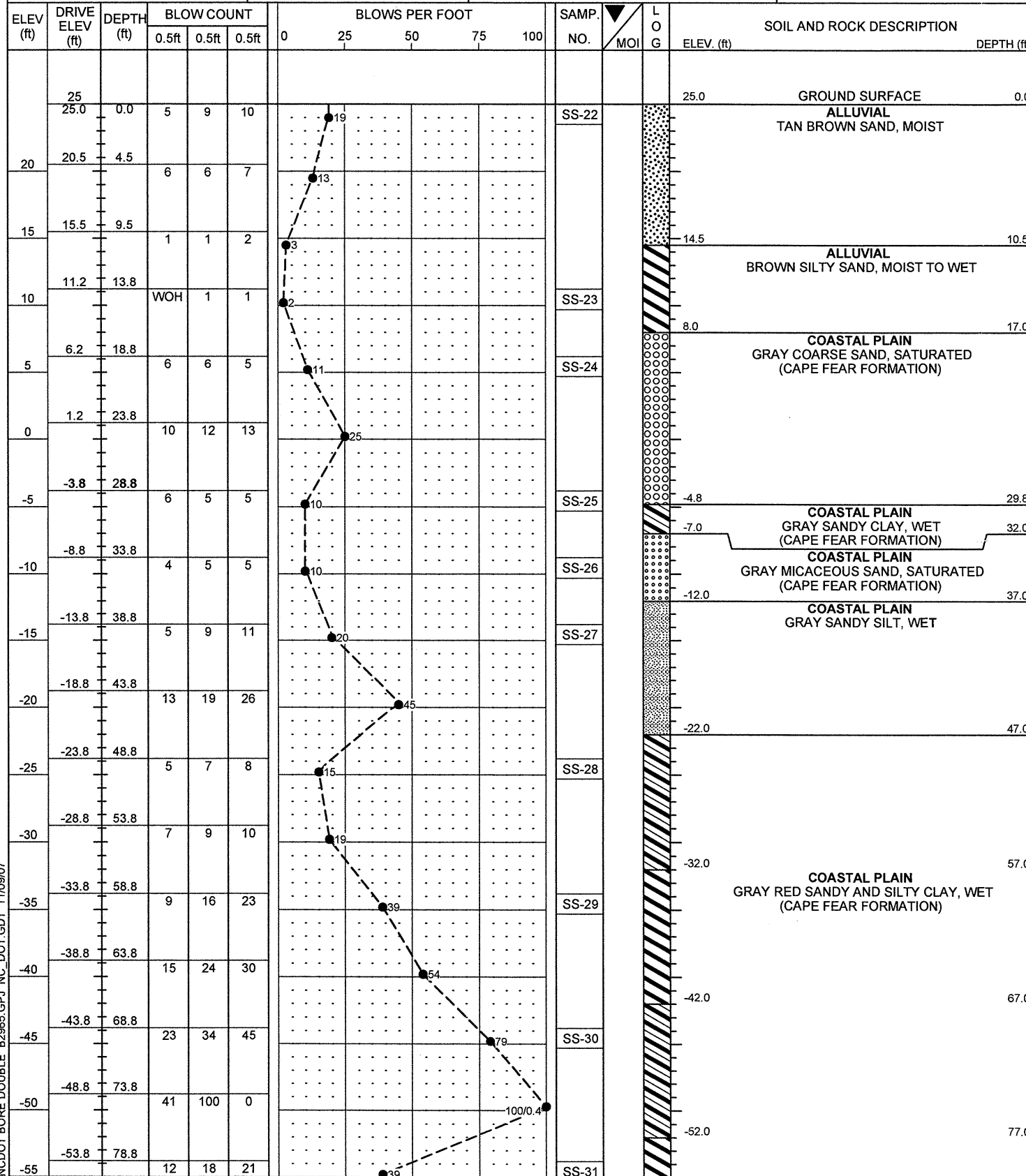


# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 32782.1.1	ID. B-2965	COUNTY Edgecombe	GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 24 ON -L- (US 64 BUS.) OVER TAR RIVER			GROUND WTR (ft)
BORING NO. B2-A	STATION 40+59	OFFSET 1ft LT	ALIGNMENT -L-
COLLAR ELEV. 25.0 ft	TOTAL DEPTH 100.3 ft	NORTHING 783,503	EASTING 2,434,574
DRILL MACHINE CME-750		DRILL METHOD ROTARY W/ MUD	
START DATE 10/04/07		COMP. DATE 10/08/07	
SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A	

PROJECT NO. 32782.1.1	ID. B-2965	COUNTY Edgecombe	GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 24 ON -L- (US 64 BUS.) OVER TAR RIVER			GROUND WTR (ft)
BORING NO. B2-A	STATION 40+59	OFFSET 1ft LT	ALIGNMENT -L-
COLLAR ELEV. 25.0 ft	TOTAL DEPTH 100.3 ft	NORTHING 783,503	EASTING 2,434,574
DRILL MACHINE CME-750		DRILL METHOD ROTARY W/ MUD	
START DATE 10/04/07		COMP. DATE 10/08/07	
SURFACE WATER DEPTH N/A		DEPTH TO ROCK N/A	



NCDOT BORE DOUBLE B2965.GPJ NC\_DOT.GDT 11/09/07



# NCDOT GEOTECHNICAL ENGINEERING UNIT

## BORELOG REPORT

PROJECT NO. 32782.1.1	ID. B-2965	COUNTY Edgecombe	GEOLOGIST Swartley, J. R.
SITE DESCRIPTION BRIDGE NO. 24 ON -L- (US 64 BUS.) OVER TAR RIVER			GROUND WTR (ft)
BORING NO. EB2-A	STATION 42+17	OFFSET 3ft LT	ALIGNMENT -L-
COLLAR ELEV. 48.8 ft	TOTAL DEPTH 60.7 ft	NORTHING 783,642	EASTING 2,434,499
DRILL MACHINE CME-750	DRILL METHOD ROTARY W/ MUD	HAMMER TYPE Automatic	
START DATE 10/08/07	COMP. DATE 10/08/07	SURFACE WATER DEPTH N/A	DEPTH TO ROCK N/A

ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				
50	48.8	0.0											GROUND SURFACE	0.0
45	44.8	4.0	5	14	8								ARTIFICIAL FILL TAN SAND WITH CONCRETE FRAGMENTS, MOIST	
40	38.3	10.5	5	7	93									
35	34.8	14.0	6	5	4								TAN COARSE SAND, MOIST (UNDIVIDED COASTAL PLAIN)	12.0
30	29.6	19.2	3	5	4								COASTAL PLAIN GRAY SILTY SANDY CLAY, MOIST TO WET (CAPE FEAR FORMATION)	17.0
25	24.6	24.2	3	9	12									
20	19.6	29.2	7	12	14								COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (CAPE FEAR FORMATION)	27.0
15	14.6	34.2	12	13	34									
10	9.6	39.2	6	11	23									
5	4.6	44.2	23	41	59								COASTAL PLAIN GRAY CLAYEY SAND, SATURATED (CAPE FEAR FORMATION)	42.0
0	-0.4	49.2	21	21	18									
-5	-5.4	54.2	13	22	34								COASTAL PLAIN GRAY MICACEOUS SAND, SATURATED (CAPE FEAR FORMATION)	47.0
-10	-10.4	59.2	7	10	14									
-15			9	9	12									
-20														
-25														
-30														

NCDOT BORE DOUBLE B2965.GPJ NC\_DOT\_GDT 11/08/07



**32782.1.1 B-2965**  
**Bridge No. 24 on US 264 Bus. over Tar River**

HOLE #	SAMPLE #	RET 4	PASS 10	PASS 40	PASS 200	CS SAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
EB1-A	SS-1	-	95	68	36	40.7	25.4	15.7	18.3	25	9	A-4(0)	1.0-1.5		
	SS-2	-	100	100	15	10.9	77.5	5.5	6.1	15	NP	A-2-4(0)	4.5-6.0		
	SS-3	-	100	100	41	6.7	59.1	11.8	22.4	22	6	A-4(0)	9.5-11.0		
	SS-4	-	99	31	6	81.5	13.8	2.6	2.0	19	NP	A-1-b(0)	19.1-20.6		
	SS-5	-	92	89	76	4.1	22.8	44.7	28.5	41	16	A-7-6(12)	24.1-25.6	24.8%	
	SS-6	-	95	92	62	8.9	36.6	30.1	24.4	43	22	A-7-6(11)	29.1-30.6		
	SS-7	-	100	62	10	62.0	29.4	3.6	5.1	23	NP	A-3(0)	34.1-35.6		
	SS-8	-	100	65	5	85.6	10.3	3.2	1.0	23	NP	A-3(0)	44.1-45.6		
	SS-9	-	100	97	76	4.1	33.5	48.2	14.2	36	8	A-4(6)	49.1-50.6		
B1-A	SS-10	-	83	19	2	89.6	9.0	0.3	1.0	25	NP	A-1-b(0)	1.0-1.5		
	SS-11	-	100	94	77	13.2	13.8	26.2	46.7	42	27	A-7-6(19)	5.5-6.0		
	SS-12	-	99	67	8	71.1	22.9	1.9	4.1	15	NP	A-3(0)	8.8-10.3		
	SS-13	-	95	89	48	13.0	44.5	18.1	24.4	26	12	A-6(2)	13.6-15.1		
	SS-14	-	100	59	8	84.9	8.5	1.5	5.1	23	NP	A-3(0)	18.6-20.1		
	SS-15	-	100	99	83	2.2	22.8	46.5	28.5	39	23	A-6(18)	28.6-30.1	20.0%	
	SS-16	-	100	79	19	58.4	24.2	6.2	11.2	21	NP	A-2-4(0)	38.6-40.1		
	SS-17	-	100	98	87	4.7	11.6	47.2	36.6	53	23	A-7-5(23)	43.6-45.1		
	SS-18	-	100	93	84	10.0	8.3	16.7	65.0	54	31	A-7-6(28)	53.6-55.1		
	SS-19	-	100	90	37	42.1	22.2	7.3	28.5	24	10	A-4(0)	68.6-70.1		
SS-20	-	96	46	20	73.4	6.6	3.8	16.3	19	6	A-1-b(0)	78.6-80.1			
B2-A	SS-22	-	93	64	20	49.3	32.5	10.1	8.1	16	NP	A-2-4(0)	1.0-1.5		
	SS-23	-	100	100	92	0.6	12.6	46.2	40.6	49	18	A-7-5(20)	13.8-15.3		
	SS-24	-	93	36	3	85.2	12.7	1.1	1.0	14	NP	A-1-b(0)	18.8-20.3		
	SS-25	-	100	91	54	13.8	42.2	25.7	18.3	37	15	A-6(5)	28.8-30.3		
	SS-26	-	100	78	10	64.0	27.0	1.9	7.1	18	NP	A-3(0)	33.8-35.3		
	SS-27	-	100	99	67	2.2	42.6	38.9	16.2	28	9	A-4(4)	38.8-40.3		
	SS-28	-	100	97	57	14.2	37.0	28.5	20.3	33	17	A-6(7)	48.8-50.3		
	SS-29	-	100	99	94	2.4	4.9	23.7	69.0	65	41	A-7-6(44)	58.8-60.3		
	SS-30	-	100	95	73	11.4	18.9	12.8	56.9	40	17	A-6(12)	68.8-70.3		
	SS-31	-	100	97	87	6.1	10.8	32.3	50.8	50	24	A-7-6(23)	78.8-80.3	25.6%	
	SS-32	-	98	67	30	57.4	12.5	4.7	25.4	29	16	A-2-6(1)	83.8-85.3		
SS-33	-	75	21	7	82.9	8.9	2.0	6.1	18	4	A-1-b(0)	98.8-100.3			
EB2-A	SS-34	-	95	72	29	38.3	37.0	13.5	11.2	18	3	A-2-4(0)	4.0-5.2		
	SS-35	-	96	25	4	89.6	7.4	0.9	2.0	14	NP	A-1-b(0)	14.0-15.5		
	SS-36	-	100	91	52	24.8	30.5	26.5	18.2	30	17	A-6(5)	24.2-25.7	22.6%	
	SS-37	-	100	75	7	66.5	28.0	3.5	2.0	20	NP	A-3(0)	29.2-30.7		
	SS-38	-	99	45	19	68.2	13.5	4.1	14.1	30	17	A-2-6(0)	44.2-45.7		
	SS-39	-	100	99	16	29.1	57.7	5.1	8.1	21	NP	A-2-4(0)	49.2-50.7		
	SS-40	-	100	62	6	73.4	21.1	3.5	2.0	19	NP	A-3(0)	59.2-60.7		



# FIELD SCOUR REPORT

WBS: 32782.1.1 TIP: B-2965 COUNTY: Edgecombe

DESCRIPTION(1): Bridge No. 24 on US 64 Business over the Tar River

### EXISTING BRIDGE

Information from: Field Inspection  Microfilm \_\_\_\_\_ (reel \_\_\_\_\_ pos: \_\_\_\_\_)  
 Other (explain) Bridge Document Management System

Bridge No.: 24 Length: 490 ft. Total Bents: 11 Bents in Channel: 4 Bents in Floodplain: 6  
 Foundation Type: Timber pile footings

#### EVIDENCE OF SCOUR(2)

Abutments or End Bent Slopes: None

Interior Bents: Scour pockets 2 to 4 feet deep around bent 3, 4, 5, 6 and extending 25 feet on the downstream side of the bent

Channel Bed: None

Channel Bank: Erosion due to surface runoff perpendicular to river for approximately 25 feet up the bank just north and south of the existing bridge.

#### EXISTING SCOUR PROTECTION

Type(3): Concrete abutment and wing walls

Extent(4): 20 feet outside edge of bridge

Effectiveness(5): Appears satisfactory

Obstructions(6): None

#### INSTRUCTIONS

- 1 Describe the specific site's location, including route number and body of water crossed.
- 2 Note scour evidence at existing end bents or abutments (e.g. undermining, sloughing, degradations).
- 3 Note existing scour protection (e.g. rip rap).
- 4 Describe extent of existing scour protection.
- 5 Describe whether or not the scour protection appears to be working.
- 6 Note obstructions such as dams, fallen trees, debris at bents, etc.
- 7 Describe the channel bed material based on observation and/or samples. Include any lab results with report.
- 8 Describe the channel bank material based on observation and/or samples. Include any lab results with report.
- 9 Describe the material covering the banks (e.g. grass, trees, rip rap, none).
- 10 Determine the approximate floodplain width from field observation or a topographic map.
- 11 Describe the material covering the floodplain (e.g. grass, trees, crops).
- 12 Use professional judgement to specify if the stream is degrading, aggrading, or static.
- 13 Describe potential and direction of the stream to migrate laterally during the bridge's life (approx. 100 years).
- 14 Give the design scour elevation (DSE) expected over the life of the bridge (approx. 100 years). This elevation can be given as a range across the site, or for each bent. Discuss the relationship between the Hydraulics Unit theoretical scour and the DSE. If the DSE is dependent on scour counter measures, explain (e.g. rip rap armoring on slopes). The DSE is based on the erodability of materials, giving consideration to the influence of joints, foliation, bedding characteristics, % core recovery, % RQD, differential weathering, shear strength, observations at existing structures, other tests deemed appropriate, and overall geologic conditions at the site.

### DESIGN INFORMATION

Channel Bed Material(7): Coarse sand

Channel Bank Material(8): Sand, silt and clay

Channel Bank Cover(9): Trees and shrubs

Floodplain Width(10): 250 feet if the flood control dike is not breached

Floodplain Cover(11): Trees and shrubs

Stream is(12): Aggrading \_\_\_\_\_ Degrading  Static \_\_\_\_\_

Channel Migration Tendency(13): Very slight chance of migration toward End Bent 2

Observations and Other Comments: River is entrenched

#### DESIGN SCOUR ELEVATIONS(14)

Feet  Meters \_\_\_\_\_

##### BENTS

B1	B2										
0.3	19										

Comparison of DSE to Hydraulics Unit theoretical scour:  
 Design Scour Elevation agrees with the Hydraulic Unit's 100year scour elevation at Bent 1 and Bent 2.

#### SOIL ANALYSIS RESULTS FROM CHANNEL BED AND BANK MATERIAL

Sample No.										
Retained #4										
Passed #10										
Passed #40										
Passed #200										
Coarse Sand										
Fine Sand										
Silt										
Clay										
LL										
PI										
AASHTO										
Station										
Offset										
Depth										

See Sheet 9,  
 "Soil Test Results",  
 for samples:  
 Channel Bank: SS-1,2,3,22,23  
 Channel Bed: SS-10

Reported by: Dean N. Algenbright Date: 11/6/2007

NOTE: SEE SHEET 2A FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2965	1	22
WS NO.	F.A. PROJ. NO.	DESCRIPTION	
32782.1.1	BRSTP-064B(2)	P.E.	
32782.2.2	BRSTP-064B(2)	R.O.W./UTILITIES	
32782.3.1	BRSTP-064B(2)	CONST.	

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	11+50 TO 46+00	4-6	8,9
-Y1-	12+50 TO 16+30	6	10
-Y2-	10+00 TO 13+15	6	11
-Y3-	11+50 TO 14+93	5	12
-Y4-	10+00 TO 18+00	5,7	13
-Y5-	10+00 TO 11+50	7	14
-Y6-	10+00 TO 11+00	4	15
-Y7-	11+50 TO 13+00	4	16
-Y8-	10+00 TO 11+00	4	17
-DRIVE-	10+00 TO 12+58	6	18
-R-	10+00 TO 12+51	6	19

CROSS SECTIONS	STATION	SHEET
-L-	27+00 TO 29+50	20-21
-L-	42+00 TO 43+00	22

ROADWAY  
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 32782.1.1 (B-2965) F.A. PROJ. BRSTP-064B(1)  
COUNTY EDGEcombe  
PROJECT DESCRIPTION BRIDGE NO. 24 OVER THE TAR RIVER ON  
US 64 BUSINESS NC 33 (MAIN ST.) FROM US 258 NC 111-122  
(MUTUAL BLVD) TO SR 1308 (ALBERMARLE AVE)  
INVENTORY

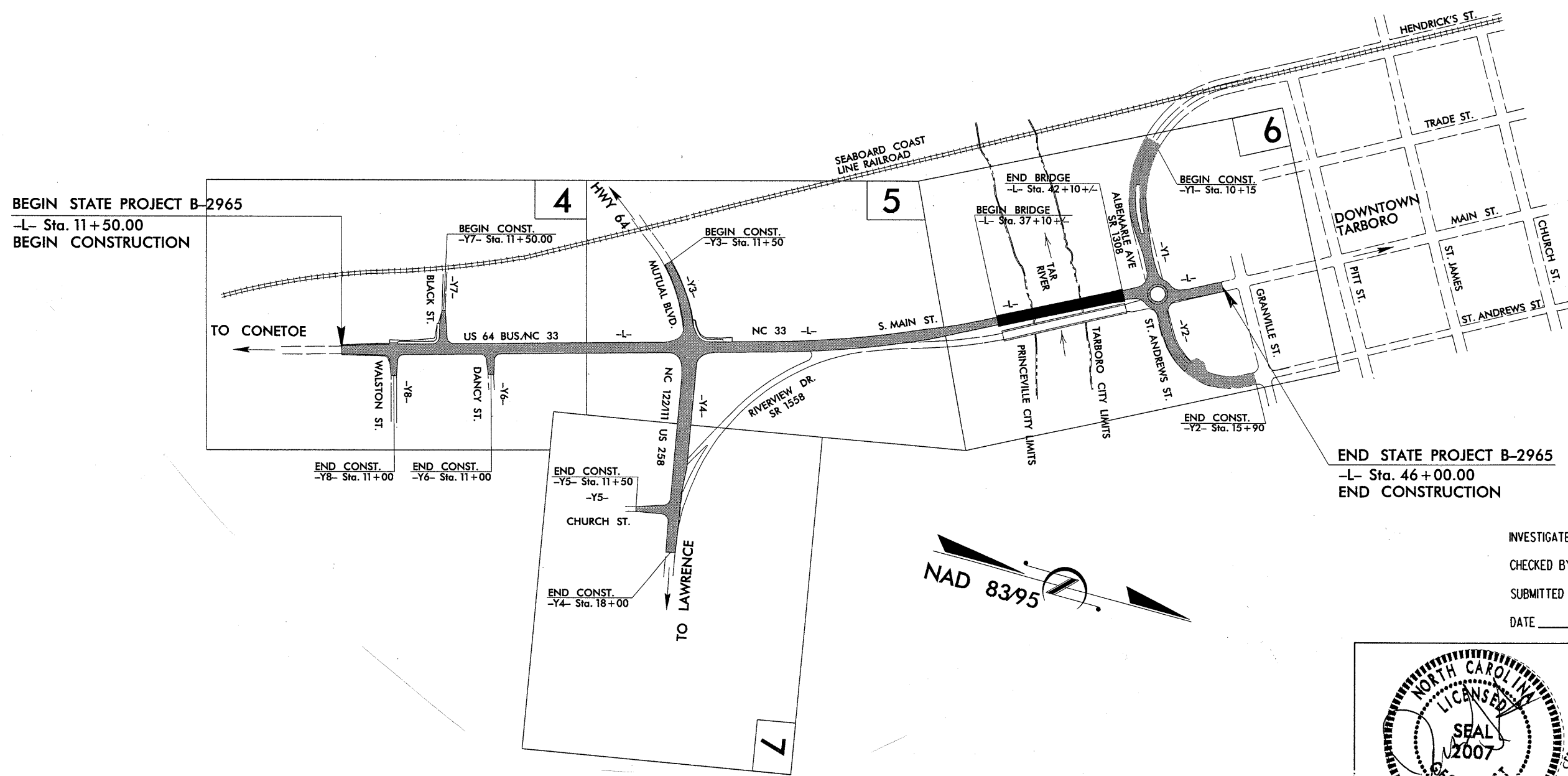
**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE, THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

CONTRACT: C202039 ID: B-2965

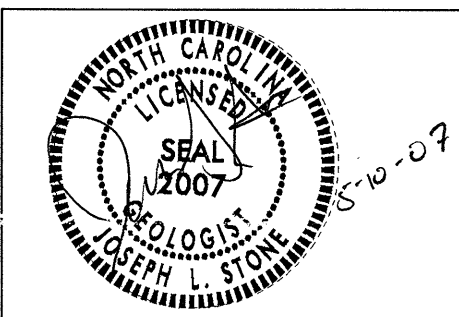


BEGIN STATE PROJECT B-2965  
-L- Sta. 11+50.00  
BEGIN CONSTRUCTION

END STATE PROJECT B-2965  
-L- Sta. 46+00.00  
END CONSTRUCTION

PERSONNEL  
TJB  
JRS  
LWD

INVESTIGATED BY J.L. STONE  
CHECKED BY D.N. ARGENBRIGHT  
SUBMITTED BY D.N. ARGENBRIGHT  
DATE MAY 2007



DRAWN BY: JLS, CMK

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

PROJECT REFERENCE NO. B-2965  
 SHEET NO. 2

**SUBSURFACE INVESTIGATION**

**SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRN, SKTY CLK, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A-7-6</i>	WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. <b>ANGULARITY OF GRAINS</b> THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.	HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: <b>WEATHERED ROCK (WR)</b> - NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED. <b>CRYSTALLINE ROCK (CR)</b> - FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. <b>NON-CRYSTALLINE ROCK (NCR)</b> - FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. <b>COASTAL PLAIN SEDIMENTARY ROCK (CPS)</b> - COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	<b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. <b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA. <b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. <b>ARGILLACEOUS</b> - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. <b>ARTESIAN</b> - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. <b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. <b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. <b>CORE RECOVERY (REC)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. <b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. <b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. <b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. <b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. <b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. <b>FORMATION (FM)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. <b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. <b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. <b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. <b>MOTTLED (MOT)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. <b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. <b>RESIDUAL (RES) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. <b>ROCK QUALITY DESIGNATION (ROD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>SAPROLITE (SAP)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. <b>SILL</b> - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. <b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. <b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. <b>STRATA CORE RECOVERY (SREC)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. <b>STRATA ROCK QUALITY DESIGNATION (SRQD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. <b>TOPSOIL (TS)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
<b>SOIL LEGEND AND AASHTO CLASSIFICATION</b>	<b>MINERALOGICAL COMPOSITION</b>	<b>WEATHERING</b>	
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.	<b>FRESH</b> - ROCK FRESH CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE. <b>VERY SLIGHT (V SLI)</b> - ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. <b>SLIGHT (SLI)</b> - ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. <b>MODERATE (MOD)</b> - SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. <b>MODERATELY SEVERE (MOD. SEV.)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> <b>SEVERE (SEV.)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT, SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &gt; 100 BPF</i> <b>VERY SEVERE (V SEV.)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i> <b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
<b>SOIL LEGEND AND AASHTO CLASSIFICATION</b>	<b>COMPRESSION</b>	<b>GROUND WATER</b>	
GROUP CLASS. A-1, A-1.5, A-2, A-2.5, A-3, A-4, A-4.5, A-5, A-6, A-7, A-7.5, A-7.6, A-8	SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50	<b>WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING</b> <b>STATIC WATER LEVEL AFTER 24 HOURS</b> <b>PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA</b> <b>SPRING OR SEEP</b>	
<b>PERCENTAGE OF MATERIAL</b>	<b>GROUND WATER</b>	<b>MISCELLANEOUS SYMBOLS</b>	
ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL	TRACE OF ORGANIC MATTER 2 - 3% LITTLE ORGANIC MATTER 3 - 5% MODERATELY ORGANIC 5 - 10% HIGHLY ORGANIC >10%	ROADWAY EMBANKMENT (RED) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD	SPT DMT VST TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE SPT REFUSAL
<b>TEXTURE OR GRAIN SIZE</b>	<b>ABBREVIATIONS</b>	<b>EQUIPMENT USED ON SUBJECT PROJECT</b>	<b>ROCK HARDNESS</b>
U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.76 2.00 0.42 0.25 0.075 0.053	AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS HI. - HIGHLY MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL # - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA. - WEATHERED γ - UNIT WEIGHT γ <sub>d</sub> - DRY UNIT WEIGHT	DRILL UNITS: <input type="checkbox"/> MOBILE B- <input type="checkbox"/> BK-51 <input type="checkbox"/> CME-45C <input type="checkbox"/> CME-550 <input type="checkbox"/> PORTABLE HOIST <input checked="" type="checkbox"/> CME-45B	<b>VERY HARD</b> - CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. <b>HARD</b> - CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. <b>MODERATELY HARD</b> - CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. <b>MEDIUM HARD</b> - CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. <b>SOFT</b> - CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. <b>VERY SOFT</b> - CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.
<b>CONSISTENCY OR DENSENESS</b>	<b>TEXTURE OR GRAIN SIZE</b>	<b>SOIL MOISTURE - CORRELATION OF TERMS</b>	<b>FRACURE SPACING</b>
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )	VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE	SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION	<b>TERM</b> <b>SPACING</b> <b>BEDDING</b>
GENERALY GRANULAR MATERIAL (NON-COHESIVE) GENERALY SILT-CLAY MATERIAL (COHESIVE)	VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD	LL - LIQUID LIMIT PL - PLASTIC LIMIT OM - OPTIMUM MOISTURE SL - SHRINKAGE LIMIT	<b>VERY WIDE</b> MORE THAN 10 FEET <b>WIDE</b> 3 TO 10 FEET <b>MODERATELY CLOSE</b> 1 TO 3 FEET <b>CLOSE</b> 0.16 TO 1 FEET <b>VERY CLOSE</b> LESS THAN 0.16 FEET
<b>PLASTICITY</b>	<b>PLASTICITY</b>	<b>PLASTICITY</b>	<b>INDURATION</b>
NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY	PLASTICITY INDEX (PI) DRY STRENGTH	PLASTICITY INDEX (PI) DRY STRENGTH	<b>FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.</b>
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.	<b>FRIABLE</b> - RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. <b>MODERATELY INDURATED</b> - GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. <b>INDURATED</b> - GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. <b>EXTREMELY INDURATED</b> - SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.

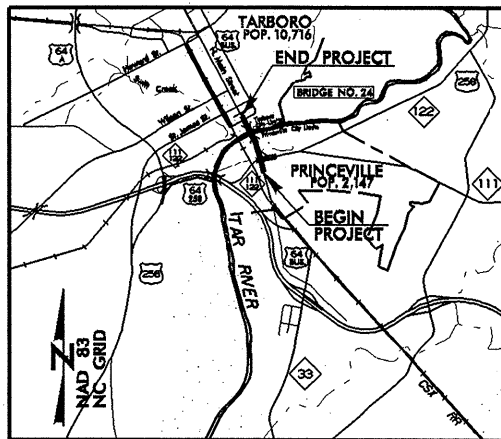
STATE OF NORTH CAROLINA  
DIVISION OF HIGHWAYS

**EDGECOMBE COUNTY**

**LOCATION: BRIDGE NO. 24 OVER THE TAR RIVER ON  
US 64 BUSINESS /NC 33 (MAIN ST.) FROM US 258/NC 111-122  
(MUTUAL BLVD) TO SR 1308 (ALBEMARLE AVE)**

**TYPE OF WORK: GRADING, PAVING, DRAINAGE, AND STRUCTURE**

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	B-2965	2A	22
WB NO.	P.A. PROJ. NO.	DESCRIPTION	
32782.1.1	BRSTP-064B(1)	P.E.	

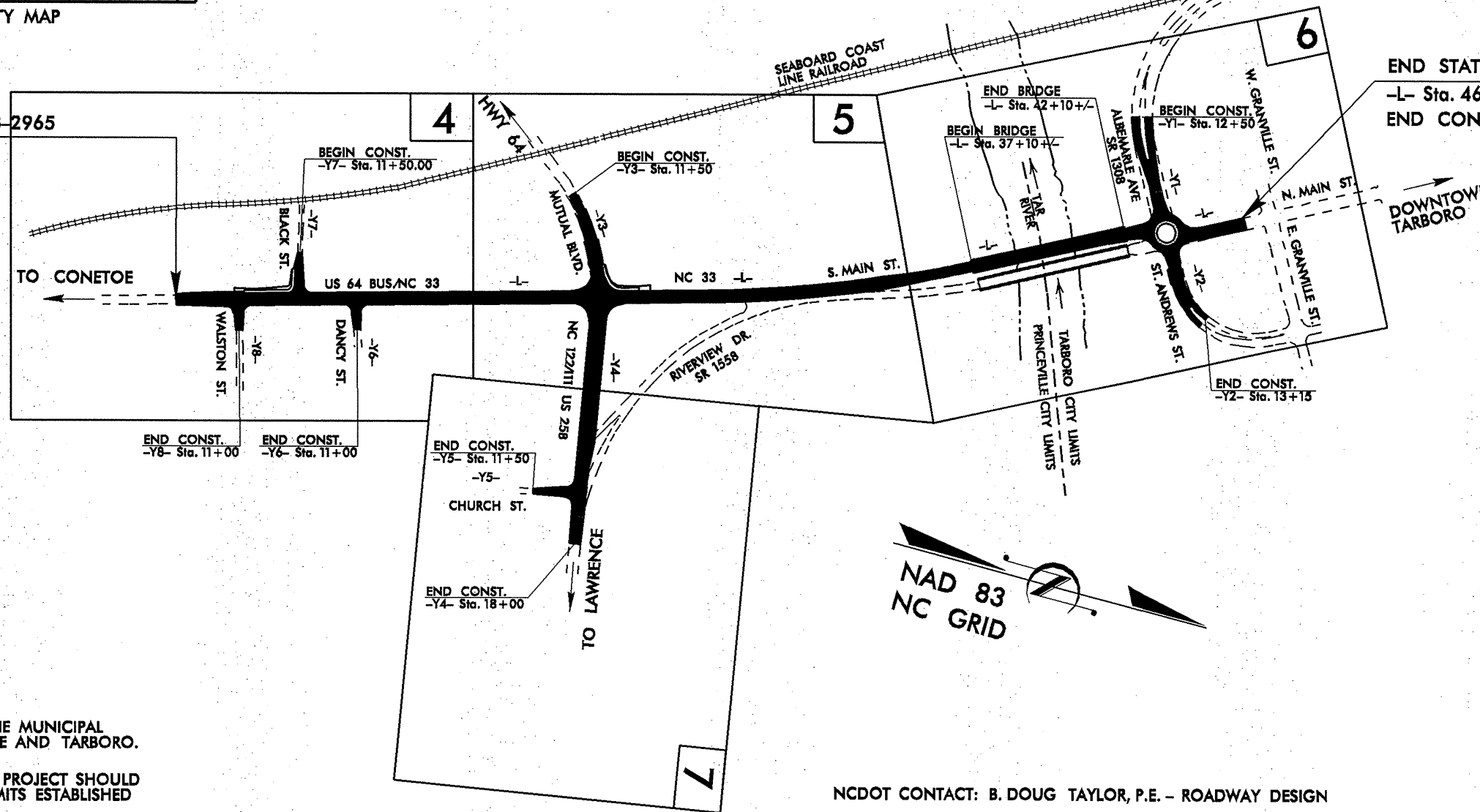


VICINITY MAP

**TIP PROJECT: B-2965**

BEGIN STATE PROJECT B-2965

-L- Sta. 11+50.00  
BEGIN CONSTRUCTION



END STATE PROJECT B-2965

-L- Sta. 46+00.00  
END CONSTRUCTION

↓  
DOWNTOWN  
TARBORO


THIS PROJECT IS WITHIN THE MUNICIPAL BOUNDARIES OF PRINCEVILLE AND TARBORO.

NOTE: CLEARING ON THIS PROJECT SHOULD BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD \_\_\_\_\_.

NCDOT CONTACT: B. DOUG TAYLOR, P.E. - ROADWAY DESIGN

INCOMPLETE PLANS  
DO NOT USE FOR R/W ACQUISITION  
PRELIMINARY PLANS  
DO NOT USE FOR CONSTRUCTION

**CONTRACT:**

<p><b>GRAPHIC SCALES</b></p> <p>50 25 0 50 100 PLANS</p> <p>50 25 0 50 100 PROFILE (HORIZONTAL)</p> <p>10 5 0 10 20 PROFILE (VERTICAL)</p>	<p><b>DESIGN DATA</b></p> <p>ADT 2008 = 13,350 ADT 2028 = 17,950 DHY = 10 % D = 60 % T = 5 % * V = 40 MPH &amp; 25 MPH ON BRIDGE &amp; NORTH INCLUDING ROUNDAABOUT * TTST 3 % DUAL 2 % FUNC CLASS: COLLECTOR</p>	<p><b>PROJECT LENGTH</b></p> <p>LENGTH ROADWAY TIP PROJECT B-2965 = 0.559 MILES LENGTH STRUCTURE TIP PROJECT B-2965 = 0.095 MILES TOTAL LENGTH TIP PROJECT B-2965 = 0.654 MILES</p>	<p>Prepared in the Office of:</p> <p><b>MULKEY</b> ENGINEERS &amp; CONSULTANTS</p> <p>2006 STANDARD SPECIFICATIONS</p> <p>RIGHT OF WAY DATE: JULY 20, 2007</p> <p>LETTING DATE: JULY 15, 2008</p> <p>PAMELA R. WILLIAMS PROJECT ENGINEER</p> <p>JEFF RECK, P.E. HYDRAULICS ENGINEER</p>	<p>HYDRAULICS ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>ROADWAY DESIGN ENGINEER</p> <p>SIGNATURE: _____ P.E.</p> <p>STATE HIGHWAY DESIGN ENGINEER</p>	<p>DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA</p>  <p>P.E.</p>
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STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY  
GOVERNOR

LYNDO TIPPETT  
SECRETARY

March 16, 2007

STATE PROJECT: 32782.1.1 B-2965  
F.A. PROJECT: BRSTP-064B(1)  
COUNTY: Edgecombe  
DESCRIPTION: Bridge No. 24 over the Tar River on US 64 Business / NC 33 (Main St.) from US 258/NC 111-122 (Mutual Blvd.) to SR 1308 (Albemarle Ave.)

SUBJECT: Geotechnical Report – Inventory

**Project Description**

The proposed project is located in Edgecombe County, within the Tarboro and Princeville city limits. Based on the current plans, proposed construction consists of relocating the bridge crossing and associated approaches to the west of the existing structure, widening of existing US 64Bus./ NC33 and associated side streets, as well as the addition of a roundabout at the northern end of the project area. The investigation of subsurface conditions was confined to areas of proposed construction.

The following lines were investigated for this project:

<u>Line</u>	<u>Station</u>
-L-	11+50 to 46+00
-Y1-	12+50 to 16+30
-Y2-	10+00 to 13+15
-Y3-	11+50 to 14+93
-Y4-	10+00 to 18+00
-Y5-	10+00 to 11+50
-Y6-	10+00 to 11+00
-Y7-	11+50 to 13+00
-Y8-	10+00 to 11+00
-DRIVE-	10+00 to 12+58
-R-	10+00 to 12+51

**Areas of Special Geotechnical Interest**

1) The following sections were found to exhibit seasonal high ground water, or the potential for ground water related construction problems:

<u>Line</u>	<u>Station (±)</u>
-L-	11+50 to 15+00
-Y6-	10+00 to 11+50
-Y7-	11+50 to 13+00
-Y8-	10+00 to 11+00

2) The following sections contain cohesive soils which have the potential to cause subgrade stability and/or long term settlement problems:

<u>Line</u>	<u>Station (±)</u>
-L-	11+50 to 16+75
-L-	26+70 to 31+00
-L-	35+25 to 37+50
-Y8-	10+00 to 11+00

3) The following section contains organic deposits which may have the potential to cause embankment stability and/or long term settlement problems:

<u>Line</u>	<u>Station (±)</u>
-L-	26+85 to 28+93

**Physiography and Geology**

This project is located in Edgecombe County within the Coastal Plain Physiographic Province. Topography along the project is flat to gently sloping with relatively good surface drainage. Ground elevations along the project range from 7± feet above sea level along the bed of the Tar River to 51± feet above sea level within the surrounding upland areas. Surface water along the project flows directly into the Tar River.

This roadway portion of this project is underlain by upland sediments of probable Pleistocene Age.

### Ground Water

Ground water data was collected during January 2006 during which period the area experienced normal precipitation conditions. Ground water elevations ranged from 29± to 31± feet above sea level along the upland areas and 28± feet within the flood plain.

### Soils

Soils encountered during this investigation are separated into 4 categories: upland soils, roadway embankment soils, floodplain soils and artificial fill.

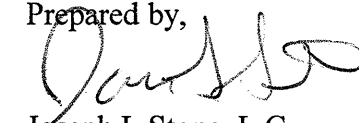
Upland soils encountered are comprised of 4 to 6 feet of loose to medium dense sand and silty sand (A-3, A-2-4), 2 to 16 feet of soft to stiff sandy and clayey silt (A-4), and 2 to 3 feet of medium stiff sandy and silty clay (A-6, A-7-5). The silts (A-4) contained 15 percent moisture while the clays (A-6, A-7-5) had a natural moisture content of 18 percent.

Soils found within the floodplain consisted of 1 to 2 feet of very soft sandy silt (A-4) with little organic matter and 2± feet of very loose silty sand (A-2-4) with little organic matter. Laboratory analysis found that these soils contained 3.1 to 4.6 percent organic components and a natural moisture content of 29 to 32 percent respectively. Vane shear tests indicate shear strength values are 10 psf. Approximately 1 to 4 feet of very soft to medium stiff gray silty clay underlies the organic sediments. Vane shear tests performed in these soils ranged from 63 psf to 793 psf.

Soils classified as roadway embankment were comprised of 6 feet or more of medium dense silty sand (A-2-4).

Soils classified as artificial fill were comprised of 1± foot of loose silty sand (A-2-4) with rock fragments and 5± feet of loose sand (A-3).

Prepared by,



Joseph L Stone, L.G.

Project Engineering Geologist

LOCATION	EVCAVATION					EMBANKMENT				BORROW	WASTE			
	TOTAL EXCAVATION	ROCK	UNDERCUT	UNSUITABLE	SUITABLE	TOTAL EMBANKMENT	ROCK	EARTH EMBANKMENT	EMBANKMENT PLUS 25%		ROCK	SUITABLE	UNSUITABLE	TOTAL
-L-														
11+50.00 TO 37+10.00	541		546		541	11850		11850	14813	14272			546	546
42+10.00 TO 42+84.14	64		300	56	8	470		470	588	580			356	356
44+04.34 TO 46+00.00	42				42	78		78	98	56				
-R-														
10+00.00 TO 12+51.33	56				56	661		661	826	770				
-Y1-														
10+85.00 TO 15+70.12	108				108	450		450	563	455				
-Y2-														
10+60.00 TO 15+85.00	98				98	246		246	308	210				
-Y3-														
11+50.00 TO 14+73.87	385				385	99		99	124			261		261
-Y4-														
10+20.11 TO 18+00.00	1067				1067	467		467	584			483		483
-Y5-														
10+20.07 TO 11+00.00	57				57	31		31	39			18		18
-Y6-														
10+20.00 TO 11+00.00	49				49	6		6	8			41		41
-Y7-														
11+50.00 TO 12+80.00	20				20	16		16	20					
-Y8-														
10+20.00 TO 11+00.00	9				9	7		7	9					
<b>SUBTOTAL</b>	2496		846	56	2440	14381		14381	17980	16343		803	902	1705
<b>TOTAL</b>	2496		846	56	2440	14381		14381	17980	16343		803	902	1705
WASTE TO REPLACE BORROW										-803		-803		-803
ADDITIONAL UNDERCUT			1100			1100		1100	1375	1375			1100	1100
<b>PROJECT TOTAL</b>	2496		1946	56	2440	15481		15481	19355	16915			2002	2002
5% TO REPLACE BORROW										850				
<b>GRAND TOTAL</b>	2496		1946	56	2440	15481		15481	19355	17765			2002	2002
SAY	2600									18000				

EST. DDE = 30 CY

EST. SELECT GRANULAR MATERIAL = 2500 CY

NOTE: EARTHWORK QUANTITIES ARE CALCULATED BY THE ROADWAY DESIGN UNIT. THESE EARTHWORK QUANTITIES ARE BASED IN PART ON SUBSURFACE DATA PROVIDED BY THE GEOTECHNICAL ENGINEERING UNIT.



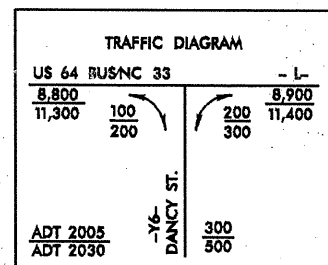
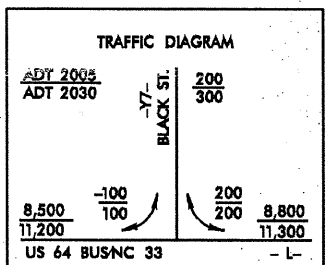
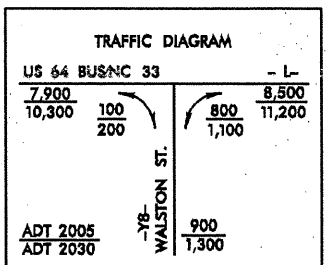
PROJECT REFERENCE NO. B-2965	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY HCDOT FOR MONUMENT "82965-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 782003246(11) EASTING: 2435088463(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993740

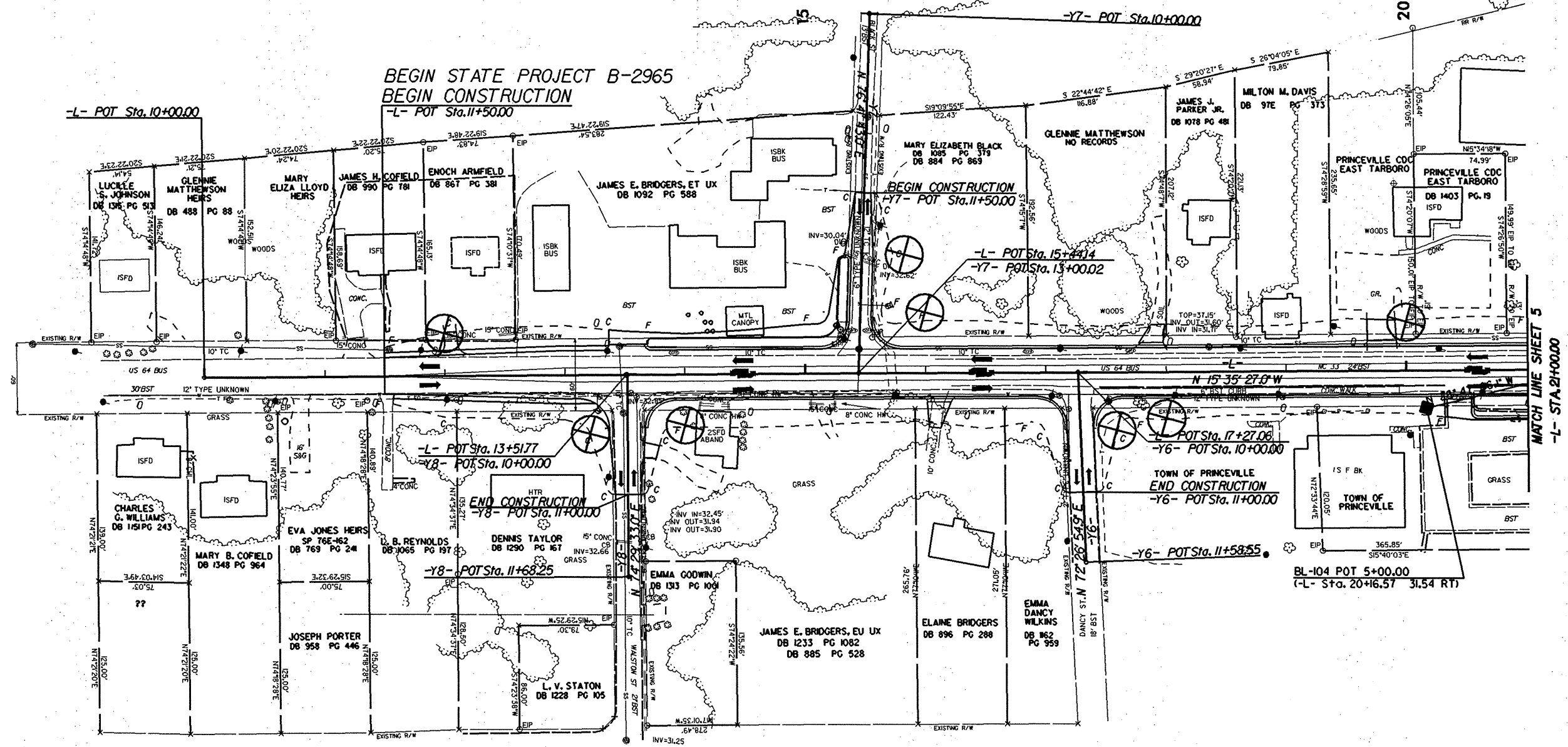
THE N.C. LAMBERT GRID BEARING AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "82965-1" TO +L STATION 11+5000 IS S 18° 46' 11.2" E DIST = 1313.8943 FT

ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29



FOR -L- PROFILE SEE SHEET 8  
 FOR -Y6- PROFILE SEE SHEET 11  
 FOR -Y7- PROFILE SEE SHEET 11  
 FOR -Y8- PROFILE SEE SHEET 11

REVISIONS



8/17/99

05-MAR-2007 10:58 L:\ERD\Greenville\TIP\B2965\GEO\RDWY\CADD\_GEO\TECH\Plan\Prof\B2965-geo-psb04.dgn

8/17/91

12-MAR-2007 16:20  
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RDWY\CADD\GEO\TECN\Plan\p\2965-geo-psh05.dgn

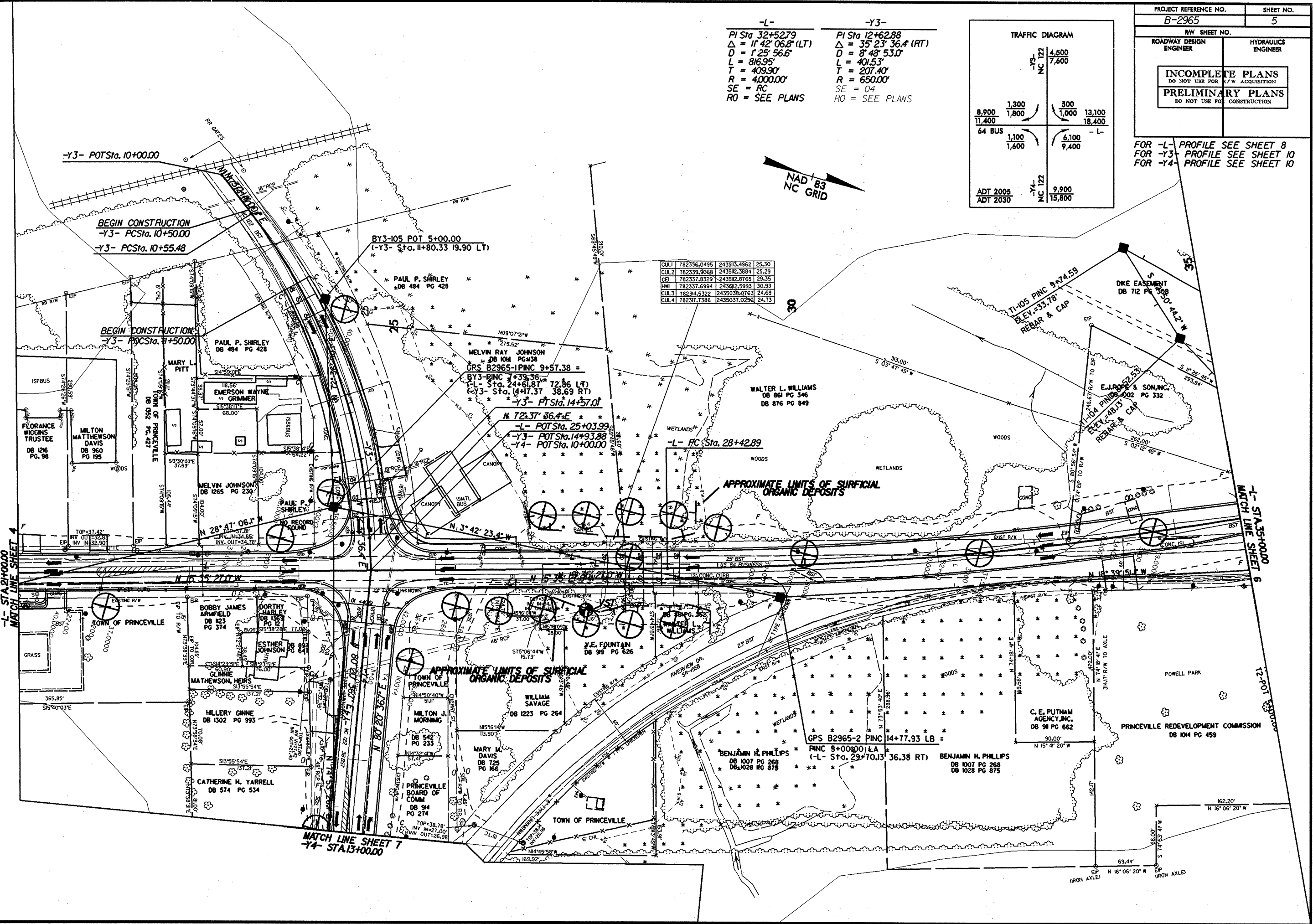
REVISIONS

-L-	-Y3-
PI Sta 32+52.79	PI Sta 12+62.88
$\Delta = 11' 42" 06.8" (LT)$	$\Delta = 35' 23" 36.4" (RT)$
$D = 1' 25" 56.6"$	$D = 8' 48" 53.0"$
$L = 816.95'$	$L = 401.53'$
$T = 409.90'$	$T = 207.40'$
$R = 4000.00'$	$R = 650.00'$
SE = RC	SE = 04
RO = SEE PLANS	RO = SEE PLANS

TRAFFIC DIAGRAM			
	-Y3- NC 122	4,500 7,600	
8,900 11,400	1,300 1,800	500 1,000	13,100 18,400
64 BUS	1,100 1,600	6,100 9,400	-L-
ADT 2005 ADT 2030	-Y4- NC 122	9,900 15,800	

PROJECT REFERENCE NO. B-2965	SHEET NO. 5
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 8  
 FOR -Y3- PROFILE SEE SHEET 10  
 FOR -Y4- PROFILE SEE SHEET 10



CUL1	782336.0495	243503.4962	25.30
CUL2	782339.9068	243502.3884	25.29
CE1	782337.8329	243502.8765	29.35
HW1	782337.6994	243502.5993	30.93
CUL3	782344.5322	243503.0163	24.69
CUL4	782317.1386	243503.0290	24.73

-L- STA 21+00.00  
MATCH LINE SHEET 4

-L- STA 35+00.00  
MATCH LINE SHEET 6

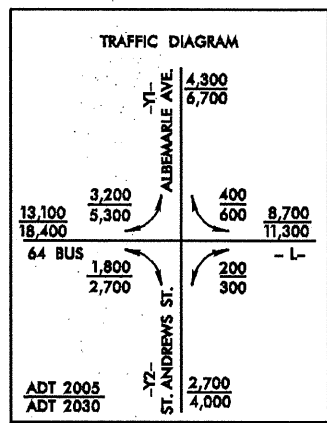
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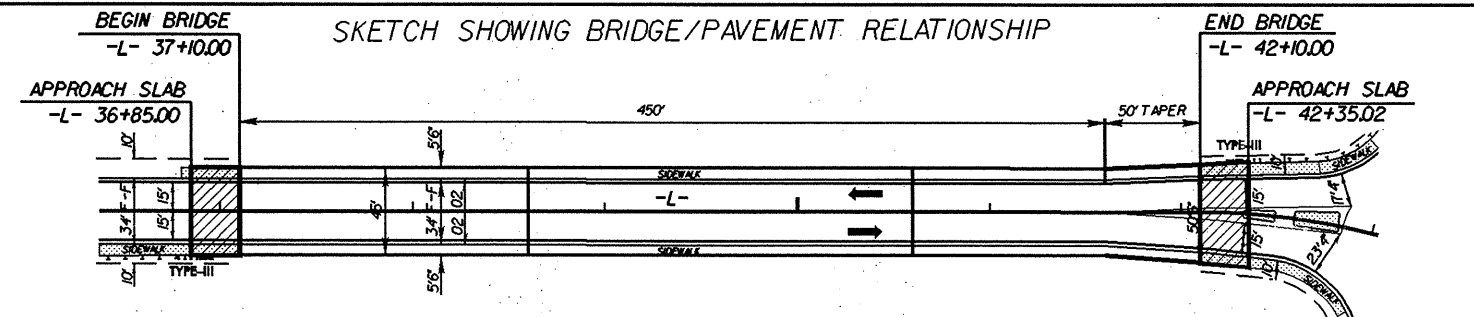
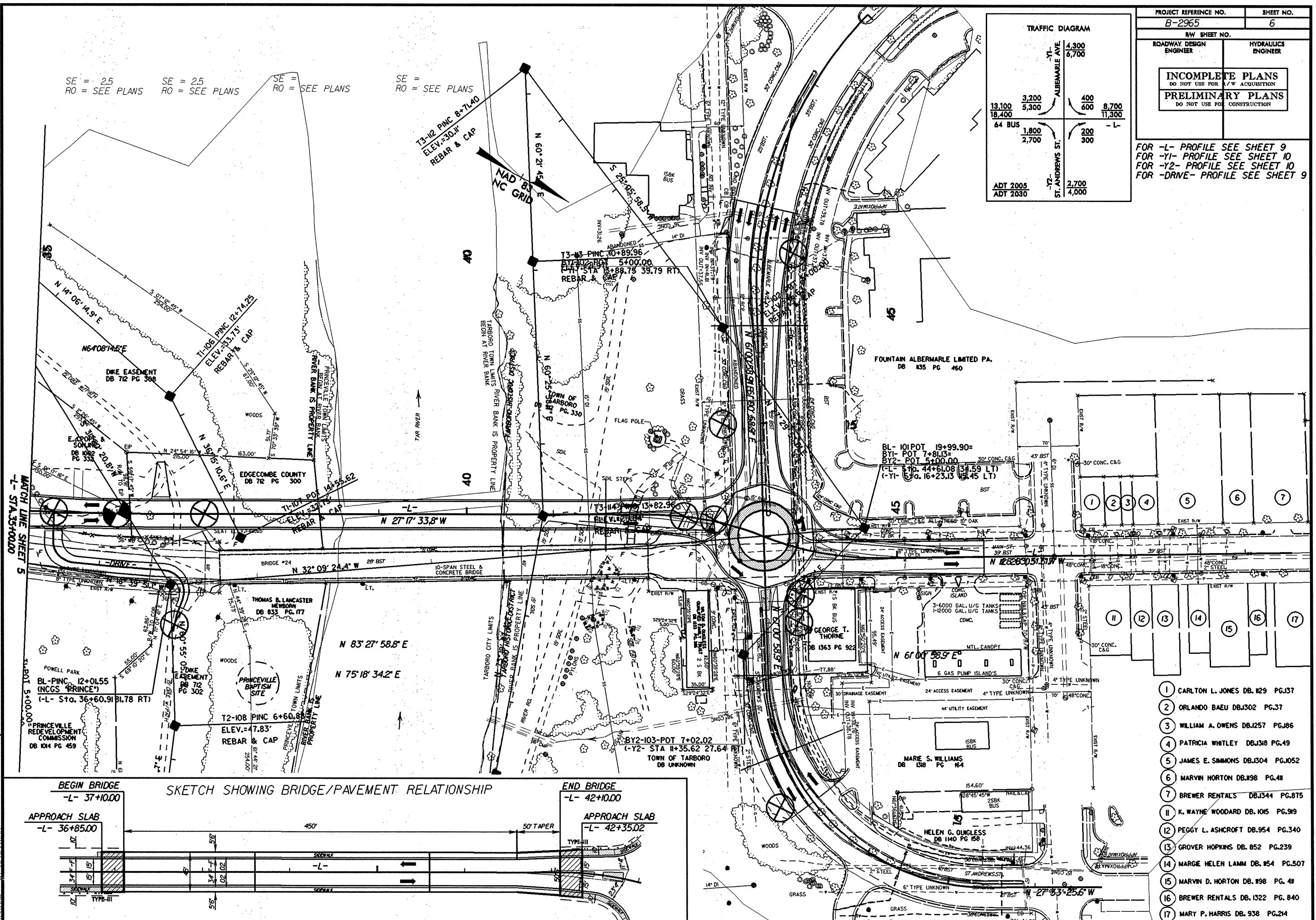
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SE = 2.5 RO = SEE PLANS SE = 2.5 RO = SEE PLANS SE = RO = SEE PLANS



PROJECT REFERENCE NO. B-2965	SHEET NO. 6
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

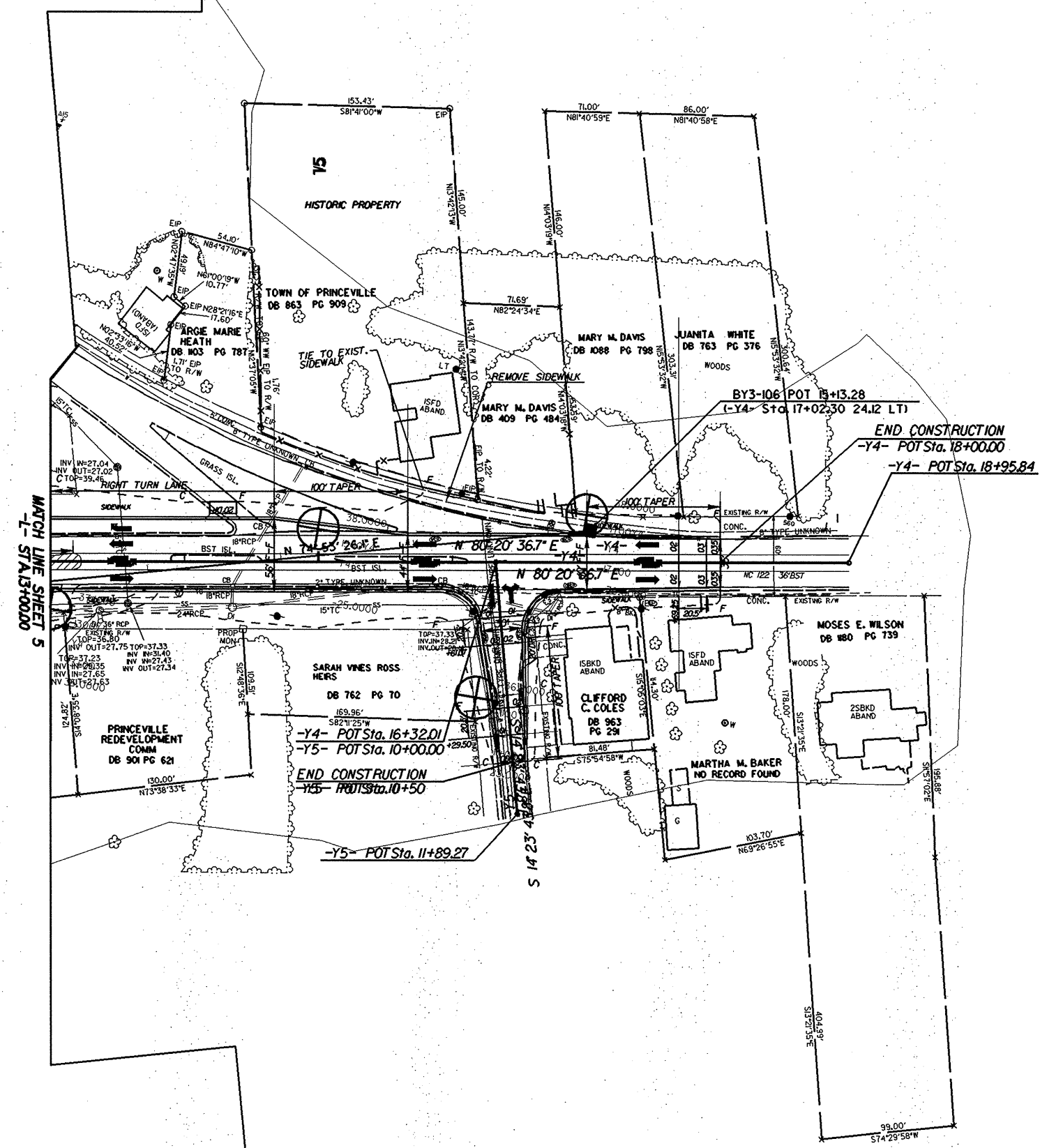
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 FOR -Y1- PROFILE SEE SHEET 10  
 FOR -Y2- PROFILE SEE SHEET 10  
 FOR -DRIVE- PROFILE SEE SHEET 9



- 1 CARLTON L. JONES DB. 129 PG.137
- 2 ORLANDO BAELU DB.1302 PG.37
- 3 WILLIAM A. OWENS DB.1257 PG.86
- 4 PATRICIA WHITLEY DB.1318 PG.49
- 5 JAMES E. SIMMONS DB.1304 PG.1052
- 6 MARVIN HORTON DB.1398 PG.41
- 7 BREWER RENTALS DB.1341 PG.875
- 11 K. WAYNE WOODARD DB. 1045 PG.919
- 12 PEGGY L. ASHCROFT DB.954 PG.340
- 13 GROVER HOPKINS DB. 852 PG.239
- 14 MARGIE HELEN LAMM DB. 154 PG.507
- 15 MARVIN D. HORTON DB. 1398 PG. 41
- 16 BREWER RENTALS DB. 1322 PG. 840
- 17 MARY P. HARRIS DB. 938 PG.214

PROJECT REFERENCE NO.		SHEET NO.	
B-2965		7	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

FOR -Y4- PROFILE SEE SHEET 10  
FOR -Y5- PROFILE SEE SHEET 11



MATCH LINE SHEET 5  
- STA. 13+00.00

REVISIONS

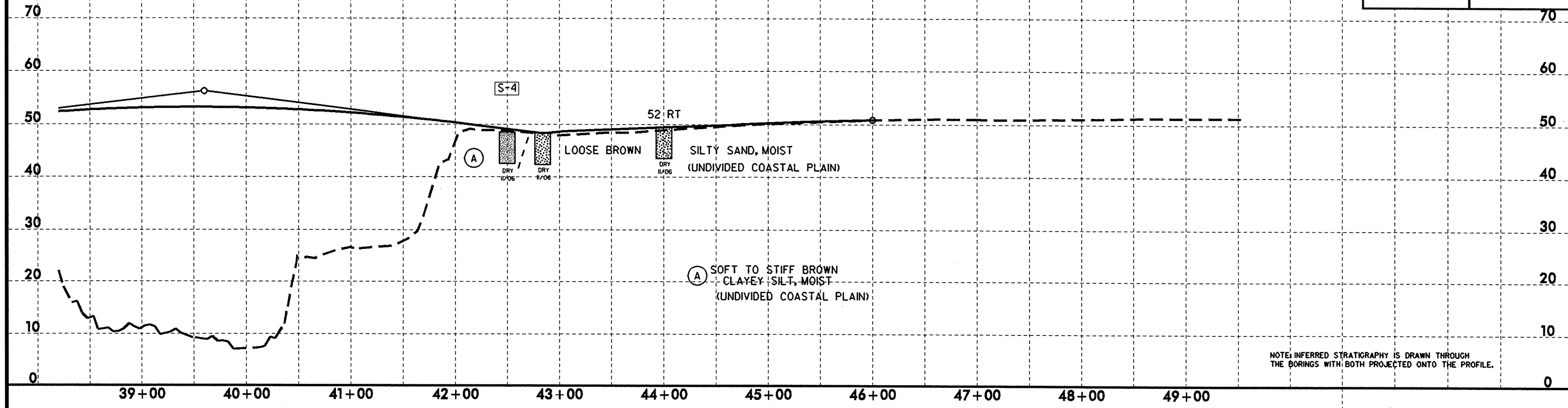
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PROJECT REFERENCE NO. B-2965		SHEET NO. 9	
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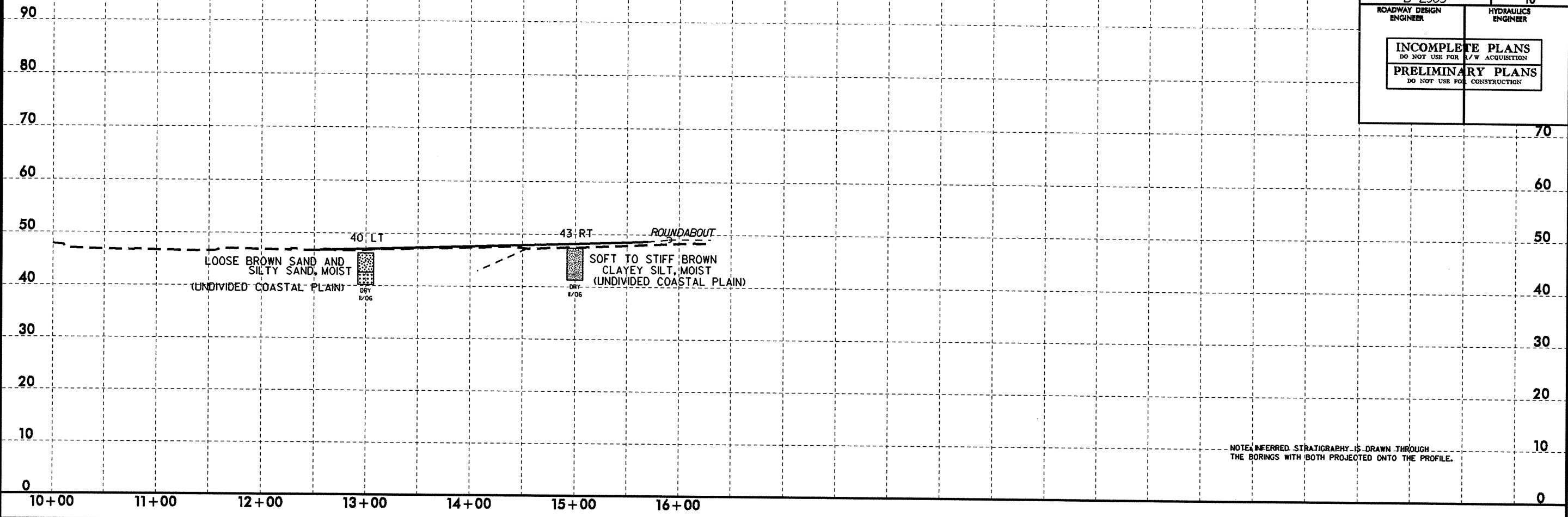
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-4	CL	42+50	0.0-6.0	A-4(0)	21	NP	25.1	13.6	25.2	36.1	100	80	66		



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PROJECT REFERENCE NO. B-2965		SHEET NO. 10	
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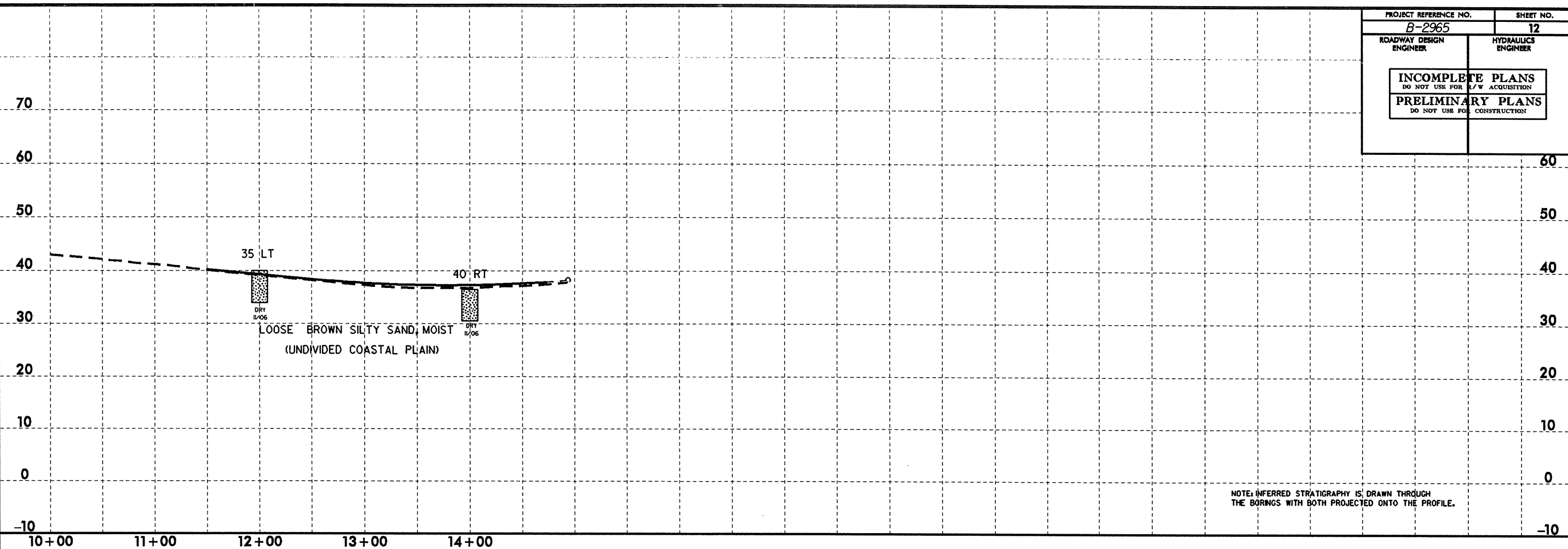
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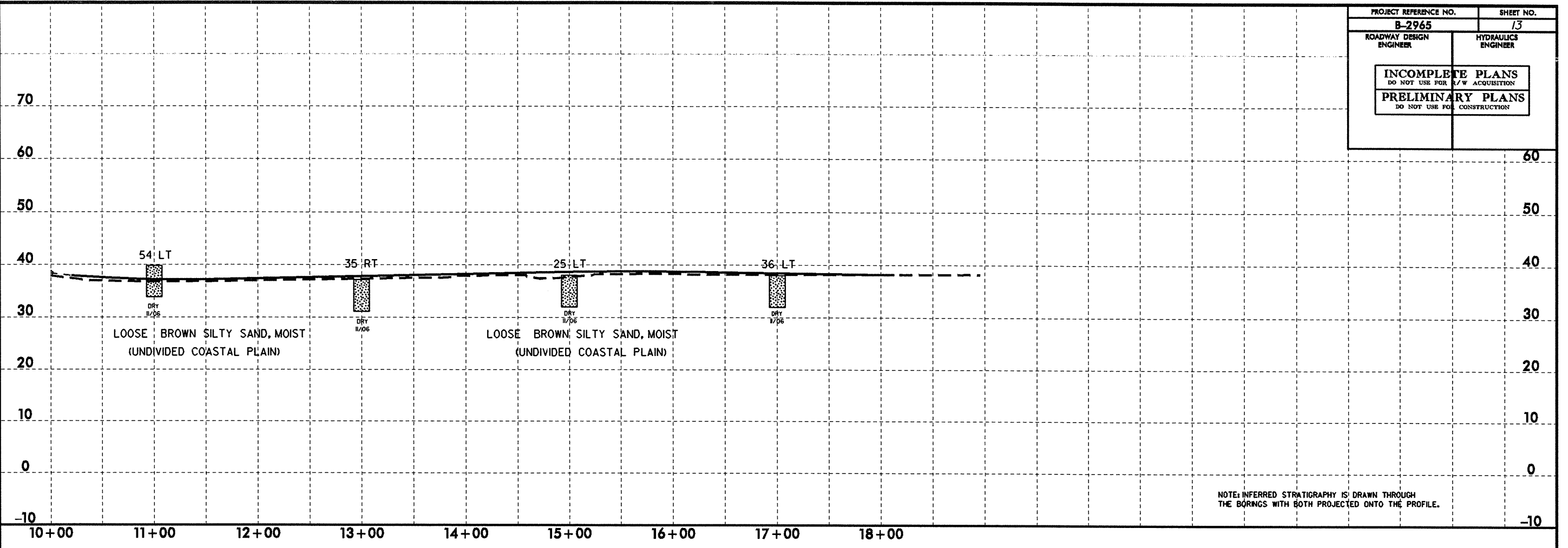


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PROJECT REFERENCE NO.		SHEET NO.	
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			

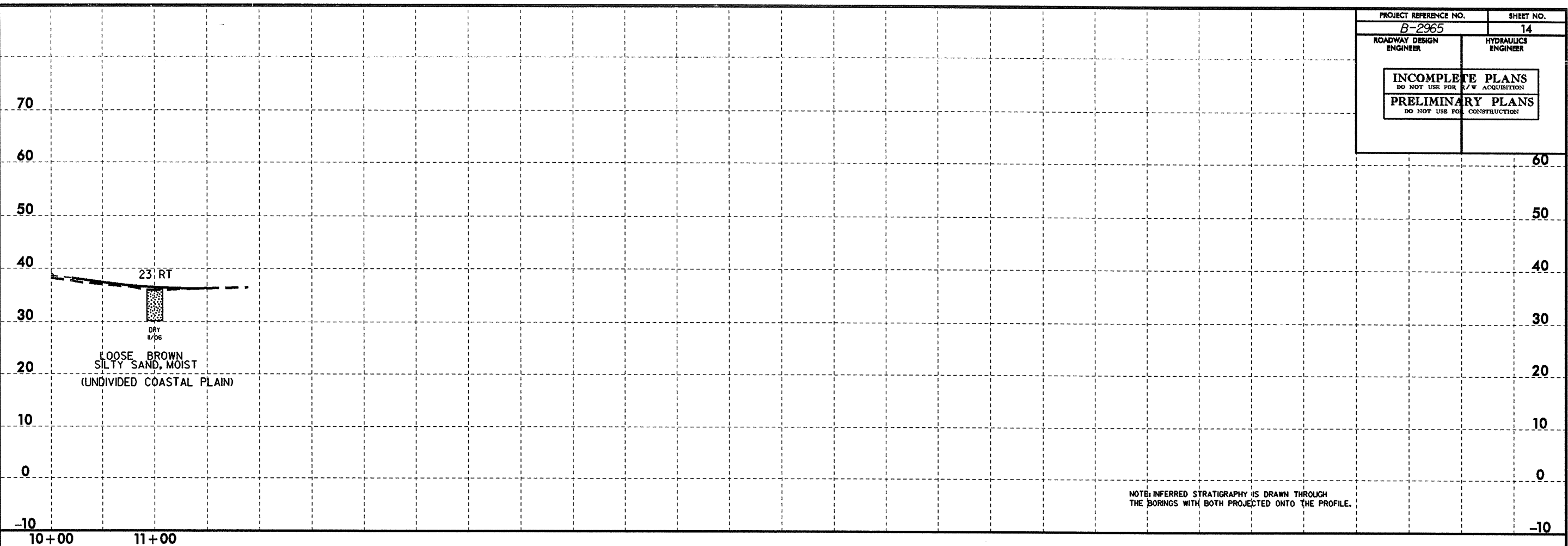


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PROJECT REFERENCE NO. B-2965	SHEET NO. 14
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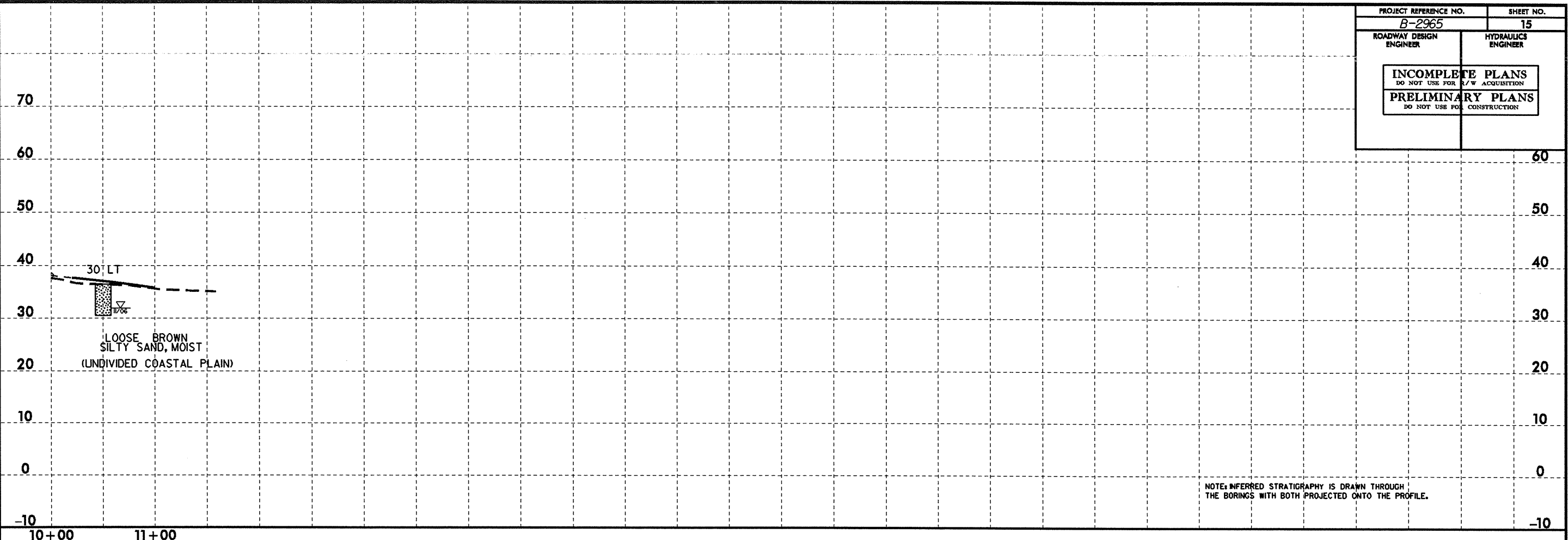


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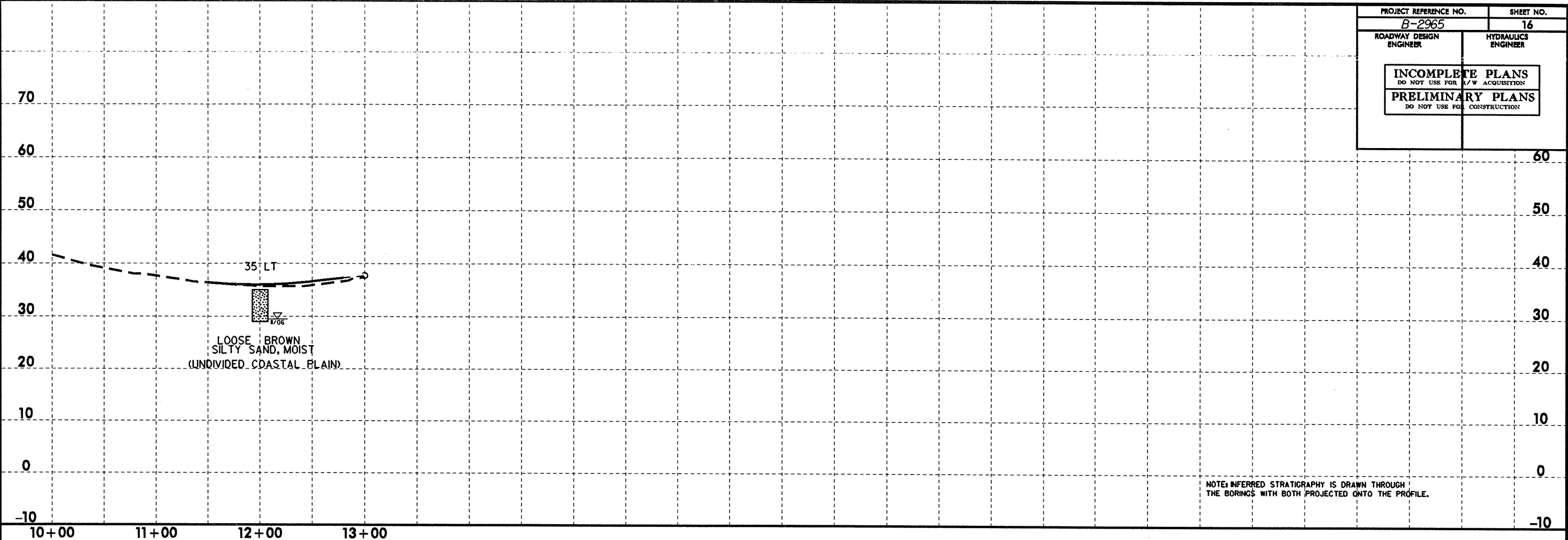
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PROJECT REFERENCE NO. B-2965		SHEET NO. 16	
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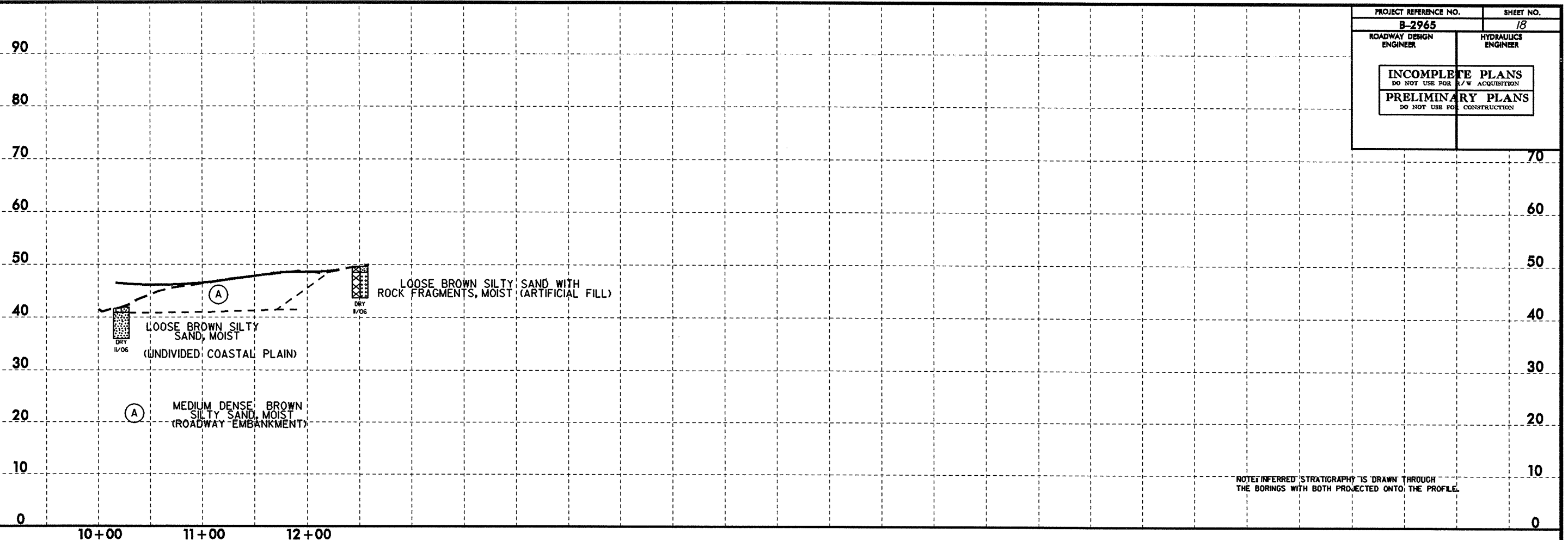


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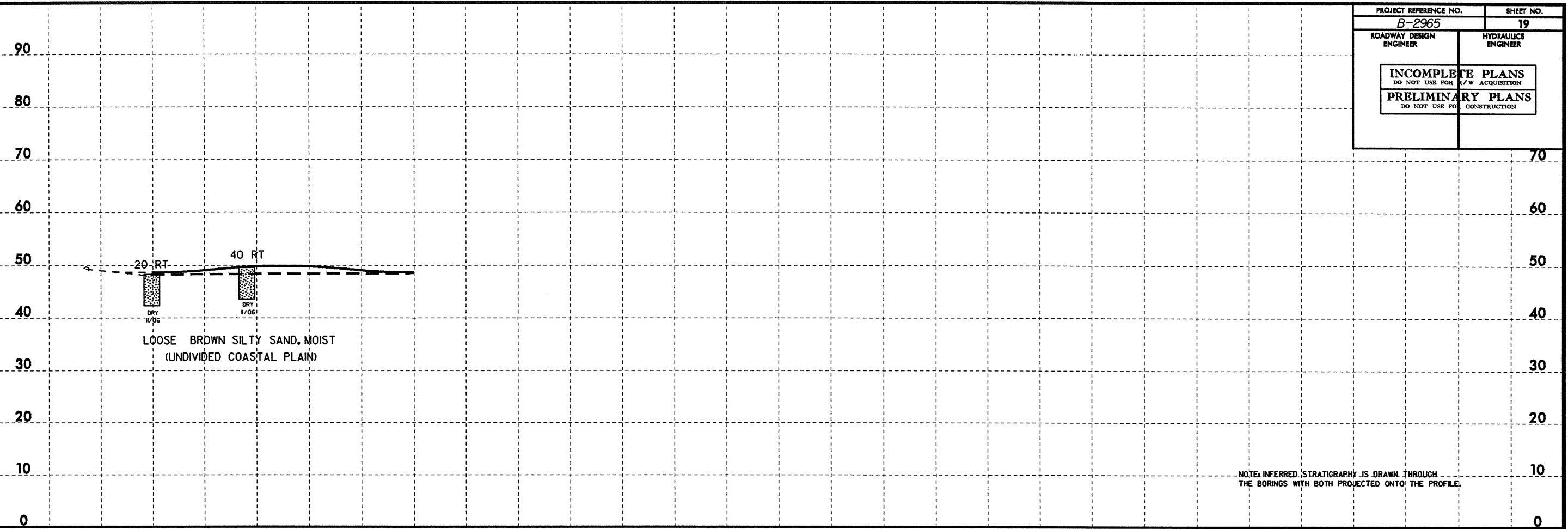


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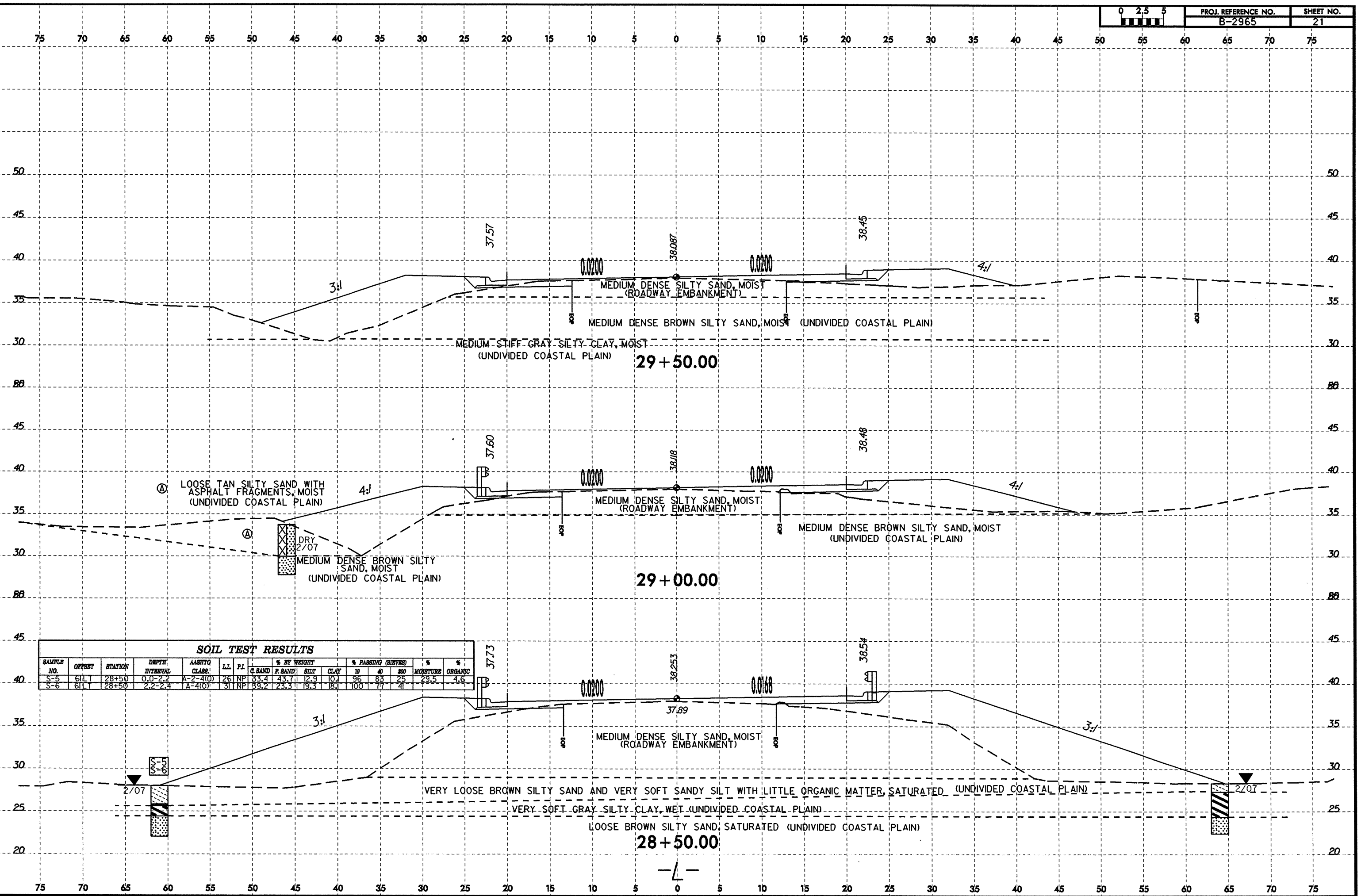
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**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PI	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	80		
S-5	61.1	28+50	0.0-2.2	A-2-4(O)	26	NP	33.4	43.7	12.9	10.1	96	83	25	29.5	4.6
S-6	61.1	28+50	2.2-2.4	A-4(O)	31	NP	39.2	23.3	19.3	18.1	100	77	41		



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	32782.1.1 (B-2965)	1	22
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
32782.1.1	BRSTP-064B(1)	P.E.	
		RW & UTIL.	

NOTE: SEE SHEET 3 FOR PLAN SHEET LAYOUT AT TIME OF INVESTIGATION

STATE OF NORTH CAROLINA  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

CONTENTS

LINE	STATION	PLAN	PROFILE
-L-	11+50 TO 16+00	4-6	8,9
-Y1-	12+50 TO 16+30	6	10
-Y2-	10+00 TO 13+15	6	11
-Y3-	11+50 TO 14+93	5	12
-Y4-	10+00 TO 18+00	5,7	13
-Y5-	10+00 TO 11+50	7	14
-Y6-	10+00 TO 11+00	4	15
-Y7-	11+50 TO 13+00	4	16
-Y8-	10+00 TO 11+00	4	17
-DRIVE-	10+00 TO 12+58	6	18
-R-	10+00 TO 12+51	6	19

CROSS SECTIONS	STATION	SHEET
-L-	27+00 TO 29+50	20-21
-L-	42+00 TO 43+00	22

ROADWAY  
SUBSURFACE INVESTIGATION

PROJ. REFERENCE NO. 32782.1.1 (B-2965) F.A. PROJ. BRSTP-064B(1)  
COUNTY EDGEcombe  
PROJECT DESCRIPTION BRIDGE NO. 24 OVER THE TAR RIVER ON  
US 64 BUSINESS/NC 33 (MAIN ST.) FROM US 258/NC 111-122  
(MUTUAL BLVD) TO SR 1308 (ALBERMARLE AVE)

RECOMMENDATIONS

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

CONTRACT: ID: B-2965

PERSONNEL

TJB

JRS

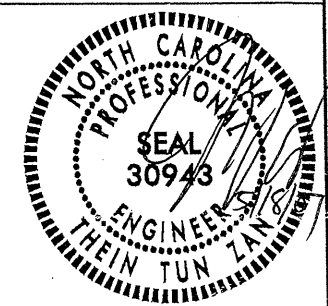
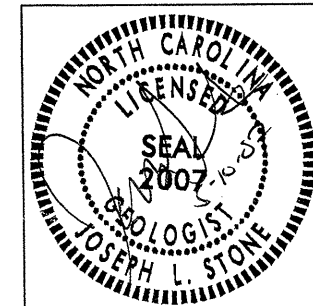
LWD

INVESTIGATED BY J.L. STONE

CHECKED BY D.N. ARGENBRIGHT

SUBMITTED BY D.N. ARGENBRIGHT

DATE MAY 2007



DRAWN BY: JLS, CMK

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

**SUBSURFACE INVESTIGATION**

**SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

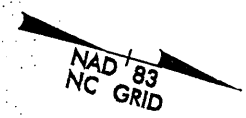
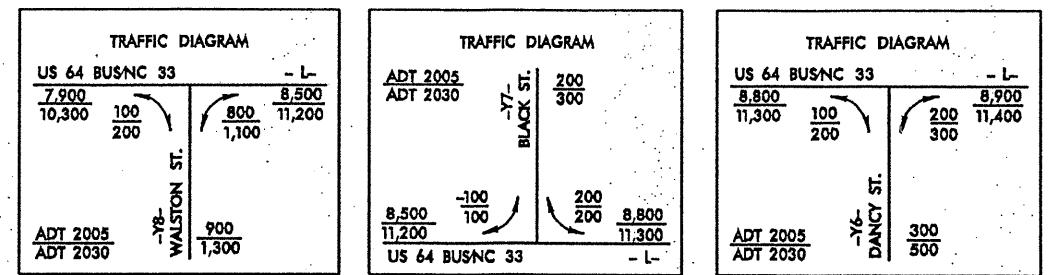
SOIL DESCRIPTION	GRADATION	ROCK DESCRIPTION	TERMS AND DEFINITIONS
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, DARK SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HARD PLASTIC, A-7-6</i>	<b>WELL GRADED</b> - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. <b>UNIFORM</b> - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) <b>GAP-GRADED</b> - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. <b>ANGULARITY OF GRAINS</b> THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: <b>ANGULAR</b> , <b>SUBANGULAR</b> , <b>SUBROUNDED</b> , OR <b>ROUNDED</b> .	<b>HARD ROCK</b> IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: <b>WEATHERED ROCK (WR)</b> - NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED. <b>CRYSTALLINE ROCK (CR)</b> - FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. <b>NON-CRYSTALLINE ROCK (NCR)</b> - FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. <b>COASTAL PLAIN SEDIMENTARY ROCK (CP)</b> - COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.	<b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. <b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA. <b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. <b>ARGILLACEOUS</b> - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. <b>ARTESIAN</b> - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. <b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. <b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. <b>CORE RECOVERY (RECJ)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. <b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. <b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. <b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. <b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. <b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. <b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. <b>FORMATION (FMJ)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. <b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. <b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. <b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. <b>MOTTLED (MOTJ)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. <b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. <b>RESIDUAL (RESJ) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. <b>ROCK QUALITY DESIGNATION (RQD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. <b>SAPROLITE (SAPJ)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. <b>SILL</b> - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. <b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. <b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. <b>STRATA CORE RECOVERY (SRECJ)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. <b>STRATA ROCK QUALITY DESIGNATION (SRQD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. <b>TOPSOIL (TSJ)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.
<b>SOIL LEGEND AND AASHTO CLASSIFICATION</b>	<b>MINERALOGICAL COMPOSITION</b>	<b>WEATHERING</b>	
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS	MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.	<b>FRESH</b> - ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE. <b>VERY SLIGHT (V SLJ)</b> - ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE. <b>SLIGHT (SLJ)</b> - ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS. <b>MODERATE (MODJ)</b> - SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK. <b>MODERATELY SEVERE (MOD. SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES 'CLUNK' SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i> <b>SEVERE (SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i> <b>VERY SEVERE (V SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i> <b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
GROUP CLASS. A-1, A-2, A-3, A-4, A-5, A-6, A-7	<b>COMPRESSIBILITY</b> SLIGHTLY COMPRESSIBLE MODERATELY COMPRESSIBLE HIGHLY COMPRESSIBLE	<b>MODERATELY SEVERE (MOD. SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i>	
SYMBOL	<b>PERCENTAGE OF MATERIAL</b> ORGANIC MATERIAL: TRACE OF ORGANIC MATTER (2-3%), LITTLE ORGANIC MATTER (3-5%), MODERATELY ORGANIC (5-10%), HIGHLY ORGANIC (>10%) GRANULAR SOILS: SILT-CLAY SOILS: OTHER MATERIAL: TRACE (1-10%), LITTLE (10-20%), SOME (20-35%), HIGHLY (35% AND ABOVE)	<b>VERY SEVERE (V SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i>	
% PASSING: 10, 40, 200	<b>GROUND WATER</b> WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING STATIC WATER LEVEL AFTER 24 HOURS PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA SPRING OR SEEP	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
LIQUID LIMIT PLASTIC INDEX		<b>MODERATELY SEVERE (MOD. SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i>	
GROUP INDEX		<b>VERY SEVERE (V SEVJ)</b> - ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED, ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i>	
USUAL TYPES OF MAJOR MATERIALS		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
GENERATING AS A SUBGRADE		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
PI OF A-7-5 SUBGROUP IS ≤ LL - 30 ; PI OF A-7-6 SUBGROUP IS > LL - 30		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
<b>CONSISTENCY OR DENSENESS</b>	<b>MISCELLANEOUS SYMBOLS</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
PRIMARY SOIL TYPE: COMPACTNESS OR CONSISTENCY, RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE), RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )	ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
GENERALY GRANULAR MATERIAL (NON-COHESIVE): VERY LOOSE, MEDIUM DENSE, DENSE, VERY DENSE	SPT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE SPT REFUSAL	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
GENERALY SILT-CLAY MATERIAL (COHESIVE): VERY SOFT, MEDIUM STIFF, STIFF, VERY STIFF, HARD	<b>ABBREVIATIONS</b> AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSC - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC - FRACTURED, FRACTURES FRAGS - FRAGMENTS HL - HIGHLY MED - MEDIUM MICA - MICACEOUS MOD - MODERATELY NP - NON PLASTIC ORG - ORGANIC PMT - PRESSUREMETER TEST SAP - SAPROLITIC SD - SAND, SANDY SL - SILT, SILTY SLI - SLIGHTLY TCR - TRICONE REFUSAL w - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST WEA - WEATHERED W - UNIT WEIGHT W <sub>d</sub> - DRY UNIT WEIGHT	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
<b>TEXTURE OR GRAIN SIZE</b>		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
U.S. STD. SIEVE SIZE OPENING (MM): 4, 10, 40, 60, 200, 270		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
BOULDER (BLDR), COBBLE (COB), GRAVEL (GR), COARSE SAND (CSE, SD), FINE SAND (F SD), SILT (SL), CLAY (CL)		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
GRAIN SIZE: MM, IN		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
<b>SOIL MOISTURE - CORRELATION OF TERMS</b>	<b>EQUIPMENT USED ON SUBJECT PROJECT</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
SOIL MOISTURE SCALE (ATTERBERG LIMITS), FIELD MOISTURE DESCRIPTION, GUIDE FOR FIELD MOISTURE DESCRIPTION	DRILL UNITS: MOBILE B-51, BK-51, CME-45C, CME-550, PORTABLE HOIST, CME-45B ADVANCING TOOLS: CLAY BITS, 6" CONTINUOUS FLIGHT AUGER, HOLLOW AUGERS, HARD FACED FINGER BITS, TUNG-CARBIDE INSERTS, CASING w/ ADVANCER, TRICONE 2 1/8" STEEL TEETH, TRICONE TUNG-CARB., CORE BIT HAMMER TYPE: AUTOMATIC, MANUAL CORE SIZE: B, N, H HAND TOOLS: POST HOLE DIGGER, HAND AUGER, SOUNDING ROD, VANE SHEAR TEST	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
LL - LIQUID LIMIT, PL - PLASTIC LIMIT, OH - OPTIMUM MOISTURE, SL - SHRINKAGE LIMIT		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
<b>PLASTICITY</b>		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
NONPLASTIC, LOW PLASTICITY, MED. PLASTICITY, HIGH PLASTICITY		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
<b>COLOR</b>		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.		<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	<b>FRACTURE SPACING</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	TERM: VERY WIDE, WIDE, MODERATELY CLOSE, CLOSE, VERY CLOSE SPACING: MORE THAN 10 FEET, 3 TO 10 FEET, 1 TO 3 FEET, 0.16 TO 1 FEET, LESS THAN 0.16 FEET	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	<b>BEDDING</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	TERM: VERY THICKLY BEDDED, THICKLY BEDDED, THINLY BEDDED, VERY THINLY BEDDED, THICKLY LAMINATED, THINLY LAMINATED THICKNESS: > 4 FEET, 1.5 - 4 FEET, 0.16 - 1.5 FEET, 0.03 - 0.16 FEET, < 0.008 FEET	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	<b>INDURATION</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE: RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED: GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED: GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED: SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	<b>BENCH MARK:</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	ELEVATION: FT.	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	<b>NOTES:</b>	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	
	PROPOSED UNDERCUT EXCAVATION UNSUITABLE UNCLASSIFIED EXCAVATION APPROXIMATE LIMITS OF SURFICIAL ORGANIC DEPOSITS	<b>COMPLETE</b> - ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.	



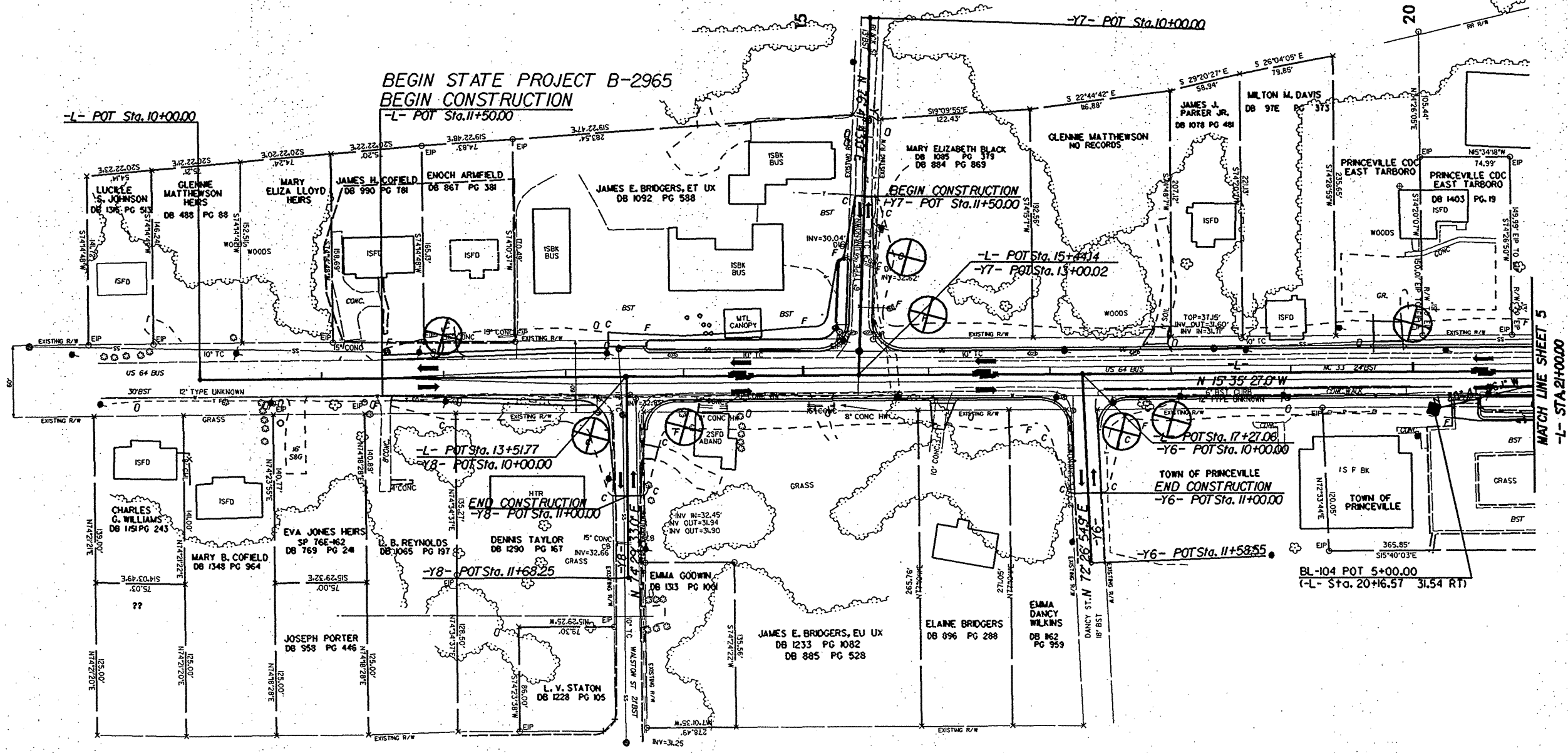
PROJECT REFERENCE NO. B-2965	SHEET NO. 4
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR R/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

**DATUM DESCRIPTION**

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY MCDOT FOR MONUMENT "B2965-1" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 782003.246(11) EASTING: 2435088.463(11) THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.99993740 THE N.C. LAMBERT GRID BEARINGS AND LOCALIZED HORIZONTAL GROUND DISTANCE FROM "B2965-1" TO L- STATION 11+50.00 IS S 18° 46' 11.2" E DIST = 1,313.8943 FT ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS MVD 29



FOR -L- PROFILE SEE SHEET 8  
 FOR -Y6- PROFILE SEE SHEET 11  
 FOR -Y7- PROFILE SEE SHEET 11  
 FOR -Y8- PROFILE SEE SHEET 11



8/17/99

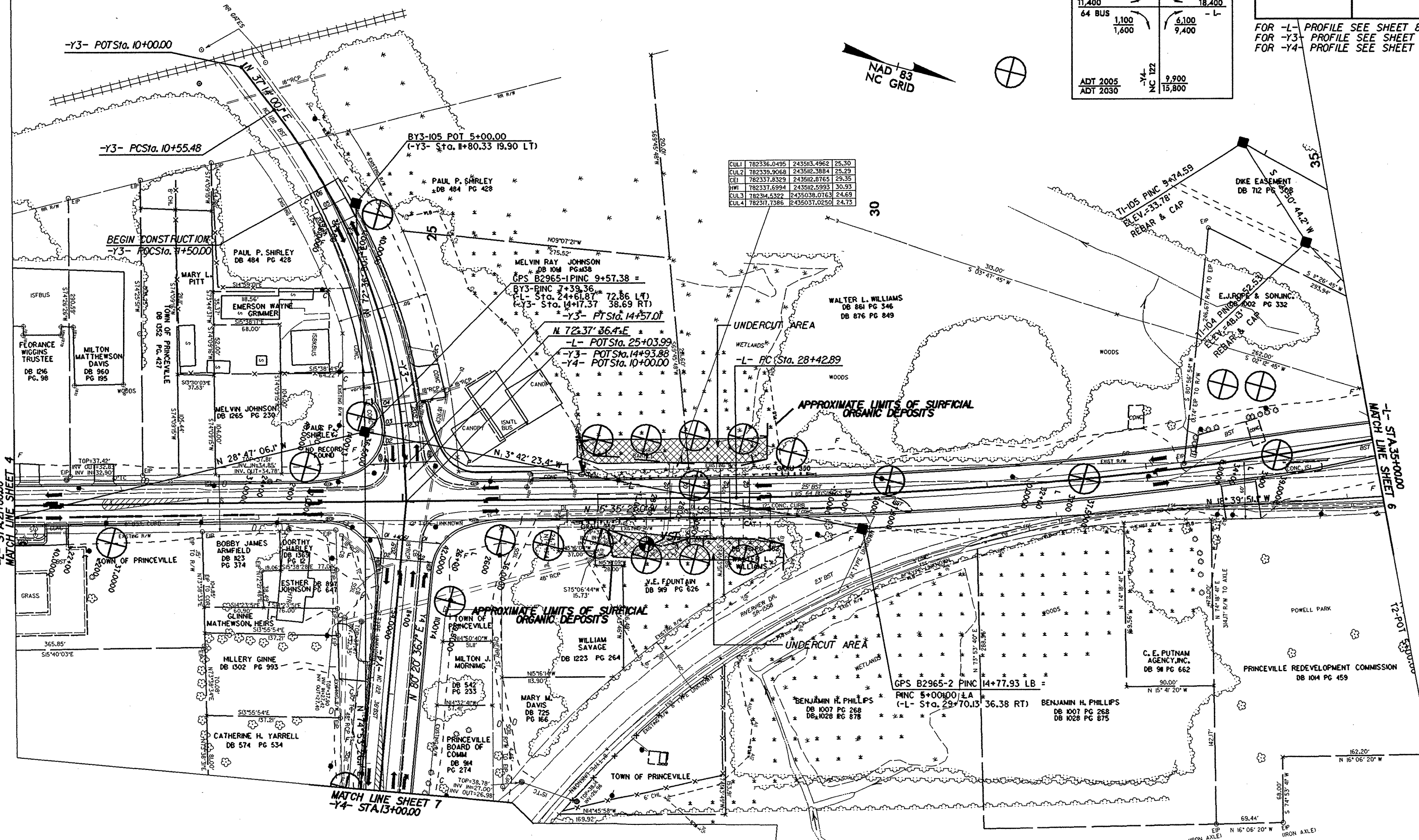
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REVISIONS

PROJECT REFERENCE NO. B-2965	SHEET NO. 5
R/W SHEET NO.	HYDRAULICS ENGINEER
ROADWAY DESIGN ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 8  
 FOR -Y3- PROFILE SEE SHEET 10  
 FOR -Y4- PROFILE SEE SHEET 10

TRAFFIC DIAGRAM			
	-Y3- NC 122	4,500	7,600
8,900	1,300	500	13,100
11,400	1,800	1,000	18,400
64 BUS	1,100	6,100	-L-
	1,600	9,400	
ADT 2005	-Y4- NC 122	9,900	
ADT 2030		15,800	



CUL1	782336.0495	243503.4962	25.30
CUL2	782339.9068	243502.3884	25.29
CE1	782337.8329	243502.6765	29.35
HW1	782337.6994	243502.5993	30.93
CUL3	782344.5322	2435038.0763	24.69
CUL4	782317.7386	2435037.0250	24.73



-L- STA 21+00.00  
MATCH LINE SHEET 4

MATCH LINE SHEET 7  
-Y4- STA. 13+00.00

-L- STA 35+00.00  
MATCH LINE SHEET 6

12-FOOT  
RIGHT-OF-WAY

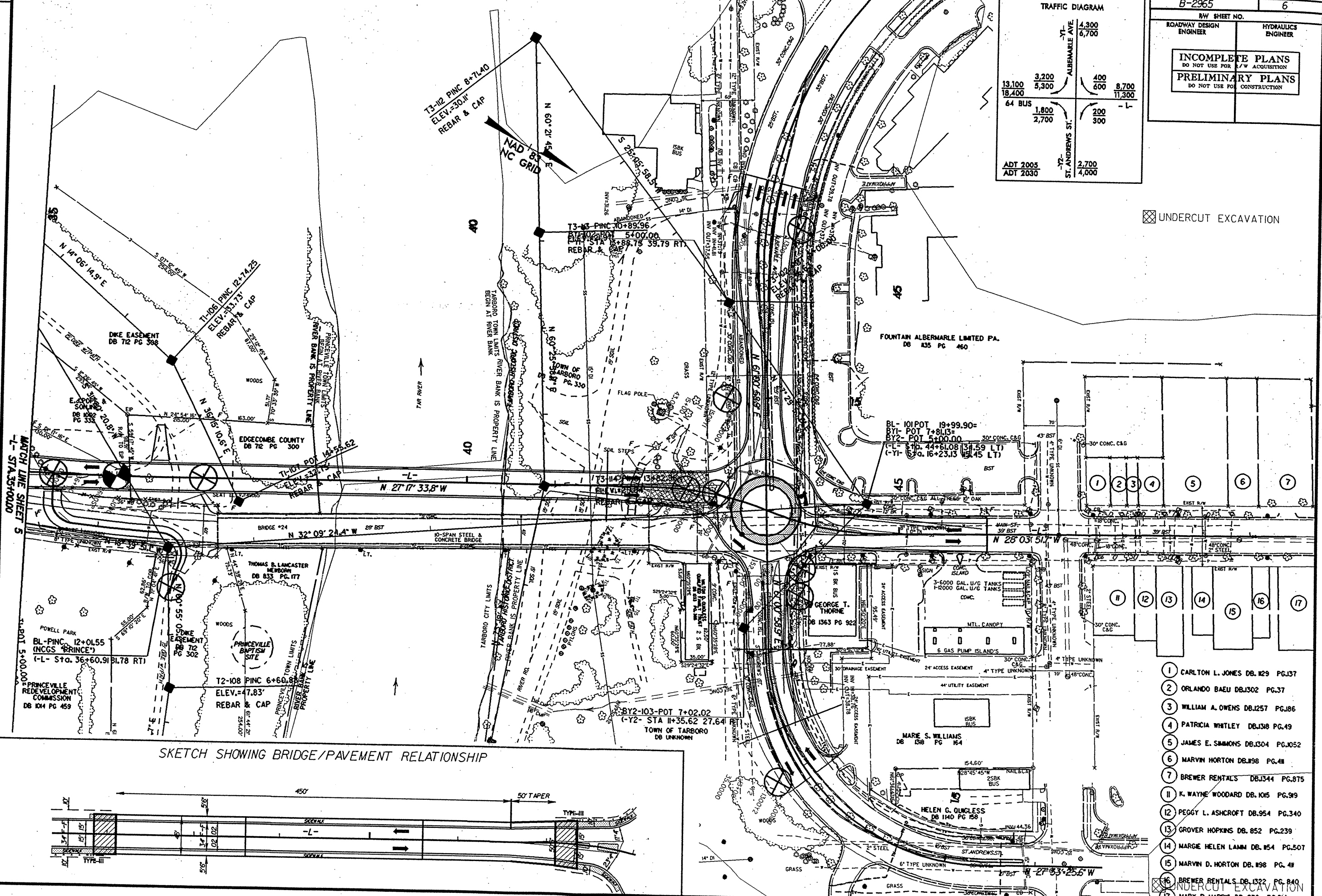


8/17/99

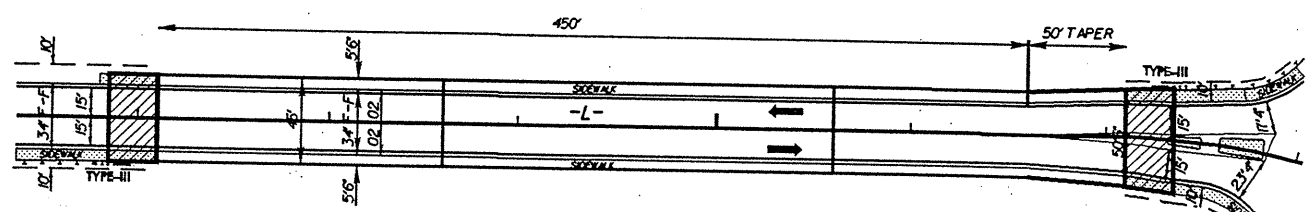
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RW SHEET NO.		HYDRAULICS ENGINEER	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
<b>INCOMPLETE PLANS</b> DO NOT USE FOR L/W ACQUISITION			
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION			

TRAFFIC DIAGRAM			
	ALBEMARLE AVE	4,300	6,700
13,100	3,200	400	8,700
18,400	5,300	600	11,300
64 BUS	1,800	200	- L
	2,700	300	
ADT 2005		2,700	
ADT 2030		4,000	
	ST. ANDREWS ST.		

UNDERCUT EXCAVATION



SKETCH SHOWING BRIDGE/PAVEMENT RELATIONSHIP



- 1 CARLTON L. JONES DB. 129 PG.137
- 2 ORLANDO BAEU DB.1302 PG.37
- 3 WILLIAM A. OWENS DB.1257 PG.186
- 4 PATRICIA WHITLEY DB.1318 PG.49
- 5 JAMES E. SIMMONS DB.1304 PG.1052
- 6 MARVIN HORTON DB.1198 PG.41
- 7 BREWER RENTALS DB.1344 PG.875
- 11 K. WAYNE WOODARD DB. 1015 PG.919
- 12 PEGGY L. ASHCROFT DB.954 PG.340
- 13 GROVER HOPKINS DB. 852 PG.239
- 14 MARGE HELEN LANN DB. 1154 PG.507
- 15 MARVIN D. HORTON DB. 1198 PG. 41
- 16 BREWER RENTALS DB. 1322 PG. 840
- 17 MARY P. MARCO DB. 1198 PG. 41

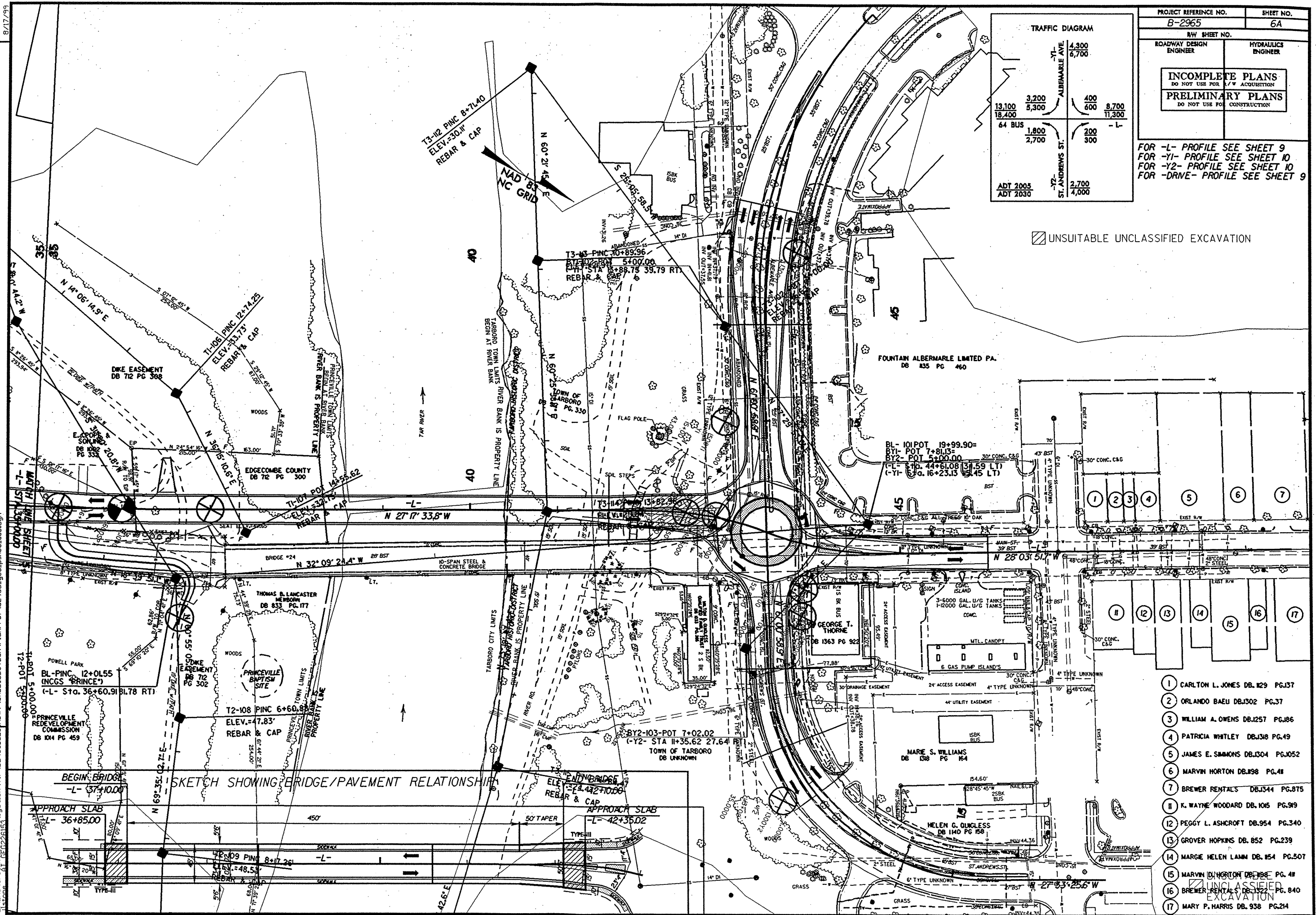
REVISIONS

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TRAFFIC DIAGRAM

ADT 2005	ADT 2030	ALBERMARLE AVE. -Y1-	4,300 6,700
64 BUS	1,800 2,700	ST. ANDREWS ST. -Y2-	200 300
13,100 18,400	3,200 5,300	400 600	8,700 11,300

PROJECT REFERENCE NO. B-2965	SHEET NO. 6A
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/F ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

FOR -L- PROFILE SEE SHEET 9  
 FOR -Y1- PROFILE SEE SHEET 10  
 FOR -Y2- PROFILE SEE SHEET 10  
 FOR -DRIVE- PROFILE SEE SHEET 9

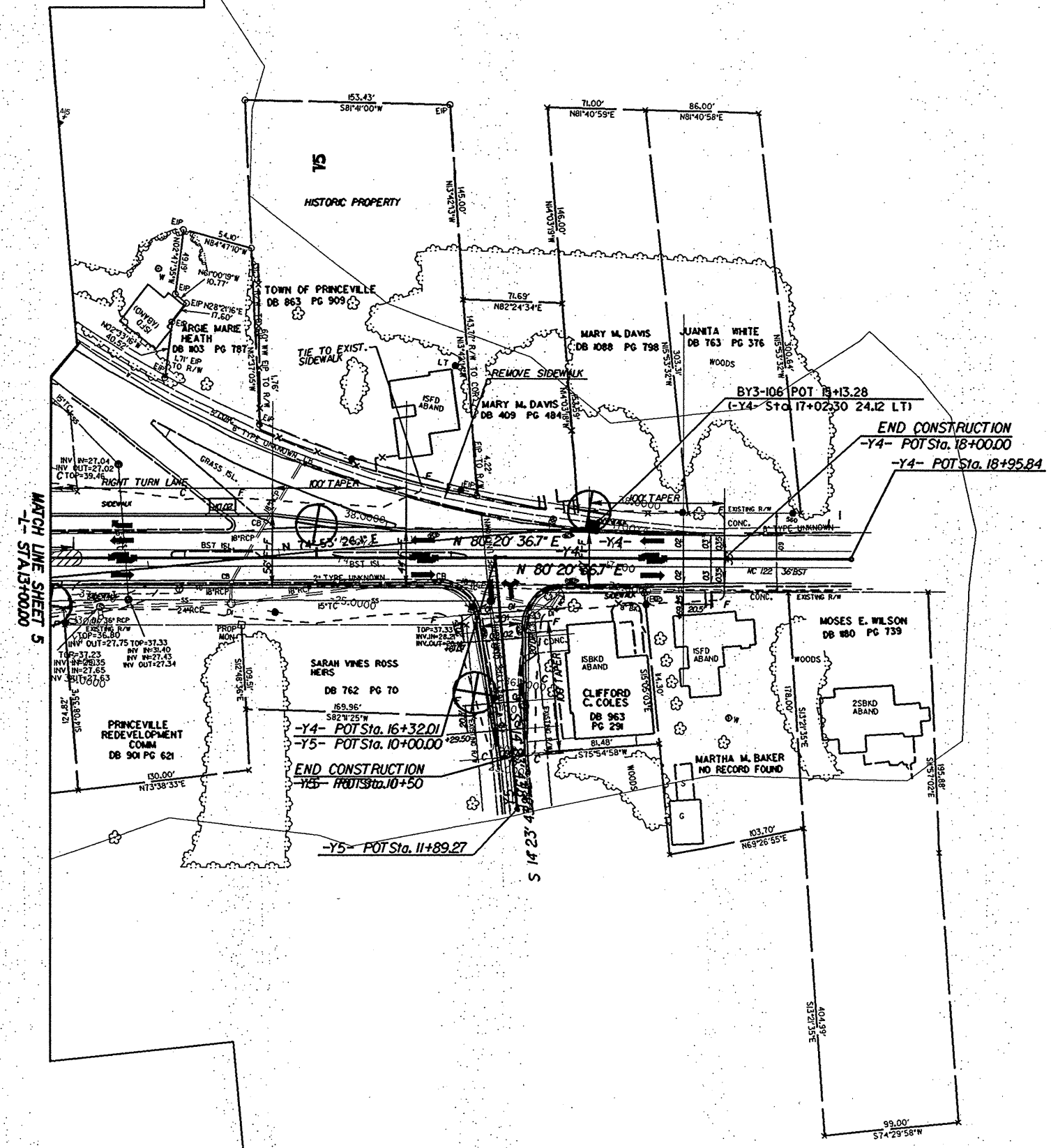
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- 1 CARLTON L. JONES DB. 129 PG.137
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- 3 WILLIAM A. OWENS DB.1257 PG.186
- 4 PATRICIA WHITLEY DB.J38 PG.49
- 5 JAMES E. SIMMONS DB.J304 PG.1052
- 6 MARVIN HORTON DB.198 PG.41
- 7 BREWER RENTALS DB.J344 PG.875
- 8 K. WAYNE WOODARD DB.105 PG.99
- 12 PEGGY L. ASHCROFT DB.954 PG.340
- 13 GROVER HOPKINS DB. 852 PG.239
- 14 MARGE HELEN LAMM DB. 154 PG.507
- 15 MARVIN HORTON DB.198 PG. 41
- 16 BREWER RENTALS DB.1322 PG. 840
- 17 MARY P. HARRIS DB. 938 PG.214

UNCLASSIFIED EXCAVATION

PROJECT REFERENCE NO. B-2965	SHEET NO. 7
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR A/W ACQUISITION	
<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

FOR -Y4- PROFILE SEE SHEET 10  
 FOR -Y5- PROFILE SEE SHEET 11



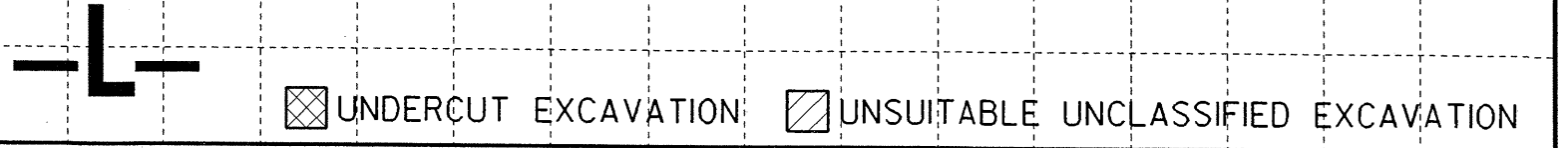
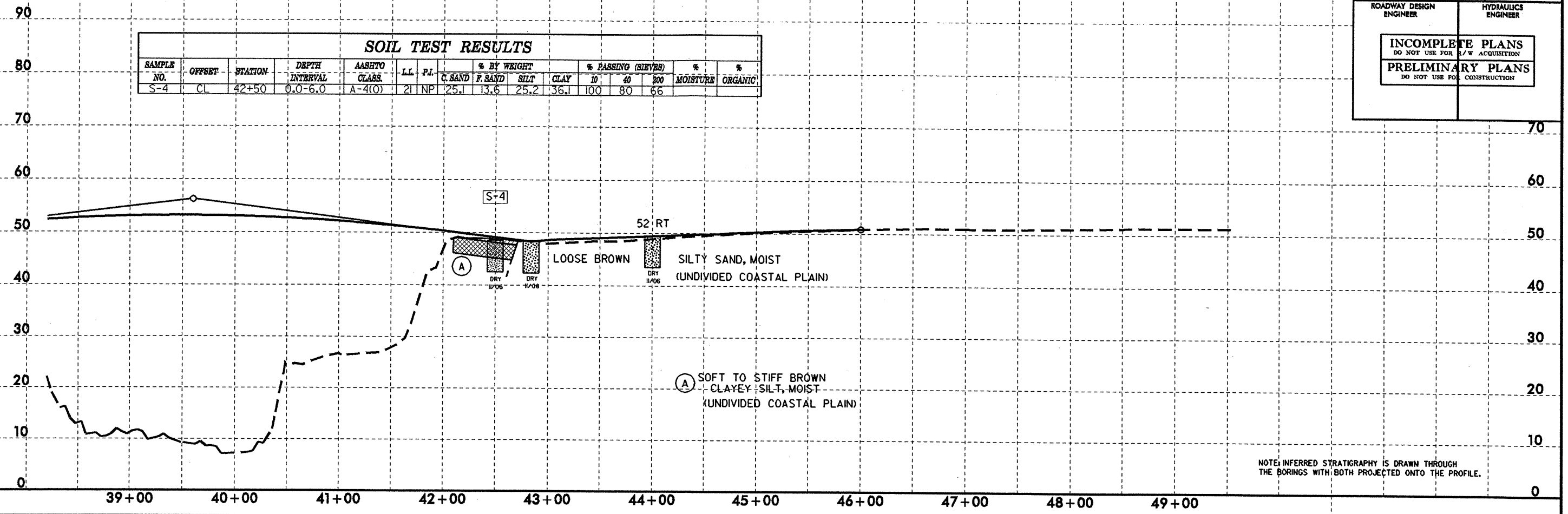
REVISIONS

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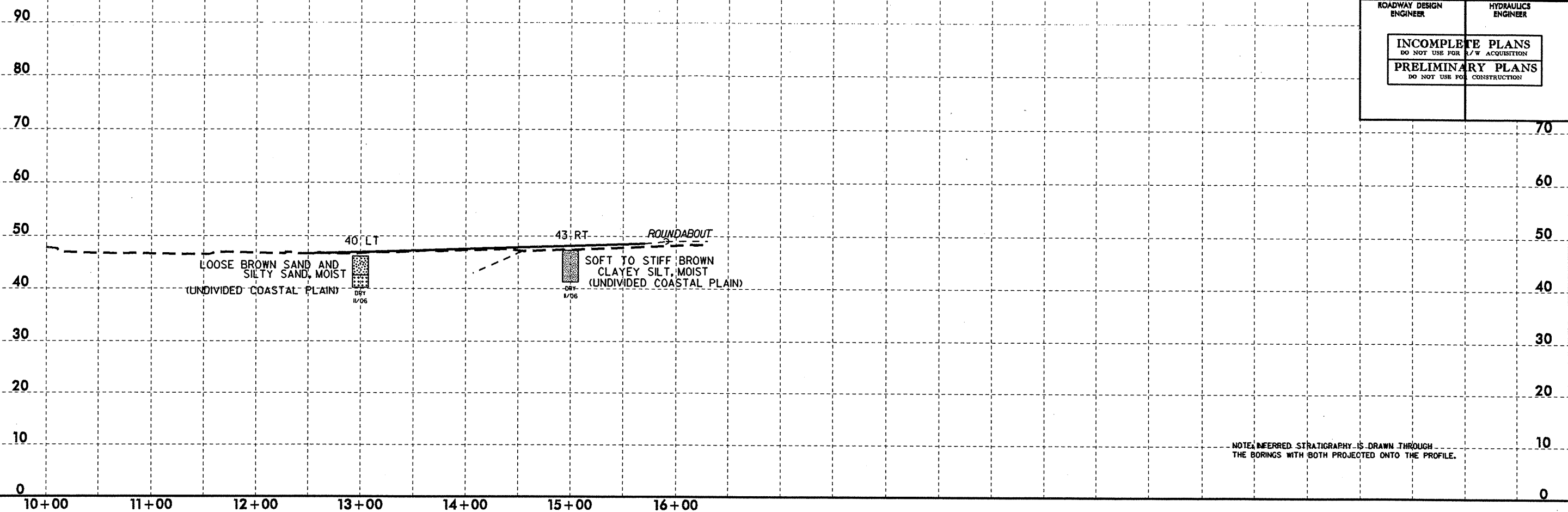
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SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS	LL	PL	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-4	CL	42+50	0.0-6.0	A-4(0)	21	NP	25.1	13.6	25.2	36.1	100	80	66		



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INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	



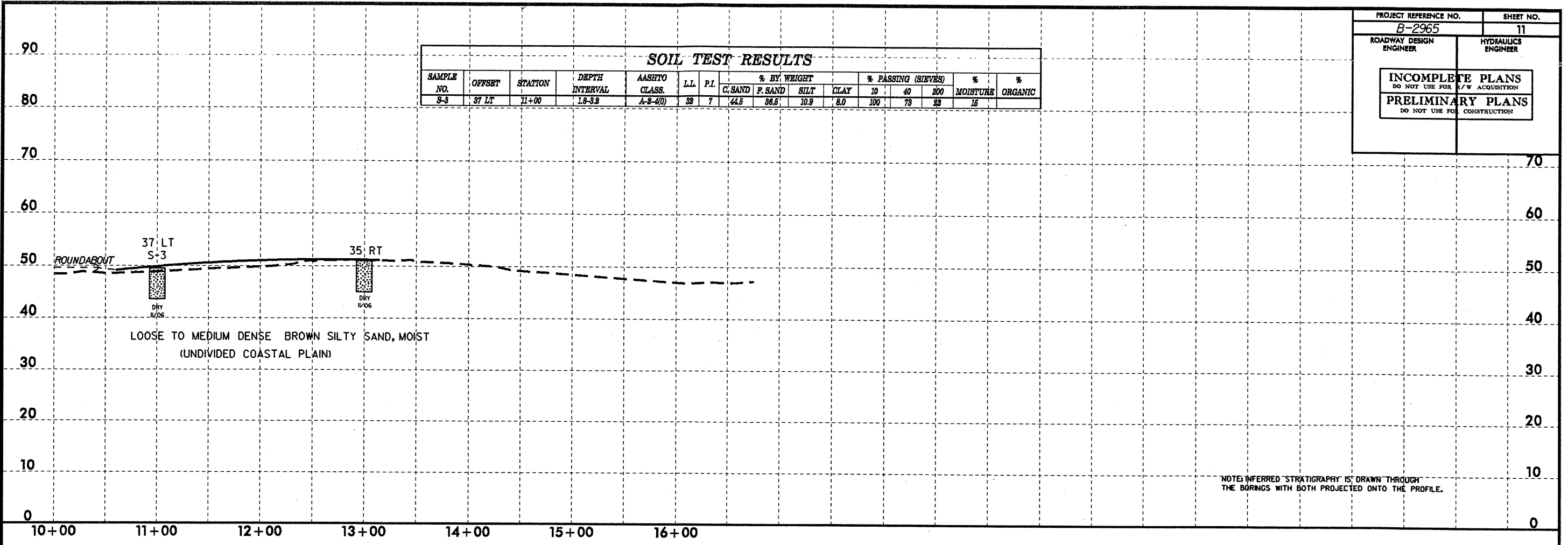
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5/28/99

PROJECT REFERENCE NO. B-2965		SHEET NO. 11	
ROADWAY DESIGN ENGINEER		HYDRAULICS ENGINEER	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION		PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C. SAND	F. SAND	SILT	CLAY	10	40	200		
S-3	37 LT	11+00	1.8-3.3	A-2-4(0)	38	7	44.6	38.6	10.9	8.0	100	78	33	16	

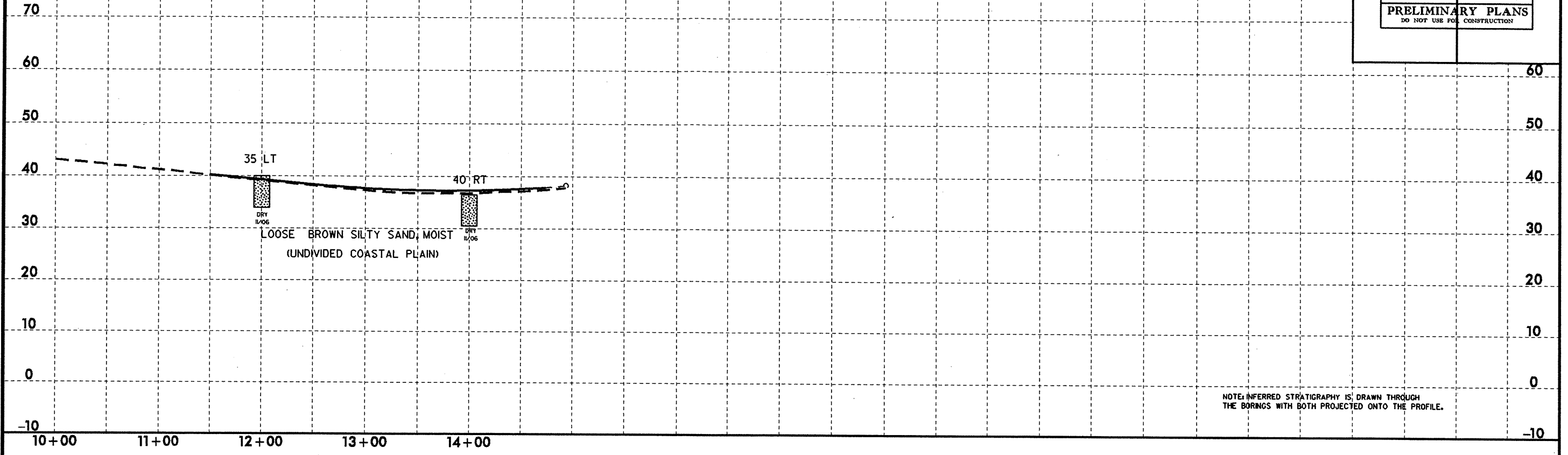


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PROJECT REFERENCE NO. B-2965	SHEET NO. 12
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



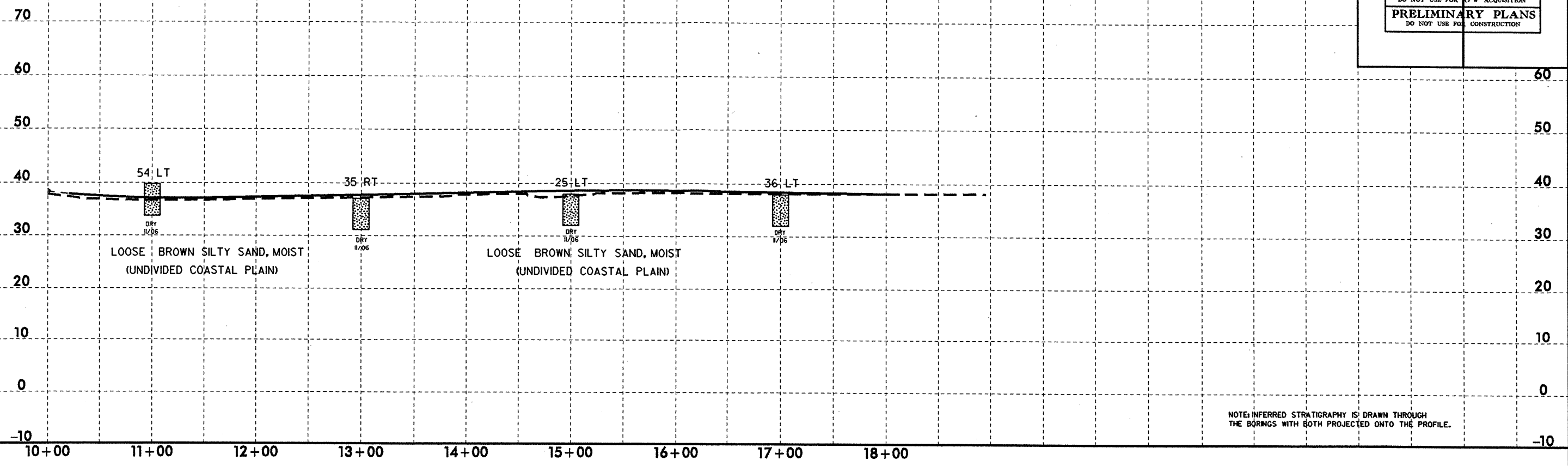
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PROJECT REFERENCE NO. <b>B-2965</b>	SHEET NO. <b>13</b>
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
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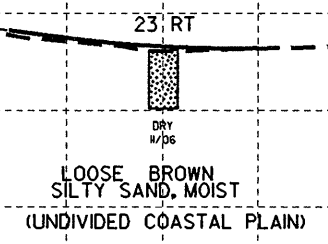
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5/28/99

PROJECT REFERENCE NO. B-2965	SHEET NO. 14
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

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60  
50  
40  
30  
20  
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60  
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NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

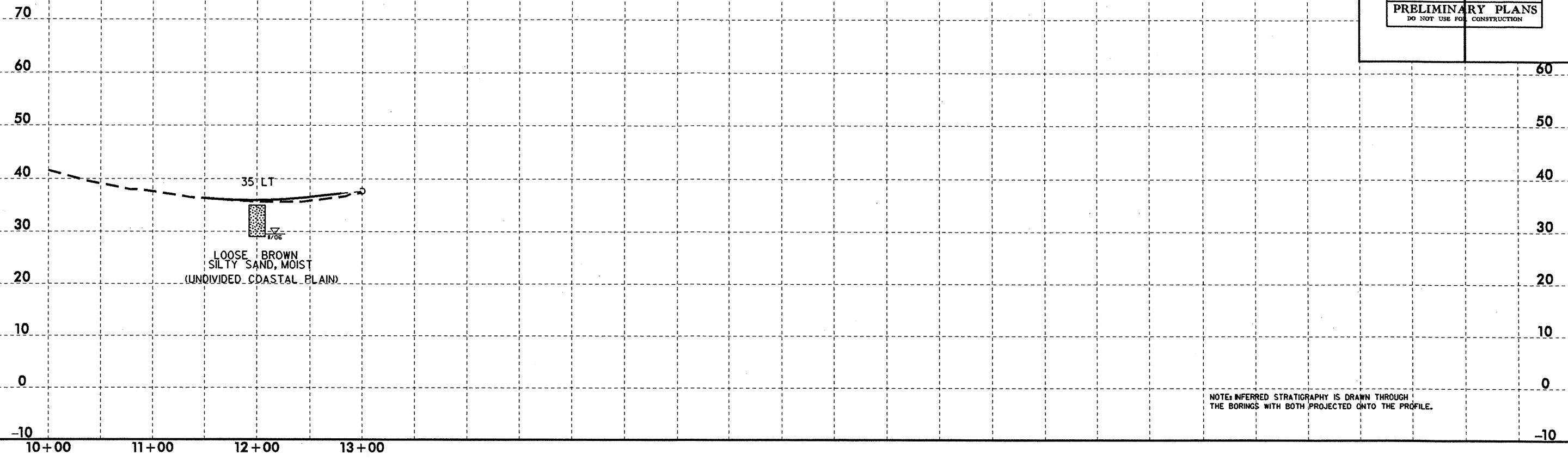
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PROJECT REFERENCE NO. B-2965	SHEET NO. 16
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



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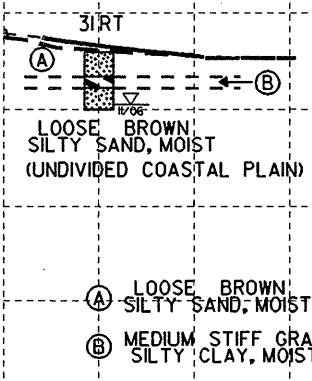
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ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> <small>DO NOT USE FOR ACQUISITION</small>	
<b>PRELIMINARY PLANS</b> <small>DO NOT USE FOR CONSTRUCTION</small>	

70  
60  
50  
40  
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10  
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60  
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NOTE: INFERRED STRATIGRAPHY IS DRAWN THROUGH THE BORINGS WITH BOTH PROJECTED ONTO THE PROFILE.

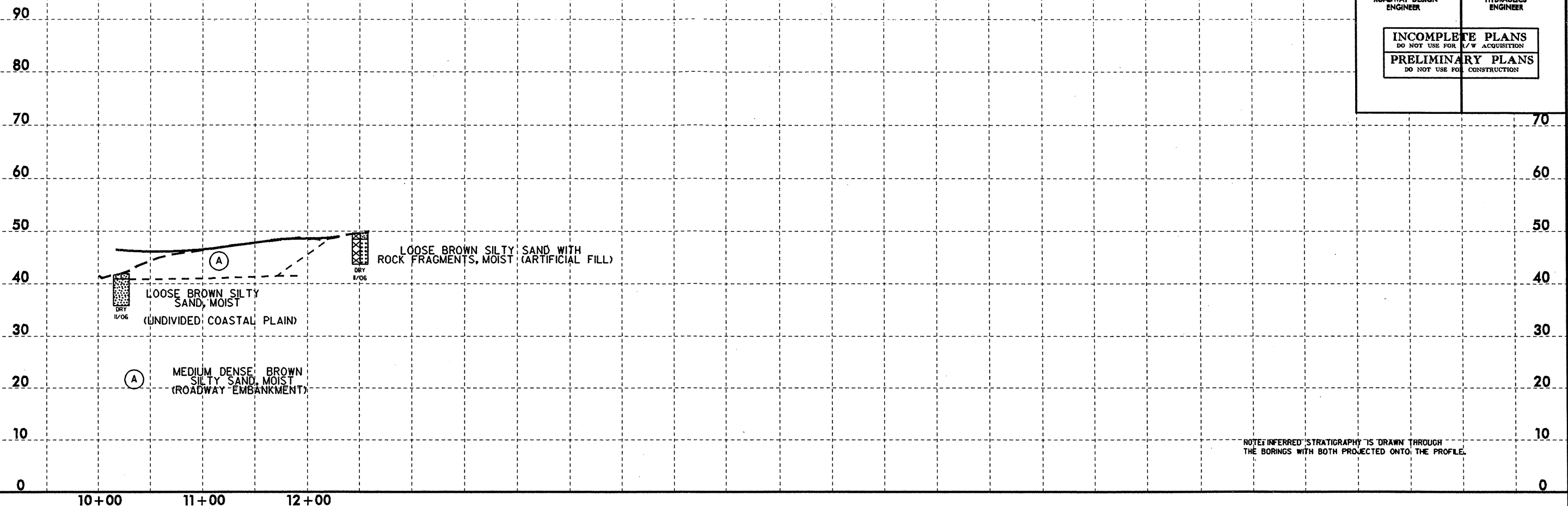
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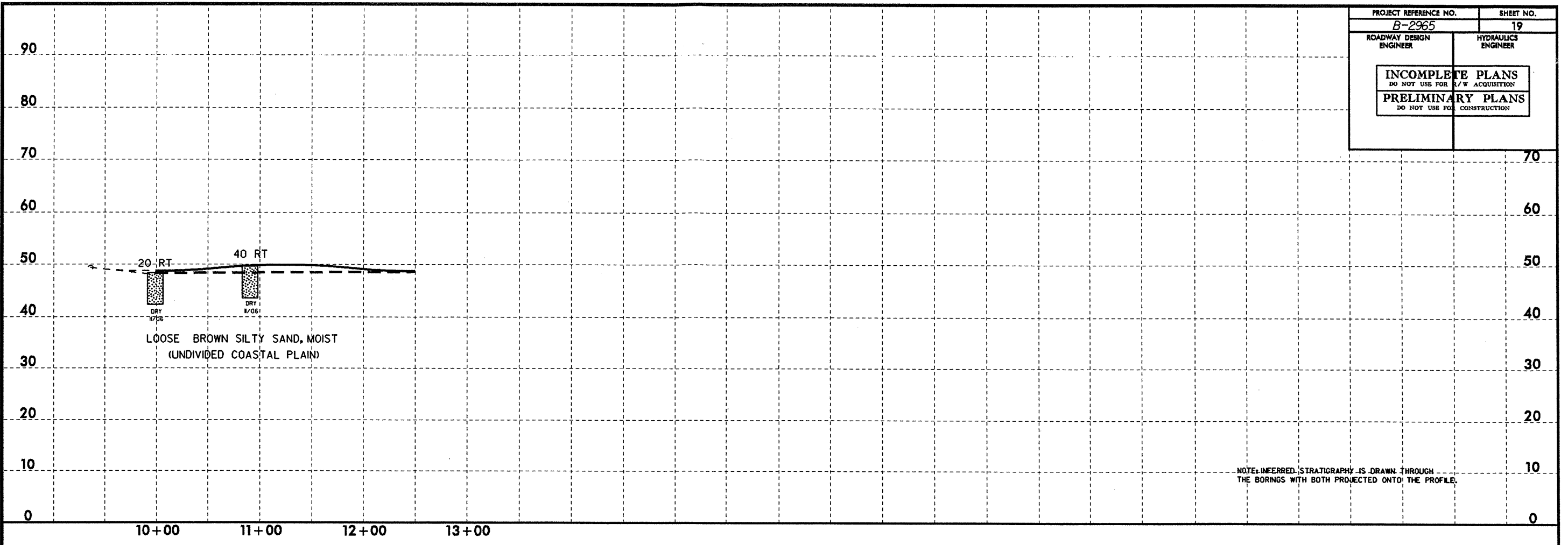


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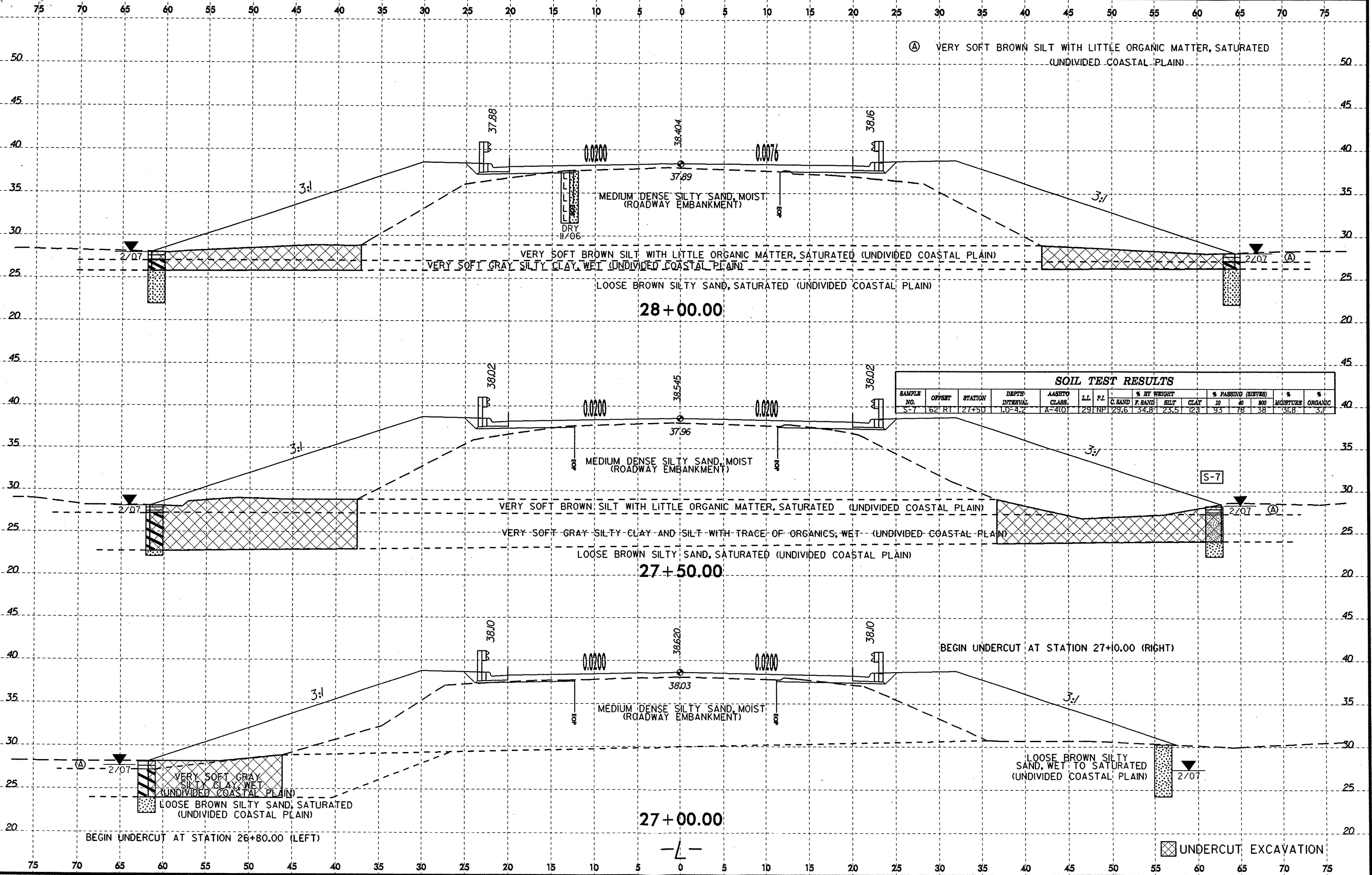
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<b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	



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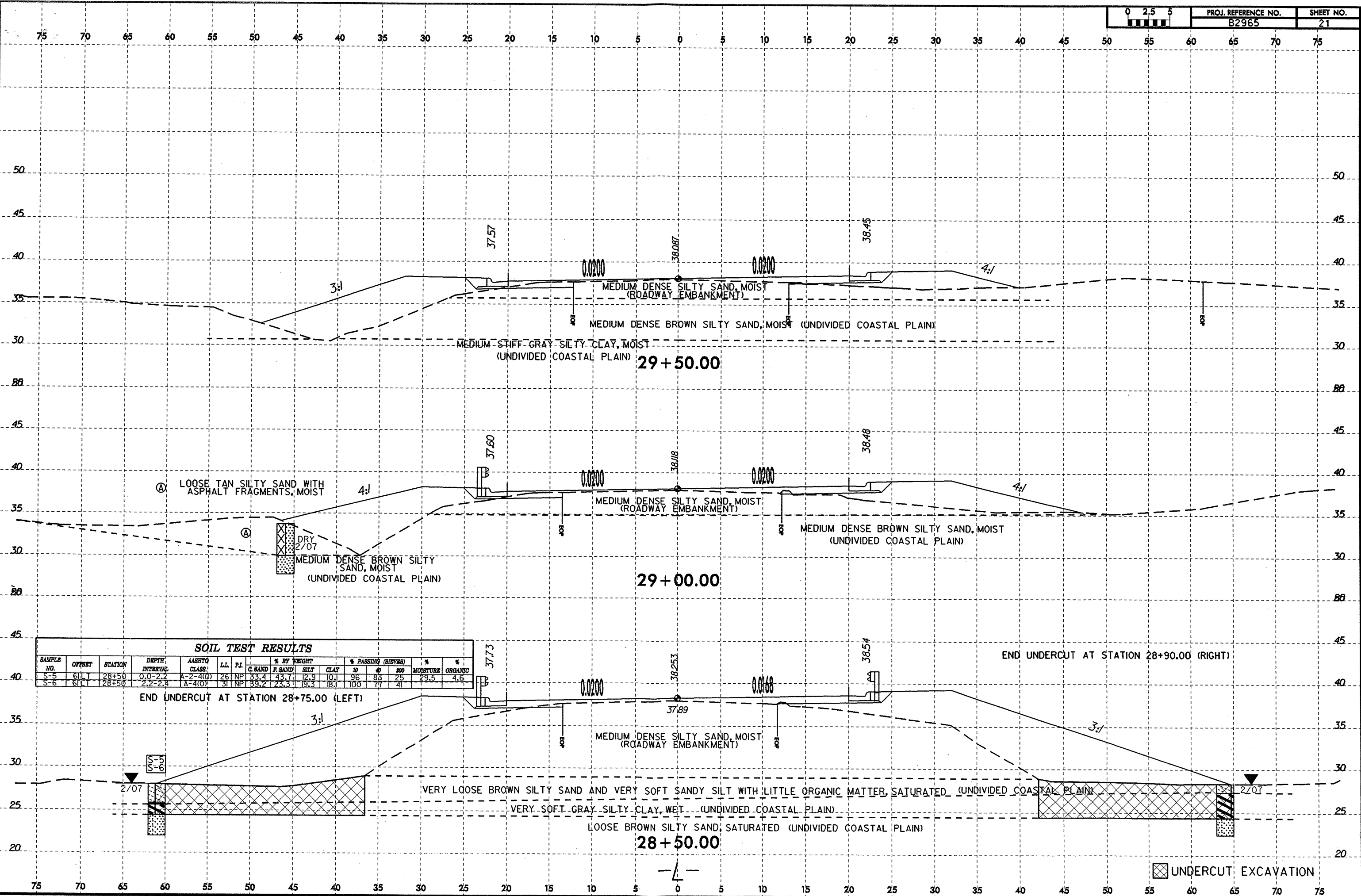
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**SOIL TEST RESULTS**

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	PL	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							G. SAND	F. SAND	SILT	CLAY	#10	#40	#200		
S-5	61L	28+50	0.0-2.2	A-2-4(O)	26	NP	83.4	43.7	12.9	10.1	96	83	25	29.5	4.6
S-6	61L	28+50	2.2-2.4	A-4(O)	31	NP	59.2	23.3	19.3	18.1	100	77	41		

END UNDERCUT AT STATION 28+75.00 (LEFT)

END UNDERCUT AT STATION 28+90.00 (RIGHT)

UNDERCUT EXCAVATION



STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	32782.1.1 B-2965	1	5

**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

**CONTENTS**

<u>SHEET</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	LEGEND
3	SITE PLAN
4	PROFILE
5	SOIL TEST RESULTS

PROJ. REFERENCE NO. 32782.1.1 (B-2965) F.A. PROJ. BRSTP-064B(2)  
COUNTY EDGEcombe  
PROJECT DESCRIPTION BRIDGE NO. 24 OVER THE TAR RIVER  
ON US 64 BUSINESS /NC 33 (MAIN ST.) FROM US 258 /  
NC 111-122 (MUTUAL BLVD) TO SR 1308 (ALBEMARLE AVE)  
SITE DESCRIPTION RETAINING WALL LOCATED 33.8 TO 44.71 FEET  
LEFT OF -L- STA. 28+00

**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING, AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA ARE PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION, AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

**PROJECT: 32782.1.1 ID: B-2965**

**PERSONNEL**

R.E. SMITH

J. M. EDMONDSON

F. M. WESCOTT III

INVESTIGATED BY F.M. WESCOTT III

CHECKED BY D.N. ARGENBRIGHT

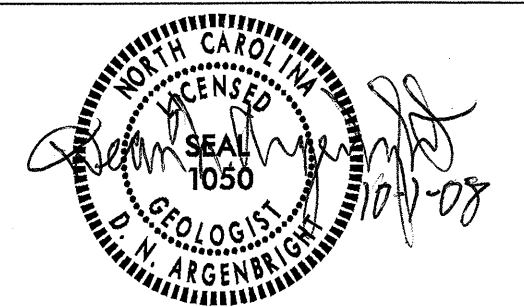
SUBMITTED BY D.N. ARGENBRIGHT

DATE OCTOBER, 2008

DRAWN BY: C.P. TURNER

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IT IS CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

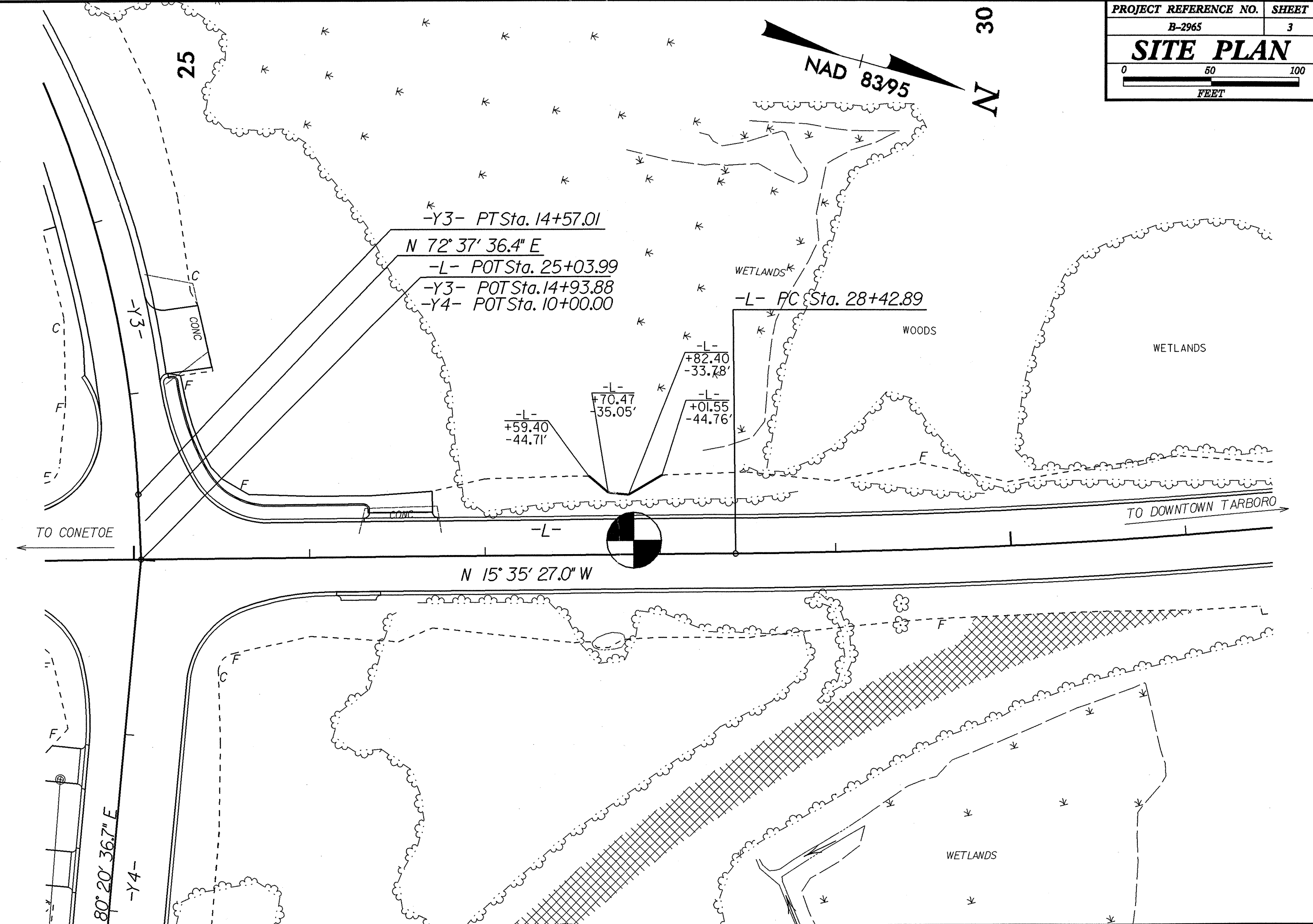


**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

**SUBSURFACE INVESTIGATION**

**SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS**

SOIL DESCRIPTION		GRADATION		ROCK DESCRIPTION		TERMS AND DEFINITIONS					
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLE: <i>VERY STIFF, GRAY, SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGH PLASTIC, A-7-6</i>		WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.  THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS IS DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.		HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT IF TESTED, WOULD YIELD SPT REFUSAL, AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:  WEATHERED ROCK (WR)  NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT N VALUES > 100 BLOWS PER FOOT IF TESTED.  CRYSTALLINE ROCK (CR)  FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC.  NON-CRYSTALLINE ROCK (NCR)  FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC.  COASTAL PLAIN SEDIMENTARY ROCK (CP)  COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.		ALLUVIUM (ALLUV.) - SOILS THAT HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (FP) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL (RES.) SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (RQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (N OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. STRATA CORE RECOVERY (SCREC) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (SRQD) - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (TS) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.					
SOIL LEGEND AND AASHTO CLASSIFICATION		MINERALOGICAL COMPOSITION		WEATHERING							
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS		MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.		FRESH ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING, ROCK RINGS UNDER HAMMER IF CRYSTALLINE.  VERY SLIGHT (V SL) ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN, CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY, ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.  SLIGHT (SL) ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED, CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.  MODERATE (MOD) SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.  MODERATELY SEVERE (MOD. SEV) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <i>IF TESTED, WOULD YIELD SPT REFUSAL</i>  SEVERE (SEV) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &gt; 100 BPF</i>  VERY SEVERE (V SEV) ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT THE MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE SUCH THAT ONLY MINOR VESTIGES OF THE ORIGINAL ROCK FABRIC REMAIN. <i>IF TESTED, YIELDS SPT N VALUES &lt; 100 BPF</i>  COMPLETE ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS, SAPROLITE IS ALSO AN EXAMPLE.		COMPRESSIBILITY SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 31 MODERATELY COMPRESSIBLE LIQUID LIMIT EQUAL TO 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50		PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA		ROCK HARDNESS VERY HARD CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK. HARD CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN. MODERATELY HARD CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS. MEDIUM HARD CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PEICES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK. SOFT CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE. VERY SOFT CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.	
PERCENTAGE OF MATERIAL		GROUND WATER		MISCELLANEOUS SYMBOLS							
ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2-3% 3-5% TRACE 1-10% LITTLE ORGANIC MATTER 3-5% 5-12% LITTLE 10-20% MODERATELY ORGANIC 5-10% 12-20% SOME 20-35% HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP & DIP DIRECTION OF ROCK STRUCTURES SOUNDING ROD		SAMPLE DESIGNATIONS S - BULK SAMPLE SS - SPLIT SPOON SAMPLE ST - SHELBY TUBE SAMPLE RS - ROCK SAMPLE RT - RECOMPACTED TRIAXIAL SAMPLE CBR - CALIFORNIA BEARING RATIO SAMPLE					
CONSISTENCY OR DENSENESS		ROCK HARDNESS		ABBREVIATIONS							
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )		VERY LOOSE LOOSE MEDIUM DENSE DENSE VERY DENSE VERY SOFT SOFT MEDIUM STIFF STIFF VERY STIFF HARD		AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED, FRACTURES FRAGS. - FRAGMENTS		HL - HIGHLY MED. - MEDIUM MICA - MICACEOUS MOD. - MODERATELY NP - NON PLASTIC ORG. - ORGANIC PMT - PRESSUREMETER TEST SAP. - SAPROLITIC SO. - SAND, SANDY SL - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL					
TEXTURE OR GRAIN SIZE		EQUIPMENT USED ON SUBJECT PROJECT		FRACTURE SPACING		BEDDING					
U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.76 2.00 0.42 0.25 0.075 0.053		DRILL UNITS: MOBILE B- BK-51 CME-45C CME-550 PORTABLE HOIST CME-45B		TERM SPACING VERY WIDE MORE THAN 10 FEET WIDE 3 TO 10 FEET MODERATELY CLOSE 1 TO 3 FEET CLOSE 0.16 TO 1 FEET VERY CLOSE LESS THAN 0.16 FEET		TERM THICKNESS VERY THICKLY BEDDED > 4 FEET THICKLY BEDDED 1.5 - 4 FEET THINLY BEDDED 0.16 - 1.5 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET					
SOIL MOISTURE - CORRELATION OF TERMS		HAMMER TYPE:		INDURATION							
SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION		X AUTOMATIC MANUAL		FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.		FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.					
LL LIQUID LIMIT PL PLASTIC LIMIT OM OPTIMUM MOISTURE SL SHRINKAGE LIMIT		ADVANCING TOOLS: CLAY BITS 6" CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING w/ ADVANCER TRICONE 2 15/16 STEEL TEETH TRICONE * TUNG-CARB. CORE BIT		CORE SIZE: -B -N -H HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST		BENCH MARK: ELEVATION: FT. NOTES:					
PLASTICITY		COLOR									
NONPLASTIC 0-5 VERY LOW LOW PLASTICITY 6-15 SLIGHT MED. PLASTICITY 16-25 MEDIUM HIGH PLASTICITY 26 OR MORE HIGH		DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.									



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Author: AT 11/24/04

# HEAD WALL PROFILE THROUGH BORING PROJECTED ALONG HEADWALL

PROJECT REFERENCE NO. B-2965	SHEET NO. 4
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
<b>INCOMPLETE PLANS</b> DO NOT USE FOR ACQUISITION <b>PRELIMINARY PLANS</b> DO NOT USE FOR CONSTRUCTION	

VE = 0.5

40

30

20

10

26+50

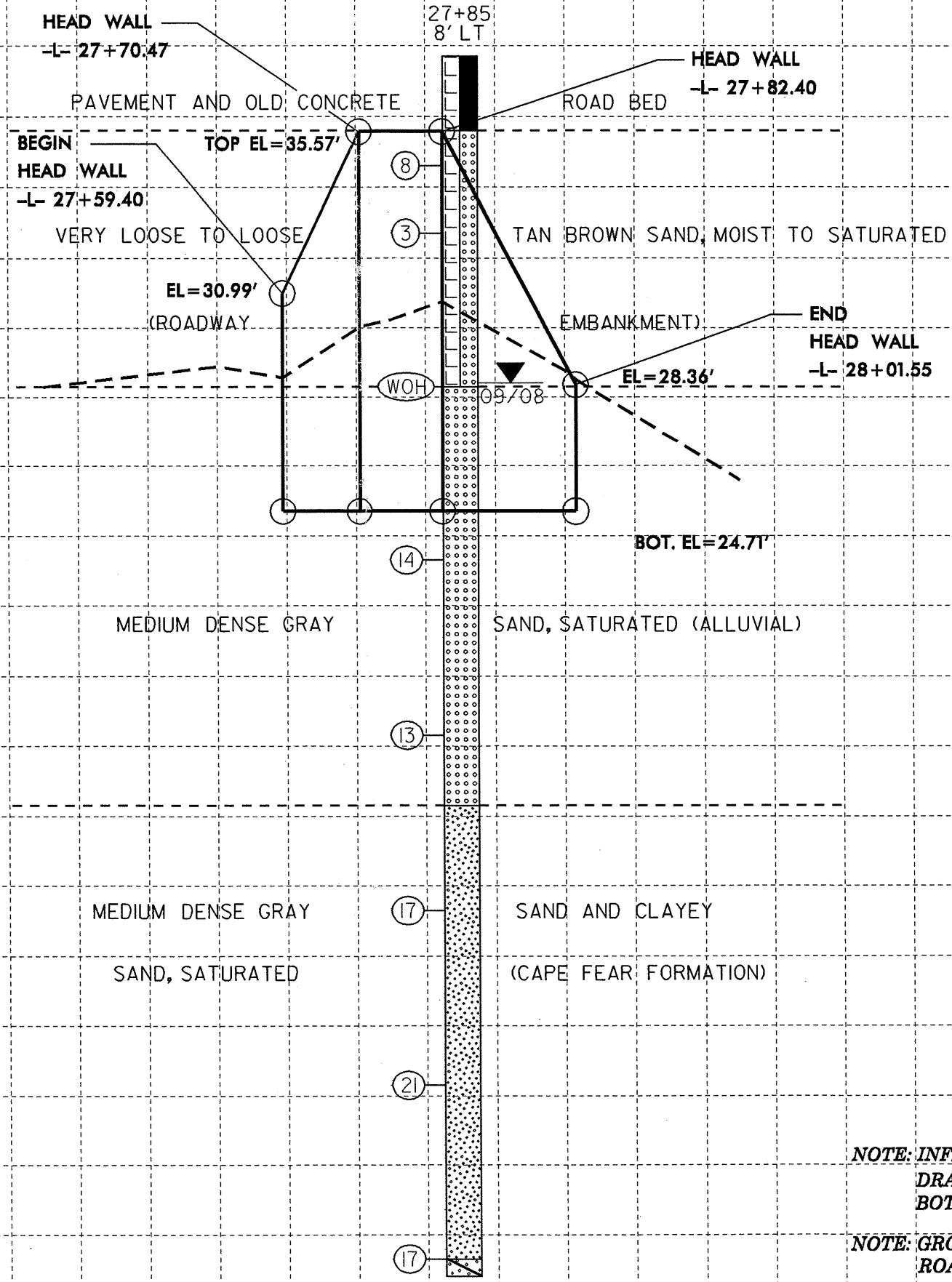
27+00

27+50

28+00

28+50

29+00



**NOTE: INFERRED STRATIGRAPHY**  
 DRAWN THROUGH BORINGS AND  
 BOTH ARE PROJECTED ON TO PROFILE

**NOTE: GROUND LINE PROFILE DERIVED FROM**  
 ROADWAY DESIGN FILE DATED 9/308

**B-2965**  
**SOILS TEST RESULTS**

HOLE #	SAMPLE #	PASS 10	PASS 40	PASS 200	CSESAND	FINESAND	SI	CL	LL	PI	CLASS	DEPTH	MOIST.	ORG.
27+85	SS-1	98	83	9	43.1	49.9	3.0	4.0	12	NP	A-3(0)	2.1-3.6		
8' LT	SS-2	96	58	11	60.7	29.7	5.6	4.0	17	NP	A-2-4(0)	13.4-14.9		
	SS-3	99	71	12	67.3	22.6	8.1	2.0	21	NP	A-2-4(0)	23.4-24.9		
	SS-4	61	38	22	49.0	18.6	14.3	18.0	32	11	A-2-6(0)	34.4-34.9		

REFERENCE: R-4436

PROJECT: 34625

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	R-4436	1	12

**STATE OF NORTH CAROLINA**  
**DEPARTMENT OF TRANSPORTATION**  
**DIVISION OF HIGHWAYS**  
**GEOTECHNICAL ENGINEERING UNIT**

**STRUCTURE**  
**SUBSURFACE INVESTIGATION**

COUNTY EDGEcombe  
PROJECT DESCRIPTION PRINCEVILLE DIKE PROJECT

**CONTENTS**

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2, 2A	LEGEND (SOIL & ROCK)
3, 4	SITE PLAN
5-II	BORE LOGS
12	SOIL TEST RESULTS

PERSONNEL  
C. DRISCOLL  
M. RADFORD

INVESTIGATED BY C. DRISCOLL  
DRAWN BY B. JOHNSON  
CHECKED BY T. WELLS  
SUBMITTED BY KLEINFELDER, INC.  
DATE JULY 2017

**CAUTION NOTICE**

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WERE MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N. C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL ENGINEERING UNIT AT (919) 707-6850. THE SUBSURFACE PLANS AND REPORTS, FIELD BORING LOGS, ROCK CORES AND SOIL TEST DATA ARE NOT PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE, OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THE PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

- NOTES:
- THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N. C. DEPARTMENT OF TRANSPORTATION AS ACCURATE NOR IS IT CONSIDERED PART OF THE PLANS, SPECIFICATIONS OR CONTRACT FOR THE PROJECT.
  - BY HAVING REQUESTED THIS INFORMATION, THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

Prepared in the Office of:



**KLEINFELDER**  
Bright People. Right Solutions.  
7343 WEST FRIENDLY AVENUE, SUITE B  
GREENSBORO, NC 27400  
ENGINEERING FIRM LICENSE NO. F-1312



DocuSigned by:  
Thomas R. Wells  
7DA5D2D0518F4B0... 7/26/2017  
SIGNATURE DATE

**DOCUMENT NOT CONSIDERED FINAL  
UNLESS ALL SIGNATURES COMPLETED**



NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT

**SUBSURFACE INVESTIGATION**  
SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS  
(PAGE 1 OF 2)

SOIL DESCRIPTION										GRADATION									
SOIL IS CONSIDERED UNCONSOLIDATED, SEMI-CONSOLIDATED, OR WEATHERED EARTH MATERIALS THAT CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER AND YIELD LESS THAN 100 BLOWS PER FOOT ACCORDING TO THE STANDARD PENETRATION TEST (AASHTO T 206, ASTM D1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM. BASIC DESCRIPTIONS GENERALLY INCLUDE THE FOLLOWING: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. FOR EXAMPLE, VERY STIFF, GRAY, SILTY CLAY, MOIST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6										WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORMLY GRADED - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLE SIZES OF TWO OR MORE SIZES.									
SOIL LEGEND AND AASHTO CLASSIFICATION										ANGULARITY OF GRAINS									
GENERAL CLASS. GRANULAR MATERIALS (<= 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS										MINERALOGICAL COMPOSITION									
GROUP CLASS. A-1, A-3, A-2, A-4, A-5, A-6, A-7, A-1-A2, A-3, A-4, A-5, A-6, A-7										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHEN THEY ARE CONSIDERED OF SIGNIFICANCE.									
SYMBOL										COMPRESSIBILITY									
% PASSING #10, #40, #200										SLIGHTLY COMPRESSIBLE LL < 31 MODERATELY COMPRESSIBLE LL = 31 - 50 HIGHLY COMPRESSIBLE LL > 50									
MATERIAL PASSING #40 LL, PI										PERCENTAGE OF MATERIAL									
GROUP INDEX										ORGANIC MATERIAL GRANULAR SOILS SILT - CLAY SOILS OTHER MATERIAL									
USUAL TYPES OF MAJOR MATERIALS										TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC > 10% > 20% HIGHLY 35% AND ABOVE									
GEN. RATING AS SUBGRADE										GROUND WATER									
EXCELLENT TO GOOD FAIR TO POOR FAIR TO POOR POOR UNSUITABLE										▽ WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING ▽ STATIC WATER LEVEL AFTER 24 HOURS ▽PW PERCHED WATER, SATURATED ZONE, OR WATER BEARING STRATA ○ SPRING OR SEEP									
CONSISTENCY OR DENSENESS										MISCELLANEOUS SYMBOLS									
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT <sup>2</sup> )										ROADWAY EMBANKMENT (RE) WITH SOIL DESCRIPTION 25/025 DIP & DIP DIRECTION OF ROCK STRUCTURES SOIL SYMBOL SPT DMT VST PMT TEST BORING ARTIFICIAL FILL (AF) OTHER THAN ROADWAY EMBANKMENT AUGER BORING CORE BORING MONITORING WELL INFERRED SOIL BOUNDARY INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY									
TEXTURE OR GRAIN SIZE										RECOMMENDATION SYMBOLS									
U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.76 2.00 0.42 0.25 0.075 0.053										UNDERCUT UNCLASSIFIED EXCAVATION - UNSUITABLE WASTE UNCLASSIFIED EXCAVATION - ACCEPTABLE, BUT NOT TO BE USED IN THE TOP 3 FEET OF EMBANKMENT OR BACKFILL SHALLOW UNDERCUT UNCLASSIFIED EXCAVATION - ACCEPTABLE DEGRADABLE ROCK									
GRAIN SIZE MM 305 75 2.0 0.25 0.05 0.005 IN. 12 3										ABBREVIATIONS									
SOIL MOISTURE - CORRELATION OF TERMS										AR - AUGER REFUSAL MED. - MEDIUM VST - VANE SHEAR TEST BT - BORING TERMINATED MICA - MICACEOUS WEA. - WEATHERED CL - CLAY MOD. - MODERATELY ? - UNIT WEIGHT CPT - CONE PENETRATION TEST NP - NON PLASTIC 7/6 - DRY UNIT WEIGHT CSE. - COARSE ORG. - ORGANIC DMT - DILATOMETER TEST PMT - PRESSUREMETER TEST SAMPLE ABBREVIATIONS DPT - DYNAMIC PENETRATION TEST SAP. - SAPROLITIC S - BULK e - VOID RATIO SD. - SAND, SANDY SD. - SAND, SANDY F - FINE SL. - SILT, SILTY SLI. - SLIGHTLY ST - SHELBY TUBE FOSS. - FOSSILIFEROUS TCR - TRICONE REFUSAL RS - ROCK FRAC. - FRACTURED, FRACTURES W - MOISTURE CONTENT RT - RECOMPACTED TRIAXIAL FRAGS. - FRAGMENTS RT - RECOMPACTED TRIAXIAL HI. - HIGHLY V - VERY CBR - CALIFORNIA BEARING RATIO									
PLASTICITY										EQUIPMENT USED ON SUBJECT PROJECT									
PLASTICITY INDEX (PI) DRY STRENGTH										DRILL UNITS: ADVANCING TOOLS: HAMMER TYPE:									
NON PLASTIC 0-5 VERY LOW SLIGHTLY PLASTIC 6-15 SLIGHT MODERATELY PLASTIC 16-25 MEDIUM HIGHLY PLASTIC 26 OR MORE HIGH										CLAY BITS 6' CONTINUOUS FLIGHT AUGER 8" HOLLOW AUGERS HARD FACED FINGER BITS TUNG-CARBIDE INSERTS CASING W/ ADVANCER TRICONE STEEL TEETH TRICONE 2-1/8" TUNG-CARB. CORE BIT									
COLOR										CORE SIZE: B H N HAND TOOLS: POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST									
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YELLOW-BROWN, BLUE-GRAY). MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.										CME-45C CME-55 CME-550 VANE SHEAR TEST PORTABLE HOIST CME-45D									

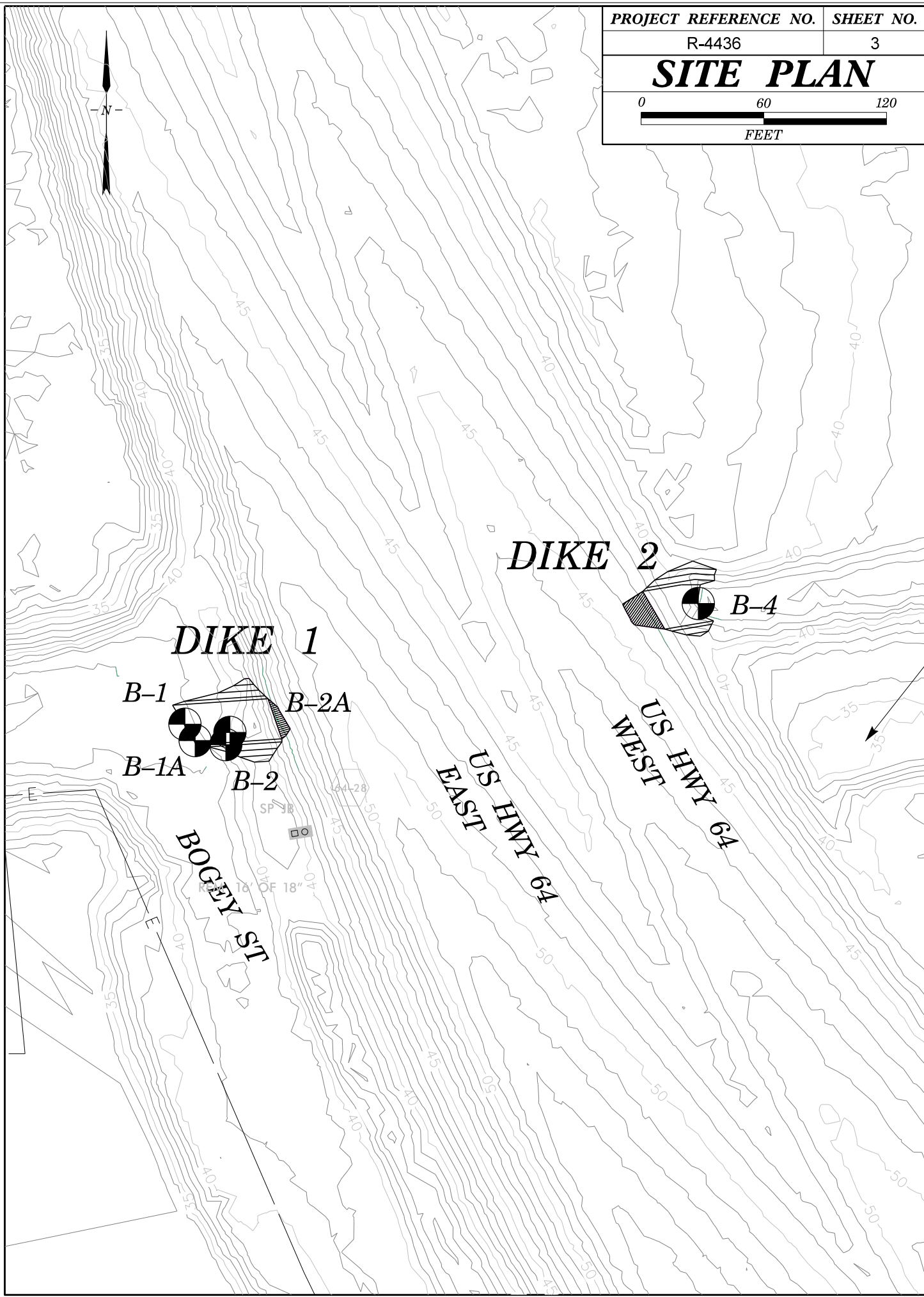
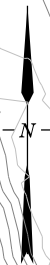
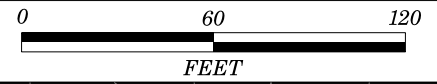
**NORTH CAROLINA DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS  
GEOTECHNICAL ENGINEERING UNIT**

# SUBSURFACE INVESTIGATION

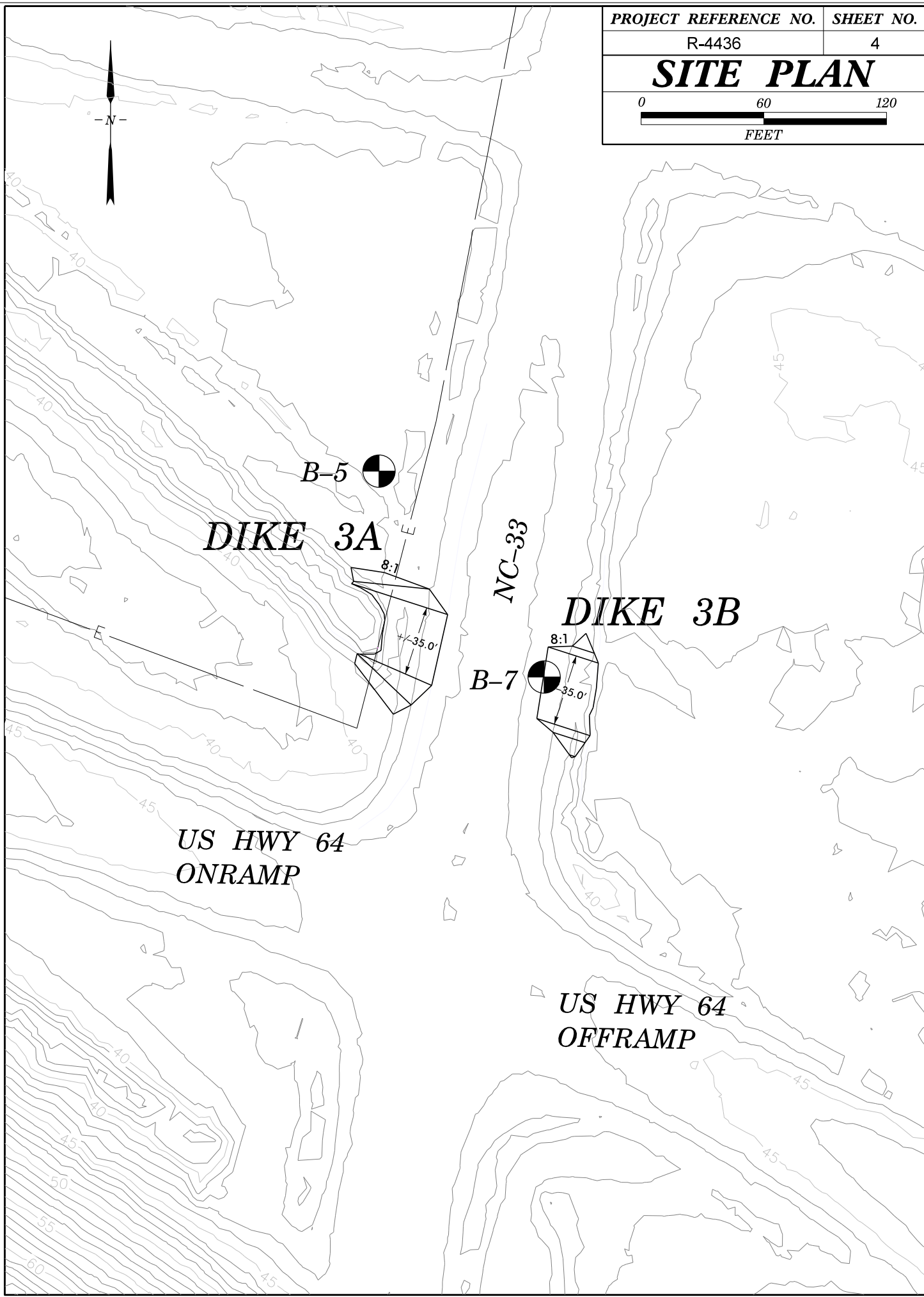
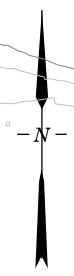
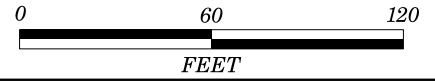
## SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS (PAGE 2 OF 2)

ROCK DESCRIPTION		TERMS AND DEFINITIONS	
<p>HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WOULD YIELD SPT REFUSAL IF TESTED. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS IN NON-COASTAL PLAIN MATERIAL. THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS:</p>		<p><b>ALLUVIUM (ALLUV.)</b> - SOILS THAT HAVE BEEN TRANSPORTED BY WATER.</p> <p><b>AQUIFER</b> - A WATER BEARING FORMATION OR STRATA.</p> <p><b>ARENACEOUS</b> - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND.</p> <p><b>ARGILLACEOUS</b> - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, SUCH AS SHALE, SLATE, ETC.</p> <p><b>ARTESIAN</b> - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IT IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE.</p> <p><b>CALCAREOUS (CALC.)</b> - SOILS THAT CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE.</p> <p><b>COLLUVIUM</b> - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE.</p> <p><b>CORE RECOVERY (REC.)</b> - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.</p> <p><b>DIKE</b> - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK.</p> <p><b>DIP</b> - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL.</p> <p><b>DIP DIRECTION (DIP AZIMUTH)</b> - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH.</p> <p><b>FAULT</b> - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE.</p> <p><b>FISSILE</b> - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES.</p> <p><b>FLOAT</b> - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLODGED FROM PARENT MATERIAL.</p> <p><b>FLOOD PLAIN (FP)</b> - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM.</p> <p><b>FORMATION (FM.)</b> - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD.</p> <p><b>JOINT</b> - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED.</p> <p><b>LEDGE</b> - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT.</p> <p><b>LENS</b> - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS.</p> <p><b>MOTTLED (MOT.)</b> - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE.</p> <p><b>PERCHED WATER</b> - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM.</p> <p><b>RESIDUAL (RES.) SOIL</b> - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK.</p> <p><b>ROCK QUALITY DESIGNATION (ROD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE.</p> <p><b>SAPROLITE (SAP.)</b> - RESIDUAL SOIL THAT RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK.</p> <p><b>SILL</b> - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, THAT HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS.</p> <p><b>SLICKENSIDE</b> - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE.</p> <p><b>STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT)</b> - NUMBER OF BLOWS IN OR BPF) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS PENETRATION EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS.</p> <p><b>STRATA CORE RECOVERY (SREC.)</b> - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE.</p> <p><b>STRATA ROCK QUALITY DESIGNATION (SROD)</b> - A MEASURE OF ROCK QUALITY DESCRIBED BY TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE.</p> <p><b>TOPSOIL (TS.)</b> - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.</p>	
	<b>WEATHERING</b>		
FRESH	ROCK FRESH, CRYSTALS BRIGHT, FEW JOINTS MAY SHOW SLIGHT STAINING. ROCK RINGS UNDER HAMMER IF CRYSTALLINE.		
VERY SLIGHT (V SL.)	ROCK GENERALLY FRESH, JOINTS STAINED, SOME JOINTS MAY SHOW THIN CLAY COATINGS IF OPEN. CRYSTALS ON A BROKEN SPECIMEN FACE SHINE BRIGHTLY. ROCK RINGS UNDER HAMMER BLOWS IF OF A CRYSTALLINE NATURE.		
SLIGHT (SL.)	ROCK GENERALLY FRESH, JOINTS STAINED AND DISCOLORATION EXTENDS INTO ROCK UP TO 1 INCH. OPEN JOINTS MAY CONTAIN CLAY. IN GRANITOID ROCKS SOME OCCASIONAL FELDSPAR CRYSTALS ARE DULL AND DISCOLORED. CRYSTALLINE ROCKS RING UNDER HAMMER BLOWS.		
MODERATE (MOD.)	SIGNIFICANT PORTIONS OF ROCK SHOW DISCOLORATION AND WEATHERING EFFECTS. IN GRANITOID ROCKS, MOST FELDSPARS ARE DULL AND DISCOLORED, SOME SHOW CLAY. ROCK HAS DULL SOUND UNDER HAMMER BLOWS AND SHOWS SIGNIFICANT LOSS OF STRENGTH AS COMPARED WITH FRESH ROCK.		
MODERATELY SEVERE (MOD. SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. IN GRANITOID ROCKS, ALL FELDSPARS DULL AND DISCOLORED AND A MAJORITY SHOW KAOLINIZATION. ROCK SHOWS SEVERE LOSS OF STRENGTH AND CAN BE EXCAVATED WITH A GEOLOGIST'S PICK. ROCK GIVES "CLUNK" SOUND WHEN STRUCK. <u>IF TESTED, WOULD YIELD SPT REFUSAL</u>		
SEVERE (SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC CLEAR AND EVIDENT BUT REDUCED IN STRENGTH TO STRONG SOIL. IN GRANITOID ROCKS ALL FELDSPARS ARE KAOLINIZED TO SOME EXTENT. SOME FRAGMENTS OF STRONG ROCK USUALLY REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES &gt; 100 BPF</u>		
VERY SEVERE (V SEV.)	ALL ROCK EXCEPT QUARTZ DISCOLORED OR STAINED. ROCK FABRIC ELEMENTS ARE DISCERNIBLE BUT MASS IS EFFECTIVELY REDUCED TO SOIL STATUS, WITH ONLY FRAGMENTS OF STRONG ROCK REMAINING. SAPROLITE IS AN EXAMPLE OF ROCK WEATHERED TO A DEGREE THAT ONLY MINOR VESTIGES OF ORIGINAL ROCK FABRIC REMAIN. <u>IF TESTED, WOULD YIELD SPT N VALUES &lt; 100 BPF</u>		
COMPLETE	ROCK REDUCED TO SOIL. ROCK FABRIC NOT DISCERNIBLE, OR DISCERNIBLE ONLY IN SMALL AND SCATTERED CONCENTRATIONS. QUARTZ MAY BE PRESENT AS DIKES OR STRINGERS. SAPROLITE IS ALSO AN EXAMPLE.		
<b>ROCK HARDNESS</b>			
VERY HARD	CANNOT BE SCRATCHED BY KNIFE OR SHARP PICK. BREAKING OF HAND SPECIMENS REQUIRES SEVERAL HARD BLOWS OF THE GEOLOGIST'S PICK.		
HARD	CAN BE SCRATCHED BY KNIFE OR PICK ONLY WITH DIFFICULTY. HARD HAMMER BLOWS REQUIRED TO DETACH HAND SPECIMEN.		
MODERATELY HARD	CAN BE SCRATCHED BY KNIFE OR PICK. GOUGES OR GROOVES TO 0.25 INCHES DEEP CAN BE EXCAVATED BY HARD BLOW OF A GEOLOGIST'S PICK. HAND SPECIMENS CAN BE DETACHED BY MODERATE BLOWS.		
MEDIUM HARD	CAN BE GROOVED OR GOUGED 0.05 INCHES DEEP BY FIRM PRESSURE OF KNIFE OR PICK POINT. CAN BE EXCAVATED IN SMALL CHIPS TO PIECES 1 INCH MAXIMUM SIZE BY HARD BLOWS OF THE POINT OF A GEOLOGIST'S PICK.		
SOFT	CAN BE GROOVED OR GOUGED READILY BY KNIFE OR PICK. CAN BE EXCAVATED IN FRAGMENTS FROM CHIPS TO SEVERAL INCHES IN SIZE BY MODERATE BLOWS OF A PICK POINT. SMALL, THIN PIECES CAN BE BROKEN BY FINGER PRESSURE.		
VERY SOFT	CAN BE CARVED WITH KNIFE. CAN BE EXCAVATED READILY WITH POINT OF PICK. PIECES 1 INCH OR MORE IN THICKNESS CAN BE BROKEN BY FINGER PRESSURE. CAN BE SCRATCHED READILY BY FINGER NAIL.		
<b>FRACTURE SPACING</b>		<b>BEDDING</b>	
<b>TERM</b>	<b>SPACING</b>	<b>TERM</b>	<b>THICKNESS</b>
VERY WIDE	MORE THAN 10 FEET	VERY THICKLY BEDDED	4 FEET
WIDE	3 TO 10 FEET	THICKLY BEDDED	1.5 - 4 FEET
MODERATELY CLOSE	1 TO 3 FEET	THINLY BEDDED	0.16 - 1.5 FEET
CLOSE	0.16 TO 1 FOOT	VERY THINLY BEDDED	0.03 - 0.16 FEET
VERY CLOSE	LESS THAN 0.16 FEET	THICKLY LAMINATED	0.008 - 0.03 FEET
		THINLY LAMINATED	< 0.008 FEET
<b>INDURATION</b>			
FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC.			
FRIABLE	RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE.		
MODERATELY INDURATED	GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER.		
INDURATED	GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER.		
EXTREMELY INDURATED	SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.		
		BENCH MARK: N/A	
		ELEVATION: N/A FEET	
<b>NOTES:</b>			
FIAD: FILLED IMMEDIATELY AFTER DRILLING			
ELEVATIONS WERE ESTIMATED FROM ACAD_PRINCEVILLE DESIGN.DGN FILE RECEIVED ON JULY 5, 2017.			
DATE: 8-15-14			

# SITE PLAN



# SITE PLAN



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 34625.1.1		TIP R-4436		COUNTY EDGEcombe		GEOLOGIST Driscoll, F. C.												
SITE DESCRIPTION Princeville Dike Project							GROUND WTR (ft)											
BORING NO. B-1		STATION N/A		OFFSET N/A		ALIGNMENT N/A												
COLLAR ELEV. 42.0 ft		TOTAL DEPTH 14.0 ft		NORTHING 776,335		EASTING 2,435,901												
DRILL RIG/HAMMER EFF./DATE BR12296 CME-45D 84% 05/04/2016				DRILL METHOD H.S. Augers		HAMMER TYPE Automatic												
DRILLER Radford, M.		START DATE 07/06/17		COMP. DATE 07/06/17		SURFACE WATER DEPTH N/A												
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						ELEV. (ft)		
45																		
	41.0	1.0													42.0	GROUND SURFACE	0.0	
40	38.5	3.5	3	3	4							SS-1	11%		<b>COASTAL PLAIN</b> Dark Brown to Light Brown, Silty, Fine SAND (Duplin Formation)			
	36.0	6.0	5	5	5							SS-2	8%					
35	33.5	8.5	4	4	5							SS-3	8%					
	31.0	11.0	4	4	8							SS-4	9%					
30	28.5	13.5	3	3	3							SS-5	21%			31.5	Light Brown-Tan, Coarse SAND (Duplin Formation)	10.5
			15									SS-6	20%			28.0	Boring Terminated at Elevation 28.0 ft In COASTAL PLAIN: Coarse SAND (Duplin Formation)	14.0

NCDOT BORE SINGLE R4436\_GEO\_GINT.GPJ NC\_DOT.GDT 7/19/17



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 34625.1.1			TIP R-4436			COUNTY EDGEcombe			GEOLOGIST Driscoll, F. C.							
SITE DESCRIPTION Princeville Dike Project										GROUND WTR (ft)						
BORING NO. B-2			STATION N/A			OFFSET N/A			ALIGNMENT N/A							
COLLAR ELEV. 40.0 ft			TOTAL DEPTH 25.1 ft			NORTHING 776,325			EASTING 2,435,921							
DRILL RIG/HAMMER EFF./DATE BR12296 CME-45D 84% 05/04/2016						DRILL METHOD Mud Rotary			HAMMER TYPE Automatic							
DRILLER Radford, M.			START DATE 07/06/17			COMP. DATE 07/06/17			SURFACE WATER DEPTH N/A							
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)	
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						
40	40.0	0.0	2	3	7	10									40.0	0.0
35	36.6	3.4	5	4	5	9						7%		COASTAL PLAIN Dark Brown to Light Brown, Silty, Fine SAND (Duplin Formation)		
	31.6	8.4	5	6	6	12						15%				
25	26.5	13.5	4	3	4	7						23%		Light Brown-Tan to Gray, Coarse to Fine SAND (Duplin Formation)	27.0	13.0
	21.6	18.4	8	7	9	16						20%				
15	16.4	23.6	8	11	10	21						22%		Gray-Brown, Silty, Fine SAND (Duplin Formation)	17.0	23.0
												28%				14.9
														Boring Terminated at Elevation 14.9 ft In COASTAL PLAIN: Silty, Fine SAND (Duplin Formation)		

NCDOT BORE SINGLE R4436\_GEO\_GINT.GPJ NC\_DOT.GDT 7/19/17

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 34625.1.1			TIP R-4436			COUNTY EDGEcombe			GEOLOGIST Driscoll, F. C.								
SITE DESCRIPTION Princeville Dike Project										GROUND WTR (ft)							
BORING NO. B-2A			STATION N/A			OFFSET N/A			ALIGNMENT N/A								
COLLAR ELEV. 40.0 ft			TOTAL DEPTH 10.2 ft			NORTHING 776,331			EASTING 2,435,923								
DRILL RIG/HAMMER EFF./DATE BR12296 CME-45D 84% 05/04/2016						DRILL METHOD Mud Rotary			HAMMER TYPE Automatic								
DRILLER Radford, M.			START DATE 07/07/17			COMP. DATE 07/07/17			SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION			
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)		
40															40.0	GROUND SURFACE	0.0
	40.0	0.0	1	1	3	•	•	•	•	•	SS-45	8%	•			<b>COASTAL PLAIN</b>	
	37.8	2.2	3	4	4	•	•	•	•	•	SS-46	9%	•			Dark Brown, Silty, Fine SAND (Duplin Formation)	
35	35.8	4.2	1	1	8	•	•	•	•	•	SS-47	19%	•	36.0	---	Light Brown-Tan, Coarse to Fine SAND (Duplin Formation)	4.0
	33.8	6.2	7	8	7	•	•	•	•	•	SS-48	17%	•	34.0	---	Light Brown, Silty, Fine SAND (Duplin Formation)	6.0
30	31.8	8.2	3	6	7	•	•	•	•	•	SS-49	14%	•				
															29.8		10.2
Boring Terminated at Elevation 29.8 ft In COASTAL PLAIN: Silty, Fine SAND (Duplin Formation)																	

NCDOT BORE SINGLE R4436\_GEO\_GINT.GPJ NC\_DOT.GDT 7/19/17



# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 34625.1.1			TIP R-4436			COUNTY EDGEcombe			GEOLOGIST Driscoll, F. C.								
SITE DESCRIPTION Princeville Dike Project										GROUND WTR (ft)							
BORING NO. B-4			STATION N/A			OFFSET N/A			ALIGNMENT N/A								
COLLAR ELEV. 42.0 ft			TOTAL DEPTH 25.1 ft			NORTHING 776,394			EASTING 2,436,152								
DRILL RIG/HAMMER EFF./DATE BR12296 CME-45D 84% 05/04/2016						DRILL METHOD Mud Rotary			HAMMER TYPE Automatic								
DRILLER Radford, M.			START DATE 07/07/17			COMP. DATE 07/07/17			SURFACE WATER DEPTH N/A								
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100							
45																	
	42.0	0.0													42.0	GROUND SURFACE	
40	40.0	2.0	4	6	8	14					SS-29	10%			<b>COASTAL PLAIN</b> Light-Dark Brown to Tan-Brown, Silty, Fine to Coarse SAND (Duplin Formation)		
	38.0	4.0	10	8	10	18					SS-30	12%					
	36.0	6.0	2	1	7	23					SS-31	17%					
35	34.0	8.0	8	11	12	15					SS-32	21%					
			1	7	8						SS-33	20%					
30	28.4	13.6	3	2	2	4					SS-34	24%				29.0	Red-Brown, Coarse to Fine SAND with trace gravel (Duplin Formation)
25	23.4	18.6	5	9	9	18					SS-35	24%		24.0	Gray, Clayey, Fine SAND (Duplin Formation)	18.0	
20	18.4	23.6	7	11	19	30					SS-36	26%		20.0	Gray, Coarse to Fine Sandy, Silty CLAY (Duplin Formation)	22.0	
														16.9	Boring Terminated at Elevation 16.9 ft In COASTAL PLAIN: Clayey, Fine SAND (Duplin Formation)		25.1

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 34625.1.1		TIP R-4436		COUNTY EDGEcombe		GEOLOGIST Driscoll, F. C.										
SITE DESCRIPTION Princeville Dike Project							GROUND WTR (ft)									
BORING NO. B-5		STATION N/A		OFFSET N/A		ALIGNMENT N/A	0 HR. N/A									
COLLAR ELEV. 38.0 ft		TOTAL DEPTH 25.1 ft		NORTHING 775,644		EASTING 2,437,425	24 HR. FIAD									
DRILL RIG/HAMMER EFF./DATE BR12296 CME-45D 84% 05/04/2016				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic										
DRILLER Radford, M.		START DATE 07/07/17		COMP. DATE 07/07/17		SURFACE WATER DEPTH N/A										
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100				ELEV. (ft)	DEPTH (ft)	
40																
	38.0	0.0	2	4	2										38.0	GROUND SURFACE
	35.9	2.1	1	1	2						SS-13	9%				<b>COASTAL PLAIN</b>
	33.9	4.1	WOH		1	1					SS-14	14%				Dark Brown to Light-Dark Brown, Silty, Fine SAND (Duplin Formation)
	31.9	6.1	8	10	13						SS-15	20%				
	29.9	8.1	1	2	2						SS-16	21%			32.0	Light Brown-Tan, Coarse to Fine SAND (Duplin Formation)
											SS-17	22%			30.0	Dark Green, Silty, Fine to Coarse SAND (Duplin Formation)
	24.4	13.6	3	2	2											
											SS-18	28%				
	19.4	18.6	7	4	5										21.0	Dark Green-Gray, Clayey, Coarse to Fine SAND (Duplin Formation)
											SS-19	30%				
	14.4	23.6	4	5	6										16.0	Dark Green-Gray, Silty, Fine to Coarse SAND (Duplin Formation)
											SS-20	29%			12.9	Boring Terminated at Elevation 12.9 ft In COASTAL PLAIN: Silty, Fine SAND (Duplin Formation)

NCDOT BORE SINGLE R4436\_GEO\_GINT.GPJ NC\_DOT.GDT 7/21/17

# GEOTECHNICAL BORING REPORT

## BORE LOG

WBS 34625.1.1		TIP R-4436		COUNTY EDGEcombe		GEOLOGIST Driscoll, F. C.											
SITE DESCRIPTION Princeville Dike Project							GROUND WTR (ft)										
BORING NO. B-7		STATION N/A		OFFSET N/A		ALIGNMENT N/A	0 HR. N/A										
COLLAR ELEV. 42.0 ft		TOTAL DEPTH 25.2 ft		NORTHING 775,543		EASTING 2,437,506	24 HR. FIAD										
DRILL RIG/HAMMER EFF./DATE BR12296 CME-45D 84% 05/04/2016				DRILL METHOD Mud Rotary		HAMMER TYPE Automatic											
DRILLER Radford, M.		START DATE 07/07/17		COMP. DATE 07/07/17		SURFACE WATER DEPTH N/A											
ELEV (ft)	DRIVE ELEV (ft)	DEPTH (ft)	BLOW COUNT			BLOWS PER FOOT					SAMP. NO.	MOI	LOG	SOIL AND ROCK DESCRIPTION	DEPTH (ft)		
			0.5ft	0.5ft	0.5ft	0	25	50	75	100						ELEV. (ft)	
45																	
	42.0	0.0													42.0	GROUND SURFACE	
40	40.0	2.0	10	6	5	11					SS-21	12%					
	38.0	4.0	8	7	7	14					SS-22	11%					
	36.0	6.0	1	2	5	7					SS-23	18%			36.3	Light Brown, Silty, Fine SAND (Duplin Formation)	
35	34.0	8.0	3	2	2	4					SS-24	21%				5.7	Light Brown, Fine to Coarse SAND (Duplin Formation)
			1	2	3	5					SS-25	20%					
30	28.3	13.7				4										29.0	Dark Green to Dark Gray, Silty, Fine SAND (Duplin Formation)
	23.3	18.7	3	2	2	4					SS-26	27%					
25			2	2	4	6					SS-27	30%					
20	18.3	23.7	9	9	7	16					SS-28	28%			16.8	Boring Terminated at Elevation 16.8 ft In COASTAL PLAIN: Silty, Fine SAND (Duplin Formation)	

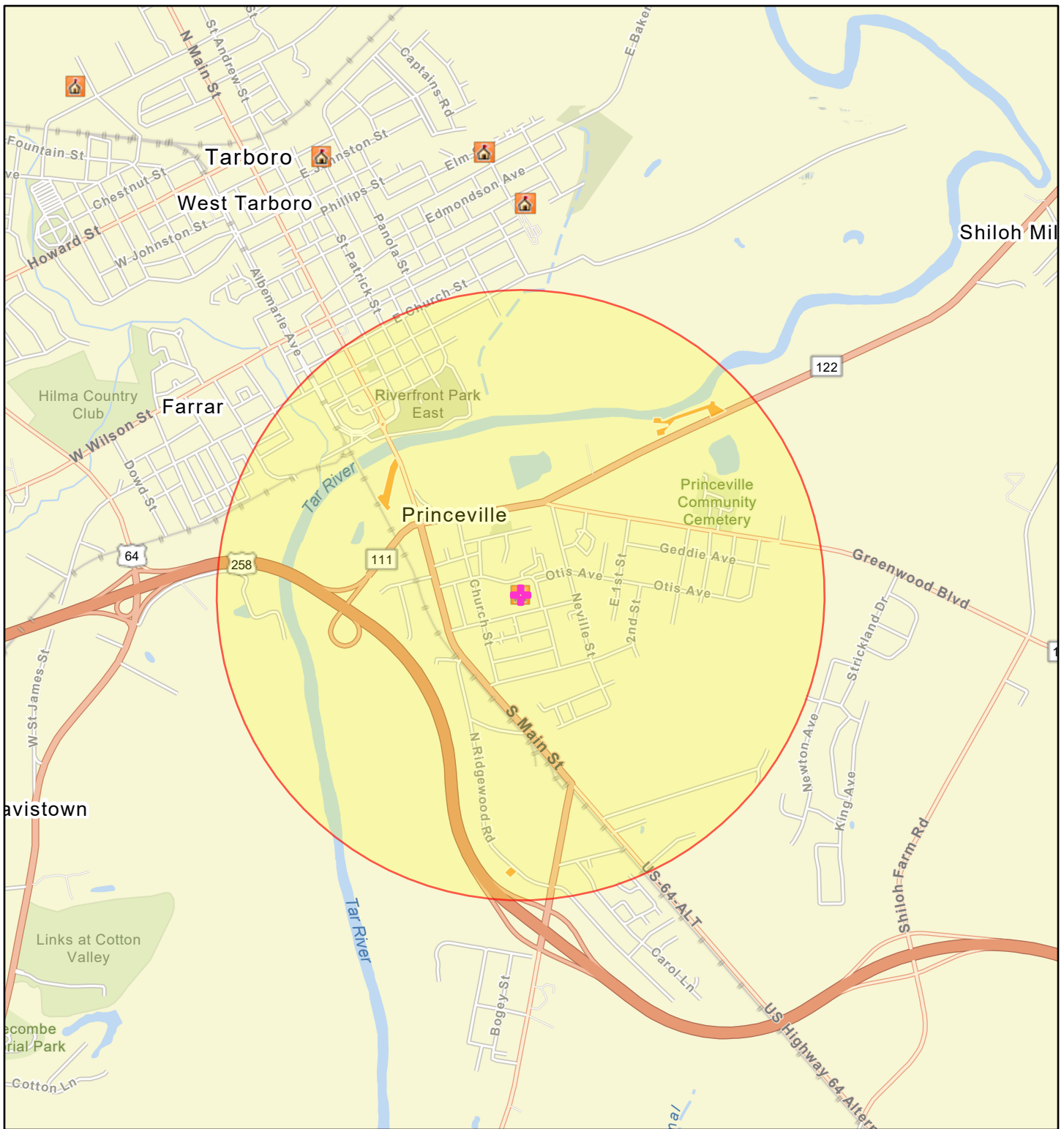
NCDOT BORE SINGLE R4436\_GEO\_GINT.GPJ NC\_DOT.GDT 7/19/17



## **ATTACHMENT 17:**







### **Educational and Cultural Facilities**

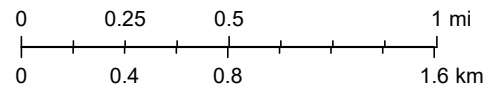
# Princeville Elementary School - One-mile Radius



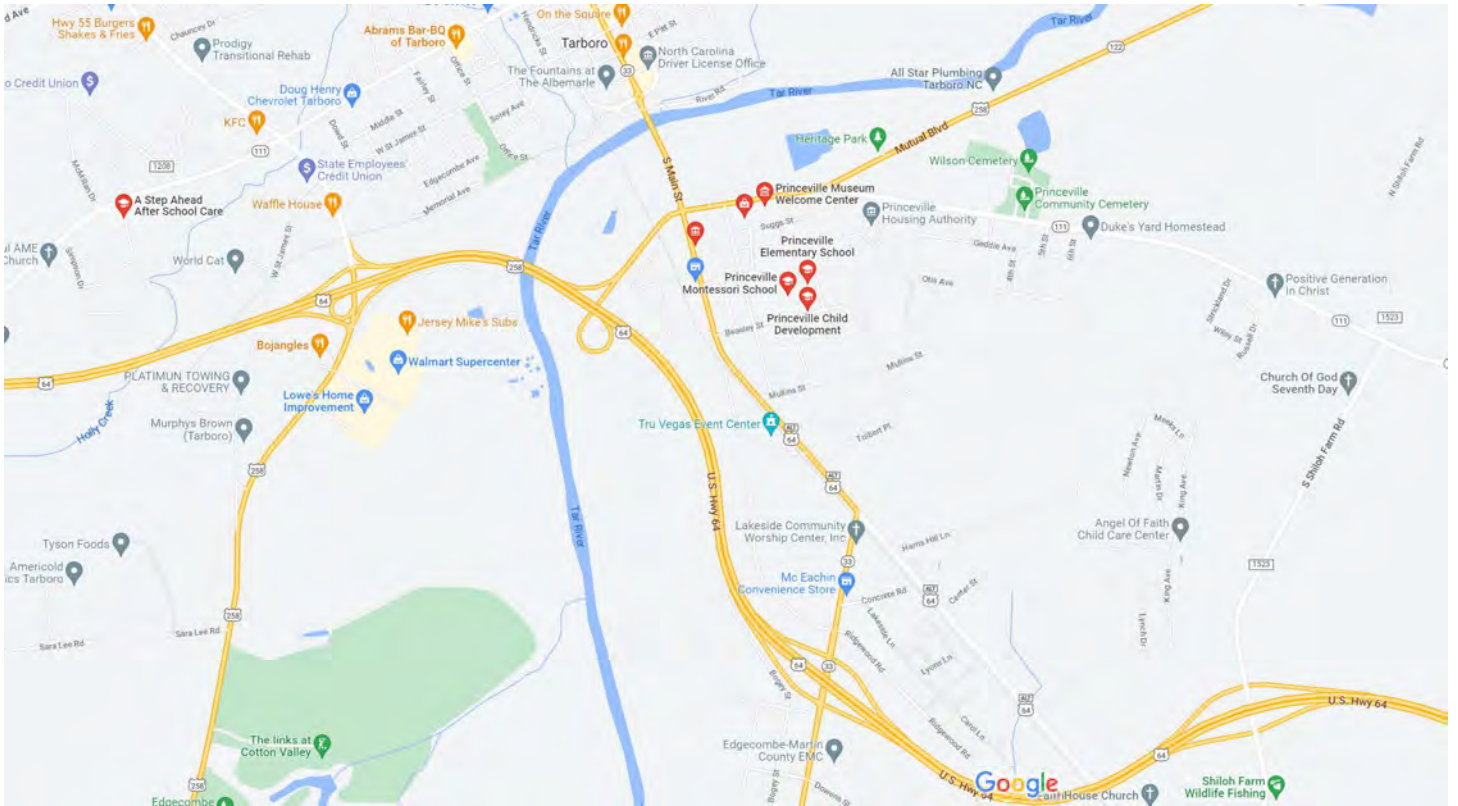
June 16, 2022

1:36,112

-  Project Buffer
-  Princeville Elementary School
-  structure 1 - princeville levee floodgate repairs
-  structure 4 - princeville levee floodgate repairs
-  structures 2 & 3 - princeville levee floodgate repairs
-  Schools



State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA, EPA OEI, OFA



Map data ©2023 1000 ft

Rating Hours All filters

**Princeville Elementary School**  
4.8 (4)  
Elementary school · 306 Walston St  
(252) 823-4718

[Website](#) [Directions](#)

**Princeville Montessori School**  
No reviews  
Elementary school · 306 Walston St  
(252) 823-4718

[Website](#) [Directions](#)

**Princeville Child Development**  
No reviews  
Preschool · 405 Beasley St  
(252) 823-6282

[Directions](#)

**Pattillo Middle School**  
2.3 (3)  
Middle school · 501 East Ave  
(252) 823-3812

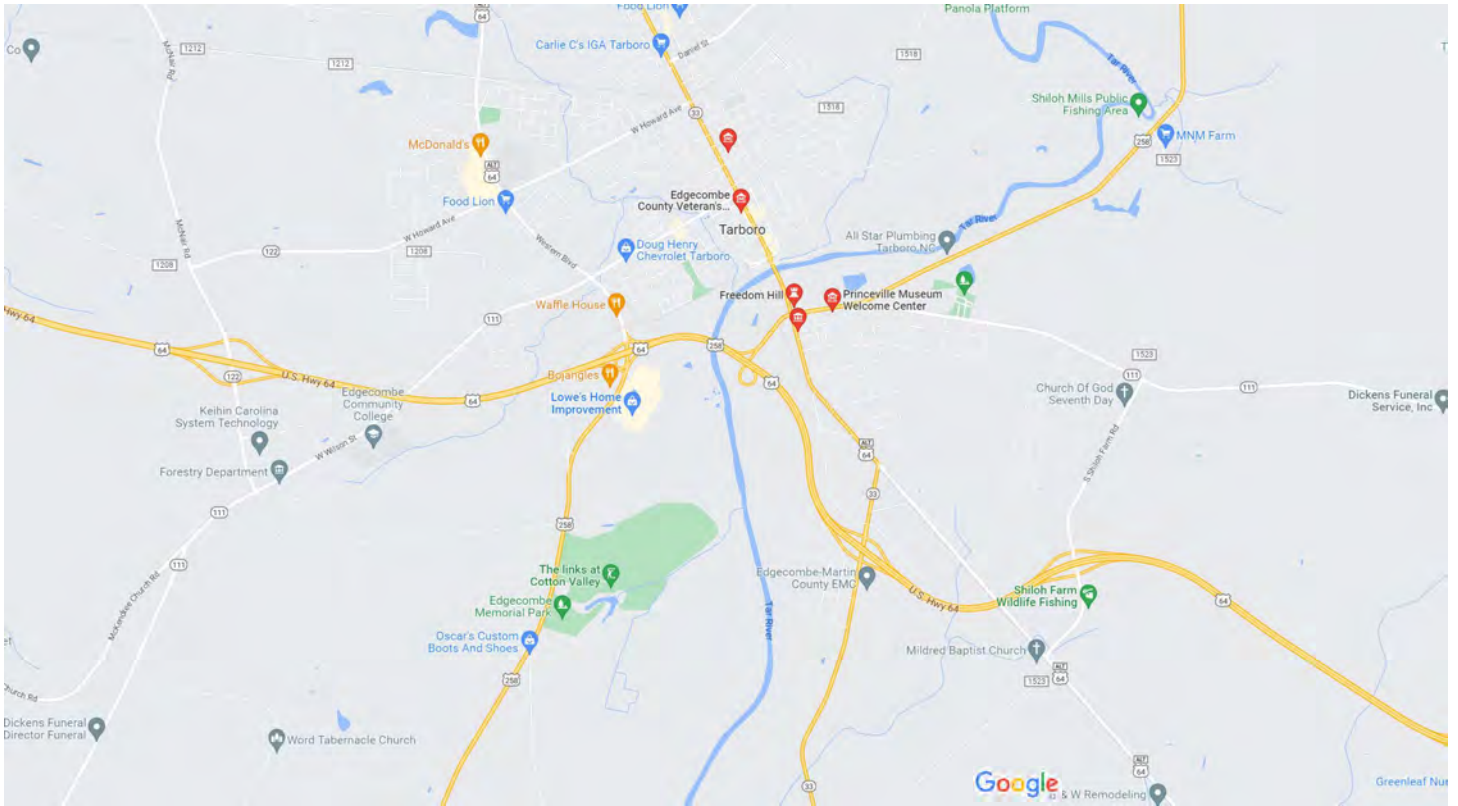
[Website](#) [Directions](#)

**Princeville Town Hall**  
4.0 (1)  
City government office · 201 S Main St  
Open now · (252) 641-6816

[Website](#) [Directions](#)


**Martin Millennium Academy**  
3.9 (9)  
Middle school · 400 E Johnston St  
(252) 641-5710



[Website](#) [Directions](#)





Map data ©2023 2000 ft


Rating 

**Princeville Museum Welcome Center**  
4.8 (6)  
Museum · 310 Mutual Blvd  
(252) 823-8500 

**Blount-Bridgers House**  
4.4 (37)  
Art museum · 130 Bridgers St  
Open · Closes 4 PM · (252) 823-4159  

**Hobson Pittman Memorial Gallery**  
3.5 (2)  
Museum · 130 Bridgers St  
Open · Closes 4 PM · (252) 823-4159 

**Edgemombe County Veteran's Military Museum**  
4.8 (42)  
Museum · 106 W Church St  
Closed · Opens 10 AM Fri · (252) 823-0891  
 "The museum has so much to offer.. so much history."

**Freedom Hill**  
5.0 (1)  
Historical landmark · 90 N Shiloh Farm Rd 

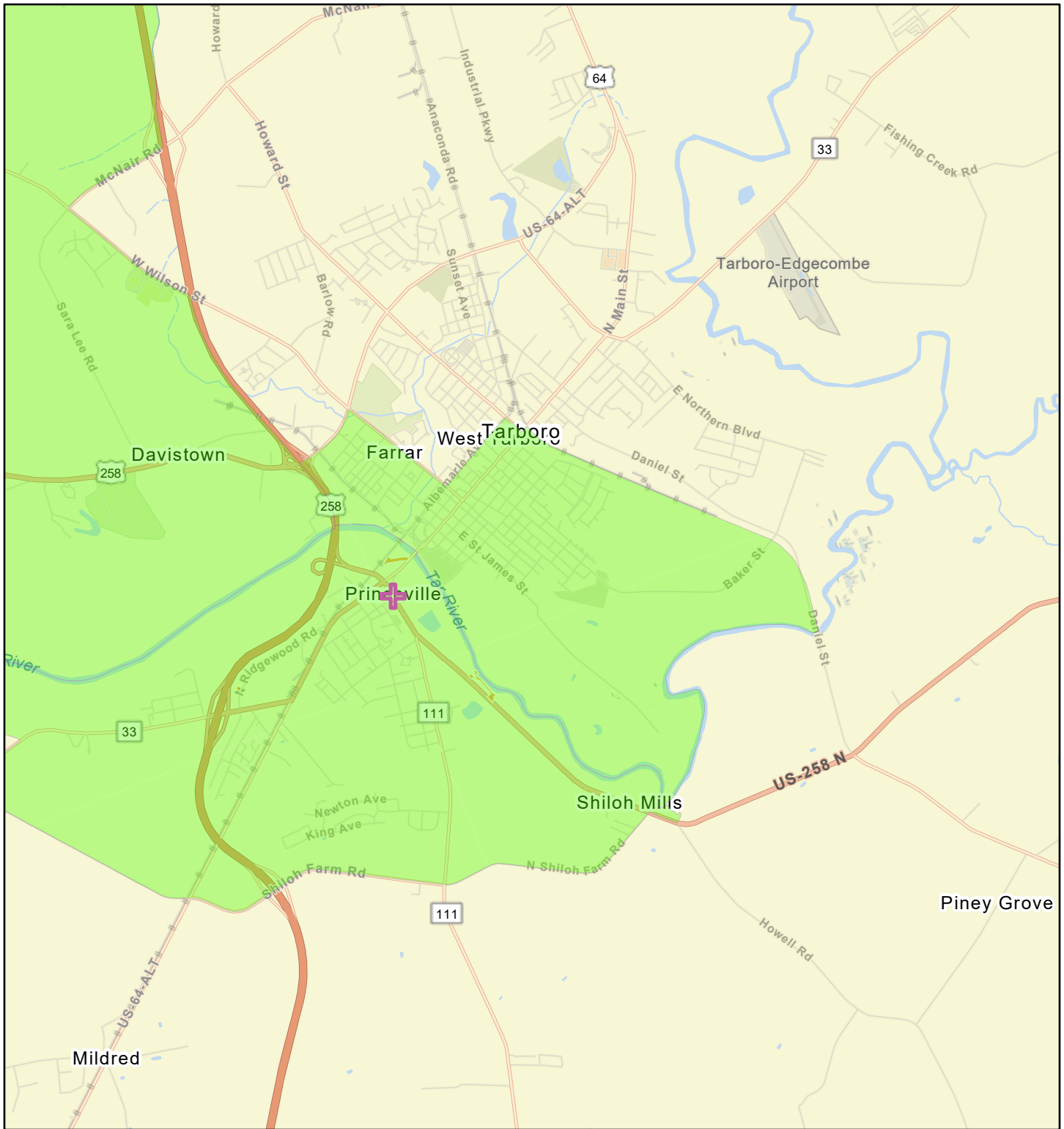
**Princeville Town Hall**  
4.0 (1)  
 



**ATTACHMENT 18:**






**Commercial Facilities**

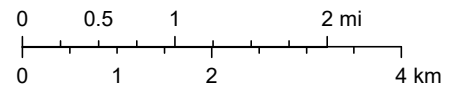
# Princeville - Qualified Opportunity Zone



June 16, 2022

1:72,224

-  US Dept of Treasury Opportunity Zones
-  Search Result (point)
-  structure 1 - princeville levee floodgate repairs
-  structure 4 - princeville levee floodgate repairs
-  structures 2 & 3 - princeville levee floodgate repairs



State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, USDA



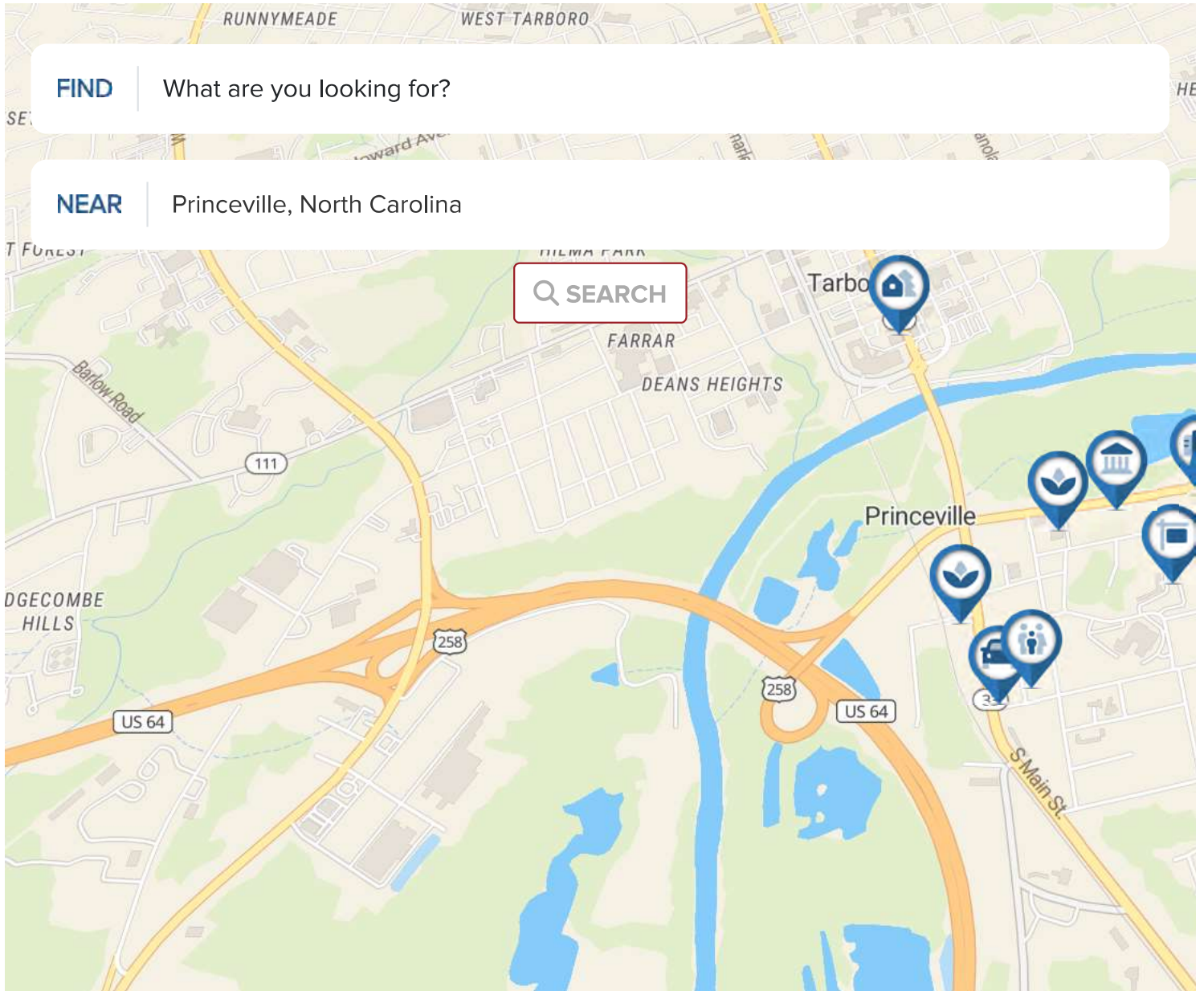
**FIND**

What are you looking for?

**NEAR**

Princeville, North Carolina

SEARCH



## PRINCEVILLE CHAMBER OF COMMERCE

Princeville is considered a Small Town with a population of 1,966 and 31 businesses. 0 in 2018 were added to the Princeville Chamber of Commerce business directory which was less than 2017 which had 0. The economy of Princeville employs 1,060 people and has an unemployment rate of 14%.

Some of the largest industries in Princeville are Auto Repair (4), Various Denomination & Non-Denominati Churches (2), and Transmissions Auto Repairing (2).

# BUSINESSES IN PRINCEVILLE, NC

## Featured Businesses



### **Brown's Legacy Group, LLC**

**Business To Business Service**

301 Otis Ave  
Princeville, North Carolina 27886  
**(919) 803-9783**

**( 0 Reviews )**



### **St Luke Church of Christ**

**Church Of Christ**

101 Neville St  
Princeville, NC 27886  
**(252) 563-6545**

**( 11 Reviews )**



### **J E Simmons Furniture Co**

**Mattress Store**

208 S Main St  
Princeville, NC 27886  
**(252) 823-3230**

**( 1 Review )**



## Gateway To Heaven Church Inc

Church

311 2nd St  
Princeville, NC 27886

(252) 641-0946

( 7 Reviews )



## Princeville Volunteer Fire

Fire Station

312 Mutual Blvd  
Princeville, NC 27886

(252) 823-8115

( 1 Review )



## Hinton's Body Shop

Auto Body Shop

328 Neville St  
Princeville, NC 27886

(252) 907-3384

( 2 Reviews )



## Macedonia Baptist Church

Baptist Church

315 Beasley St  
Princeville, NC 27886

(252) 641-4754

( 4 Reviews )



## Macclesfield Volunteer Fire Dept

Fire Station

104 3rd St  
Princeville, NC 27886  
(252) 827-5344

( 5 Reviews )



## Dollar General

Dollar Store, Beauty Supply Store, Candy Store

306 Mutual Blvd  
Princeville, NC 27886  
(252) 563-2633

( 143 Reviews )



## Positive Generation In Christ

Church

934 Greenwood Blvd  
Princeville, NC 27886  
(252) 824-7350

( 1 Review )

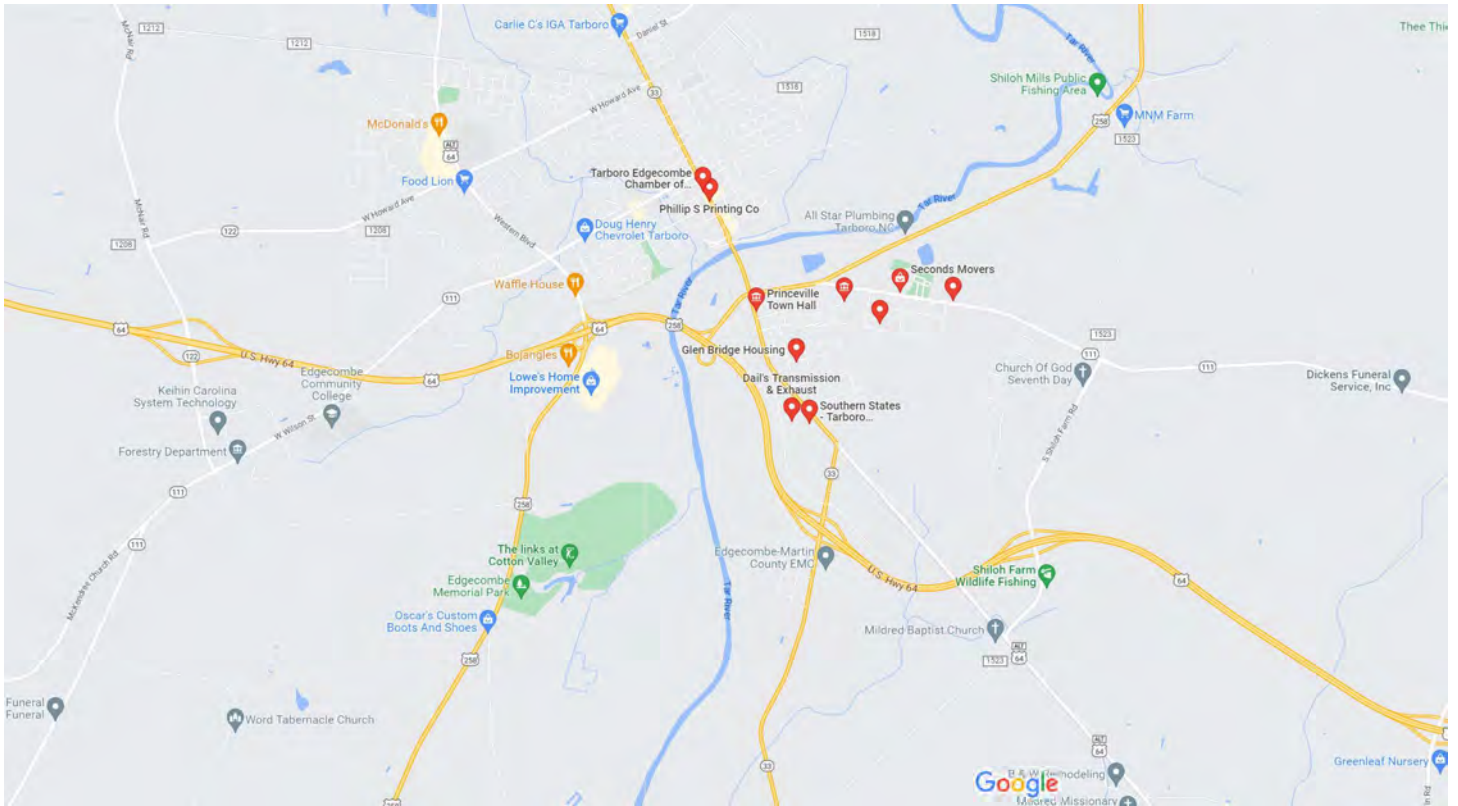
## BROWSE CATEGORIES

Shopping (6)

Government (4)

Family & Community (4)

Automotive & Vehicles (3)



Map data ©2023 2000 ft

Hours [All filters](#)

### Simplified Payments Solutions

No reviews  
Business management consultant  
Open · Closes 5:30 PM · (919) 307-7754



[Directions](#)

### Brown's Legacy Group, LLC

No reviews  
Business to business service · 301 Otis Ave  
Open · Closes 5 PM · (919) 803-9783



[Website](#)



[Directions](#)

### Craft Trucking and Farms LLC

No reviews  
Trucking company  
Open · Closes 6 PM · (252) 714-2797



[Website](#)



[Directions](#)

### Seconds Movers

4.6 (19)  
Mover · 705 Greenwood Blvd  
Open 24 hours · (252) 214-9360



[Directions](#)

### Eastern Seaboard Service Company, LLC

No reviews  
Lighting consultant  
Open · Closes 7 PM · (888) 866-2247  
Online estimates



[Website](#)



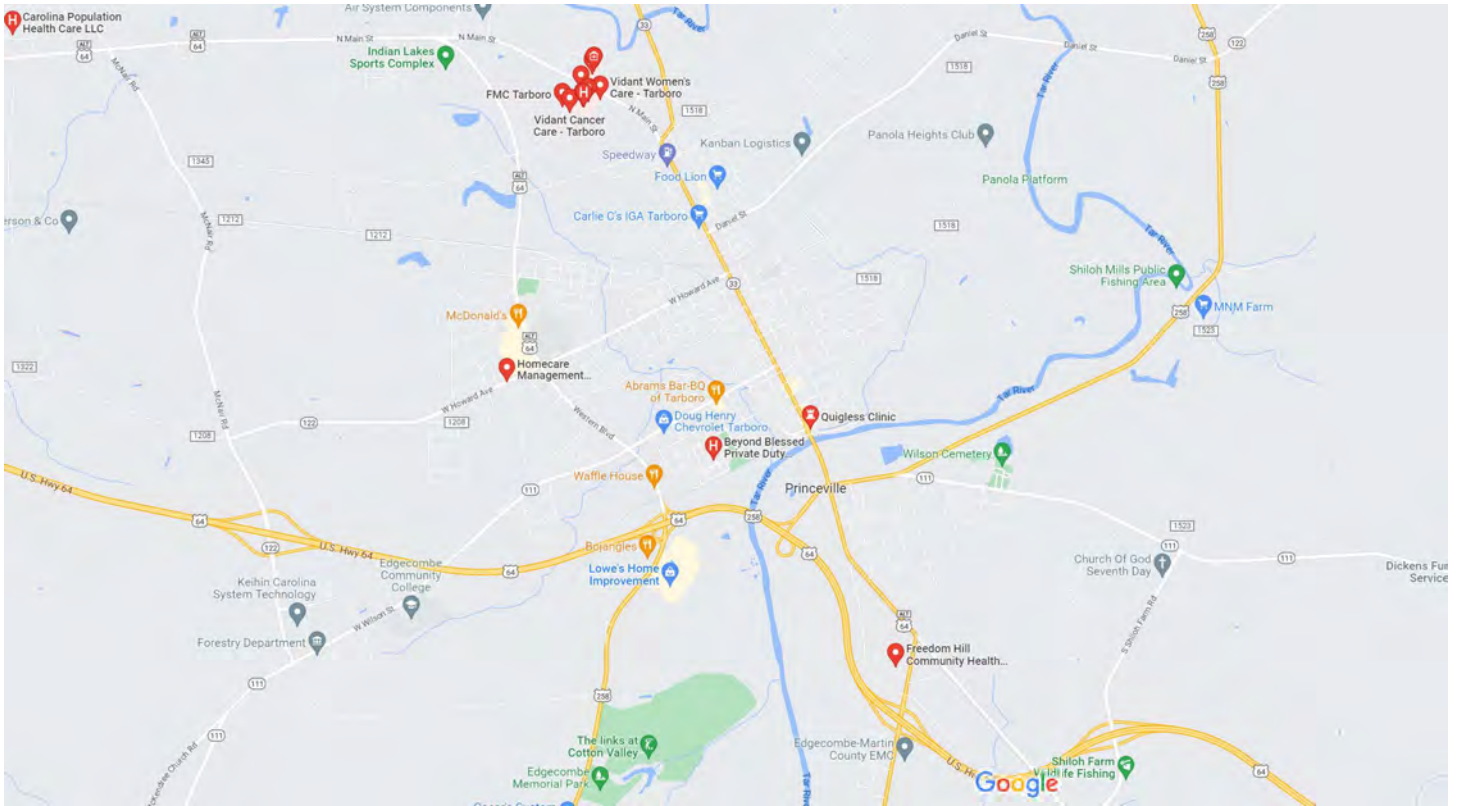
[Directions](#)

## **ATTACHMENT 19:**

### **Health Care and Social Services**



hospitals in Princeville, NC



Map data ©2023 2000 ft

Rating Hours All filters

**ECU Health Edgecombe Hospital**

2.6 (62)  
 General hospital · 111 Hospital Dr  
 Open 24 hours · (252) 641-7700

[Website](#) [Directions](#)

**ECU Health Edgecombe Hospital Emergency Department**

1.8 (5)  
 Emergency room · 111 Hospital Dr  
 Open 24 hours · (252) 641-7700

[Website](#) [Directions](#)

**Freedom Hill Community Health Center**

4.1 (67)  
 Community health centre · 162 NC-33  
 Open · Closes 5PM · (252) 641-0514

[Website](#) [Directions](#)

**Beyond Blessed Private Duty Companion Services LLC**

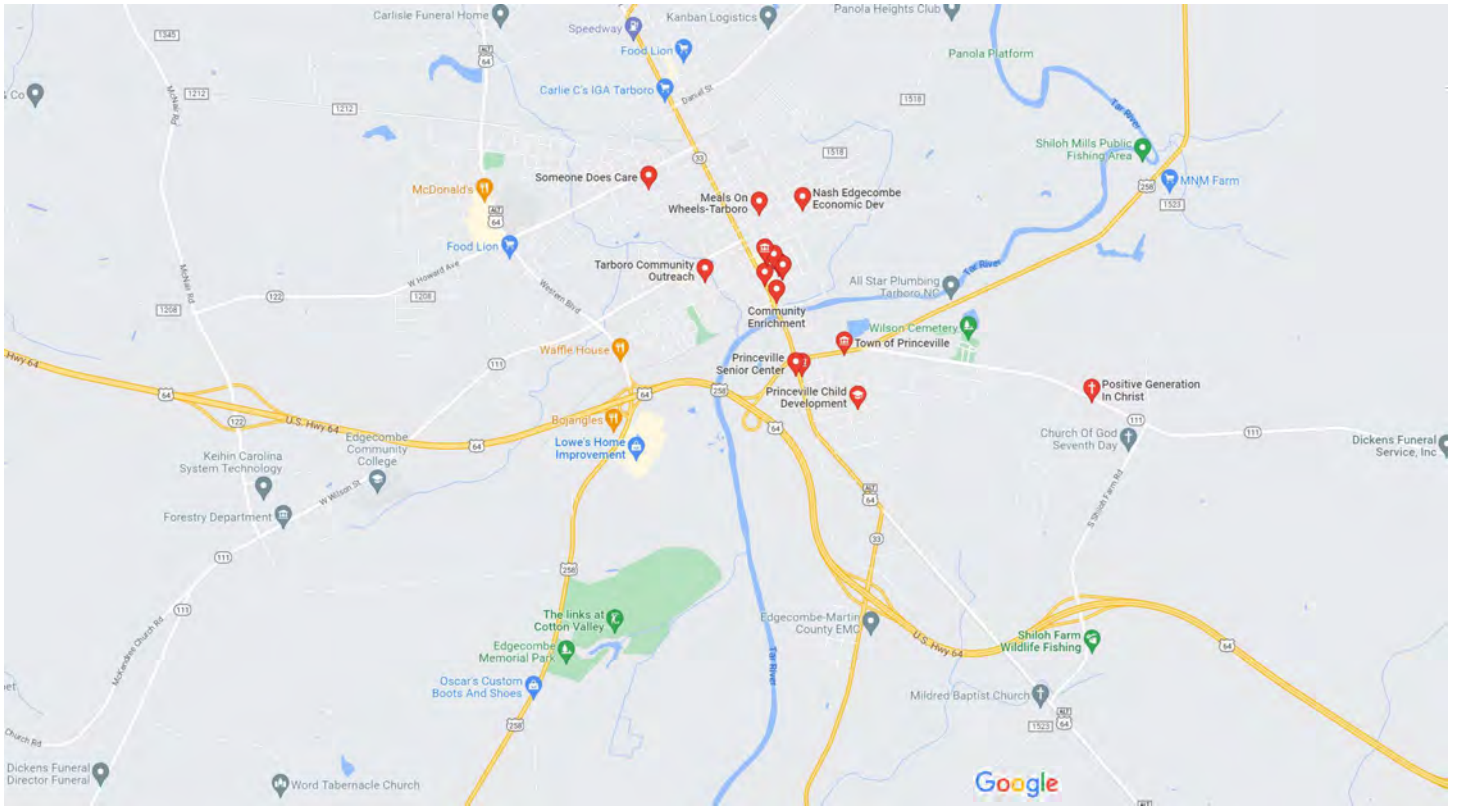
No reviews  
 Private hospital · 300 Virginia Ave  
 Open · Closes 5PM · (252) 886-0718

[Directions](#)

**Heritag Hospital: Peterson Noel MD**

No reviews  
 Doctor · 111 Hospital Dr #301  
 Open now · (252) 641-7229

[Directions](#)



Map data ©2023 2000 ft

Rating Hours All filters

**Edgecombe County Department of Social Services**

1.9 (8)  
Government office · 122 E St James St  
Open now · (252) 641-7611

[Website](#) [Directions](#)

**Nash Edgecombe Economic Dev**

3.7 (3)  
Social services organization · 607 E Wilson St  
(252) 823-3269

[Directions](#)

**Edgecombe County Child Support**

2.0 (5)  
Social services organization · 301 St Andrew St  
Open · Closes 5PM · (252) 641-7955

[Website](#) [Directions](#)

**Positive Generation In Christ**

3.0 (1)  
Church · 934 Greenwood Blvd  
(252) 824-7350

[Directions](#)

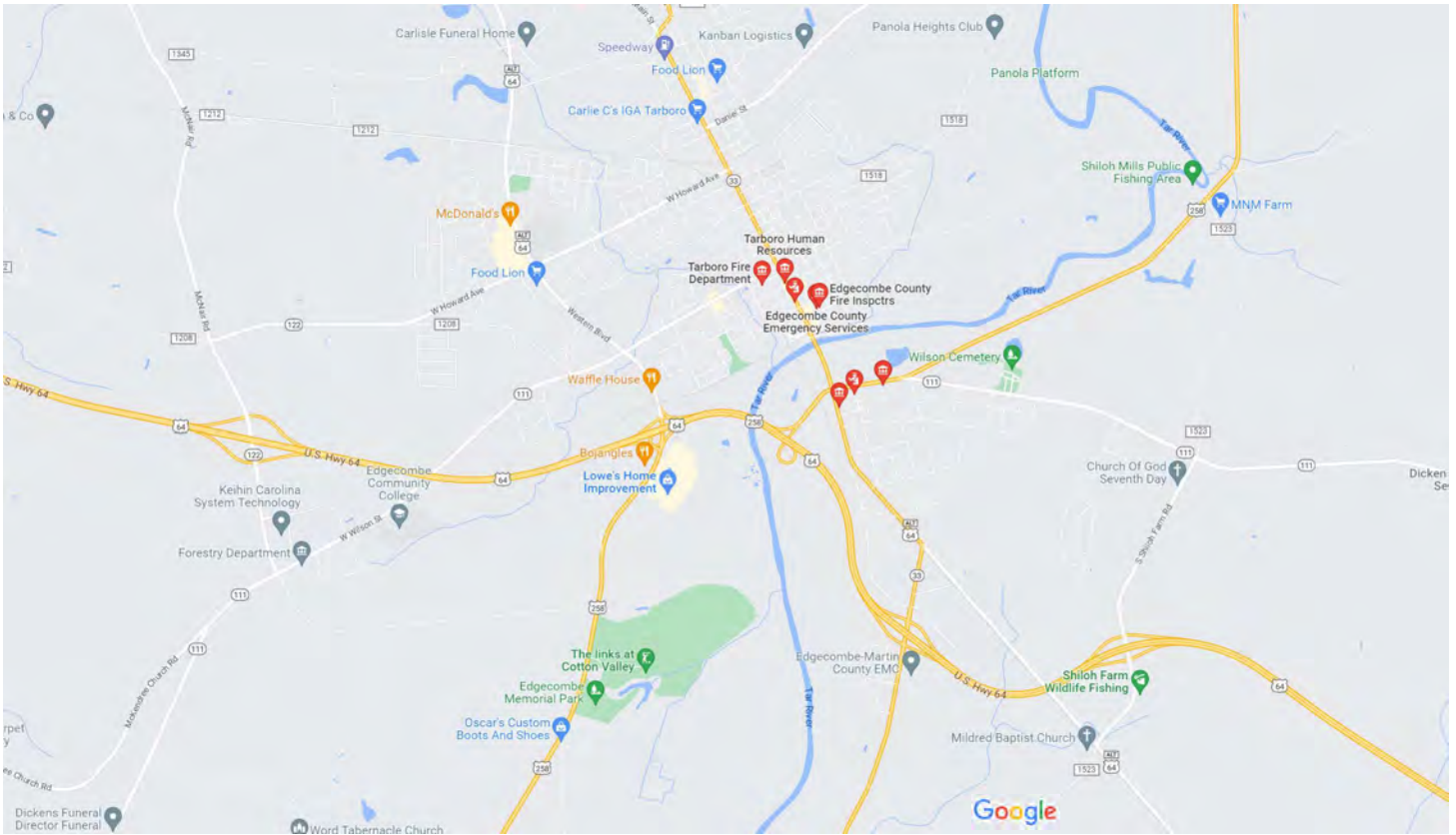
**Someone Does Care**

No reviews  
Assisted living facility · 201 St Andrew St  
Open · Closes 5PM · (252) 641-5790

[Directions](#)

**ATTACHMENT 20:**

**Public Safety – Police, Fire and Emergency Medical**



Map data ©2023 2000 ft

Rating All filters

**Princeville Volunteer Fire**

5.0 (1)  
Fire station · 312 Mutual Blvd  
(252) 823-8115



[Directions](#)

**Tarboro Police Department**

No reviews  
Police department · 106 Church St  
(252) 641-4247



[Directions](#)

**Tarboro Fire Department**

No reviews  
Fire station · 205 W St John St  
(252) 641-4288



[Website](#)



[Directions](#)

**Edgecombe County Fire Inspctrs**

No reviews  
County government office · 201 St Andrew St # 233  
(252) 641-7843



[Directions](#)

**Edgecombe County Emergency Services**

3.0 (1)  
City Hall · 201 St Andrew St # 233  
(252) 641-7816



[Website](#)



[Directions](#)

**Tarboro Police Department**

5.0 (2)  
Police department · 318 N Main St



[Website](#)

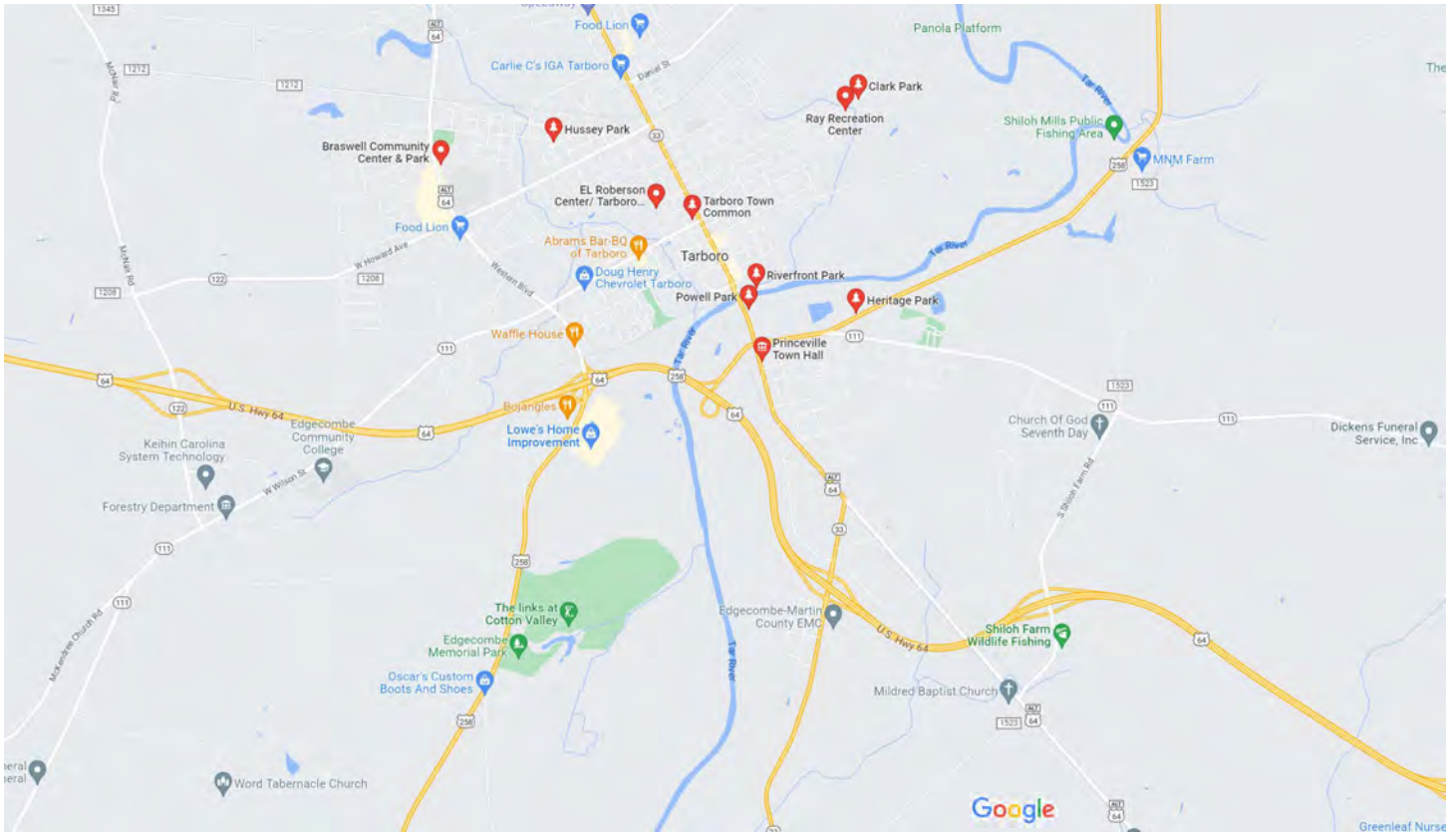


[Directions](#)

## **ATTACHMENT 21:**

### **Parks, Open Space and Recreation**


Google Maps Parks Search Results, Planning  
Princeville's Heritage Trail, and Trail Map




Map data ©2023 2000 ft

Rating Hours All filters

**Powell Park**  
 No reviews  
 Park



**Heritage Park**  
 3.4 (7)  
 Park · 428 Mutual Blvd  
 Open now




"Cute little park with restroom and playground for the kids."


**Hussey Park**  
 No reviews  
 Park · 809 Linden St



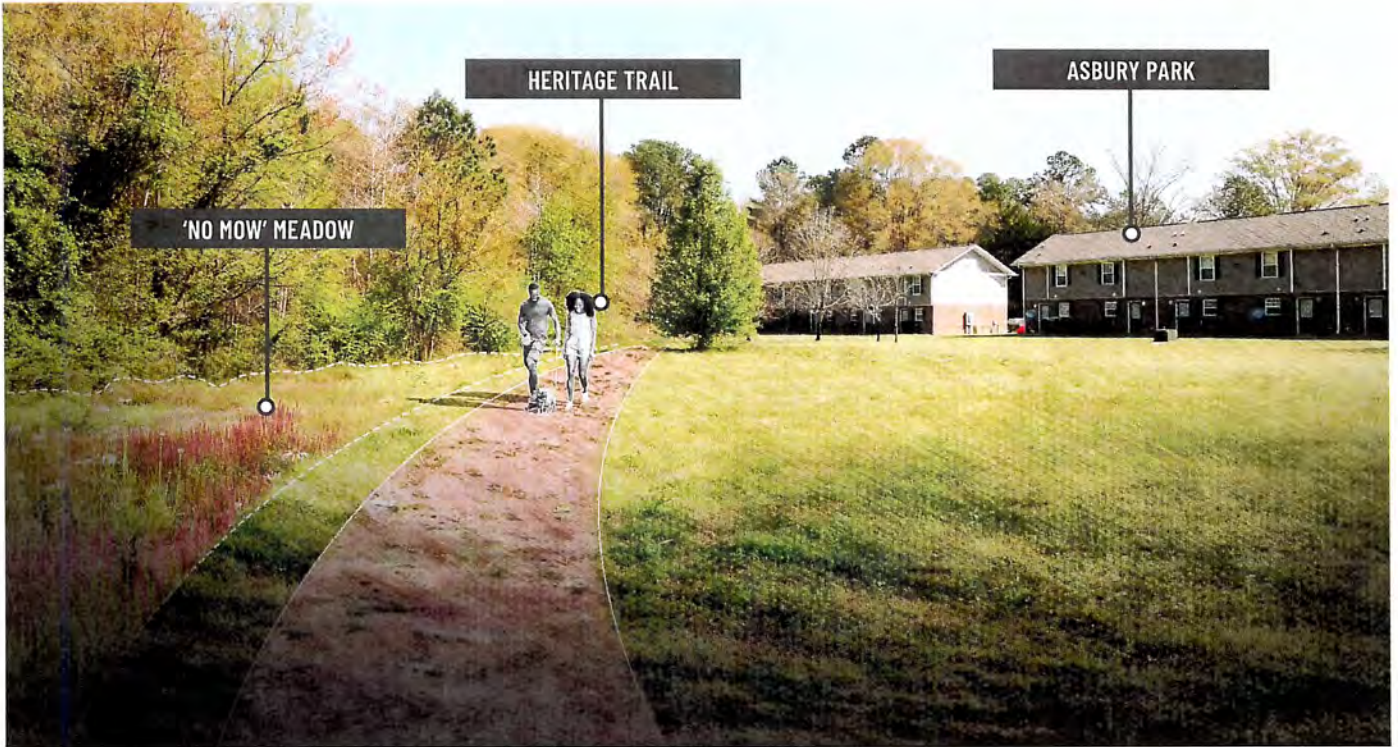
**E. L. Roberson Center/ Tarboro Parks & Recreation Administration**  
 4.8 (20)  
 Park · 305 W Baker St  
 Closed · Opens 8 AM Fri



**Riverfront Park**  
 4.7 (16)  
 Park · 100 River Rd



"Beautiful park with a nice pavilion and a boat launch."



# PLANNING PRINCEVILLE'S HERITAGE TRAIL

GIVE YOUR INPUT AS WE BUILD A RESILIENT FUTURE TOGETHER

The Town of Princeville is working with NC State University, the Conservation Trust for North Carolina, and the Conservation Corps North Carolina to build the first phases of the Heritage Trail and Princeville Elementary School Rain Gardens.

The Heritage Trail will be a nature trail built by crews of local young people. It will allow people to walk from Princeville Elementary School to the Princeville History Museum. The Heritage Trail will also educate youth, residents, and visitors about nature and the role of water in the community.

We are looking for input on this exciting project from you, your friends and your family!

**WILL YOU PLEASE HELP IMPROVE THE PROJECT BY SHARING YOUR THOUGHTS?**

Scan the QR CODE below to access the survey.



Or use the following link :

<http://bitly.ws/cl24>

# HERITAGE TRAIL

## GIVE YOUR INPUT!

### BACKGROUND:

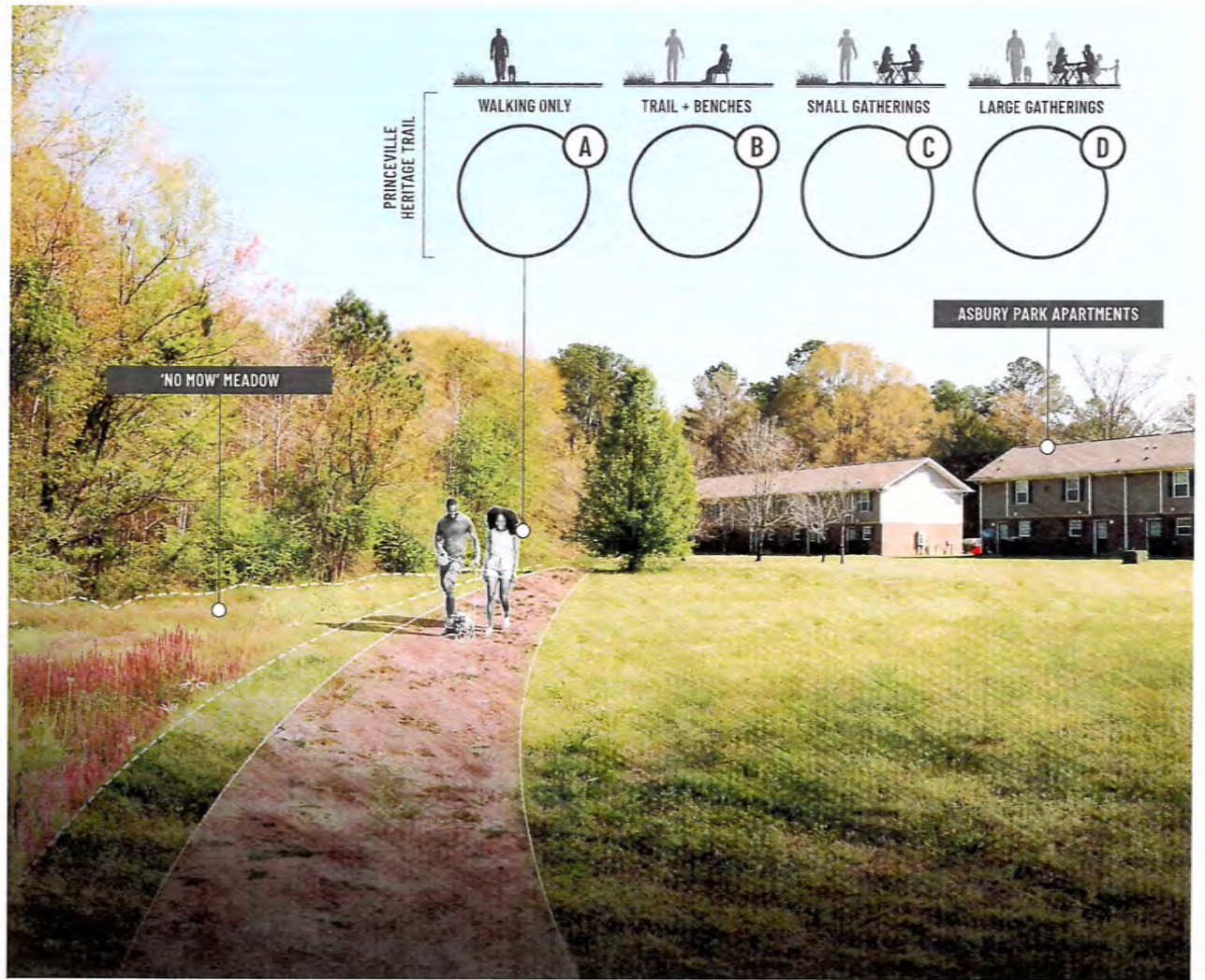
The Town of Princeville is working with NC State University, the Conservation Trust for North Carolina, and the Conservation Corps of North Carolina to build the first phases of the Princeville Heritage Trail. The trail will allow people to walk from Princeville Elementary School to the Princeville History Museum, and will also educate youth, residents, and visitors about natural systems and the role of water in the community.



**COMMENTING INSTRUCTIONS:** Using the provided post-it notes, please use the comment box below to **write any additional considerations** you would like the team to be aware of for this project.

Comments can also be sent via email to: [coastaldynamics@ncsu.edu](mailto:coastaldynamics@ncsu.edu)

**VOTING INSTRUCTIONS:** Using the provided push-pin, please **vote on which ONE of the four trail options you prefer the most**. Your input will be used to inform final planning and construction decisions for this section of the Princeville Heritage Trail.



View from proposed trail behind Asbury Park Apartments



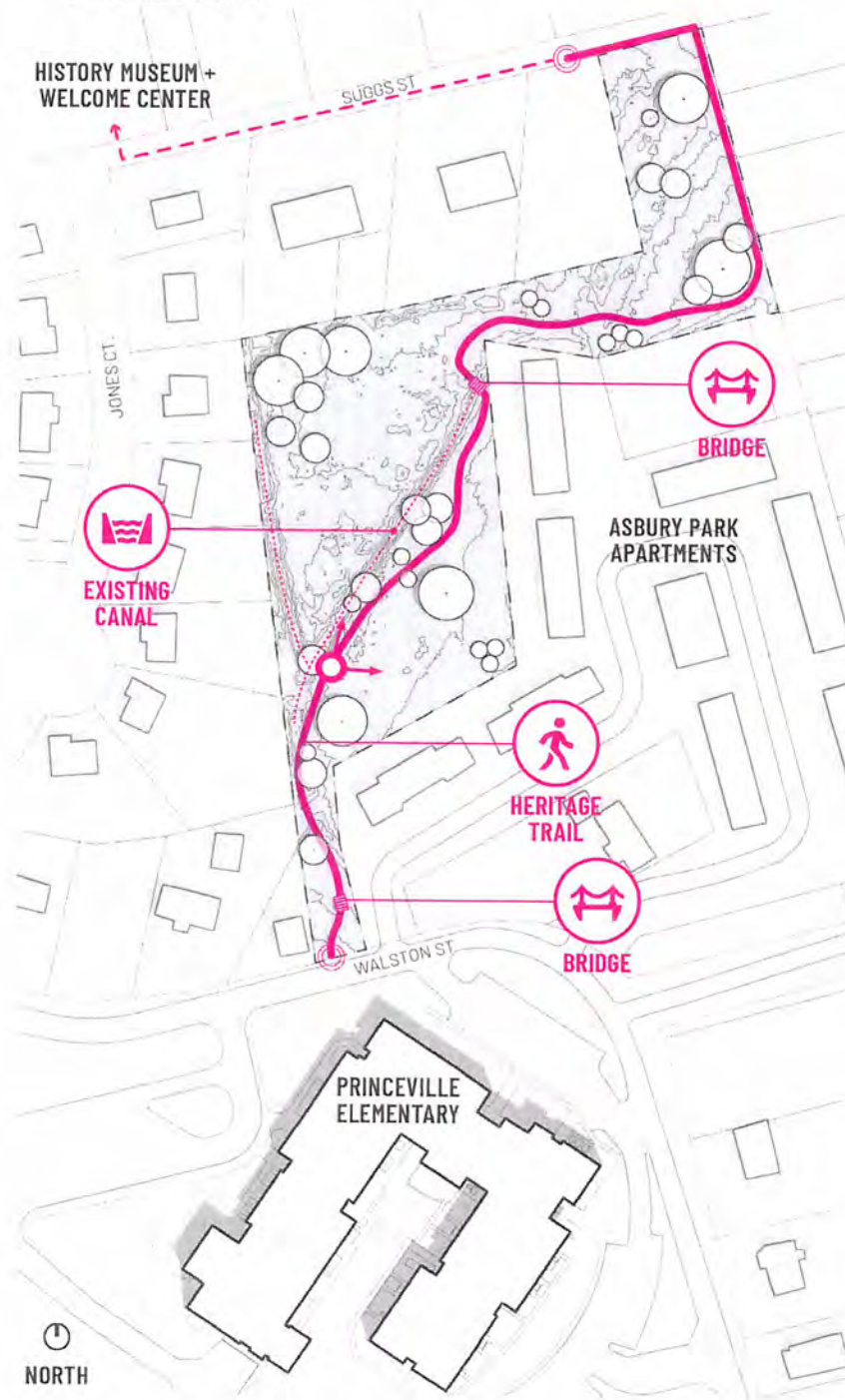
# PHASE 1: PRINCEVILLE HERITAGE TRAIL

## COMMUNITY SURVEY

Working with the Town of Princeville, the Conservation Trust for North Carolina, Conservation Corps North Carolina, and NC State's Coastal Dynamics Design Lab are creating a nature trail this summer. Crews of local young people will construct the path. The trail will allow people to walk from Princeville Elementary School to the Princeville History Museum. It will also educate local youth, residents, and visitors about nature and the role of water in the community.

The map below shows where the trail will be, generally. We want community members to be excited by this project and to feel good about its features. Will you please help by giving us some feedback about our plans?

### TRAIL MAP



# SURVEY QUESTIONS

1. Do you have any concerns regarding this trail?

- Lighting
- Routing
- Signage
- Noise
- Construction
- None at this time
- Other:

If you would like to complete this survey online, please scan the QR code:



2. How often do you visit Asbury Park?

- I live here
- Once a week
- Once a month
- Never

3. Which of these options do you prefer (please check all that apply):

WALKING TRAIL ONLY

TRAIL BENCHES



SMALL FAMILY GATHERING

LARGE FAMILY GATHERING



4. Beyond adding to our trail network around Town, we want to understand the top priorities you would like to address in the next few years. After flooding and housing affordability/availability, what should be the next top priority? For more information, visit [www.princevilletownplan.com](http://www.princevilletownplan.com).

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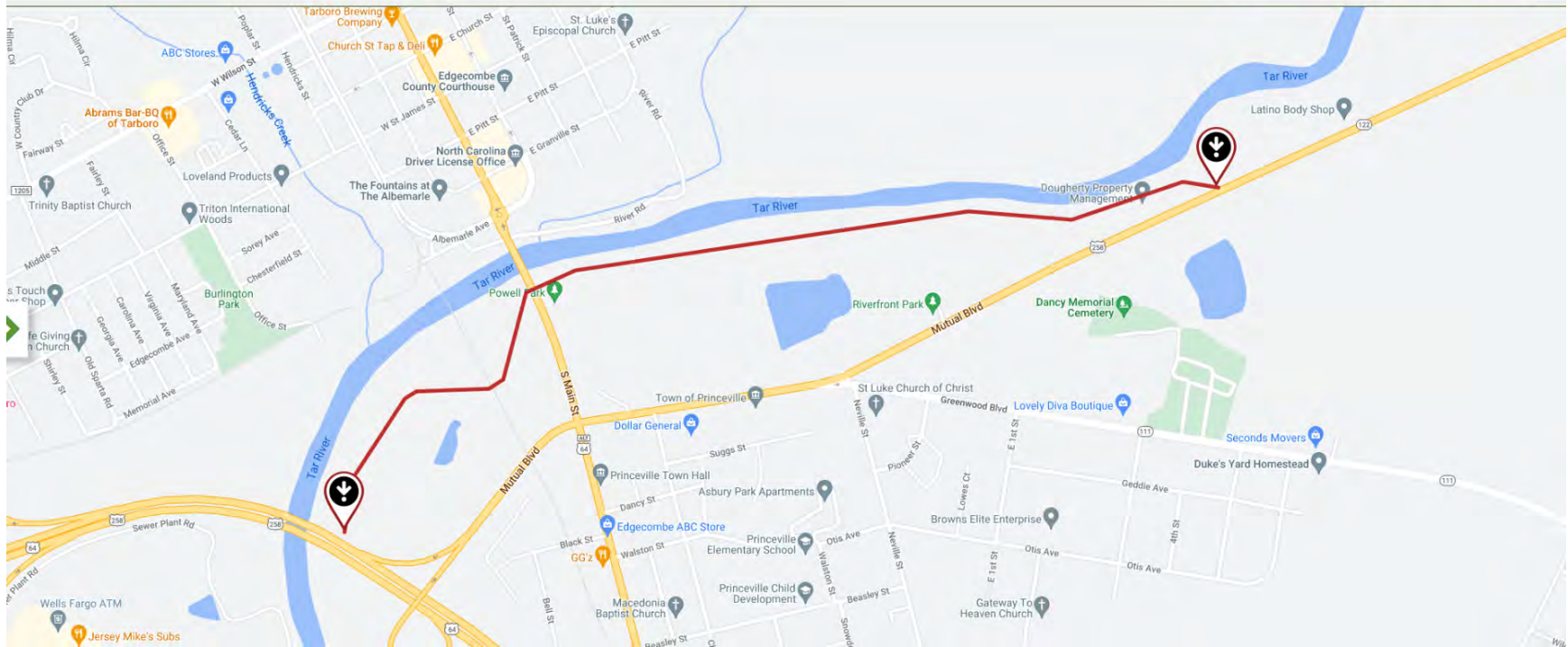
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# TrailLink, Princeville Heritage Trail, at <https://www.trailink.com/trail/princeville-heritage-trail/>



Princeville Heritage Trail



**ATTACHMENT 22:**

**Climate Change**

Hazard Report

# Extreme Heat

📍 Edgemcombe County, North Carolina

👤 Total Population  
📊 52,648

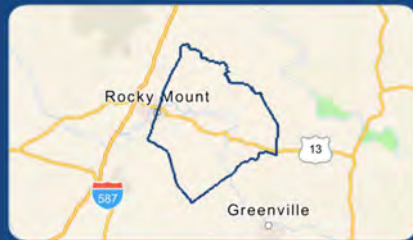
👤 Non-Hispanic White Population (%)  
64%

👤 Income Below Poverty in Last 12 Mo (%)  
24%

🏠 Building Codes Hazard Resistance  
📊 Lower Resistance

🌊 % Population Disadvantaged  
📊 100.00%

🔍 Explore additional data



🌐 U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

©2023 Esri

National Risk Index Rating  
Relatively High



according to the [FEMA National Risk Index](#)

Extreme Heat Annualized Frequency  
📊 1.15

Expected Annual Loss Rating  
📊 Relatively Moderate

Expected Annual Loss Total (\$)   
📊 \$376,820.52

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2100)
		Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max
<b>Temperature thresholds:</b>						
Annual days with maximum temperature > 90°F	41 days 41 - 49	73 days 50 - 89	75 days 55 - 93	85 days 55 - 108	95 days 65 - 111	96 days 64 - 121
Annual days with maximum temperature > 95°F	10 days 8 - 13	26 days 11 - 39	28 days 15 - 45	36 days 15 - 56	45 days 20 - 64	46 days 20 - 73
Annual days with maximum temperature > 100°F	1 days 0 - 1	4 days 1 - 10	5 days 2 - 13	8 days 2 - 20	12 days 2 - 32	13 days 3 - 20
Annual days with maximum temperature > 105°F	0 days 0 - 0	0 days 0 - 1	0 days 0 - 2	1 days 0 - 3	2 days 0 - 11	2 days 0 - 7
<b>Annual temperature:</b>						
Annual single highest maximum temperature °F	99 °F 98 - 100	102 °F 99 - 104	103 °F 100 - 105	104 °F 100 - 106	105 °F 101 - 109	105 °F 101 - 108
Annual highest maximum temperature averaged over a 5-day period °F	95 °F 94 - 96	98 °F 96 - 100	98 °F 96 - 101	99 °F 96 - 102	101 °F 97 - 105	101 °F 98 - 104
Cooling degree days (CDD)	1684 degree-days 1629 - 1779	2,108 degree-days 1,809 - 2,437	2,152 degree-days 1,876 - 2,377	2,325 degree-days 1,903 - 2,734	2,514 degree-days 2,077 - 2,881	2,552 degree-days 2,072 - 3,017

N/A = Data Not Available

Page 1 of 5

Hazard Report

# Drought

📍 Edgemcombe County, North Carolina

👤 Total Population  
📊 52,648

👤 Non-Hispanic White Population (%)  
64%

National Risk Index Rating  
Relatively High



according to the [FEMA National Risk Index](#)

Drought Annualized Frequency  
📊 11.22

Expected Annual Loss Rating  
📊 Relatively Moderate

Expected Annual Loss Total (\$)   
📊 \$1,207,404.36

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2100)
		Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max



Income Below Poverty in Last 12 Mo (%)  
24%



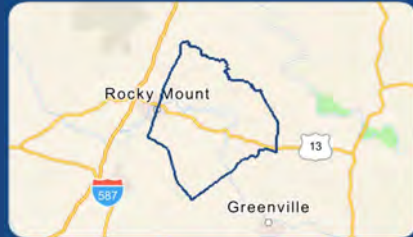
Building Codes Hazard Resistance  
Lower Resistance



% Population Disadvantaged  
100.00%



[Explore additional data](#)



U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

©2023 Esri

Page 2 of 5

Indicator	Modeled History (1976 - 2005)	(2015 - 2044)		(2035 - 2064)		(2070 - 2100)
	Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max
<b>Precipitation:</b>						
Average annual total precipitation	47" 45 - 49	49" 46 - 53	49" 44 - 53	50" 45 - 54	50" 45 - 53	50" 44 - 55
Days per year with precipitation (wet days)	180 days 174 - 185	179 days 165 - 188	178 days 158 - 189	179 days 157 - 193	177 days 150 - 193	179 days 155 - 194
Days per year with no precipitation (dry days)	185 days 180 - 191	186 days 177 - 201	187 days 176 - 207	186 days 172 - 209	188 days 172 - 215	186 days 171 - 210
Maximum number of consecutive dry days	13 days 11 - 14	13 days 11 - 15	13 days 11 - 15	13 days 12 - 16	14 days 12 - 16	14 days 12 - 16
<b>Temperature thresholds:</b>						
Annual days with maximum temperature > 90 °F	41 days 41 - 49	73 days 50 - 89	75 days 55 - 93	85 days 55 - 108	95 days 65 - 111	96 days 64 - 121
Annual days with maximum temperature > 100 °F	1 days 0 - 1	4 days 1 - 10	5 days 2 - 13	8 days 2 - 20	12 days 2 - 32	13 days 3 - 20

N/A = Data Not Available

## Hazard Report Wildfire

Edgecombe County, North Carolina



Total Population  
52,648



Non-Hispanic White Population (%)  
64%



Income Below Poverty in Last 12 Mo (%)  
24%



Building Codes Hazard Resistance  
Lower Resistance



% Population Disadvantaged  
100.00%



[Explore additional data](#)

National Risk Index Rating  
Very Low

Wildfire Annualized Frequency  
0.00

Expected Annual Loss Rating  
Very Low

Wildfire Hazard Potential (Mean)  
62.02

Expected Annual Loss Total (\$)  
\$462.94

according to the [FEMA National Risk Index](#)

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005)	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2100)
	Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max
<b>Precipitation:</b>						
Days per year with no precipitation (dry days)	185 days 180 - 191	186 days 177 - 201	187 days 176 - 207	186 days 172 - 209	188 days 172 - 215	186 days 171 - 210
Maximum number of consecutive dry days	13 days 11 - 14	13 days 11 - 15	13 days 11 - 15	13 days 12 - 16	14 days 12 - 16	14 days 12 - 16
Days per year with precipitation (wet days)	180 days	179 days	178 days	179 days	177 days	179 days



U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

	174 - 185	165 - 188	158 - 189	157 - 193	150 - 193	155 - 194
<b>Temperature thresholds:</b>						
Annual days with maximum temperature > 90°F	41 days 41 - 49	73 days 50 - 89	75 days 55 - 93	85 days 55 - 108	95 days 65 - 111	96 days 64 - 121
Annual days with maximum temperature > 100°F	1 days 0 - 1	4 days 1 - 10	5 days 2 - 13	8 days 2 - 20	12 days 2 - 32	13 days 3 - 20

N/A = Data Not Available

# Hazard Report Flooding

Edgecombe County, North Carolina

**Total Population**  
52,648

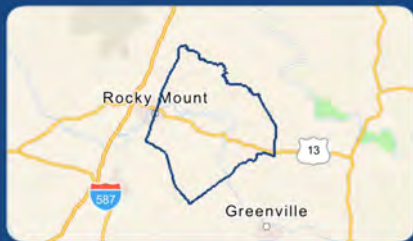
**Non-Hispanic White Population (%)**  
64%

**Income Below Poverty in Last 12 Mo (%)**  
24%

**Building Codes Hazard Resistance**  
Lower Resistance

**% Population Disadvantaged**  
100.00%

[Explore additional data](#)



U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

**National Risk Index Rating**  
Relatively High

according to the [FEMA National Risk Index](#)

**Flooding Annualized Frequency**  
1.38

**Expected Annual Loss Rating**  
Relatively High

**Expected Annual Loss Total (\$)**  
\$4,975,251.10

**Area in a 100-year / 500-year flood zone (%)**  
14.93% / 3.79%

**Area outside 100-year or 500-year flood zone (%)**  
81.27%

**Area unmapped/undetermined for flooding (%)**  
0.00%

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2100)
		Lower Emissions	Higher Emissions	Lower Emissions	Higher Emissions	Lower Emissions
		Min - Max	Min - Max	Min - Max	Min - Max	Min - Max
<b>Precipitation:</b>						
Annual average total precipitation	47" 45 - 49	49" 46 - 53	49" 44 - 53	50" 45 - 54	50" 45 - 53	50" 44 - 55
Days per year with precipitation (wet days)	180 days 174 - 185	179 days 165 - 188	178 days 158 - 189	179 days 157 - 193	177 days 150 - 193	179 days 155 - 194
Maximum period of consecutive wet days	12 days 11 - 14	13 days 11 - 15	13 days 10 - 15	13 days 10 - 16	13 days 11 - 17	13 days 11 - 15
<b>Annual days with:</b>						
Annual days with total precipitation > 1 inch	7 days 6 - 8	8 days 6 - 9	8 days 6 - 10	8 days 6 - 10	8 days 6 - 10	8 days 6 - 11
Annual days with total precipitation > 2 inches	1 days 0 - 1	1 days 1 - 1	1 days 0 - 1	1 days 0 - 1	1 days 1 - 1	1 days 0 - 1
Annual days with total precipitation > 3 inches	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0	0 days 0 - 0
Annual days that exceed 99th percentile precipitation	6 days 6 - 8	7 days 7 - 9	7 days 7 - 9	8 days 7 - 9	8 days 7 - 9	8 days 7 - 10
Days with maximum temperature below 32 °F	1 days 1 - 2	1 days 0 - 2	1 days 0 - 1	1 days 0 - 2	0 days 0 - 1	0 days 0 - 1

N/A = Data Not Available

Hazard Report

# Coastal Inundation

📍 Edgecombe County, North Carolina

👤 Total Population  
📊 52,648

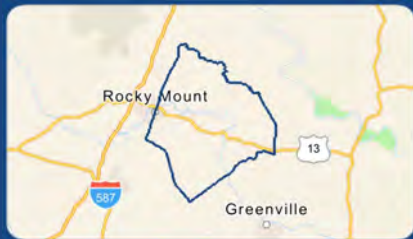
👤 Non-Hispanic White Population (%)  
64%

👤 Income Below Poverty in Last 12 Mo (%)  
24%

🏠 Building Codes Hazard Resistance  
📊 Lower Resistance

🌊 % Population Disadvantaged  
📊 100.00%

🔍 [Explore additional data](#)



🌐 U.S. Climate Resilience Toolkit

Source: Census Bureau, CEQ, Esri, FEMA, MRLC, NOAA, UCSD

National Risk Index Rating  
Very Low



Coastal Inundation Annualized Frequency  
📊 2.60

Expected Annual Loss Rating  
📊 Very Low

Expected Annual Loss Total (\$)  
📊 \$1,479.77

according to the [FEMA National Risk Index](#)

## Future Climate Indicators

Indicator	Modeled History (1976 - 2005) Min - Max	Early Century (2015 - 2044)		Mid Century (2035 - 2064)		Late Century (2070 - 2100)
		Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max	Higher Emissions Min - Max	Lower Emissions Min - Max
<b>Sea level rise:</b>						
Percent of selected county impacted by global sea level rise	N/A	0%	0%	0%	0%	0%

N/A = Data Not Available

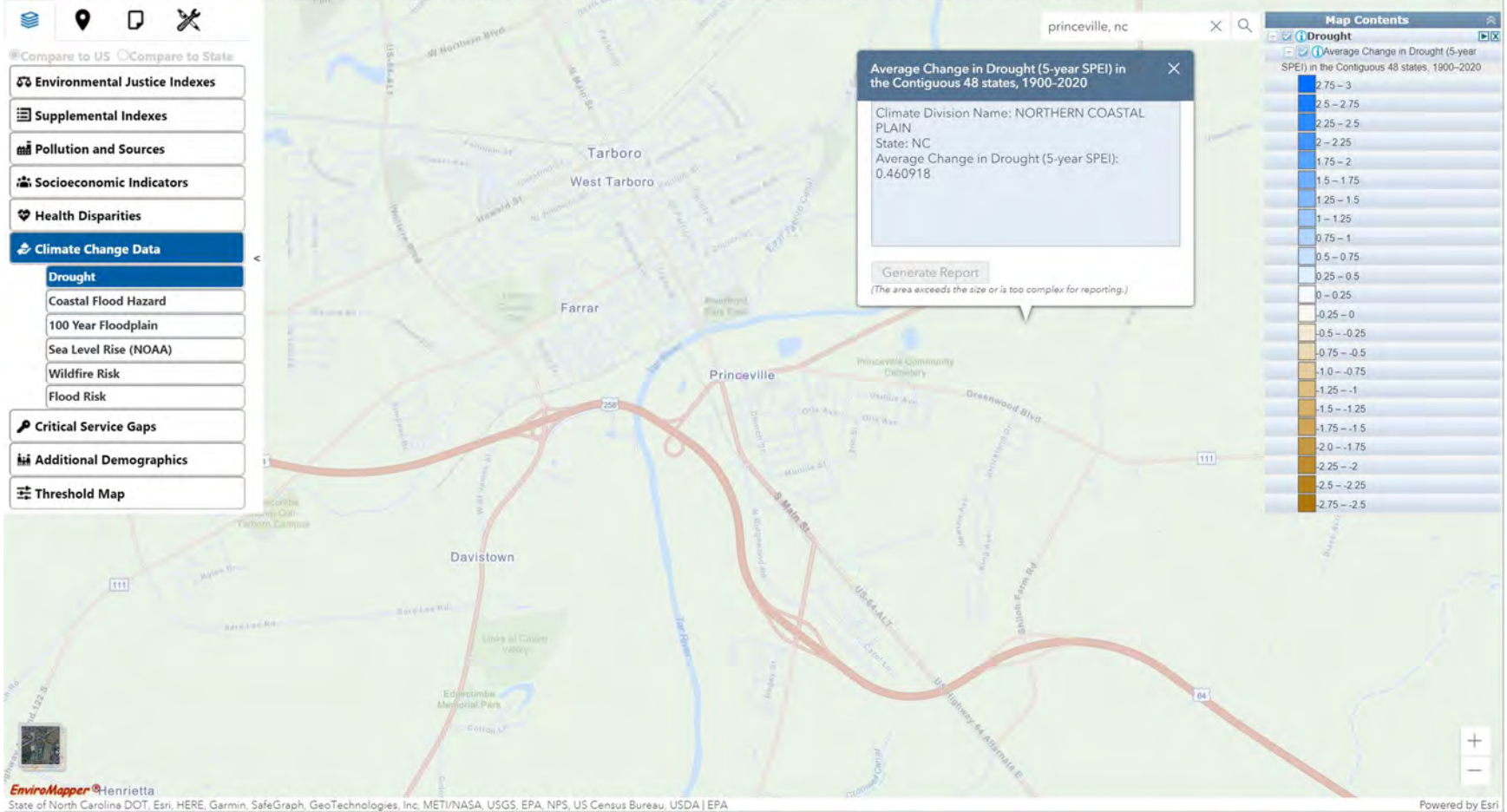


# Princeville Levee Floodgate Repairs Project – Drought

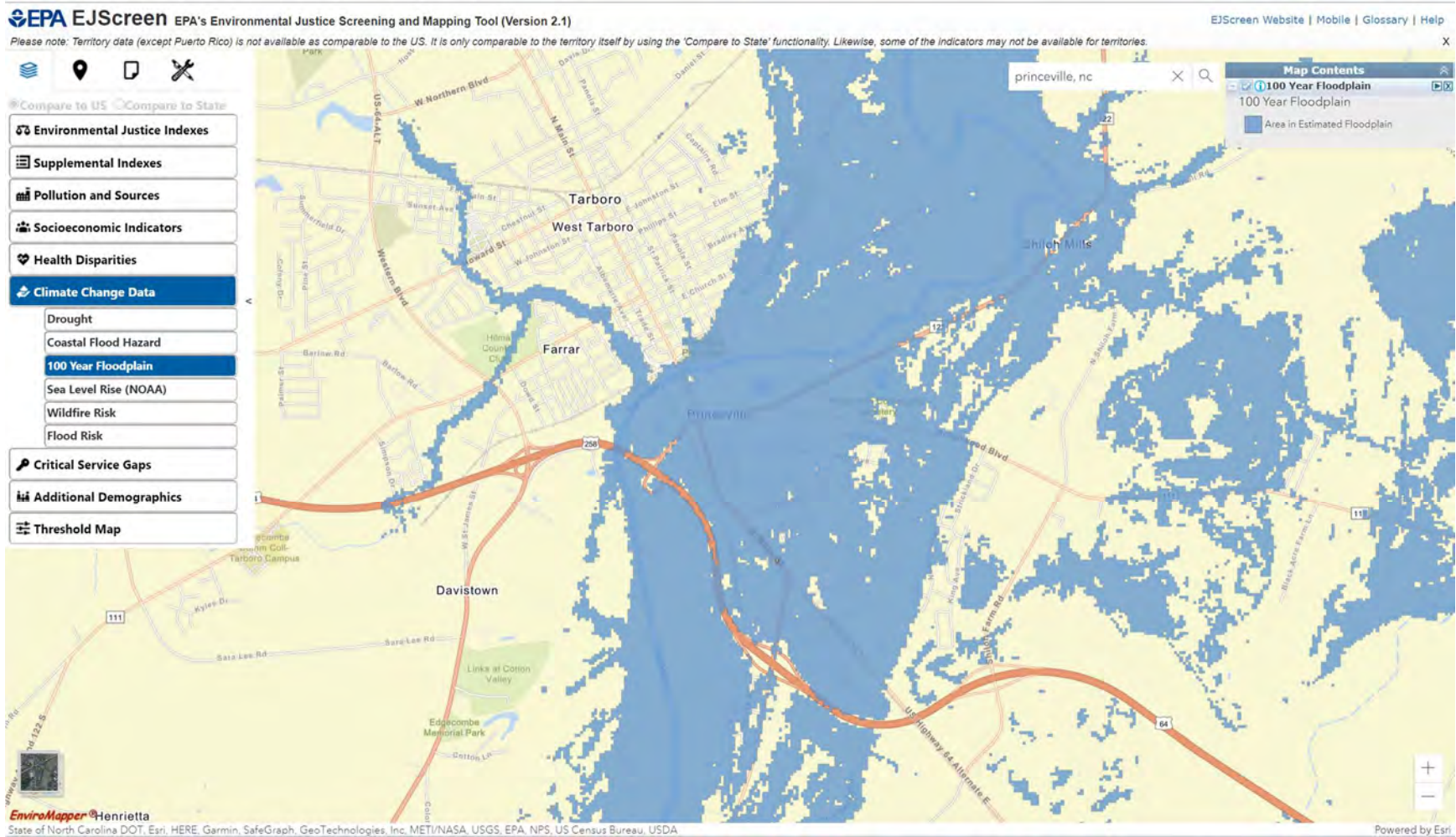
**EPA EJScreen** EPA's Environmental Justice Screening and Mapping Tool (Version 2.1)

Please note: Territory data (except Puerto Rico) is not available as comparable to the US. It is only comparable to the territory itself by using the 'Compare to State' functionality. Likewise, some of the indicators may not be available for territories.

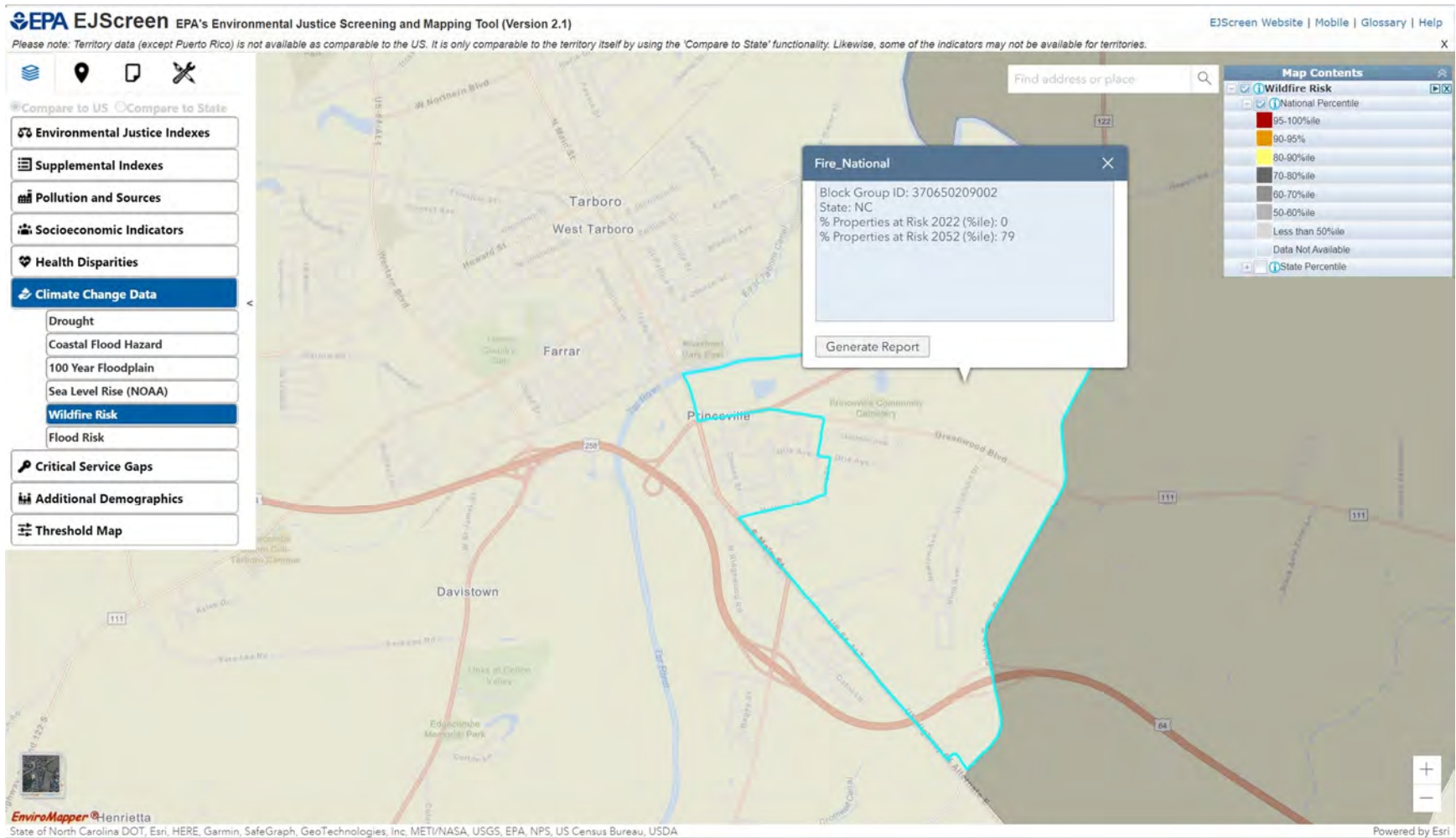
[EJScreen Website](#) | [Mobile](#) | [Glossary](#) | [Help](#)



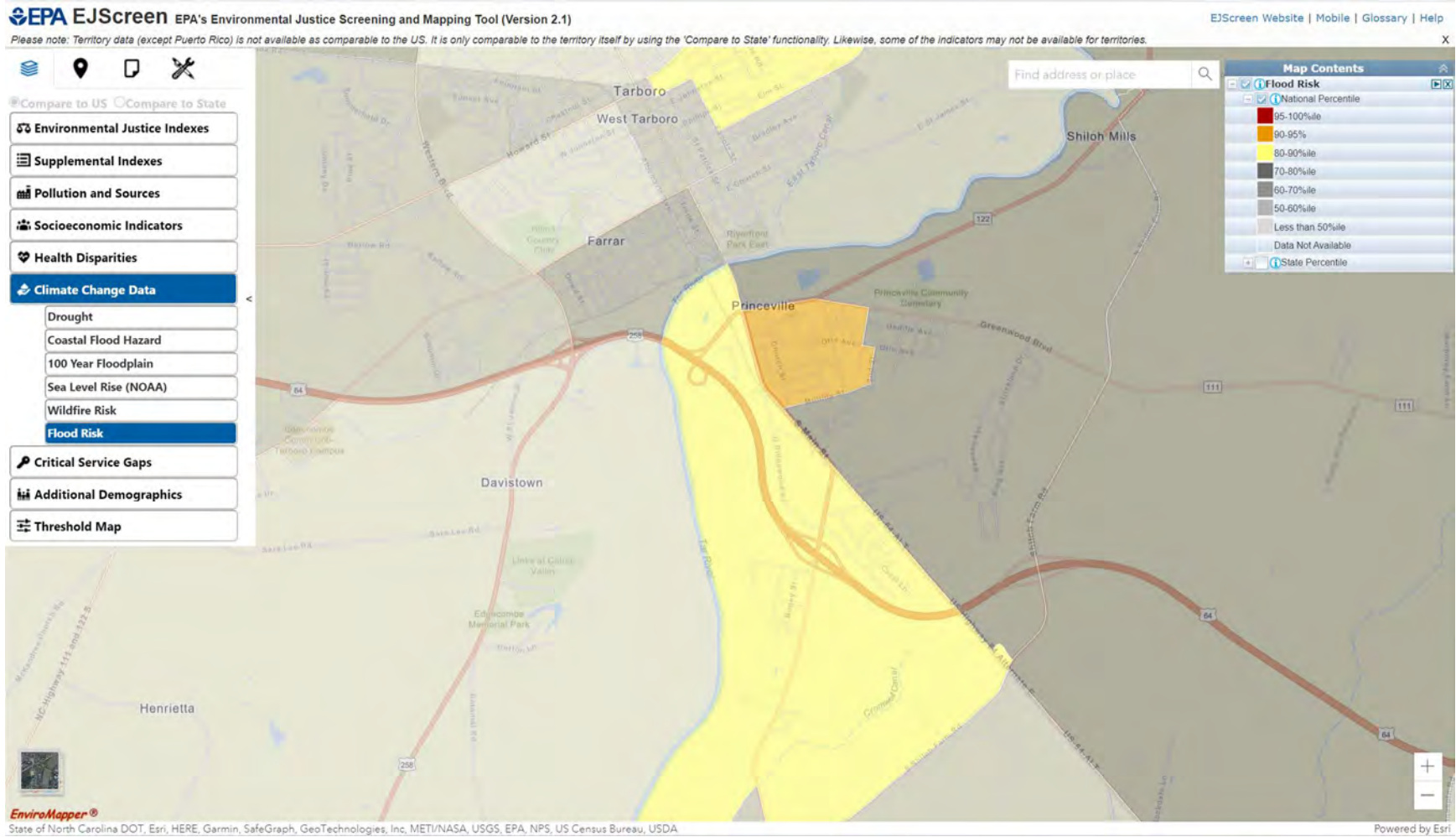
# Princeville Levee Floodgate Repairs Project – 100- year Floodplain



# Princeville Levee Floodgate Repairs Project – Wildfire Risk



# Princeville Levee Floodgate Repairs Project – Flood Risk



**ATTACHMENT 23:**

**State Environmental Clearinghouse Comments**

Comments on Draft EA and Early Notice

## **Comments on Draft EA**



Roy Cooper  
Governor

Pamela B. Cashwell  
Secretary

September 20, 2022

Andrea Gievers  
Town of Princeville  
c/o NC Department of Public Safety  
Office of Recovery and Resiliency  
Durham, NC 27709-

**Re: SCH File # 23-E-4600-0029 Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.**

Dear Andrea Gievers:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act.

Attached to this letter are comments made by the agencies in the review of this document. If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

If you have any questions, please do not hesitate to contact me at (984) 236-0000.

Sincerely,

CRYSTAL BEST  
State Environmental Review Clearinghouse

#### Attachments

Mailing  
1301 Mail Service Center | Raleigh, NC 27699-1301



[ncadmin.nc.gov](http://ncadmin.nc.gov)

Location  
116 West Jones St. | Raleigh NC 27603  
984-236-0000 T

Control No.: 23-E-4600-0029

Date Received: 8/18/2022

County.: EDGECOMBE

Agency Response: 9/19/2022

Review Closed: 9/19/2022

LYN HARDISON  
CLEARINGHOUSE COORDINATOR  
DEPT OF ENVIRONMENTAL QUALITY

Project Information

Type: National Environmental Policy Act Environmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: LYN HARDISON

Date: 9/19/2022



Control No.: 23-E-4600-0029

Date Received: 8/18/2022

County.: EDGECOMBE

Agency Response: 9/19/2022

Review Closed: 9/19/2022

JINTAO WEN  
CLEARINGHOUSE COORDINATOR  
DPS - DIV OF EMERGENCY MANAGEMENT

Project Information

Type: National Environmental Policy Act Environmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Based on the information provided, the proposed project will encroach into Special Flood Hazard Area (SFHA) and Floodway. Therefore, a Floodplain Development Permit issued by Town of Princeville will be required. Please coordinate with the Town's Floodplain Administrator for permitting.

Reviewed By: JINTAO WEN

Date: 9/6/2022

Control No.: 23-E-4600-0029

Date Received: 8/18/2022

County.: EDGECOMBE

Agency Response: 9/19/2022

Review Closed: 9/19/2022

JEANNE STONE  
CLEARINGHOUSE COORDINATOR  
DEPT OF TRANSPORTATION

Project Information

Type: National Environmental Policy Act ironmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: JEANNE STONE

Date: 8/31/2022

Control No.: 23-E-4600-0029

Date Received: 8/18/2022

County.: EDGECOMBE

Agency Response: 9/19/2022

Review Closed: 9/19/2022

DEVON BORGARDT  
CLEARINGHOUSE COORDINATOR  
DEPT OF NATURAL & CULTURAL  
RESOURCE

Project Information

Type: National Environmental Policy Act Environmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: DEVON BORGARDT

Date: 8/29/2022



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

To: Crystal Best  
State Clearinghouse  
NC Department of Administration

From: Lyn Hardison  
Division of Environmental Assistance and Customer Service  
Washington Regional Office

RE: 23-0029  
Environmental Assessment  
Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.  
Edgecombe County

Date: September 19, 2022

The Department of Environment Quality has reviewed the proposal for the referenced project. Based on the information provided, one (1) contamination site was identified within one mile of the project site. In addition, several of our agencies have identified permits that may be required and offered some valuable guidance. The comments are attached for the applicant's review.

The Department will continue to be available to assist the applicant with any questions or concerns.

Thank you for the opportunity to respond.

Attachments



North Carolina Department of Environmental Quality

217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601

919.707.8600

ROY COOPER  
Governor  
ELIZABETH S. BISER  
Secretary  
MICHAEL SCOTT  
Director



## MEMORANDUM

TO: Michael Scott, Division Director through Sharon Brinkley

FROM: Drew Hammonds, Eastern District Supervisor - Solid Waste Section

DATE: September 14, 2022

SUBJECT: Review: SW 23-0029 – Edgecombe County (EA – Town of Princeville – Proposed project is for the inlet and outlet channel repairs at four existing floodgate culverts the levee and construction of permanent access roads)

---

The Division of Waste Management, Solid Waste Section (Section) has reviewed the documents submitted for the subject project in Edgecombe County, NC. Based on the information provided in these documents, the Section at this time does not see an adverse impact on the surrounding communities and likewise knows of no situations in the communities, which would affect this project.

As always for any planned or proposed projects, it is recommended that during any land clearing, demolition, and construction, the Town of Princeville and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. **Any waste generated by and of the projects that cannot be beneficially reused or recycled must be disposed of at a solid waste management facility permitted by the Division. The Section strongly recommends that the Town of Princeville require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.**

Permitted solid waste management facilities are listed on the Division of Waste Management, Solid Waste Section portal site at: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules-data/solid-waste-management-annual-reports/solid-waste-permitted-facility-list>

Questions regarding solid waste management for this project should be directed to Mr. John College, Environmental Senior Specialist, Solid Waste Section, at (919) 268-1524.

cc: John College, Environmental Senior Specialist



North Carolina Department of Environmental Quality | Division of Waste Management  
Fayetteville Regional Office | 225 Green Street, Suite 714 | Fayetteville, North Carolina 28301  
910.433.3300

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh  
 Project Number: 23-0029 Due Date: 09/15/2022  
 County: Edgecombe

After review of this project, it has been determined that the DEQ permit(s) and/or approvals indicated may need to be obtained for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begins activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received, and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted, and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
<input checked="" type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.	60 days (90 days)
<input checked="" type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of \$100 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with _____ <b>Local Government's</b> approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		Based on Local Program
<input type="checkbox"/>	Compliance with 15A NCAC 04B .0125 – Buffers Zones for Trout Waters shall have an undisturbed buffer zone 25 feet wide or of sufficient width to confine visible siltation within the twenty-five percent (25%) of the buffer zone nearest the land-disturbing activity, whichever is greater.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H .0126 - NPDES Stormwater Program which regulates three types of activities: Industrial, Municipal Separate Storm Sewer System & Construction activities that disturb ≥1 acre.		30-60 days (90 days)
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 -State Stormwater Permitting Programs regulate site development and post-construction stormwater runoff control. Areas subject to these permit programs include site all 20 coastal counties, and various other counties and watersheds throughout the state.		45 days (90 days)

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh  
 Project Number: 23-0029 Due Date: 09/15/2022  
 County: Edgecombe

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory time limit)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage, or the total project cost will be required upon completion.	30 days (60 days)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application forms.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)
<input checked="" type="checkbox"/>	Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: <a href="http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program">http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program</a>		
<input type="checkbox"/>	Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Falls Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: <a href="http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information">http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information</a>		
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 - \$475.00 fee must accompany application	75 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$100.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input checked="" type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input checked="" type="checkbox"/>	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of the _____ water system must be approved through the _____ delegated plan approval authority. Please contact them at _____ for further information.		

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh  
 Project Number: 23-0029 Due Date: 09/15/2022  
 County: Edgecombe

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No comment	Comments	Date Review
DAQ	SH	<input type="checkbox"/>	See checked boxes above.	8/23/2022
DWR-WQROS (Aquifer & Surface)	JSB &	<input type="checkbox"/>	See checked boxes above. &	8/29/2022
DWR-PWS	SG	<input type="checkbox"/>	See checked boxes above.	9/6/2022
DEMLR (LQ & SW)		<input type="checkbox"/>		/ /
DWM – UST	SNH	<input type="checkbox"/>	see attached comments	9/16/2022
Other Comments		<input type="checkbox"/>		/ /

**REGIONAL OFFICES**

Questions regarding these permits should be addressed to the Regional Office marked below.

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> <b>Asheville Regional Office</b><br>2090 U.S. 70 Highway<br>Swannanoa, NC 28778-8211<br>Phone: 828-296-4500<br>Fax: 828-299-7043  | <input type="checkbox"/> <b>Fayetteville Regional Office</b><br>225 Green Street, Suite 714,<br>Fayetteville, NC 28301-5043<br>Phone: 910-433-3300<br>Fax: 910-486-0707  | <input type="checkbox"/> <b> Mooresville Regional Office</b><br>610 East Center Avenue, Suite 301,<br>Mooresville, NC 28115<br>Phone: 704-663-1699<br>Fax: 704-663-6040 |
| <input checked="" type="checkbox"/> <b>Raleigh Regional Office</b><br>3800 Barrett Drive,<br>Raleigh, NC 27609<br>Phone: 919-791-4200<br>Fax: 919-571-4718 | <input checked="" type="checkbox"/> <b>Washington Regional Office</b><br>943 Washington Square Mall,<br>Washington, NC 27889<br>Phone: 252-946-6481<br>Fax: 252-975-3716 | <input type="checkbox"/> <b>Wilmington Regional Office</b><br>127 Cardinal Drive Ext.,<br>Wilmington, NC 28405<br>Phone: 910-796-7215<br>Fax: 910-350-2004              |
|  | <input type="checkbox"/> <b>Winston-Salem Regional Office</b><br>450 Hanes Mill Road, Suite 300,<br>Winston-Salem, NC 27105<br>Phone: 336-776-9800<br>Fax: 336-776-9797  |   |



ROY COOPER  
*Governor*  
ELIZABETH S. BISER  
*Secretary*  
MICHAEL SCOTT  
*Director*



TO: Lyn Hardison, Environmental Coordinator

FROM: Sylvia Newsom-Hunneke, Regional UST Supervisor

COPY: Sharon Brinkley, Administrative Secretary

DATE: September 16, 2022

RE: Environmental Review – Project Number 23-E-4600-0029 – Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations in Tarboro, Edgecombe County.

I searched the Petroleum Underground Storage Tank (UST), and Non-UST Databases and review of those databases did not indicate any petroleum releases within the proposed project area. I reviewed the above proposal and determined that this project should not have any adverse impact upon groundwater. The following comments are pertinent to my review:

1. The Washington Regional Office (WaRO) UST Section recommends removal of any abandoned or out-of-use petroleum USTs or petroleum above ground storage tanks (ASTs) within the project area. The UST Section should be contacted regarding use of any proposed or on-site petroleum USTs or ASTs. We may be reached at (252) 946-6481.
2. Any petroleum USTs or ASTs must be installed and maintained in accordance with applicable local, state, and federal regulations. For additional information on petroleum ASTs, it is advisable that the North Carolina Department of Insurance at (919) 661-5880 ext. 239, USEPA (404) 562-8761, local fire department, and Local Building Inspectors be contacted.
3. Any petroleum spills must be contained, and the area of impact must be properly restored. Petroleum spills of significant quantity must be reported to the North Carolina Department of Environmental Quality – Division of Waste Management Underground Storage Tank Section in the Washington Regional Office at (252) 946-6481
4. Any soils excavated during demolition or construction that show evidence of petroleum contamination, such as stained soil, odors, or free product must be reported immediately to the local Fire Marshall to determine whether explosive or inhalation hazards exist. Also, notify the UST Section of the Washington Regional Office at (252) 946-6481. Petroleum contaminated soils must be handled in accordance with all applicable regulations.
5. Any questions or concerns regarding spills from petroleum USTs, ASTs, or vehicles should be directed to the UST Section at (252) 946-6481.





NORTH CAROLINA  
*Environmental Quality*

ROY COOPER

*Governor*

ELIZABETH S. BISER

*Secretary*

MICHAEL SCOTT

*Director*

Date: August 29, 2022

To: Michael Scott, Director  
Division of Waste Management

Through: Janet Macdonald  
Inactive Hazardous Sites Branch

From: Katie C Tatum  
Inactive Hazardous Sites Branch

Subject: NEPA Project # 23-0029, Town of Princeville, Edgecombe County, North Carolina

The Superfund Section has reviewed the proximity of sites under its jurisdiction to the Town of Princeville project. Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

One (1) Superfund Section site was identified within one mile of the project as shown on the attached reports. The Superfund Section recommends that site files be reviewed to ensure that appropriate precautions are incorporated into any construction activities that encounter potentially contaminated soil or groundwater. Superfund Section files can be viewed at: <http://deq.nc.gov/waste-management-laserfiche>.

Please contact Janet Macdonald at 919.707.8349 if you have any questions concerning the Superfund Section review portion of this SEPA/NEPA inquiry.



North Carolina Department of Environmental Quality | Division of Waste Management  
217 West Jones Street | 1646 Mail Service Center | Raleigh, North Carolina 27699-1646  
919.707.8200

# Superfund Section Only: SEPA/NEPA

## Area of Interest (AOI) Information

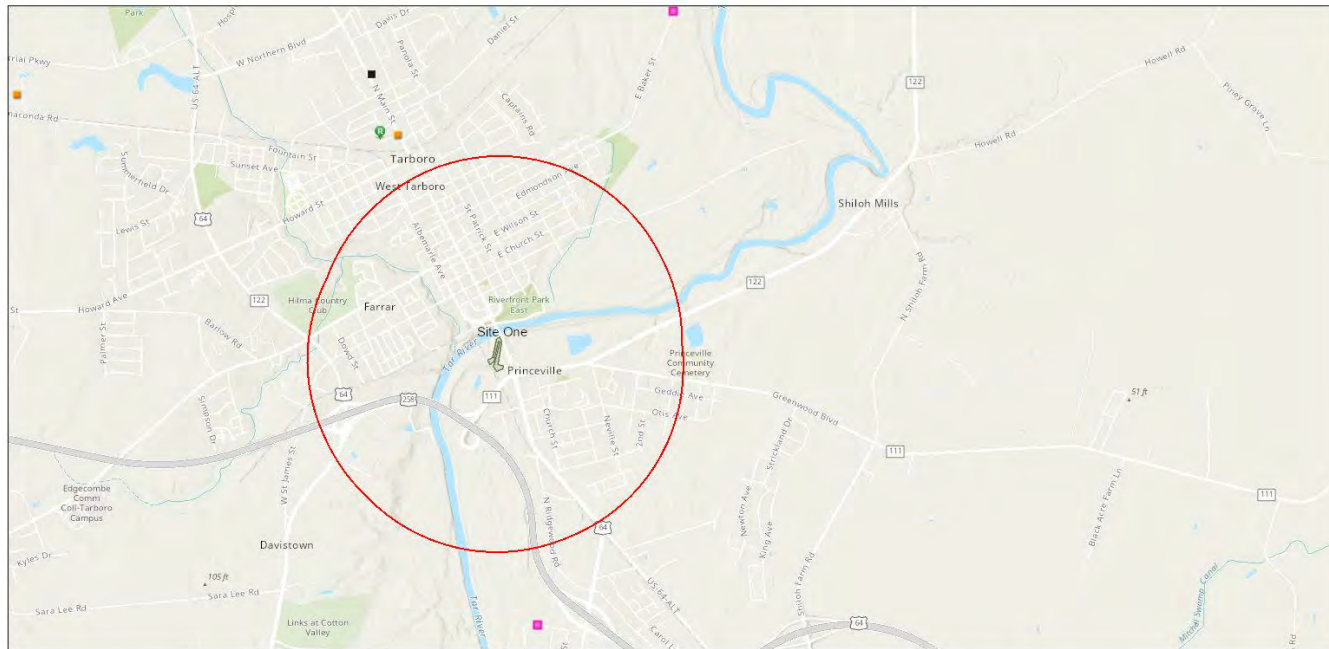
Edgecombe County

NEPA project 23-0029

(Site 1)

Area : 2,301.13 acres

Aug 29 2022 11:04:27 Eastern Daylight Time



-  NC Brownfields Location\_View
-  Inactive Hazardous Sites
-  Recorded
-  DryCleaning Contaminated
-  Pre Regulatory Landfill Sites
-  Investigation



Esri, NASA, NGA, USGS, FEMA, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Superfund Section Only  
Edgecombe County NEPA project 23-0029  
Site One

## Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	0	N/A	N/A
Pre-Regulatory Landfill Sites	0	N/A	N/A
Brownfields Program Sites	0	N/A	N/A



# Superfund Section Only: SEPA/NEPA

## Area of Interest (AOI) Information

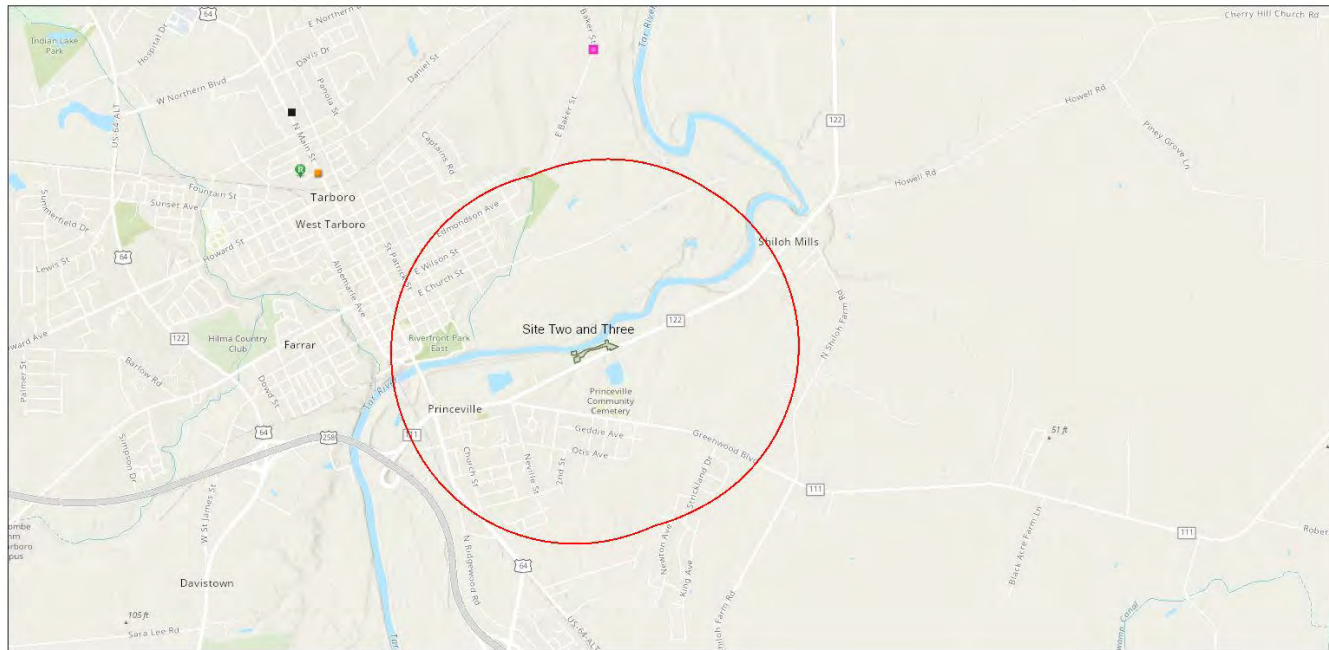
## Edgecombe County

## NEPA project 23-0029

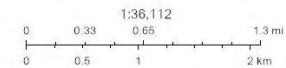
## (Sites 2 & 3)

Area : 2,408.28 acres

Aug 27 2022 11:18:39 Eastern Daylight Time



- NC Brownfields Location\_View
- Recorded
- Pre Regulatory Landfill Sites
- Inactive Hazardous Sites
- DryCleaning Contaminated



Esrri, NASA, NGA, USGS, FEMA, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Superfund Section Only  
Edgecombe County NEPA project 23-0029  
Sites 2 & 3

## Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	0	N/A	N/A
Pre-Regulatory Landfill Sites	0	N/A	N/A
Brownfields Program Sites	0	N/A	N/A

# Superfund Section Only: SEPA/NEPA

## Area of Interest (AOI) Information

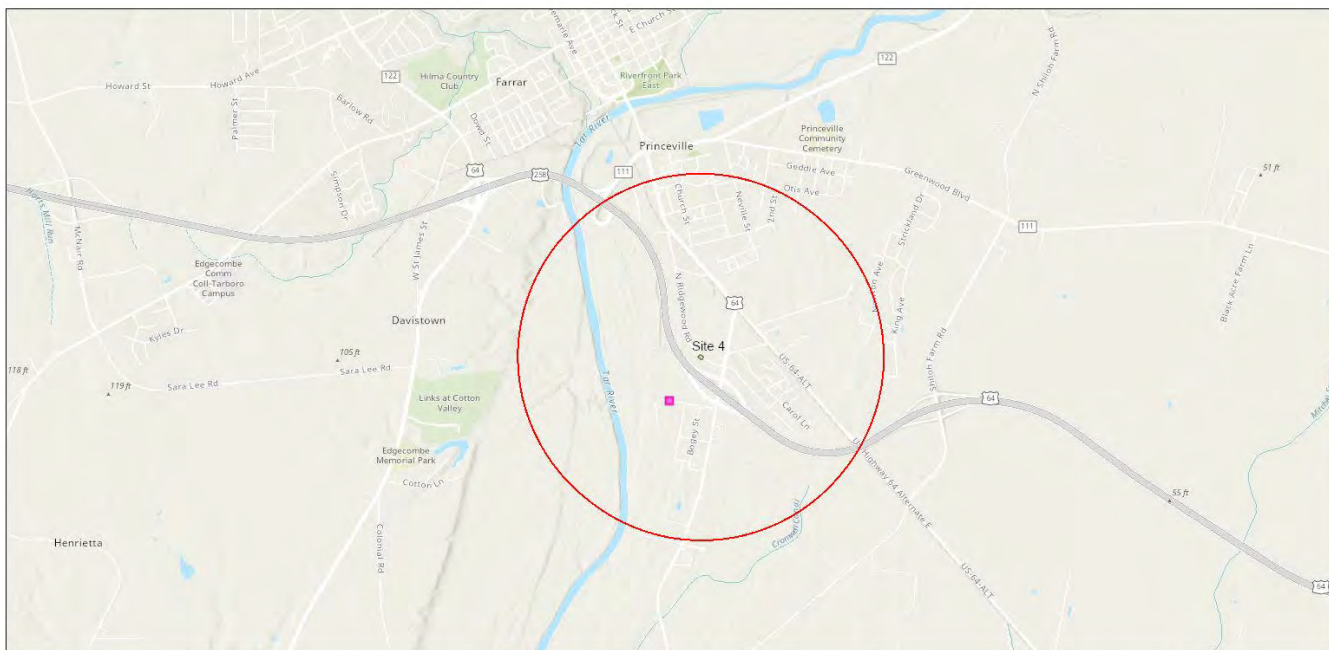
Edgecombe County

NEPA project 23-0029

(site 4)

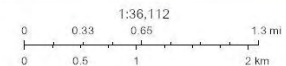
Area : 2,065.51 acres

Aug 29 2022 11:45:04 Eastern Daylight Time



Pre Regulatory Landfill Sites

-  Investigation



Esrri, NASA, NGA, USGS, FEMA, State of North Carolina DOT, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

Superfund Section Only  
 Edgecombe County NEPA project 23-0029  
 Site 4

## Summary

Name	Count	Area(acres)	Length(mi)
Certified DSCA Sites	0	N/A	N/A
Federal Remediation Branch Sites	0	N/A	N/A
Inactive Hazardous Sites	0	N/A	N/A
Pre-Regulatory Landfill Sites	1	N/A	N/A
Brownfields Program Sites	0	N/A	N/A

## Pre-Regulatory Landfill Sites

#	EPAID	SITENAME	Count
1	NONCD0000297	Princeville Dump	1



# Department of Environmental Quality Project Review Form

**Project Number: 23-E-4600-0029**

**County: Edgecombe**

**Date Received: 8-18-2022**

**Due Date: 9-15-2022**

**Project Description:** *Environmental Assessment - Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.*

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input type="checkbox"/> Coastal Management
<input type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR	<input type="checkbox"/> Parks & Recreation	<input type="checkbox"/> Marine Fisheries
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR - Public Water	<input checked="" type="checkbox"/> Waste Mgmt	<input type="checkbox"/> Military Affairs
<input checked="" type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR (LQ & SW)	<input checked="" type="checkbox"/> Water Resources Mgmt (Public Water, Planning & Water Quality Program)	<input type="checkbox"/> DMF-Shellfish Sanitation
<input type="checkbox"/> Washington	<input checked="" type="checkbox"/> DWM - WaRO	<input type="checkbox"/> DWR-Transportation Unit	<input checked="" type="checkbox"/> Wildlife <u>Maria</u>
<input type="checkbox"/> Wilmington			<input type="checkbox"/> Wildlife/DOT
<input type="checkbox"/> Winston-Salem			

Manager Sign-Off/Region:	Date: 9/15/22	In-House Reviewer/Agency: Melodi Deaver, Hazardous Waste Section
--------------------------	------------------	---

Response (check all applicable)

No objection to project as proposed.
  No Comment

Insufficient information to complete review
  Other (specify or attach comments)

If you have any questions, please contact:

**Lyn Hardison at [lyn.hardison@ncdenr.gov](mailto:lyn.hardison@ncdenr.gov) or (252) 948-3842**  
**943 Washington Square Mall Washington NC 27889**  
**Courier No. 16-04-01**

## Department of Environmental Quality Project Review Form

**Project Number: 23-E-4600-0029**

**County: Edgecombe**

**Date Received: 8-18-2022**

**Due Date: 9-15-2022**

**Project Description:** *Environmental Assessment - Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.*

This Project is being reviewed as indicated below:

Regional Office	Regional Office Area	In-House Review	
<input type="checkbox"/> Asheville	<input checked="" type="checkbox"/> Air	<input type="checkbox"/> Air Quality	<input type="checkbox"/> Coastal Management
<input type="checkbox"/> Fayetteville	<input checked="" type="checkbox"/> DWR	<input type="checkbox"/> Parks & Recreation	<input type="checkbox"/> Marine Fisheries
<input type="checkbox"/> Mooresville	<input checked="" type="checkbox"/> DWR - Public Water	<input checked="" type="checkbox"/> Waste Mgmt	<input type="checkbox"/> Military Affairs
<input checked="" type="checkbox"/> Raleigh	<input checked="" type="checkbox"/> DEMLR (LQ & SW)	<input checked="" type="checkbox"/> Water Resources Mgmt (Public Water, Planning & Water Quality Program)	<input type="checkbox"/> DMF-Shellfish Sanitation
<input type="checkbox"/> Washington	<input checked="" type="checkbox"/> DWM - WaRO	<input type="checkbox"/> DWR-Transportation Unit	<input checked="" type="checkbox"/> Wildlife <u>Maria</u>
<input type="checkbox"/> Wilmington			<input type="checkbox"/> Wildlife/DOT
<input type="checkbox"/> Winston-Salem			

Manager Sign-Off/Region:	Date: <u>9-2-2022</u>	In-House Reviewer/Agency: 
--------------------------	--------------------------	-------------------------------

Response (check all applicable)

- |  |   |
|--|---|
| <input type="checkbox"/> No objection to project as proposed.        | <input checked="" type="checkbox"/> No Comment              |
| <input type="checkbox"/> Insufficient information to complete review | <input type="checkbox"/> Other (specify or attach comments) |

If you have any questions, please contact:

**Lyn Hardison at [lyn.hardison@ncdenr.gov](mailto:lyn.hardison@ncdenr.gov) or (252) 948-3842  
943 Washington Square Mall Washington NC 27889  
Courier No. 16-04-01**

## **Comments on Early Notice**



Roy Cooper  
Governor

Pamela B. Cashwell  
Secretary

December 22, 2022

Andrea Gievers  
Town of Princeville  
c/o NC Department of Public Safety  
Office of Recovery and Resiliency  
Durham, NC 27709-

Re: SCH File # 23-E-4600-0103 Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

Dear Andrea Gievers:

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act.

Attached to this letter are comments made by the agencies in the review of this document. If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

If you have any questions, please do not hesitate to contact me at (984) 236-0000.

Sincerely,

CRYSTAL BEST  
State Environmental Review Clearinghouse

#### Attachments

Mailing  
1301 Mail Service Center | Raleigh, NC 27699-1301



[ncadmin.nc.gov](http://ncadmin.nc.gov)

Location  
116 West Jones St. | Raleigh NC 27603  
984-236-0000 T

Control No.: 23-E-4600-0103

Date Received: 12/8/2022

County.: EDGECOMBE

Agency Response: 12/21/2022

Review Closed: 12/21/2022

JINTAO WEN  
CLEARINGHOUSE COORDINATOR  
DPS - DIV OF EMERGENCY MANAGEMENT

Project Information

Type: National Environmental Policy Act Environmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: JINTAO WEN

Date: 12/19/2022

Control No.: 23-E-4600-0103

Date Received: 12/8/2022

County.: EDGECOMBE

Agency Response: 12/21/2022

Review Closed: 12/21/2022

JEANNE STONE  
CLEARINGHOUSE COORDINATOR  
DEPT OF TRANSPORTATION

Project Information

Type: National Environmental Policy Act ironmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: JEANNE STONE

Date: 12/16/2022

Control No.: 23-E-4600-0103

Date Received: 12/8/2022

County.: EDGECOMBE

Agency Response: 12/21/2022

Review Closed: 12/21/2022

LYN HARDISON  
CLEARINGHOUSE COORDINATOR  
DEPT OF ENVIRONMENTAL QUALITY

Project Information

Type: National Environmental Policy Act Environmental Assessment

Applicant: Town of Princeville

Project Desc.: Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.

As a result of this review the following is submitted:

No Comment

Comments Below

Documents Attached

Reviewed By: LYN HARDISON

Date: 12/22/2022



NORTH CAROLINA  
Environmental Quality

ROY COOPER  
Governor

ELIZABETH S. BISER  
Secretary

To: Crystal Best  
State Clearinghouse  
NC Department of Administration

From: Lyn Hardison  
Division of Environmental Assistance and Customer Service  
Washington Regional Office

Re: 23-0103  
Environmental Assessment - Proposed project is for the inlet and outlet channel repairs at four (4) existing floodgate culverts along the levee and construct permanent access roads to facilitate said repairs and provide access for future inspection, maintenance, and flood-fighting operations.  
Edgecombe County

Date: December 21, 2022

The Department of Environment Quality has reviewed the proposal for the referenced project. The comments are attached for the applicant's review.

The Department will continue to be available to assist the applicant with any questions or concerns.

Thank you for the opportunity to respond.

Attachments



North Carolina Department of Environmental Quality

217 West Jones Street | 1601 Mail Service Center | Raleigh, North Carolina 27699-1601

919.707.8600



ROY COOPER  
Governor  
ELIZABETH S. BISER  
Secretary  
MICHAEL SCOTT  
Director



## MEMORANDUM

TO: Michael Scott, Division Director through Sharon Brinkley

FROM: Amanda Thompson, Environmental Senior Specialist - Solid Waste Section

DATE: December 14, 2022

SUBJECT: Review: SW 23-0103 – Edgecombe County (Environmental Assessment – Town of Princeville – Proposed project is for the inlet and outlet channel repairs at 4 existing floodgate culverts along the levee and construct permanent access roads.)

---

The Division of Waste Management, Solid Waste Section (Section) has reviewed the documents submitted for the subject project in Edgecombe County, NC. Based on the information provided in this document, the Section at this time does not see an adverse impact on the surrounding communities and likewise knows of no situations in the communities, which would affect this project.

For any planned or proposed projects, it is recommended that during any land clearing, demolition, and construction, the Town of Princeville and/or its contractors would make every feasible effort to minimize the generation of waste, to recycle materials for which viable markets exist, and to use recycled products and materials in the development of this project where suitable. **Any waste generated by and of the project that cannot be beneficially reused or recycled as described, may require disposal of at a solid waste management facility permitted by the Division. The Section strongly recommends that the Town of Princeville require all contractors to provide proof of proper disposal for all generated waste to permitted facilities.**

Permitted solid waste management facilities are listed on the Division of Waste Management, Solid Waste Section portal site at: <https://deq.nc.gov/about/divisions/waste-management/waste-management-rules-data/solid-waste-management-annual-reports/solid-waste-permitted-facility-list>

And the site locator tool at:

<https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=7dd59be2750b40bebebf49fc383f688>

Questions regarding solid waste management for this project should be directed to Mr. John College, Environmental Senior Specialist, Solid Waste Section, at (919) 268-1524.

cc: John College, Environmental Senior Specialist



North Carolina Department of Environmental Quality | Division of Waste Management  
Fayetteville Regional Office | 225 Green Street, Suite 714 | Fayetteville, North Carolina 28301  
910.433.3300

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh  
 Project Number: 23-0103 Due Date: 12/20/2022  
 County: Edgecombe

After review of this project, it has been determined that the DEQ permit(s) and/or approvals indicated may need to be obtained for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of the form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory time limit)
<input type="checkbox"/>	Permit to construct & operate wastewater treatment facilities, non-standard sewer system extensions & sewer systems that do not discharge into state surface waters.	Application 90 days before begins construction or award of construction contracts. On-site inspection may be required. Post-application technical conference usual.	30 days (90 days)
<input type="checkbox"/>	Permit to construct & operate, sewer extensions involving gravity sewers, pump stations and force mains discharging into a sewer collection system	Fast-Track Permitting program consists of the submittal of an application and an engineer's certification that the project meets all applicable State rules and Division Minimum Design Criteria.	30 days (N/A)
<input type="checkbox"/>	NPDES - permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begins activity. On-site inspection. Pre-application conference usual. Additionally, obtain permit to construct wastewater treatment facility granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90-120 days (N/A)
<input type="checkbox"/>	Water Use Permit	Pre-application technical conference usually necessary.	30 days (N/A)
<input type="checkbox"/>	Well Construction Permit	Complete application must be received, and permit issued prior to the installation of a groundwater monitoring well located on property not owned by the applicant, and for a large capacity (>100,000 gallons per day) water supply well.	7 days (15 days)
<input type="checkbox"/>	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Pre-application conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
<input type="checkbox"/>	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100 thru 2Q.0300)	Application must be submitted, and permit received prior to construction and operation of the source. If a permit is required in an area without local zoning, then there are additional requirements and timelines (2Q.0113).	90 days
<input checked="" type="checkbox"/>	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
<input checked="" type="checkbox"/>	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 20.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-707-5950	Please Note - The Health Hazards Control Unit (HHCU) of the N.C. Department of Health and Human Services, must be notified of plans to demolish a building, including residences for commercial or industrial expansion, even if no asbestos is present in the building.	60 days (90 days)
<input checked="" type="checkbox"/>	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres are to be disturbed. Plan must be filed with and approved by applicable Regional Office (Land Quality Section) at least 30 days before beginning activity. A NPDES Construction Stormwater permit (NCG010000) is also usually issued should design features meet minimum requirements. A fee of \$100 for the first acre or any part of an acre. An express review option is available with additional fees.		20 days (30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		(30 days)
<input type="checkbox"/>	Sedimentation and erosion control must be addressed in accordance with _____ <b>Local Government's</b> approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable Stormwater conveyances and outlets.		Based on Local Program
<input type="checkbox"/>	Compliance with 15A NCAC 04B .0125 – Buffers Zones for Trout Waters shall have an undisturbed buffer zone 25 feet wide or of sufficient width to confine visible siltation within the twenty-five percent (25%) of the buffer zone nearest the land-disturbing activity, whichever is greater.		
<input type="checkbox"/>	Compliance with 15A NCAC 2H .0126 - NPDES Stormwater Program which regulates three types of activities: Industrial, Municipal Separate Storm Sewer System & Construction activities that disturb ≥1 acre.		30-60 days (90 days)
<input type="checkbox"/>	Compliance with 15A NCAC 2H 1000 -State Stormwater Permitting Programs regulate site development and post-construction stormwater runoff control. Areas subject to these permit programs include site all 20 coastal counties, and various other counties and watersheds throughout the state.		45 days (90 days)

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh  
 Project Number: 23-0103 Due Date: 12/20/2022  
 County: Edgecombe

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory time limit)
<input type="checkbox"/>	Mining Permit	On-site inspection usual. Surety bond filed with DEQ Bond amount varies with type mine and number of acres of affected land. Affected area greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
<input type="checkbox"/>	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to prepare plans, inspect construction, and certify construction is according to DEQ approved plans. May also require a permit under mosquito control program. And a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of \$200.00 must accompany the application. An additional processing fee based on a percentage, or the total project cost will be required upon completion.	30 days (60 days)
<input type="checkbox"/>	Oil Refining Facilities	N/A	90-120 days (N/A)
<input type="checkbox"/>	Permit to drill exploratory oil or gas well	File surety bond of \$5,000 with DEQ running to State of NC conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DEQ rules and regulations.	10 days N/A
<input type="checkbox"/>	Geophysical Exploration Permit	Application filed with DEQ at least 10 days prior to issue of permit. Application by letter. No standard application forms.	10 days N/A
<input type="checkbox"/>	State Lakes Construction Permit	Application fee based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property	15-20 days N/A
<input checked="" type="checkbox"/>	401 Water Quality Certification	Compliance with the T15A 02H .0500 Certifications are required whenever construction or operation of facilities will result in a discharge into navigable water as described in 33 CFR part 323.	60 days (130 days)
<input checked="" type="checkbox"/>	Compliance with Catawba, Goose Creek, Jordan Lake, Randleman, Tar Pamlico or Neuse Riparian Buffer Rules is required. Buffer requirements: <a href="http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program">http://deq.nc.gov/about/divisions/water-resources/water-resources-permits/wastewater-branch/401-wetlands-buffer-permits/401-riparian-buffer-protection-program</a>		
<input type="checkbox"/>	Nutrient Offset: Loading requirements for nitrogen and phosphorus in the Neuse and Tar-Pamlico River basins, and in the Jordan and Falls Lake watersheds, as part of the nutrient-management strategies in these areas. DWR nutrient offset information: <a href="http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information">http://deq.nc.gov/about/divisions/water-resources/planning/nonpoint-source-management/nutrient-offset-information</a>		
<input type="checkbox"/>	CAMA Permit for MAJOR development	\$250.00 - \$475.00 fee must accompany application	75 days (150 days)
<input type="checkbox"/>	CAMA Permit for MINOR development	\$100.00 fee must accompany application	22 days (25 days)
<input type="checkbox"/>	Abandonment of any wells, if required must be in accordance with Title 15A. Subchapter 2C.0100.		
<input checked="" type="checkbox"/>	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
<input checked="" type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of a public water system must be approved by the Division of Water Resources/Public Water Supply Section prior to the award of a contract or the initiation of construction as per 15A NCAC 18C .0300 et. seq., Plans and specifications should be submitted to 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. All public water supply systems must comply with state and federal drinking water monitoring requirements. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input checked="" type="checkbox"/>	If existing water lines will be relocated during the construction, plans for the water line relocation must be submitted to the Division of Water Resources/Public Water Supply Section at 1634 Mail Service Center, Raleigh, North Carolina 27699-1634. For more information, contact the Public Water Supply Section, (919) 707-9100.		30 days
<input type="checkbox"/>	Plans and specifications for the construction, expansion, or alteration of the _____ water system must be approved through the _____ delegated plan approval authority. Please contact them at _____ for further information.		

State of North Carolina Department of Environmental Quality  
 INTERGOVERNMENTAL REVIEW PROJECT COMMENTS

Reviewing Regional Office: Raleigh  
 Project Number: 23-0103 Due Date: 12/20/2022  
 County: Edgecombe

Other Comments (attach additional pages as necessary, being certain to comment authority)

Division	Initials	No comment	Comments	Date Review
DAQ	SH	<input type="checkbox"/>	See checked boxes above.	12/9/2022
DWR-WQROS (Aquifer & Surface)	&	<input type="checkbox"/>	It is recommended to schedule a site visit with 401 Water quality staff to discuss the proposal and to ensure compliance will be maintained per 401 surface Water requirements, surface water standards and buffer rules.  If wetland, riparian buffers or stream impacts are proposed, this project will need to comply with/secure a 404 permit from the USACE, obtain a 401 Water Quality Certification authorization and a riparian buffer authorization. &	/ /
DWR-PWS	SG	<input type="checkbox"/>	See Checked boxes above	/ /
DEMLR (LQ & SW)	ISB	<input type="checkbox"/>	See Checked Box	12/14/2022
DWM – UST		<input type="checkbox"/>		/ /
Other Comments		<input type="checkbox"/>		/ /

**REGIONAL OFFICES**

Questions regarding these permits should be addressed to the Regional Office marked below.

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> <b>Asheville Regional Office</b><br>2090 U.S. 70 Highway<br>Swannanoa, NC 28778-8211<br>Phone: 828-296-4500<br>Fax: 828-299-7043 | <input type="checkbox"/> <b>Fayetteville Regional Office</b><br>225 Green Street, Suite 714,<br>Fayetteville, NC 28301-5043<br>Phone: 910-433-3300<br>Fax: 910-486-0707 | <input type="checkbox"/> <b>Mooresville Regional Office</b><br>610 East Center Avenue, Suite 301,<br>Mooresville, NC 28115<br>Phone: 704-663-1699<br>Fax: 704-663-6040 |
| <input type="checkbox"/> <b>Raleigh Regional Office</b><br>3800 Barrett Drive,<br>Raleigh, NC 27609<br>Phone: 919-791-4200<br>Fax: 919-571-4718           | <input type="checkbox"/> <b>Washington Regional Office</b><br>943 Washington Square Mall,<br>Washington, NC 27889<br>Phone: 252-946-6481<br>Fax: 252-975-3716           | <input type="checkbox"/> <b>Wilmington Regional Office</b><br>127 Cardinal Drive Ext.,<br>Wilmington, NC 28405<br>Phone: 910-796-7215<br>Fax: 910-350-2004             |
|   | <input type="checkbox"/> <b>Winston-Salem Regional Office</b><br>450 Hanes Mill Road, Suite 300,<br>Winston-Salem, NC 27105<br>Phone: 336-776-9800<br>Fax: 336-776-9797 |  |