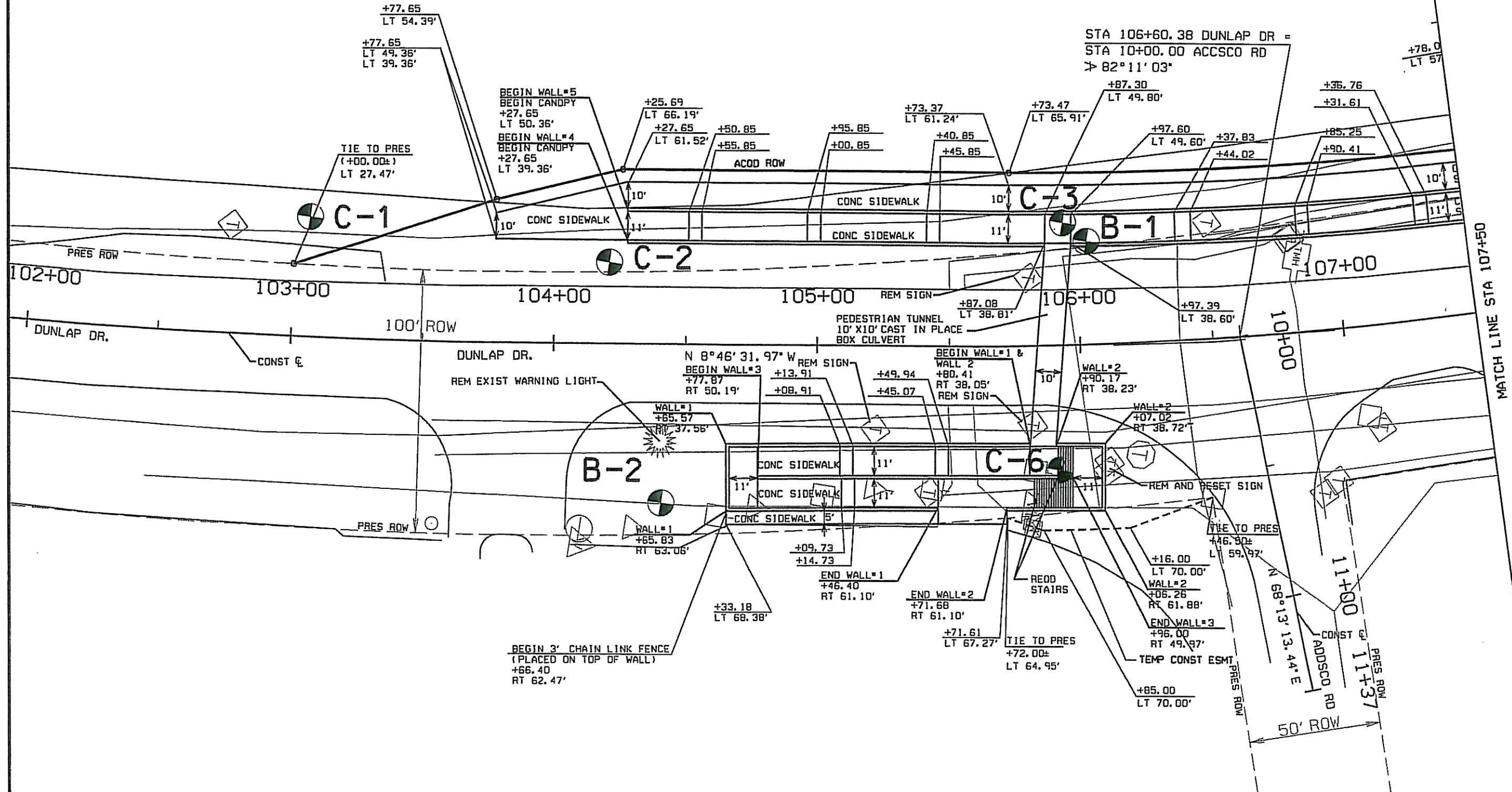


PED TUNNEL PLAN SHEET 01

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
ST-049-000-007	2012	?

LEGEND

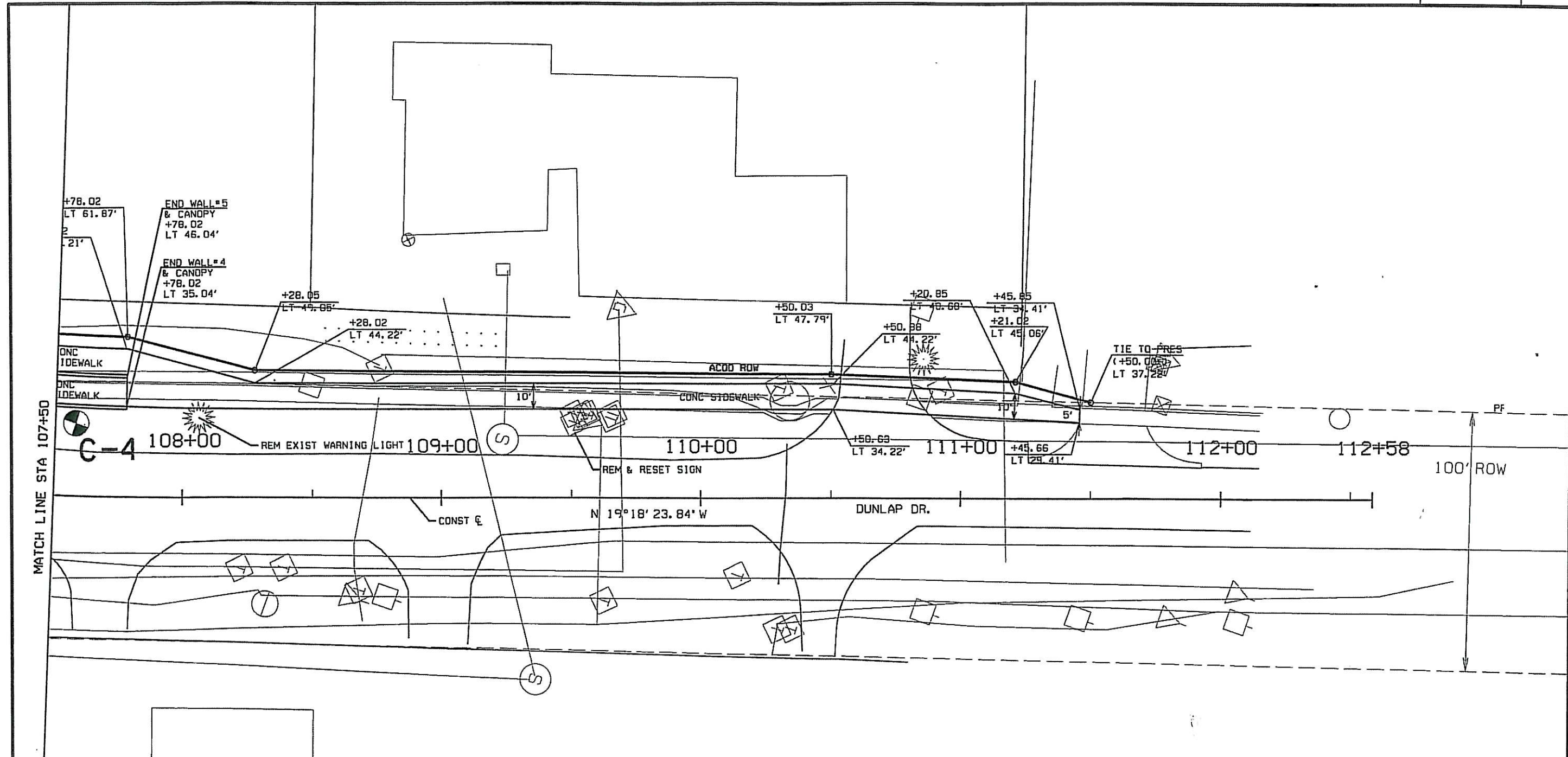
Boring / CPT Number B-1/C-1
 Boring Location



RESPONSIBLE PE:	SUPERVISOR:	DESIGNER:	PLAN SUBMITTAL	ALABAMA DEPARTMENT OF TRANSPORTATION	0 20 40 HORIZ SCALE (FEET)	SHEET TITLE	ROUTE
DATE:	DATE:	DATE:				PED TUNNEL PLAN SHEET 01	DUNLAP DR

PED TUNNEL PLAN SHEET 02

REFERENCE PROJECT NO	FISCAL YEAR	SHEET NO
ST-049-000-007	2012	?



MATCH LINE STA 107+50

LEGEND

Boring / CPT Number B-1/C-1

Boring Location

RESPONSIBLE PE:	SUPERVISOR:	DESIGNER:	PLAN SUBMITTAL	 ALABAMA DEPARTMENT OF TRANSPORTATION	HORIZ SCALE (FEET)	SHEET TITLE	ROUTE
DATE:	DATE:	DATE:				PED TUNNEL PLAN SHEET 02	DUNLAP DR

thompson ENGINEERING RECORD OF TEST BORING

PROJECT: AUSTAL Pedestrian Tunnel
 BORING NO.: B-1
 STATION: STA 106+03.27 LT 39.69'
 CLIENT: ALDOT
 PROJECT NO.: 12-4035-0003

GROUND ELEVATION: +16.9 ft.
 DATE DRILLED: 3/19/12
 GR. WATER DEPTH: 14.1 ft.
 24 HR. GR. WATER DEPTH: N.O.

DRILL RIG: CME 650 X
 DRILLER: Stan White
 DRILLING METHOD: Mud Rotary
 HAMMER TYPE: Automatic
 METHOD OF RECOVERY: ASTM D1586 & D1587

DEPTH/ELEV.	SYMBOL	MAJOR SOIL COMPONENT	OTHER COMPONENTS	SAMPLE I.D. NO.	N OR REC/RQD	AASHTO	WC	LL	PI	200
0		SAND (SP)	Loose, medium to fine grained, light reddish brown	S-1	7	A-3				3.1
1.5			Very loose, light brown	S-2	4					
3			Very loose, light reddish brown, trace gravel	S-3	2					
4.5			Very loose	S-4	3					
6			Medium dense	S-5	11					
8		SANDY SILT (ML)	Stiff, light reddish brown	S-6	14	A-4				54.3
10										
12		SAND (SP)	Loose, medium to fine grained, light brown	S-7	7					
14										
16		SANDY CLAY (CH)	Soft, dark brown, includes organics	S-8	3	A-7-5	109.2	121	85	
18				Dark gray	T-1		A-4(0)	37.9	28	5
20		SANDY SILT (ML)								
22										
24		SAND (SP)	Loose, medium to fine grained, gray	S-9	9	A-2-4				11.6
26										
28				Loose, dark gray	S-10	10				
30				Loose	S-11	9				
32				Loose	S-12	10	A-3			

This Record of Test Boring is part of the project Geotechnical Report. Actual strata changes may be gradual over depth.

thompson ENGINEERING RECORD OF TEST BORING

PROJECT: AUSTAL Pedestrian Tunnel
 BORING NO.: B-1
 STATION: STA 106+03.27 LT 39.69'
 CLIENT: ALDOT
 PROJECT NO.: 12-4035-0003

GROUND ELEVATION: +16.9 ft.
 DATE DRILLED: 3/19/12
 GR. WATER DEPTH: 14.1 ft.
 24 HR. GR. WATER DEPTH: N.O.

DRILL RIG: CME 650 X
 DRILLER: Stan White
 DRILLING METHOD: Mud Rotary
 HAMMER TYPE: Automatic
 METHOD OF RECOVERY: ASTM D1586 & D1587

DEPTH/ELEV.	SYMBOL	MAJOR SOIL COMPONENT	OTHER COMPONENTS	SAMPLE I.D. NO.	N OR REC/RQD	AASHTO	WC	LL	PI	200
40		SAND (SP)	Medium dense	S-13	13					
42										
44				Loose	S-14	10				
46										
60		Boring Terminated at 60 feet.								

This Record of Test Boring is part of the project Geotechnical Report. Actual strata changes may be gradual over depth.

thompson ENGINEERING RECORD OF TEST BORING

PROJECT: AUSTAL Pedestrian Tunnel
 BORING NO.: B-2
 STATION: STA 104+41.09 RT 60.19'
 CLIENT: ALDOT
 PROJECT NO.: 12-4035-0003

























GROUND ELEVATION: +16.6 ft.
 DATE DRILLED: 3/19/12
 GR. WATER DEPTH: 13.5 ft.
 24 HR. GR. WATER DEPTH: N.O.

DRILL RIG: CME 650 X
 DRILLER: Stan White
 DRILLING METHOD: Mud Rotary
 HAMMER TYPE: Automatic
 METHOD OF RECOVERY: ASTM D1586 & D1587


DEPTH/ELEV.	SYMBOL	MAJOR SOIL COMPONENT	OTHER COMPONENTS	SAMPLE I.D. NO.	N OR REC/RQD	AASHTO	WC	LL	PI	200	
0		SAND (SP)	Loose, medium to fine grained, light brown	S-1	4	A-1-b				3.2	
1.5			Loose, with gravel	S-2	9						
3			Medium dense	S-3	11						
4.5			Loose, light reddish brown	S-4	8	A-3					
6			Medium dense	S-5	11						
8			Medium dense, reddish brown	S-6	14						
10		CLAY (CH)	Loose, dark gray	S-7	8						
12											
14		SAND (SP)	Brownish gray, with sand and organics	T-1		A-7-5(38)	68.9	72	46	76.6	
16											
18				Medium dense, medium to fine grained, gray	S-8	11					
20				Loose	S-9	6	A-3				4.5
22				Loose	S-10	6					
24			Loose	S-11	9						

This Record of Test Boring is part of the project Geotechnical Report. Actual strata changes may be gradual over depth.

STRATA SYMBOLS

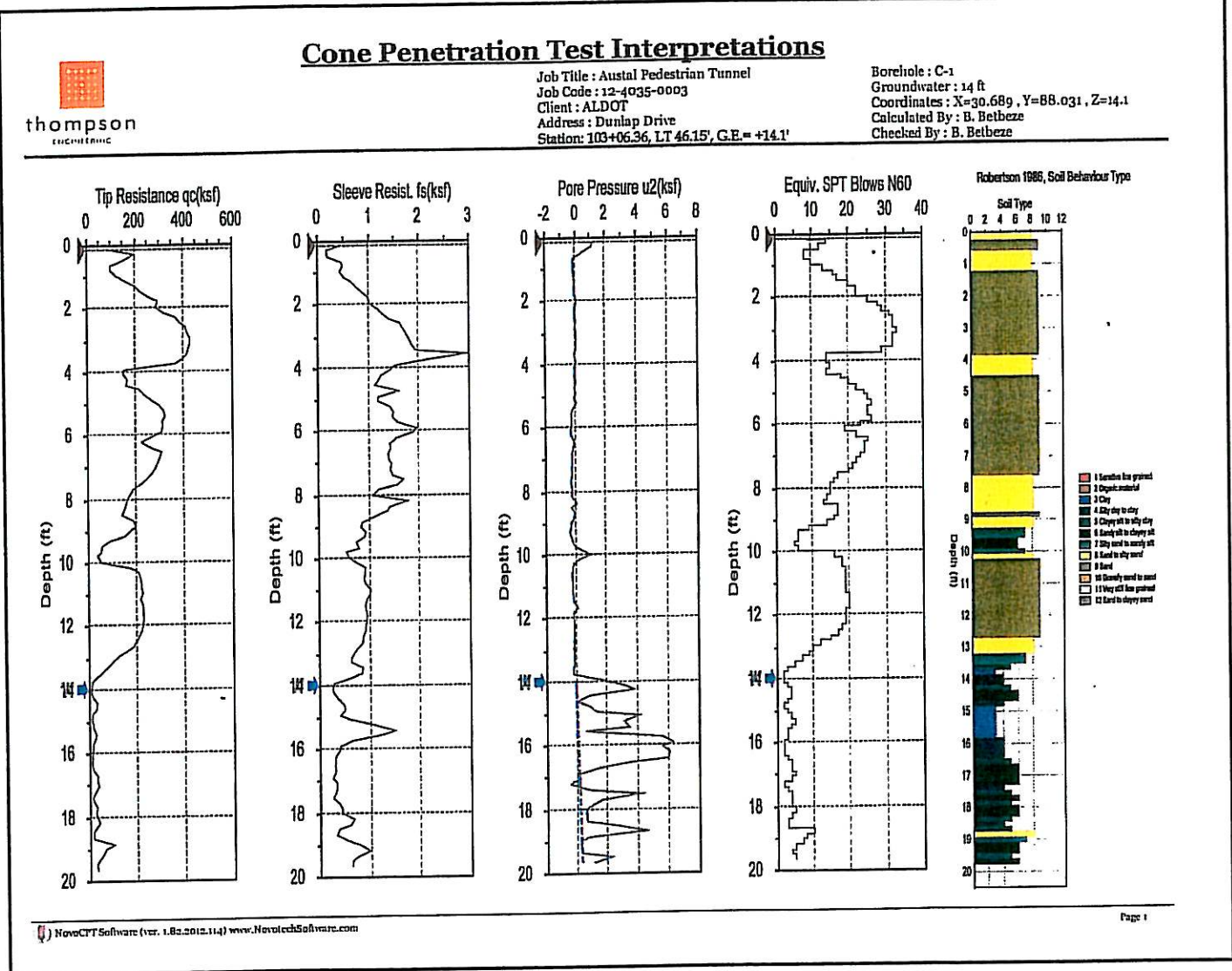
-  High plasticity (CH) clay
-  Sand (SP)
-  HSA - Hollow Stem Auger
-  Low plasticity (CL) clay
-  Silty sand (SM)
-  SSA - Solid Stem Auger
-  Clayey sand (SC)
-  Sand With Silt (SP-SM)
-  MR - Mud Rotary
-  Silty Clayey Sand (SC-SM)
-  Sandy Silt (ML)
-  NO - Not Obtained
-  Elastic silt (MH)
-  Ground Water, ATD
-  NE - Not Encountered
-  Limestone
-  24 Hr. Ground Water
-  S - SPT Sample
-  T - Shelby Tube Sample
-  Silty Clay (CL-ML)
-  S - SPT Sample
-  T - Shelby Tube Sample
-  Clayey gravel (GP)
-  Rock Core Sample

Alabama Department of Transportation

 2970 COTTAGE HILL RD. MOBILE, AL 36606	PROJECT NO: PEDESTRIAN TUNNEL FOUNDATION REPORT AUSTAL PEDESTRIAN TUNNEL MOBILE COUNTY, ALABAMA
APPROVED: SAM STERNBERG III, P.E.	Preliminary Project No: ST-049-000-007
GEOTECHNICAL ENGINEER	
DATE: 4/6/2012	TEST BORING RECORD Sheet of

		<h2>RECORD OF TEST BORING</h2>											
PROJECT: AUSTAL Pedestrian Tunnel BORING NO.: B-2 STATION: STA 104+41.09 RT 60.19' CLIENT: ALDOT PROJECT NO.: 12-4035-0003		GROUND ELEVATION: +16.6 ft. DATE DRILLED: 3/19/12 GR. WATER DEPTH: 13.5 ft. 24 HR. GR. WATER DEPTH: N.O.				DRILL RIG: CME 550 X DRILLER: Stan White DRILLING METHOD: Mud Rotary HAMMER TYPE: Automatic METHOD OF RECOVERY: ASTM D1586 & D1587							
DEPTH/ELEV.	SYMBOL	MAJOR SOIL COMPONENT	OTHER COMPONENTS	SAMPLE I.D. NO.	N OR REC/ RQD	AASHTO	WC	LL	PI	200			
40	[Symbol]	SAND (SP)	Medium dense	S-12	12	A-3					8.4		
45			Loose	S-13	9								
60		Boring Terminated at 60 feet.											

This Record of Test Boring is part of the project Geotechnical Report. Actual strata changes may be gradual over depth.



STRATA SYMBOLS

- | | | | | | |
|--|---------------------------|--|------------------------|--|--------------------------------|
| | High plasticity (CH) clay | | Sand (SP) | | HSA - Hollow Stem Auger |
| | Low plasticity (CL) clay | | Silty sand (SM) | | SSA - Solid Stem Auger |
| | Clayey sand (SC) | | Sand With Silt (SP-SM) | | MR - Mud Rotary |
| | Silty Clayey Sand (SC-SM) | | Sandy Silt (ML) | | NO - Not Obtained |
| | Elastic silt (MH) | | Ground Water, ATD | | NE - Not Encountered |
| | Limestone | | 24 Hr. Ground Water | | S - SPT Sample |
| | Silty Clay (CL-ML) | | S - SPT Sample | | T - Shelby Tube Sample |
| | Clayey gravel (GP) | | T - Shelby Tube Sample | | REC = Recovery |
| | | | Rock Core Sample | | RQD = Rock Quality Designation |

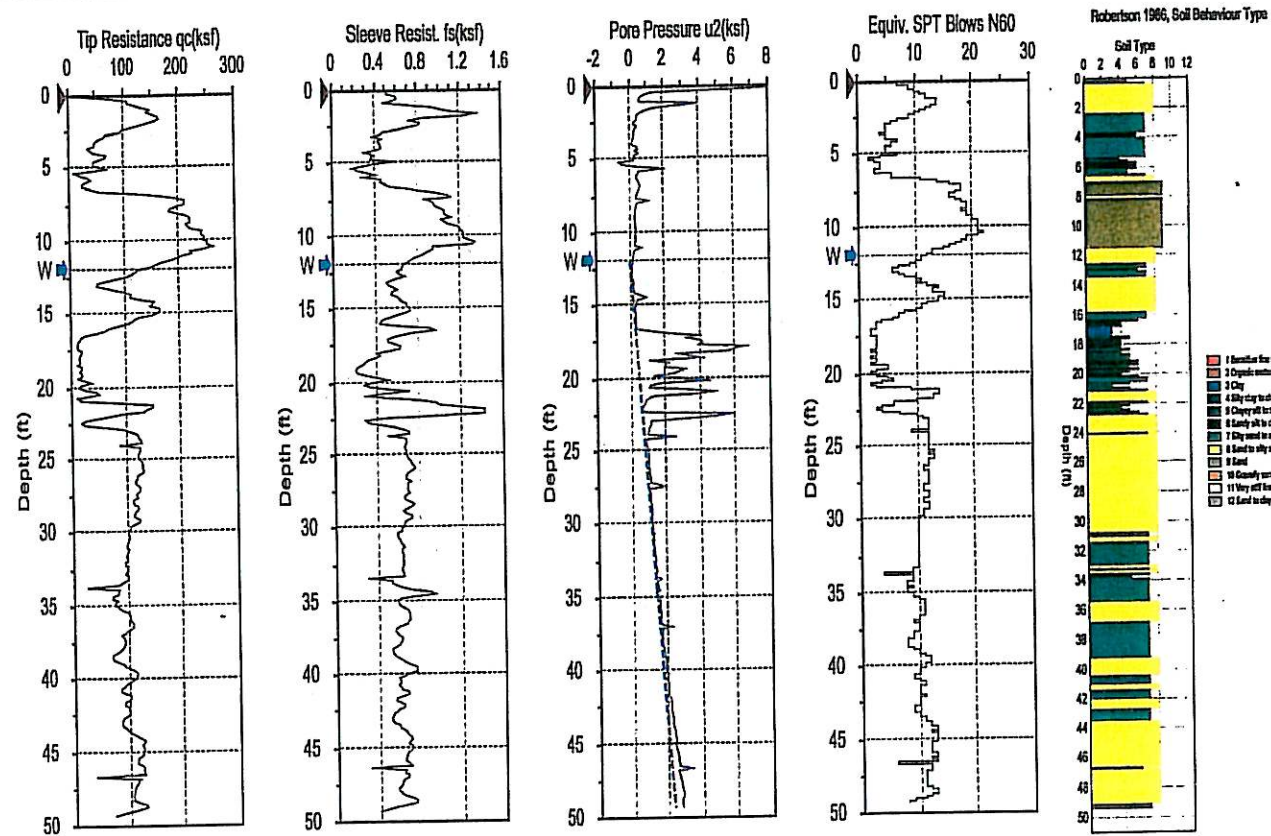
<h3>Alabama Department of Transportation</h3>	
<p>2970 COTTAGE HILL RD. MOBILE, AL 36606</p>	<p>PROJECT NO: PEDESTRIAN TUNNEL FOUNDATION REPORT AUSTAL PEDESTRIAN TUNNEL MOBILE COUNTY, ALABAMA</p>
APPROVED: SAM STERNBERG III, P.E. GEOTECHNICAL ENGINEER	Preliminary Project No: ST-049-000-007
DATE: 4/6/2012	TEST BORING RECORD Sheet of

Cone Penetration Test Interpretations



Job Title : Austal Pedestrian Tunnel
 Job Code : 12-4035-0003
 Client : ALDOT
 Address : Dunlap Drive
 Station : 104+20.81, LT 30.82, G.E. = +16.2'

Borehole : C-2
 Groundwater : 12 ft
 Coordinates : X=30.69, Y=88.031, Z=16.2
 Calculated By : B. Betheze
 Checked By : B. Betheze

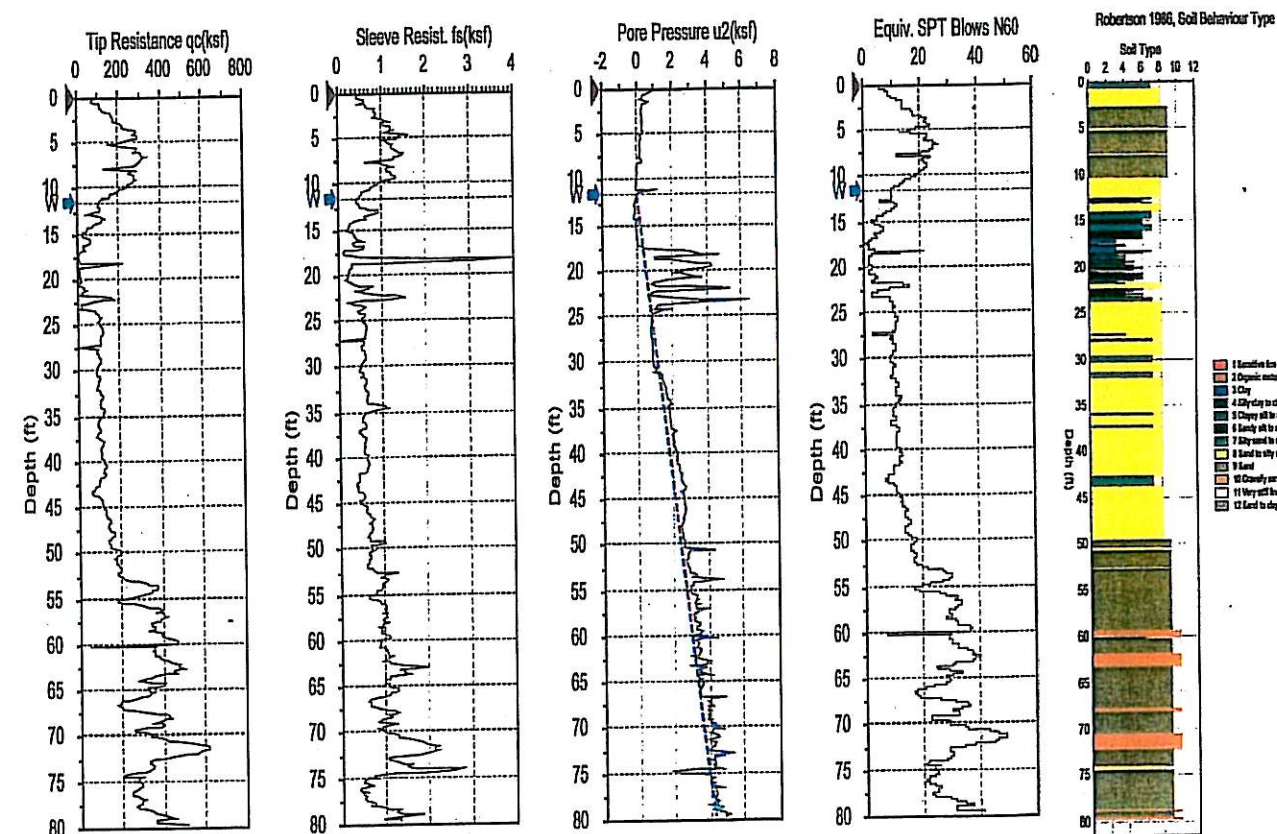


Cone Penetration Test Interpretations



Job Title : Austal Pedestrian Tunnel
 Job Code : 12-4035-0003
 Client : ALDOT
 Address : Dunlap Drive
 Station : 105+94.29, LT 46.49, G.E. = +16.3'

Borehole : C-3
 Groundwater : 11.6 ft
 Coordinates : X=30.69, Y=88.031, Z=16.3
 Calculated By : B. Betheze
 Checked By : B. Betheze



Alabama Department of Transportation



PROJECT NO:
 PEDESTRIAN TUNNEL FOUNDATION REPORT
 AUSTAL PEDESTRIAN TUNNEL
 MOBILE COUNTY, ALABAMA

APPROVED: SAM STERNBERG III, P.E.

GEOTECHNICAL ENGINEER

DATE: 4/6/2012

Preliminary Project No: ST-049-000-007

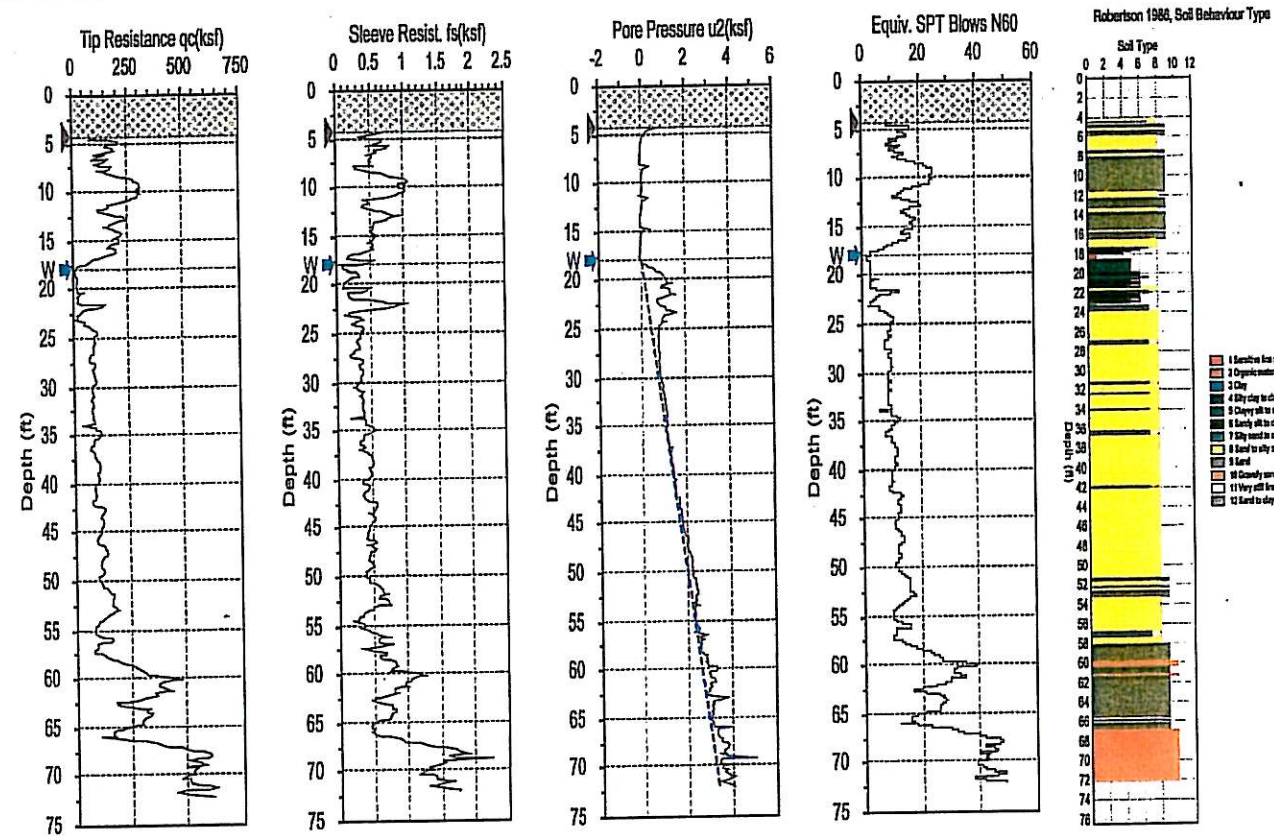
TEST BORING RECORD
 Sheet of

Cone Penetration Test Interpretations



Job Title : Austal Pedestrian Tunnel
 Job Code : 12-4035-0003
 Client : ALDOT
 Address : Dunlap Drive
 Station : 107+58.25, LT 28.28', G.R.=+16.9'

Borehole : C-4
 Groundwater : 18 ft
 Coordinates : X=30.691, Y=88.031, Z=16.9
 Calculated By : B. Betze
 Checked By : B. Betze

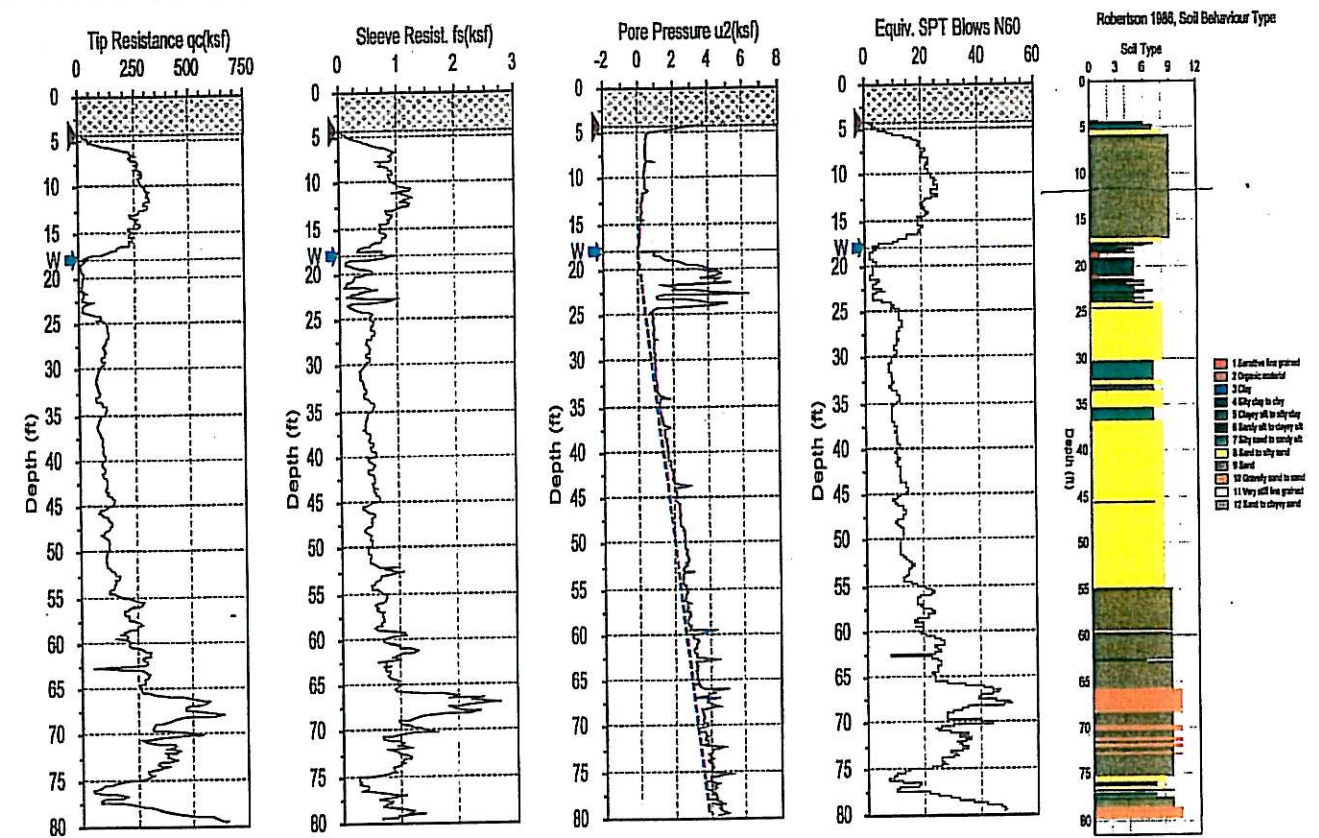


Cone Penetration Test Interpretations

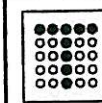


Job Title : Austal Pedestrian Tunnel
 Job Code : 12-4035-0003
 Client : ALDOT
 Address : Dunlap Drive
 Station : 105+91.46, LT 47.17', G.R.=+17.5'

Borehole : C-6
 Groundwater : 18 ft
 Coordinates : X=30.69, Y=88.031, Z=17.5
 Calculated By : B. Betze
 Checked By : B. Betze



Alabama Department of Transportation



thompson
 ENGINEERING
 2970 COTTAGE HILL RD.
 MOBILE, AL 36606

PROJECT NO:
 PEDESTRIAN TUNNEL FOUNDATION REPORT
 AUSTAL PEDESTRIAN TUNNEL
 MOBILE COUNTY, ALABAMA

APPROVED: SAM STERNBERG III, P.E.

GEOTECHNICAL ENGINEER

Preliminary Project No: ST-049-000-007

DATE: 4/6/2012

TEST BORING RECORD
 Sheet of



Client: ALDOT
Project: AUSTAL Pedestrian Tunnel

Project No.: 12-4035-0003
Division: 3rd
Date: 4/3/2012

ALABAMA DEPARTMENT OF TRANSPORTATION
SOILS AND BASE COARSE ANALYSIS

Boring No.		B-1	B-1	B-1	B-1	B-1	B-1
Station		106+03.27	106+03.27	106+03.27	106+03.27	106+03.27	106+03.27
Offset		39.7' LT	39.7' LT	39.7' LT	39.7' LT	39.7' LT	39.7' LT
Sample No.		S-3	S-6	S-8	T-1	S-9	S-12
Depth (ft)		3.0	8.5	18.5	20.0	23.5	38.5
TOTAL PASSING (%)							
3"	SIEVE (75mm)						
2 1/2"	" (63mm)						
2"	" (50mm)						
1 1/2"	" (37.5mm)						
1"	" (25mm)						
3/4"	" (19mm)						
1/2"	" (12.5mm)	100.0					
3/8"	" (9.5mm)	98.0					100.0
#4	" (4.75mm)	96.9					99.8
#10	" (2.00mm)	94.4	100.0	---	100.0	100.0	98.5
#20	" (0.85mm)	91.2	97.9	---	99.9	98.8	97.2
#40	" (425um)	73.3	84.6	---	99.7	86.9	85.1
#60	" (250um)	33.6	64.2	---	99.1	53.5	49.0
#100	" (150um)	7.8	55.4	---	88.4	22.1	11.1
#200	" (75um)	3.1	54.3	---	50.2	11.6	5.0
Clay		0.5	0.2	---	15.0	3.3	1.7
Silt		2.6	54.1	---	35.2	8.3	3.3
Total Sand		93.8	45.7	---	49.8	88.4	94.8
Total Gravel		3.1	0	---	0	0.0	0.2
ATTERBERG LIMITS							
Liquid Limit		---	---	121	28	---	---
Plastic Limit		---	---	36	23	---	---
Plasticity Index		---	---	85	5	---	---
USCS		SP	ML	CL	ML	SP-SM	SP
AASHTO		A-3	A-4	A-6(8)	A-4(0)	A-2-4	A-3

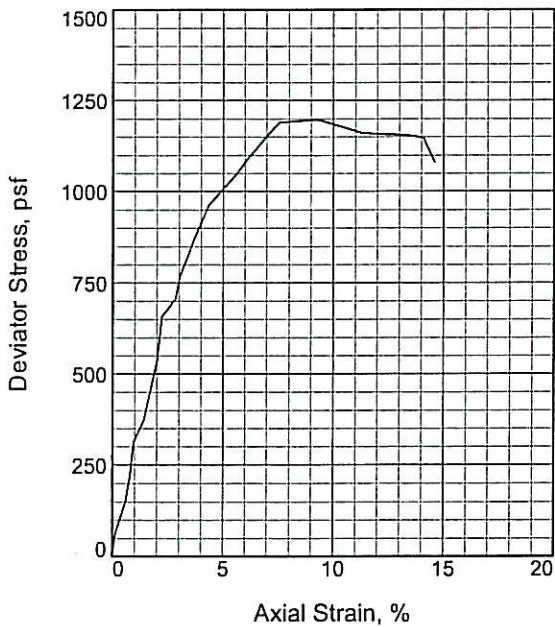
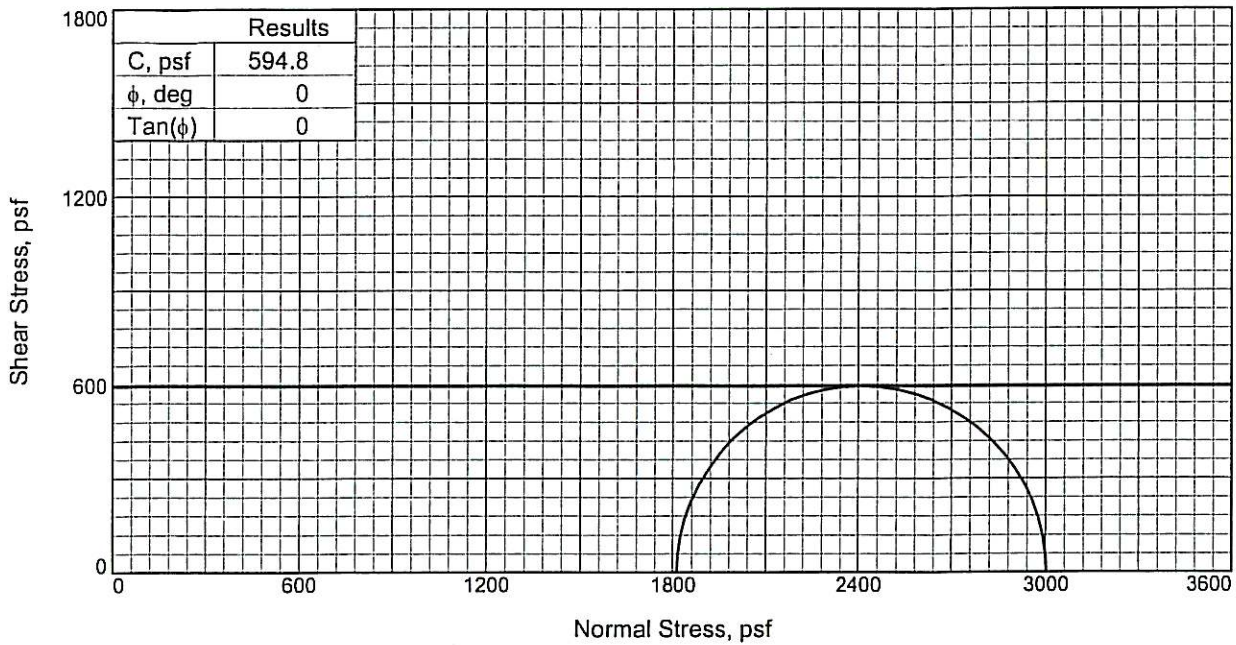


Client: ALDOT
Project: AUSTAL Pedestrian Tunnel

Project No.: 12-4035-0003
Division: 3rd
Date: 4/3/2012

ALABAMA DEPARTMENT OF TRANSPORTATION
SOILS AND BASE COARSE ANALYSIS

Boring No.		B-2	B-2	B-2	B-2	B-2
Station		104+41.09	104+41.09	104+41.09	104+41.09	104+41.09
Offset		60.2' RT	60.2' RT	60.2' RT	60.2' RT	60.2' RT
Sample No.		S-2	S-5	T-1	S-9	S-12
Depth (ft)		1.5	6.0	18.0	28.5	43.5
TOTAL PASSING (%)						
3"	SIEVE (75mm)					
2 1/2"	" (63mm)					
2"	" (50mm)					
1 1/2"	" (37.5mm)					
1"	" (25mm)					
3/4"	" (19mm)					
1/2"	" (12.5mm)	100.0				
3/8"	" (9.5mm)	95.2	100.0			100.0
#4	" (4.75mm)	83.9	97.3			99.1
#10	" (2.00mm)	75.4	93.8	100.0	100.0	95.7
#20	" (0.85mm)	68.0	91.8	99.6	98.5	93.4
#40	" (425um)	43.6	77.2	98.5	86.6	79.0
#60	" (250um)	16.8	41.0	96.6	51.6	42.5
#100	" (150um)	6.2	9.8	91.0	11.4	13.2
#200	" (75um)	3.2	3.3	76.6	4.5	6.4
Clay			0	37.0	0	2.2
Silt		3.2	3.3	39.6	4.5	4.2
Total Sand		80.7	94	23.4	95.5	92.7
Total Gravel		16.1	2.7	0	0	0.9
ATTERBERG LIMITS						
Liquid Limit		---	---	72	---	---
Plastic Limit		---	---	24	---	---
Plasticity Index		---	---	48	---	---
USCS		SP	SP	CH	SP	SP
AASHTO		A-1-b	A-3	A-7-6(39)	A-3	A-3



Specimen No.		1
Initial	Water Content, %	37.4
	Dry Density, pcf	85.7
	Saturation, %	106.0
	Void Ratio	0.9377
	Diameter, in.	1.374
	Height, in.	2.774
At Test	Water Content, %	39.2
	Dry Density, pcf	85.7
	Saturation, %	111.3
	Void Ratio	0.9377
	Diameter, in.	1.374
	Height, in.	2.774
Strain at peak, %		7.6
Back Pressure, psf		0.0
Cell Pressure, psf		1813.0
Fail. Stress, psf		1189.7
Strain, %		7.6
Ult. Stress, psf		1080.3
Strain, %		14.6
σ_1 Failure, psf		3002.6
σ_3 Failure, psf		1813.0

Type of Test:

Unconsolidated Undrained

Sample Type: 3-in. Shelby Tube

Description: SANDY CLAY, brownish gray

LL= 72 PL= 24 PI= 48

Assumed Specific Gravity= 2.66

Remarks: Compression Failure Mode: Symmetrical
Bulge

Report No. _____

Client: ALDOT

Project: AUSTAL Pedestrian Tunnel

Source of Sample: B-2 **Depth:** 18.0

Sample Number: T-1

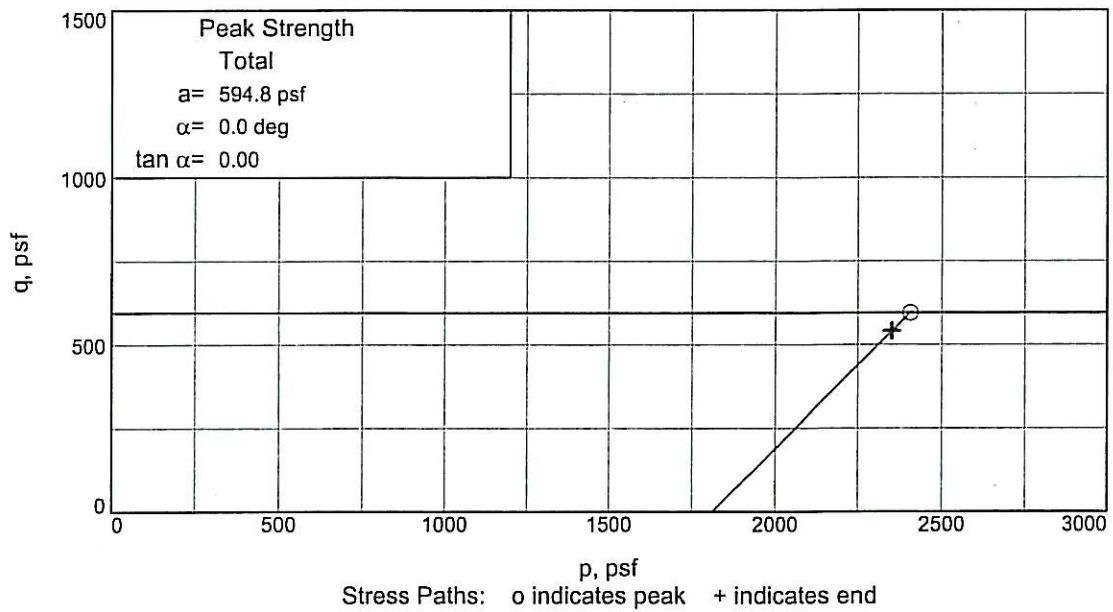
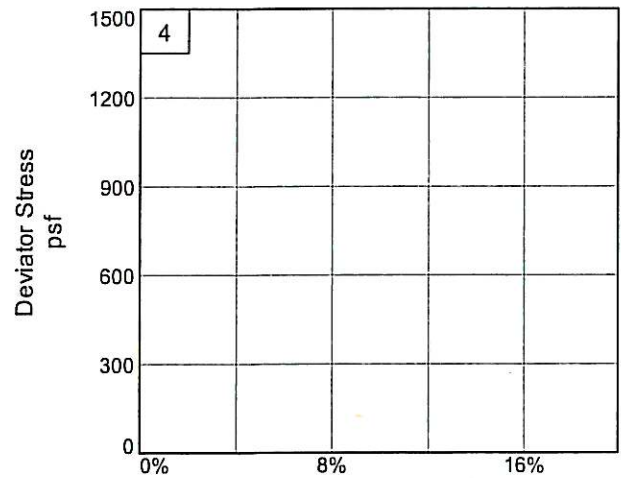
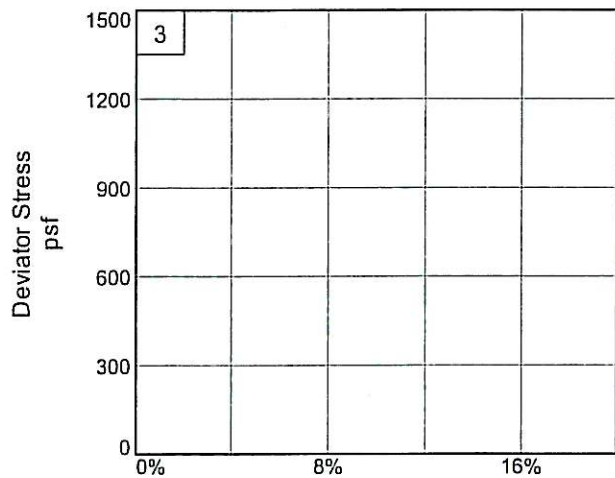
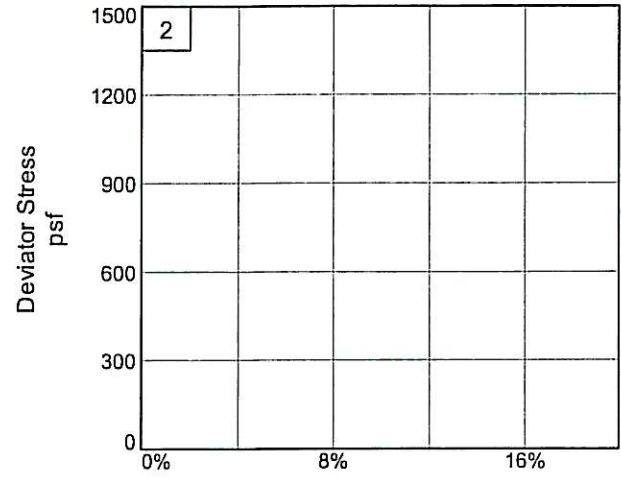
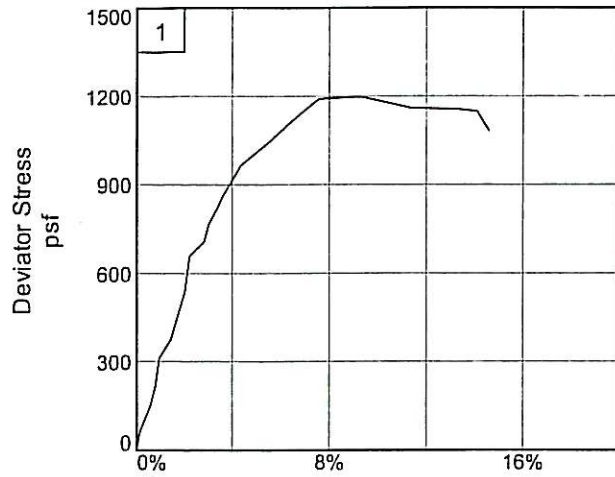
Proj. No.: 12-4035-0003

Date Sampled: 3/20/12

TRIAxIAL SHEAR TEST REPORT

Thompson Engineering

Mobile, Alabama



Client: ALDOT

Project: AUSTAL Pedestrian Tunnel

Source of Sample: B-2

Depth: 18.0

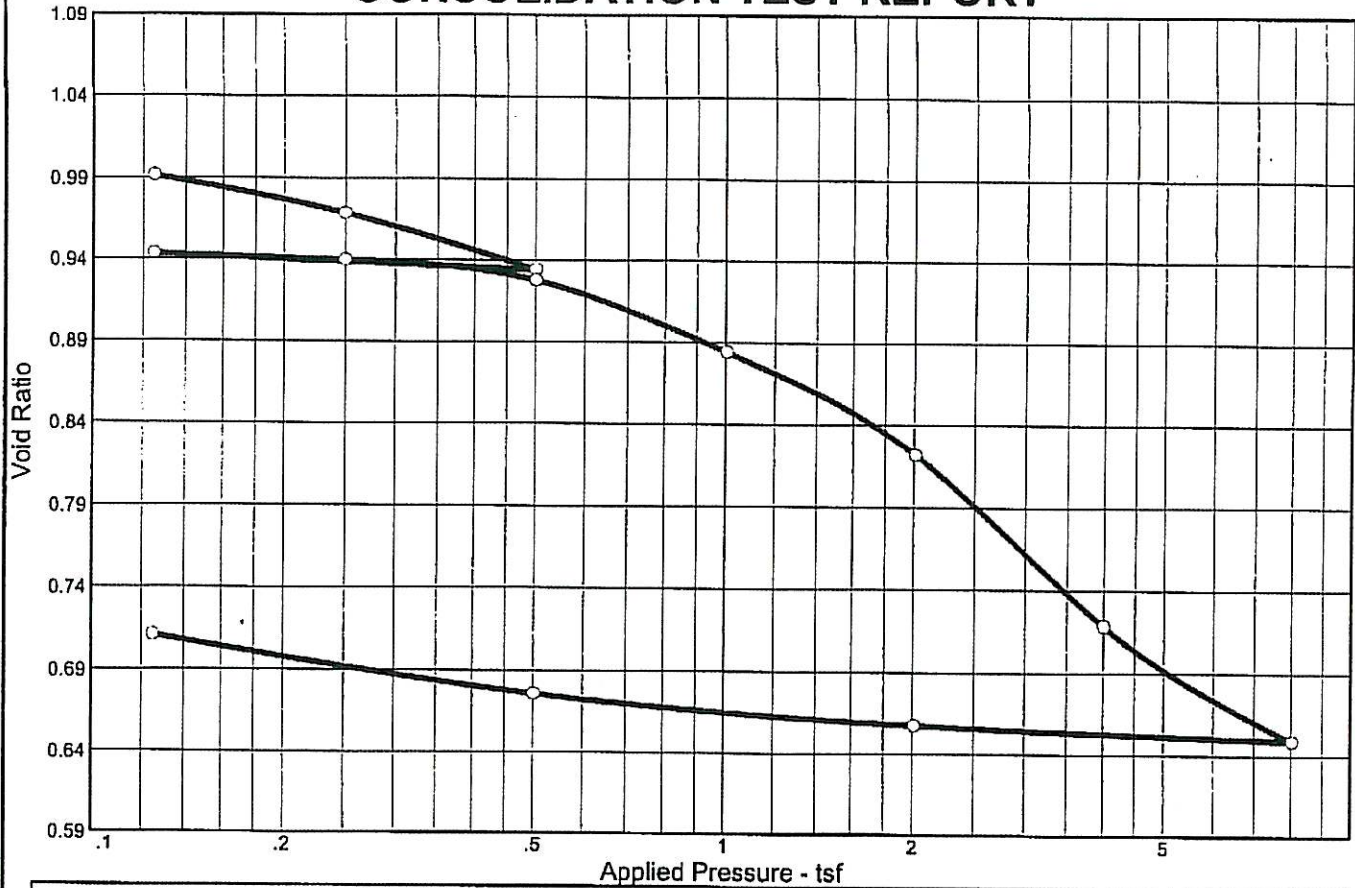
Sample Number: T-1

Project No.: 12-4035-0003

Report No. _____

Thompson Engineering

CONSOLIDATION TEST REPORT



Coefficients of Consolidation and Secondary Consolidation

No.	Load (tsf)	C_v (in.2/sec.)	C_α	No.	Load (tsf)	C_v (in.2/sec.)	C_α	No.	Load (tsf)	C_v (in.2/sec.)	C_α
2	0.25	0.0003	0.002								
3	0.50	0.0004	0.003								
5	0.25	0.0020	0.000								
6	0.50	0.0006	0.001								
7	1.00	0.0002	0.004								
8	2.01	0.0002	0.005								
9	4.01	0.0004	0.006								
10	8.05	0.0004	0.004								

Natural		Dry Dens. (pcf)	LL	PI	Sp. Gr.	USCS	AASHTO	Initial Void Ratio
Saturation	Moisture							
101.5 %	39.3 %	81.8	72	48	2.66	CH	A-7-6(39)	1.029

MATERIAL DESCRIPTION

CLAY, brownish gray, with sand and organics

Project No. 1240350003	Client: ALDOT	Remarks:
Project: AUSTAL Pedestrian Tunnel		
Source: B-2	Sample No.: T-1 Elev./Depth: 18.0	
Thompson Engineering Mobile, Alabama		

Report No.

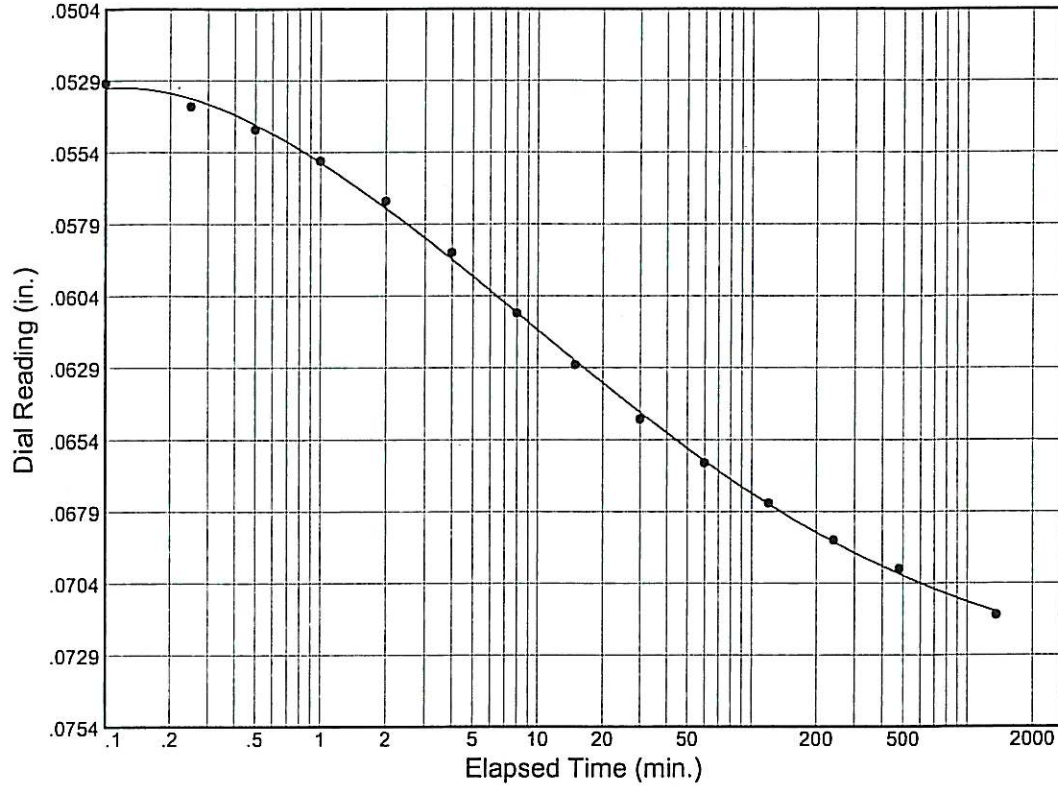
Dial Reading vs. Time

Project No.: 12-4035-0003
 Project: AUSTAL Pedestrian Tunnel

Source: B-2

Sample No.: T-1

Elev./Depth: 18.0



Load No.= 7

Load= 1.00 tsf

$D_0 = 0.05010$

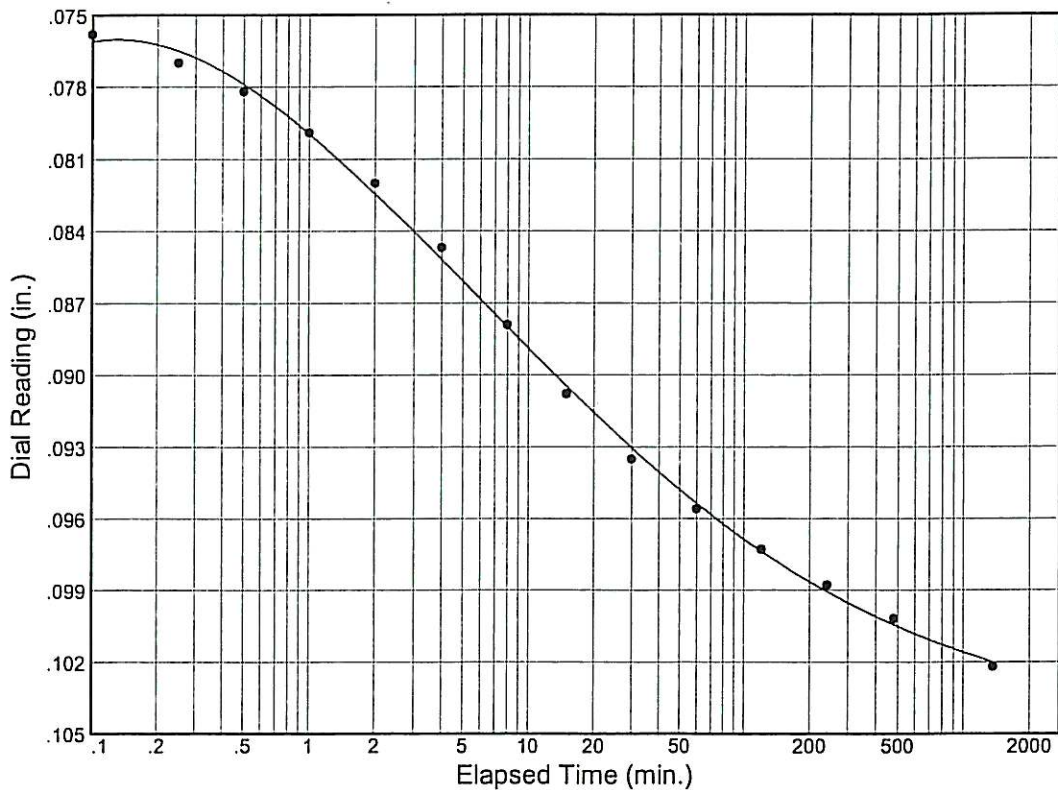
$D_{50} = 0.05862$

$D_{100} = 0.06714$

$T_{50} = 3.29$ min.

$C_v @ T_{50}$
 0.0002 in.²/sec.

$C_\alpha = 0.004$



Load No.= 8

Load= 2.01 tsf

$D_0 = 0.07210$

$D_{50} = 0.08409$

$D_{100} = 0.09608$

$T_{50} = 3.04$ min.

$C_v @ T_{50}$
 0.0002 in.²/sec.

$C_\alpha = 0.005$

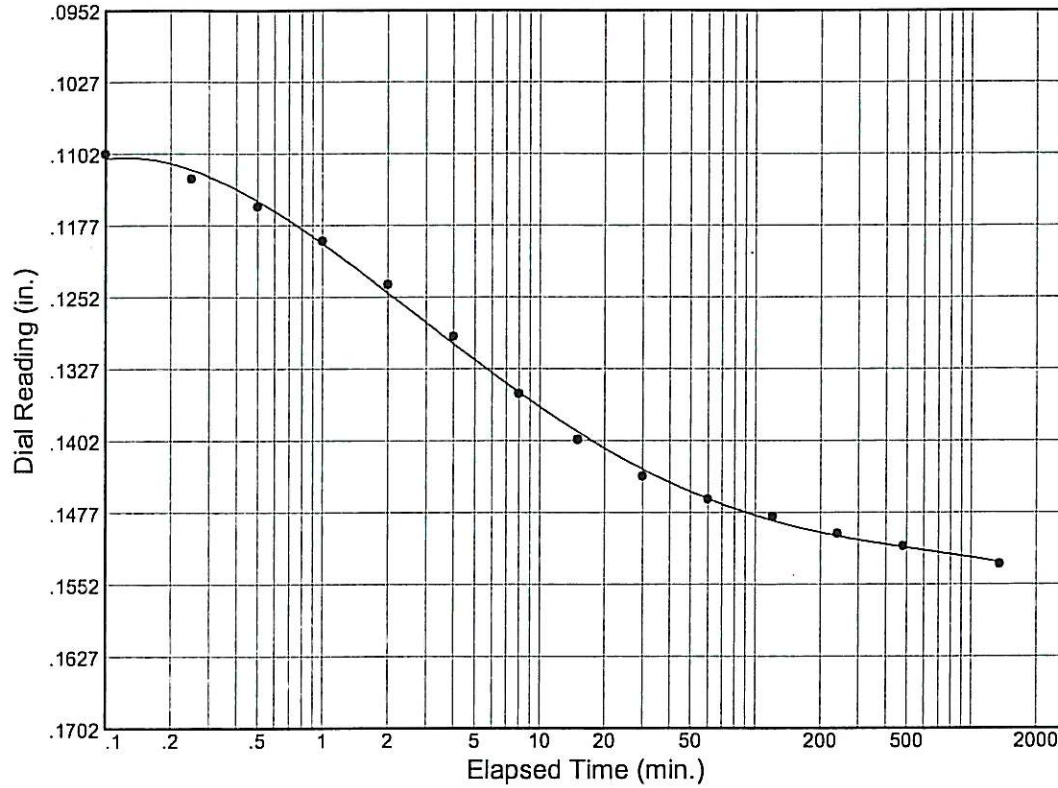
Dial Reading vs. Time

Project No.: 12-4035-0003
 Project: AUSTAL Pedestrian Tunnel

Source: B-2

Sample No.: T-1

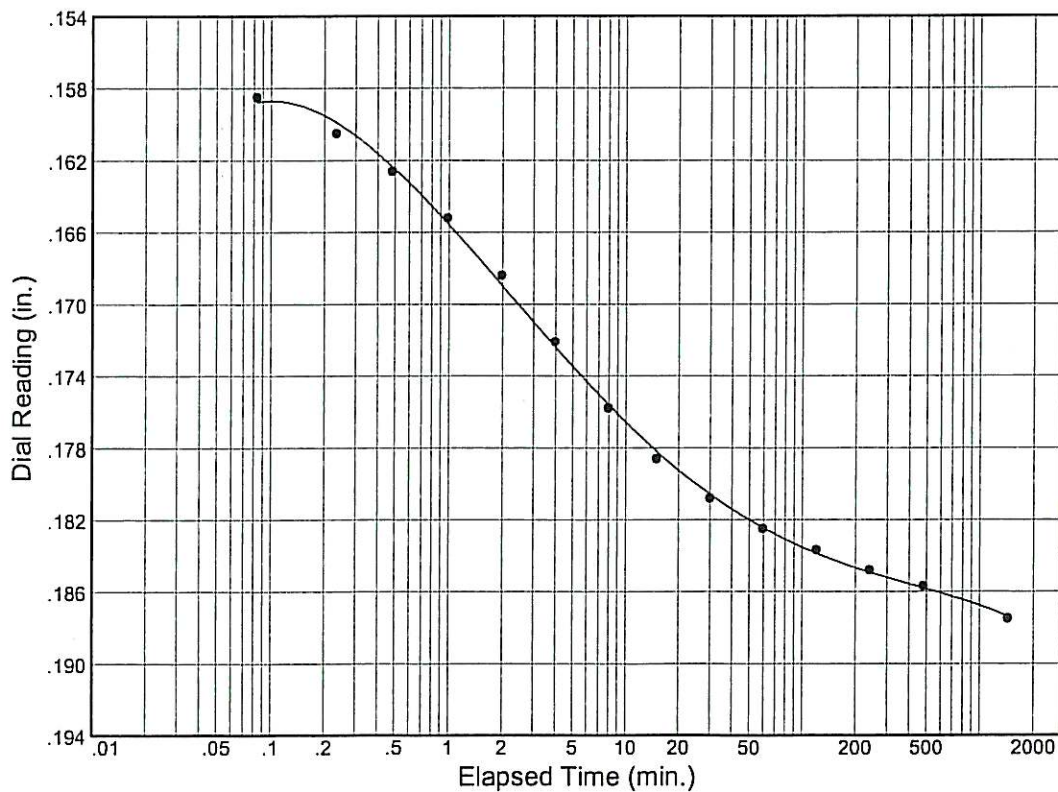
Elev./Depth: 18.0



Load No.= 9
 Load= 4.01 tsf
 $D_0 = 0.10220$
 $D_{50} = 0.12351$
 $D_{100} = 0.14483$
 $T_{50} = 1.69 \text{ min.}$

$C_v @ T_{50}$
 0.0004 in.²/sec.

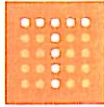
$C_\alpha = 0.006$



Load No.= 10
 Load= 8.05 tsf
 $D_0 = 0.15310$
 $D_{50} = 0.16679$
 $D_{100} = 0.18047$
 $T_{50} = 1.28 \text{ min.}$

$C_v @ T_{50}$
 0.0004 in.²/sec.

$C_\alpha = 0.005$



thompson
ENGINEERING

CLIENT: ALDOT
PROJECT: Austal Pedestrian Tunnel

JOB #: 12-4035-0003
LAB #: 6207

**REPORT OF: MOISTURE, ASH, AND ORGANIC MATTER OF PEAT AND OTHER
ORGANIC SOILS ASTM D 2974**

SAMPLE IDENTIFICATION: B-1 S-8
DEPTH: 18.5 ft.

DATE TESTED: 3/21/2012

TESTED BY: R.BYRD

LABORATORY RESULTS

MOISTURE CONTENT

TARE WEIGHT(g):	15.98
TARE AND WET WEIGHT(g):	61.53
TARE AND DRY WEIGHT(g):	37.75
OVEN-DRIED MOISTURE CONTENT (%):	109.2

TARE WEIGHT(g):	12.26
TARE WT. AND DRIED SAMPLE AT 110 DEGREES CENTIGRADE (g):	23.44
TARE WT. AND ASHED SAMPLE AT 440 DEGREES CENTIGRADE (g):	21.67
SPECIMEN DRIED WEIGHT AT 110 DEGREES CENTIGRADE (g):	11.18
SPECIMEN ASHED WEIGHT AT 440 DEGREES CENTIGRADE (g):	9.41
LOSS ON IGNITION AT 440 DEGREES CENTIGRADE (g):	1.77
PERCENTAGE OF ASH "UNBURNED MATTER"	84.17
PERCENTAGE OF ORGANIC MATTER (%):	15.83

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