Appendix B

(*All of Appendix B is on a CD with this Report*)

CD of Geotechnical Data Reports: Delaware Turnpike Improvements

- Report No. 1: Mainline Improvements
- Report No. 2: I-95/SR 1 Interchange GDR with Supplemental Laboratory Test Data
- Report No. 3: Toll Plaza
- Report No. 4: Northbound Widening

Historic Geotechnical Data

- Churchman Road Bridge over I-95 (2)
- Churchman Road & SR 7 Interchange (17)
  - Consolidation (11)
  - Unconfined Compression Test (3)
  - Triaxial Compression Test (3)
- SR 7 Re-Alignment Fly-over Bridge No. 223 (4)
- SR 7 over Eagle Run (4)
- Road A over SR 7 (2)

BORING LOGS

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-071-05	NEW CASTLE	IM-N056 (16)	80	131

CHURCHMANS ROAD BRIDGE OVER I-95

REVISIONS

S-40

BORING B-1
STA. 19+92
℄ CONSTRUCTION

N	C	
5-5-7		EL. 90.20 SILTY SAND AND SANDY SILT, BROWN, DAMP (FILL)
5-7-11		
7-10-10		EL. 84.20 SILTY SAND, BROWN, DAMP
7-11-12		EL. 81.20 SAND, TRACE SILT, ORANGY BROWN, BROWN, DAMP
8-13-14		
10-10-10		EL. 75.20 FINE SILTY SAND, LIGHT TAN, BROWN, TRACE BLACK, DAMP
8-11-13		EL. 72.20 COARSE SAND, SOME TO AND SMALL TO LARGE GRAVEL, TRACE TO LITTLE SILT, BROWN, DARK BROWN, TAN.. WET @ 24.0'
5-8-8		
10-8-9		EL. 64.30 W.L. (0)
10-13-10		EL. 62.80 W.L. (24)
8-8-11		
4-6-8		EL. 57.20 LAYERED SILTY CLAY AND FINE SANDY SILT, GRAY, WET
6-8-9		
PT-PT-PT-PT		
7-11-13		EL. 50.50 SILTY CLAY WITH SAND, SOME TO LITTLE SILT, SEAMS. LIGNITE AT 39.7', GRAY, BLACK, WET
9-14-19		
9-12-16		
8-11-13		
12-15-17		EL. 29.90 SILTY CLAY AND CLAYEY SILT WITH SILTY CLAYEY SAND SEAMS, GRAY, LITTLE RED, WET
10-14-17		
9-13-21		EL. 21.20 CLAY, RED, LITTLE GRAY, LITTLE BROWN, WET
16-30-47		EL. 16.20 SILTY CLAY AND SILT, TRACE LIGNITE, GRAY, DARK BROWN, WET
		EL. 14.70

BORING B-2
STA. 20+58
16' RIGHT

N	C	
8-6-5		EL. 86.90 SILT, LITTLE SAND, TRACE GRAVEL, GRASS, BROWN, DAMP. (FILL)
7-8-15		EL. 82.90 SILTY SAND, SOME GRAVEL, BROWN, DAMP. (FILL)
17-21-25		EL. 80.90 MEDIUM - COARSE SAND, SOME TO TRACE SMALL GRAVEL, TAN, LIGHT BROWN, DARK BROWN, DRY.. DAMP AT 15.0' - 18.0'
14-19-15		
11-17-18		
14-13-14		EL. 68.90 SAND, LITTLE TO SOME SILT, TAN, BROWN, DARK BROWN, DAMP - MOIST
10-11-18		EL. 65.90 GRAVEL AND SILTY SAND, TAN, BROWN, MOIST... WET AT 24.0'- 27.5'
18-22-38		EL. 63.60 W.L. (0) DRY, CAVED @ 23.3'
10-14-14		EL. 62.00 W.L. (24)
11-9-8		EL. 59.40 INTERLAYERED SILTY CLAY, CLAYEY SILT, SILTY SAND, LIGNITE FRAGMENTS, TAN, GRAY, WET
PT-PT-PT-PT		
7-8-10		
3-2-2		
8-11-11		EL. 47.90 SILTY CLAY WITH SEAMS OF BLACK LIGNITE AND SANDY SILT, GRAY, WET
6-8-12		
8-9-13		
10-18-21		EL. 36.90 SILTY CLAY AND CLAY, GRAY, RED, LITTLE BROWN, WET... TRACE GRAY SANDY CLAY. SEAMS AT 79.0' - 80.5'
9-10-14		
9-17-19		
10-13-14		
11-14-15		
12-20-36		
11-17-35		EL. 6.40

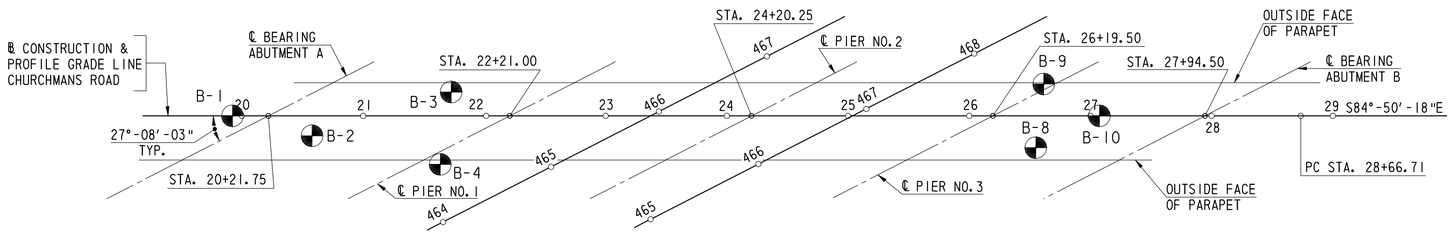
BORING B-3
STA. 21+73
20' LEFT

N	C	
1-3-3		EL. 85.30 SILTY SAND, ROOT FRAGMENTS, BROWN MOIST. (FILL)
3-3-3		EL. 82.30 SILT, TRACE CLAY, TRACE SAND, BROWN, TAN, MOIST. (FILL)
9-14-15		EL. 79.30 SILTY SAND AND SILT, LIGHT TAN, BROWN, DAMP
7-8-17		EL. 75.30 SILT, GRAY, BROWN, BLACK
15-16-17		EL. 74.30 GRAVEL AND SAND, LITTLE TO SOME SILT, BROWN, TAN, BLACK, DAMP
32-29-23		EL. 68.80 FINE SANDY SILT WITH SILTY SAND, TAN, LIGHT TAN, BROWN, MOIST
9-11-11		EL. 65.60 W.L. (96)
6-8-10		EL. 65.30 W.L. (0)
10-10-11		EL. 61.30 SILTY SAND AND SANDY SILT LAYERS, GRAY, WET
10-10-13		
9-30-22		EL. 55.30 LAYERED SILTY SAND, CLAYEY SILT AND SANDY CLAY, TAN, BROWN, WET
7-8-12		EL. 51.80 CLAYEY SAND AND GRAVELLY CLAY, DARK GRAY, RED, WET
8-9-11		
6-10-13		EL. 45.80 CLAY, LITTLE TO SOME SILT, GRAY, RED, BROWN, PURPLE, WET
3-8-11		
6-6-7		
9-15-21		
10-18-21		
8-16-21		
15-22-22		EL. 20.80 FINE SANDY SILT AND SILTY SAND, GRAY, DAMP
10-16-28		EL. 15.80 SANDY CLAY, RED, GRAY, WET
12-18-24		EL. 10.80 SILTY CLAY, RED, LITTLE GRAY, WET
11-16-22		EL. 4.30

BORING B-4
STA. 21+64
40' RIGHT

N	C	
1-1-1		EL. 64.00 3" TOPSOIL, SILTY SAND, ROOTS, BROWN, BLACK, WET
2-3-4		EL. 64.00 W.L. (120)
5-7-13		EL. 63.50 W.L. (0)
5-5-7		EL. 62.00 COARSE SAND, BROWN, WET
7-10-11		EL. 57.50 SANDY SILT, GRAY, MOIST
PT-PT-PT-PT		EL. 55.00 SILTY CLAY AND CLAY WITH LITTLE SANDY SILT AND SILTY SAND SEAMS, GRAY, RED, TRACE PURPLE, TRACE BROWN
5-6-9		
3-4-7		
3-6-8		
12-18-18		
10-15-17		
8-9-11		
6-8-9		
5-15-13		EL. 24.00 FINE SILTY SAND AND SANDY SILT, GRAY, MOIST
8-9-15		EL. 19.00 SILTY CLAY AND CLAY, RED, LITTLE GRAY, LITTLE BROWN, LITTLE PURPLE, TRACE SANDY SILT SEAMS, GRAY, WET
11-14-16		
7-11-16		
9-12-15		
24-31-53		EL. 0.00 FINE SANDY SILT, SOME MICA, ORANGY BROWN, WET
31-22-20		EL. -5.00 CLAYEY SILT, LIGHT GRAYISH RED, WET
54-67-34		EL. -10.00 FINE SAND AND SILTY SAND, GRAY, TAN, WET
		EL. -11.50

DATUM EL. -10.00



BORINGS AND DRIVE TESTS

SCALE: 1/8" = 1'-0"
10'

B-11

BORINGS AND DRIVE TESTS LOCATION PLAN

SCALE: 1"=60'

PREL. TRACING K.A.B. DESIGN J.J.F. CHKD. S.A.M.

8/25/2008
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pcf: CHRCH095

BORING LOGS

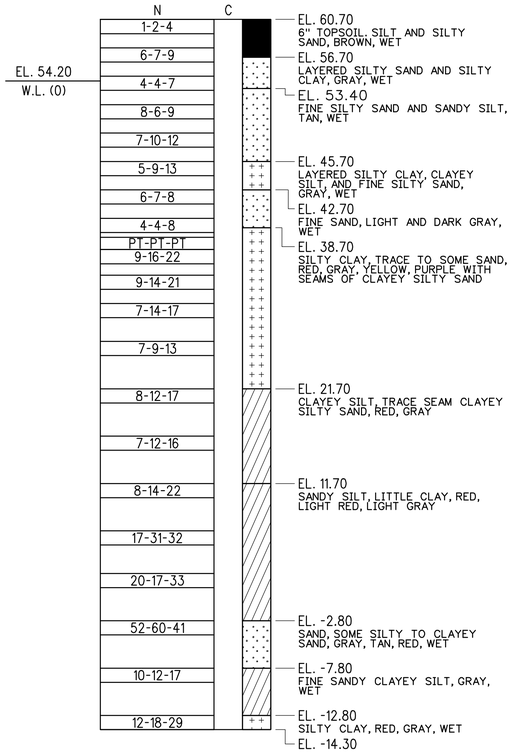
CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-071-05	NEW CASTLE	IM-N056 (16)	81	131

CHURCHMANS ROAD BRIDGE OVER I-95

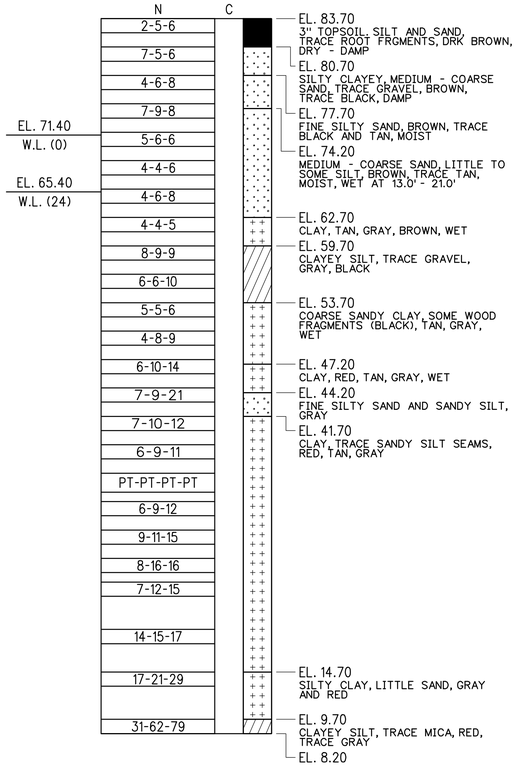
REVISIONS

S-41

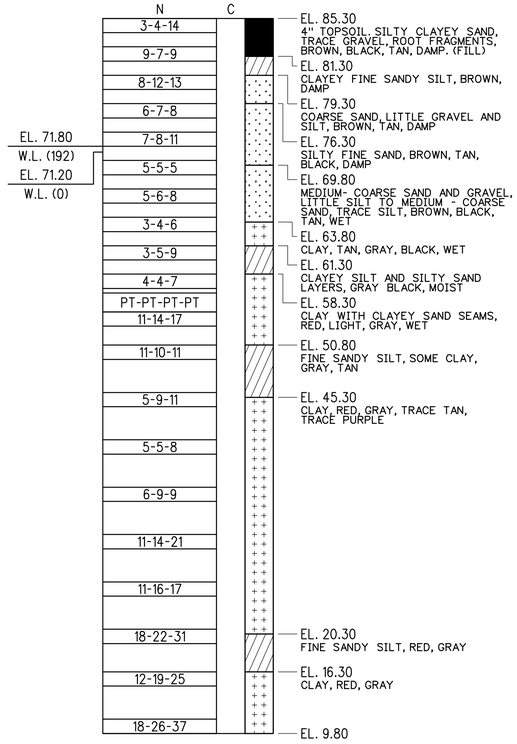
BORING B-8
STA. 26+55
26' RIGHT



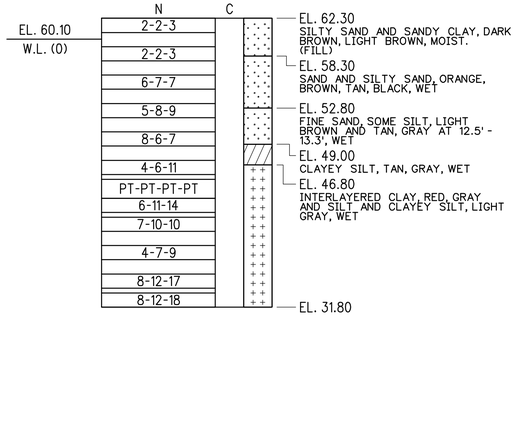
BORING B-9
STA. 26+61
26' LEFT



BORING B-10
STA. 27+07
℄ CONSTRUCTION



BORING B-11
STA. 22+87
180' RIGHT



DATUM EL. -20.00

DATUM EL. -20.00

BORINGS AND DRIVE TESTS

SCALE: 1/8" = 1'-0"

10'

NOTE:
FOR BORING LOCATION PLAN, SEE DWG. NO. S-40.

PREL. TRACING K.A.B. DESIGN J.J.F. CHKD. S.A.M.

8/25/2008
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pet: CHRCH095

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	229	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-90

BORING B-1
STA. 21+626.309, 15.409 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 17.678

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.524	WET VERY STIFF REDDISH BROWN CLAYEY SILT W/SOME FINE TO COARSE SAND AND GRAVEL.	1	8/12/16/14	500	16.154
2.438-3.048	WET MEDIUM DENSE REDDISH BROWN GRAVELLY FINE SAND W/SOME COARSE SAND, TRACE OF CLAY.	2	9/8/7/10	450	14.630
WATER LEVEL 3.962-4.572	WET LOOSE BROWN COARSE TO FINE SAND W/TRACE OF GRAVEL AND CLAY.	3	3/4/5/6	400	13.106
	NOTE A	4	3/8	225	12.192
5.486-6.096	NOTE B	5	13/15	250	11.582
7.010-7.620	WET STIFF GRAY SILTY FINE SANDY CLAY W/SOME COARSE SAND, TRACE OF GRAVEL.	6	3/5/7/11	500	10.058
8.534-9.144	SATURATED STIFF GRAY SILT W/TRACE OF FINE TO COARSE SAND AND CLAY.	7	4/5/8/12	550	8.534
10.058-10.668	SATURATED VERY STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL.	8	7/12/15/20	550	7.010
11.582-12.040	SATURATED VERY STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND.	9	8/11/16	600	5.638
13.106-13.716	SATURATED HARD REDDISH GRAY CLAY W/TRACE OF FINE SAND.	10	8/16/16/25	600	3.962
	NOTE C	11	8	200	
	NOTE D	12	13	150	
14.630-15.240	NOTE E	13	13/16	250	2.438
16.154-16.612	SATURATED VERY DENSE MULTICOLORED FINE TO COARSE SAND W/SOME SILT, TRACE OF GRAVEL.	14	18/50/50	375	1.066
17.678-18.136	WET VERY DENSE MULTICOLORED SILTY FINE SAND W/TRACE OF COARSE SAND.	15	25/50/65	450	-0.458
19.202-19.660	SATURATED VERY DENSE BROWNISH GRAY FINE SAND W/SOME SILT, TRACE OF COARSE SAND.	16	17/25/32	450	-1.982
20.726-21.184	WET VERY DENSE MULTICOLORED FINE TO COARSE SAND W/SOME SILT, TRACE OF GRAVEL.	17	27/30/28	350	-3.506

NOTE A - SATURATED STIFF GRAY SILTY CLAY W/SOME ORGANIC MATTER AND FINE SAND, TRACE OF COARSE SAND.
NOTE B - WET MEDIUM DENSE GRAY GRAVELLY COARSE TO FINE SAND W/TRACE OF SILT
NOTE C - SATURATED VERY STIFF RED CLAY W/TRACE OF FINE SAND.
NOTE D - NO SIEVE ANALYSIS. INDICATION OF SATURATED MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND.
NOTE E - WET VERY STIFF BROWN CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND.

20.000 / 15.000 / 10.000 / 5.000 / 0.000 / -5.000 / -10.000

SCALE: 1:100

BORING B-2
STA. 21+612.274, 19.582 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 19.020

(A)	(B)	(C)	(D)	(E)	(F)
	NO SAMPLING 0.0 TO 4.115 m				
WATER LEVEL 4.115-4.572	WET STIFF REDDISH BROWN CLAYEY FINE SANDY SILT W/SOME COARSE SAND. TRACE OF GRAVEL.	1	9/6/9	125	14.448
5.639-6.096	NOTE F	2A	2/6	175	12.924
		2B	12	150	
7.163-7.620	WET VERY STIFF GRAYISH BROWN SILTY FINE SANDY CLAY W/SOME COARSE SAND AND GRAVEL.	3	6/10/14	250	11.400
8.687-9.144	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND.	4	2/4/7	300	9.876
10.211-10.668	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND.	5	4/6/6	450	8.352
11.735-12.192	SATURATED STIFF REDDISH GRAY FINE SANDY CLAY W/TRACE OF COARSE SAND.	6	4/5/7	450	6.828
13.259-13.716	SATURATED VERY STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	7	5/7/9	450	5.304
14.783-15.240	SATURATED VERY STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	8	7/9/10	450	3.780
16.307-16.764	NOTE G	9A	7/10	300	2.256
		9B	20	150	
17.831-18.288	NOTE H	10A	7/4	300	0.732
		10B	11	150	
19.355-19.812	SATURATED VERY DENSE GRAY FINE TO COARSE SAND W/SOME SILT.	11	26/42/32	300	-0.792
20.879-21.336	SATURATED VERY DENSE GRAY FINE TO COARSE SAND W/SOME SILT.	12	17/27/36	300	-2.316
22.403-22.860	NOTE I	13A	9/12	150	-3.840
		13B	33	200	
23.927-24.293	WET VERY DENSE GRAY SILTY FINE SAND W/TRACE OF COARSE SAND.	14	32/62/W/50mm	225	-5.273
25.451-25.908	NOTE J	15A	12	150	-6.888
		15B	21/47	200	

NOTE F - (2A) SATURATED FIRM BROWNISH GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND TRACE OF GRAVEL AND ORGANIC MATTER.
(2B) WET MEDIUM DENSE GRAY SILTY COARSE TO FINE SAND W/SOME GRAVEL, TRACE OF ORGANIC MATTER.
NOTE G - (9A) SATURATED VERY STIFF GRAYISH BROWN CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND.
(9B) SATURATED VERY STIFF REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.
NOTE H - (10A) SATURATED MEDIUM DENSE BROWN FINE TO COARSE SAND W/TRACE OF SILT.
(10B) SATURATED MEDIUM DENSE BROWNISH GRAY FINE TO COARSE SAND W/SOME SILT.
NOTE I - (13A) SATURATED MEDIUM DENSE GRAYISH BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF GRAVEL.
(13B) WET HARD BROWNISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.
NOTE J - (15A) WET MEDIUM DENSE GRAY FINE SAND W/SOME SILT, TRACE OF COARSE SAND.
(15B) WET HARD BROWNISH GRAY CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND.

BORING B-3
STA. 21+645.457, 18.784 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 16.916

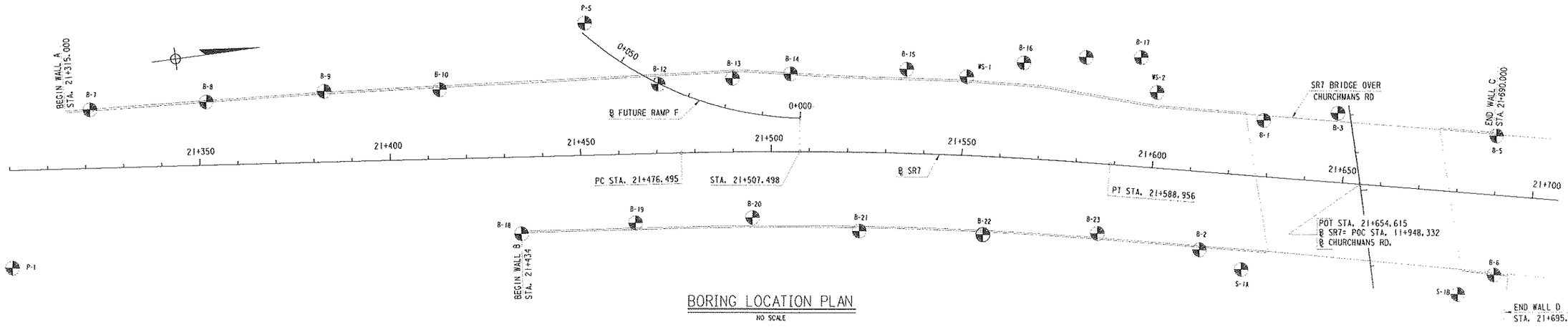
(A)	(B)	(C)	(D)	(E)	(F)
0.762-1.219	NOTE K	1	8/7/7	350	15.697
1.219-1.676	NOTE L	2/2A	4 8/9	125/150	15.240
WATER LEVEL 2.591-3.048	WET MEDIUM DENSE BROWNISH RED SILTY FINE TO COARSE SAND W/SOME GRAVEL.	3	3/8/9	250	13.868
4.115-4.572	SATURATED FIRM GRAY CLAYEY SILT W/SOME FINE TO COARSE SAND, TRACE OF ORGANIC MATTER.	4	2/3/4	325	12.344
5.639-6.096	SATURATED FIRM GRAY ORGANIC CLAY W/TRACE OF FINE TO COARSE SAND.	5	2/3/4	375	10.820
7.163-7.620	WET STIFF GRAY CLAYEY SILT W/SOME FINE TO COARSE SAND, TRACE OF GRAVEL.	6	3/6/7	375	9.296
8.687-9.144	WET MEDIUM DENSE GRAY COARSE TO FINE SAND W/SOME CLAY, TRACE OF GRAVEL.	7	3/6/8	300	7.772
10.211-10.668	WET MEDIUM DENSE BROWNISH GRAY COARSE TO FINE SAND W/SOME CLAY, TRACE OF GRAVEL.	8	4/8/6	300	6.248
11.735-12.192	SATURATED MEDIUM DENSE GRAY FINE TO COARSE SAND W/SOME SILT, TRACE OF GRAVEL.	9	6/8/12	175	4.724
13.259-13.716	SATURATED VERY STIFF MULTICOLORED CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.	10	6/6/10	200	3.200
14.783-15.240	NOTE M	11	11	150	1.676
		11A	35/60	225	
16.307-16.764	WET DENSE MULTICOLORED SILTY FINE TO COARSE SAND W/TRACE OF GRAVEL.	12	20/20/24	275	0.152
17.831-18.288	SATURATED DENSE GRAYISH RED SILTY FINE SAND W/TRACE OF COARSE SAND.	13	15/28/20	300	-1.372
19.355-19.812	SATURATED VERY DENSE GRAYISH BROWN SILTY FINE SAND W/TRACE OF COARSE SAND.	14	24/34/30	275	-2.896
20.879-21.336	SATURATED VERY DENSE GRAYISH BROWN SILTY FINE SAND W/TRACE OF COARSE SAND.	15	28/21/36	275	-4.420

NOTE K - WET STIFF BROWNISH GRAY CLAYEY FINE TO COARSE SANDY SILT W/TRACE OF GRAVEL.
NOTE L - (2) WET FIRM MULTICOLORED SILTY CLAY W/SOME FINE TO COARSE SAND, TRACE OF GRAVEL.
(2A) WET MEDIUM DENSE REDDISH BROWN SILTY COARSE TO FINE SAND W/SOME GRAVEL.
NOTE M - (11) SATURATED VERY STIFF MULTICOLORED CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.
(11A) SATURATED VERY DENSE BROWNISH GRAY FINE SAND W/SOME SILT, TRACE OF COARSE SAND AND GRAVEL.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996.
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.



BORING LOCATION PLAN
NO SCALE

N:\BMD\SHARE2\DELD\...\SR7CHRCH BORINGO1.DGN
DESIGN ... R.A.J. ... CHK. ... N.D.R.
PANEL TRACING ... H.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	230	365

CHURCHMANS ROAD & SR 7 INTERCHANGE STRUCTURE PLANS & DETAILS BORING LOGS

REVISIONS

S-91

BORING B-5

STA. 21+687.266, 16.144 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. +15.545

WATER LEVEL (at sample 1)

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.524	WET MEDIUM DENSE REDDISH BROWN GRAVELLY COARSE TO FINE SAND W/SOME SILT.	1	7/12/7/7	375	14.021
2.438-3.048	NOTE N	2	2/3	75	
		2A	4/7	200	12.497
3.962-4.572	WET LOOSE REDDISH GRAY COARSE TO FINE SAND W/TRACE OF CLAY.	3	3/4/4/4	175	10.973
5.486-6.096	SATURATED FIRM GRAY CLAY W/SOME ORGANIC MATTER, TRACE OF FINE SAND.	4	1/2/4/4	325	9.449
7.010-7.620	SATURATED FIRM GRAYISH BLACK ORGANIC CLAYEY SILT W/SOME FINE TO COARSE SAND.	5	2/3/4/7	500	7.925
8.534-9.144	NO SIEVE ANALYSIS - INDICATION OF SATURATED STIFF BROWN PEAT.	6	4/5/8/9	450	6.401
10.058-10.668	WET MEDIUM DENSE GRAY COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT.	7	3/14/11/13	300	4.877
11.582-12.192	SATURATED VERY STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	8	3/6/10/14	350	3.353
13.106-13.564	SATURATED VERY DENSE REDDISH GRAY FINE TO COARSE SAND W/TRACE OF SILT.	9	12/29/43	325	1.981
14.630-15.088	SATURATED VERY DENSE MULTICOLORED FINE SAND W/TRACE OF SILT AND COARSE SAND.	10	20/52/50	300	0.457
16.154-16.612	WET HARD GRAYISH RED FINE SANDY SILT W/TRACE OF COARSE SAND.	11	17/38/50	275	-1.067
17.678-18.136	SATURATED VERY DENSE GRAYISH RED SILTY FINE SAND.	12	18/20/33	300	-2.591
19.202-19.660	WET VERY DENSE GRAYISH BROWN FINE TO COARSE SAND W/SOME SILT.	13	19/48/40	300	-4.115

NOTE N - (2) SATURATED FIRM GRAY CLAYEY FINE SANDY SILT W/SOME GRAVEL AND COARSE SAND.
(2A) SATURATED STIFF GRAY FINE TO COARSE SANDY SILT W/TRACE OF GRAVEL AND ORGANIC MATTER.

Elevation scale: 20.000, 15.000, 10.000, 5.000, 0.000, -5.000, -10.000

SCALE: 1:100

BORING B-6

STA. 21+689.408, 20.096 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. +16.612

WATER LEVEL (at sample 4)

(A)	(B)	(C)	(D)	(E)	(F)
0.305-.762	NOTE O	1	3/7/10	350	15.850
.914-1.372	NOTE P	2	9/10/7	225	15.240
2.438-2.896	SATURATED VERY STIFF GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND.	3	5/9/11	350	13.716
3.962-4.420	WET MEDIUM DENSE BROWN GRAVEL W/ SOME COARSE TO FINE SAND AND SILT.	4	4/14/10	175	12.192
5.486-5.944	NOTE Q	5A	3/3		
		5B	4	-	10.668
7.010-7.468	SATURATED FIRM GRAY ORGANIC CLAY W/TRACE OF FINE TO COARSE SAND.	6	3/3/4	450	9.144
8.534-8.992	NO SIEVE ANALYSIS - INDICATION OF SATURATED BLACK ORGANIC PEAT.	7	5/7/10	450	7.620
10.058-10.516	NOTE R	8A	3/2	300	
		8B	3	150	6.096
11.582-12.040	MOIST DENSE GRAY GRAVEL W/SOME COARSE TO FINE SAND, TRACE OF SILT.	9	6/23/20	300	4.572
13.106-13.564	SATURATED STIFF BROWNISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	10	7/5/7	300	3.048
14.630-15.088	SATURATED VERY STIFF BROWNISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.	11	4/7/11	300	1.524
16.154-16.612	SATURATED SOFT BROWNISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	12	1/1/2	100	0.000
17.678-18.136	WET STIFF GRAY FINE SANDY SILT W/SOME COARSE SAND.	13	3/4/7	150	-1.524
19.202-19.660	WET DENSE BROWNISH GRAY FINE SAND W/SOME COARSE SAND AND CLAY.	14	7/11/23	250	-3.048
20.726-21.184	SATURATED VERY STIFF RED SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	15	5/9/10	450	-4.572
22.250-22.708	NOTE S	16A	12/20	300	
		16B	40	150	-6.096
23.774-24.232	NOTE T	17A	10/21	200	
		17B	34	100	-7.620
25.298-25.756	WET VERY DENSE BROWNISH GRAY SILTY FINE SAND W/SOME COARSE SAND.	18	20/36/24	250	-9.144
26.822-27.280	WET VERY STIFF BROWNISH GRAY FINE SANDY SILT W/SOME COARSE SAND AND CLAY.	19	8/10/11	250	-10.668
28.346-28.804	WET HARD MULTICOLORED SILTY FINE SANDY CLAY W/SOME COARSE SAND.	20	10/16/20	450	-12.192
29.870-30.328	WET VERY DENSE MULTICOLORED CLAYEY COARSE TO FINE SAND W/TRACE OF GRAVEL.	21	21/25/27	450	-13.716

NOTE O - MOIST VERY STIFF BROWN COARSE TO FINE SANDY SILT W/SOME CLAY AND GRAVEL.
NOTE P - WET VERY STIFF BROWNISH GRAY SILT AND GRAVEL W/SOME COARSE TO FINE SAND AND CLAY.
NOTE Q - (5A) SATURATED FIRM BROWN ORGANIC CLAYEY FINE TO COARSE SANDY SILT.
(5B) NO SIEVE ANALYSIS - INDICATION OF SATURATED FIRM GRAY ORGANIC CLAY.
NOTE R - (8A) NO SIEVE ANALYSIS - INDICATION OF SATURATED FIRM BROWN ORGANIC SILT.
(8B) SATURATED LOOSE GRAY GRAVELLY COARSE TO FINE SAND W/TRACE OF SILT.
NOTE S - (16A) SATURATED HARD RED CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND.
(16B) WET HARD REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.
NOTE T - (17A) SATURATED DENSE BROWNISH GRAY COARSE TO FINE SAND W/SOME CLAY.
(17B) WET VERY DENSE GRAY SILTY FINE SAND W/TRACE OF COARSE SAND.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BMD\SHARE2\DEL... \SR7CHRCH BORING02.DGN

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(I)	231	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-92

BORING B-7
STA. 21+320.760, 16.529 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 24.183

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.524	WET MEDIUM DENSE BROWNISH GRAY SILTY COARSE TO FINE SAND W/ TRACE OF GRAVEL	1	9/8/8/9	200	22.659
2.438-3.048 (WATER LEVEL)	WET MEDIUM DENSE BROWN GRAVELLY COARSE TO FINE SAND W/ SOME SILT	2	7/9/10/8	300	21.135
3.962-4.572	WET MEDIUM DENSE REDDISH BROWN FINE SAND W/ SOME SILT, COARSE SAND AND GRAVEL	3	5/7/7/7	350	19.611
5.486-6.096	WET VERY STIFF BROWNISH GRAY CLAYEY FINE SANDY SILT	4	4/9/9/11	325	18.087
7.010-7.620	SATURATED VERY STIFF BROWNISH GRAY CLAYEY SILT W/ SOME FINE SAND, TRACE OF COARSE SAND AND ORGANIC MATTER	5	6/9/12/15	250	16.563
8.534-8.992	NOTE U	6	4/6/7	150	15.191
10.058-10.668	SATURATED VERY STIFF MULTICOLORED CLAYEY SILT W/ SOME FINE SAND	7	3/8/8/9	350	13.515

NOTE U - SATURATED STIFF BROWNISH GRAY CLAYEY FINE SANDY SILT W/ TRACE OF ORGANIC MATTER.

BORING B-8
STA. 21+351.252, 17.791 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 24.232

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.524	WET MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND W/ TRACE OF GRAVEL	1	10/12/12/12	375	22.708
2.438-3.048 (WATER LEVEL)	WET LOOSE BROWN COARSE SANDY GRAVEL W/ SOME FINE SAND AND SILT	2	5/5/4/5	225	21.184
3.962-4.572	WET LOOSE BROWN GRAVELLY COARSE SAND W/ SOME FINE SAND, TRACE OF SILT	3	4/4/6/6	250	19.660
	NOTE V	4.	6/5	375	
5.486-6.096	NOTE W	5	5/9	225	18.136
7.010-7.620	SATURATED VERY STIFF GRAY CLAYEY SILT W/ SOME ORGANIC MATTER AND FINE SAND, TRACE OF COARSE SAND	6	10/11/11/12	600	16.612
8.534-8.992	NOTE X	7	10/11/15	400	15.240
10.058-10.516	NOTE Y	8	8/11/11	400	13.716

NOTE V- (4) WET BROWN COARSE SAND W/ SOME GRAVEL AND FINE SAND, TRACE OF SILT.
NOTE W- (5) SATURATED VERY STIFF GRAY FINE SANDY SILT W/ TRACE OF COARSE SAND AND ORGANIC MATTER.
NOTE X- WET VERY STIFF GRAY CLAYEY SILT W/ SOME FINE SAND, TRACE OF COARSE SAND.
NOTE Y- SATURATED VERY STIFF GRAY CLAYEY SILT W/ TRACE OF FINE SAND.

BORING B-9
STA. 21+382.054, 19.661 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 24.049

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.524	MOIST MEDIUM DENSE BROWN COARSE SAND W/ SOME SILT AND FINE SAND, TRACE OF GRAVEL	1	6/9/9/11	375	22.525
2.438-3.048	WET STIFF BROWN SILTY CLAY W/ SOME FINE SAND AND GRAVEL, TRACE OF COARSE SAND	2	4/6/5/6	300	21.001
3.962-4.572	SATURATED STIFF GRAYISH BLACK ORGANIC FINE SANDY SILT W/ SOME CLAY, TRACE OF COARSE SAND AND GRAVEL	3	5/6/7/7	450	19.477
5.486-6.096	WET STIFF GRAYISH BROWN SILTY CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	4	4/4/5/8	325	17.953
7.010-7.620	WET VERY STIFF GRAY CLAYEY SILT W/ SOME COARSE TO FINE SAND	5	5/7/9/12	450	16.429
8.534-9.144	SATURATED STIFF GRAY SILTY CLAY W/ TRACE OF FINE SAND AND ORGANIC MATTER	6	5/6/8/9	450	14.905
10.058-10.668	SATURATED VERY STIFF GRAYISH BROWN CLAY W/ TRACE OF FINE SAND AND ORGANIC MATTER	7	9/9/10/13	450	13.381

WATER LEVEL NOT RECORDED.

25.000
20.000
15.000
10.000
DATUM EL. 5.000
SCALE: 1:100

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N.D.R. R.A.J.

N:\BMD\SHARE2\DEL... \SR7CHRCH BORING03.DGN

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	232	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-93

BORING B-10
STA. 21+412.216, 18.031 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 23.677

(A)	(B)	(C)	(D)	(E)	(F)
.0.914-1.524	SATURATED FIRM BROWNISH GRAY SILTY CLAY W/TRACE OF FINE SAND.	1	5/4/4/6	200	22.153
2.438-3.048	WET MEDIUM DENSE BROWN COARSE SAND W/SOME FINE SAND AND SILT, TRACE OF GRAVEL.	2	4/6/8/8	300	20.629
3.962-4.572	WET STIFF GRAYISH BLACK FINE SANDY SILT W/SOME CLAY AND ORGANIC MATTER, TRACE OF GRAVEL.	3	3/6/9/7	375	19.105
5.486-6.096	WET STIFF GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND.	4	4/6/9/13	375	17.581
7.010-7.620	WET STIFF GRAY SILT W/SOME FINE SAND, TRACE OF COARSE SAND AND CLAY.	5	5/6/7/8	450	16.057
8.534-9.144	SATURATED VERY STIFF GRAYISH BROWN CLAY W/TRACE OF ORGANIC MATTER AND FINE SAND.	6	5/7/14/13	450	14.533
10.058-10.668	WET VERY STIFF GRAY FINE SANDY SILT W/TRACE OF ORGANIC MATTER.	7	0/12/13/22	350	13.009

WATER LEVEL (at 2.438-3.048)

25.000 / 20.000 / 15.000

DATUM EL. 10.000

SCALE: 1:100

BORING B-12
STA 21+469.567, 19.228 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 22.287

(A)	(B)	(C)	(D)	(E)	(F)
.0.914-1.524	MOIST DENSE BROWN COARSE TO FINE SANDY GRAVEL W/SOME SILT.	1	12/18/16/10	400	20.763
2.438-3.048	WET STIFF BROWN SILTY COARSE SANDY CLAY W/SOME GRAVEL AND FINE SAND.	2	3/6/7/8	325	19.239
3.962-4.572	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND.	3	4/7/8/11	250	17.715
5.486-6.096	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND.	4	4/7/7/10	350	16.191
7.010-7.620	WET VERY STIFF GRAY FINE SANDY SILT.	5	6/12/10/10	450	14.667
8.534-9.144	SATURATED MEDIUM DENSE GRAY SILTY FINE SAND.	6	4/7/10/10	350	13.143
10.058-10.668	WET VERY STIFF GRAY CLAYEY SILT W/TRACE OF FINE SAND AND ORGANIC MATTER.	7	4/8/9/13	450	11.619

WATER LEVEL (at 7.010-7.620)

BORING B-13
STA. 21+488.800, 20.267 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 21.720

(A)	(B)	(C)	(D)	(E)	(F)
.0.914-1.524	WET MEDIUM DENSE BROWN COARSE SAND AND GRAVEL W/SOME FINE SAND AND SILT.	1	12/10/6/9	300	20.196
2.438-3.048	WET VERY STIFF BROWNISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND AND GRAVEL.	2	6/10/15/22	375	18.672
3.962-4.572	WET MEDIUM DENSE BROWN FINE TO COARSE SAND W/SOME GRAVEL, TRACE OF CLAY.	3	4/8/11/11	450	17.148
5.486-6.096	SATURATED VERY STIFF RED CLAY W/TRACE OF FINE TO COARSE SAND.	4	4/11/15/16	450	15.624
7.010-7.620	WET VERY STIFF MULTICOLORED SILTY CLAY W/TRACE OF FINE TO COARSE SAND.	5	6/12/13/15	450	14.100
8.534-9.144	SATURATED VERY STIFF MULTICOLORED CLAY W/TRACE OF FINE SAND.	6	5/9/10/14	450	12.576
10.058-10.668	SATURATED VERY STIFF MULTICOLORED CLAY W/TRACE OF FINE SAND.	7	6/8/10/18	350	11.052

WATER LEVEL NOT RECORDED.

25.000 / 20.000 / 15.000 / 10.000

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 Kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BMD\SHARE2\DELA\SR7CHRCH BORING04.DGN

PREL. DRAWING / DESIGN / R.A.J. / CHKD / N.D.R.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	233	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-94

BORING B-14
STA. 21+503.480, 21.672 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 21.123

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE Z	1	2/2/7	175	20.361
1.219-1.676	NOTE AA	2	5/5/9	300	19.447
2.743-3.200	WET VERY STIFF MULTICOLORED SILTY FINE SANDY CLAY W/SOME COARSE SAND	3	5/8/12	350	17.923
4.267-4.724	WET VERY STIFF RED SILTY CLAY W/ TRACE OF FINE TO COARSE SAND	4	5/8/11	250	16.399
5.791-6.248	SATURATED VERY STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND	5	3/8/12	275	14.875
7.315-7.772	MOIST VERY STIFF GRAYISH RED SILTY CLAY W/ TRACE OF FINE SAND	6	6/9/16	375	13.351
8.839-9.296	SATURATED STIFF GRAYISH RED CLAY W/ TRACE OF FINE SAND	7	4/5/9	325	11.827
10.363-10.820	SATURATED STIFF GRAYISH RED CLAY W/ TRACE OF FINE SAND	8	4/5/8	300	10.303
11.887-12.344	WET VERY STIFF GRAYISH RED SILTY CLAY W/ TRACE OF FINE SAND	9	3/7/10	350	8.779

WATER LEVEL

NOTE Z - WET LOOSE BROWN COARSE TO FINE SAND W/ SOME CLAY AND GRAVEL.
NOTE AA - SATURATED STIFF MULTICOLORED CLAYEY SILT W/ TRACE OF COARSE TO FINE SAND.

25.000
20.000
15.000
10.000
5.000

SCALE: 1:100

BORING B-15
STA. 21+533.446, 22.918 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 20.025

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE BB	1	1/2/3	100	19.263
1.219-1.676	NOTE CC	2	4/4/4	250	18.349
2.743-3.200	NOTE DD	3	3/6	200	
		3A	6	125	16.825
4.267-4.724	SATURATED FIRM BROWNISH GRAY SILTY CLAY W/ TRACE OF GRAVEL, FINE SAND, COARSE SAND ORGANIC MATTER	4	2/2/4	325	15.301
5.791-6.248	SATURATED SOFT MULTICOLORED SILTY CLAY W/ TRACE OF GRAVEL AND FINE TO COARSE SAND	5	W/R/1/3	300	13.777
7.315-7.772	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE TO COARSE SAND AND GRAVEL	6	2/4/7	400	12.253
8.839-9.296	SATURATED FIRM RED CLAY W/ TRACE OF FINE TO COARSE SAND	7	3/4/4	350	10.729
10.363-10.820	SATURATED STIFF RED CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND	8	3/5/8	450	9.205
11.887-12.344	NOTE EE	9	2/3	225	
		9A	5	150	7.681

WATER LEVEL

NOTE BB - WET FIRM BROWN COARSE TO FINE SANDY SILT W/ SOME GRAVEL.
NOTE CC - WET LOOSE REDDISH GRAY CLAYEY COARSE TO FINE SAND W/ TRACE OF GRAVEL.
NOTE DD - (3) SATURATED STIFF RED SILTY COARSE TO FINE SAND W/ TRACE OF GRAVEL.
(3A) WET MEDIUM DENSE BROWNISH GRAY COARSE TO FINE SAND W/ SOME SILT, TRACE OF GRAVEL.
NOTE EE - (9) SATURATED FIRM GRAY SILTY FINE SANDY CLAY W/ SOME COARSE SAND.
(9A) SATURATED STIFF RED CLAY W/ TRACE OF FINE SAND.

BORING B-16
STA. 21+563.329, 25.849 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 17.953

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE FF	1	3/6/5	450	17.191
.914-1.372	NOTE GG	2	7/12/20	450	16.581
2.438-2.896	WET VERY STIFF BROWNISH GRAY CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND AND GRAVEL	3	5/9/14	450	15.057
3.962-4.420	WET VERY STIFF BROWN CLAYEY FINE TO COARSE SANDY SILT W/ TRACE OF GRAVEL	4	6/8/20	450	13.533
5.486-5.944	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE SAND	5	2/5/8	350	12.009
7.010-7.468	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE TO COARSE SAND	6	4/6/8	450	10.485
8.534-8.992	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE SAND	7	4/6/8	450	8.961
10.058-10.516	SATURATED VERY STIFF RED CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	8	5/8/10	450	7.437

WATER LEVEL

NOTE FF- SATURATED STIFF GRAYISH RED CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND AND GRAVEL.
NOTE GG- WET HARD MULTICOLORED CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND AND GRAVEL.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996.
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BMD\SHARE2\DEL...\SR7CHRCH BORING05.DGN

PREL. TRACING ... DESIGN ... R.A.J. ... CHKD. ... N.D.R.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	234	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-95

25.000

20.000

15.000

10.000

5.000

DATUM EL. 0.000

SCALE: 1:100

BORING B-17
STA. 21+593.149, 29.355 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 18.136

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE HH	1	4/3/5	225	17.374
1.219-1.676	NOTE II	2	4/5/5	325	16.460
2.438-2.896	WET STIFF MULTICOLORED CLAYEY SILT W/TRACE OF FINE TO COARSE SAND AND GRAVEL.	3	4/6/9	450	15.240
3.962-4.420 (WATER LEVEL)	NOTE JJ	4 4A	5/11 8	200 150	13.716
5.486-5.944	NOTE KK	5 5A	13 3/5	150 200	12.192
7.010-7.468	SATURATED STIFF RED CLAY W/TRACE OF FINE TO COARSE SAND.	6	2/4/6	350	10.668
8.534-8.992	SATURATED VERY STIFF REDDISH CLAY W/TRACE OF FINE SAND AND GRAVEL.	7	4/7/9	450	9.144
10.058-10.516	SATURATED VERY STIFF RED SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND.	8	4/8/13	450	7.620
11.582-12.040	SATURATED STIFF RED CLAY W/SOME FINE SAND, TRACE OF FINE SAND AND GRAVEL.	9	4/6/9	450	6.096

NOTE HH - WET FIRM MULTICOLORED CLAYEY SILT W/TRACE OF FINE TO COARSE SAND AND GRAVEL.

NOTE II - SATURATED STIFF MULTICOLORED SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL.

NOTE JJ - (4) WET VERY STIFF BROWNISH GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND.
(4A) WET MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND W/TRACE OF GRAVEL.

NOTE KK - (5) MOIST MEDIUM DENSE BROWNISH GRAY SILTY COARSE TO FINE SANDY GRAVEL W/TRACE OF CLAY.
(5A) SATURATED STIFF MULTICOLORED SILTY CLAY W/SOME FINE TO COARSE SAND, TRACE OF GRAVEL.

BORING B-18
STA. 21+432.966, 18.914 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 22.311

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE LL	1	4/4/7	275	21.549
1.372-1.829	NOTE MM 3	2	3/3/4	3/5 300 200	20.482
2.134-2.591	NOTE NN	3A	7	100	19.720
3.658-4.115 (WATER LEVEL)	SATURATED STIFF GRAY FINE SANDY SILT W/SOME CLAY, TRACE OF ORGANIC MATTER.	4	7/7/6	250	18.196
5.182-5.639	SATURATED STIFF GRAY ORGANIC FINE SANDY SILT W/TRACE OF COARSE SAND, GRAVEL AND CLAY.	5	3/6/7	300	16.672
6.706-7.163	NOTE OO	6 6A	5 9/13	125 175	15.148
8.230-8.687	SATURATED VERY STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND.	7	6/9/12	325	13.624
9.754-10.211	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND.	8	3/5/7	300	12.100
11.278-11.735	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND.	9	4/6/9	325	10.576

NOTE LL - SATURATED STIFF BROWNISH GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND.

NOTE MM - SATURATED FIRM BROWNISH GRAY SILT W/SOME CLAY, TRACE OF FINE TO COARSE SAND.

NOTE NN - (3) SATURATED FIRM BROWNISH GRAY SILT W/TRACE OF FINE TO COARSE SAND, GRAVEL AND CLAY.
(3A) NO SIEVE ANALYSIS - INDICATION OF WET MEDIUM DENSE BROWN FINE TO COARSE SANDY SILT W/TRACE OF CLAY.

NOTE OO - (6) SATURATED STIFF GRAY ORGANIC FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND.
(6A) WET VERY STIFF GRAY FINE SANDY SILT W/TRACE OF COARSE SAND.

BORING B-19
STA. 21+462.697, 18.241 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 21.519

(A)	(B)	(C)	(D)	(E)	(F)
0.610-1.067	NOTE PP	1	2/5/7	125	20.452
2.134-2.591	WET VERY STIFF GRAYISH BROWN SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL.	2	7/11/12	300	18.928
3.658-4.115	SATURATED VERY STIFF MULTICOLORED CLAY, W/TRACE OF FINE SAND.	3	9/11/17	300	17.404
5.182-5.639	SATURATED VERY STIFF REDDISH GRAY CLAY, W/TRACE OF FINE SAND.	4	7/8/13	275	15.880
6.706-7.163	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND.	5	3/6/6	325	14.356
8.230-8.687	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND.	6	3/7/8	350	12.832
9.754-10.211	SATURATED VERY STIFF REDDISH GRAY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.	7	6/9/9	375	11.308
11.278-11.735	SATURATED STIFF GRAY CLAY W/TRACE OF FINE SAND.	8	4/6/8	400	9.784

WATER LEVEL NOT RECORDED.

NOTE PP - WET STIFF BROWNISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF GRAVEL AND COARSE SAND.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 Kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BMD\SHARE2\DELA... \SR7CHRCH BORING06.DGN

PREL. TRACING — DESIGN — R.A.J. — CHKD — N.D.R.

CONTRACT	COUNTY	F.A.P. NO	SHEET NO	TOTAL SHTS
91-101-04	NEW CASTLE	STP-N339(1)	235	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-96

BORING B-20
STA. 21+493.707, 16.176 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 20.635

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE QQ	1	4/5/8	300	19.873
1.219-1.676	NOTE RR	2	4/6/7	350	18.959
2.743-3.200	NOTE SS	3 3A	3 7/11	100 150	17.435
4.267-4.724	SATURATED STIFF MULTICOLORED CLAY W/ TRACE OF FINE TO COARSE SAND	4	3/4/5	275	15.911
5.791-6.248	SATURATED VERY STIFF MULTICOLORED CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	5	6/10/13	300	14.387
7.315-7.772	SATURATED STIFF MULTICOLORED CLAY W/ TRACE OF COARSE SAND	6	3/5/7	275	12.863
8.839-9.296	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE SAND	7	3/5/8	300	11.339
10.363-10.820	WET STIFF GRAYISH RED SILTY FINE SANDY CLAY W/ TRACE OF COARSE SAND	8	4/6/8	325	9.815
11.887-12.344	SATURATED VERY STIFF GRAYISH RED SILTY CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	9	4/8/9	300	8.291

WATER LEVEL NOT RECORDED.
NOTE QQ - SATURATED STIFF BROWNISH GRAY SILTY CLAY W/ TRACE OF FINE TO COARSE SAND AND GRAVEL.
NOTE RR - SATURATED STIFF MULTICOLORED SILT W/ SOME CLAY, TRACE OF FINE TO COARSE SAND.
NOTE SS - (3) WET FIRM MULTICOLORED CLAYEY SILT W/ SOME FINE TO COARSE SAND.
(3A) WET VERY STIFF MULTICOLORED SILTY CLAY W/ TRACE OF FINE SAND.

25.000
20.000
15.000
10.000
DATUM EL. 5.000
SCALE: 1:100

BORING B-21
STA. 21+522.061, 19.590 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 19.690

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE TT	1	4/8/8	175	18.928
1.067-1.524	NOTE UU	2	2/8/9	250	18.166
2.591-3.048	WET VERY STIFF MULTICOLORED ORGANIC SILTY CLAY W/ TRACE OF FINE TO COARSE SAND AND GRAVEL	3	5/10/12	450	16.642
4.115-4.572	SATURATED VERY STIFF REDDISH GRAY CLAY W/ TRACE OF FINE SAND	4	4/8/11	175	15.118
5.639-6.096	SATURATED STIFF MULTICOLORED CLAY W/ TRACE OF FINE TO COARSE SAND AND GRAVEL	5	4/5/8	350	13.594
7.163-7.620	SATURATED STIFF MULTICOLORED CLAY W/ TRACE OF FINE SAND	6	4/5/7	450	12.070
8.687-9.144	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE SAND	7	3/5/7	400	10.546
10.211-10.668	NOTE VV	8 8A	3/7 12	150 125	9.022
11.735-12.192	SATURATED VERY STIFF MULTICOLORED SILTY CLAY W/ SOME FINE SAND, TRACE TO COARSE SAND	9	3/6/11	375	7.498

WATER LEVEL NOT RECORDED.
NOTE TT - WET VERY STIFF REDDISH GRAY SILTY CLAY W/ TRACE OF FINE SAND.
NOTE UU - WET VERY STIFF REDDISH GRAY SILTY CLAY W/ TRACE OF FINE SAND.
NOTE VV - (8) WET STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/ TRACE OF COARSE SAND.
(8A) WET VERY STIFF GRAY CLAYEY FINE SANDY SILT W/ TRACE OF COARSE SAND.

BORING B-22
STA. 21+554.971, 19.607 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 19.538

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE WW	1	5/10/5	150	18.776
1.219-1.676	NOTE XX	2	2/1/4	100	17.862
2.743-3.200	SATURATED VERY STIFF REDDISH GRAY CLAY W/ TRACE OF FINE TO COARSE SAND	3	4/7/9	450	16.338
4.267-4.724	SATURATED VERY STIFF REDDISH GRAY CLAY W/ TRACE OF FINE SAND	4	3/7/10	450	14.814
5.791-6.248	SATURATED STIFF REDDISH GRAY CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	5	4/5/10	150	13.290
7.315-7.772	NO SIEVE ANALYSIS - INDICATION OF SATURATED STIFF RED CLAY	6	3/5/8	100	11.766
8.839-9.296	SATURATED STIFF REDDISH GRAY CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	7	3/5/8	375	10.242
10.363-10.820	WET STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/ TRACE OF COARSE SAND	8	4/6/9	300	8.718
11.887-12.344	WET STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/ TRACE OF COARSE SAND	9	4/5/8	450	7.194

WATER LEVEL NOT RECORDED.
NOTE WW - WET STIFF BROWNISH RED CLAYEY SILT W/ SOME FINE SAND, TRACE OF COARSE SAND AND GRAVEL.
NOTE XX - NO SIEVE ANALYSIS - INDICATION OF SATURATED FIRM RED CLAY W/ TRACE OF FINE SAND.

BORING B-23
STA. 21+585.354, 17.413 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 18.898

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE YY	1	3/4/6	350	18.136
1.219-1.676	NOTE ZZ	2	9/11/14	350	17.222
2.743-3.200	WET VERY STIFF REDDISH GRAY SILTY CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND AND GRAVEL	3	6/11/11	400	15.698
4.267-4.724	SATURATED STIFF REDDISH GRAY CLAY W/ TRACE OF FINE TO COARSE SAND	4	2/5/6	450	14.174
5.791-6.248	SATURATED FIRM GRAYISH RED CLAY W/ TRACE OF FINE SAND	5	2/3/5	450	12.650
7.315-7.772	SATURATED STIFF GRAYISH RED CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	6	4/6/8	350	11.126
8.839-9.296	MOIST STIFF GRAYISH RED SILTY FINE SANDY CLAY W/ TRACE OF COARSE SAND	7	2/4/5	400	9.602
10.058-10.516	MOIST STIFF GRAYISH RED SILTY CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	8	3/4/8	450	8.382
11.887-12.344	SATURATED VERY STIFF MULTICOLORED CLAY W/ SOME FINE SAND, TRACE OF COARSE SAND	9	4/6/10	450	6.554

WATER LEVEL NOT RECORDED.
NOTE YY - WET STIFF MULTICOLORED CLAYEY SILT W/ SOME FINE TO COARSE SAND, TRACE OF GRAVEL.
NOTE ZZ - WET MEDIUM DENSE BROWN FINE TO COARSE SAND W/ SOME SILT, TRACE OF GRAVEL.

20.000
15.000
10.000
DATUM EL. 5.000
SCALE: 1:100

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BWD\SHARE2\DEL... SR7CHRCH BORING07.DGN
H. R.A.J. N.O.R.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	236	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-97

BORING WS-1
STA. 21+550.407, 20.692 METERS LEFT OF SR7 BASELINE

Elevation scale: 25.000, 20.000, 15.000, 10.000, 5.000, 0.000, -5.000, -10.000

WATER LEVEL (at elev. approx. 15.000)

SURFACE ELEV. 20.208

(A)	(B)	(C)	(D)	(E)	(F)
1.219-1.676	WET STIFF REDDISH GRAY CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND	1	4/7/8	350	18.532
2.743-3.200	WET MEDIUM DENSE REDDISH BROWN CLAYEY FINE SAND W/SOME COARSE SAND AND GRAVEL	2	2/8/10	300	17.008
4.267-4.724	SATURATED STIFF REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND AND GRAVEL	3	3/3/6	375	15.484
5.791-6.248	WET VERY DENSE BROWN COARSE SANDY GRAVEL W/SOME CLAY AND FINE SAND	4	13/42/37	350	13.960
7.315-7.772	WET VERY STIFF GRAY SILTY CLAY W/ TRACE OF FINE TO COARSE SAND	5	4/7/12	275	12.436
7.772-8.382	NOTE A	U-1	---	550	11.826
8.382-8.839	NOTE B	6	3/7/10	350	11.369
10.668-11.125	SATURATED STIFF RED CLAY W/TRACE OF FINE TO COARSE SAND	7	4/6/7	375	9.083
12.192-12.802	SHELBY TUBE SAMPLE - NO SIEVE ANALYSIS	U-2	---	525	7.406
12.802-13.259	NOTE C	8	5/9/11	400	6.949
13.716-14.173	NOTE D	9	4/8/12	400	6.035
15.240-15.697	WET VERY STIFF RED CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND	10	4/9/14	400	4.511
16.764-17.221	SATURATED HARD REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	11	7/17/21	400	2.987
18.288-18.745	SATURATED DENSE GRAY SILTY FINE SAND W/TRACE OF COARSE SAND	12	11/19/27	350	1.463
19.812-20.269	SATURATED VERY DENSE GRAY FINE TO COARSE SAND W/SOME SILT	13	22/31/37	225	-0.061
21.336-21.793	NO SAMPLE RECOVERY - BROKEN TRAP	14	23/31/30	0	-1.585

NOTE A - SHELBY TUBE SAMPLE - NO SIEVE ANALYSIS
NOTE B - SATURATED VERY STIFF MULTICOLORED SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL.
NOTE C - SATURATED STIFF REDDISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.
NOTE D - SATURATED VERY STIFF REDDISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND.

SCALE: 1:100

BORING WS-2
STA. 21+599.700, 19.856 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 18.684

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.372	MOIST DENSE COARSE SAND W/SOME FINE SAND AND SILT, TRACE OF GRAVEL	1	12/19/13	300	17.312
2.438-2.896	WET VERY STIFF GRAY CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND AND GRAVEL	2	8/12/13	375	15.788
3.962-4.420	WET STIFF BROWNISH GRAY SILTY CLAY W/SOME FINE TO COARSE SAND, TRACE OF GRAVEL	3	10/8/6	450	14.264
5.486-5.944	WET VERY STIFF GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL	4	7/8/10	375	12.740
7.010-7.468	NOTE E	5 6	5 6/8	150 250	11.216
8.534-8.992	SATURATED VERY STIFF RED CLAY W/ TRACE OF FINE TO COARSE SAND	7	5/7/10	350	9.692
9.144-9.754	NOTE F	8	---	475	8.930
10.058-10.516	NOTE G	9	5/8/11	450	8.168
11.582-12.040	SATURATED STIFF RED CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	10	5/5/7	450	6.644
13.106-13.564	SATURATED VERY STIFF RED SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	11	5/10/14	450	5.120
14.630-15.088	SATURATED VERY STIFF RED SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	12	4/10/15	450	3.596
16.154-16.612	WET HARD REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	13	18/21/22	400	2.072
17.678-18.136	SATURATED DENSE GRAY FINE TO COARSE SAND W/TRACE OF SILT	14	6/6/32	375	0.548
19.202-19.660	SATURATED HARD REDDISH GRAY CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND	15	11/20/30	400	-0.976
20.726-21.184	WET VERY DENSE BROWNISH GRAY FINE TO COARSE SAND W/SOME GRAVEL AND SILT	16	42/65/85	300	-2.500

WATER LEVEL NOT RECORDED

NOTE E - (5) WET STIFF BROWNISH GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL.
(6) SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL.
NOTE F - SHELBY TUBE SAMPLE - SATURATED RED CLAY W/TRACE OF FINE SAND.
NOTE G - SATURATED VERY STIFF RED CLAY W/TRACE OF FINE SAND.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BMD\SHARE2\DEL...\SR7CHRCH BORING08.DGN
FIELD TRACING ... DESIGN ... R.A.J. ... CHKD ... N.D.R.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	237	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-98

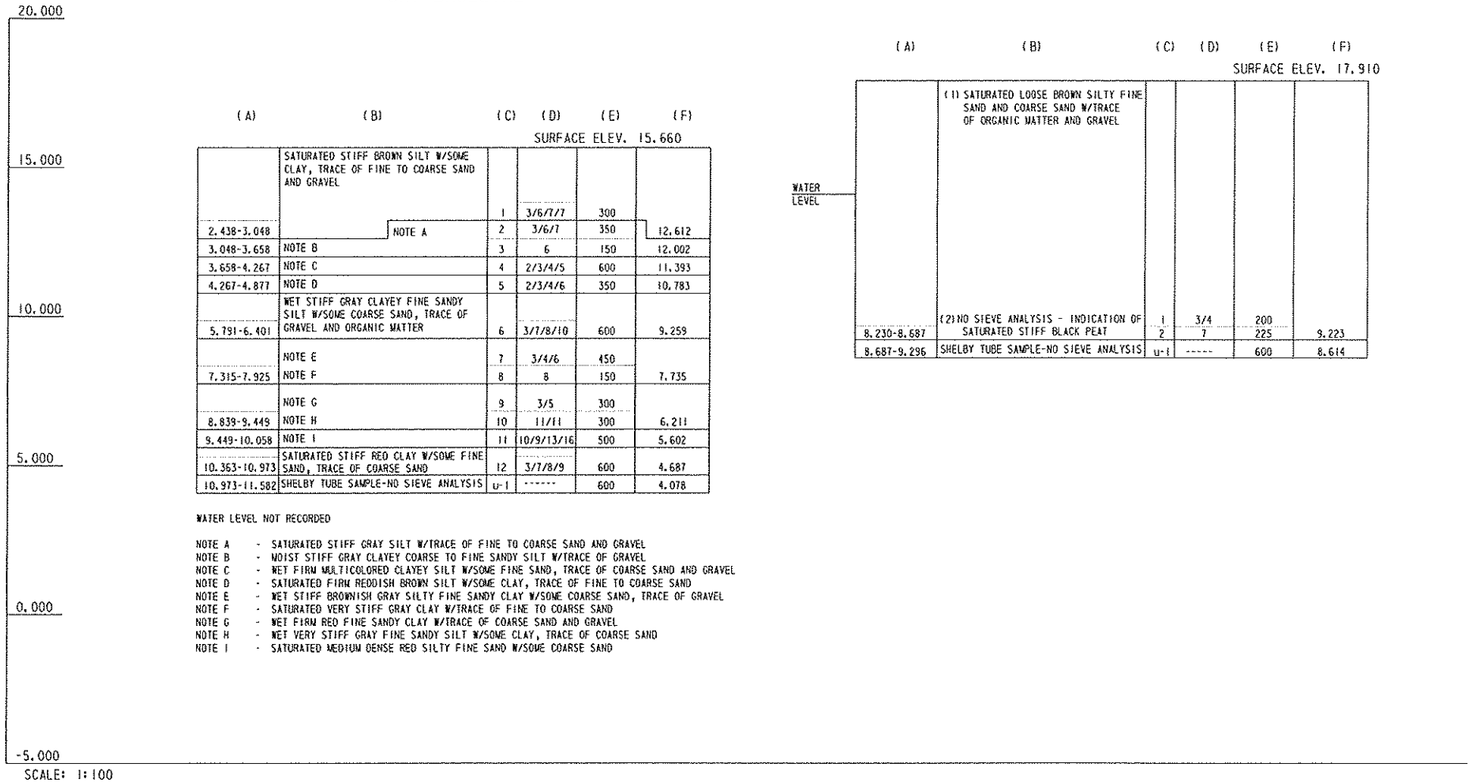
BORING S-1A
STA. 21+625.463, 24.711 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 15.660

(A)	(B)	(C)	(D)	(E)	(F)
	SATURATED STIFF BROWN SILT W/SOME CLAY, TRACE OF FINE TO COARSE SAND AND GRAVEL	1	3/6/7/7	300	
2.438-3.048	NOTE A	2	3/6/7	350	12.612
3.048-3.658	NOTE B	3	6	150	12.002
3.658-4.267	NOTE C	4	2/3/4/5	600	11.393
4.267-4.877	NOTE D	5	2/3/4/6	350	10.783
5.791-6.401	WET STIFF GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL AND ORGANIC MATTER	6	3/7/8/10	600	9.259
	NOTE E	7	3/4/6	450	
7.315-7.925	NOTE F	8	8	150	7.735
	NOTE G	9	3/5	300	
8.839-9.449	NOTE H	10	11/11	300	6.211
9.449-10.058	NOTE I	11	10/9/13/16	500	5.602
10.363-10.973	SATURATED STIFF RED CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	12	3/7/8/9	600	4.687
10.973-11.582	SHELBY TUBE SAMPLE-NO SIEVE ANALYSIS	U-1	------	600	4.078

WATER LEVEL NOT RECORDED

NOTE A - SATURATED STIFF GRAY SILT W/TRACE OF FINE TO COARSE SAND AND GRAVEL
NOTE B - MOIST STIFF GRAY CLAYEY COARSE TO FINE SANDY SILT W/TRACE OF GRAVEL
NOTE C - WET FIRM MULTICOLORED CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND AND GRAVEL
NOTE D - SATURATED FIRM REDDISH BROWN SILT W/SOME CLAY, TRACE OF FINE TO COARSE SAND
NOTE E - WET STIFF BROWNISH GRAY SILTY FINE SANDY CLAY W/SOME COARSE SAND, TRACE OF GRAVEL
NOTE F - SATURATED VERY STIFF GRAY CLAY W/TRACE OF FINE TO COARSE SAND
NOTE G - WET FIRM RED FINE SANDY CLAY W/TRACE OF COARSE SAND AND GRAVEL
NOTE H - WET VERY STIFF GRAY FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND
NOTE I - SATURATED MEDIUM DENSE RED SILTY FINE SAND W/SOME COARSE SAND



BORING S-1B
STA. 21+682.506, 26.739 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 17.910

(A)	(B)	(C)	(D)	(E)	(F)
	(1) SATURATED LOOSE BROWN SILTY FINE SAND AND COARSE SAND W/TRACE OF ORGANIC MATTER AND GRAVEL	1	3/4	200	
8.230-8.687	(2) NO SIEVE ANALYSIS - INDICATION OF SATURATED STIFF BLACK PEAT	2	7	225	9.223
8.687-9.296	SHELBY TUBE SAMPLE-NO SIEVE ANALYSIS	U-1	-----	600	8.614

WATER LEVEL

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 Kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N:\BMD\SHARE2\DELA\SR7CHRCH BORINGS09.DGN
PROJ. ENGINEER H. DESIGNED R.A.J. CHKD N.D.R.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	238	365

CHURCHMANS ROAD & SR 7 INTERCHANGE STRUCTURE PLANS & DETAILS BORING LOGS

REVISIONS

S-99

BORING WA-1
STA. 21+777.641, 50.682 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 13.595

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.372	SATURATED SOFT GRAYISH BROWN CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND	1	1/2/2	300	12.223
2.438-2.896	SATURATED VERY STIFF GRAYISH BROWN CLAYEY SILT W/ TRACE OF FINE TO COARSE SAND	2	4/6/10	350	10.699
3.962-4.420	SATURATED FIRM GRAY CLAY W/TRACE OF FINE SAND	3	2/2/3	400	9.175
5.486-5.944	NO SIEVE ANALYSIS - INDICATION OF SATURATED STIFF BROWN PEAT	4	3/4/7	450	7.651
7.010-7.468	SATURATED STIFF GRAY MICACEOUS FINE SANDY SILT W/ TRACE OF COARSE SAND AND CLAY	5	3/5/7	400	6.127
8.534-8.992	NO SAMPLE RECOVERY	6	4/4/6	0	4.603
10.058-10.516	SATURATED MEDIUM DENSE MULTICOLORED SILTY FINE SAND W/SOME GRAVEL, TRACE OF COARSE SAND	7	4/8/12	300	3.079
11.582-12.040	SATURATED STIFF REDDISH GRAY CLAYEY SILT W/ TRACE OF FINE SAND AND GRAVEL	8	4/6/8	450	1.555
13.106-13.564	NOTE A	9 10	4 10/18	150 300	0.031
14.630-15.088	SATURATED DENSE GRAY FINE SAND W/ SOME COARSE SAND AND SILT, TRACE OF GRAVEL	11	15/17/21	400	-1.493
16.154-16.612	SATURATED MEDIUM DENSE GRAY FINE TO COARSE SAND W/SOME SILT, TRACE OF GRAVEL	12	11/10/14	175	-3.017
17.678-18.137	WET DENSE MULTICOLORED FINE SAND W/ SOME COARSE SAND, TRACE OF CLAY	13	15/21/25	400	-4.542
19.202-19.660	SATURATED DENSE MULTICOLORED FINE SAND W/SOME COARSE SAND AND SILT	14	14/18/22	450	-6.065
20.726-21.184	SATURATED DENSE MULTICOLORED SILTY FINE SAND W/TRACE OF GRAVEL AND COARSE SAND	15	10/14/18	400	-7.589

WATER LEVEL NOT RECORDED

NOTE A - (9) SATURATED FIRM RED CLAY W/TRACE OF FINE TO COARSE SAND.
(10) SATURATED MEDIUM DENSE GRAY FINE SAND W/SOME SILT, TRACE OF COARSE SAND.

BORING WA-2
STA. 21+825.358, 24.358 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 13.225

WATER LEVEL (indicated between samples 3 and 4)

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	WET VERY STIFF MULTICOLORED SILT W/ TRACE OF FINE TO COARSE SAND	1	8/10/11	200	12.463
1.219-1.676	NOTE B	2	3/4/4	250	11.549
2.743-3.200	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND	3	3/4/6	250	10.025
4.267-4.724	SATURATED FIRM GRAY CLAY W/SOME ORGANIC MATTER, TRACE OF FINE SAND	4	2/3/4	250	8.501
5.791-6.248	NO SIEVE ANALYSIS - INDICATION OF SATURATED STIFF BLACK PEAT	5	4/5/9	250	6.977
7.315-7.772	WET MEDIUM DENSE GRAY COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	6	5/5/7	150	5.453
8.839-9.296	SATURATED MEDIUM DENSE MULTICOLORED FINE TO COARSE SAND W/SOME CLAY AND GRAVEL	7	9/7/8	100	3.929
10.363-10.820	SATURATED STIFF BROWNISH GRAY FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND	8	4/4/10	200	2.405
11.887-12.344	SATURATED MEDIUM DENSE BROWNISH GRAY FINE SAND W/TRACE OF COARSE SAND AND SILT	9	4/2/10	250	0.881
13.411-13.868	SATURATED HARD BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	10	12/19/26	200	-0.643
14.935-15.392	SATURATED MEDIUM DENSE BROWNISH GRAY COARSE TO FINE SAND W/SOME SILT	11	6/5/10	200	-2.167
16.459-16.916	SATURATED MEDIUM DENSE MULTICOLORED COARSE TO FINE SAND W/TRACE OF SILT	12	2/6/13	150	-3.691
17.983-18.440	SATURATED DENSE MULTICOLORED COARSE TO FINE SAND W/TRACE OF SILT	13	11/21/29	150	-5.215
19.507-19.964	SATURATED VERY DENSE MULTICOLORED FINE TO COARSE SAND W/TRACE OF SILT	14	14/28/38	150	-6.739
21.031-21.488	SATURATED HARD GRAYISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	15	17/29/45	200	-8.263
22.555-23.012	SATURATED HARD GRAYISH BROWN FINE TO COARSE SANDY CLAY	16	10/16/21	200	-9.787

NOTE B - SATURATED FIRM BROWNISH GRAY SILT W/SOME CLAY, TRACE OF FINE TO COARSE SAND AND ORGANIC MATTER.

BORING WA-3
STA. 21+868.801, 28.668 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 12.460

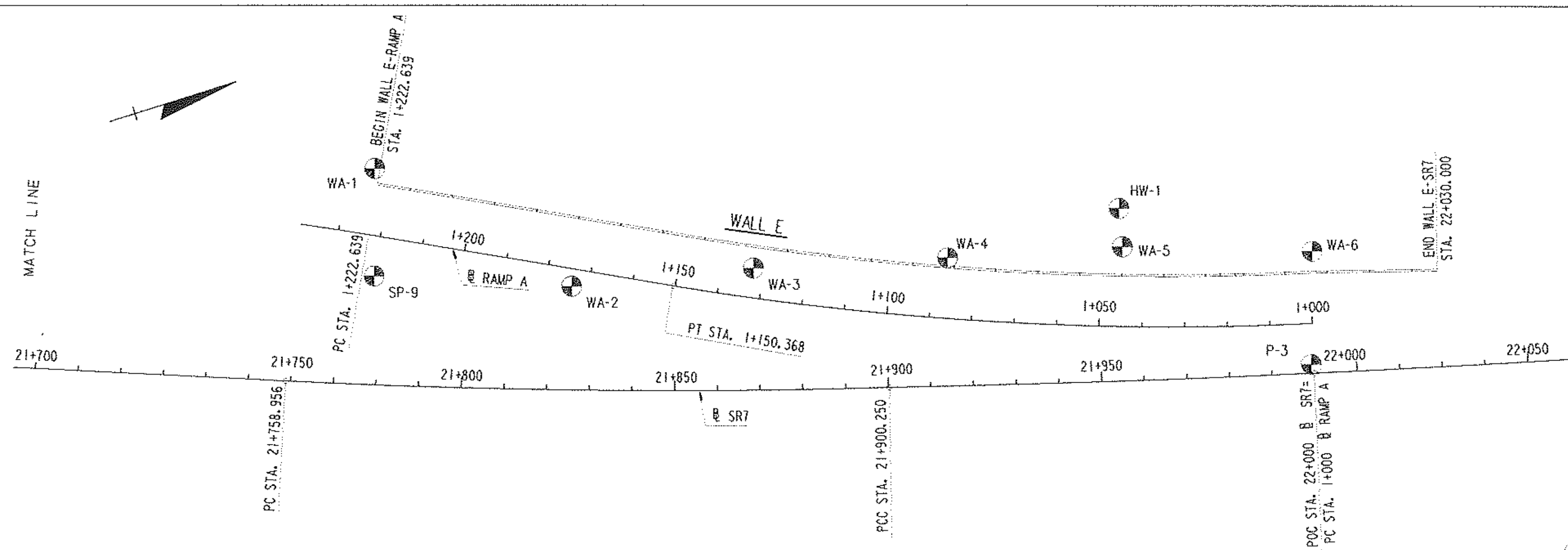
(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.372	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	1	3/5/10	450	11.088
2.438-2.896	WET VERY STIFF BROWNISH GRAY SILT W/SOME FINE TO COARSE SAND, TRACE OF GRAVEL AND CLAY	2	5/10/12	125	9.564
3.962-4.420	WET STIFF GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	3	6/6/8	150	8.040
5.486-5.944	NO SIEVE ANALYSIS - INDICATION OF SATURATED VERY STIFF BLACK PEAT	4	4/6/11	450	6.516
7.010-7.468	SATURATED STIFF GRAY MICACEOUS ORGANIC CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	5	2/3/6	450	4.992
8.534-8.992	WET MEDIUM DENSE BROWN COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	6	5/5/9	125	3.468
10.058-10.516	NOTE C	7 8	4 6/9	225 200	1.944
11.582-12.040	SATURATED MEDIUM DENSE REDDISH GRAY FINE TO COARSE SAND W/TRACE OF SILT AND GRAVEL	9	5/6/8	300	0.420
13.106-13.564	WET MEDIUM DENSE MULTICOLORED COARSE TO FINE SAND W/SOME SILT, TRACE OF GRAVEL	10	7/7/10	250	-1.104
14.630-15.088	SATURATED VERY STIFF REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	11	5/7/10	450	-2.628
16.154-16.612	WET VERY STIFF REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	12	5/11/16	450	-4.152
17.678-18.137	WET MEDIUM DENSE REDDISH BROWN SILTY FINE SAND W/SOME COARSE SAND, TRACE OF GRAVEL	13	7/9/11	350	-5.677
19.202-19.660	WET VERY STIFF REDDISH BROWN SILTY FINE SANDY CLAY W/SOME COARSE SAND	14	7/11/15	400	-7.200
20.726-21.184	SATURATED HARD MULTICOLORED FINE SANDY CLAY W/SOME COARSE SAND	15	13/20/30	400	-8.724

WATER LEVEL NOT RECORDED

NOTE C - (7) SATURATED LOOSE GRAY GRAVELLY FINE SAND W/SOME COARSE SAND AND SILT.
(8) SATURATED STIFF MULTICOLORED CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND.

Elevation scale: 15.000, 10.000, 5.000, 0.000, -5.000, -10.000, -15.000

SCALE: 1:100



BORING LOCATION PLAN

NO SCALE

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 Kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

BORING WA-4
STA. 21+914.469, 30.071 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 11.220

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.372	SATURATED FIRM GRAY SILTY CLAY W/ TRACE OF FINE TO COARSE SAND AND GRAVEL	1	3/2/4	400	9.848
2.438-2.896	SATURATED FIRM GRAYISH BROWN CLAYEY SILT W/TRACE OF FINE TO COARSE SAND	2	3/3/4	450	8.324
	NOTE D	3	2	200	
3.962-4.420		4	2/2	150	6.800
5.486-5.944	WET MEDIUM DENSE GRAY COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	5	4/6/6	200	5.276
7.010-7.468	SATURATED STIFF BROWN MICACEOUS FINE SANDY SILT W/SOME CLAY, TRACE OF GRAVEL	6	3/5/7	450	3.752
8.534-8.992	SATURATED DENSE GRAY FINE TO COARSE SAND W/TRACE OF SILT AND GRAVEL	7	10/14/20	350	2.228
10.058-10.516	SATURATED MEDIUM DENSE GRAY FINE SAND W/SOME COARSE SAND, TRACE OF SILT	8	10/10/14	300	0.704
11.582-12.040	SATURATED VERY DENSE BROWN FINE SAND W/SOME COARSE SAND AND SILT, TRACE OF GRAVEL	9	17/24/30	350	-0.820
13.106-13.564	SATURATED DENSE GRAY FINE SAND W/ SOME COARSE SAND AND SILT	10	12/18/22	350	-2.344
14.630-15.088	WET VERY DENSE BROWN FINE TO COARSE SAND W/TRACE OF SILT AND GRAVEL	11	11/28/28	300	-3.868
16.154-16.612	WET MEDIUM DENSE BROWN SILTY FINE TO COARSE SAND W/TRACE OF GRAVEL	12	8/11/14	400	-5.392
17.678-18.136	WET HARD BROWNISH RED CLAYEY FINE SANDY SILT W/SOME COARSE SAND	13	11/20/18	450	-6.917
19.202-19.660	WET MEDIUM DENSE REDDISH BROWN FINE TO COARSE SAND W/ TRACE OF GRAVEL AND CLAY	14	3/7/17	400	-8.440
20.726-21.184	SATURATED HARD REDDISH GRAY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	15	8/15/18	375	-9.964

WATER LEVEL (marked between samples 2 and 3)

NOTE D - (3) NO SIEVE ANALYSIS - INDICATION OF SATURATED SOFT BROWN PEAT.
(4) SATURATED SOFT BROWNISH GRAY ORGANIC CLAY W/TRACE OF FINE TO COARSE SAND.

BORING WA-5
STA. 21+955.820, 31.533 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 10.335

(A)	(B)	(C)	(D)	(E)	(F)
0.914-1.372	SATURATED STIFF GRAY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND AND GRAVEL	1	5/4/5	400	8.963
2.438-2.896	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	2	3/5/7	450	7.439
3.962-4.420	SATURATED FIRM BROWN ORGANIC CLAY W/SOME FINE SAND, TRACE OF COARSE SAND AND GRAVEL	3	2/2/4	400	5.915
5.486-5.944	SATURATED MEDIUM DENSE GRAY FINE SANDY GRAVEL W/SOME COARSE SAND, TRACE OF SILT	4	5/7/8	300	4.391
7.010-7.468	SATURATED STIFF REDDISH GRAY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	5	3/6/8	350	2.867
8.534-8.992	SATURATED LOOSE GRAY FINE SAND W/ TRACE OF SILT AND COARSE SAND	6	2/2/5	250	1.343
10.058-10.516	SATURATED MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF GRAVEL	7	4/9/14	350	-0.181
11.582-12.040	SATURATED MEDIUM DENSE BROWN SILTY FINE SAND W/SOME COARSE SAND	8	10/13/16	400	-1.705
13.106-13.564	SATURATED DENSE BROWNISH GRAY FINE SAND W/SOME COARSE SAND AND SILT, TRACE OF GRAVEL	9	9/13/18	400	-3.229
14.630-15.088	WET MEDIUM DENSE BROWN FINE TO COARSE SAND W/SOME CLAY, TRACE OF GRAVEL	10	4/8/10	450	-4.753
16.154-16.612	WET LOOSE BROWN SILTY FINE TO COARSE SAND W/TRACE OF GRAVEL	11	3/4/5	300	-6.277
17.678-18.136	WET VERY LOOSE BROWN SILTY FINE TO COARSE SAND W/TRACE OF GRAVEL	12	WH/1/2	125	-7.802
19.202-19.660	WET MEDIUM DENSE REDDISH BROWN SILTY FINE SAND W/TRACE OF COARSE SAND AND GRAVEL	13	8/12/14	400	-9.325
20.726-21.184	WET VERY STIFF MULTICOLORED CLAYEY FINE TO COARSE SANDY SILT W/TRACE OF GRAVEL	14	9/12/14	450	-10.849

WATER LEVEL (marked at sample 4)

BORING WA-6
STA. 22+000.643, 28.618 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 10.205

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	MOIST MEDIUM DENSE BROWN SILTY GRAVEL W/SOME COARSE TO FINE SAND	1	16/8/7	300	9.443
1.219-1.676	SATURATED SOFT GRAY SILTY CLAY W/ TRACE OF FINE TO COARSE SAND	2	1/1/3	350	8.529
2.743-3.200	WET VERY STIFF BROWN CLAYEY SILT W/SOME FINE TO COARSE SAND	3	4/6/10	450	7.005
4.267-4.724	SATURATED SOFT GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND	4	1/1/2	450	5.481
5.791-6.248	WET VERY LOOSE MULTICOLORED COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	5	1/1/3	225	3.957
7.315-7.772	WET LOOSE GRAYISH BROWN GRAVELLY FINE TO COARSE SAND W/SOME SILT	6	1/2/3	175	2.433
	SATURATED FIRM RED CLAY W/SOME FINE SAND AND GRAVEL, TRACE OF COARSE SAND	7	3	125	
8.839-9.296	SATURATED STIFF GRAY FINE SANDY SILT	8	5/6	325	0.909
10.668-11.125	SATURATED HARD GRAY FINE SANDY SILT W/TRACE OF COARSE SAND	9	10/18/28	325	-0.920
12.192-12.649	SATURATED VERY DENSE BROWN FINE TO COARSE SAND W/SOME SILT, TRACE OF GRAVEL	10	16/30/42	150	-2.444
13.716-14.173	SATURATED VERY DENSE GRAY SILTY FINE SAND W/SOME COARSE SAND	11	15/25/30	350	-3.968
15.240-15.697	WET MEDIUM DENSE GRAYISH BROWN SILTY FINE TO COARSE SAND W/TRACE OF GRAVEL	12	5/6/11	275	-5.492
16.764-17.221	SATURATED VERY STIFF RED SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	13	5/8/12	300	-7.016
18.288-18.745	WET HARD MULTICOLORED SILTY FINE SANDY CLAY W/SOME COARSE SAND	14	9/15/16	200	-8.540
19.812-20.269	SATURATED VERY STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	15	4/10/13	300	-10.064
21.336-21.793	SATURATED VERY LOOSE BROWN COARSE TO FINE SAND W/SOME SILT, TRACE OF GRAVEL - COULD NOT KEEP HOLE OPEN	16	4/4/WH	450	-11.588

WATER LEVEL NOT RECORDED

Elevation scale: 15.000, 10.000, 5.000, 0.000, -5.000, -10.000, -15.000

SCALE: 1:100

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS
91-101-04	NEW CASTLE	STP-N339(1)	240	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-101

BORING HW-1
STA. 21+955.327, 40.520 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 10.860

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE A	1	17/12/8	100	10.098
1.067-1.524	NOTE B	2	2/3/3	150	9.336
2.591-3.048 (WATER LEVEL)	SATURATED FIRM MULTICOLORED ORGANIC SILTY CLAY W/SOME COARSE SAND, TRACE OF FINE SAND AND GRAVEL	3	2/3/3	200	7.812
4.115-4.572	SATURATED LOOSE GRAY SILTY FINE SAND W/TRACE OF COARSE SAND	4	2/2/3	150	6.288
5.639-6.096	SATURATED MEDIUM DENSE GRAY COARSE TO FINE SAND AND GRAVEL W/SOME SILT	5	4/7/5	100	4.764
7.163-7.620	SATURATED MEDIUM DENSE BROWNISH GRAY GRAVELLY FINE SAND W/SOME SILT, TRACE OF COARSE SAND	6	11/13/11	100	3.240
8.687-9.144	SATURATED MEDIUM DENSE GRAY COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL	7	6/11/11	150	1.716
10.211-10.668	SATURATED MEDIUM DENSE BROWNISH GRAY COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL	8	13/10/14	100	0.192
11.735-12.192	SATURATED DENSE MULTICOLORED FINE TO COARSE SAND W/SOME SILT	9	20/21/21	100	-1.332
13.259-13.716	WET VERY DENSE BROWNISH GRAY FINE TO COARSE SAND W/SOME SILT	10	16/32/34	100	-2.856
14.783-15.240	WET MEDIUM DENSE BROWNISH GRAY FINE TO COARSE SAND W/TRACE OF CLAY AND GRAVEL	11	6/5/15	150	-4.380

NOTE A - MOIST MEDIUM DENSE MULTICOLORED SILTY COARSE SAND AND GRAVEL W/SOME FINE SAND.
NOTE B - WET FIRM GRAYISH BROWN SILTY FINE TO COARSE SANDY CLAY W/TRACE OF GRAVEL.

BORING HW-2
STA. 22+058.474, 45.349 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 9.145

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE C	1	4/4/6	225	8.383
0.914-1.372	NOTE D	2	2/4/5	225	7.773
2.438-2.896 (WATER LEVEL)	SATURATED FIRM GRAY ORGANIC CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND	3	2/3/5	275	6.249
3.962-4.420	SATURATED LOOSE GRAY COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL	4	2/3/5	325	4.725
5.486-5.944	NO SAMPLE RECOVERY - INDICATION OF SATURATED LOOSE MULTICOLORED COARSE SAND AND GRAVEL	5	6/4/3	0	3.201
7.010-7.468	SATURATED FIRM BROWNISH GRAY FINE SANDY SILT W/TRACE OF COARSE SAND AND CLAY	6	2/3/5	250	1.677
8.534-8.992	SATURATED MEDIUM DENSE BROWNISH GRAY FINE TO COARSE SAND W/SOME SILT, TRACE OF GRAVEL	7	5/7/11	200	0.153
10.058-10.516	SATURATED STIFF REDDISH GRAY FINE SANDY SILT W/SOME CLAY, TRACE OF COARSE SAND	8	2/3/6	300	-1.371
11.582-12.040	SATURATED VERY STIFF BROWN FINE SANDY SILT W/TRACE OF COARSE SAND	9	5/9/7	350	-2.895
13.106-13.564	WET STIFF BROWN CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL	10	5/3/6	325	-4.419
14.630-15.088	SATURATED STIFF RED CLAY W/SOME FINE TO COARSE SAND	11	3/6/7	325	-5.943

NOTE C - SATURATED STIFF GRAYISH BROWN SILTY CLAY W/TRACE OF FINE TO COARSE SAND.
NOTE D - SATURATED STIFF MULTICOLORED SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL.

Elevation scale: 15.000, 10.000, 5.000, 0.000, -5.000, -10.000, -15.000

SCALE: 1:100

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.

N.D.R.
R.A.J.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	241	365

CHURCHMANS ROAD & SR 7 INTERCHANGE STRUCTURE PLANS & DETAILS BORING LOGS

REVISIONS

S-102

BORING P-1
STA. 21+300.205, 25.579 METERS RIGHT OF SR7 BASELINE

SURFACE ELEV. 23.784

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE A	1	4/4/4	350	23.022
1.067-1.524	NOTE B	2	2/4/3	400	22.260
2.591-3.048	WET LOOSE BROWN COARSE TO FINE SAND W/SOME SILT AND GRAVEL	3	3/4/3	375	20.736
4.115-4.572	SATURATED MEDIUM DENSE BROWNISH GRAY SILTY FINE SAND W/TRACE OF COARSE SAND AND GRAVEL	4	5/6/8	300	19.212
5.639-6.096	SATURATED STIFF GRAY CLAYEY FINE SANDY SILT W/TRACE OF ORGANIC MATTER	5	3/8/7	375	17.688
7.163-7.620	SATURATED VERY STIFF GRAY ORGANIC FINE SANDY SILT W/TRACE OF COARSE SAND	6	4/10/15	325	16.164
8.687-9.144	SATURATED MEDIUM DENSE GRAY SILTY FUNE SAND W/TRACE OF ORGANIC MATTER	7	3/5/10	450	14.640
10.211-10.668	SATURATED VERY STIFF GREY CLAYEY FINE SANDY SILT W/TRACE OF ORGANIC MATTER	8	5/10/12	375	13.116
11.735-12.192	SATURATED HARD GRAY FINE SANDY SILT	9	16/28/26	375	11.592

WATER LEVEL (shown between samples 2 and 3)

NOTE A - WET LOOSE BROWN COARSE SAND W/SOME FINE SAND AND SILT, TRACE OF GRAVEL.
NOTE B - WET LOOSE BROWN CLAYEY COARSE TO FINE SAND W/TRACE OF GRAVEL.

BORING P-3
STA. 21+999.511, 1.580 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 10.430

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE C	1	3/6/5	175	9.668
1.067-1.524	NOTE D	2	2/5/6	325	8.906
2.591-3.048	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	3	2/4/6	450	7.382
4.115-4.572	WET MEDIUM DENSE BROWNISH GRAY GRAVEL W/SOME FINE TO COARSE SAND AND SILT	4	5/7/8	150	5.858
5.639-6.096	SATURATED STIFF RED CLAY W/SOME GRAVEL, TRACE OF FINE TO COARSE SAND	5	3/3/6	75	4.334
7.163-7.620	WET VERY STIFF REDDISH GRAY FINE SANDY SILT W/TRACE OF GRAVEL, COARSE SAND AND CLAY	6	7/7/11	300	2.810
8.687-9.144	SATURATED MEDIUM DENSE GRAY FINE TO COARSE SAND W/TRACE OF SILT AND GRAVEL	7	2/5/6	250	1.286
10.211-10.668	SATURATED MEDIUM DENSE GRAY COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL	8	9/8/11	425	-0.238

WATER LEVEL (shown between samples 3 and 4)

NOTE C - MOIST MEDIUM DENSE BROWN GRAVELLY COARSE TO FINE SAND W/TRACE OF CLAY.
NOTE D - SATURATED STIFF BROWNISH GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND.

BORING P-4
STA. 22+180.290, 28.105 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 10.228

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE E	1 1A	5/5 12	300 150	9.466
1.067-1.524	NOTE F	2	1/2/4	425	8.704
2.591-3.048	SATURATED STIFF BROWNISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	3	2/4/7	450	7.180
4.115-4.572	NOTE G	4 4A	2/4 10	300 150	5.656
5.639-6.096	WET DENSE BROWN COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	5	10/17/24	325	4.132
7.163-7.620	SATURATED VERY STIFF BROWNISH GRAY CLAYEY FINE SANDY SILT W/TRACE OF GRAVEL AND COARSE SAND	6	4/7/9	250	2.608
8.687-9.144	SATURATED STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/SOME COARSE SAND, TRACE OF GRAVEL	7	5/4/5	150	1.084
10.211-10.668	SATURATED MEDIUM DENSE BROWN FINE SAND W/SOME COARSE SAND, TRACE OF SILT	8	2/4/7	350	-0.440
11.735-12.192	SATURATED FIRM REDDISH GRAY SILTY FINE SANDY CLAY W/SOME COARSE SAND	9	2/2/6	250	-1.964

WATER LEVEL (shown at sample 4)

Elevation scale: 25.000, 20.000, 15.000, 10.000, 5.000, 0.000, -5.000

SCALE: 1:100

NOTE E - (1) WET MEDIUM DENSE BROWN SILTY COARSE TO FINE SAND W/TRACE OF GRAVEL.
(1A) SATURATED VERY STIFF BROWN SILTY CLAY W/TRACE OF FINE TO COARSE SAND.
NOTE F - SATURATED FIRM BROWNISH GRAY CLAY W/TRACE OF FINE TO COARSE SAND.
NOTE G - (4) SATURATED SOFT GRAY MICACEOUS SILTY CLAY W/SOME FINE SAND.
(4A) SATURATED STIFF GRAY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 Kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.
6. FOR SIGN POLE BORING LOCATIONS SEE DWG. NOS. S-91 & S-100.

DESIGN R.A.J. CHKD. N.D.R.

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS
91-101-04	NEW CASTLE	STP-N339(1)	242	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-103

BORING P-5
STA. 21+451.787, 34.727 METERS LEFT OF SR7 BASELINE

SURFACE ELEV. 22.567

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE H	1	3/6/7	350	21.805
2.134-2.591	WET LOOSE BROWN CLAYEY GRAVELLY COARSE SAND W/SOME FINE SAND	2	6/3/4	225	19.976
2.743-3.200	NOTE I	3	3/4/5	325	19.367
4.267-4.724	SATURATED FIRM REDDISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND	4	2/3/5	250	17.843
5.791-6.248	WET STIFF REDDISH GRAY CLAYEY SILT W/TRACE OF FINE TO COARSE SAND	5	4/5/5	325	16.319
7.315-7.772	SATURATED STIFF GRAY CLAY W/TRACE OF FINE SAND	6	2/5/6	300	14.795
8.839-9.296 (WATER LEVEL)	WET VERY STIFF BROWN FINE SANDY SILT	7	10/13/12	325	13.271
10.363-10.820	SATURATED MEDIUM DENSE BROWN SILTY FINE SAND W/TRACE OF COARSE SAND	8	8/13/15	450	11.747
11.887-12.344	SATURATED MEDIUM DENSE BROWN COARSE TO FINE SAND W/TRACE OF SILT	9	6/6/9	450	10.223
13.411-13.868	SATURATED VERY STIFF GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	10	4/10/15	300	8.699
14.935-15.392	SATURATED VERY STIFF REDDISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	11	3/6/10	300	7.175
16.459-16.916	WET VERY STIFF REDDISH GRAY CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND	12	4/7/11	350	5.651
17.983-18.440	SATURATED HARD REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	13	6/15/25	450	4.127

NOTE H - WET STIFF BROWN SILTY FINE TO COARSE SANDY CLAY W/SOME GRAVEL.
NOTE I - SATURATED STIFF BROWN CLAY W/TRACE OF COARSE TO FINE SAND.

Elevation scale: 25.000, 20.000, 15.000, 10.000, 5.000, 0.000

SCALE: 1:100

BORING P-6
STA. 11+820.333, 27.405 METERS RIGHT OF CHURCHMANS BASELINE

SURFACE ELEV. 16.885

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE J	1	4/5/5	150	16.123
1.219-1.676 (WATER LEVEL)	NOTE K	2	4/10/12	250	15.209
2.743-3.200	SATURATED VERY STIFF RED CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	3	2/4/6	200	13.685
4.267-4.724	SATURATED FIRM RED CLAY W/TRACE OF FINE TO COARSE SAND	4	2/2/3	200	12.161
5.791-6.248	WET STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	5	3/4/7	225	10.637
7.315-7.772	SATURATED STIFF REDDISH GRAY CLAY W/TRACE OF FINE SAND	6	3/4/6	450	9.113
8.839-9.296	SATURATED STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	7	3/5/8	325	7.589
10.363-10.820	SATURATED VERY STIFF RED SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	8	6/10/14	450	6.065
11.887-12.344	SATURATED VERY STIFF RED SILTY CLAY W/SOME FINE SAND	9	5/7/10	450	4.541

NOTE J - WET STIFF BROWN CLAYEY FINE TO COARSE SANDY SILT W/SOME GRAVEL.
NOTE K - SATURARED VERY STIFF BROWNISH GRAY CLAY W/SOME FINE SAND AND COARSE SAND, TRACE OF GRAVEL.

BORING P-8
STA. 12+239.844, 4.361 METERS LEFT OF CHURCHMANS BASELINE

SURFACE ELEV. 21.540

(A)	(B)	(C)	(D)	(E)	(F)
1.219-1.676 (WATER LEVEL)	WET LOOSE BROWN COARSE SAND W/SOME GRAVEL, FINE SAND AND SILT	1	3/4/3	x	19.864
1.981-2.438	NOTE L	2	6/7/9	x	19.102
2.743-3.353	NOTE M	3	4/5/8	x	18.187
4.267-4.877	WET STIFF MULTICOLORED SILTY CLAY W/TRACE OF COARSE TO FINE SAND	4	2/5/10/13	x	16.663
5.791-6.401	SATURATED VERY STIFF GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND	5	4/5/10/14	x	15.139
7.315-7.925	NO SAMPLE RECOVERY	6	4/5/9/12	x	13.615
8.839-9.449	WET VERY STIFF GRAY CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND	7	7/7/12/17	x	12.091
10.363-10.973	SATURATED MEDIUM DENSE GRAY FINE SAND W/SOME COARSE SAND, TRACE OF CLAY	8	6/9/11/14	x	10.567
11.582-12.192	SATURATED VERY STIFF REDDISH GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	9	7/12/13/14	x	9.348

x SAMPLE RECOVERY NOT RECORDED.

NOTE L - WET VERY STIFF GRAY GRAVELLY SILT W/SOME FINE SAND, TRACE OF COARSE SAND AND CLAY.
NOTE M - WET STIFF GRAY FINE SANDY SILT W/SOME CLAY, TRACE OF GRAVEL AND COARSE SAND.

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.
6. FOR SIGN POLE BORING LOCATIONS SEE DWG. NOS. S-91 & S-100.

N:\BMD\SHARE2\DEL...\SR7CHRCH BORING14.DGN

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL SHTS.
91-101-04	NEW CASTLE	STP-N339(1)	243	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-104

BORING SP-1
STA. 11+468.649, 8.909 METERS RIGHT OF CHURCHMANS BASELINE

(A)	(B)	(C)	(D)	(E)	(F)
					* SURFACE ELEV. XX.XXX
1.219-1.829	WET MEDIUM DENSE BROWN FINE SAND W/SOME SILT AND COARSE SAND, TRACE OF GRAVEL	1	6/7/6/6	**	*
1.981-2.591	NOTE A	2	2/3/3/3	**	*
2.743-3.353	NOTE B	3	3/4/5/3	**	*
4.267-4.877	WET MEDIUM DENSE BROWN COARSE SAND W/SOME GRAVEL, FINE SAND AND SILT	4	8/11/9/4	**	*
5.791-6.401	SATURATED STIFF GRAY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	5	4/5/9/12	**	*
7.315-7.925	SATURATED VERY STIFF GRAY CLAYEY FINE SANDY SILT W/TRACE OF COARSE SAND	6	4/7/11/15	**	*
8.839-9.449	SATURATED VERY STIFF GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	7	8/9/9/13	**	*
10.363-10.973	SATURATED MEDIUM DENSE BROWN FINE SAND W/TRACE OF SILT AND COARSE SAND	8	7/14/4/17	**	*
11.582-12.192	SATURATED MEDIUM DENSE BROWN FINE SAND W/SOME SILT, TRACE OF COARSE SAND	9	5/6/7/6	**	*

WATER LEVEL (between 1.981-2.591 and 2.743-3.353)

* SURFACE ELEVATIONS NOT AVAILABLE.
** SAMPLE RECOVERY NOT RECORDED.

NOTE A - MOIST LOOSE BROWN COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL.
NOTE B - WET LOOSE BROWN COARSE SAND W/SOME GRAVEL, TRACE OF FINE SAND AND SILT.

BORING SP-3
STA. 12+412.631, 13.836 METERS LEFT OF W.B. CHURCHMANS BASELINE

(A)	(B)	(C)	(D)	(E)	(F)
					* SURFACE ELEV. XX.XXX
1.219-1.676	WET LOOSE BROWN SILTY FINE TO COARSE SAND W/SOME GRAVEL	1	3/4/6	350	*
2.743-3.200	WET LOOSE BROWN SILTY FINE SAND W/SOME COARSE SAND, TRACE OF GRAVEL	2	3/4/6	375	*
4.267-4.724	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/SOME CLAY, TRACE OF GRAVEL	3	3/5/10	350	*
5.791-6.248	WET VERY STIFF BROWN SILTY FINE SANDY CLAY W/TRACE OF GRAVEL AND COARSE SAND	4	7/11/14	325	*
7.315-7.772	WET VERY STIFF RED SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	5	6/10/17	300	*
8.839-9.296	SATURATED VERY STIFF GRAY CLAY W/TRACE OF FINE SAND	6	8/10/15	300	*
10.363-10.820	SATURATED VERY STIFF GRAY FINE SANDY SILT	7	9/12/15	300	*
11.887-12.344	WET VERY STIFF REDDISH GRAY SILTY CLAY W/TRACE OF FINE SAND	8	2/8/12	200	*

WATER LEVEL (at 7.315-7.772)

* SURFACE ELEVATIONS NOT AVAILABLE

SP-4
STA. 12+413.658, 24.163 METERS RIGHT OF W.B. CHURCHMANS BASELINE

(A)	(B)	(C)	(D)	(E)	(F)
					* SURFACE ELEV. XX.XXX
0.305-0.762	NOTE C	1	6/13/18	275	*
1.219-1.676	NOTE D	2	4/12/12	300	*
2.743-3.200	WET MEDIUM DENSE BROWN CLAYEY COARSE SAND W/SOME FINE SAND, TRACE OF GRAVEL	3	8/14/11	150	*
4.267-4.724	WET MEDIUM DENSE BROWN SILTY FINE SAND W/TRACE OF COARSE SAND AND GRAVEL	4	5/10/11	375	*
5.791-6.248	WET STIFF BROWN FINE SANDY SILT W/SOME CLAY, TRACE OF GRAVEL AND CLAY	5	5/5/9	400	*
7.315-7.772	WET STIFF GRAY SILTY CLAY W/SOME FINE SAND, TRACE OF COARSE SAND	6	3/6/8	450	*
8.839-9.296	WET VERY STIFF RED SILTY CLAY W/SOME COARSE SAND, TRACE OF FINE SAND	7	7/12/14	450	*
10.363-10.820	WET VERY STIFF REDDISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND	8	7/12/14	450	*
11.887-12.344	WET VERY STIFF GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND	9	3/7/15	450	*

WATER LEVEL (at 4.267-4.724)

* SURFACE ELEVATIONS NOT AVAILABLE

NOTE C - WET HARD BROWN CLAYEY SILT W/SOME COARSE TO FINE SAND, TRACE OF GRAVEL.
NOTE D - WET MEDIUM DENSE BROWN GRAVELLY COARSE SAND W/SOME CLAY AND FINE SAND.

SCALE: 1:100

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.
6. FOR SIGN POLE BORING LOCATIONS SEE DWG. NOS. S-91 & S-100.

N.D.R. R.A.J. H.

N:\BMD\SHARE2\DEL\SR7CHRCH BORING15.DGN

CONTRACT	COUNTY	F.A.P. NO.	SHEET NO.	TOTAL
91-101-04	NEW CASTLE	STP-N339(1)	244	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS

S-105

BORING SP-6
STA. 22+740.923, 26.300 METERS LEFT OF SR7 BASELINE

WATER LEVEL

x SURFACE ELEV. XX.XXX

(A)	(B)	(C)	(D)	(E)	(F)
0.305-0.762	NOTE E	1	1/2/3	150	x
1.067-1.524	NOTE F	2	7/10/12	450	x
2.591-3.048	WET VERY STIFF BROWNISH GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL	3	6/10/15	450	x
4.115-4.572	WET MEDIUM DENSE BROWNISH GRAY FINE SANDY GRAVEL W/SOME SILT AND COARSE SAND	4	3/6/9	200	x
5.639-6.096	WET MEDIUM DENSE BROWNISH GRAY COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	5	7/11/12	250	x
7.163-7.620	WET VERY DENSE BROWN COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	6	27/30/31	225	x
8.687-9.144	NOTE G	7 7A	25/8 8	125 75	x
10.211-10.668	WET VERY STIFF GRAYISH RED CLAYEY FINE TO COARSE SANDY SILT W/TRACE OF GRAVEL	8	10/12/14	300	x
11.735-12.192	WET VERY STIFF GRAYISH RED FINE SANDY CLAY W/SOME COARSE SAND	9	6/11/12	400	x

x SURFACE ELEVATIONS NOT AVAILABLE.

NOTE E - WET FIRM BROWNISH GRAY CLAYEY FINE SANDY SILT W/SOME COARSE SAND, TRACE OF GRAVEL.
NOTE F - SATURATED VERY STIFF BROWNISH GRAY CLAYEY SILT W/SOME FINE SAND, TRACE OF COARSE SAND.
NOTE G - (7) WET DENSE BROWN COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT.
(7A) WET VERY STIFF REDDISH BROWN CLAYEY FINE SANDY SILT W/SOME FINE SAND.

BORING SP-7
STA. 22+740.073, 0.140 METERS LEFT OF SR7 BASELINE

WATER LEVEL

x SURFACE ELEV. XX.XXX

(A)	(B)	(C)	(D)	(E)	(F)
1.067-1.524	WET VERY STIFF BROWN SILT W/SOME FINE TO COARSE SAND AND CLAY, TRACE OF GRAVEL	1	4/8/9	450	x
2.591-3.048	MOIST MEDIUM DENSE BROWN GRAVELLY COARSE TO FINE SAND W/SOME SILT	2	4/7/8	400	x
4.115-4.572	WET MEDIUM DENSE BROWN COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	3	7/18/10	250	x
5.639-6.096	WET MEDIUM DENSE BROWN COARSE SANDY GRAVEL W/SOME FINE SAND, TRACE OF SILT	4	8/5/8	300	x
7.163-7.620	WET STIFF RED CLAYEY FINE TO COARSE SANDY SILT	5	5/6/9	450	x
8.687-9.144	SATURATED STIFF REDDISH GRAY CLAY W/SOME FINE TO COARSE SAND	6	4/6/8	450	x
10.211-10.668	WET VERY STIFF REDDISH GRAY SILTY FINE SANDY CLAY W/SOME COARSE SAND	7	4/7/11	450	x
11.735-12.192	WET LOOSE GRAY CLAYEY COARSE TO FINE SAND W/TRACE OF GRAVEL	8	4/5/5	450	x

x SURFACE ELEVATIONS NOT AVAILABLE.

SP-8
STA. 22+190.405, 1.148 METERS LEFT OF SR7 BASELINE

WATER LEVEL

x SURFACE ELEV. XX.XXX

(A)	(B)	(C)	(D)	(E)	(F)
1.067-1.524	SATURATED SOFT BROWNISH GRAY SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	1	WH/1/2	450	x
2.591-3.048	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	2	4/5/7	450	x
4.115-4.572	WET MEDIUM DENSE GRAY COARSE TO FINE SAND AND GRAVEL W/TRACE OF SILT	3	4/6/14	350	x
5.639-6.096	SATURATED STIFF REDDISH BROWN SILTY FINE SANDY CLAY W/TRACE OF COARSE SAND	4	3/5/5	375	x
7.163-7.620	SATURATED STIFF BROWN FINE SANDY SILT W/TRACE OF COARSE SAND	5	3/4/6	450	x
8.687-9.144	SATURATED LOOSE BROWN FINE SAND W/SOME COARSE SAND, TRACE OF SILT	6	3/3/4	450	x
10.211-10.668	WET MEDIUM DENSE BROWN COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL	7	4/6/8	375	x
11.735-12.192	NOTE H	8 9	2 3/4	200 250	x

x SURFACE ELEVATIONS NOT AVAILABLE.

NOTE H - (8) SATURATED VERY LOOSE BROWN COARSE TO FINE SAND W/TRACE OF SILT AND GRAVEL.
(9) SATURATED FIRM RED SILTY FINE SANDY CLAY W/SOME COARSE SAND.

SCALE: 1:100

(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.
6. FOR SIGN POLE BORING LOCATIONS SEE DWG. NOS. S-91 & S-100.

N:\BMD\SHARE2\DEL...\DE\SR7\CHRCH BORING16.DGN
PWL TRACING ... H. ... DESIGN ... R.A.J. ... CHKD ... N.D.R.

CONTRACT	COUNTY	NO.	SHEET NO	TOTAL SHTS
91-101-04	NEW CASTLE	STP-N339(1)	245	365

CHURCHMANS ROAD & SR 7 INTERCHANGE
STRUCTURE PLANS & DETAILS
BORING LOGS

REVISIONS	

S-106

BORING SP-9
STA. 21+778.169, 25.508 METERS LEFT OF SR7 BASELINE

x SURFACE ELEV. XX.XXX

(A)	(B)	(C)	(D)	(E)	(F)
0.610-1.219	WET MEDIUM DENSE GRAY FINE TO COARSE SAND W/SOME CLAY AND GRAVEL	1	3/6/11/10	xx	x
1.676-2.286	MOIST DENSE GRAY FINE SANDY GRAVEL W/SOME COARSE SAND, TRACE OF CLAY	2	4/13/21/30	xx	x
2.591-3.200	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE AND COARSE SAND	3	3/6/9/10	xx	x
WATER LEVEL 4.115-4.724	SATURATED STIFF BROWNISH GRAY SILTY CLAY W/TRACE OF FINE TO COARSE SAND	4	1/3/6/7	575	x
5.639-6.248	SATURATED FIRM BROWNISH RED ORGANIC CLAY W/TRACE OF FINE TO COARSE SAND AND GRAVEL	5	1/3/5/6	600	x
7.163-7.772	SATURATED VERY STIFF DARK GRAY ORGANIC SILT W/SOME COARSE TO FINE SAND	6	4/5/12/16	600	x
8.687-9.296	NO SAMPLE RECOVERY	7	3/3/1/12	0	x
10.211-10.820	SATURATED DENSE BROWN SILTY FINE SAND W/TRACE OF COARSE SAND AND GRAVEL	8	36/20/20/26	100	x
11.582-12.192	SATURATED DENSE GRAYISH BROWN FINE SAND W/SOME SILT AND COARSE SAND, TRACE OF GRAVEL	9	14/13/25/24	125	x

x SURFACE ELEVATIONS NOT AVAILABLE.

xx SAMPLE RECOVERY NOT RECORDED.

SCALE: 1:100

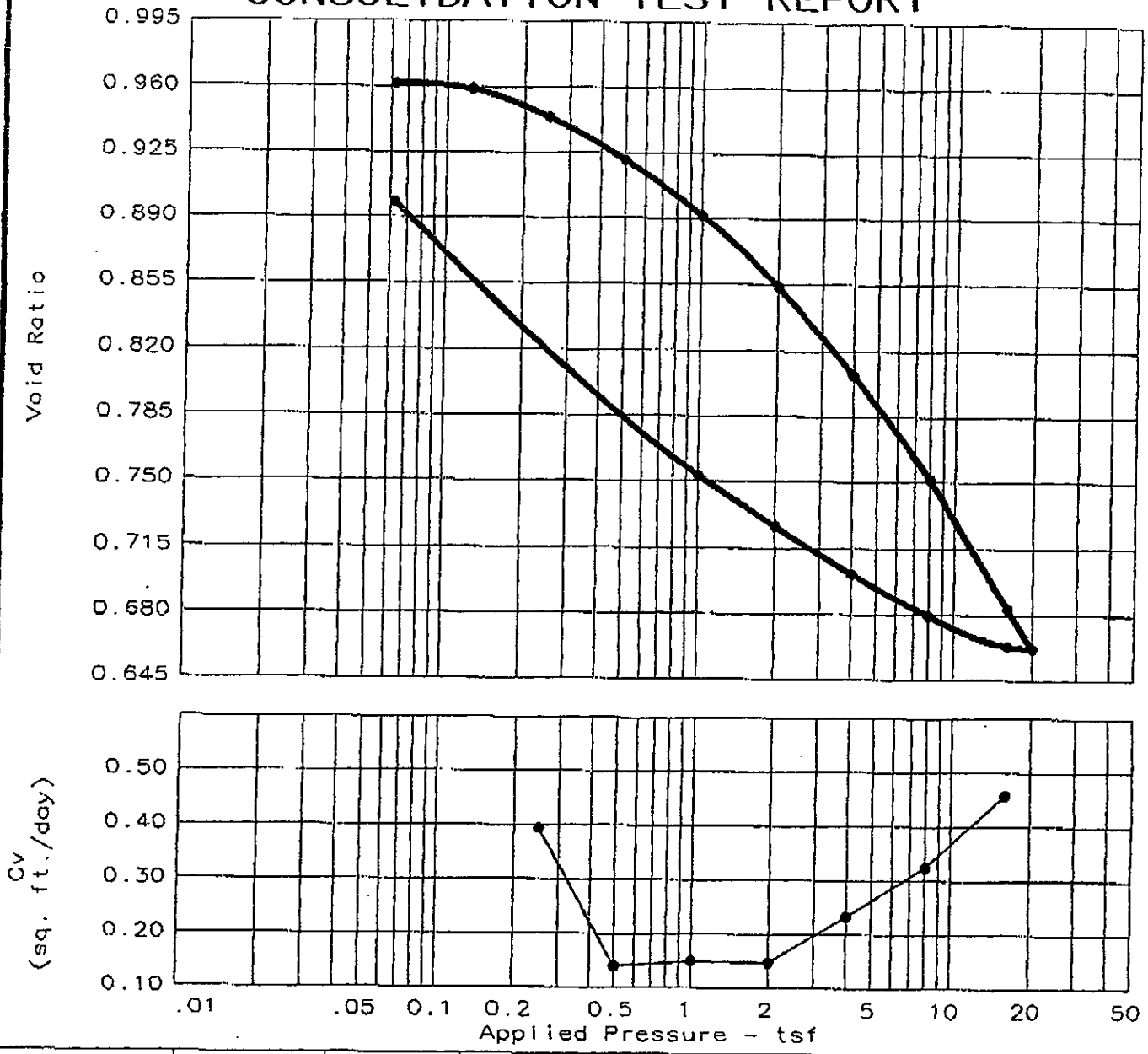
(A) SAMPLE DEPTH
(B) DESCRIPTION
(C) SAMPLE NUMBER
(D) BLOWS ON SAMPLE SPOON
(E) LENGTH OF RECOVERED SAMPLE (MILLIMETERS)
(F) ELEVATION

NOTES:

1. BORING LOGS RECORDED HEREIN WERE MADE BY DELDOT BETWEEN DECEMBER 1994 AND MARCH 1996
2. BORING METHOD: HOLLOW STEM AUGER.
3. SOIL SAMPLING: 50.8 mm SPLIT SPOON SAMPLER DRIVEN WITH A 63.5 Kg HAMMER FALLING 762 mm UNLESS OTHERWISE NOTED.
4. "WATER LEVEL" INDICATES DEPTH OF WATER MEASURED THROUGH THE HOLLOW STEM AUGERS DURING DRILLING.
5. COLUMN (D) INDICATES NUMBER OF BLOWS ON SAMPLE SPOON FOR EACH 150 mm OF PENETRATION OR FRACTION THEREOF OR METHOD BY WHICH PENETRATION OF TUBE SAMPLER WAS OBTAINED.
6. FOR SIGN POLE BORING LOCATIONS SEE DWG. NOS. S-91 & S-100.

SCH BORING17.DGN

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
99.1 %	34.2	88.8	52.3	24.2	2.791	2.41	0.22	0.9628

TEST RESULTS

Compression Index = 0.22

MATERIAL DESCRIPTION

SATURATED DARK RED CLAY.

Project No.: 91-101-04
Project: S.R. 7 & CHURCHMANS ROAD
Location: BORING # S1A
SAMPLE # U-1 (36.0'-38.0')
Date: 11-15-95

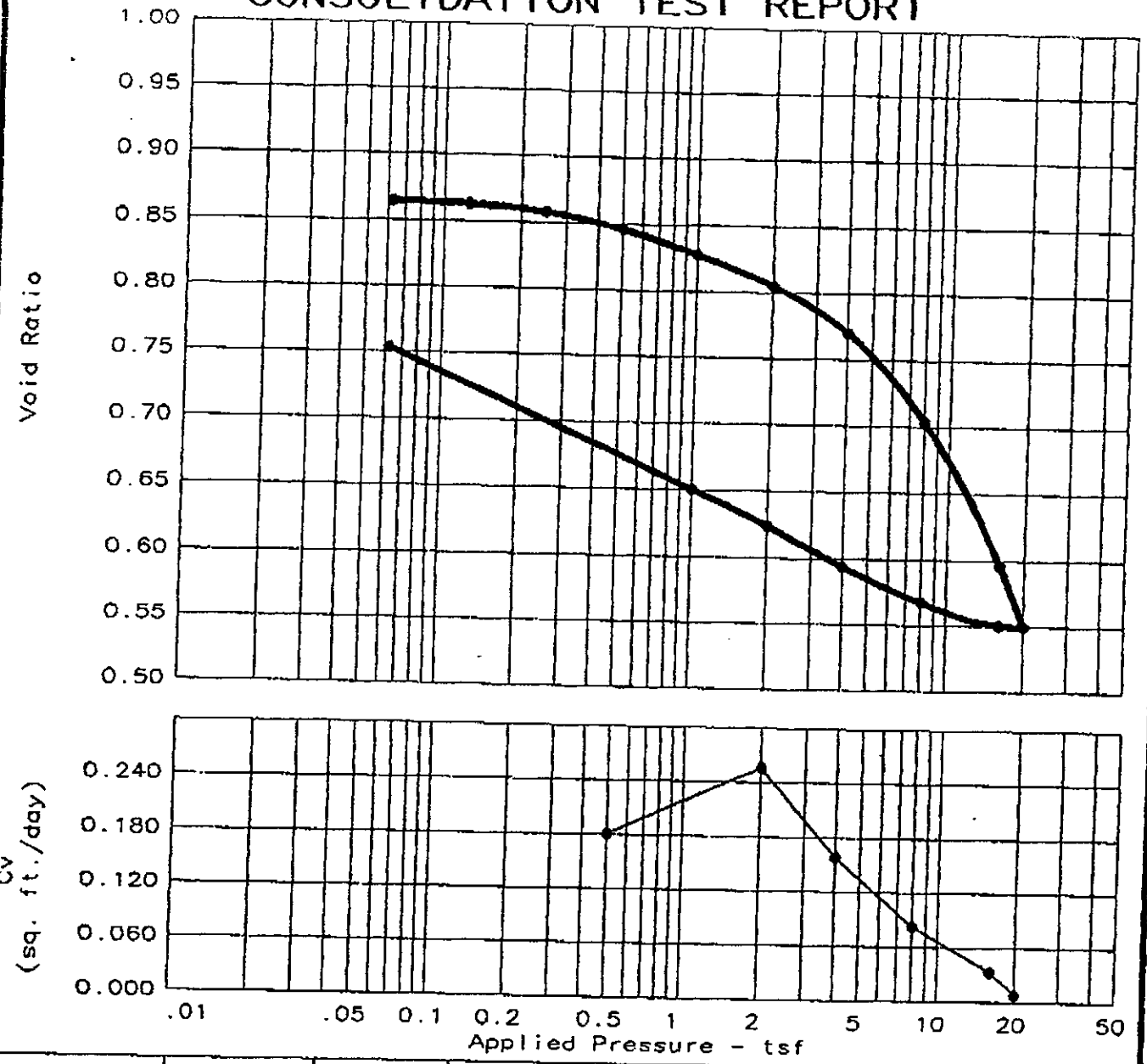
Remarks:

CONSOLIDATION TEST REPORT

DEL. DOT. MATERIALS & RESEARCH

Fig. No. 1

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
117.5 %	52.2	65.2	57.9	11.4	1.948	-	0.48	0.8648

TEST RESULTS

Compression Index = 0.48

MATERIAL DESCRIPTION

SATURATED BLACK ORGANIC PEATY CLAY.

Project No.: 91-101-04
Project: S.R. 7 & CHURCHMANS ROAD
Location: BORING # S18
SAMPLE # U-1 (28.5'-30.5')
Date: 11-15-95

Remarks:

CONSOLIDATION TEST REPORT

DEL. DOT. MATERIALS & RESEARCH

Fig. No. 1

GEOTEC ASSOCIATES
302 Beverly Road
Newark, Delaware

Approx. 100% organic

C_c=1.15

Technician rn

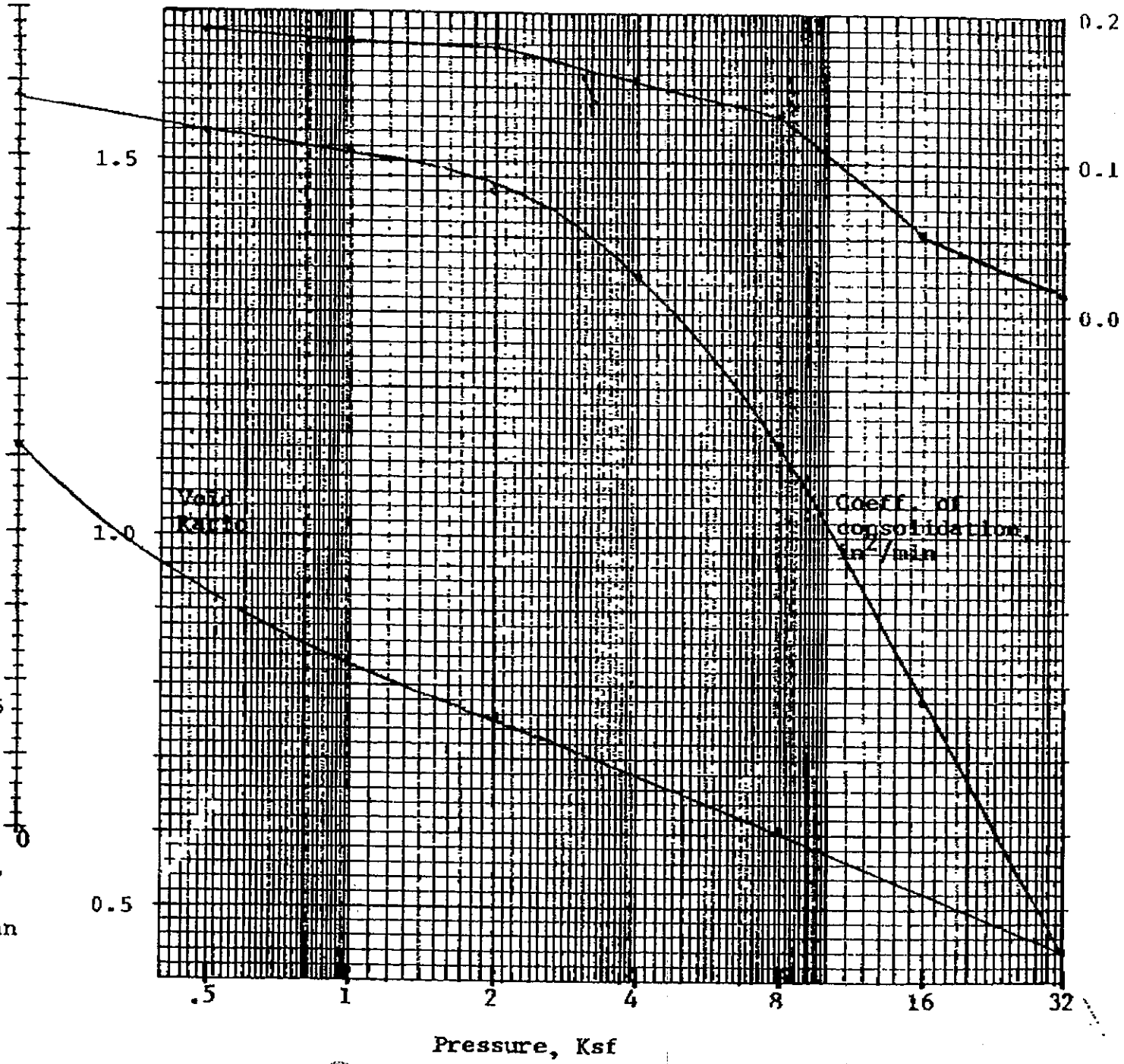
Date 10-16-95

Specific gravity 0.821

Initial moisture 212. %

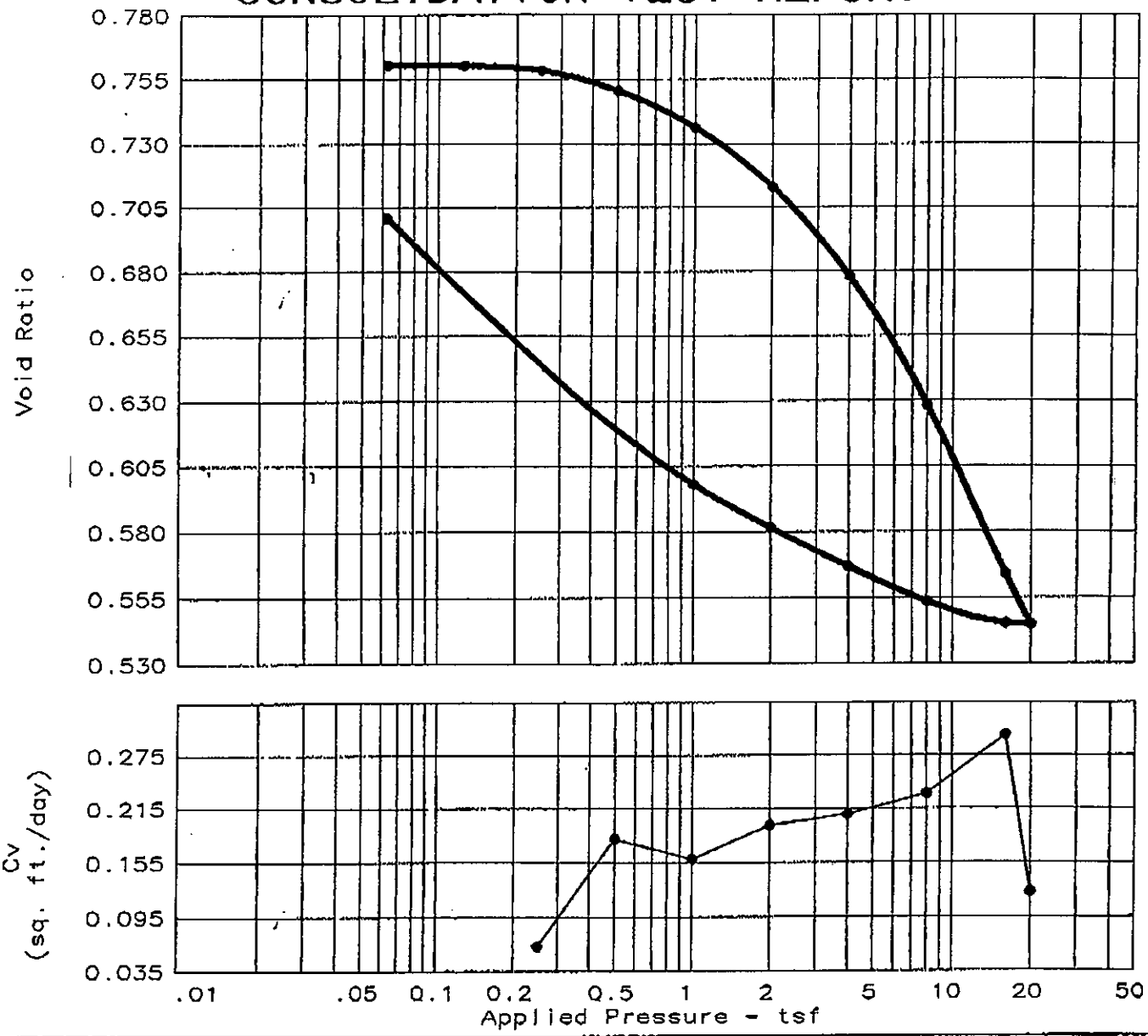
Location Churchman

Sample SI, U2 25-27'



CONSOLIDATION TEST

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
107.5 %	30.7	94.2	40	18	2.655	2.10	0.20	0.7594

TEST RESULTS	MATERIAL DESCRIPTION
Compression Index = 0.20	SATURATED GRAYISH RED CLAY W/TRACE OF SAND.

Project No.: 91-101-04
Project: S.R. 7 & CHURCHMANS ROAD
Location: BORING # S # 2
SAMPLE # U-1 (15.0'-17.0')
Date: 10-24-95

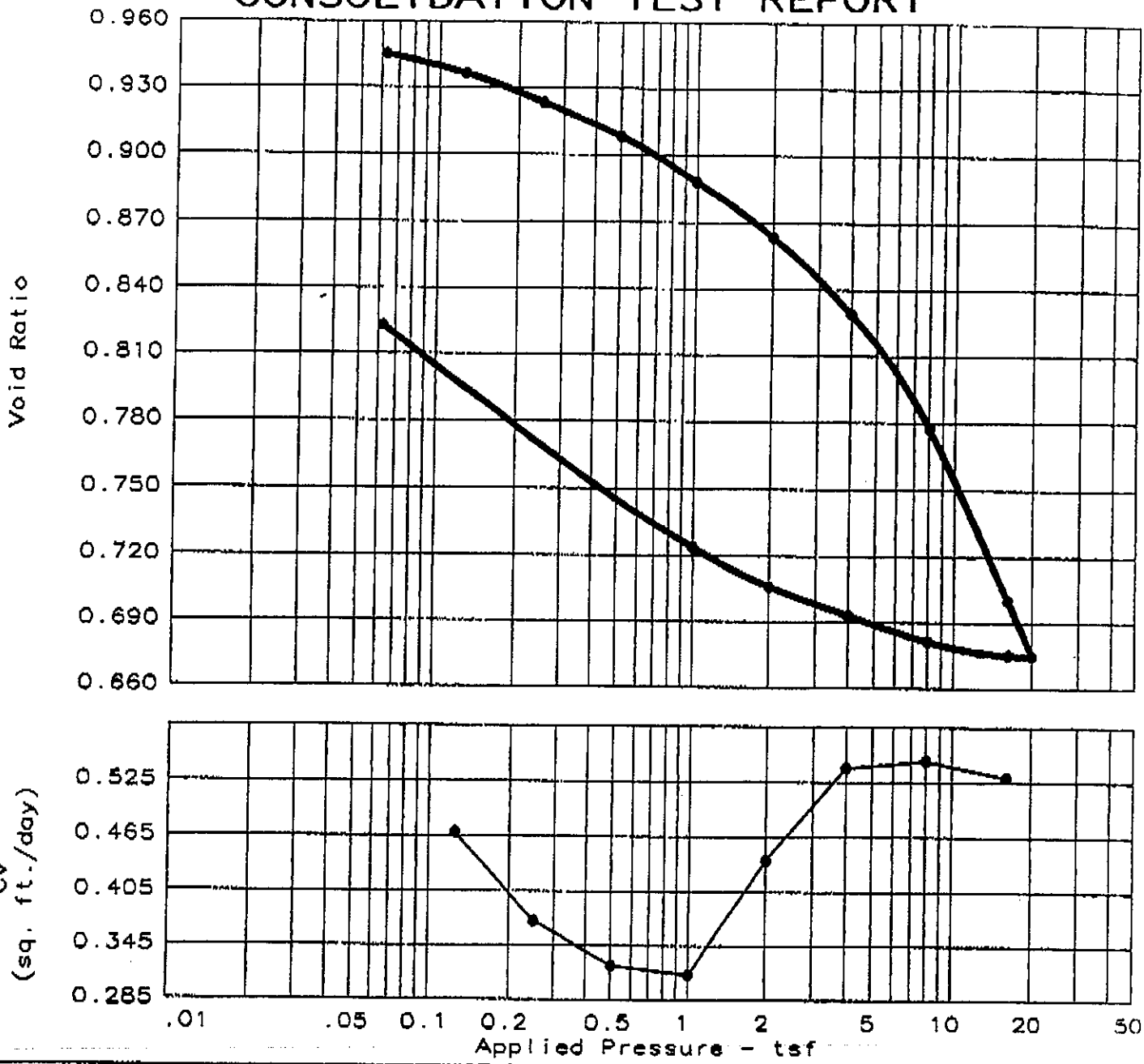
Remarks:

CONSOLIDATION TEST REPORT

DEL. DOT. MATERIALS & RESEARCH

Fig. No. 1

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
104.1 %	38.2	82.8	39.3	11.9	2.582	4.53	0.26	0.9468

TEST RESULTS

Compression Index = 0.26

MATERIAL DESCRIPTION

SATURATED GRAY ORGANIC SILTY CLAY.

Project No.: 91-101-04
Project: S.R. 7 & CHURCHMANS ROAD
Location: BORING # S-3
SAMPLE # U-1 (10.0'-12.0')
Date: 10-12-95

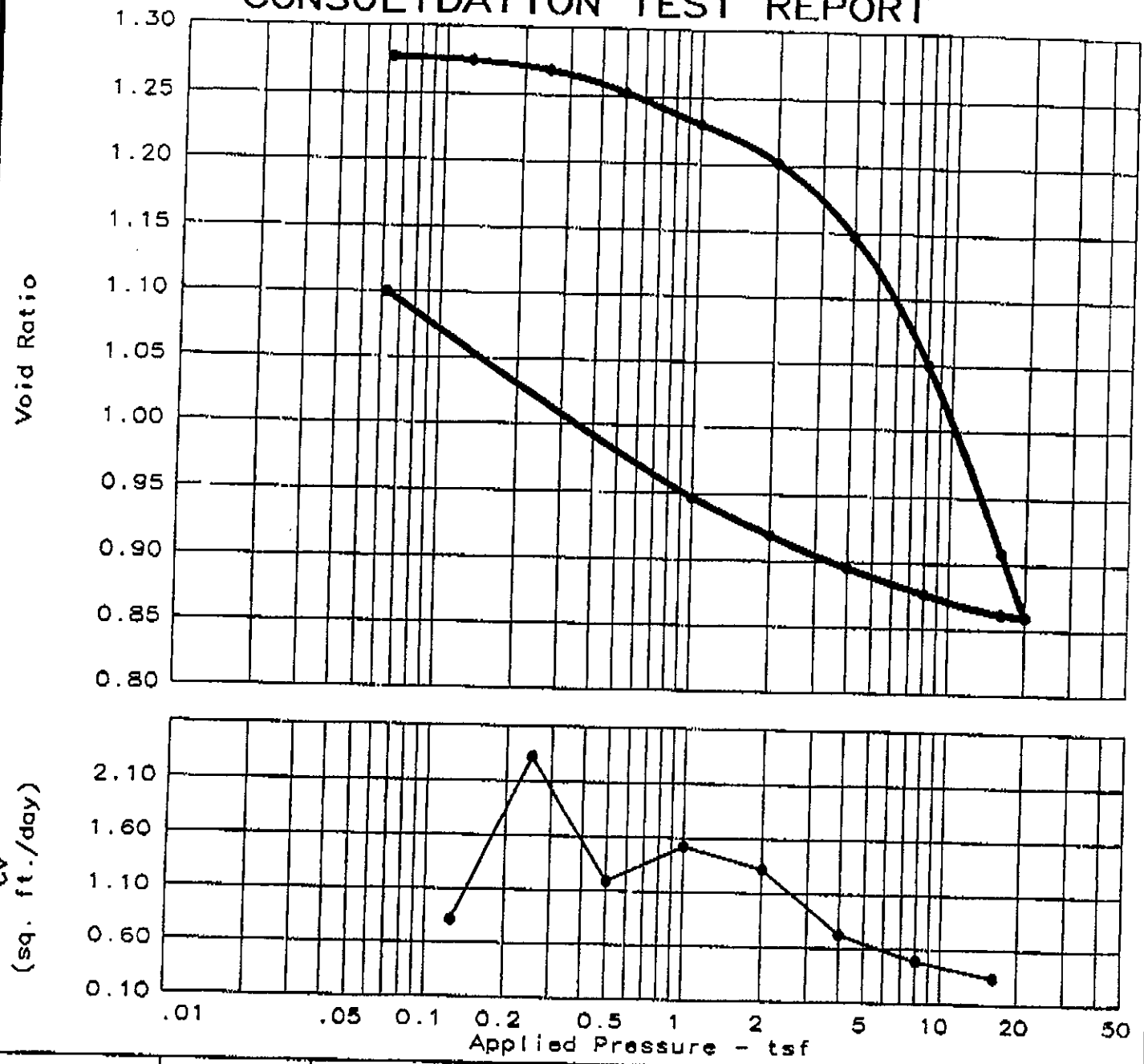
Remarks:

CONSOLIDATION TEST REPORT

DEL. DOT. MATERIALS & RESEARCH

Fig. No. 1

CONSOLIDATION TEST REPORT



Natural Saturation	Natural Moisture	Dry Density	LL	PI	Sp.Gr.	Precons. press.	C_c	e_o
101.0 %	51.7	68.4	50	13	2.497	4.23	0.50	1.2792

TEST RESULTS

Compression Index = 0.50

MATERIAL DESCRIPTION

SATURATED DARK GRAY ORGANIC SILTY CLAY.

Project No.: 91-101-04
Project: S.R. 7 & CHURCHMANS ROAD
Location: BORING # S-3
SAMPLE # U-2 (15.0'-17.0')
Date: 10-20-95

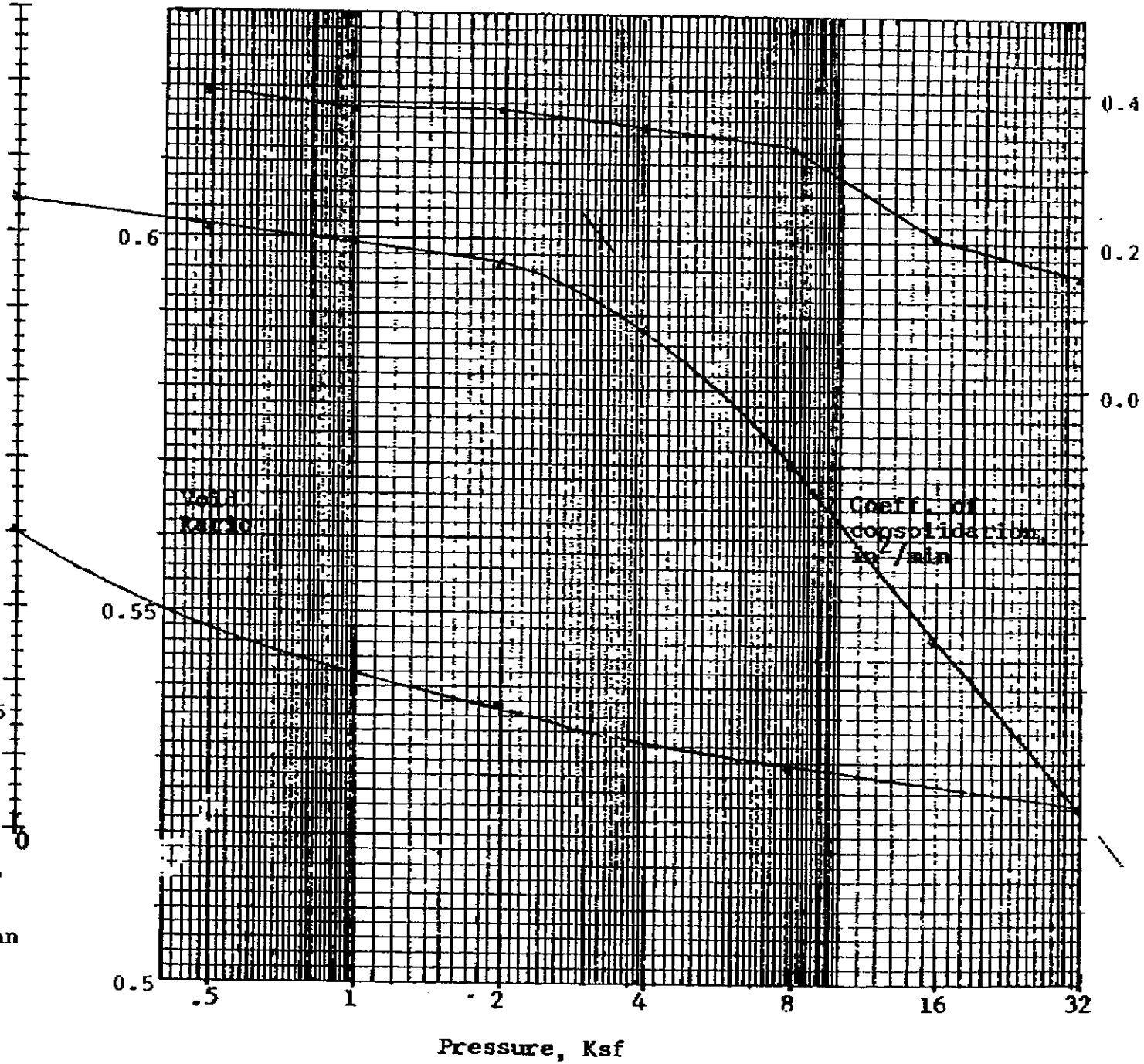
Remarks:

CONSOLIDATION TEST REPORT

DEL. DOT. MATERIALS & RESEARCH

Fig. No. 1

GEOTEC ASSOCIATES
302 Beverly Road
Newark, Delaware



C_c=0.076

Technician rn

Date 10-16-95

Specific gravity 2.64

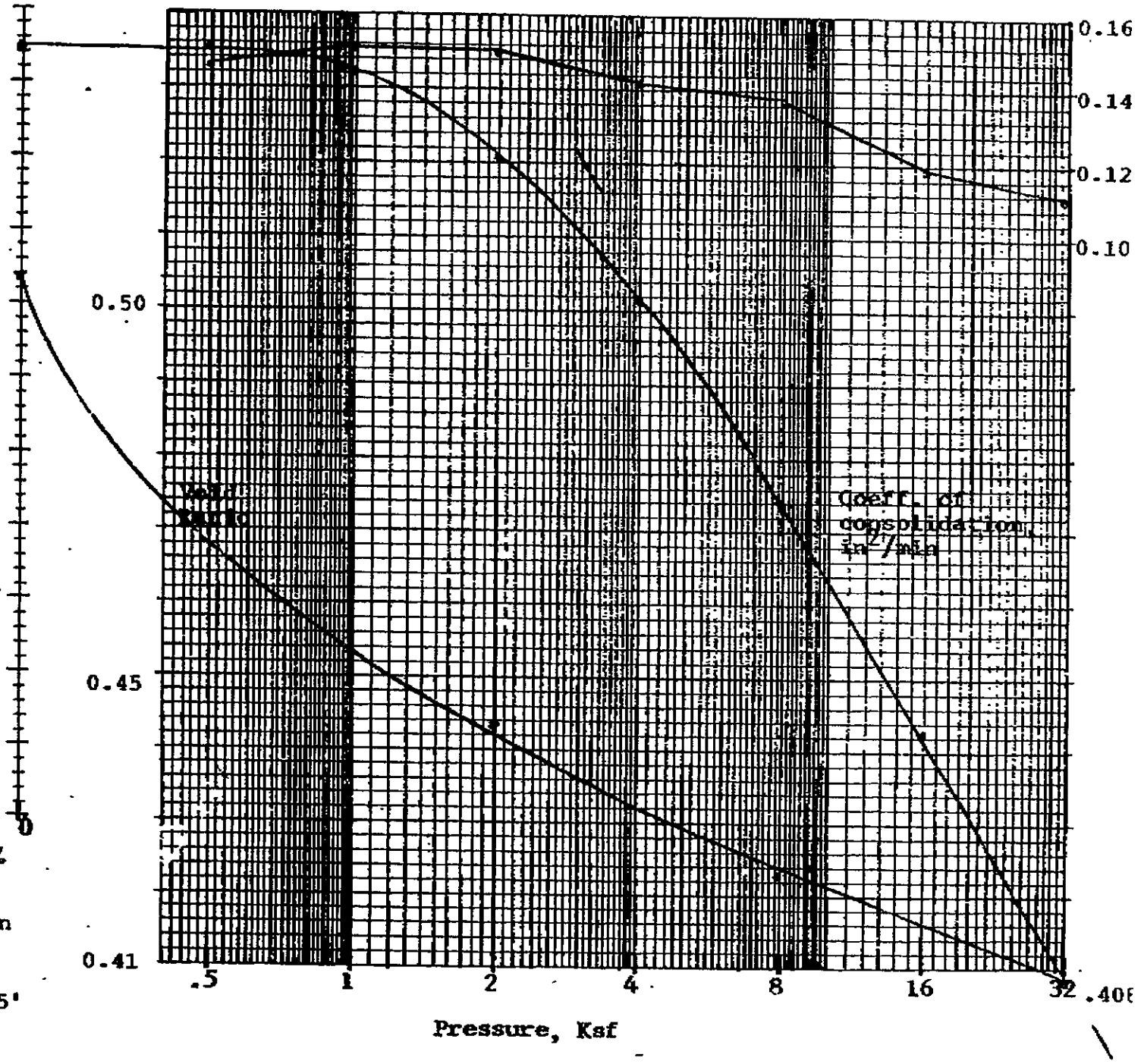
Initial moisture 24.5 %

Location Churchman
S4, 01

Sample 6-8'

CONSOLIDATION TEST

GEOTEC ASSOCIATES
302 Beverly Road
Newark, Delaware



C_c=0.111

Technician rn

Date 10-9-95

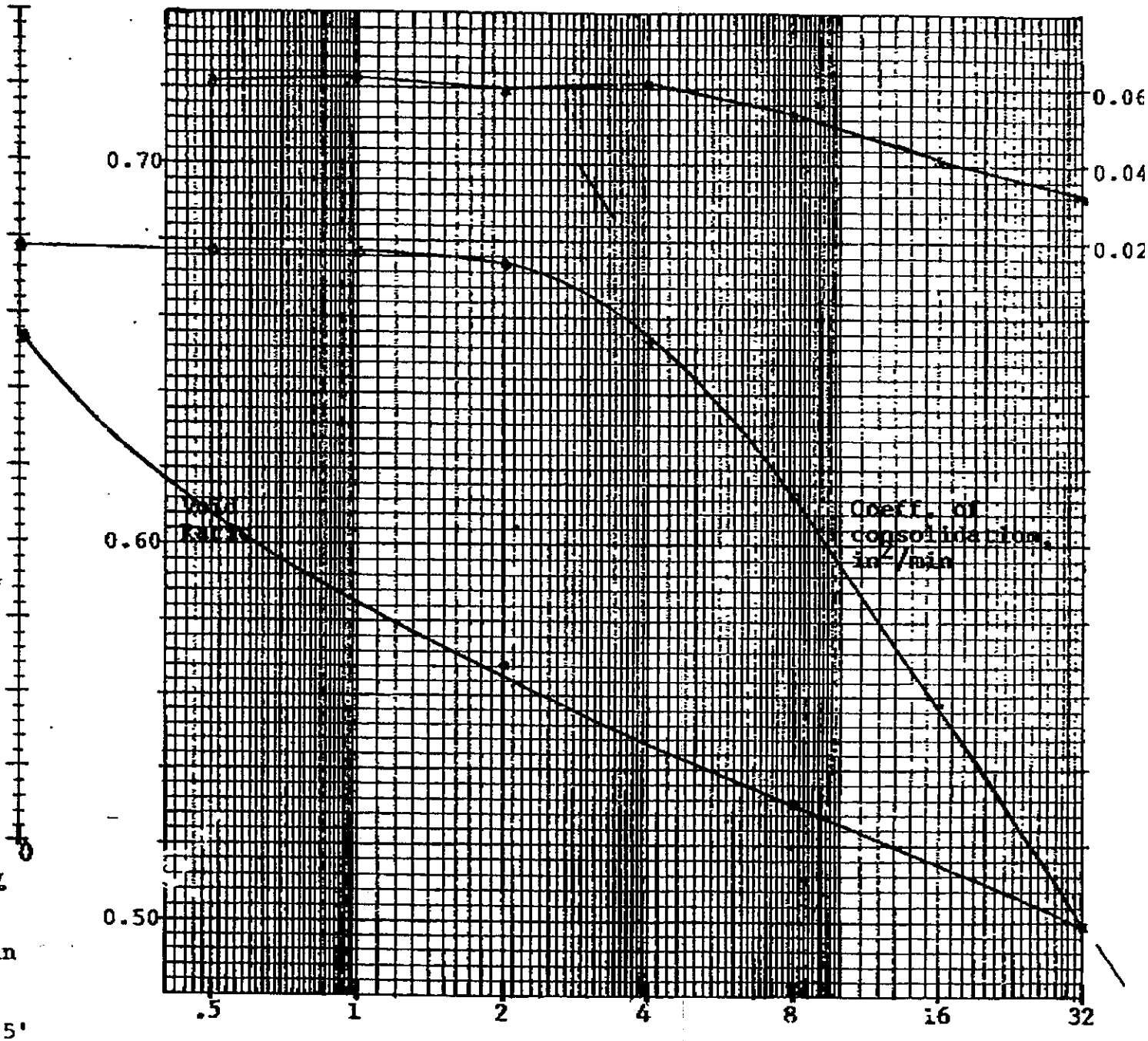
Specific gravity 2.64

Initial moisture 18.2 %

Location Churchman
S4, U2

Sample 25.5-27.5'

GEOTEC ASSOCIATES
302 Beverly Road
Newark, Delaware



C_c=0.194

Technician rn

Date 10-9-95

Specific gravity 2.65

Initial moisture 25.7 %

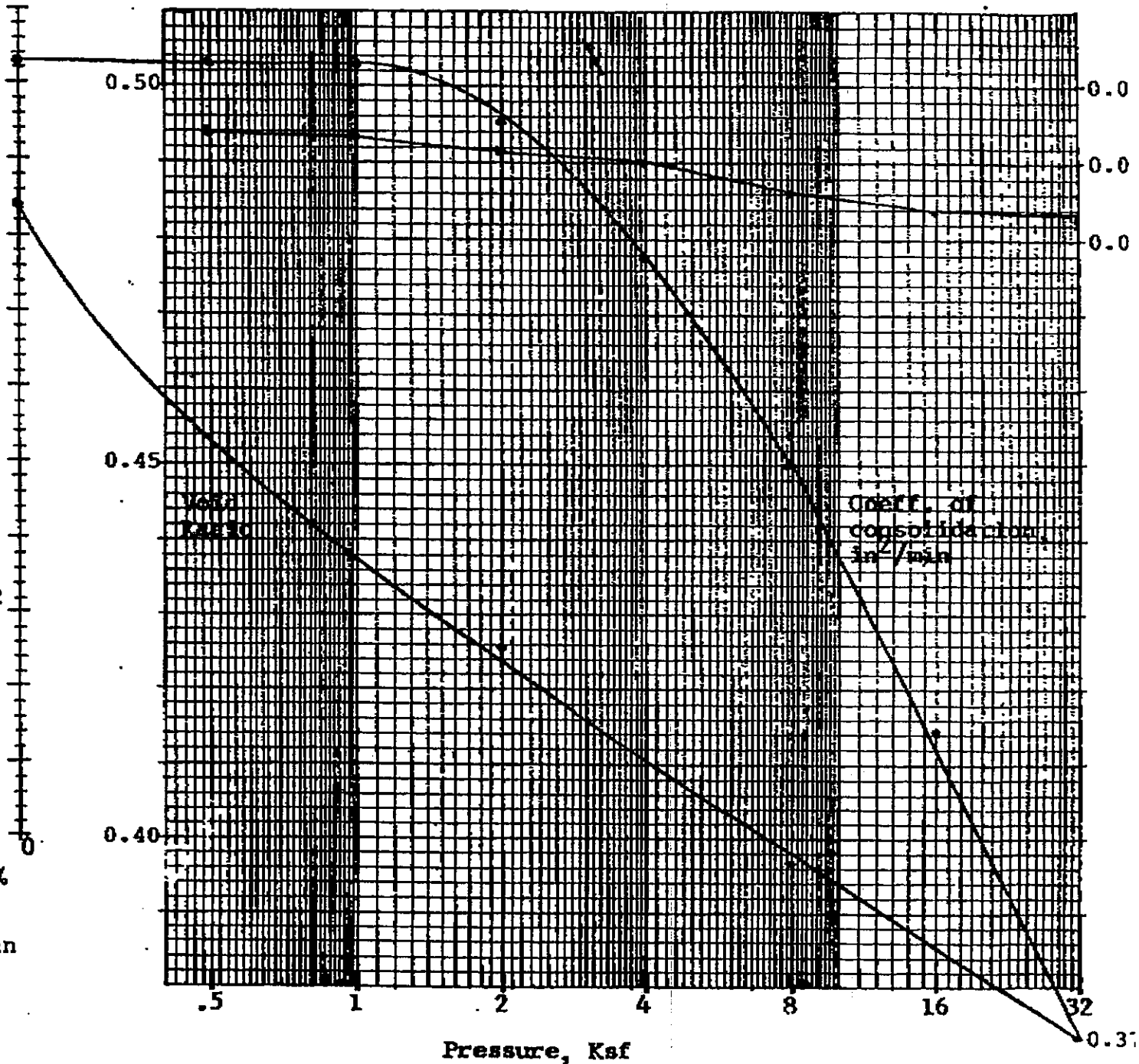
Location Churchman

WS1, U1

Sample 25.5-27.5'

CONSOLIDATION TEST

GEOTEC ASSOCIATES
302 Beverly Road
Newark, Delaware



C_c=0.132

Technician rn

Date 10-9-95

Specific gravity 2.67

Initial moisture 18.9 %

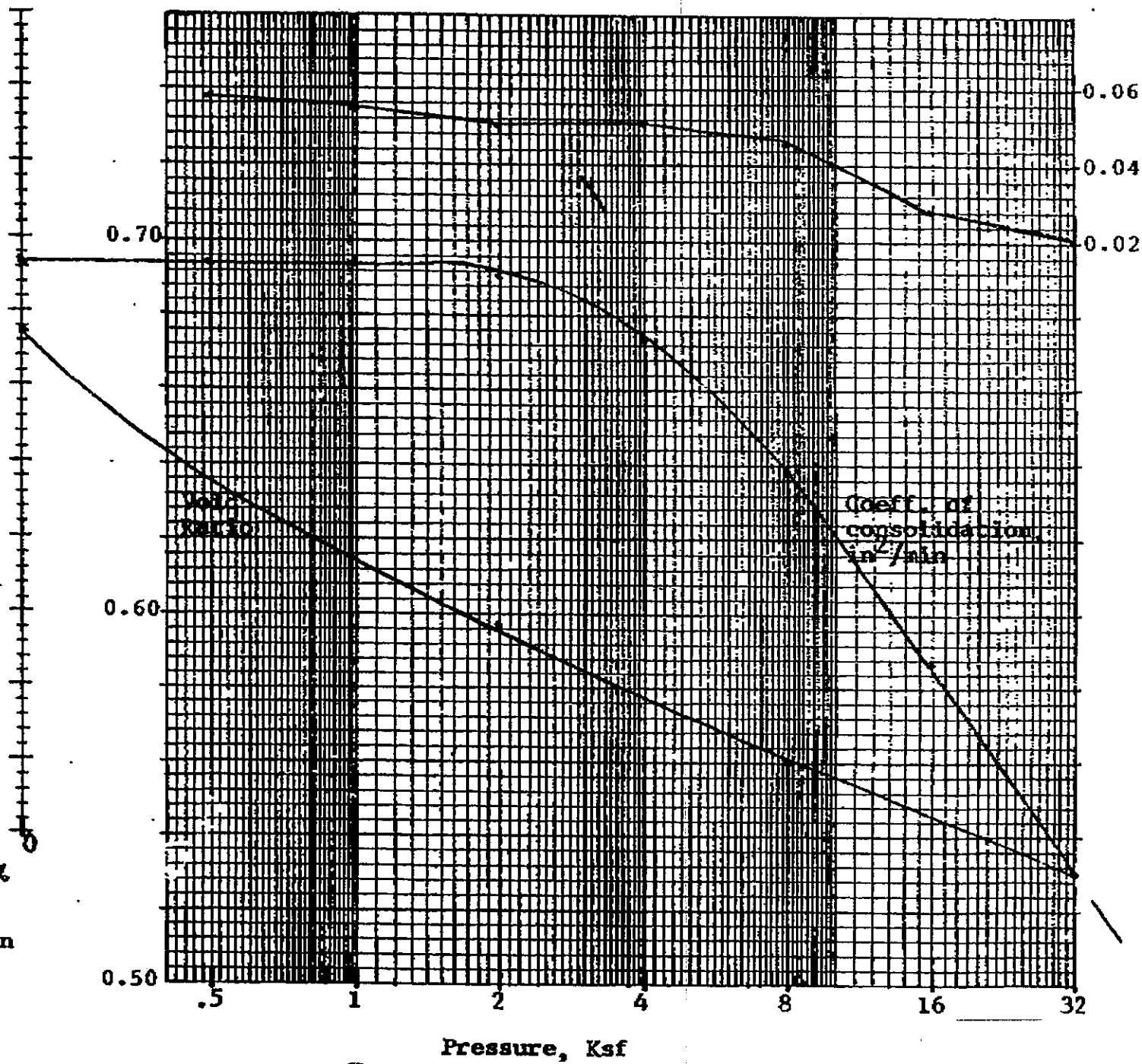
Location Churchman

WS1, U2

Sample 40-42'

CONSOLIDATION TEST

GEOTEC ASSOCIATES
302 Beverly Road
Newark, Delaware



C_c=0.184

Technician rn

Date 10-9-95

Specific gravity 2.68

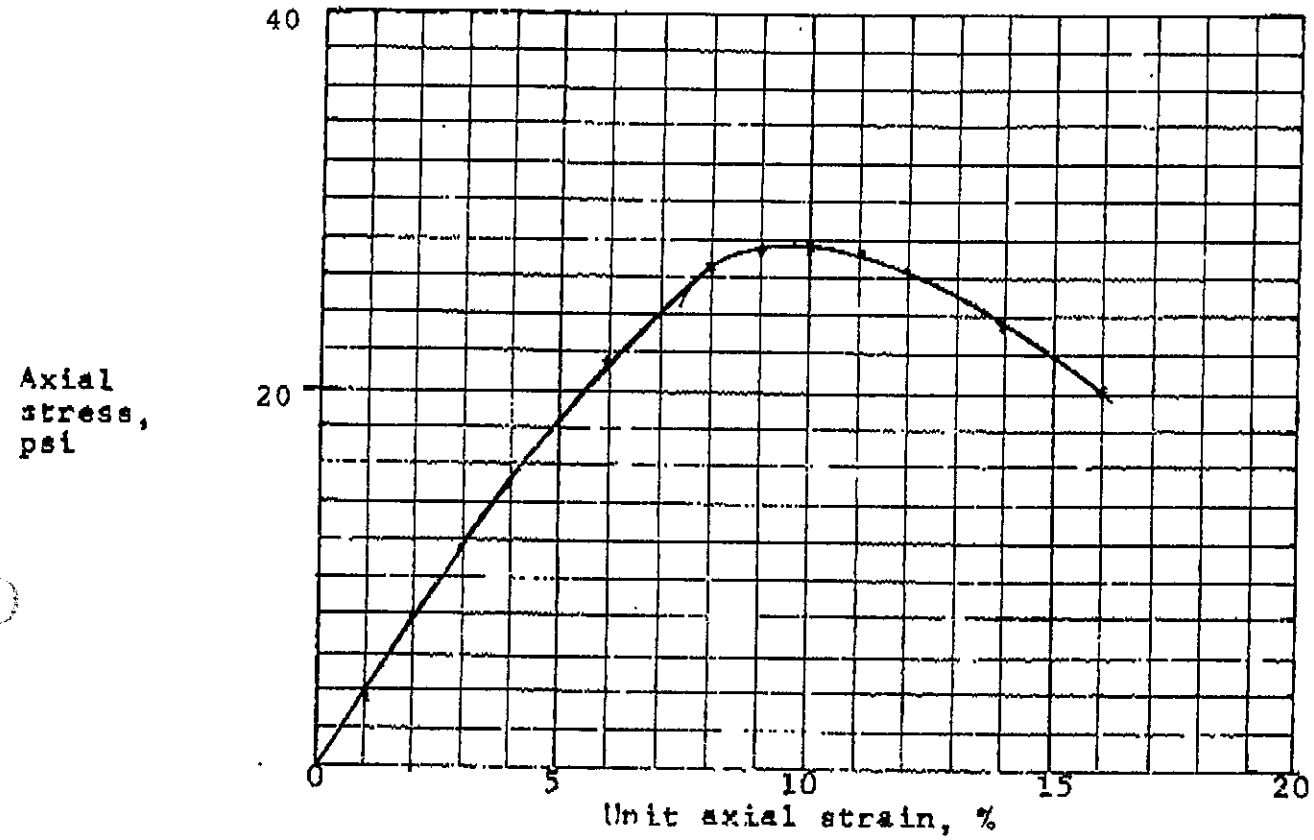
Initial moisture 25.1 %

Location Churchman
WS2, U1
Sample 30-32'

CONSOLIDATION TEST

GEOTEC ASSOCIATES

302 Beverly Road
Newark, Delaware



Approx. 100% organic, entire tube. Fine, horizontally matted, partially decomposed wood fibers.

Dia. 2.84 in. Height 5.71 in. Technician rn

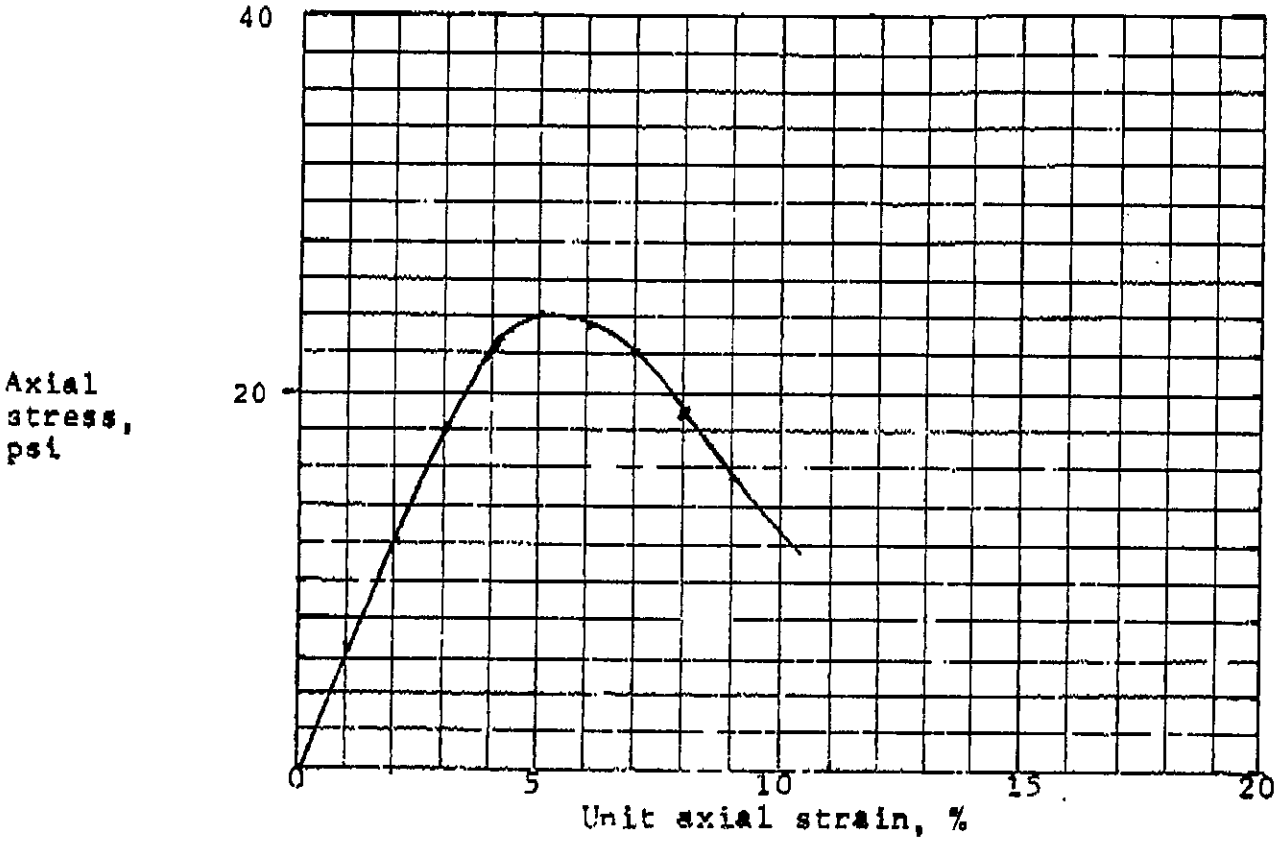
Moisture 214. % Dry density 24.1 pcf Date 10-16-95

Location Churchman Sample S1, U2 25-27' Cohesion 1,980 psf

UNCONFINED COMPRESSION TEST

GEOTEC ASSOCIATES

302 Beverly Road
Newark, Delaware



Dia. 2.84 in. Height 5.69 in. Technician rn

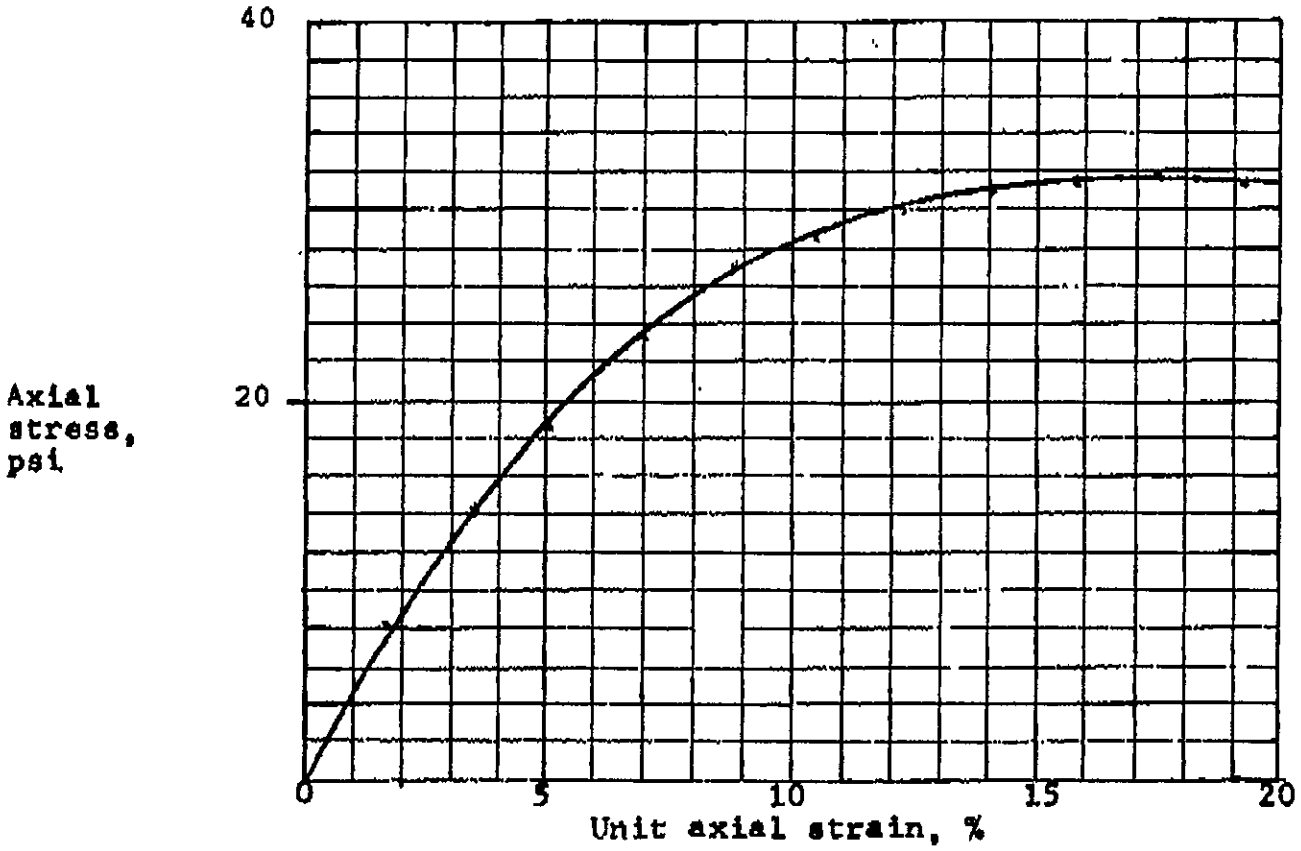
Moisture 24,3 % Dry density 101 pcf Date 10-16-95

Location Churchman Sample S4, U1 6-8' Cohesion 1,728 psf

UNCONFINED COMPRESSION TEST

GEOTEC ASSOCIATES

302 Beverly Road
Newark, Delaware



Dia. 2.84 in. Height 5.71 in. Technician rn

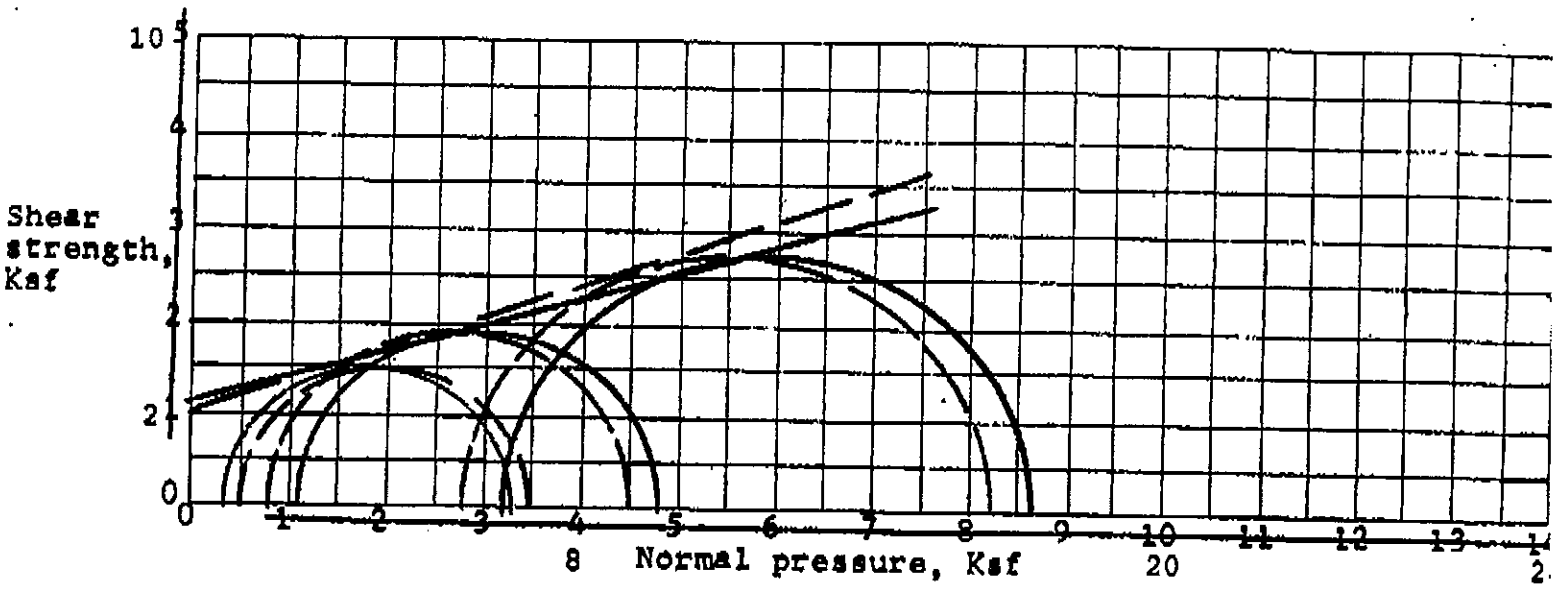
Moisture 25.9 % Dry density 103 pcf Date 10-9-95

Location Churchman Sample WS1, U1 25.5-27.5' Cohesion 2,297 psf

UNCONFINED COMPRESSION TEST

GEOTEC ASSOCIATES

302 Beverly Road
Newark, Delaware



Total stress

Effective stress

Say (26' overburden + 12' fill) 110 pcf = 4.18 Ksf

Sample preparation: Undisturbed XX Disturbed _____

Presaturated XX Preconsolid XX psi

Sample dia. 2.80 in. Load rate .05 in/min Technician rn

Ave moisture 17.3 % Ave dry den. 114 pcf Date 10-9-95

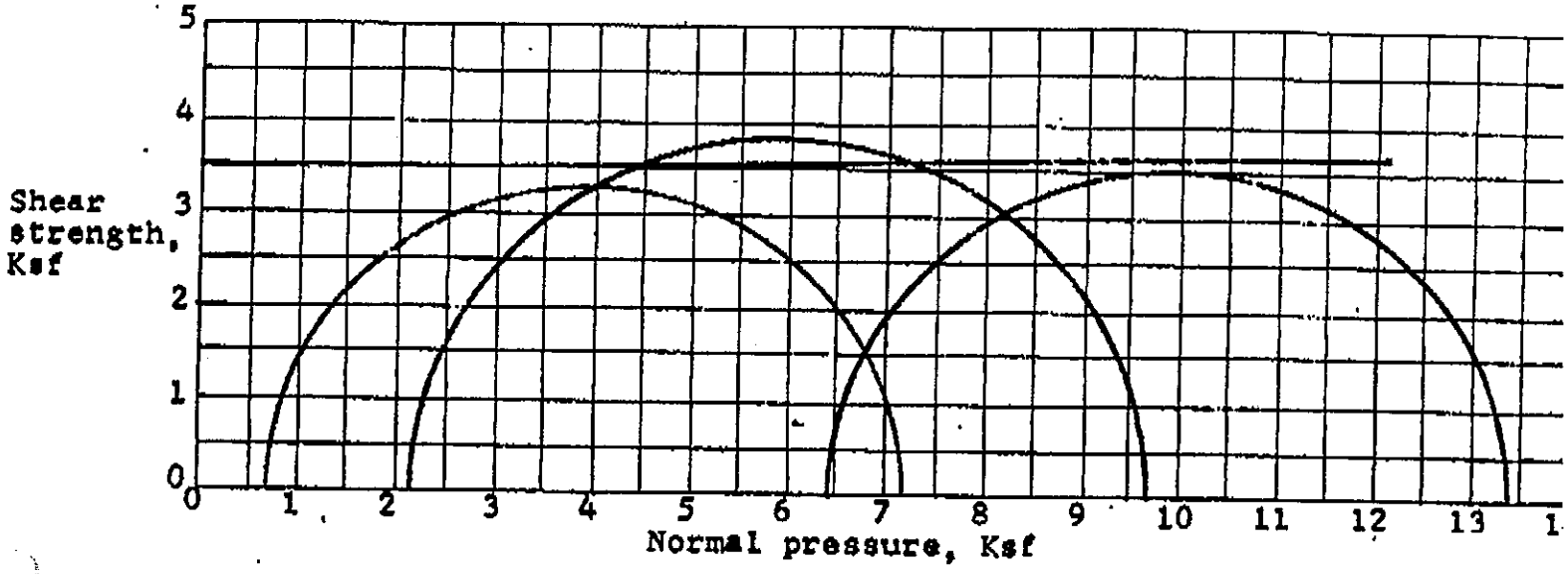
Location Churchman Sample S4, U2 25.5-27.5' c 2.2 Ksf ø 16°

c_{cu} = 2.0 Ksf $ø_{cu}$ = 19°

TRIAXIAL COMPRESSION TEST

GEOTEC ASSOCIATES

302 Beverly Road
Newark, Delaware



Sample preparation: Undisturbed XX Disturbed

Presaturated Preconsolid psi

Sample dia. 2.80 in. Load rate .05 in/min Technician rn

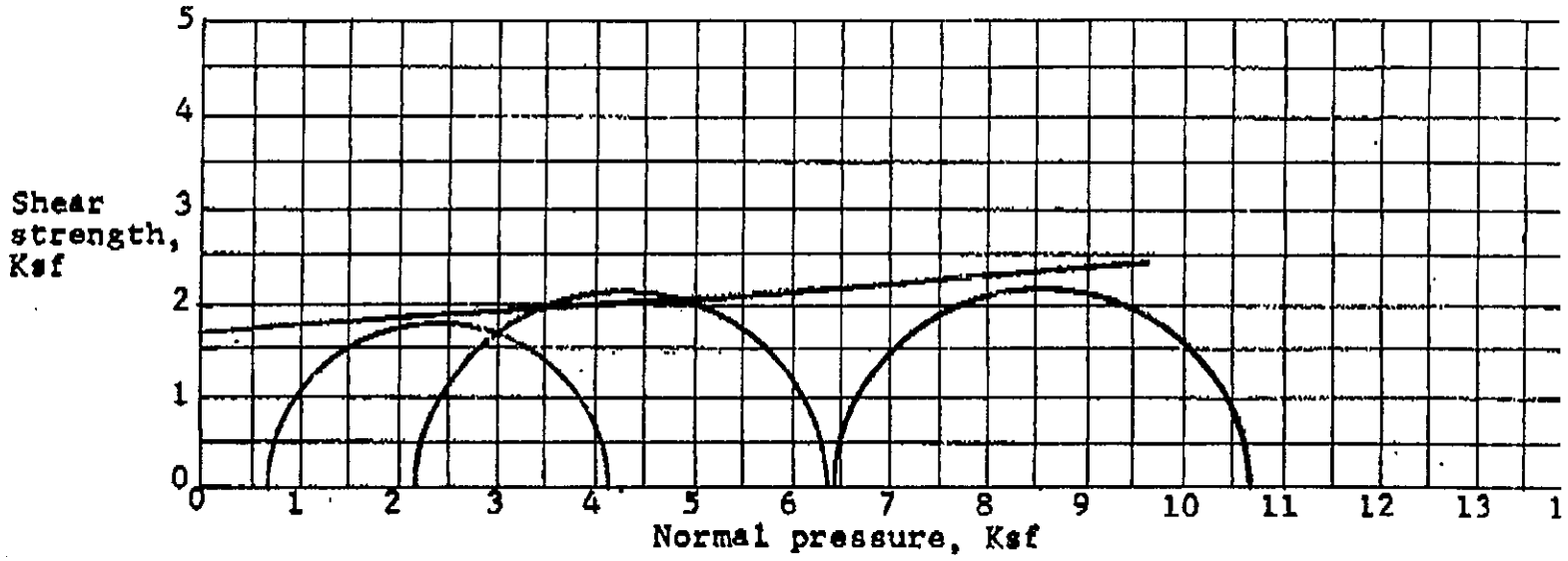
Ave moisture 19.1 % Ave dry den. 111 pcf Date 10-9-95

Location Churchman Sample WS1, U2 40-42' c 3.5 Ksf ϕ 1 °

TRIAXIAL COMPRESSION TEST

GEOTEC ASSOCIATES

302 Beverly Road
Newark, Delaware



Sample preparation: Undisturbed XX Disturbed

Presaturated Preconsolid psi

Sample dia. 2.80 in. Load rate .05 in/min Technician rn

Ave moisture 27.1 % Ave dry den. 102 pcf Date 10-9-95

Location Churchman Sample WS2, U1 30-32' c 1.7 Ksf ø 4 °

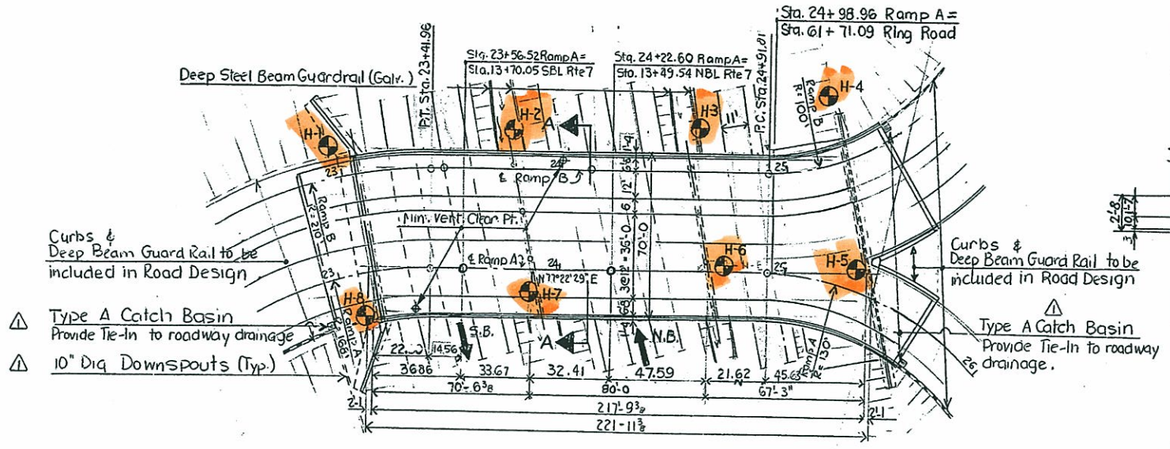
TRIAXIAL COMPRESSION TEST

BENCH MARK: (Main Talley, Inc.)
1. Sta. 12+56.00 106' Rt of SBL Route 7 R.R. spike in telephone pole # 109 Elevation 62.38.
2. Sta. 8+48.00 44' Lt of NBL Route 7 R.R. spike in telephone pole # 108 Elevation 67.02.

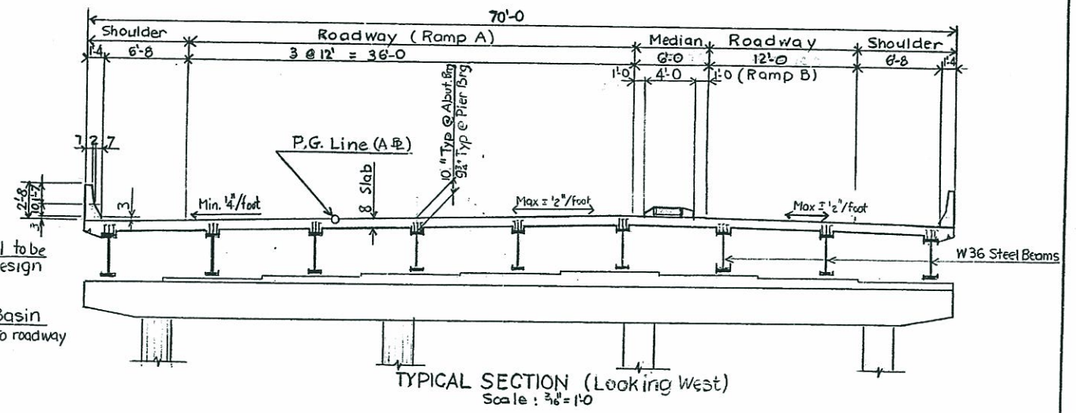
COUNTY	CONTRACT	P.R.E. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
New Castle	76-12-005	2	DEL.		3	29

ROUTE 7 RE-ALIGNMENT & FLY-OVER BRIDGE NO. 223

NO.	REVISIONS	BY	DATE
1	ADDITIONAL ITEMS NOT INCLUDED IN THIS CONTRACT	PJS	7/11/77
2	Add Sht. Nos.	CRL	3/1/78



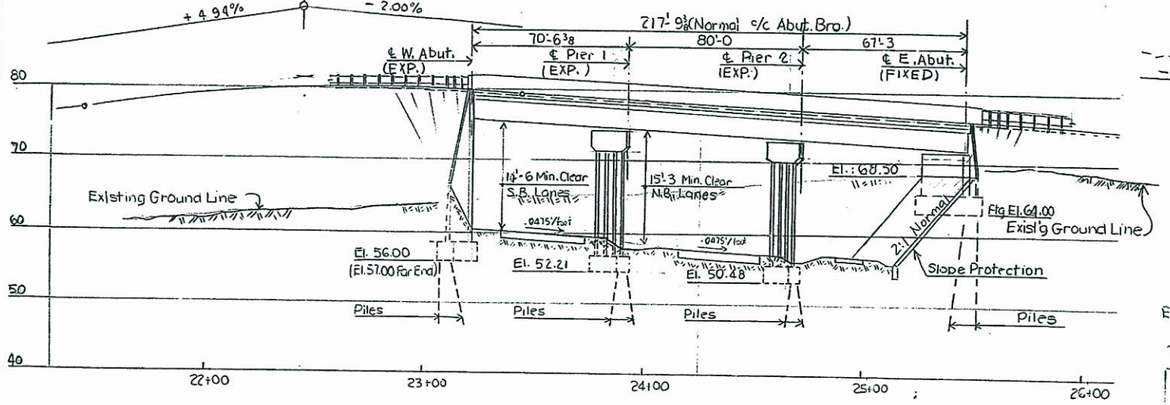
PLAN
Scale : 1" = 30'-0



TYPICAL SECTION (Looking West)
Scale : 3/8" = 1'-0

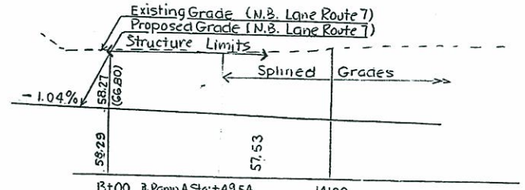
RAMP 'B': P.V.I. Sta. 22+66.96
El. : 83.44
V.C. : 200'
M.O. : 2.125'
+5.20%
-3.30%

RAMP 'A': P.V.I. Sta. 22+40.80
El. : 81.96
V.C. : 200'
M.O. : 1.735'
+4.94%
-2.00%

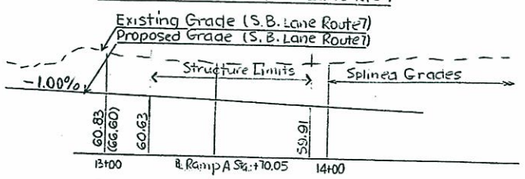


ELEVATION
H. Scale : 1" = 30'-0
V. Scale : 1" = 10'-0

N 611 000.00
E 432 500.00
MAIN-ALLEY FIELD CONTROL LINE

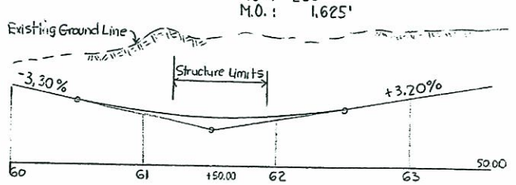


PROFILE GRADE N.B. Lane Rte 7



PROFILE GRADE S.B. Lane Rte 7

RING ROAD : P.V.I. Sta. 61+50.00
El. : 54.90
V.C. : 200'
M.O. : 1.625'



PROFILE OF RING ROAD

NOTES :

Specifications : For General Notes see Sheet 2 of 29 ⚠2
Construction : Delaware Department of Highways & Transportation Standard Specifications, January 1, 1974
Design : A.A.S.H.T.O. Specifications for Highway Bridges 1973, with Interims as they govern.
Dead Load : Concrete - 150 lbs. per cu.ft. Future Wearing Surface - 25 lbs. per sq.ft.
Live Load : HS 20 - 44
Unit Stresses : Reinforcing Steel (A-615 Grade 40) : fs = 20 000 psi
Concrete fc' = 4 000psi fc = 1 200 psi
Structural Steel (AA.S.H.T.O. M222-ASTM A588) fs = 27 000psi
Superstructure : Concrete Deck - Steel Beam Construction Composite Action under Live Load. Prefabricated Expansion Joint System.
BORING LOCATIONS : ⊕
PILING : C.I.P. Concr. Piles (12" Dia 7 Ga) Driven to a 45 Ton Bearing Capacity. No protection required

DELAWARE
DEPARTMENT OF HIGHWAYS & TRANSPORTATION
DIVISION OF HIGHWAYS

SITE PLAN

D. BGS	SCALE	APPROVED BY:
T. BGS	as shown	BRIDGE ENGINEER
C.		

D C B A

COUNTY	CONTRACT	F.A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
New Castle	76-12-005	2	DEL		17	29

ROUTE 7 RE-ALIGNMENT & FLY-OVER BRIDGE NO. 223

NO.	REVISIONS	BY	DATE

BORING NO H-1
STA. 13+10.00, 50' RIGHT OF ℄ SBL

Ftg El ± W

ELEV. (feet) | DEPTH (feet) | CASING BLOWS | SAMPLE DESCRIPTION | SAMPLE NO | BLOWS/6"

Elevations: 63.12 (depth 0), 60.0, 50.0, 40.0, 30.0, 20.0, 10.0, 0.0
Depths: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Sample description:
- TOP SOIL
- BRWN. TO GRAY SILT w/ some sand
- REDDISH BRWN SANDY SILT w/ traces of clay
- REDDISH BRWN SILT w/ some clay and trace of sand
- CLAYEY SILT, RED AND GRAY SILTY CLAY w/ sand lenses
- BROWN & GRAY SANDY SILT w/ trace organic material – moist
- BROWN & GRAY SANDY SILT w/ trace organic material – wet
- ▼ WET
- GRAY SILT w/ traces of clay, sand and organic material

Sample No	Blows/6"
1	3-7-6
2	3-5-8
3	4-7-10
4	4-7-12
5	5-10-16
6	6-11-16
7	7-14-21
8	4-5-14
9	5-10-26
10	15-17-20
11	10-16-20
12	6-12-20
13	5-12-25
14	12-19-30

BORING NO. H-8
STA. 13+80.00, 48' RIGHT OF ℄ SBL

Ftg. El ± W

ELEV. (ft) | DEPTH (ft) | CASING BLOWS | SAMPLE DESCRIPTION | SAMPLE NO. | BLOWS/6"

Elevations: 64.72 (depth 0), 60.0, 50.0, 40.0, 30.0, 20.0, 10.0, 0.0
Depths: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Sample description:
- TOP SOIL
- BRWN & GRAY SILT w/ traces of clay
- REDDISH BRWN. SILT w/ traces of silt
- VARIEGATED SILT w/ trace of fine sand
- BRWN. SILTY FINE SAND w/ trace of mica
- RED AND GRAY CLAYEY SILT w/ trace of sand – wet
- GRAY SILTY FINE SAND w/ trace of mica
- WHITE FINE SAND w/ trace of mica
- DARK, GRAY F/M SAND
- DARK, GRAY F/M SAND w/ trace of silt and organic
- GRAY FINE SAND w/ organic
- GRAY FINE SAND w/ silt & org.

Sample No.	Blows/6"
1	3-5-7
2	9-9-14
3	4-11-18
4	6-10-15
5	4-8-14
6	4-7-9
7	4-8-12
8	6-9-18
9	6-11-14
10	6-21-33
11	11-19-29
12	11-19-30
13	20-41-45
14	19-31-50

BORING NO. H-2
STA. 13+15.00, 35' LEFT OF ℄ SBL

Ftg. El. ± Pier W

ELEV. (ft) | DEPTH (ft) | CASING BLOWS | SAMPLE DESCRIPTION | SAMPLE NO | BLOWS/6"

Elevations: 66.03 (depth 0), 60.0, 50.0, 40.0, 30.0, 20.0, 10.0
Depths: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

Sample description:
- TOP SOIL
- BRWN & GRAY SILT w/ trace of sand
- BRWN & GRAY SILT w/ trace of sand & clay
- RED & GRAY SILTY CLAY w/ trace of sand lenses
- RED & GRAY CLAY w/ traces of silt & fine sand lenses
- BROWN AND GRAY FINE/MEDIUM SAND
- BRWN AND GRAY SILTY FINE SAND
- GRAY F/M SAND w/ some silt
- GRAY FINE SAND w/ some silt

Sample No	Blows/6"
1	5-5-8
2	8-28-28
3	10-15-15
4	6-9-13
5	4-10-15
6	6-10-14
7	4-10-15
8	3-7-10
9	4-12-18
10	10-19-19
11	11-15-18
12	16-26-37
13	17-21-28
14	17-32-52

BORING DATA:

Weight of Casing Hammer: 300 lbs
Average Fall: 18 in
Casing Diameter: in
Weight of Sample Hammer: 140 lbs
Average Fall: 30 in
Type of Sampler: (Split Spoon)
Sampler Diameter: 2 in
Sampler Length: in
Date of Borings:
Boring No: H-1 through 8 April 1977
Boring Locations: ⊕

DELAWARE
DEPARTMENT OF HIGHWAYS & TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURAL BORINGS

	SCALE	APPROVED BY:
D. BGS T. BGS C.	VERTICAL: 1" = 5.0	BRIDGE ENGINEER

D C B A A D

COUNTY	CONTRACT	P.R.A. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
New Castle	76-12-005	2	DEL		18	29

ROUTE 7 RE-ALIGNMENT & FLY-OVER BRIDGE NO. 223

NO.	REVISIONS	BY	DATE

BORING NO H-7

STA. 13+85.00; 30' LEFT OF ℄ SBL

Water Elev. = Fig El 1 Pier W

ELEV. [ft]	DEPTH [ft]	CASING BLOWS	SAMPLE DESCRIPTION	SAMPLE NO	SAMPLE BLOWS/6"
66.04	0		TOP SOIL	1	3 3 5
			GRAY & BRWN CLAYEY SILT w/ trace of mica		
60.0	5		BRWN & GRAY CLAYEY SILT w/ sand and mica	2	5 7 9
				3	4 6 9
	10		BRWN & GRAY SANDY SILT w/ tr. of gravel & mica	4	3 13 11
50.0	15		BRWN & GRAY SILT w/ sand lenses - wet	5	8 9 11
	20		VARIEGATED CLAYEY SILT w/ traces of sand	6	6 9 14
40.0	25			7	4 6 11
	30			8	6 9 12
30.0	35		DARK GRAY CLAYEY SILT w/ traces of mica	9	4 10 15
	40		GRAY & BRWN F/M SAND	10	12 28 32
20.0	45		ALTERNATE LAYERS OF GRAVEL, SAND AND SILT w/ organic	11	12 12 25
	50		GRAY FINE SAND w/ silt and organic matter	12	14 20 24
10.0	55			13	20 28 49
	60			14	14 29 50
0.0					

BORING NO. H-3

STA. 13+00.00; 52' LEFT OF ℄ NBL

Fig. El ± Pier E

ELEV. [ft]	DEPTH [ft]	CASING BLOWS	SAMPLE DESCRIPTION	SAMPLE NO	SAMPLE BLOWS/6"
68.68	0		TOP SOIL & FILL	1	2 3 5
	5		BRWN & GRAY SILT w/ trace of clay and sand	2	4 15 18
60.0				3	3 6 8
	10			4	8 15 24
	15			5	5 8 12
50.0	20		RED & GRAY SILTY CLAY	6	6 8 11
	25			7	5 9 11
40.0	30			8	4 7 10
	35		GRAY SANDY SILT	9	6 17 19
30.0	40		BRWN AND GRAY VERY FINE SAND	10	5 17 33
	45			11	3 7 17
20.0	50		GRAY SANDY SILT	12	10 10 17
	55			13	7 15 25
10.0	60		BRWN & GRAY SANDY SILT w/ trace of coal & wood - wet	14	5 30 54
	65				
0.0					

BORING NO H-6

STA 13+60.00; 50' LEFT OF ℄ NBL

Fig El ± Pier E

ELEV. [ft]	DEPTH [ft]	CASING BLOWS	SAMPLE DESCRIPTION	SAMPLE NO	SAMPLE BLOWS/6"
66.97	0		TOP SOIL	1	3 8 12
	5		BRWN & GRAY SILT w/ trace of gravel	2	6 6 11
60.0			RED BRWN & GRAY SILT w/ trace fine sand	3	2 6 8
	10			4	4 9 14
	15			5	5 9 15
50.0	20		VARIEGATED CLAYEY SILT	6	4 6 9
	25			7	4 9 12
40.0	30			8	5 7 12
	35		GRAY SILT w/ traces of sand & mica	9	5 9 16
30.0	40		RED & GRAY CLAYEY SILT	10	4 6 10
	45		GRAY SILT w/ traces of sand & mica	11	5 12 18
20.0	50			12	11 18 21
	55		GRAY SANDY SILT w/ mica	13	6 22 30
10.0	60		GRAY SILT w/ some sand and wood	14	8 17 19
0.0					

DELAWARE
DEPARTMENT OF HIGHWAYS & TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURAL BORINGS

D. BGS	SCALE	APPROVED BY:
T. BGS	VERTICAL: 1" = 5'-0	BRIDGE ENGINEER
C.		

D C B A

COUNTY	CONTRACT	P. R. J. REG. NO.	STATE	FED. AID PROJECT NO.	SHEET NO.	TOTAL SHEETS
New Castle	76-12-005	2	DEL		19	29

ROUTE 7 RE-ALIGNMENT & FLY-OVER BRIDGE NO. 223

NO.	REVISIONS	BY	DATE

BORING NO. H-4
STA. 12+95.00; 110' LEFT OF ℄ NBL

Ftg. El. ±

ELEV. [ft]	DEPTH [ft]	CASING BLOWS	SAMPLE DESCRIPTION	SAMPLE NO.	SAMPLE BLOWS/6"
65.85	0		TOP SOIL	1	5 8 12
60.0	5		BRWN & GRAY SILT w/ some sand	2	7 15 13
				3	3 9 15
	10		BRWN & GRAY SILT w/ trace of sand	4	5 10 14
50.0	15			5	5 8 10
	20		RED SILTY CLAY (NO REC. LARGE PIECE OF GRAVEL BLOCKING SAMPLE IN SPOON)	6	4 6 9
40.0	25		RED AND GRAY SILTY CLAY w/ trace of sand	7	2 7 9
	30			8	4 4 8
30.0	35		BRWN & GRAY SILTY FINE SAND w/ traces of mica	9	6 20 26
	40		RED AND GRAY CLAYEY SILT	10	5 12 16
20.0	45		GRAY SILT w/ traces of fine sand & mica	11	6 16 21
	50		DARK GRAY SILT w/ trace of mica - wet	12	6 11 18
10.0	55		GRAY FINE SAND w/ silt and traces organic material	13	13 20 33
	60		GRAY FINE SAND w/ trace of silt & organic material	14	6 22 31
0.0					

BORING NO. H-5
STA. 13+75.00; 118' LEFT OF ℄ NBL

Ftg. El. ±

ELEV. [ft]	DEPTH [ft]	CASING BLOWS	SAMPLE DESCRIPTION	SAMPLE NO	SAMPLE BLOWS/6"
68.29	0		TOP SOIL	1	3 10 15
	5		BRWN & GRAY SILT w/ trace of sand	2	3 8 8
60.0				3	3 5 6
	10			4	3 10 18
	15			5	5 10 14
50.0	20		RED & GRAY CLAYEY SILT w/ trace of sand	6	5 8 14
	25			7	4 8 10
40.0	30			8	4 6 11
	35			9	6 13 16
30.0	40		GRAY SANDY SILT	10	5 13 20
	45			11	7 12 15
20.0	50			12	6 12 17
	55		GRAY F/M SAND w/ trace of silt & coal - wet	13	12 27 32
10.0	60			14	5 16 37
0.0					

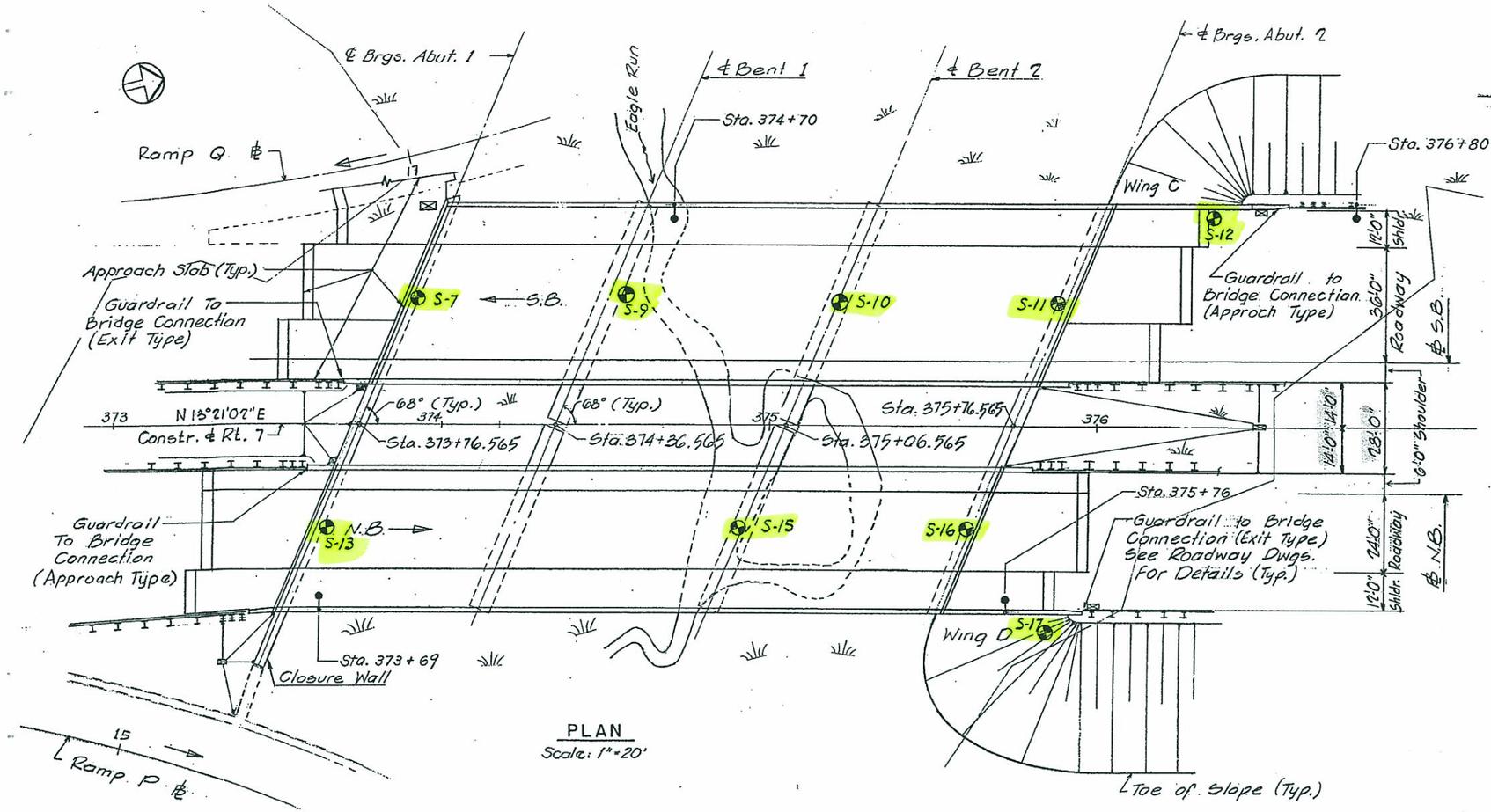
DELAWARE
DEPARTMENT OF HIGHWAYS & TRANSPORTATION
DIVISION OF HIGHWAYS

STRUCTURAL BORINGS

D. BGS	SCALE	APPROVED BY:
T. BGS	VERTICAL: 1"=5'-0	BRIDGE ENGINEER
C.		

DWG. NO.	CONTRACT	COUNTY	FEDERAL AID PROJECT Nº	SHEET Nº	TOTAL SHEETS
33	83-101-02	NEW CASTLE	F-1045 (26)	318	492

ROUTE 7
OVER EAGLE RUN
3 SPAN CONT. COMP. P/S CONC. BOX BM. BRIDGE
GENERAL PLAN



PLAN
Scale: 1"=20'

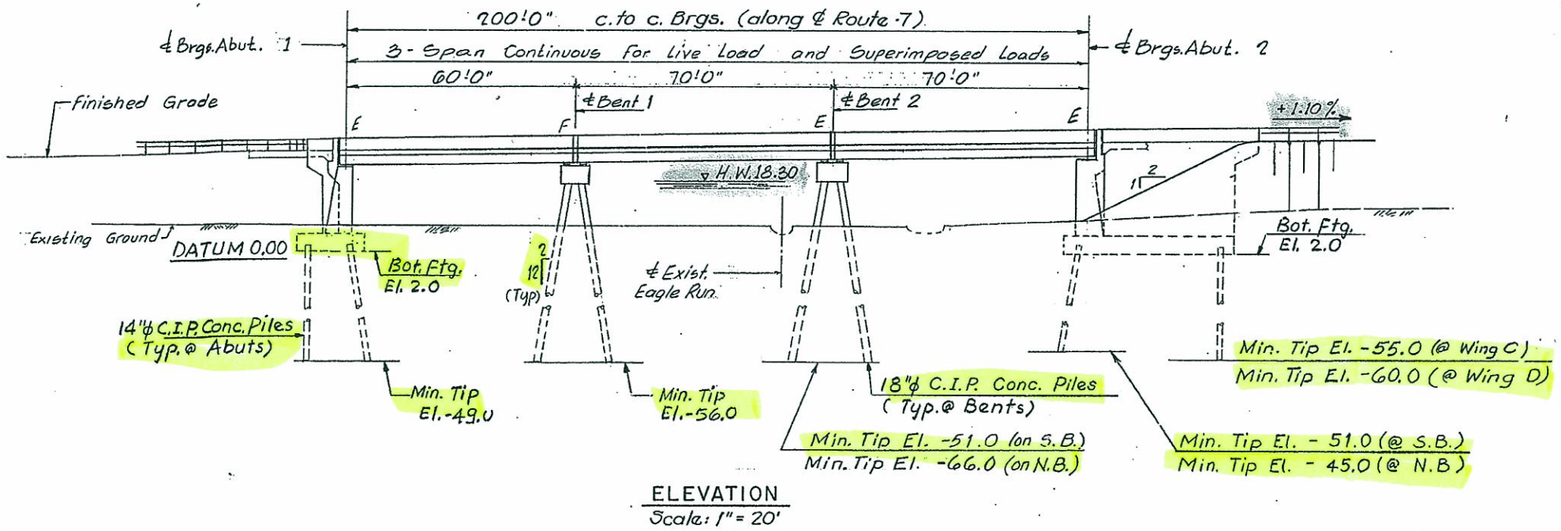
P.V.I. Sta. 370+00.00
Elev. 22.95
V.C. 1.000'
M.O. +2.03

VERTICAL CURVE DATA FOR ROUTE-7

HYDRAULIC DATA

Design Flood: Frequency 100 Years
Magnitude 828 CFS
High Water Elev. 18.30

● Denotes Borings



ELEVATION
Scale: 1"=20'

DWG. NO.	CONTRACT	COUNTY	FEDERAL AID PROJECT Nº	SHEET Nº	TOTAL SHEETS
114	83-101-02	NEW CASTLE	F-1045(26)	399	492

ROUTE 7, RAMP P AND RAMP Q OVER EAGLE RUN
3 SPAN CONT. COMP. P/S CONC. BOX BM. BRIDGE
TEST BORINGS

WALTON CORPORATION
Drilling Contractor
P.O. BOX 1697, NEWARK, DELAWARE 19715

REVISIONS

DATUM 10.0

ELEVATION (IN FEET)

ABUT-1 (S.B.)

EL. 7.52 — S-7 — STRATA DESCRIPTION — A

BOT. FTG EL 3.01

- LT. BR. & LT. GR. SILTY (F-C) SANDY CLAY (SAT. & SOFT) — 5.0 to 0.0
- EL.-0.98
- LT. GR. SILTY (F-C) SAND W/TR. GRAVEL & MICA MIXTURE (SAT. & LOOSE) — 0.0 to -8.48
- EL.-8.48
- LT. & MED. BROWN SANDY CLAY W/TR. MICA (VERY WET & STIFF) — -8.48 to -15.98
- 14"ϕ C.I.P. CONC. PILE
- EL.-15.98
- LT. TO DARK GR. SANDY CLAY W/TR. SILT — -15.98 to -21.98
- EL.-21.98
- MED. & LT. GR. (F-C) SAND W/SOME SILT & VERY WEATHERED CHARCOAL & CLAY MIXTURE (VERY WET & COMP.) — -21.98 to -27.98
- EL.-27.98
- SAME W/TR. MICA — -27.98 to -29.98
- EL.-29.98
- LT. GR. SILTY CLAY W/SOME SAND & MICA MIXTURE (VERY WET & STIFF) — -29.98 to -36.98
- EL.-36.98
- RED & MED. GR. SILTY CLAY W/TR. SAND & MICA MIXTURE (WET & VERY STIFF) — -36.98 to -41.48
- EL.-41.48
- RED & MED. GR. SILTY CLAY W/SOME SAND AND LTL. TO TR. MICA (WET & HARD) — -41.48 to -46.98
- EL.-46.98
- RED & MED. GR. AND LT. TO MED. BR. SILTY CLAYEY SAND — -46.98 to -48.48
- EST. TIP EL. -49.0
- EL.-48.48
- LT. TO MED. BR. (F-C) SILT W/SOME TO TR. CLAY (VERY WET & DENSE) — -48.48 to -52.98
- EL.-52.98

ARTESIANS STARTED @ EL.-30.98
END OF BORING, WATER CAME OUT OF HOLE

BENT-1

EL. 7.32 — S-9 — STRATA DESCRIPTION — A

- SAT. GR. VERY SOFT SILTY CLAY — 7.32 to -4.68
- EL.-4.68
- SAT. GR. STIFF SILTY CLAY W/LENS (F) SAND — -4.68 to -9.68
- EL.-9.68
- SAT. MED. DENSE (F) SAND W/SOME SILT W/SOME CLAY — -9.68 to -14.68
- EL.-14.68
- SAT. GR. STIFF SILTY CLAY W/TR. (F) SAND W/CHARCOAL — -14.68 to -19.68
- EL.-19.68
- SAT. GR. VERY STIFF SILTY CLAY W/ (F) SAND LENS W/SOME CHARCOAL — -19.68 to -29.68
- EL.-29.68
- SAT. LT. GR. LOOSE (F) SAND W/MICA — -29.68 to -34.68
- EL.-34.68
- 18"ϕ MONOTUBE
- SAT. LT. GR. AND RED VERY STIFF CLAY MARBLED W/SOME (VF) SAND W/TR. MICA — -34.68 to -49.68
- EL.-49.68
- SAT. MULTICOLORED MED. DENSE (F-C) SAND W/TR. SILT — -49.68 to -56.18
- EST. TIP EL-56.0
- EL.-56.18

BENT-2 (S.B)

EL. 7.49 — S-10 — STRATA DESCRIPTION — A

- SAT. LT. BR. & DK. GR. STIFF CLAYEY SILT & ROOT MATERIAL — 7.49 to -0.01
- EL.-0.01
- SAT. LT. BR. & LT. GR. STIFF SILTY CLAY W/TR. (F-C) SAND & GRAVEL — -0.01 to -4.51
- EL.-4.51
- SAT. LT. GR. STIFF SILTY CLAY W/ LENS (F) SAND & GRAVEL — -4.51 to -11.01
- EL.-11.01
- SAT. DK. GR. STIFF (VF) SAND W/ SOME SAND — -11.01 to -17.01
- EL.-17.01
- SAT. DK. GR. W/SOME SILT & LT. GR. SAND LENS — -17.01 to -21.51
- EL.-21.51
- SAT. LT. GR. VERY STIFF SILTY (F) SAND — -21.51 to -27.01
- EL.-27.01
- SAT. LT. GR. MED. DENSE (F-C) SAND W/TR. MICA — -27.01 to -35.51
- EL.-35.51
- SAT. GR. & RED CLAY & SILT W/TR. (F) SAND — -35.51 to -41.01
- EL.-41.01
- 18"ϕ MONOTUBE
- SAT. GR. & WHITE (F-C) SAND — -41.01 to -51.0
- EST. TIP EL. -51.0
- EL.-51.51
- MULTICOLORED HARD (F) SANDY SILT — -51.51 to -52.51
- EL.-52.51
- SAT. MULTICOLORED (F-C) SANDY SILT — -52.51 to -53.01
- EL.-53.01

RUNNING WATER @ EL:51.51

ABUT. 2 (S.B.)

EL. 8.15 — S-11 — STRATA DESCRIPTION — A

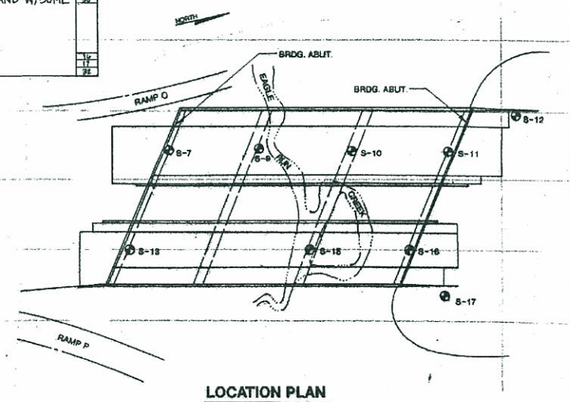
- SAT. LT. BR. AND GR. ORGANIC SANDY SILTY CLAY — 8.15 to 1.15
- BOT. FTG EL 2.01
- EL. 1.15
- NO RECOVERY - GRAVEL IN TIP — 1.15 to -3.85
- EL.-3.85
- SAT. GR. FIRM TO STIFF SILTY CLAY W/ (F) SAND LENS W/MICA W/GRAVEL — -3.85 to -13.85
- EL.-13.85
- SAT. DK. GR. AND BLK. ORGANIC SILTY CLAY W/SOME CHARCOAL — -13.85 to -18.85
- 14"ϕ C.I.P. CONC. PILE
- EL.-18.85
- SAT. RED TO GR. VERY STIFF CLAY W/SOME SILT — -18.85 to -38.85
- EL.-38.85
- SAT. MULTICOLORED HARD CLAY W/SOME SILT W/GR. (F) SAND LENS — -38.85 to -44.85
- EL.-44.85
- SAT. MULTICOLORED SANDY SILTY CLAY W/MICA — -44.85 to -47.85
- EL.-47.85
- EST. TIP EL. -51.0
- SAT. MULTICOLORED DENSE (F-C) SAND W/SOME SILT — -47.85 to -57.35
- EL.-57.35

NOTE:

1) DESCRIPTIVE PROFILES ARE BASED ON "DRILLER'S DESCRIPTION OF MATERIALS" AS ENCOUNTERED BY STANDARD PENETRATION TEST BORINGS PERFORMED BY THE WALTON CORPORATION BETWEEN JUNE 15 - JUNE 22, 1988.

2) VERTICAL SCALE IS 1"=5'.

3) "A" REPRESENTS NUMBER OF BLOWS OF 140 LB. HAMMER DROPPED 30 IN. REQ'D TO DRIVE 2 IN. SPLIT SPOON SAMPLER FOR EACH OF THREE 6 IN. INCREMENTS.



LOCATION PLAN
SCALE: 1"=50'

D.S. HAPPEL — DESIGN
CHKD.
FREL. TRACING

DWG. NO.	CONTRACT	COUNTY	FEDERAL AID PROJECT Nº	SHEET Nº	TOTAL SHEETS
115	83-101-02	NEW CASTLE	F-1045 (26)	400	492

ROUTE 7, RAMP P AND RAMP Q OVER EAGLE RUN
3 SPAN CONT. COMP. P/S CONC. BOX BM. BRIDGE
TEST BORINGS

WALTON CORPORATION
Drilling Contractor
P.O. BOX 1097, NEWARK, DELAWARE 19715

REVISIONS

PREL. TRACING D.S. HAPPEL DESIGN CHKD

ELEVATION (IN FEET)

ABUT. 2 (S.B.) WINGWALL

DATUM 10.0

EL. 8.84 — S-12 — STRATA DESCRIPTION — A

Bot. Ftg EL. 2.0±

- SAT., MED. DENSE BR. SILTY (F-C) SAND W/GRAVEL — EL. -1.16
- WET, STIFF CLAY W/GR. TO BR. SAND & SOME SILTY CLAY — EL. -4.66
- WET STIFF CLAY & GR. SILTY CLAY W/SOME ORGANIC MATTER & TR. MICA & SAND — EL. -9.16
- WET, VERY STIFF DK. GR. & ORGANIC SILTY CLAY — EL. -15.16
- WET, STIFF, DK. GR. SILTY CLAY W/SOME CHAR. COLOR — EL. -25.16
  14"ϕ C.I.P. Conc. Pile
- WET, DK. GR. & LT. BR. STIFF, SILTY (F-C) CLAY — EL. -30.5
- WET, VERY STIFF, LT. GR. SANDY, CLAYEY SILT W/(F-C) SAND LENS — EL. -35.66
- WET, FIRM, LT. GR. & BR. (F) SANDY CLAY W/LENS (F) SAND SEAMS — EL. -41.16
- WET & VERY STIFF, RED & GR. CLAY W/SOME SAND — EL. -45.66
- WET & HARD, MULTICOLORED, SILTY CLAY — EL. -50.66
- SAT., DENSE, MULTICOLORED (F) SAND W/LENS SILT & CLAY — EL. -51.66
- SAT., VERY DENSE, LT. BR. & CHAR. COLOR SAND W/SOME SILT & TR. GRAVEL — EST. TIP EL. -55.0 — EL. -56.66

ABUT. - 1 (N.B.)

EL. 7.15 — S-13 — STRATA DESCRIPTION — A

Bot. Ftg EL. 2.0±

- SAT., BR. STIFF, CLAYEY SILT W/(F) SAND MIXTURE — EL. -3.85
- SAT., GR., FIRM, CLAYEY SILT W/(F-C) SAND — EL. -17.35
  14"ϕ C.I.P. Conc. Pile
- SAT., LT. GR., STIFF, SILTY, CLAYEY (F) SAND W/TR. MICA — EL. -26.35
- SAT., LT. GR., VERY STIFF, SILTY CLAY W/SAND LENS & CHARCOAL MIXTURE — EL. -31.85
- SAT., LT. GR., CLAYEY SILT W/SAND LENS & CHARCOAL MIXTURE — EL. -37.85
- SAT., LT. GR., MED. DENSE (F-C) SAND W/TR. MICA — EL. -39.85
- SAT., LT. GR., HARD SILT W/CLAY MIXTURE AND TR. MICA & SAND — EL. -43.35
- SAT., LT. GR., VERY DENSE (F-C) SAND W/TR. CLAY — EST. TIP EL. -48.0 — EL. -51.85
- SAT., MICACEOUS, SILTY SAND W/ (F) SAND LENS — EL. -58.35

BENT-2 (N.B)

EL. 7.70 — S-15 — STRATA DESCRIPTION — A

EL. 7.20 TOPSOIL

- LT. BR. AND LT. GR., CLAYEY SILT W/TR. (F) SAND AND MICA (WET & SOFT) — EL. -6.80
- LT. & DK. GR., SILTY (F) SAND W/TR. MICA (WET & LOOSE) — EL. -9.30
- DK. GR. & ORGANIC BR. SILTY CLAY W/MICA MIXTURE (MOIST & VERY SOFT) — EL. -19.30
- LT. GR., CLAYEY (M-C) SAND W/MICA MIXTURE (WET & VERY SOFT) — EL. -26.80
- LT. GR., (M-C) SAND W/SILT & MICA MIXTURE (VERY MOIST & LOOSE)
  18"ϕ MONOTUBE — EL. -35.80
- LT. GR., SILTY CLAY W/MICA MIXTURE & TR. (F) SAND (WET & COMP.) — EL. -41.80
- LT. GR., SANDY CLAY W/TR. MICA (WET & COMP.) — EL. -45.30
- MULTICOLORED, SANDY CLAY W/MICA MIXTURE (VERY MOIST & COMP.) — EL. -49.80
- MULTICOLORED, SILTY, SANDY CLAY W/MICA (WET & HARD) — EL. -52.80

EST. TIP EL. -66.0

ABUT. - 2 (N.B.)

EL. 7.64 — S-16 — STRATA DESCRIPTION — A

Bot. Ftg EL. +2.0±

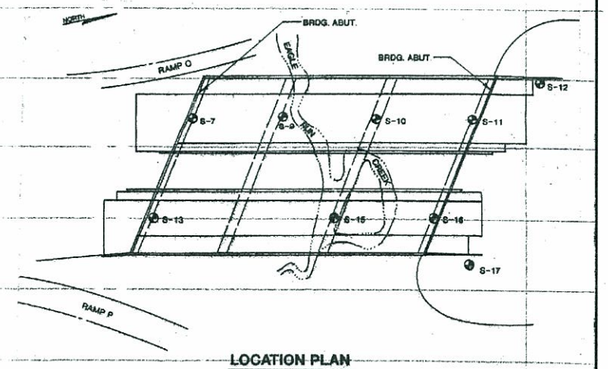
- SAT., DK. BR., FIRM SILT W/ROOT MAT W/TR. GRAVEL — EL. 0.64
- SAT., LT. BR. SILT W/LENS OF (F) SAND — EL. -4.36
- SAT., DK. GR. STIFF TO VERY STIFF CLAY W/TR. TO SOME SILT — EL. -15.36
- SAT., DK. GR. CLAY W/SOME SILT & LENS SAND — EL. -25.36
- SAT., LT. GR., DENSE (F-C) SAND TR. SILT & MICA — EL. -39.36
  14"ϕ C.I.P. Conc. Pile
  EST. TIP EL. -43.0
- SAT., LT. RD., LT. BR. & GR. CLAY — EL. -49.36
- SAT., MULTICOLORED, HARD (F) SAND W/ SILT — EL. -52.86

NOTE:

1) DESCRIPTIVE PROFILES ARE BASED ON "DRILLER'S DESCRIPTION OF MATERIALS" AS ENCOUNTERED BY STANDARD PENETRATION TEST BORINGS PERFORMED BY THE WALTON CORPORATION BETWEEN JUNE 15 - JUNE 22, 1989.

2) VERTICAL SCALE IS 1"=5'.

3) "N" REPRESENTS NUMBER OF BLOWS OF 140 LB. HAMMER DROPPED 30 IN. REQ'D TO DRIVE 2 IN. SPLIT SPOON SAMPLER FOR EACH OF THREE 6 IN. INCREMENTS.



LOCATION PLAN
SCALE: 1"=50'

DWG. NO.	CONTRACT	COUNTY	FEDERAL AID PROJECT Nº	SHEET Nº	TOTAL SHEETS
116	83-101-02	NEW CASTLE	F-1045(26)	401	492

ROUTE 7, RAMP P AND RAMP Q OVER EAGLE RUN
3 SPAN CONT. COMP. P/S CONC. BOX BM. BRIDGE
TEST BORINGS

WALTON CORPORATION
Drilling Contractor
P.O. BOX 1697, NEWARK, DELAWARE 19715

REVISIONS

ELEVATION (IN FEET)

DESIGN D.S. HAPPEL CHKD

PREL. TRACING

322617

ABUT. 2 (N.B.) WINGWALL

DATUM 10.0

S-17 — EL. 8.21

STRATA DESCRIPTION

BOT FTG EL. 2.0±

EL. 1.21 — BR. & GR. SILT W/ SAND & MICA

MOIST, FIRM, LT. GR., MICACEOUS, SANDY SILT W/ TR. CLAY

EL. -3.79

DK. GR., ORGANIC, SILTY CLAY W/ TR. MICA AND SAND

EL. -13.79

14"ϕ C.I.P. CONC. PILE

LT. BR. TO LT. GR. (F-C) SAND W/ TR. TO SOME SILT & TR. MICA & GRAVEL

EL. -40.29

RED & GR., STIFF, SANDY CLAY

EL. -45.29

EL. -47.79

MULTICOLORED (F-C) SAND W/ SILT

LT. BR. & GR. SANDY, SILTY CLAY

EL. -53.79

VERY DENSE (F) SAND W/ SOME SILT & MICA

EL. -57.29

EST. TIP EL. -60.0

ABUT. - 1 (RAMP P)

S-18 — EL. 6.69

STRATA DESCRIPTION

EL. 3.19 — LT. & DK. BR., SILTY, SANDY CLAY

EL. -1.81 — BR., SILTY CLAY W/ TR. SAND (SAT. & SOFT)

MED. BR. & LT. GR., SILTY CLAY W/ TR. (VF) SAND (MRM & VERY WET)

14"ϕ C.I.P. CONC. PILE

EL. -11.31

LT. GR. (F-M) SAND W/ SILT

EL. -18.31

GR., SILTY CLAY W/ LENS OF (F) SAND (VERY MOIST & STIFF)

EL. -21.31

LT. TO DK. GR., MED. SAND (F-C) W/ LENS CLAY (VERY MOIST & DENSE)

EL. -26.31

LT. GR., VERY STIFF CLAY W/ SOME LENS SAND (VERY MOIST)

EL. -33.31

LT. GR., SILTY CLAY W/ TR. (VF) SAND & TR. CHARCOAL (VERY MOIST @ COMP.)

EL. -37.31

LT. GR., SILTY CLAY & SAND (VERY MOIST @ COMP.)

EL. -40.31

LT. GR. & RED SILTY CLAY W/ TR. (M-C) SAND (MOIST & STIFF)

EL. -49.81

LT. GR. & LT. BR. CLAY W/ MED. (C) SAND (WET & LOOSE)

EL. -52.81

EL. -53.81

LT. BR., MED. DENSE (F-C) SAND (VERY WET & LOOSE)

EST TIP EL -60.0

S-19 — EL. 6.61

STRATA DESCRIPTION

EL. 3.11 — MED. & DK. BR. SILTY, SANDY CLAY

BOT. FTG EL 1.0±

LT. BR. & LT. GR., SILTY CLAY W/ TR. SAND (WET & SOFT)

EL. -5.39

MED. BR. SILT W/ TR. CLAY

EL. -10.39

SILTY, LT. GR. CLAY W/ TR. SAND (VERY MOIST @ COMP.)

EL. -15.39

LT. GR., SILTY CLAY W/ SOME CHARCOAL (MOIST & COMP.)

EL. -20.39

LT. GR., SILTY CLAY W/ LENS SAND (MOIST & COMP.)

14"ϕ C.I.P. CONC. PILE

EL. -35.39

LT. GR. (F-C) SAND W/ TR. SILT

EL. -40.39

LT. GR. CLAY W/ SILT (F-C) SAND WEATHERED WOOD (WET @ COMP.)

EL. -45.39

LT. REDDISH GR. (F-C) SAND

EL. -50.39

EST. TIP EL. -52.0

MULTICOLORED, SANDY SILT (HARD)

EL. -55.39

MULTICOLORED SAND (HARD)

EL. -58.89

BENT-2

S-21 — EL. 6.24

STRATA DESCRIPTION

EL. 5.24 — TOPSOIL W/ VEG. & ROOTS OR SAND (F-M) GRAVEL

HEAVY GRAVEL, WET, VERY DENSE, LT. BR., SILTY (F-C) SAND & GRAVEL

EL. -0.76

WET, VERY STIFF, LT. GR., MICACEOUS, (F) SANDY SILT

EL. -11.26

WET, VERY STIFF, LT. TO DK. GR., SILTY CLAY W/ DENSE (2") CHARCOAL TR. MICA & SAND

EL. -21.26

WET, (F) GR. SILT W/ CHARCOAL & ORGANICS TR. GR. CLAY & (F-M) GR. SAND

EL. -31.26

18"ϕ MONOTUBE

GR., RED & LT. BR., SILTY CLAY W/ TR. SAND & MICA

EL. -57.76

VARICOLORED (F-M) SAND

EL. -59.26

RED & GR. CLAY

EST. TIP EL. -60.0

LT. BR. (F-M) SAND TR. SILT

EL. -64.26

WATER RUNNING OUT TOP OF AUGERS

NOTE:

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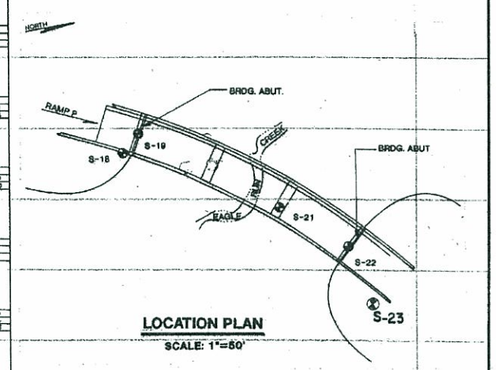
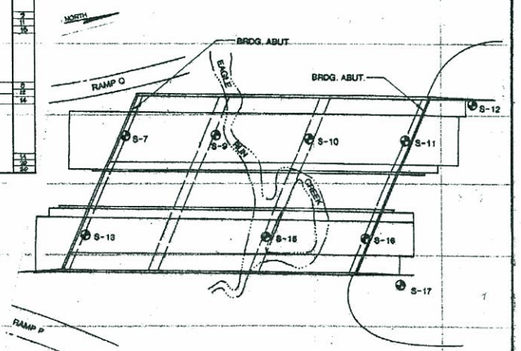


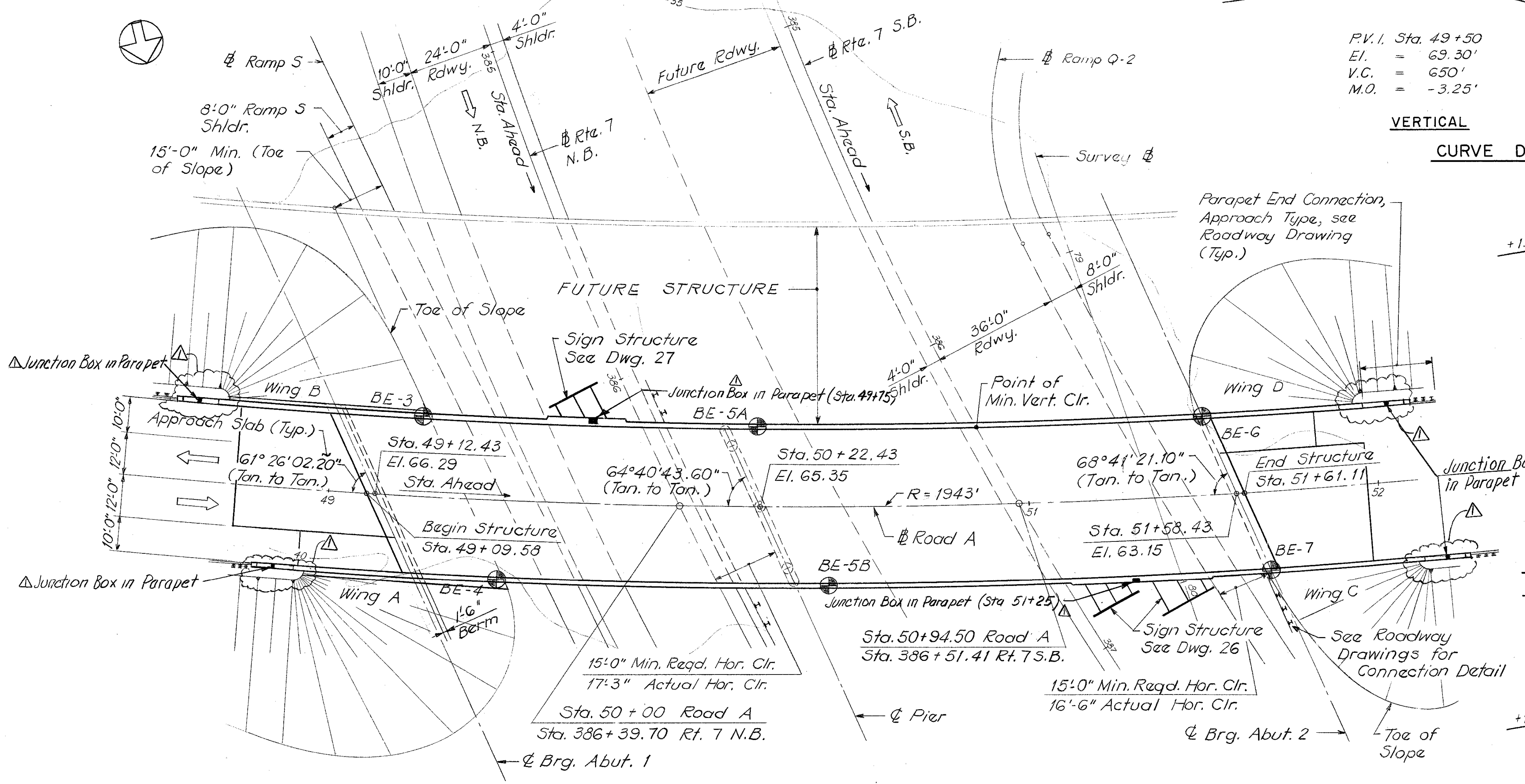
LOCATION PLAN
SCALE: 1"=50'



LOCATION PLAN
SCALE: 1"=50'

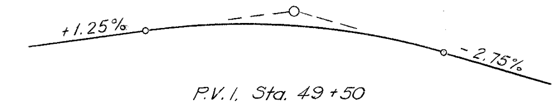
DWG. NO.	CONTRACT	COUNTY	FEDERAL AID PROJECT Nº	SHEET Nº	TOTAL SHEETS
1	83-101-02	NEW CASTLE	F-1045 (26)	257	492

ROAD A OVER ROUTE - 7
2 SPAN COMP. STEEL GIRDER BRIDGE GENERAL PLAN



PLAN
Scale: 1" = 20'

CURVE DATA FOR ROAD A



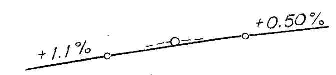
VERTICAL

P.V.I. Sta. 49+50
El. = 69.30'
V.C. = 650'
M.O. = -3.25'

HORIZONTAL

P.I. Sta. 48+66.21
D_c = 2°56'55.79"
Δ = 23°22'26"
R = 1943'
L_c = 792.65'
Tan. = 401.91'

CURVE DATA FOR RT.-7 SOUTHBOUND



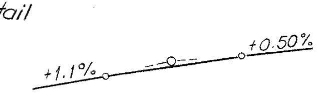
VERTICAL

P.V.I. Sta. 386+50
El. = 40.86'
V.C. = 800'
M.O. = -0.6'

HORIZONTAL

P.I. Sta. 387+67.75
D_c = 2°58'37.73"
Δ = 8°23'42"
R = 1924.52"
L_c = 281.98'
Tan. = 141.24'

CURVE DATA FOR RT.-7 NORTHBOUND

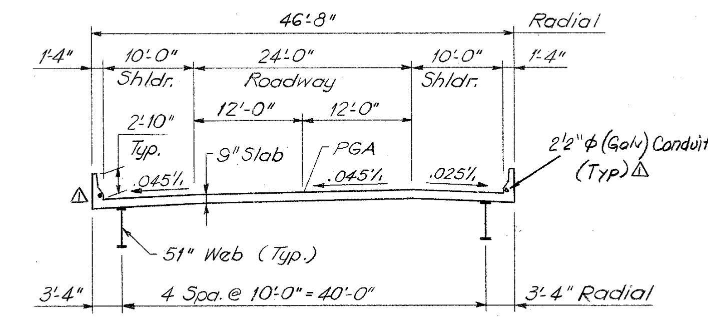


VERTICAL

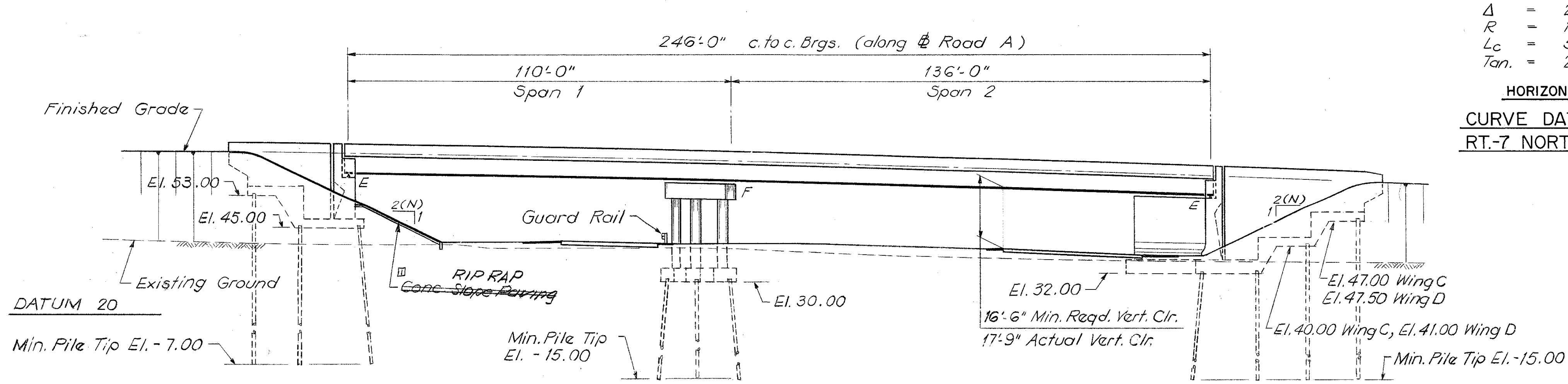
P.V.I. Sta. 383+00
El. = 37.25'
V.C. = 800'
M.O. = -0.6'

HORIZONTAL

P.I. Sta. 384+81.58
D_c = 3°45'00"
Δ = 22°00'00"
R = 1527.89'
L_c = 586.67'
Tan. = 296.99'



TYPICAL SECTION
Scale: 1" = 10'



ELEVATION
Scale: 1" = 20'

INDEX OF DRAWINGS

REVISIONS

Addendum	Revised as shown	CHK 2-20-90
Addendum	Added Junction Box	JSJ 3-9-90
Revision	Changed slope paving to rip rap	JSJ 5-25-91

PREL. TRACING KM — DESIGN DGF — CHKD. SBS

DWG. NO.	CONTRACT	COUNTY	FEDERAL AID PROJECT Nº	SHEET Nº	TOTAL SHEETS
29	83-101-02	NEW CASTLE	F-1045 (26)	285	492

ROAD A
OVER ROUTE - 7
SPAN COMP. STEEL GIRDER BRIDGE
TEST BORINGS

REVISIONS

BE-3
STATION - 78+85 OFFSET - 193' RT
GROUND SURFACE EL. 36.19

Abut. 1 B/Ftg. El. 45.0

ELEV.				
36.5	2,2,4	BROWN & RED SILT, TRACE FINE SAND, SOME CLAY, OCC. FINE GRAVEL	32.69	
9.0	5,7,9	BROWN FINE TO MEDIUM SAND, SOME SILT, SOME FINE GRAVEL	27.19	
13.5	10,15 19	BROWN CLAYEY SILT, TRACE FINE SAND	22.69	
17.0	6,7,8 △	BLACK CLAYEY SILT	19.19	
23.5	5,7,6	REDDISH BROWN & GRAY SILT, SOME CLAY, SOME FINE SAND 12.69	12.19 0 HRS	13.19 24 HRS
34.0	6,8,8 △ 5,9,11	GREENISH GRAY TO GRAY SILT, TRACE TO SOME FINE SAND	2.19	
38.0	9,9,11	REDDISH BROWN CLAY, FINE SAND INTERBEDS	-1.81	
	8,11 10 17,19 25 9,11 17 7,11, 16 12,19 21	DARK GRAY & GRAY CLAYEY SILT, TRACE WHITE FINE SAND, FINE TO MEDIUM SAND INTERBEDS		
64.0			-27.81	
	13,17 21 25,28 28 29,34 41 26,31 39	REDDISH BROWN & GRAY FINE SAND, GRAY SILTY CLAY INTERBEDS, OCC. CHARCOAL (WOOD) FRAGMENTS		
81.5			-45.31	

M.P.T. El. -7.0

BE-4
STATION - 79+36 OFFSET - 188' RT
GROUND SURFACE EL. 40.46

ELEV.				
37.5	1,3,3	BROWN & REDDISH BROWN CLAYEY SILT, TRACE FINE SAND & FINE GRAVEL	37.46	
9.0	6,7,7	BROWN FINE TO MEDIUM SAND, TRACE SILT, SOME FINE GRAVEL	31.46	
13.0	9,13 21	BROWN CLAYEY SILT, TRACE FINE SAND	27.46	
17.5	5,7,9 △	DARK GRAY & BLACK CLAYEY SILT	22.96	
24.0	6,6,7	REDDISH BROWN & GRAY SILT, TRACE FINE SAND, RED CLAY INTERBEDS	15.46 0 HRS	16.46 22 HRS
29.0	5,9,8	GREENISH GRAY CLAYEY SILT, SOME FINE SAND	11.46	
33.0	6,8,13	GRAY FINE TO MEDIUM SAND	7.46	
43.0	7,9,12	REDDISH BROWN & GRAY SILTY CLAY	-2.54	
46.0	6,10 13	GRAY FINE SAND	-5.54	
	15,16 21 9,9,14 8,10 12 10,17 19 12,15 20	GRAY FINE SAND WITH REDDISH BROWN AND GRAY SILTY CLAY INTERBEDS, CHARCOAL (WOOD) FRAGMENTS		
	10,25 29 23,29 32 25,28 35			
86.5	22,30 33		-46.04	

BE-5A
STATION - 79+23 OFFSET - 30' RT
GROUND SURFACE EL. 36.29

ELEV.				
3.0	3,3,6	LT. BROWN SILT, SOME FINE SAND	33.29	
12.0	13,19 28 7,13 21	LT. BROWN, ORANGE FINE TO MEDIUM SAND, SOME SILT, SOME FINE GRAVEL	24.29	
23.0	4,5,7 △ 4,4,7	REDDISH BROWN & DARK GRAY SILTY CLAY, SOME FINE SAND	13.29	
28.0	5,6,8	GRAYISH BROWN & BROWN CLAYEY SILT, OCC. CHARCOAL (WOOD) FRAGMENTS	8.29 0 HRS	9.79 24 HRS
33.0	7,10 10 8,10,9	GRAY FINE TO MEDIUM SAND, REDDISH BROWN, SILTY CLAY INTERBEDS	3.29	
39.0	10,17 25 19,23 30 22,28 34 23,34 43	REDDISH BROWN & GRAY SILTY CLAY	-2.71	
61.5	25,38 47	GRAY & BROWN FINE TO MEDIUM SAND, GRAY SANDY CLAY INTERBEDS	-25.21	

Pier B/Ftg. El. 30.0

M.P.T. El. -15.0

BE-5B
STATION - 79+78 OFFSET - 80' RT
GROUND SURFACE EL. 36.29

ELEV.				
3.0	1,2,4	LT. BROWN CLAYEY SILT	33.29	
8.5	7,13 26	BROWN & GRAY FINE SAND, SOME SILT, SOME FINE GRAVEL	27.79	
17.0	3,7 15 △ 9,5,7	REDDISH BROWN & GRAY CLAYEY SILT, SOME FINE SAND	19.29	
28.0	5,7,9 △ 5,8,13	GRAY TO GREENISH GRAY CLAYEY SILT, SOME FINE SAND	8.29 0 HRS	10.29 24 HRS
39.0	1,1,2 8,14 22	GRAY FINE TO MEDIUM SAND, OCC. GRAY CLAYEY SILT INTERBEDS	-2.71	
43.0	16,24 23	YELLOW FINE SAND, SOME SILT	-6.71	
48.0	21,28 32	GRAY & REDDISH BROWN FINE SAND, RED CLAY INTERBEDS	-11.71	
	23,29 39 25,33 38	GRAY FINE SAND, OCCASIONAL GRAY CLAYEY SILT INTERBEDS		
61.5	23,31 36		-25.21	

BE-6
STATION - 79+60 OFFSET - 20' LT
GROUND SURFACE EL. 34.29

ELEV.				
8.5	2,2,3	BROWN & GRAY SILT, SOME FINE SAND & FINE GRAVEL	25.79	
13.0	6,8,13 20,20 21	RUST BROWN & BROWN FINE TO COARSE SAND & SOME FINE GRAVEL	21.29	
17.5	8,11 19	GRAY & REDDISH BROWN SILTY CLAY	16.79	
31.0	6,10 12 35,71 100/2" 5,3,7	GREENISH GRAY TO GRAY CLAYEY SILT, GRAY FINE SAND INTERBEDS 3.29	6.29 0 HRS	7.29 30 HRS
38.0	9,10 13	GRAY SILT, TRACE FINE SAND	-3.71	
	15,21 26 25,23 26 23,31 42 22,34 43	GRAY TO LT. GRAY FINE SAND, OCC. SILT INTERBEDS, OCCASIONAL CHARCOAL (WOOD) FRAGMENTS		
61.5	24,29 37		-27.21	

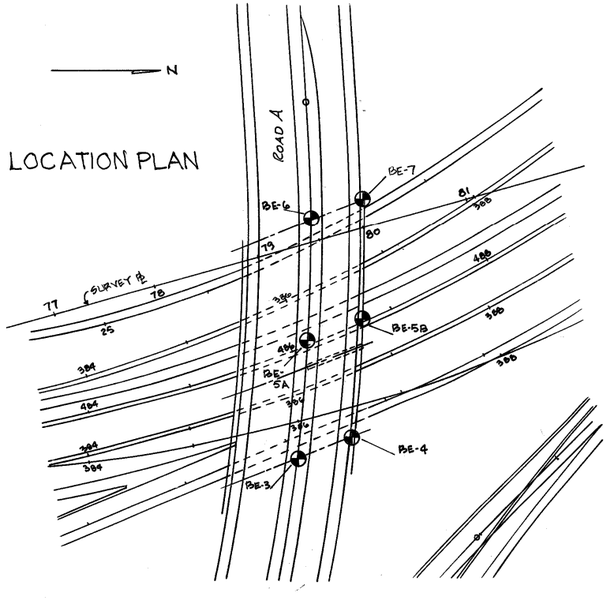
M.P.T. El. -15.0

BE-7
STATION - 80.05 OFFSET - 25' LT
GROUND SURFACE EL. 35.49

Abut. 2 B/Ftg. El. 32.0

ELEV.				
3.0	2,3,3	BROWN & GRAY CLAYEY SILT, SOME FINE SAND & FINE GRAVEL	32.49	
8.0	5,9,15	REDDISH BROWN FINE SAND & CLAYEY SILT, TRACE FINE GRAVEL	27.49	
12.0	17,21 22	LT. BROWN & GRAY CLAYEY SILT, TRACE FINE SAND	23.49	
23.0	10,18 17 5,8,19	GREENISH GRAY & DARK BROWN CLAYEY SILT, TRACE FINE SAND	12.49	
30.0	22,53 81	GRAY FINE SAND, GRAY SILTY CLAY INTERBEDS 5.49	6.49 0 HRS	8.49 23 HRS
	4,4,7 7,13 12 13,19 29 22,27 29 21,30 55 25,31 40	LT. BROWN & GRAY FINE SAND, OCC. SILTY SAND INTERBEDS, OCCASIONAL CHARCOAL (WOOD) FRAGMENTS		
61.5	27,33 41		-26.01	

LOCATION PLAN



LEGEND

A	B	C	D

▼ GROUND WATER LEVEL
A DEPTH IN FEET
B STANDARD PENETRATION RESISTANCE IN BLOWS PER 6 INCHES OR AS INDICATED ¶ SPECIAL SAMPLING
C DESCRIPTION OF PRINCIPAL SOIL STRATA
D ELEVATION IN FEET
△ UNDISTURBED SAMPLE

NOTES:
a. WEIGHT OF HAMMER: 140 LBS.
b. DROP OF HAMMER: 30 IN.
c. SOIL SAMPLER: 2 IN. O.D. STANDARD SPLIT SPOON BARREL
d. UNDISTURBED SOIL SAMPLER: 3 IN. O.D. x 30 IN. LONG THIN WALLED TUBE (SHELBY TUBE)

PREL. TRACING ____ DESIGN DGF CHKD. SBS

TEST BORINGS RESULTS AND LOCATION PLAN

DELAWARE ROUTE 7
NEW CASTLE COUNTY, DELAWARE

PHASE I
EAGLE RUN ROAD OVERPASS

DATE:		SCALE:
11/3/07	Mc CLYMONT & RAK GEOTECHNICAL ENGINEERS, INC. PENNSAUKEN, NJ - TAMPA, FL - TORONTO, CANADA	AS SHOWN
		DRAWN: CL

529017