KEYS CONCRETE INDUSTRIES
11913 S.R. 54
ODESSA, FL 33556
USA
727-372-1365

CONCRETE MIX DESIGN

MIX ID : 1900067 TREMIE (17) 6000 PSI 02/22/00

CONTRACTOR : COASTAL CAISSON
SOURCE OF CONCRETE : KEYS CONCRETE INDUSTRIES

WEIGHTS PER CUBIC YARD (SATURATED, SURFACE-DRY)			YIELD, CU FT
HOLNAM CEMENT CO.	TYPE I-S, LB	525	2.67
MONEX RESOURCES, INC.	CLASS "F", LB	131	0.98
RINKER MATERIALS, INC.	FDOT SAND, LB	1423	8.67
FL. CRUSHED STONE CO.	#67 STONE, LB	1426	9.31
WATER, GAL-US (LB)		36.0 (300)	4.81
TOTAL AIR, %		2.0 +/- 1.5	0.54
		TOTAL	27.00
WRDA-64, W.R.GRACE	ASTM C-494, OZ	39.36	
DAREX AEA, W.R.GRACE	ASTM C-260, OZ	9.0	
WATER/CEMENT RATIO, LBS/LB		0.46	
SLUMP, IN		8.00	
CONCRETE UNIT WEIGHT, PCF		140.9	

SLUMP RANGE: 7.0" - 9.0"

PREPARED BY :

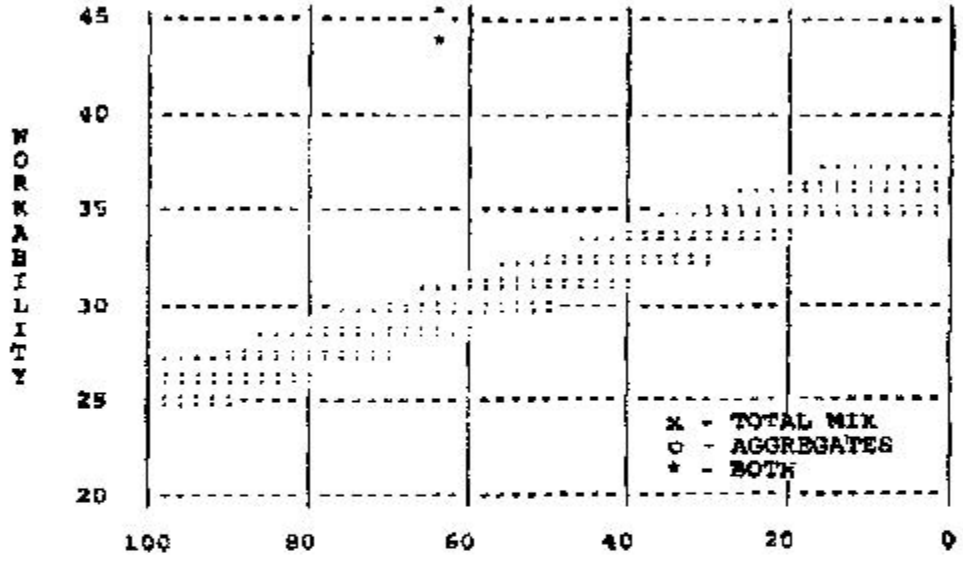
TERRY L. POSNER, TECHNICAL SERVICES MGR.

Figure A-1. Site I and II concrete mix design (1 of 4).

MIX ID: 1900067 TREMIE PSI: 4000 PSI 02/22/00

MIX ANALYSIS

MIX VOLUME, CU FT	27.00
COARSENESS (Q / (Q + I))	63.3
WORKABILITY	49.2
W - ADJUST	51.7
PERCENT MORTAR	66.1
TOTAL FINENESS MODULUS	4.51



MATERIALS CHARACTERISTICS

	STONE	SAND
DENSITY, SP G	2.45	2.63
% PASSING 3/8 " SIEVE	38.0	100.0
% PASSING # 8 SIEVE	2.0	100.0
FINENESS MODULUS	6.57	2.30
PERCENT OF AGGREGATE	51.8	48.2

MINERAL ADMIXTURE DENSITY, SP G 2.15

NO SEVERE EXPOSURE

Figure A-2. Site I and II concrete mix design (2 of 4).

MIX ID: 1900067 TREMIE PSI: 4000 PSI 02/22/00

FULL GRADATION ANALYSIS

SIEVE	STONE	SAND	PASTE	TOTAL	AGGR
1-1/2 "				100.0	100.0
1 "	100.0			100.0	100.0
3/4 "	99.0			99.7	99.5
1/2 "	72.0			90.3	85.5
3/8 "	38.0			78.6	67.9
# 4	4.0			66.8	50.2
# 8	2.0	100.0		66.1	49.2
# 16	-	95.0		63.8	45.8
# 30	-	54.0		50.7	26.0
# 50	-	19.0		39.4	9.2
# 100	-	2.0		34.0	1.0
# 200	-	-	100.0	33.3	-
# 325	-	-	95.5	31.9	-
Liquid	-	-	59.5	19.8	-

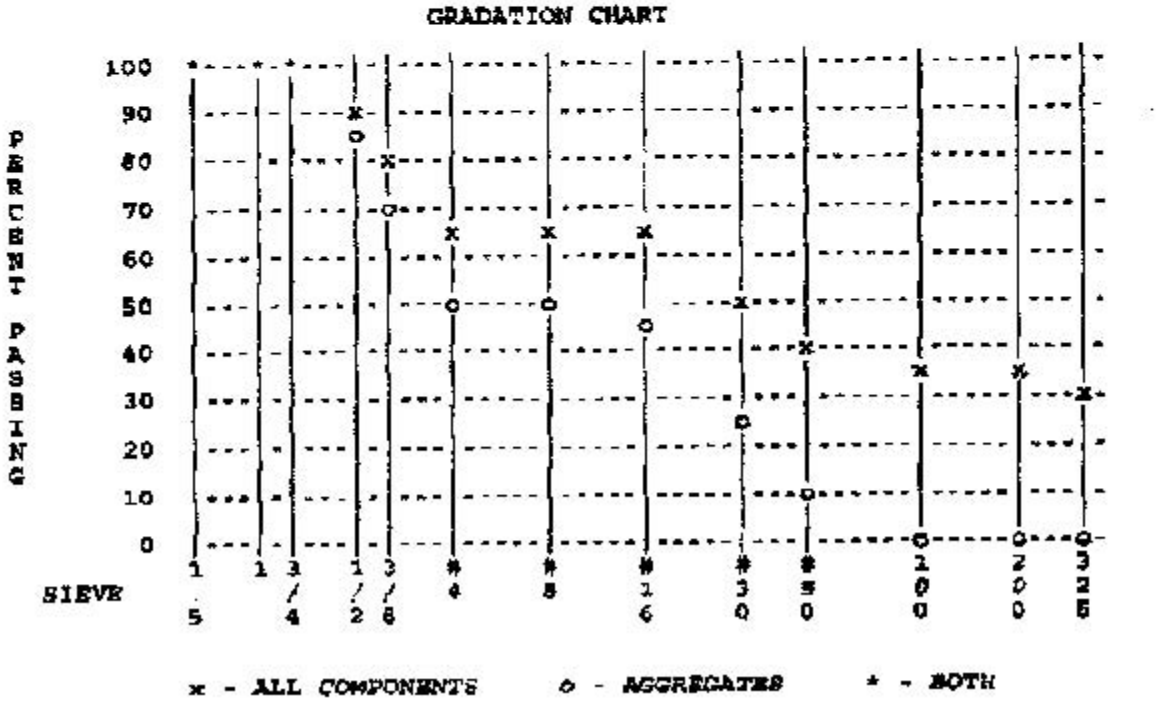


Figure A-3. Site I and II concrete mix design (3 of 4).

MIX ID: 1900067 TREMIE PSI: 4000 PSI 02/22/00

MATERIALS DISTRIBUTION

SIEVE	STONE	SAND	PASTE	TOTAL	AGGR
1-1/2 "				0.0	-
1 "	100.0			-	-
3/4 "	99.0			0.3	0.5
1/2 "	72.0			9.3	14.0
3/8 "	38.0			11.7	17.6
# 4	6.0			11.7	17.6
# 8	2.0	100.0		0.7	1.0
# 16	-	95.0		2.3	3.4
# 30	-	54.0		13.2	19.8
# 50	-	19.0		11.2	16.9
# 100	-	2.0		5.5	8.2
# 200	-	-	100.0	0.6	1.0
# 325	-	-	95.5	1.5	-
Liquid	-	-	59.5	12.0	-

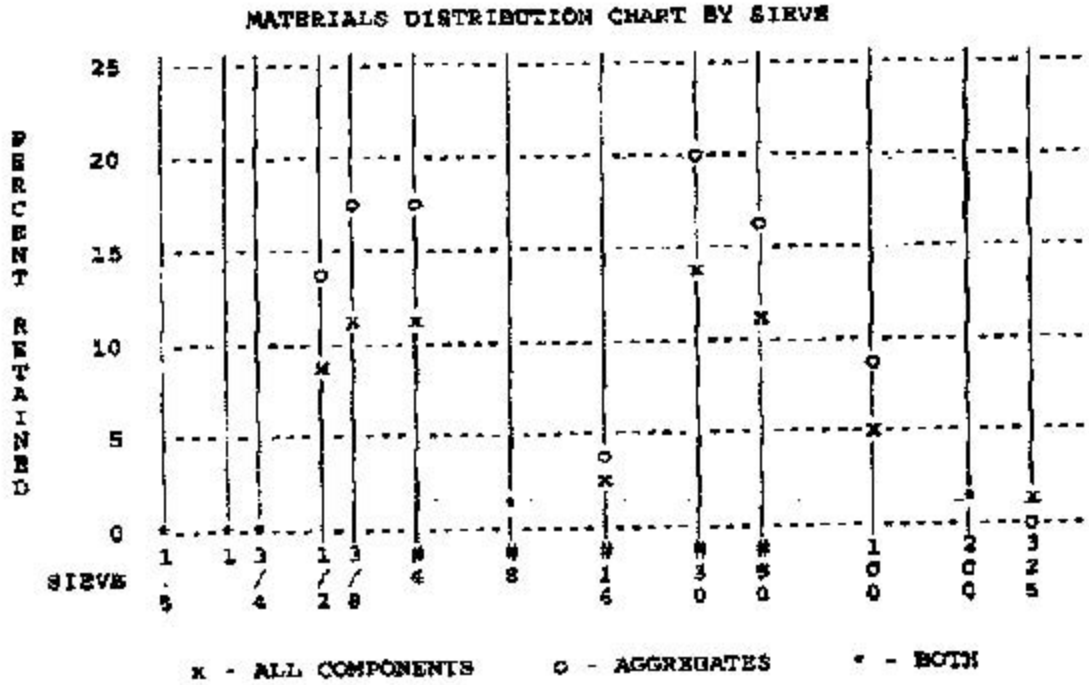


Figure A-4. Site I and II concrete mix design (4 of 4).

Appendix A. (continued)

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

FORM 675-030-12
MATERIALS - 10/94

Page 1 of Page 2

Project #: USF FP #: Post Grout Boring No.: B-1 Elevation: ____ Type Equipment: CME 75
Bridge #: N/A Station #: N/A Offset: N/A County: Pinellas D.O.T.#: 23867
ELEVATION BASED ON BENCH MARK ____ Township ____ South Range ____ East Section ____
Description: SPT for post grout research
Drilled By: Kauffman/Stovall Logged By: McLaughlin Water Table Elevation: ____ Type Hammer: AUTO
Date/Time Started: 5/6/00 7:30A Date/Time Completed: 5/6/00 10:35 Boring ____
Water Table Monitors: Station: N/A Offset: N/A Monitor Offset: N/A Water Table Depth: ____

(Metric/English) SAMPLE FROM	TO	SPT BLOWS	MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	REC. %	REMARKS
0.0		8	Brn Sand, med.				
		10	dense, dry				
	1.5	14		1	13½	75	
1.5							No sample taken due to
							repeated cave in of
	3.0			2			Rubble layer
3.0		6	dk brn Sand w/silt				STRATA CHANGE @ ≈ 3.0'
		4	w/ rock, clay, loose				
	4.5	3	wet (Fill)	3	18	100	
4.5		3	med brn fine sand				STRATA CHANGE @ ≈ 4.5'
		5	w/roots med. dense				
	6.0	8	wet	4	13½	75	
6.0		3	Gray Sand w/shell				STRATA CHANGE @ ≈ 6.0'
		1	very loose, wet				
	7.5	1		5	9	50	
7.5		2	SAME (loose)				
		2					
	9.0	3		6	6	33	
9.0		3	SAME				
		3					
	10.5	3		7	6	33	
10.5		3	Shell w/s sand				STRATA CHANGE @ ≈ 10.5'
		2	loose, wet				
	12.0	3		8	4½	25	
12.0		4	SAME				
		4					(50% Fluid loss 12.5 TO 13.5')
	13.5	6		9	13½	75	
13.5		2	SAME				Gray fine sand in tip
		2					of spoon
	15.0	8		10	13½	75	regain 100% Fluid return @ 14'

Figure A-5. Site I SPT boring log B-1 (1 of 2).

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

FORM 675-030-11
MATERIALS - 10/98

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Project #: USF FP #: Post Grout Boring #: B-1 Station #: N/A Offset: N/A

(Metric)/(English) SAMPLE FROM	TO	SPT BLOWS			MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	REC. %	REMARKS
15.0		5			Gray fine sand				STRATA CHANGE in Tip of
			6		med. dense, wet				Sample #10
	16.5			4		11	18	100	
16.5		3			Gray brn silty				STRATA CHANGE @ 16.5'
			4		sand, loose, wet				
	18.0			4		12	18	100	
									Terminated @ 18.0'

Figure A-6. Site I SPT boring log B-1 (2 of 2).

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

FORM 675-030-12
MATERIALS - 10/90

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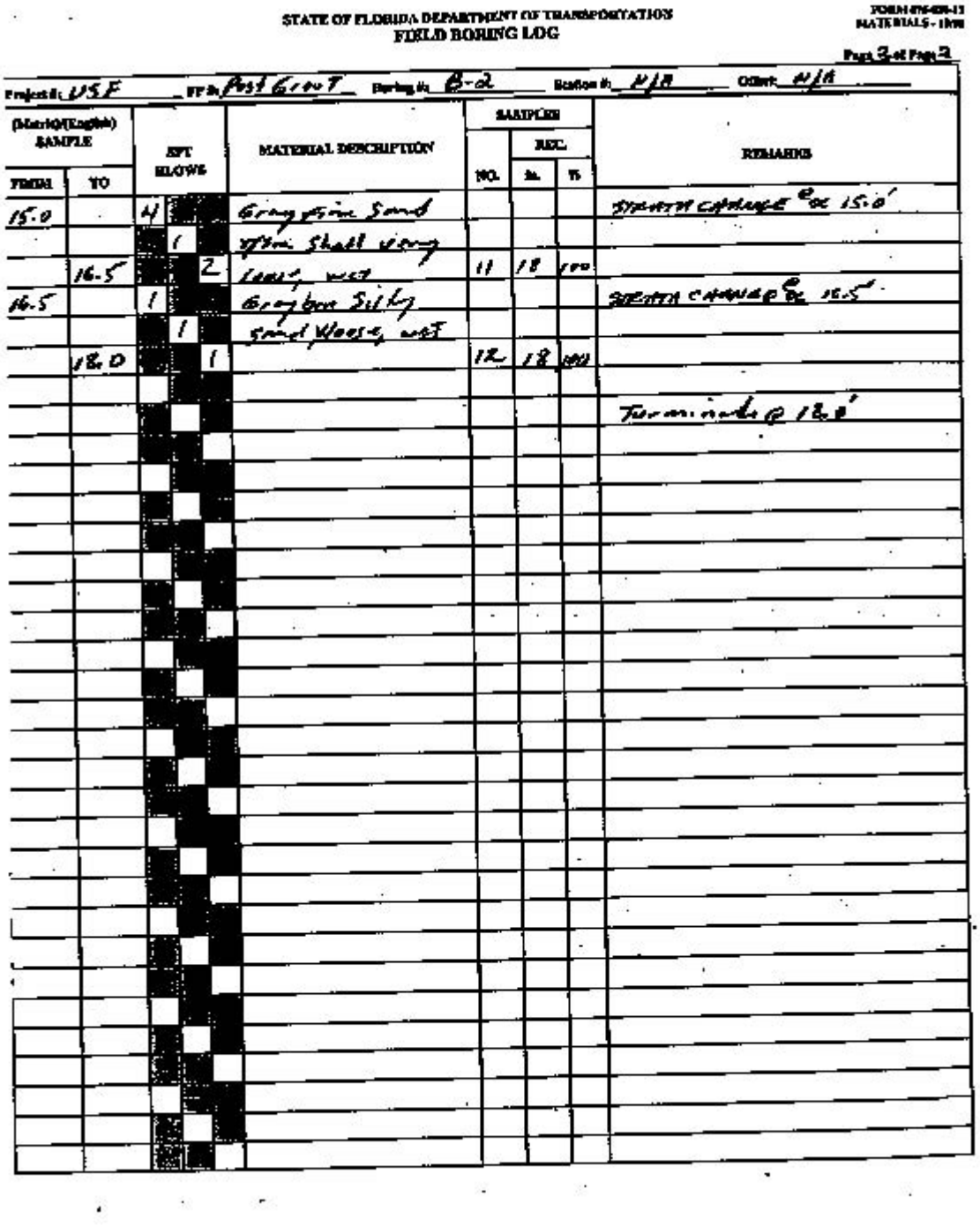
Project #: USF FP #: Post Grout Boring #: B-2 Elevation: ____ Type Equipment: CME 75
Bridge #: N/A Station #: N/A Offset: N/A County: Pinellas D.O.T.A.: 23867
ELEVATION BASED ON BENCH MARK ____ Township ____ South Range ____ East Section ____
Description: SPT for post grout research
Drilled By: [illegible] Logged By: [illegible] Water Table Elevation: ____ Type Hammer: AUTO
Date/Time Started: 5/1/00 [illegible] Date/Time Completed: 5/1/00 2:00 Boring [illegible]
Water Table Monitors: Station: N/A Offset: N/A Monitor OSE: N/A Water Table Depth: ____

(Metric)(English) SAMPLE FROM	TO	SPT BLOWS	MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	%	REMARKS
0.0		3	drk brn sand w/silt				
		5	sm rock, med dense				
	1.5	12	dry (fill)	1	13½	75	
1.5		10	SAME				
		8					
	3.0	8		2	18	100	
3.0		2	very dark gray				STRATA CHANGE @ 3.0'
		4	sand, loose, wet				
	4.5	5		3	13½	75	
4.5		1	med brn fine sand				STRATA CHANGE @ 4.5
		3	w/roots, med				
	6.0	7	dense, wet	4	13½	75	
6.0		5	SAME (no roots)				
		4	Loose				
	7.5	2		5	13½	75	
7.5		1	gray sand/shell				STRATA CHANGE @ 7.5'
		2	loose, wet				
	9.0	2		6	6	33	
9.0		3	SAME				
		3					
	10.5	3		7	6	33	
10.5		3	SAME				
		2					
	12.0	2		8	6	3	
12.0		3	shell w/ sand				STRATA CHANGE @ 12.0'
		2	loose, wet				
	13.5	3		9	9	50	
13.5		3	gray sand & shell				strata change @ 13.5'
		3	loose, wet				
	15.0	4		10	6	33	

Figure A-7. Site I SPT boring log B-2 (1 of 2).



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

Page 2 of Page 2

Project Id: USF FP #: Post Grout Boring #: B-2 Station #: N/A Offset: N/A

(Metric)(English) SAMPLE FROM	TO	SPT BLOWS	MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	REC. %	REMARKS
15.0		4	Gray fine Sand				STRATA CHANGE @ 15.0'
		1	w/ Shell Frag				
	16.5	2	Loose, wet	11	18	100	
16.5		1	Gray/tan Silty				STRATA CHANGE @ 16.5'
		1	Sand Loose, wet				
	18.0	1		12	18	100	
							Terminated @ 18.0'

Figure A-8. Site I SPT boring log B-2 (2 of 2).

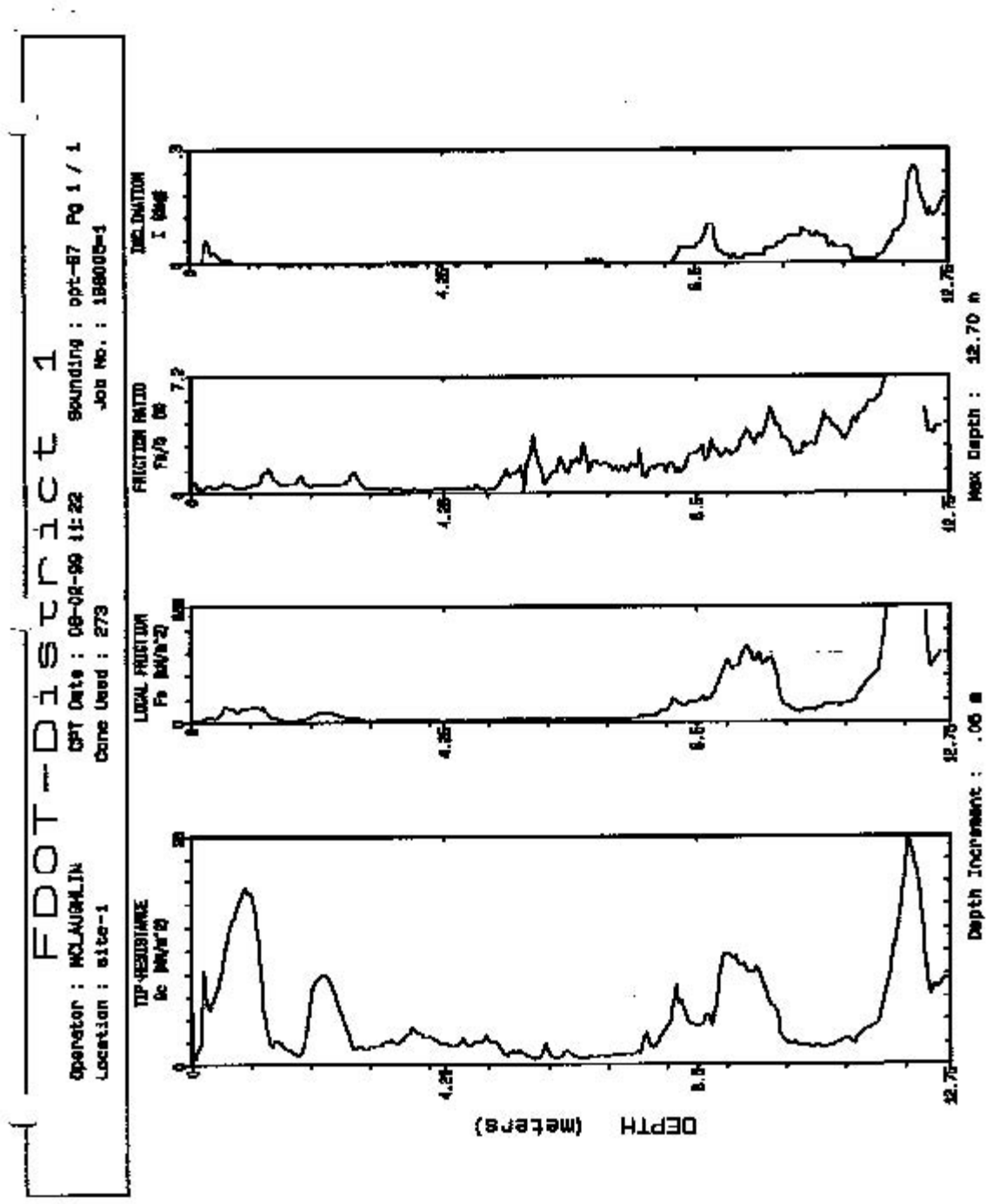


Figure A-9. Site I CPT sounding CPT-67.

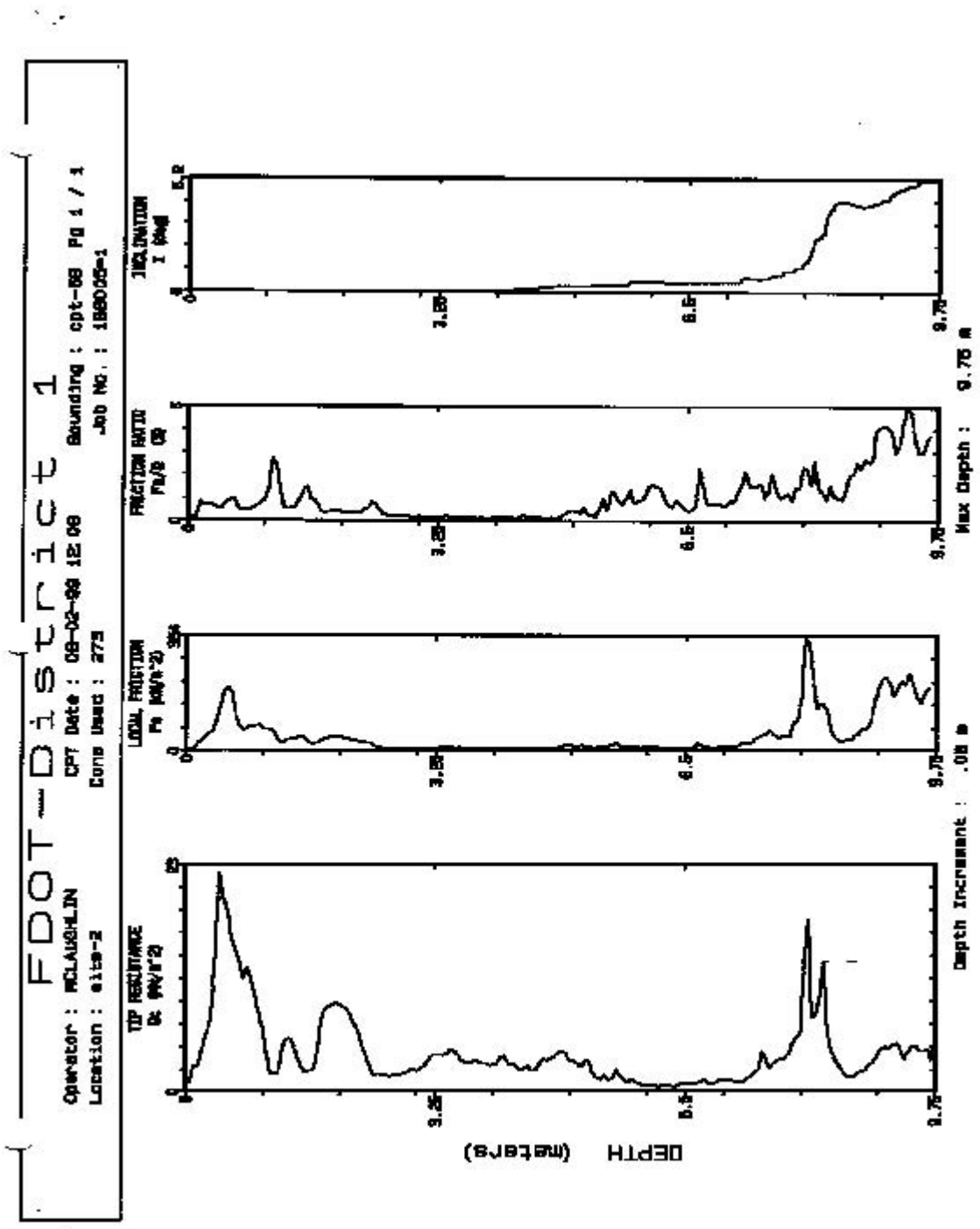


Figure A-10. Site I CPT sounding CPT-68.

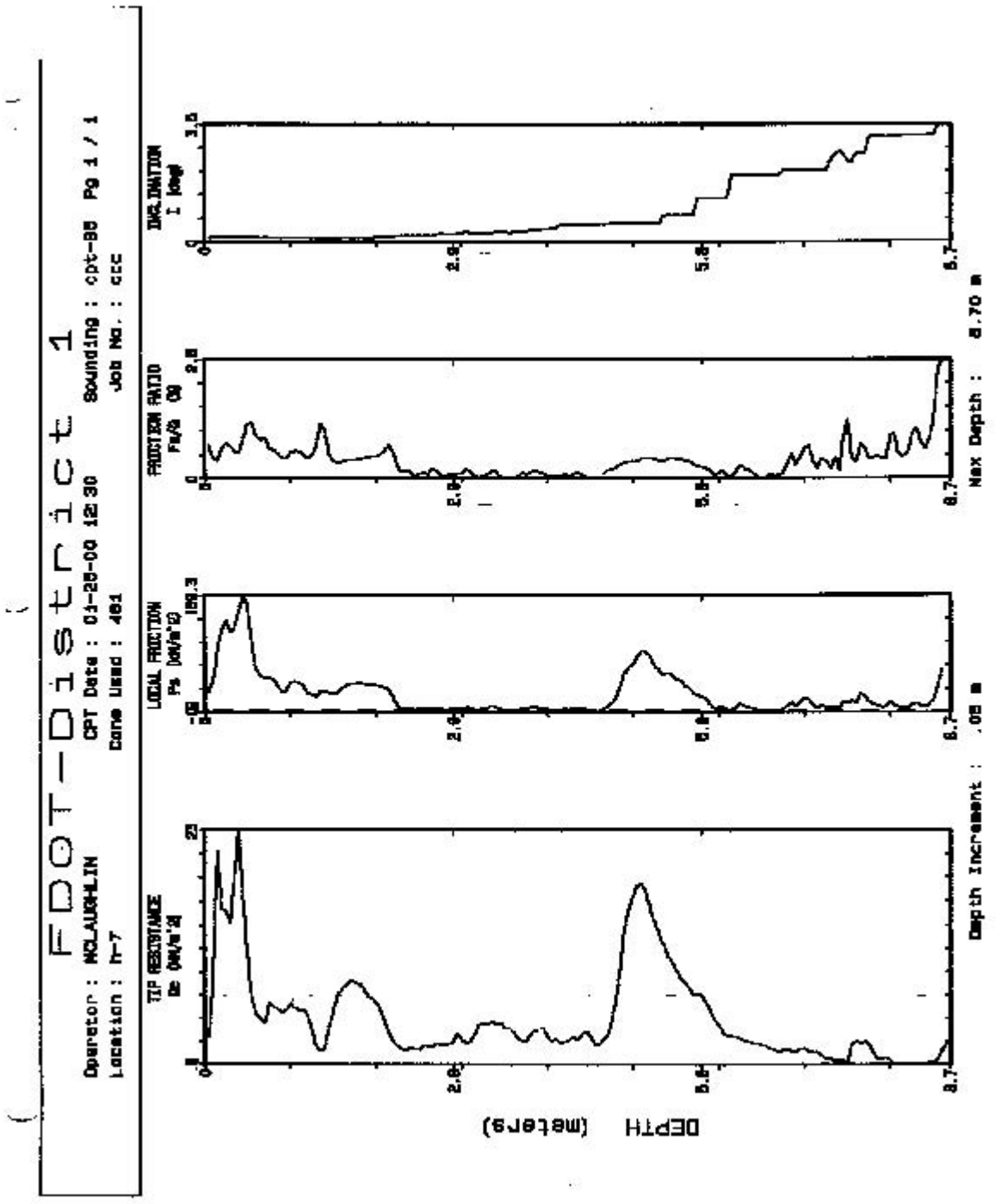


Figure A-11. Site I CPT sounding Control Shaft location.

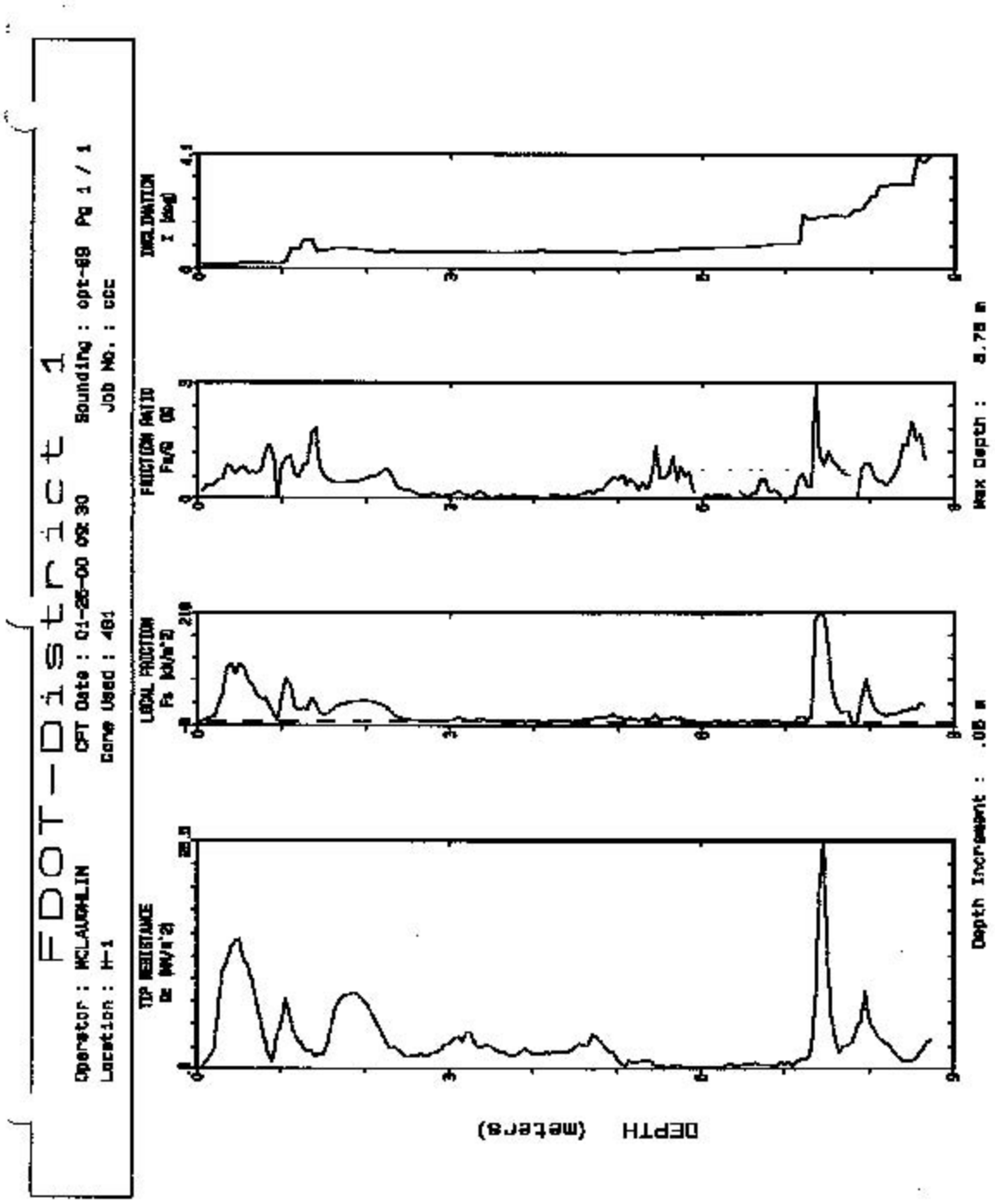


Figure A-12. Site I CPT sounding Flat-Jack 1 location.

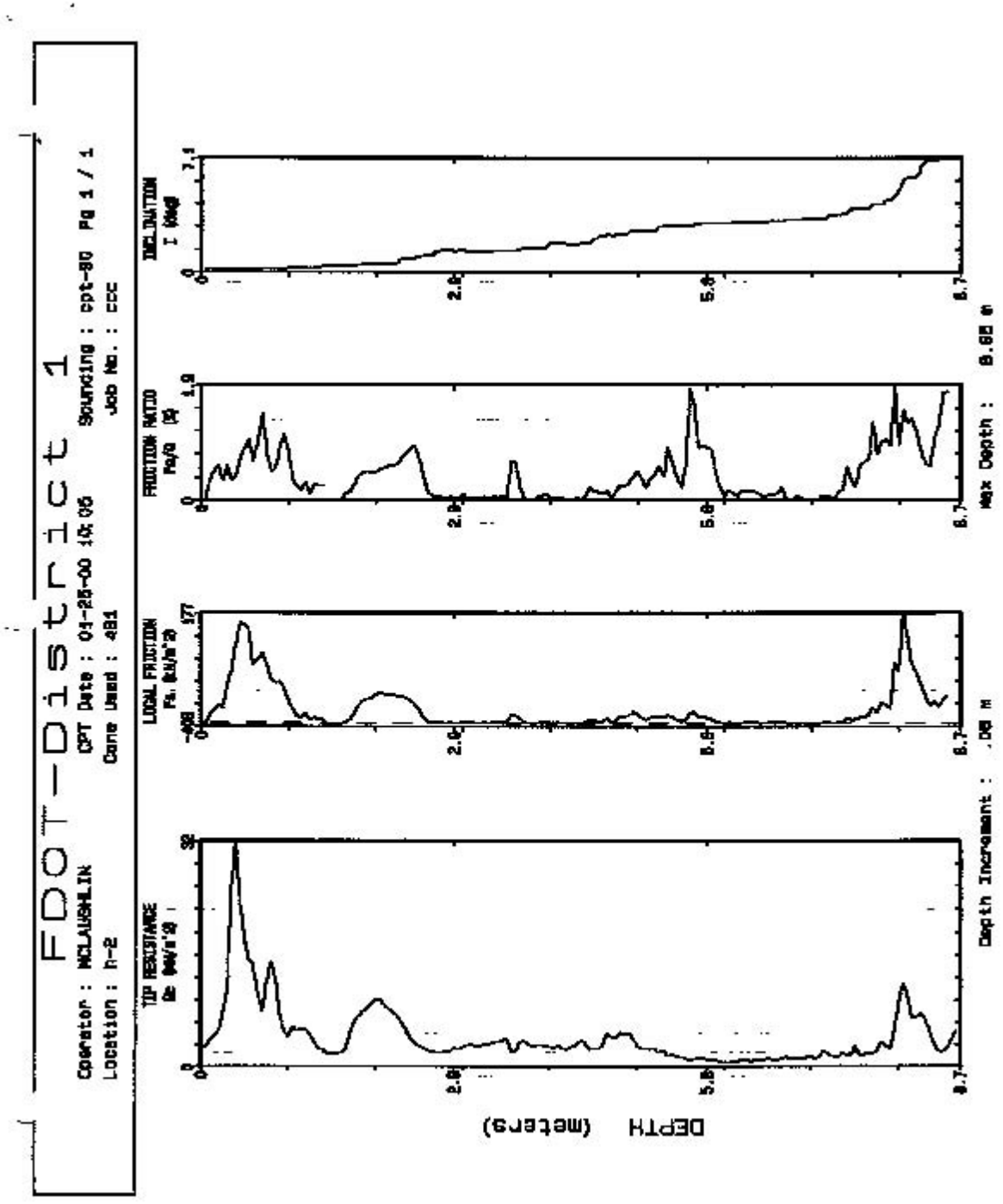


Figure A-13. Site I CPT sounding Flat-Jack 2 location.

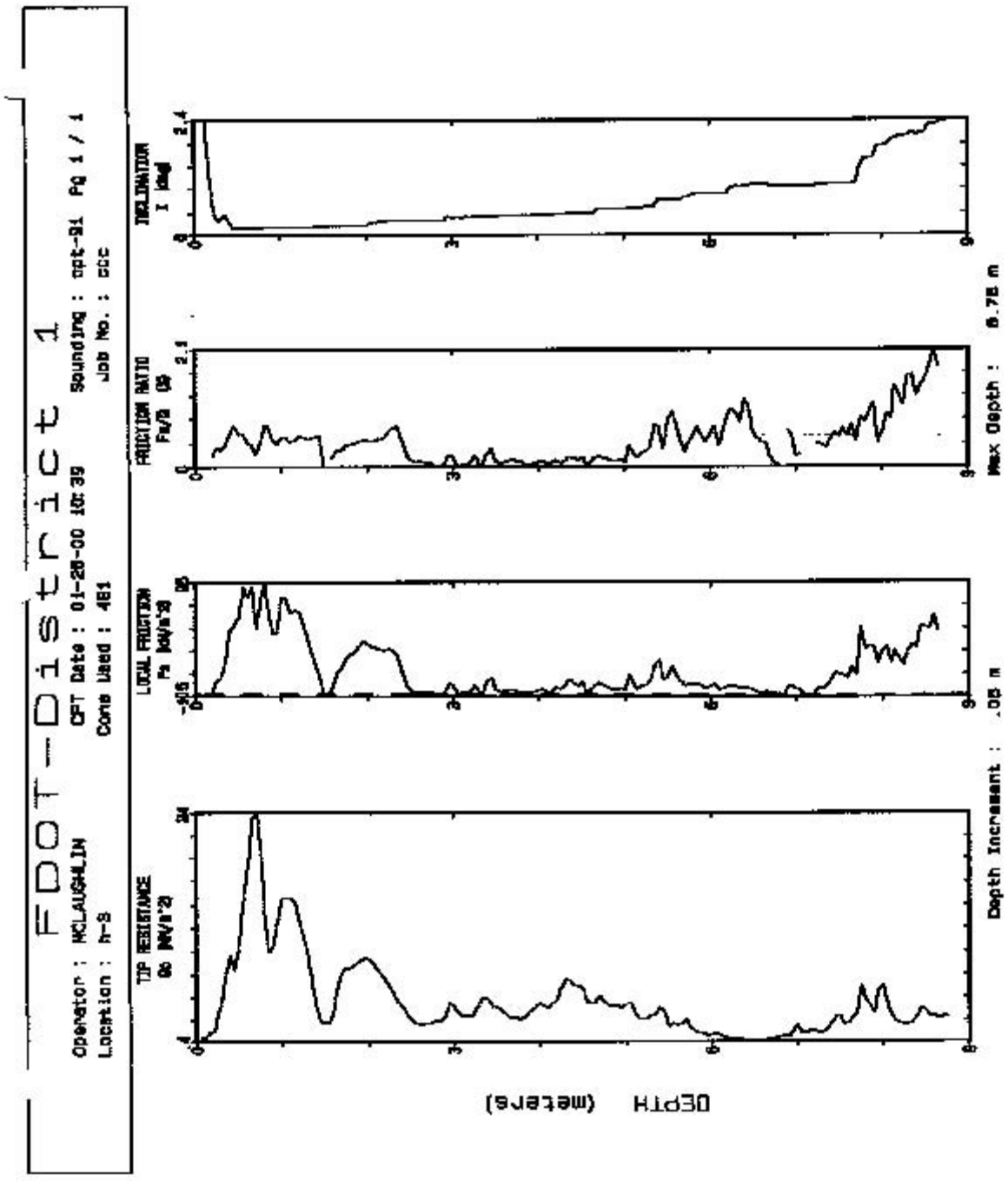


Figure A-14. Site I CPT sounding Sleeve-Port 1 location.

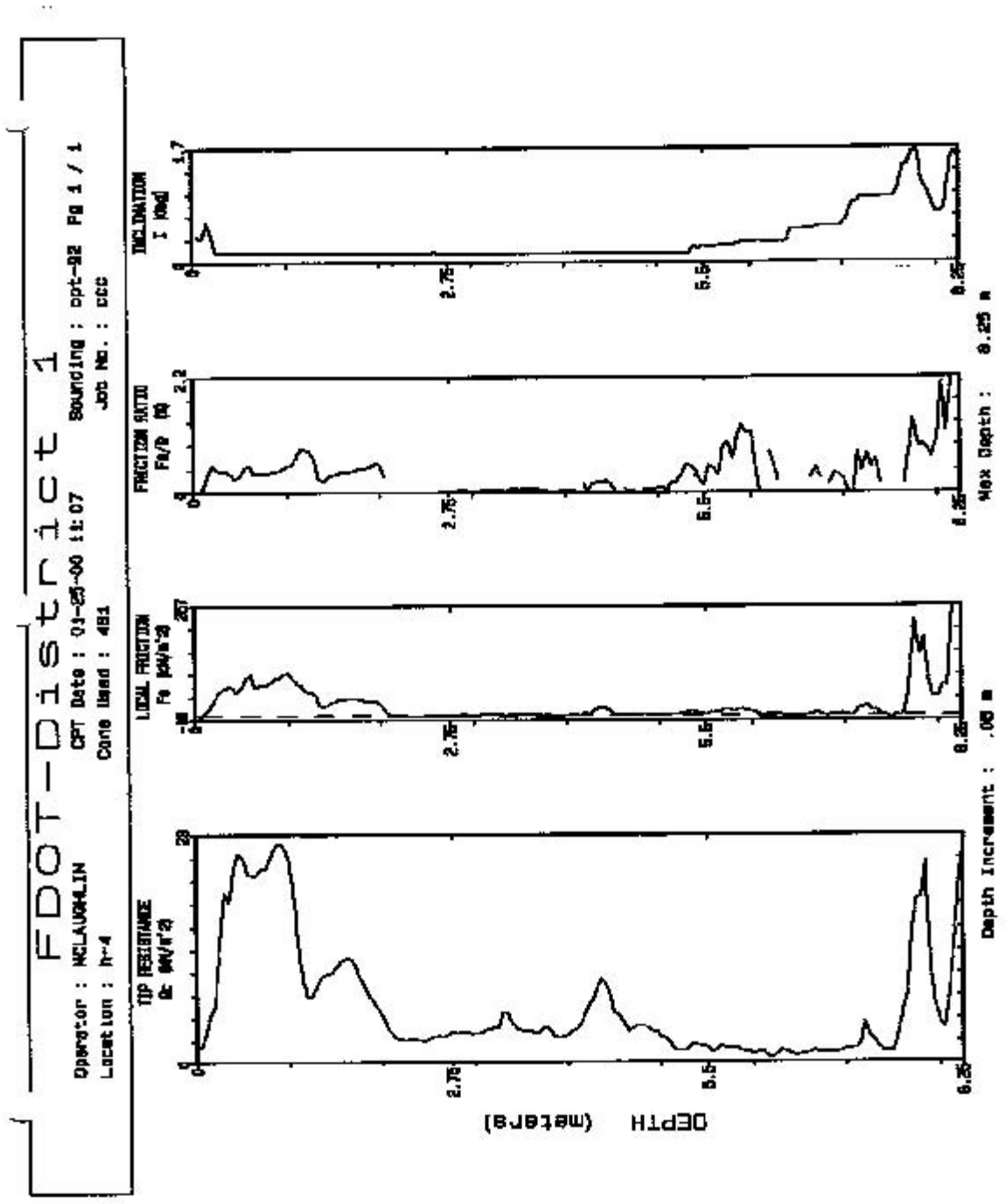


Figure A-15. Site I CPT sounding Sleeve-Port 2 location.

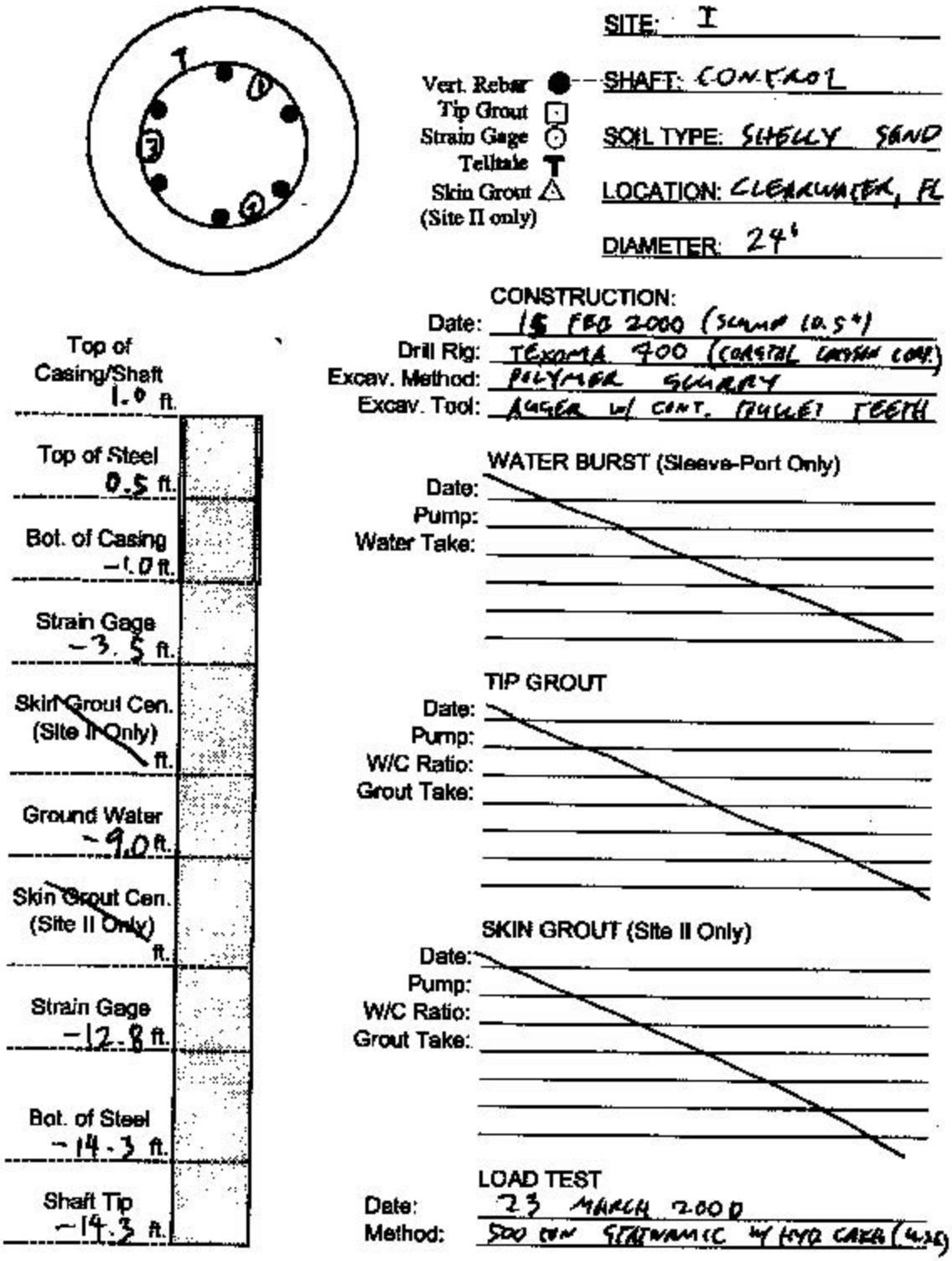


Figure A-16. Site I Control Shaft as-built.

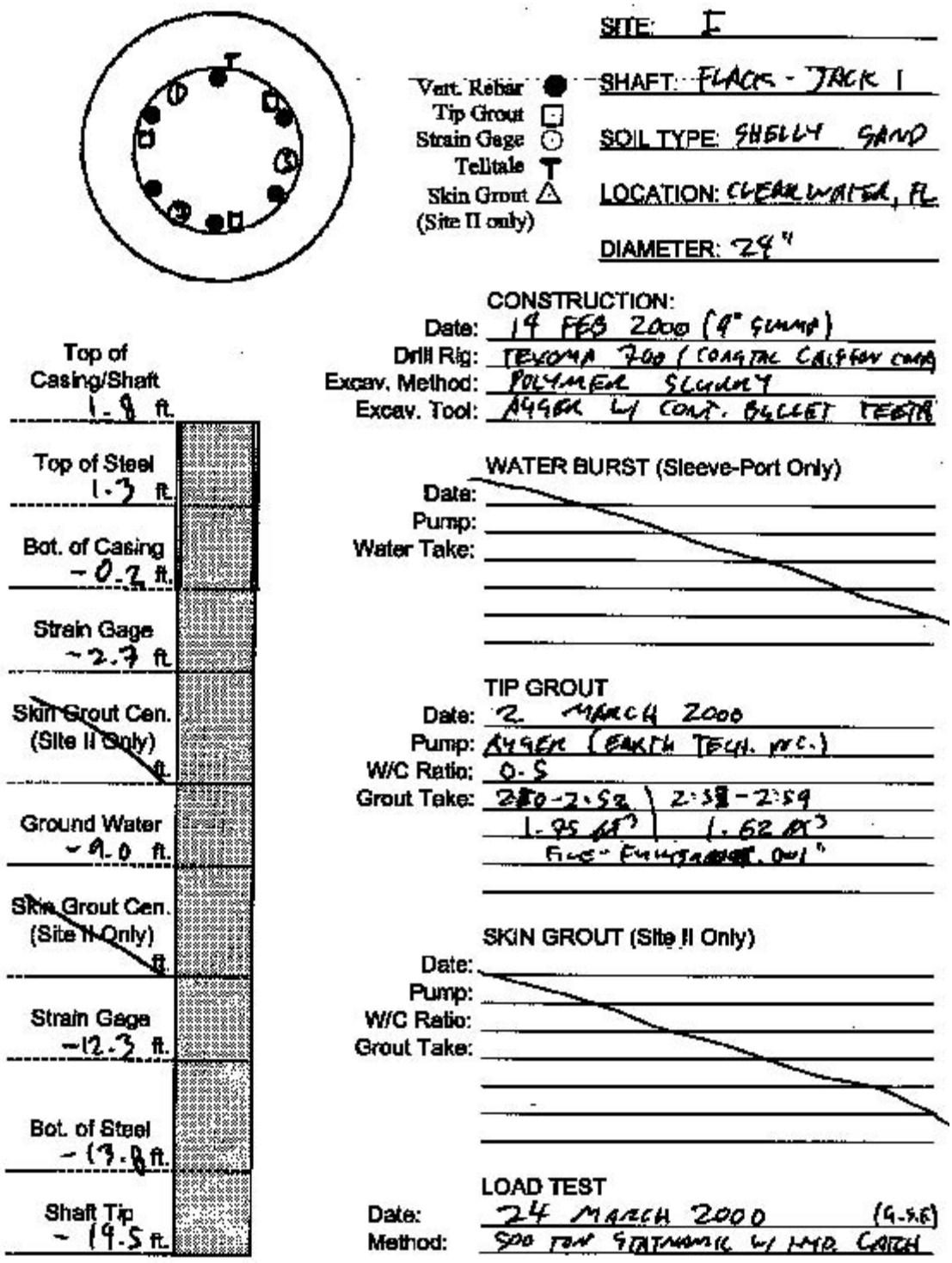


Figure A-17. Site I Flat-Jack 1 as-built.

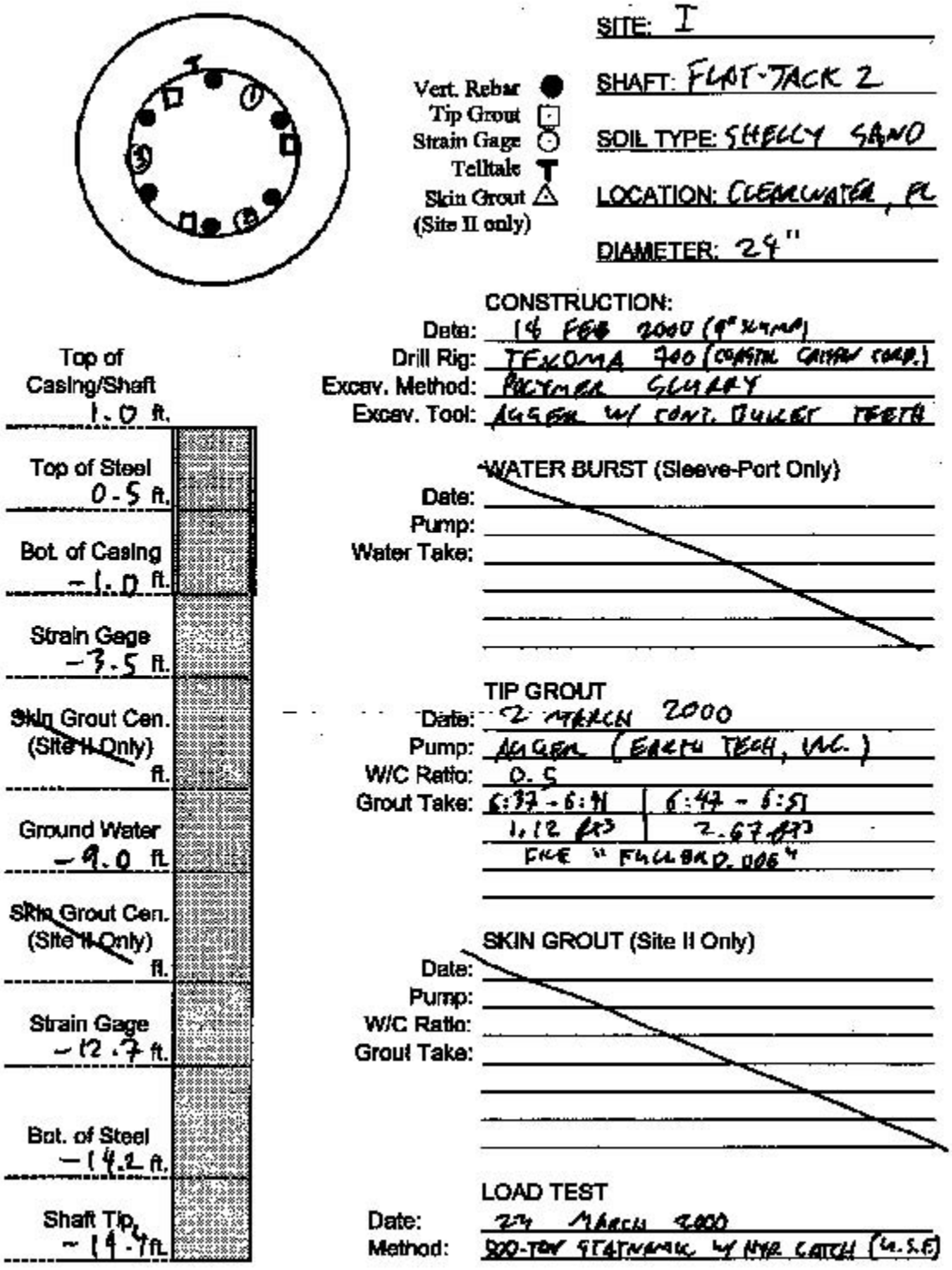
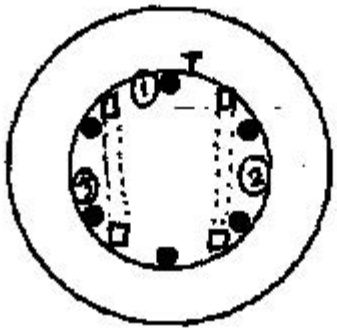


Figure A-18. Site I Flat-Jack 2 as-built.

Appendix A. (continued)



Vert. Rebar ●
Tip Grout ⊡
Strain Gage ⊙
Telltale T
Skin Grout △
(Site II only)

SITE: I

SHAFT: SLEEVE - PORT 1

SOIL TYPE: SHELLY SAND

LOCATION: CLEARWATER, FL

DIAMETER: 24"

CONSTRUCTION:

Date: 15 FEB 2000 (8.5" Slump)

Drill Rig: TEXOMA 700 (COASTAL CAISSON CORP.)

Excav. Method: POLYMER SLURRY

Excav. Tool: AUGER w/ CONT. BULLET TEETH

Top of Casing/Shaft 1.0 ft.

Top of Steel 0.8 ft.

Bot. of Casing −1.0 ft.

Strain Gage −3.2 ft.

Skin Grout Cen. (Site II Only) ft.

Ground Water −9.0 ft.

Skin Grout Cen. (Site II Only) ft.

Strain Gage −12.2 ft.

Bot. of Steel −13.7 ft.

Shaft Tip −14.3 ft.

WATER BURST (Sleeve-Port Only)

Date: 18 FEB 2000

Pump: AUGER (BEARD TECH CORP.)

Water Take: ENSILEY BARGE W/ AUGER PUMP @ 200 PSI

TIP GROUT

Date: 2 MARCH 2000

Pump: AUGER (BEARD TECH INC.)

W/C Ratio: 0.5

Grout Take:	5:42–5:43	5:45–5:50	5:52–5:56	5:58–6:09
	2.1 ft³	1.57 ft³	1.62 ft³	0.57 ft³
	NORTH SIDE	NORTH	SOUTH	SOUTH

FILE "FULLBRD.004"

SKIN GROUT (Site II Only)

Date:

Pump:

W/C Ratio:

Grout Take:

LOAD TEST

Date: 29 MARCH 2000

Method: SOD-TOP STATNAMIC W/ MAT CATCH (6.5 F)

Figure A-19. Site I Sleeve-Port 1 as-built.

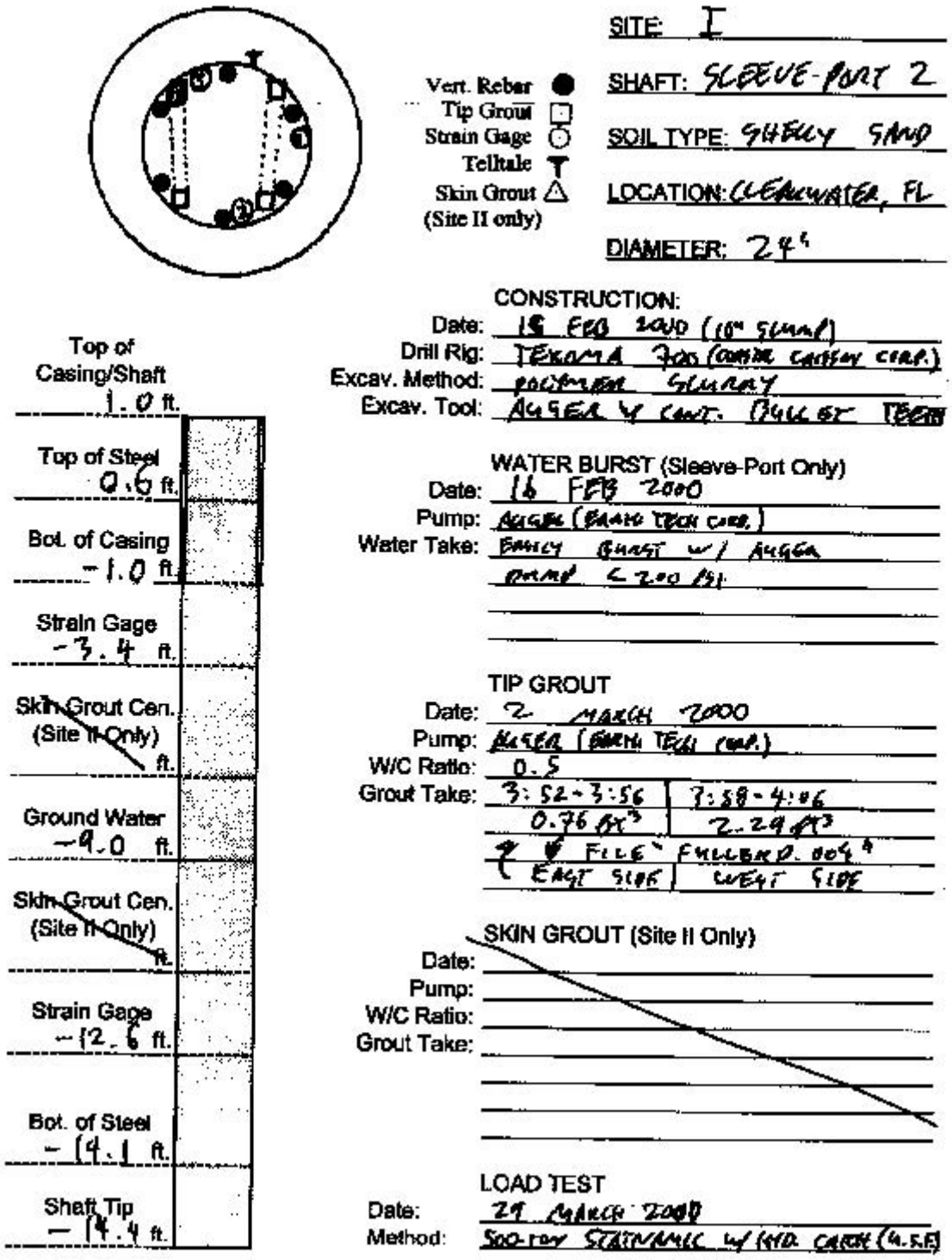


Figure A-20. Site I Sleeve-Port 2 as-built.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

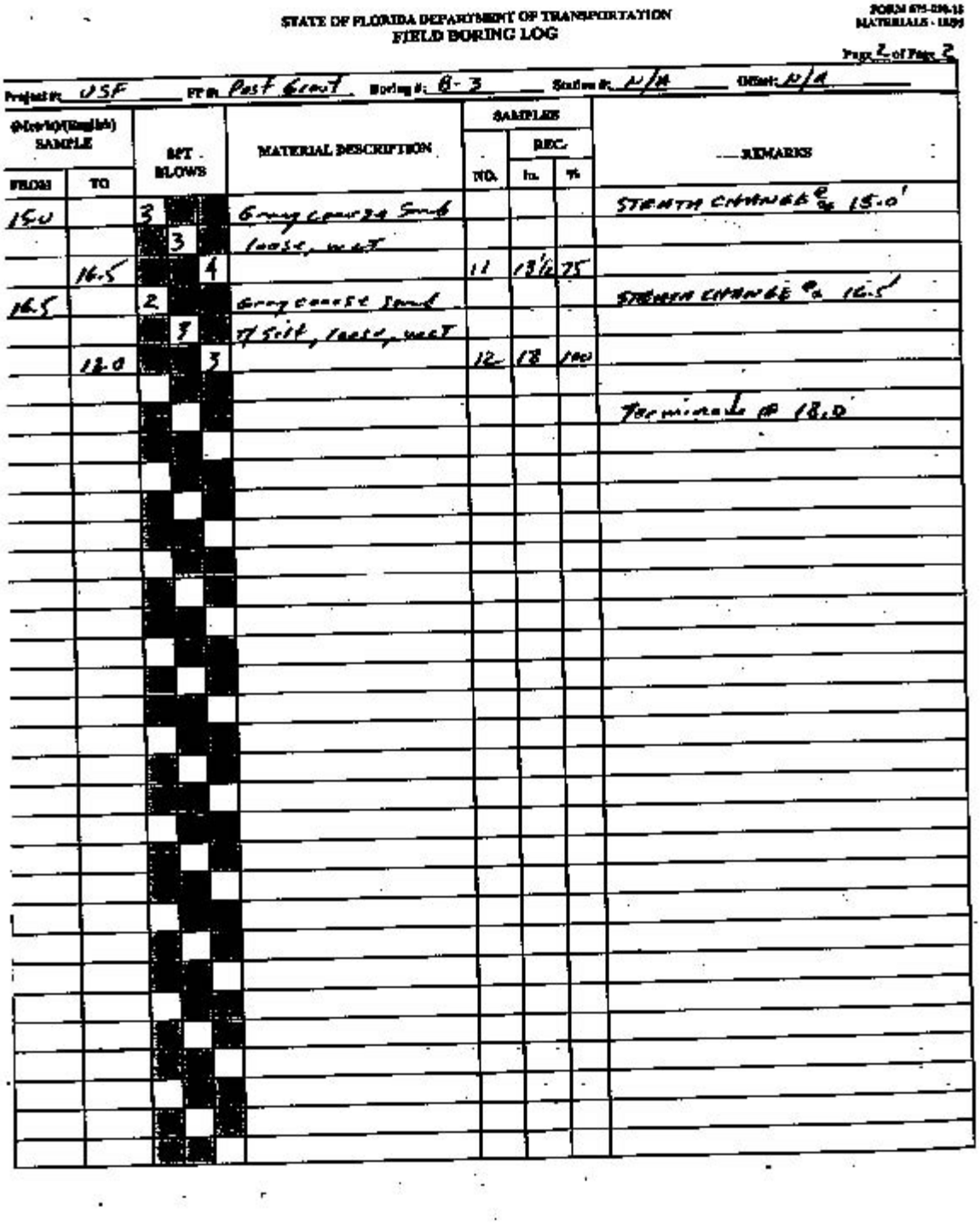
FORM 675-010-13
MATERIALS - 10/95

Page 1 of Pages 2

Project #: USF — FP #: Post Grout — Boring #: B-3 — Elevation: — Type Equipment: CME 75
Bridge #: N/A — Station #: N/A — Offset: N/A — County: Pinellas — D.O.T.#: 23867
ELEVATION BASED ON BENCH MARK: — Township: — South — Range: — East Section:
Description: SPT for Post Grout research
Drilled By: Kauffman/Sturgill — Logged By: McLaughlin — Water Table Elevation: — Type Hammer: Auto
Date/Time Started: 6/7/00 PM — Date/Time Completed: 6/7/00 3:45 PM — Boring:
Water Table Monitor Station: N/A — Offset: N/A — Monitor GSE: N/A — Water Table Depth:

(Metric)/(English) Sample From	To	SPT Blows	Material Description	Samples No.	Rec. In.	Rec. %	Remarks
0.0	1.5			1			no ground sample taken due to rocks/trash
1.5	3.0	8, 5, 7	Dk brn Sand w/Silt, rock mix, dense, dry (Fill)	2	13½	75	
3.0	4.5	5, 8, 10	brn Sand w/roots, med dense, wet	3	13½	75	STRATA CHANGE @ 3.0'
4.5	6.0	3, 3, 4	med brn Sand, loose, wet	4	13½	75	STRATA CHANGE @ 4.5'
6.0	7.5	2, 2, 2	Dk brn fine Sand, loose, wet	5	18	100	STRATA CHANGE @ 6.0'
7.5	9.0	1, 1, 2	SAME	6	9	50	
9.0	10.5	1, 1, 1	med. brn Sand, very loose, wet	7	13½	75	STRATA CHANGE @ 9.0' (1st blow pushed tube 12")
10.5	12.0	1, 0, 1	SAME	8	9	50	
12.0	13.5	WH, WH, 1	SAME	9	18	100	(weight of hammer pushed tube 12")
13.5	15.0	0, 2, 3	med brn Sand T/Silt, loose, wet	10	13½	75	STRATA CHANGE @ 13.5'

Figure A-21. Site II SPT boring log B-3 (1 of 2).



STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

FORM 675-030-15
MATERIALS - 10/95

Page 2 of Page 2

Project #: USF FT #: Post Grout Boring #: B-3 Station #: N/A Offset: N/A

SAMPLE FROM	SAMPLE TO	SPT BLOWS	MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	REC. %	REMARKS
15.0		3 3 4	Gray coarse Sand loose, wet				STRATA CHANGE @ 15.0'
	16.5			11	18½	75	
16.5		2 3 3	Gray coarse Sand w/ silt, loose, wet				STRATA CHANGE @ 16.5'
	18.0			12	18	100	
							Terminated @ 18.0'

Figure A-22. Site II SPT boring log B-3 (2 of 2).

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

FORM 675-030-15
MATERIALS - 1995

Page 1 of Page 2

Project #: USF — FP #: Post Grout — Boring #: B-4 — Elevation: — Type Equipment: CME 75
Bridge #: N/A — Station #: N/A — Offset: N/A — County: Pinellas — D.O.T. #: 23867
ELEVATION BASED ON BENCH MARK — Township — South — Range — East Section
Description: SPT for post grout research
Drilled By: [illegible] / [illegible] — Logged By: McLaughlin — Water Table Elevation: — Type Hammer:
Date/Time Started: 5/8/00 — Date/Time Completed: 5/8/00 — Boring: [illegible]
Water Table Elevation Station: N/A — Offset: N/A — Monitor GSE: N/A — Water Table Depth:

(Metric)(English) SAMPLE FROM	TO	SPT BLOWS	MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	REC. %	REMARKS
0.0	1.5			1			no ground sample taken due to rocks & trash
1.5	3.0	5, 5, 5	Drk brn Sand w/silt & rock med dense, moist	2	18	100	
3.0	4.5	4, 7, 11	NO RECOVERY	3	0	0	
4.5	6.0	7, 5, 6	Brn Sand w/rocks med dense, wet	4	4½	25	STRATA CHANGE @ 4.5'
6.0	7.5	2, 1, 2	SAME (very loose)	5	13½	75	
7.5	9.0	4, 3, 1	NO RECOVERY	6	0	0	
9.0	10.5	WH, WH, 1	med brn Sand very loose, wet	7	18	100	(weight of hammer pushed tube 12")
10.5	12.0	WH, 1, 1	SAME	8	18	100	(weight of hammer pushed tube 6")
12.0	13.5	WH, WH, 2	Gray Sand w/silt very loose, wet	9	13½	75	(weight of hammer pushed tube 12") STRATA CHANGE @ 12.5'
13.5	15.0	WR, 2, 3	Gray Sand, loose, wet	10	13½	75	in spoon (weight of rod pushed spoon 6") STRATA CHANGE @ 13.5'

Figure A-23. Site II SPT boring log B-4 (1 of 2).

FORM [illegible]
MATERIALS - [illegible]

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION
FIELD BORING LOG

Page 2 of Page 2

Project #: USF   TT #: Post Grout   Boring #: B-4   Station #: N/A   Offset: N/A

(Metric)/(English) SAMPLE FROM	TO	SPT BLOWS			MATERIAL DESCRIPTION	SAMPLES NO.	REC. in.	REC. %	REMARKS
15.0		1			Gray Sand w/ Seams				STRATA CHANGE @ 15.0'
			2		of dk brn Silty				
	16.5			2	Sand, loose, wet	11	13½	75	
16.5		3			SAME (very loose)				
			1						
	18.0			1		12	9	50	
									Terminate @ 18.0'

Figure A-24. Site II SPT boring log B-4 (2 of 2).

Appendix A. (continued)

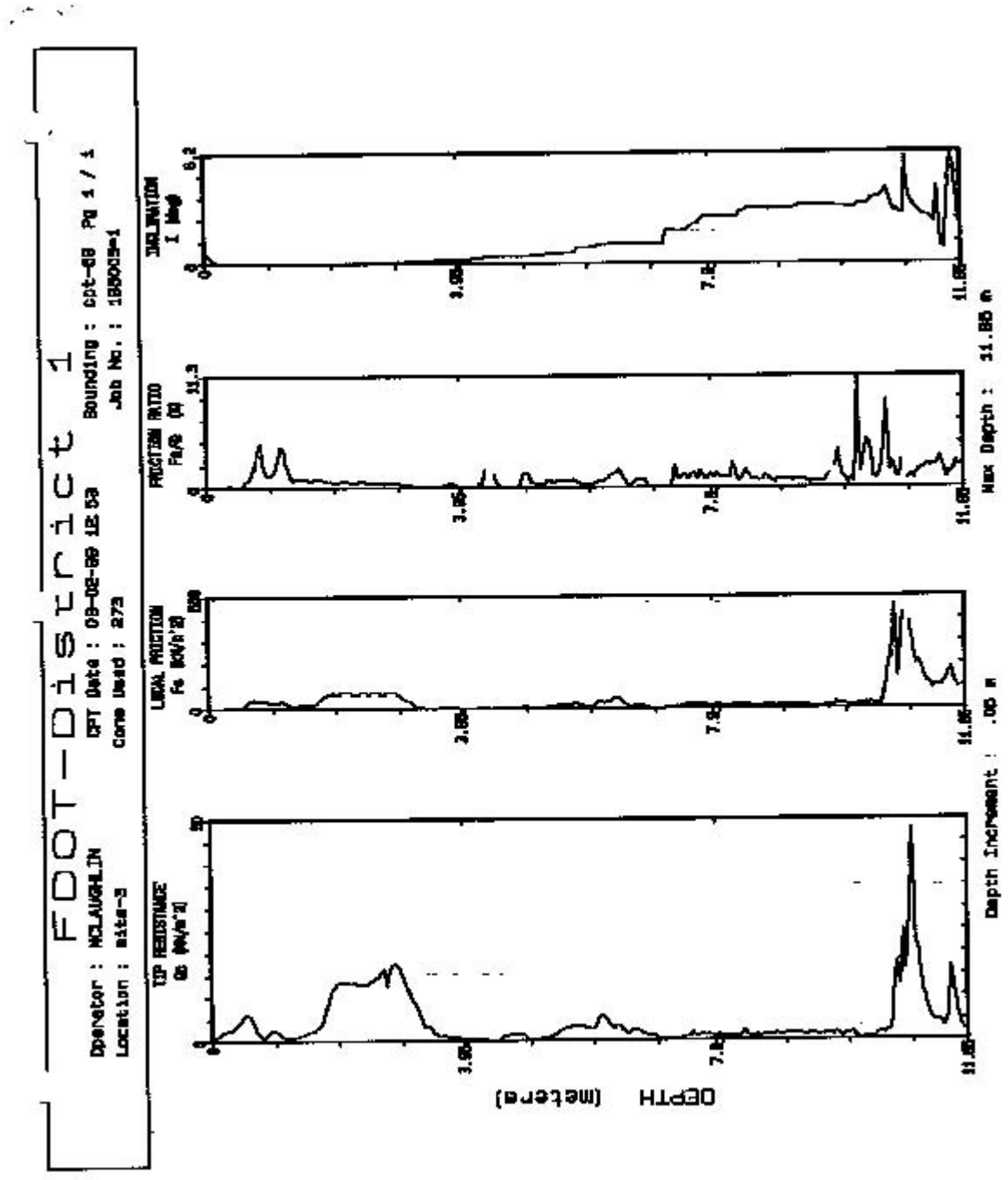


Figure A-25. Site II CPT sounding CPT-69.

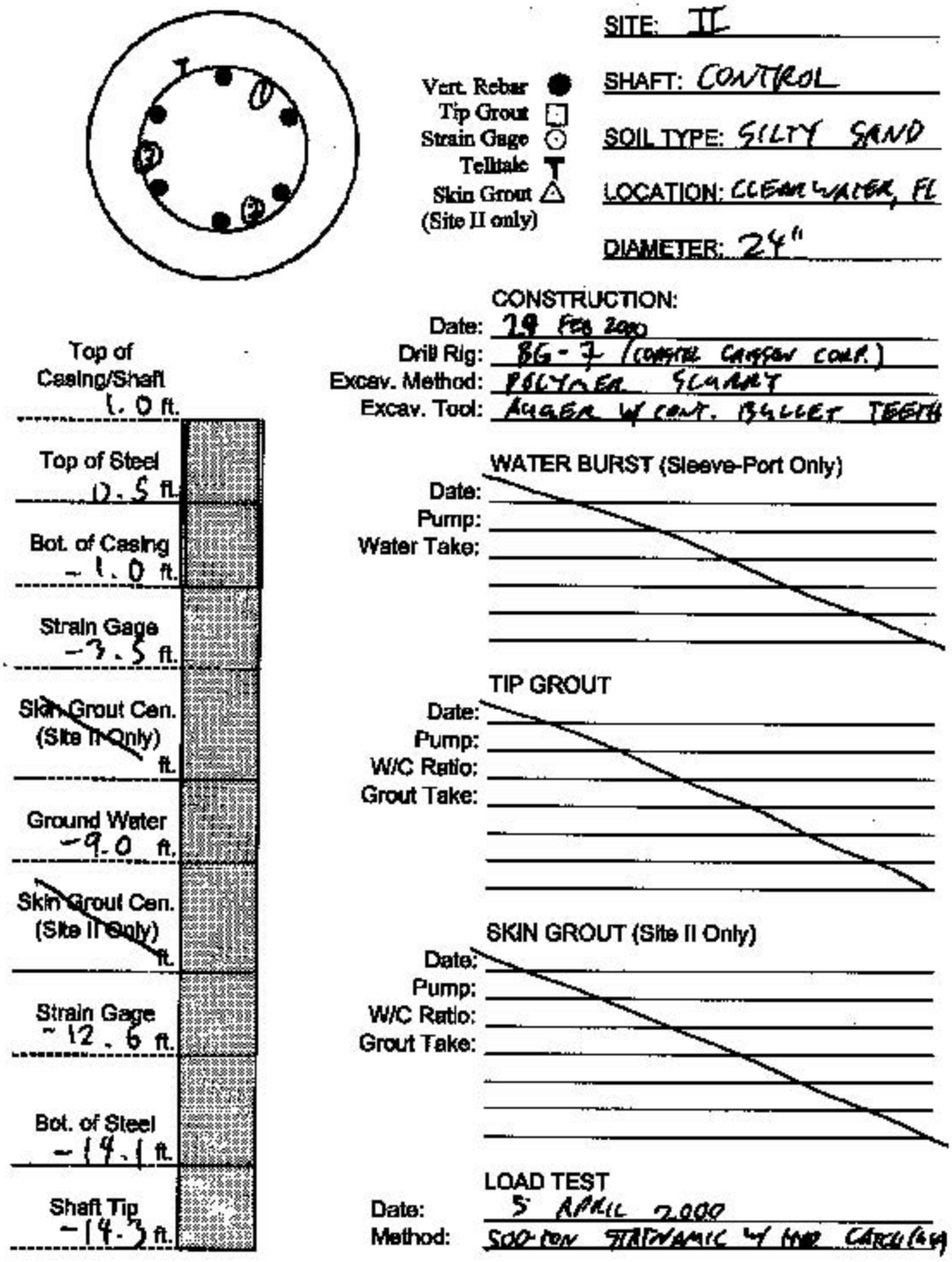
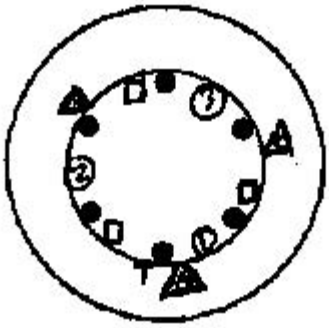


Figure A-26. Site II Control Shaft as-built.

Appendix A. (continued)



Vert. Rebar ●
Tip Grout ⊡
Strain Gage ⊙
Telltale T
Skin Grout △
(Site II only)

SITE: II
SHAFT: FLACK-JACK
SOIL TYPE: SILTY SAND
LOCATION: CLEARWATER, FL
DIAMETER: 24"

Top of Casing/Shaft 1.0 ft.
Top of Steel 0.6 ft.
Bot. of Casing -1.0 ft.
Strain Gage -3.4 ft.
Skin Grout Cen. (Site II Only) -5.2 & -7.1 ft.
Ground Water -9.0 ft.
Skin Grout Cen. (Site II Only) -9.4 & -11.3 ft.
Strain Gage -12.6 ft.
Bot. of Steel -19.1 ft.
Shaft Tip -19.5 ft.

CONSTRUCTION:
Date: 29 FEB 2000
Drill Rig: BG-7 (COASTAL CAISSON CORP.)
Excav. Method: POLYMER SLURRY
Excav. Tool: AUGER W/ CONT. BULLET TEETH

WATER BURST (Sleeve-Port Only)
Date: 2 MARCH 2000 (SKIN S.P. 2)
Pump: AUGER (EARTH TECH) + PRESS. WASH (C.C.C.)
Water Take: W/ SKIN GROUT SLEEVE-PORTS
COULD NOT TF BURST W/ AUGER
@ 200 PSI & PRESSURE WASHER USED
UP TO 1100 PSI (ALL BURST.)

TIP GROUT
Date: 22 MARCH 2000
Pump: AUGER (EARTH TECH. INC.)
W/C Ratio: 0.5
Grout Take: 3:04-3:08 (4.1 ft³) | 3:11-3:22 (3.55 ft³)

SKIN GROUT (Site II Only)
Date: 14 MARCH 2000
Pump: AUGER (EARTH TECH INC.)
W/C Ratio: 0.5

12:05	12:15	12:20	12:35	12:45	12:50
C-2	A-2	B-2	C-1	A-1	B-1
.1 CF	1.9 CF	0.7 CF	1.2 CF	1.6 CF	0

LOAD TEST
Date: 7 APRIL 2000
Method: 500 TON STATNAMIC W/ HYD. CAPACITY

Figure A-27. Site II Flat-Jack as-built.

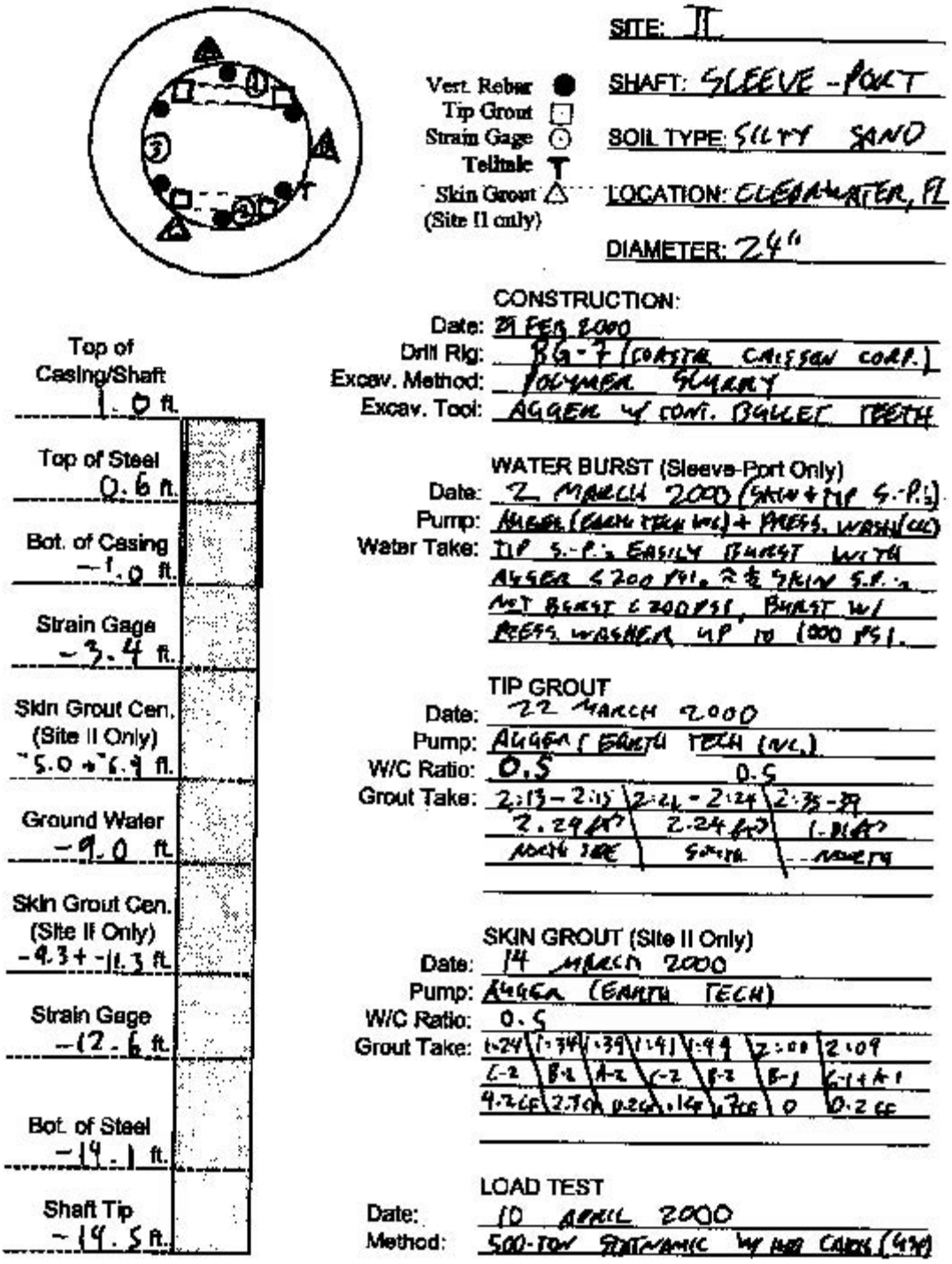


Figure A-28. Site II Sleeve-Port as-built.

OF TRANSPORTATION
APPROVED
DATE Jan. 06, 1999
BY
DISTRICT MATERIALS ENGR.

ISSUED :C. ROBERTS
REVIEWED:R. W. HALL
DATE :12/24/98
MIX NO. :04-M0434

CONCRETE MIX DESIGN

M880434

CONCRETE SUPPLIER: TARMAC AMERICA INC
ADDRESS: 11000 N.W. 121 WAY MEDLEY, FLORIDA 33178
PLANT LOCATION: STUAR
FDOT ASSIGNED PLANT NO.:89-245
DATE: 12/23/98
TELEPHONE NO:561/848-2594
PROJECT NO:89040-3510

CLASS CONCRETE: IV DRILL SHAFT(28)

SOURCE OF MATERIALS

COARSE AGGREGATE:	PENINSULA	GRADE:	#7 S.G.(SSD):2.430
FINE AGGREGATE	: E. H. JAHNA	F.M.:	2.41 S.G.(SSD):2.630
PIT NO.(COARSE)	: 87-145	TYPE:	CRUSHED LIMESTONE
PIT NO.(FINE)	: 05-145	TYPE:	SILICA SAND
CEMENT	: PENINSULA TARMAC(MIAMI)	SPEC:	AASHTO M-85 TYPE II
1R ENTR.ADMIX	: MRA-90 MASTER BUILDERS	SPEC:	AASHTO M-154
1ST ADMIX	: POZZOLITH 961 R MASTER BUILD	SPEC:	AASHTO M-194 TYPE D
2ND ADMIX	: ----	SPEC:	----
3RD ADMIX	: ----	SPEC:	----
FLY ASH	: S FRANCEN (MIAMI) TARMAC	SPEC:	ASTM C-989

$ BLAST FURNACE SLAG
HOT WEATHER METRIC DESIGN MIX

CEMENT	kg:	150.00	SLUMP RANGE	: 175.00 TO 225.00	mm
COARSE AGG	kg:	949.00	AIR CONTENT	: 0.00 TO 6.00	%
FINE AGG	kg:	677.00	UNIT WEIGHT (WET)	: 2205.00	kg/m3
AIR ENT ADMX	mL:	359.00	W/C RATIO(PLANT)	: 0.40	kg/kg
1ST ADMIXTURE	mL:	1704.00	W/C RATIO (FIELD)	: 0.40	kg/kg
2ND ADMIX	mL:	0.00	YIELD	: 1.00	m3
3RD ADMIX	mL:	0.00			
WATER	L:	178.00			
WATER	kg:	178.00			
FLY ASH	kg:	211.00	$		

PRODUCER TEST DATA

CHLORIDE CONT	: 0.09	kg/m3
SLUMP	: 203.00	mm
AIR CONTENT	: 4.00	%
TEMPERATURE	: 37.00	DEG C

COMPRESSIVE STRENGTH MPA

28 -DAY- 46.60	-DAY-
-DAY-	-DAY-

CC:
D. M. E. 4 & 6
TEST FILE

Figure A-29. Site III concrete mix design (1 of 2).

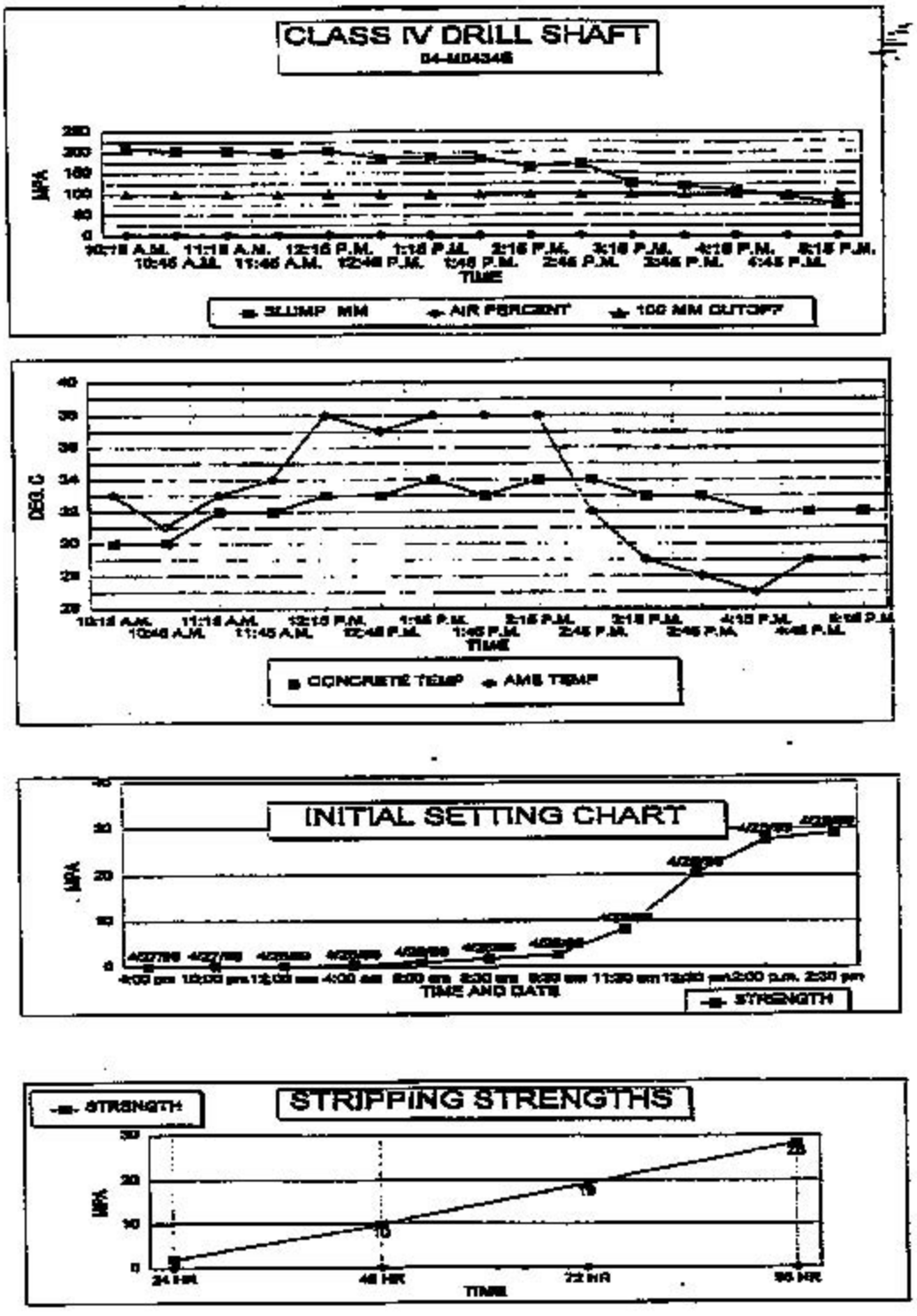


Figure A-30. Site III concrete mix design (2 of 2).

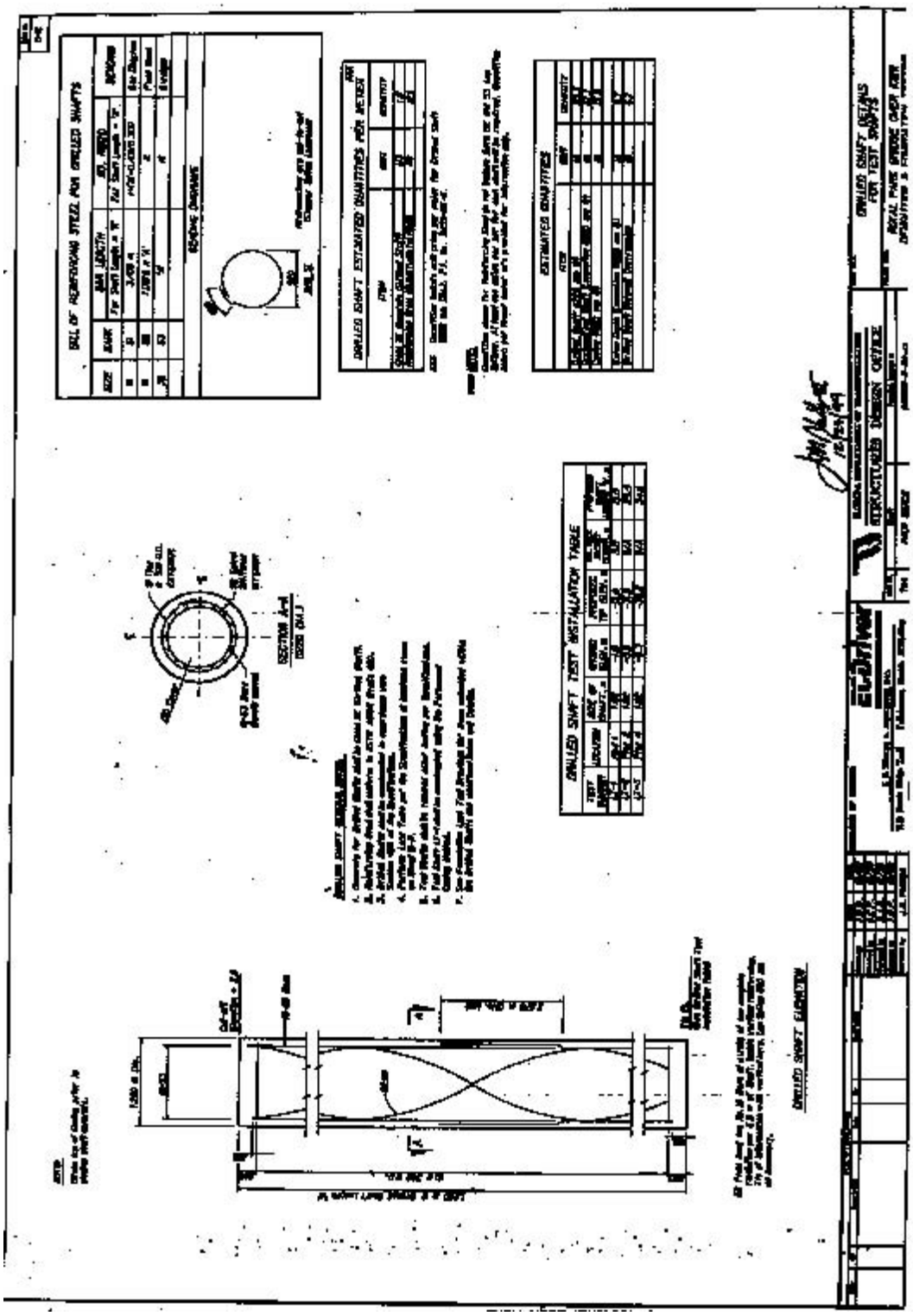


Figure A-31. Site III drilled shaft detail.

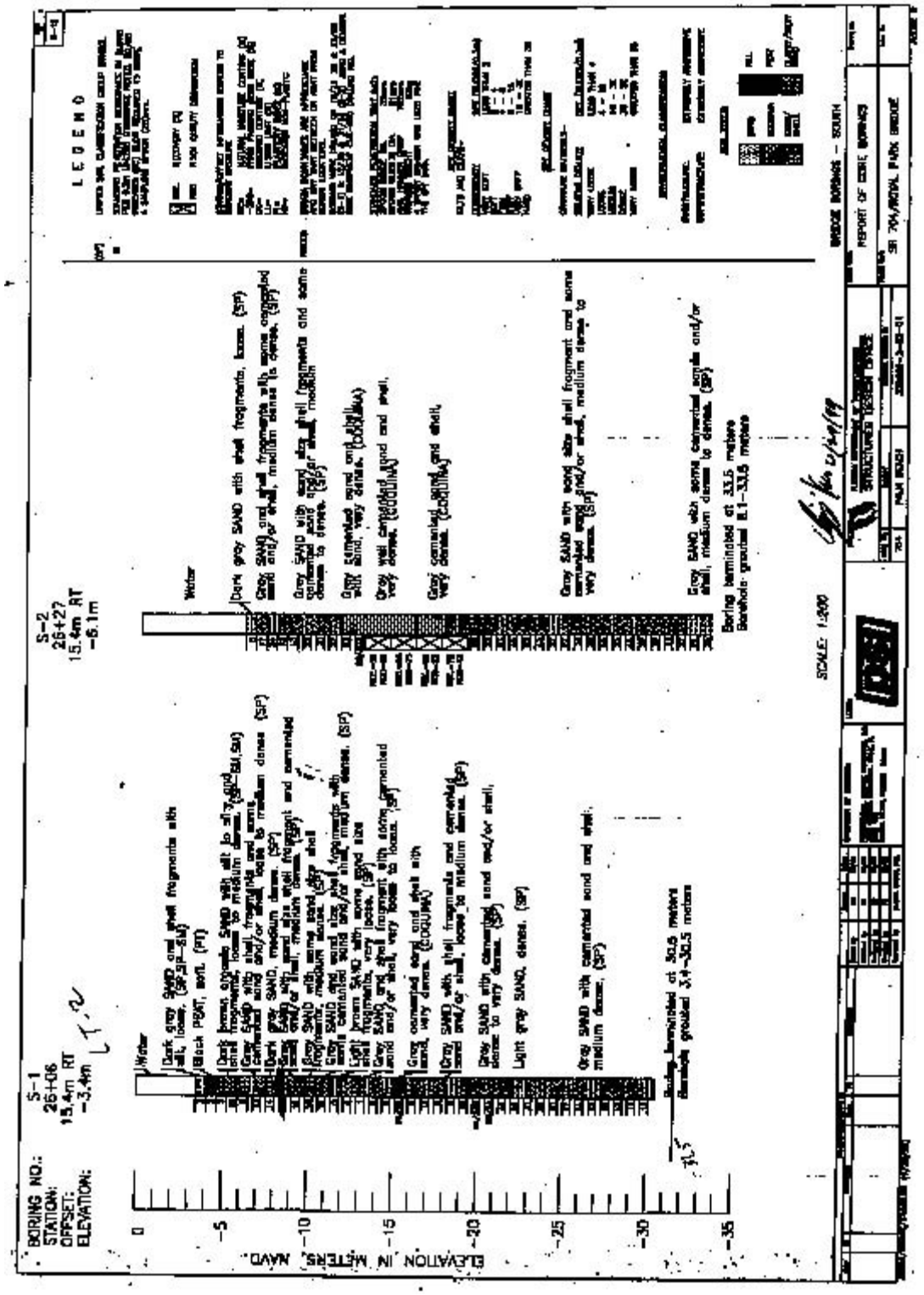


Figure A-32. Site III boring S-1 and S-2.

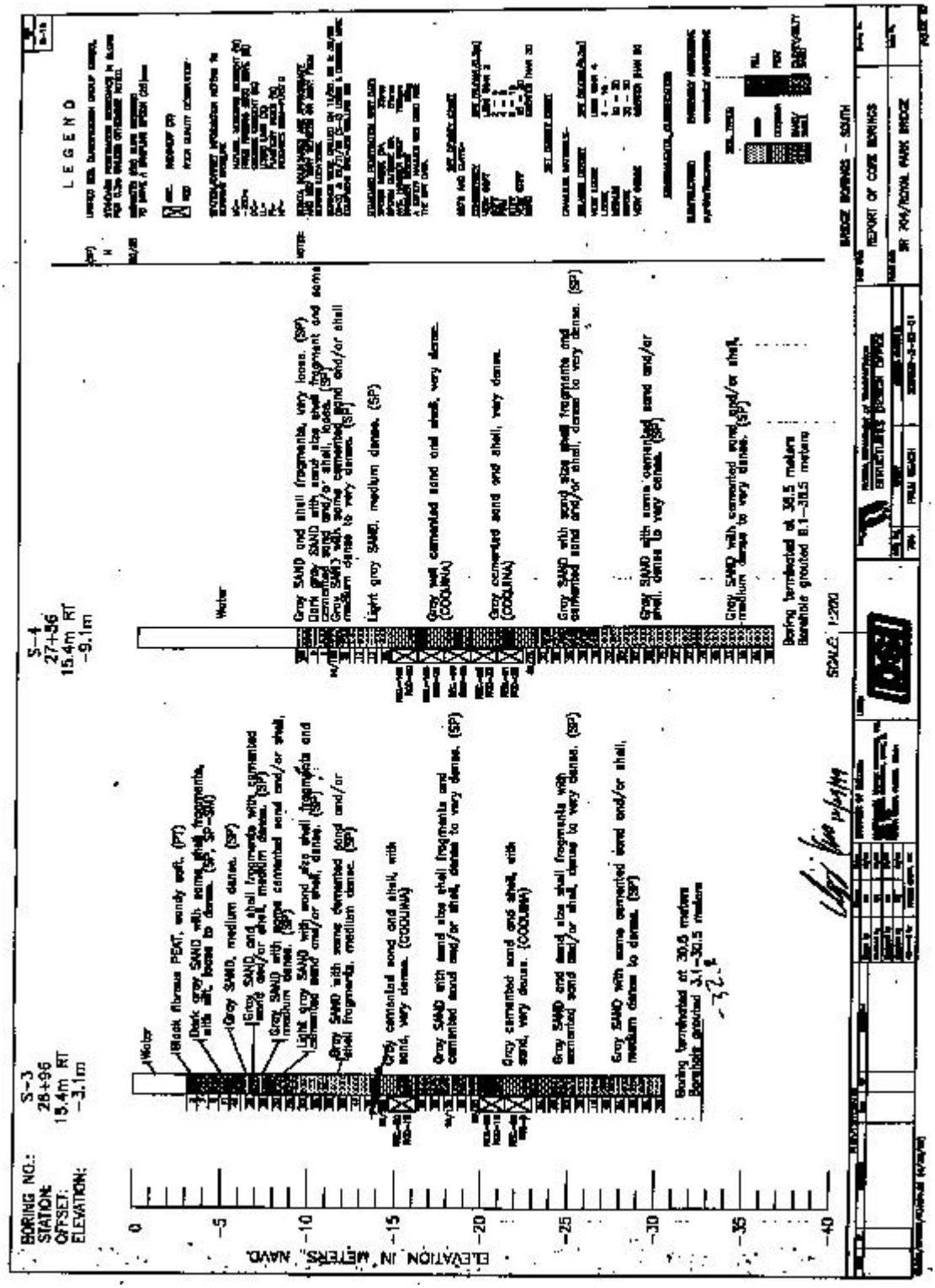


Figure A-33. Site III boring S-3 and S-4.

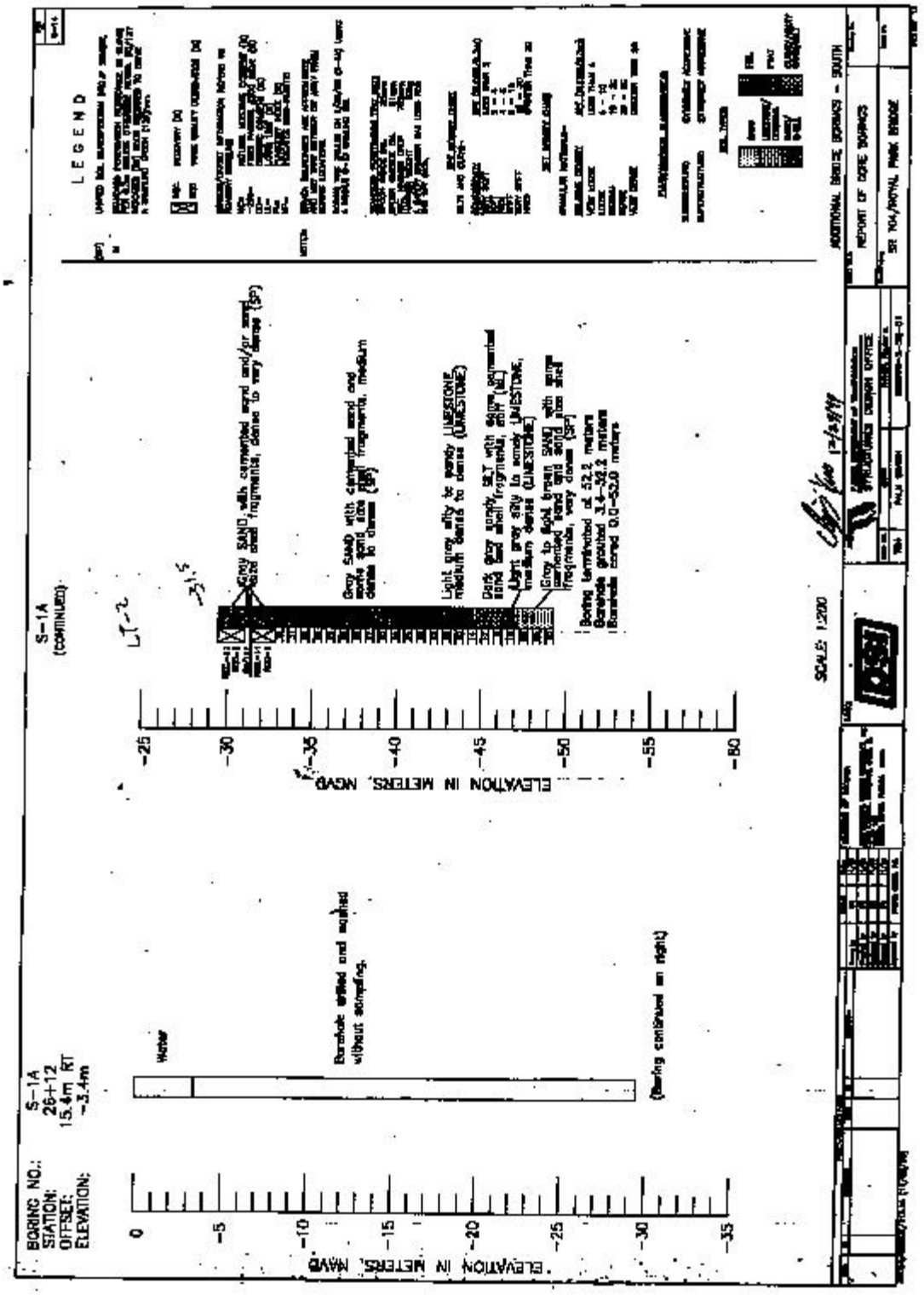


Figure A-34. Site III boring S1-A.

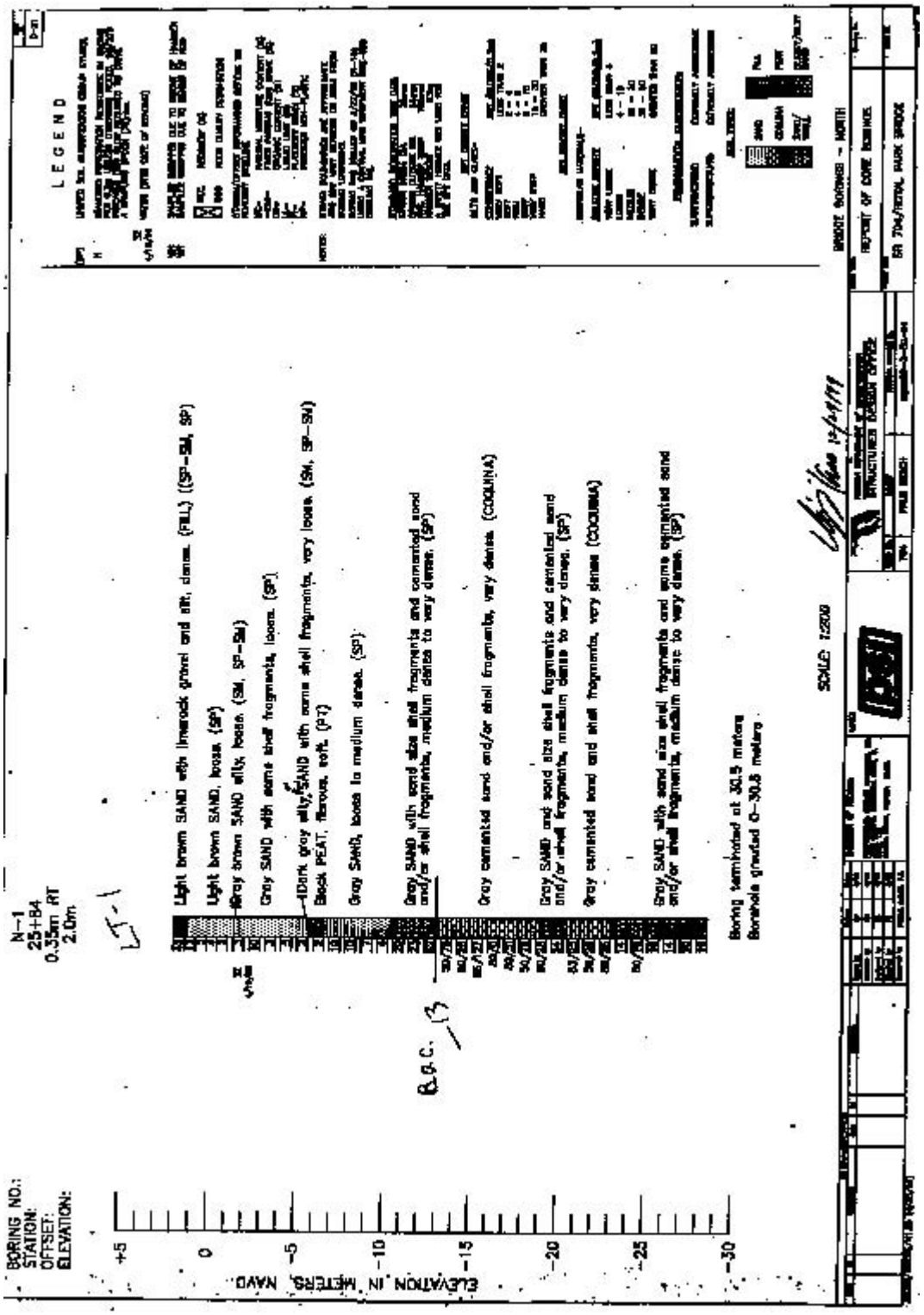


Figure A-35. Site III boring N-1.

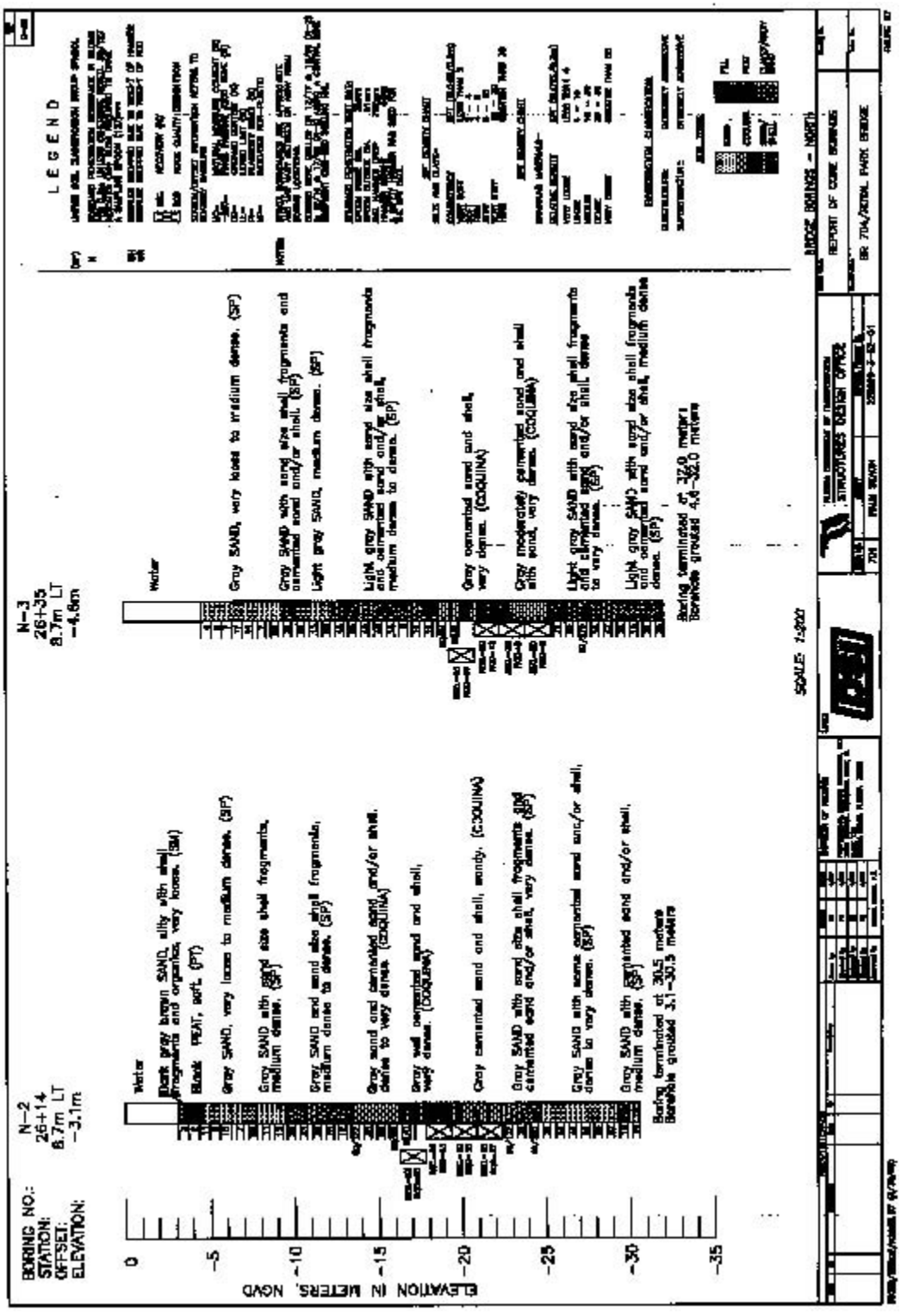


Figure A-36. Site III boring N-2 and N-3.

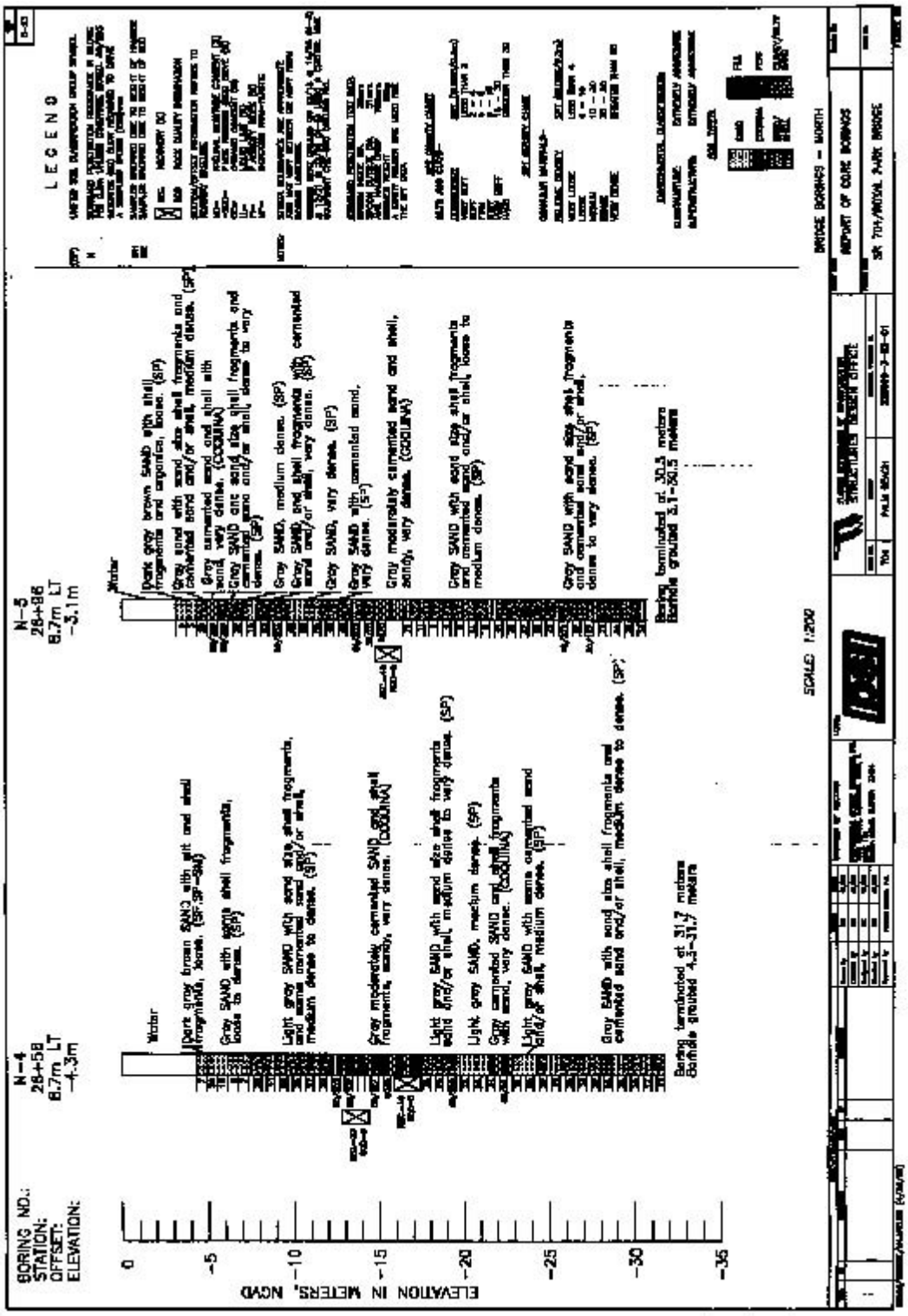


Figure A-37. Site III boring N-4 and N-5.

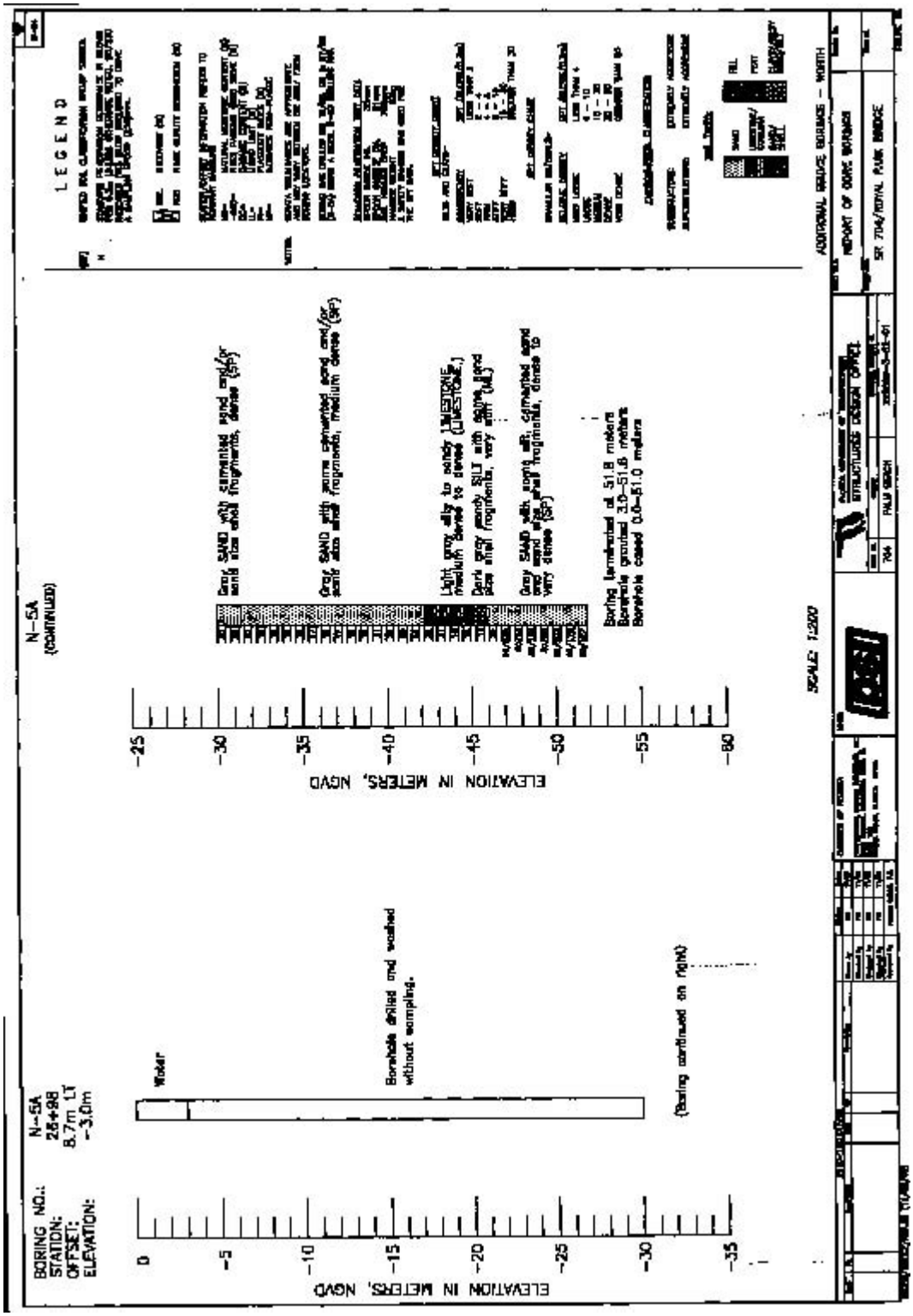


Figure A-38. Site III boring N-5A.

Appendix A. (continued)

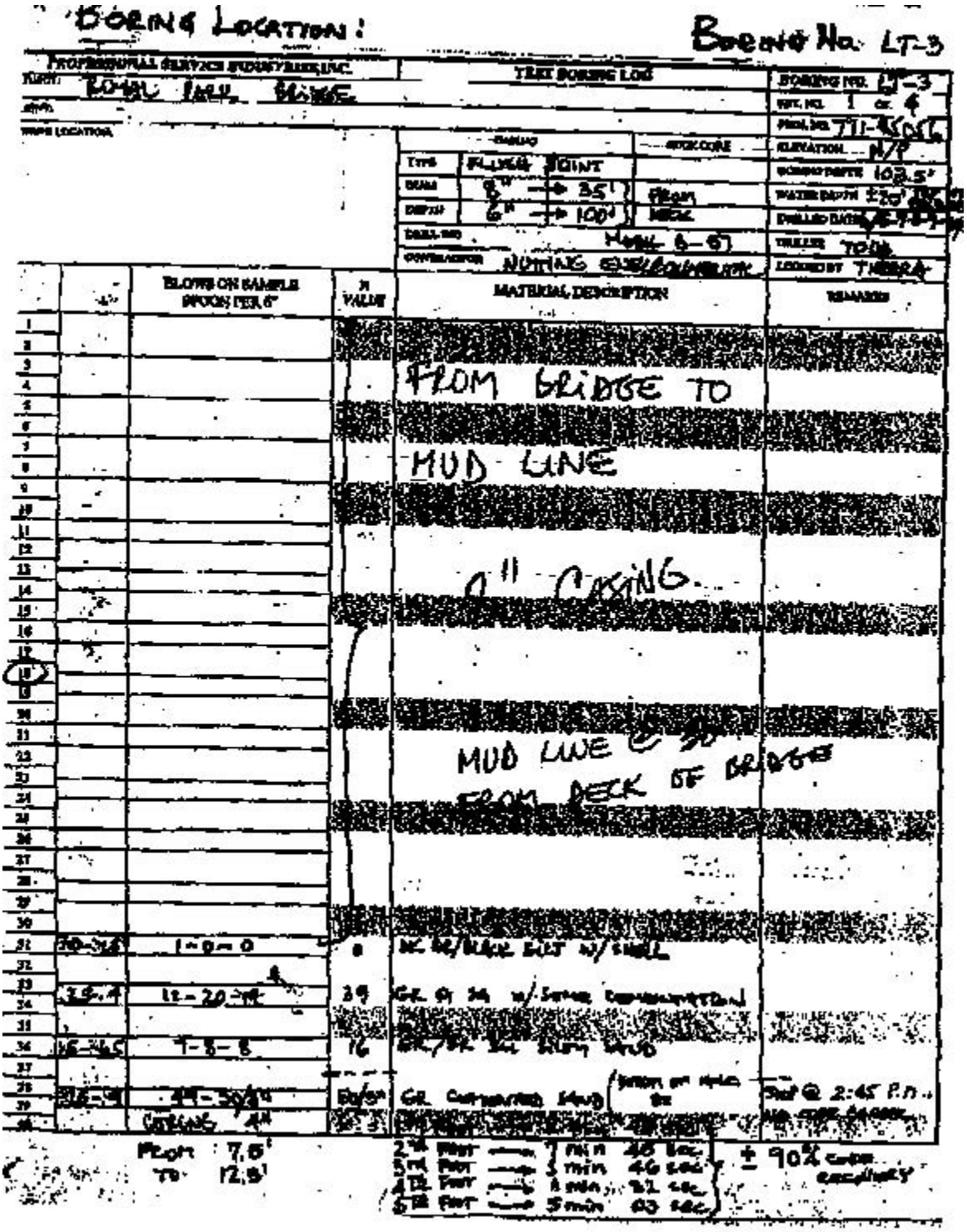


Figure A-39. Site II SPT boring log LT-3 location (1 of 4).

Appendix A. (continued)

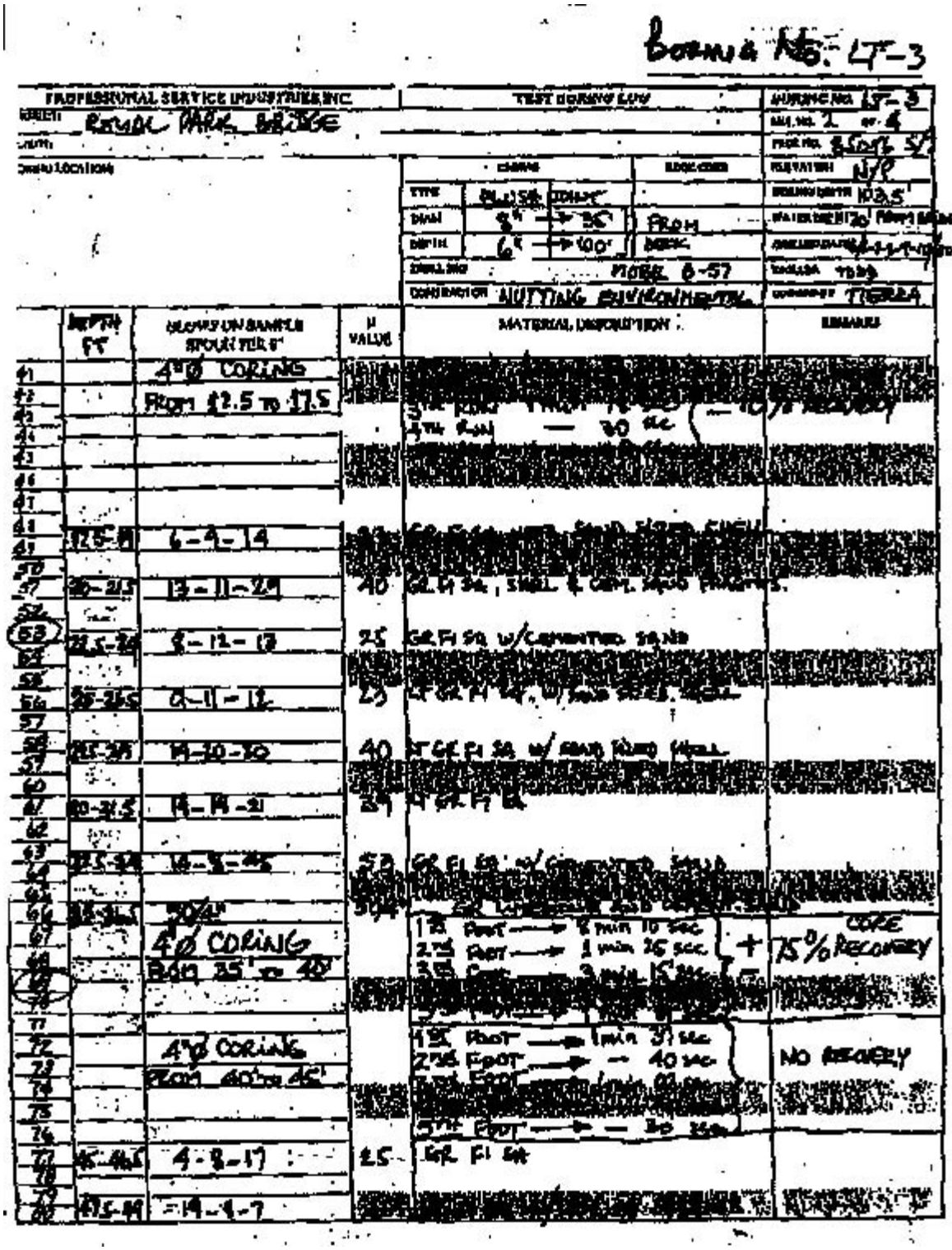


Figure A-40. Site III SPT boring log LT-3 location (2 of 4).

Boring No. LT-3

PROFESSIONAL SERVICE INDUSTRIES, INC — TEST BORING LOG

PROJECT: ROYAL PARK BRIDGE
CLIENT:
BORING LOCATION:

	CASING	ROCK CORE	
TYPE	FLUSH JOINT		BORING NO. LT-3
DIAM	8" — 35'	FROM	SHT. NO. 3 OF 4
DEPTH	6" — 100'	[illegible]	ELEVATION NVP
DRILLING			BORING DEPTH 102.5'
CONTRACTOR	NUTTING ENGINEERS		DRILLER TODD

	DEPTH FT.	BLOWS ON SAMPLE SPOON PER 6"	N VALUE	MATERIAL DESCRIPTION	REMARKS
81	50-51.5	16-2/1 Foot	[illegible]	[illegible]	
82					
83					
84	52.5-54	W.O.R.	W.O.R.	NO RECOVERY	
85					
86	55-56.5	3-3-3	[illegible]	[illegible]	
87					
88					
89	57.5-59	3-2-3	[illegible]	SAME	
90					
91	60-61.5	45-10-5	15	GR [illegible] CEM. SAND.	
92					
93					
94	62.5-64	5-5-5	10	GR FI SA W/CEMENTED SAND FRAGS	
95					
96	65-66.5	10-12-14	26	SAME	
97					
98					
99	67.5-69	16-16-28	44	SAME	
100					
101	70-71.5	15-41-27	64	SAME	
102					
103					
104	72.5-74	10-8-6	14	GR FI SA TRACE CEMENTED SAND	
105					
106	75-76.5	50-21-10	31	GR FI SA W/CEM SAND FRAGS	
107					
108					
109	77.5-79	16-21-28	49	GR FI SA TRACE CEM. SAND	
110					
111	80-81.5	50-41-38	79	GR FI SA	
112					
113	82.5-84	21-26-21	47	GR FI SA TRACE CEM SAND	
114					
115					
116	85-86.5	15-14-16	30	GR FI SA W/NODULES OF CEM SAND	
117					
118					
119	87.5-89	20-8-9	17	GR FI SA W/CEM SAND TRACE [illegible]	
120					

Figure A-41. Site III SPT boring log LT-3 location (3of 4).

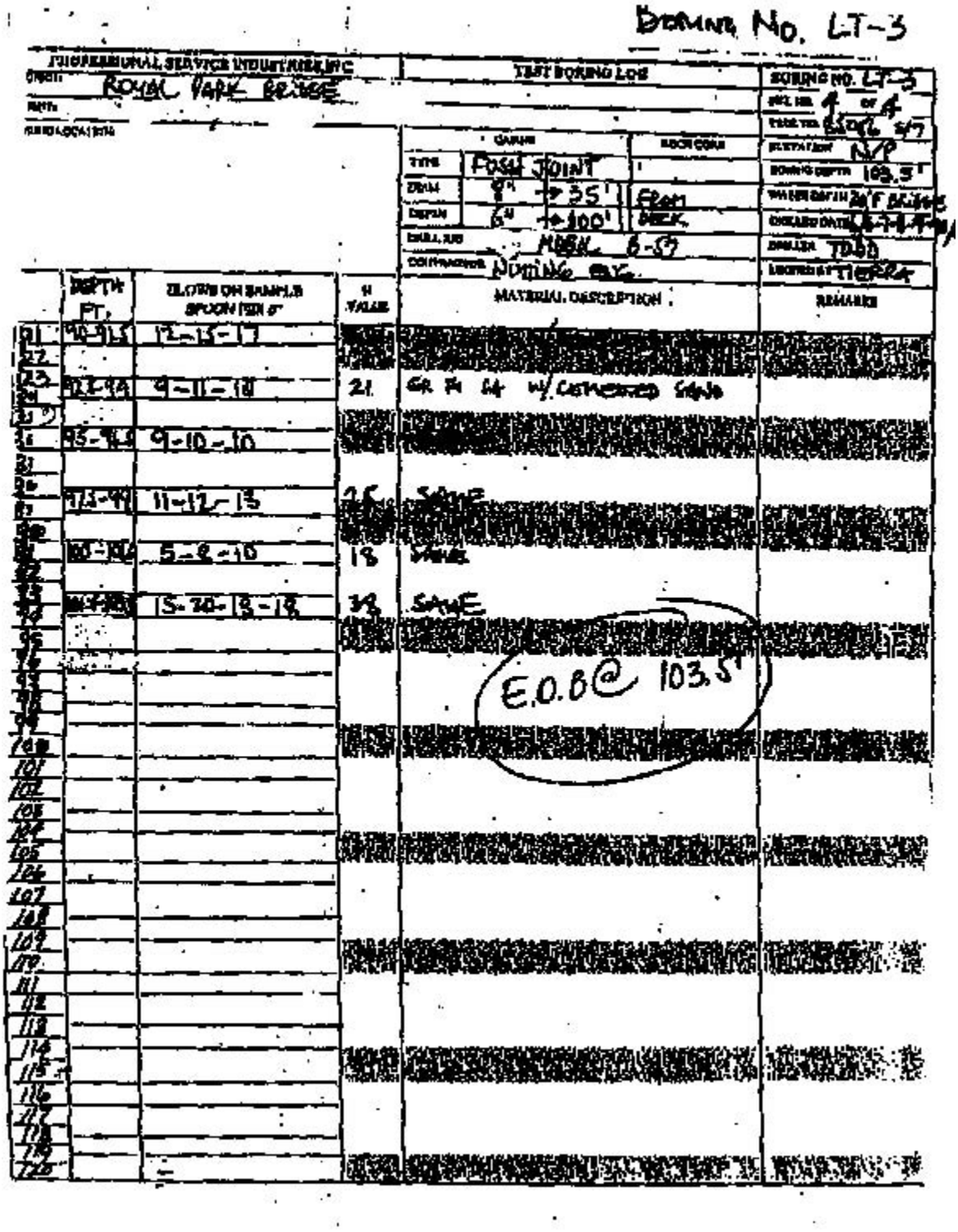


Figure A-42. Site III SPT boring log LT-3 location (4 of 4).

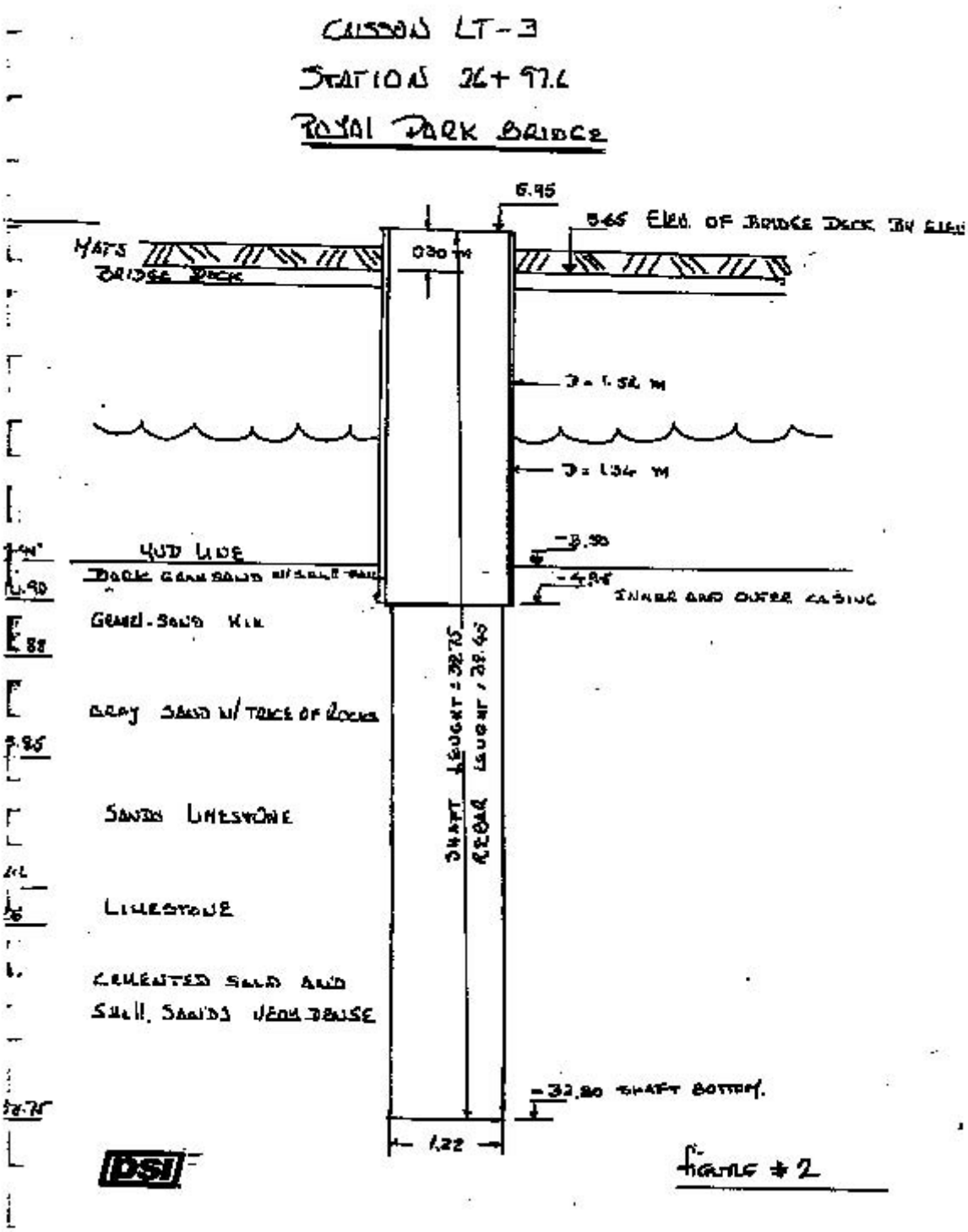


Figure A-43. Site III LT-3 as-built.

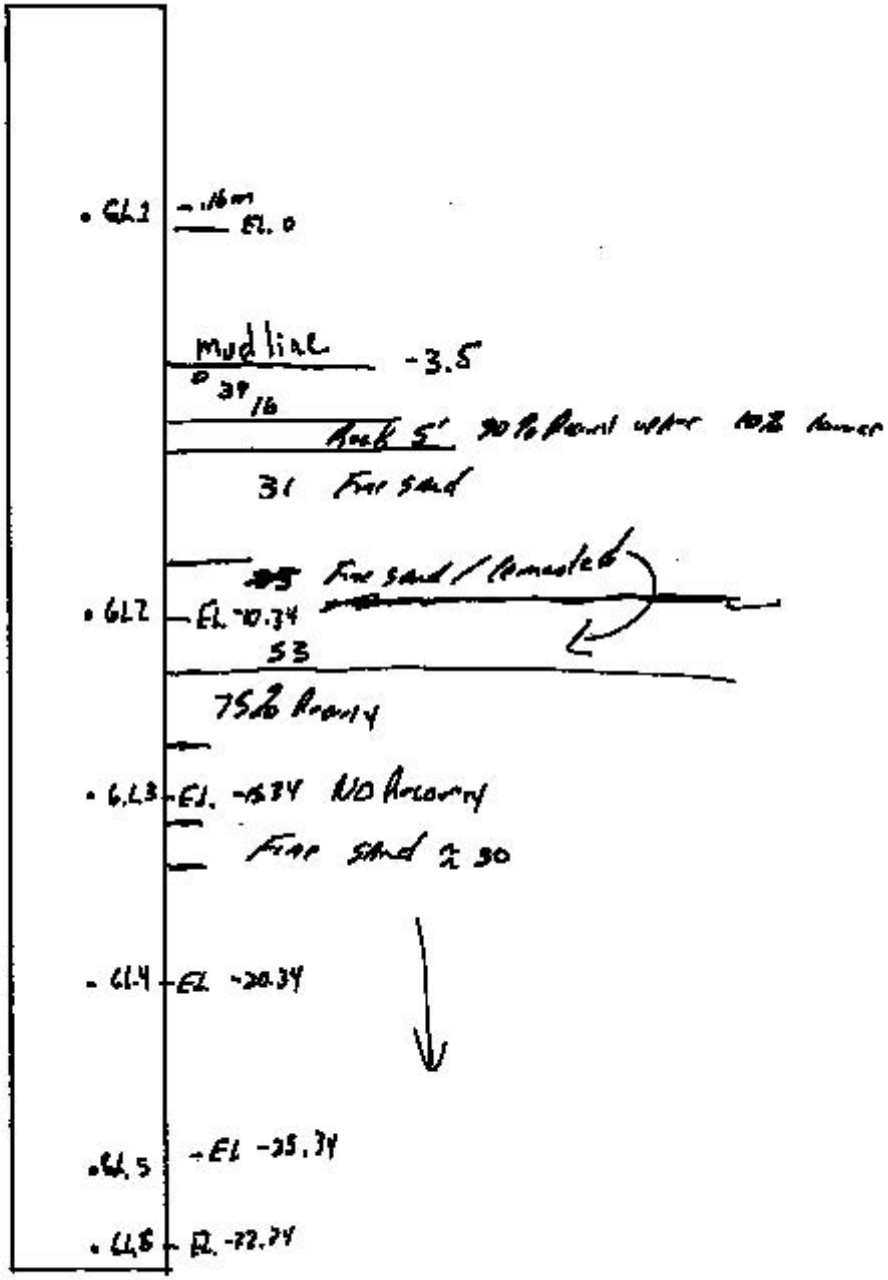


Figure A-44. Site III LT-3 strain gage locations.

Appendix A. (continued)

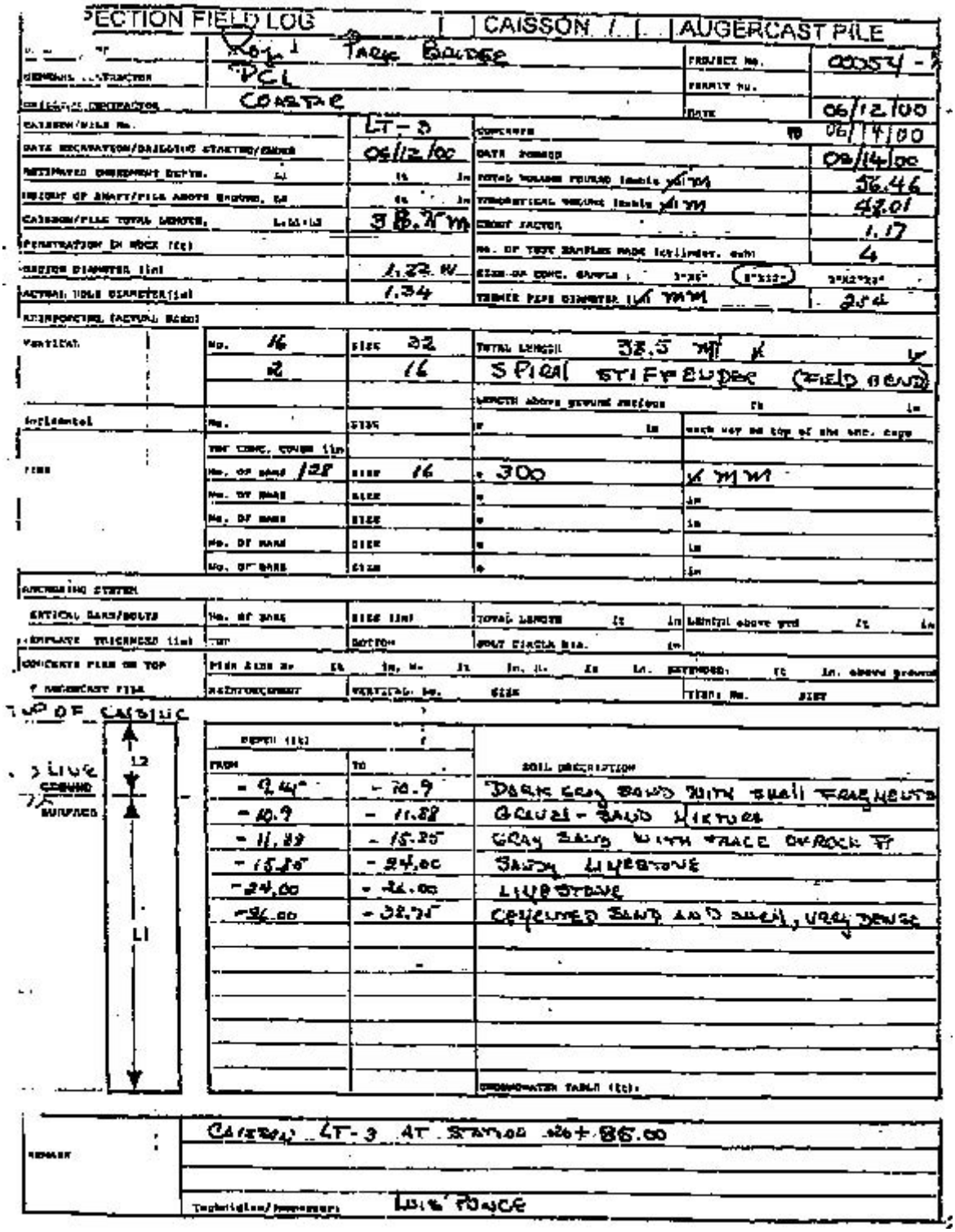


Figure A-45. Site III LT-3 inspection log.

Information To Build On
Engineering • Consulting • Testing

REPORT OF FIELD INSPECTION OF CONCRETE

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

ATE: June 14, 2000 OUR REPORT NO.: 772-00054-11 PAGE 1 OF 2

FIELD DATA: Concrete was delivered by TAMMAC, mix number M880434.

MIX NO.	BY	NO. OF CYLINDERS MADE	CONCRETE SUPPLIER TICKET NUMBER	TIME TRUCK DISPATCHED	TIME TRUCK UNLOADED	YARDS OF CONCRETE	SLUMP, IN	AIR CONTENT, %	TEMPERATURE, °F AIR	TEMPERATURE, °F CONCRETE
			2242420	02:29 pm	---	10.0				
			2242421	02:46 pm	---	10.0				
			2242422	03:05 pm	07:55 pm	10.0				
			2242423	04:37 pm	05:15 pm	10.0	8 1/4	3.25	84	95
1			2242625	05:23 pm	06:23 pm	10.0	8	3.00	84	95
			2242626	05:42 pm	06:45 pm	10.0				

OCATION: CAISSON LT-3 STATION 26+85.00

REJECTED, OUT OF TIME

REJECTED, OUT OF TIME

REJECTED, OUT OF TIME

FROM -26.27 TO -31.70 METERS

1 FROM -31.70 TO -27.43 METERS

FROM -27.43 TO -33.47 METERS

EMARKS: Observed the placement of 56.4 cubic yards of concrete.

EVENTHOUGHT TRUCK #094 WAS REJECTED, CONTRACTOR POURED 3.55 CUBIC METERS AT HIS OWN RISK

TECHNICIAN: L. POUCH

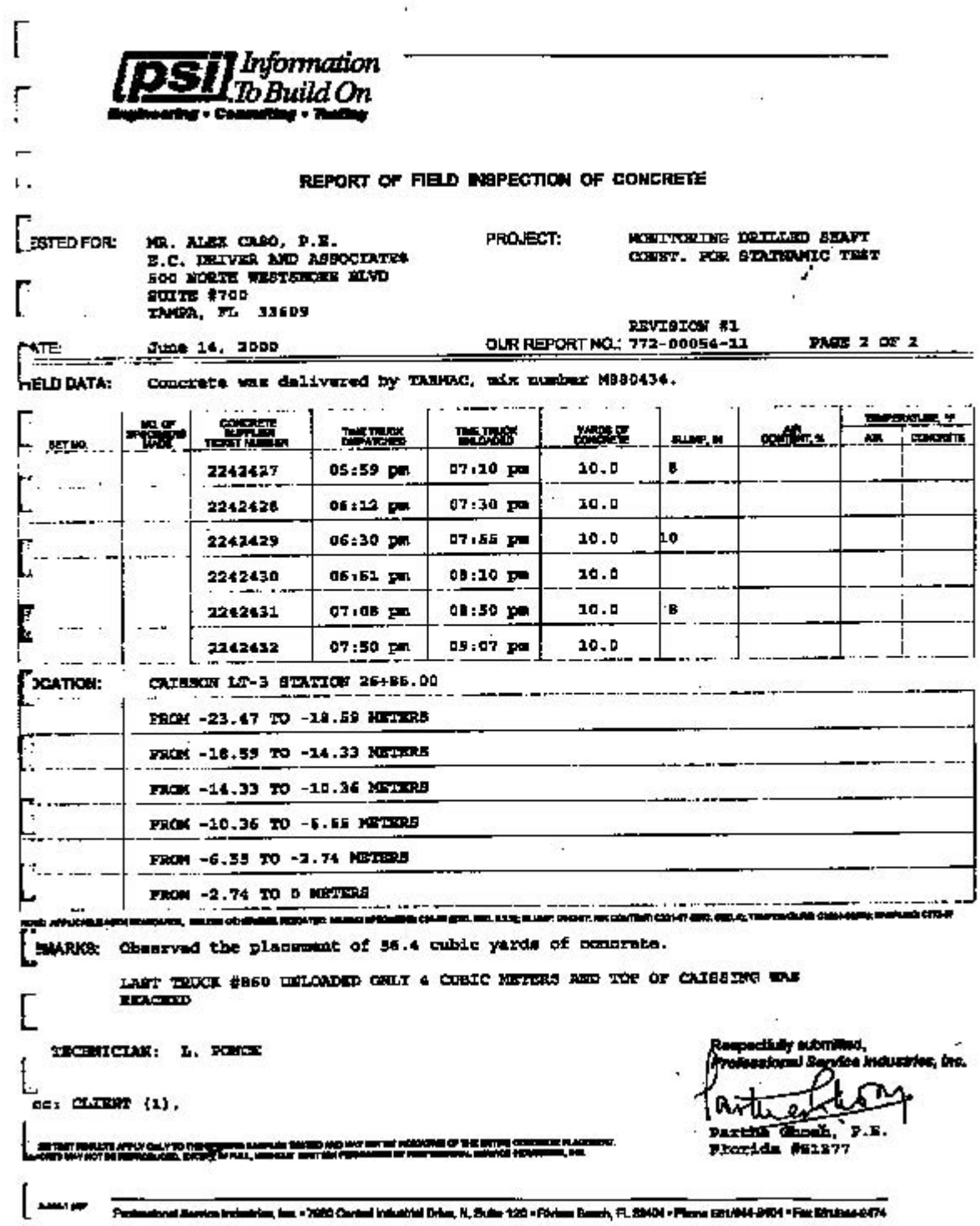
Respectfully submitted,
Professional Service Industries, Inc.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Professional Service Industries, Inc. • 7680 Central Industrial Drive, N. Suite 120 • Riviera Beach, FL 33404 • Phone (561)844-2404 • Fax (561)844-2474

Figure A-46. Site III LT-3 concrete log (1 of 3).



psi Information To Build On
Engineering • Consulting • Testing

REPORT OF FIELD INSPECTION OF CONCRETE

ESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

ATE: June 14, 2000 OUR REPORT NO.: 772-00054-11 PAGE 2 OF 2

IELD DATA: Concrete was delivered by TAMMAC, mix number M880434.

SET NO.	NO. OF SPECIMENS MADE	CONCRETE SUPPLIER TICKET NUMBER	TIME TRUCK DISPATCHED	TIME TRUCK UNLOADED	YARDS OF CONCRETE	SLUMP, IN	AIR CONTENT, %	TEMPERATURE, °F AIR	TEMPERATURE, °F CONCRETE
		2242427	05:59 pm	07:10 pm	10.0	8			
		2242428	06:12 pm	07:30 pm	10.0				
		2242429	06:30 pm	07:55 pm	10.0	10			
		2242430	06:51 pm	08:10 pm	10.0				
		2242431	07:08 pm	08:50 pm	10.0	8			
		2242432	07:50 pm	09:07 pm	10.0				

CATION: CAISSON LT-3 STATION 26+86.00
FROM -23.47 TO -18.59 METERS
FROM -18.59 TO -14.33 METERS
FROM -14.33 TO -10.36 METERS
FROM -10.36 TO -6.55 METERS
FROM -6.55 TO -2.74 METERS
FROM -2.74 TO 0 METERS

EMARKS: Observed the placement of 56.4 cubic yards of concrete.
LAST TRUCK #860 UNLOADED ONLY 4 CUBIC METERS AND TOP OF CAISSING WAS REACHED

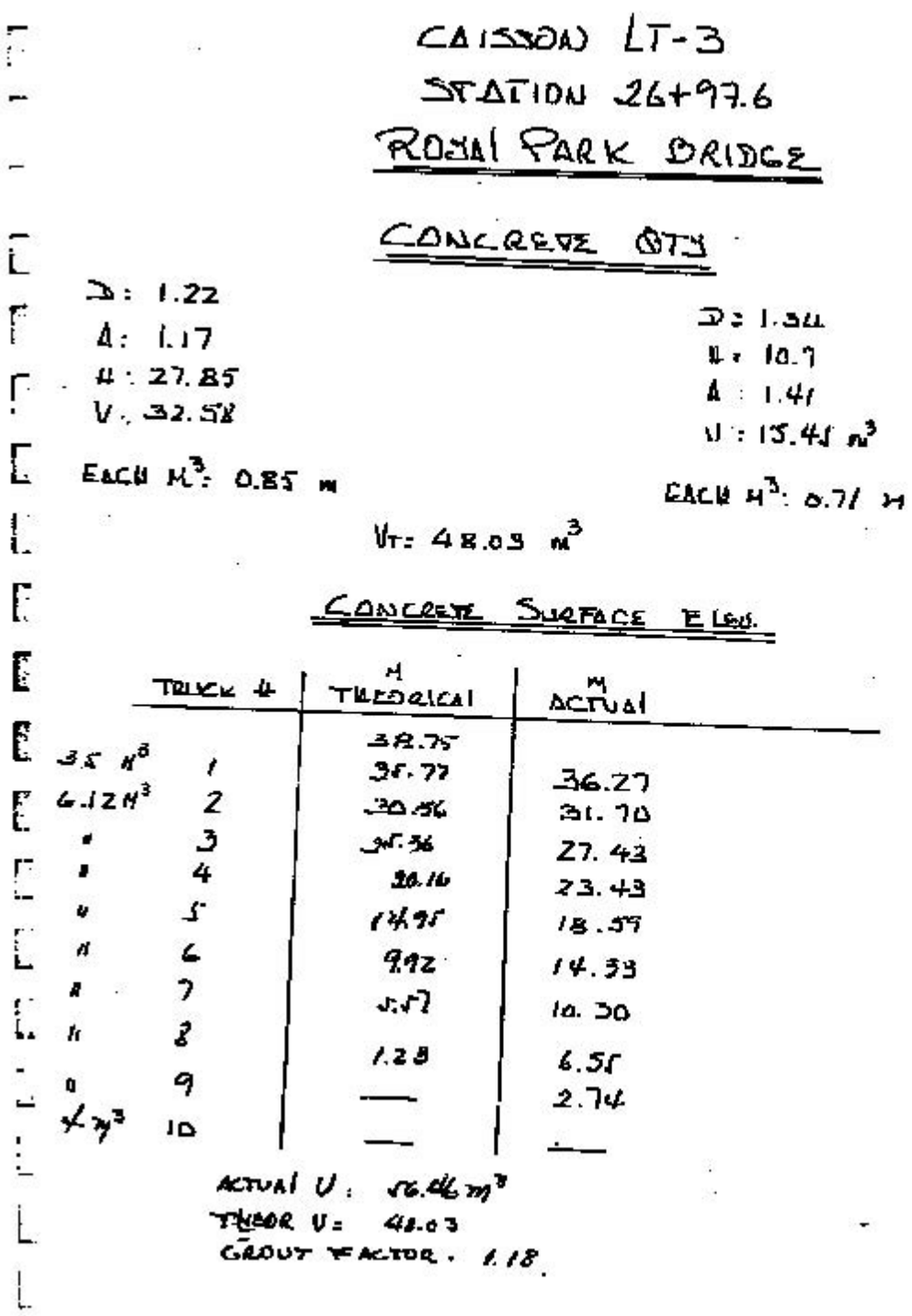
TECHNICIAN: L. PONCE

Respectfully submitted,
Professional Service Industries, Inc.
Partha Ghosh, P.E.
Florida #61277

cc: CLIENT (1),

Professional Service Industries, Inc. • 7650 Central Industrial Drive, N, Suite 120 • Riviera Beach, FL 33404 • Phone 561/844-9804 • Fax 561/844-0474

Figure A-47. Site III LT-3 concrete log (2 of 3).



CAISSON LT-3
STATION 26+97.6
ROYAL PARK BRIDGE

CONCRETE QTY

D: 1.22
A: 1.17
H: 27.85
V: 32.58

EACH M³: 0.85 M

D: 1.34
H: 10.7
A: 1.41
V: 15.45 M³

EACH M³: 0.71 M

VT: 48.03 M³

CONCRETE SURFACE ELEV.

	TRUCK #	M THEORETICAL	M ACTUAL
3.5 M³	1	38.75	
6.12 M³	2	36.77	36.27
"	3	30.56	31.70
"	4	34.36	27.43
"	5	20.16	23.43
"	6	14.95	18.59
"	7	9.92	14.33
"	8	5.57	10.30
"	9	1.28	6.55
X M³	10	—	2.74
		—	—

ACTUAL V: 56.46 M³
THEOR V: 48.03
GROUT FACTOR: 1.18

Figure A-48. Site III LT-3 concrete log (3 of 3).

PSI Information To Build On
Engineering • Consulting • Testing

REPORT OF CONCRETE COMPRESSION TEST

SUBMITTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

DATE: June 14, 2000 OUR REPORT NO.: 772-00054-12

FIELD DATA:
LOCATION OF PLACEMENT CAISSON LT-3 STATION 26+85.00
FROM -31.70 TO -27.43

DATE PLACED	June 14, 2000	SUPPLIER	TARMAC
TIME	06:15 pm	DELIVERY TICKET NO./TRUCK NO.	2242425
SLUMP, IN.	---	MIX NUMBER AND PROPORTIONS	MS00434
AIR CONTENT, %	3.00	CEMENT	---
AIR TEMPERATURE, °F	26	WATER	---
CONCRETE TEMPERATURE, °F	25	FINE AGGREGATE	---
DATE RECEIVED IN LAB	June 15, 2000	COARSE AGGREGATE	---
FIELD DATA SUBMITTED BY	PSI\L. DOSCH	ADMIXTURE	---
MIX DATA SUBMITTED BY	TARMAC		

COMPRESSION TEST RESULTS
ASTM C39-96; C31-98

LABORATORY NUMBER	SPECIMEN IDENTIFICATION OR ELEVATION	TEST AGE (DAYS)	DATE OF TEST	TOTAL LOAD (LBS.)	CYLINDER DIAMETER (IN.)	CYLINDER AREA (SQ. IN.)	COMPRESSIVE STRENGTH (PSI)	TYPE OF BREAK
2	A	7	06/21/00	120000	6.00	28.27	4240	Columnar
2	B	28	07/12/00					
2	C	28	07/12/00					
2	D	H	HOLD					
MEDICATIONS		28					5500	

REMARKS: X Cylinders made by PSI representative. X Cylinders picked up by PSI representative. ... Test results comply with applicable specifications.
Cylinders made by Architect's or Contractor's representative. __ Cylinders delivered to PSI laboratory. __ Test results do not comply w/ applicable specifications.

TECHNICIAN: L. DOSCH

Respectfully submitted,
Professional Service Industries, Inc.
Parvinder Ghosh, P.E.
Florida #51377

CC: CLIENT (1),

1. SEE TEST RESULTS APPLY ONLY TO THE TESTED SAMPLES TAKEN AND MAY NOT BE REPRESENTATIVE OF THE ENTIRE CONCRETE PLACEMENT. REPORTS MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION BY PROFESSIONAL SERVICE INDUSTRIES, INC.

Figure A-49. Site III LT-3 concrete cylinder break strengths.

Appendix A. (continued)

PSI Information To Build On
Engineering • Consulting • Testing

INSPECTION REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #2

DATE: June 12, 2000

OUR REPORT NO.: 772-00054-7

REMARKS: As requested, a PSI representative reported to the above referenced project to perform caisson monitoring at location LT-3.

The following items were noted:

1. At 7:00 a.m. contractor started positioning the outer casing, 1.52 meters in diameter, at the shaft location.

2. At 8:30 a.m. contractor started to drive outer casing in with a vibratory hammer.

3. At 10:00 a.m. outer casing reached 1.45 meters below mudline (9.14 meters below bridge deck).

4. At 10:30 a.m.the inner casing was placed (1.34 diameter) to be driven to the same elevation as outer casing.

5. At 1:30 p.m. the inner casing installation was performed (10.90 meters below bridge deck or -4.95 BM elevation).

6. At 2:00 p.m. contractor began to pump out water inside casing prior to drilling operation.

7. At 3:00 p.m. shaft drilling began. PSI representative recorded soil description found from the shaft excavation.

8. At 7:00 p.m. drilling stopped at about depth 15.8 m and both casings' depths were about 9.14 meters below bridge deck.

Inspector: L. Ponce
Total Hours: 12.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Parthiv Shroff, P. E.
Florida #51377

cc: CLIENT (1),

Figure A-50. Site III LT-3 construction details (1 of 5).

PSI Information To Build On
Engineering • Consulting • Testing

INSPECTION REPORT

ESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #3

ATE: June 13, 2000 OUR REPORT NO.: 772-00054-3

REMARKS: As requested, a PSI representative reported to the above referenced project to perform caisson monitoring of LT-3 at station 26 +85.

1. Drilling started at a depth of 15.80 meters and the different soils that were encountered during shaft excavation were recorded in the inspection field log report.

2. Drilling activity advanced at a rate of 2.5 meters per hour, shaft length was proposed to be 38.75 meters (see attached Figure #2).

3. DOT representative were also at job site.

4. At 4:00 p.m. the depth of shaft excavation reached 36 meters.

5. On site, additional steel reinforcing was spliced to the original reinforcement cage in order to reach 38.75 meters (shaft length) required.

6. Also, grout bottom plate was attached at the bottom end of steel reinforcing.

7. At 4:30 p.m. total shaft length was reached (38.75 meters). Contractor checked the caisson diameter using a 1.22 meters core barrel.

8. The bottom of the caisson will be cleaned tomorrow morning, and concrete pour is scheduled for 1:00 p.m. tomorrow.

Inspector: L. Ponce
Total Hours: 9.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Figure A-51. Site III LT-3 construction details (2 of 5).

PSI Information To Build On
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SAMPLE PICK UP FIELD REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

DATE: June 13, 2000

OUR REPORT NO.: 772-00054-S

REMARKS:

As requested, a PSI representative reported to the above referenced project to pick-up cylinders that had been previously cast at location LT-1.

On this day, one (1) set of cylinders was picked up and transported back to our laboratory for compressive strength testing.

Inspector: L. Ponce
Total Hours: 1.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Figure A-52. Site III LT-3 construction details (3 of 5).

PSI Information To Build On
Engineering • Consulting • Testing

INSPECTION REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR SEISMIC TEST

REVISION #3

DATE: June 14, 2000 OUR REPORT NO.: 772-00054-10 PAGE 1 OF 2

REMARKS: As requested, a PSI representative reported to the above referenced project to perform caisson monitoring installation and concrete testing at location LT-3.

The following items were noted:

1. From 7:00 a.m. to 2:00 p.m. contractor cleaned the bottom of the shaft and also sieved the excavated mud in order to reuse the mud.

   Length of inner casing = 10.9 m
   Length of outer casing = 10.9 m

2. At 2:00 p.m. steel reinforcing was placed in the shaft hole and wires for testing purposes were also installed. This activity finished at 4:45 p.m. Trimie (0.25 meter) was installed to place concrete and was set up at 5:00 p.m.

3. At 3:00 p.m. concrete trucks arrived and were waiting to place the concrete.

4. At 4:00 p.m. contractor and D.O.T. crew were informed by PSI representative that two trucks were out of 90 minutes specifications.

   Contractor decided to pour at his own risk.

5. At 5:00 p.m pouring started. At 5:15 p.m. the trimie experienced mechanical difficulties, so it was removed and cleaned. Contractor decided to send away the 3 concrete trucks that were at the site. Amount placed from first truck was 3.55 cubic meters.

6. At 6:00 p.m. the concrete pour re- started and finished at 9:30 p.m. Depth measures were taken after each truck. Sample for testing purposes was taken from truck #675 and ticket #242425. Last truck placed 4 cubic meters in the caisson. Total concrete placed was 56.46 cubic meters. Theoretical volume = 48.01 cubic meters. Grout factor = 1.17.

CC: CLIENT (1),

Figure A-53. Site III LT-3 construction details (4 of 5).

E.C. DRIVER AND ASSOCIATES
June 14, 2000
772-00054-10
PAGE 2 OF 2

All this information is included in attached inspection field report and field inspection of concrete.

Inspector: L. Ponce
Total Hours: 14.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Figure A-54. Site III LT-3 construction details (5 of 5).

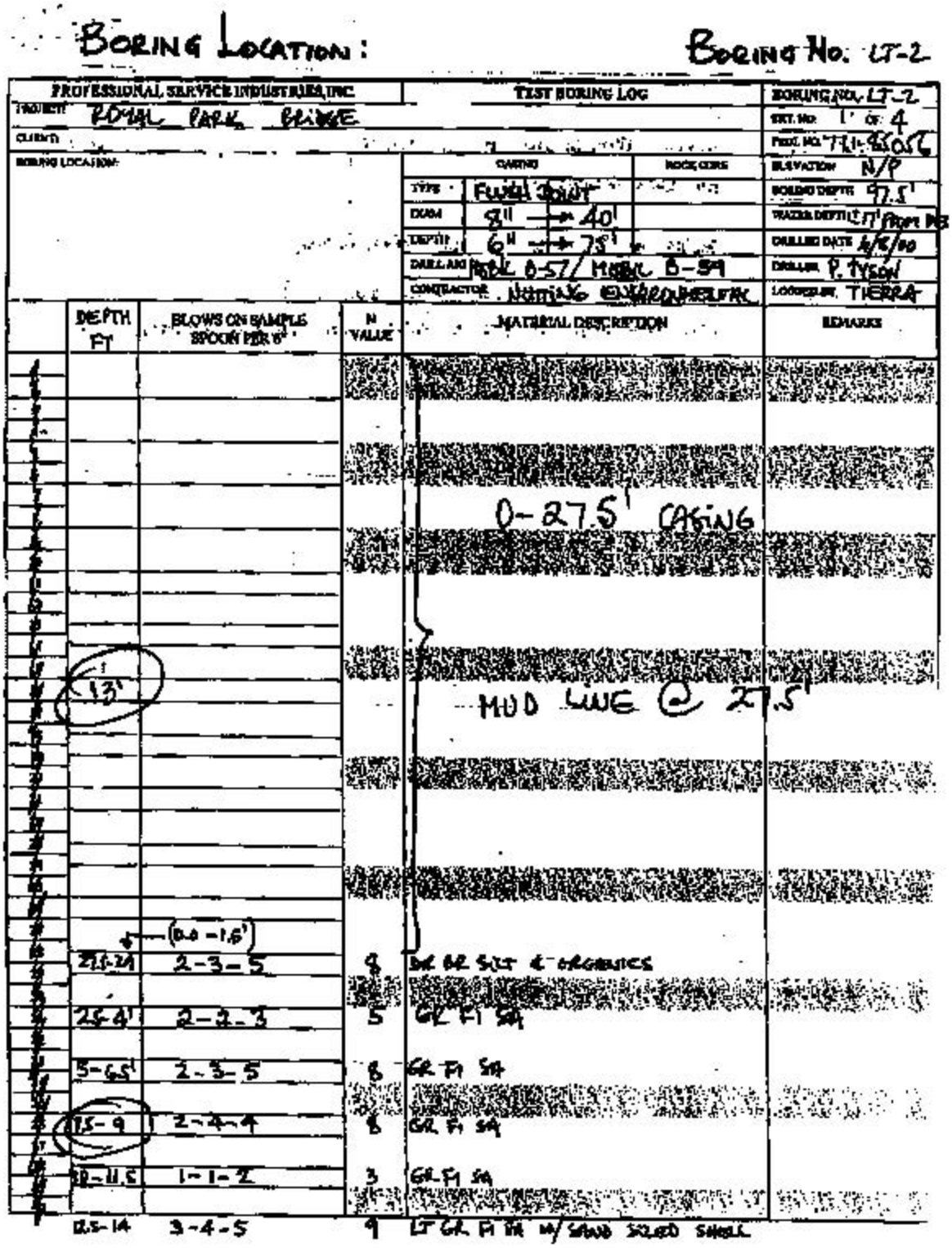

Figure A-55. Site II SPT boring log LT-2 location (1 of 4).

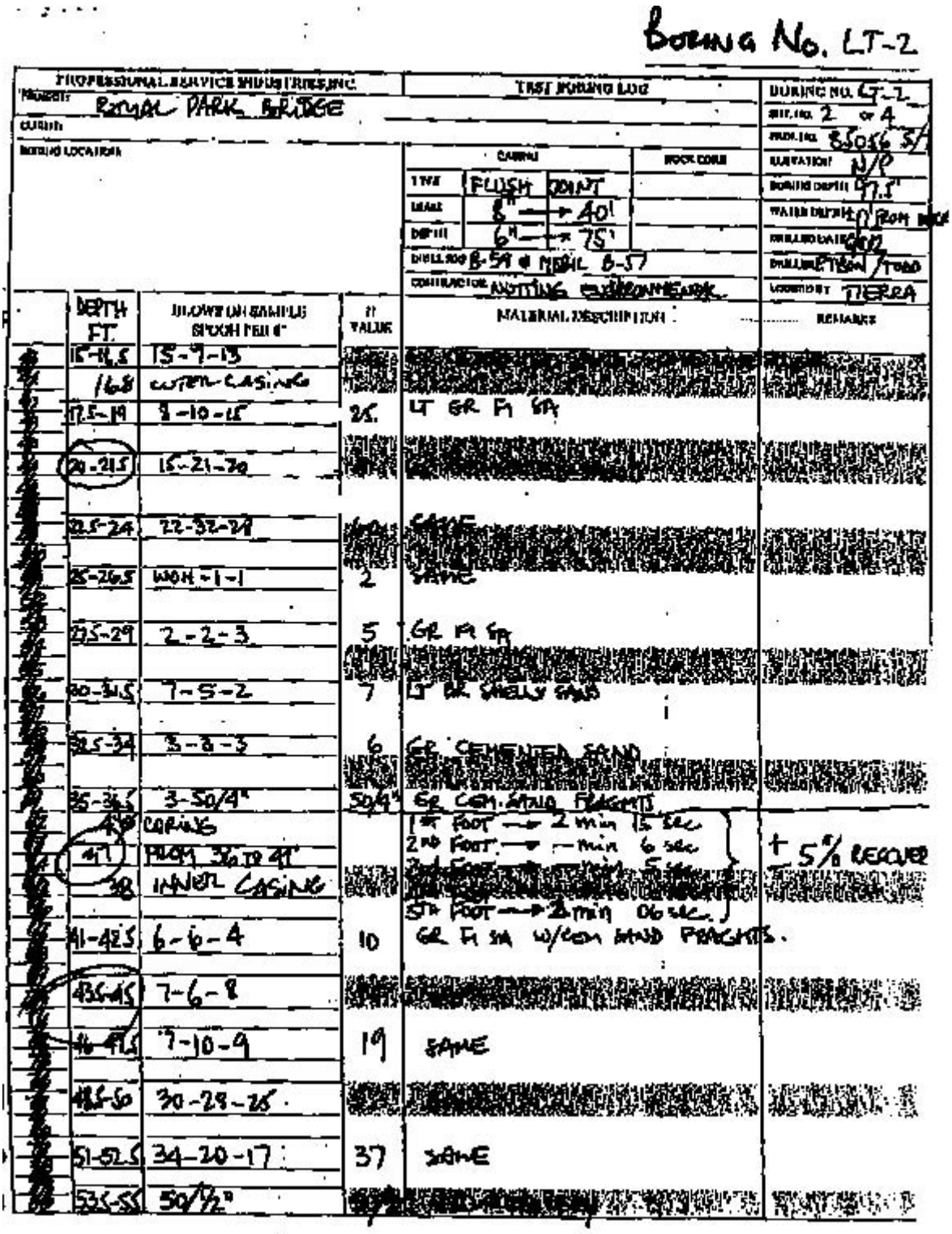

Figure A-56. Site III SPT boring log LT-2 location (2 of 4).

Appendix A. (continued)

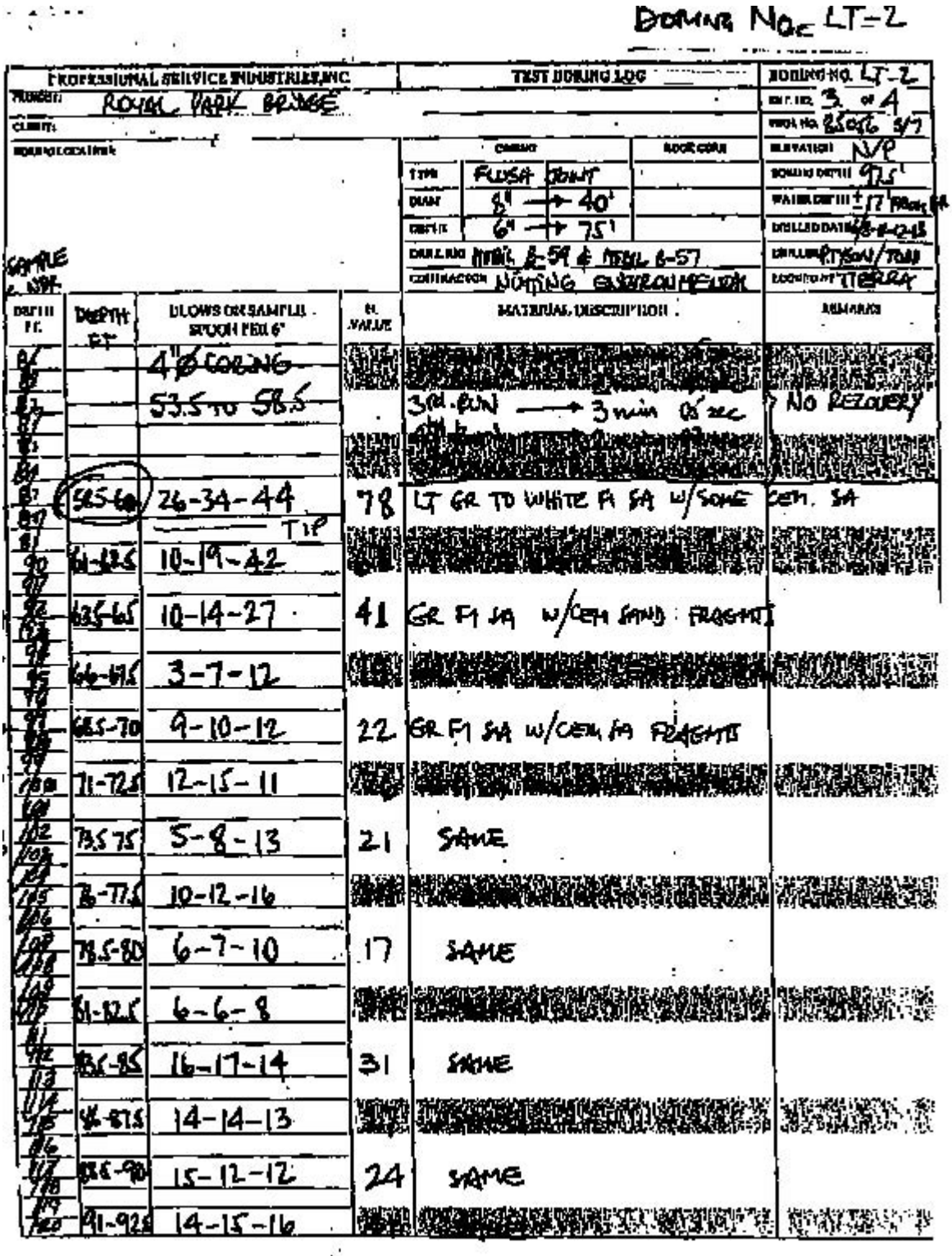

Figure A-57. Site III SPT boring log LT-2 location (3 of 4).

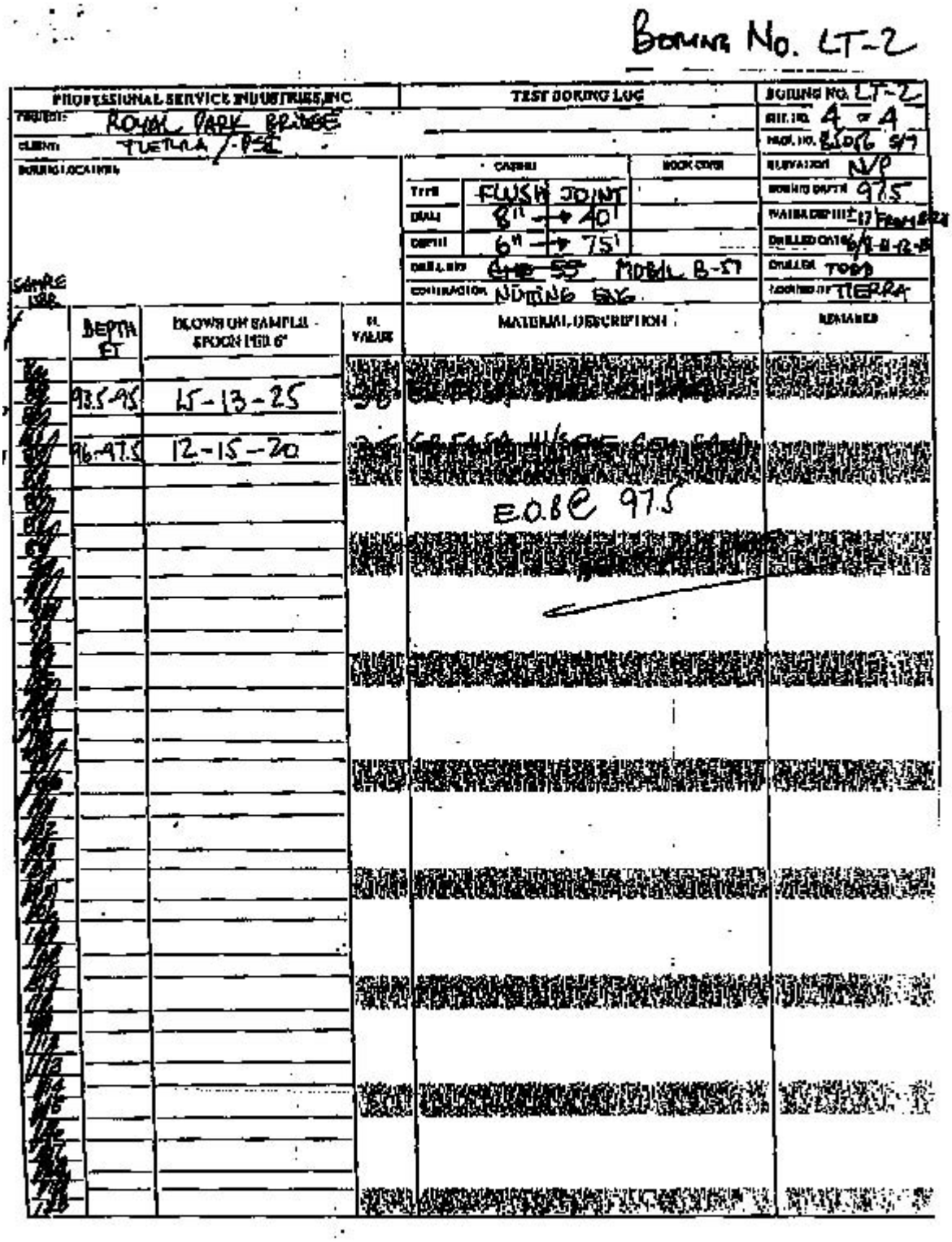

Figure A-58. Site III SPT boring log LT-2 location (4 of 4).

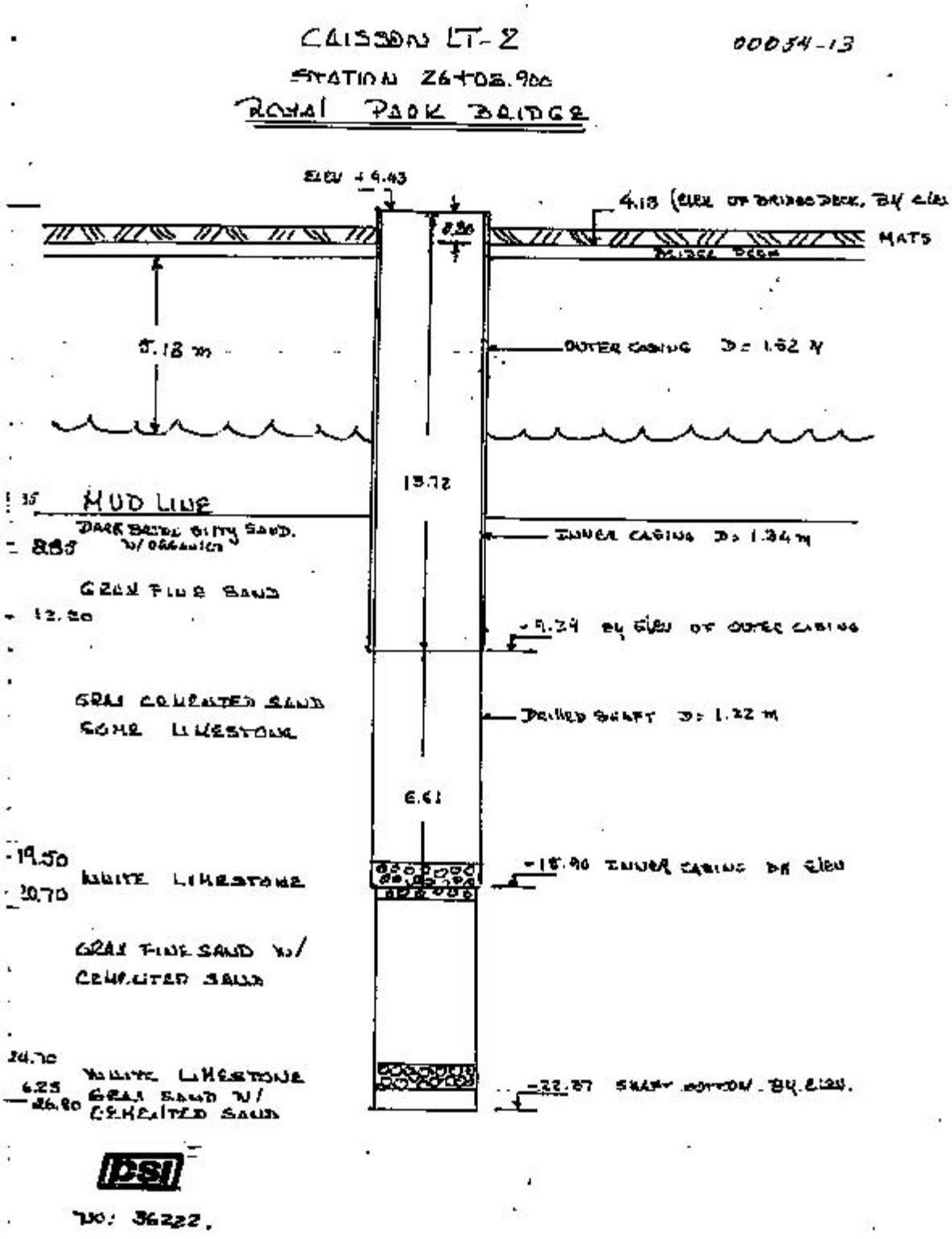

Figure A-59. Site III LT-2 as-built.

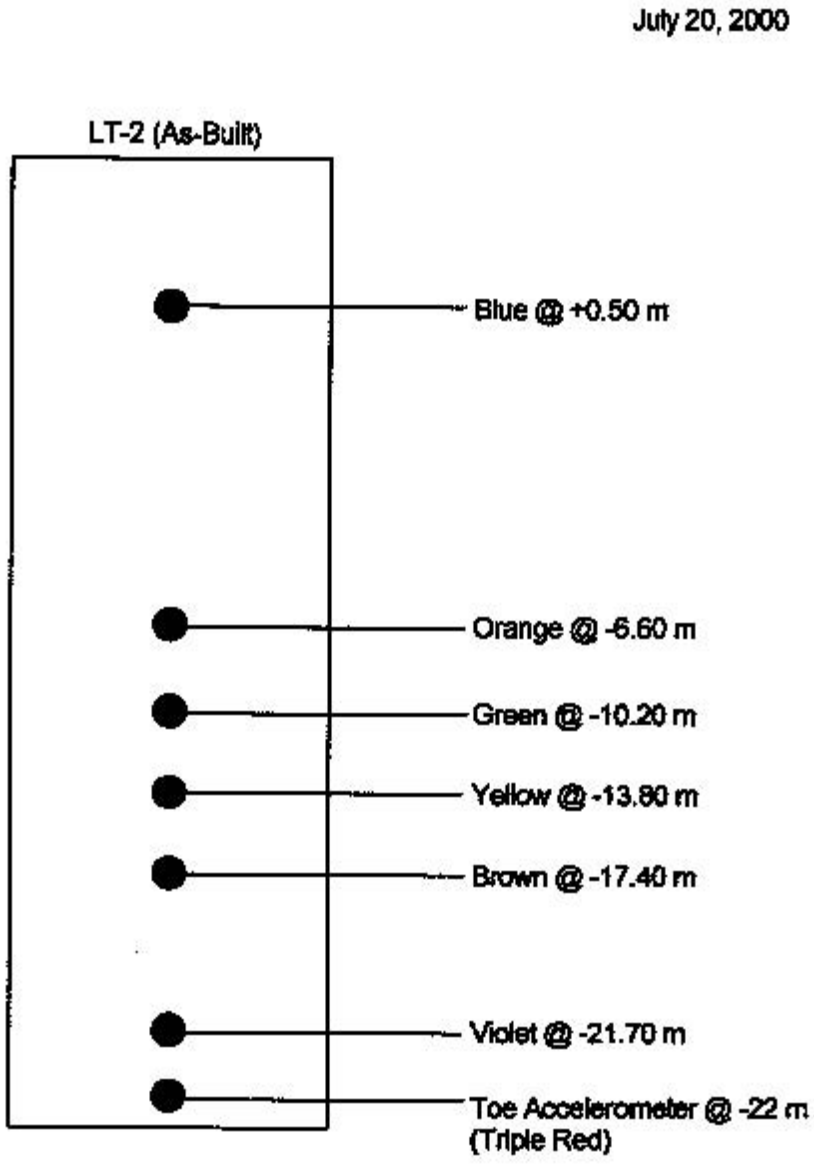

Figure A-60. Site III strain gage locations.

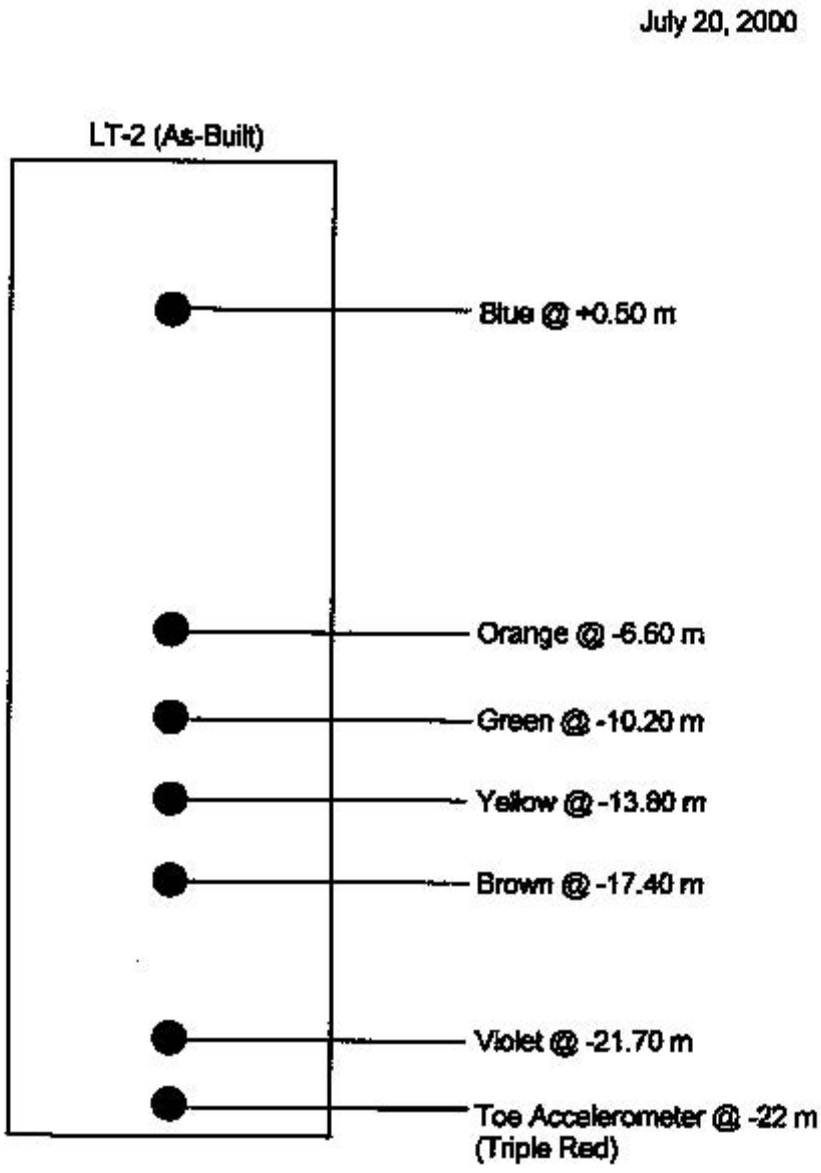

Figure A-61. Site III LT-2 strain gage locations.

Appendix A. (continued)

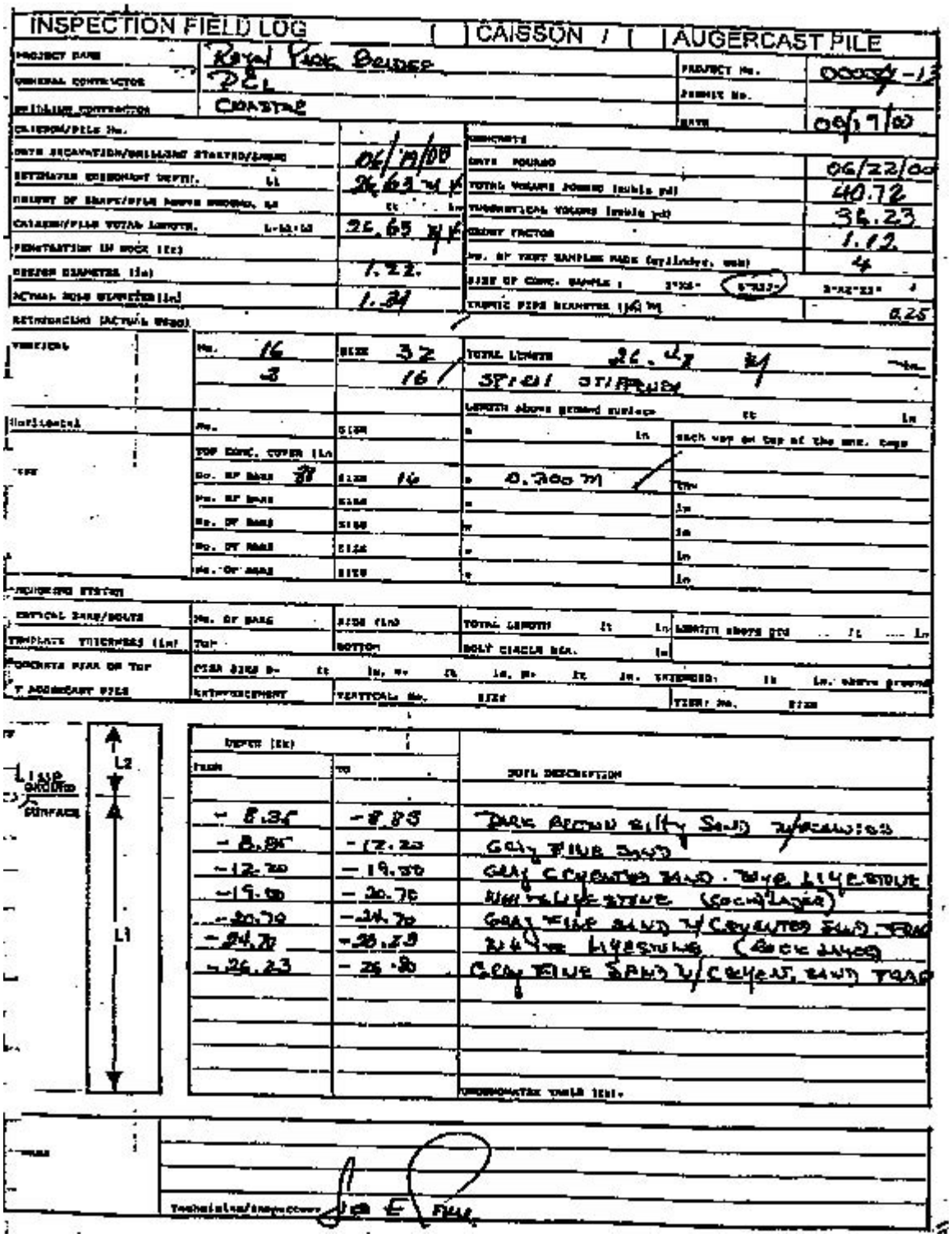

Figure A-62. Site III LT-2 inspection log.

PSI Information To Build On
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REPORT OF FIELD INSPECTION OF CONCRETE

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

DATE: June 22, 2000 OUR REPORT NO.: 772-00054-16 PAGE 1 OF 2

FIELD DATA: Concrete was delivered by TARMAC, mix number M880434.

SET NO.	NO. OF SPECIMENS MADE	CONCRETE SUPPLIER TICKET NUMBER	TIME TRUCK DISPATCHED	TIME TRUCK UNLOADED	YARDS OF CONCRETE	SLUMP, IN	AIR CONTENT, %	TEMPERATURE, °F AIR	CONCRETE
1	4	2242756	03:51 pm	05:10 pm	10.0	8 3/4	3.75	90	95
1		2242757	05:06 pm	05:45 pm	10.0	9		89	92
		2242758	05:22 pm	06:00 pm	10.0				
		2242759	05:29 pm	06:15 pm	10.0	9		88	91
		2242760	05:42 pm	06:30 pm	10.0				
		2242761	06:01 pm	07:00 pm	10.0	8 3/4		86	90

LOCATION: CAISSON LT-2

1	LT-2 FROM -26.80 TO 22.86
1	LT-2 FROM -22.86 TO -19.35
	LT-2 FROM -19.35 TO -15.09
	LT-2 FROM -15.09 TO -11.18
	LT-2 FROM -11.18 TO -7.07
	LT-2 FROM -7.07 TO -2.44

NOTE: APPLICABLE ASTM REFERENCES, UNLESS OTHERWISE INDICATED: [illegible]

REMARKS: Observed the placement of 56.7 cubic yards of concrete.

MIX 04-M0434

TECHNICIAN: L. PONCE

cc: CLIENT (1),

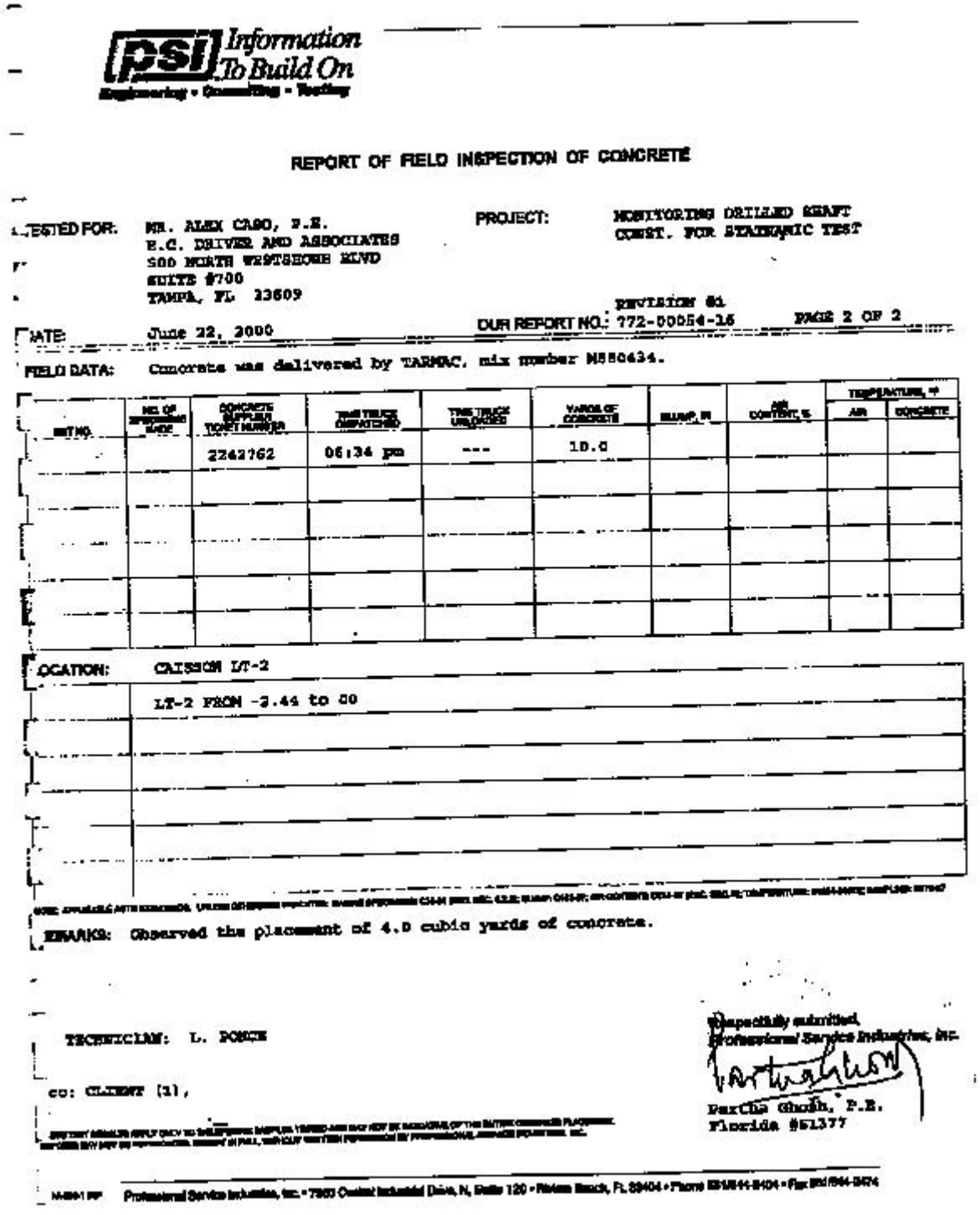
[illegible] REPORTS MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION BY PROFESSIONAL SERVICE INDUSTRIES, INC.

Respectfully submitted,
Professional Service Industries, Inc.

Partha Ghosh, P.E.
Florida #51377

Professional Service Industries, Inc. • 7560 Central Industrial Drive, N. Suite 120 • Riviera Beach, FL 33404 • Phone 561/844-2404 • Fax 561/844-2474

Figure A-63. Site III LT-2 concrete log (1 of 3).



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REPORT OF FIELD INSPECTION OF CONCRETE

TESTED FOR: MR. ALEX CASO, P.E.
P.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

DATE: June 22, 2000

OUR REPORT NO.: 772-00054-16

PAGE 2 OF 2

FIELD DATA: Concrete was delivered by TARMAC, mix number M580434.

BAT NO.	NO. OF SPECIMENS MADE	CONCRETE SUPPLIER TICKET NUMBER	TIME TRUCK DISPATCHED	TIME TRUCK UNLOADED	YARDS OF CONCRETE	SLUMP, IN	AIR CONTENT, %	TEMPERATURE, °F AIR	TEMPERATURE, °F CONCRETE
		2242762	06:34 pm	---	10.0				

LOCATION: CAISSON LT-2

LT-2 FROM -2.44 to 00

REMARKS: Observed the placement of 4.0 cubic yards of concrete.

TECHNICIAN: L. POUCH

cc: CLIENT (1),

Respectfully submitted,
Professional Service Industries, Inc.

Partha Ghosh, P.E.
Florida #51377

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Figure A-64. Site III concrete log (2 of 3).

00004 - 13

CONCRETE CITY

D = 1.22
h = 6.47 m
A = 1.17 m²
U = 7.57 m³
Each m³ = 0.86 m/min

D = 1.34 m
h = 20.33 m
A = 1.41 m²
U = 28.67 m³
Each m³ = 0.71 m

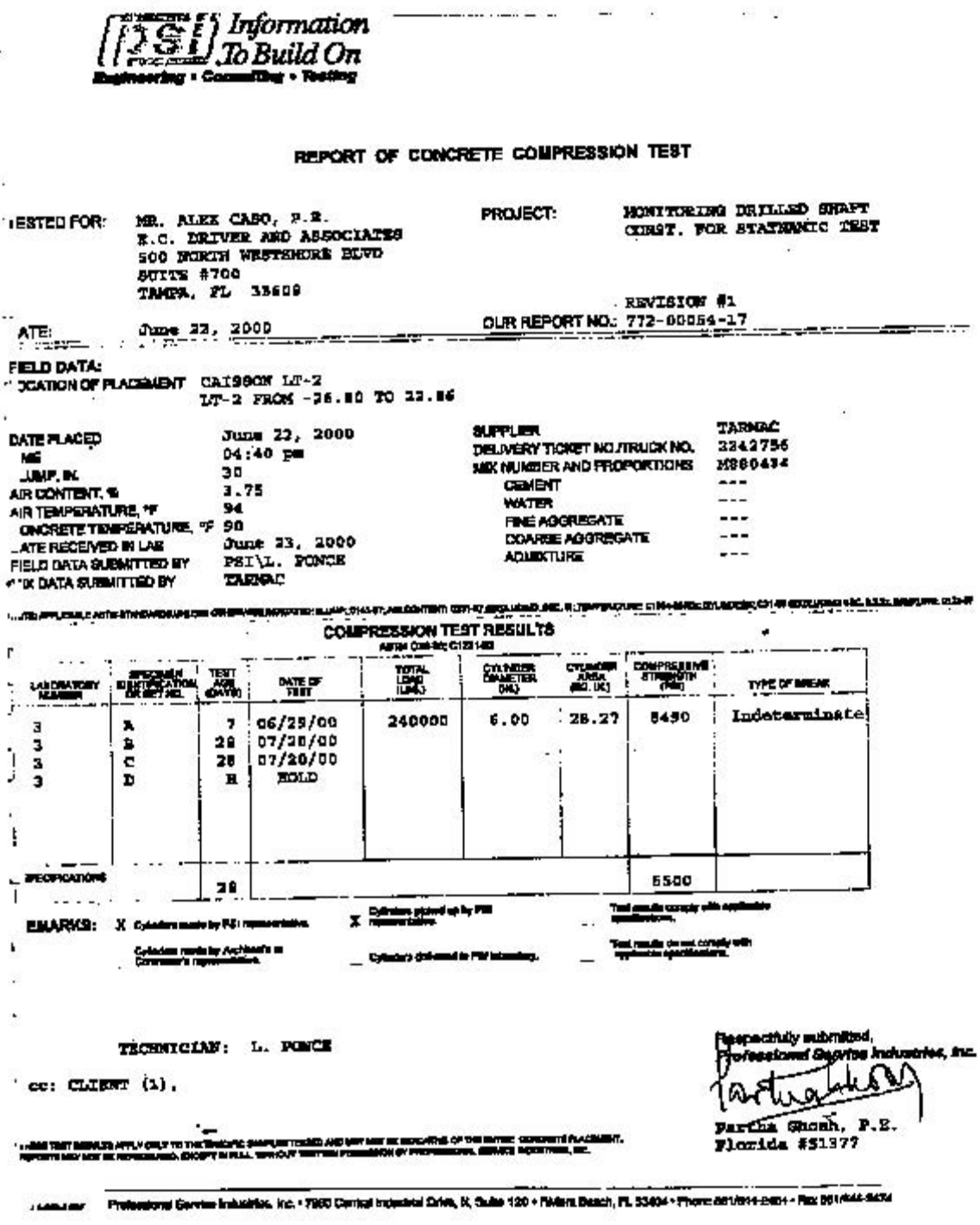
CONCRETE SURFACE ELEV

TRUCK	H THEORICAL	H ACTUAL
	- 22.80	
1	- 21.33	- 22.27
2	- 16.99	- 19.35
3	- 11.72	- 15.09
4	- 6.46	- 11.18
5	- 1.20	- 7.07
6	———	- 2.44
7		——— (4 m³)

PSI

N° : 36222

Figure A-65. Site III LT-2 concrete log (3 of 3).



Information To Build On
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REPORT OF CONCRETE COMPRESSION TEST

TESTED FOR: MR. ALEX CASO, P.E.
R.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #1

DATE: June 22, 2000

OUR REPORT NO.: 772-00054-17

FIELD DATA:
LOCATION OF PLACEMENT: CAISSON LT-2
LT-2 FROM -26.80 TO 22.86

DATE PLACED	June 22, 2000	SUPPLIER	TARMAC
MIX	04:40 pm	DELIVERY TICKET NO./TRUCK NO.	2242756
SLUMP, IN.	30	MIX NUMBER AND PROPORTIONS	M000434
AIR CONTENT, %	3.75	CEMENT	---
AIR TEMPERATURE, °F	94	WATER	---
CONCRETE TEMPERATURE, °F	90	FINE AGGREGATE	---
DATE RECEIVED IN LAB	June 23, 2000	COARSE AGGREGATE	---
FIELD DATA SUBMITTED BY	PSI\L. PONCE	ADMIXTURE	---
MIX DATA SUBMITTED BY	TARMAC		

COMPRESSION TEST RESULTS

LABORATORY NUMBER	SPECIMEN IDENTIFICATION OR SET NO.	TEST AGE (DAYS)	DATE OF TEST	TOTAL LOAD (LBS.)	CYLINDER DIAMETER (IN.)	CYLINDER AREA (SQ. IN.)	COMPRESSIVE STRENGTH (PSI)	TYPE OF BREAK
3	A	7	06/29/00	240000	6.00	28.27	8490	Indeterminate
3	B	28	07/20/00					
3	C	28	07/20/00					
3	D	H	HOLD					
SPECIFICATIONS		28					6500	

REMARKS: X Cylinders made by PSI representative. X Cylinders picked up by PSI representative. Test results comply with applicable specifications.
Cylinders made by Architect's or Consumer's representative. Cylinders delivered to PSI laboratory. Test results do not comply with applicable specifications.

TECHNICIAN: L. PONCE

cc: CLIENT (1).

Respectfully submitted,
Professional Service Industries, Inc.
Partha Ghosh, P.E.
Florida #51977

THESE TEST RESULTS APPLY ONLY TO THE SPECIFIC SAMPLES TESTED AND MAY NOT BE INDICATIVE OF THE ENTIRE CONCRETE PLACEMENT. REPORTS MAY NOT BE REPRODUCED, EXCEPT IN FULL, WITHOUT WRITTEN PERMISSION OF PROFESSIONAL SERVICE INDUSTRIES, INC.

Professional Service Industries, Inc. • 7900 Central Industrial Drive, N. Suite 120 • Riviera Beach, FL 33404 • Phone: 561/844-2601 • Fax: 561/844-8474

Figure A-66. Site III LT-2 concrete cylinder breaks.

Appendix A. (continued)

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INSPECTION REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #2

DATE: June 15, 2000

OUR REPORT NO.: 772-00054-14

REMARKS: As requested, a PSI representative reported to the above referenced project to perform caisson monitoring at location LT-2.

The following items were noted:

1. At 7:00 outer casing (1.52 meters diameter) was placed on LT-2 caisson, at station No. 26 +08.90 and driven with a vibrator hammer to 12.42 meters below bridge deck (-9.25 NE elevation). Mudline is 8.05 below bridge deck.

2. At 12:00 p.m. inner casing (1.34 meters diameter) was placed on drilled shaft LT-2 and driven into the ground to same elevation as the outer casing.

3. Steel reinforcing cage was not ready and will not be ready until Saturday, therefore driller contractor will not drill the shaft until everything is ready.

4. Activities will re-start on Monday 19, 2000.

Inspector: L. Ponce
Total Hours: 10.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Figure A-67. Site III LT-2 construction details (1 of 6).

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INSPECTION REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

ATE: June 19, 2000

REVISION #3
OUR REPORT NO: 772-00054-13

REMARKS: As requested, a PSI representative reported to the above referenced project to perform caisson monitoring and steel inspection (for LT-2).

The following items were noted:

1. At 7: 00 a.m. shaft drilling began. Excavated soils classification were recorded in inspection field report.

2. Inspection of steel reinforcing was performed according to project #229855-1-52-01 Sheet D-12.

3. At 2:00 p.m. drilling was completed depth reached 26.80 meters.

4. At 4:00 p.m. contractor started to clean bottom of shaft and also sieved the excavated material in order to reuse the mud.

5. Concrete pour is scheduled for tomorrow at 2:00 p.m.

Technician: L. Ponce
Total Hours: 4.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Parthe Ghosh, P.E.
Florida #51277

cc: CLIENT (1).

Professional Service Industries, Inc. • 7900 Central Industrial Drive, N, Bldg 180 • Riviera Beach, FL 33404 • Phone 561/844-2404 • Fax 561/844-8474

Figure A-68. Site III LT-2 construction details (2 of 6).

PSI Information To Build On
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INSPECTION REPORT

ESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATEWIDE TEST

REVISION #2

ATE: June 20, 2000

OUR REPORT NO.: 772-00054-20

REMARKS:

As requested, a PSI representative reported to the above referenced project to perform caisson monitoring at location LT-2.

The following items were noted:

1. At 7:00 a.m. subcontractor Coastal Caisson continued sieving excavated mud to reuse the mud.

2. At 11:00 a.m. mud was coming up from the mudline of the intracoastal waterways proximate to the drilled shaft excavation. Coastal Caisson decided to continue with its original schedule of the concrete placement at 3:00 p.m. in believing that the mud came up from a small hole at the bottom of the casing.

3. At 1:00 p.m. contractor stopped all work activities because the drilled shaft hole was caving in from below the casing bottom.

4. Roy with Coastal Caisson communicated to DOT and PSI representative that they have to use additional inner casing, an additional 8' into the ground in order to stop the caving in and seal the possible hole

on the drilled shaft walls below the existing casing bottom.

Rest of day Coastal Caisson welded additional casing to existing one.

Inspector: L. Ponce
Total Hours: 9.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Figure A-69. Site III LT-2 construction details (3 of 6).

PSI Information To Build On
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INSPECTION REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
600 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #2

ATE: June 21, 2000 OUR REPORT NO.: 772-00054-19

REMARKS:

As requested, a PSI representative reported to the above referenced project to perform caison monitoring at location LT-2.

The following items were noted:

1. At 7:00 a.m. contractor began to drive additional 8' inner casing in.

2. At 12:00 p.m. mud was still escaping from drilled shaft. Contractor decided to install 15' more of inner casing to stabilize the hole.

3. At 5:00 p.m. they received additional casing and was welded during the night to the existing one.

Inspector: L. Ponce
Total Hours: 8.0

Respectfully submitted,

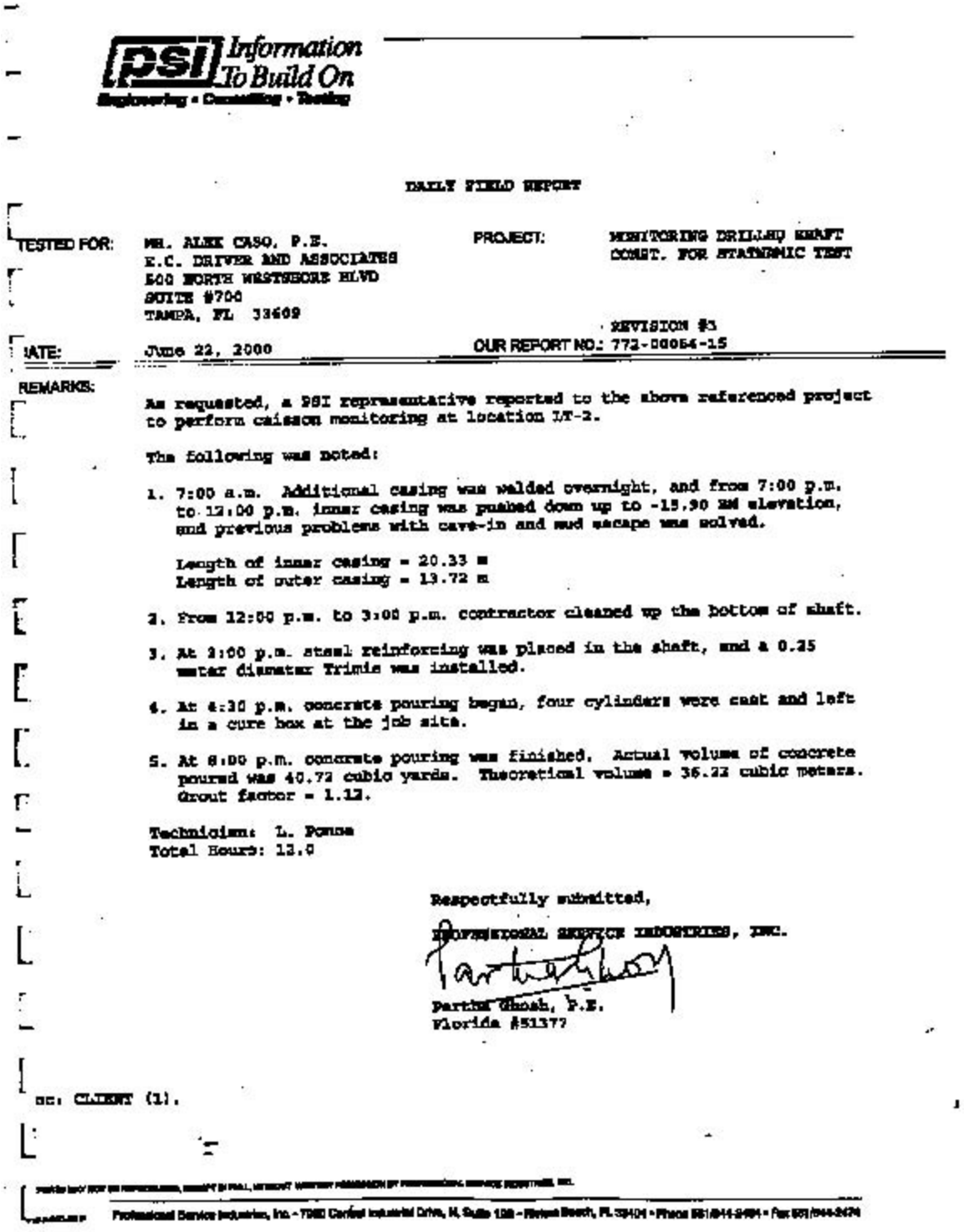
PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1),

Figure A-70. Site III LT-2 construction details (4 of 6).

Appendix A. (continued)



Information To Build On
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DAILY FIELD REPORT

TESTED FOR: MR. ALEX CASO, P.E.
E.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR STATNAMIC TEST

REVISION #3

DATE: June 22, 2000

OUR REPORT NO.: 772-00054-15

REMARKS:

As requested, a PSI representative reported to the above referenced project to perform caisson monitoring at location LT-2.

The following was noted:

1. 7:00 a.m. Additional casing was welded overnight, and from 7:00 p.m. to 12:00 p.m. inner casing was pushed down up to -15.90 M elevation, and previous problems with cave-in and mud escape was solved.

   Length of inner casing = 20.33 m
   Length of outer casing = 19.72 m

2. From 12:00 p.m. to 3:00 p.m. contractor cleaned up the bottom of shaft.

3. At 3:00 p.m. steel reinforcing was placed in the shaft, and a 0.25 meter diameter Trimie was installed.

4. At 4:30 p.m. concrete pouring began, four cylinders were cast and left in a cure box at the job site.

5. At 8:00 p.m. concrete pouring was finished. Actual volume of concrete poured was 40.72 cubic yards. Theoretical volume = 36.22 cubic meters. Grout factor = 1.12.

Technician: L. Ponce
Total Hours: 13.0

Respectfully submitted,

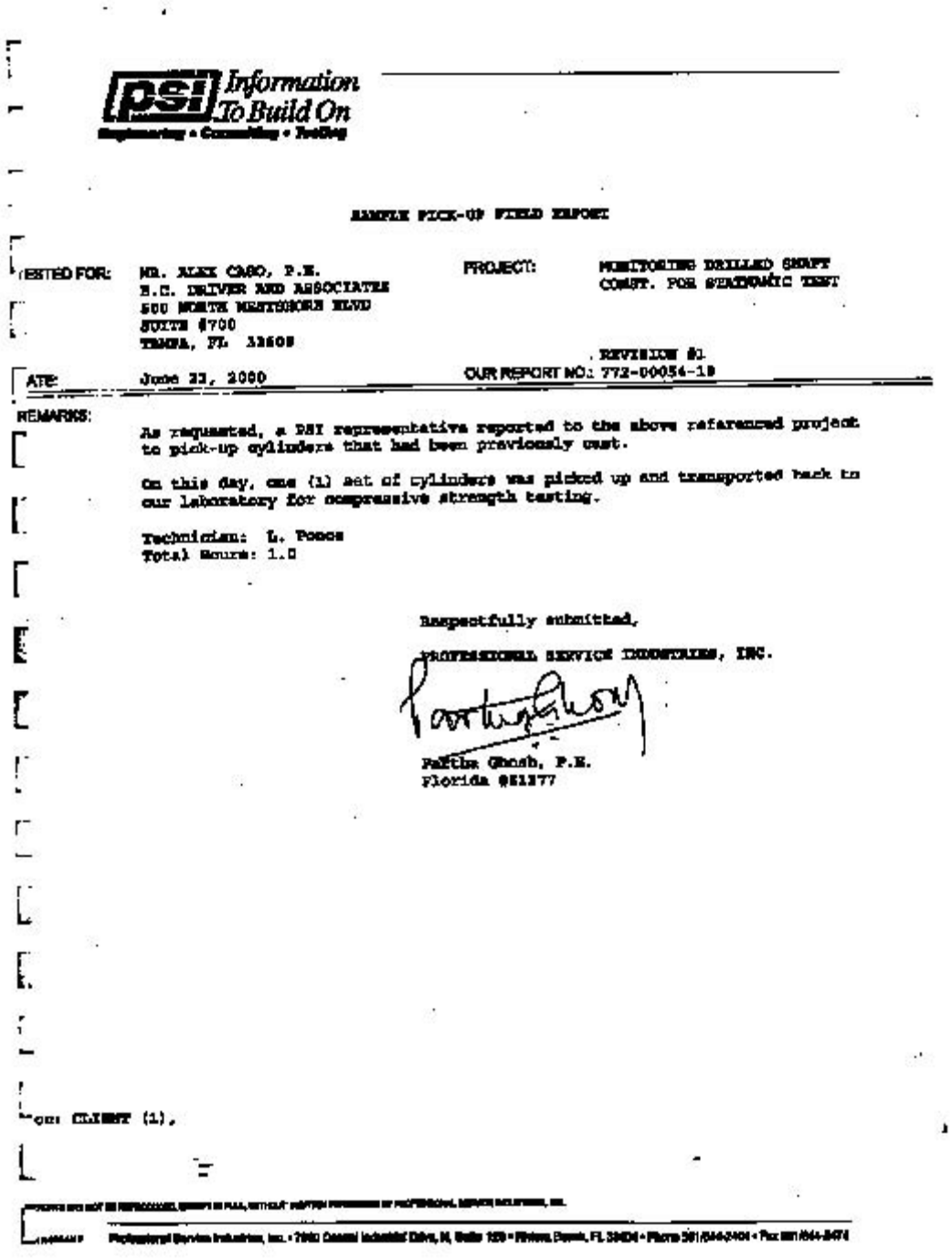
PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

cc: CLIENT (1).

Professional Service Industries, Inc. - 7981 Central Industrial Drive, N. Suite 108 - Riviera Beach, FL 33404 - Phone 561/844-3484 - Fax 561/844-3476

Figure A-71. Site III LT-2 construction details (5 of 6).



psi Information To Build On

Engineering • Consulting • Testing

SAMPLE PICK-UP FIELD REPORT

TESTED FOR: MR. ALEX CANO, P.E.
B.C. DRIVER AND ASSOCIATES
500 NORTH WESTSHORE BLVD
SUITE #700
TAMPA, FL 33609

PROJECT: MONITORING DRILLED SHAFT CONST. FOR DYNAMIC TEST

REVISION #1

ATE: June 23, 2000

OUR REPORT NO.: 772-00054-1B

REMARKS:

As requested, a PSI representative reported to the above referenced project to pick-up cylinders that had been previously cast.

On this day, one (1) set of cylinders was picked up and transported back to our laboratory for compressive strength testing.

Technician: L. Ponce
Total Hours: 1.0

Respectfully submitted,

PROFESSIONAL SERVICE INDUSTRIES, INC.

Partha Ghosh, P.E.
Florida #51377

ON: CLIENT (1).

Professional Service Industries, Inc. • 7900 Central Industrial Drive, H, Suite 180 • Riviera Beach, FL 33404 • Phone 561/844-2404 • Fax 561/844-8474

Figure A-72. Site III LT-2 construction details (6 of 6).

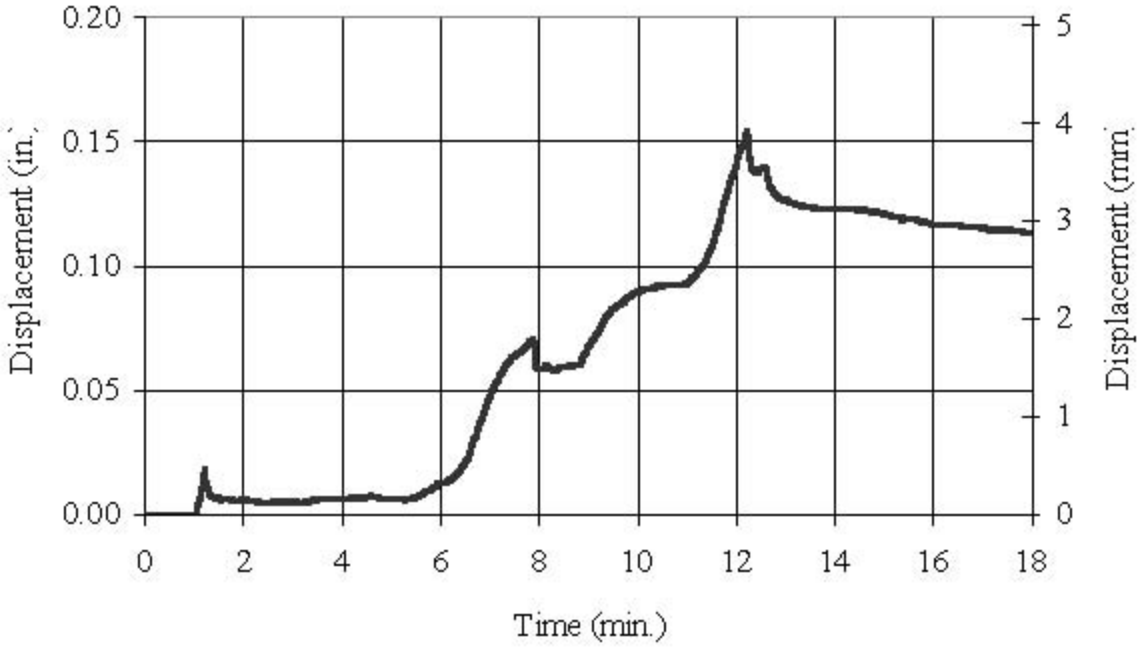


Figure B-1. Site I Flat-Jack 1 grouting displacement vs. time.

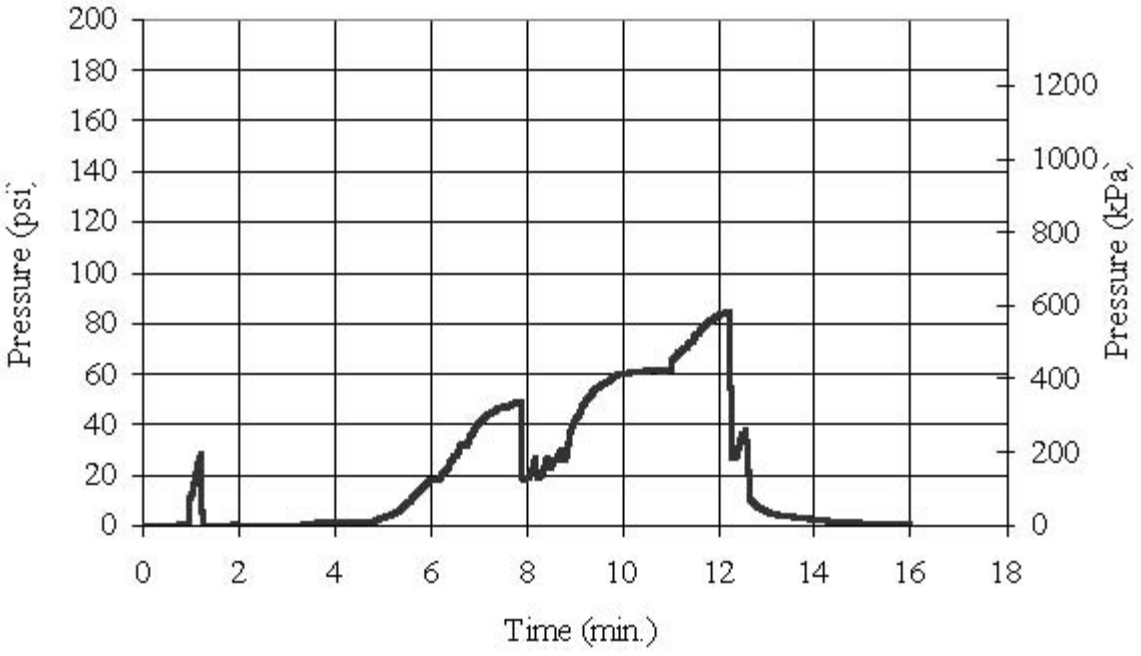


Figure B-2. Site I Flat-Jack 1 grouting pressure vs. time.

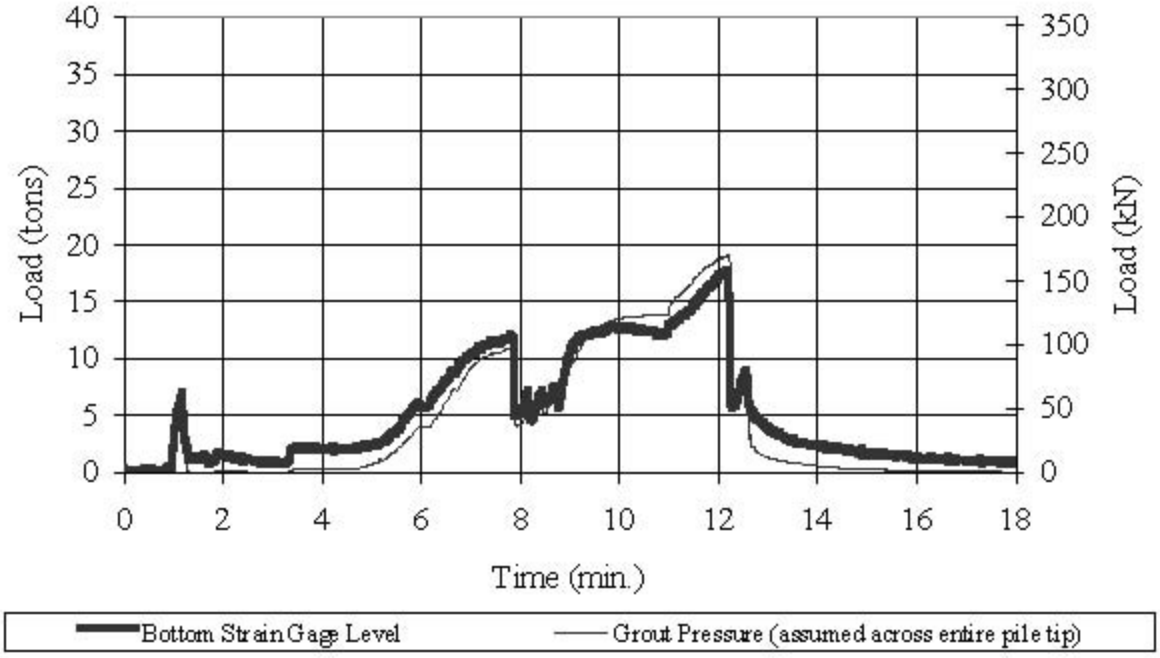


Figure B-3. Site I Flat-Jack 1 grouting load vs. displacement.

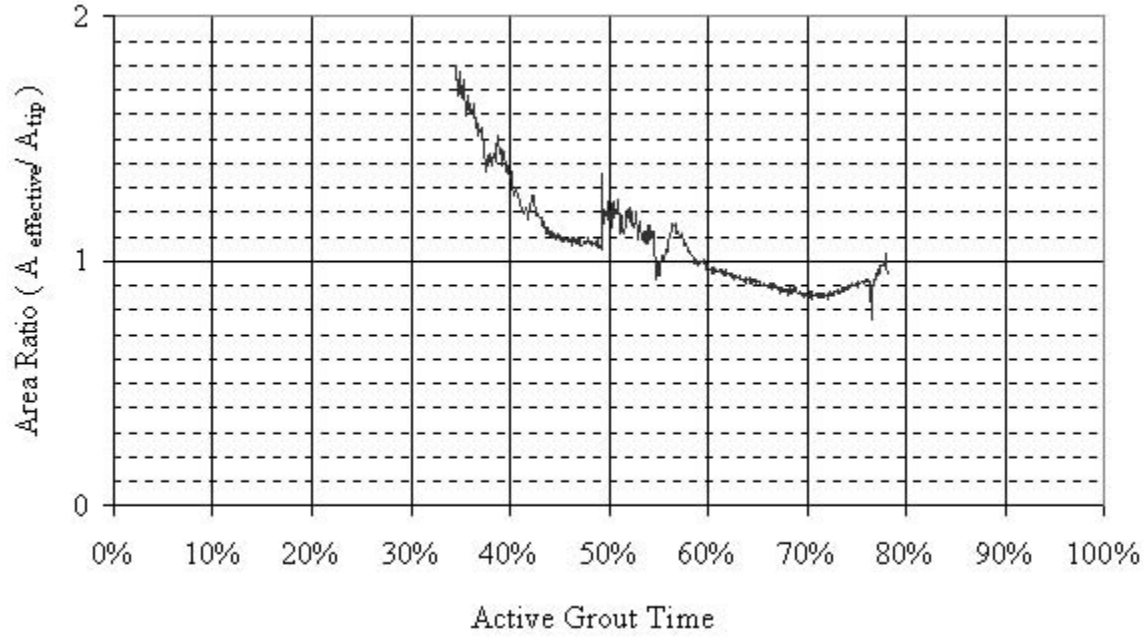


Figure B-4. Site I Flat-Jack 1 grouting area ratio vs. active grout time.

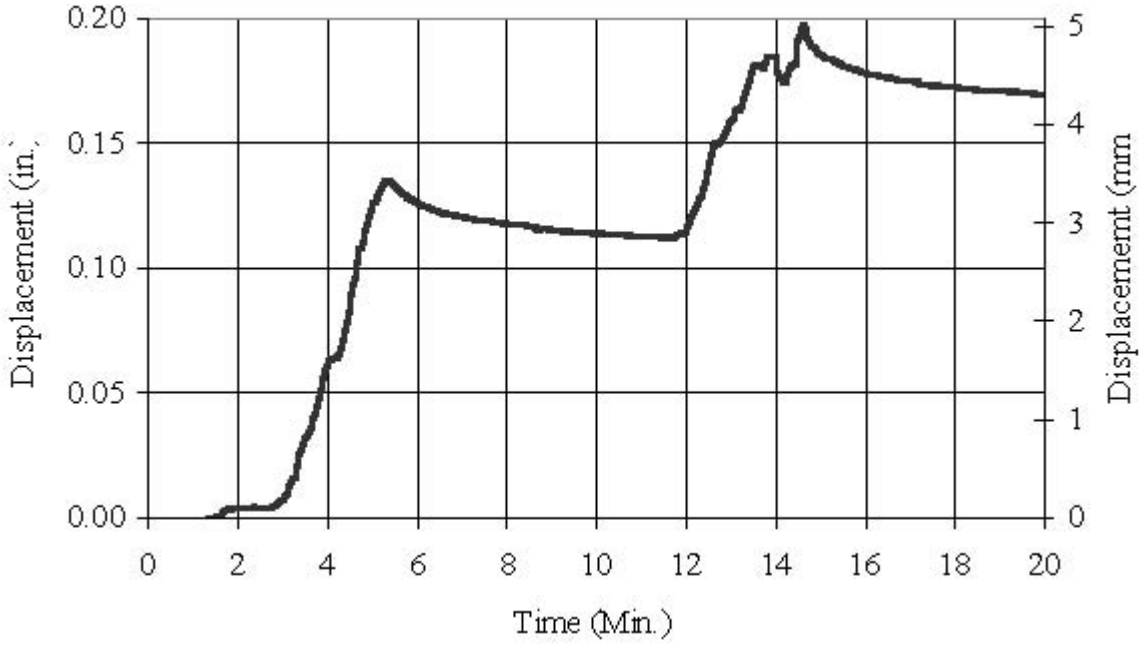


Figure B-5. Site I Flat-Jack 2 grouting displacement vs. time.

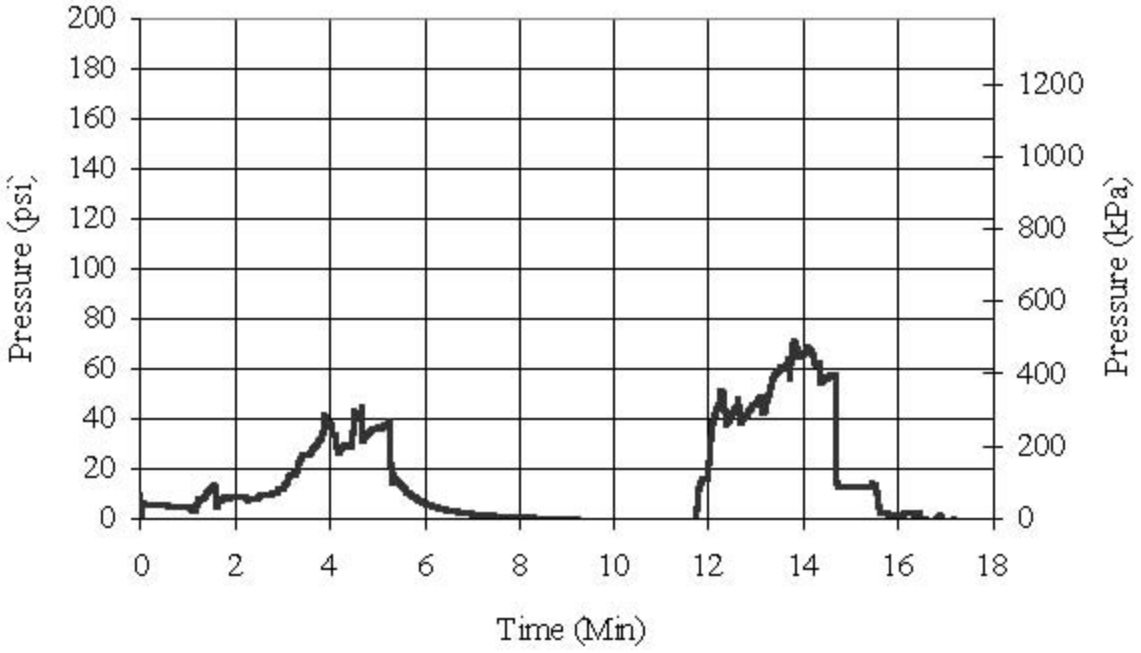


Figure B-6. Site I Flat-Jack 2 grouting pressure vs. time.

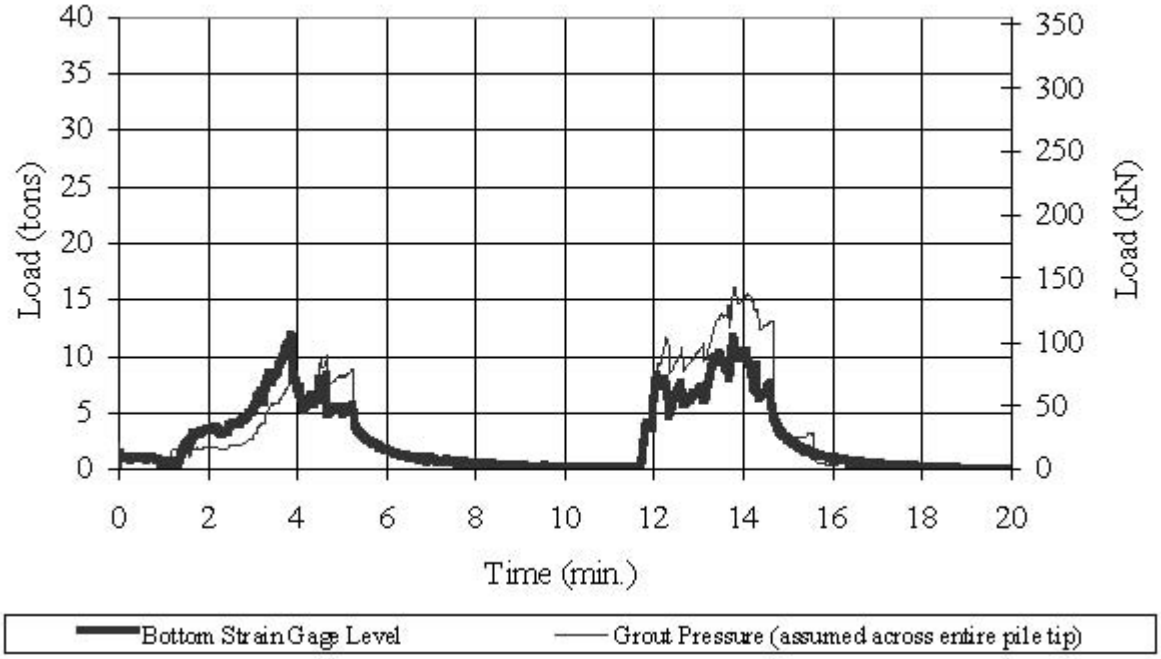


Figure B-7. Site I Flat-Jack 2 grouting load vs. time.

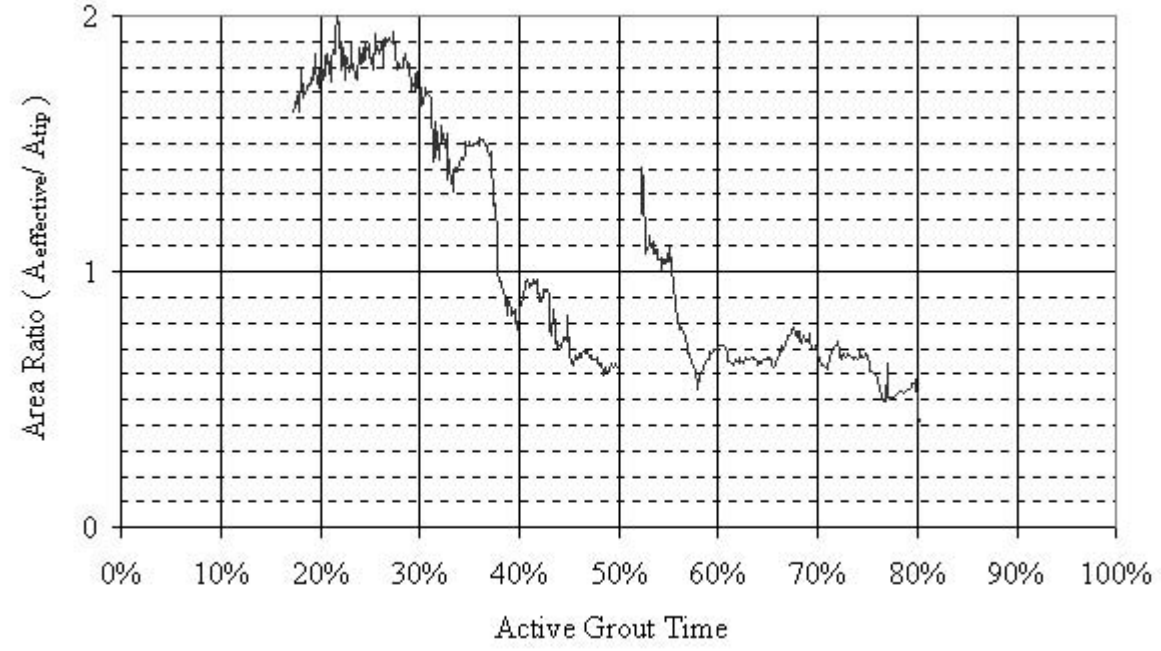


Figure B-8. Site I Flat-Jack 2 grouting area ratio vs. active grout time.

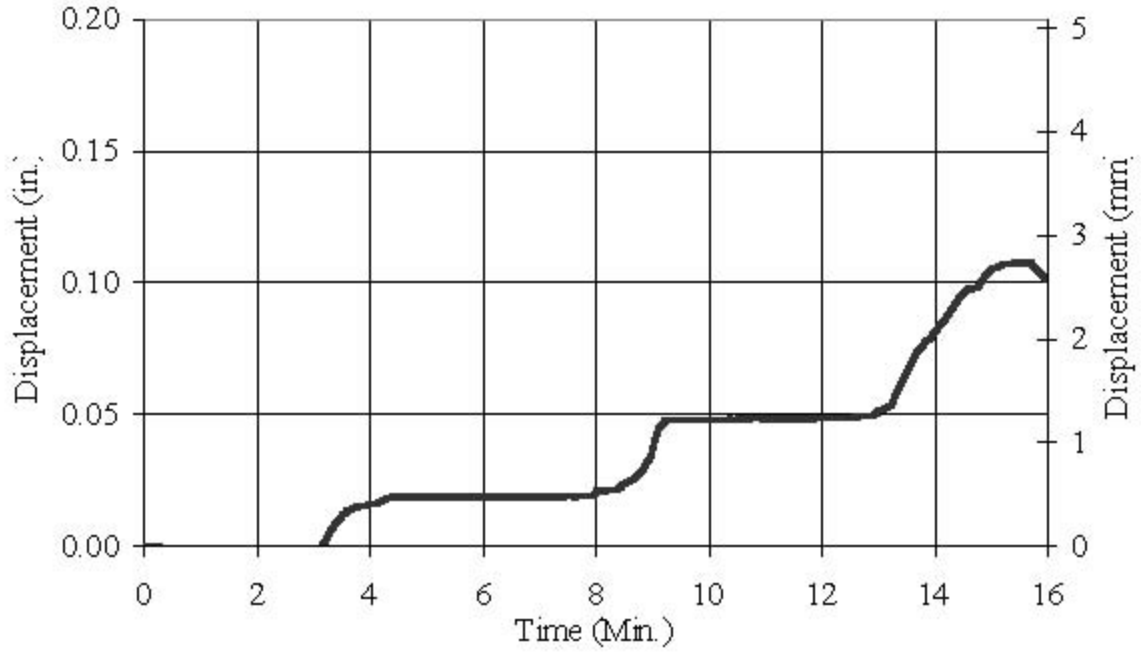


Figure B-9. Site I Sleeve-Port 1 grouting displacement vs. time.

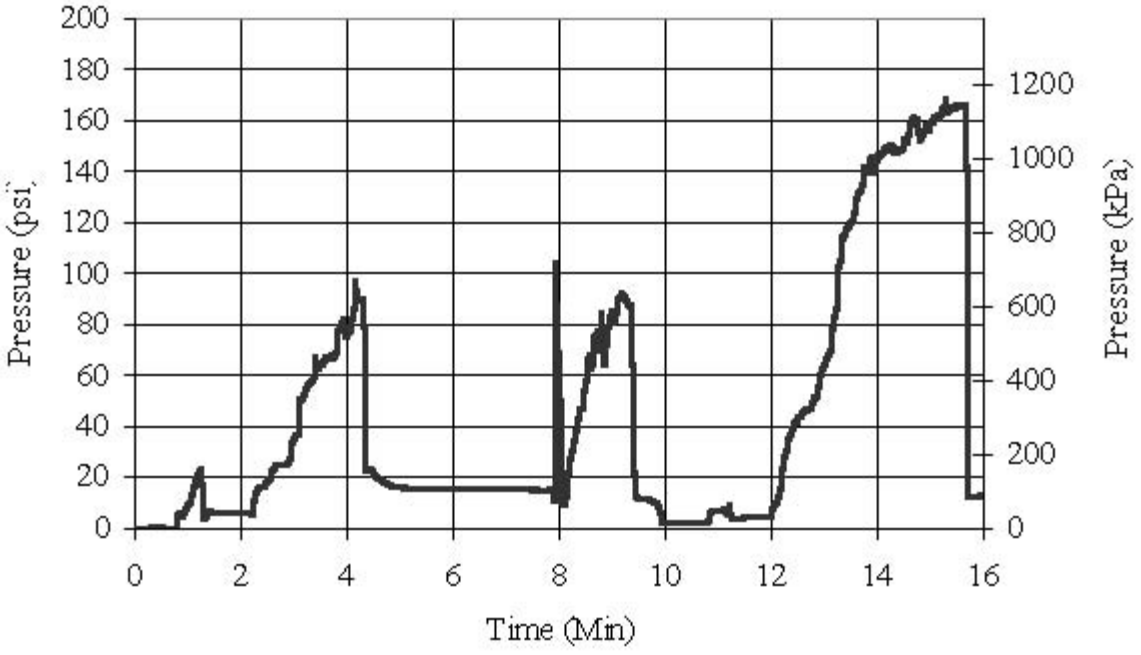


Figure B-10. Site I Sleeve-Port 1 grouting pressure vs. time.

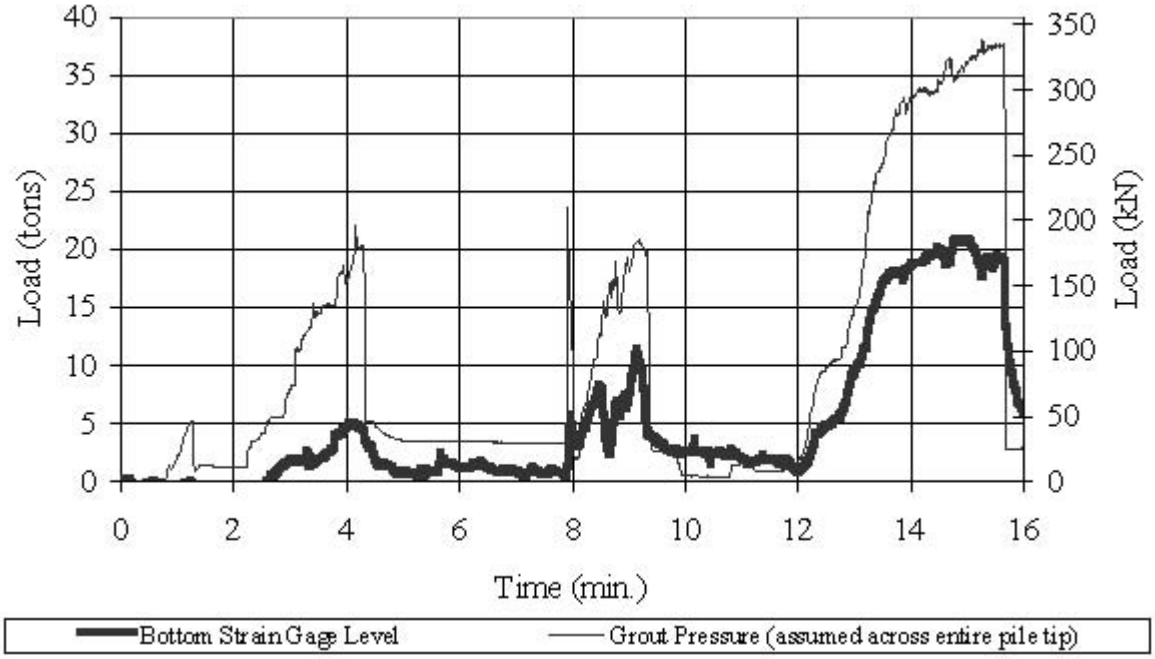


Figure B-11. Site I Sleeve-Port 1 grouting load vs. time.

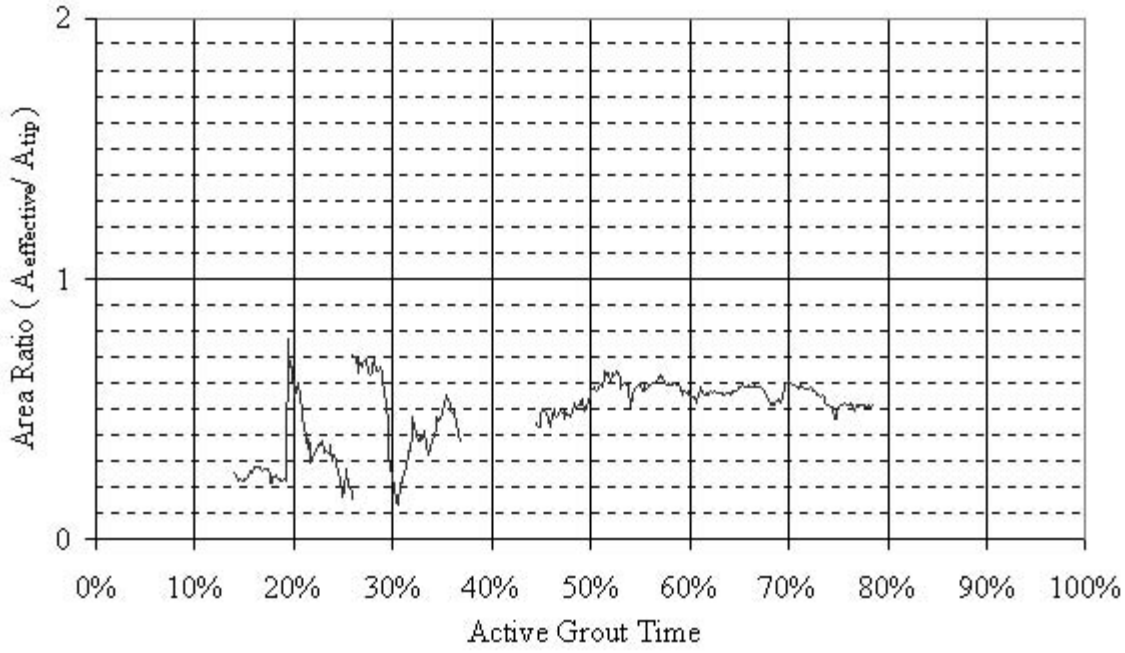


Figure B-12. Site I Sleeve-Port 1 grouting area ratio vs. active grout time.

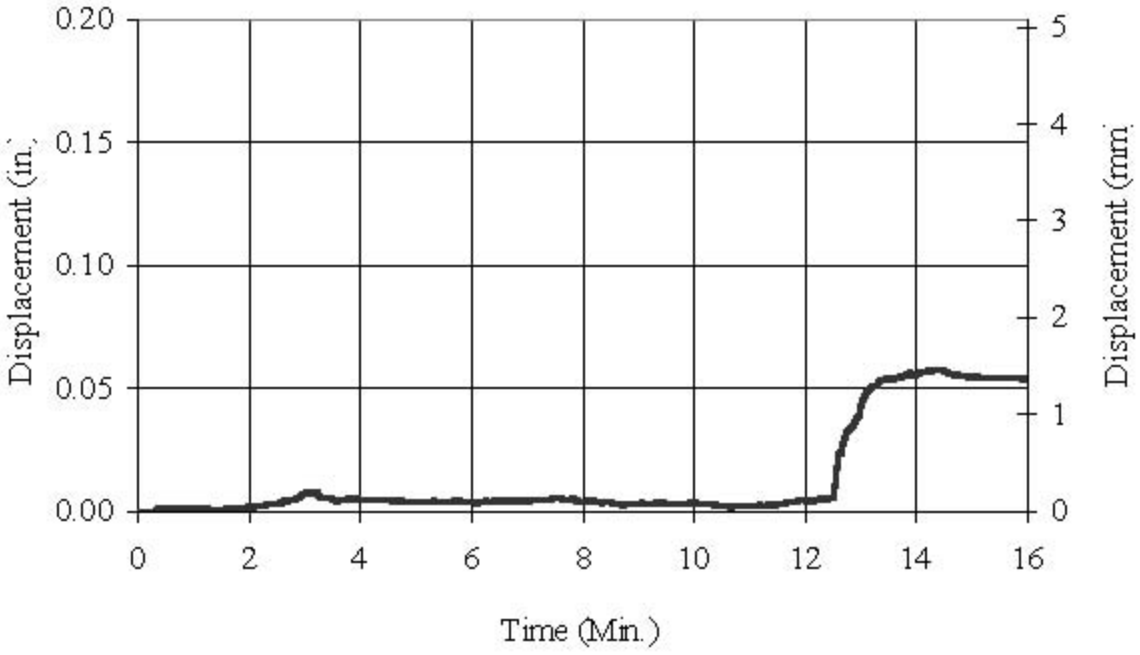


Figure B-13. Site I Sleeve-Port 2 grouting displacement vs. time.

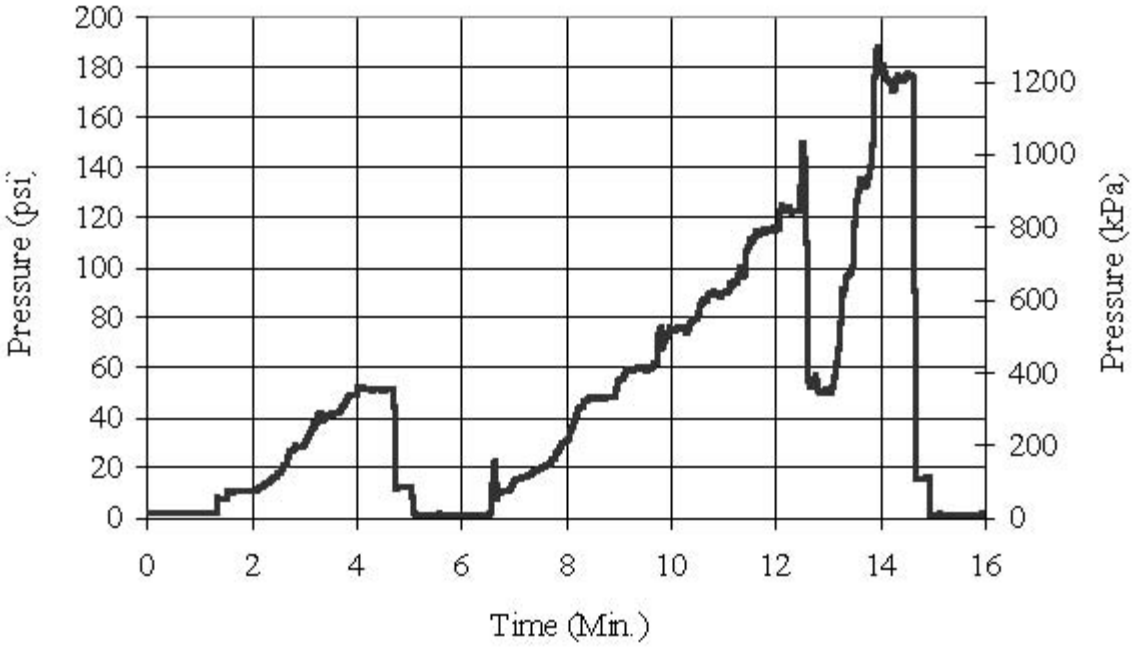


Figure B-14. Site I Sleeve-Port 2 grouting pressure vs. time.

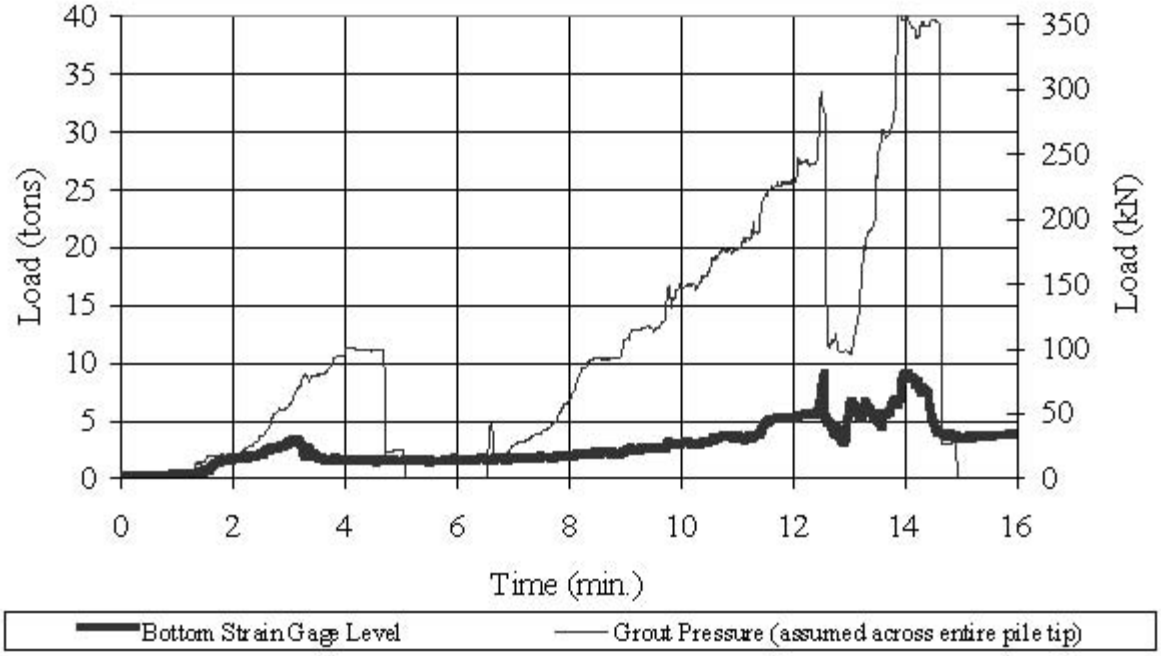


Figure B-15. Site I Sleeve-Port 2 grouting load vs. time.

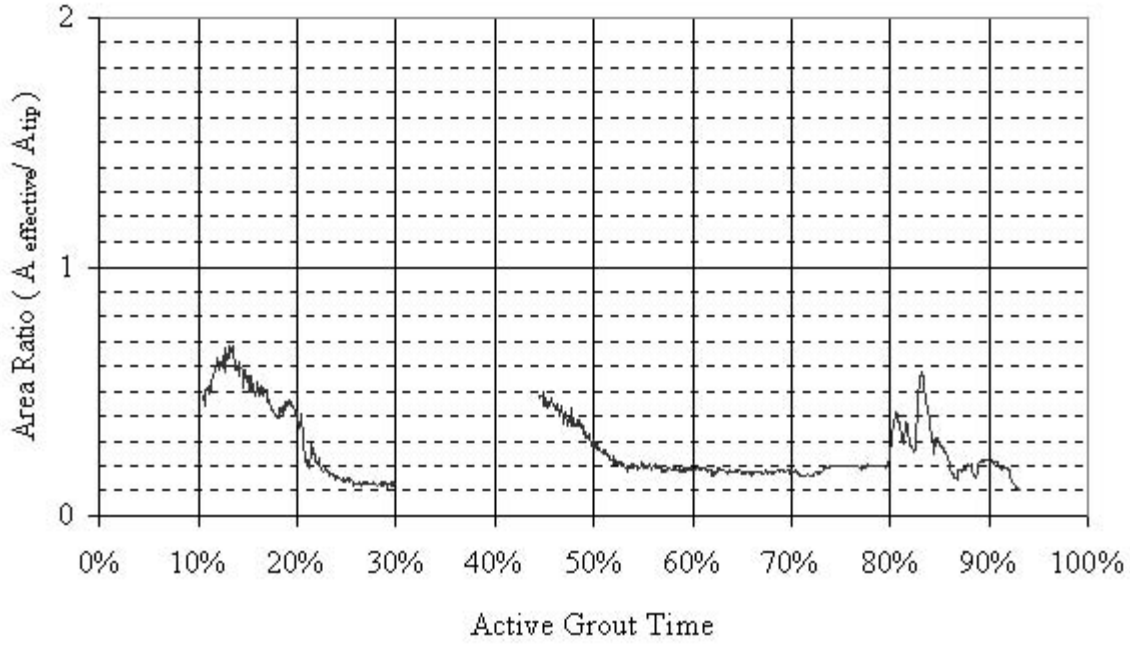


Figure B-16. Site I Sleeve-Port 2 grouting area ratio vs. active grout time.

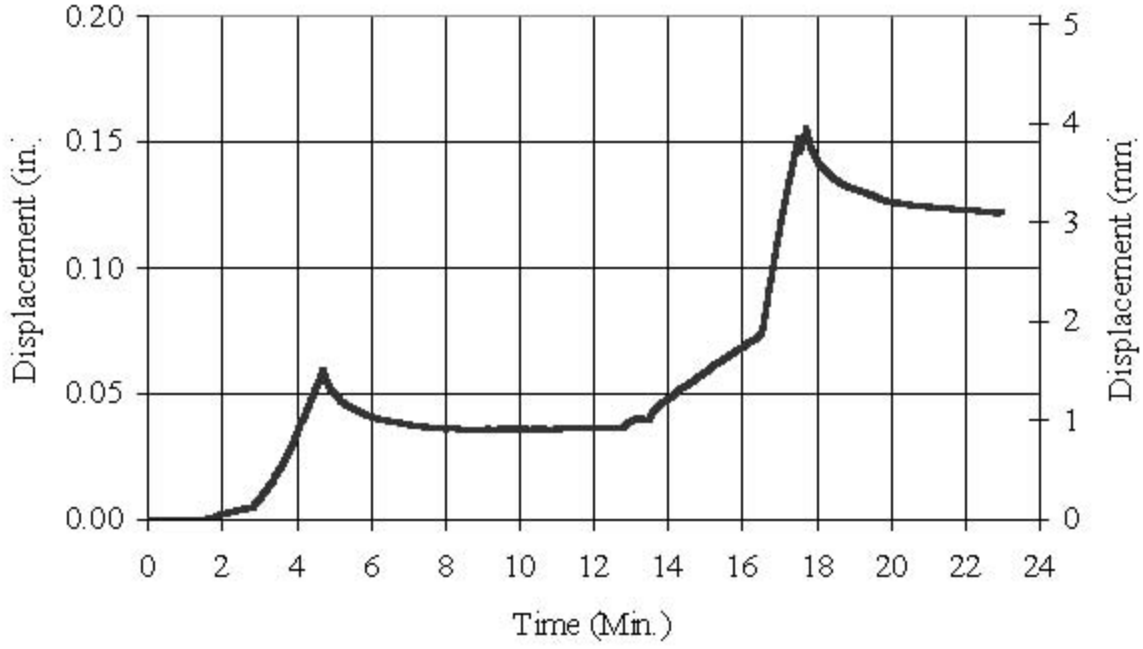


Figure B-17. Site II Flat-Jack grouting displacement vs. time.

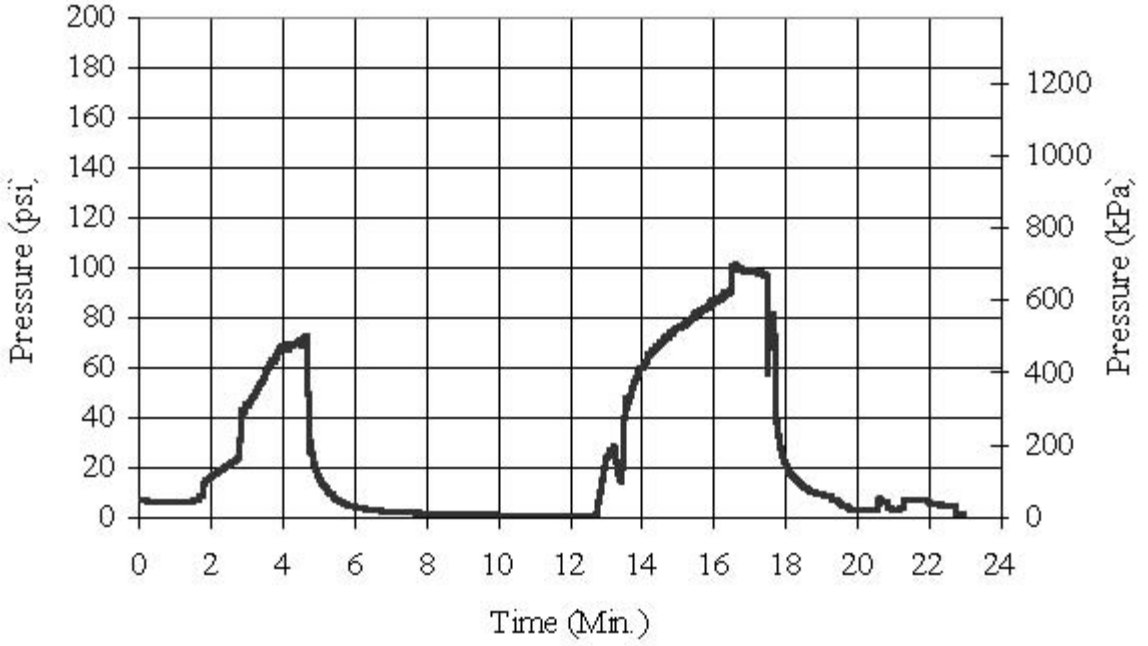


Figure B-18. Site II Flat-Jack grouting pressure vs. time.

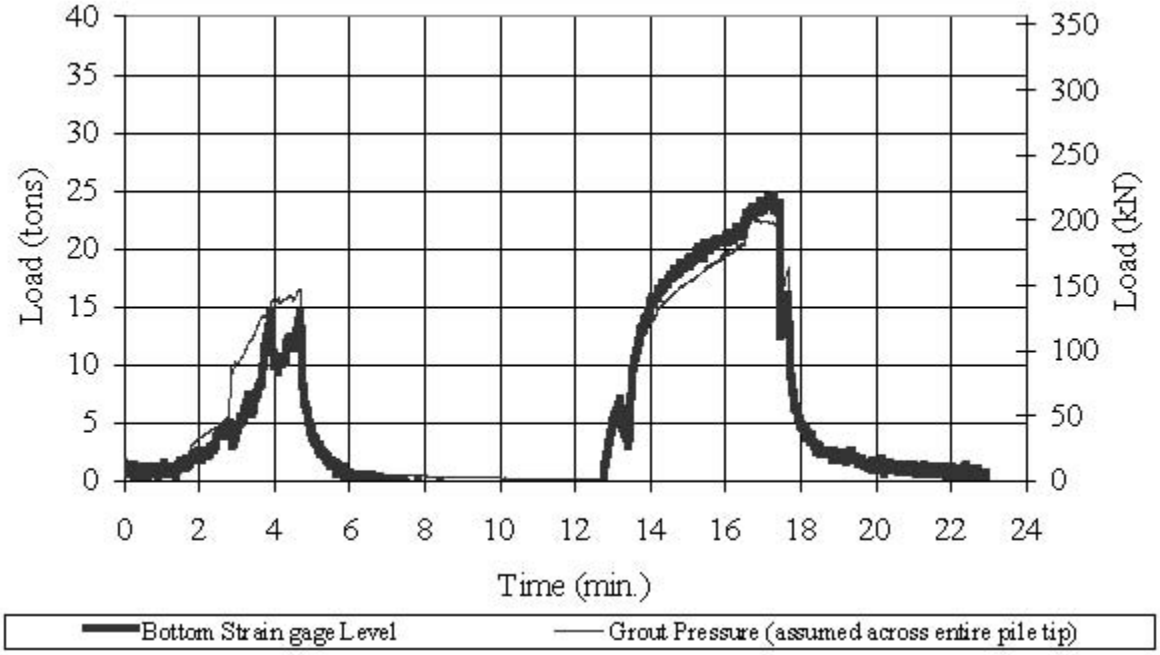


Figure B-19. Site II Flat-Jack grouting load vs. time.

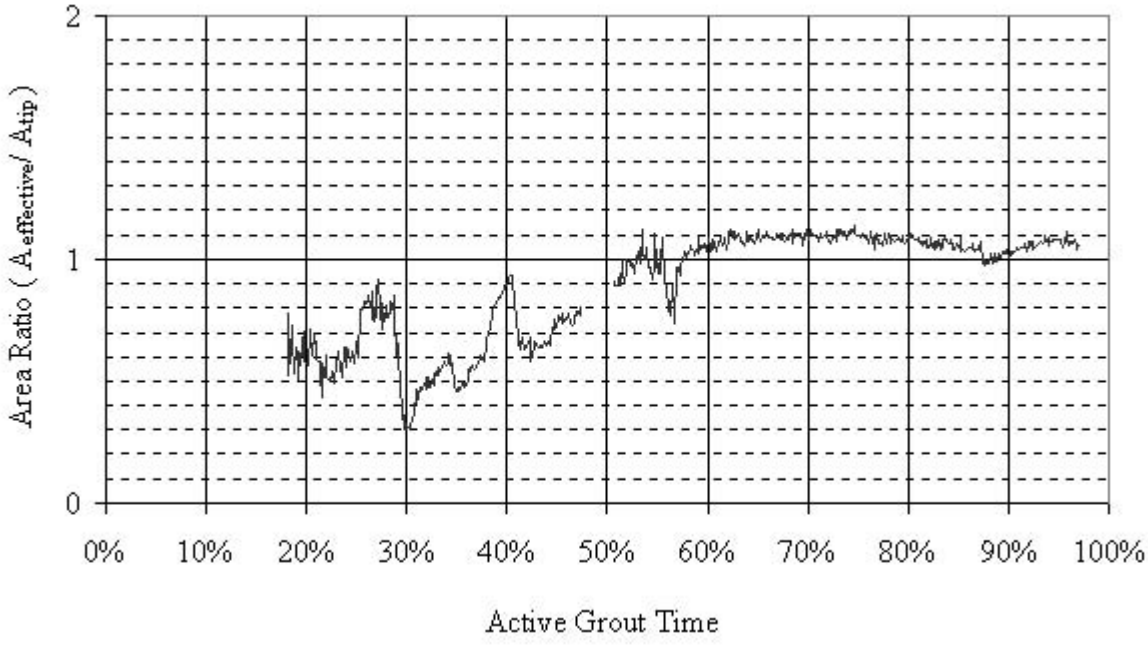


Figure B-20. Site II Flat-Jack grouting area ratio vs. active grout time.

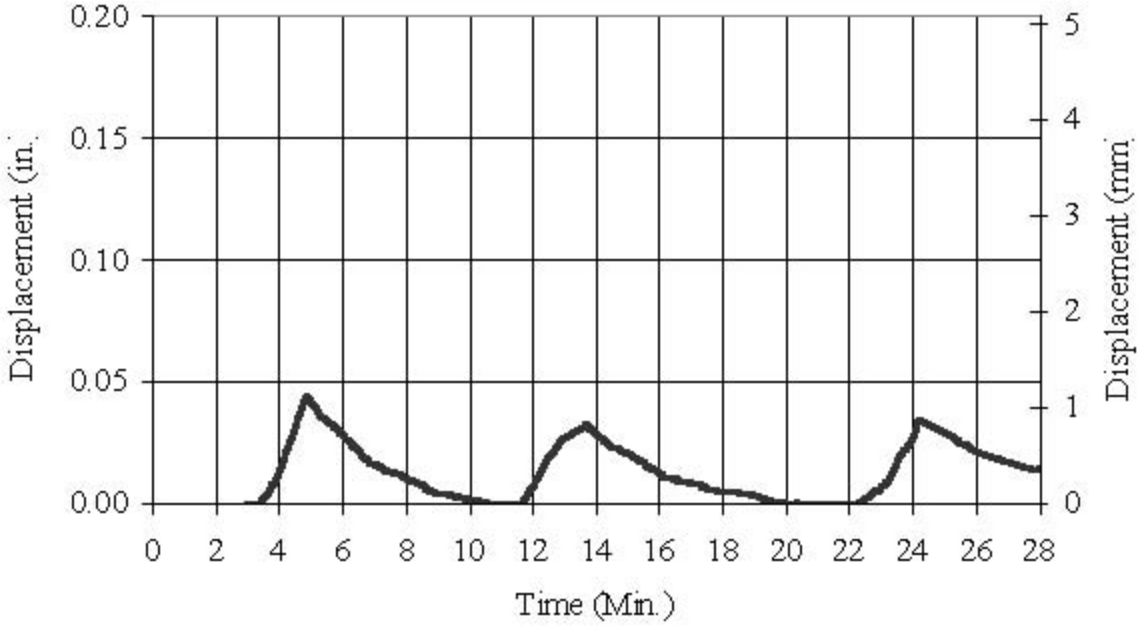


Figure B-21. Site II Sleeve-Port grouting displacement vs. time

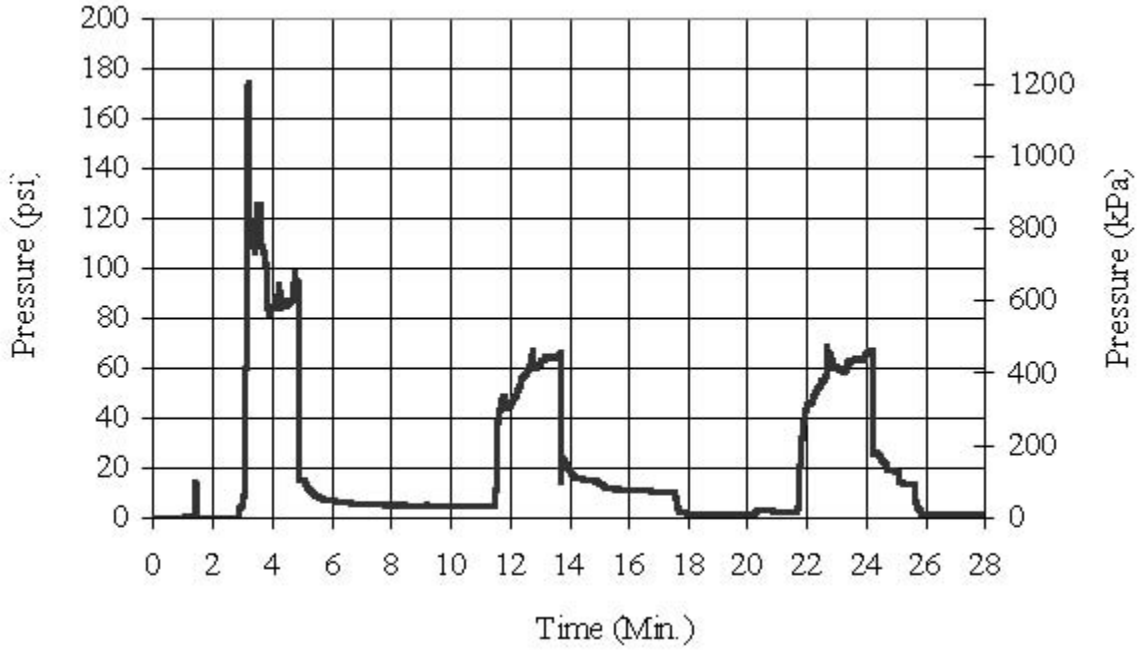


Figure B-22. Site II Sleeve-Port grouting pressure vs. time.

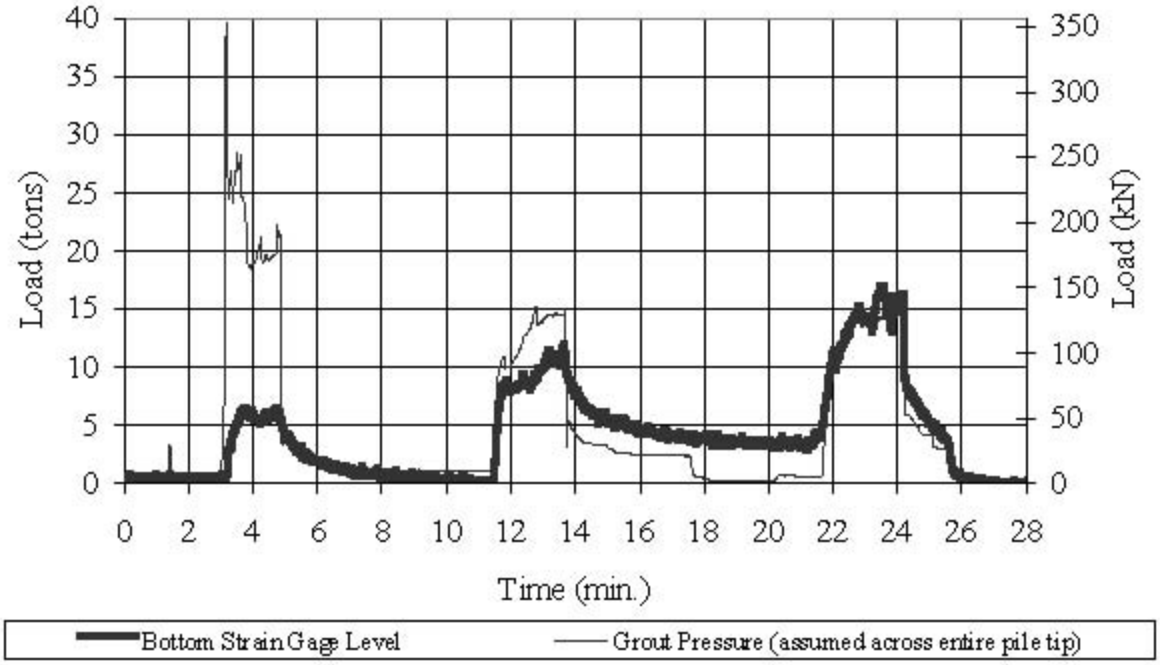


Figure B-23. Site II Sleeve-Port grouting Load vs. time.

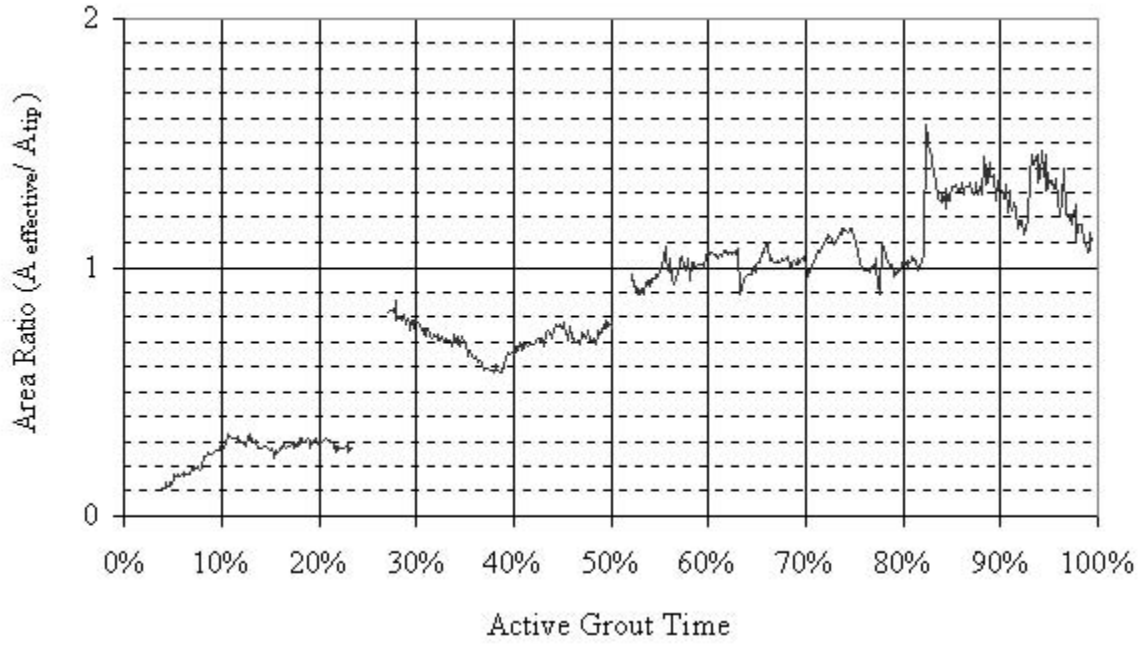


Figure B-24. Site II Sleeve-Port grouting area ratio vs. active grout time.

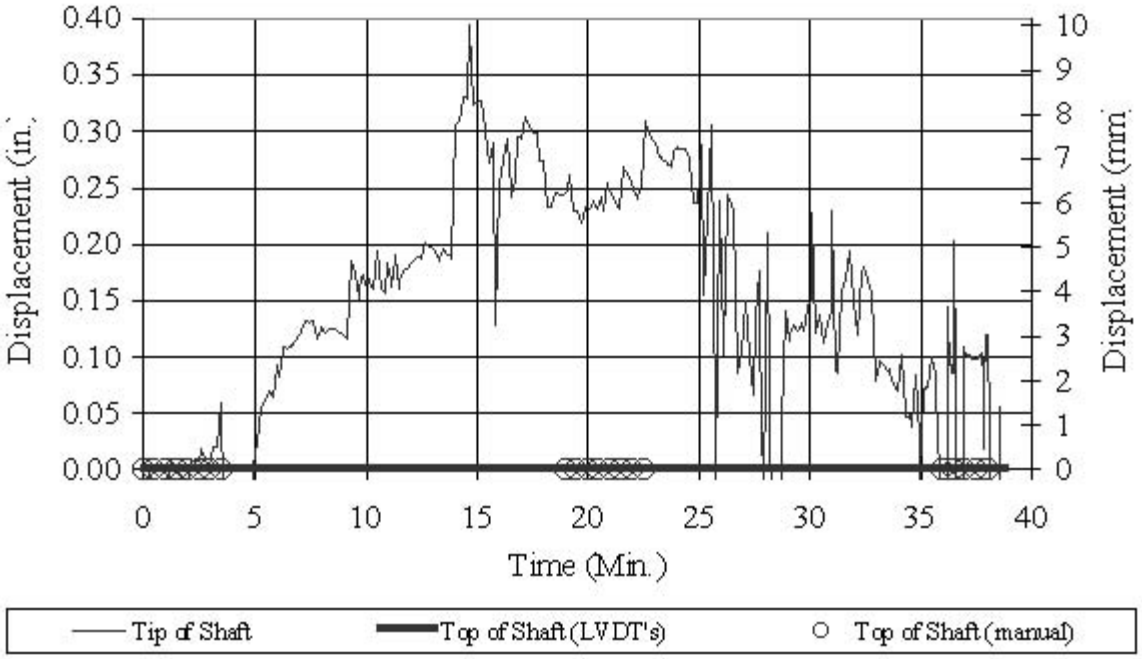


Figure B-25. Site III LT-3 grouting displacement vs. time.

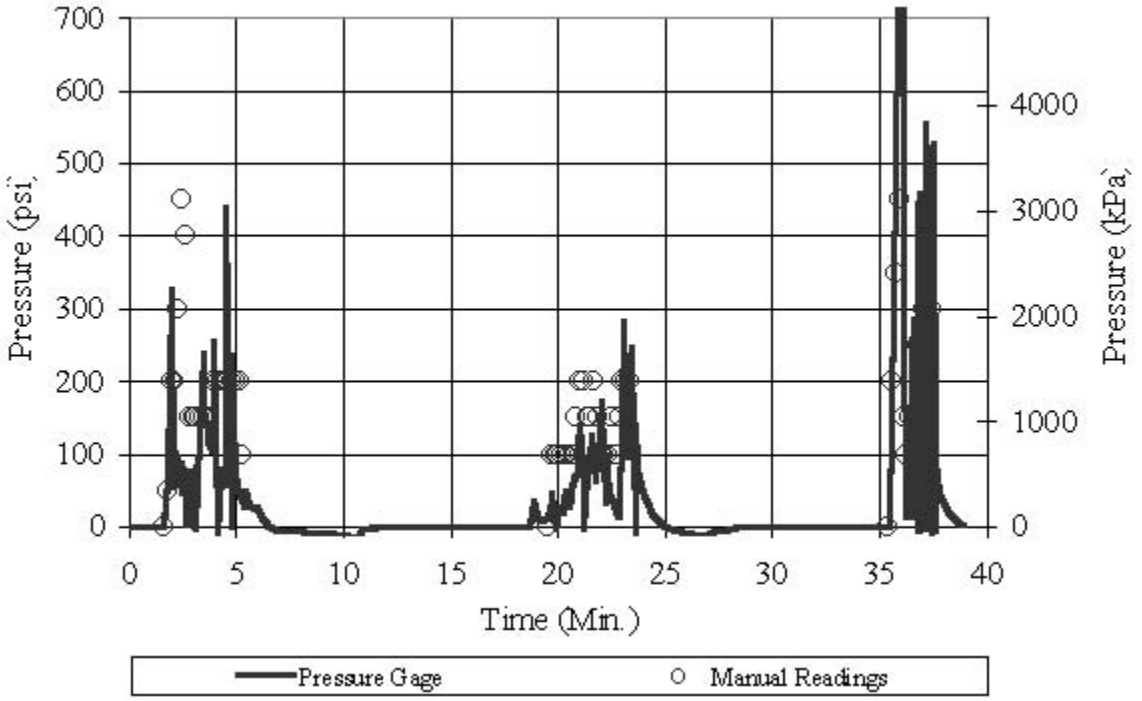


Figure B-26. Site III LT-3 grouting pressure vs. time.

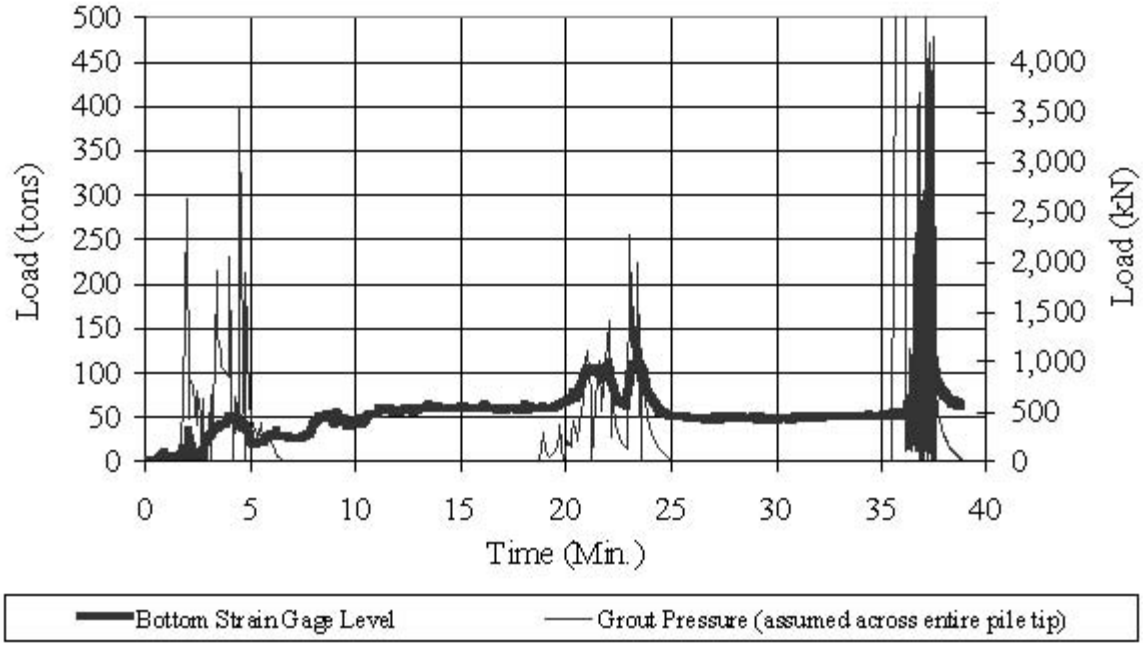


Figure B-27. Site III LT-3 grouting load vs. time.

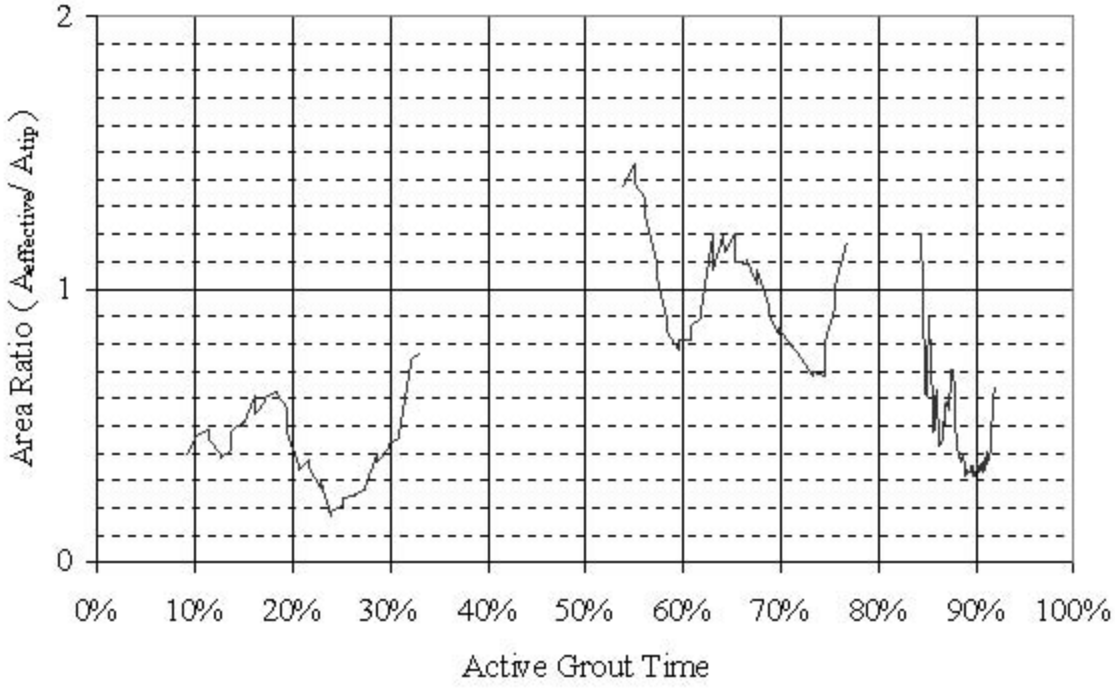


Figure B-28. Site III LT-3 grouting area ratio vs. active grout time.

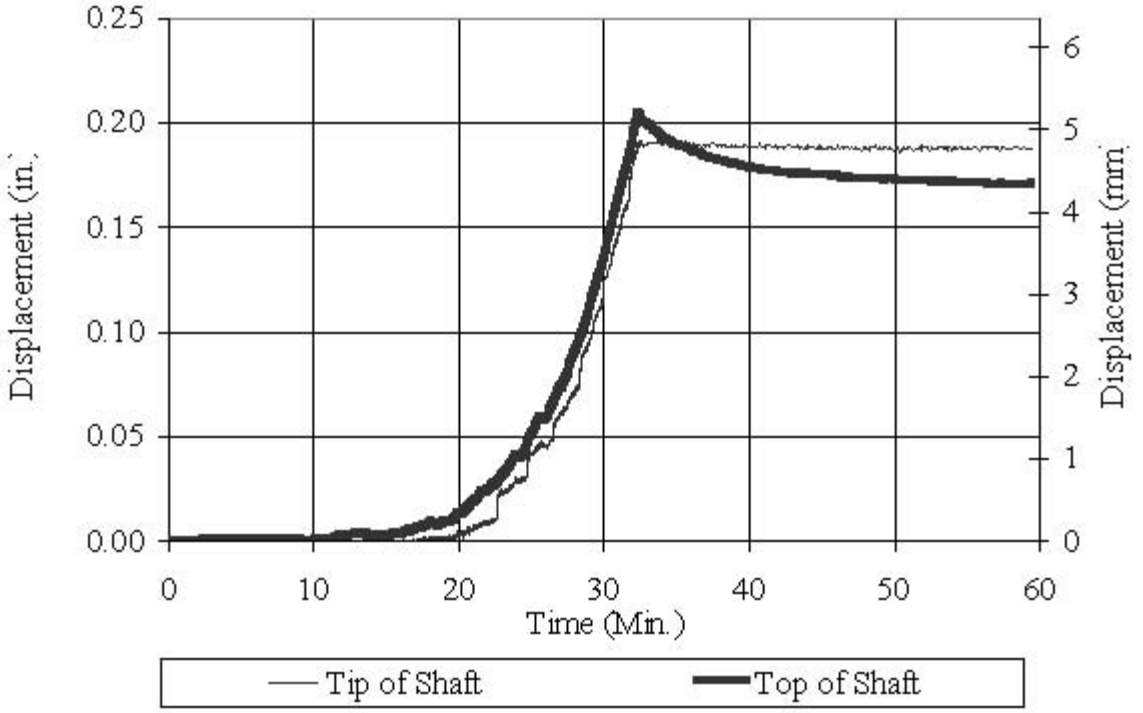


Figure B-29. Site III LT-2 grouting displacement vs. time.

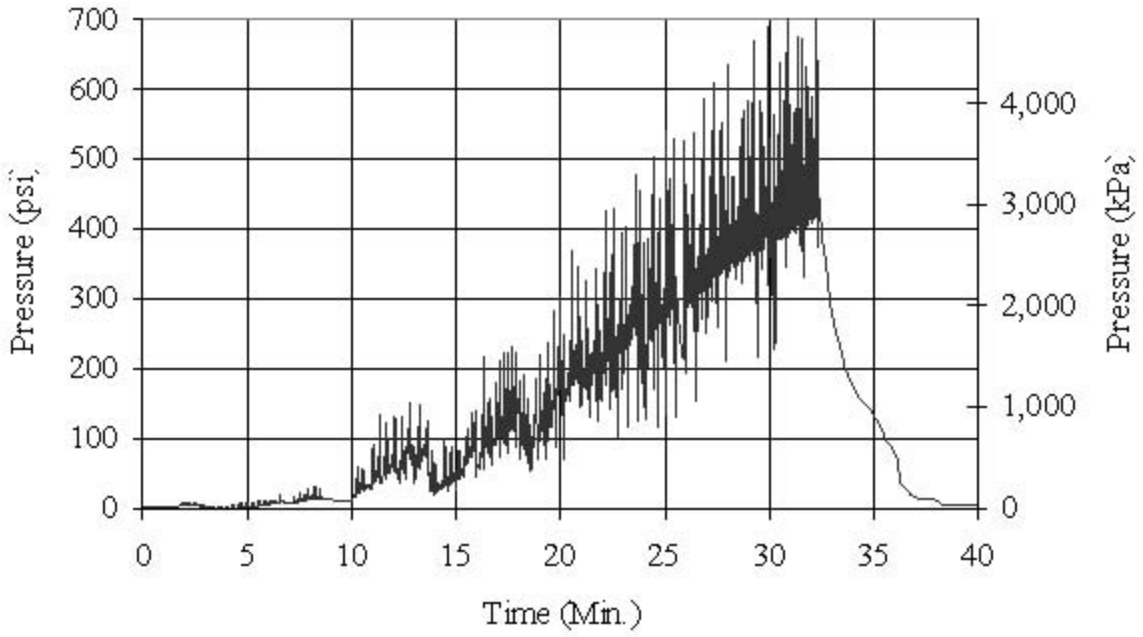


Figure B-30. Site III LT-2 grouting pressure vs. time.

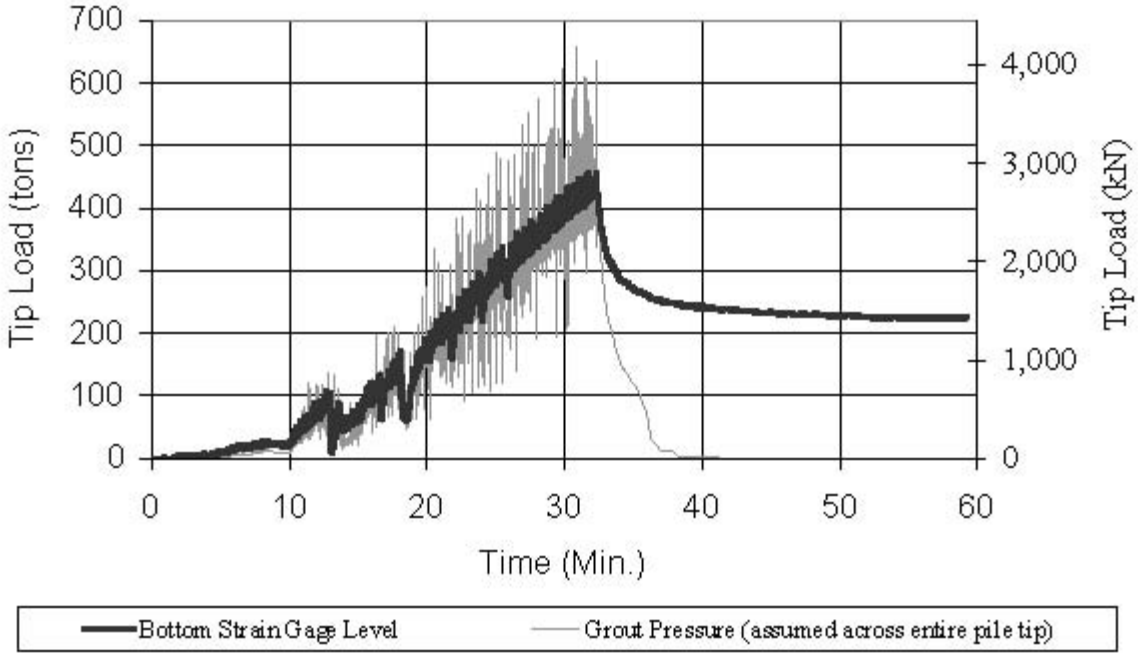


Figure B-31. Site III LT-2 grouting load vs. time.

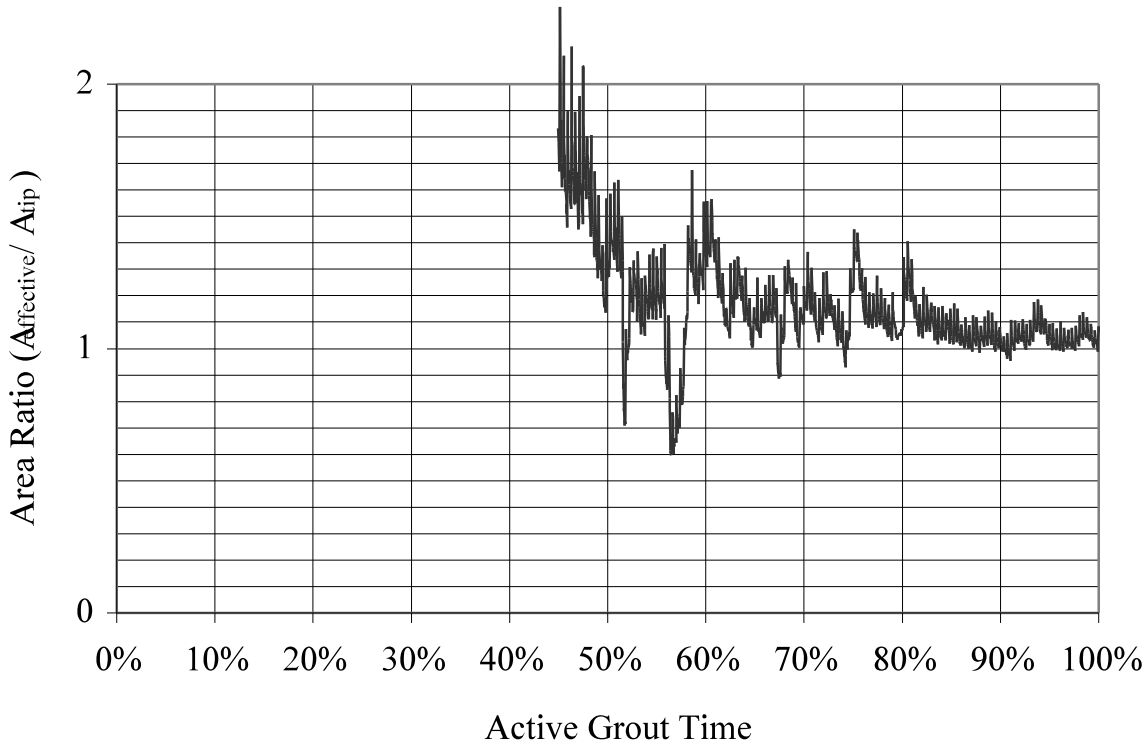


Figure B-32. Site III LT-2 grouting area ratio vs. active grout time.

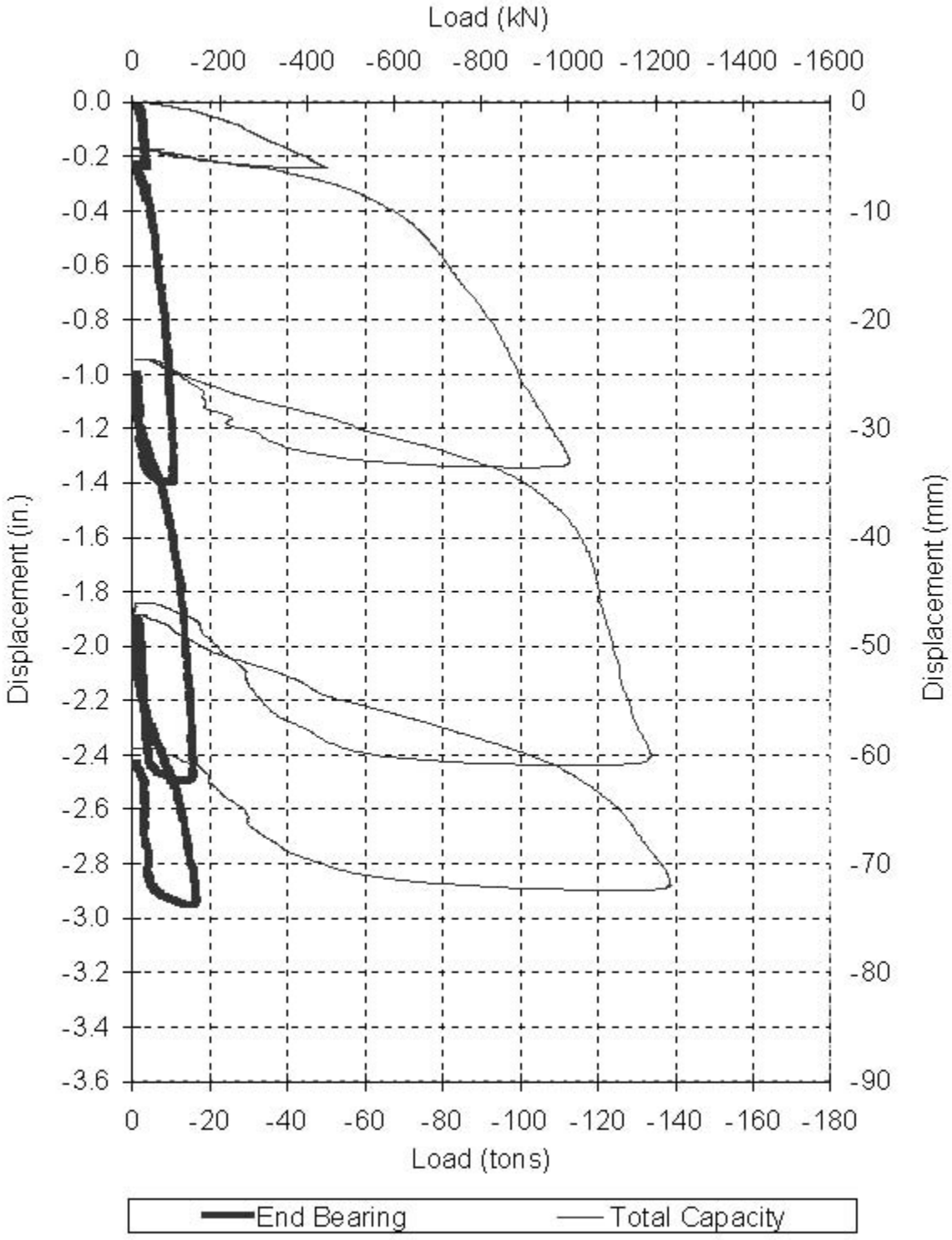


Figure C-1. Site I Control shaft load vs. displacement.

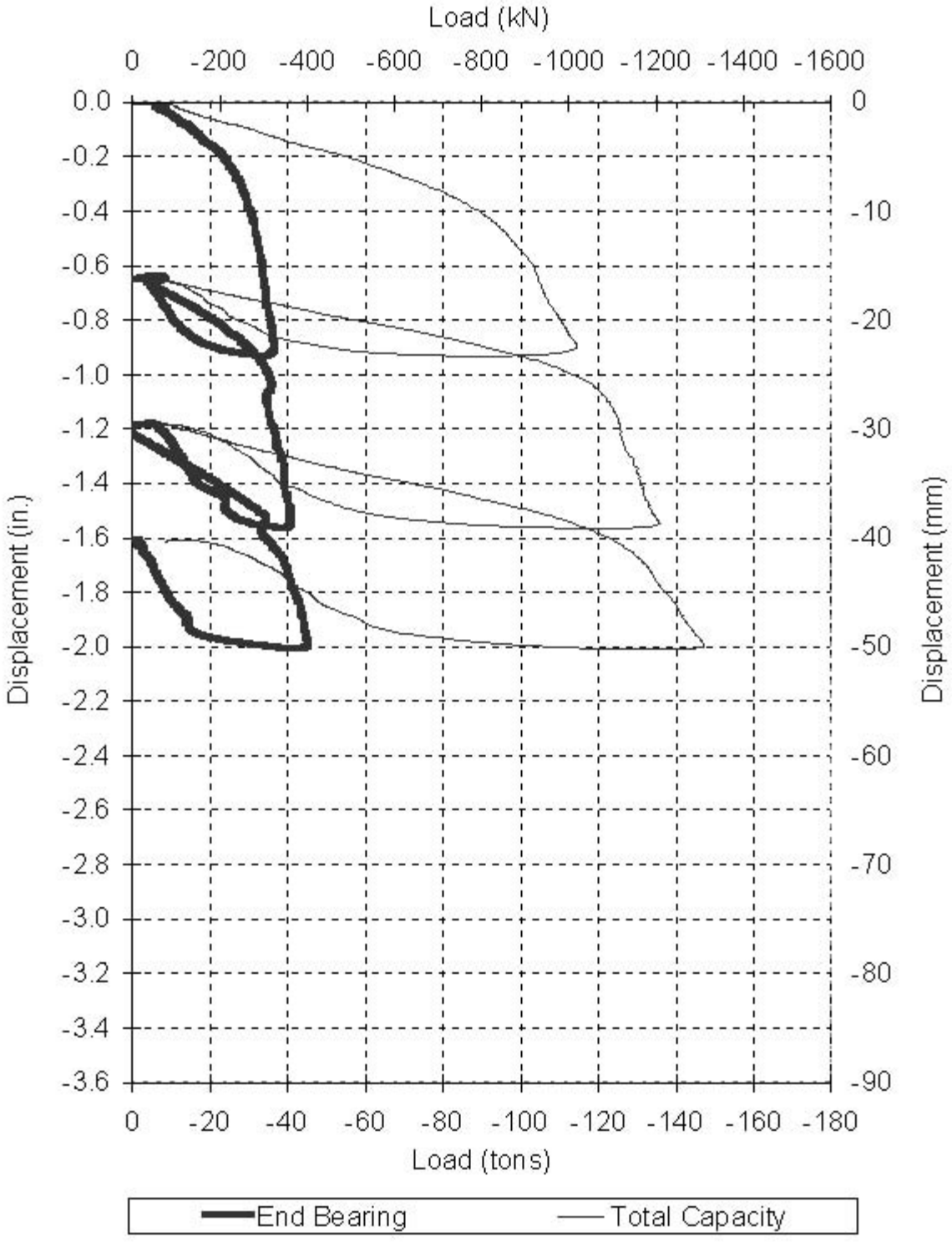


Figure C-2. Site I Flat-Jack 1 load vs. displacement.

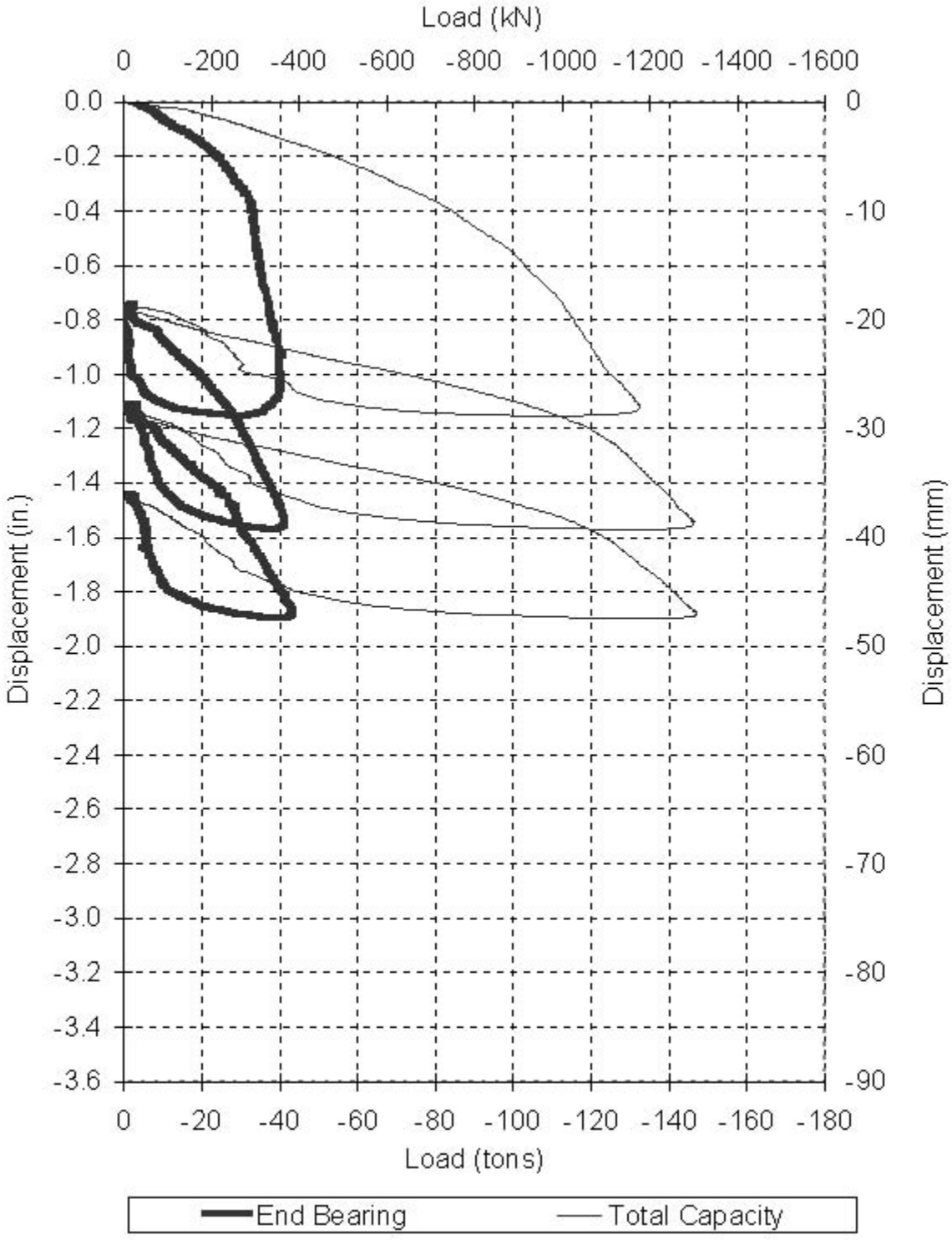


Figure C-3. Site I Flat-Jack 2 load vs. displacement.

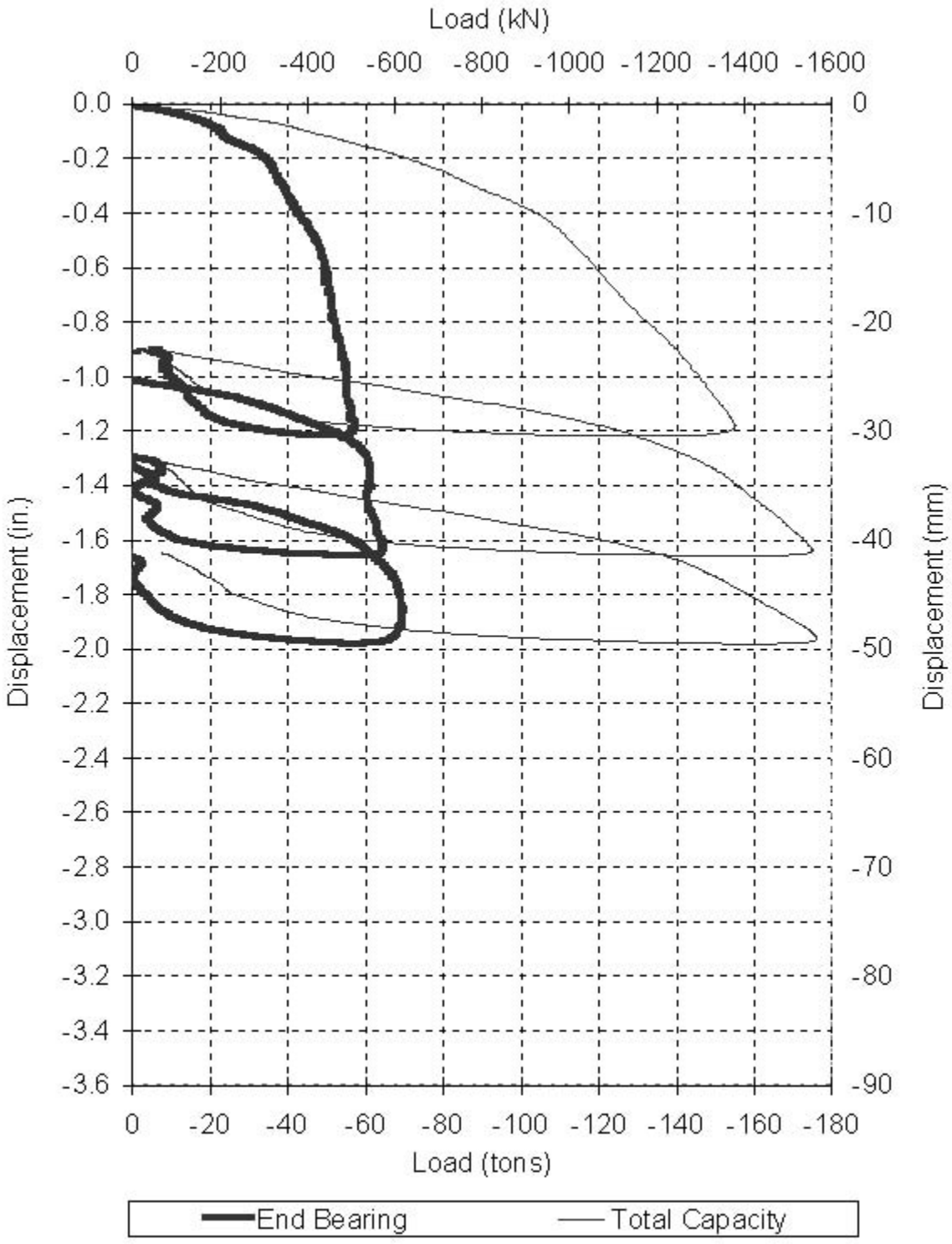


Figure C-4. Site I Sleeve-Port 1 load vs. displacement.

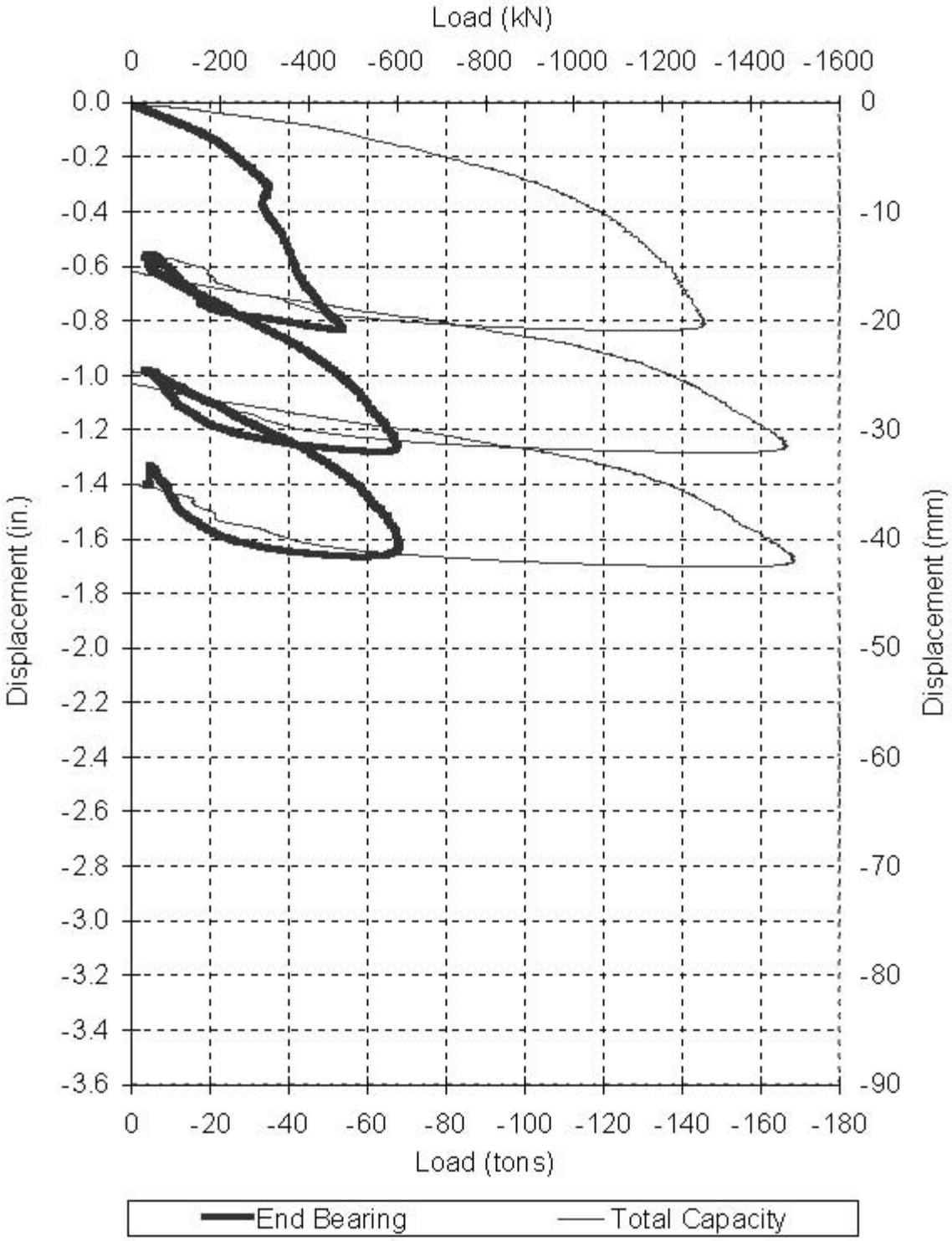


Figure C-5. Site I Sleeve-Port 2 load vs. displacement.

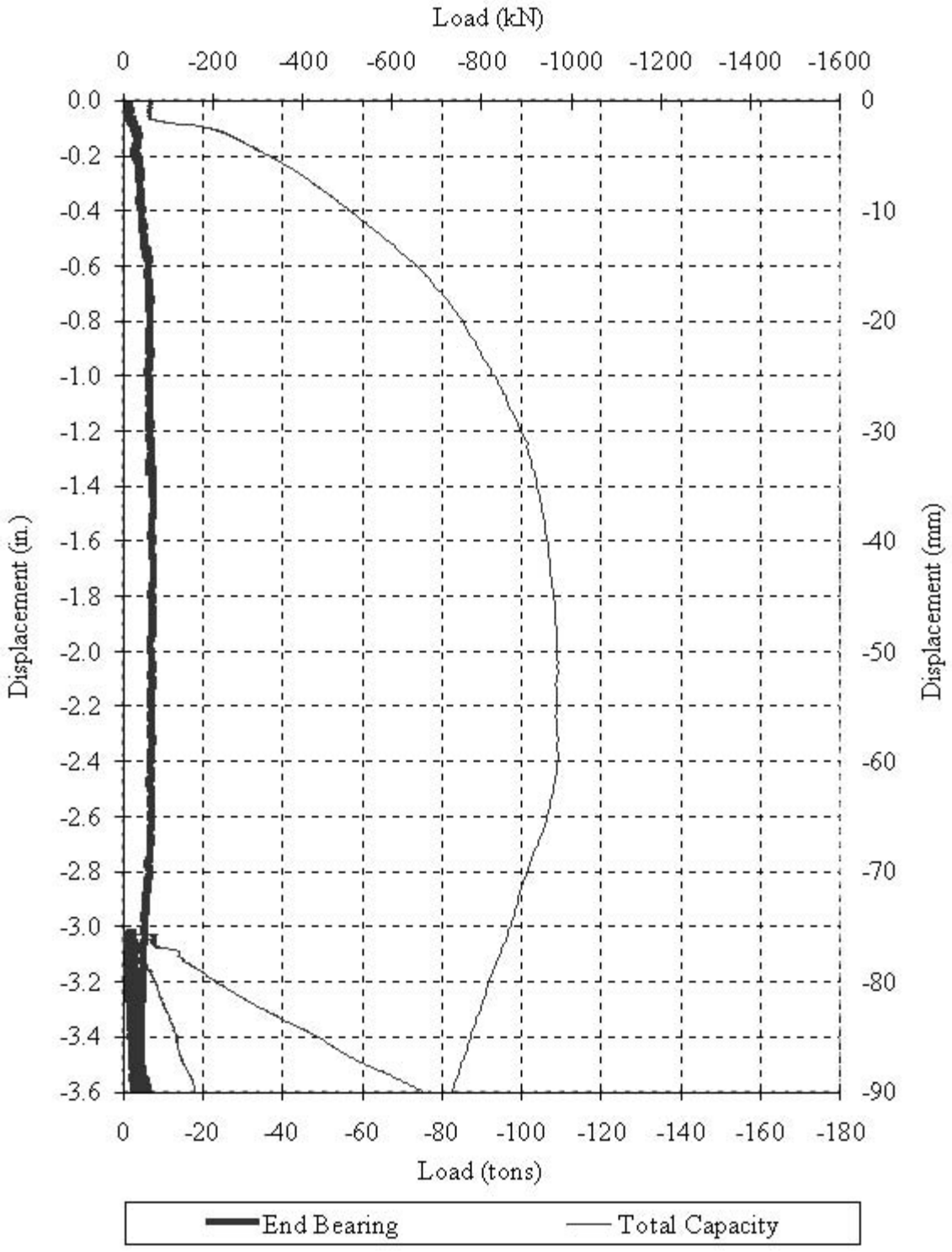


Figure C-6. Site II Control shaft load vs. displacement.

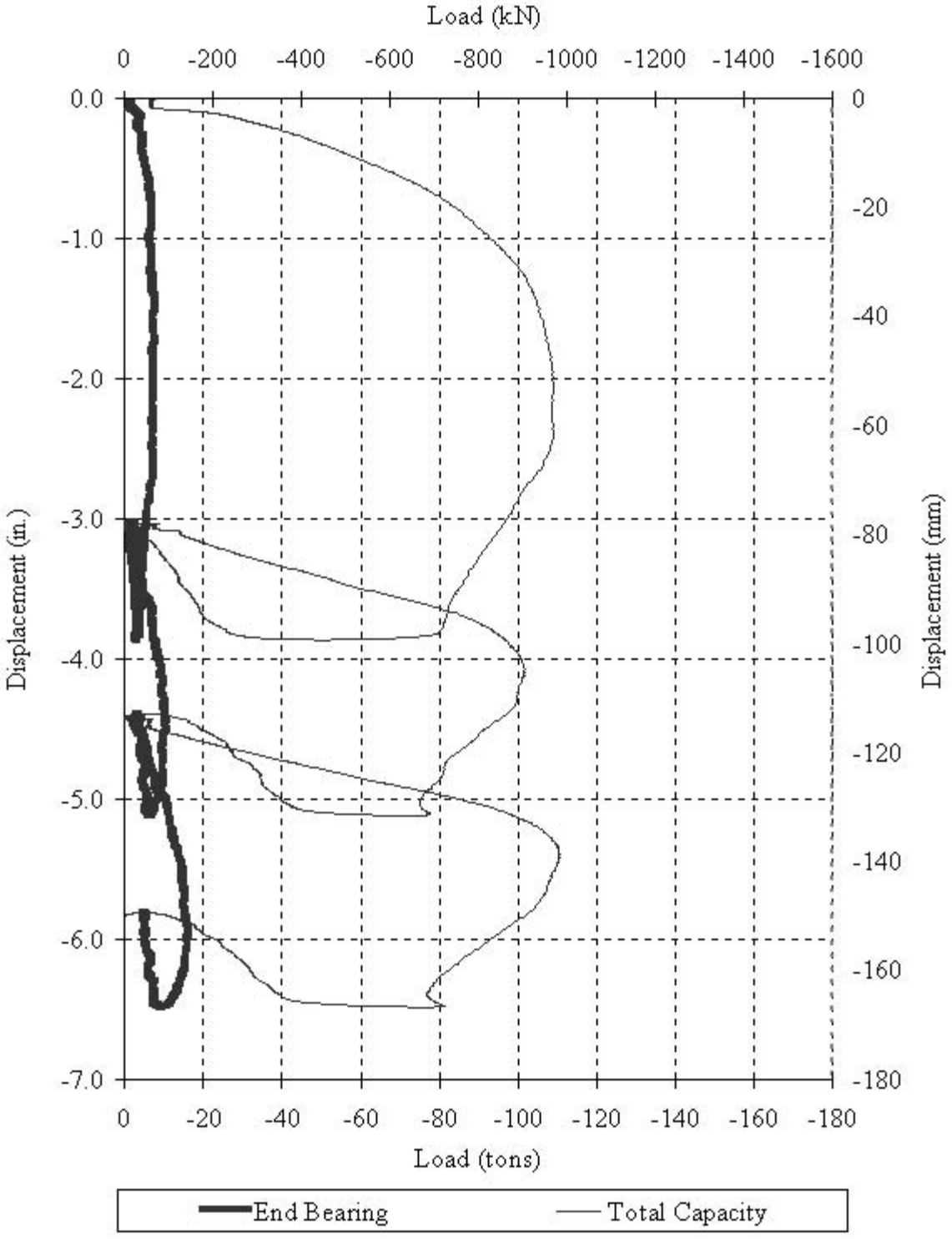


Figure C-7. Site II Control shaft load vs. deflection (large deflection scale).

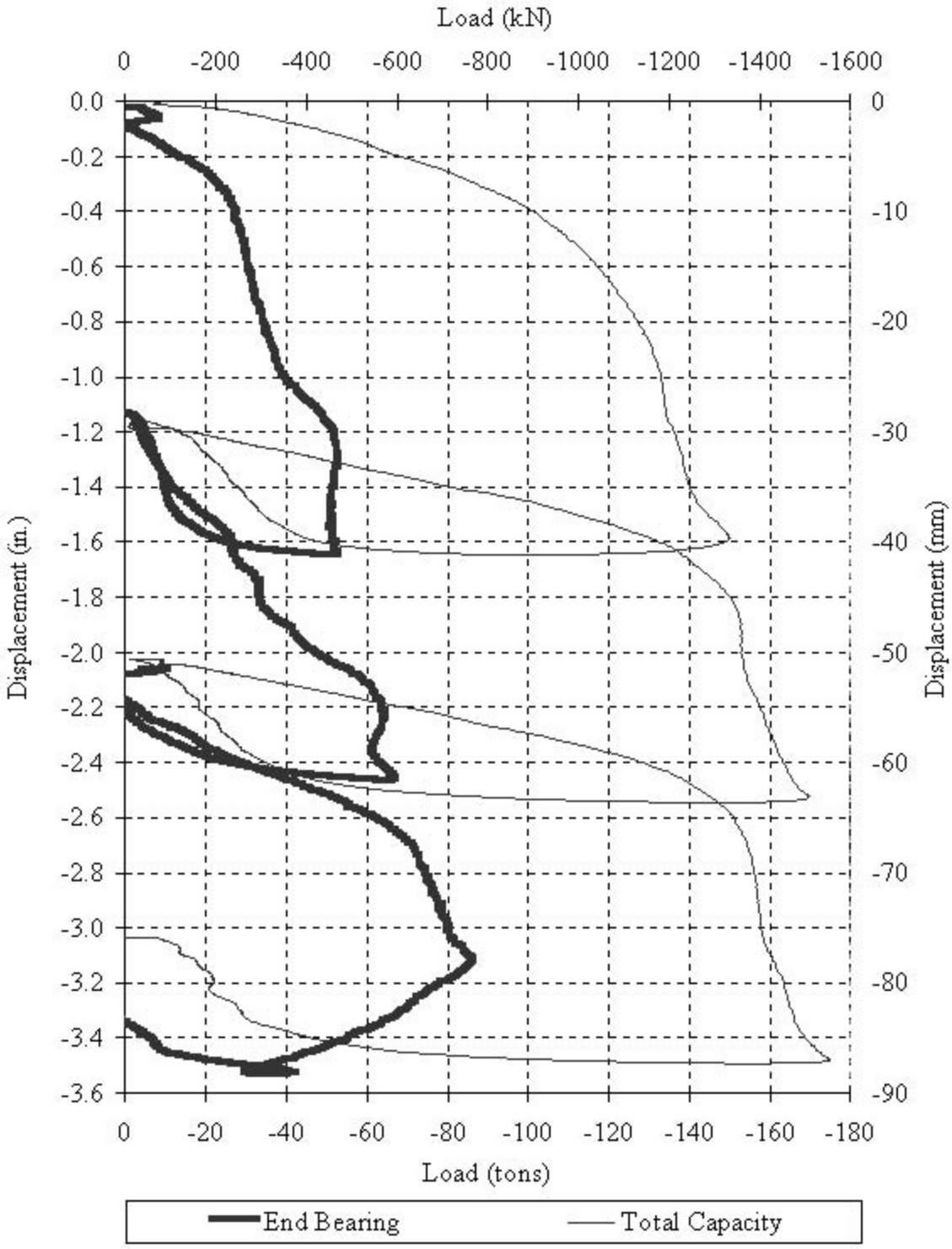


Figure C-8. Site II Flat-Jack load vs. deflection.

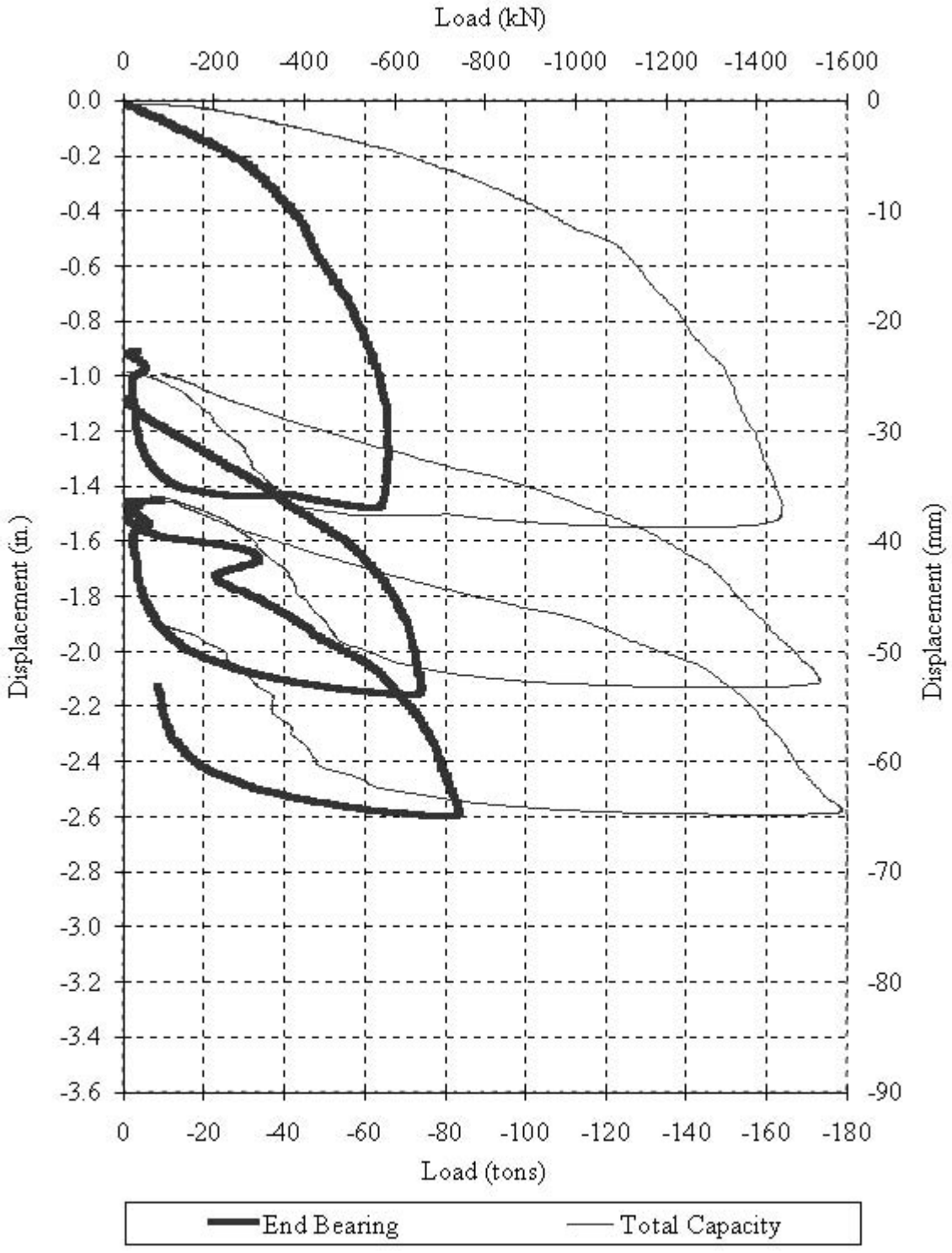


Figure C-9. Site II Sleeve-Port load vs. deflection.

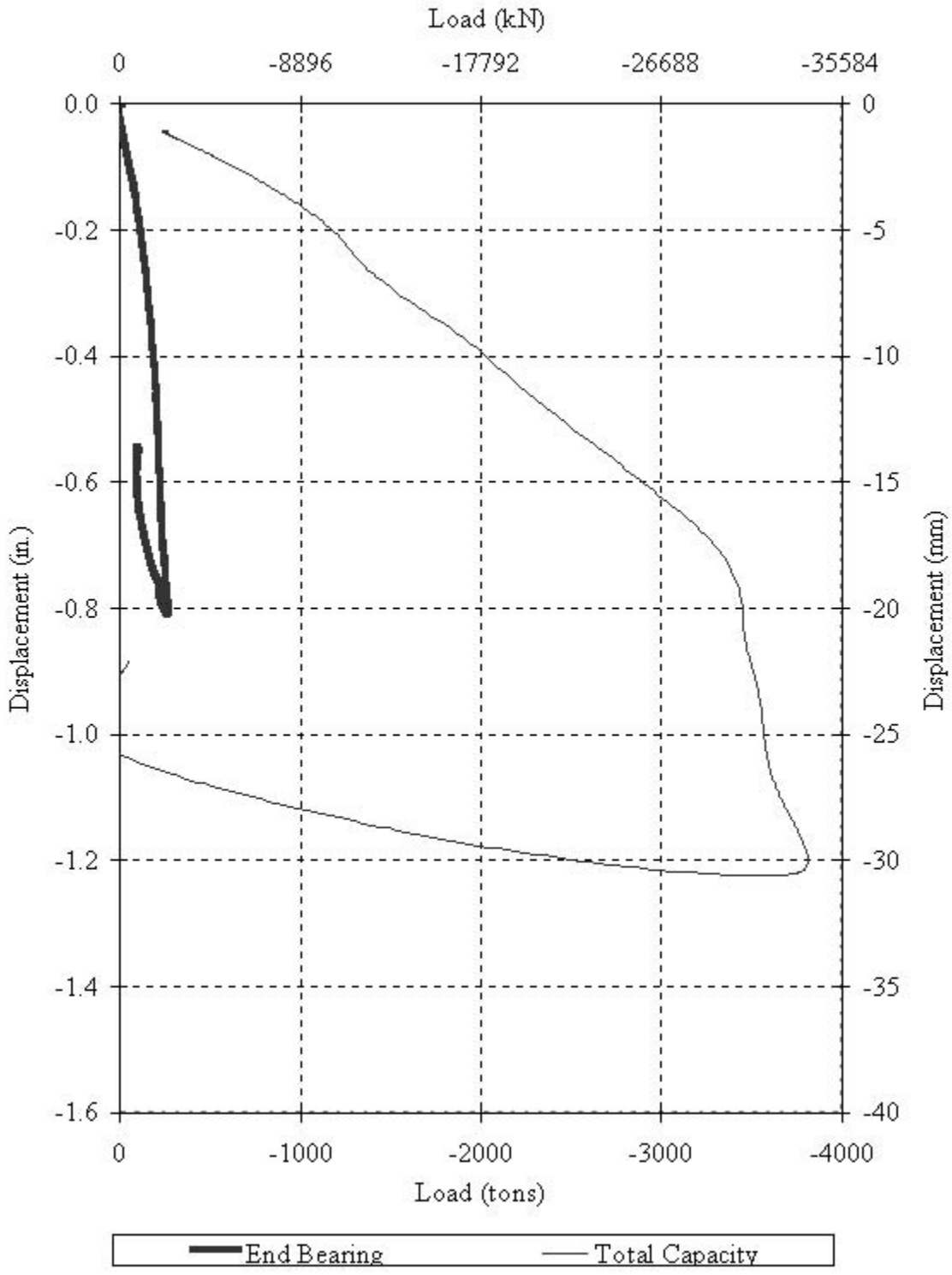


Figure C-10. Site III LT-3 cycle 1 load vs. displacement (control).

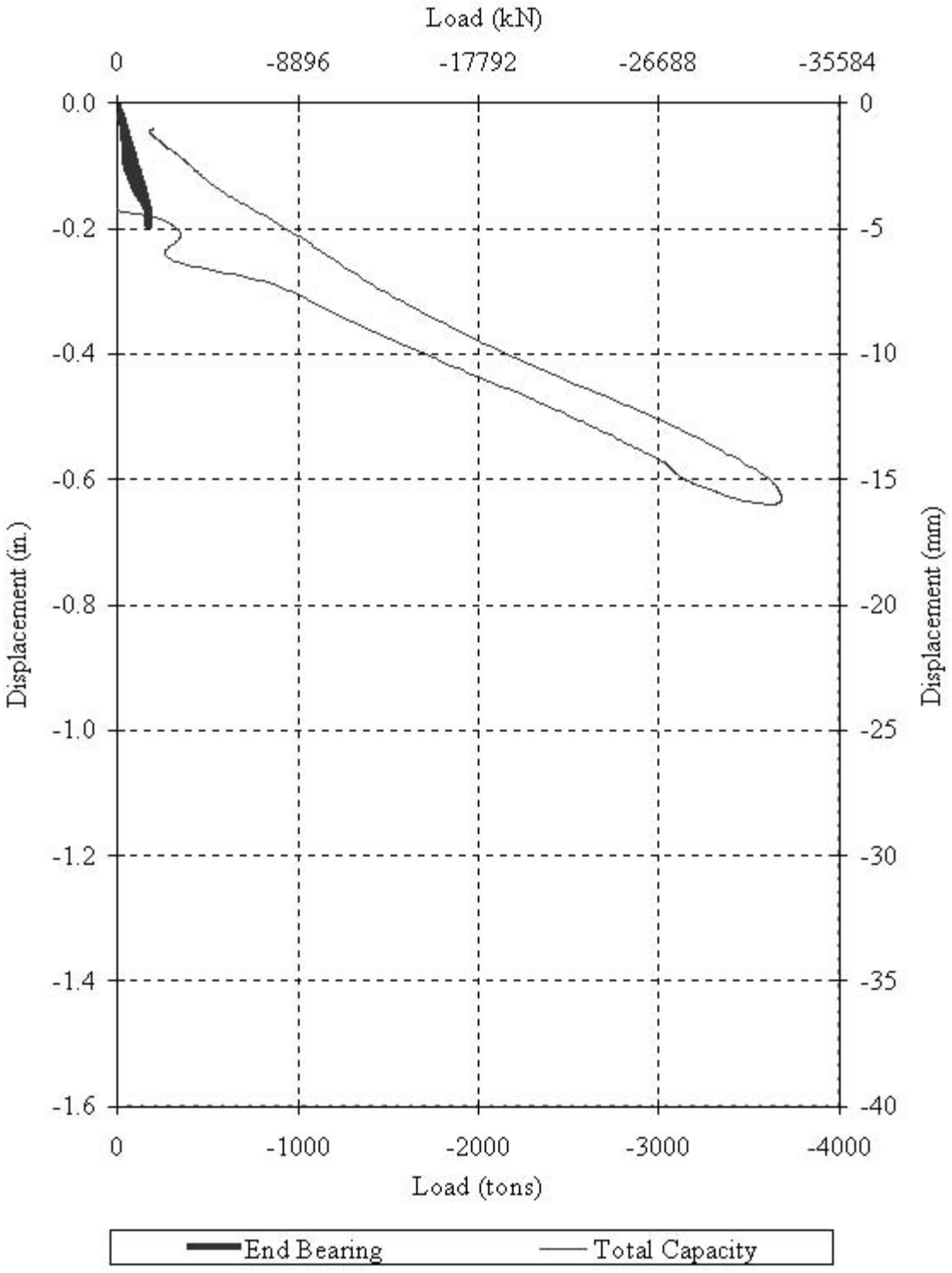


Figure C-11. Site III LT-3 cycle 2 (grouted).

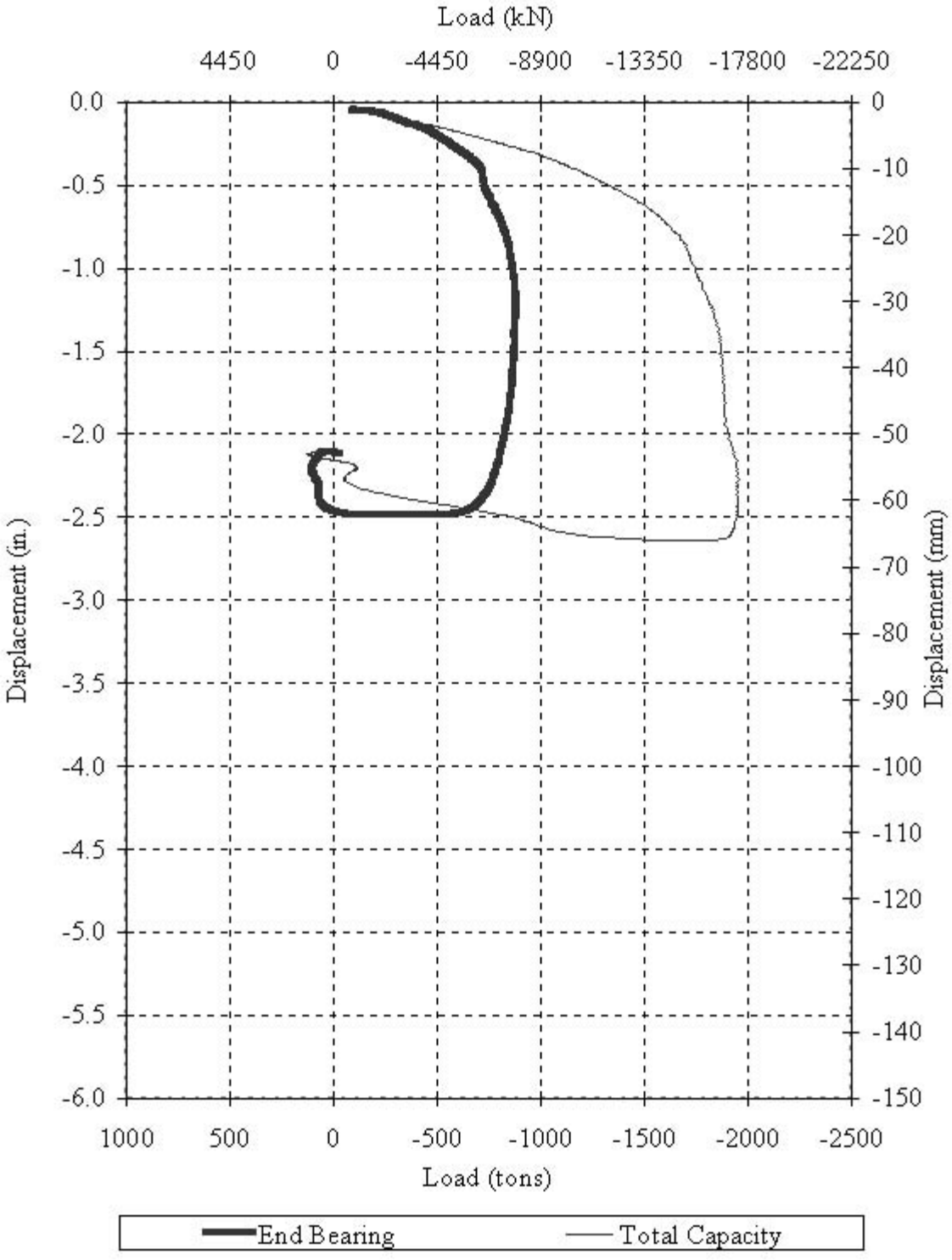


Figure C-12. Site III LT-2 cycle 1 (control).

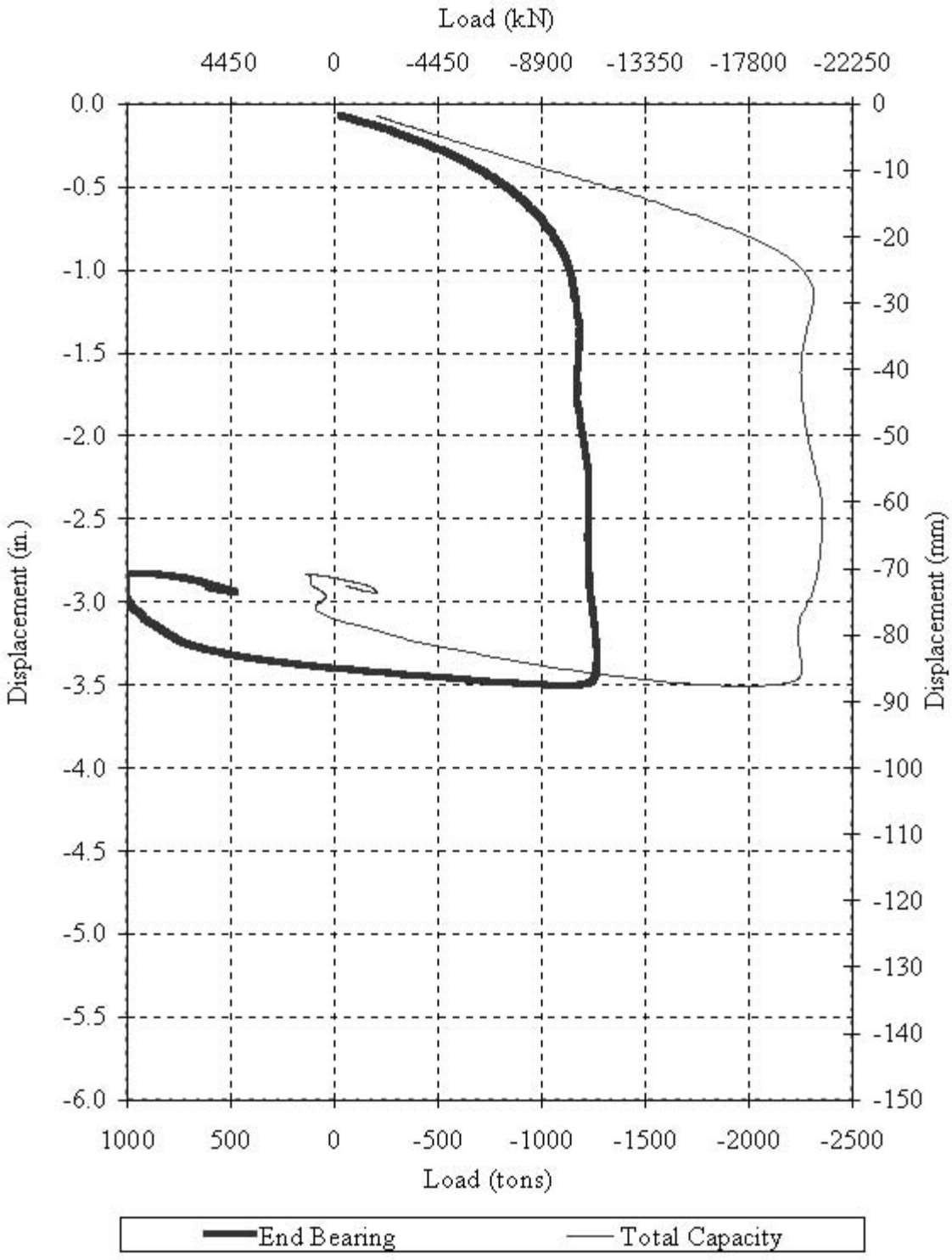


Figure C-13. Site III LT-2 cycle 2 (grouted).