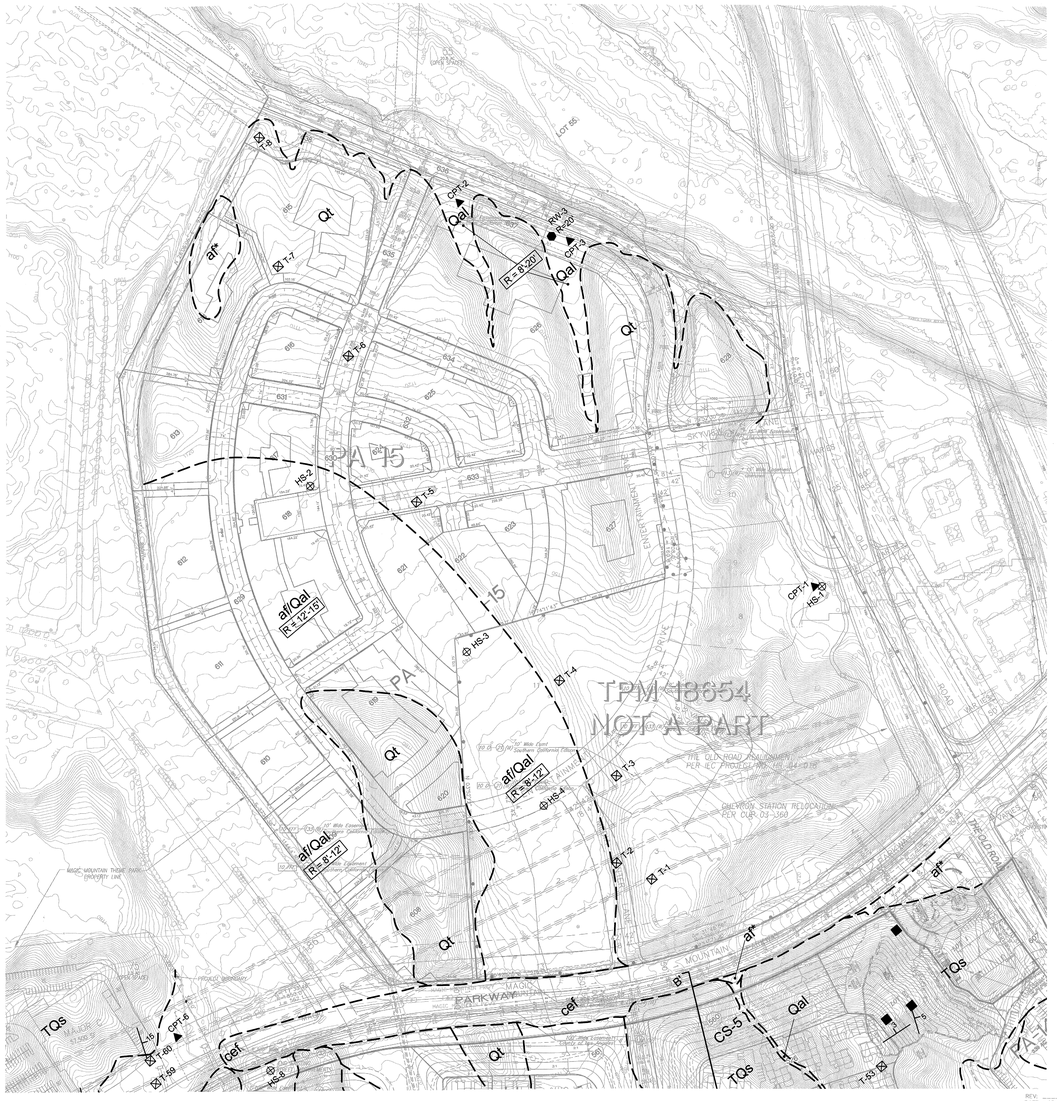
Lot No.	Use	Stories	Units	Required Residential Parking	Residential Parking Provided	Retail/Office SQ. FT.	Retail/Office Parking Required	Retail/Office Parking Provided
608	4-Story Condo	4	125	281	281	0	0	0
609	Residential above Parking Structure (2 levels)	4	34	76	76	0	0	382
610	Residential above Parking Structure (2 levels)	4	26	59	59	0	0	306
611	Parking Structure	4		0	0	0	0	773
612	Parking Structure	4		0	0	0	0	767
613	Parking Structure	4		0	0	0	0	721
614	4-Story Mixed Use (Condo above Retail)	4	90	203	203	7,900	0	0
615	4-Story Mixed Use (Condo above Retail)	4	145	293	293	6,100	24	0
616	4-Story Mixed Use (Condo above Retail)	4	55	124	124	15,800	63	0
617	5-Story Mixed-Use (Commercial/Office)	5	0	0	0	374,400	1,510	0
618	Open Space		0	0	0	0	0	0
619	5- Story Mixed-Use (Commercial/Office)	5	0	0	0	210,100	848	0
620	4-Story Mixed-Use (Commercial/Office)	4	0	0	0	27,400	110	0
621	5-Story Mixed-Use (Commercial/Office)	5	0	0	0	173,500	700	0
622	4-Story Parking Structure	4	0	0	0	0	0	719
623	4-Story Mixed-Use (Commercial/Office)	4	0	0	0	54,800	221	0
624	5- Story Mixed-Use (Commercial/Office)	5	0	0	0	73,100	295	0
625	4-Story Mixed Use (Condo above Retail)	4	100	225	225	37,500	150	0
626	4-Story Mixed Use (Condo above Retail)	4	315	709	709	19,600	79	0
627	4-Story Condo	4	110	248	248	0	0	0
	On-Street Parking							332
627, 636	Open Space							
629-636	Private Drive							
628	Drainage Filter Site							
	TOTAL		1,000	2,218	2,218	1,000,000	4,000	4,000



LEGEND:

Lot 1 / 1,000 SF / 1010.0	LOT NO. / LOT AREA (SQUARE FEET) / PAD ELEVATION
EX	EXISTING
FM	FORCE MAIN
HP	HIGH POINT
L	LENGTH
MIN	MINIMUM
GB	GRADE BREAK
PROP	PROPOSED
R	RADIUS
SF	SQUARE FOOT
SD	STORM DRAIN
SS	SANITARY SEWER
STD	STANDARD
R/W	RIGHT OF WAY
W1	WATER ZONE - 1
W2	WATER ZONE - 2
W3	WATER ZONE - 3
RW	RECLAIMED WATER
CLWA	CASTAIC LAKE WATER AGENCY
PVT	PRIVATE DRIVE
P & T	PRIVATE AND FUTURE STREET
REC	RECREATION
O. S.	OPEN SPACE
RUA	RESTRICTED USE AREA

FOR EXPLANATION SEE FIGURE 3.1

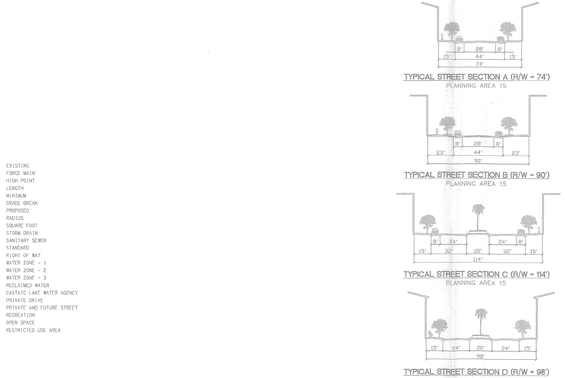
R.T. FRANKIAN & ASSOCIATES

Geotechnical Map

Newhall Land & Farming Company

Vesting Tentative Tract Map No. 53295
Valencia, California

SCALE	DRAWN BY	DESIGNED BY	JOB NO.
AS SHOWN	MN	AWR/DS	2004-700-21
DATE 3-18-05	Figure 3.4		



ALLIANCE LAND PLANNING & ENGINEERING INC.
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CIVIL ENGINEERING / LAND PLANNING / MUNICIPAL SERVICES / SURVEYING

PLANS PREPARED FOR:
NEWHALL LAND
23823 WEST VALENCIA BOULEVARD
VALENCIA, CALIFORNIA 91355
TELEPHONE: (661) 255-4000
REPRESENTATIVE: ALEX HERRELL

PLANS PREPARED BY:
ALLIANCE LAND PLANNING & ENGINEERING INC.
5962 LAPLACE COURT, SUITE 150
(760) 431-9696
PLANS PREPARED UNDER THE DIRECTION OF:
PAUL E. GAY R.C.E. 53339 DATE

REGISTERED PROFESSIONAL ENGINEER PAUL E. GAY No. 53339 EXP. 6-30-05 CIVIL STATE OF CALIFORNIA

BENCHMARK:
DESCRIPTION:
LOCATION:
RECORDED FROM:
ELEVATION:

LEGAL DESCRIPTION:
THAT PORTION OF RANCHO SAN FRANCISCO, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON MAP RECORDED IN BOOK 1, PAGES 521 PAGES 522 OF PATENTS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.

NO.	DATE	REVISIONS	BY	APP'D

SHEET 4 COUNTY OF LOS ANGELES 5 OF SHEETS

MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP NO. 53295

COUNTY CASE NO.

LOCATED IN THE UNINCORPORATED AREA OF THE COUNTY OF LOS ANGELES STATE OF CALIFORNIA

RW:
DATE: 12/28/04

3-18-05 2004-700-21

LEGEND:
Lot 1
1,000 SF
1010.0
LOT NO.
LOT AREA (SQUARE FEET)
PAD ELEVATION
PROJECT BOUNDARY
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
PROPOSED UTILITY EASEMENT
EXISTING EASEMENT
FUTURE RIGHT OF WAY
PROPOSED CONTOUR
DAYLIGHT LINE
RIDGE LINE
STORM DRAIN
SANITARY SEWER
WATER
STORM DRAIN INLET
CATCH BASIN
EXISTING STORM DRAIN LINE
EXISTING SEWER LINE
EXISTING WATER LINE
EXISTING POWER POLE
SEA, RIVER CORRIDOR
FEMA
Q-CAP
404_1603
BURIED BANK STABILIZATION
ABANDONED OIL WELL
EXISTING OAK TREE DRIPLINE WITH NUMBER AND SIZE
EX EXISTING
FM FORCE MAIN
HP HIGH POINT
L LENGTH
MIN MINIMUM
GB GRADE BREAK
PROP PROPOSED
R RADIUS
SF SQUARE FOOT
SD STORM DRAIN
SS SANITARY SEWER
STD STANDARD
R/W RIGHT OF WAY
W1 WATER ZONE – 1
W2 WATER ZONE – 2
W3 WATER ZONE – 3
RW RECLAIMED WATER
CLWA CASTAIC LAKE WATER AGENCY
PVT PRIVATE DRIVE
P.S.F PRIVATE AND FUTURE STREET
REC RECREATION
O.S. OPEN SPACE
RUA RESTRICTED USE AREA
VTTM 61105
MISSION VILLAGE
NOT A PART
TPM-16054
NOT A PART
PA-1
PA-2
PA-3
PA-4
PA-5
PA-6
PA-7
PA-8
PA-9
PA-10
PA-11
PA-12
PA-13
PA-14
PA-15
CS-1
CS-2
CS-3
CS-4
CS-5
Qal
af*
af/Qal
Qsf*
Qt
TQs
cef
HS-1
HS-2
HS-3
HS-4
HS-5
HS-6
HS-7
HS-8
HS-10
CPT-1
CPT-2
CPT-4
CPT-5
CPT-6
B-1
B-2
B-3
B-4
B-40E
B-41E
B-42E
B-43E
B-47E
B-60E
B-61E
B-62E
FOR EXPLANATION SEE FIGURE 3.1
R.T. FRANKIAN & ASSOCIATES
Geotechnical Map
Newhall Land & Farming Company
Vesting Tentative Tract Map No. 53295
Valencia, California
SCALE AS SHOWN
DRAWN MN
CHECKED AWR/DS
DATE 3-18-05
Figure 3.5
JOB NO. 2004-700-21
REV. DATE: 12/28/04
SHEET 5 COUNTY OF LOS ANGELES 5
MAJOR LAND DIVISION
VESTING TENTATIVE TRACT MAP
NO. 53295
COUNTY CASE NO.
LOCATED IN THE UNINCORPORATED AREA OF THE
COUNTY OF LOS ANGELES STATE OF CALIFORNIA
FEET
100 50 0 100 200
1/2 0 INCHES
ALLIANCE
LAND PLANNING & ENGINEERING INC.
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CIVIL ENGINEERING | LAND PLANNING | RECORD SURVEYING
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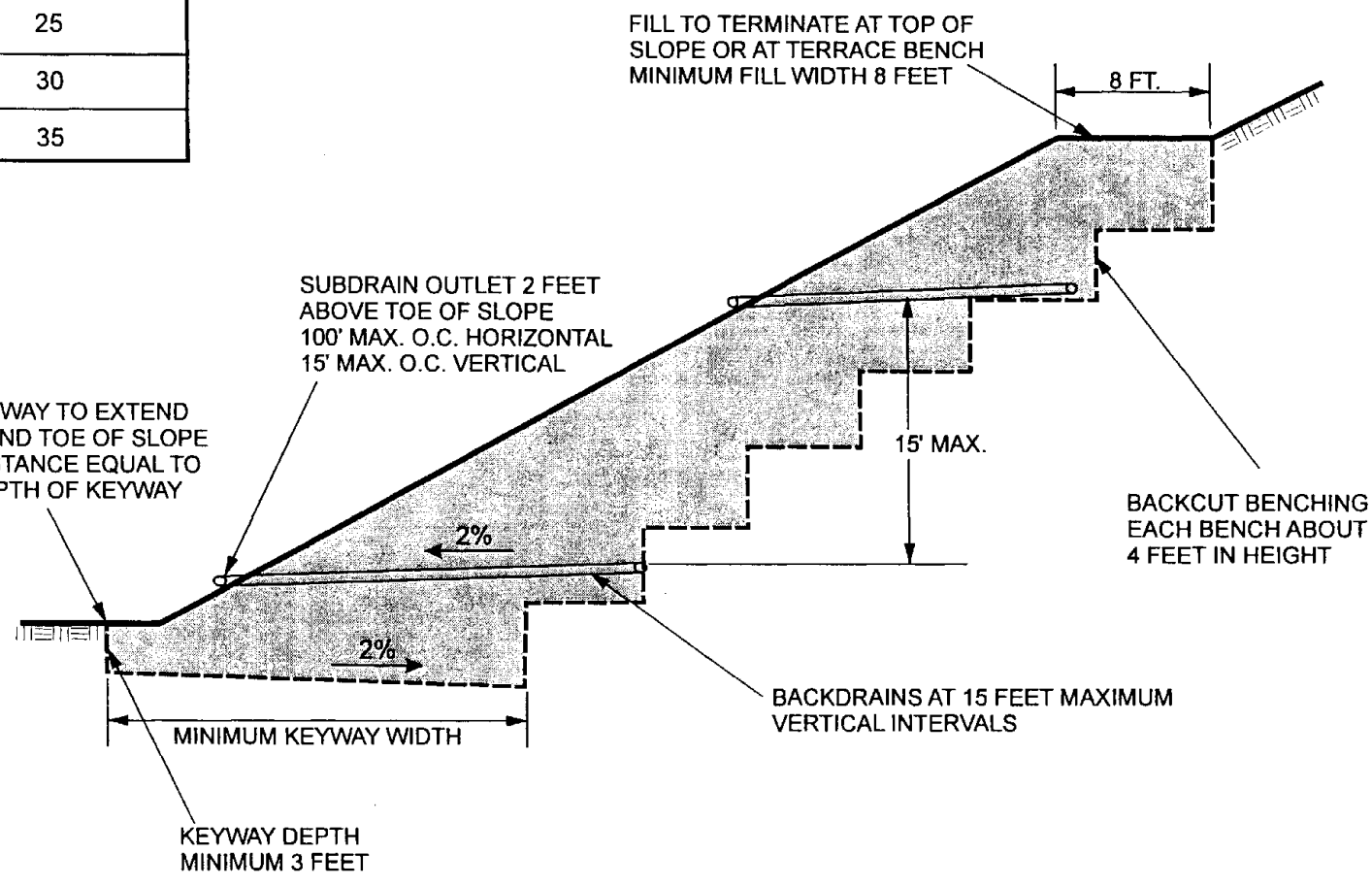
TELEPHONE: (661) 255-4000
REPRESENTATIVE: ALEX MERRELL
PLANS PREPARED BY:
ALLIANCE LAND PLANNING & ENGINEERING INC.
5952 LAPLACE COURT, SUITE 130
(760) 431-9696
PLANS PREPARED UNDER THE DIRECTION OF:
PAUL C. GAFF R.C.E. 53339 DATE
REGISTERED PROFESSIONAL ENGINEER PAUL C. GAFF No. 53339 EXP. 6-30-07 CIVIL
BENCHMARK:
DESCRIPTION:
LOCATION:
RECORDED FROM:
ELEVATION:
LEGAL DESCRIPTION:
THAT PORTION OF RANCHO SAN FRANCISCO, IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS SHOWN ON MAP RECORDED IN BOOK 1 PAGES 521 PAGES 522 OF PATENTS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY.
NO. DATE REVISIONS BY APP'D

STABILITY FILL HEIGHT (FEET)	MINIMUM WIDTH OF KEYWAY (FEET)
0 - 20	15
20 - 30	20
30 - 50	25
50 - 75	30
75 - 100	35



STABILITY FILL DETAILS FOR GROSSLY STABLE SLOPES

N.T.S.

Newhall Land and Farming Company
March 18, 2005
2004-700-21

APPENDIX A

EXPLORATIONS

RTF&A
GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

APPENDIX A

EXPLORATIONS

The soil conditions beneath the site were explored by drilling borings. The soils encountered were classified in the accordance with the Unified Soil Classification System described in Figure A-1. The locations of the explorations are shown on Figures 3.1 and 3.6, Geotechnical Maps. Details of the explorations are summarized in Table A-1, Exploration Summary. The logs of the borings followed by the logs of the test pits are presented in this appendix. The results of the CPT soundings are presented in Appendix C.

CURRENT EXPLORATIONS

Current bucket borings were drilled at 4 locations to depths of 65 feet below the existing grade using 24-inch-diameter drilling equipment. Our geologist downhole logged all 4 borings.

PREVIOUS EXPLORATIONS

Previous subsurface exploration by RTF&A and Allan E. Seward Engineering Geology, Inc. is substantial and attached to this Appendix. The exploration is summarized in Table A-1 by Planning Area, consultant, and report date. The location of the previous subsurface explorations are shown on the Geotechnical Maps.

TABLE A-1
EXPLORATION SUMMARY

EXPLORATION	PLANNING AREA	CONSULTANT REPORT DATE	G. S. ELEV. (ft)	EXPL. DEPTH (ft)	FILL DEPTH (ft)	GEOLOGIC MATERIALS	BEDROCK DEPTH (ft)	BEDROCK ELEV. (ft)	GROUNDWATER DEPTH (ft)	GROUNDWATER ELEV. (ft)	REC. REMOVAL DEPTH (ft)
CONE PENETRATION TESTS											
CPT-1	PA-1	RTF&A, 11-25-02	1,012	50	NA	Qal	N/E	--	14.0	998	10
CPT-2(P)	PA-1	RTF&A, 11-25-02	1,015	45	NA	Qal	N/E	--	14.1	1,001	10
CPT-3(P)	PA-1	RTF&A, 11-25-02	1,010	50	NA	Qal	N/E	--	12.9	997	6
CPT-4(P)	PA-1	RTF&A, 11-25-02	1,012	58	NA	Qal	N/E	--	11.9	1,000	8
CPT-5(P)	PA-1	RTF&A, 11-25-02	1,020	50	NA	Qal	N/E	--	11.0	1,009	7
CPT-6(P)	PA-1	RTF&A, 11-25-02	989	50	NA	Qal	N/E	--	11.0	978	7
CPT-7(P)	PA-1	RTF&A, 11-25-02	1,002	35	NA	Qal	N/E	--	6.0	996	2
CPT-8	PA-1	RTF&A, 11-25-02	1,014	50	NA	Qal	N/E	--	8.5	1,006	4
CPT-9(P)	PA-1	RTF&A, 11-25-02	1,024	57	NA	Qal	N/E	--	12.6	1,011	8
CPT-10	PA-1	RTF&A, 11-25-02	1,016	50	NA	Qal	N/E	--	11.5	1,005	7
CPT-11(P)	PA-1	RTF&A, 11-25-02	1,024	60	NA	Qal	N/E	--	12.1	1,012	8
CPT-12	PA-1	RTF&A, 11-25-02	1,006	65	NA	Qal	N/E	--	9.8	996	6
CPT-13(P)	PA-1	RTF&A, 11-25-02	1,010	50	NA	Qal	N/E	--	9.8	1,000	6
CPT-14	PA-1	RTF&A, 11-25-02	1,008	42	NA	Qal	N/E	--	6.2	1,002	1
CPT-15	PA-1	RTF&A, 11-25-02	1,013	50	NA	Qal	N/E	--	13.8	999	9
CPT-16	PA-1	RTF&A, 11-25-02	1,018	115	NA	Qal	N/E	--	15.1	1,003	11
CPT-17	PA-1	RTF&A, 11-25-02	1,014	50	NA	Qal	N/E	--	8.1	1,006	4
CPT-18	PA-1	RTF&A, 11-25-02	1,016	50	NA	Qal	N/E	--	9.3	1,007	5
CPT-19	PA-1	RTF&A, 11-25-02	1,022	55	NA	Qal	N/E	--	12.1	1,010	8
CPT-1	PA-1	RTF&A, 3-23-98	1,030	60	NA	Qal	N/E	--	13.5	1,017	9
CPT-2	PA-1	RTF&A, 3-23-98	1,024	55	NA	Qal	N/E	--	13.1	1,011	9
CPT-3	PA-1	RTF&A, 3-23-98	1,018	38	NA	Qal	N/E	--	10.0	1,008	6
CPT-4	PA-1	RTF&A, 3-23-98	1,000	18	NA	Qal	N/E	--	10.0	990	6
CPT-5	PA-1	RTF&A, 3-23-98	998	45	NA	Qal	N/E	--	10.0	988	6
CPT-6	PA-1	RTF&A, 3-23-98	998	52	NA	Qal	N/E	--	10.0	988	6
CPT-7	PA-2	AES, 5-25-00	1,037	47	NA	Qal	N/E	--	NA	NA	--
CPT-8	PA-2	AES, 5-25-00	1,036	25	NA	Qal	N/E	--	NA	NA	--
CPT-9	PA-2	AES, 5-25-00	1,034	37	NA	Qal	N/E	--	NA	NA	--
CPT-10	PA-2	AES, 5-25-00	1,042	40	NA	Qal	N/E	--	NA	NA	--
CPT-11	PA-2	AES, 5-25-00	1,039	36	NA	Qal	N/E	--	NA	NA	--
CPT-12	PA-2	AES, 5-25-00	1,037	50	NA	Qal	N/E	--	NA	NA	--
CPT-13	PA-2	AES, 5-25-00	1,048	51	NA	Qal	N/E	--	NA	NA	--
CPT-14	PA-2	AES, 5-25-00	1,041	50	NA	Qal	N/E	--	NA	NA	--
CPT-6	PA-3 - 14	AES, 5-25-00	1,172	25	NA	Qal	N/E	--	NA	NA	--
CPT-16	PA-3	AES, 5-25-00	1,158	41	NA	Qal	N/E	--	NA	NA	--
CPT-18	PA-3 -14	AES, 5-25-00	1,175	43	NA	Qal	N/E	--	NA	NA	--
CPT-4	PA-4 - 14	AES, 5-25-00	1,185	36	NA	Qal	N/E	--	NA	NA	--
CPT-5	PA-4 - 14	AES, 5-25-00	1,215	27	NA	Qal	N/E	--	NA	NA	--
CPT-1	PA-15	AES, 5-25-00	1,081	50	NA	Qal	NE	--	NA	NA	--
CPT-2	PA-15	AES, 5-25-00	1,066	30	NA	Qal	N/E	--	NA	NA	--
CPT-3	PA-15	AES, 5-25-00	1,069	33	NA	Qal	N/E	--	NA	NA	--
ROTARY-WASH BORINGS											
RW-1	PA-2	AES, 5-25-00	1034	50	NE	Qal	NE	--	3	1,031	--
RW-2	PA-2	AES, 5-25-00	1,034	50	N/E	Qal	20	1014	7	1,027	--
WB-1	PA-1	RTF&A, 3-23-98	1,016	50	N/E	Qal	N/E	--	ND	--	--
WB-2	PA-1	RTF&A, 3-23-98	1,005	47.0	N/E	Qal	45	960	8	998	--
WB-3	PA-1	RTF&A, 3-23-98	1,003	53	N/E	Qal	NE	--	ND	--	--
WB-4	PA-1	RTF&A, 3-23-98	1,006	51.5	N/E	Qal	NE	--	13	993	--
RW-3	PA-15	AES, 5-25-00	1,068	40	NE	Qal	30	1038	25.5	1,043	--
HOLLOW STEM AUGER BORINGS											
HS-5	PA-4 - 14	AES, 5-25-00	1,180	20.0	N/E	Qal/Qt	N/E	--	NE	--	--
HS-6	PA-4 - 14	AES, 5-25-00	1,184	30	N/E	Qal	N/E	--	NE	--	--
HS-7	PA-4 - 14	AES, 5-25-00	1,209	30	N/E	Qal	N/E	--	NE	--	--
HS-8	PA-4 - 14	AES, 5-25-00	1,160	30.0	N/E	Qal	30	1130	NE	--	--
HS-10	PA-4 - 14	AES, 5-25-00	1,219	30	N/E	Qal	NE	--	NE	--	--
HS-1	PA-15	AES, 5-25-00	1,072	30	17	af/Qal	NE	--	30	1,042	--
HS-2	PA-15	AES, 5-25-00	1,123	30	5	af/Qal	NE	--	NE	--	--
HS-3	PA-15	AES, 5-25-00	1,138	30	8	af/Qal	NE	--	NE	--	--
HS-4	PA-15	AES, 5-25-00	1,151	30	5	af/Qal	NE	--	NE	--	--
BUCKET-AUGER BORINGS											
B-40E	PA-4 - 14	AES, 7/22/04	1,230	40	--	--	--	--	--	--	--

TABLE A-1
EXPLORATION SUMMARY

EXPLORATION	PLANNING AREA	CONSULTANT REPORT DATE	G. S. ELEV. (ft)	EXPL. DEPTH (ft)	FILL DEPTH (ft)	GEOLOGIC MATERIALS	BEDROCK DEPTH (ft)	BEDROCK ELEV. (ft)	GROUNDWATER DEPTH (ft)	GROUNDWATER ELEV. (ft)	REC. REMOVAL DEPTH (ft)
B-41E	PA-4 - 14	AES, 7/22/04	1,240	35	N/E	Qls/TQs	9.5	1,231	N/E	--	--
B-42E	PA-4 - 14	AES, 7/22/04	1,269	35	NE	Qls/TQs	27.5	1,242	N/E	--	--
B-43E	PA-4 - 14	AES, 7/22/04	1,312	50	NE	Qls/TQs	35	1,277	N/E	--	--
B-47E	PA-4 - 14	AES, 7/22/04	1,280	40	NE	Qls/TQs	24	1,256	N/E	--	--
B-60E	PA-3 - 14	AES, 5-25-00	1,200	43	NE	Qal/TQs	35	1,165	N/E	--	--
B-61E	PA-3 - 14	AES, 5-25-00	1,300	65	NE	TQs	0	1,300	N/E	--	3
B-62E	PA-3 - 14	AES, 5-25-00	1,164	32	N/E	Qal/TQs	11	1,153	N/E	--	--
B-1	PA-4 - 14	this report	1,242	65	N/E	Qt/TQs	14	1,228	N/E	--	4
B-2	PA-4 - 14	this report	1,302	65	N/E	Qt/TQs	16	1,286	N/E	--	4
B-3	PA-4 - 14	this report	1,415	65	N/E	TQs	7	1,408	N/E	--	5
B-4	PA-4 - 14	this report	1,405	65	N/E	TQs	4	1,401	N/E	--	4

NOTES:

N/D = Not Determined
N/E = Not Encountered

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS: GRAPH	SYMBOLS: LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

PARTICLE SIZE LIMITS

FIGURE A-1

SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Coarse		
	No. 200	No. 40	No. 10	No. 4	3/4 in.	3 in.	12 in.

REFERENCE: ASTM D-2487

UNIFIED SOIL CLASSIFICATION SYSTEM

SAMPLE KEY:

- FRANKIAN LINED-BARREL SAMPLER (3.50" O.D., 2.625" I.D., 8.0" LONG SAMPLE TUBE)
- STANDARD PENETRATION TEST (ASTM D-1586)
- NO RECOVERY / DISTURBED SAMPLE
- HAND GRAB SAMPLE

Bucket Auger Boring, RTF&A
Current Investigation

BORING B-1

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/26/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1242'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved ridge top

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE
				0			SM
							SM
11			-	10			
13			-	20			
20			-	30			
				40			

MODERN SOIL
SILTY SAND: with gravel, small roots and organic debris, loose, moist, brown

TERRACE DEPOSITS
SILTY SAND: generally massive, loose, moist, light brown

6' - dense, difficult to excavate with pick, cemented with alkaline earth carbonates, includes carbonate stringers, slightly moist, light brown

9' - N51W, 14NE: coarse sand layer 1" thick in massive fine sandstone, dense moderately hard to hard, friable, possible bedrock

BEDROCK -SAUGUS FORMATION
Matrix supported coarse sand/gravel conglomerate, hard when struck with pick, friable, dry to the touch, tan

16' - N81W, 9NE: Massive to bedded sandy siltstone and fine grained sandstone, displays fining, upwards gradation, moderately hard, friable, dry, tan

19' - N79W, 11NE: 2" thick sand/gravel conglomerate bed, loose, dry, tan

25' - N74W, 14NE: Massive fine sandstone, moderately hard, friable, dry to the touch, tan to light brown

30' - N68W, 12NE: Massive fine sandstone continued with many cut and fill channel features

31' - 2" thick matrix supported coarse sand/gravel conglomerate, loose easy to excavate with pick, dry to the touch, tan

33' - N5W, 4SW: Massive fine to coarse sandstone, displaying cross bedding and other depositional features, moderately hard but friable, dry, tan

37' - N15W, 4SW: Massive fine sandstone with numerous channel cut and fills that show variable altitudes

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

(CONTINUED ON THE FOLLOWING FIGURE)

LOG OF BORING — R.T. FRANKIAN & ASSOCIATES

BORING B-1 (CONTINUED)

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/26/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1242'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved ridge top

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE

40' - N78E, 2NW: Fine to coarse sandstone with gravel beds, friable, dry, tan

46' - N78E, 5NW: massive fine sandstone with coarse sand gravel layers that define bedding, soft to moderately hard, friable, dry, tan

51' - N77E, 7NW: Interbedded massive fine sandstone and thin gravel layers, friable

54' - Coarse sand/gravel conglomerate interbedded with fine to coarse sandstone beds, beds are 3" to 12" thick, rock is moderately hard, friable, dry, tan cemented with alkaline earth carbonate

60' - Interbedded coarse sand/gravel conglomerate and sandstone

Bottom of Boring at 65 feet.
No caving
No groundwater encountered
Boring downhole logged
Hole backfilled & tamped 1/26/2005

Kelly Weights
0-15' - 1767 lbs.
15-30' - 1182 lbs.
30-45' - 757 lbs.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

BOREHOLE LOG 2004-700-21.GPJ FRANKIAN.GDT 3/10/05

BORING B-2

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/25/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1302'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved ridge top

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION / GRAPHIC LOG	SOIL TYPE
11			-	5, 10		SP
14			-	15, 20		
18			-	25, 30, 35, 40		

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

TERRACE DEPOSITS

SAND: with gravel, loose, easy to excavate with pick, moist, tan to light brown

7' - N75E, 15NW: Sand (sp) with gravel, loose, moist to the touch, tan

15' - N80E, 14NW: Sand (sp) with gravel, many small channel cut & fills composed of coarse sand and gravel, loose, moist, tan

Sharp depositional contact N12W, 37NE

BEDROCK - SAUGUS FORMATION

Massive fine grained sandstone, friabel, moderately hard, moist, tan

19' - N64W, 10NE: Interbedded fine sandstone and sandy siltstone with coarse sand/gravel conglomerate layers defining bedding, friable

24' - N68W, 12NE: Massive sandy siltstone, moderately hard when struck with pick, friable, slightly moist to the touch, tan

30' - N70W, 14NE: Massive to bedded fine sandstone, beds are 1' to 3' thick with diffuse contacts, moderately hard, friable, slightly moist to the touch, tan

36' - N74W, 12NE: Sharp depositional contact with matrix supported gravel conglomerate, matrix is fine to coarse sand, friable, slightly moist, tan to brown

(CONTINUED ON THE FOLLOWING FIGURE)

BORING B-2 (CONTINUED)

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/25/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1302'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved ridge top

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE

40' - N76E, 16NW: Massive fine sandstone, moderately hard, friable, slightly moist to the touch, tan

46' - N78E, 15NW: Massive fine sandstone, moderately hard, friable, slightly moist, tan

50' - N62E, 14NW: Massive fine sandstone continues

58' - N70E, 10NW: Coarse grained sandstone with thin gravel horizons, displays cross bedding and other depositional features, loose, slightly moist, tan
60' - Fine to coarse grained sandstone

Bottom of Boring at 65 feet.
No caving
No groundwater encountered
Boring downhole logged
Hole backfilled & tamped 1/25/2005

Kelly Weights
0-15' - 1767 lbs.
15-30' - 1182 lbs.
30-45' - 757 lbs.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

BOREHOLE ...G 2004-700-21.GPJ FRANKIAN.GDT 3/10/05

BORING B-3

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/24/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1415'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved, brush covered, hilltop

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE
				0			SM
				5			SM
6			-	10			
30			-	20			
17			-	30			
				40			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

MODERN SOIL
SILTY SAND: with gravel, roots and organic debris, loose, easy to excavate with pick, moist, brown mottled gray, diffuse contact

HEAVILY WEATHERED BEDROCK
Soil-like SILTY SAND (SM) with SAND (SP) layers, massive, loose, easy to excavate with pick, moist, tan

Coarse sand/gravel stone line defines sharp contact with:

BEDROCK - SAUGUS FORMATION
Massive to bedded fine grained sandstone and silty sandstone, soft east y to excavate with pick, slightly moist to the touch, tan to light brown
9' - N39W, 17NE: Bedded fine sandstone, beds are 3" to 6" thick with diffuse contacts

12' Massive fine to coarse sandstone with gravel-sized clasts defining indistinct bedding, moderately hard, friable, slightly moist, tan

14.5' - N66W, 20NE: Massive to bedded siltstone and fine sandstone beds *" to <2' thick, increasing rock hardness

18' N70W, 10NE: Massive 12" thick siltstone to fine sandstone bed, displaying fining upwards gradation, coarse sand/gravel conglomerate below, conglomerate is matrix supported, friable, disseminated carbonate

23' - N69W, 9NE: Fine gravel conglomerate, matrix supported, matrix is fine to coarse sand, moderately hard but friable, cemented with alkaline earth carbonate, slightly moist to dry to the touch, tan

28' - N88W, 25N: 1.5' thick siltstone/fine sandstone bed displaying fining upwards gradation, matrix supported gravel conglomerate above and below, moderately hard but friable, dry to the touch, tan

33.5' - N85W, 3NE: 3' thick siltstone/fine sandstone bed with fining upwards gradation

36.5' - Massive, matrix supported, gravel/cobble conglomerate clasts are angular to sub-rounded, up to 6" diameter, hard to excavate with pick, friable, dry, tan

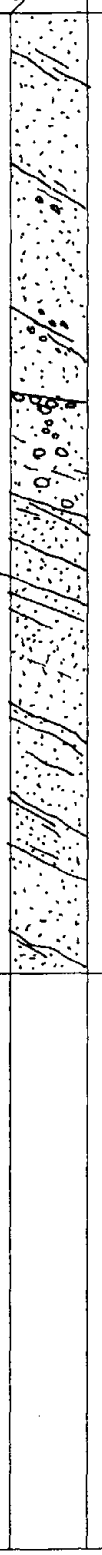
(CONTINUED ON THE FOLLOWING FIGURE)

LOG OF BORING — R.T. FRANKIAN & ASSOCIATES

BORING B-3 (CONTINUED)

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/24/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1415'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved, brush covered, hilltop

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE



40' - Sharp, irregular contact with massive fine sandstone and sandy siltstone

45' - Massive fine sandstone and siltstone weakly cemented with carbonate, hard difficult to excavate with pick, dry to the touch, tan

50' - Irregular depositional contact with sand/gravel conglomerate, hard but friable, dry to the touch, tan

53' - N77E, 21NW: Interbedded fine sandstone and sand/gravel conglomerate, tan

58' - Massive sandy siltstone, hard difficult to excavate with pick, dry to the touch, friable, tan

60' - Massive sandy siltstone continued

Bottom of Boring at 65 feet.
No caving
No groundwater encountered
Boring downhole logged
Hole backfilled & tamped 1/24/2005

Kelly Weights
0-15' - 1767 lbs.
15-30' - 1182 lbs.
30-45' - 757 lbs.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

BOREHOLE ... 2004-700-21.GPJ FRANKIAN.GDT 3/10/05

LOG OF BORING — R.T. FRANKIAN & ASSOCIATES

BORING B-4

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/25/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1405'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved, brush covered ridge

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE
				0			SM
				5			
11			-	10			
				15			
17			-	20			
				25			
20			-	30			
				35			
				40			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

MODERN SOIL
SILTY SAND: with gravel, roots, and organic debris, loose, easy to excavate with pick, moist, brown

HEAVILY WEATHERED BEDROCK
soil-like, silty sand (sm) with sand (sp) layers, loose, easy to excavate with pick, moist, tan to brown

BEDROCK - SAUGUS FORMATION
Massive fine grained sandstone, soft to moderately hard, friable, slightly moist ot the touch, tan to light brown

8' - N72W, 24NE: Massive fine grained sandstone, unjointed, coarse sand/gravel layers define bedding

13' - N78W, 28NE: Massive fine sandstone, soft to moderately hard, friable, dry to the touch, tan

19' - N84W, 17NE: Interbedded fine sandstone and sandy siltstone, generally massive, soft to moderately hard, unjointed, dry to the touch, tan

24' - N38W, 23NE: Massive fine sandstone with coarse sand/gravel layers to 1" thick

30' - N64W, 14NE: Massive fine sandstone and sandy siltstone, unjointed, moderately hard, friable, dry to the touch, tan

35' - N70W, 16NE: Massive fine sandstone and sandy siltstone, unjointed, moderately hard, friable, dry to the touch, tan

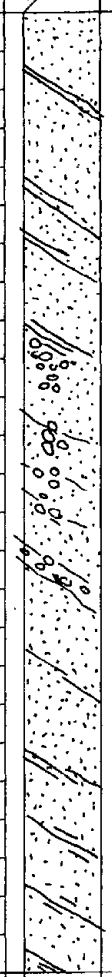
39' - 3" to 8" thick coarse sand/gravel channel cut and fill, shard but

(CONTINUED ON THE FOLLOWING FIGURE)

BORING B-4 (CONTINUED)

JOB NUMBER: 2004-700-21
DATE DRILLED: 1/25/05
EQUIPMENT USED: Track Mount Bucket Auger
ELEVATION: 1405'
LOGGED BY: DS
BORING DEPTH: 0-65'
SURFACE CONDITIONS: Unimproved, brush covered ridge

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	GRAPHIC LOG	SOIL TYPE



irregular contacts above and below

44' - N70E, 19NW: Massive fine sandstone, moderately hard, friable, unjointed, dry to the touch, tan

48' - N74E, 13NW: Massive fine to coarse sandstone, moderately hard, friable, gravel filled erosional, channels are common
49' - N68W, 16NE: Coarse sand/gravel conglomerate, matrix supported, weakly cemented with alkaline earth carbonate, friable, dry to the touch, tan

55' - Massive fine sandstone, moderately hard, friable, dry, tan

60' - N69W, 20NE: Massive fine sandstone continued

Bottom of Boring at 65 feet.
No caving
No groundwater encountered
Boring downhole logged
Hole backfilled & tamped 1/25/2005

Kelly Weights
0-15' - 1767 lbs.
15-30' - 1182 lbs.
30-45' - 757 lbs.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

BOREHOLE LOG 2004-700-21.GPJ FRANKIAN.GDT 3/10/05

LOG OF BORING — R.T. FRANKIAN & ASSOCIATES

Rotary Wash Boring
RTF&A 96-115-21 Report Dated 3-23-98

MAJOR DIVISION			GROUP SYMBOLS	TYPICAL NAMES
COARSE GRAINED SOILS More than 50% retained on No. 200 (75 µm) sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 (4.75mm) sieve	CLEAN GRAVELS (Little or no fines)	GW	Well graded gravels, gravel-sand mixtures, little or no fines
			GP	Poorly graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES (Appreciable amount of fines)	GM	Silty gravel, gravel-sand-silt mixture
			GC	Clayey gravels, gravel-sand-clay mixture
	SANDS More than 50% of coarse fraction passes No. 4 (4.75 mm) sieve	CLEAN SANDS (Little or no fines)	SW	Well graded sands, gravelly-sands, little or no fines
			SP	Poorly graded sands, gravelly-sands, little or no fines
		SANDS WITH FINES (Appreciable amount of fines)	SM	Silty sands, sand-silt mixtures
			SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% or more passes No. 200 (75 µm) sieve	SILTS AND CLAYS (Liquid limit LESS than 50)		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS (Liquid limit GREATER than 50)		MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			CH	Inorganic clays of high plasticity, fat clays
			OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			PT	Peat and other highly organic soils

*Based on the material passing the 3-inch (76 mm) sieve.

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by a combination of group symbols.

PARTICLE SIZE LIMITS

SILT OR CLAY	SAND			GRAVEL		COBBLES	BOULDERS
	Fine	Medium	Coarse	Fine	Coarse		
	No. 200	No. 40	No. 10	No. 4	3/4 in.	3 in.	12 in.

REFERENCE: ASTM D-2487

UNIFIED SOIL CLASSIFICATION SYSTEM

SAMPLE KEY:

FRANKIAN LINED-BARREL SAMPLER (3.25" O.D., 2.625" I.D., 8.0" LONG SAMPLE TUBE)

STANDARD PENETRATION TEST (ASTM D-1586)

NO RECOVERY

BORING WB-1

From 96-115-S REPORT DATED 3-23-98 BY: CLT

JOB NUMBER: 96-115-S
DATE DRILLED: 12-9-96
EQUIPMENT USED: 4-7/8" Diameter Rotary Wash Rig
ELEVATION: 1016
COORDINATES: N: 4,271,180 E: 4,106,770
SURFACE CONDITIONS: Open field, vegetation,relatively level

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
						ML	CLAYEY SILT: damp, brown
8	28.9	84	-	5			more sand
-	-	-	14				more clay, less sand
-	-	-	10	10			(LL=30; PI= 5)
8	38.0	84	-			SM	SILTY SAND: fine to medium, moist, dark gray
-	-	-	23	15			
36	14.6	112	-			SP/ SM	SAND: fine to medium, some silt, moist, dark gray
-	-	-	62	20			7% Passing #200 sieve some gravel
							some cobbles
-	-	-	64/6"	25			
						ML	CLAYEY SILT: moist, gray
20	26.4	97	-			SM	SILTY SAND: fine to medium, few gravel, moist, gray
-	-	-	44	30			ELEVATION AND COORDINATES FROM GEOTECHNICAL MAP
							some gravel
				35			fine
						ML	CLAYEY SILT: moist, dark gray
15	37.5	-	-				(LL=38; PI=10) 82% Passing #200 sieve
				40			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

(CONTINUED ON FOLLOWING FIGURE)

LOG OF BORING

R.T. FRANKIAN & ASSOCIATES

FIGURE A-2.1a

BORING WB-1 (CONTINUED)

From 96-115-S REPORT DATED 3-23-98

JOB NUMBER: 96-115-S
DATE DRILLED: 12-9-96

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
-	-	-	49			SM	SILTY SAND: fine to medium, some gravel, moist
-	-	-	75/5"	45			fine abundant gravel
50/7"	13.6	116	-				
				50			END OF BORING AT 50 FEET.
				55			
				60			
				65			
				70			
				75			
				80			

Drilling mud used in drilling process.
Water level not established.
Used 400-pound hammer with 18" drop to drive Frankian sampler and used 140-pound hammer with 30" drop to drive SPT sampler.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF BORING

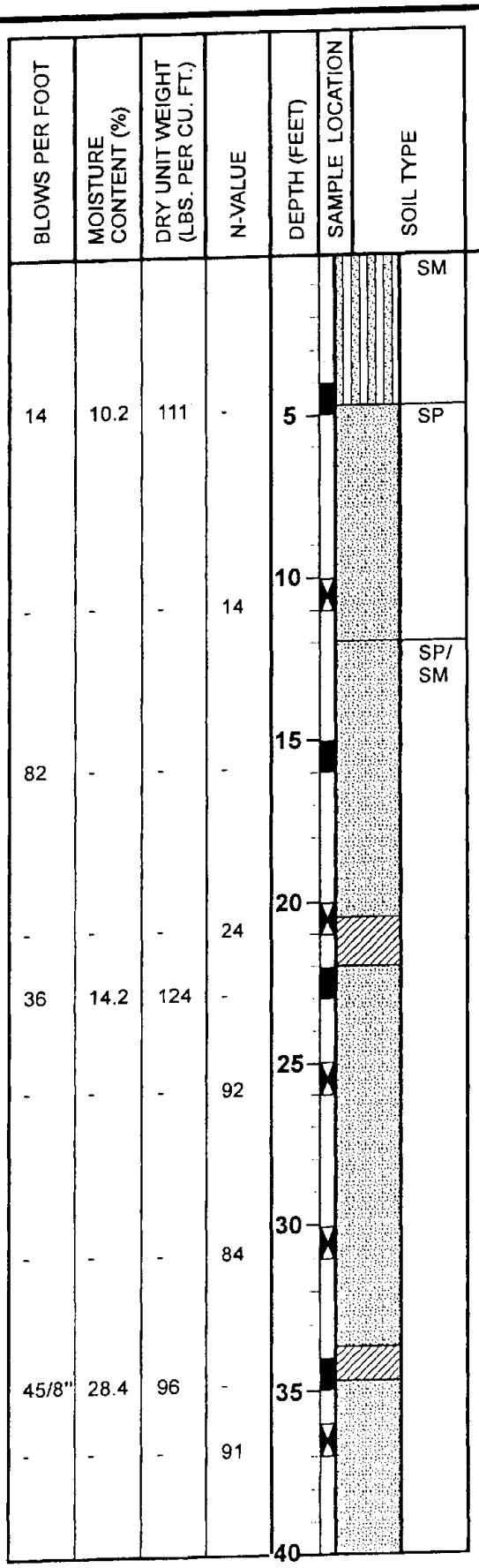
R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.1b

BORING WB-2

From 96-115-S REPORT DATED 3-23-98

BY: CLT

JOB NUMBER: 96-115-S
DATE DRILLED: 12-19-96
EQUIPMENT USED: 4-7/8" Diameter Rotary Wash Rig
ELEVATION: 1005
COORDINATES: N: 4,271,525 E: 4,105,120
SURFACE CONDITIONS: Open vegetated field, relatively level



SILTY SAND: fine to medium, few gravel, damp, grayish brown

some clay with organic material

SAND: fine to coarse, damp, light brown

abundant gravel

small layer of silt
some cobbles

SAND: fine to medium, few gravel, some silt, damp, tan

layer of clay

abundant gravel, light brown
7% Passing #200 sieve

little to no gravel

abundant gravel

ELEVATION AND COORDINATES FROM GEOTECHNICAL MAP

layer of clay

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

(CONTINUED ON FOLLOWING FIGURE)

LOG OF BORING

R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.2a

BORING WB-2 (CONTINUED)

From 96-115-S REPORT DATED 3-23-98

JOB NUMBER: 96-115-S
DATE DRILLED: 12-19-96

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE
-	-	-	60/6"			few gravel
50/7"	15.6	122	-	45	SS	fine SANDSTONE BEDROCK: massive, dark gray
-	-	-	40/2"			END OF BORING AT 47 FEET.

Drilling mud used in drilling process.
Water level at 7-1/2 feet below ground surface.
Used 400-pound hammer with 18" drop to drive Frankian sampler and Used 140-pound hammer with 30" drop to drive SPT sample.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF BORING

R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.2b

BORING WB-3

From 96-115-S REPORT DATED 3-23-98

BY: CLT

JOB NUMBER: 96-115-S
DATE DRILLED: 12-19-96
EQUIPMENT USED: 4-7/8" Diameter Rotary Wash Rig
ELEVATION: 1003
COORDINATES: N: 4,271,780 E: 4,103,450
SURFACE CONDITIONS: Nearly level, vegetated field

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
						ML	SANDY SILT: moist, dark brown
						SM	SILTY SAND: fine, damp, dark reddish brown
18	8.3	102	-	5			
11	19.2	96	-				moist
-	-	-	18	10			
-	-	-	31	15			some clay abundant gravel
16	18.5	109	-				26% Passing #200 sieve fine to medium
-	-	-	19	20			layer of sandy silt layer of clayey silt
-	-	-	77			SP	SAND: fine to coarse, some gravel, moist, brown some clay
40	-	-	-	25		CL	layer of clayey sand CLAY: moist, dark brown
14	-	-	-				
37	-	-	-	30		SC	CLAYEY SAND: fine to medium, moist, dark gray
-	-	-	30				ELEVATION AND COORDINATES FROM GEOTECHNICAL MAP
19	31.5	89	-	35			layer of sandy clay
-	-	-	43			SP	SAND: fine to coarse, some gravel, moist, light brown
				40			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

(CONTINUED ON FOLLOWING FIGURE)

LOG OF BORING

R.T. FRANKIAN & ASSOCIATES

FIGURE A-2.3a

BORING WB-3 (CONTINUED)

From 96-115-S REPORT DATED 3-23-98

JOB NUMBER: 96-115-S
DATE DRILLED: 12-19-96

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE
-	-	-	69	45		more gravel
-	-	-	60	50		fine
-	-	-	59/4"	55		END OF BORING AT 53 FEET.
				60		
				65		
				70		
				75		
				80		

Drilling mud used in drilling process.
Water level not established.
Used 400-pound hammer with 18" drop to drive Frankian sampler and Used 140-pound hammer with 30" drop to drive SPT sampler.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF BORING

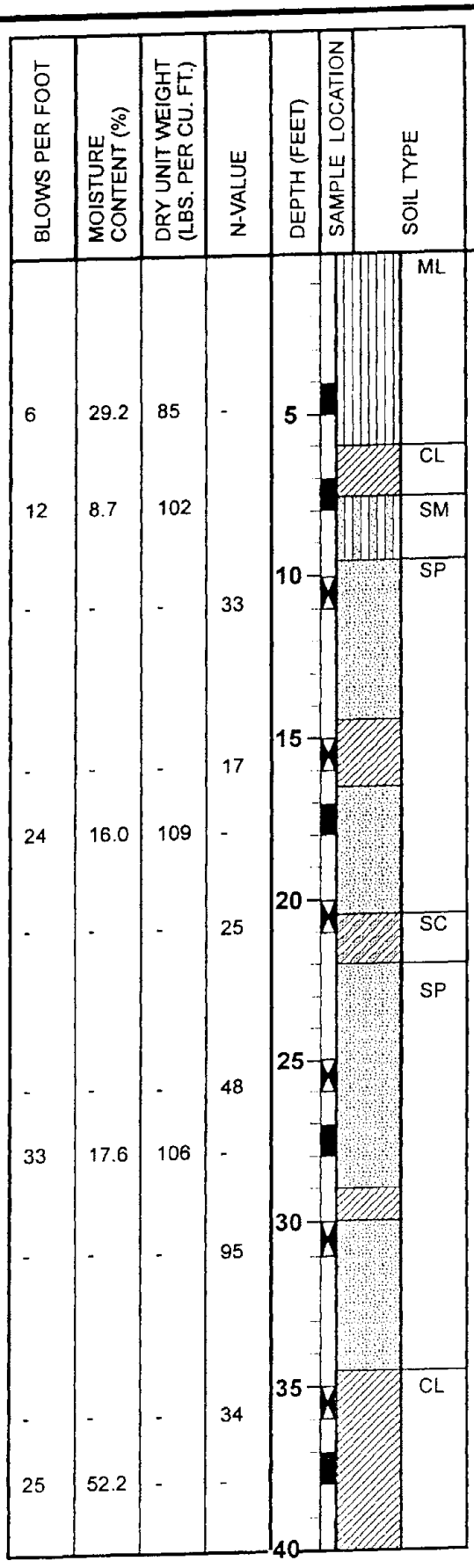
R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.3b

BORING WB-4

From 96-115-S REPORT DATED 3-23-98

BY:CLT

JOB NUMBER: 96-115-S
DATE DRILLED: 12-20-96
EQUIPMENT USED: 4-7/8" Diameter Rotary Wash Rig
ELEVATION: 1006
COORDINATES: N: 4,272,260 E: 4,105,725
SURFACE CONDITIONS: Level, vegetated, open field



SANDY SILT: some clay, damp, brown

SILTY CLAY: moist, grayish brown

SILTY SAND: fine, damp, reddish brown

SAND: fine to medium, moist, light brown

layer of clay

less silt

CLAYEY SAND: fine, moist, gray
30% Passing #200 sieve
3" layer of clay

SAND: fine, moist, light grayish brown

fine to medium

layer of clay

ELEVATION AND COORDINATES FROM GEOTECHNICAL MAP

SILTY CLAY: moist, grayish brown

90% Passing #200 sieve
(Disturbed sample recovered)

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

(CONTINUED ON FOLLOWING FIGURE)

LOG OF BORING

R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.4a

BORING WB-4 (CONTINUED)

From 96-115-S REPORT DATED 3-23-98

JOB NUMBER: 96-115-S
DATE DRILLED: 12-20-96

BLOWS PER FOOT	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	N-VALUE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
-	-	-	35				some gravel
-	-	-	39	45			
50	-	-	-			SM	SILTY SAND: fine to coarse, some gravel, moist
-	-	-	76	50			END OF BORING AT 51-1/2 FEET.
				55			
				60			
				65			
				70			
				75			
				80			

Drilling mud used in drilling process
Water level measured at a depth of 13 feet.
Used 400-pound hammer with 18" drop to drive Frankian sampler and used 140-pound hammer with 30" drop to drive SPT sampler.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF BORING

R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.4b

Rotary Wash Boring, AES 5-25-00

DRILL HOLE LOG

BORING NO. RW-1

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Rotary Wash Boring
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1034
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - Ft.)	Excavated and logged on 3/27/00
		3 4 6 10		95.9/28.3 10	CL	@ 2' Lean clay, stiff, moist, light grayish-brown	% fines=75.4
5		8 14 15		29			@ 5' No recovery
		15 9 12		21			@ 6.5' No recovery
		7 8 9		91.7/32.2 17			
10		7 8 10		101.2/25.3 18		@ 11' - sandy clay	% fines=65.5
15		18 20 25		15	SC		@ 15' No recovery
		9 8 7		45			@ 16.5' No recovery
		15 20 18		121.7/14.8 38		@ 18' Clayey sand, medium dense, moist, light yellowish-brown to light grayish-brown	% fines=45.9
20		17 28 50/ 6"		78			@ 20' No Recovery
		35 45 40		130.9/11.2 85		@ 21.5' - dense	
25		13 16 18		34		@ 25' - dense	% fines=33.2
30		19 50/ 6"		50+			@ 30' No Recovery Gravels in mud pit
35		16 27 50/ 5"		77		@ 35' - very dense	

DRILL HOLE LOG

BORING NO. RW-1

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Rotary Wash Boring
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1034
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES. DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40		40 50/ 6"		sat		@ 40' - with gravel, very dense, wet, light brown	
45		40 50/ 3"		sat		BEDROCK; TQs (45 - 50 Ft.) @ 45' Clayey sand with gravel, very dense, wet, light reddish-brown	@ 45' SPT sample looks like weathered TQs
50		60/ 5"		sat		@ 50' - very dense TOTAL DEPTH 50 Ft. (Elev. 984) No Caving Ground Water @ 3 Ft. (Elev. 1031)	
55							
60							
65							
70							
75							

DRILL HOLE LOG

BORING NO. RW-2

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Rotary Wash Boring
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1034
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 20 Ft.)	Excavated and logged on 3/28/00
		8 7 8		117.6/15.3	SC	@ 2' Clayey sand, loose, moist, brown	% fines=46.5
5		8 8 10		112.6/18.5	CL	@ 5' Sandy lean clay, stiff, moist, light brown	% fines=50.6
		7 10 18		115.6/16.0	SC	@ 8' Clayey sand, medium-dense, moist, light reddish-brown to light grayish-brown	% fines=36.4
10		10 11 12		111.4/20.8	CL	@ 11' Sandy lean clay, very stiff, moist, light brown	% fines=66.2
		14 14 18			SC	@ 14' Clayey sand, dense, moist, light brown	% fines=43.8
15		18 25 29				@ 17' - with gravel and very dense	
20		38 35 50/ 6"				BEDROCK; TQs? (20 - 50 Ft.) @ 20' - with gravel and very dense	
		50/ 6"			SM- SC	@ 23' Clayey to silty sand, very dense, moist to wet, light brown	
25		50/ 6"			SM	@ 26' Silty sand, very dense, very moist, light brown	
		50/ 6"					
30		50/ 5"				@ 32' - with gravel	
35		50/ 5"				@ 35' - with gravel	
		50/				@ 38' - with gravel	

DRILL HOLE LOG

BORING NO. RW-2

PROJECT: Valencia Company — JOB NO.: 00-1729-1
Magic Mountain Entertainment — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Rotary Wash Boring
HAMMER TYPE: Downhole — AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1034 — LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40		6"					
		50/ 4"				@ 41' - with gravel	
		50/ 5"				@ 44' - with gravel	
45		21 42 50/ 5"			CL	@ 47' Sandy lean clay, hard, very moist, light yellowish-brown	
50		6/6"				@ 50' - more sandy TOTAL DEPTH 50 Ft. (Elev. 984) Ground Water @ 7 Ft. (Elev. 1027) No Caving	
55							
60							
65							
70							
75							

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

DRILL HOLE LOG

BORING NO. RW-3

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Rotary Wash Boring
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1068
LOGGED BY: DGG

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 4/4/00
		5 5 6		71.5/24.0	CL	@ 3' Lean clay, stiff, damp, grayish-brown	
5		8 9 10		72.9/23.1		@ 5' - very stiff	
		14 14 15		90.4/13.5		@ 8' - very stiff	% finess=89.6
10		15 15 18		85.1/27.2		@ 11' - very stiff	
15		11 12 15		80.2/22.5	CH	@ 15' Fat clay, very stiff, moist, grayish-brown	
20		30 45 50			SC	@ 20' Clayey sand, very dense, moist, grayish-brown	
25		28 35 45				@ 25' - reddish-brown	
30		50/ 3"			SM	BEDROCK; TQs (30 - 50 Ft.) @ 30' Silty sand with gravel, very dense, very moist, reddish-brown	
35		50/ 5"				@ 35' - grayish to reddish-brown	

DRILL HOLE LOG

BORING NO. RW-3

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Rotary Wash Boring
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1068
LOGGED BY: DGG

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40		33 26 30			CL	@ 40' Lean clay with sand, hard; wet, reddish- to grayish-brown TOTAL DEPTH 40 Ft. (Elev. 1028) Ground Water @ 25.5 Ft. (Elev. 1042.5) No Caving	
45							
50							
55							
60							
65							
70							
75							

Bucket Boring, AES 5-25-00

CLIENT: Newhall Ranch Company		JOB NO.: 99-1703QIsII-1	**DRILL HOLE LOG**
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation		DATE: 7/22/04	
		LOGGED BY: DGG/BJS	
DRILLING COMPANY: Tri-Valley Drilling/Dave		DRILLED: 1/7,10/00	
DRILLING METHOD: Bucket-Auger (86' Rig)		HOLE DIA: 24"	
HAMMER TYPE: Telescoping Kelly Bar		AVERAGE DROP (in.): 12"	**BORING NO.** B-40E
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.		ELEVATION: 1230'	

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40			TQs			TOTAL DEPTH 40 Ft. (Elev. 1190') No Ground Water No Caving	Backfill tamped every 5 ft.
45							
50							
55							
60							
65							
70							
75							

CLIENT: Newhall Ranch Company	JOB NO.: 99-1703Qlsll-1	**DRILL HOLE LOG**	
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation	DATE: 7/22/04		
	LOGGED BY: DGG/BJS		
DRILLING COMPANY: Tri-Valley Drilling/Dave	DRILLED: 1/10/00		
DRILLING METHOD: Bucket-Auger (86' Rig)	HOLE DIA: 24"		
HAMMER TYPE: Telescoping Kelly Bar	AVERAGE DROP (in.): 12"	**BORING NO.** B-41E	
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.	ELEVATION: 1240'		

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
			Qsw			**SLOPEWASH; Qsw (0 - 2.5 Ft.)** @ 0' Yellowish-brown sandy silt with pebbles; loose to moderately dense; slightly damp; locally soft with caliche; krotovina	Downhole logged on 1/10/00 @ 0-10' Mixed Bulk Sample
			Qls			**LANDSLIDE DEBRIS; Qls (2.5 - 9.5 Ft.)** @ 2.5' Light yellowish-brown to yellowish-brown siltstone and silty sandstone; moderately dense to dense; slightly damp; caliche-filled fractures; bedrock slightly disturbed	
5		3 6 8		B:N49W,13NE 115/11.3		@ 5.7' Discontinuous pebbly sandstone interbed	
				Apx B:N51W,21NE		@ 7' Bedding slightly irregular and soft	
				B:N42W,20NE			
10				SP:N62W,15NE		@ 9.5' Thin silty clay layer; slightly sheared; base of caliche	
		3 4 10		119/14.0		**BEDROCK; TQs (9.5 - 35 Ft.)**	@ 10' % fines = 84.9
				B:N54W,14NE		@ 9.5' Olive to yellowish-brown siltstone to clayey siltstone; moderately hard; damp; local discontinuous concretionary lenses; bedding is typically subtle but locally thin bedded to laminated	
				Apx B:N49W,14NE		@ 12.5' Grades into pale reddish-brown siltstone and sandy siltstone	
15						@ 13.7' Pebbly sandstone interbeds; lensing and channeled	
						@ 15.5' Discontinuous medium- to coarse-grained sandstone interbed	
				B:N54W,16NE		@ 17.5' Moderate to yellowish-brown siltstone/mudstone	
20		4 9 15	Qs	B:N45W,15NE 114/13.0			
25							
				B:N47W,18NE		@ 26' Bedding slightly irregular and cross laminated; possible primary soft sediment deformation	
				B:N46W,13NE		@ 28.3' Pale reddish-brown siltstone	
30						@ 29' Light yellowish-brown slightly silty, fine-grained sandstone; grades into yellowish-gray pebbly sandstone	
35						TOTAL DEPTH 35 Ft. (Elev. 1205') No Ground Water, No Caving Slide Plane @ 9.5 Ft. (Elev. 1230.5')	Backfill tamped every 5 Ft.

CLIENT: Newhall Ranch Company		JOB NO.: 99-1703Qlsll-1	**DRILL HOLE LOG**
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation		DATE: 7/22/04	
		LOGGED BY: DGG/BJS	
DRILLING COMPANY: Tri-Valley Drilling/Dave		DRILLED: 1/10-11/00	
DRILLING METHOD: Bucket-Auger (86' Rig)		HOLE DIA: 24"	
HAMMER TYPE: Telescoping Kelly Bar		AVERAGE DROP (in.): 12"	**BORING NO.** B-42E
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.		ELEVATION: 1269'	

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
			Qsw			**SLOPEWASH; Qsw (0 - 3 Ft.)** @ 0' Yellowish-brown sandy silt with scattered pebbles and cobbles; loose to moderately dense; slightly damp; CaCO3 on clasts above 5'	Downhole logged on 1/10/00 and 1/11/00 @ 0-10 Ft. Mixed Bulk Sample
5		1 1 2		107/9.1		**LANDSLIDE DEBRIS; Qls (3 - 18.5 Ft.)** @ 3' Moderate yellowish-brown siltstone to slightly sandy siltstone with scattered pebbles; moderately dense; locally soft; damp; CaCO3 filaments; weathered	
				B:N40W,12SW		@ 8.1' Moderate-brown clayey silt layer with CaCO3; dense sandstone and pebbly sandstone interbeds below	
10		3 6 9		125/10.9 SP?:N85W,32NE		@ 9.7' Grades to silty sandstone @ 10.6' Moderate-brown clayey siltstone; slightly sheared; minor carbonate; pebble to cobble lense and sandy siltstone below; poorly bedded	
			Qls	B:N68W,10NE		@ 14' Interbedded moderate-brown clayey siltstone and sandstone	
15						@ 16' Fine- to medium-grained sandstone with pebbles	
				B/SP:N45W,7NE		@ 18' Siltstone/mudstone; slightly sticky and sheared **LANDSLIDE?; Qls? (18.5 - 27.5 Ft.)** @ 18.5' Yellowish-brown siltstone; dense to moderately hard; damp	Queried landslide material looks fairly intact but correlations with B-43E indicate the basal slide plane is at 27 ft.
20		6 18		Apx B:N43W,21NE 132/9.3		@ 21' Fine- to coarse-grained pebbly sandstone with minor siltstone interbeds; cross-bedded and channeled	
			Qls?	B:N46W,14NE		@ 23' Moderate-brown siltstone; locally laminated	
25							
				B/SP:N44W,13NE @ 27' % fines = 95.7		@ 27' 1-2.5"-thick mudstone; slightly sheared; soft and sticky; slide plane? **BEDROCK; TQs (27.5 - 35 Ft.)** @ 27.5' Yellowish-brown siltstone; moderately hard; damp	@ 27' 4 hand-driven rings oriented normal to mudstone bed
30				B:N42W,14NE		@ 29.5' Sandstone interbed	
			TQs				
35						TOTAL DEPTH 35 Ft. (Elev. 1234') No Ground Water, No Caving Slide Plane @ 10.6 Ft. (Elev. 1258.4') and @ 18 Ft. (Elev. 1257')	Backfill tamped every 5 ft.

CLIENT: Newhall Ranch Company		JOB NO.: 99-1703Qlsll-1	**DRILL HOLE LOG**
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation		DATE: 7/22/04	
		LOGGED BY: DGG/BJS	
DRILLING COMPANY: Tri-Valley Drilling/Dave		DRILLED: 1/11-12/00	
DRILLING METHOD: Bucket-Auger (86' Rig)		HOLE DIA: 24"	
HAMMER TYPE: Telescoping Kelly Bar		AVERAGE DROP (in.): 12"	**BORING NO.** B-43E
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.		ELEVATION: 1312'	

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
			Qsw			**SLOPEWASH; Qsw (0 - 4 Ft.)** @ 0' Light-brown to yellowish-brown sandy silt and mud with scattered pebbles; loose to moderately dense; slightly damp; includes highly weathered Qls	Downhoel logged on 1/11/00 and 1/12/00 @ 0-10' Mixed Bulk Sample
5		2 3 3		114/12.2		**LANDSLIDE DEBRIS; Qls (4 - 35.5 Ft.)** @ 4' Moderate yellowish-brown siltstone; moderately dense to dense; slightly damp; poorly bedded; CaCO3; fractures	
						@ 7.5' Sandy siltstone with scattered pebbles	
						@ 8.5' Pebbles and cobbles; loose; slightly damp	
10		2 3 3		Apx B:N47W,25NE 110/12.2		@ 9.5' Moderate-brown siltstone/mudstone with local pebbles; dense; damp; mudstone/siltstone below	Landslide material is generally dense but slightly disrupted with local minor normal offset beds
				Apx B:N48W,18NE		@ 14' Irregular mudstone interbed with CaCO3	
15		3 6 11		120/11.6			
				Apx B:N41W,15NE		@ 16' Pebbly sandstone lense up to 8" thick	
			Qls				
20		2 2 4		B:N38W,24NE 113/16.4		@ 20.2' Moderate yellowish-brown clayey siltstone; irregular and moderately sheared; offset by minor normal fault	@ 20' % fines = 88.4 @ 20' Minor normal fault with apx 6" offset
						@ 23' Grades to sandy siltstone	
25				Apx B:N54W,22NE		@ 27' Pebbly sandstone lense	
						@ 28.2' Pebbly to cobbly sandstone lense; slightly loose	
30				B:N55W,18NE		@ 29.6' Moderate-brown mudstone interbeds, slightly sheared; offset by minor normal faults	@ 30' Minor normal faults with up to 5" of offset
		5 11 16		B:N50W,14NE 120/12.8 B:N47W,16NE			
						@ 33.5' Clayey siltstone @ 34' 1/2"-thick moderate-brown silty clay; moderately plastic and sticky; undulating and shallow-dipping @ 35.2' 1/4-1/2"-thick moderate-brown clay and silty clay	
35				SP:N38W,13NE ST:Northeast		**BEDROCK; TQs (35.5 - 50 Ft.)** @ 35.5' Yellowish-brown sandy siltstone; moderately hard; damp	Mudstone between 34 and 35.2' appears disturbed
			TQs	B:N50W,13NE			

CLIENT: Newhall Ranch Company	JOB NO.: 99-1703QlsII-1	**DRILL HOLE LOG**	
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation	DATE: 7/22/04		
	LOGGED BY: DGG/BJS		
DRILLING COMPANY: Tri-Valley Drilling/Dave	DRILLED: 1/11-12/00		
DRILLING METHOD: Bucket-Auger (86' Rig)	HOLE DIA: 24"		
HAMMER TYPE: Telescoping Kelly Bar	AVERAGE DROP (in.): 12"	**BORING NO.** B-43E	
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.	ELEVATION: 1312'		

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40			TQ	B:N47W,15NE		@ 37.4' Discontinuous sandstone interbeds and pebbly lenses @ 39.5' Yellowish-brown siltstone and sandy siltstone	
45				B:N51W,16NE		@ 45.5' Fine- to medium-grained sandstone interbed @ 47' Pebbly sandstone with local cobbles; some cross bedding	
50						TOTAL DEPTH 50 Ft. (Elev. 1262') No Ground Water No Caving Slide Plane @ 35.2 Ft. (Elev. 1276.8')	Backfill tamped every 5 Ft.
55							
60							
65							
70							
75							

CLIENT: Newhall Ranch Company	JOB NO.: 99-1703Qlsll-1	**DRILL HOLE LOG**	
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation	DATE: 7/22/04		
	LOGGED BY: BJS		
DRILLING COMPANY: Tri-Valley Drilling/Dave	DRILLED: 1/20/00		
DRILLING METHOD: Bucket-Auger (86' Rig)	HOLE DIA: 24"		
HAMMER TYPE: Telescoping Kelly Bar	AVERAGE DROP (in.): 12"	**BORING NO.** B-47E	
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.	ELEVATION: 1280'		

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						LANDSLIDE DEBRIS; Qls (0 - 24.5 Ft.) @ 0' Yellowish-brown silty sandstone with local sandstone lenses and thin mudstone interbeds; dense, but slightly soft for TQs; slightly damp to damp; caliche-lined fractures; disturbed mudstone bleb @ 3.5' Slightly disturbed, moderate-brown mudstone interbed; slightly sticky	Downhole logged on 1/20/00 Surficial material removed for drill pad
5				B:N22W,12NE		@ 6' Slightly undulating, laminated siltstone/sandy siltstone	
				B:N54W,13NE		@ 8' Reddish-brown, fine sandy mudstone interbed @ 8.5' Moderate-brown mudstone bleb; dense to moderately hard	
10				B:N47W,17NE		@ 9' Cross-laminated fine sandstone interbed	Landslide material is generally tight and only slightly disturbed; suggesting only minor movement
			Qls			@ 13' Disturbed mudstone fragments and local hard concretions; slightly soft	
15				B:N44W,17NE		@ 16' Light reddish-brown sandy siltstone interbed	
						@ 18' Moderate-brown silty mudstone interbed; slightly sticky	
20				B:N48W,13NE		@ 19' Light yellowish-brown to yellowish-gray sandstone with interbedded siltstone and sandy siltstone; dense	
				B:N28W,15NE			
25				SP?:N30W,15NE		@ 24.4' Moderate-brown mudstone; slightly soft and sheared **BEDROCK; TQs (24.5 - 40 Ft.)** @ 24.5' Light-brown sandy siltstone with pebbles; moderately hard; damp; poorly sorted @ 27' Yellowish-brown sandy mudstone	
30						@ 29' Grades brown and more clayey; slightly sticky	
			TQs	Parting: N50W, 23NE		@ 32' Minor discontinuous partings and polished pebbles; minor CaCO3 @ 32.5' Grades sandier	
35						@ 36' Discontinuous slightly silty sandstone interbeds	

CLIENT: Newhall Ranch Company	JOB NO.: 99-1703QlsII-1	**DRILL HOLE LOG**	
PROJECT: Newhall Ranch - Mesas-East Phase II Landslide Investigation	DATE: 7/22/04		
	LOGGED BY: BJS		
DRILLING COMPANY: Tri-Valley Drilling/Dave	DRILLED: 1/20/00		
DRILLING METHOD: Bucket-Auger (86' Rig)	HOLE DIA: 24"		
HAMMER TYPE: Telescoping Kelly Bar	AVERAGE DROP (in.): 12"	**BORING NO.** B-47E	
DRIVING WEIGHTS: 0-28'=3450 lbs; 28-57'=2050 lbs; 57-85'=1140 lbs.	ELEVATION: 1280'		

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40			Qls			TOTAL DEPTH 40 Ft. (Elev. 1240') No Ground Water No Caving Slide Plane @ 24.4 Ft. (Elev. 1255.6')	Backfill tamped every 5 ft.
45							
50							
55							
60							
65							
70							
75							

DRILL HOLE LOG

BORING NO. B-60E

PROJECT: Newhall Ranch - Mesas East — JOB NO.: 00-1703CM-1
Phase II Landslide Investigation — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Tri Valley Drilling/Dave
METHOD OF DRILLING/HOLE DIAMETER (in.) Bucket Auger 24" (86' Rig)
HAMMER TYPE: Telescoping Kelly Bar — AVERAGE DROP (in.): 12"
DRIVING WEIGHTS: 0-28'=3450 lbs, 28-57=2050 lbs, 57-85'=1140 lbs
ELEVATION: 1200± — LOGGED BY: DGG

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						ALLUVIUM; Qal (0 - 35 Ft.) @ 0' Yellowish-brown silt with scattered pebbles and cobbles; slightly damp @ 3' Color yellowish brown to light gray	Excavated and surface logged on 2/11/00; no downhole logging
5		Push/ 12" 1		Consol		@ 5' Medium-brown silt	@ 5' Bulk Sample
10		1 2 4		Consol		@ 10' Medium- to grayish-brown pebbly cobbly silty sand to sandy silt; damp @ 12' Yellowish- to medium-brown, fine- to medium-grained, pebbly to cobbly sand @ 13' Orangish-brown	@ 10' Bulk Sample
15		1 1 2		Consol		@ 17' Medium- to slightly orangish-brown silt to slightly sandy silt @ 18' Scattered pebbles and cobbles	% fines=47.6
20		1 3 2		123/2.5		@ 20' Orangish- to yellowish-tan, fine- to medium-grained sand @ 21' Pebbles and cobbles	@ 23' Bulk Sample
25							@ 25' Too cobbly for drive sample
						@ 28' Finer-grained	
30		2 3 3		Consol		@ 30' Medium-brown silt to slightly sandy silt @ 31' Silty sand to sandy silt with pebbles and cobbles	
35		3 8 16		120/3.5		BEDROCK; TQs (35 - 43 Ft.) @ 35' Orangish-yellow, fine- to medium-grained pebbly sandstone @ 37' Medium- to orangish-brown siltstone with pebbles	

DRILL HOLE LOG

BORING NO. B-60E

PROJECT: Newhall Ranch - Mesas East
Phase II Landslide Investigation
JOB NO.: 00-1703CM-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Tri Valley Drilling/Dave
METHOD OF DRILLING/HOLE DIAMETER (in.) Bucket Auger 24" (86' Rig)
HAMMER TYPE: Telescoping Kelly Bar
AVERAGE DROP (in.): 12"
DRIVING WEIGHTS: 0-28'=3450 lbs, 28-57=2050 lbs, 57-85'=1140 lbs
ELEVATION: 1200±
LOGGED BY: DGG

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40						@ 39' Pebbly cobbly sandstone	
						@ 43' Yellowish-orange; fine- to coarse-grained pebbly sandstone	
		3 8 16		123/2.6		TOTAL DEPTH 43 Ft. (Elev. 1157) No Ground Water No Caving	Backfill Tamped every 5 ft.
45							
50							
55							
60							
65							
70							
75							

Allan E. Seward Engineering Geology, Inc.

DRILL HOLE LOG

BORING NO. B-61E

PROJECT: Newhall Ranch - Mesas East — JOB NO.: 00-1703CM-1
Phase II Landslide Investigation — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Tri Valley Drilling/Danny
METHOD OF DRILLING/HOLE DIAMETER (in.) Bucket-Auger 24" (4WD Rig)
HAMMER TYPE: Telescoping Kelly Bar — AVERAGE DROP (in.): 12"
DRIVING WEIGHTS: 0-24'=3160 lbs, 24-47'=2040 lbs, 47-72'=1120 lbs
ELEVATION: 1300± — LOGGED BY: BJS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						BEDROCK: TOs (0 - 65 Ft.)	Excavated and logged on 3/1/00 and 3/2/00
						@ 0' Light yellowish-brown sandy siltstone to silty sandstone with local interbeds and channels of sandstone and pebbly sandstone; finer beds dense, slightly damp to damp, not well sorted and poorly bedded; coarse beds dense but slightly friable, dry to slightly damp, cross bedded and locally laminated	Surface material removed for drill pad
				B:N16W,16NE (x-bedded)		@ 2' Cross-bedded sandstone interbed	
5						@ 5' Light yellowish-brown to yellowish-gray silty sandstone with local pebbles, concretions and sandy lenses	@ 0-10' Mixed Bulk Sample
10		5 10 13		Consol		@ 9' Fine silty sandstone	% fines=50.2
				B:N12W,9NE (x-bedded)		@ 13' Sandstone and pebbly sandstone channel with cross bedding	
15		5 8 13		116/7.0		@ 15.5' Light yellowish-brown to yellowish-gray silty sandstone with local pebbles and pebbly lenses, and rare, discontinuous muddy layers	@ 15' Bulk Sample
				Apx B:N30W,8NE			
				Apx B:N50W,13NE			
20		6 8 12/ 5"		B:N55W,10NE 119/3.6		@ 20' Pebbly lense; pebbly silty sandstone interbeds below	@ 20' Bulk Sample
25				B:N52W,10NE		@ 24' Pebbly to cobbly lense with underlying cross-bedded sandstone; poorly sorted silty sandstone below; dense to moderately hard; slightly damp to damp	
				B:N20W,15NE		@ 29' Thin sandstone interbed within yellowish-brown pebbly silty sandstone and local silty interbeds	
30		7 24		132/7.5		@ 31' Pebbly sandstone lense channeled into yellowish-brown sandy siltstone and mudstone with local pebbles; poorly sorted and poorly bedded	@ 30' Bulk Sample Bedding is poor from 30 to 50 feet
35						@ 37.5' Yellowish-brown to brown slightly sandy mudstone/siltstone	

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

DRILL HOLE LOG

BORING NO. B-61E

PROJECT: Newhall Ranch - Mesas East — JOB NO.: 00-1703CM-1
Phase II Landslide Investigation — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Tri Valley Drilling/Danny
METHOD OF DRILLING/HOLE DIAMETER (in.) Bucket-Auger 24" (4WD Rig)
HAMMER TYPE: Telescoping Kelly Bar — AVERAGE DROP (in.): 12"
DRIVING WEIGHTS: 0-24'=3160 lbs, 24-47'=2040 lbs, 47-72'=1120 lbs
ELEVATION: 1300± — LOGGED BY: BJS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
40		5 11 23		Consol 126/11.0		@ 40' Concretions	% fines=78
45						@ 45.5' Mudstone interbed; bedding vague but shallow	
						@ 48' Grades sandier	
50				Apx B:N20W,10NE		@ 50' Grades siltier with local concretions; local sandstone interbeds below; bedding vague	
				B:N20W,8NE			
55							
60				B:N38W,15NE (x-bedded)		@ 59.5' Grades sandier @ 60.5' Sandstone and pebbly sandstone interbed; cross bedded and channeled; lithologically identical to coarse bed at 2 ft.	
65		11 46		120/5.7		TOTAL DEPTH 65 Ft. (Elev. 1235) No Ground Water No Caving	Backfill tamped every 10 ft.
70							
75							

Allan E. Seward Engineering Geology, Inc.

DRILL HOLE LOG

BORING NO. B-62E

PROJECT: Newhall Ranch - Mesas East — JOB NO.: 00-1703CM-1
Phase II Landslide Investigation — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Tri Valley Drilling/Dave
METHOD OF DRILLING/HOLE DIAMETER (in.) Bucket-Auger 24" (4WD Rig)
HAMMER TYPE: Telescoping Kelly Bar — AVERAGE DROP (in.): 12"
DRIVING WEIGHTS: 0-24'=3160 lbs, 24-47'=2040 lbs, 47-72'=1120 lbs
ELEVATION: 1164± — LOGGED BY: MAS/BJS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						SLOPEWASH/ALLUVIUM; Qsw/Qal (0 - 11 Ft.)	Excavated and logged on 3/2/00
						@ 0' Brown muddy sand with scattered pebbles; soft; moist to wet, roots; poorly sorted	
		1/18"		116/13.0			@ 3' Bulk Sample
5						@ 5' Grades yellowish-brown and moderately dense	@ 0-10' Mixed Bulk Sample
10		2 3 4		115/6.8			@ 10' Bulk Sample
						BEDROCK; TQs (11 - 32 Ft.)	
						@ 11' Light yellowish-brown fine sandy siltstone; soft to moderately dense; damp; weathered with roots and bioturbation	
15						@ 15' Light yellowish-brown to yellowish-gray fine silty sandstone with sandstone and pebbly sandstone lenses and interbeds; dense; slightly damp; local caliche-filled fractures	
				B:N32W,10NE B:N52W,8NE		@ 17.5' Siltstone and sandstone interbeds; moderately well bedded and thin bedded	
20		5 3/1"				@ 19' Cross-bedded yellowish-gray sandstone and pebbly sandstone with channels; slightly to moderately friable	Drive Sample @ 20' hit rock % fines= 62
				B:N53W,6NE		@ 23' Coarse sandstone and pebbly sandstone lense/channel; cross bedded; moderately friable but dense	@ 20' Bulk Sample
25						@ 25' Slightly clayey sandy siltstone; dense; damp	
30							
		3 11 16		123/10.1		TOTAL DEPTH 32 Ft. (Elev. 1132) No Ground Water No Caving	Backfill Tamped every 10 ft.
35							

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Hollow Stem Boring, AES 5-25-00

DRILL HOLE LOG

BORING NO. HS-1

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1072
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						ARTIFICIAL FILL; af (0 - 17 Ft.)	Excavated and logged on 3/15/00
		7 6 7		120.6/9.3	SC	@ 2' Clayey sand, loose, moist, yellowish-brown	
5		7 7 8		111.4/13.3		@ 5' Light yellowish-brown	@ 0-5' Bulk Sample
		39 26 28		121.1/4.6	CL	@ 8' Sandy clay with interlayer of well graded sand, hard, moist, light brown to yellowish-brown	
10		5 7 4		130.9/11.5		@ 11' - with gravel and stiff	@ 11-15' Bulk Sample
15		8 16 18		83.4/30.8		@ 15' - less sand and very stiff	
						QUATERNARY ALLUVIUM; Qal (17 - 30 Ft.)	
20		3 4 10		84.0/33.6	CH	@ 20' Fat clay, stiff, moist, yellowish-brown	
25		8 15 15			SM	@ 25' Silty sand with gravel, medium dense, very moist, grayish-brown	% fines=21.1
30		9 20 20				@ 30' - dense	@ 30' Ground water
						TOTAL DEPTH 30 Ft. (Elev. 1042) Ground Water @ 30 Ft. (Elev. 1042) No Caving	
35							

DRILL HOLE LOG

BORING NO. HS-2

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1123
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						ARTIFICIAL FILL; af (0 - 5 Ft.)	Excavated and logged on 3/15/00
		10 11 18		117.3/11.1	SC/ CL	@ 2' Clayey sand to sandy clay, medium dense to very stiff, moist, brown	@ 0-5' Bulk Sample
5		5 5 5		89.8/11.0	CL	QUATERNARY ALLUVIUM; Qal (5 - 18 Ft.) @ 5' Lean clay with sand, stiff, moist, yellowish-brown	@ 6-8' Bulk Sample
		5 6 6		98.9/11.3			
10		3 3 7		114.6/7.8	SM	@ 11' Silty sand, loose, moist, yellowish-brown	
15		3 7 14		117.3/7.8		@ 15' - medium dense	% fines=36.1
						QUATERNARY TERRACE; Qt (18 - 30 Ft.)	
20		8 9 14		112.6/8.0		@ 20' Silty sand with gravel, medium dense, moist, yellowish-brown	
25		16 50/ 6"			SC/ CL	@ 25' Clayey sand to sandy clay, very dense to hard, moist, yellowish-brown	@ 27-30' Bulk Sample
30		20 50/ 6"				TOTAL DEPTH 30 Ft. (Elev. 1093) No Ground Water	
35							

Allan E. Seward Engineering Geology, Inc.

For use with report dated 03/18/2005: RTF Job No. 2004-700-21

DRILL HOLE LOG

BORING NO. HS-3

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1138
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						ARTIFICIAL FILL?; af (0 - 8 Ft.)	Excavated and logged on 3/15/00
		24 21 22		111.7/4.7	SM	@ 2' Silty sand with gravel, medium dense, damp, light yellowish-brown	
5		7 9 8		105.6/8.7		@ 5' - loose	
		7 5 17		100.3/8.1		QUATERNARY ALLUVIUM; Qal (8 - 30 Ft.) @ 8' - loose	
10		9 12 13		103.3/6.6		@ 12' - moist	@ 11' No Recovery % fines=43.5
15		9 10 26		101.1/8.4			
20		7 10 19		110.7/7.6			
25		5 7 9					% fines=12.9
30		21 50/ 6"				QUATERNARY TERRACE; Qt (30 Ft.) @ 30' - very dense TOTAL DEPTH 30 Ft. (Elev. 1108) No Ground Water No Caving	
35							

DRILL HOLE LOG

BORING NO. HS-4

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1151
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						ARTIFICIAL FILL; af? (0 - 5 Ft.)	Excavated and logged on 3/15/00
		1 36 50		118.6/8.6	SM	@ 2' Silty sand with gravel, dense, damp, light yellowish-brown	@ 0-3' Bulk Sample
5		28 50		122.6/10.6	SC	QUATERNARY ALLUVIUM; Qal (5 - 25 Ft.) @ 5' Clayey sand with gravel, dense, moist, brown	
		9 8 9		107.0/10.3	SM	@ 8' Silty sand, loose, moist, light yellowish-brown	% fines=39.0
10		9 18 36		115.3/4.8		@ 11' - with gravel and medium dense	% fines=18.7
				103.1/2.9			@ 13-15' Bulk Sample
15		12 22 15				@ 15' - with gravel and medium dense	
20		5 8 19		119.9/5.7		@ 20' - medium dense	% fines=16.3
25		48 50/ 5"			SP-SM	QUATERNARY TERRACE; Qt (25 - 30 Ft.) @ 25' Poorly graded sand with silt and gravel, very dense, moist, yellowish-brown	@ 25-30' Bulk Sample
30		58 66/ 2"				TOTAL DEPTH 30 Ft. (Elev. 1121) No Ground Water No Caving	
35							

DRILL HOLE LOG

BORING NO. HS-5

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1180
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 12 Ft.)	Excavated and logged on 3/21/00
		3 5 7		109.1/5.0	SM	@ 2' Silty sand, loose, moist, light brown	@ 0-2' Bulk Sample
5		15 18 25		112.0/4.4		@ 5' - medium dense	
		15 19 32		110.1/6.7		@ 8' - medium dense and yellowish-brown	@ 8-11' Bulk Sample
10		50/ 6"					@ 11' No recovery
		50/ 6"		105.0/9.1		QUARTERNARY TERRANCE; Qt (12 - 20 Ft.) @ 12' - very dense, yellowish-brown	
15		31 50/ 4"		94.3/14.8	CL	@ 15' Lean clay, hard, moist, yellowish-brown	@ 15-20' Bulk Sample
		18 46 50/ 4"					
20		33 38 50/ 6"				@ 20' - sandy TOTAL DEPTH 20 Ft. (Elev. 1160) No Ground Water No Caving	
25							
30							
35							

DRILL HOLE LOG

BORING NO. HS-6

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1184
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 3/21/00
		3 6 9		98.5/2.9	SM	@ 2' Silty sand, loose, damp, light yellowish-brown	
5		6 7 14		98.9/2.2		@ 5' - medium dense	
		15 21 35		110.2/3.3		@ 8' - dense	
10		5 29 32		106.0/2.9	SW-SM	@ 11' Well graded sand with silt, dense, moist, light yellowish-brown	@ 11-15' Bulk Sample % fines=9.2
15		25 27 27		108.8/2.7		@ 15' - medium dense	
20		15 17 19		107.2/4.4	SM	@ 20' Silty sand, medium dense, moist, light yellowish-brown	
25		28 40 50/4"				@ 25' - with gravel and very dense	
30		24 32 36				@ 30' - with gravel and dense TOTAL DEPTH 30 Ft. (Elev. 1154) No Ground Water No Caving	
35							

DRILL HOLE LOG

BORING NO. HS-7

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1209
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 3/21/00
		9 11 13		112.5/4.8	SP-SM	@ 2' Poorly graded sand with silt, medium dense, moist, light brown	@ 0-2' Bulk Sample % fines=8.7
5		7 11 23		92.7/2.9			% fines=2.2
		10 15 22		116.3/3.5	SW	@ 8' Well graded sand with gravel, medium dense, damp, light yellowish-brown	@ 8-11' Bulk Sample
10		15 13 15		114.5/4.6			% fines=4.8
15		9 10 15		108.5/7.1	SM	@ 16.5' Silty sand with some gravel, medium dense, damp, light yellowish-brown	@ 15' No Recovery % fines=26.6
20		33 44 50/ 45		118.6/2.1	SP-SM	@ 20' Poorly graded sand with silt, very dense, gravel, moist, light yellowish-brown	@ 21-25' Bulk Sample
25		11 15 26			SM	@ 25' Silty sand, medium dense, moist, light brown	
30		23 33 45			CL	QUATERNARY TERRACE; Qt (30 Ft.) @ 30' Lean clay with sand, hard, moist, light yellowish-brown TOTAL DEPTH 30 Ft. (Elev. 1179) No Ground Water	
35							

DRILL HOLE LOG

BORING NO. HS-8

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1160
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 3/21/00
		5 6 12		93.2/7.5	CL	@ 6" Top Soil, silty, soft, moist, brown with roots and grass @ 2' Sandy clay, stiff, damp, light yellowish-brown	@ 0-5' Mixed Bulk Sample
5		13 6 9		98.3/4.3	SM-SC	@ 5' Clayey, silty sand, loose, moist, yellowish-brown	
		15 27 27		101.7/3.9		@ 8' - medium dense	@ 8' Rock
10		5 6 8		99.3/7.7			
15		8 8 8		112.6/8.9			@ 15-18' Bulk Sample
20		9 9 9		108.9/4.8	SM	@ 20' Silty sand with gravel, loose, moist, yellowish-brown	% fines=17.(
25		15 7 8			SM	@ 25' - medium dense	% fines=14.(
30		19 28 40			CL	BEDROCK?; TQs? (30 Ft.) @ 30' Lean clay, hard, moist, light yellow TOTAL DEPTH 30 Ft. (Elev. 1130) No Ground Water No Caving	
35							

DRILL HOLE LOG

BORING NO. HS-10

PROJECT: Valencia Company — JOB NO.: 00-1729-1
Magic Mountain Entertainment — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole — AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1219 — LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 3/21/00
		2 2 2		107.7/7.8	SM	@ 2' Silty sand with gravel, loose, moist, light brown	
5		8 11 26		108.2/3.5		@ 5' - less gravel and medium dense	
		11 13 11		107.9/5.3		@ 8' - less gravel and medium dense	
10		17 22 34		110.1/4.1		@ 11' - dense	% fines=19.8
15		31 36 50/ 6"		103.1/7.6		@ 16.5' - dense, light yellowish-brown	@ 15' No Recovery
20		50/ 4"					@ 20' No Recovery
		50/ 4"		110.3/2.5	SP- SM	@ 21' Poorly graded sand with silt and gravel, very dense, moist, light yellowish-brown	
		48 50/ 5"					
25		32 36 50/ 5"					
30		50			SM	@ 30' Silty sand wtih gravel, very dense, moist, yellowish-brown	
						TOTAL DEPTH 30 Ft. (Elev. 1189) No Ground Water No Caving	
35							

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

DRILL HOLE LOG

BORING NO. HS-11

PROJECT: Valencia Company — JOB NO.: 00-1729-1
Magic Mountain Entertainment — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole — AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1176 — LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 3/21/00
		13 16 17		91.8/3.8	SP	@ 2' Poorly graded sand, medium dense, damp, light yellowish-brown	@ 0-5' Bulk Sample
5		7 8 32		105.7/4.1		@ 5' - with some gravel	@ 5' Bulk Sample % fines=3.9
		50/ 6"		104.4/5.5	SM	@ 9' Silty sand, dense, damp, yellowish-brown	% fines=21.9
10		12 20 47					@ 11' No Recovery
		24 50/ 6"		113.8/1.9	SW	@ 13' Well graded sand with gravel, dense, damp, yellowish-brown	
15		50/ 6"		110.0/2.3	SW- SM	@ 15' Well graded sand with silt and gravel, dense, damp, yellowish-brown	110.0/2.3
20		15 15 17		102.8/5.7	SM	@ 20' Silty sand, medium dense, moist, yellowish-brown	% fines=33.0
25		17 21 17				@ 25' - with gravel	@ 25-30' Bul Sample
30		17 20 21				@ 30' - with gravel TOTAL DEPTH 30 Ft. (Elev. 1146) No Ground Water No Caving	
35							

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

DRILL HOLE LOG

BORING NO. HS-12

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1163
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES. DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 8 Ft.)	Excavated and logged on 3/21/00
		3 3 6		112.3/6.6	SM	@ 2' Silty sand with gravel, loose, moist, yellowish-brown	@ 0-5' Bulk Sample
5		12 13 15		109.6/3.5		@ 5' - medium dense, damp, light yellowish-brown	
		18 32 21		124.2/2.8		BEDROCK; TQs (8 - 30 Ft.) @ 8' - medium dense	
10							
		36 22 30		116.1/3.3		@ 12' - medium dense	
15		33 28 30		116.6/2.8		@ 15' - dense	@ 17-20' Bulk Sample
20		30 20 17		107.0/5.0		@ 20' - medium dense	
25		30 42 42			SP-SM	@ 25' Poorly graded sand with silt and gravel, very dense, damp, light yellowish-brown	
30		50/5"				TOTAL DEPTH 30 Ft. (Elev. 1133) No Ground Water No Caving	
35							

DRILL HOLE LOG

BORING NO. HS-13

PROJECT: Valencia Company — JOB NO.: 00-1729-1
Magic Mountain Entertainment — DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole — AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1085 — LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						ARTIFICIAL FILL; af (0 - 5 Ft.)	@ 0-2' Bulk Sample
		50/5"		113.1/4.1			@ 2' No Recovery
		11 13 16			SM	@ 3' Silty sand, medium dense, moist, light brown	
5		13 8 9		97.5/11.0		QUATERNARY ALLUVIUM; Qal (5 - 23 Ft.)	% fines=12.5
		5 4 7		102.0/12.2	CL	@ 8' Sandy clay, stiff, moist, brown	% fines=65.6
10		6 7 12		91.0/22.9		@ 11' - less sand and very stiff	@ 11-15' Bul Sample
15		7 6 7		104.5/6.8	SC	@ 15' Clayey sand with gravel, loose, moist, light reddish-brown	% fines=34.5
20		16 21 31		122.1/10.2		@ 20' - medium dense	@ 20-23' Bul Sample
		27 44 50				QUATERNARY TERRACE; Qt/TQs?, (23 - 25 Ft.) @ 23' - very dense	@ 23' may be TQs
25		13 40 50/4				@ 25' - very dense TOTAL DEPTH 25 Ft. (Elev. 1060) No Ground Water No Caving	
30							
35							

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

DRILL HOLE LOG

BORING NO. HS-10

PROJECT: Valencia Company
Magic Mountain Entertainment
JOB NO.: 00-1729-1
DATE: 5/25/00
DRILLING COMPANY/DRILLER: Valley Well Drilling
METHOD OF DRILLING/HOLE DIAMETER (in.) Hollow-Stem Auger
HAMMER TYPE: Downhole
AVERAGE DROP (in.): 30"
DRIVING WEIGHTS: 140 lbs.
ELEVATION: 1219
LOGGED BY: MAS

DEPTH (feet)	SAMPLE TYPE	BLOWS / 6"	GRAPHIC LOG	ATTITUDES, DRY DENSITY (pcf)/ MOISTURE CONTENT (%)	USCS SYMBOL	Description Soils: description; consistency/density; moisture; color; other Bedrock: color, lithology; hardness; moisture; other	Remarks
						QUATERNARY ALLUVIUM; Qal (0 - 30 Ft.)	Excavated and logged on 3/21/00
		2 2 2		107.7/7.8	SM	@ 2' Silty sand with gravel, loose, moist, light brown	
5		8 11 25		108.2/3.5		@ 5' - less gravel and medium dense	
		11 13 11		107.9/5.3		@ 8' - less gravel and medium dense	
10		17 22 34		110.1/4.1		@ 11' - dense	% fines=19.8
15		31 36 50/ 6" 13 25 40		103.1/7.6		@ 16.5' - dense, light yellowish-brown	@ 15' No Recovery
20		50/ 4"		110.3/2.5	SP- SM	@ 21' Poorly graded sand with silt and gravel, very dense, moist, light yellowish-brown	@ 20' No Recovery
		50/ 4"					
		48 50/ 5"					
25		32 36 50/ 5"					
30		50			SM	@ 30' Silty sand wtih gravel, very dense, moist, yellowish-brown	
						TOTAL DEPTH 30 Ft. (Elev. 1189) No Ground Water No Caving	
35							

SHEET 1 of 1

Test Pit,
RTF&A 96-149-21 Report Dated 12-30-03

LOG OF TEST PIT TP-1

JOB NUMBER 96-149-01 CLIENT Newhall Land & Farming LOGGED BY DGF

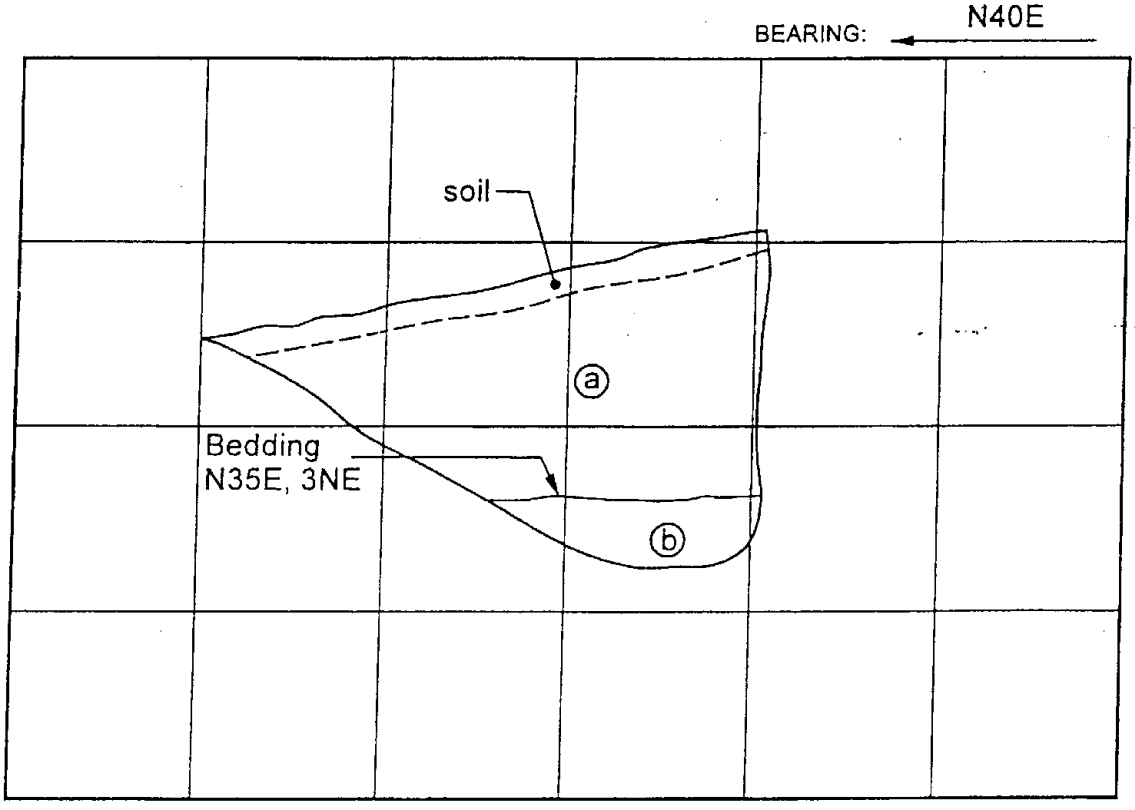
LOCATION Chevron Station ELEVATION 1215+/- feet DATE LOGGED 9-30-03

0-1 foot: soil

1-8.5 feet: Terrace Deposites; (Qt)

a) Reddish brown, fine to coarse grained sand with pebbles to small boulders (up to 2 ft.), moderately soft, dry, poorly cemented, poorly bedded

b) Light yellowish brown, fine to medium grained silty sand, moderately soft, dry



NOTE:
THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC TEST PIT LOCATION AND AT THE DATE INDICATED IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

LOG OF TEST PIT TP-2

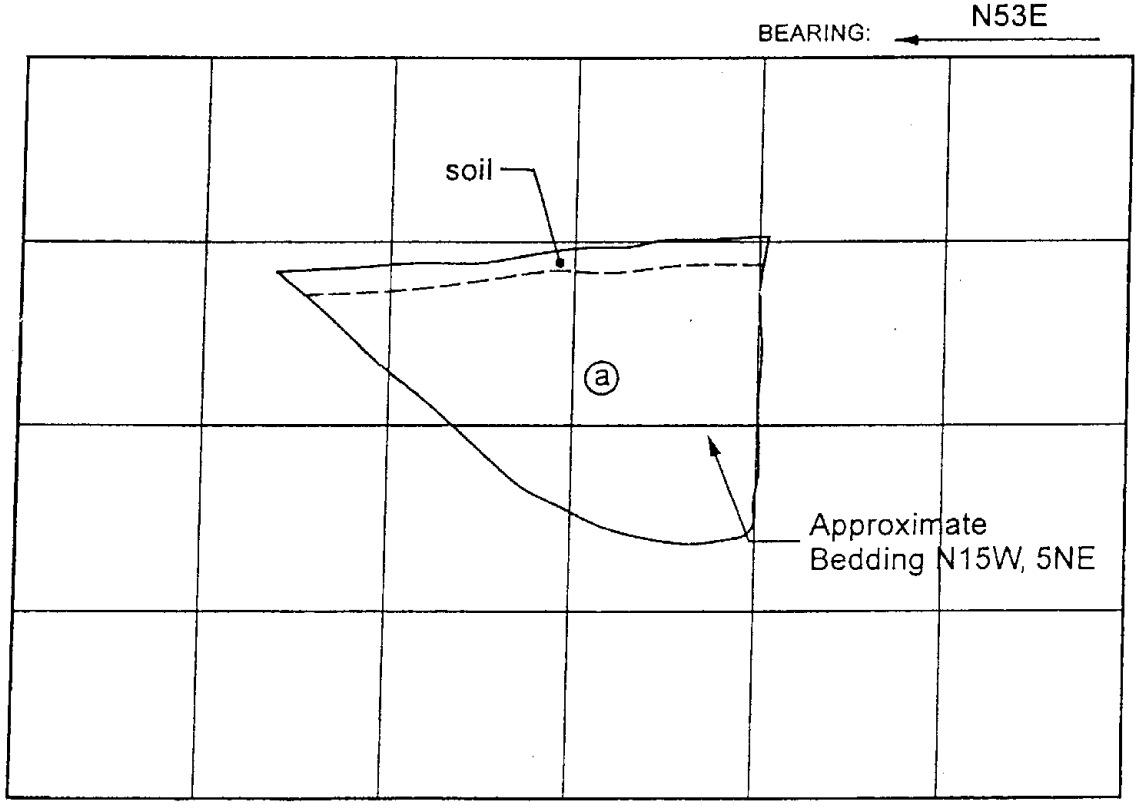
JOB NUMBER 96-149-01 CLIENT Newhall Land & Farming LOGGED BY DGF

LOCATION Chevron Station ELEVATION 1203+/- feet DATE LOGGED 9-30-03

0-8 inches: soil

8"-8.5 feet: Terrace Deposits; (Qt)

a) Reddish brown, fine to coarse grained sand with pebbles and cobbles moderately soft, dry, poorly bedded



NOTE:
THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC TEST PIT LOCATION AND AT THE DATE INDICATED. IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

LOG OF TEST PIT TP-3

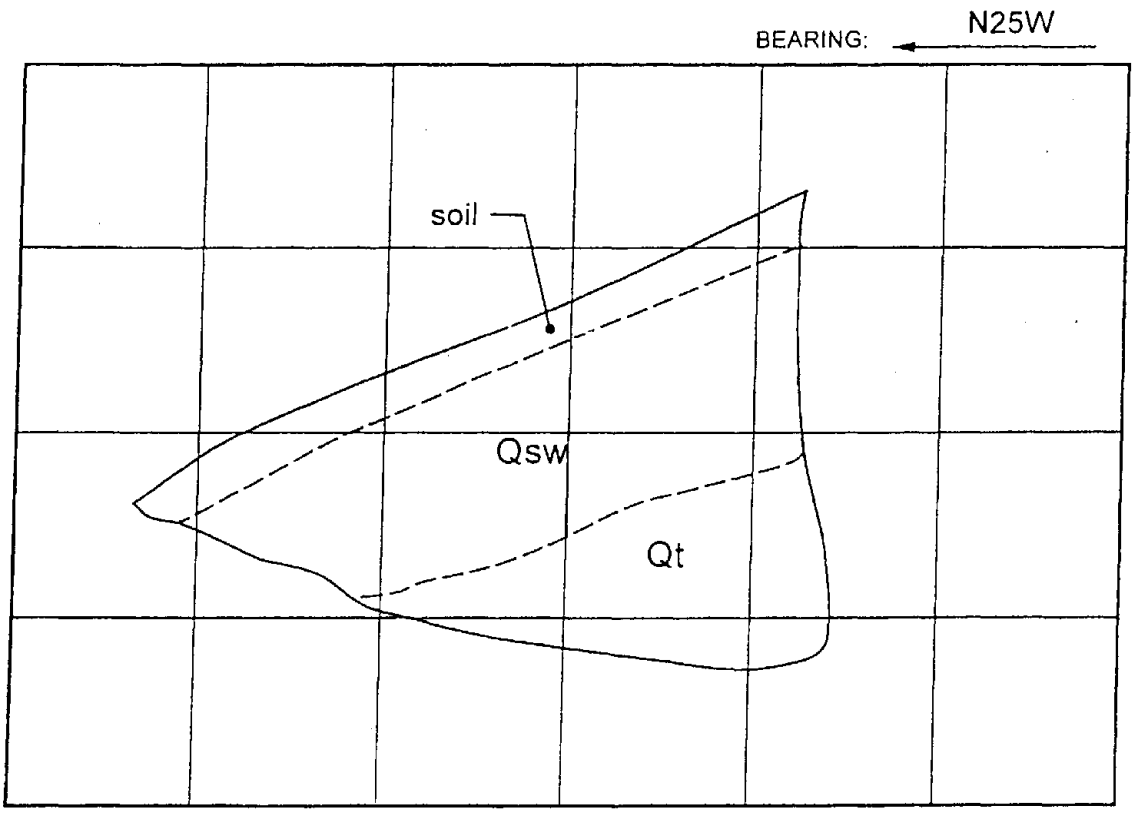
JOB NUMBER 96-149-01 CLIENT Newhall Land & Farming LOGGED BY DGF

LOCATION Chevron Station ELEVATION 1127 +/- feet DATE LOGGED 9-30-03-

0-1.5 feet: soil

1.5-6 feet: Slope Wash (Qsw)
Dark brown, fine to coarse grained silty sand with pebbles to small cobbles, loose, moist

6-12 feet: Terrace Deposits (Qt)
Yellowish brown, fine to medium grained sand, moderately dense, moist, massive bedding



NOTE:
THE LOG OF SUBSURFACE CONDITIONS SHOWN HEREON APPLIES ONLY AT THE SPECIFIC TEST PIT LOCATION AND AT THE DATE INDICATED IT IS NOT WARRANTED TO BE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND TIMES

Test Pit,
RTF&A 96-149-F Report Dated 5-20-03

TEST PIT TP-1

FROM 96-149-K REPORT DATED 5-20-97

BY: CT

JOB NUMBER: 96-149-K
DATE DRILLED: 1-10-97
EQUIPMENT USED: BACKHOE
ELEVATION: 1105
COORDINATES:
SURFACE CONDITIONS: Near center of nearly level bench

BLOWS PER FOOT OR (N-VALUE)	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	% PASSING # 200 SIEVE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
						SM	SILTY SAND: fine, grayish to yellowish light brown
-	8	110	-	5			SANDSTONE: fine, silty, moist to damp, light yellowish brown
-	-	-	-	10			brown
				15			END OF TEST PIT AT 11 FEET. No water. No caving.
				20			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF TEST PIT

R.T. FRANKIAN & ASSOCIATES
FIGURE A-2.4

TEST PIT TP-2

96-149-K REPORT DATED 5-20-97

BY: CT

JOB NUMBER: 96-149-K
DATE DRILLED: 1-10-97
EQUIPMENT USED: BACKHOE
ELEVATION: 1106
COORDINATES:
SURFACE CONDITIONS: Edge of low slope

BLOWS PER FOOT OR (N-VALUE)	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	% PASSING # 200 SIEVE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
						SM	SILTY SAND: fine, some gravel and cobbles, loose, dry to damp, brown
-	9	103	-				SANDSTONE: fine, silty, some gravel and cobbles, dry, light yellowish brown
				5			no cobbles
-	4	101	-				
				10			END OF TEST PIT AT 10 FEET. No water. Some caving.
				15			
				20			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF TEST PIT

R.T. FRANKIAN & ASSOCIATES

FIGURE A-2.5

TEST PIT TP-3

96-149-K REPORT DATED 5-20-97

BY: CT

JOB NUMBER: 96-149-K
DATE DRILLED: 1-10-97
EQUIPMENT USED: BACKHOE
ELEVATION: 1106
COORDINATES:
SURFACE CONDITIONS: Toe of 2:1 natural slope located behind service station.

BLOWS PER FOOT OR (N-VALUE)	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	% PASSING # 200 SIEVE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
						SM	SILTY SAND: fine, loose to medium dense, damp to moist, medium to dark brown
-	7	102	-	5			SANDSTONE: weathered, fine, silty, some cobbles, some clay, medium to dark brown
							fine to coarse, light brown
-	8	106	-	10			END OF TEST PIT AT 10 FEET. No water. No caving.
				15			
				20			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF TEST PIT

R.T. FRANKIAN & ASSOCIATES

FIGURE A-2.6

TEST PIT TP-4

96-149-K REPORT DATED 5-20-97

BY: CT

JOB NUMBER: 96-149-K
DATE DRILLED: 1-10-97
EQUIPMENT USED: BACKHOE
ELEVATION: 1094
COORDINATES:
SURFACE CONDITIONS: Near center of canyon, eastern end of disposal site.

BLOWS PER FOOT OR (N-VALUE)	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	% PASSING # 200 SIEVE	DEPTH (FEET)	SAMPLE LOCATION	SOIL TYPE	
						SM	SILTY SAND: fine, some gravel, loose, damp, light brown
						SC	CLAYEY SAND: fine to medium, medium dense, moist, brown
						SP	SAND: fine to coarse, some gravel, medium dense, moist, brown
							1/2"- thick clay layer
-	3	107	-	5			damp, dense, light reddish brown
						SP/ GP	GRAVELLY SAND: fine to coarse, some cobbles, dry, light brown
-	2	119	-				
							END OF TEST PIT AT 8 FEET.
							No water.
							No caving.
				10			
				15			
				20			

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF TEST PIT

R.T. FRANKIAN & ASSOCIATES

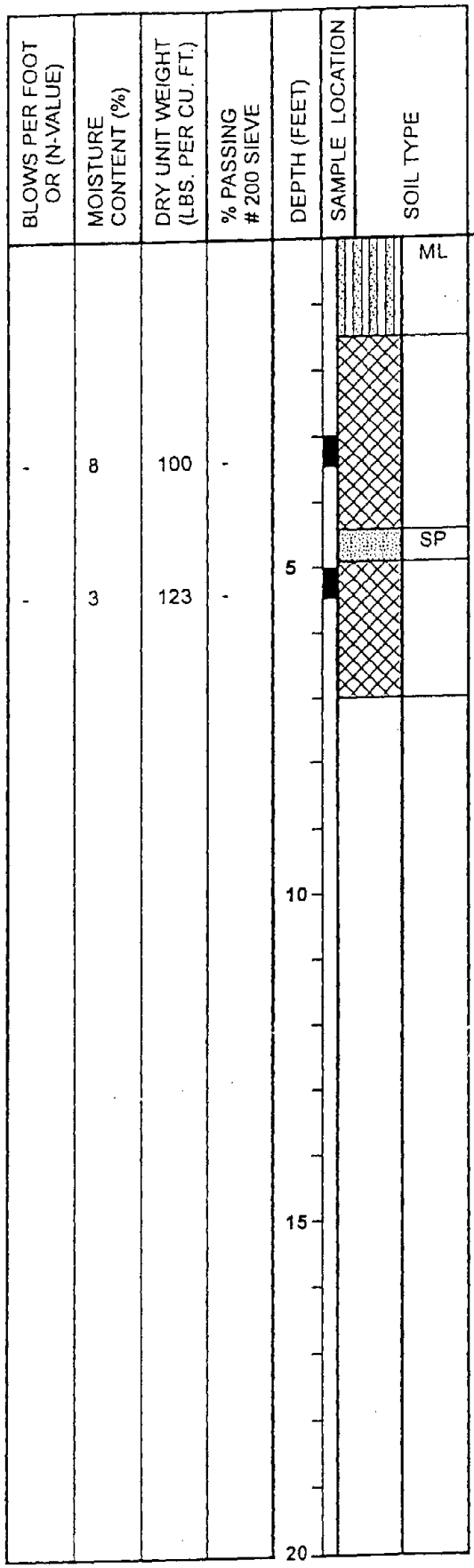
FIGURE A-2.7

TEST PIT TP-5

96-149-K REPORT DATED 5-20-97

JOB NUMBER: 96-149-K
DATE DRILLED: 1-10-97
EQUIPMENT USED: BACKHOE
ELEVATION: 1123
COORDINATES:
SURFACE CONDITIONS: At toe of 4:1 natural slope near western end of disposal site

BY: CT



BLOWS PER FOOT OR (N-VALUE)	MOISTURE CONTENT (%)	DRY UNIT WEIGHT (LBS. PER CU. FT.)	% PASSING # 200 SIEVE	SOIL TYPE	
-	8	100	-	ML	CLAYEY SILT: dark brown
					SAND STONE: fine, silty, weathered, moist, yellowish gray
					dry
-	3	123	-	SP	SAND: SLIDE PLANE: fine, some gravel, loose, dry, yellowish gray
					SAND STONE: fine, dry, yellowish gray

END OF TEST PIT AT 7 FEET.
No water.
No caving.

Note: The log of subsurface conditions shown hereon applies only at the specific location and date indicated. It is not warranted to be representative of subsurface conditions at other locations or times.

LOG OF TEST PIT

R.T. FRANKIAN & ASSOCIATES

FIGURE A-2.8

Test Pit, AES 5-25-00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-1

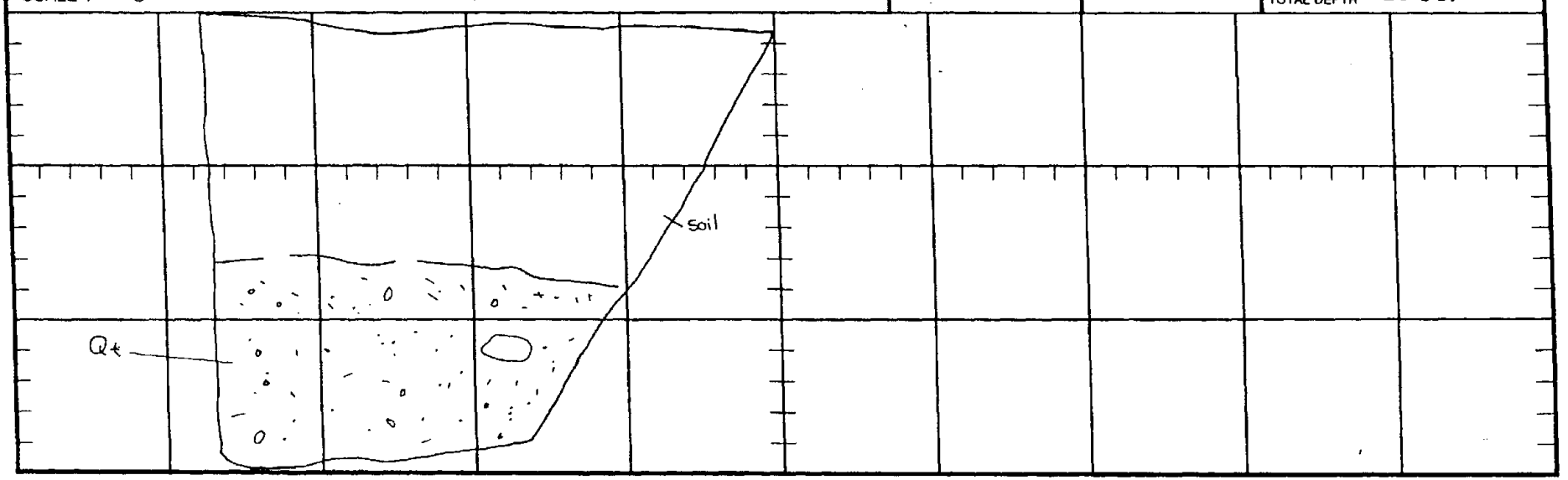
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8' SOIL; s, Medium to dark brown sandy silt to silty sand with pebbles and cobbles; loose; dry to damp 8 - 14' QUATERNARY TERRACE; Qt, Light reddish-tan sand and gravel with boulders; friable; dense; damp			No Ground Water No Caving TOTAL DEPTH 14 Ft.

SCALE 1" = 5'

N 70 W



ALLAN E. SEWARD

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-2

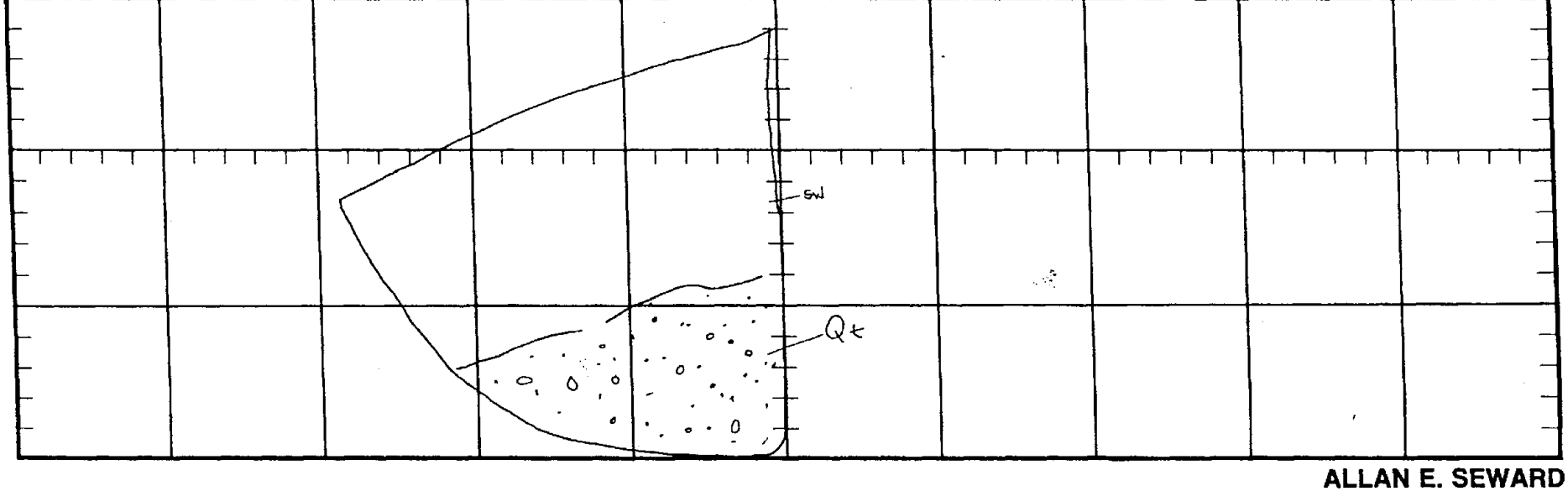
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8' SOIL/SLOPEWASH; sw, Medium to dark brown sandy silt to silty sand with pebble and cobbles; loose to moderately dense; dry to damp 8 - 14' QUATERNARY TERRACE; Qt, Light reddish-tan sand and gravel with boulders; friable; dense; damp			No Ground Water No Caving TOTAL DEPTH 14 Ft.

SCALE 1" = 5'

N 76 W



ALLAN E. SEWARD

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-3

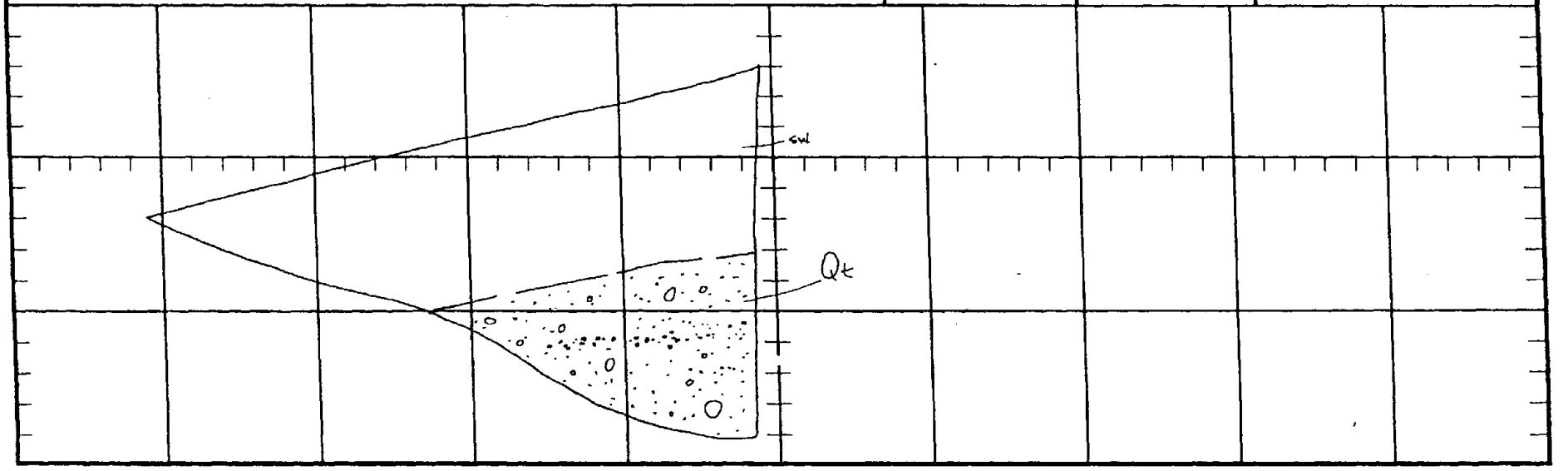
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' SLOPEWASH; sw, Light to medium grayish brown sandy silty with pebbles and cobbles; dense; hard; dry 6 - 12' QUATERNARY TERRACE; Qt, Light brown to tan sands and gravels with cobbles; moderately friable; moderately hard; dry to damp			No Ground Water No Caving TOTAL DEPTH 12 Ft.

SCALE 1" = 5'

N 60 W



ALLAN E. SEWARD

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

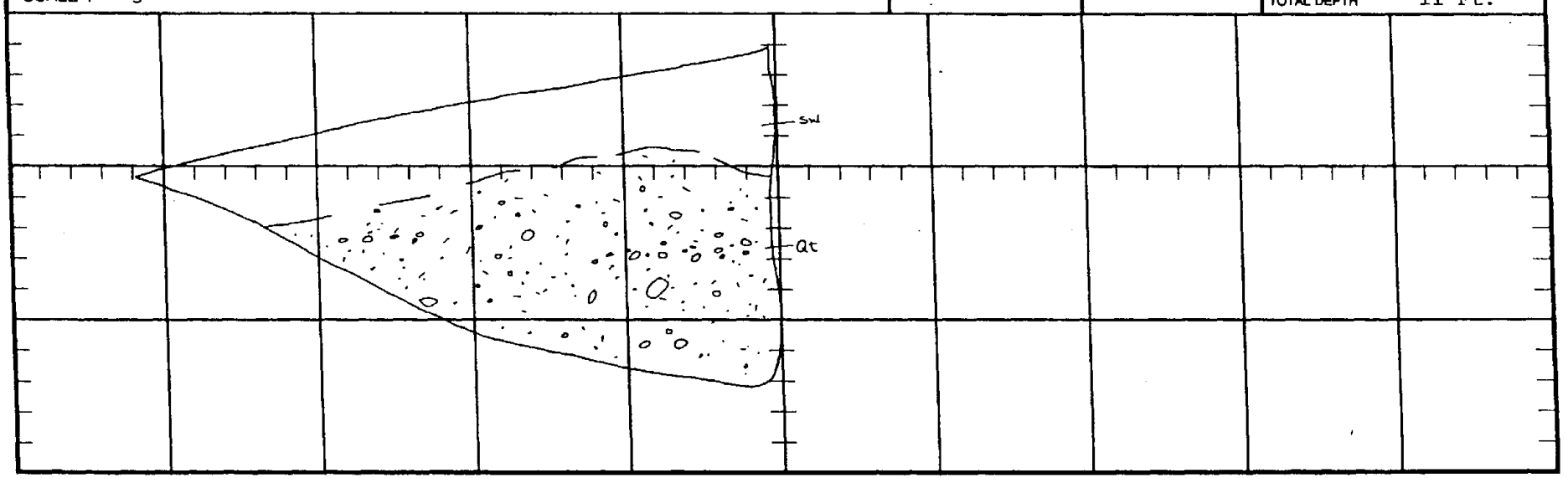
Trench Log No. T-4

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 3' SLOPEWASH; sw, Medium brown silty sand to sandy silt; moderately dense; dry 3 - 11' QUATERNARY TERRACE; Qt, Light brown to tan sands and gravel with cobbles; moderately friable; damp			No Ground Water No Caving TOTAL DEPTH 11 Ft.

SCALE 1" = 5'

N 75 W



ALLAN E. SEWARD

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

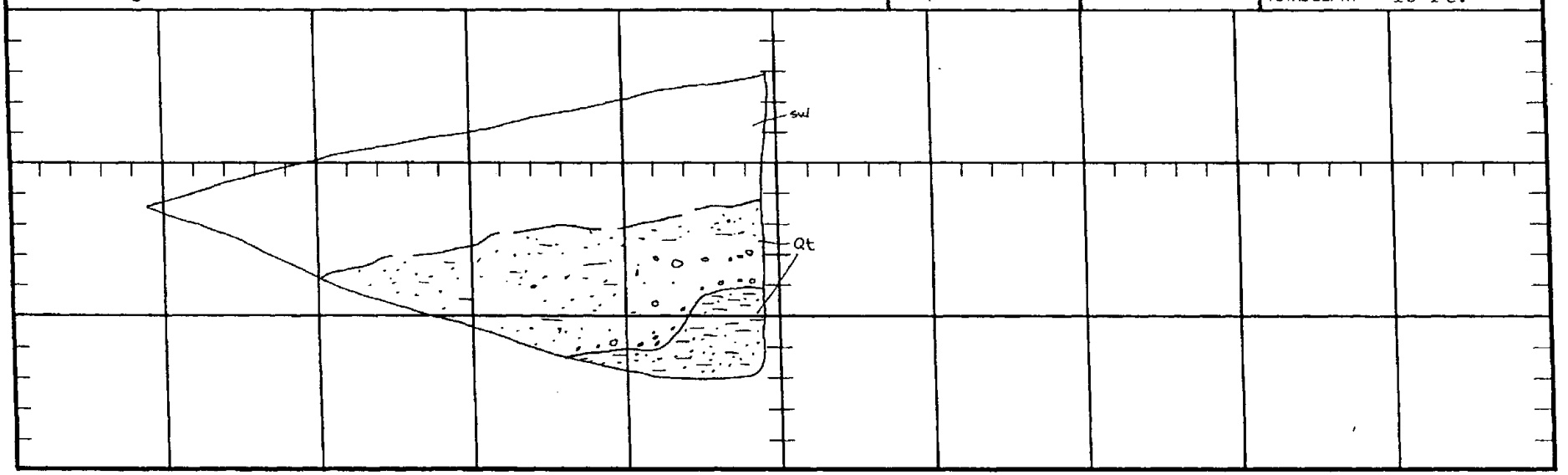
Trench Log No. T-5

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Medium brown silty sand to sandy silt; moderately dense; dry 4 - 10' QUATERNARY TERRACE; Qt, Light grayish-brown silty gravel with cobbles, siltstone and silty sand; moderately hard to moderately friable; damp			No Ground Water No Caving TOTAL DEPTH 10 Ft.

SCALE 1" = 5'

East



ALLAN E. SEWARD

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-6

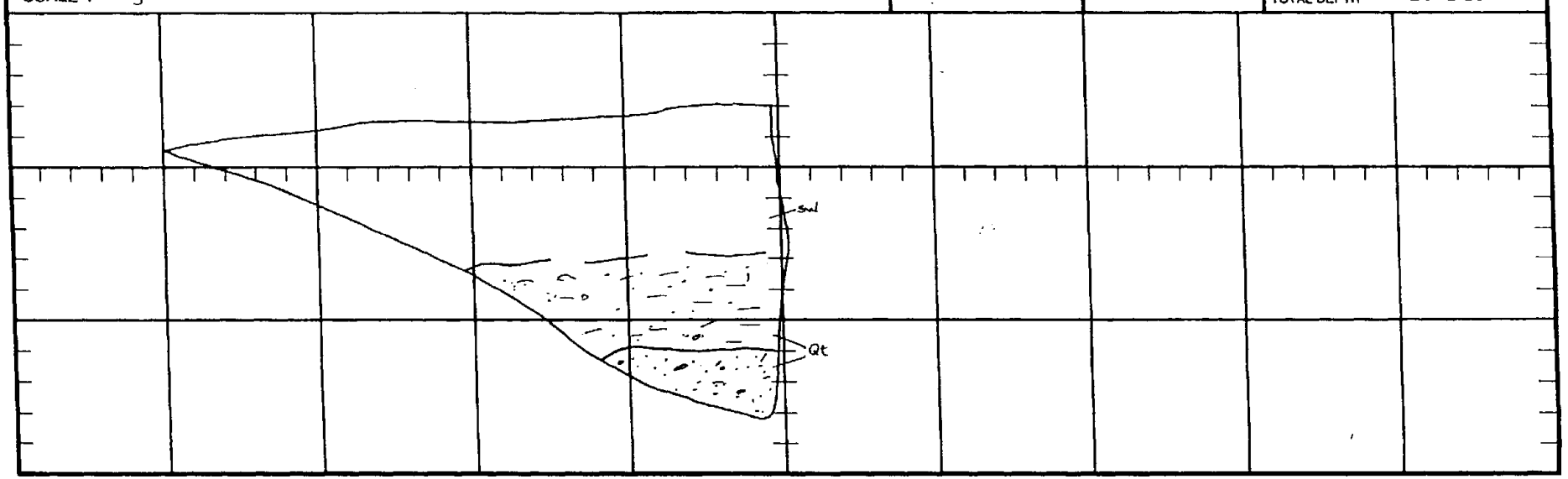
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5' SLOPEWASH; sw, Light to medium brown silty sand to sandy silt; moderately dense; dry to damp 5 - 10' QUATERNARY TERRACE; Qt, Light brown to tan sandy siltstone/pebbles and friable sand and gravel; moderately hard; damp			Upper 3 ft. of Qt is massive sandy silt with pebbles No Ground Water No Caving TOTAL DEPTH 10 Ft.

SCALE 1" = 5'

East



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-7

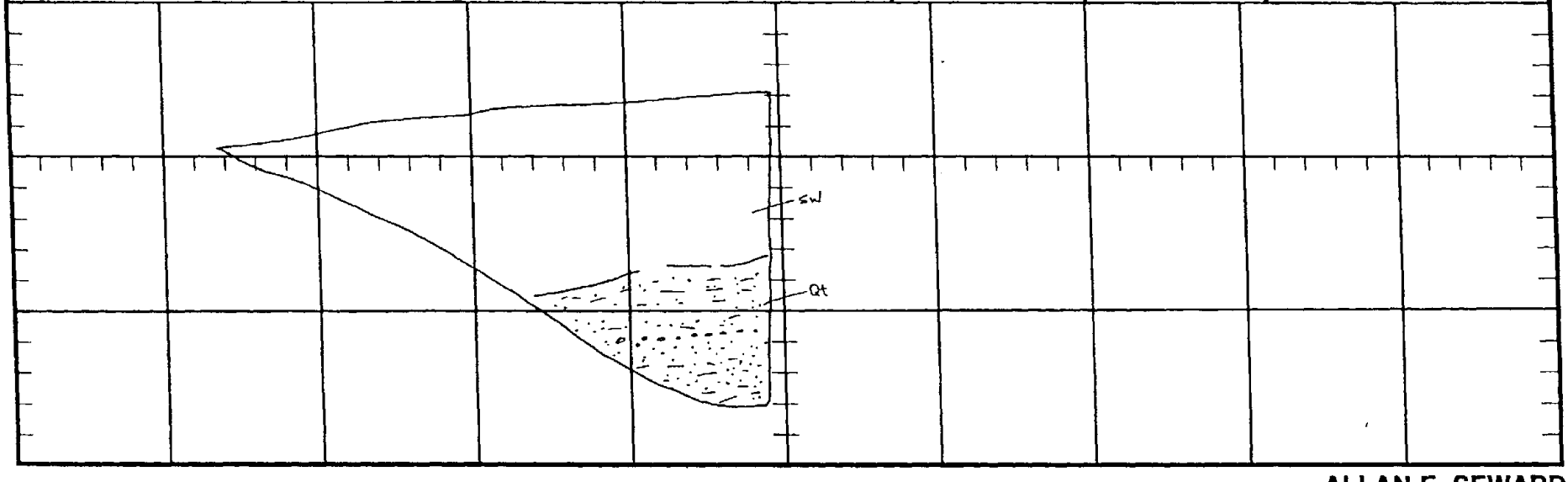
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5' SLOPEWASH; sw, Medium brown sandy silt; moderately dense; dry to damp 5 - 10' QUATERNARY TERRACE; Qt, Light brown to tan; slightly silty gravel and silty sand; moderately friable and moderately hard; damp			No Ground Water No Caving TOTAL DEPTH 10 Ft.

SCALE 1" = 5'

East



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JOB NO. 00-1729-1

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Trench Log No. T-8

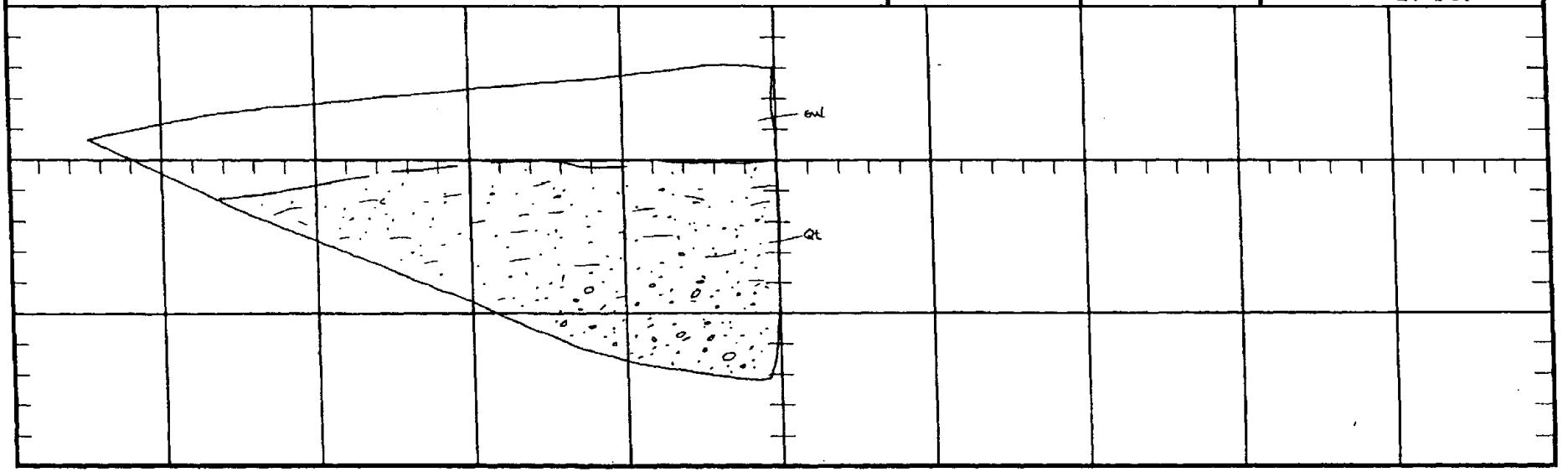
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Medium brown sandy silt with pebbles; dense; hard; dry to damp 4 - 10' QUATERNARY TERRACE; Qt, Light brown silty sands and gravel; moderately hard to moderately friable; damp			No Ground Water No Caving TOTAL DEPTH 10 Ft.

N 63 E

SCALE 1" = 5'



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-9

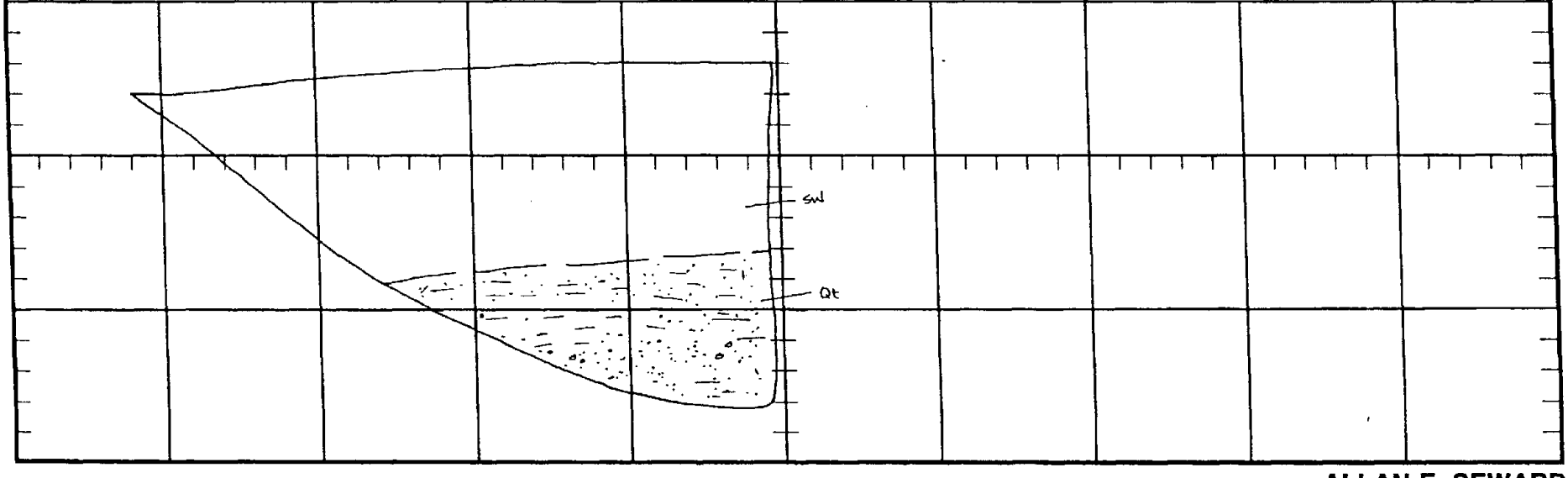
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' SLOPEWASH; sw, Medium grayish-brown sandy silt with pebbles; moderately dense; dry to damp			
6 - 11' QUATERNARY TERRACE; Qt, Light brown to dark brown silty sand to sandy silt and sand with pebbles and some cobbles; moderately hard; damp			Qt is very poorly sorted
			No Ground Water No Caving
			TOTAL DEPTH 11 Ft.

SCALE 1" = 5'

N 88 E



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JOB NO. 00-1729-1

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Trench Log No. T-10

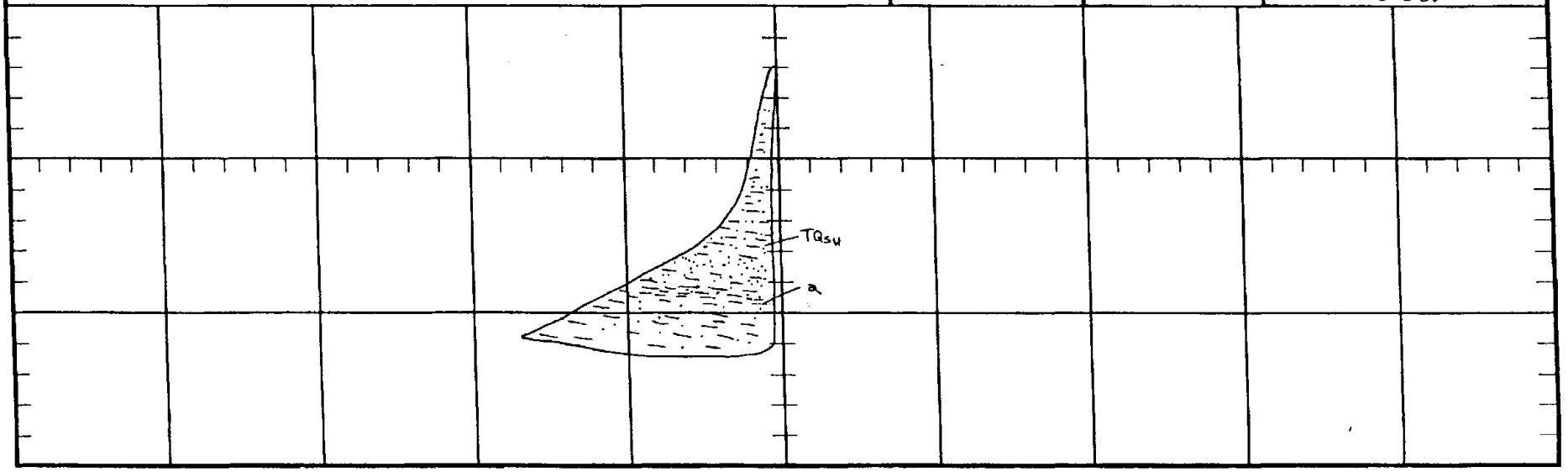
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light brown, tan and medium to dark brown sandstone, pebbly sandstone, sandy siltstone, siltstone and clayey siltstone; moderately hard to hard; dry to damp	a)N27W,15 NE (v. good)	Within clayey seam in siltstone	Excavated in near vertical oil pad "backcut" No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 78 E



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-11

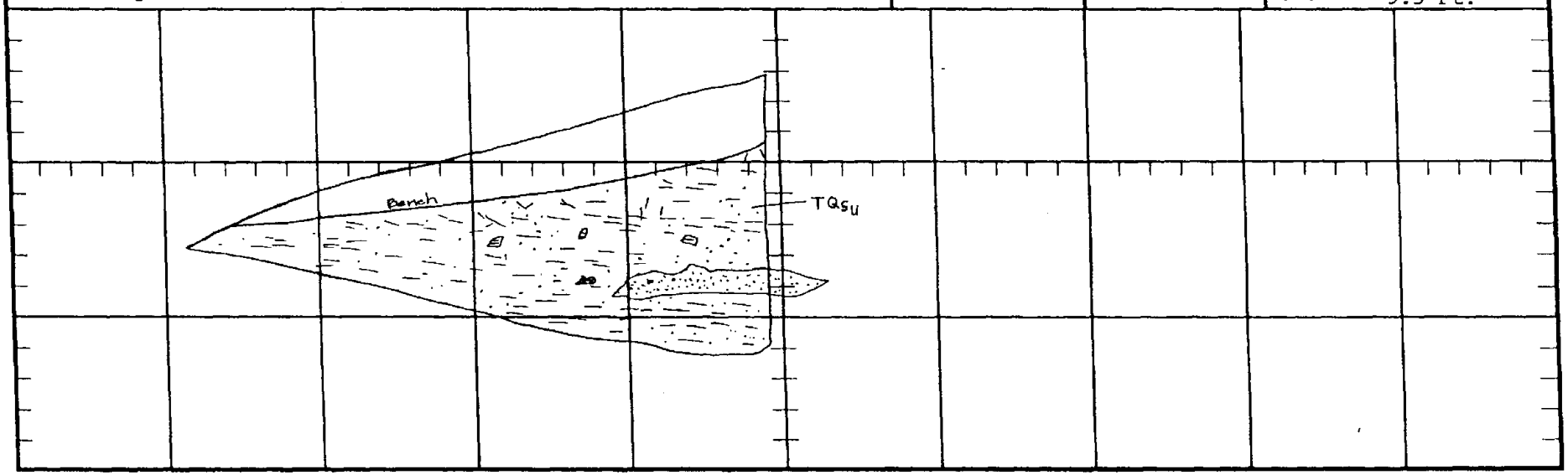
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9.5' BEDROCK; TQs, Light yellowish-brown silty sandstone to sandy siltstone with silty pebbly sandstone channels; moderately hard to hard; dry to damp	N39W,14NE (silty layer)		Upper 2-3 Ft. widened (soil removed) Weathered down to 3 ft. Ripup clasts of brown (TQs?) silt-stone 1-2" diameter between 4-5' No Ground Water No Caving

SCALE 1" = 5'

N 58 E



TOTAL DEPTH 9.5 Ft.

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JOB NO. 00-1729-1

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Trench Log No. T-12

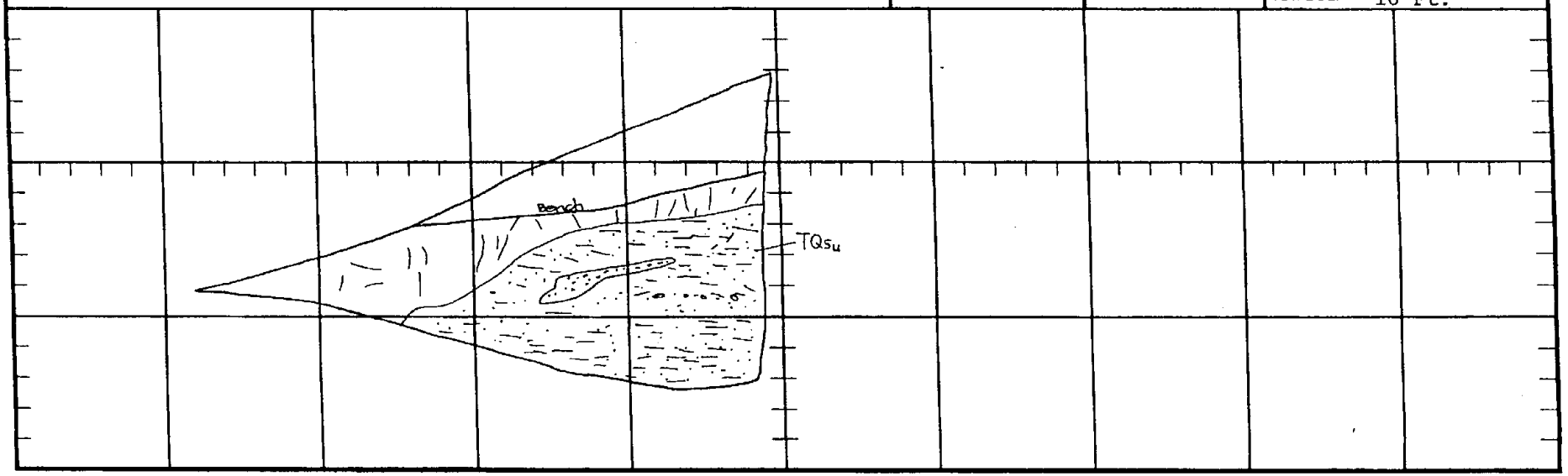
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 10' BEDROCK; TQs, Light yellowish-brown silty sandstone to sandy siltstone with pebbly sandstone lenses; moderately hard to hard; dry to damp	N42W,12NE (pebble string)		Upper 2-3 Ft. widened (soil removed) Weathered down to 4.5 Ft. No Ground Water No Caving TOTAL DEPTH 10 Ft.

SCALE 1" = 5'

N 76 W



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JOB NO. 00-1729-1

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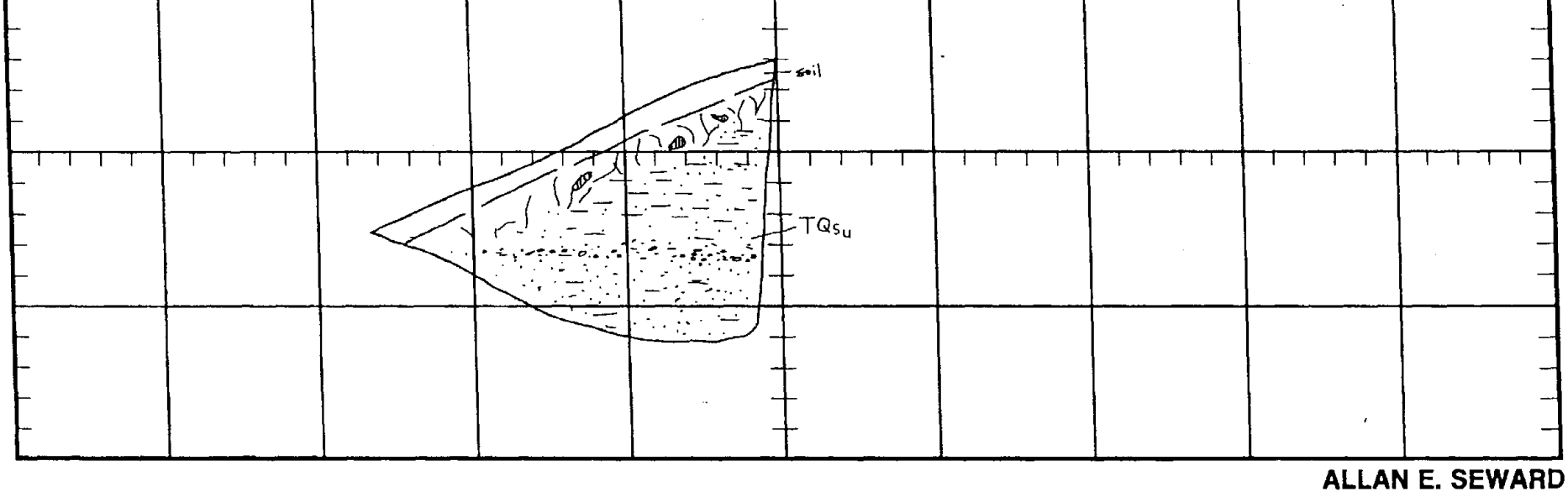
Trench Log No. T-13

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8" SOIL; s, Light yellowish-brown sandy silt with pebbles; loose; dry			Weathered down to 3 ft.
8" - 9' BEDROCK; TQs, Light yellowish-brown, light brown and light grayish-brown siltstone, silty sandstone and cobbly sandstone; moderately hard and friable; dry to damp	N37W,10NE		Lenses of friable laminated pebbly sand
			No Ground Water No Caving
			TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 83 E



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JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

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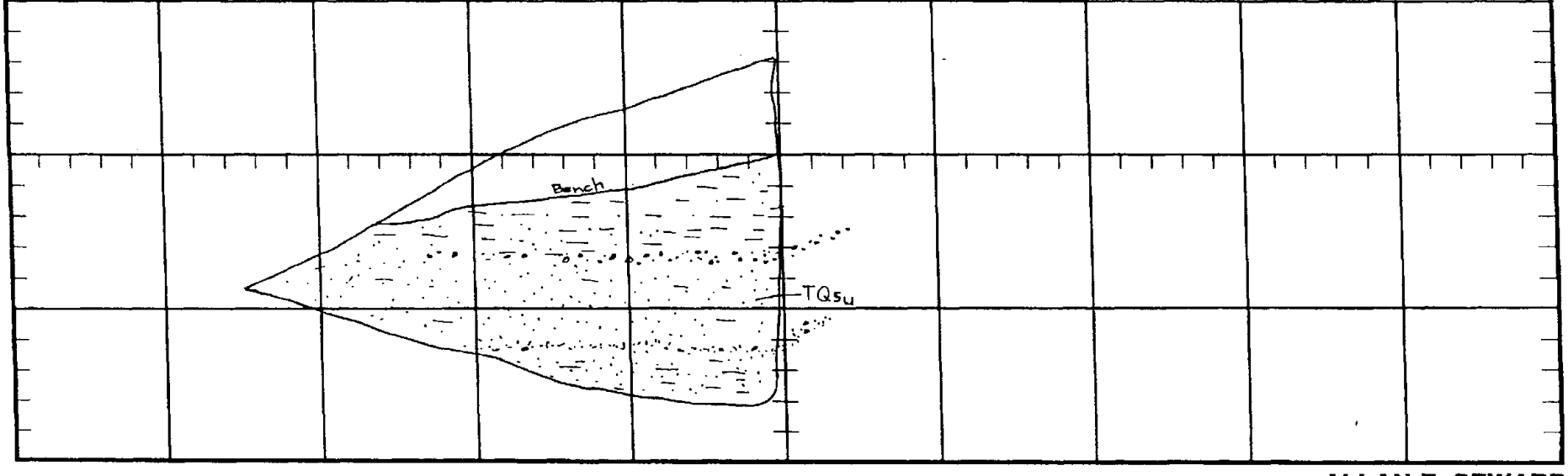
Trench Log No. T-14

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 11' BEDROCK; TQs, Light brown, light yellowish-brown and light grayish-brown siltstone, silty sandstone and pebbly sandstone; moderately hard and friable; dry to damp	N44W,14NE		Upper 2-3 ft. widened i.e. soil removed Weathered down to 3.5 ft. No Ground Water No Caving TOTAL DEPTH 11 Ft.

SCALE 1" = 5'

N 60 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-15

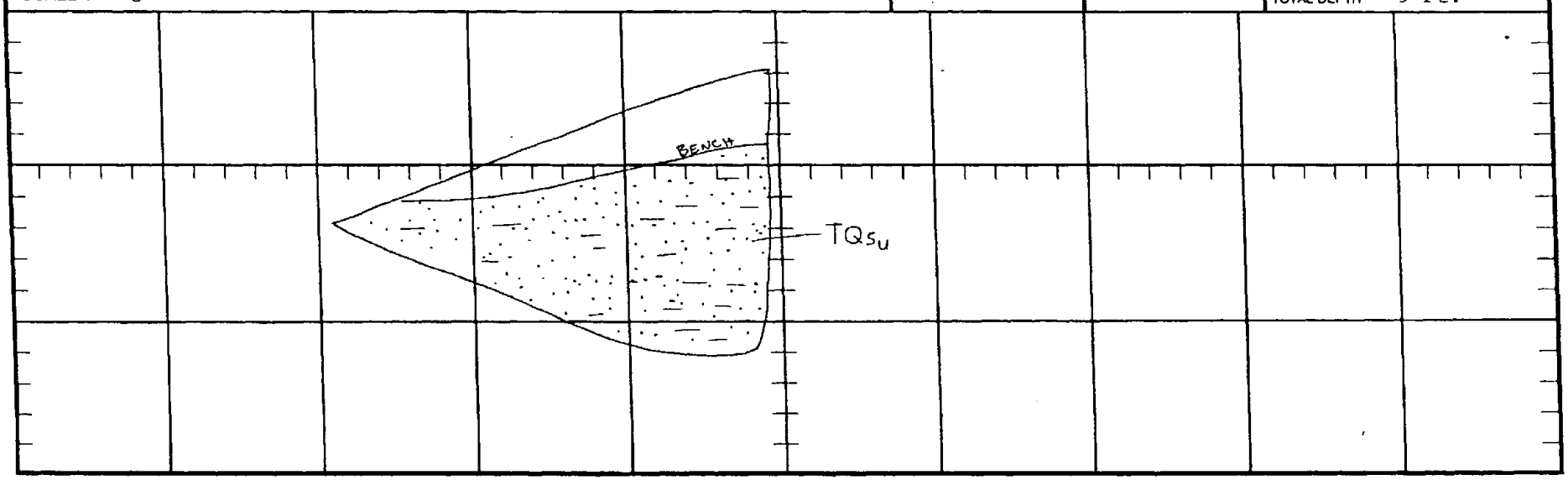
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light yellowish-brown silty sandstone and pebbly sandstone; moderately hard and friable; dry	N60W,10NE		Weathered down to 3.5 Ft. Upper 2-3 Ft. widened No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 62 E



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-16

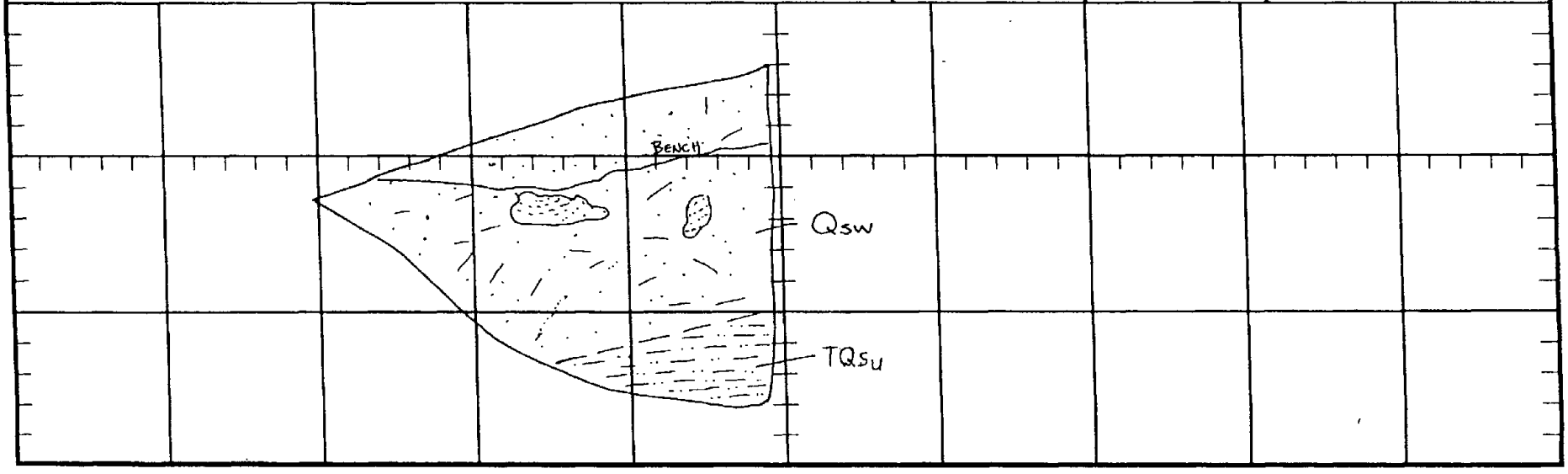
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8' SURFICIAL FAILURE; Qsw, Light yellowish-brown silty sand and laminated sands disturbed ("rotated back" laminae) loose to moderately dense; dry		Slip Surface N75W,21NE	Upper 2-3' widened Weathered down to 4 ft.
8 - 11' BEDROCK; TQs, Light yellowish-brown sandy siltstone; moderately hard; dry to damp	Massive		Softer above planar surface at 8 ft. harder below and no rotated laminae below
			No Ground Water No Caving
			TOTAL DEPTH 11 Ft.

SCALE 1" = 5'

N 24 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-17

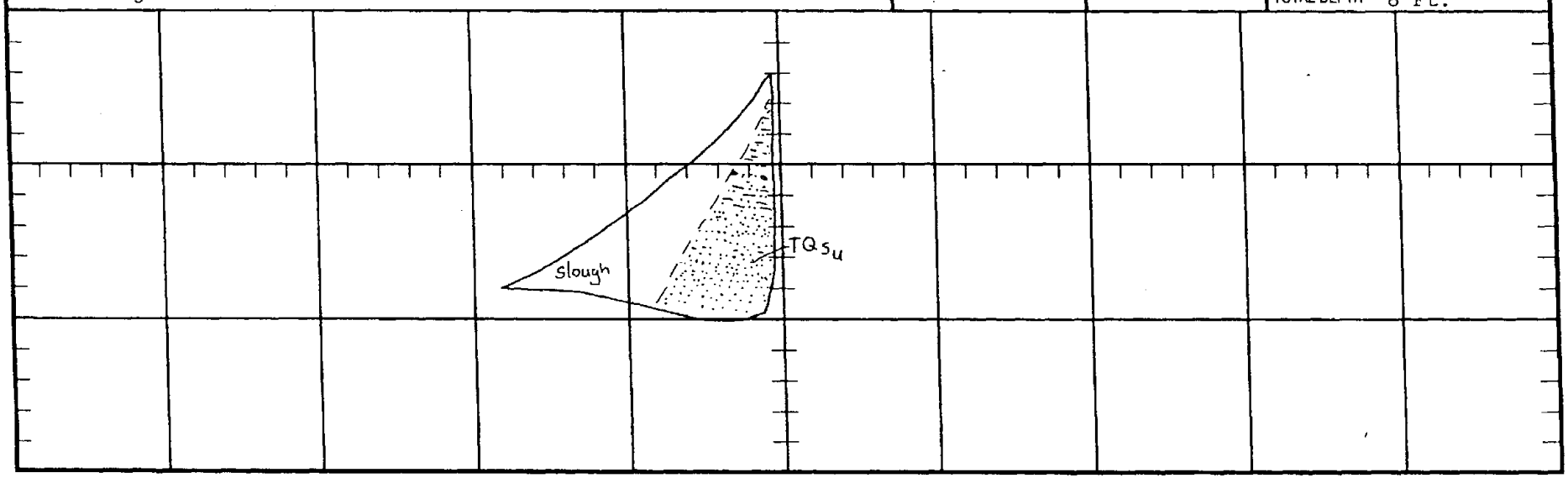
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8' BEDROCK; TQs, Light yellowish-brown and light grayish-brown silty sandstone, sandstone and pebbly sand to gravel, laminated lenses; friable to moderately hard; dry	a) N51W,10NE b) N38W,15NE		Excavated in oil pad "backcut" Friable at base of trench Moderately hard at top Upper portion looks like our Qp while friable lower portion has a more Qt appearance, but is dipping with regional No Ground Water No Caving TOTAL DEPTH 8 Ft.

SCALE 1" = 5'

N 33 E



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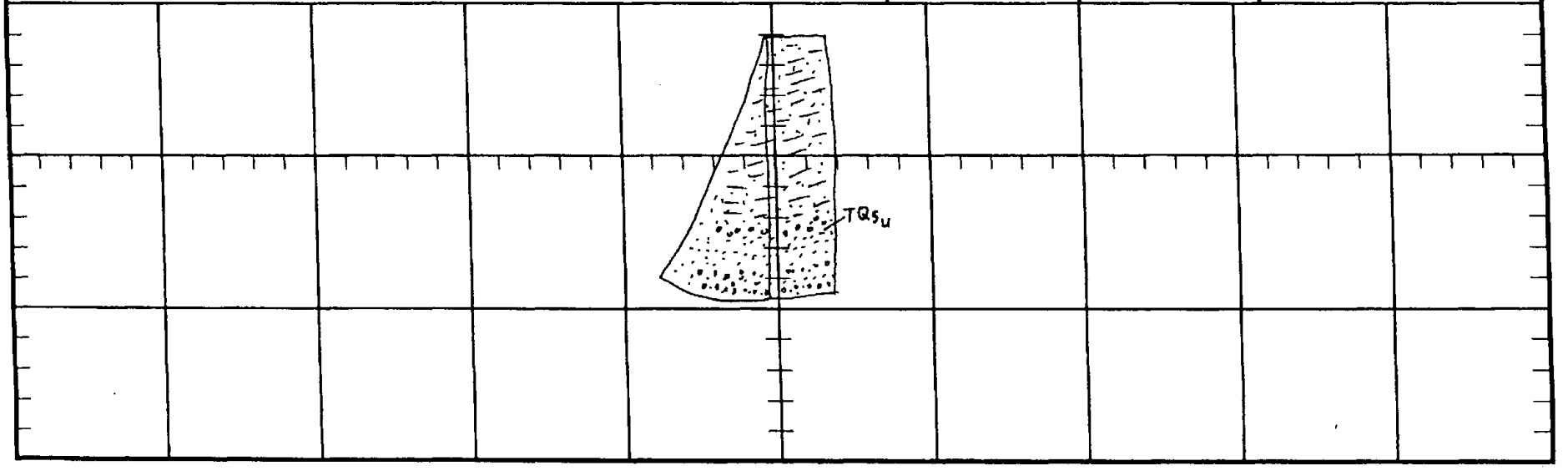
Trench Log No. T-18

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light yellowish to grayish-brown sandy siltstone, pebbly sandstone and pebble conglomerate; moderately friable to moderately hard; dry to damp	N23E,9SW N30E,9SE		Trenches T-18 thru T-32 excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 21 E



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-19

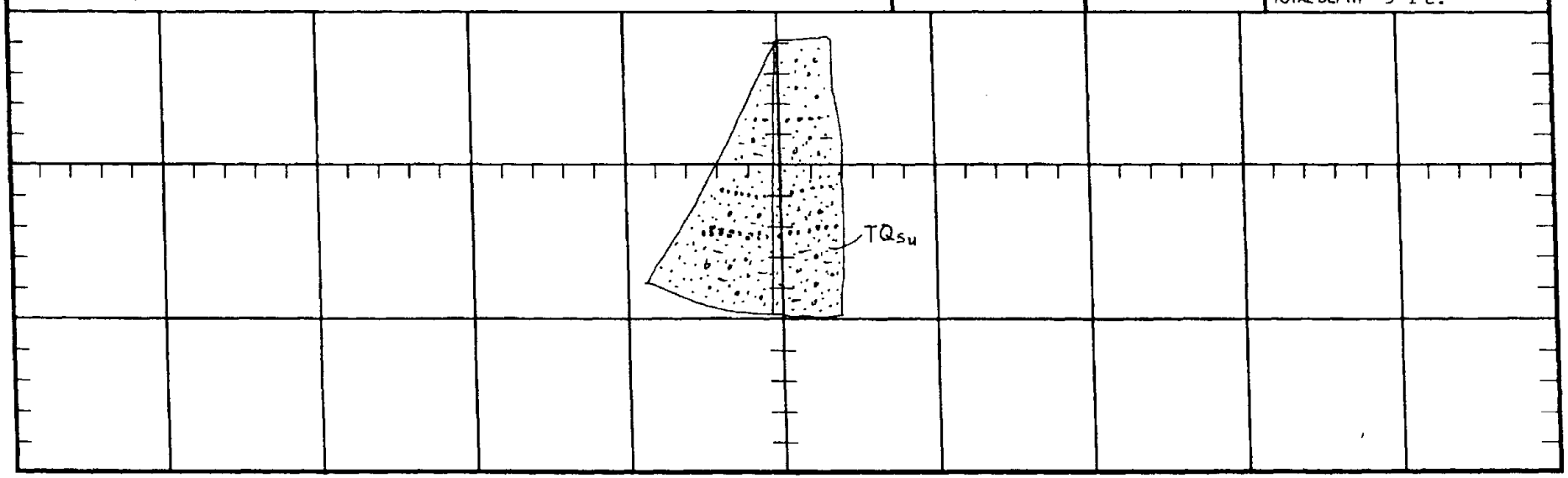
PROJECT Magic Mountain Ent. Center

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light grayish-brown and yellowish-brown interbedded pebble conglomerate and pebbly silty sandstone and pebbly sandy siltstone; moderately friable; dry to damp	N38W,12NE		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 70 W



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JOB NO. 00-1729-1

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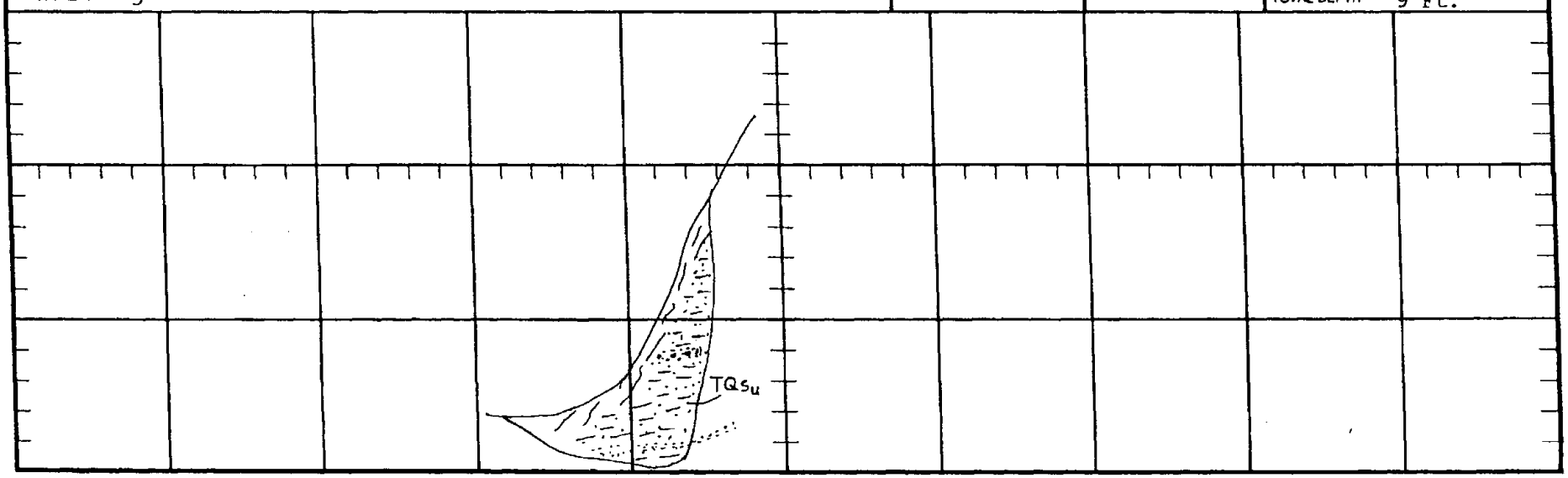
Trench Log No. T-20

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light orangish-brown sandy siltstone with lenses of silty pebbly sandstone; moderately hard; dry to damp	North, 15E		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 6 E



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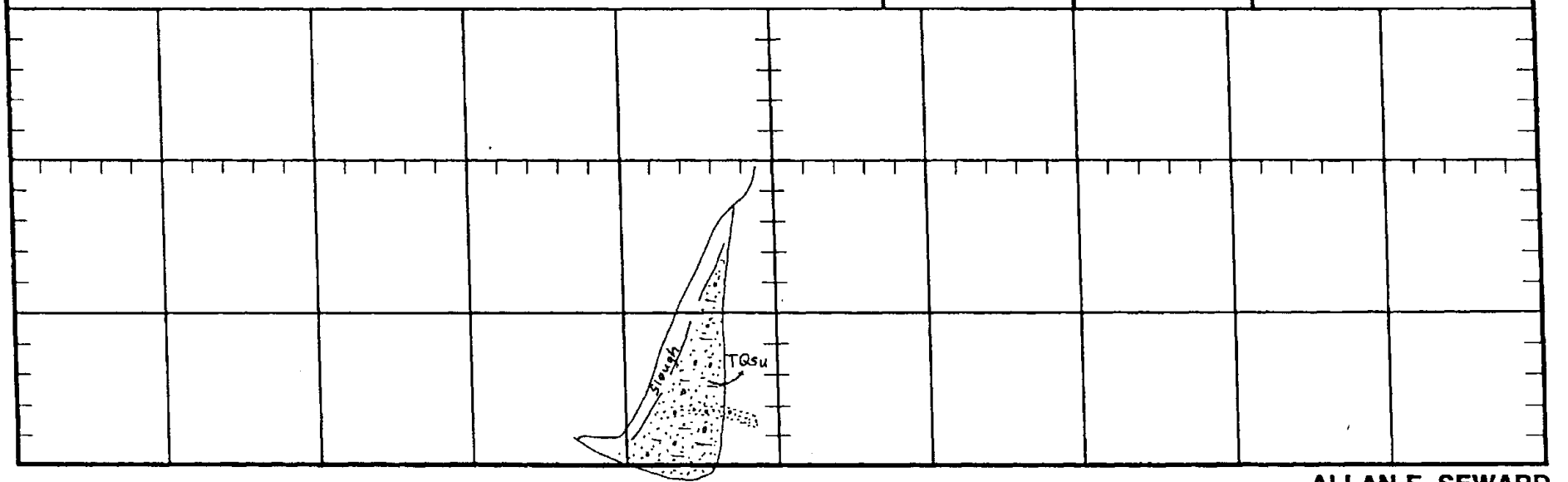
Trench Log No. T-21

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light yellowish-brown silty sandstone, sandy siltstone and silty pebbly sandstone; moderately hard; dry to damp	N12W,14NE		Excavated in existing oil pad cut No soil/slopewash No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 20 W



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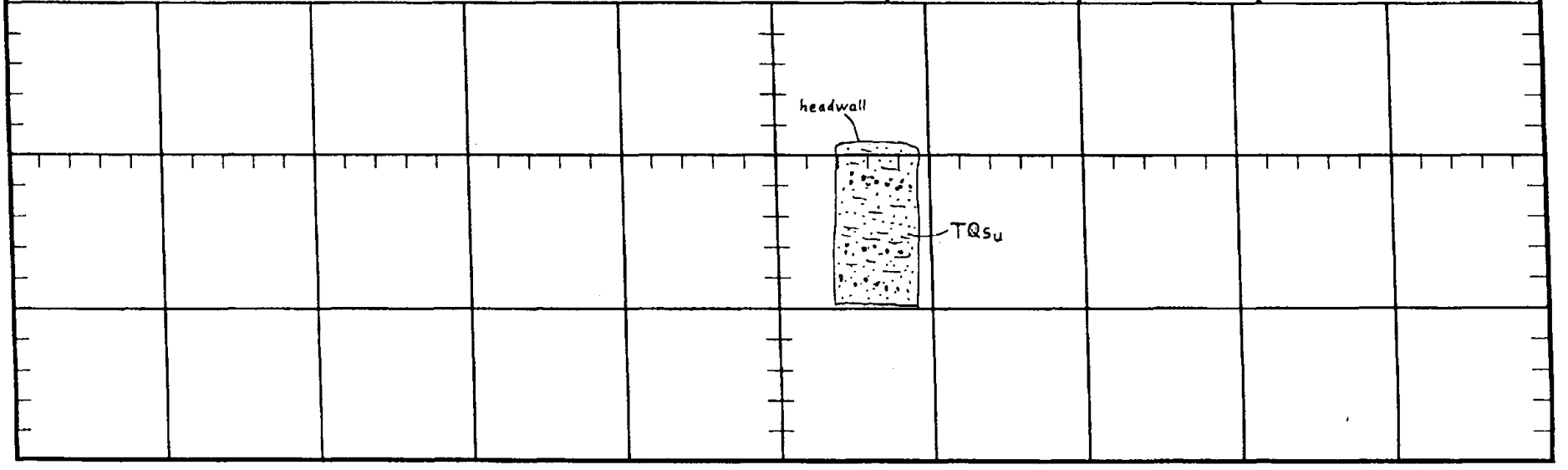
Trench Log No. T-22

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' BEDROCK; TQs, Light yellowish to grayish-brown interbedded silty sandstone, sandstone and pebble conglomerate; moderately hard; dry to damp	N44W,12NE		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 6 Ft.

SCALE 1" = 5'

N 30 E



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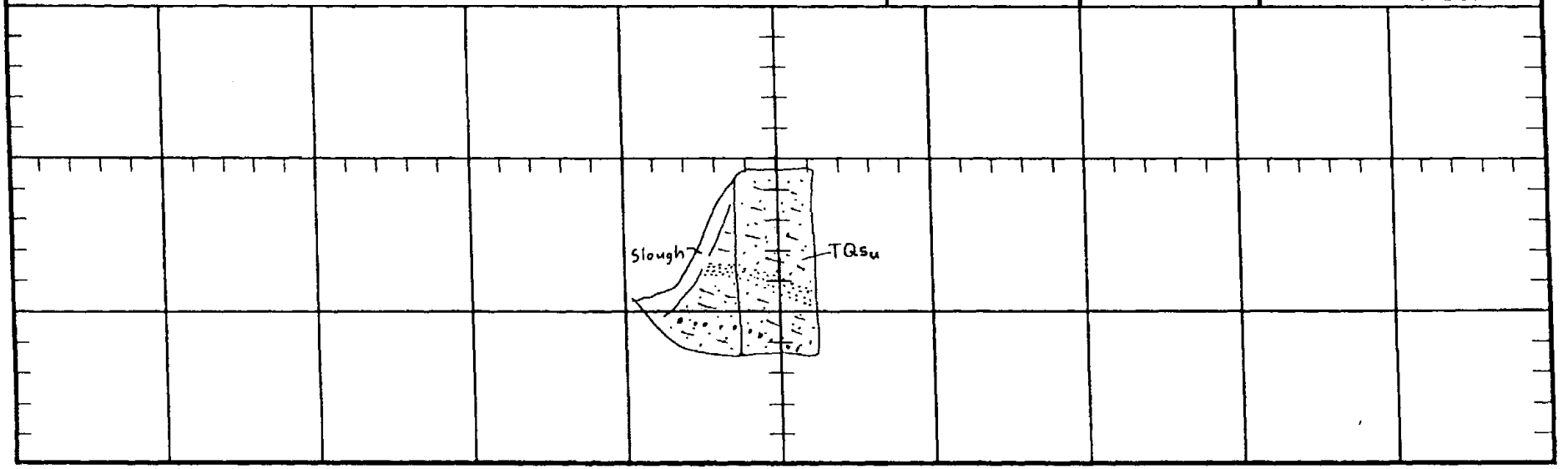
Trench Log No. T-23

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6.5' BEDROCK; TQs, Light yellowish-brown silty sandstone and pebbly sandstone; moderately hard; dry to damp	N50W,14NE		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 6.5 Ft.

SCALE 1" = 5'

N 12 W



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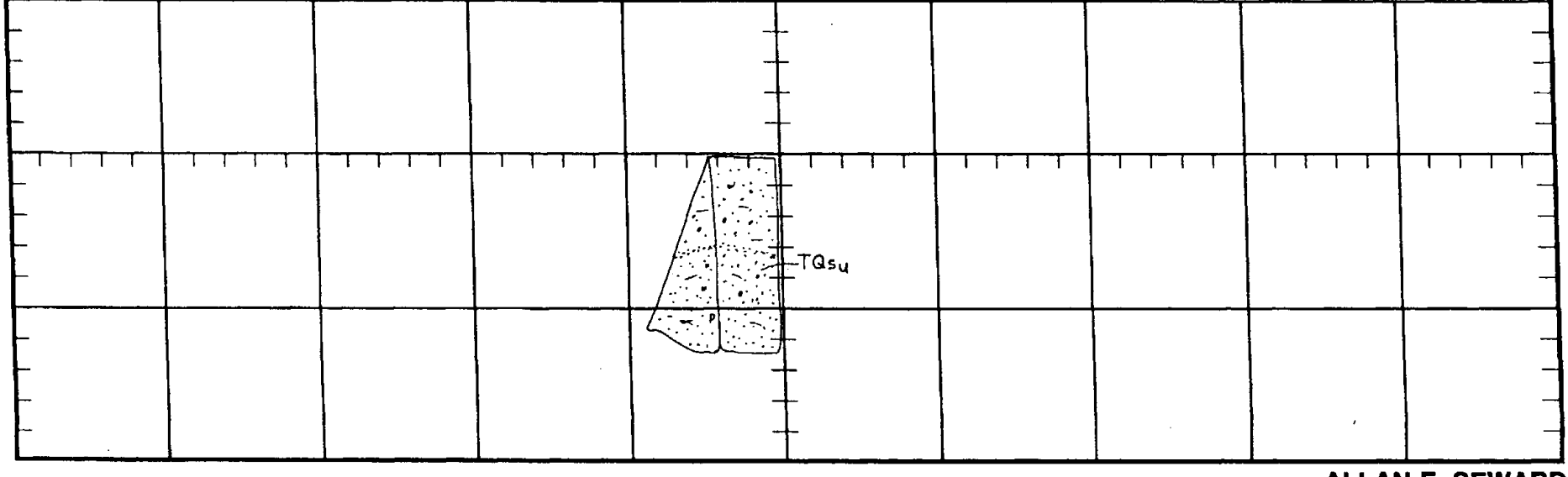
Trench Log No. T-24

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6.5' BEDROCK; TQs, Light yellowish-brown silty sandstone and pebbly silty sandstone; moderately hard; dry to damp	N38W,11NE apx.		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 6.5 Ft.

SCALE 1" = 5'

N 64 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-25

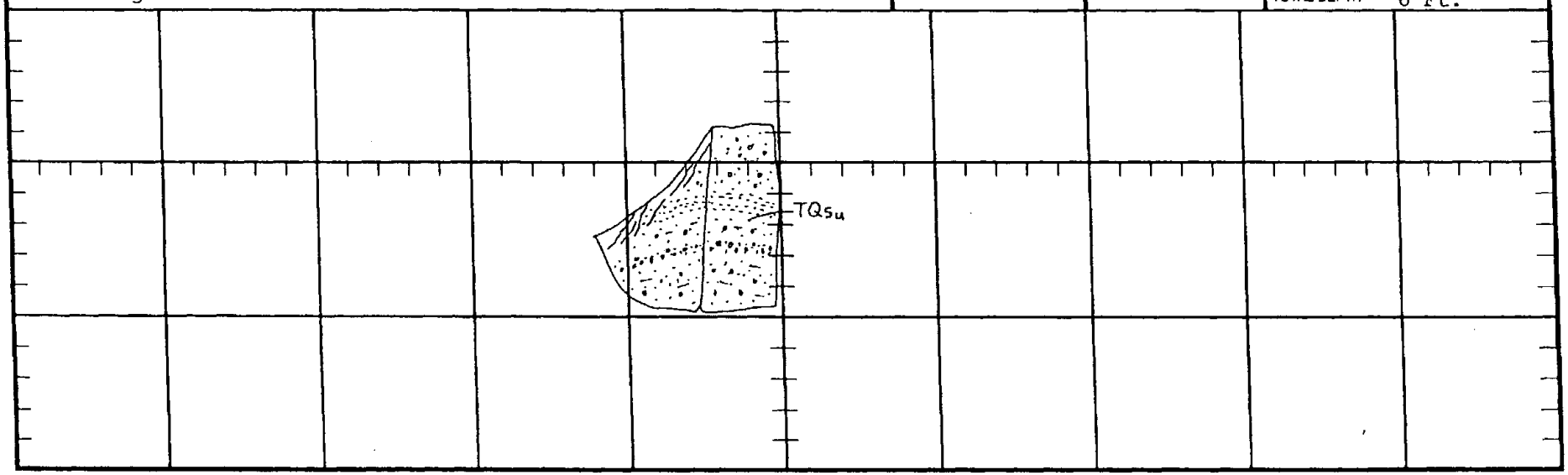
PROJECT Magic Mountain Ent. Center

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' BEDROCK; TQs, Light yellowish-brown to tan interbedded pebble conglomerate silty sandstone and sandstone; soft to moderately hard; dry to damp	N18W,15NE (apx) N37W,14NE (good)		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 6 Ft.

SCALE 1" = 5'

N 72 E



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-26

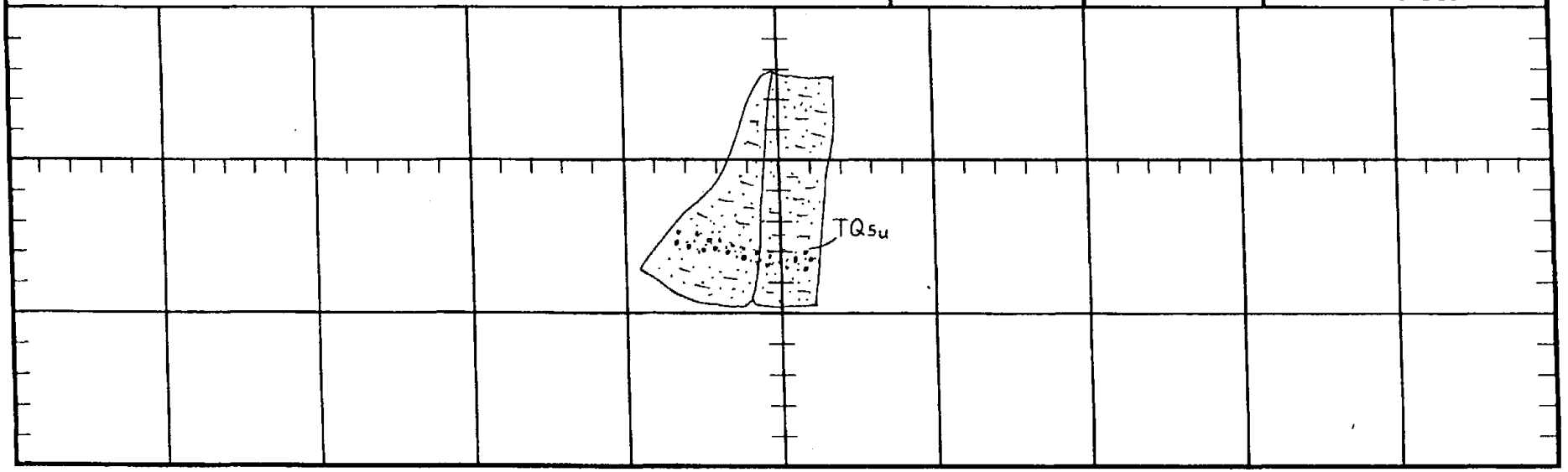
PROJECT Magic Mountain Ent. Center

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8' BEDROCK; TQs, Light yellowish-brown and light brown silty conglomerate and sandy siltstone; moderately hard; dry to damp	N28W,15NE		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 8 Ft.

SCALE 1" = 5'

N 57 E



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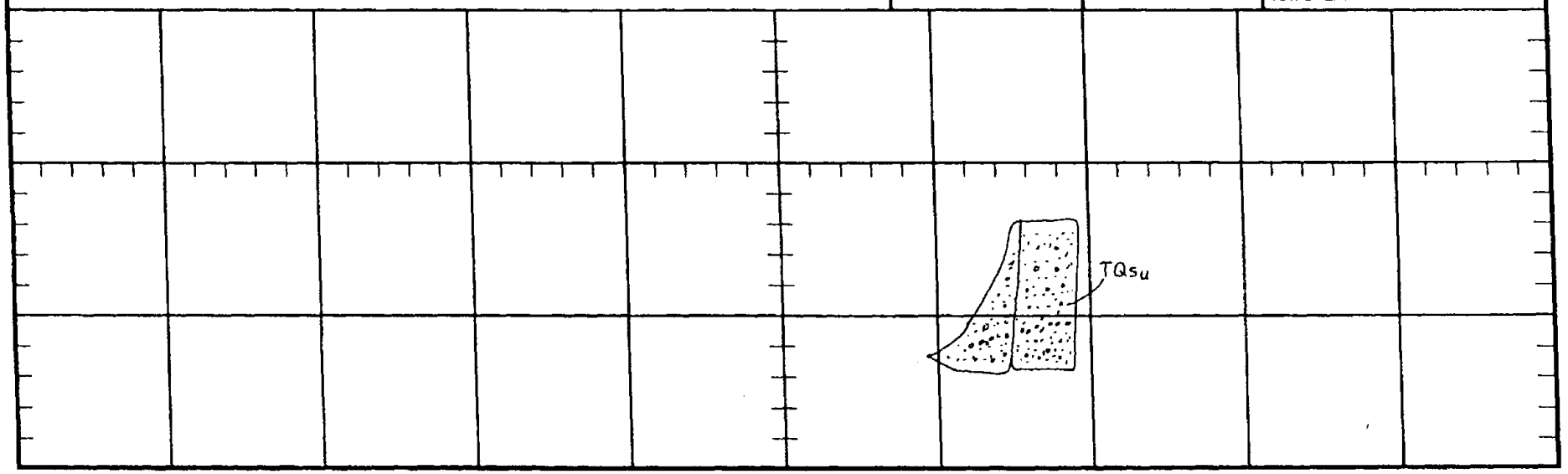
Trench Log No. T-27

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5' BEDROCK; TQs, Light grayish-brown interbedded sandstone, pebbly sandstone and conglomerate friable; dry to damp	N34W,12NE		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 5 Ft.

SCALE 1" = 5'

N 55 E



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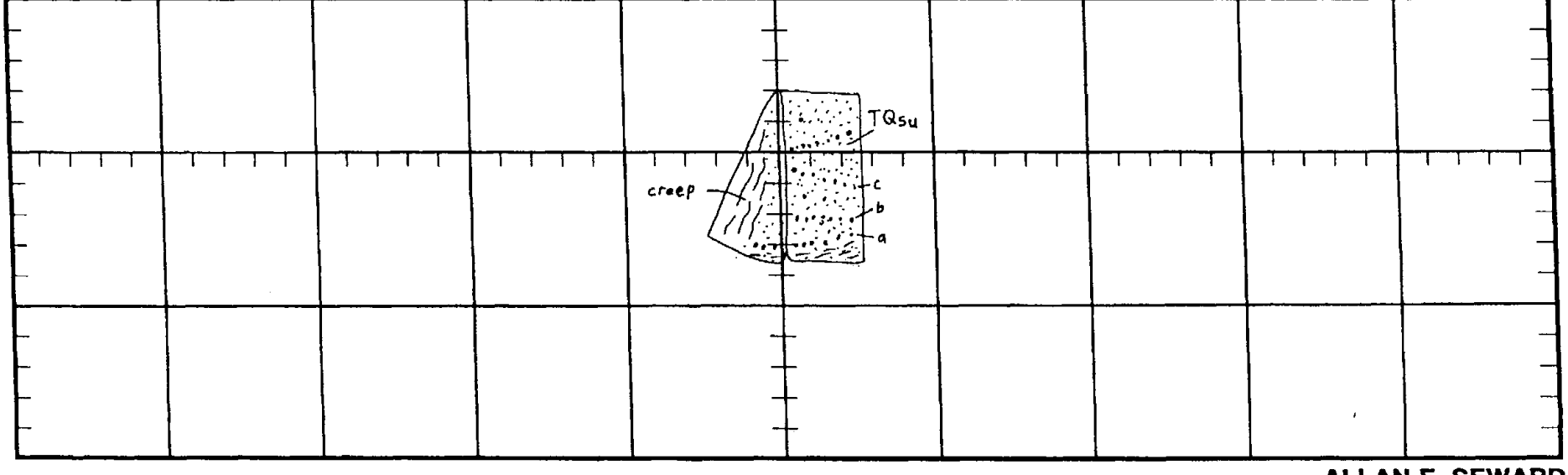
Trench Log No. T-28

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5.5' BEDROCK; TQs, Light grayish-brown and light yellowish-brown pebble conglomerate and sandy siltstone with pebbles friable to moderately hard; dry to damp	a) North, 17E (erosional b) Horizontal c) N40W, 21SW		Excavated in existing oil pad cut Pebbles of (light yellow) TQs siltstone to sandy siltstone in conglomerate No Ground Water No Caving TOTAL DEPTH 5.5 Ft.

SCALE 1" = 5'

N 23 W



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LOGGED BY SKM

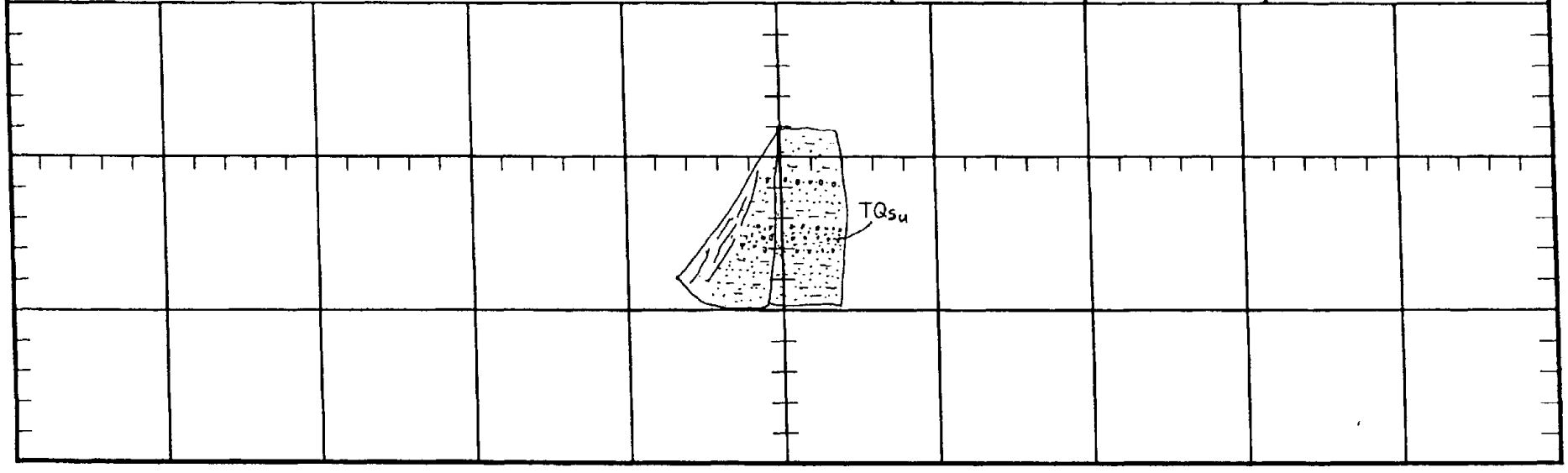
Trench Log No. T-29

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' BEDROCK; TQs, Light yellowish-tan and light grayish-brown pebble conglomerate, pebbly sandstone, sandy siltstone and silty sandstone; moderately friable to soft; dry to damp	Horizontal and cross bedded		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 6 Ft.

SCALE 1" = 5'

N 79 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Ent. Center

LOGGED BY SKM

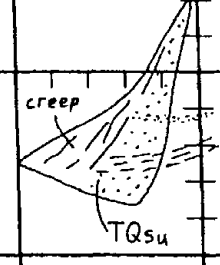
Trench Log No. T-30

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5.5' BEDROCK; TQs, Light yellowish-brown and light brown silty sandstone and clayey sandy silt; moderately friable and moderately hard; dry to damp	North, 10E		Excavated in existing oil pad cut May be disturbed due to downhill movement No Ground Water No Caving TOTAL DEPTH 5.5 Ft.

SCALE 1" = 5'

N 3 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-31

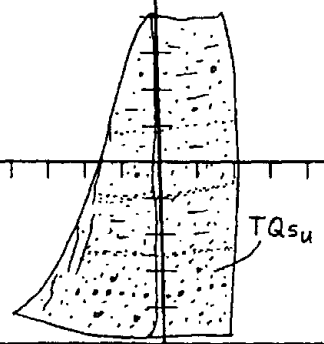
PROJECT Magic Mountain Ent. Center

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light yellowish-brown interbedded silty sandstone and pebbly sandstone; moderately friable; dry to damp	N35W,11NE		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 16 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Ent. Center

LOGGED BY SKM

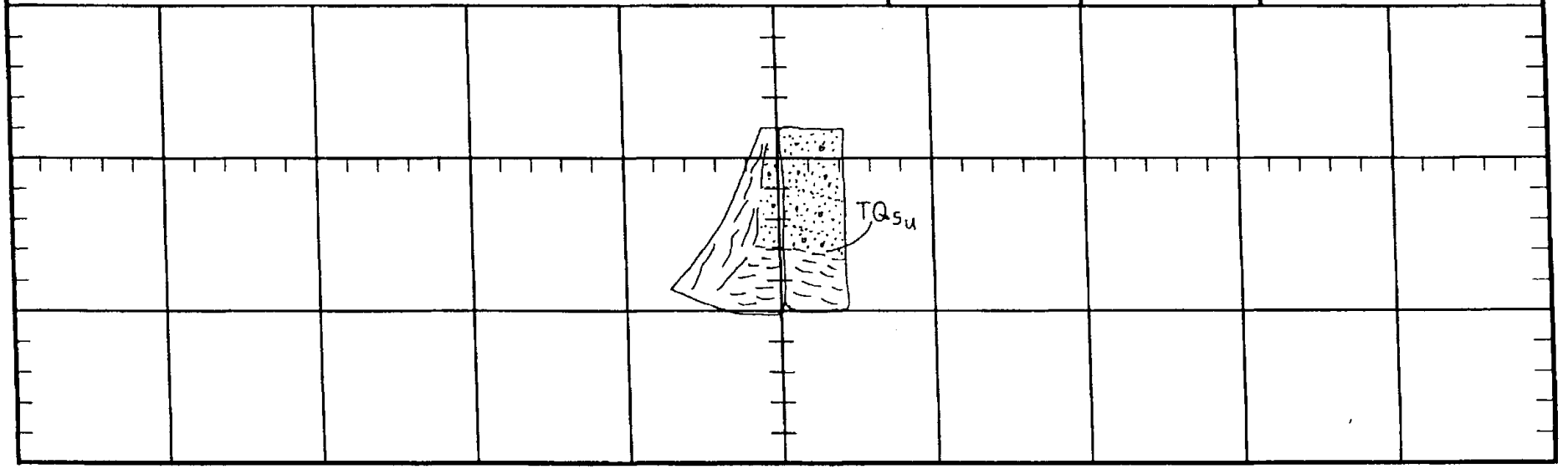
Trench Log No. T-32

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' BEDROCK; TQs, Light grayish-brown and light yellowish-brown pebbly sandstone and sandy siltstone, moderately friable to moderately hard; dry to damp	N82E,9NW		Excavated in existing oil pad cut No Ground Water No Caving TOTAL DEPTH 6 Ft.

SCALE 1" = 5'

N 87 W



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JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

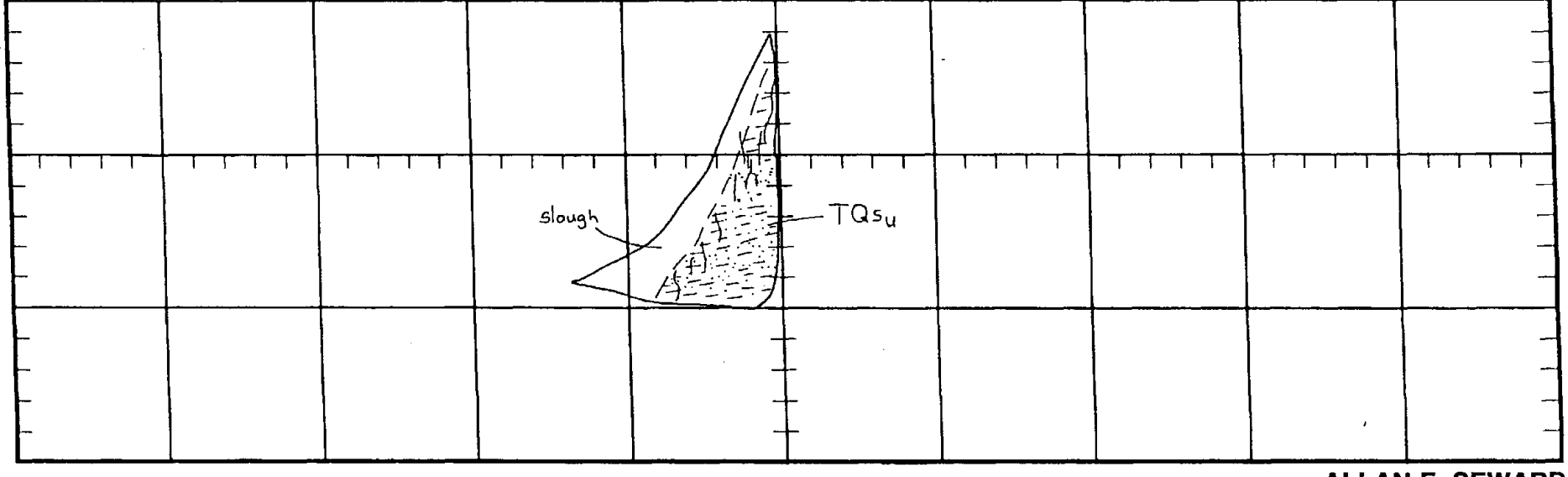
Trench Log No. T-33

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 9' BEDROCK; TQs, Light yellowish-brown and light brown silty sandstone, sandy siltstone and siltstone; moderately hard; dry to damp	N44W,15NE		Trenches T-33 thru T-46 excavated on 1/13/00 Excavated in existing road cut No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 87 W



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JOB NO. 00-1729-1

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Trench Log No. T-34

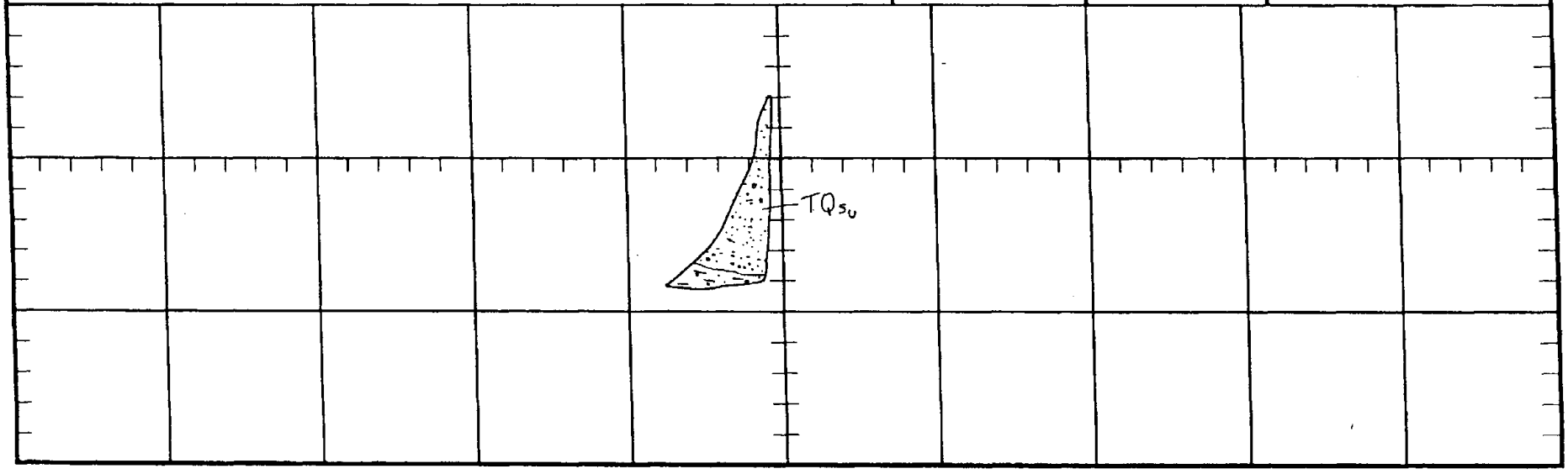
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' BEDROCK; TQs, Light yellowish-brown and light grayish-brown sandstone, pebbly sandstone and sandy pebbly siltstone; moderately friable to moderately hard; dry to damp	N57W,9NE		Excavated in oil pad "backcut" No Ground Water No Caving TOTAL DEPTH 6 Ft.

SCALE 1" = 5'

N 50 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-35

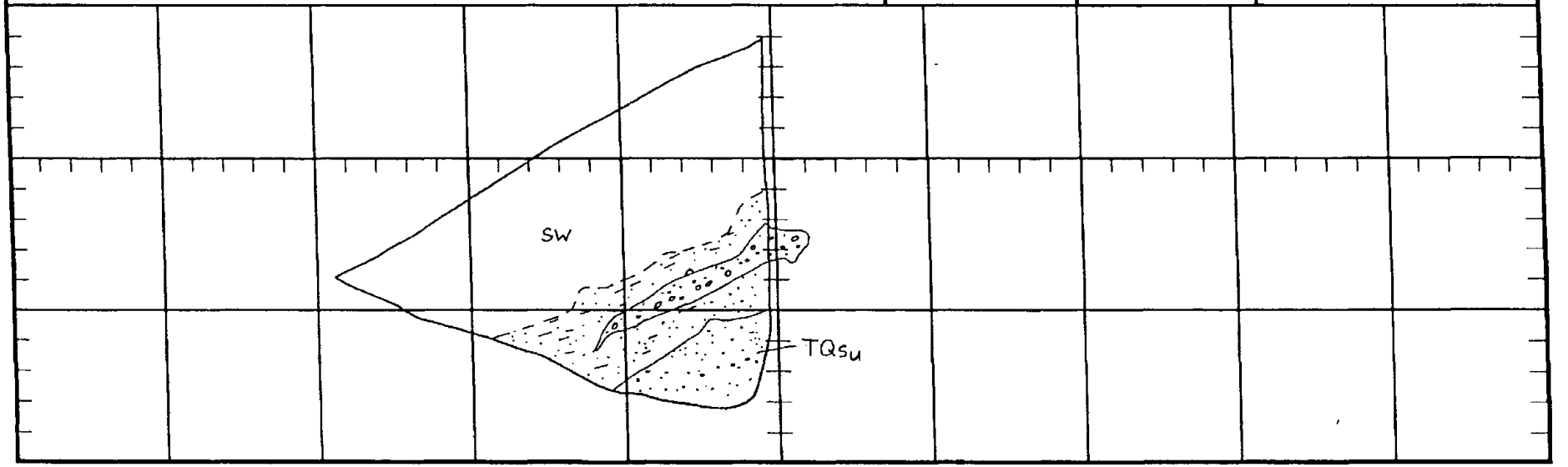
PROJECT Magic Mountain Entertainmen

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5' SLOPEWASH; sw, Light brown to tan sandy silt with pebbles; loose; dry 5 - 12' BEDROCK; TQs, Light grayish-brown and light yellowish-brown pebble conglomerate (friable) and silty sandstone (moderately friable); dry to damp	Massive		From 5 to 9' appears creep affected or slumped Pebbles in pebble conglomerate are subangular to sub-rounded (high pebble content, low sand content) No Ground Water No Caving TOTAL DEPTH 12 Ft.

East

SCALE 1" = 5'



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-36

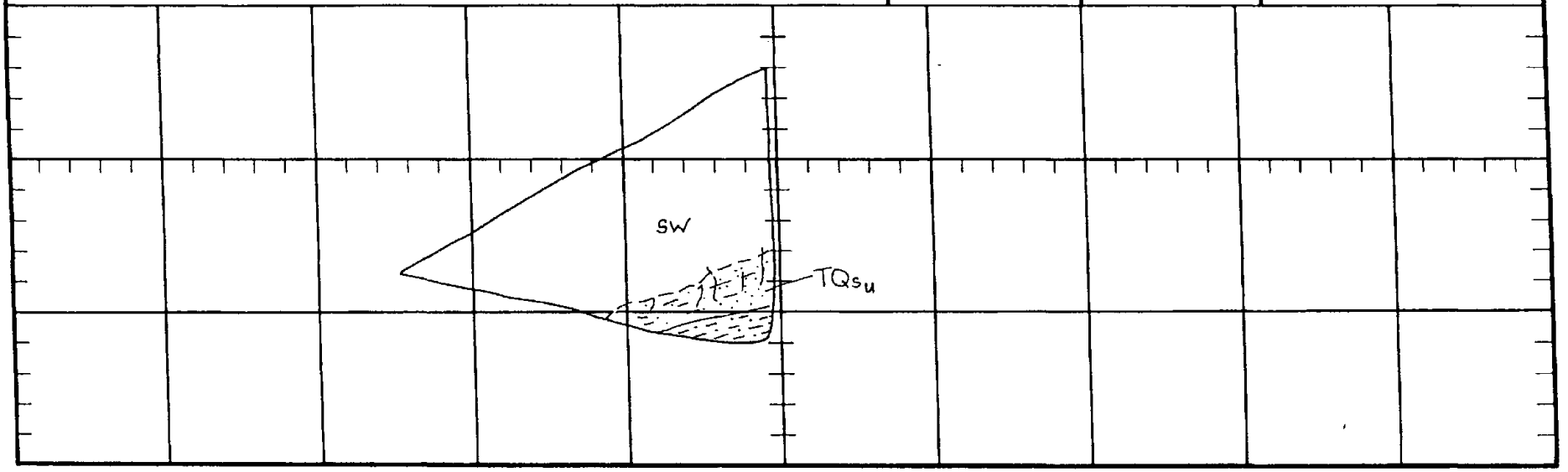
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6' SLOPEWASH; sw, Light brown pebbly sandy silt; loose to dense; dry to damp 6 - 9' BEDROCK; TQs, Light yellowish-brown and light to medium brown silty sandstone and siltstone; moderately hard to hard; dry to damp	N42W,14NE		Weathered down to 7 ft. No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 72 W



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JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

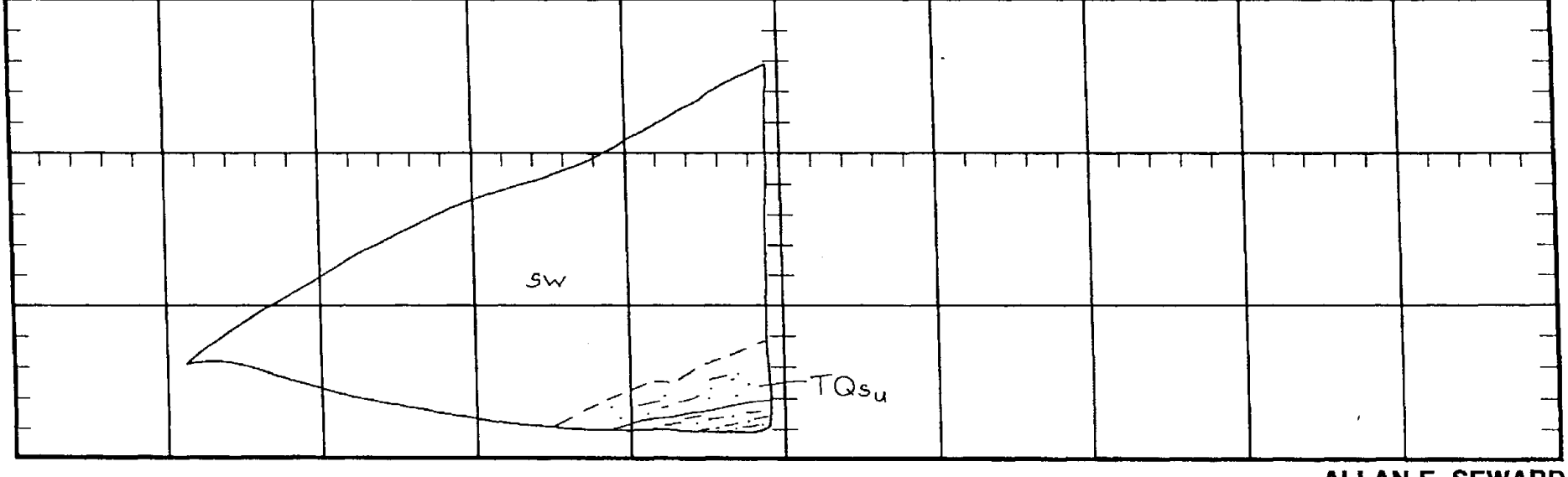
Trench Log No. T-37

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 11' SLOPEWASH; sw, Light brown to light yellowish-brown sandy silt to silty sand; loose to moderately dense; dry to damp			Upper 3-4 feet widened
11 - 12' BEDROCK; TQs, Light to medium brown siltstone; moderately hard; damp	N60W,11NE (apx)		From 9-11 ft. may be surficial failure
			No Ground Water No Caving
			TOTAL DEPTH 12 Ft.

SCALE 1" = 5'

N 83 E



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

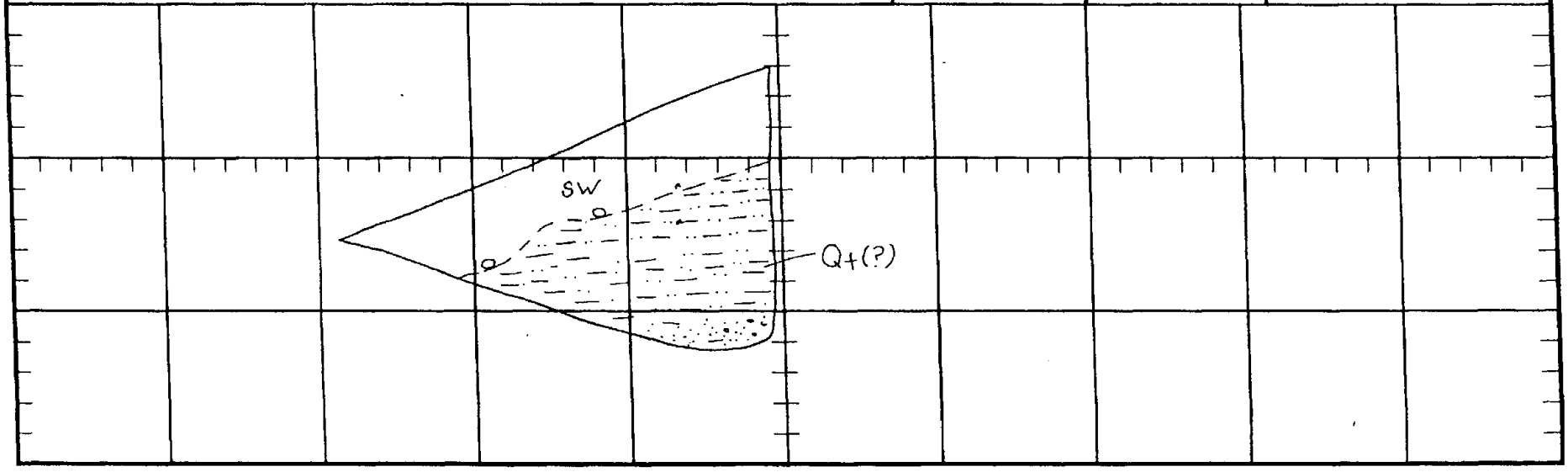
Trench Log No. T-38

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 3' SLOPEWASH; sw, Light brown sandy silt with pebbles and cobbles; loose; dry 3 - 9' QUATERNARY TERRACE; Qt (?), Light yellowish-brown to light reddish-brown sandy siltstone, sandstone and pebbly sandstone	N70W,8NE apx		Generally massive No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 80 E



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-39

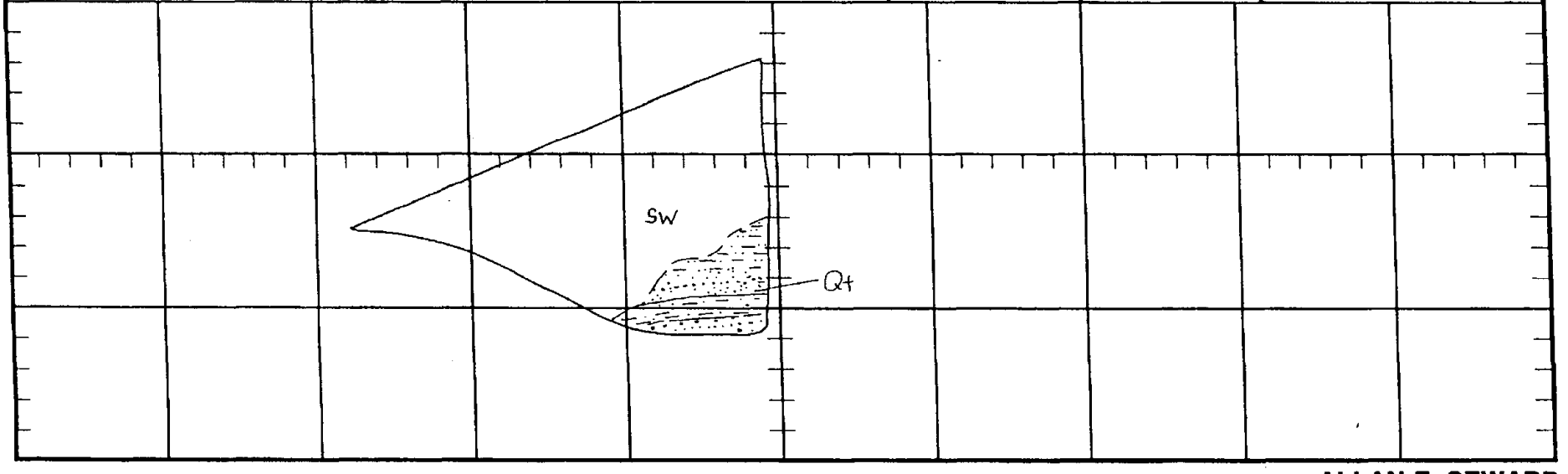
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 5' SLOPEWASH; sw, Light yellowish-brown sandy silt to silty sand with pebbles and cobbles; loose to moderately dense; dry to damp 5 - 9' QUATERNARY TERRACE; Qt, Light brown and light grayish-brown sandy siltstone, siltstone and pebbly sandstone; moderately hard and friable; dry to damp	Horizontal		No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 83 E



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

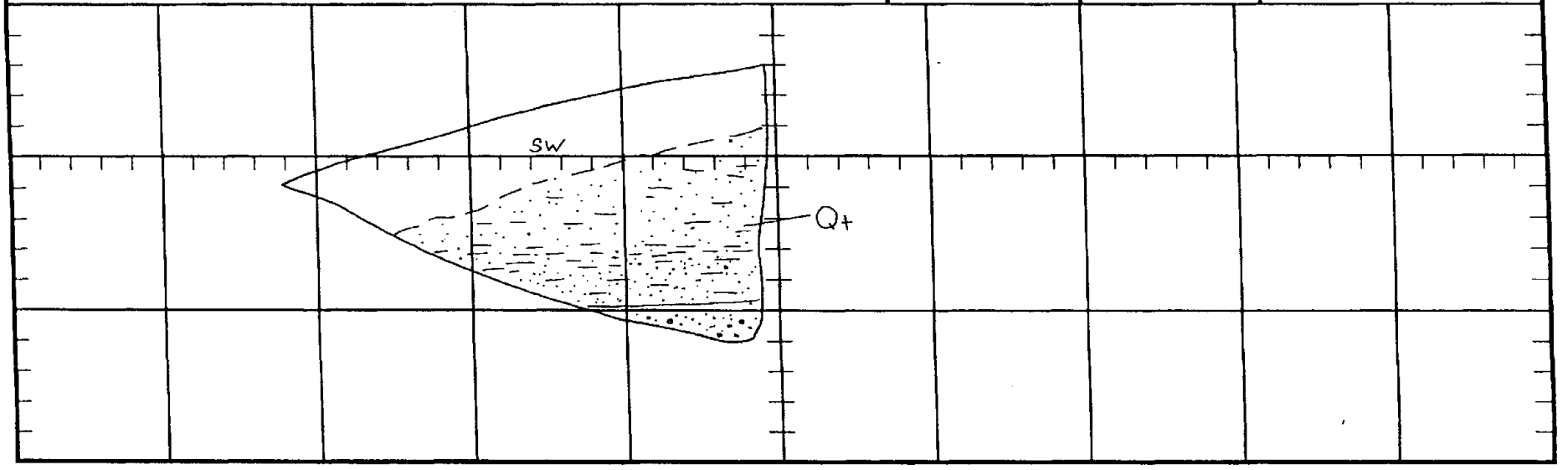
Trench Log No. T-40

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 2' SLOPEWASH; sw, Light brown sandy silt with pebbles; loose; dry 2 - 9' QUATERNARY TERRACE; Qt, Light yellowish-brown silty sandstone, siltstone and pebbly sandstone to conglomerate; moderately hard and friable; dry to damp	Horizontal		No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 60 E



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-41

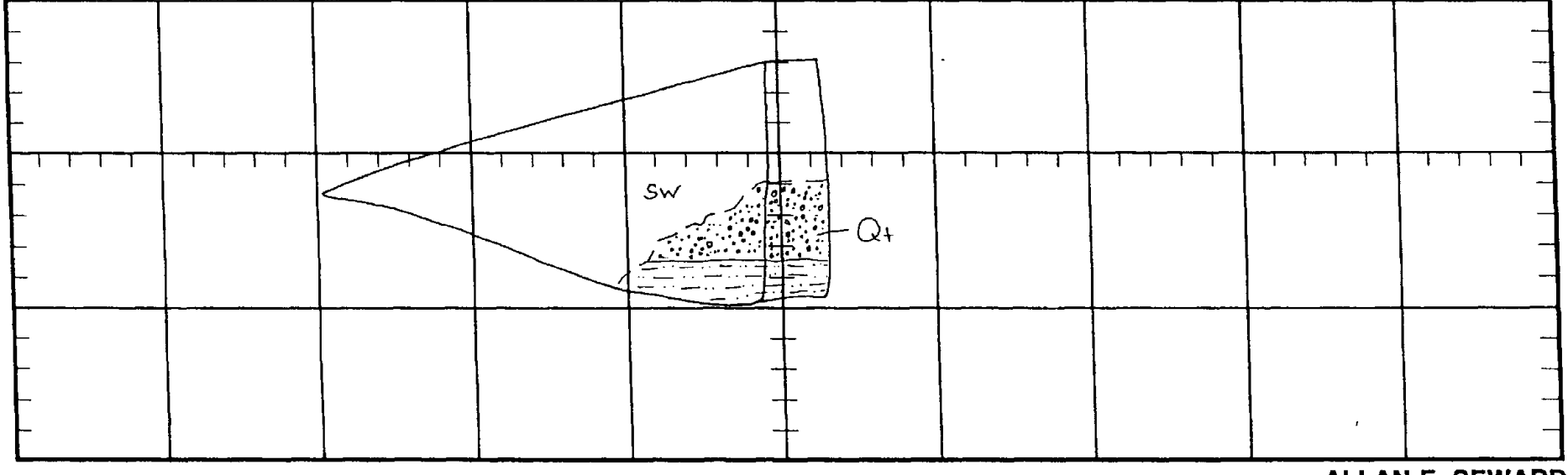
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Light brown sandy silt, loose; dry 4 - 8' QUATERNARY TERRACE; Qt, Light grayish-brown and light yellowish-brown to light brown pebble conglomerate and sandy siltstone; moderately hard and friable; dry to damp			No Ground Water No Caving TOTAL DEPTH 8 Ft.

SCALE 1" = 5'

N 47 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

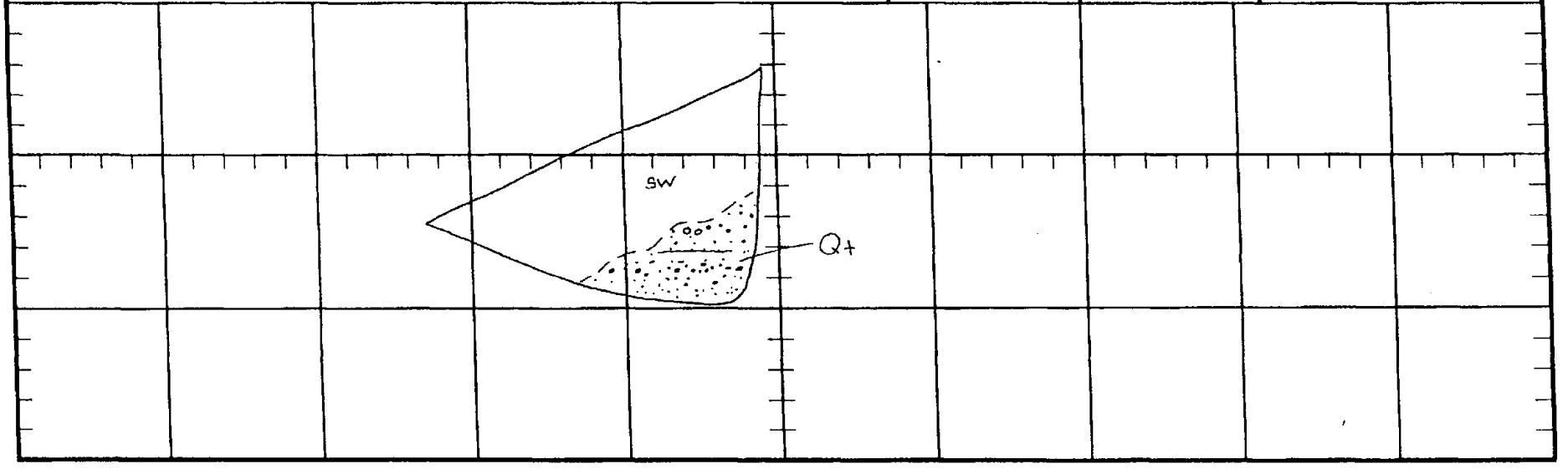
Trench Log No. T-42

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Light brown sandy silt; loose; dry 4 - 8' QUATERNARY TERRACE; Qt, Light grayish-brown pebbly sandstone and pebble conglomerate; moderately friable; dry to damp	Horizontal		No Ground Water No Caving TOTAL DEPTH 8 Ft.

SCALE 1" = 5'

N 58 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-43

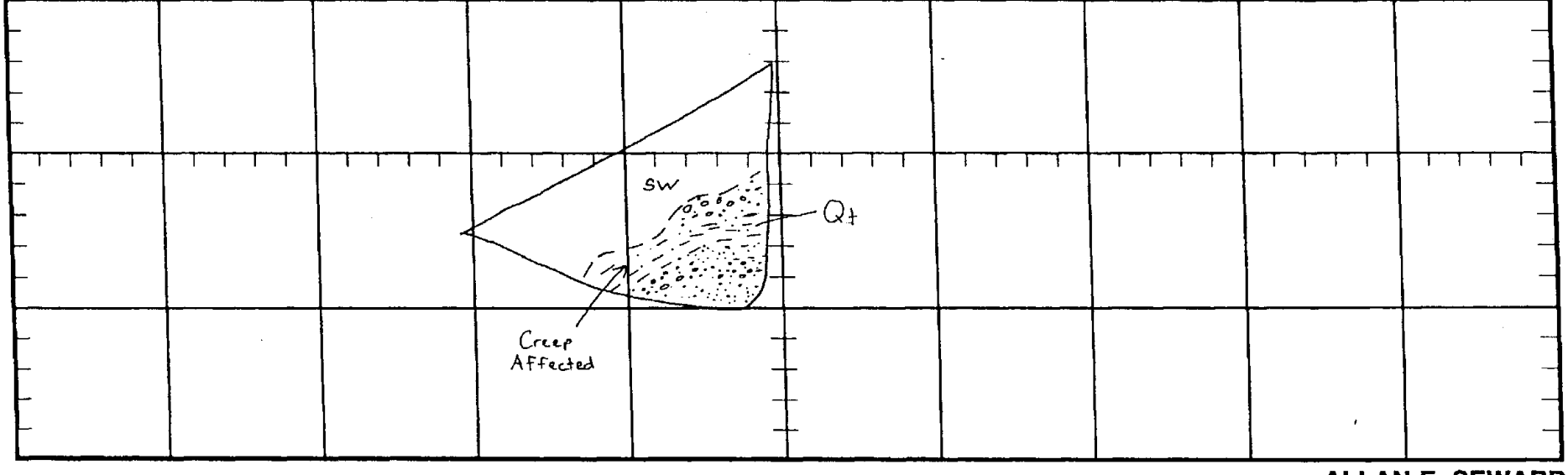
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 3.5' SLOPEWASH; sw, Medium brown sandy silt with pebbles; loose to moderately dense; dry			
3.5 - 8' QUATERNARY TERRACE; Qt, Light grayish-brown and light yellowish-brown sandy siltstone and pebble conglomerate; moderately hard and friable; dry to damp	Horizontal with local cross bedding		Weathered down to 5 ft.
			No Ground Water No Caving
			TOTAL DEPTH 8 Ft.

SCALE 1" = 5'

N 54 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

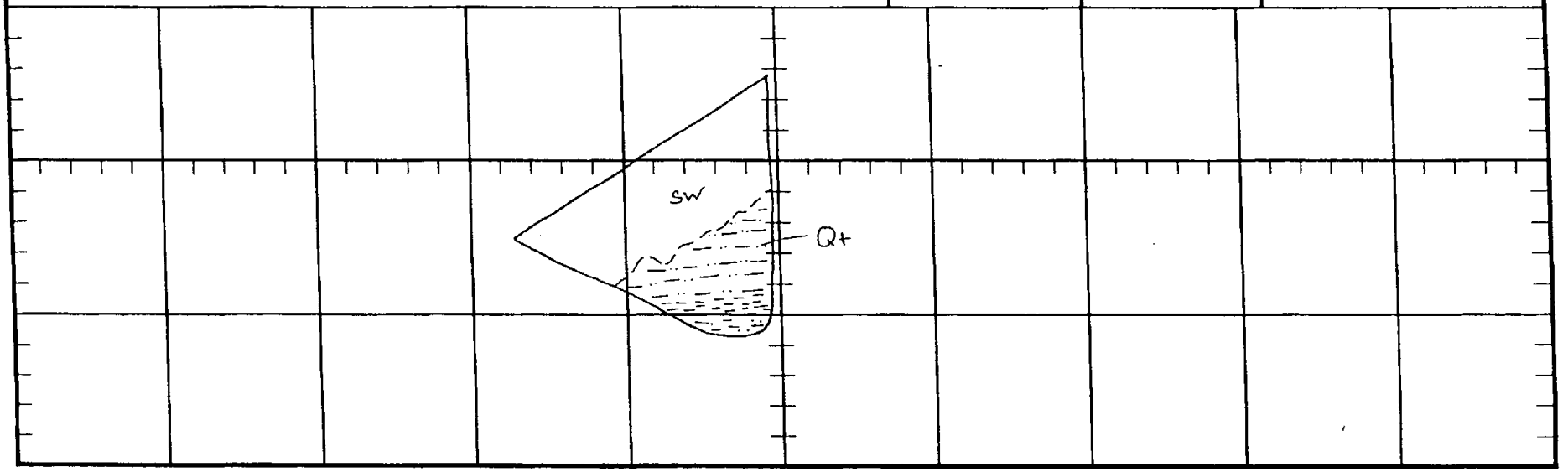
Trench Log No. T-44

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Light medium brown and light brown sandy silt with pebles and sandier silt with pebbles; loose to moderately dense; dry to damp			Weathered down to 5.5 ft.
4 - 8.5' QUATERNARY TERRACE; Qt, Light brown to brownish-tan sandy siltstone and siltstone; moderately hard to hard; dry to damp	Horizontal		No Ground Water No Caving TOTAL DEPTH 8.5 Ft.

SCALE 1" = 5'

N 87 W



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-45

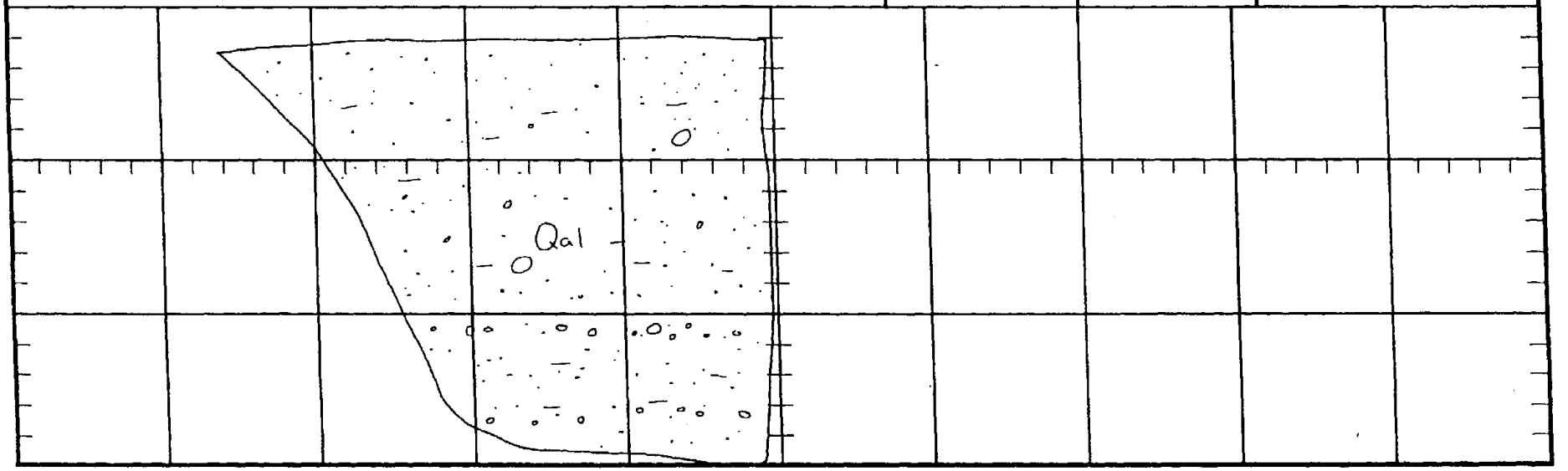
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 14' QUATERNARY ALLUVIUM; Qal, Light yellowish-brown silty sand (fine-grained) with pebbles and cobbles; loose and friable; dry to damp			Excavated in center of alluvial valley Surface logged No Ground Water No Caving TOTAL DEPTH 14 Ft.

SCALE 1" = 5'

N 5 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

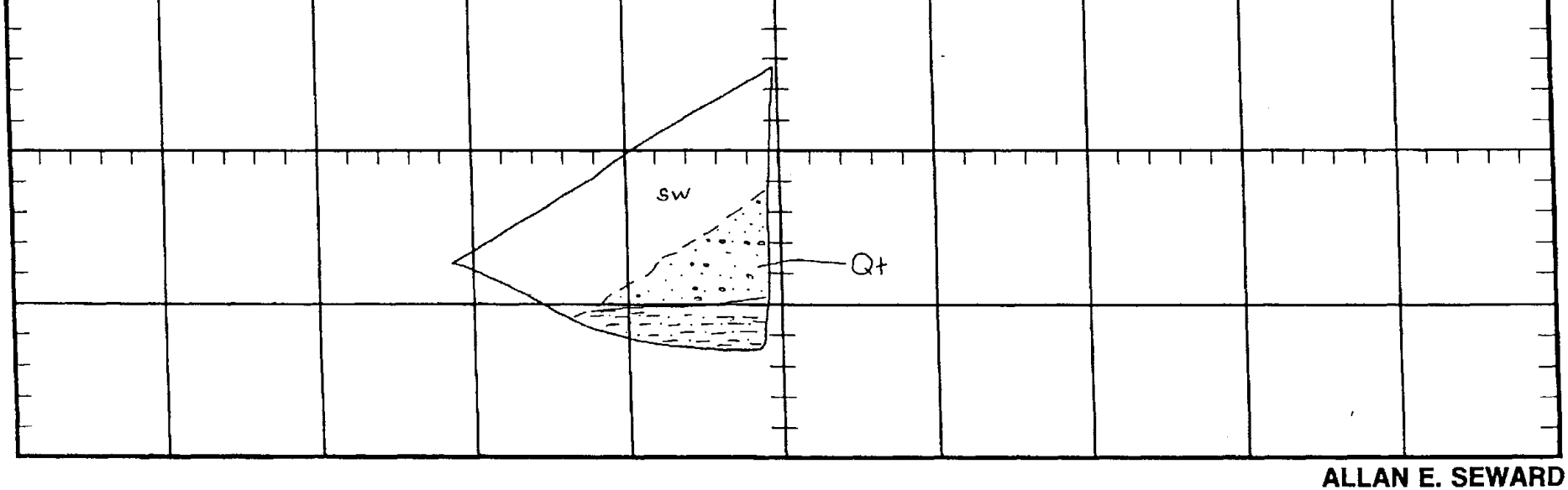
Trench Log No. T-46

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Light yellowish-brown silty sand to sandy silt; loose to moderately dense; dry 4 - 9' QUATERNARY TERRACE; Qt, Light grayish-brown and light reddish-brown pebbly sandstone to conglomerate and siltstone; friable and moderately hard; dry to damp	Horizontal		No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 74 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

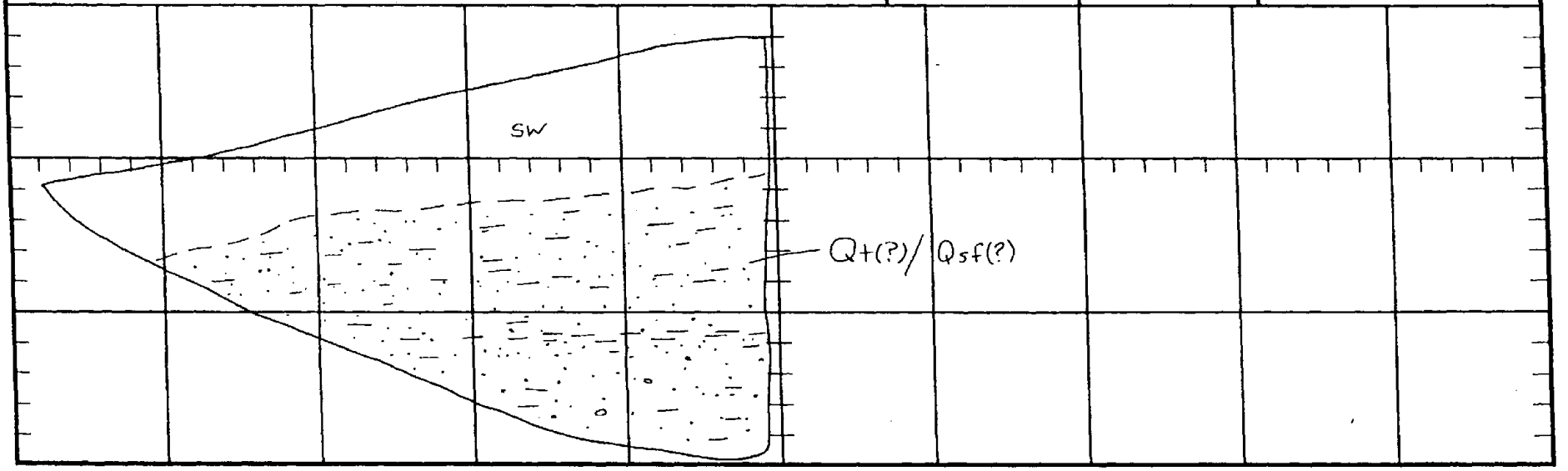
Trench Log No. T-47

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4.5' SLOPEWASH; sw, Light brown sandy silt with pebbles; loose to moderately dense; dry to damp 4.5 - 14' QUATERNARY TERRACE; Qt (?), Light yellowish-brown silty sandstone, pebbly sandstone and sandy siltstone; moderately hard and friable in places; dry to damp			Trenches T-47 thru T-54 excavated on 1/14/00. Surface logged Upper 4' widened May have experienced movement-appears slightly disturbed No Ground Water No Caving TOTAL DEPTH 14 Ft.

SCALE 1" = 5'

East



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JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

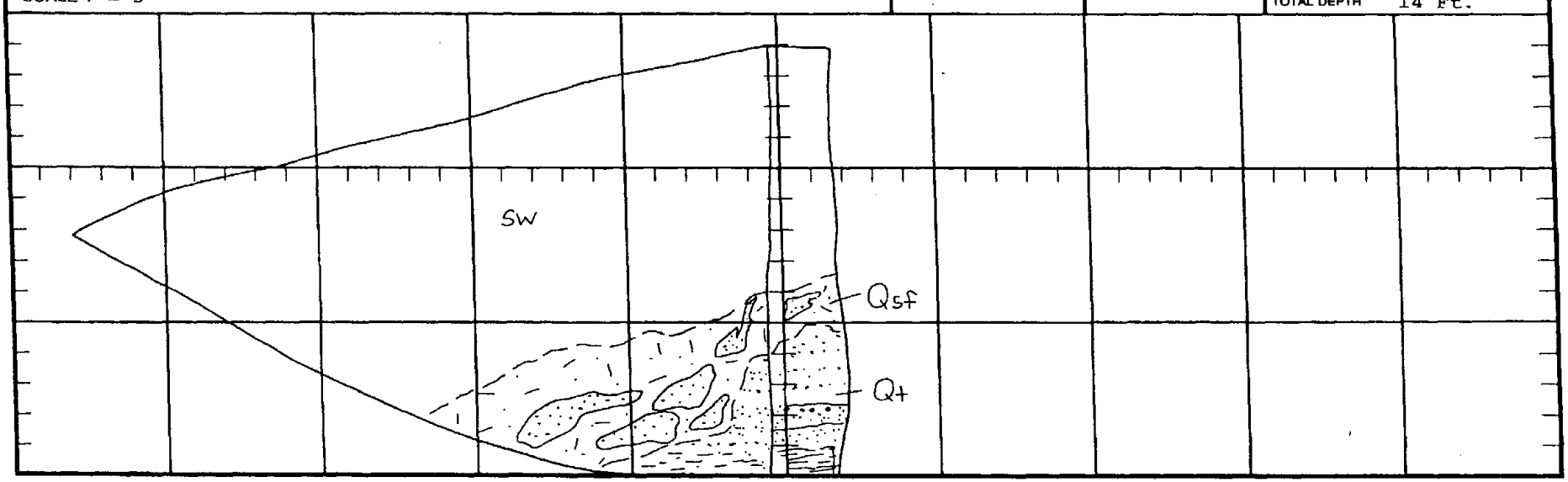
Trench Log No. T-48

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 8' SLOPEWASH; sw, Light brown sandy silt with pebbles; loose to moderately dense; dry to damp 8 - 10' SURFICIAL FAILURE/LANDSLIDE; sf/Qls, Weathered Qt fragments/blocks intermixed with slopewash; loose; dry to damp 10 - 14' QUATERNARY TERRACE; Qt, Light yellowish-brown slightly silty sandstone, pebbly sandstone and silty sandstone; moderately hard and moderately friable; damp			No Ground Water No Caving TOTAL DEPTH 14 Ft.

SCALE 1" = 5'

N 72 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

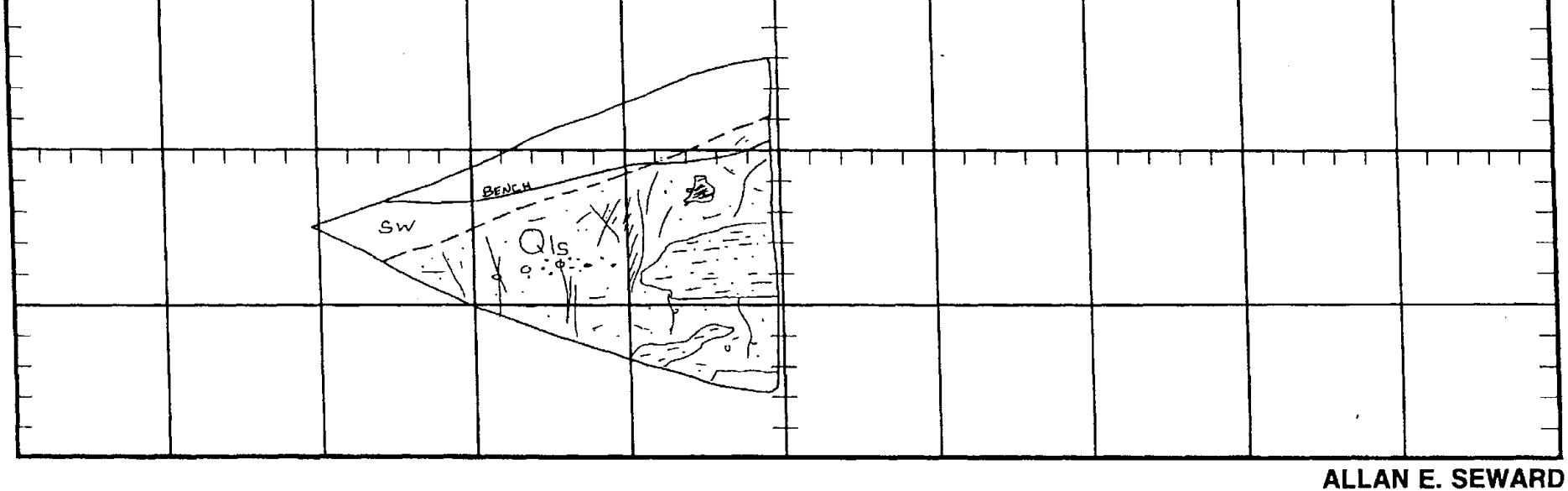
Trench Log No. T-49

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 2' SLOPEWASH; sw, Light to medium brown, slightly sandy silt with pebbles; loose to moderately dense; dry to damp 2 - 10.5' LANDSLIDE; Qls, Jumbled Qt lithologies and soil backfill, loose to moderately dense; dry to damp			No Ground Water No Caving TOTAL DEPTH 10.5 Ft.

SCALE 1" = 5'

N 70 W



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JOB NO. 00-1729-1 PROJECT Magic Mountain Entertainment

LOGGED BY SKM

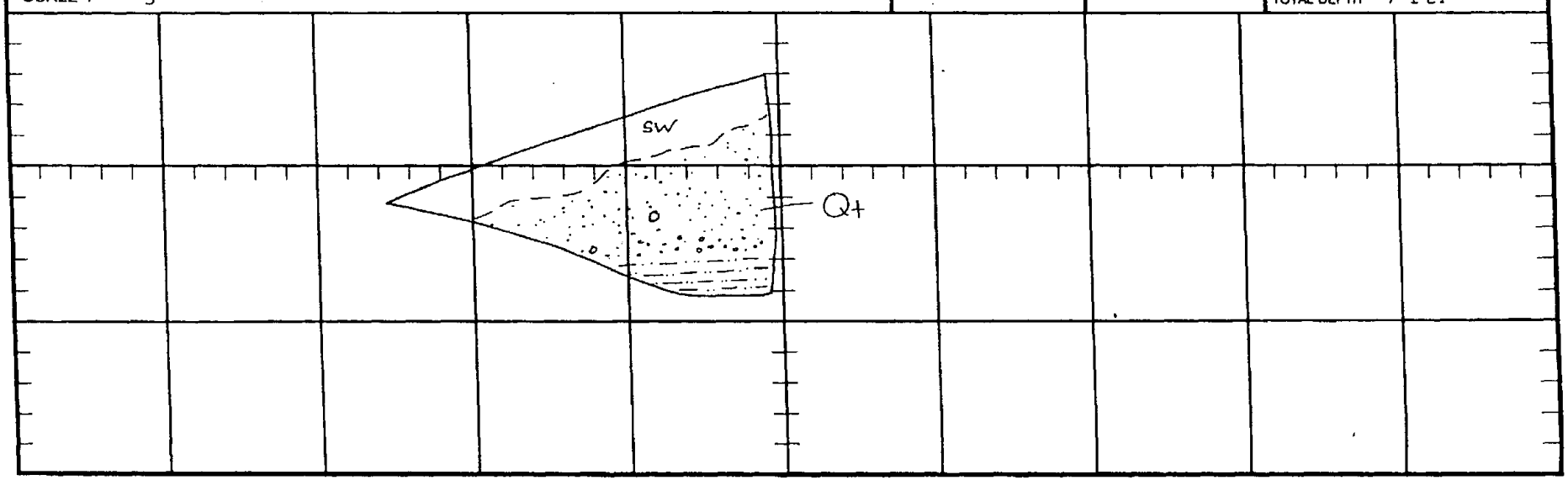
Trench Log No. T-50

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1.5' SLOPEWASH; sw, Light brown to light reddish-brown sandy silt with pebbles; loose to moderately dense; dry			
1.5 - 7' QUATERNARY TERRACE; Qt, Light reddish-brown silty pebbly sandstone, and sandy siltstone with pebbles; moderately hard to hard; damp	Horizontal		Hard siltstone at base with 2-3" grooves cut by backhoe teeth
			No Ground Water No Caving
			TOTAL DEPTH 7 Ft.

N 44 E

SCALE 1" = 5'



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JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

Trench Log No. T-51

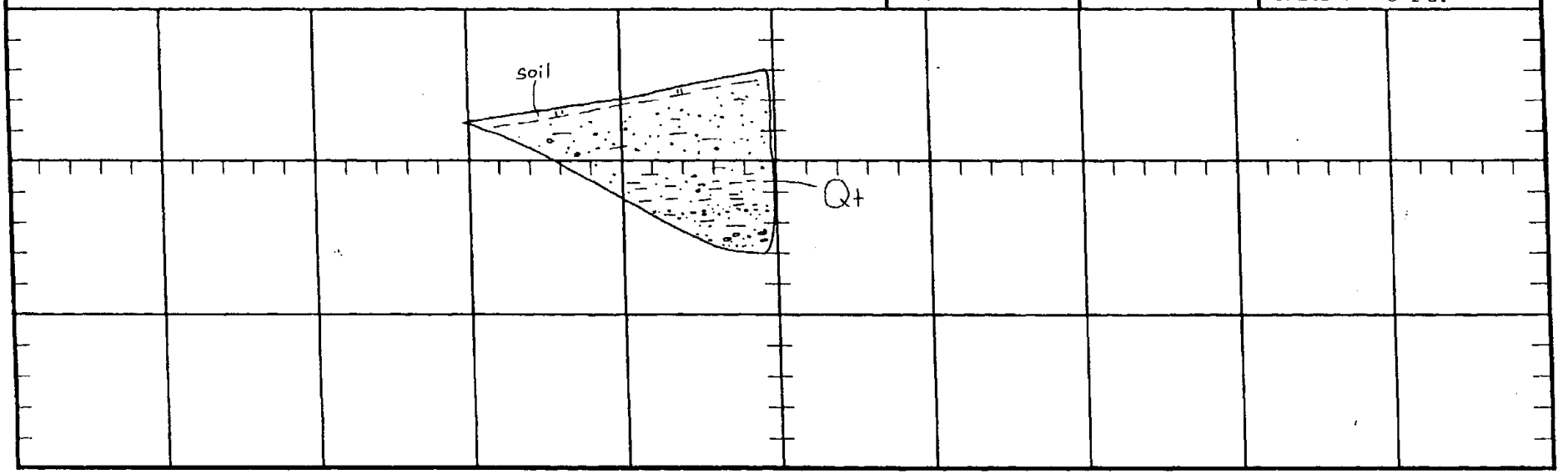
DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6" SOIL; s, Light brown to light reddish-brown sandy silt with pebbles; loose; dry			Digs very hard
6" - 6' QUATERNARY TERRACE; Qt, Light reddish-brown silty sandstone to sandy siltstone with pebbles and pebbly sandstone; hard; dry to damp	Horizontal		No Ground Water No Caving

SCALE 1" = 5'

N 20 W

TOTAL DEPTH 6 Ft.



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JOB NO. 00-1729-1

PROJECT Magic Mountain Entertainment

LOGGED BY SKM

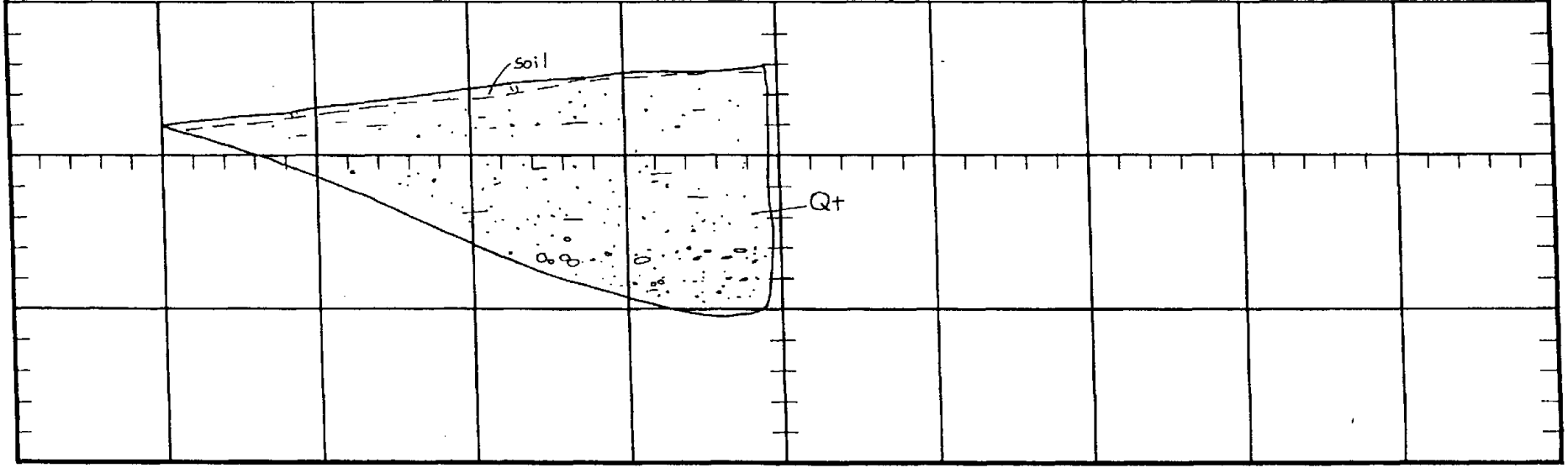
Trench Log No. T-52

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 2" SOIL; s, Light brown silty sand to sandy silt; loose; dry 2" - 8' QUATERNARY TERRACE; Qt, Light brown and light reddish-brown silty pebbly sandstone and pebbly sandstone; moderately hard to moderately friable; dry to damp	Horizontal		No Ground Water No Caving TOTAL DEPTH 8 Ft.

N 17 E

SCALE 1" = 5'



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JOB NO. 00-1729-1

LOGGED BY SKM

Trench Log No. T-53

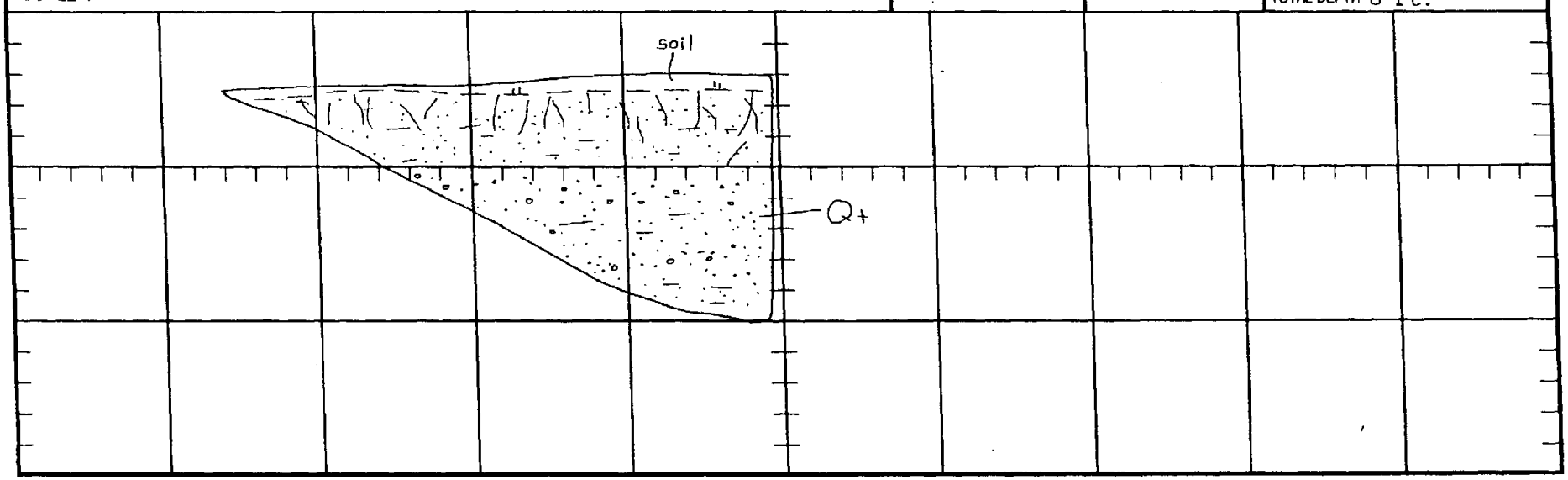
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6" SOIL; s, Light brown sandy silt with pebbles; loose; dry			Weathered down to 2'
6" - 8' QUATERNARY TERRACE; Qt, Light brown to light reddish-brown silty sandstone and pebbly sandstone; moderately hard; friable in places; dry to damp	Horizontal		No Ground Water No Caving

SCALE 1" = 5'

N 79 E



TOTAL DEPTH 8 Ft.

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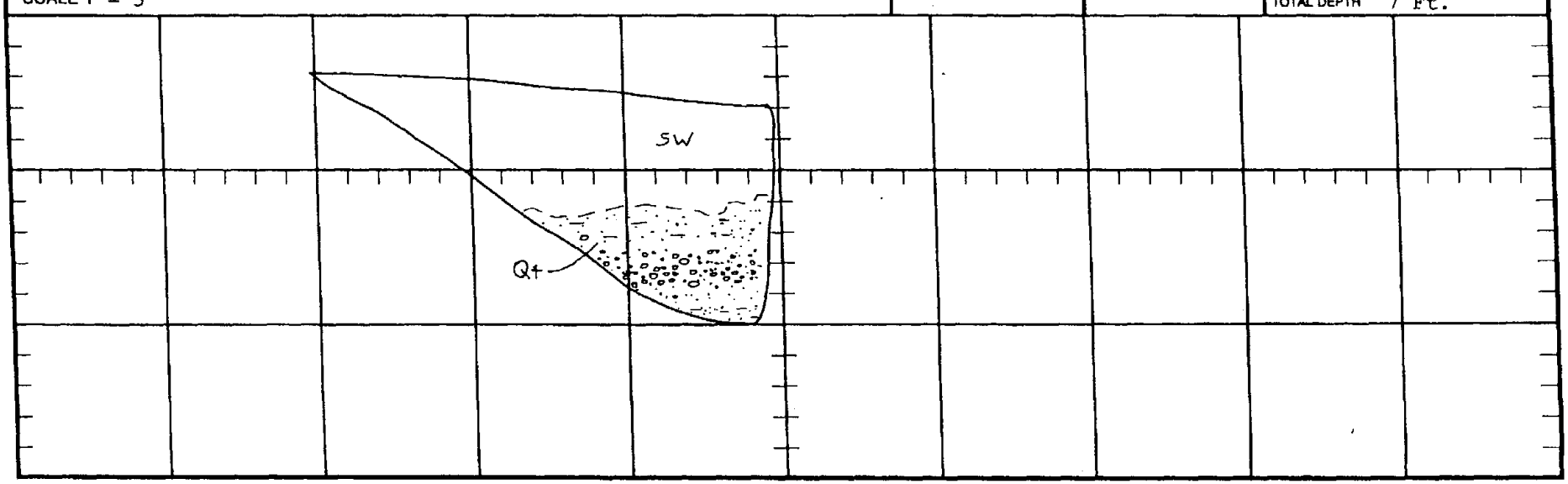
Trench Log No. T-54

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 4' SLOPEWASH; sw, Light yellowish-brown sandy silt with pebbles; loose; dry 4 - 7' QUATERNARY TERRACE; Qt, Light yellowish-brown to light brown and light grayish-brown silty pebbly sandstone and pebble conglomerate; moderately hard and friable; dry to damp	Horizontal		Weathered down to 5 ft. Slopewash weathered in place Qt? Pebble conglomerate is very friable minor sand and portions have black coating on pebbles No Ground Water No Caving TOTAL DEPTH 7 Ft.

SCALE 1" = 5'

N 3 W



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JOB NO. 00-1703CM-1 PROJECT Magic Mountain Entertainment

LOGGED BY DGG

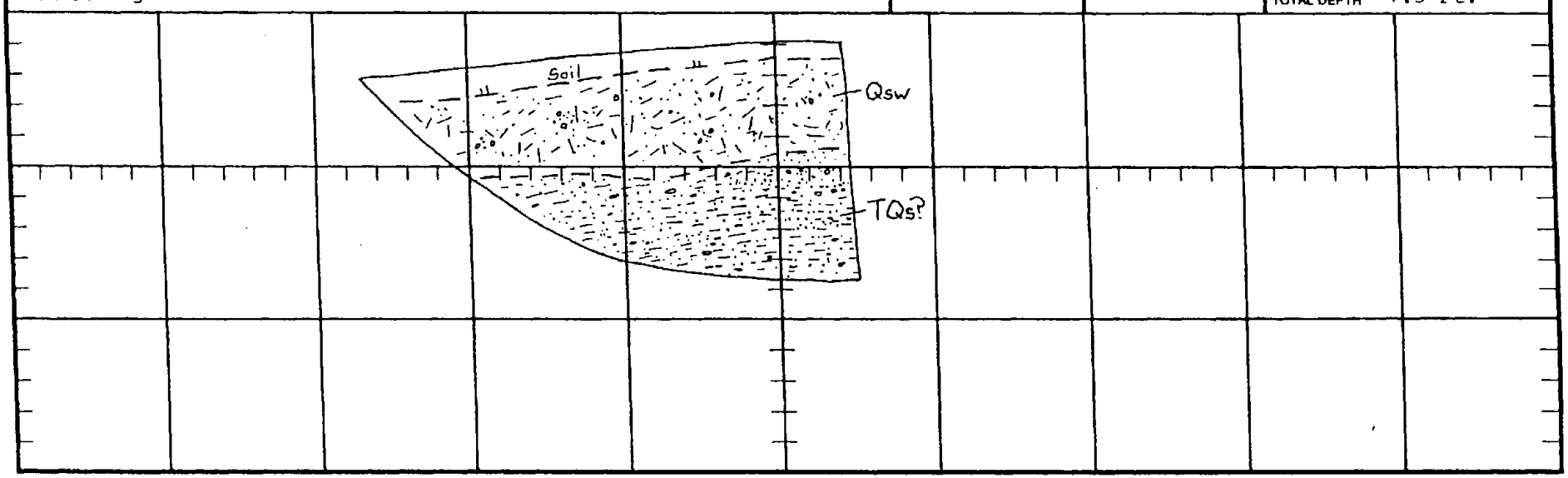
Trench Log No. T-55

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 6" SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist 6" - 3.5' SLOPEWASH; Qsw, Yellowish-brown silt to sandy silt within scattered pebbles and local pods of pebbles; loose to moderately dense; slightly damp to damp 3.5 - 7.5' BEDROCK; TQs?, Yellowish- to light-brown siltstone, sandy siltstone with scattered pebbles, and fine- to coarse-grained pebbly sandstone; dense to slightly friable; slightly damp to damp; top 1.5' weathered	N46W,8NE		T-55 thru T-67 excavated 2/18/00 using a track mounted backhoe with a 24" bucket Lithology is transitional between TQs and Qt but bedding attitude indicates probable young TQs No Ground Water No Caving TOTAL DEPTH 7.5 Ft.

SCALE 1" = 5'

N 16 E



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JOB NO. 00-1703CM-1 PROJECT Magic Mountain Entertainment

LOGGED BY DGG

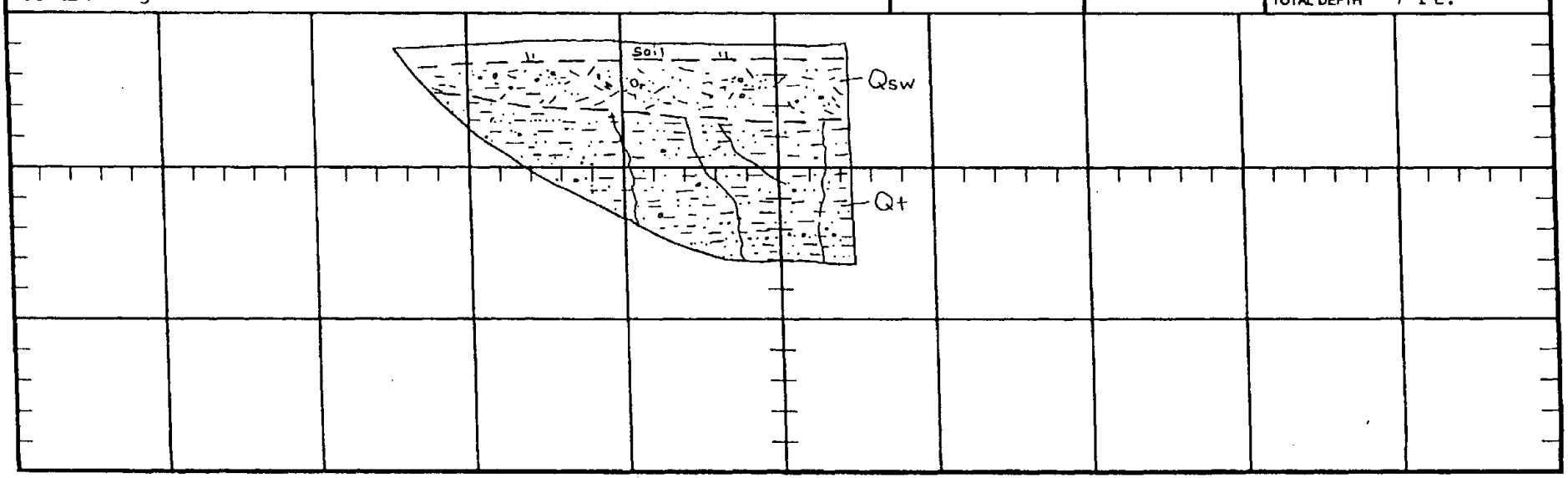
Trench Log No. T-56

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 0.5' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
0.5 - 2.5' SLOPEWASH; Qsw, Yellowish-brown silt to sandy silt within scattered pebbles and local pods of pebbles; loose to moderately dense; slightly damp to damp		f:N34E,85NW	Fractures may be shattered ridge effects
2.5 - 7' QUATERNARY TERRACE DEPOSITS; Qt, Yellowish- to slightly pale reddish-brown siltstone to sandy siltstone with scattered pebbles; moderately dense to dense; damp; locally fractured	N82E,3NW		Lithology is transitional between TQs and Qt but bedding attitude indicates Qt
			No Ground Water No Caving
			TOTAL DEPTH 7 Ft.

SCALE 1" = 5'

N 15 E



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JOB NO. 00-1703CM-1 PROJECT Magic Mountain Entertainment

LOGGED BY DGG

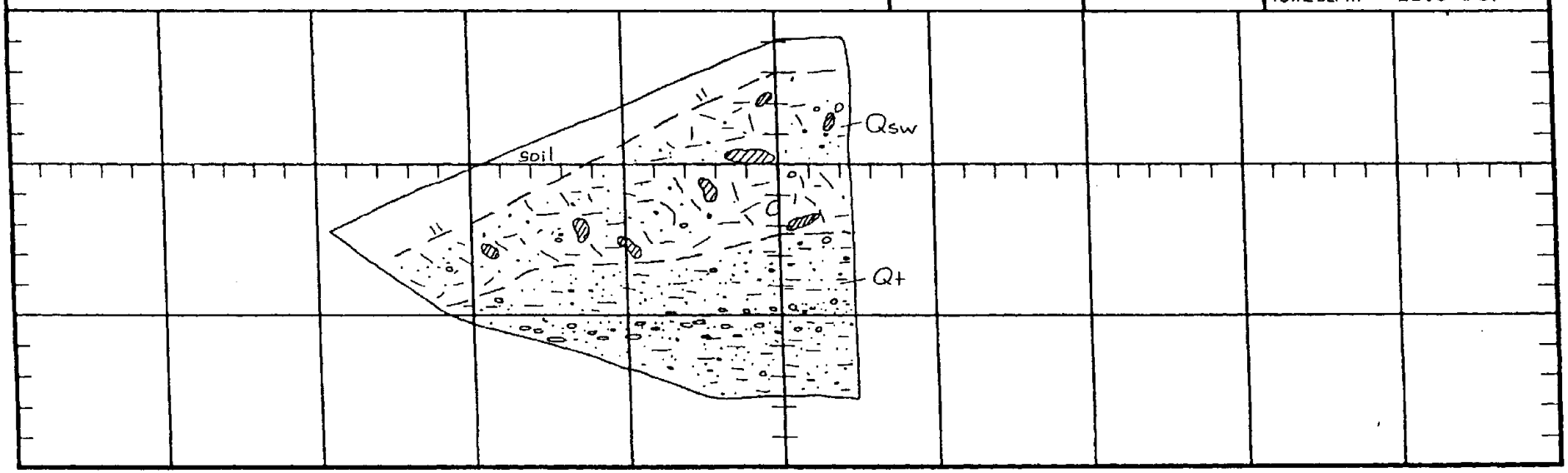
Trench Log No. T-57

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1 - 6.5' SLOPEWASH; Qsw, Yellowish-brown silt to sandy silt with scattered pebbles and a few scattered cobbles; soft to firm; damp; abundant krotovina			
6.5 - 11.5' QUATERNARY TERRACE DEPOSITS; Qt, Yellowish-brown to light yellowish-brown siltstone, sandy siltstone and pebbly to cobbly sandstone and sandstone; moderately dense to dense but friable; damp; cross-bedding and channeling in sandstone	Apx. Horizontal		Lithology and bedding attitude indicate Qt unit No Ground Water No Caving TOTAL DEPTH 11.5 Ft.

SCALE 1" = 5'

N 65 W



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JOB NO. 00-1703CM-1 PROJECT Magic Mountain Entertainment

LOGGED BY DGG

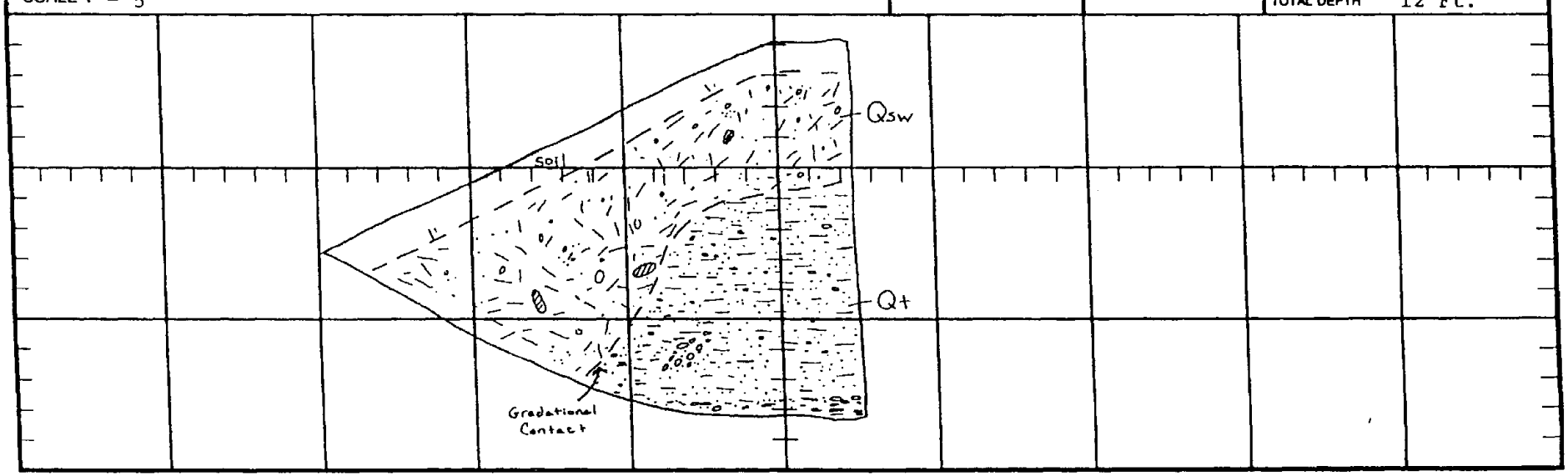
Trench Log No. T-58

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1.5' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1.5 - 4' SLOPEWASH; Qsw, Yellowish-brown silt to sandy silt with scattered pebbles and a few scattered cobbles; soft to firm; damp; scattered krotovina			
4 - 12' QUATERNARY TERRACE DEPOSITS; Qt, Yellowish-brown to light yellowish-brown siltstone, sandy siltstone; pebbly to cobbly sandstone and sandstone; moderately dense to dense but friable; damp; cross-bedding and channeling in sandstone	Apx: Horizontal		Lithology and bedding attitude indicate Qt unit
			No Ground Water No Caving
			TOTAL DEPTH 12 Ft.

SCALE 1" = 5'

N 60 W



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JOB NO. 00-1703CM-1

PROJECT Magic Mountain Entertainment

LOGGED BY DGG

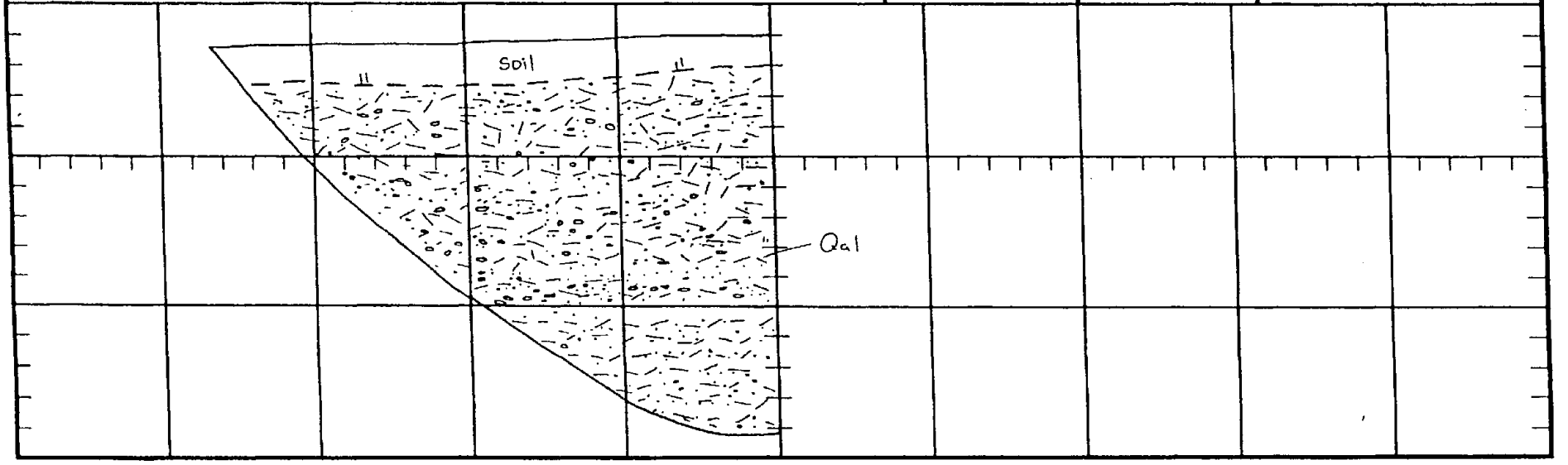
Trench Log No. T-59

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist 1 - 13' QUATERNARY ALLUVIUM; Qal, Yellowish-brown to light brown silt to sandy silt with scattered pebbles and local sandy pebbly pockets; loose/soft; damp			No Ground Water No Caving TOTAL DEPTH 13 Ft.

SCALE 1" = 5'

N 40 E



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JOB NO. 00-1703CM-1

PROJECT Magic Mountain Entertainment

LOGGED BY DGG

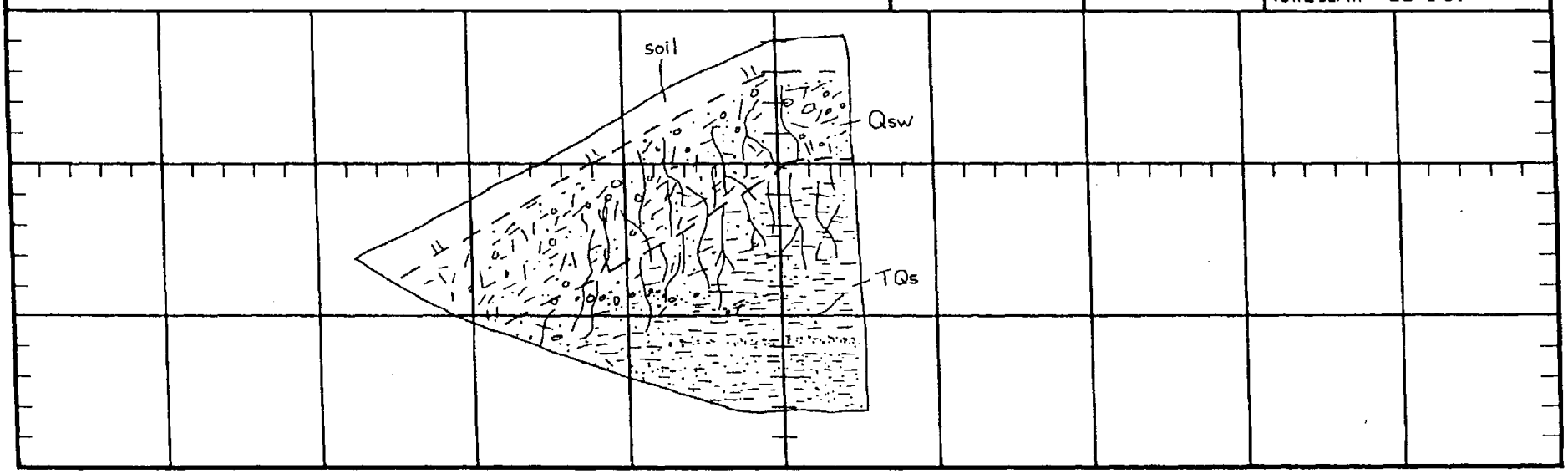
Trench Log No. T-60

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1 - 4' SLOPEWASH; Qsw, Yellowish-to light-brown silt to sandy silt with pebbles and cobbles; loose; damp			
4 - 12' BEDROCK; TQs?; Yellowish-to light-brown siltstone, sandy siltstone, and sandstone, with scattered pebbles and few scattered cobbles; local concretions; moderately dense to dense but slightly loose; damp	Apx: N15W,10NE		Lithology is transitional between TQs and Qt but bedding attitude indicates TQs Upper 5' of bedrock highly fractured, weakened and creep affected No Ground Water No Caving TOTAL DEPTH 12 Ft.

SCALE 1" = 5'

N 38 W



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JOB NO. 00-1703CM-1 PROJECT Magic Mountain Entertainment

LOGGED BY DGG

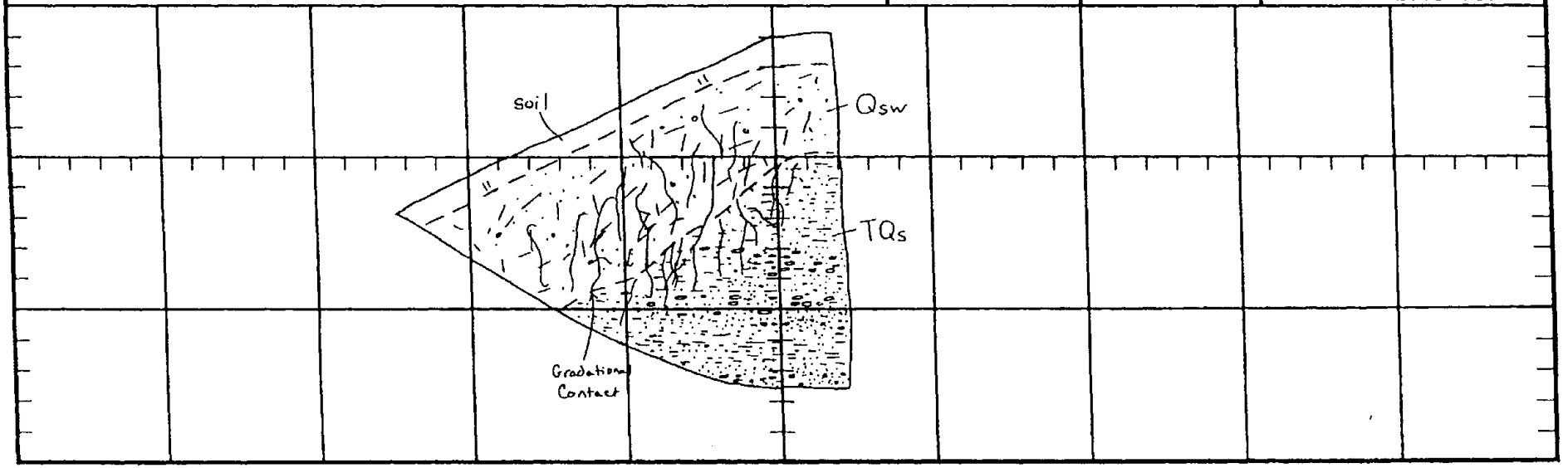
Trench Log No. T-61

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1 - 4' SLOPEWASH; Qsw, Yellowish- to light-brown silt to sandy silt with scattered pebbles; loose/soft; damp; fractured			
4 - 10.5' BEDROCK; TQs?, Yellowish- to light-brown siltstone, sandy siltstone, pebbly cobbley sandstone and sandstone; loose to moderately dense; damp	N15W,8NE		Lithology is transitional between TQs and Qt but bedding attitude indicates TQs No Ground Water No Caving TOTAL DEPTH 10.5 Ft.

SCALE 1" = 5'

N 47 W



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LOGGED BY DGG

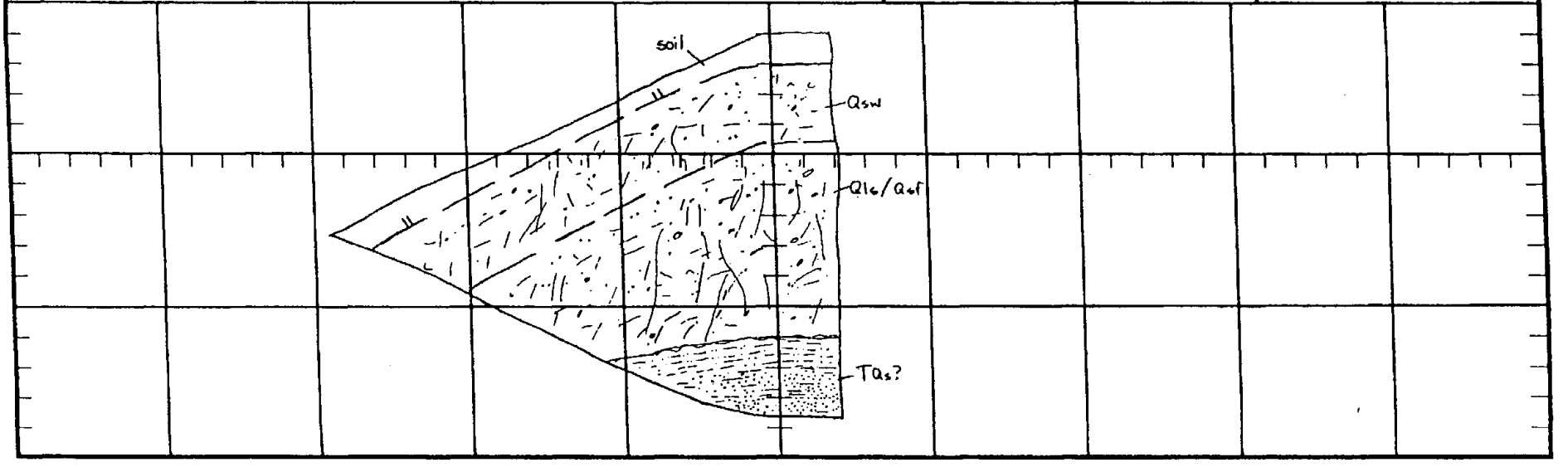
Trench Log No. T-62

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1 - 3.5' SLOPEWASH; Qsw, Yellowish- to light-brown silt to sandy silt with scattered pebbles; loose; damp			
3.5 - 10' LANDSLIDE/SURFICIAL FAILURE; Qls/Qsf, Yellowish-brown silt and sandy silt with scattered pebbles and few scattered cobbles; damp; 2-3% void space			
10 - 12.5' BEDROCK; TQs?, Yellowish- to light-brown siltstone, sandy siltstone and fine- to coarse-grained sandstone; moderately dense to dense; damp; top 4" of bedrock sheared with caliche	N27W,5NE		Lithology and bedding attitude are transitional between TQs and Qt No Ground Water No Caving TOTAL DEPTH 12.5 Ft.

SCALE 1" = 5'

N 71 W



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LOGGED BY DGG

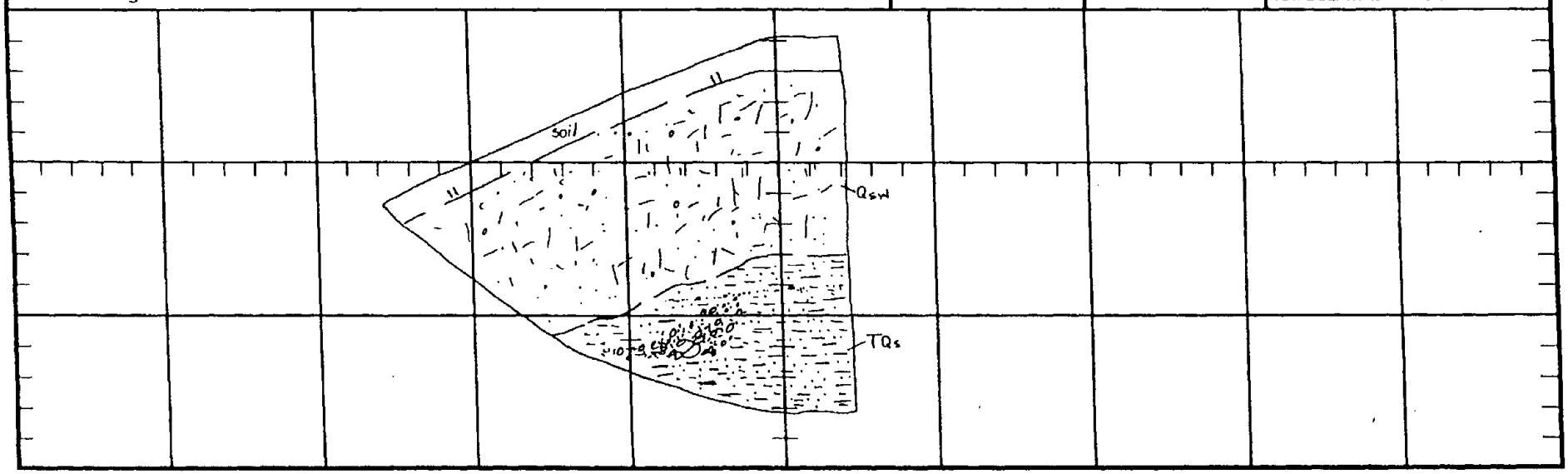
Trench Log No. T-63

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist 1 - 6' SLOPEWASH; Qsw, Yellowish- to medium-brown silt to sandy silt with scattered pebbles; loose; damp 6 - 12' BEDROCK; TQs?, Yellowish-brown siltstone to sandy siltstone, with lenses of fine- to medium-grained sandstone and channel of pebbly cobbly sandstone; dense; slightly damp	Apx:N60W,5NE		Lithology and bedding attitude are transitional between TQs and Qt Upper 4' of bedrock highly weathered No Ground Water No Caving TOTAL DEPTH 12 Ft.

SCALE 1" = 5'

N 10 E



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JOB NO. 00-1703CM-1

PROJECT Magic Mountain Entertainment

LOGGED BY DGG

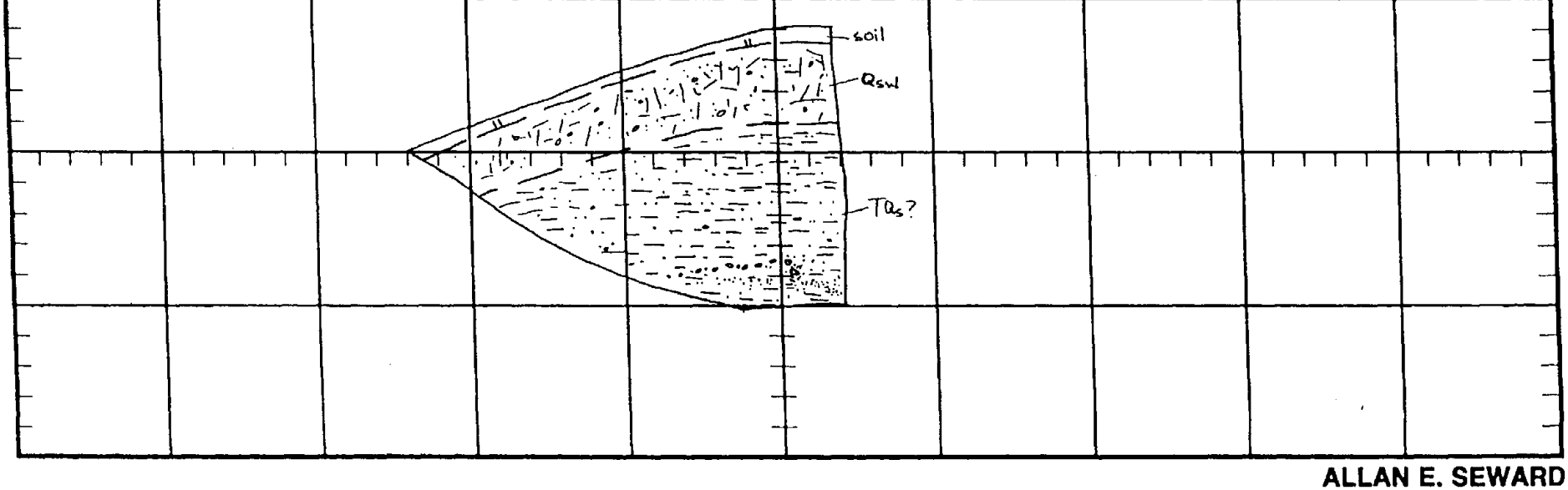
Trench Log No. T-64

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - .5' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist .5 - 3' SLOPEWASH: Qsw, Yellowish- to light-brown silt to sandy silt with scattered pebbles; loose; damp 3 - 9' BEDROCK; TQs?, Yellowish- to light-brown siltstone with scattered pebbles, sandy siltstone; fine-grained sandstone and pebbly sandstone; moderately dense to moderately hard; damp	Apx: N61W,13NE		Lithology transitional between TQs and Qt but bedding attitude indicates TQs Upper 2' of bedrock weathered No Ground Water No Caving TOTAL DEPTH 9 Ft.

SCALE 1" = 5'

N 74 W



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JOB NO. 00-1703CM-1 PROJECT Magic Mountain Entertainment

LOGGED BY DGG

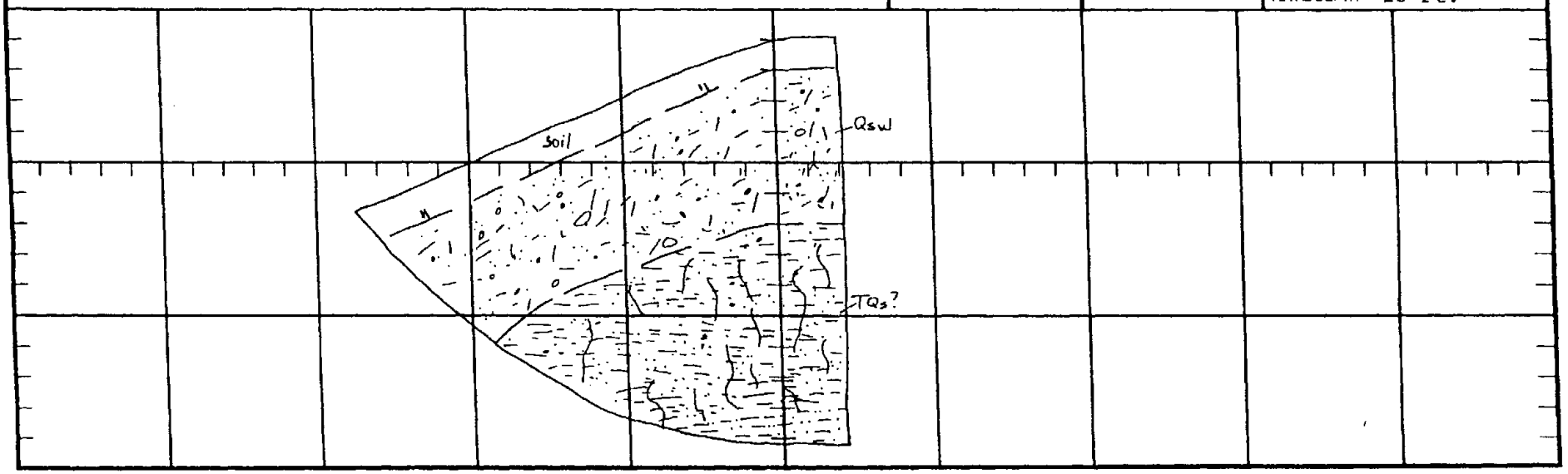
Trench Log No. T-65

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist 1 - 6' SLOPEWASH; Qsw, Yellowish- to medium-brown silt to sandy silt with scattered pebbles and a few cobbles; loose to dense; slightly damp 6 - 13' BEDROCK; TQs?, Yellowish- to light-brown siltstone and sandy siltstone with scattered pebbles; upper 6 ft. moderately dense, weathered and fractured, but bottom ft. moderately hard; damp; caliche along fractures	Apx:N66W,11NE		Lithology is transitional between TQs and Qt but bedding attitude indicates TQs No Ground Water No Caving TOTAL DEPTH 13 Ft.

SCALE 1" = 5'

N 14 E



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JOB NO. 00-1703CM-1

PROJECT Magic Mountain Entertainment

LOGGED BY DGG

Trench Log No. T-66

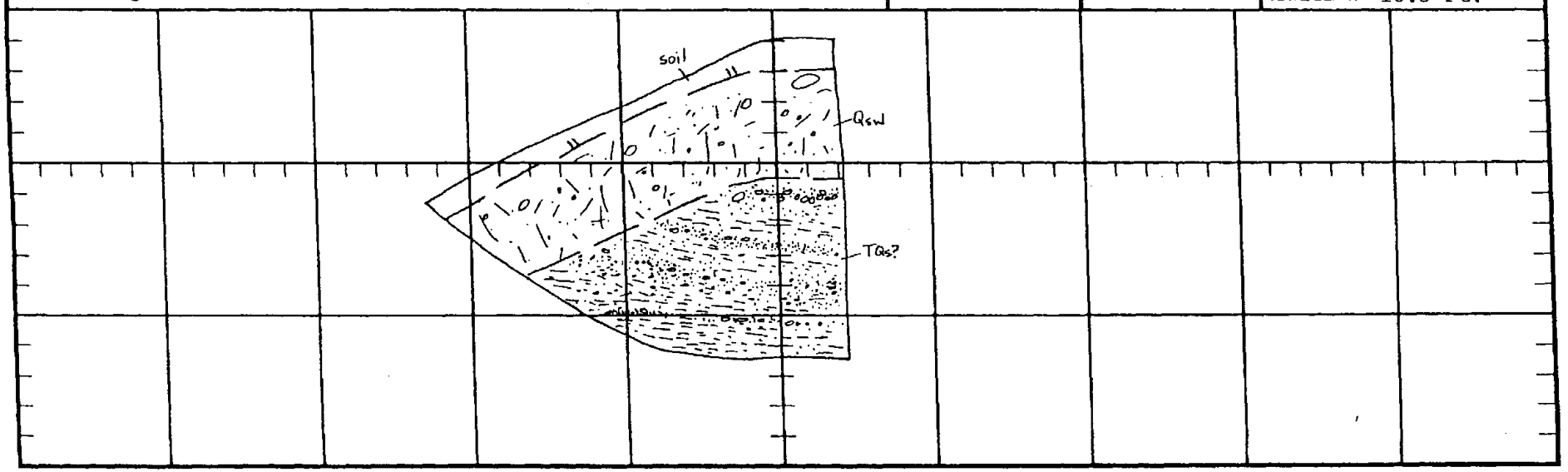
DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1 - 4.5' SLOPEWASH: Qsw, Yellowish- to medium brown silt to sandy silt with scattered pebbles and cobbles			
4.5 - 10.5' BEDROCK; TQs?, Light-brown to light-gray fine- to coarse-grained sandstone, silty sandstone and pebbly sandstone with cobbles; dense but moderately friable; slightly damp	N63W,11NE		Lithology is transitional between TQs and Qt but bedding attitude indicates TQs

N 57 E

SCALE 1" = 5'

TOTAL DEPTH 10.5 Ft.



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JOB NO. 00-1703CM-1

LOGGED BY DGG

Trench Log No. T-67

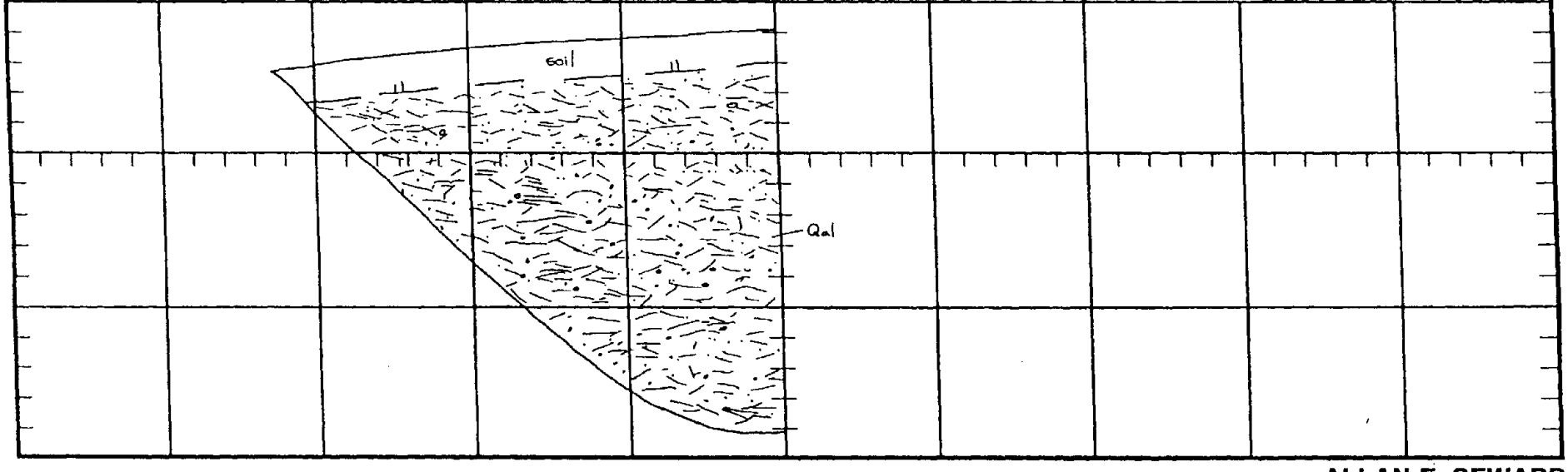
PROJECT Magic Mountain Entertainment

DATE 5/25/00

LITHOLOGY	BEDDING	OTHER	COMMENTS
0 - 1' SOIL; s, Medium-brown silt to slightly sandy silt with rootlets and scattered pebbles; soft to firm; damp to moist			
1 - 13' QUATERNARY ALLUVIUM; Qal, Medium-brown, locally yellowish-brown silt to sandy silt with scattered pebbles and local cobbles; loose to moderately dense; slightly damp to damp			2-3% voids; 1/4" to 3/8" diameter to bottom of trench
			Nq Ground Water No Caving
			TOTAL DEPTH 13 Ft.

SCALE 1" = 5'

N 78 E



ALLAN E. SEWARD

Newhall Land and Farming Company
March 18, 2005
2004-700-21

APPENDIX B

LABORATORY TESTS

RTF&A
GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

APPENDIX B

LABORATORY TESTS

Laboratory tests were performed on selected samples obtained from the borings to aid in the classification of the soils and to determine their engineering properties.

The field moisture content and dry density of the soils encountered were determined by performing tests on the undisturbed samples. The results of the tests are shown to the left of the boring logs in Appendix A.

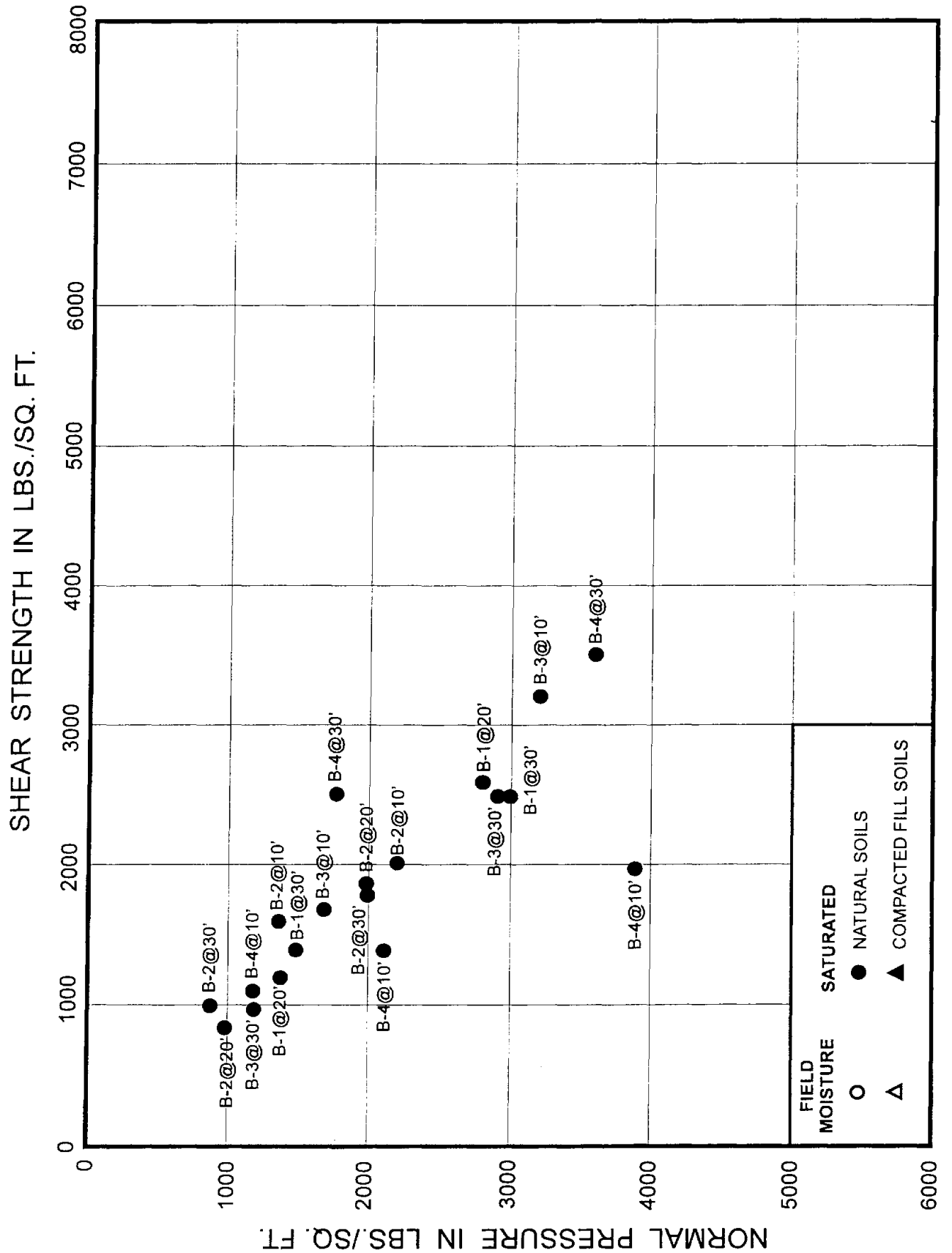
Direct shear tests were performed on selected undisturbed and remolded samples to determine the shear strength of the soils. Saugus Formation cross-bedding strengths are presented in Figure B-1.1. Terrace deposit cross-bedding strengths are presented on Figure B-1.2. The results of multi-shear direct shear tests to determine Saugus Formation along bedding strengths that present peak, ultimate, residual, and multi-shear residual. The remolded sample consisted of the upper soils prepared at a relative compaction of 90% of the maximum dry density obtainable using ASTM D1557. The tests on the samples from the current borings were performed after soaking the samples to near-saturated moisture content and at various surcharge pressures. The shear strength values determined from the direct shear tests as part of the current investigation are presented on Figures B-1.1 through B-1.4 Summary of Shear Test Data. Direct shear tests from our previous investigation of Planning Area 1 (RTF&A, 2001) and direct shear testing by AES are also presented in this Appendix.

Confined consolidation tests were performed on undisturbed samples from the previous investigations. Water was added during the tests to most of the undisturbed samples to illustrate the effect of moisture on the compressibility. The results of the tests are presented on Figures B-2.1 through B-2.3, Consolidation Test Data.

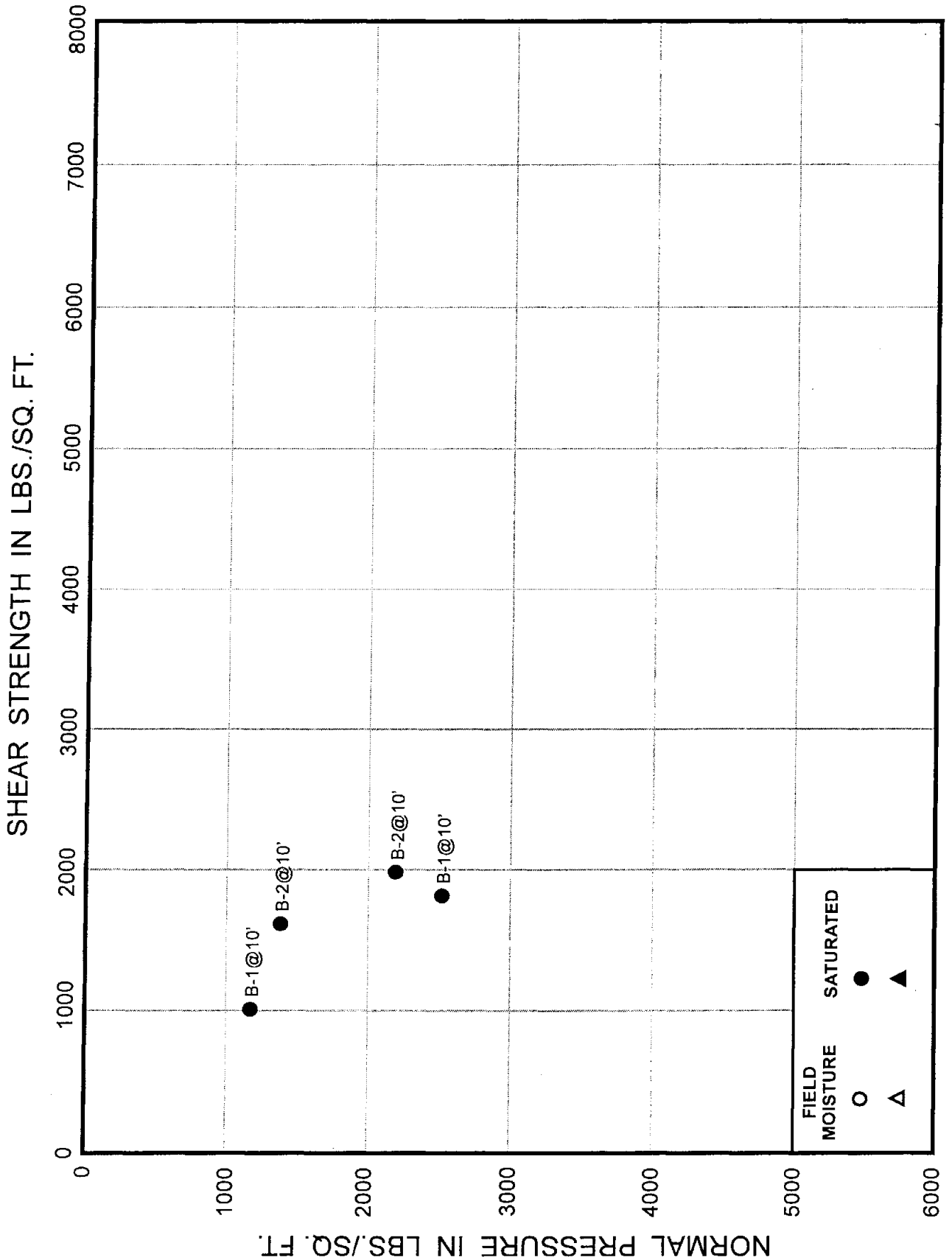
Sieve analysis tests to determine grain size distribution were performed on several samples obtained from the previous investigation (RTF&A, 2001). The results of the sieve analysis and hydrometer tests are shown on the attached grain size distribution sheets.

Additional laboratory test results from the previous feasibility evaluation (AES, 2000) are also presented in this appendix. These tests consist of hydroconsolidation tests, particle size distribution, Atterburg limits, consolidation tests, and direct shear tests.

SUMMARY OF SHEAR TEST DATA



SUMMARY OF SHEAR TEST DATA



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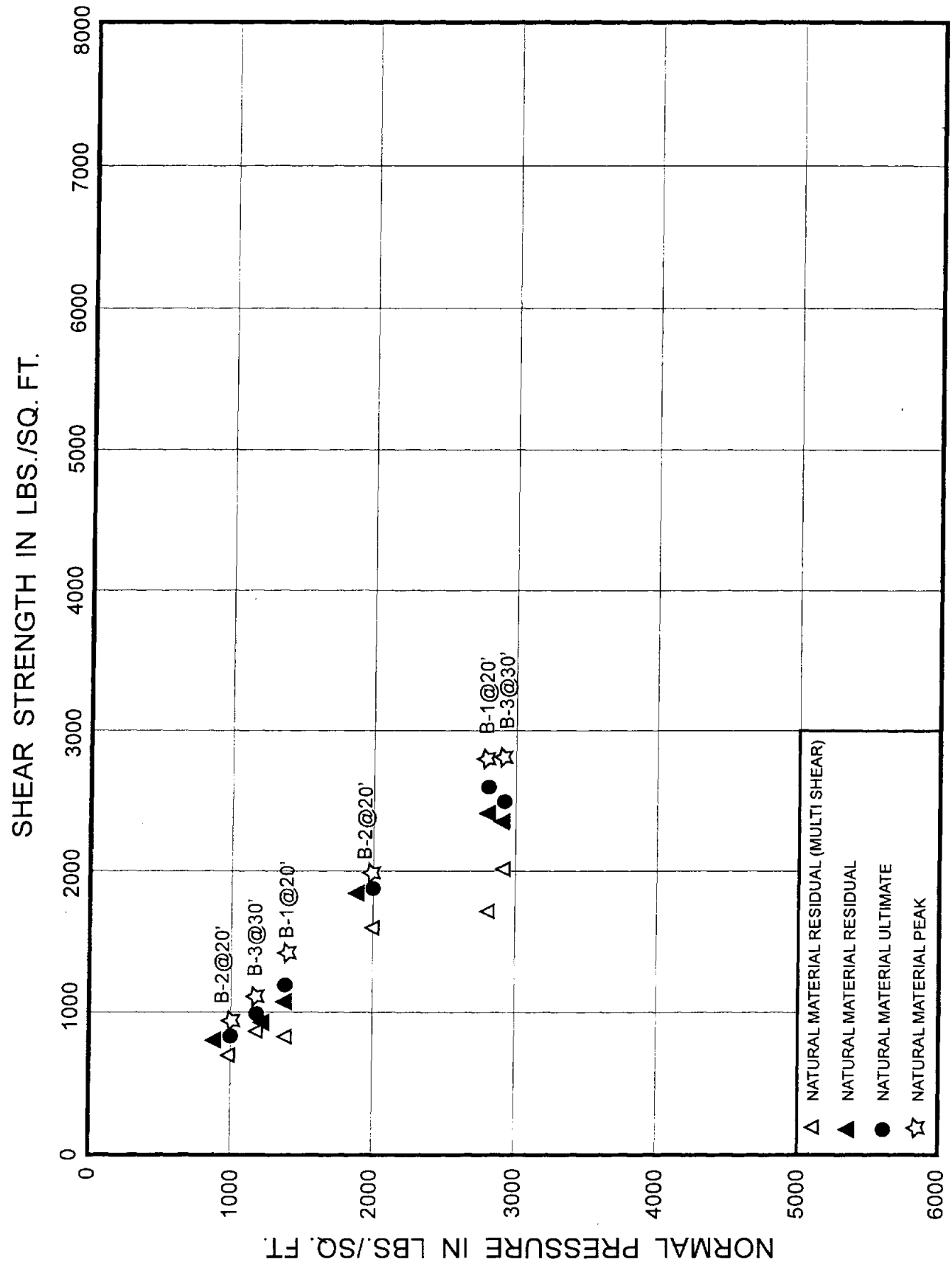
2004-700-21 REPORT DATED 3-18-05

FIGURE B-1.2

SUMMARY OF SHEAR TEST DATA



SUMMARY OF SHEAR TEST DATA

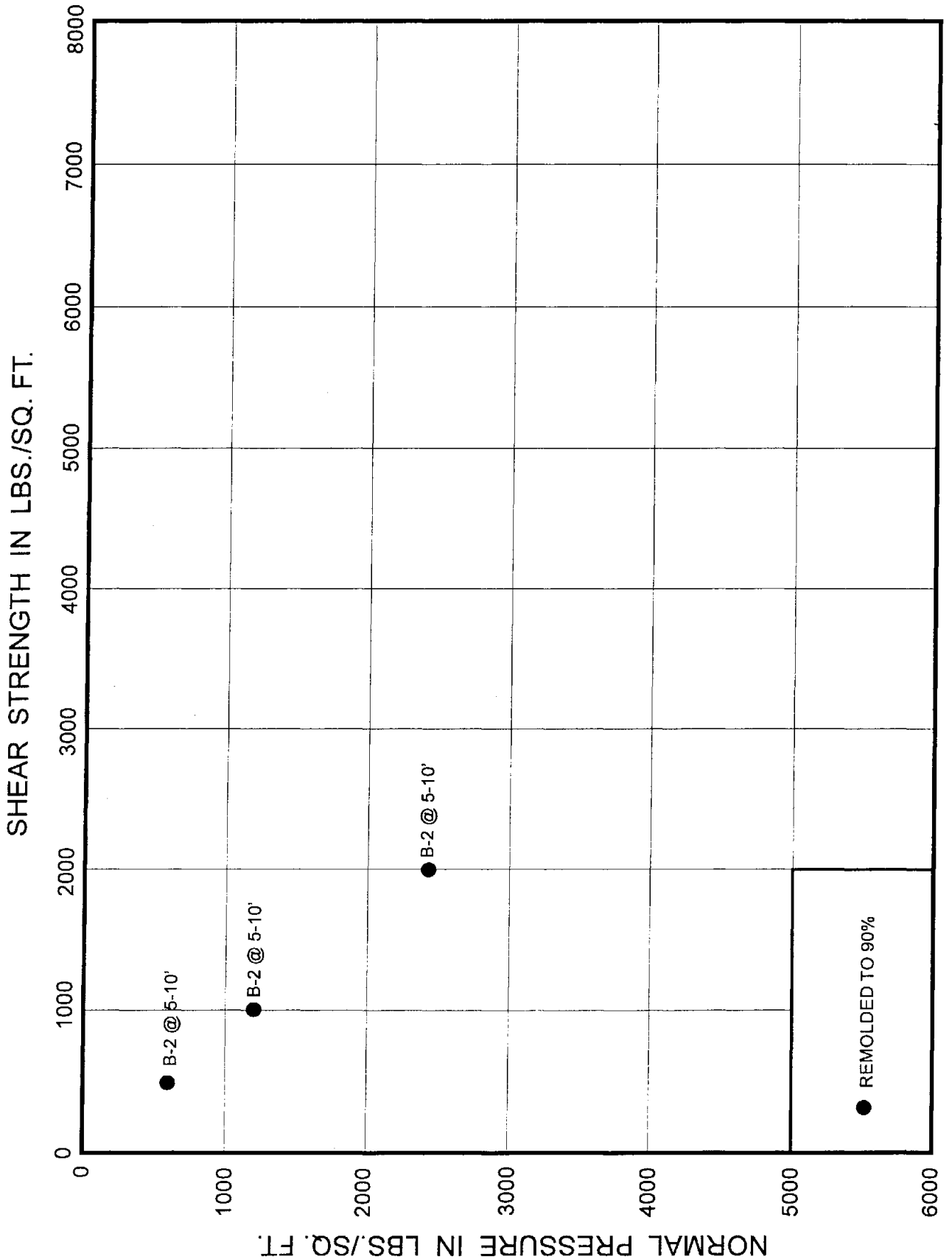


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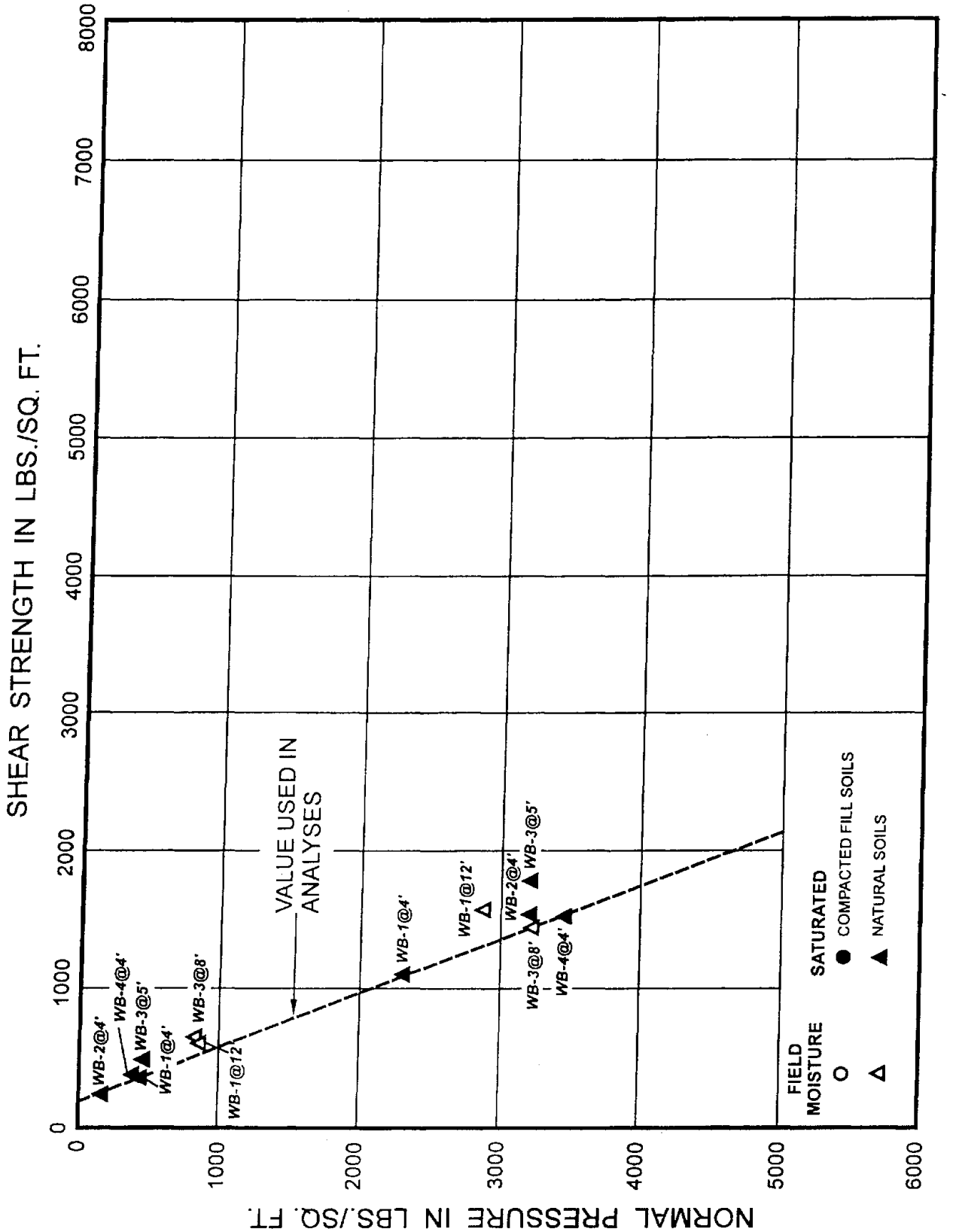
FIGURE B-1.4

JOB NO. 96-115-S DATE

SUMMARY OF SHEAR TEST DATA



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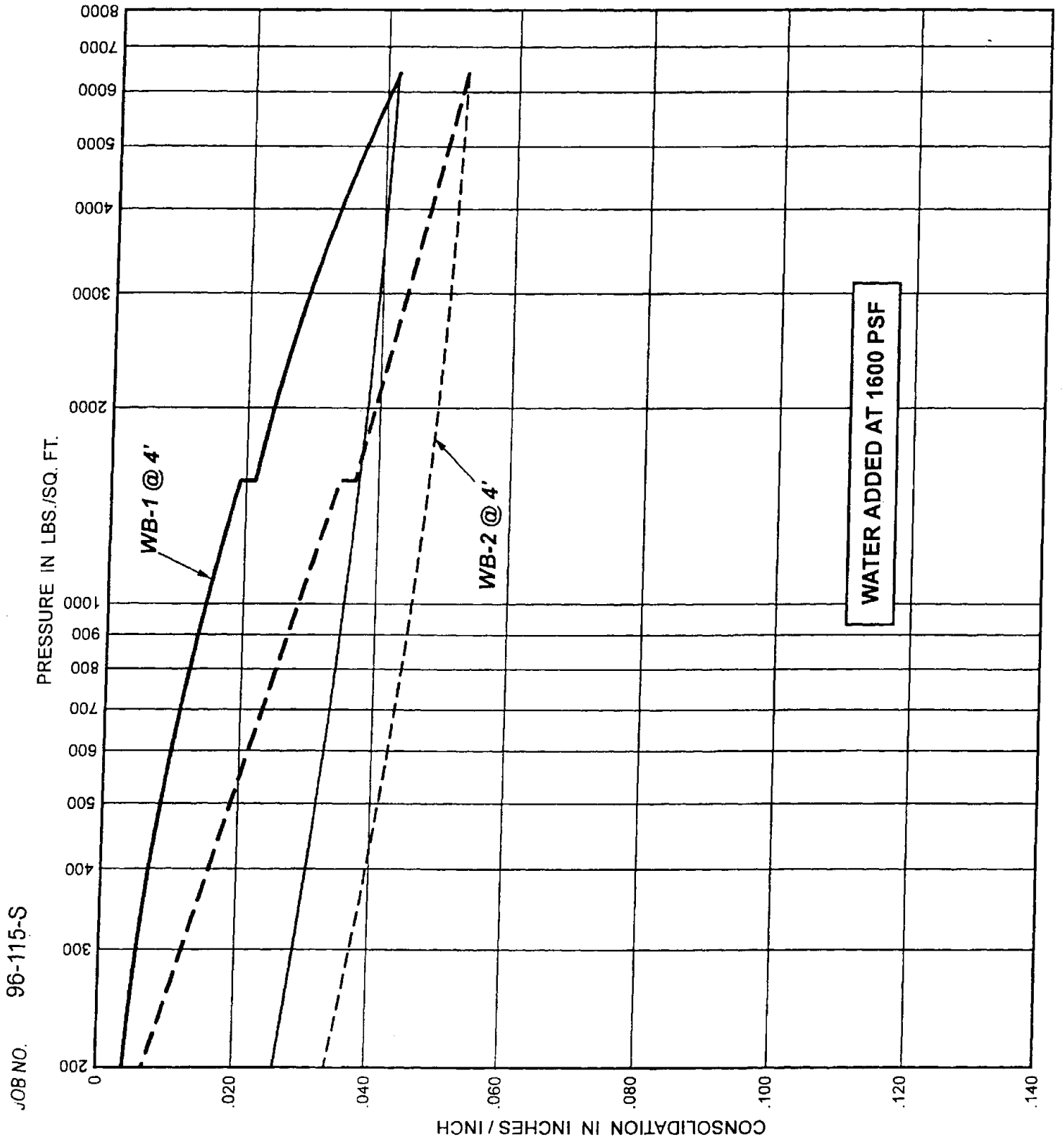
96-115-S REPORT DATED 12-3-01
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

FIGURE B-1

CONSOLIDATION TEST DATA

From 96-115-S REPORT DATED 3-23-98



JOB NO. 96-115-S

96-115-S REPORT DATED 12-3-01

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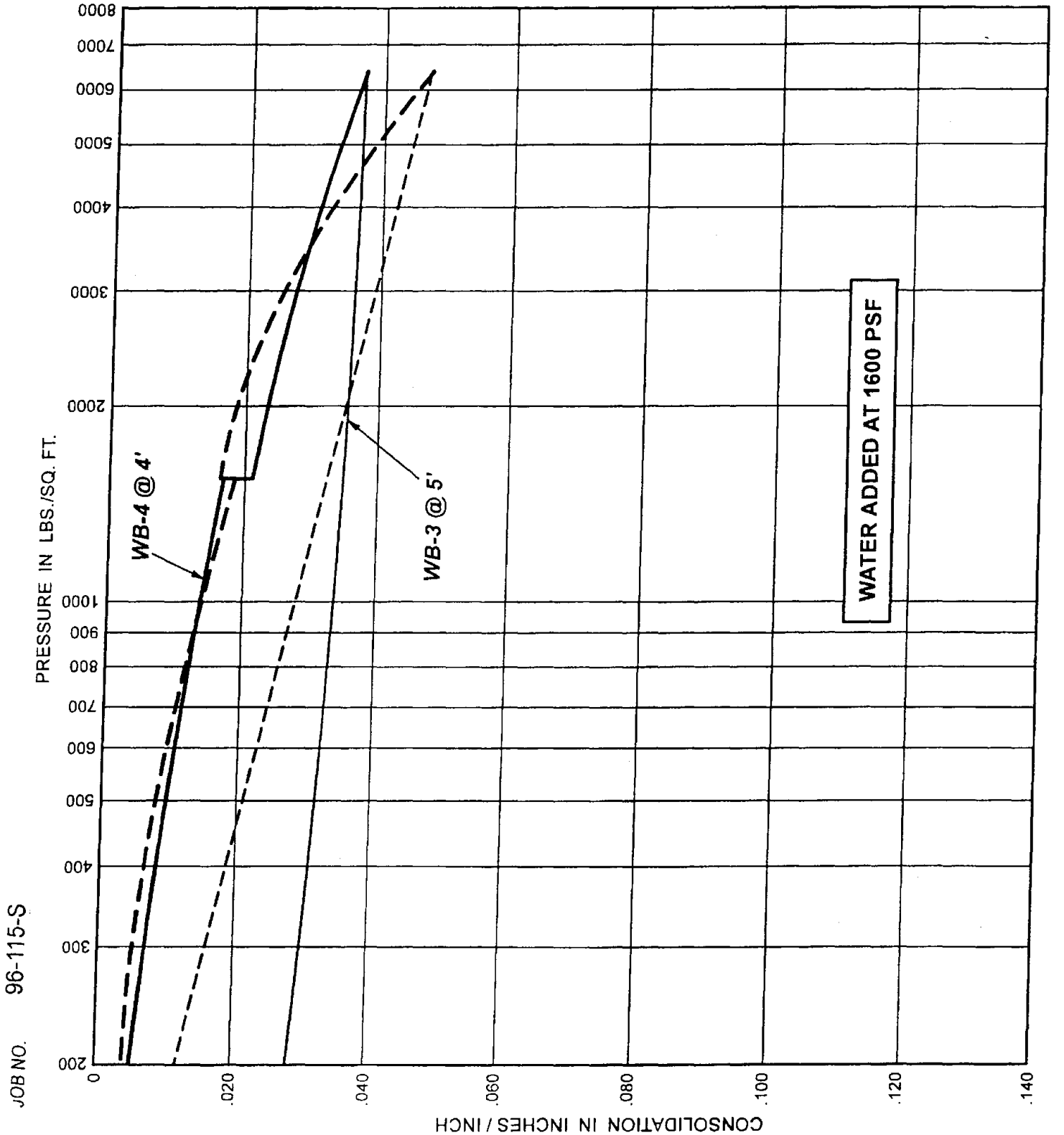
FIGURE B-2.1

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

CONSOLIDATION TEST DATA

From 96-115-S REPORT DATED 3-23-98



JOB NO. 96-115-S

96-115-S REPORT DATED 12-3-01

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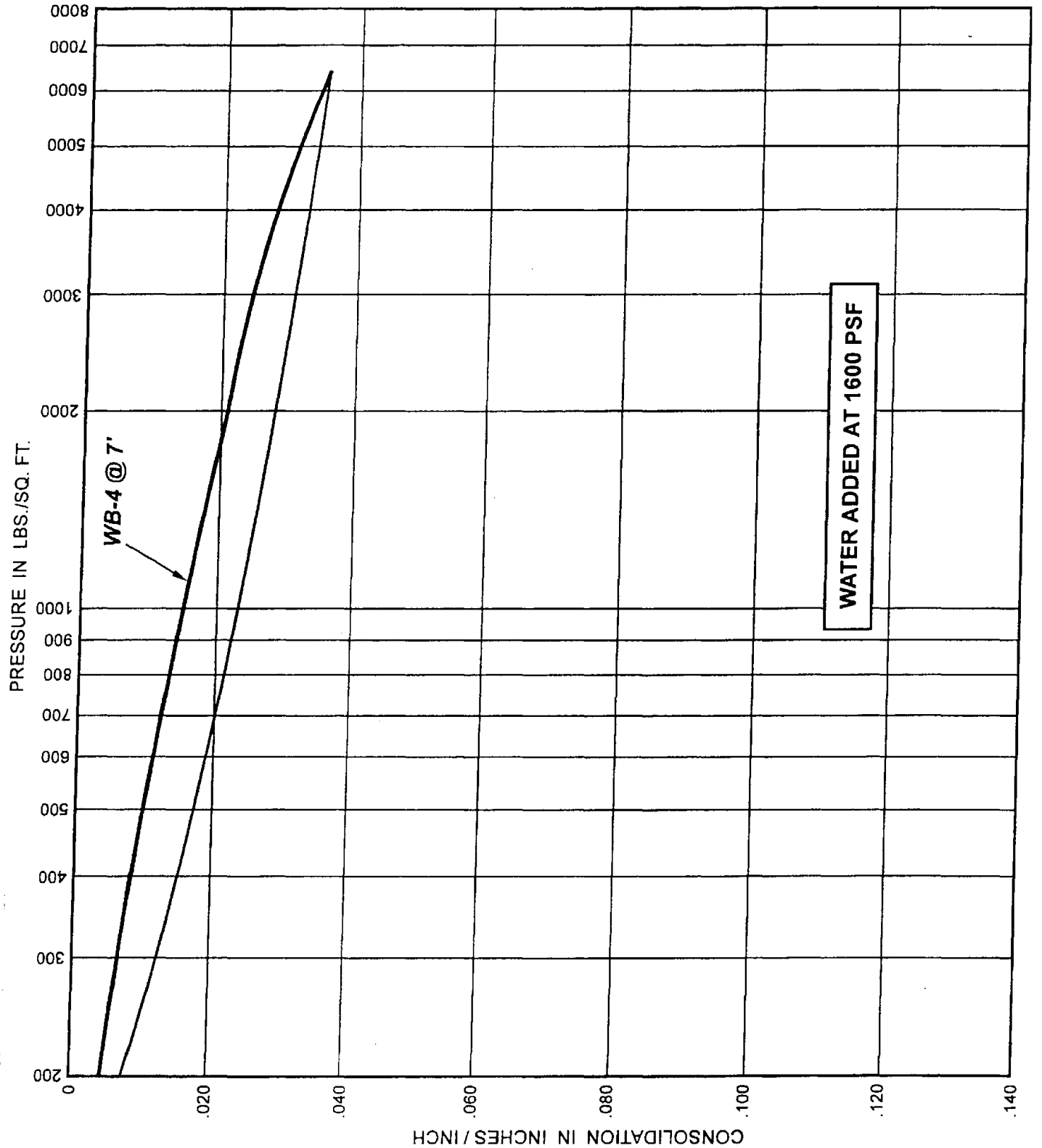
FIGURE B-2.2

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

CONSOLIDATION TEST DATA

From 96-115-S REPORT DATED 3-23-98



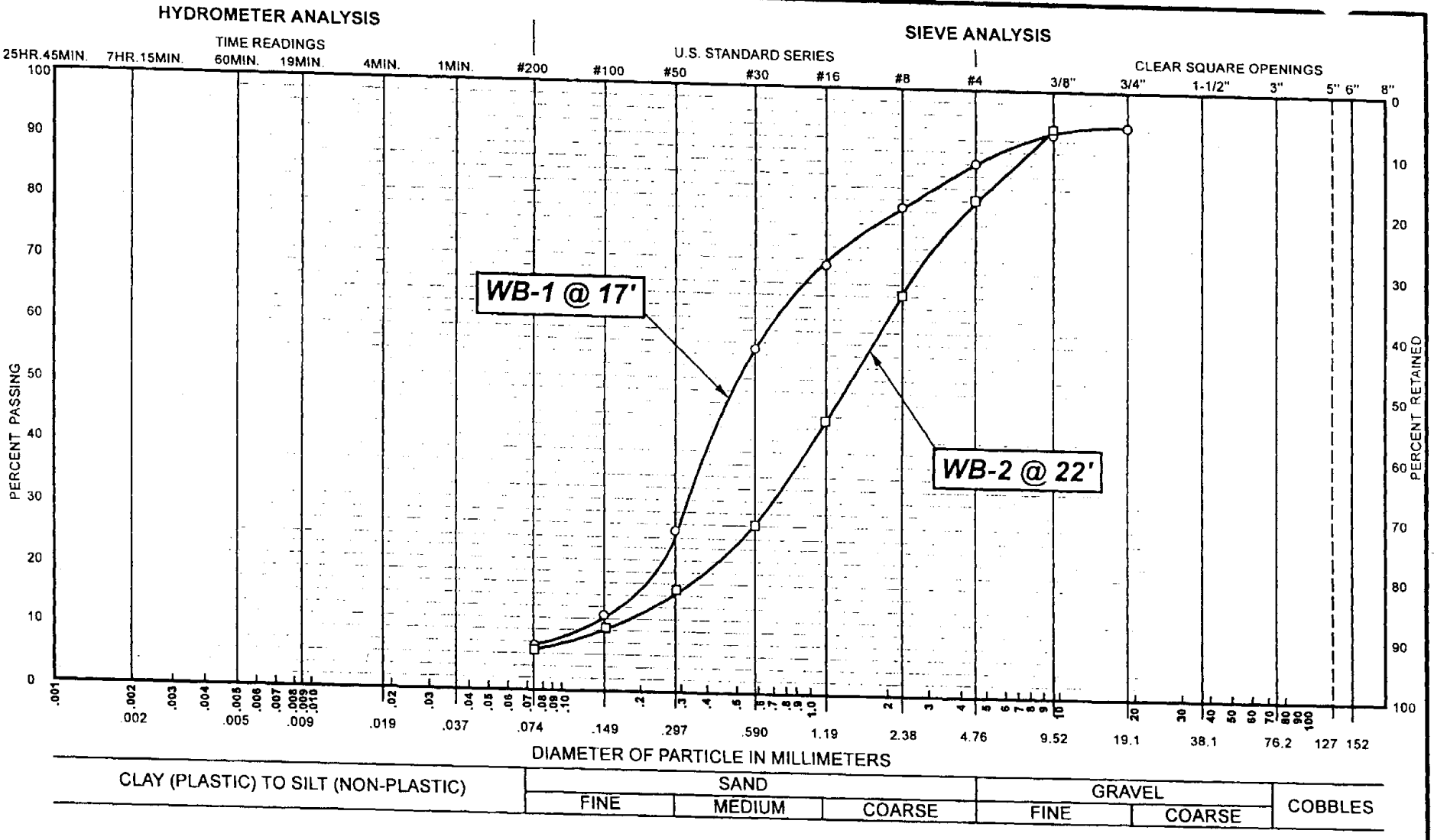
JOB NO. 96-115-S

R.T. FRANKIAN & ASSOCIATES

FIGURE B-2.3

96-115-S REPORT DATED 12-3-01

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

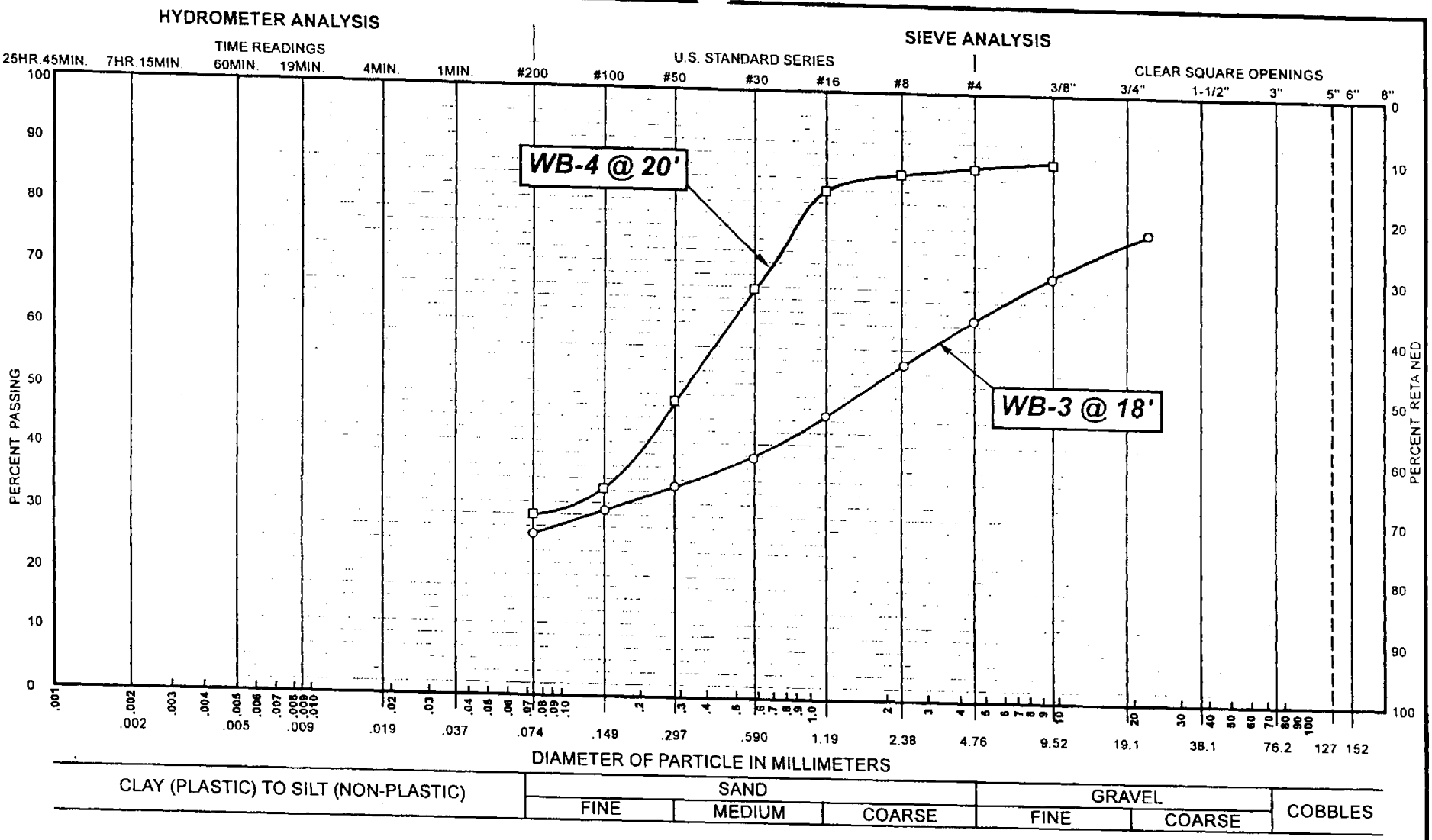


GRADATION TEST DATA

From 96-115-S REPORT DATED 3-23-98

FIGURE B-3.1

96-115-S REPORT DATED 12-3-01
For use with report dated 03/18/2005. RTF Job No. 2004-700-21



GRADATION TEST DATA

From 96-115-S REPORT DATED 3-23-98

FIGURE B-3.2

GEOTECHNICAL LABORATORY INVESTIGATION

1. General

   a. The purpose of the laboratory investigation was to evaluate the geotechnical engineering characteristics of the various materials encountered during the field investigation. The investigation program was carried out employing, wherever practical, currently accepted test procedures of the American Society of Testing and Materials (ASTM) and California Test Standards.

   b. Relatively undisturbed ring samples and bag samples were obtained during the course of the field investigation. Laboratory sample identification is by project name and number, drill hole number or trench number and depth.

   c. Geotechnical laboratory testing is classified in two major subgroups:
      - Index Properties Tests, and
      - Geotechnical Engineering Properties Tests

2. Index Properties Tests

The following Index Properties test were performed on native soils collected during the field exploration.

Test Type	No. of Tests Performed	Testing Standard
Moisture Content & Unit Weight	85	ASTM D 2216 (Water Content)
Percent-Finer Than # 200	17	ASTM D 1140
Particle-size Analysis	18	ASTM D 422 and D 1140
Atterberg Limits	12	ASTM D 4318

The purpose of each test is briefly described below.

a. The natural water content and in-situ unit dry weight of soils provided an indication of the strength of natural soils before additional testing was performed. These data, in conjunction with field blow count data, served in the selection of samples for additional testing. Test results are presented on the Drill Hole Logs and Trench Logs within **Appendix A**.

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b. Minus No. 200 wash-sieve analyses were performed on some samples to evaluate only the percentage of fine particles smaller than 75 microns within the soil. These tests were conducted to aid in classifying the soils in accordance with the Unified Soil Classification System (USCS). Test results are presented on the Drill Hole Logs and Trench Logs within **Appendix A.**

c. Complete mechanical particle-size analyses of soil fractions larger and smaller than 75 microns (No. 200 sieve) were conducted to aid in classifying the soils in accordance with the Unified Soil Classification System (USCS). Test results are presented on **Figures B1.1 through B1.4** within this **Appendix.**

d. Liquid and plastic limit tests (Atterberg limits) were conducted on selected samples to aid in classifying the soils in accordance with USCS (by evaluating soil plasticity). Test results are presented on **Figures B2.1 through B2.4** within this **Appendix.**

3. Geotechnical Engineering Properties Tests

The following Geotechnical Engineering Property Tests were performed on relatively undisturbed ring samples collected at this site.

Test Type	Test No.	Testing Standard
Consolidation	11	ASTM D 2435
Direct Shear	2	ASTM D 3080

The purpose of each test is briefly described below.

a. One-dimensional consolidation tests were performed on selected ring samples to assess the soils compressibility characteristics by subjecting the specimens to loads ranging from 150 psf to 16,000 psf, and with the addition of water at loads near the overburden pressure. Test results are plotted on **Figures B3.1 through B3.11** within this **Appendix.**

b. Direct shear tests were performed on relatively undisturbed test specimens using a displacement-controlled direct shear machine. Samples were tested at normal pressures ranging from approximately 2.0 ksf to 5.0 ksf in order to define both the

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peak and residual shear strength parameters. The samples were consolidated under the normal load at saturated conditions and then sheared horizontally at a controlled displacement rate until a residual strength was attained. Tests results are plotted on **Figures B4.1 and B4.2** within this **Appendix.**

The following attachments completed this Appendix

Laboratory Test Results

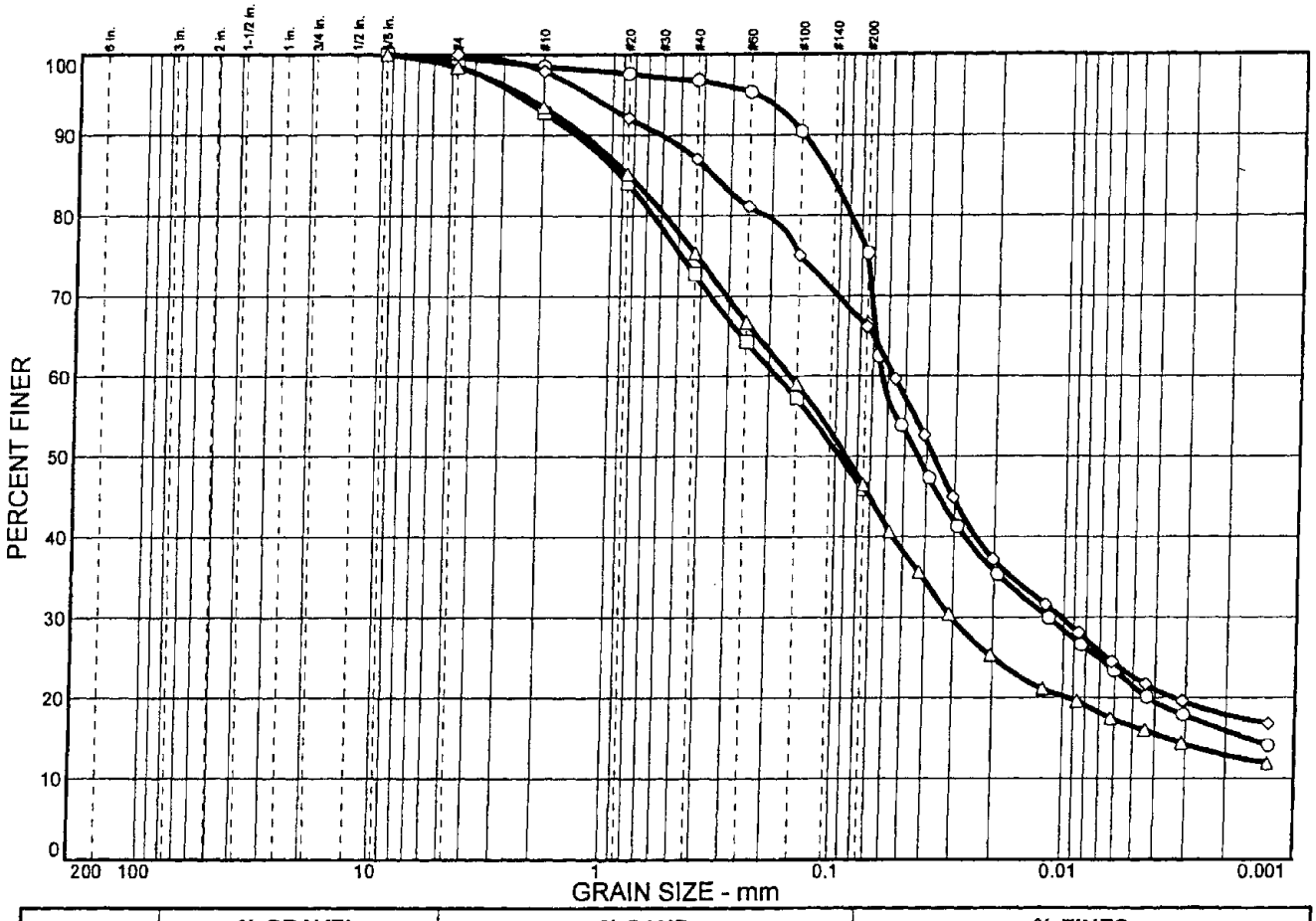
• Soil Collapse Potential of Shallow Soils to Receive Fill	Table B1
• Particle Size Distribution Test Report	Figures B1.1 through B1.4
• Liquid and Plastic Limits Test Report	Figures B2.1 through B2.4
• Consolidation Test Reports	Figures B3.1 through B3.11
• Direct Shear Test Results	Figures B4.1 and B1.2

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

SOIL COLLAPSE POTENTIAL OF SHALLOW SOILS TO RECEIVE FILL

Location	Depth (ft.)	% Hydroconsolidation	Hydroconsolidation Classification (RTF - County)
HS-1	2'	- (expansion)	-
HS-2	5'	0.0	Low (<2%)
HS-3	5'	0.2	Low (<2%)
HS-5	5'	0.7	Low (<2%)
HS-6	5'	2.1	High (>2%)
HS-8	5'	2.9	High (>2%)
HS-10	2'	0.0	Low (<2%)
HS-12	5'	0.0	Low (<2%)
HS-13	3'	1.2	Low (<2%)
RW-2	11'	0.3	Low (<2%)
RW-3	5'	- (expansion)	-

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	0.0	0.4	1.1	1.7	21.4	54.0	21.4
□	0.0	0.0	1.4	5.8	20.0	26.9	45.9	
△	0.0	0.0	1.6	4.9	18.1	28.9	30.0	16.5
◇	0.0	0.0	0.0	2.1	10.9	20.8	43.6	22.6

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	USCS
○	RW-1	1	2'	Lean clay with sand	CL
□	RW-1	3	18'	Silty sand	SC
△	RW-2	1	2'	Clayey sand	SC
◇	RW-2	3	11'	Sandy lean clay	CL

PARTICLE SIZE DISTRIBUTION TEST REPORT

ALLAN E. SEWARD

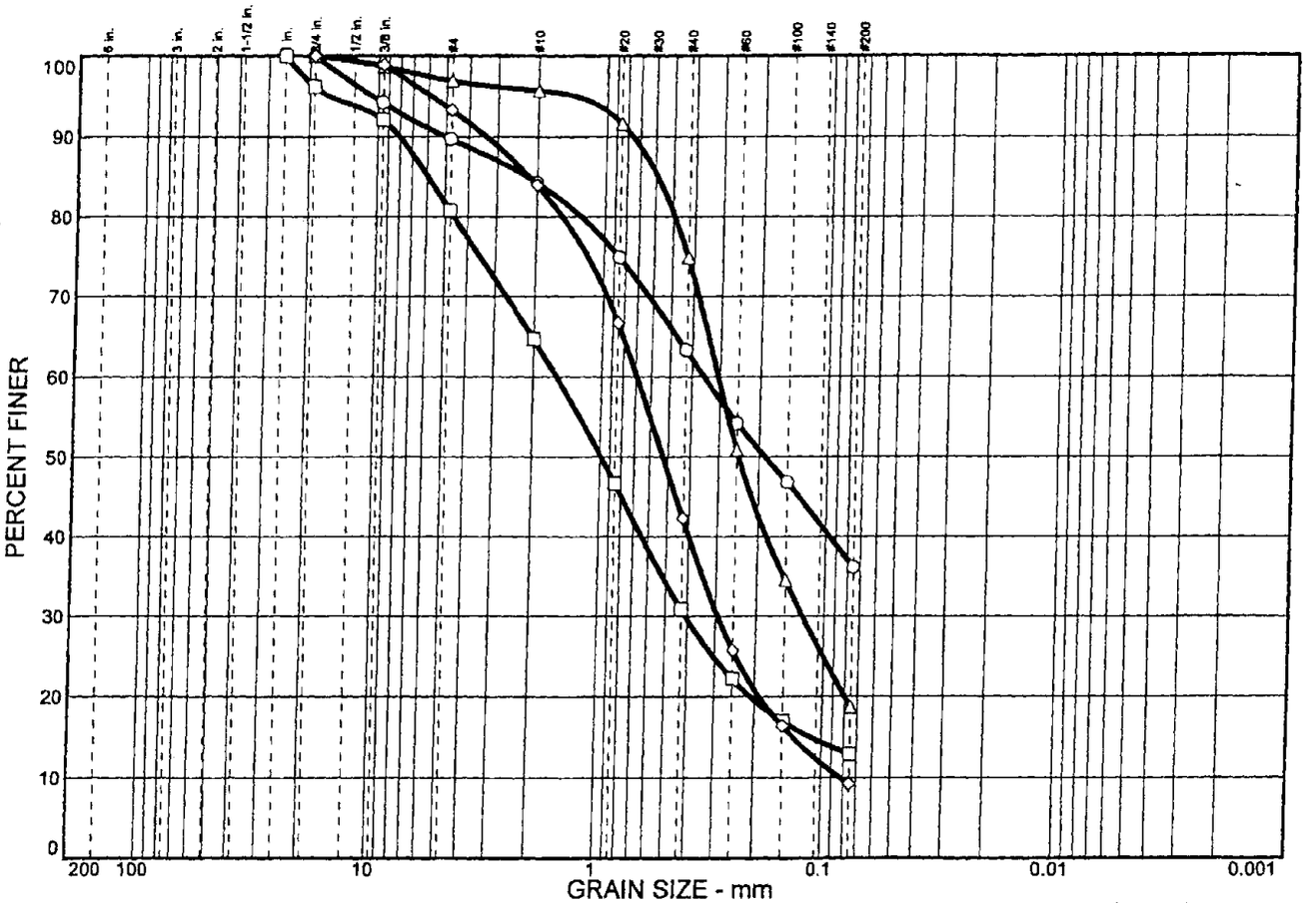
ENGINEERING GEOLOGY, INC.

Client: Valencia Company

Project: Magic Mountain Entertainment

Project No.: 00-1729-1 **Figure** B1.1

PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	0.0	10.3	5.4	21.0	27.2	36.1	
□	0.0	3.8	15.4	16.1	33.8	18.0	12.9	
△	0.0	0.0	3.1	1.2	20.8	56.2	18.7	
◇	0.0	0.0	6.7	9.3	41.7	33.1	9.2	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	USCS
○	HS-2	3	15'	Silty sand	SM
□	HS-3	2	25'	Silty sand with gravel	SM
△	HS-4	1	11'	Silty sand	SM
◇	HS-6	2	15'	Well-graded sand with silt	SW-SM

PARTICLE SIZE DISTRIBUTION TEST REPORT

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Project: Magic Mountain Entertainment

Project No.: 00-1729-1

Figure B1.2

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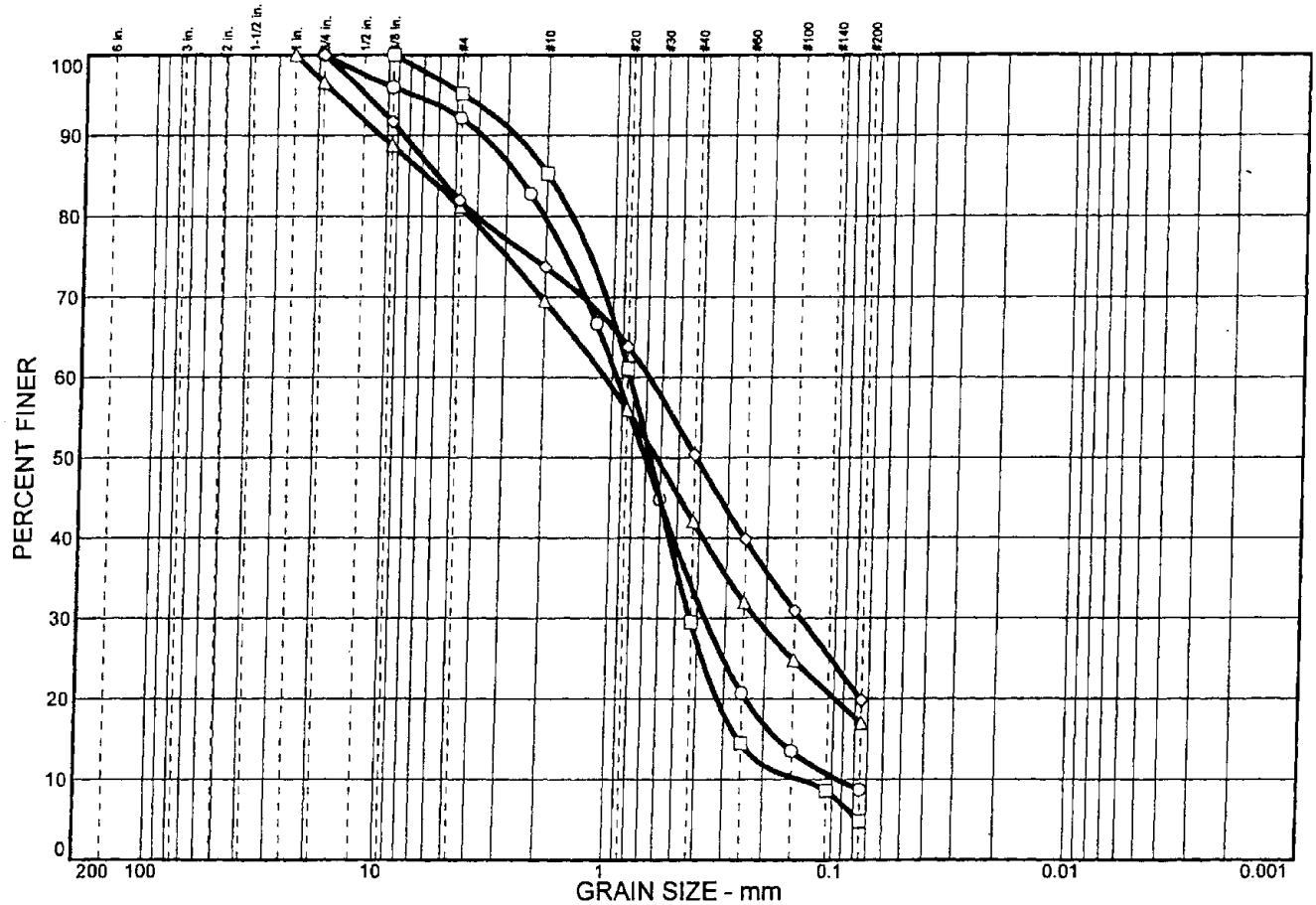
PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	0.0	7.9	12.5	45.7	25.2	8.7	
□	0.0	0.0	4.8	9.9	55.8	24.7	4.8	
△	0.0	3.4	15.4	11.7	27.4	25.1	17.0	
◇	0.0	0.0	18.0	8.3	23.3	30.6	19.8	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	USCS
○	HS-7	1	2'-3.5'	Well-graded sand with silt	SW-SM
□	HS-7	2	11'	Well-graded sand	SW
△	HS-8	3	20'	Silty sand with gravel	SM
◇	HS-10	2	11'	Silty sand with gravel	SM

PARTICLE SIZE DISTRIBUTION TEST REPORT

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Client: Valencia Company

Project: Magic Mountain Entertainment

Project No.: 00-1729-1 **Figure** B1.3

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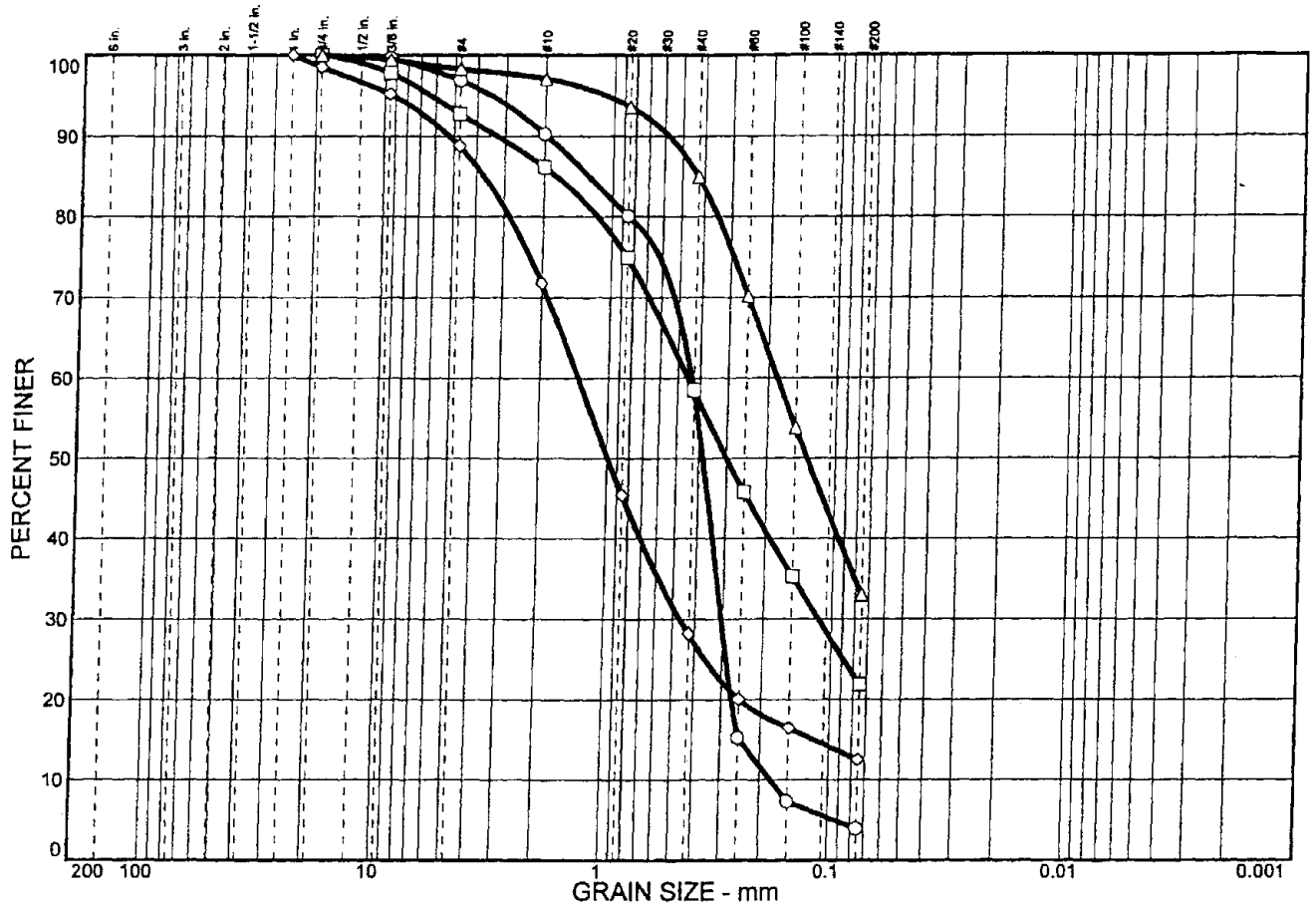
PARTICLE SIZE DISTRIBUTION TEST REPORT



	% COBBLES	% GRAVEL		% SAND			% FINES	
		CRS.	FINE	CRS.	MEDIUM	FINE	SILT	CLAY
○	0.0	0.0	3.1	6.6	31.9	54.5	3.9	
□	0.0	0.0	7.2	6.6	27.7	36.6	21.9	
△	0.0	0.0	1.7	1.2	12.1	52.0	33.0	
◇	0.0	1.5	9.7	17.0	43.6	15.7	12.5	

SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	USCS
○	HS-11	1	2'-3.5'	Poorly graded sand	SP
□	HS-11	2	9'	Silty sand	SM
△	HS-11	3	20'	Silty sand	SM
◇	HS-13	1	3'	Silty sand	SM

PARTICLE SIZE DISTRIBUTION TEST REPORT

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Project: Magic Mountain Entertainment

Project No.: 00-1729-1 **Figure** B1.4

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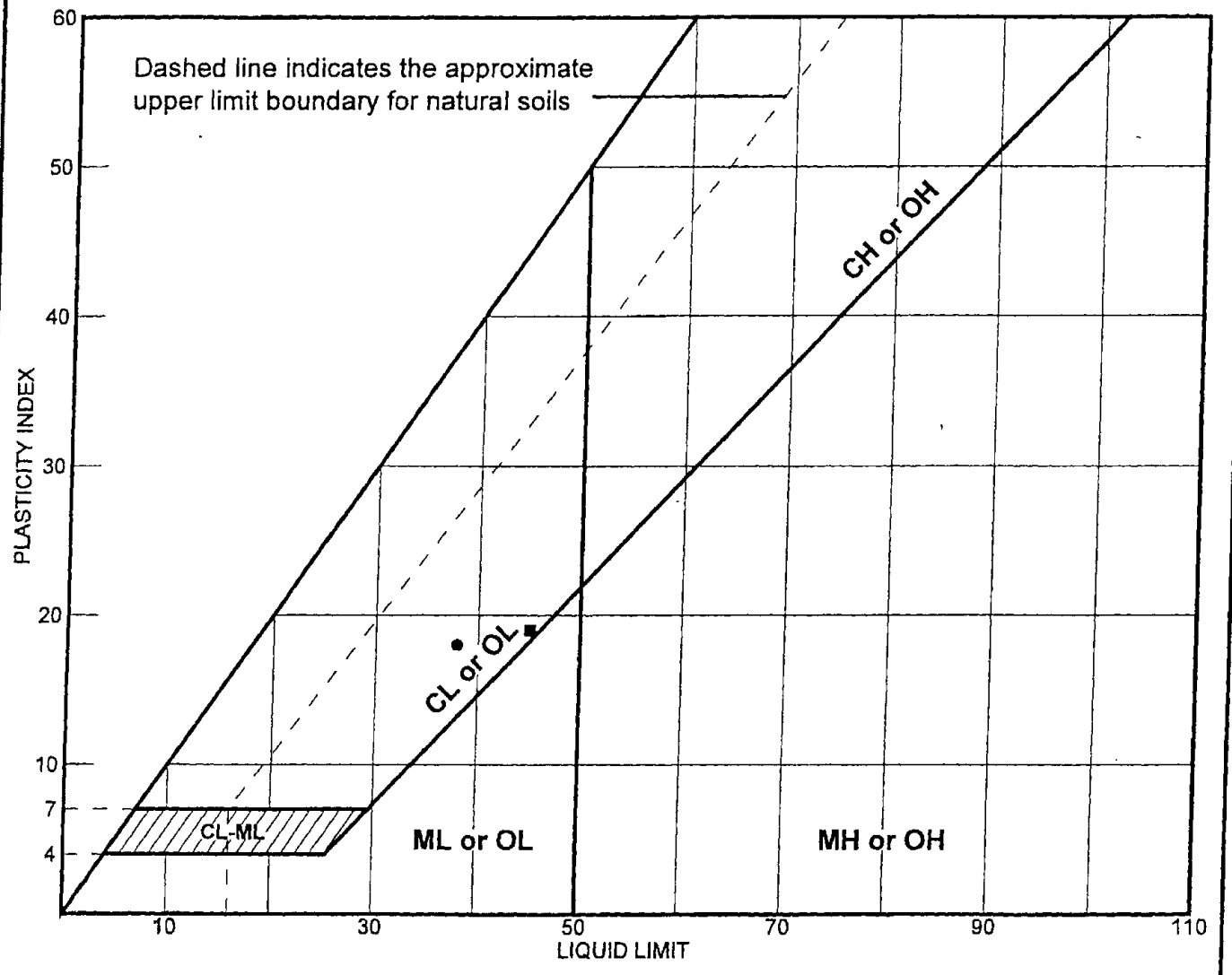
LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	RW-1	1	2'		20	38	18	CL
■	RW-1	2	8'		26	45	19	CL

LIQUID AND PLASTIC LIMITS TEST REPORT

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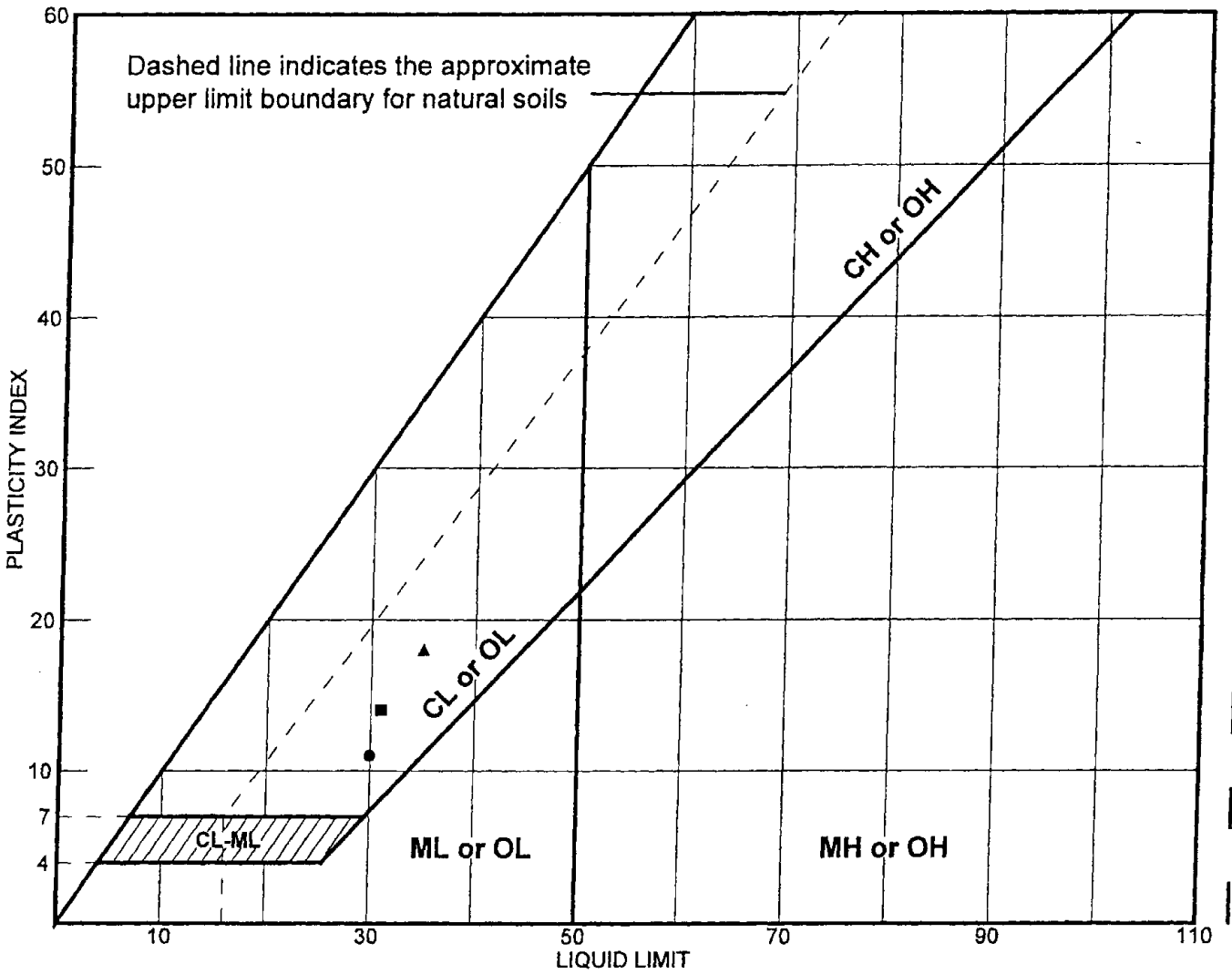
Project No.: 00-1729-1 **Figure** B2.1

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	RW-2	1	2'		19	30	11	SC
■	RW-2	2	8'		17	31	14	SC
▲	RW-2	3	11'		17	35	18	CL

LIQUID AND PLASTIC LIMITS TEST REPORT

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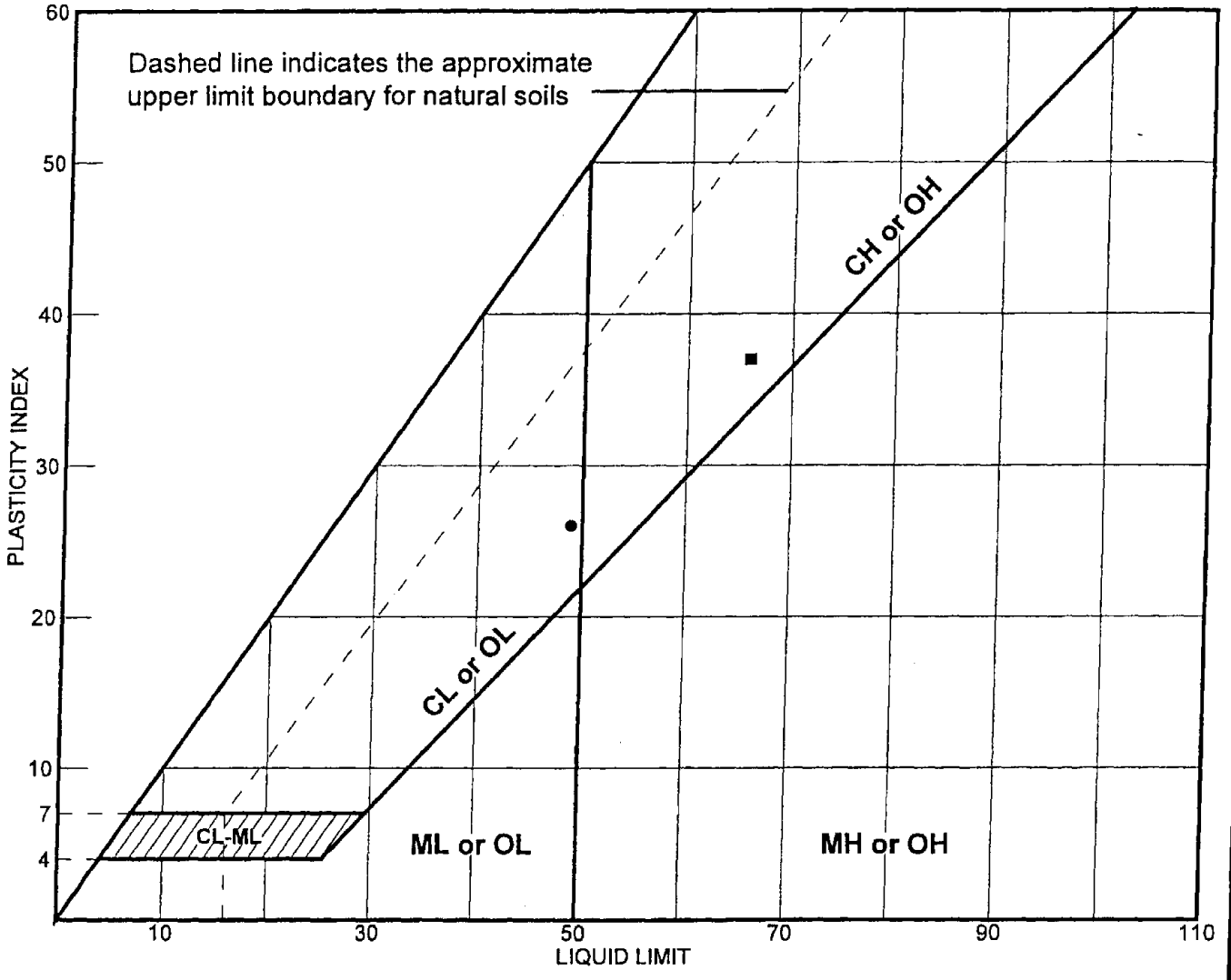
Project No.: 00-1729-1 **Figure** B2.2

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	RW-3	1	3'		23	49	26	CL
■	RW-3	4	15'		29	66	37	CH

LIQUID AND PLASTIC LIMITS TEST REPORT

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Project: Magic Mountain Entertainment

Project No.: 00-1729-1 **Figure** B2.3

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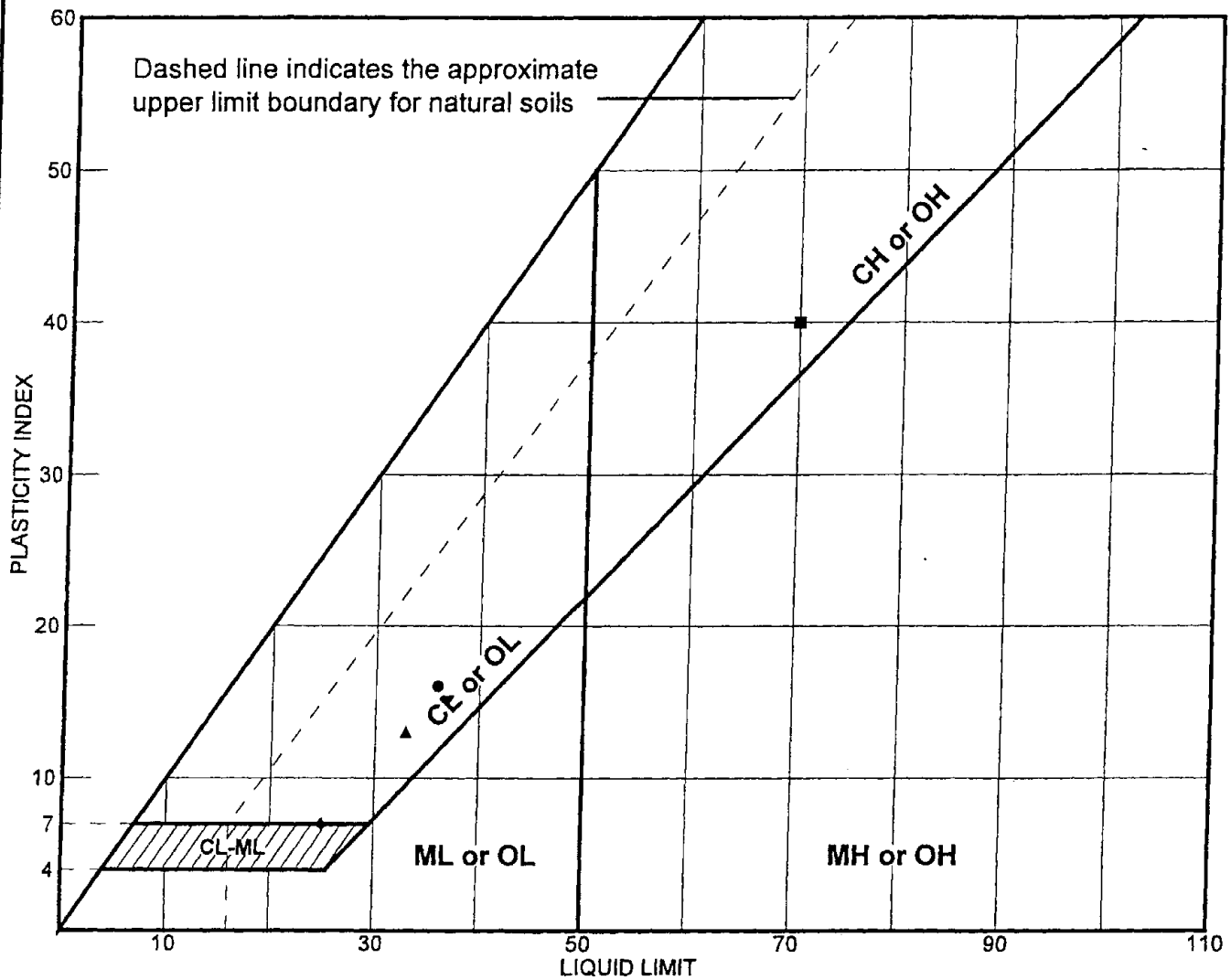
LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA								
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	HS-1	2	8'		20	36	16	CL
■	HS-1	4	20'		30	70	40	CH
▲	HS-2	2	8'		20	33	13	CL
◆	HS-8	2	15'		18	25	7	SC-SM
▼	HS-13	4	11'		22	37	15	CL

LIQUID AND PLASTIC LIMITS TEST REPORT

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Project: Magic Mountain Entertainment

Project No.: 00-1729-1 **Figure** B2.4

CONSOLIDATION TEST REPORT

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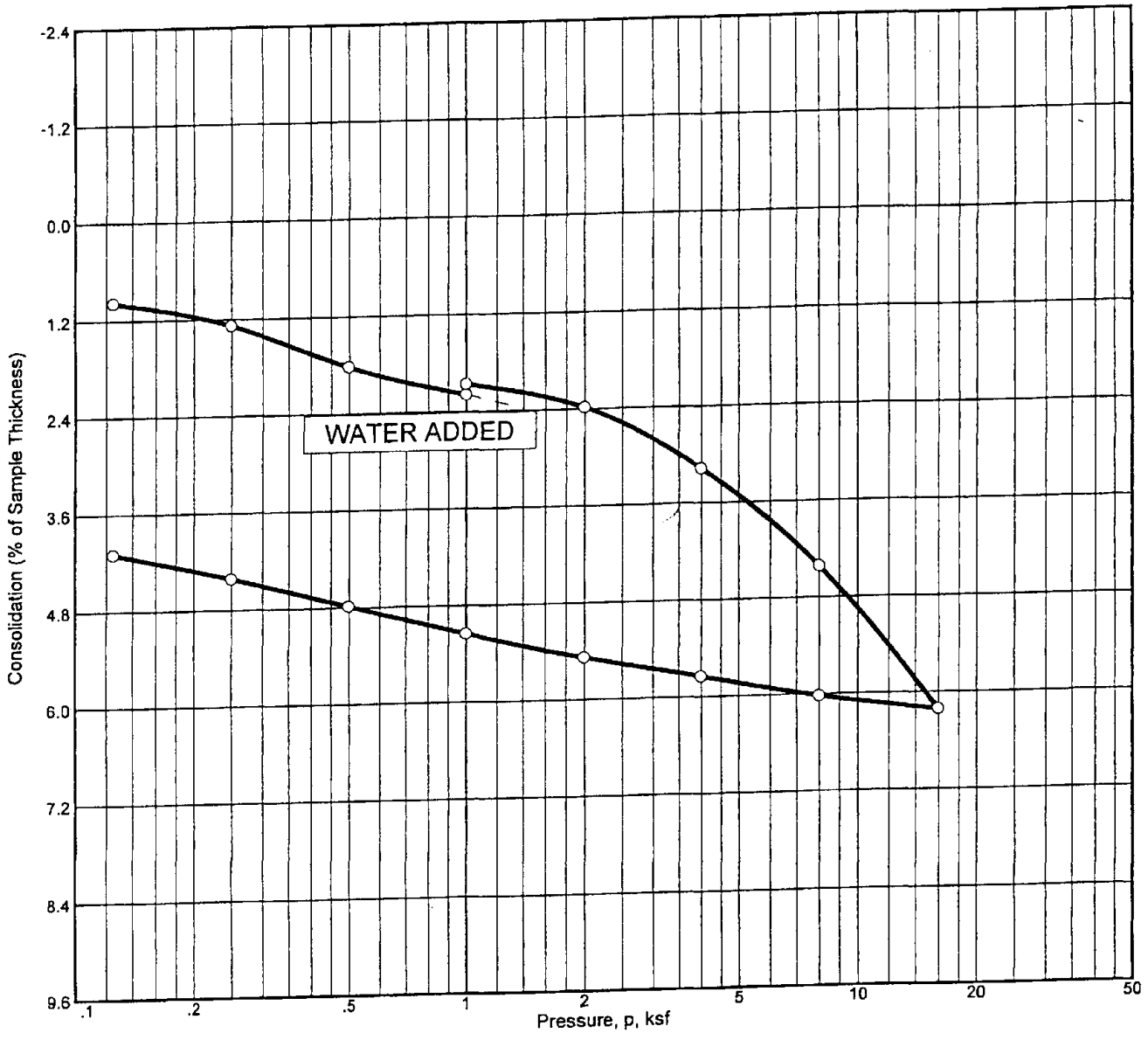

SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	119.8	13.0	90.2	1.000	0.381	2.65	0.08	0.24	4.23	SC
FINAL	124.9	12.7	100.0	0.959	0.325					

Source: HS-1 **Sample No.:** 1 **Elev./Depth:** 2'-3.5'
Material Description: Yellowish brown clayey sand
Remarks:

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Job No.: 00-1729-1 **Figure** B3.1

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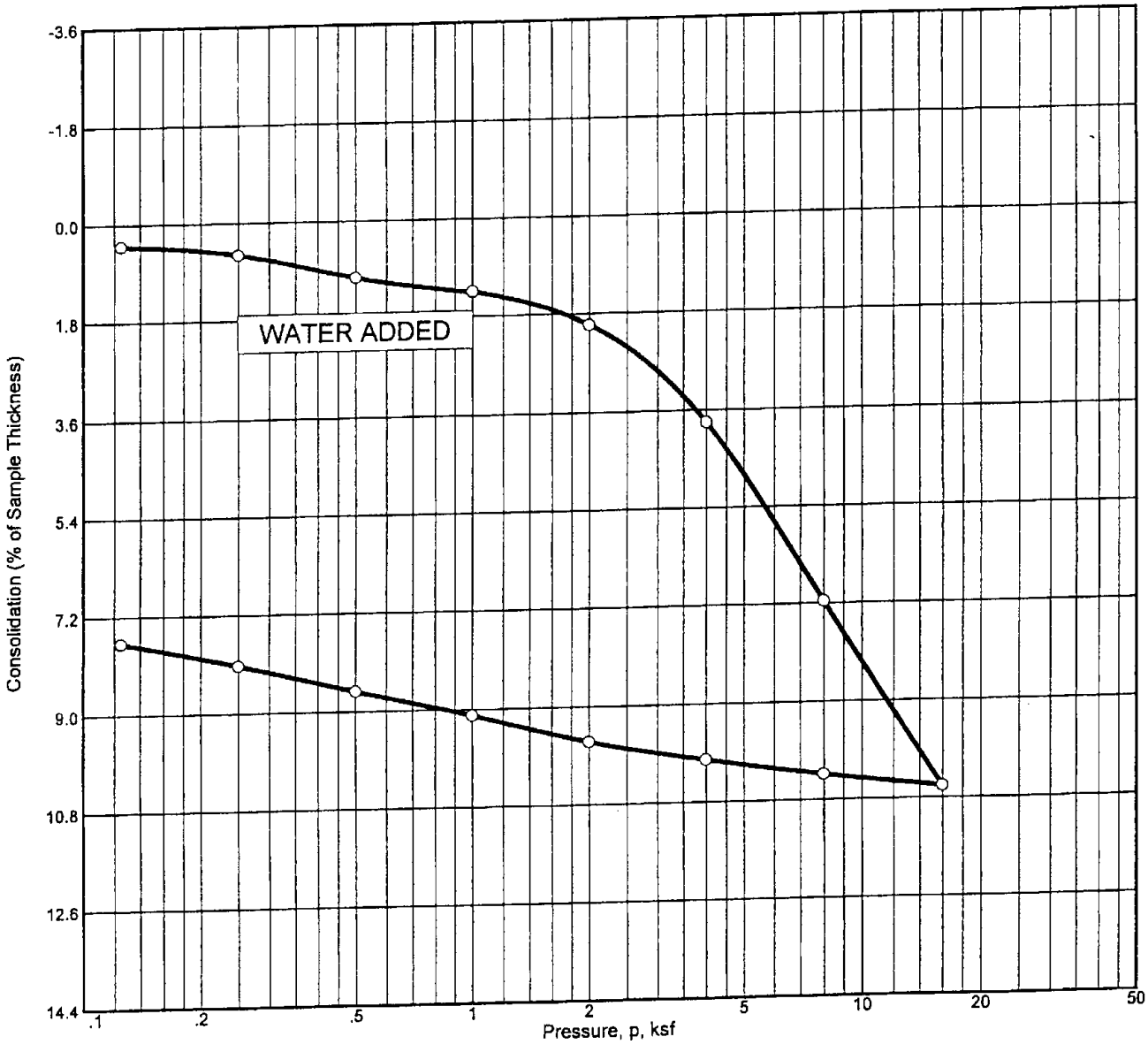
CONSOLIDATION TEST REPORT



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SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	117.6	15.1	98.2	1.000	0.407	2.65	0.16	0.60	3.21	CL
FINAL	127.4	12.7	100.0	0.923	0.299					

Source: HS-2 **Sample No.:** 1 **Elev./Depth:** 5'-6.5'
Material Description: Light brown sandy lean clay
Remarks:

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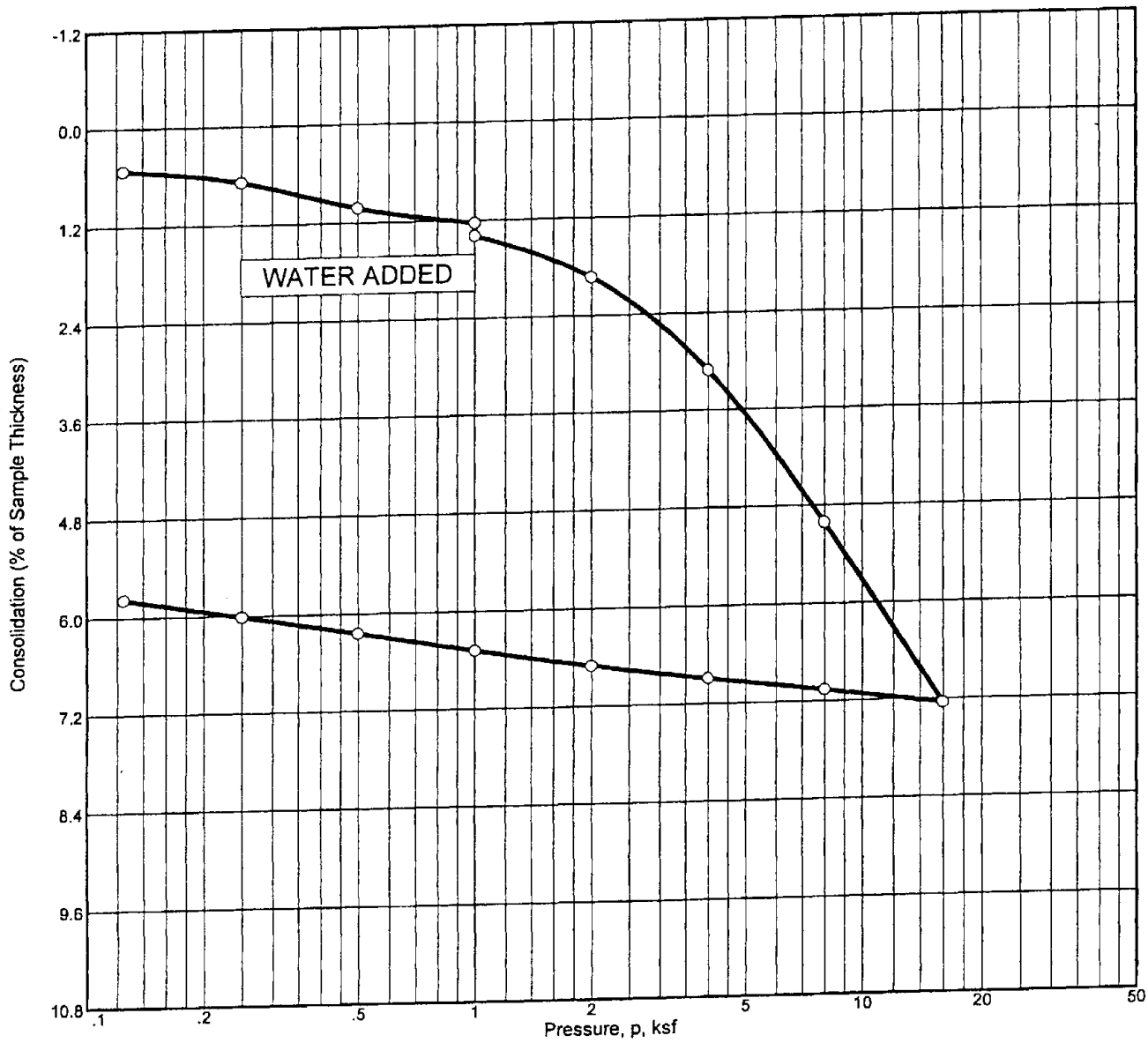
CONSOLIDATION TEST REPORT



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	95.0	26.8	95.7	1.000	0.742	2.65	0.13	0.60	3.44	SM
FINAL	100.8	25.5	100.0	0.942	0.641					

Source: HS-3 **Sample No.:** 1 **Elev./Depth:** 5'-6.5'
Material Description: Light yellowish brown silty sand
Remarks:

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Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.3

CONSOLIDATION TEST REPORT

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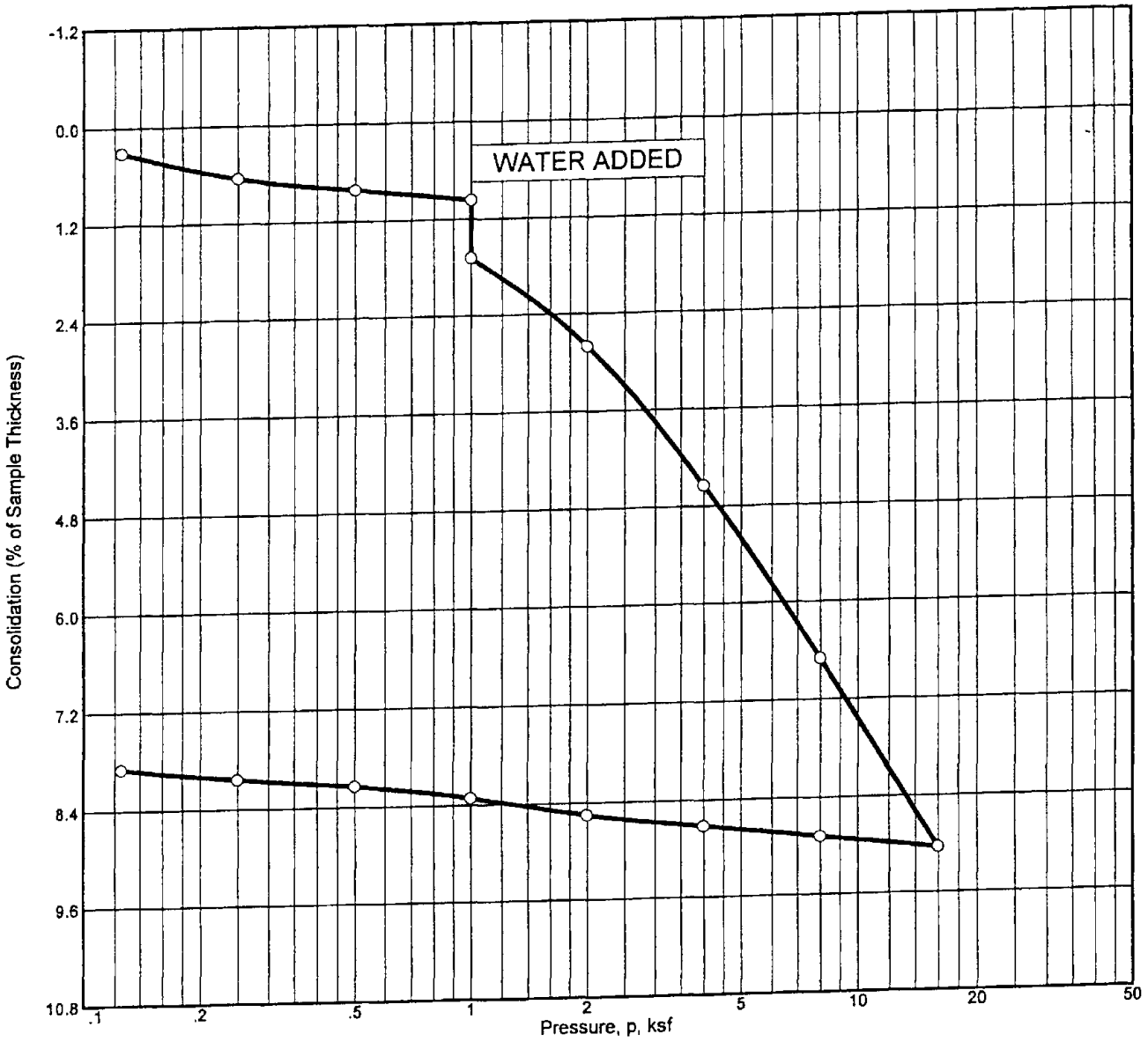

SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	95.0	27.3	97.3	1.000	0.742	2.65	0.14	0.60	2.81	SM
FINAL	103.1	23.5	100.0	0.921	0.605					

Source: HS-5 **Sample No.:** 1 **Elev./Depth:** 5'-6.5'
Material Description: Light brown silty sand
Remarks:

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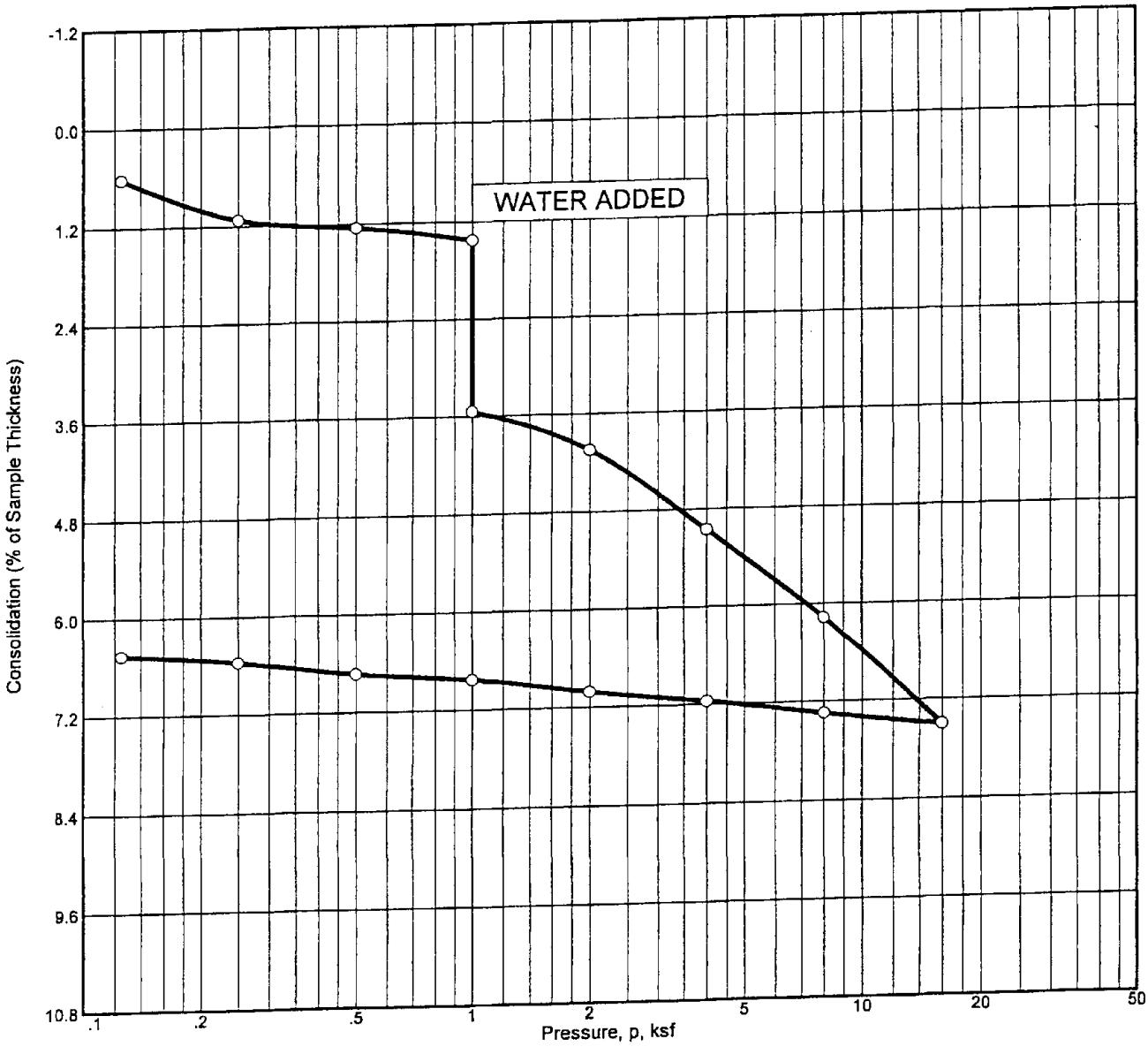
Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.4

CONSOLIDATION TEST REPORT



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SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	68.7	50.7	95.5	1.000	1.409	2.65	0.11	0.60	3.05	SM
FINAL	73.4	49.0	100.0	0.935	1.253					

Source: HS-6 **Sample No.:** 1 **Elev./Depth:** 5'-6.5'
Material Description: Light yellowish brown silty sand
Remarks:

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ENGINEERING GEOLOGY, INC.

Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.5

CONSOLIDATION TEST REPORT

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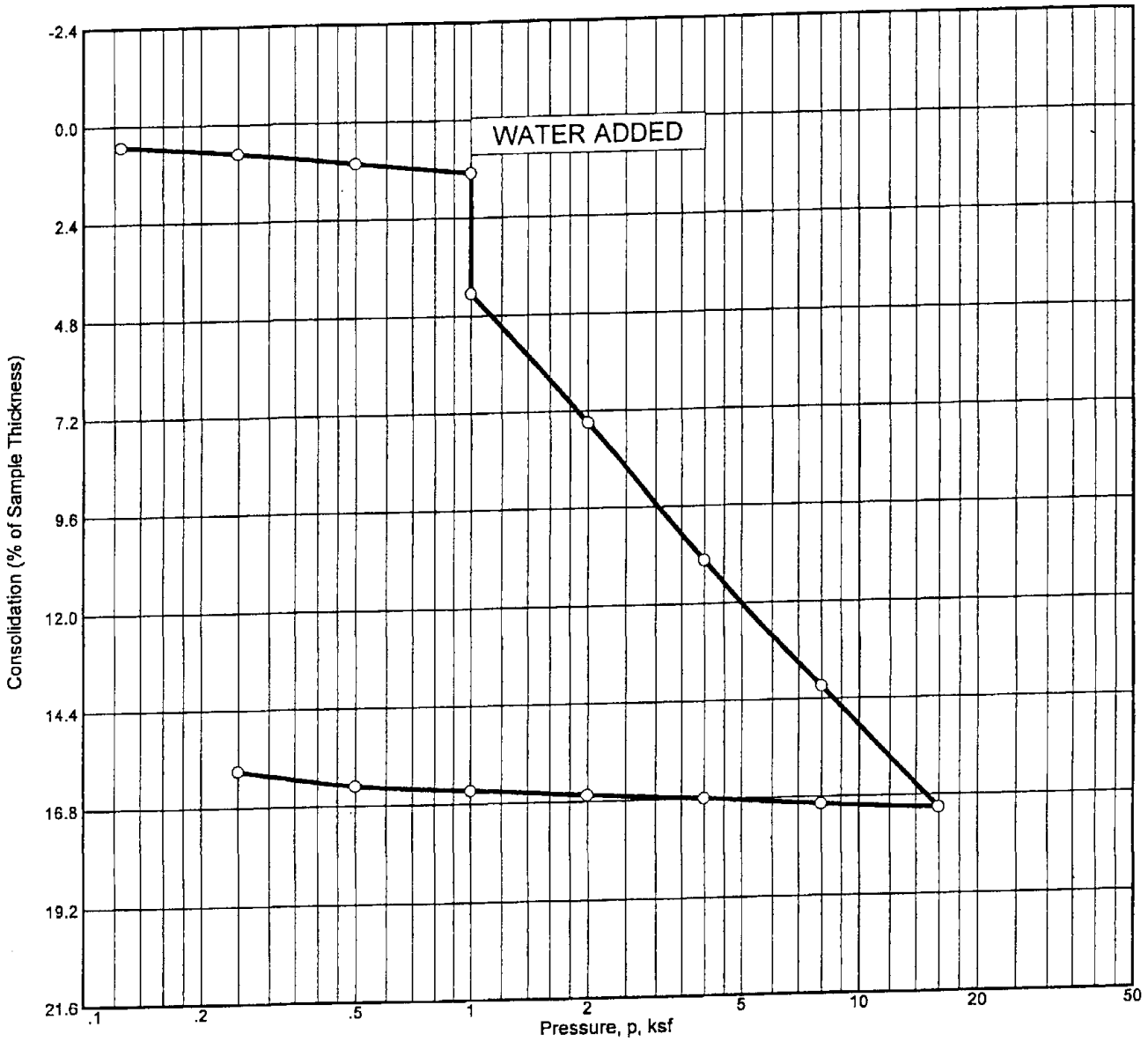

SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	73.0	46.3	96.8	1.000	1.267	2.65	0.23	0.60	3.78	SM
FINAL	86.8	35.2	100.0	0.841	0.906					

Source: HS-8 **Sample No.:** 1 **Elev./Depth:** 5'-6.5'
Material Description: Yellowish brown clayey/silty sand
Remarks:

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Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.6

CONSOLIDATION TEST REPORT

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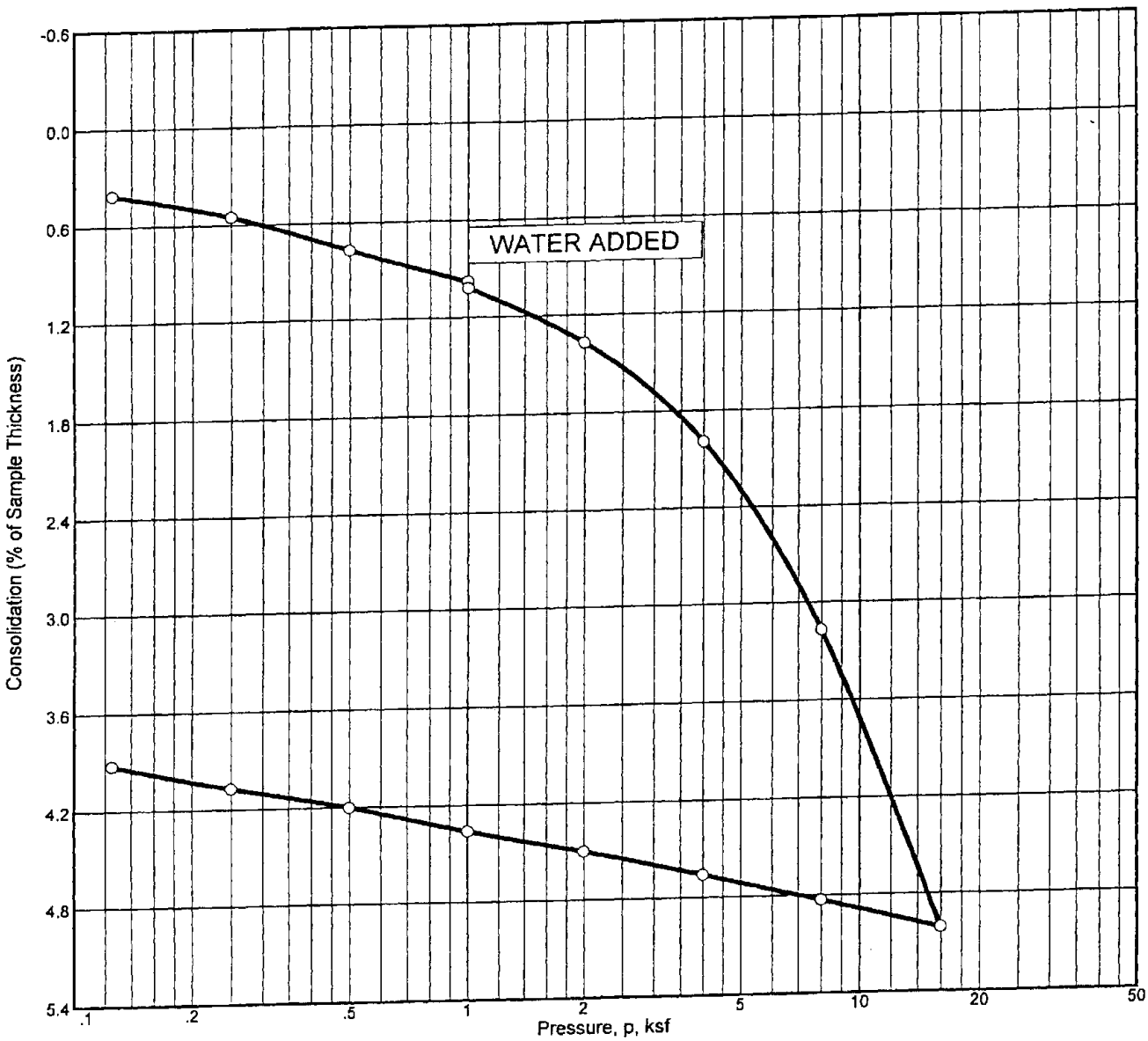

SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	107.0	19.1	92.5	1.000	0.546	2.65	0.10	0.24	5.85	SM
FINAL	111.4	20.1	100.0	0.961	0.486					

Source: HS-10 **Sample No.:** 1 **Elev./Depth:** 2'-3.5'
Material Description: Light brown silty sand
Remarks:

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Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.7

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CONSOLIDATION TEST REPORT

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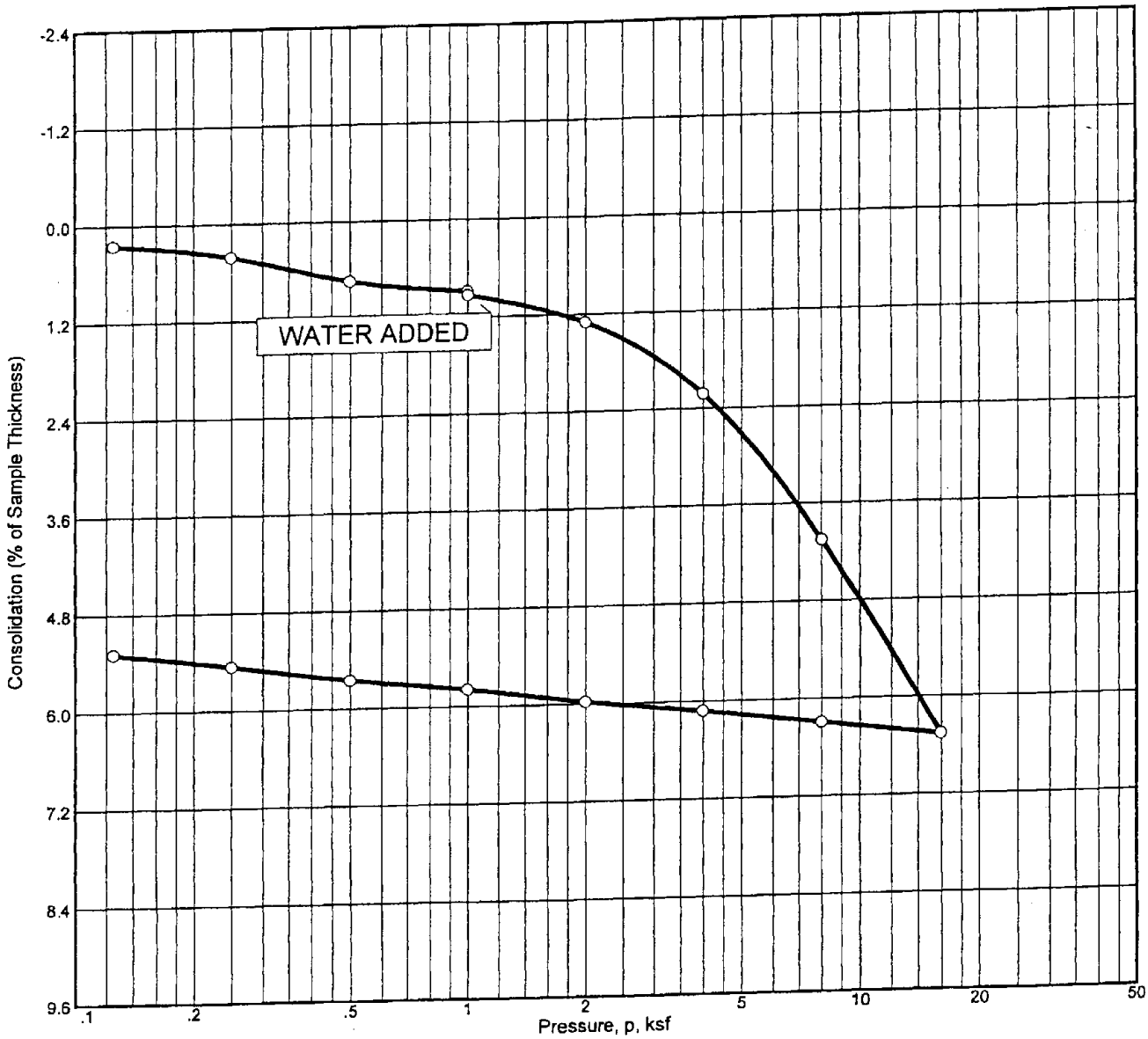
DATE | APPROVED BY



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	101.8	21.3	90.2	1.000	0.625	2.65	0.13	0.24	4.66	SM
FINAL	107.5	21.3	100.0	0.947	0.539					

Source: HS-12 **Sample No.:** 1 **Elev./Depth:** 2'-3.5'
Material Description: Yellow brown silty sand
Remarks:

ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.

Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.8

CONSOLIDATION TEST REPORT

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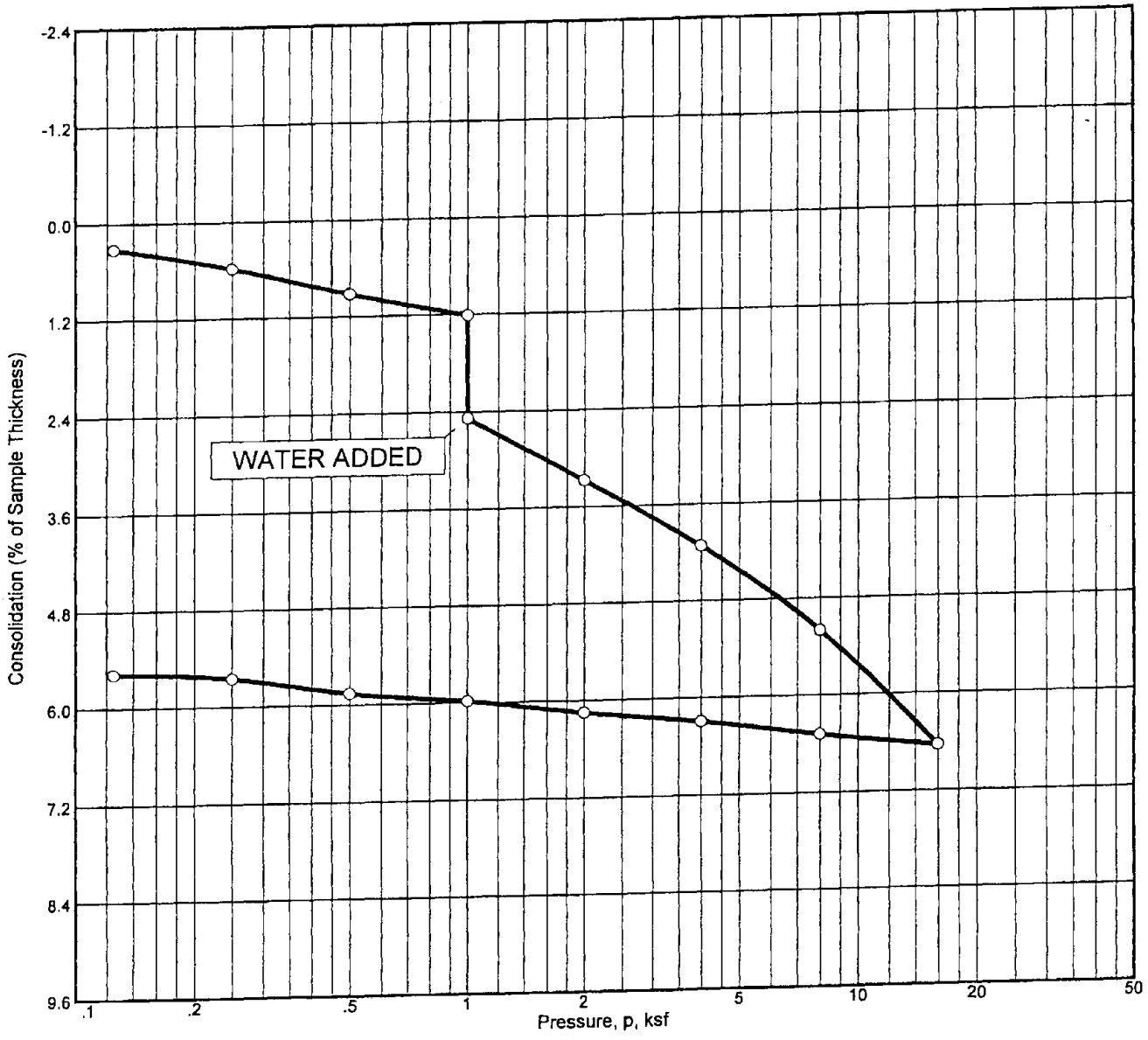
DATE | APPROVED BY



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	65.0	55.8	95.6	1.000	1.545	2.65	0.12	0.60	8.28	SP
FINAL	68.8	53.0	100.0	0.944	1.403					

Source: HS-13 **Sample No.:** 3 **Elev./Depth:** 5'-6.5'
Material Description: Brown silty sandy clay
Remarks:

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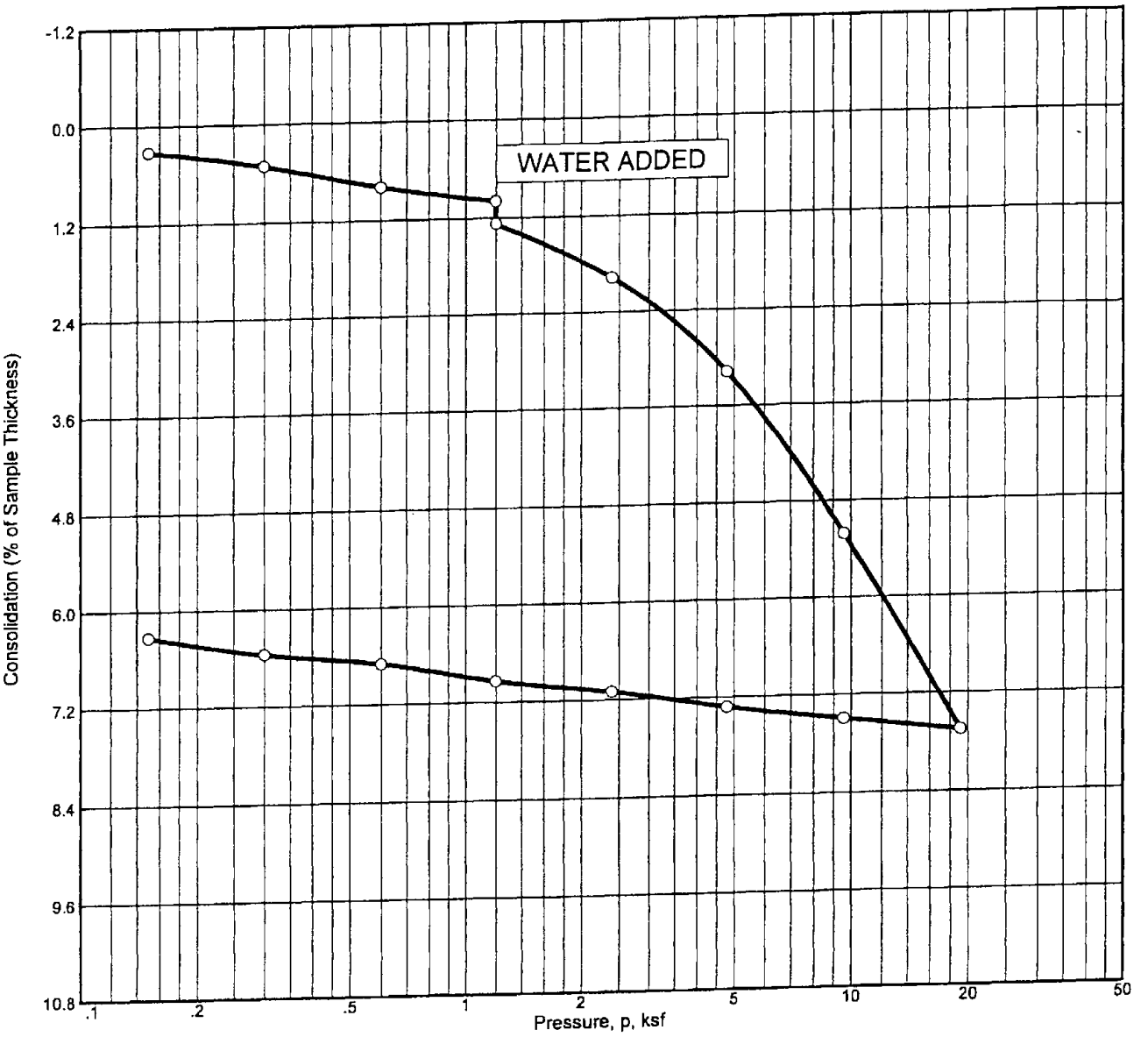
ENGINEERING GEOLOGY, INC.

Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.9

CONSOLIDATION TEST REPORT

DRAWN BY	CHECKED BY
DATE	APPROVED BY



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	110.1	15.8	83.2	1.000	0.503	2.65	0.12	1.32	5.43	SM
FINAL	117.5	19.8	100.0	0.937	0.408					

Source: RW-2 **Sample No.:** 4 **Elev./Depth:** 11'-12.5'
Material Description: Light brown sandy lean clay
Remarks:

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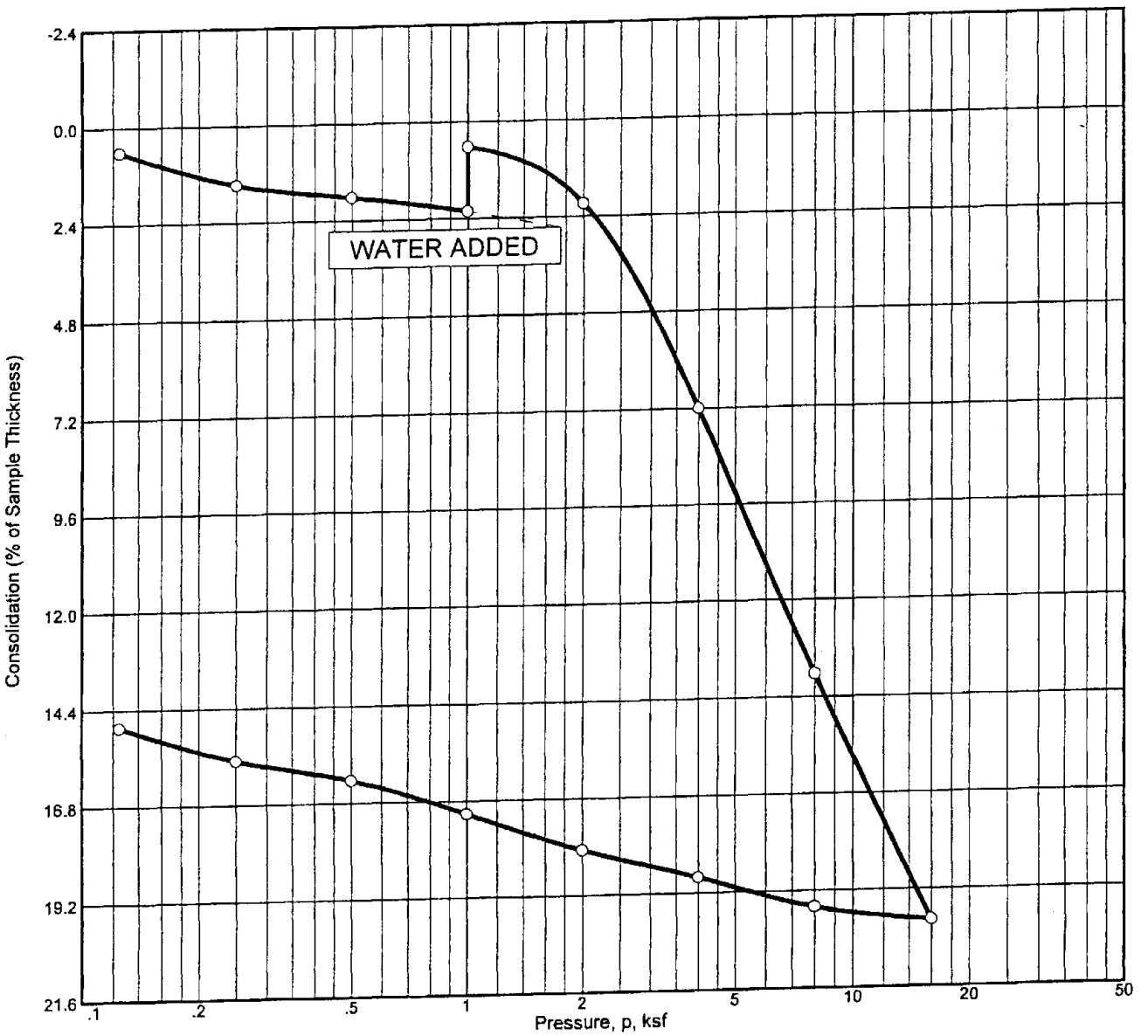
ENGINEERING GEOLOGY, INC.

Client: Valencia Company
Project: Magic Mountain Entertainment
Job No.: 00-1729-1 **Figure** B3.10

CONSOLIDATION TEST REPORT

DRAWN BY	CHECKED BY
DATE	APPROVED BY



SUMMARY OF TEST RESULTS

	DRY DENSITY (pcf)	MOISTURE CONTENT, (%)	SATURATION (%)	HEIGHT (in.)	VOID RATIO	SPECIFIC GRAVITY	C_c	P'_o (ksf)	P_c (ksf)	USCS
INITIAL	53.7	64.4	82.1	1.000	2.079	2.65	0.62	0.60	2.09	SC-SM
FINAL	63.1	81.9	100.0	0.852	1.622					

Source: RW-3 **Sample No.:** 3 **Elev./Depth:** 5'-6.5'
Material Description: Grayish brown lean clay
Remarks:

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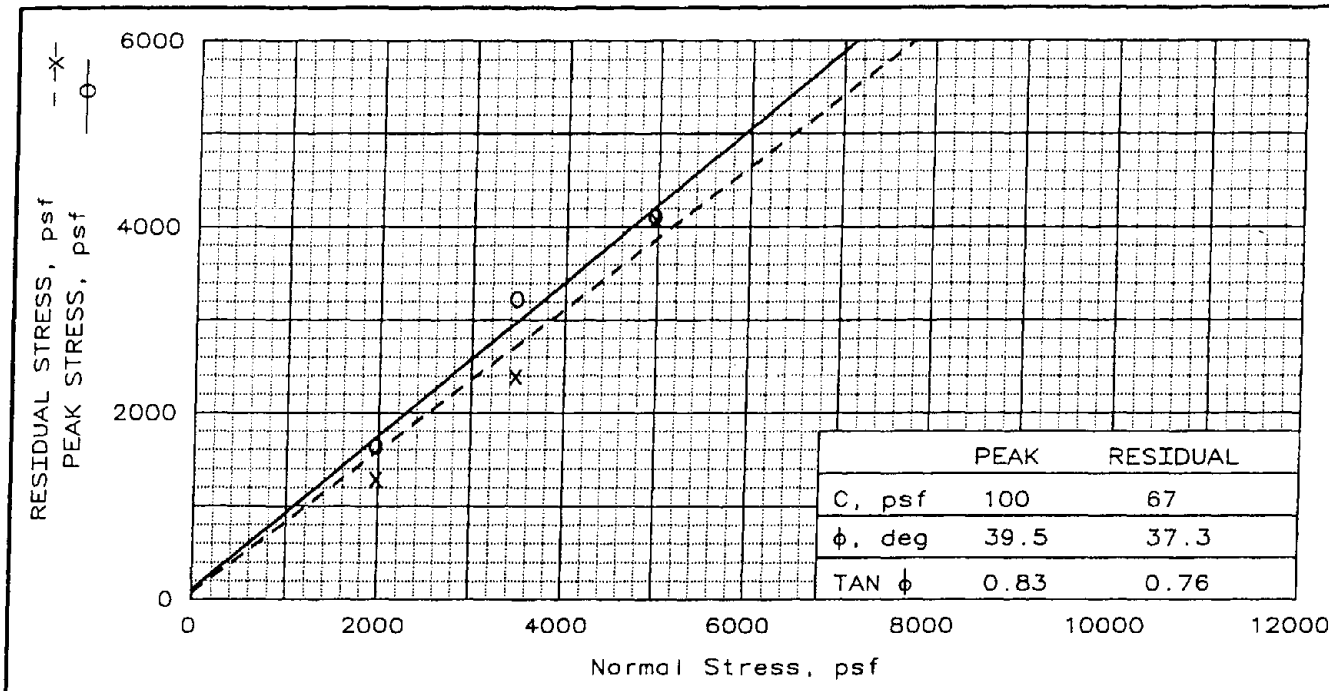
ENGINEERING GEOLOGY, INC.

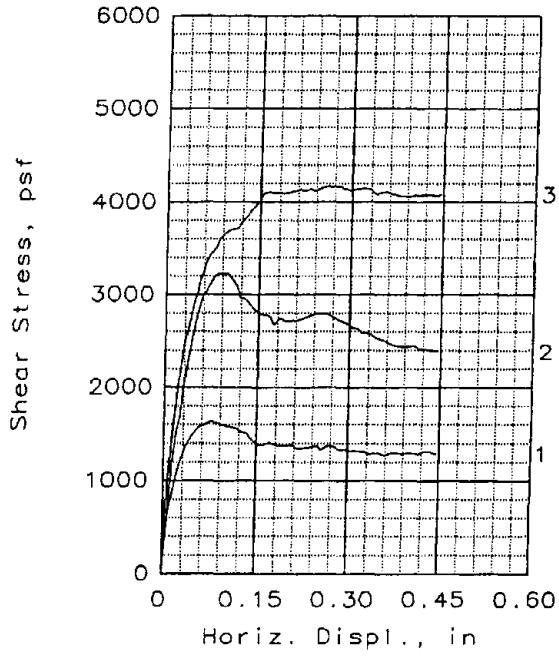
Client: Valencia Company
Project: Magic Mountain Entertainment

Job No.: 00-1729-1 **Figure** B3.11

For use with report dated 03/18/2005; RTF Job No. 2004-700-21



	PEAK	RESIDUAL
C, psf	100	67
ϕ, deg	39.5	37.3
TAN ϕ	0.83	0.76



SAMPLE No:		1	2	3
INITIAL	WATER CONTENT, %	31.2	30.1	27.8
	DRY DENSITY, pcf	89.9	90.8	94.2
	SATURATION, %	98.6	97.2	97.4
	VOID RATIO	0.840	0.821	0.756
	DIAMETER, in	2.42	2.42	2.42
	HEIGHT, in	1.00	1.00	1.00
AT TEST	WATER CONTENT, %	30.6	29.1	26.2
	DRY DENSITY, pcf	91.2	92.8	97.1
	SATURATION, %	99.7	98.5	98.4
	VOID RATIO	0.815	0.783	0.705
	DIAMETER, in	2.42	2.42	2.42
	HEIGHT, in	0.99	0.98	0.97
NORMAL STRESS, psf		2000	3500	5000
PEAK STRESS, psf		1632	3228	4109
DISPLACEMENT, in		0.08	0.09	0.17
RESIDUAL STRESS, psf		1284	2388	4081
DISPLACEMENT, in		0.45	0.45	0.45
Strain rate, in/min		0.0100	0.0100	0.0100

SAMPLE TYPE: Undisturbed
DESCRIPTION: SP

SPECIFIC GRAVITY= 2.65
REMARKS: % -#200 = 8.7

Fig. No.: B4.1

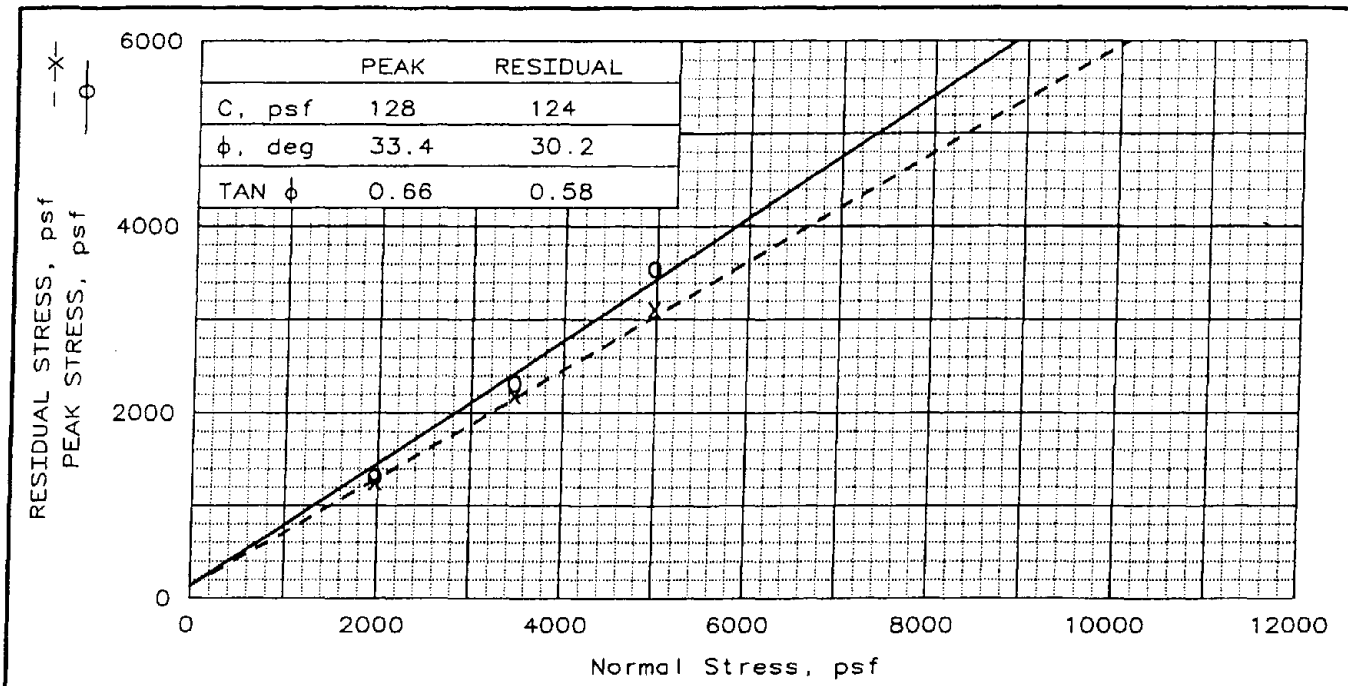
CLIENT: Newhall Land

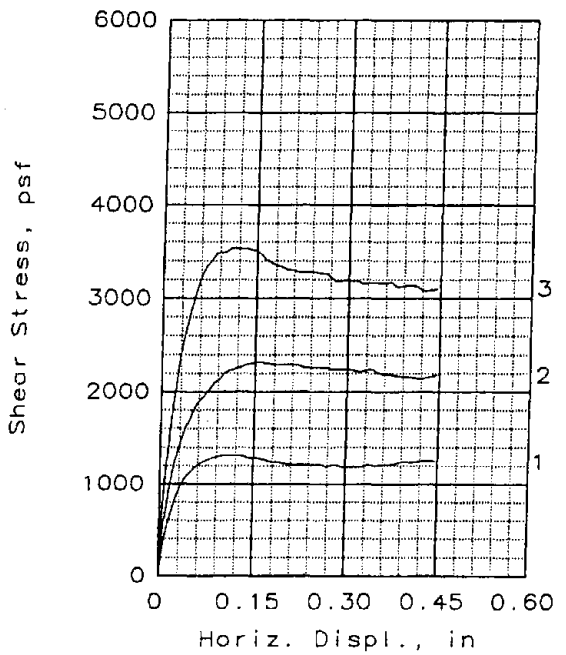
PROJECT: Magic Mtn. Entertainment

SAMPLE LOCATION: HS-7 @ 2'-3.5'

PROJ. NO.: 00-1729-1 DATE: 5/25/00

DIRECT SHEAR TEST REPORT
ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.





SAMPLE No:		1	2	3
INITIAL	WATER CONTENT, %	62.0	54.4	42.4
	DRY DENSITY, pcf	61.0	66.3	76.4
	SATURATION, %	96.1	96.3	96.3
	VOID RATIO	1.710	1.497	1.166
	DIAMETER, in	2.42	2.42	2.42
	HEIGHT, in	1.00	1.00	1.00
AT TEST	WATER CONTENT, %	52.9	53.2	41.5
	DRY DENSITY, pcf	68.8	68.0	78.8
	SATURATION, %	99.8	98.2	99.9
	VOID RATIO	1.403	1.435	1.100
	DIAMETER, in	2.42	2.42	2.42
	HEIGHT, in	0.89	0.98	0.97
NORMAL STRESS, psf		2000	3500	5000
PEAK STRESS, psf		1308	2316	3540
DISPLACEMENT, in		0.10	0.15	0.11
RESIDUAL STRESS, psf		1248	2184	3109
DISPLACEMENT, in		0.45	0.45	0.45
Strain rate, in/min		0.0100	0.0100	0.0100

SAMPLE TYPE: Undisturbed
DESCRIPTION: SP w/gravel

SPECIFIC GRAVITY= 2.65
REMARKS:

Fig. No.: B4.2

CLIENT: Newhall Land

PROJECT: Magic Moutain Entertainment

SAMPLE LOCATION: HS-11 @ 2'-3.5'

PROJ. NO.: 00-1729-1 DATE: 5/25/00

DIRECT SHEAR TEST REPORT
ALLAN E. SEWARD
ENGINEERING GEOLOGY, INC.

Newhall Land and Farming Company
March 18, 2005
2004-700-21

APPENDIX C

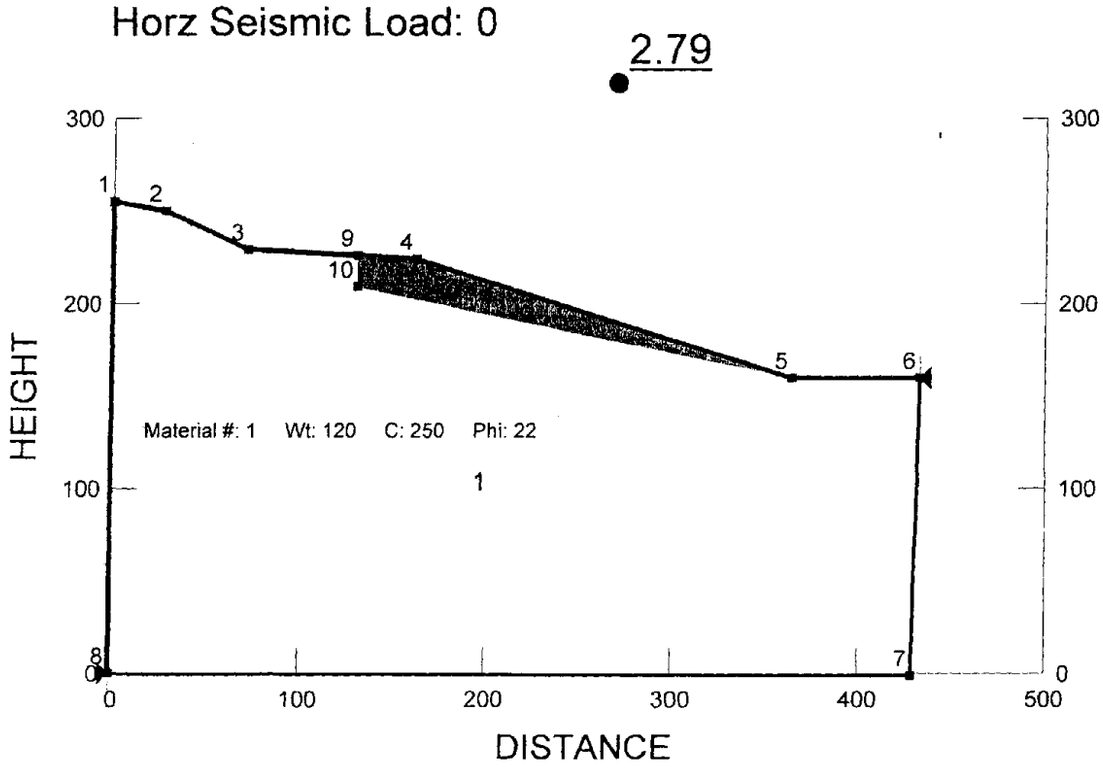
SLOPE STABILITY ANALYSES

RTF&A
GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

Title: SLOPE STABILITY ANALYSIS - SECTION C-C
Comments: BEDDING FAILURE
Name: 200-700-Sec C 1.gsz
Directory: E:\Slope Stability Calculations\200-700\
Date: 3/18/05Time: 2:40:21 PM

Material #: 1 Wt: 120 C: 250 Phi: 22 Model: MohrCoulomb

Slip Surface Option: FullySpecified
Analysis Method□Spencer
P.W.P. Option□Piezometric Lines / Ru
Horz Seismic Load: 0



SLOPE STABILITY ANALYSIS - SECTION C-C
BEDDING FAILURE
DATESTAMP 3/18/05
TIMESTAMP 2:40:21 PM

Center_X	Center_Y	Radius	Slip_Surface	Method
2.702500e+002	3.187500e+002	1.779467e+002	1	2

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height	Base_Length
1	1.310000e+002	2.257582e+002	2.090000e+002	1.390000e+002	2.253187e+002	2.073176e+002	1.737966e+001	8.174991e+000
2	1.390000e+002	2.253187e+002	2.073176e+002	1.470000e+002	2.248791e+002	2.056352e+002	1.862251e+001	8.174991e+000
3	1.470000e+002	2.248791e+002	2.056352e+002	1.550000e+002	2.244396e+002	2.039528e+002	1.986535e+001	8.174991e+000
4	1.550000e+002	2.244396e+002	2.039528e+002	1.630000e+002	2.240000e+002	2.022704e+002	2.110819e+001	8.174991e+000
5	1.630000e+002	2.240000e+002	2.022704e+002	1.707308e+002	2.215385e+002	2.006446e+002	2.131174e+001	7.899871e+000
6	1.707308e+002	2.215385e+002	2.006446e+002	1.784615e+002	2.190769e+002	1.990188e+002	2.047598e+001	7.899871e+000
7	1.784615e+002	2.190769e+002	1.990188e+002	1.861923e+002	2.166154e+002	1.973930e+002	1.964023e+001	7.899871e+000
8	1.861923e+002	2.166154e+002	1.973930e+002	1.939231e+002	2.141538e+002	1.957672e+002	1.880447e+001	7.899871e+000
9	1.939231e+002	2.141538e+002	1.957672e+002	2.016538e+002	2.116923e+002	1.941415e+002	1.796872e+001	7.899871e+000
10	2.016538e+002	2.116923e+002	1.941415e+002	2.093846e+002	2.092308e+002	1.925157e+002	1.713296e+001	7.899871e+000
11	2.093846e+002	2.092308e+002	1.925157e+002	2.171154e+002	2.067692e+002	1.908899e+002	1.629721e+001	7.899871e+000
12	2.171154e+002	2.067692e+002	1.908899e+002	2.248462e+002	2.043077e+002	1.892641e+002	1.546146e+001	7.899871e+000
13	2.248462e+002	2.043077e+002	1.892641e+002	2.325769e+002	2.018462e+002	1.876383e+002	1.462570e+001	7.899871e+000
14	2.325769e+002	2.018462e+002	1.876383e+002	2.403077e+002	1.993846e+002	1.860125e+002	1.378995e+001	7.899871e+000
15	2.403077e+002	1.993846e+002	1.860125e+002	2.480385e+002	1.969231e+002	1.843868e+002	1.295419e+001	7.899871e+000
16	2.480385e+002	1.969231e+002	1.843868e+002	2.557692e+002	1.944615e+002	1.827610e+002	1.211844e+001	7.899871e+000
17	2.557692e+002	1.944615e+002	1.827610e+002	2.635000e+002	1.920000e+002	1.811352e+002	1.128268e+001	7.899871e+000
18	2.635000e+002	1.920000e+002	1.811352e+002	2.712308e+002	1.895385e+002	1.795094e+002	1.044693e+001	7.899871e+000
19	2.712308e+002	1.895385e+002	1.795094e+002	2.789615e+002	1.870769e+002	1.778836e+002	9.611175e+000	7.899871e+000
20	2.789615e+002	1.870769e+002	1.778836e+002	2.866923e+002	1.846154e+002	1.762578e+002	8.775421e+000	7.899871e+000
21	2.866923e+002	1.846154e+002	1.762578e+002	2.944231e+002	1.821538e+002	1.746321e+002	7.939667e+000	7.899871e+000
22	2.944231e+002	1.821538e+002	1.746321e+002	3.021538e+002	1.796923e+002	1.730063e+002	7.103912e+000	7.899871e+000
23	3.021538e+002	1.796923e+002	1.730063e+002	3.098846e+002	1.772308e+002	1.713805e+002	6.268158e+000	7.899871e+000
24	3.098846e+002	1.772308e+002	1.713805e+002	3.176154e+002	1.747692e+002	1.697547e+002	5.432403e+000	7.899871e+000
25	3.176154e+002	1.747692e+002	1.697547e+002	3.253462e+002	1.723077e+002	1.681289e+002	4.596649e+000	7.899871e+000
26	3.253462e+002	1.723077e+002	1.681289e+002	3.330769e+002	1.698462e+002	1.665031e+002	3.760895e+000	7.899871e+000
27	3.330769e+002	1.698462e+002	1.665031e+002	3.408077e+002	1.673846e+002	1.648774e+002	2.925140e+000	7.899871e+000
28	3.408077e+002	1.673846e+002	1.648774e+002	3.485385e+002	1.649231e+002	1.632516e+002	2.089386e+000	7.899871e+000
29	3.485385e+002	1.649231e+002	1.632516e+002	3.562692e+002	1.624615e+002	1.616258e+002	1.253632e+000	7.899871e+000
30	3.562692e+002	1.624615e+002	1.616258e+002	3.640000e+002	1.600000e+002	1.600000e+002	4.178772e-001	7.899871e+000

Sl#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	1.6684e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
2	1.7878e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
3	1.9071e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
4	2.0264e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
5	1.9771e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
6	1.8995e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
7	1.8220e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
8	1.7445e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
9	1.6669e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
10	1.5894e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
11	1.5119e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
12	1.4343e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
13	1.3568e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
14	1.2793e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
15	1.2018e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
16	1.1242e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
17	1.0467e+004	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
18	9.6915e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
19	8.9162e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
20	8.1409e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
21	7.3656e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
22	6.5902e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
23	5.8149e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
24	5.0396e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
25	4.2643e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
26	3.4890e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
27	2.7136e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
28	1.9383e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
29	1.1630e+003	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
30	3.8766e+002	0.0000e+000	1.1876e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0

Spencer_Method_Fm= 2.7884534 Applied_Lambda= 0.1834

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	1.6337e+004	-3.1001e+003	2.2000e+001	2.5000e+002	0.0000e+000	0.0000e+000	-3.2147e+002	5.8950e+001
2	1.7507e+004	-3.2696e+003	2.2000e+001	2.5000e+002	3.2147e+002	-5.8950e+001	-7.1741e+002	1.3156e+002
3	1.8677e+004	-3.4390e+003	2.2000e+001	2.5000e+002	7.1741e+002	-1.3156e+002	-1.1878e+003	2.1783e+002
4	1.9846e+004	-3.6085e+003	2.2000e+001	2.5000e+002	1.1878e+003	-2.1783e+002	-1.7328e+003	3.1775e+002
5	1.9363e+004	-3.5139e+003	2.2000e+001	2.5000e+002	1.7328e+003	-3.1775e+002	-2.2711e+003	4.1648e+002
6	1.8603e+004	-3.4037e+003	2.2000e+001	2.5000e+002	2.2711e+003	-4.1648e+002	-2.7611e+003	5.0633e+002
7	1.7843e+004	-3.2936e+003	2.2000e+001	2.5000e+002	2.7611e+003	-5.0633e+002	-3.2026e+003	5.8730e+002
8	1.7083e+004	-3.1835e+003	2.2000e+001	2.5000e+002	3.2026e+003	-5.8730e+002	-3.5958e+003	6.5940e+002
9	1.6323e+004	-3.0734e+003	2.2000e+001	2.5000e+002	3.5958e+003	-6.5940e+002	-3.9406e+003	7.2262e+002
10	1.5563e+004	-2.9632e+003	2.2000e+001	2.5000e+002	3.9406e+003	-7.2262e+002	-4.2369e+003	7.7697e+002
11	1.4803e+004	-2.8531e+003	2.2000e+001	2.5000e+002	4.2369e+003	-7.7697e+002	-4.4849e+003	8.2244e+002
12	1.4043e+004	-2.7430e+003	2.2000e+001	2.5000e+002	4.4849e+003	-8.2244e+002	-4.6844e+003	8.5903e+002
13	1.3283e+004	-2.6329e+003	2.2000e+001	2.5000e+002	4.6844e+003	-8.5903e+002	-4.8356e+003	8.8675e+002
14	1.2523e+004	-2.5227e+003	2.2000e+001	2.5000e+002	4.8356e+003	-8.8675e+002	-4.9384e+003	9.0560e+002
15	1.1763e+004	-2.4126e+003	2.2000e+001	2.5000e+002	4.9384e+003	-9.0560e+002	-4.9927e+003	9.1557e+002
16	1.1003e+004	-2.3025e+003	2.2000e+001	2.5000e+002	4.9927e+003	-9.1557e+002	-4.9987e+003	9.1666e+002
17	1.0243e+004	-2.1924e+003	2.2000e+001	2.5000e+002	4.9987e+003	-9.1666e+002	-4.9562e+003	9.0887e+002
18	9.4827e+003	-2.0822e+003	2.2000e+001	2.5000e+002	4.9562e+003	-9.0887e+002	-4.8654e+003	8.9221e+002
19	8.7226e+003	-1.9721e+003	2.2000e+001	2.5000e+002	4.8654e+003	-8.9221e+002	-4.7261e+003	8.6668e+002
20	7.9626e+003	-1.8620e+003	2.2000e+001	2.5000e+002	4.7261e+003	-8.6668e+002	-4.5385e+003	8.3227e+002
21	7.2025e+003	-1.7519e+003	2.2000e+001	2.5000e+002	4.5385e+003	-8.3227e+002	-4.3024e+003	7.8898e+002
22	6.4425e+003	-1.6417e+003	2.2000e+001	2.5000e+002	4.3024e+003	-7.8898e+002	-4.0180e+003	7.3682e+002
23	5.6824e+003	-1.5316e+003	2.2000e+001	2.5000e+002	4.0180e+003	-7.3682e+002	-3.6852e+003	6.7578e+002
24	4.9224e+003	-1.4215e+003	2.2000e+001	2.5000e+002	3.6852e+003	-6.7578e+002	-3.3039e+003	6.0587e+002
25	4.1623e+003	-1.3114e+003	2.2000e+001	2.5000e+002	3.3039e+003	-6.0587e+002	-2.8743e+003	5.2708e+002
26	3.4022e+003	-1.2012e+003	2.2000e+001	2.5000e+002	2.8743e+003	-5.2708e+002	-2.3962e+003	4.3942e+002
27	2.6422e+003	-1.0911e+003	2.2000e+001	2.5000e+002	2.3962e+003	-4.3942e+002	-1.8698e+003	3.4288e+002
28	1.8821e+003	-9.8097e+002	2.2000e+001	2.5000e+002	1.8698e+003	-3.4288e+002	-1.2949e+003	2.3746e+002
29	1.1221e+003	-8.7085e+002	2.2000e+001	2.5000e+002	1.2949e+003	-2.3746e+002	-6.7165e+002	1.2317e+002
30	3.6203e+002	-7.6072e+002	2.2000e+001	2.5000e+002	6.7165e+002	-1.2317e+002	0.0000e+000	0.0000e+000

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Spencer Method	2.7996e+003	3.3596e+005	2.6173e+007	9.3862e+006	1.8824e+005	6.7659e+004	2.7884534

SUMMARY OF MINIMUM FACTORS OF SAFETY

MOMENT AND FORCE EQUILIBRIUM: SPENCER METHOD
270.2500=X-COOR. 318.7500=Y-COOR. 177.9467=RADIUS 2.7884534=F.S. 1=SLIP#

MOST_CRITICAL #	SLIP_SURFACE #
1	1

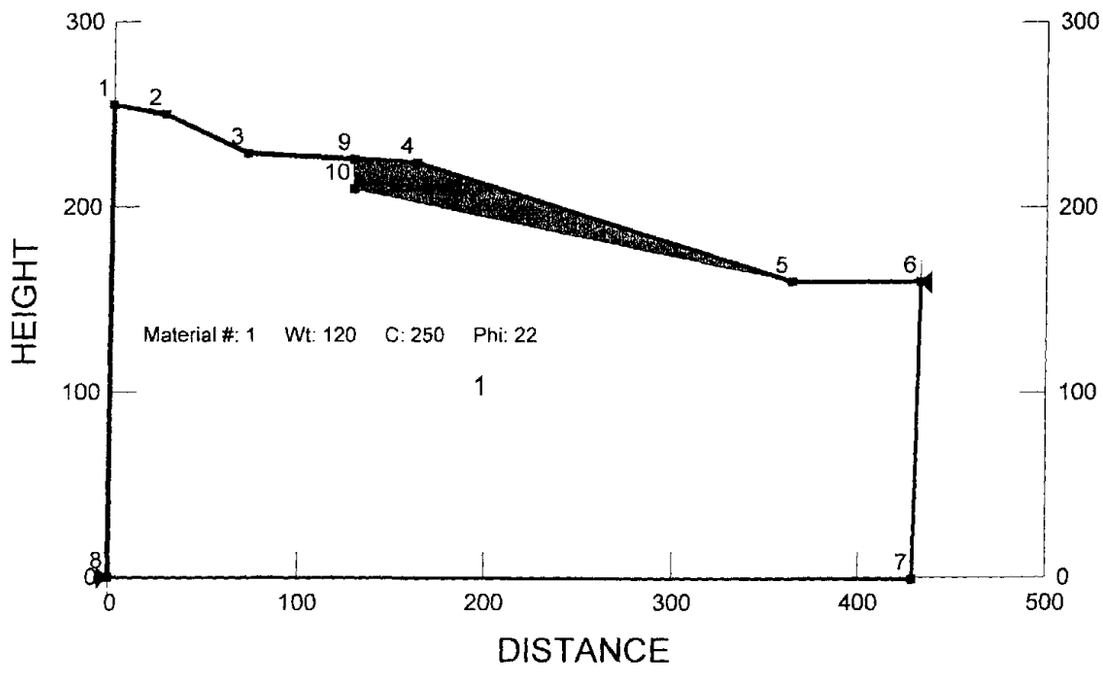
SLIP_SURFACE #	AUTOTENSIONELEV

Title: SLOPE STABILITY ANALYSIS - SECTION C-C
Comments: EARTQUAKE - BEDDING FAILURE
Name: 200-700-Sec C 2.gsz
Directory: E:\Slope Stability Calculations\200-700\
Date: 3/18/05Time: 2:43:19 PM

Material #: 1 Wt: 120 C: 250 Phi: 22 Model: MohrCoulomb

Slip Surface Option: FullySpecified
Analysis Method: Spencer
P.W.P. Option□Piezometric Lines / Ru
Horz Seismic Load: 0.15

1.59



SLOPE STABILITY ANALYSIS - SECTION C-C
EARTQUAKE - BEDDING FAILURE
DATESTAMP 3/18/05
TIMESTAMP 2:43:19 PM

Center_X	Center_Y	Radius	Slip_Surface	Method
2.702500e+002	3.187500e+002	1.784630e+002	1	2

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height	Base_Length
1	1.290000e+002	2.258681e+002	2.100000e+002	1.375000e+002	2.254011e+002	2.081915e+002	1.653887e+001	8.690265e+000
2	1.375000e+002	2.254011e+002	2.081915e+002	1.460000e+002	2.249341e+002	2.063830e+002	1.788035e+001	8.690265e+000
3	1.460000e+002	2.249341e+002	2.063830e+002	1.545000e+002	2.244670e+002	2.045745e+002	1.922183e+001	8.690265e+000
4	1.545000e+002	2.244670e+002	2.045745e+002	1.630000e+002	2.240000e+002	2.027660e+002	2.056330e+001	8.690265e+000
5	1.630000e+002	2.240000e+002	2.027660e+002	1.707308e+002	2.215385e+002	2.011211e+002	2.082570e+001	7.903816e+000
6	1.707308e+002	2.215385e+002	2.011211e+002	1.784615e+002	2.190769e+002	1.994763e+002	2.000900e+001	7.903816e+000
7	1.784615e+002	2.190769e+002	1.994763e+002	1.861923e+002	2.166154e+002	1.978314e+002	1.919231e+001	7.903816e+000
8	1.861923e+002	2.166154e+002	1.978314e+002	1.939231e+002	2.141538e+002	1.961866e+002	1.837561e+001	7.903816e+000
9	1.939231e+002	2.141538e+002	1.961866e+002	2.016538e+002	2.116923e+002	1.945417e+002	1.755892e+001	7.903816e+000
10	2.016538e+002	2.116923e+002	1.945417e+002	2.093846e+002	2.092308e+002	1.928969e+002	1.674223e+001	7.903816e+000
11	2.093846e+002	2.092308e+002	1.928969e+002	2.171154e+002	2.067692e+002	1.912520e+002	1.592553e+001	7.903816e+000
12	2.171154e+002	2.067692e+002	1.912520e+002	2.248462e+002	2.043077e+002	1.896072e+002	1.510884e+001	7.903816e+000
13	2.248462e+002	2.043077e+002	1.896072e+002	2.325769e+002	2.018462e+002	1.879624e+002	1.429214e+001	7.903816e+000
14	2.325769e+002	2.018462e+002	1.879624e+002	2.403077e+002	1.993846e+002	1.863175e+002	1.347545e+001	7.903816e+000
15	2.403077e+002	1.993846e+002	1.863175e+002	2.480385e+002	1.969231e+002	1.846727e+002	1.265876e+001	7.903816e+000
16	2.480385e+002	1.969231e+002	1.846727e+002	2.557692e+002	1.944615e+002	1.830278e+002	1.184206e+001	7.903816e+000
17	2.557692e+002	1.944615e+002	1.830278e+002	2.635000e+002	1.920000e+002	1.813830e+002	1.102537e+001	7.903816e+000
18	2.635000e+002	1.920000e+002	1.813830e+002	2.712308e+002	1.895385e+002	1.797381e+002	1.020867e+001	7.903816e+000
19	2.712308e+002	1.895385e+002	1.797381e+002	2.789615e+002	1.870769e+002	1.780933e+002	9.391980e+000	7.903816e+000
20	2.789615e+002	1.870769e+002	1.780933e+002	2.866923e+002	1.846154e+002	1.764484e+002	8.575286e+000	7.903816e+000
21	2.866923e+002	1.846154e+002	1.764484e+002	2.944231e+002	1.821538e+002	1.748036e+002	7.758592e+000	7.903816e+000
22	2.944231e+002	1.821538e+002	1.748036e+002	3.021538e+002	1.796923e+002	1.731588e+002	6.941899e+000	7.903816e+000
23	3.021538e+002	1.796923e+002	1.731588e+002	3.098846e+002	1.772308e+002	1.715139e+002	6.125205e+000	7.903816e+000
24	3.098846e+002	1.772308e+002	1.715139e+002	3.176154e+002	1.747692e+002	1.698691e+002	5.308511e+000	7.903816e+000
25	3.176154e+002	1.747692e+002	1.698691e+002	3.253462e+002	1.723077e+002	1.682242e+002	4.491817e+000	7.903816e+000
26	3.253462e+002	1.723077e+002	1.682242e+002	3.330769e+002	1.698462e+002	1.665794e+002	3.675123e+000	7.903816e+000
27	3.330769e+002	1.698462e+002	1.665794e+002	3.408077e+002	1.673846e+002	1.649345e+002	2.858429e+000	7.903816e+000
28	3.408077e+002	1.673846e+002	1.649345e+002	3.485385e+002	1.649231e+002	1.632897e+002	2.041735e+000	7.903816e+000
29	3.485385e+002	1.649231e+002	1.632897e+002	3.562692e+002	1.624615e+002	1.616448e+002	1.225041e+000	7.903816e+000
30	3.562692e+002	1.624615e+002	1.616448e+002	3.640000e+002	1.600000e+002	1.600000e+002	4.083470e-001	7.903816e+000

SL#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	1.6870e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.5304e+003	2.1737e+002	0.0000e+000	0.0000e+000	0
2	1.8238e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.7357e+003	2.1623e+002	0.0000e+000	0.0000e+000	0
3	1.9606e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.9409e+003	2.1509e+002	0.0000e+000	0.0000e+000	0
4	2.0975e+004	0.0000e+000	1.2011e+001	1.0000e+000	3.1462e+003	2.1395e+002	0.0000e+000	0.0000e+000	0
5	1.9320e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.8980e+003	2.1236e+002	0.0000e+000	0.0000e+000	0
6	1.8562e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.7843e+003	2.1030e+002	0.0000e+000	0.0000e+000	0
7	1.7805e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.6707e+003	2.0825e+002	0.0000e+000	0.0000e+000	0
8	1.7047e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.5570e+003	2.0620e+002	0.0000e+000	0.0000e+000	0
9	1.6289e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.4434e+003	2.0414e+002	0.0000e+000	0.0000e+000	0
10	1.5532e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.3297e+003	2.0209e+002	0.0000e+000	0.0000e+000	0
11	1.4774e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.2161e+003	2.0004e+002	0.0000e+000	0.0000e+000	0
12	1.4016e+004	0.0000e+000	1.2011e+001	1.0000e+000	2.1025e+003	1.9798e+002	0.0000e+000	0.0000e+000	0
13	1.3259e+004	0.0000e+000	1.2011e+001	1.0000e+000	1.9888e+003	1.9593e+002	0.0000e+000	0.0000e+000	0
14	1.2501e+004	0.0000e+000	1.2011e+001	1.0000e+000	1.8752e+003	1.9388e+002	0.0000e+000	0.0000e+000	0
15	1.1743e+004	0.0000e+000	1.2011e+001	1.0000e+000	1.7615e+003	1.9182e+002	0.0000e+000	0.0000e+000	0
16	1.0986e+004	0.0000e+000	1.2011e+001	1.0000e+000	1.6479e+003	1.8977e+002	0.0000e+000	0.0000e+000	0
17	1.0228e+004	0.0000e+000	1.2011e+001	1.0000e+000	1.5342e+003	1.8772e+002	0.0000e+000	0.0000e+000	0
18	9.4705e+003	0.0000e+000	1.2011e+001	1.0000e+000	1.4206e+003	1.8566e+002	0.0000e+000	0.0000e+000	0
19	8.7129e+003	0.0000e+000	1.2011e+001	1.0000e+000	1.3069e+003	1.8361e+002	0.0000e+000	0.0000e+000	0
20	7.9552e+003	0.0000e+000	1.2011e+001	1.0000e+000	1.1933e+003	1.8156e+002	0.0000e+000	0.0000e+000	0
21	7.1976e+003	0.0000e+000	1.2011e+001	1.0000e+000	1.0796e+003	1.7951e+002	0.0000e+000	0.0000e+000	0
22	6.4399e+003	0.0000e+000	1.2011e+001	1.0000e+000	9.6599e+002	1.7745e+002	0.0000e+000	0.0000e+000	0
23	5.6823e+003	0.0000e+000	1.2011e+001	1.0000e+000	8.5235e+002	1.7540e+002	0.0000e+000	0.0000e+000	0
24	4.9247e+003	0.0000e+000	1.2011e+001	1.0000e+000	7.3870e+002	1.7335e+002	0.0000e+000	0.0000e+000	0
25	4.1670e+003	0.0000e+000	1.2011e+001	1.0000e+000	6.2505e+002	1.7129e+002	0.0000e+000	0.0000e+000	0
26	3.4094e+003	0.0000e+000	1.2011e+001	1.0000e+000	5.1141e+002	1.6924e+002	0.0000e+000	0.0000e+000	0
27	2.6517e+003	0.0000e+000	1.2011e+001	1.0000e+000	3.9776e+002	1.6719e+002	0.0000e+000	0.0000e+000	0
28	1.8941e+003	0.0000e+000	1.2011e+001	1.0000e+000	2.8412e+002	1.6513e+002	0.0000e+000	0.0000e+000	0
29	1.1365e+003	0.0000e+000	1.2011e+001	1.0000e+000	1.7047e+002	1.6308e+002	0.0000e+000	0.0000e+000	0
30	3.7882e+002	0.0000e+000	1.2011e+001	1.0000e+000	5.6823e+001	1.6103e+002	0.0000e+000	0.0000e+000	0

Spencer_Method_Fm= 1.5897298 Applied_Lambda= 0.4889

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	1.5827e+004	-5.3889e+003	2.2000e+001	2.5000e+002	0.0000e+000	0.0000e+000	-5.4888e+002	2.6832e+002
2	1.7081e+004	-5.7076e+003	2.2000e+001	2.5000e+002	5.4888e+002	-2.6832e+002	-1.2520e+003	6.1204e+002
3	1.8335e+004	-6.0263e+003	2.2000e+001	2.5000e+002	1.2520e+003	-6.1204e+002	-2.1093e+003	1.0312e+003
4	1.9589e+004	-6.3451e+003	2.2000e+001	2.5000e+002	2.1093e+003	-1.0312e+003	-3.1209e+003	1.5257e+003
5	1.8039e+004	-5.8275e+003	2.2000e+001	2.5000e+002	3.1209e+003	-1.5257e+003	-4.0684e+003	1.9888e+003
6	1.7345e+004	-5.6511e+003	2.2000e+001	2.5000e+002	4.0684e+003	-1.9888e+003	-4.9304e+003	2.4103e+003
7	1.6650e+004	-5.4746e+003	2.2000e+001	2.5000e+002	4.9304e+003	-2.4103e+003	-5.7071e+003	2.7899e+003
8	1.5956e+004	-5.2981e+003	2.2000e+001	2.5000e+002	5.7071e+003	-2.7899e+003	-6.3984e+003	3.1279e+003
9	1.5262e+004	-5.1217e+003	2.2000e+001	2.5000e+002	6.3984e+003	-3.1279e+003	-7.0043e+003	3.4241e+003
10	1.4567e+004	-4.9452e+003	2.2000e+001	2.5000e+002	7.0043e+003	-3.4241e+003	-7.5247e+003	3.6785e+003
11	1.3873e+004	-4.7687e+003	2.2000e+001	2.5000e+002	7.5247e+003	-3.6785e+003	-7.9598e+003	3.8912e+003
12	1.3178e+004	-4.5922e+003	2.2000e+001	2.5000e+002	7.9598e+003	-3.8912e+003	-8.3095e+003	4.0621e+003
13	1.2484e+004	-4.4158e+003	2.2000e+001	2.5000e+002	8.3095e+003	-4.0621e+003	-8.5737e+003	4.1913e+003
14	1.1790e+004	-4.2393e+003	2.2000e+001	2.5000e+002	8.5737e+003	-4.1913e+003	-8.7526e+003	4.2787e+003
15	1.1095e+004	-4.0628e+003	2.2000e+001	2.5000e+002	8.7526e+003	-4.2787e+003	-8.8461e+003	4.3244e+003
16	1.0401e+004	-3.8863e+003	2.2000e+001	2.5000e+002	8.8461e+003	-4.3244e+003	-8.8541e+003	4.3284e+003
17	9.7066e+003	-3.7099e+003	2.2000e+001	2.5000e+002	8.8541e+003	-4.3284e+003	-8.7768e+003	4.2906e+003
18	9.0122e+003	-3.5334e+003	2.2000e+001	2.5000e+002	8.7768e+003	-4.2906e+003	-8.6141e+003	4.2110e+003
19	8.3178e+003	-3.3569e+003	2.2000e+001	2.5000e+002	8.6141e+003	-4.2110e+003	-8.3659e+003	4.0897e+003
20	7.6235e+003	-3.1804e+003	2.2000e+001	2.5000e+002	8.3659e+003	-4.0897e+003	-8.0324e+003	3.9267e+003
21	6.9291e+003	-3.0040e+003	2.2000e+001	2.5000e+002	8.0324e+003	-3.9267e+003	-7.6134e+003	3.7219e+003
22	6.2347e+003	-2.8275e+003	2.2000e+001	2.5000e+002	7.6134e+003	-3.7219e+003	-7.1091e+003	3.4753e+003
23	5.5403e+003	-2.6510e+003	2.2000e+001	2.5000e+002	7.1091e+003	-3.4753e+003	-6.5194e+003	3.1870e+003
24	4.8459e+003	-2.4745e+003	2.2000e+001	2.5000e+002	6.5194e+003	-3.1870e+003	-5.8442e+003	2.8570e+003
25	4.1516e+003	-2.2981e+003	2.2000e+001	2.5000e+002	5.8442e+003	-2.8570e+003	-5.0837e+003	2.4852e+003
26	3.4572e+003	-2.1216e+003	2.2000e+001	2.5000e+002	5.0837e+003	-2.4852e+003	-4.2378e+003	2.0716e+003
27	2.7628e+003	-1.9451e+003	2.2000e+001	2.5000e+002	4.2378e+003	-2.0716e+003	-3.3064e+003	1.6164e+003
28	2.0684e+003	-1.7686e+003	2.2000e+001	2.5000e+002	3.3064e+003	-1.6164e+003	-2.2897e+003	1.1193e+003
29	1.3741e+003	-1.5922e+003	2.2000e+001	2.5000e+002	2.2897e+003	-1.1193e+003	-1.1875e+003	5.8053e+002
30	6.7968e+002	-1.4157e+003	2.2000e+001	2.5000e+002	1.1875e+003	-5.8053e+002	0.0000e+000	0.0000e+000

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Spencer Method	2.7648e+003	3.3177e+005	2.5388e+007	1.5970e+007	1.8290e+005	1.1514e+005	1.5897298

| SUMMARY OF MINIMUM FACTORS OF SAFETY |

MOMENT AND FORCE EQUILIBRIUM: SPENCER METHOD
270.2500=X-COOR. 318.7500=Y-COOR. 178.4630=RADIUS 1.5897298=F.S. 1=SLIP#

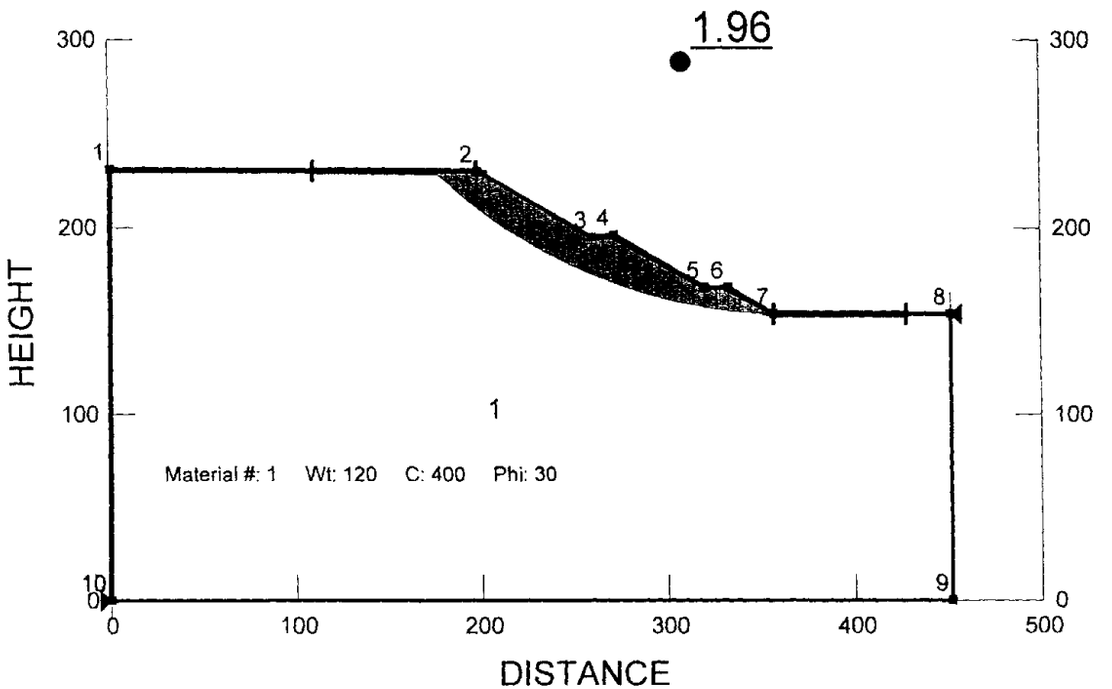
MOST_CRITICAL #	SLIP_SURFACE #
1	1

SLIP_SURFACE # AUTOTENSIONELEV

Title: SLOPE STABILITY ANALYSIS - SECTION L-L
Comments: CIRCULAR FAILURE
Name: 200-700-Sec L11.gsz
Directory: E:\Slope Stability Calculations\200-700\
Date: 3/18/05Time: 10:05:25 AM

Material #: 1 Wt: 120 C: 400 Phi: 30 Model: MohrCoulomb

Slip Surface Option: EntryAndExit
Analysis Method: Bishop
P.W.P. Option□Piezometric Lines / Ru
Horz Seismic Load: 0



SLOPE STABILITY ANALYSIS - SECTION L-L
CIRCULAR FAILURE
DATESTAMP 3/18/05
TIMESTAMP 10:05:25 AM

Center_X	Center_Y	Radius	Slip_Surface	Method
3.671890e+002	4.314920e+002	2.776789e+002	77	1

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height	Base_Length
1	1.759993e+002	2.301162e+002	2.301162e+002	1.817495e+002	2.300871e+002	2.248089e+002	2.676625e+000	7.825318e+000
2	1.817495e+002	2.300871e+002	2.248089e+002	1.874997e+002	2.300581e+002	2.197907e+002	7.807626e+000	7.632218e+000
3	1.874997e+002	2.300581e+002	2.197907e+002	1.932498e+002	2.300290e+002	2.150414e+002	1.266002e+001	7.458124e+000
4	1.932498e+002	2.300290e+002	2.150414e+002	1.990000e+002	2.300000e+002	2.105437e+002	1.725247e+001	7.300471e+000
5	1.990000e+002	2.300000e+002	2.105437e+002	2.051000e+002	2.265000e+002	2.060306e+002	1.999513e+001	7.588259e+000
6	2.051000e+002	2.265000e+002	2.060306e+002	2.112000e+002	2.230000e+002	2.017680e+002	2.088116e+001	7.441980e+000
7	2.112000e+002	2.230000e+002	2.017680e+002	2.173000e+002	2.195000e+002	1.977422e+002	2.152375e+001	7.308909e+000
8	2.173000e+002	2.195000e+002	1.977422e+002	2.234000e+002	2.160000e+002	1.939411e+002	2.193576e+001	7.187544e+000
9	2.234000e+002	2.160000e+002	1.939411e+002	2.295000e+002	2.125000e+002	1.903542e+002	2.212849e+001	7.076625e+000
10	2.295000e+002	2.125000e+002	1.903542e+002	2.356000e+002	2.090000e+002	1.869720e+002	2.211193e+001	6.975088e+000
11	2.356000e+002	2.090000e+002	1.869720e+002	2.417000e+002	2.055000e+002	1.837861e+002	2.189498e+001	6.882024e+000
12	2.417000e+002	2.055000e+002	1.837861e+002	2.478000e+002	2.020000e+002	1.807891e+002	2.148556e+001	6.796659e+000
13	2.478000e+002	2.020000e+002	1.807891e+002	2.539000e+002	1.985000e+002	1.779742e+002	2.089074e+001	6.718324e+000
14	2.539000e+002	1.985000e+002	1.779742e+002	2.600000e+002	1.950000e+002	1.753354e+002	2.011687e+001	6.646443e+000
15	2.600000e+002	1.950000e+002	1.753354e+002	2.660000e+002	1.955000e+002	1.729065e+002	2.114939e+001	6.473139e+000
16	2.660000e+002	1.955000e+002	1.729065e+002	2.720000e+002	1.960000e+002	1.706382e+002	2.399747e+001	6.414608e+000
17	2.720000e+002	1.960000e+002	1.706382e+002	2.780000e+002	1.925000e+002	1.685262e+002	2.468711e+001	6.360973e+000
18	2.780000e+002	1.925000e+002	1.685262e+002	2.840000e+002	1.890000e+002	1.665670e+002	2.322225e+001	6.311920e+000
19	2.840000e+002	1.890000e+002	1.665670e+002	2.900000e+002	1.855000e+002	1.647571e+002	2.160643e+001	6.267176e+000
20	2.900000e+002	1.855000e+002	1.647571e+002	2.960000e+002	1.820000e+002	1.630934e+002	1.984285e+001	6.226499e+000
21	2.960000e+002	1.820000e+002	1.630934e+002	3.020000e+002	1.785000e+002	1.615734e+002	1.793437e+001	6.189678e+000
22	3.020000e+002	1.785000e+002	1.615734e+002	3.080000e+002	1.750000e+002	1.601945e+002	1.588354e+001	6.156527e+000
23	3.080000e+002	1.750000e+002	1.601945e+002	3.140000e+002	1.715000e+002	1.589547e+002	1.369264e+001	6.126884e+000
24	3.140000e+002	1.715000e+002	1.589547e+002	3.200000e+002	1.680000e+002	1.578520e+002	1.136368e+001	6.100609e+000
25	3.200000e+002	1.680000e+002	1.578520e+002	3.265000e+002	1.680000e+002	1.568103e+002	1.068861e+001	6.583102e+000
26	3.265000e+002	1.680000e+002	1.568103e+002	3.330000e+002	1.680000e+002	1.559258e+002	1.165153e+001	6.560059e+000
27	3.330000e+002	1.680000e+002	1.559258e+002	3.390000e+002	1.645000e+002	1.552475e+002	1.067988e+001	6.038332e+000
28	3.390000e+002	1.645000e+002	1.552475e+002	3.450000e+002	1.610000e+002	1.547010e+002	7.792173e+000	6.024960e+000
29	3.450000e+002	1.610000e+002	1.547010e+002	3.510000e+002	1.575000e+002	1.542853e+002	4.773186e+000	6.014497e+000
30	3.510000e+002	1.575000e+002	1.542853e+002	3.570000e+002	1.540000e+002	1.540000e+002	1.623603e+000	6.006897e+000

SL#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	1.8469e+003	0.0000e+000	4.2706e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
2	5.3874e+003	0.0000e+000	4.1112e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
3	8.7357e+003	0.0000e+000	3.9555e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
4	1.1905e+004	0.0000e+000	3.8032e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
5	1.4636e+004	0.0000e+000	3.6496e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
6	1.5285e+004	0.0000e+000	3.4945e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
7	1.5755e+004	0.0000e+000	3.3423e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
8	1.6057e+004	0.0000e+000	3.1928e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
9	1.6198e+004	0.0000e+000	3.0456e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
10	1.6186e+004	0.0000e+000	2.9007e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
11	1.6027e+004	0.0000e+000	2.7577e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
12	1.5727e+004	0.0000e+000	2.6166e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
13	1.5292e+004	0.0000e+000	2.4771e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
14	1.4726e+004	0.0000e+000	2.3393e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
15	1.5228e+004	0.0000e+000	2.2039e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
16	1.7278e+004	0.0000e+000	2.0709e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
17	1.7775e+004	0.0000e+000	1.9391e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
18	1.6720e+004	0.0000e+000	1.8084e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
19	1.5557e+004	0.0000e+000	1.6786e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
20	1.4287e+004	0.0000e+000	1.5497e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
21	1.2913e+004	0.0000e+000	1.4216e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
22	1.1436e+004	0.0000e+000	1.2942e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
23	9.8587e+003	0.0000e+000	1.1675e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
24	8.1818e+003	0.0000e+000	1.0414e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
25	8.3371e+003	0.0000e+000	9.1051e+000	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
26	9.0882e+003	0.0000e+000	7.7492e+000	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
27	7.6895e+003	0.0000e+000	6.4494e+000	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
28	5.6104e+003	0.0000e+000	5.2049e+000	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
29	3.4367e+003	0.0000e+000	3.9628e+000	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
30	1.1690e+003	0.0000e+000	2.7225e+000	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0

Bishop_Method_Fm= 1.9647508 Applied_Lambda= 0.0000

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	8.2205e+002	-1.8347e+003	3.0000e+001	4.0000e+002	0.0000e+000	0.0000e+000	8.5983e+002	0.0000e+000
2	4.6143e+003	-2.9097e+003	3.0000e+001	4.0000e+002	-8.5983e+002	0.0000e+000	1.2509e+002	0.0000e+000
3	8.1113e+003	-3.9019e+003	3.0000e+001	4.0000e+002	-1.2509e+002	0.0000e+000	-1.8917e+003	0.0000e+000
4	1.1348e+004	-4.8208e+003	3.0000e+001	4.0000e+002	1.8917e+003	0.0000e+000	-4.9165e+003	0.0000e+000
5	1.4021e+004	-5.6649e+003	3.0000e+001	4.0000e+002	4.9165e+003	0.0000e+000	-8.5068e+003	0.0000e+000
6	1.4596e+004	-5.8042e+003	3.0000e+001	4.0000e+002	8.5068e+003	0.0000e+000	-1.1914e+004	0.0000e+000
7	1.4992e+004	-5.8936e+003	3.0000e+001	4.0000e+002	1.1914e+004	0.0000e+000	-1.5058e+004	0.0000e+000
8	1.5224e+004	-5.9370e+003	3.0000e+001	4.0000e+002	1.5058e+004	0.0000e+000	-1.7878e+004	0.0000e+000
9	1.5304e+004	-5.9378e+003	3.0000e+001	4.0000e+002	1.7878e+004	0.0000e+000	-2.0327e+004	0.0000e+000
10	1.5241e+004	-5.8986e+003	3.0000e+001	4.0000e+002	2.0327e+004	0.0000e+000	-2.2373e+004	0.0000e+000
11	1.5044e+004	-5.8220e+003	3.0000e+001	4.0000e+002	2.2373e+004	0.0000e+000	-2.3996e+004	0.0000e+000
12	1.4721e+004	-5.7096e+003	3.0000e+001	4.0000e+002	2.3996e+004	0.0000e+000	-2.5188e+004	0.0000e+000
13	1.4278e+004	-5.5633e+003	3.0000e+001	4.0000e+002	2.5188e+004	0.0000e+000	-2.5950e+004	0.0000e+000
14	1.3718e+004	-5.3842e+003	3.0000e+001	4.0000e+002	2.5950e+004	0.0000e+000	-2.6292e+004	0.0000e+000
15	1.4207e+004	-5.4927e+003	3.0000e+001	4.0000e+002	2.6292e+004	0.0000e+000	-2.6368e+004	0.0000e+000
16	1.6183e+004	-6.0614e+003	3.0000e+001	4.0000e+002	2.6368e+004	0.0000e+000	-2.6242e+004	0.0000e+000
17	1.6667e+004	-6.1926e+003	3.0000e+001	4.0000e+002	2.6242e+004	0.0000e+000	-2.5752e+004	0.0000e+000
18	1.5668e+004	-5.8892e+003	3.0000e+001	4.0000e+002	2.5752e+004	0.0000e+000	-2.4845e+004	0.0000e+000
19	1.4574e+004	-5.5586e+003	3.0000e+001	4.0000e+002	2.4845e+004	0.0000e+000	-2.3571e+004	0.0000e+000
20	1.3386e+004	-5.2010e+003	3.0000e+001	4.0000e+002	2.3571e+004	0.0000e+000	-2.1984e+004	0.0000e+000
21	1.2102e+004	-4.8164e+003	3.0000e+001	4.0000e+002	2.1984e+004	0.0000e+000	-2.0148e+004	0.0000e+000
22	1.0723e+004	-4.4045e+003	3.0000e+001	4.0000e+002	2.0148e+004	0.0000e+000	-1.8129e+004	0.0000e+000
23	9.2486e+003	-3.9651e+003	3.0000e+001	4.0000e+002	1.8129e+004	0.0000e+000	-1.6003e+004	0.0000e+000
24	7.6768e+003	-3.4979e+003	3.0000e+001	4.0000e+002	1.6003e+004	0.0000e+000	-1.3849e+004	0.0000e+000
25	7.8593e+003	-3.6497e+003	3.0000e+001	4.0000e+002	1.3849e+004	0.0000e+000	-1.1383e+004	0.0000e+000
26	8.6452e+003	-3.8760e+003	3.0000e+001	4.0000e+002	1.1383e+004	0.0000e+000	-8.5946e+003	0.0000e+000
27	7.3557e+003	-3.3908e+003	3.0000e+001	4.0000e+002	8.5946e+003	0.0000e+000	-5.9522e+003	0.0000e+000
28	5.3782e+003	-2.8070e+003	3.0000e+001	4.0000e+002	5.9522e+003	0.0000e+000	-3.5619e+003	0.0000e+000
29	3.2933e+003	-2.1922e+003	3.0000e+001	4.0000e+002	3.5619e+003	0.0000e+000	-1.5376e+003	0.0000e+000
30	1.0969e+003	-1.5453e+003	3.0000e+001	4.0000e+002	1.5376e+003	0.0000e+000	0.0000e+000	0.0000e+000

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Bishop Method	2.9861e+003	3.5833e+005	7.6174e+007	3.8770e+007			1.9647508

SUMMARY OF MINIMUM FACTORS OF SAFETY

MOMENT EQUILIBRIUM: BISHOP SIMPLIFIED METHOD
367.1887=X-COOR. 431.4919=Y-COOR. 277.6789=RADIUS 1.9647508=F.S. 77=SLIP#

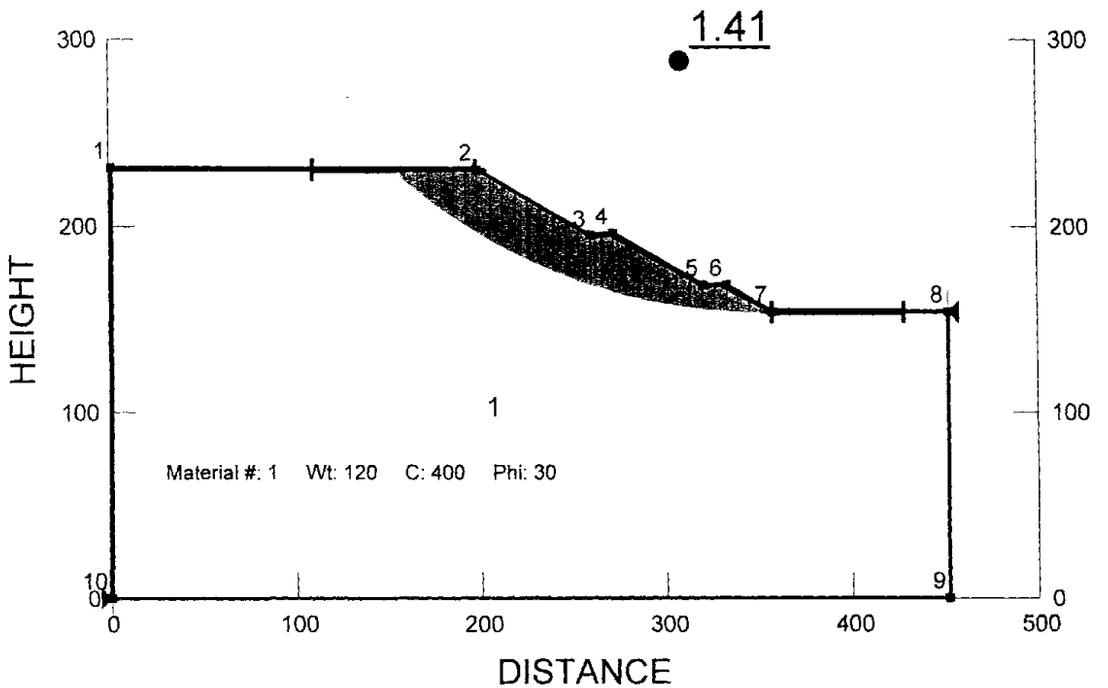
MOST_CRITICAL #	SLIP_SURFACE #
1	77

SLIP_SURFACE # AUTOTENSIONELEV

Title: SLOPE STABILITY ANALYSIS - SECTION L-L
Comments: EARTHQUAKE - CIRCULAR FAILURE
Name: 200-700-Sec L12.gsz
Directory: E:\Slope Stability Calculations\200-700\
Date: 3/18/05Time: 10:11:33 AM

Material #: 1 Wt: 120 C: 400 Phi: 30 Model: MohrCoulomb

Slip Surface Option: EntryAndExit
Analysis Method: Bishop
P.W.P. Option□Piezometric Lines / Ru
Horz Seismic Load: 0.15



SLOPE STABILITY ANALYSIS - SECTION L-L
EARTHQUAKE - CIRCULAR FAILURE
DATESTAMP 3/18/05
TIMESTAMP 10:11:33 AM

Center_X	Center_Y	Radius	Slip_Surface	Method
3.519130e+002	4.488720e+002	2.949163e+002	52	1

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height	Base_Length
1	1.539986e+002	2.302273e+002	2.302273e+002	1.604274e+002	2.301948e+002	2.245756e+002	2.850946e+000	8.560108e+000
2	1.604274e+002	2.301948e+002	2.245756e+002	1.668562e+002	2.301623e+002	2.192428e+002	8.307777e+000	8.352992e+000
3	1.668562e+002	2.301623e+002	2.192428e+002	1.732849e+002	2.301299e+002	2.142071e+002	1.345703e+001	8.166480e+000
4	1.732849e+002	2.301299e+002	2.142071e+002	1.797137e+002	2.300974e+002	2.094498e+002	1.831888e+001	7.997810e+000
5	1.797137e+002	2.300974e+002	2.094498e+002	1.861425e+002	2.300649e+002	2.049546e+002	2.291078e+001	7.844727e+000
6	1.861425e+002	2.300649e+002	2.049546e+002	1.925712e+002	2.300325e+002	2.007072e+002	2.724795e+001	7.705369e+000
7	1.925712e+002	2.300325e+002	2.007072e+002	1.990000e+002	2.300000e+002	1.966952e+002	3.134374e+001	7.578186e+000
8	1.990000e+002	2.300000e+002	1.966952e+002	2.057778e+002	2.261111e+002	1.927079e+002	3.338443e+001	7.863838e+000
9	2.057778e+002	2.261111e+002	1.927079e+002	2.125556e+002	2.222222e+002	1.889585e+002	3.336252e+001	7.745963e+000
10	2.125556e+002	2.222222e+002	1.889585e+002	2.193333e+002	2.183333e+002	1.854367e+002	3.310804e+001	7.638356e+000
11	2.193333e+002	2.183333e+002	1.854367e+002	2.261111e+002	2.144444e+002	1.821336e+002	3.263056e+001	7.540038e+000
12	2.261111e+002	2.144444e+002	1.821336e+002	2.328889e+002	2.105556e+002	1.790410e+002	3.193857e+001	7.450174e+000
13	2.328889e+002	2.105556e+002	1.790410e+002	2.396667e+002	2.066667e+002	1.761519e+002	3.103967e+001	7.368044e+000
14	2.396667e+002	2.066667e+002	1.761519e+002	2.464444e+002	2.027778e+002	1.734598e+002	2.994062e+001	7.293029e+000
15	2.464444e+002	2.027778e+002	1.734598e+002	2.532222e+002	1.988889e+002	1.709590e+002	2.864748e+001	7.224592e+000
16	2.532222e+002	1.988889e+002	1.709590e+002	2.600000e+002	1.950000e+002	1.686445e+002	2.716566e+001	7.162268e+000
17	2.600000e+002	1.950000e+002	1.686445e+002	2.660000e+002	1.955000e+002	1.667472e+002	2.757179e+001	6.292951e+000
18	2.660000e+002	1.955000e+002	1.667472e+002	2.720000e+002	1.960000e+002	1.649893e+002	2.989901e+001	6.252316e+000
19	2.720000e+002	1.960000e+002	1.649893e+002	2.788571e+002	1.920000e+002	1.631478e+002	2.995353e+001	7.100275e+000
20	2.788571e+002	1.920000e+002	1.631478e+002	2.857143e+002	1.880000e+002	1.614817e+002	2.770694e+001	7.056824e+000
21	2.857143e+002	1.880000e+002	1.614817e+002	2.925714e+002	1.840000e+002	1.599879e+002	2.528655e+001	7.018132e+000
22	2.925714e+002	1.840000e+002	1.599879e+002	2.994286e+002	1.800000e+002	1.586638e+002	2.269521e+001	6.983984e+000
23	2.994286e+002	1.800000e+002	1.586638e+002	3.062857e+002	1.760000e+002	1.575070e+002	1.993541e+001	6.954194e+000
24	3.062857e+002	1.760000e+002	1.575070e+002	3.131429e+002	1.720000e+002	1.565156e+002	1.700929e+001	6.928604e+000
25	3.131429e+002	1.720000e+002	1.565156e+002	3.200000e+002	1.680000e+002	1.556878e+002	1.391868e+001	6.907080e+000
26	3.200000e+002	1.680000e+002	1.556878e+002	3.265000e+002	1.680000e+002	1.550530e+002	1.264774e+001	6.531055e+000
27	3.265000e+002	1.680000e+002	1.550530e+002	3.330000e+002	1.680000e+002	1.545632e+002	1.320996e+001	6.518567e+000
28	3.330000e+002	1.680000e+002	1.545632e+002	3.390000e+002	1.645000e+002	1.542389e+002	1.186428e+001	6.008858e+000
29	3.390000e+002	1.645000e+002	1.542389e+002	3.450000e+002	1.610000e+002	1.540371e+002	8.627249e+000	6.003496e+000
30	3.450000e+002	1.610000e+002	1.540371e+002	3.510000e+002	1.575000e+002	1.539575e+002	5.267929e+000	6.000632e+000
31	3.510000e+002	1.575000e+002	1.539575e+002	3.570000e+002	1.540000e+002	1.540000e+002	1.786496e+000	6.000254e+000

SL#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	2.1994e+003	0.0000e+000	4.1319e+001	1.0000e+000	3.2991e+002	2.2879e+002	0.0000e+000	0.0000e+000	0
2	6.4091e+003	0.0000e+000	3.9676e+001	1.0000e+000	9.6136e+002	2.2602e+002	0.0000e+000	0.0000e+000	0
3	1.0381e+004	0.0000e+000	3.8072e+001	1.0000e+000	1.5572e+003	2.2342e+002	0.0000e+000	0.0000e+000	0
4	1.4132e+004	0.0000e+000	3.6502e+001	1.0000e+000	2.1198e+003	2.2095e+002	0.0000e+000	0.0000e+000	0
5	1.7675e+004	0.0000e+000	3.4963e+001	1.0000e+000	2.6512e+003	2.1863e+002	0.0000e+000	0.0000e+000	0
6	2.1020e+004	0.0000e+000	3.3452e+001	1.0000e+000	3.1531e+003	2.1642e+002	0.0000e+000	0.0000e+000	0
7	2.4180e+004	0.0000e+000	3.1967e+001	1.0000e+000	3.6270e+003	2.1434e+002	0.0000e+000	0.0000e+000	0
8	2.7153e+004	0.0000e+000	3.0467e+001	1.0000e+000	4.0729e+003	2.1136e+002	0.0000e+000	0.0000e+000	0
9	2.7135e+004	0.0000e+000	2.8951e+001	1.0000e+000	4.0702e+003	2.0749e+002	0.0000e+000	0.0000e+000	0
10	2.6928e+004	0.0000e+000	2.7457e+001	1.0000e+000	4.0392e+003	2.0372e+002	0.0000e+000	0.0000e+000	0
11	2.6540e+004	0.0000e+000	2.5982e+001	1.0000e+000	3.9809e+003	2.0007e+002	0.0000e+000	0.0000e+000	0
12	2.5977e+004	0.0000e+000	2.4526e+001	1.0000e+000	3.8965e+003	1.9653e+002	0.0000e+000	0.0000e+000	0
13	2.5246e+004	0.0000e+000	2.3087e+001	1.0000e+000	3.7868e+003	1.9309e+002	0.0000e+000	0.0000e+000	0
14	2.4352e+004	0.0000e+000	2.1663e+001	1.0000e+000	3.6528e+003	1.8975e+002	0.0000e+000	0.0000e+000	0
15	2.3300e+004	0.0000e+000	2.0252e+001	1.0000e+000	3.4950e+003	1.8651e+002	0.0000e+000	0.0000e+000	0
16	2.2095e+004	0.0000e+000	1.8855e+001	1.0000e+000	3.3142e+003	1.8336e+002	0.0000e+000	0.0000e+000	0
17	1.9852e+004	0.0000e+000	1.7548e+001	1.0000e+000	2.9778e+003	1.8146e+002	0.0000e+000	0.0000e+000	0
18	2.1527e+004	0.0000e+000	1.6329e+001	1.0000e+000	3.2291e+003	1.8080e+002	0.0000e+000	0.0000e+000	0
19	2.4647e+004	0.0000e+000	1.5032e+001	1.0000e+000	3.6971e+003	1.7902e+002	0.0000e+000	0.0000e+000	0
20	2.2799e+004	0.0000e+000	1.3657e+001	1.0000e+000	3.4198e+003	1.7615e+002	0.0000e+000	0.0000e+000	0
21	2.0807e+004	0.0000e+000	1.2290e+001	1.0000e+000	3.1211e+003	1.7336e+002	0.0000e+000	0.0000e+000	0
22	1.8675e+004	0.0000e+000	1.0930e+001	1.0000e+000	2.8012e+003	1.7065e+002	0.0000e+000	0.0000e+000	0
23	1.6404e+004	0.0000e+000	9.5756e+000	1.0000e+000	2.4606e+003	1.6803e+002	0.0000e+000	0.0000e+000	0
24	1.3996e+004	0.0000e+000	8.2270e+000	1.0000e+000	2.0994e+003	1.6550e+002	0.0000e+000	0.0000e+000	0
25	1.1453e+004	0.0000e+000	6.8830e+000	1.0000e+000	1.7180e+003	1.6304e+002	0.0000e+000	0.0000e+000	0
26	9.8652e+003	0.0000e+000	5.5777e+000	1.0000e+000	1.4798e+003	1.6168e+002	0.0000e+000	0.0000e+000	0
27	1.0304e+004	0.0000e+000	4.3100e+000	1.0000e+000	1.5456e+003	1.6140e+002	0.0000e+000	0.0000e+000	0
28	8.5423e+003	0.0000e+000	3.0931e+000	1.0000e+000	1.2813e+003	1.6032e+002	0.0000e+000	0.0000e+000	0
29	6.2116e+003	0.0000e+000	1.9263e+000	1.0000e+000	9.3174e+002	1.5844e+002	0.0000e+000	0.0000e+000	0
30	3.7929e+003	0.0000e+000	7.6019e-001	1.0000e+000	5.6894e+002	1.5662e+002	0.0000e+000	0.0000e+000	0
31	1.2863e+003	0.0000e+000	-4.0557e-001	1.0000e+000	1.9294e+002	1.5486e+002	0.0000e+000	0.0000e+000	0

Bishop_Method_Fm= 1.4055923 Applied_Lambda= 0.0000

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	5.8094e+002	-2.6746e+003	3.0000e+001	4.0000e+002	0.0000e+000	0.0000e+000	1.4007e+003	0.0000e+000
2	4.7445e+003	-4.3259e+003	3.0000e+001	4.0000e+002	-1.4007e+003	0.0000e+000	9.0816e+002	0.0000e+000
3	8.6055e+003	-5.8587e+003	3.0000e+001	4.0000e+002	-9.0816e+002	0.0000e+000	-1.1176e+003	0.0000e+000
4	1.2198e+004	-7.2862e+003	3.0000e+001	4.0000e+002	1.1176e+003	0.0000e+000	-4.3581e+003	0.0000e+000
5	1.5550e+004	-8.6195e+003	3.0000e+001	4.0000e+002	4.3581e+003	0.0000e+000	-8.5298e+003	0.0000e+000
6	1.8685e+004	-9.8677e+003	3.0000e+001	4.0000e+002	8.5298e+003	0.0000e+000	-1.3379e+004	0.0000e+000
7	2.1625e+004	-1.1039e+004	3.0000e+001	4.0000e+002	1.3379e+004	0.0000e+000	-1.8678e+004	0.0000e+000
8	2.4321e+004	-1.2228e+004	3.0000e+001	4.0000e+002	1.8678e+004	0.0000e+000	-2.4090e+004	0.0000e+000
9	2.4284e+004	-1.2179e+004	3.0000e+001	4.0000e+002	2.4090e+004	0.0000e+000	-2.8808e+004	0.0000e+000
10	2.4086e+004	-1.2067e+004	3.0000e+001	4.0000e+002	2.8808e+004	0.0000e+000	-3.2802e+004	0.0000e+000
11	2.3736e+004	-1.1895e+004	3.0000e+001	4.0000e+002	3.2802e+004	0.0000e+000	-3.6052e+004	0.0000e+000
12	2.3239e+004	-1.1666e+004	3.0000e+001	4.0000e+002	3.6052e+004	0.0000e+000	-3.8556e+004	0.0000e+000
13	2.2601e+004	-1.1380e+004	3.0000e+001	4.0000e+002	3.8556e+004	0.0000e+000	-4.0321e+004	0.0000e+000
14	2.1824e+004	-1.1040e+004	3.0000e+001	4.0000e+002	4.0321e+004	0.0000e+000	-4.1367e+004	0.0000e+000
15	2.0914e+004	-1.0646e+004	3.0000e+001	4.0000e+002	4.1367e+004	0.0000e+000	-4.1725e+004	0.0000e+000
16	1.9870e+004	-1.0200e+004	3.0000e+001	4.0000e+002	4.1725e+004	0.0000e+000	-4.1435e+004	0.0000e+000
17	1.7930e+004	-9.1557e+003	3.0000e+001	4.0000e+002	4.1435e+004	0.0000e+000	-4.0755e+004	0.0000e+000
18	1.9562e+004	-9.8142e+003	3.0000e+001	4.0000e+002	4.0755e+004	0.0000e+000	-3.9706e+004	0.0000e+000
19	2.2501e+004	-1.1263e+004	3.0000e+001	4.0000e+002	3.9706e+004	0.0000e+000	-3.7948e+004	0.0000e+000
20	2.0893e+004	-1.0590e+004	3.0000e+001	4.0000e+002	3.7948e+004	0.0000e+000	-3.5620e+004	0.0000e+000
21	1.9150e+004	-9.8631e+003	3.0000e+001	4.0000e+002	3.5620e+004	0.0000e+000	-3.2816e+004	0.0000e+000
22	1.7269e+004	-9.0809e+003	3.0000e+001	4.0000e+002	3.2816e+004	0.0000e+000	-2.9637e+004	0.0000e+000
23	1.5248e+004	-8.2420e+003	3.0000e+001	4.0000e+002	2.9637e+004	0.0000e+000	-2.6199e+004	0.0000e+000
24	1.3082e+004	-7.3450e+003	3.0000e+001	4.0000e+002	2.6199e+004	0.0000e+000	-2.2625e+004	0.0000e+000
25	1.0766e+004	-6.3879e+003	3.0000e+001	4.0000e+002	2.2625e+004	0.0000e+000	-1.9049e+004	0.0000e+000
26	9.3563e+003	-5.7017e+003	3.0000e+001	4.0000e+002	1.9049e+004	0.0000e+000	-1.5546e+004	0.0000e+000
27	9.8878e+003	-5.9165e+003	3.0000e+001	4.0000e+002	1.5546e+004	0.0000e+000	-1.1708e+004	0.0000e+000
28	8.2790e+003	-5.1106e+003	3.0000e+001	4.0000e+002	1.1708e+004	0.0000e+000	-8.1346e+003	0.0000e+000
29	6.0740e+003	-4.2034e+003	3.0000e+001	4.0000e+002	8.1346e+003	0.0000e+000	-4.9052e+003	0.0000e+000
30	3.7502e+003	-3.2481e+003	3.0000e+001	4.0000e+002	4.9052e+003	0.0000e+000	-2.1479e+003	0.0000e+000
31	1.3022e+003	-2.2424e+003	3.0000e+001	4.0000e+002	2.1479e+003	0.0000e+000	0.0000e+000	0.0000e+000

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Bishop Method	4.4574e+003	5.3488e+005	1.0825e+008	7.7014e+007			1.4055923

| SUMMARY OF MINIMUM FACTORS OF SAFETY |

MOMENT EQUILIBRIUM: BISHOP SIMPLIFIED METHOD
351.9126=X-COOR. 448.8724=Y-COOR. 294.9163=RADIUS 1.4055923=F.S. 52=SLIP#

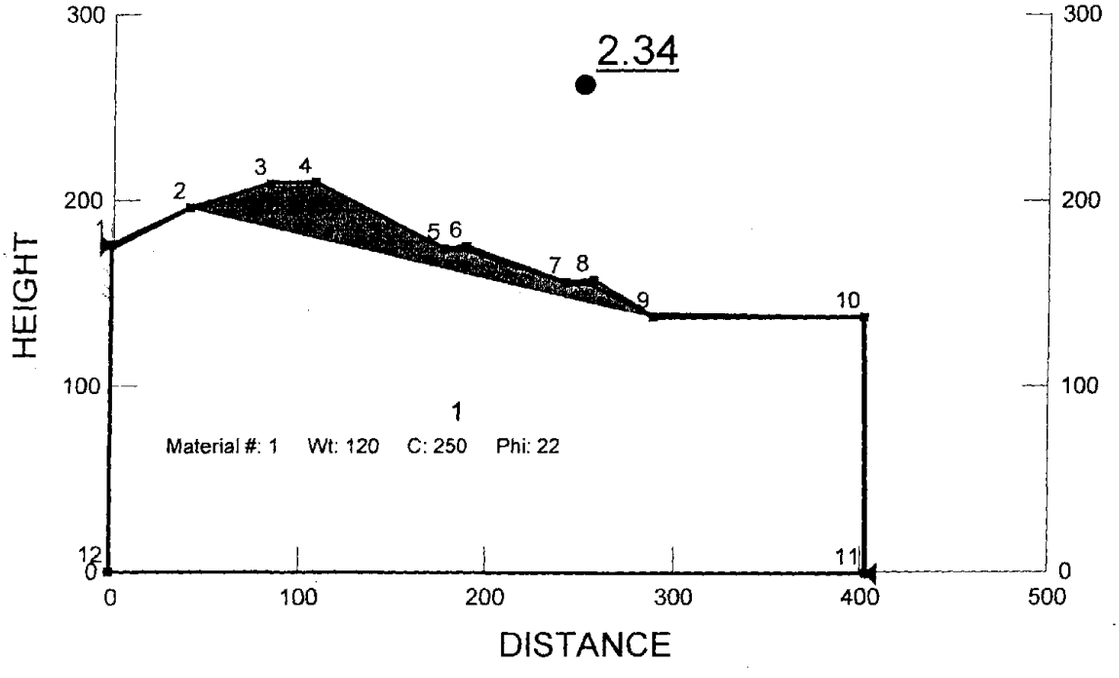
MOST_CRITICAL #	SLIP_SURFACE #
1	52

SLIP_SURFACE # AUTOTENSIONELEV

Title: SLOPE STABILITY ANALYSIS - SECTION K-K
Comments: BEDDING FAILURE
Name: 200-700-Sec K11.gsz
Directory: E:\Slope Stability Calculations\200-700\
Date: 3/18/05Time: 10:34:50 AM

Material #: 1 Wt: 120 C: 250 Phi: 22 Model: MohrCoulomb

Slip Surface Option: FullySpecified
Analysis Method: Spencer
P.W.P. Option□Piezometric Lines / Ru
Horz Seismic Load: 0



SLOPE STABILITY ANALYSIS - SECTION K-K
BEDDING FAILURE
DATESTAMP 3/18/05
TIMESTAMP 10:34:50 AM

Center_X	Center_Y	Radius	Slip_Surface	Method
2.515000e+002	2.627500e+002	1.884504e+002	1	2

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height	Base_Length
1	4.100000e+001	1.960000e+002	1.960000e+002	4.960000e+001	1.986000e+002	1.939540e+002	2.322984e+000	8.840022e+000
2	4.960000e+001	1.986000e+002	1.939540e+002	5.820000e+001	2.012000e+002	1.919081e+002	6.968952e+000	8.840022e+000
3	5.820000e+001	2.012000e+002	1.919081e+002	6.680000e+001	2.038000e+002	1.898621e+002	1.161492e+001	8.840022e+000
4	6.680000e+001	2.038000e+002	1.898621e+002	7.540000e+001	2.064000e+002	1.878161e+002	1.626089e+001	8.840022e+000
5	7.540000e+001	2.064000e+002	1.878161e+002	8.400000e+001	2.090000e+002	1.857702e+002	2.090685e+001	8.840022e+000
6	8.400000e+001	2.090000e+002	1.857702e+002	9.200000e+001	2.093333e+002	1.838669e+002	2.434812e+001	8.223276e+000
7	9.200000e+001	2.093333e+002	1.838669e+002	1.000000e+002	2.096667e+002	1.819637e+002	2.658468e+001	8.223276e+000
8	1.000000e+002	2.096667e+002	1.819637e+002	1.080000e+002	2.100000e+002	1.800605e+002	2.882124e+001	8.223276e+000
9	1.080000e+002	2.100000e+002	1.800605e+002	1.166250e+002	2.055000e+002	1.780086e+002	2.871547e+001	8.865719e+000
10	1.166250e+002	2.055000e+002	1.780086e+002	1.252500e+002	2.010000e+002	1.759567e+002	2.626739e+001	8.865719e+000
11	1.252500e+002	2.010000e+002	1.759567e+002	1.338750e+002	1.965000e+002	1.739047e+002	2.381930e+001	8.865719e+000
12	1.338750e+002	1.965000e+002	1.739047e+002	1.425000e+002	1.920000e+002	1.718528e+002	2.137122e+001	8.865719e+000
13	1.425000e+002	1.920000e+002	1.718528e+002	1.511250e+002	1.875000e+002	1.698009e+002	1.892314e+001	8.865719e+000
14	1.511250e+002	1.875000e+002	1.698009e+002	1.597500e+002	1.830000e+002	1.677490e+002	1.647505e+001	8.865719e+000
15	1.597500e+002	1.830000e+002	1.677490e+002	1.683750e+002	1.785000e+002	1.656971e+002	1.402697e+001	8.865719e+000
16	1.683750e+002	1.785000e+002	1.656971e+002	1.770000e+002	1.740000e+002	1.636452e+002	1.157888e+001	8.865719e+000
17	1.770000e+002	1.740000e+002	1.636452e+002	1.890000e+002	1.750000e+002	1.607903e+002	1.228226e+001	1.233491e+001
18	1.890000e+002	1.750000e+002	1.607903e+002	1.978333e+002	1.718333e+002	1.586888e+002	1.367708e+001	9.079867e+000
19	1.978333e+002	1.718333e+002	1.586888e+002	2.066667e+002	1.686667e+002	1.565874e+002	1.261190e+001	9.079867e+000
20	2.066667e+002	1.686667e+002	1.565874e+002	2.155000e+002	1.655000e+002	1.544859e+002	1.154671e+001	9.079867e+000
21	2.155000e+002	1.655000e+002	1.544859e+002	2.243333e+002	1.623333e+002	1.523844e+002	1.048152e+001	9.079867e+000
22	2.243333e+002	1.623333e+002	1.523844e+002	2.331667e+002	1.591667e+002	1.502829e+002	9.416331e+000	9.079867e+000
23	2.331667e+002	1.591667e+002	1.502829e+002	2.420000e+002	1.560000e+002	1.481815e+002	8.351142e+000	9.079867e+000
24	2.420000e+002	1.560000e+002	1.481815e+002	2.495000e+002	1.565000e+002	1.463972e+002	8.960685e+000	7.709321e+000
25	2.495000e+002	1.565000e+002	1.463972e+002	2.570000e+002	1.570000e+002	1.446129e+002	1.124496e+001	7.709321e+000
26	2.570000e+002	1.570000e+002	1.446129e+002	2.650000e+002	1.520000e+002	1.427097e+002	1.083871e+001	8.223276e+000
27	2.650000e+002	1.520000e+002	1.427097e+002	2.730000e+002	1.470000e+002	1.408065e+002	7.741935e+000	8.223276e+000
28	2.730000e+002	1.470000e+002	1.408065e+002	2.810000e+002	1.420000e+002	1.389032e+002	4.645161e+000	8.223276e+000
29	2.810000e+002	1.420000e+002	1.389032e+002	2.890000e+002	1.370000e+002	1.370000e+002	1.548387e+000	8.223276e+000

SL#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	2.3973e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
2	7.1920e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
3	1.1987e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
4	1.6781e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
5	2.1576e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
6	2.3374e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
7	2.5521e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
8	2.7668e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
9	2.9721e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
10	2.7187e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
11	2.4653e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
12	2.2119e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
13	1.9585e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
14	1.7052e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
15	1.4518e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
16	1.1984e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
17	1.7686e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
18	1.4498e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
19	1.3369e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
20	1.2240e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
21	1.1110e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
22	9.9813e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
23	8.8522e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
24	8.0646e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
25	1.0120e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
26	1.0405e+004	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
27	7.4323e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
28	4.4594e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0
29	1.4865e+003	0.0000e+000	1.3382e+001	1.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0.0000e+000	0

Spencer_Method_Fm= 2.3351548 Applied_Lambda= 0.2306

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	2.3269e+003	-1.3490e+003	2.2000e+001	2.5000e+002	0.0000e+000	0.0000e+000	7.7439e+002	-1.7858e+002
2	6.9935e+003	-2.1564e+003	2.2000e+001	2.5000e+002	-7.7439e+002	1.7858e+002	1.2545e+003	-2.8931e+002
3	1.1660e+004	-2.9638e+003	2.2000e+001	2.5000e+002	-1.2545e+003	2.8931e+002	1.4404e+003	-3.3218e+002
4	1.6327e+004	-3.7713e+003	2.2000e+001	2.5000e+002	-1.4404e+003	3.3218e+002	1.3321e+003	-3.0720e+002
5	2.0993e+004	-4.5787e+003	2.2000e+001	2.5000e+002	-1.3321e+003	3.0720e+002	9.2955e+002	-2.1436e+002
6	2.2744e+004	-4.8156e+003	2.2000e+001	2.5000e+002	-9.2955e+002	2.1436e+002	3.5233e+002	-8.1251e+001
7	2.4834e+004	-5.1771e+003	2.2000e+001	2.5000e+002	-3.5233e+002	8.1251e+001	-3.5665e+002	8.2247e+001
8	2.6924e+004	-5.5387e+003	2.2000e+001	2.5000e+002	3.5665e+002	-8.2247e+001	-1.1974e+003	2.7613e+002
9	2.8921e+004	-5.9530e+003	2.2000e+001	2.5000e+002	1.1974e+003	-2.7613e+002	-2.0971e+003	4.8361e+002
10	2.6455e+004	-5.5263e+003	2.2000e+001	2.5000e+002	2.0971e+003	-4.8361e+002	-2.8413e+003	6.5524e+002
11	2.3988e+004	-5.0996e+003	2.2000e+001	2.5000e+002	2.8413e+003	-6.5524e+002	-3.4300e+003	7.9100e+002
12	2.1522e+004	-4.6729e+003	2.2000e+001	2.5000e+002	3.4300e+003	-7.9100e+002	-3.8633e+003	8.9091e+002
13	1.9056e+004	-4.2462e+003	2.2000e+001	2.5000e+002	3.8633e+003	-8.9091e+002	-4.1410e+003	9.5496e+002
14	1.6590e+004	-3.8195e+003	2.2000e+001	2.5000e+002	4.1410e+003	-9.5496e+002	-4.2633e+003	9.8315e+002
15	1.4124e+004	-3.3929e+003	2.2000e+001	2.5000e+002	4.2633e+003	-9.8315e+002	-4.2300e+003	9.7548e+002
16	1.1658e+004	-2.9662e+003	2.2000e+001	2.5000e+002	4.2300e+003	-9.7548e+002	-4.0413e+003	9.3196e+002
17	1.7205e+004	-4.2974e+003	2.2000e+001	2.5000e+002	4.0413e+003	-9.3196e+002	-3.8408e+003	8.8574e+002
18	1.4104e+004	-3.4124e+003	2.2000e+001	2.5000e+002	3.8408e+003	-8.8574e+002	-3.7840e+003	8.7263e+002
19	1.3005e+004	-3.2222e+003	2.2000e+001	2.5000e+002	3.7840e+003	-8.7263e+002	-3.6579e+003	8.4355e+002
20	1.1906e+004	-3.0321e+003	2.2000e+001	2.5000e+002	3.6579e+003	-8.4355e+002	-3.4625e+003	7.9850e+002
21	1.0807e+004	-2.8419e+003	2.2000e+001	2.5000e+002	3.4625e+003	-7.9850e+002	-3.1979e+003	7.3746e+002
22	9.7083e+003	-2.6518e+003	2.2000e+001	2.5000e+002	3.1979e+003	-7.3746e+002	-2.8639e+003	6.6044e+002
23	8.6093e+003	-2.4617e+003	2.2000e+001	2.5000e+002	2.8639e+003	-6.6044e+002	-2.4606e+003	5.6744e+002
24	7.8437e+003	-2.1825e+003	2.2000e+001	2.5000e+002	2.4606e+003	-5.6744e+002	-2.1519e+003	4.9625e+002
25	9.8447e+003	-2.5287e+003	2.2000e+001	2.5000e+002	2.1519e+003	-4.9625e+002	-1.9693e+003	4.5415e+002
26	1.0121e+004	-2.6316e+003	2.2000e+001	2.5000e+002	1.9693e+003	-4.5415e+002	-1.7507e+003	4.0372e+002
27	7.2279e+003	-2.1309e+003	2.2000e+001	2.5000e+002	1.7507e+003	-4.0372e+002	-1.3495e+003	3.1122e+002
28	4.3343e+003	-1.6303e+003	2.2000e+001	2.5000e+002	1.3495e+003	-3.1122e+002	-7.6599e+002	1.7665e+002
29	1.4408e+003	-1.1297e+003	2.2000e+001	2.5000e+002	7.6599e+002	-1.7665e+002	0.0000e+000	0.0000e+000

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Spencer Method	3.6085e+003	4.3302e+005	2.6588e+007	1.1386e+007	2.2758e+005	9.7499e+004	2.3351548

SUMMARY OF MINIMUM FACTORS OF SAFETY

MOMENT AND FORCE EQUILIBRIUM: SPENCER METHOD

251.5000=X-COOR.	262.7500=Y-COOR.	188.4504=RADIUS	2.3351548=F.S.	1=SLIP#

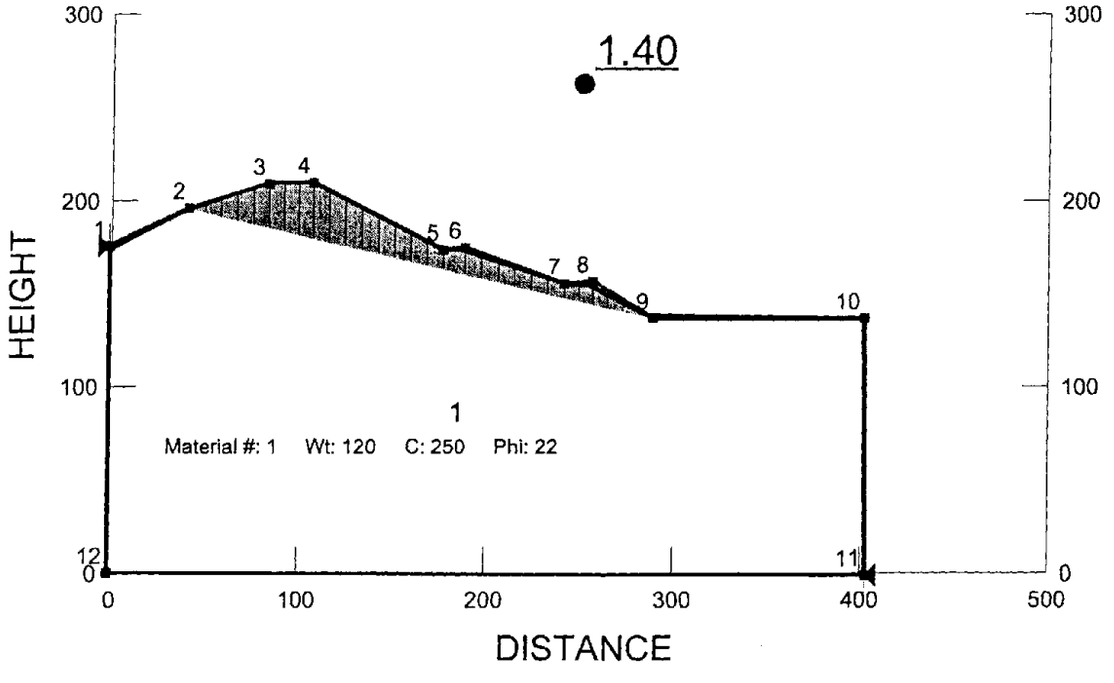
MOST_CRITICAL #	SLIP_SURFACE #
1	1

SLIP_SURFACE #	AUTOTENSIONELEV

Title: SLOPE STABILITY ANALYSIS - SECTION K - K
Comments: EARTQUAKE - BEDDING FAILURE
Name: 200-700-Sec K12.gsz
Directory: E:\Slope Stability Calculations\200-700\
Date: 3/18/05Time: 10:41:26 AM

Material #: 1 Wt: 120 C: 250 Phi: 22 Model: MohrCoulomb

Slip Surface Option: FullySpecified
Analysis Method: Spencer
P.W.P. Option Piezometric Lines / Ru
Horz Seismic Load: 0.15



SLOPE STABILITY ANALYSIS - SECTION K - K
EARTQUAKE - BEDDING FAILURE
DATESTAMP 3/18/05
TIMESTAMP 10:41:26 AM

Center_X	Center_Y	Radius	Slip_Surface	Method
2.515000e+002	2.627500e+002	1.884504e+002	1	2

SL#	X_Left	Y_L_Top	Y_L_Bottom	X_Right	Y_R_Top	Y_R_Bottom	Mid_Height	Base_Length
1	4.100000e+001	1.960000e+002	1.960000e+002	4.960000e+001	1.986000e+002	1.939540e+002	2.322984e+000	8.840022e+000
2	4.960000e+001	1.986000e+002	1.939540e+002	5.820000e+001	2.012000e+002	1.919081e+002	6.968952e+000	8.840022e+000
3	5.820000e+001	2.012000e+002	1.919081e+002	6.680000e+001	2.038000e+002	1.898621e+002	1.161492e+001	8.840022e+000
4	6.680000e+001	2.038000e+002	1.898621e+002	7.540000e+001	2.064000e+002	1.878161e+002	1.626089e+001	8.840022e+000
5	7.540000e+001	2.064000e+002	1.878161e+002	8.400000e+001	2.090000e+002	1.857702e+002	2.090685e+001	8.840022e+000
6	8.400000e+001	2.090000e+002	1.857702e+002	9.200000e+001	2.093333e+002	1.838669e+002	2.434812e+001	8.223276e+000
7	9.200000e+001	2.093333e+002	1.838669e+002	1.000000e+002	2.096667e+002	1.819637e+002	2.658468e+001	8.223276e+000
8	1.000000e+002	2.096667e+002	1.819637e+002	1.080000e+002	2.100000e+002	1.800605e+002	2.882124e+001	8.223276e+000
9	1.080000e+002	2.100000e+002	1.800605e+002	1.166250e+002	2.055000e+002	1.780086e+002	2.871547e+001	8.865719e+000
10	1.166250e+002	2.055000e+002	1.780086e+002	1.252500e+002	2.010000e+002	1.759567e+002	2.626739e+001	8.865719e+000
11	1.252500e+002	2.010000e+002	1.759567e+002	1.338750e+002	1.965000e+002	1.739047e+002	2.381930e+001	8.865719e+000
12	1.338750e+002	1.965000e+002	1.739047e+002	1.425000e+002	1.920000e+002	1.718528e+002	2.137122e+001	8.865719e+000
13	1.425000e+002	1.920000e+002	1.718528e+002	1.511250e+002	1.875000e+002	1.698009e+002	1.892314e+001	8.865719e+000
14	1.511250e+002	1.875000e+002	1.698009e+002	1.597500e+002	1.830000e+002	1.677490e+002	1.647505e+001	8.865719e+000
15	1.597500e+002	1.830000e+002	1.677490e+002	1.683750e+002	1.785000e+002	1.656971e+002	1.402697e+001	8.865719e+000
16	1.683750e+002	1.785000e+002	1.656971e+002	1.770000e+002	1.740000e+002	1.636452e+002	1.157888e+001	8.865719e+000
17	1.770000e+002	1.740000e+002	1.636452e+002	1.890000e+002	1.750000e+002	1.607903e+002	1.228226e+001	1.233491e+001
18	1.890000e+002	1.750000e+002	1.607903e+002	1.978333e+002	1.718333e+002	1.586888e+002	1.367708e+001	9.079867e+000
19	1.978333e+002	1.718333e+002	1.586888e+002	2.066667e+002	1.686667e+002	1.565874e+002	1.261190e+001	9.079867e+000
20	2.066667e+002	1.686667e+002	1.565874e+002	2.155000e+002	1.655000e+002	1.544859e+002	1.154671e+001	9.079867e+000
21	2.155000e+002	1.655000e+002	1.544859e+002	2.243333e+002	1.623333e+002	1.523844e+002	1.048152e+001	9.079867e+000
22	2.243333e+002	1.623333e+002	1.523844e+002	2.331667e+002	1.591667e+002	1.502829e+002	9.416331e+000	9.079867e+000
23	2.331667e+002	1.591667e+002	1.502829e+002	2.420000e+002	1.560000e+002	1.481815e+002	8.351142e+000	9.079867e+000
24	2.420000e+002	1.560000e+002	1.481815e+002	2.495000e+002	1.565000e+002	1.463972e+002	8.960685e+000	7.709321e+000
25	2.495000e+002	1.565000e+002	1.463972e+002	2.570000e+002	1.570000e+002	1.446129e+002	1.124496e+001	7.709321e+000
26	2.570000e+002	1.570000e+002	1.446129e+002	2.650000e+002	1.520000e+002	1.427097e+002	1.083871e+001	8.223276e+000
27	2.650000e+002	1.520000e+002	1.427097e+002	2.730000e+002	1.470000e+002	1.408065e+002	7.741935e+000	8.223276e+000
28	2.730000e+002	1.470000e+002	1.408065e+002	2.810000e+002	1.420000e+002	1.389032e+002	4.645161e+000	8.223276e+000
29	2.810000e+002	1.420000e+002	1.389032e+002	2.890000e+002	1.370000e+002	1.370000e+002	1.548387e+000	8.223276e+000

SL#	Weight	Pore_Water	Alpha	Force Fn.	Seismic_F	Seismic_Y	Pore_Air	Phi_B	Liquified
1	2.3973e+003	0.0000e+000	1.3382e+001	1.0000e+000	3.5960e+002	1.9614e+002	0.0000e+000	0.0000e+000	0
2	7.1920e+003	0.0000e+000	1.3382e+001	1.0000e+000	1.0788e+003	1.9642e+002	0.0000e+000	0.0000e+000	0
3	1.1987e+004	0.0000e+000	1.3382e+001	1.0000e+000	1.7980e+003	1.9669e+002	0.0000e+000	0.0000e+000	0
4	1.6781e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.5172e+003	1.9697e+002	0.0000e+000	0.0000e+000	0
5	2.1576e+004	0.0000e+000	1.3382e+001	1.0000e+000	3.2364e+003	1.9725e+002	0.0000e+000	0.0000e+000	0
6	2.3374e+004	0.0000e+000	1.3382e+001	1.0000e+000	3.5061e+003	1.9699e+002	0.0000e+000	0.0000e+000	0
7	2.5521e+004	0.0000e+000	1.3382e+001	1.0000e+000	3.8282e+003	1.9621e+002	0.0000e+000	0.0000e+000	0
8	2.7668e+004	0.0000e+000	1.3382e+001	1.0000e+000	4.1503e+003	1.9542e+002	0.0000e+000	0.0000e+000	0
9	2.9721e+004	0.0000e+000	1.3382e+001	1.0000e+000	4.4581e+003	1.9339e+002	0.0000e+000	0.0000e+000	0
10	2.7187e+004	0.0000e+000	1.3382e+001	1.0000e+000	4.0780e+003	1.9012e+002	0.0000e+000	0.0000e+000	0
11	2.4653e+004	0.0000e+000	1.3382e+001	1.0000e+000	3.6979e+003	1.8684e+002	0.0000e+000	0.0000e+000	0
12	2.2119e+004	0.0000e+000	1.3382e+001	1.0000e+000	3.3179e+003	1.8356e+002	0.0000e+000	0.0000e+000	0
13	1.9585e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.9378e+003	1.8029e+002	0.0000e+000	0.0000e+000	0
14	1.7052e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.5578e+003	1.7701e+002	0.0000e+000	0.0000e+000	0
15	1.4518e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.1777e+003	1.7374e+002	0.0000e+000	0.0000e+000	0
16	1.1984e+004	0.0000e+000	1.3382e+001	1.0000e+000	1.7976e+003	1.7046e+002	0.0000e+000	0.0000e+000	0
17	1.7686e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.6530e+003	1.6836e+002	0.0000e+000	0.0000e+000	0
18	1.4498e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.1747e+003	1.6658e+002	0.0000e+000	0.0000e+000	0
19	1.3369e+004	0.0000e+000	1.3382e+001	1.0000e+000	2.0053e+003	1.6394e+002	0.0000e+000	0.0000e+000	0
20	1.2240e+004	0.0000e+000	1.3382e+001	1.0000e+000	1.8359e+003	1.6131e+002	0.0000e+000	0.0000e+000	0
21	1.1110e+004	0.0000e+000	1.3382e+001	1.0000e+000	1.6666e+003	1.5868e+002	0.0000e+000	0.0000e+000	0
22	9.9813e+003	0.0000e+000	1.3382e+001	1.0000e+000	1.4972e+003	1.5604e+002	0.0000e+000	0.0000e+000	0
23	8.8522e+003	0.0000e+000	1.3382e+001	1.0000e+000	1.3278e+003	1.5341e+002	0.0000e+000	0.0000e+000	0
24	8.0646e+003	0.0000e+000	1.3382e+001	1.0000e+000	1.2097e+003	1.5177e+002	0.0000e+000	0.0000e+000	0
25	1.0120e+004	0.0000e+000	1.3382e+001	1.0000e+000	1.5181e+003	1.5113e+002	0.0000e+000	0.0000e+000	0
26	1.0405e+004	0.0000e+000	1.3382e+001	1.0000e+000	1.5608e+003	1.4908e+002	0.0000e+000	0.0000e+000	0
27	7.4323e+003	0.0000e+000	1.3382e+001	1.0000e+000	1.1148e+003	1.4563e+002	0.0000e+000	0.0000e+000	0
28	4.4594e+003	0.0000e+000	1.3382e+001	1.0000e+000	6.6890e+002	1.4218e+002	0.0000e+000	0.0000e+000	0
29	1.4865e+003	0.0000e+000	1.3382e+001	1.0000e+000	2.2297e+002	1.3873e+002	0.0000e+000	0.0000e+000	0

Spencer_Method_Fm= 1.4013778 Applied_Lambda= 0.8672

SL#	Normal_M	ShearMob	Phi_Angle	Cohesion	SideLeft	ShearLeft	SideRight	ShearRight
1	3.0711e+003	-2.4624e+003	2.2000e+001	2.5000e+002	0.0000e+000	0.0000e+000	1.3369e+003	-1.1593e+003
2	7.2599e+003	-3.6701e+003	2.2000e+001	2.5000e+002	-1.3369e+003	1.1593e+003	2.1659e+003	-1.8782e+003
3	1.1449e+004	-4.8778e+003	2.2000e+001	2.5000e+002	-2.1659e+003	1.8782e+003	2.4868e+003	-2.1565e+003
4	1.5638e+004	-6.0854e+003	2.2000e+001	2.5000e+002	-2.4868e+003	2.1565e+003	2.2998e+003	-1.9943e+003
5	1.9826e+004	-7.2931e+003	2.2000e+001	2.5000e+002	-2.2998e+003	1.9943e+003	1.6048e+003	-1.3916e+003
6	2.1329e+004	-7.6164e+003	2.2000e+001	2.5000e+002	-1.6048e+003	1.3916e+003	6.0828e+002	-5.2748e+002
7	2.3205e+004	-8.1572e+003	2.2000e+001	2.5000e+002	-6.0828e+002	5.2748e+002	-6.1573e+002	5.3394e+002
8	2.5081e+004	-8.6980e+003	2.2000e+001	2.5000e+002	6.1573e+002	-5.3394e+002	-2.0672e+003	1.7926e+003
9	2.6945e+004	-9.3500e+003	2.2000e+001	2.5000e+002	2.0672e+003	-1.7926e+003	-3.6205e+003	3.1396e+003
10	2.4731e+004	-8.7118e+003	2.2000e+001	2.5000e+002	3.6205e+003	-3.1396e+003	-4.9053e+003	4.2538e+003
11	2.2518e+004	-8.0736e+003	2.2000e+001	2.5000e+002	4.9053e+003	-4.2538e+003	-5.9217e+003	5.1352e+003
12	2.0304e+004	-7.4354e+003	2.2000e+001	2.5000e+002	5.9217e+003	-5.1352e+003	-6.6697e+003	5.7838e+003
13	1.8090e+004	-6.7972e+003	2.2000e+001	2.5000e+002	6.6697e+003	-5.7838e+003	-7.1491e+003	6.1996e+003
14	1.5877e+004	-6.1590e+003	2.2000e+001	2.5000e+002	7.1491e+003	-6.1996e+003	-7.3602e+003	6.3826e+003
15	1.3663e+004	-5.5208e+003	2.2000e+001	2.5000e+002	7.3602e+003	-6.3826e+003	-7.3028e+003	6.3328e+003
16	1.1449e+004	-4.8826e+003	2.2000e+001	2.5000e+002	7.3028e+003	-6.3328e+003	-6.9770e+003	6.0502e+003
17	1.6815e+004	-7.0483e+003	2.2000e+001	2.5000e+002	6.9770e+003	-6.0502e+003	-6.6309e+003	5.7502e+003
18	1.3669e+004	-5.5607e+003	2.2000e+001	2.5000e+002	6.6309e+003	-5.7502e+003	-6.5328e+003	5.6651e+003
19	1.2683e+004	-5.2763e+003	2.2000e+001	2.5000e+002	6.5328e+003	-5.6651e+003	-6.3151e+003	5.4763e+003
20	1.1696e+004	-4.9919e+003	2.2000e+001	2.5000e+002	6.3151e+003	-5.4763e+003	-5.9778e+003	5.1838e+003
21	1.0710e+004	-4.7075e+003	2.2000e+001	2.5000e+002	5.9778e+003	-5.1838e+003	-5.5209e+003	4.7876e+003
22	9.7234e+003	-4.4231e+003	2.2000e+001	2.5000e+002	5.5209e+003	-4.7876e+003	-4.9443e+003	4.2876e+003
23	8.7369e+003	-4.1387e+003	2.2000e+001	2.5000e+002	4.9443e+003	-4.2876e+003	-4.2481e+003	3.6838e+003
24	7.8974e+003	-3.6522e+003	2.2000e+001	2.5000e+002	4.2481e+003	-3.6838e+003	-3.7151e+003	3.2216e+003
25	9.6935e+003	-4.1700e+003	2.2000e+001	2.5000e+002	3.7151e+003	-3.2216e+003	-3.3999e+003	2.9483e+003
26	9.9990e+003	-4.3498e+003	2.2000e+001	2.5000e+002	3.3999e+003	-2.9483e+003	-3.0224e+003	2.6209e+003
27	7.4017e+003	-3.6010e+003	2.2000e+001	2.5000e+002	3.0224e+003	-2.6209e+003	-2.3299e+003	2.0204e+003
28	4.8045e+003	-2.8522e+003	2.2000e+001	2.5000e+002	2.3299e+003	-2.0204e+003	-1.3224e+003	1.1468e+003
29	2.2072e+003	-2.1033e+003	2.2000e+001	2.5000e+002	1.3224e+003	-1.1468e+003	0.0000e+000	0.0000e+000

Slip_Surface_Summary

Analysis	Volume	Weight	Res_Moment	Act_Moment	Res_Force	Act_Force	FOS
Spencer Method	3.6085e+003	4.3302e+005	2.5909e+007	1.8488e+007	2.2167e+005	1.5897e+005	1.4013778

| SUMMARY OF MINIMUM FACTORS OF SAFETY |

MOMENT AND FORCE EQUILIBRIUM: SPENCER METHOD
251.5000=X-COOR. 262.7500=Y-COOR. 188.4504=RADIUS 1.4013778=F.S. 1=SLIP#

MOST_CRITICAL #	SLIP_SURFACE #
1	1

SLIP_SURFACE # AUTOTENSIONELEV

Newhall Land and Farming Company
March 18, 2005
2004-700-21

APPENDIX D

CONE PENETRATION TEST DATA

RTF&A
GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

Cone Penetration Test Sounding
RTF&A 96-115-21 Report Dated 12-03-01

Cone Penetration Test Sounding
with Piezometer
RTF&A 96-115-21 Report Dated 12-03-01

PRESENTATION OF CONE PENETRATION TEST DATA

TRACT #53295

VALENCIA, CALIFORNIA

Prepared for:
R.T. Frankian & Associates
Burbank, California

Prepared by:

GREGG IN SITU, INC.
Signal Hill, California
01-031sh

Prepared on:

February 6, 2001

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

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2.0 FIELD EQUIPMENT & PROCEDURES

2.1 Electronic Cone Penetration Testing

2.2 Seismic Cone Penetration Testing

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3.1 CPT Plots
3.2 Interpreted Output
3.3 Summary of Seismic Results
3.4 Pore Pressure Dissipation Tests

APPENDIX

- Figure 1: Seismic Cone Penetrometer
- Figure 2: Seismic Data Acquisition Layout
- Figure 3: Soil Classification Chart
- Figure 4: PPDT Correlation Figure
- References

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- CPT Data Disk
- CPT Interpretation Method

PRESENTATION OF CONE PENETRATION TEST DATA

1.0 INTRODUCTION

This report presents the results of a Cone Penetration Testing (CPT) program carried out at the Tract 53295 site located in Valencia, Ca.. The work was performed on December 19th, 2000 and January 31st, 2001. The work is part of a geotechnical program being carried out by R.T. Frankian & Associates. The enclosed information consists of the CPT data from the referenced project. We recommend that all data be carefully reviewed by qualified personnel to verify the data and make appropriate recommendations.

2.0 FIELD EQUIPMENT & PROCEDURES

2.1 Electronic Cone Penetration Testing

The Cone Penetration Tests (CPT) were carried out by GREGG IN SITU, INC. of Signal Hill, CA using an integrated electronic cone system. A 20 ton capacity cone was used for the soundings. This cone has a tip area of 15 sq.cm. and friction sleeve area of 225 sq.cm. A piezometer element of 5 mm. thickness is located immediately behind the cone tip. The subtraction cone used has an equal end area friction sleeve and a tip end area ratio of 0.85 (Refer to Figure 1).

The cone used during the program was capable of recording the following parameters at 5 cm depth intervals:

- Tip Resistance (Qc)
- Sleeve Friction (Fs)
- Dynamic Pore Pressure (Ut)

The above parameters, excluding the seismic wave velocities were printed simultaneously on a printer and stored on a computer diskette for future analysis and reference. CPT logs are included as well as interpreted parameters based on the CPT measurements.

A complete set of baseline readings was taken prior to and at the completion of the sounding to determine temperature shifts and any zero load offsets. Establishing temperature shifts and load offsets enables the engineer to make corrections to the cone data if necessary. The cone was hydraulically pushed using an integrated 25-ton cone rig.

20 CPT soundings were performed to a depth of 45 to 75 feet below the ground surface. Downhole seismic measurements were taken at SCPT-12 at approximately 10 foot intervals and 5 foot intervals at SCPT-16. R.T. Frankian & Associates personnel specified the CPT sounding locations.

2.2 Seismic Cone Penetration Testing

The seismic equipment and procedures used in this investigation, in general, were as developed at UBC and reported by Rice, 1984, Laing, 1985 and Robertson et al, 1986. The procedure was incorporated within the cone penetration test (CPT) and conducted when the cone penetration test was stopped at the desired test depth.

For shear wave generation, the beam was struck using a 10 lb. sledge hammer in a horizontal direction, parallel to the active axis of the transducer, first from one end and then the other. The wave traces were recorded using a digital oscilloscope card within our Pentium II portable computer. Each wave was inspected and the procedure was repeated, if necessary. A contact trigger between the beam and the hammer produced accurate triggering times and allowed for the accurate timing of shear wave markers (figure 2).

After each pair of shear wave traces was recorded, inspected and saved, the two traces were overlaid on a digital oscilloscope screen and the arrival times were selected. Each of the wave traces are presented in the Appendix. Some judgement is required on deciding the time of seismic wave arrival. A summary of the seismic wave data is presented in tabular form following the text of the report. We recommend qualified personnel review the wave arrival times and make any appropriate corrections.

3.0 CONE PENETRATION TEST DATA & INTERPRETATION

The cone penetration test data is presented in graphical form. Penetration depths are referenced to existing ground surface. This data includes CPT logs of measured soil parameters and a computer tabulation of interpreted soil types along with additional geotechnical parameters and pore pressure dissipation data.

GREGG IN SITU, INC.
01-031sh
February 6, 2001

R.T. Frankian
Tract 53295
Valencia, Ca.

The stratigraphic interpretation is based on relationships between cone bearing (Qc), sleeve friction (Fs), and penetration pore pressure (Ut). The friction ratio (Rf), which is sleeve friction divided by cone bearing, is a calculated parameter which is used to infer soil behavior type. Generally, cohesive soils (clays) have high friction ratios, low cone bearing and generate large excess pore water pressures. Cohesionless soils (sands) have lower friction ratios, high cone bearing and generate little in the way of excess pore water pressures.

The interpretation of soils encountered on this project was carried out using recent correlations developed by Robertson et al, 1988. It should be noted that it is not always possible to clearly identify a soil type based on Qc, Fs and Ut. In these situations, experience and judgement and an assessment of the pore pressure dissipation data should be used to infer the soil behavior type. The soil classification chart used to interpret soil types based on Qc and Rf is provided in the Appendix (figure 3).

Pore Pressure Dissipation Tests (PPDT's) were taken at various intervals in order to measure hydrostatic water pressures and approximate depth to groundwater table. In addition, the PPDT data can be used to estimate the horizontal permeability (k_h) of the soil. The correlation to permeability is based on the time required for 50 percent of the measured dynamic pore pressure to dissipate (t_{50}). The PPDT plots and correlation figure (figure 4) is provided in the Appendix.

Interpreted output requires that depth of water be entered for calculation purposes, where depth to water is unknown. A depth greater than the sounding termination depth is entered. An arbitrary depth equal to the depth of the sounding plus 10 feet is entered as the groundwater depth.

3.1 CPT Plots

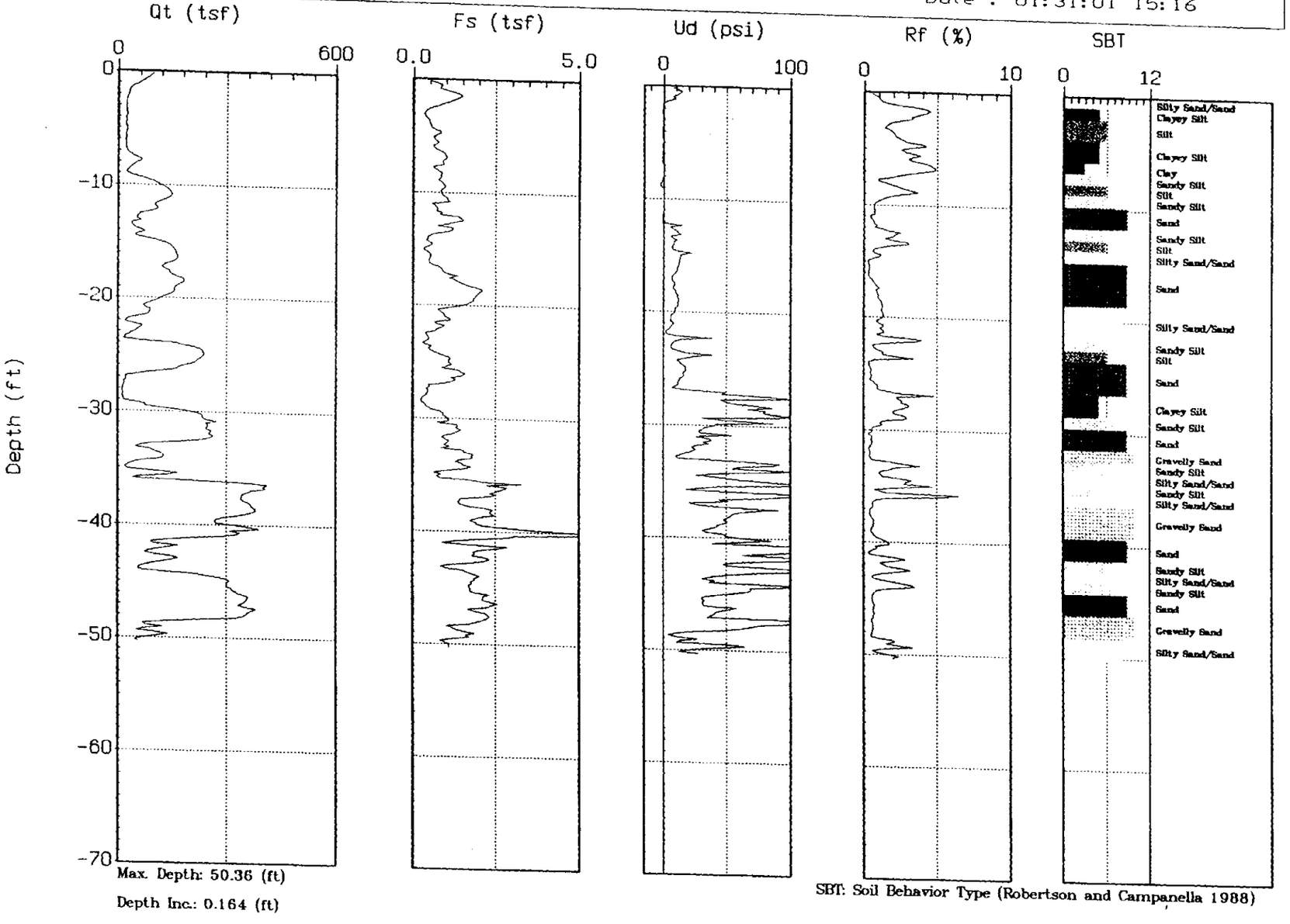
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-1

Engineer : MARK FRANKIAN
Date : 01:31:01 15:16



Max. Depth: 50.36 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

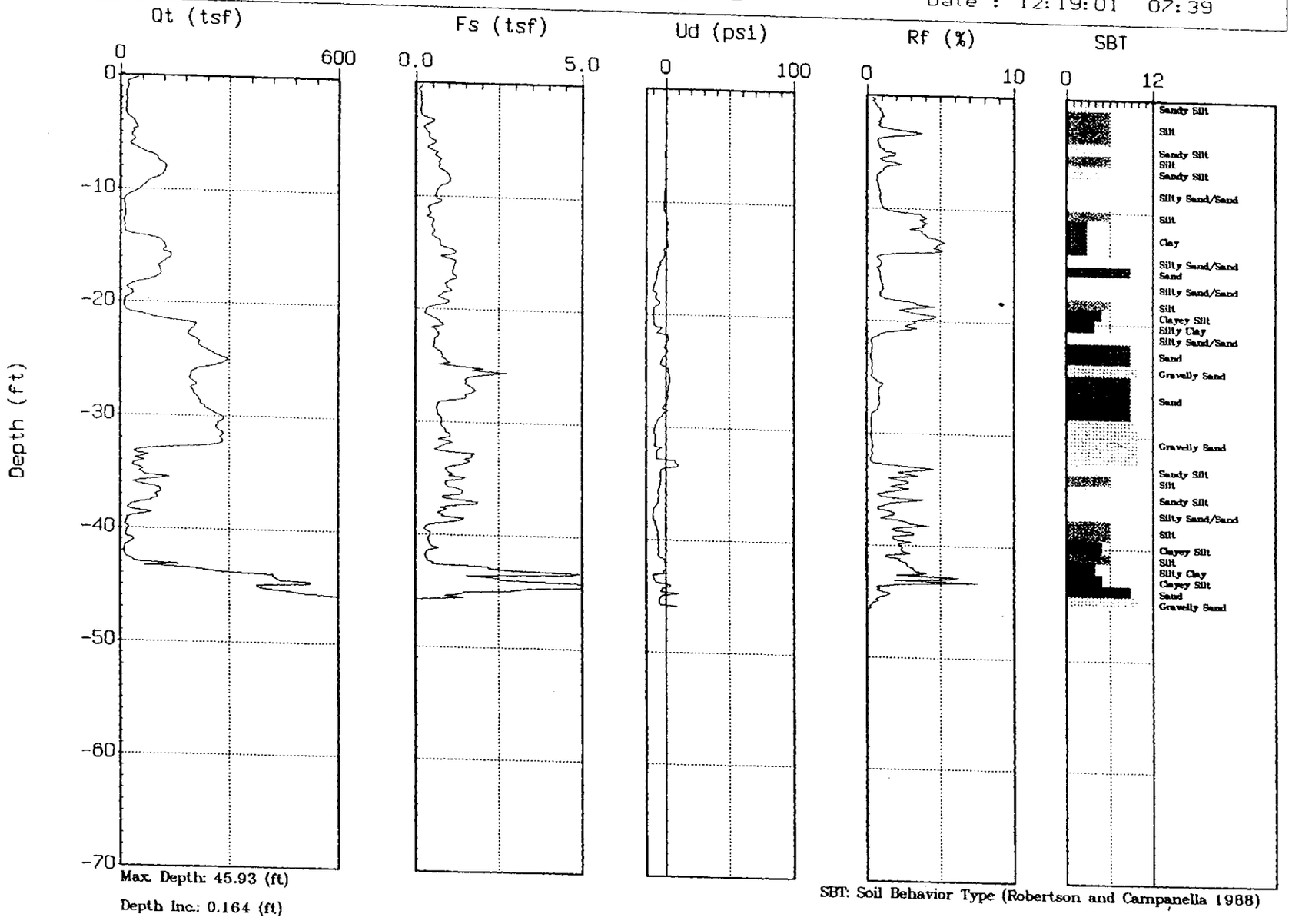
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-2

Engineer : MARK FRANKIAN
Date : 12:19:01 07:39



Max. Depth: 45.93 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

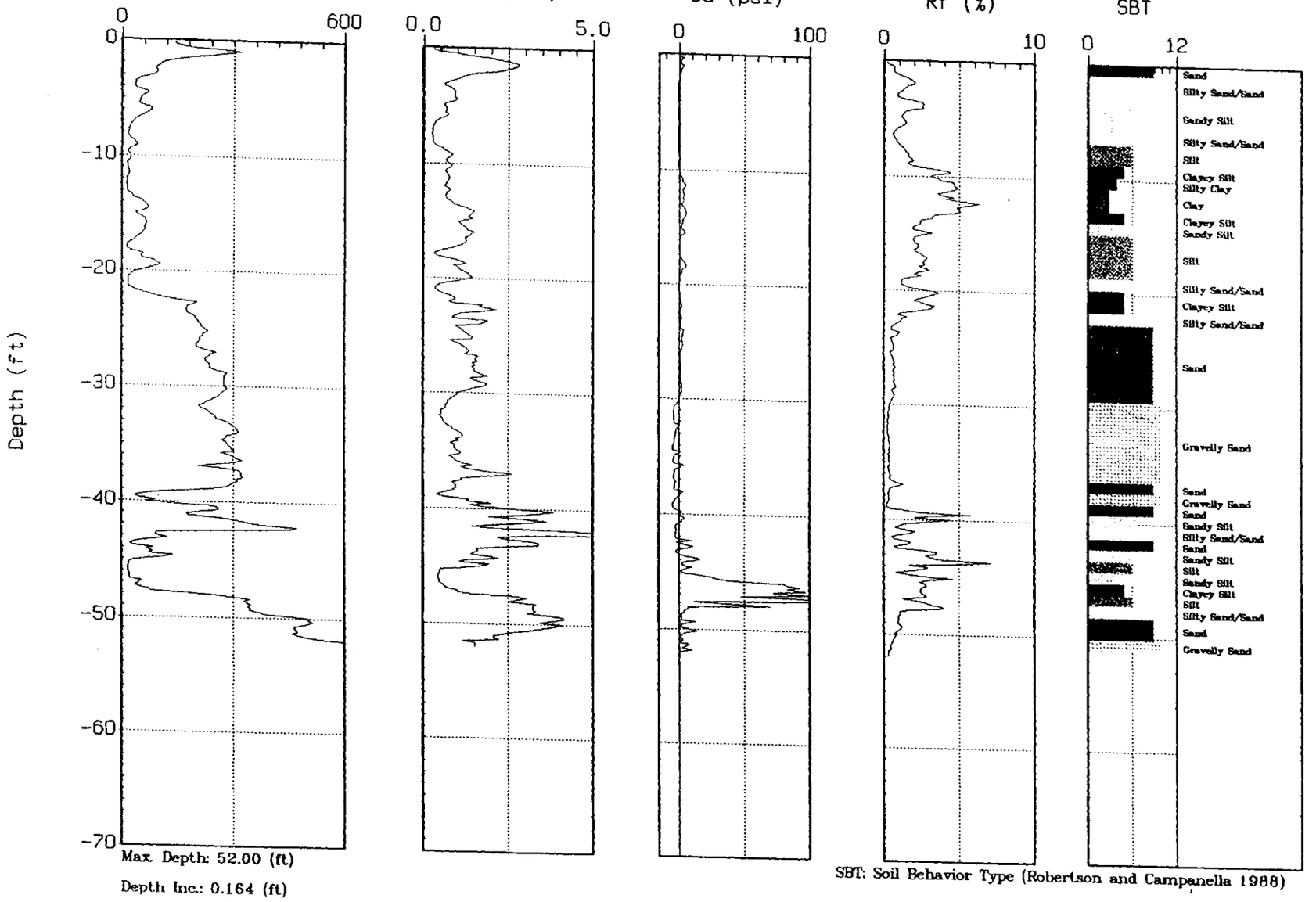
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-3

Engineer : MARK FRANKIAN
Date : 12:19:01 14:37



Max. Depth: 52.00 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

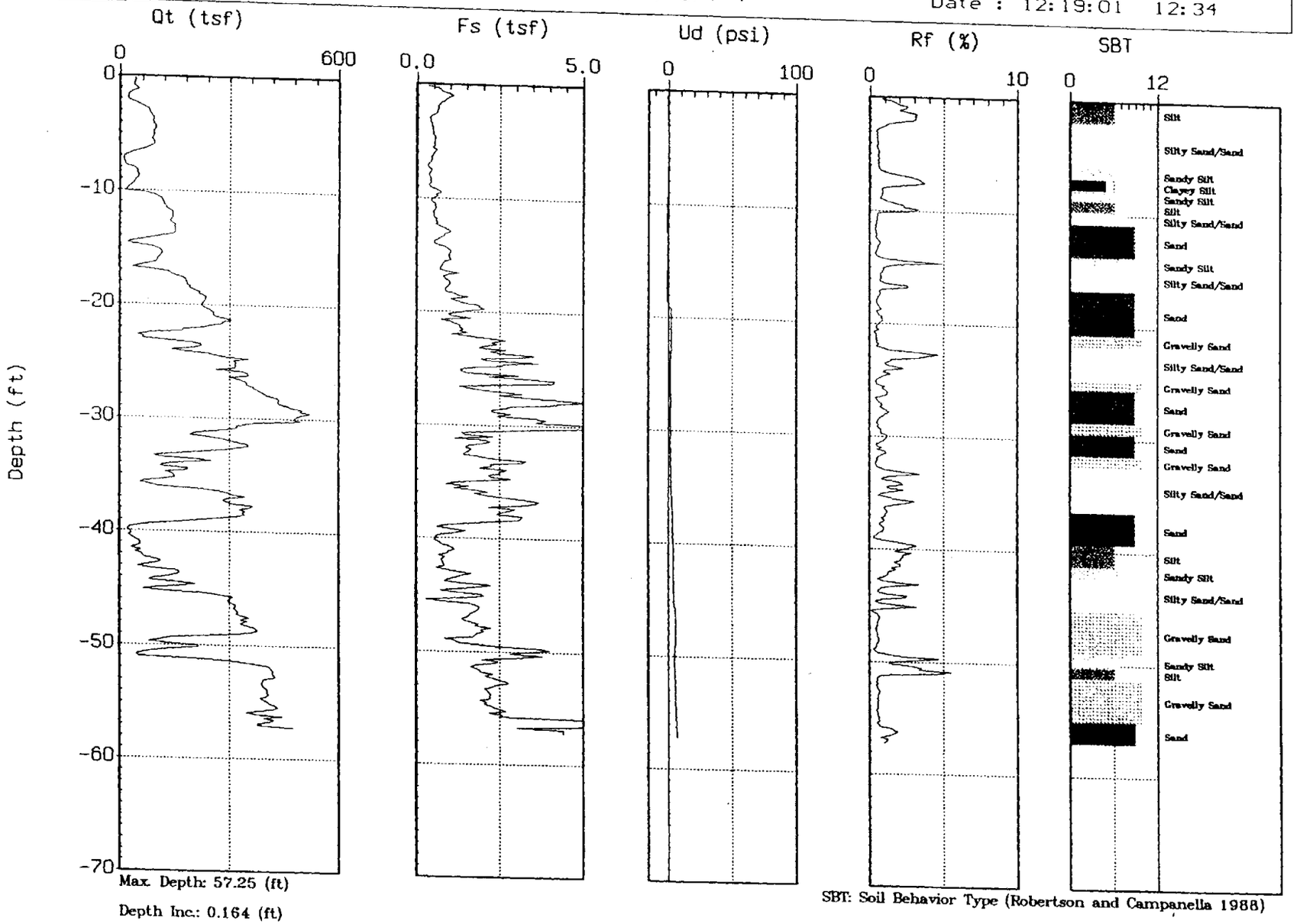
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-4

Engineer : MARK FRANKIAN
Date : 12:19:01 12:34



Max. Depth: 57.25 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

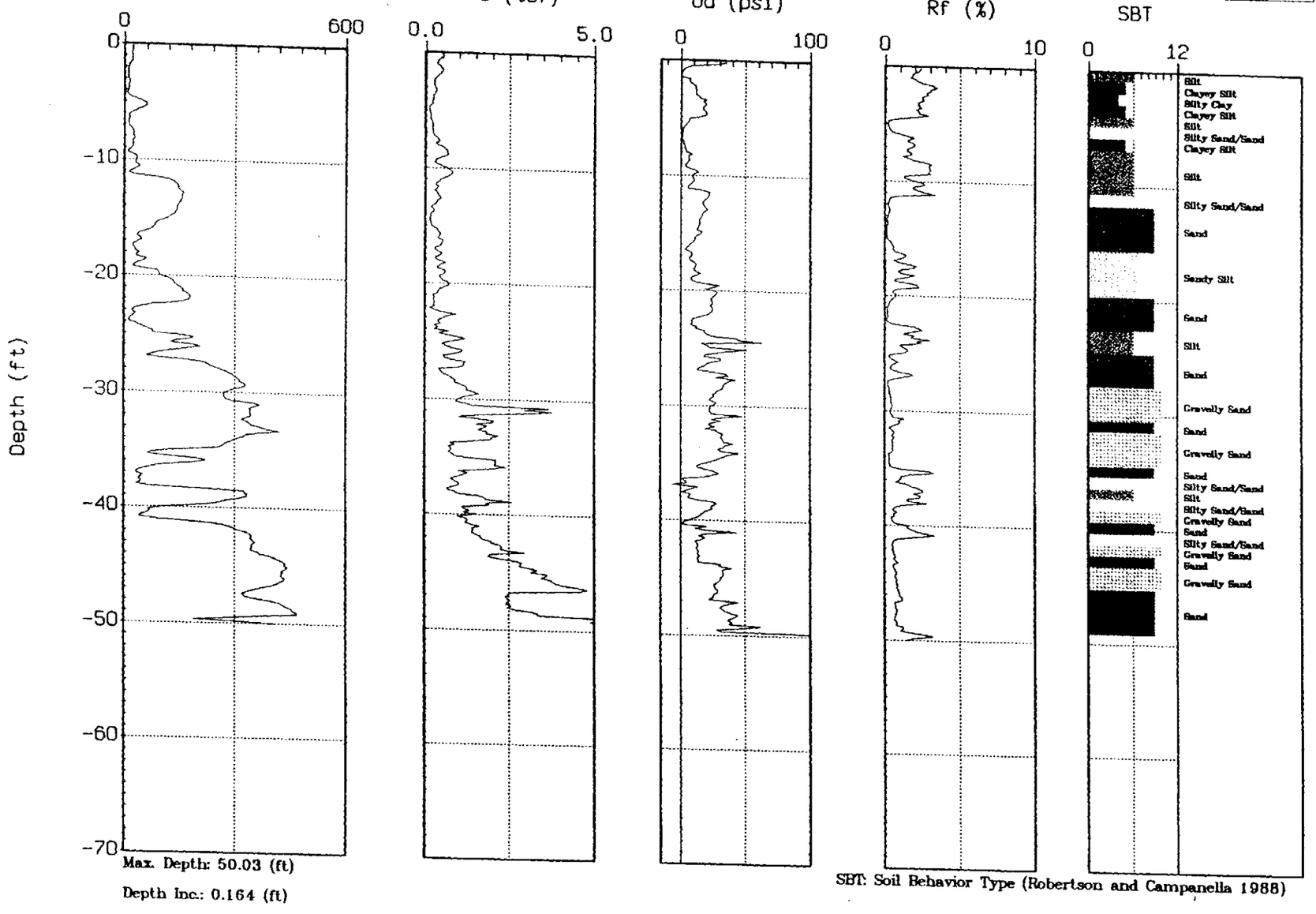
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-5

Engineer : MARK FRANKIAN
Date : 01:31:01 12:48



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

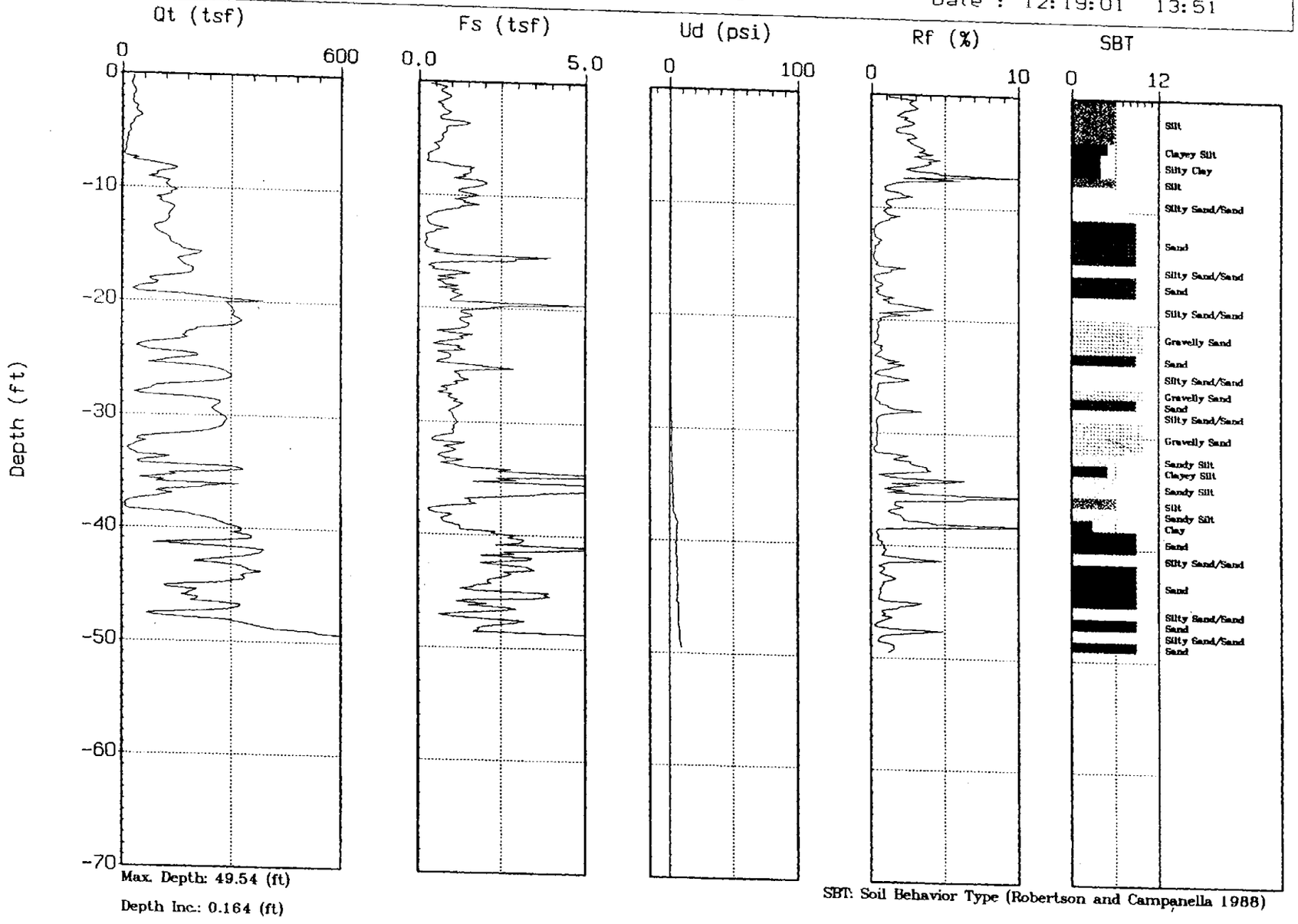
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-6

Engineer : MARK FRANKIAN
Date : 12:19:01 13:51



Max. Depth: 49.54 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

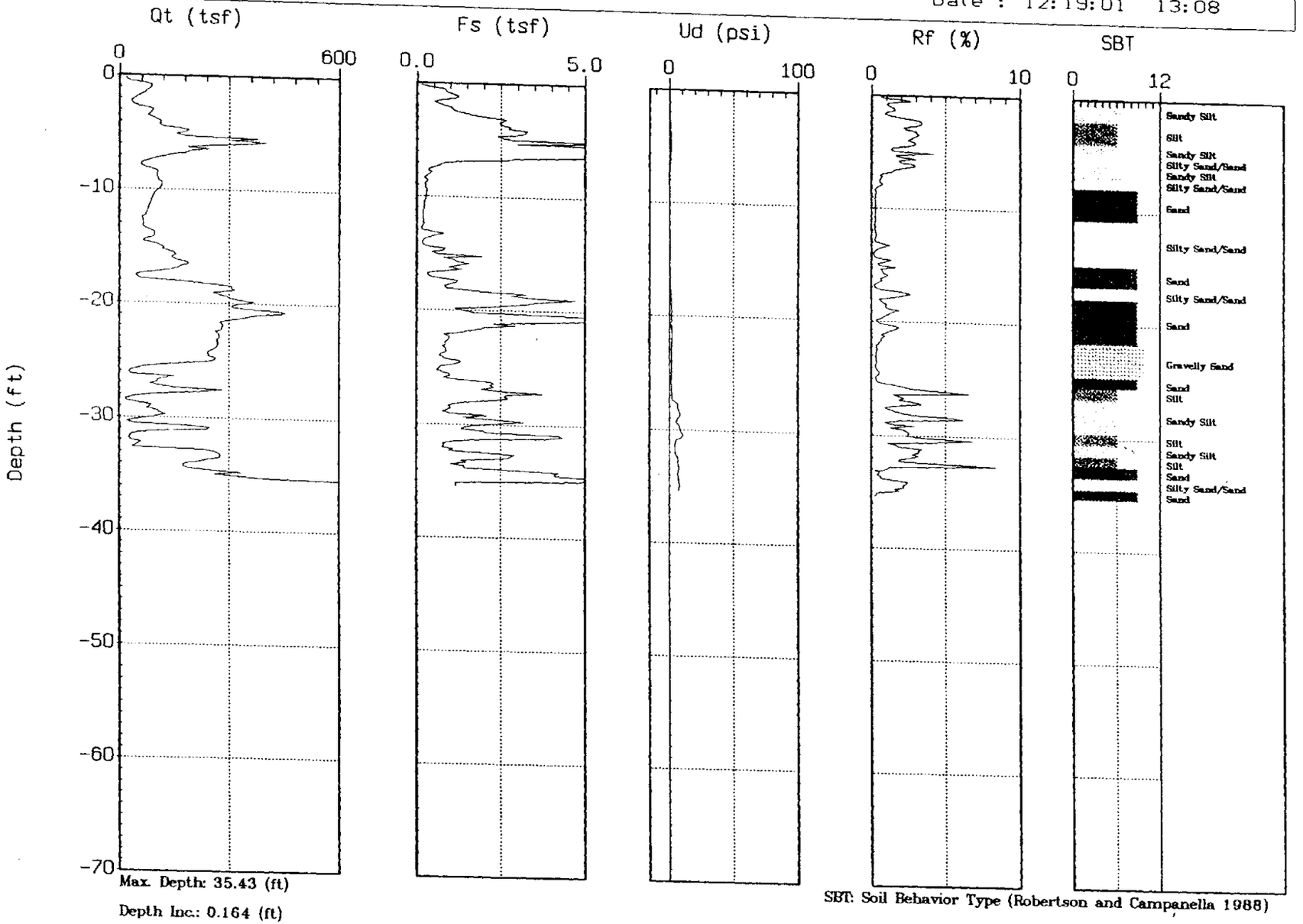
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-7

Engineer : MARK FRANKIAN
Date : 12:19:01 13:08



Max. Depth: 35.43 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

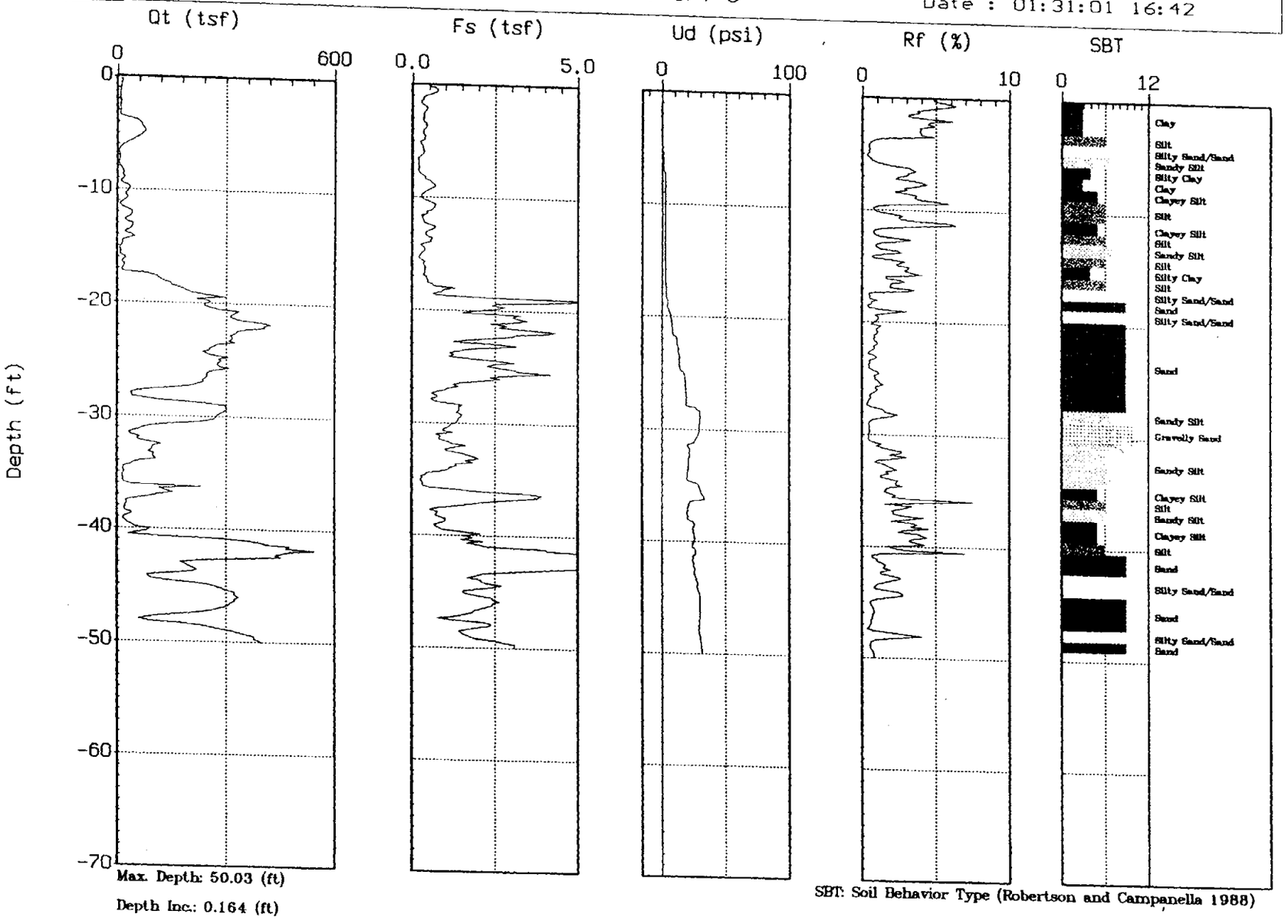
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-8

Engineer : MARK FRANKIAN
Date : 01:31:01 16:42



Max. Depth: 50.03 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

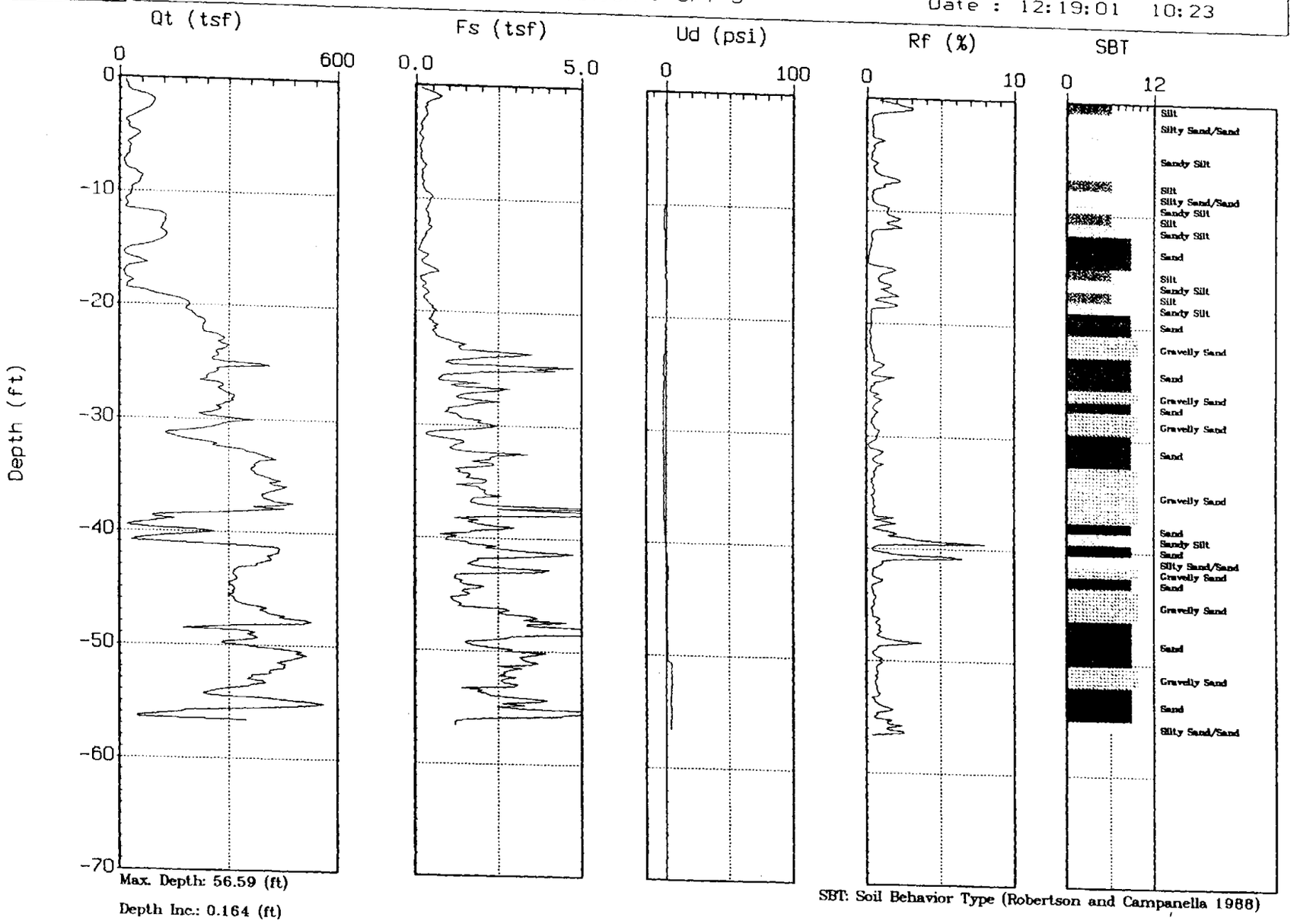
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-9

Engineer : MARK FRANKIAN
Date : 12:19:01 10:23



Max. Depth: 56.59 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

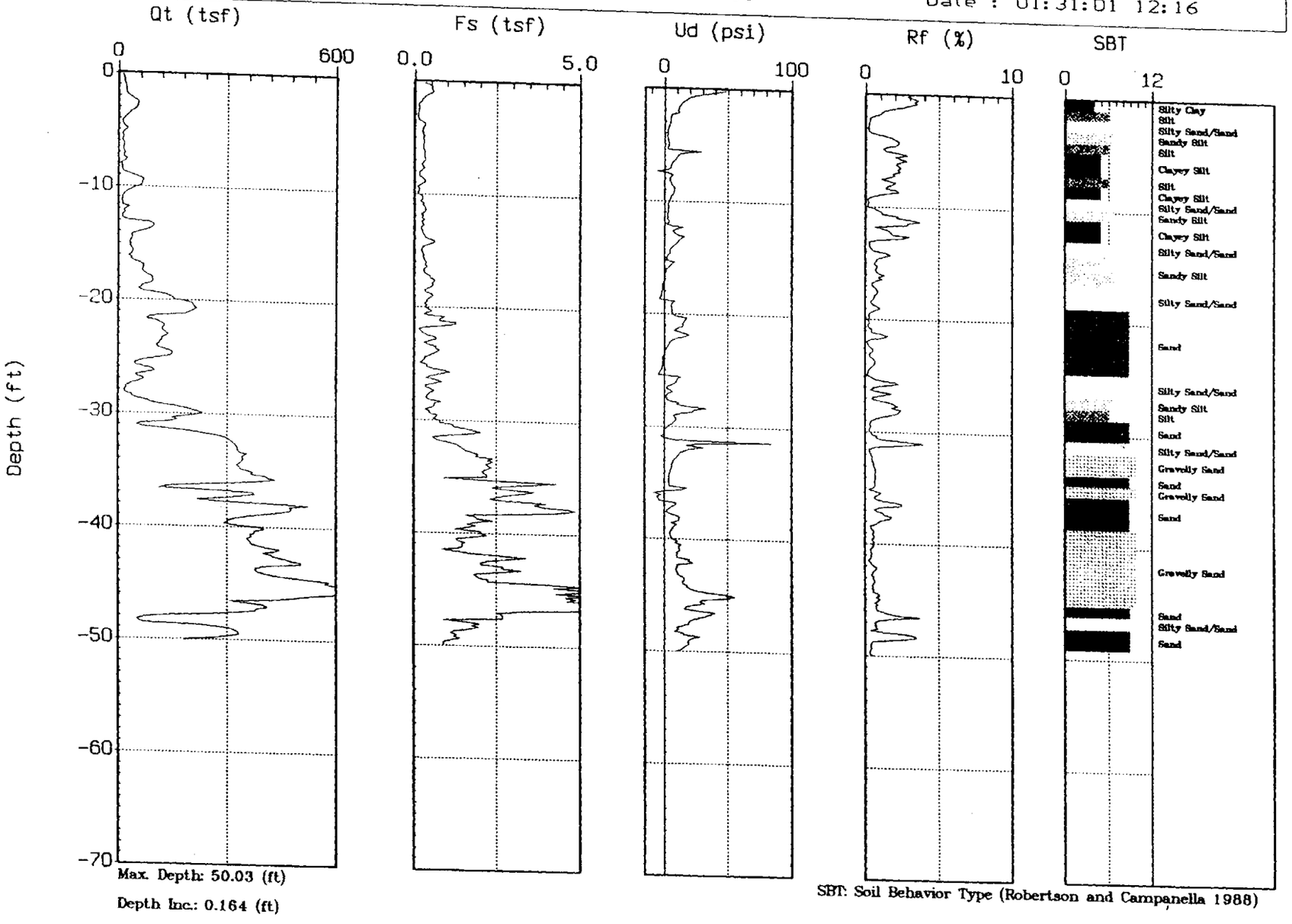
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-10

Engineer : MARK FRANKIAN
Date : 01:31:01 12:16



Max. Depth: 50.03 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

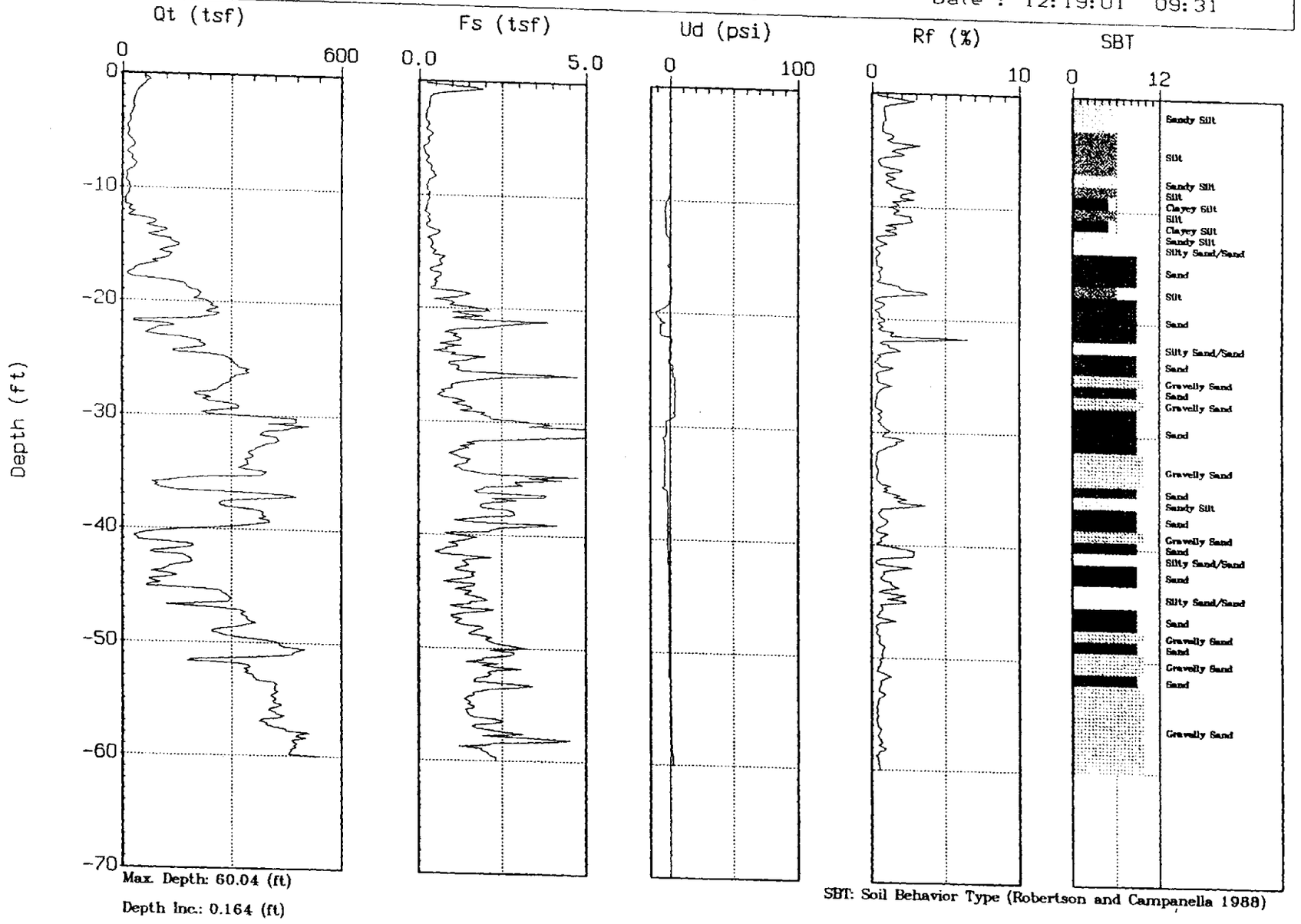
For use with report dated 03/18/2005: RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-11

Engineer : MARK FRANKIAN
Date : 12:19:01 09:31



Max. Depth: 60.04 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

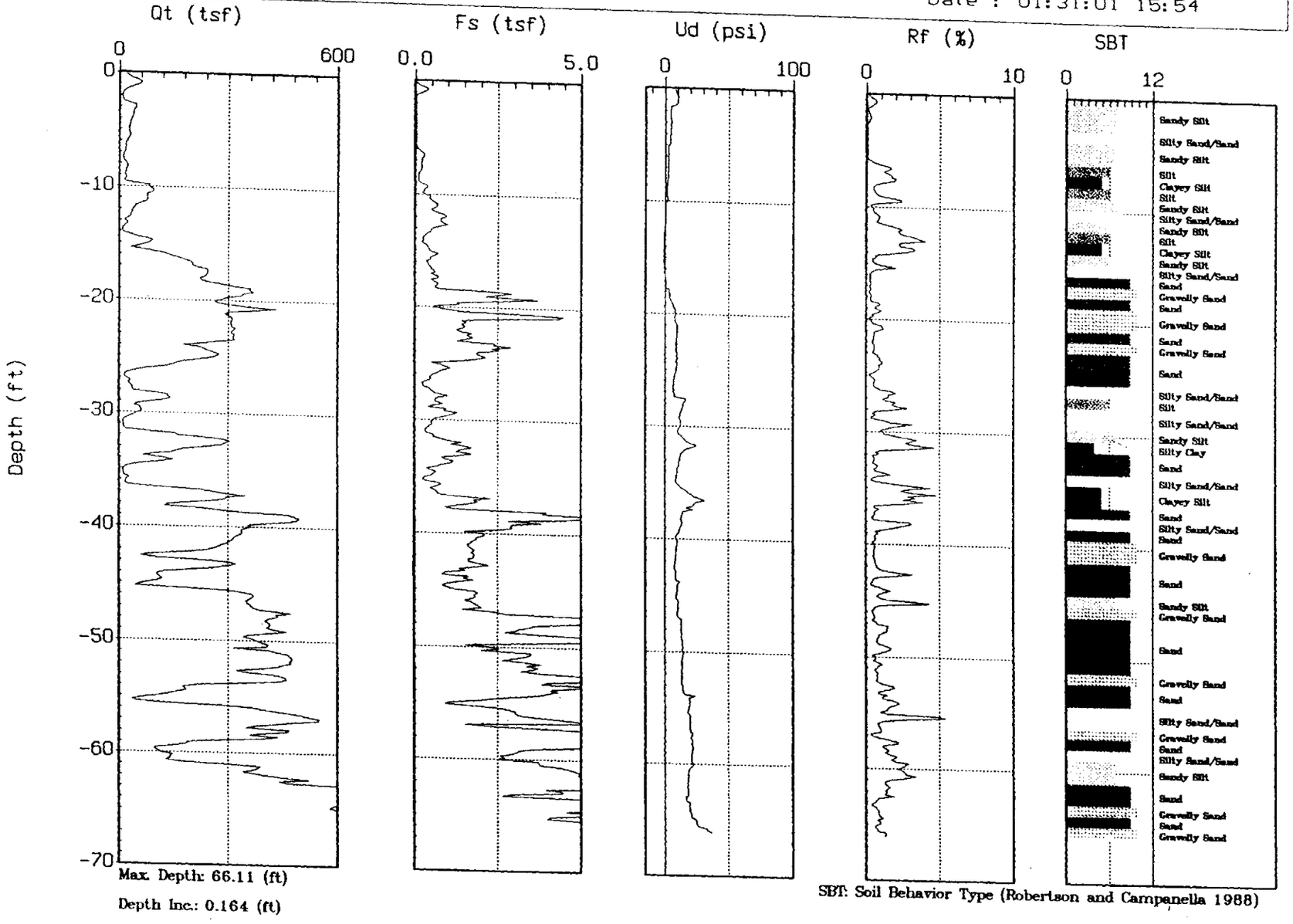
For use with report dated 03/18/2005: RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : SCPT-12

Engineer : MARK FRANKIAN
Date : 01:31:01 15:54



Max. Depth: 66.11 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

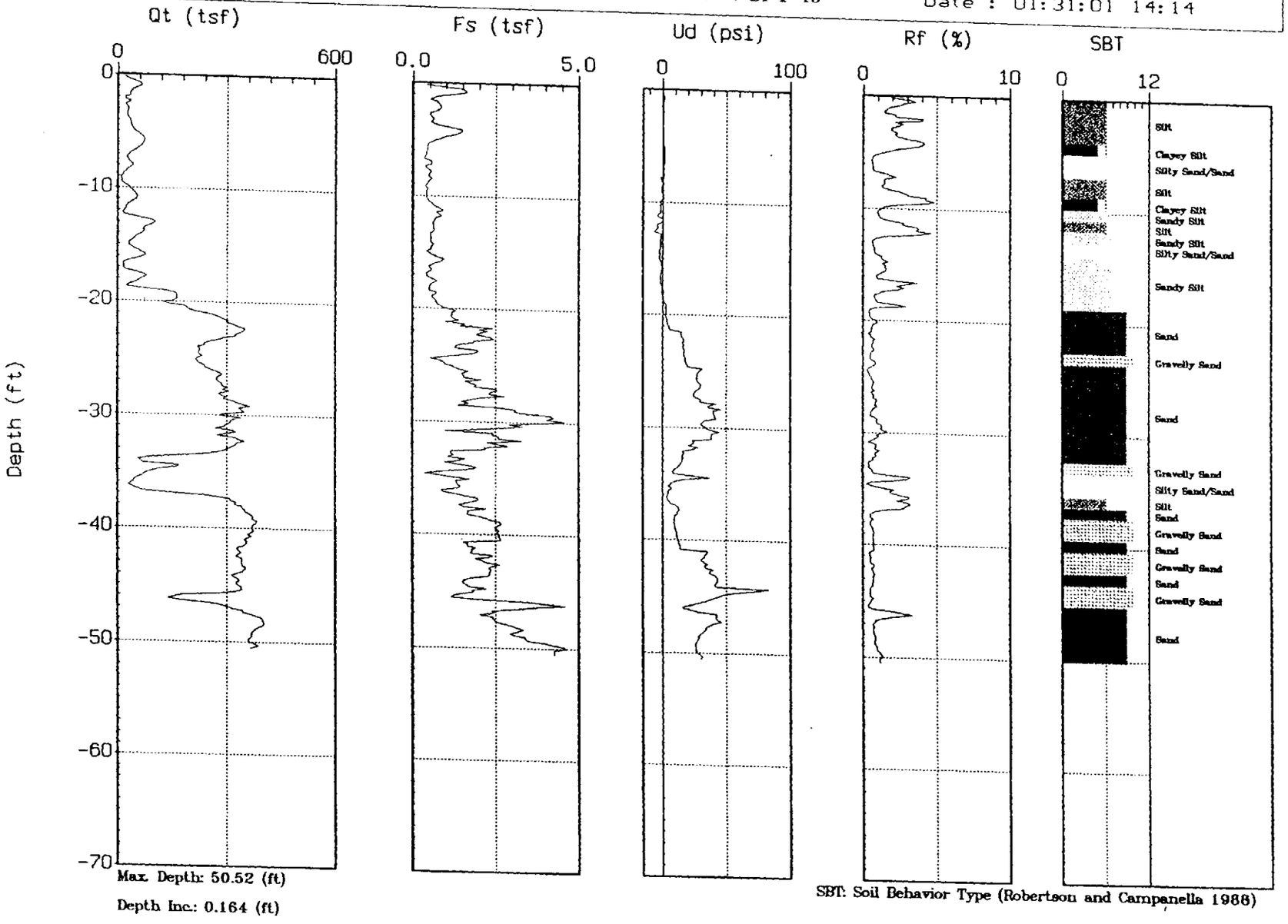
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : ~~CPT-4~~ CPT-13

Engineer : MARK FRANKIAN
Date : 01:31:01 14:14



Max. Depth: 50.52 (ft)
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

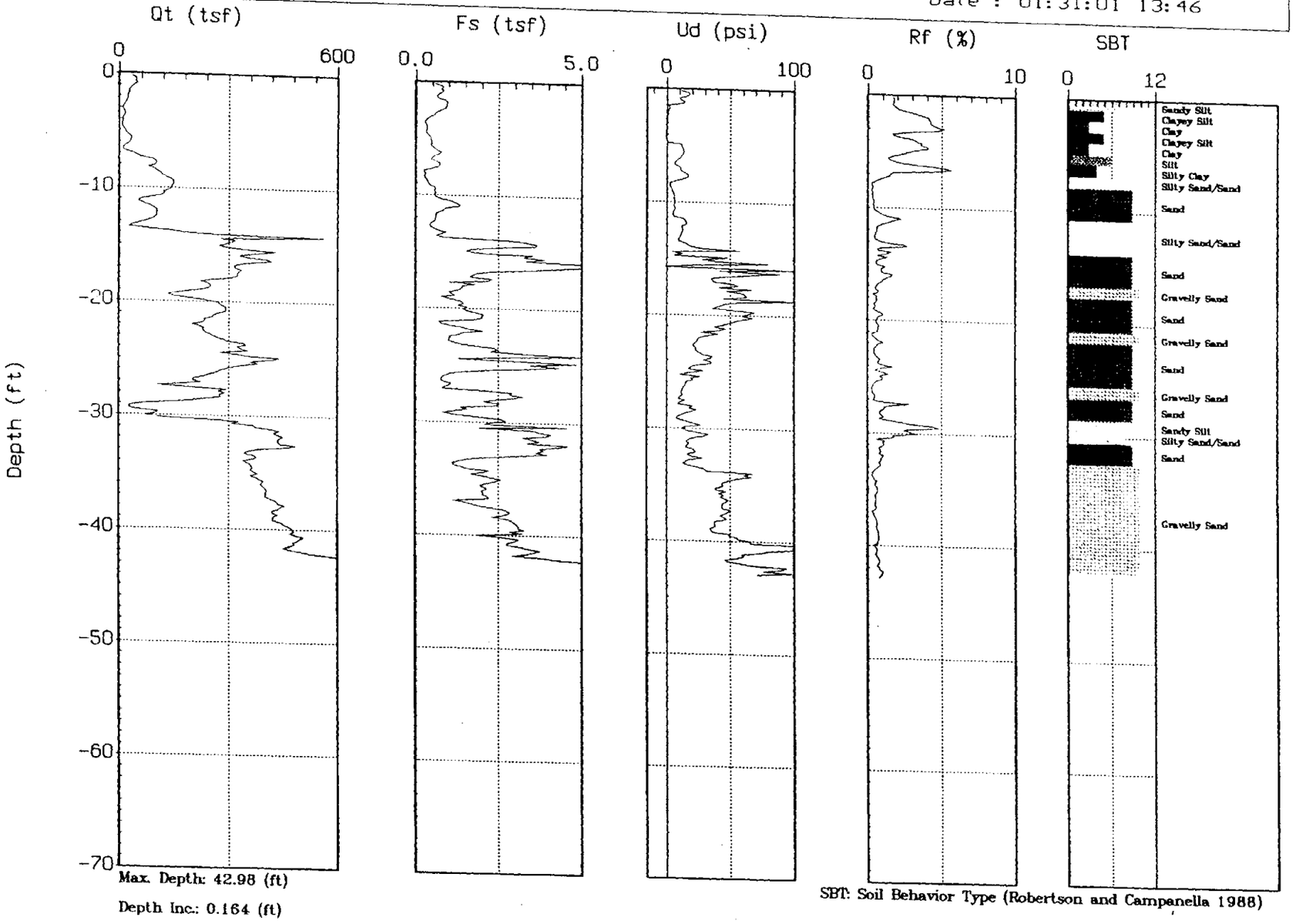
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-14

Engineer : MARK FRANKIAN
Date : 01:31:01 13:46



Max. Depth: 42.98 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

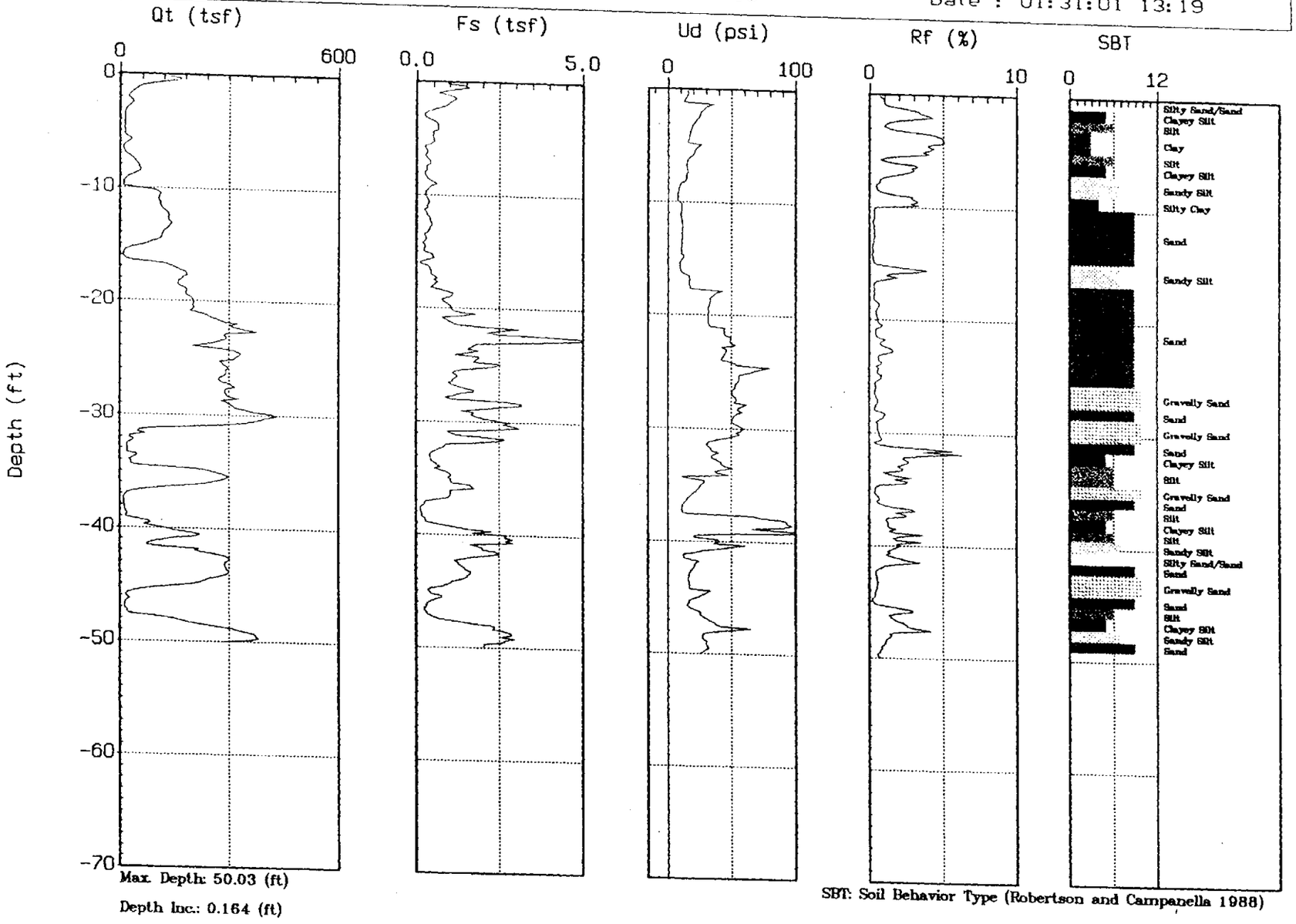
For use with report dated 03/18/2005, RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-15

Engineer : MARK FRANKIAN
Date : 01:31:01 13:19



Max. Depth: 50.03 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

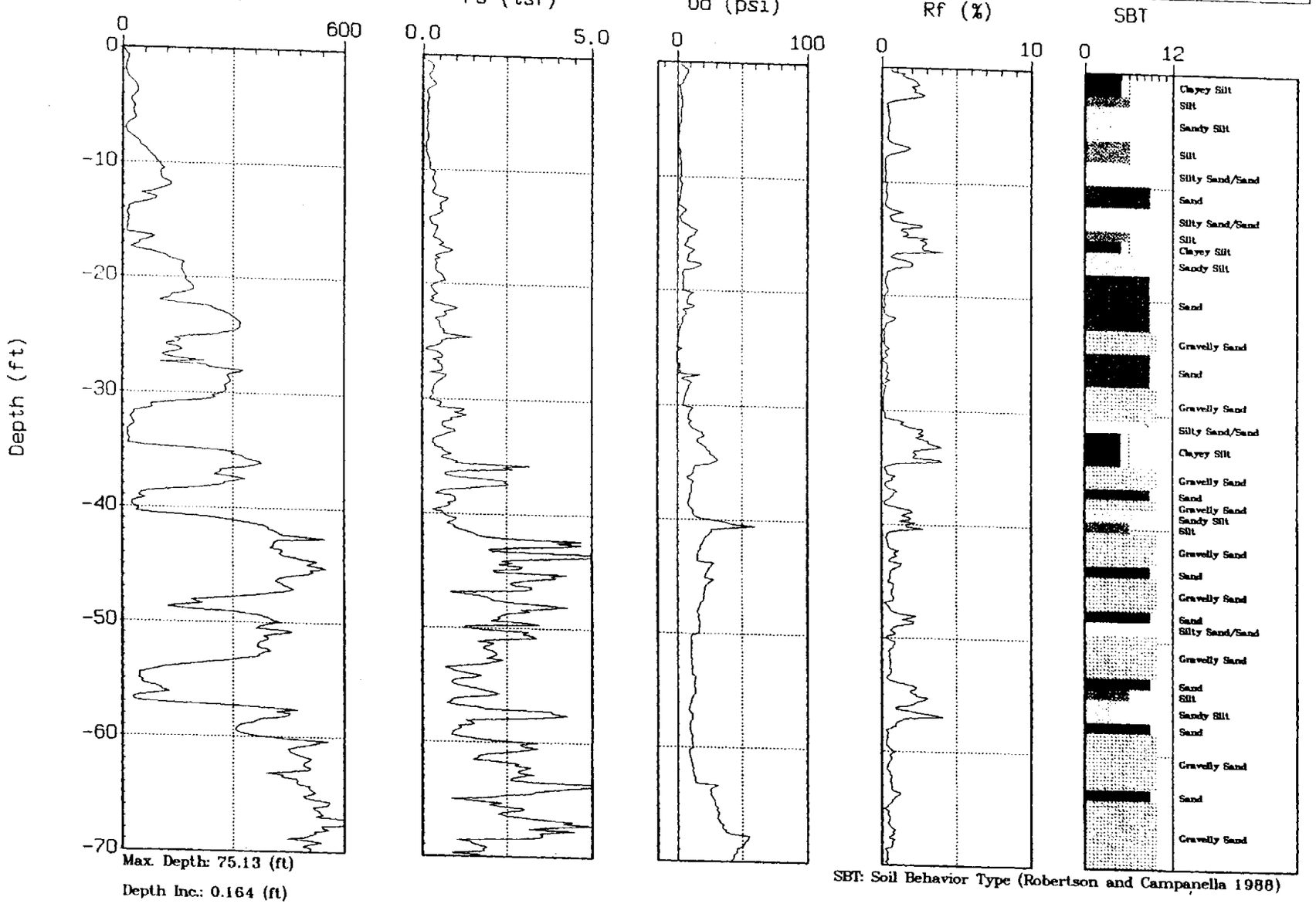
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : SCPT-16

Engineer : MARK FRANKIAN
Date : 01:31:01 08:09



Max. Depth: 75.13 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

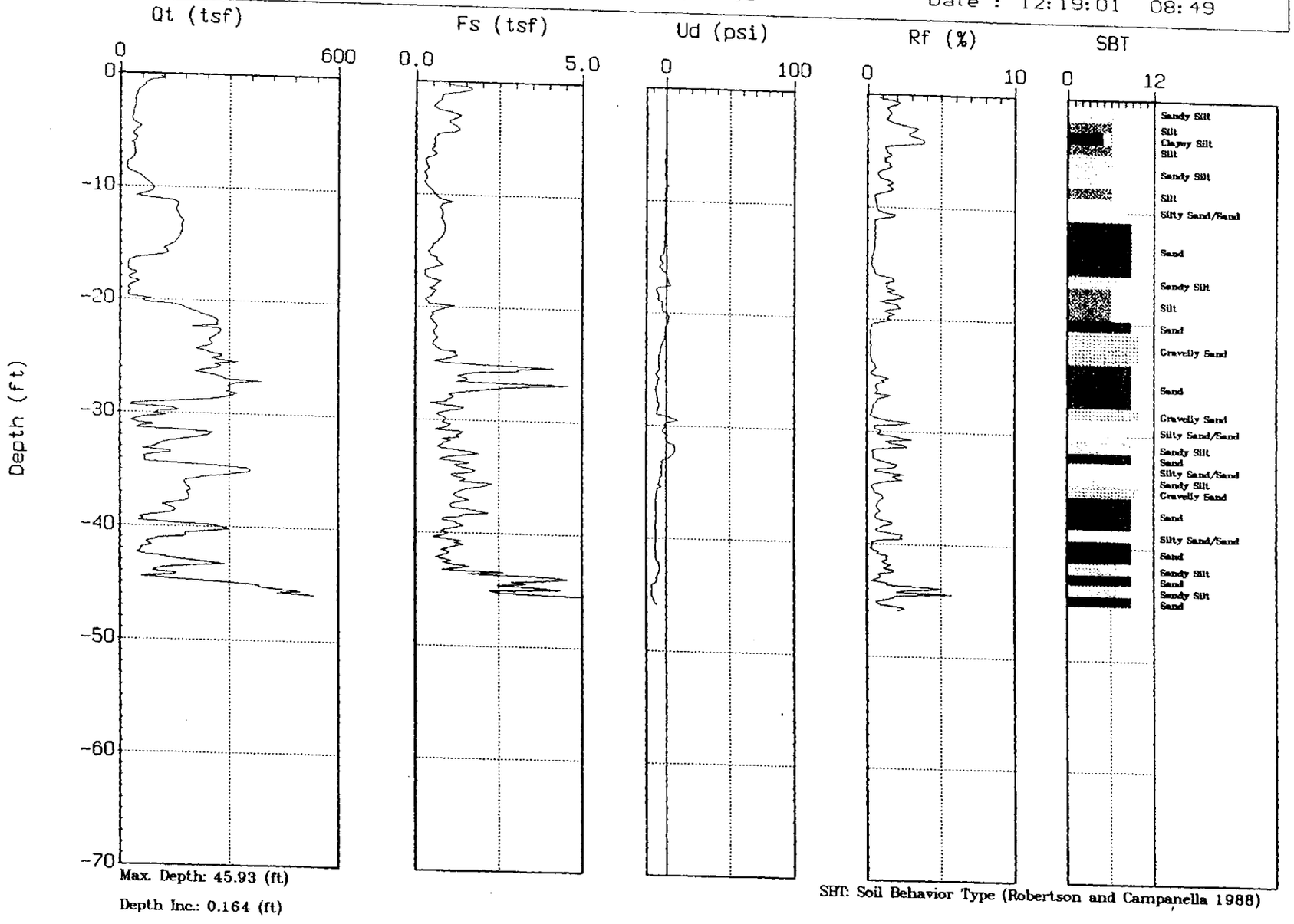
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-16

Engineer : MARK FRANKIAN
Date : 12:19:01 08:49



Max. Depth: 45.93 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

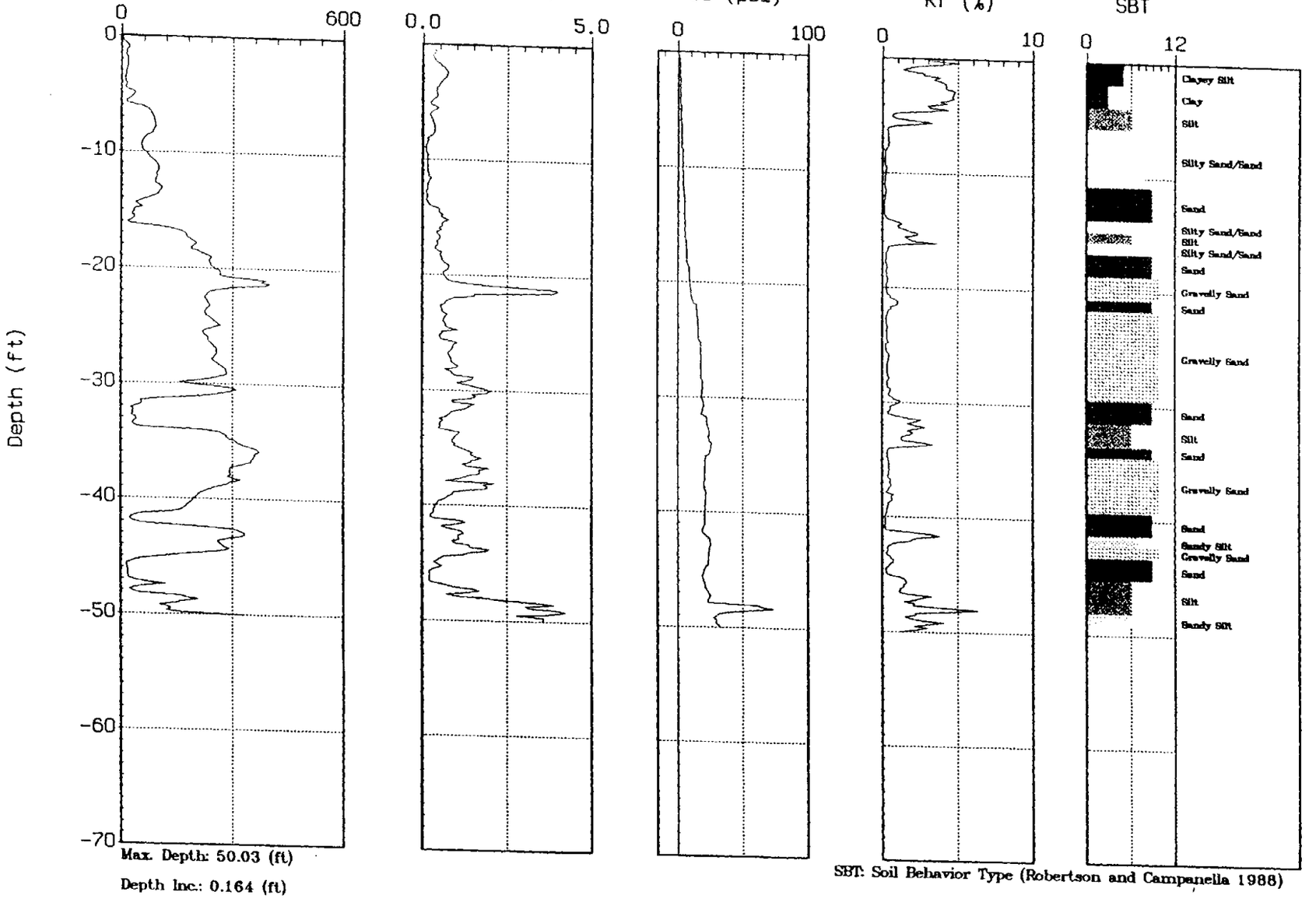
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : CPT-17

Engineer : MARK FRANKIAN
Date : 01:31:01 11:27



Max. Depth: 50.03 (ft)
Depth Inc: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

3.2 Interpreted Output

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In S , Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4425
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-1
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 15:16
CPT File: 031C01.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.30 (ft): 14.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	79.9	0.79	0.99	24.2	8	120.9	0.03	0.03	0.00	2.00	19.1	38.2	UnDef	0.41
1.48	35.8	1.30	3.63	5.2	5	114.6	0.09	0.09	0.00	2.00	17.1	34.2	2.85	0.00
2.46	23.1	0.56	2.42	-0.9	6	114.6	0.14	0.14	0.00	2.00	8.8	17.7	1.84	0.10
3.44	22.3	0.42	1.90	-0.7	6	114.6	0.20	0.20	0.00	2.00	8.5	17.1	1.77	0.10
4.43	20.8	0.67	3.25	-0.6	5	114.6	0.26	0.26	0.00	1.97	10.0	19.6	1.64	0.13
5.41	21.0	0.65	3.12	-1.0	5	114.6	0.31	0.31	0.00	1.79	10.1	18.0	1.66	0.13
6.40	19.6	0.87	4.40	-1.4	3	111.4	0.37	0.37	0.00	1.65	18.8	31.0	1.54	0.31
7.30	40.6	0.85	2.09	0.9	6	114.6	0.42	0.42	0.00	1.54	15.6	24.0	3.22	0.15
8.20	42.6	0.78	1.83	-1.6	7	117.8	0.47	0.47	0.00	1.46	13.6	19.8	UnDef	0.14
9.19	56.6	0.88	1.55	-0.5	7	117.8	0.53	0.53	0.00	1.37	18.1	24.8	UnDef	0.17
10.17	130.7	0.91	0.70	0.6	9	124.1	0.59	0.59	0.00	1.30	25.0	32.6	UnDef	0.00
11.15	128.3	0.74	0.57	0.2	9	124.1	0.65	0.65	0.00	1.24	24.6	30.5	UnDef	0.43
12.14	86.8	1.20	1.39	10.0	8	120.9	0.71	0.71	0.00	1.19	20.8	24.6	UnDef	0.25
13.21	47.0	0.92	1.95	22.3	6	114.6	0.77	0.77	0.00	1.14	18.0	20.5	3.70	0.16
14.27	63.2	0.47	0.74	24.1	8	120.9	0.84	0.83	0.01	1.10	15.1	16.6	UnDef	0.13
15.26	140.6	0.43	0.31	30.3	9	124.1	0.90	0.86	0.04	1.08	26.9	29.0	UnDef	0.38
16.24	160.2	0.61	0.38	23.7	9	124.1	0.96	0.89	0.07	1.06	30.7	32.5	UnDef	0.00
17.22	132.9	1.10	0.82	18.2	9	124.1	1.02	0.92	0.10	1.04	25.4	26.5	UnDef	0.35
18.21	171.4	1.76	1.03	22.5	9	124.1	1.08	0.95	0.13	1.03	32.8	33.7	UnDef	0.00
19.19	153.1	1.87	1.22	26.1	8	120.9	1.14	0.98	0.16	1.01	36.7	37.0	UnDef	0.00
20.18	97.2	1.09	1.13	16.7	8	120.9	1.20	1.01	0.19	1.00	23.3	23.2	UnDef	0.23
21.16	77.4	0.91	1.18	13.7	8	120.9	1.26	1.04	0.22	0.98	18.5	18.2	UnDef	0.17
22.15	40.6	0.65	1.61	28.9	7	117.8	1.32	1.07	0.25	0.97	13.0	12.5	UnDef	0.14
23.13	30.7	0.42	1.38	21.8	6	114.6	1.38	1.09	0.28	0.96	11.8	11.2	2.35	0.13
24.11	178.6	0.71	0.39	45.4	9	124.1	1.43	1.12	0.31	0.94	34.2	32.3	UnDef	0.00
25.10	229.2	1.05	0.46	38.8	9	124.1	1.50	1.15	0.34	0.93	43.9	40.9	UnDef	0.00
26.08	153.8	1.38	0.90	28.9	9	124.1	1.56	1.18	0.37	0.92	29.5	27.1	UnDef	0.40
27.07	24.7	0.65	2.65	116.2	5	114.6	1.61	1.21	0.40	0.91	11.8	10.8	1.85	0.20
28.05	12.6	0.32	2.54	144.3	5	114.6	1.67	1.24	0.44	0.90	6.0	5.4	0.88	0.10
29.04	38.6	0.57	1.48	171.1	7	117.8	1.73	1.26	0.47	0.89	12.3	11.0	UnDef	0.15
30.02	205.9	1.02	0.49	99.6	9	124.1	1.79	1.29	0.50	0.88	39.4	34.7	UnDef	0.00
31.00	250.6	1.27	0.51	82.2	9	124.1	1.85	1.32	0.53	0.87	48.0	41.8	UnDef	0.00
31.99	253.3	1.00	0.39	57.8	10	127.3	1.91	1.35	0.56	0.86	40.4	34.8	UnDef	0.00
32.97	92.8	1.55	1.67	105.8	7	117.8	1.97	1.38	0.59	0.85	29.6	25.2	UnDef	0.25
33.96	101.6	1.49	1.47	140.7	8	120.9	2.03	1.41	0.62	0.84	24.3	20.5	UnDef	0.25
34.94	62.7	0.96	1.52	171.4	7	117.8	2.09	1.44	0.65	0.83	20.0	16.7	UnDef	0.18
35.92	196.6	2.63	1.34	190.6	8	120.9	2.15	1.47	0.68	0.83	47.1	38.9	UnDef	0.00
36.91	371.4	1.87	0.50	107.5	10	127.3	2.21	1.50	0.71	0.82	59.3	48.5	UnDef	0.00
37.89	357.0	2.06	0.58	128.4	10	127.3	2.27	1.53	0.74	0.81	57.0	46.1	UnDef	0.00
38.88	349.4	1.99	0.57	96.9	10	127.3	2.33	1.56	0.77	0.80	55.8	44.6	UnDef	0.00
39.86	315.1	3.98	1.26	130.3	9	124.1	2.40	1.59	0.80	0.79	60.4	47.9	UnDef	0.00
40.85	263.7	1.91	0.73	344.3	9	124.1	2.46	1.62	0.84	0.79	50.5	39.7	UnDef	0.00

Gregg In Situ, Inc.
Run No: 01-0316-0548-4425
CPT File: 031C01.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	114.8	2.03	1.77	203.0	7	117.8	2.52	1.65	0.87	0.78	36.6	28.5	UnDef	0.34
42.81	125.2	1.50	1.20	185.5	8	120.9	2.57	1.68	0.90	0.77	30.0	23.1	UnDef	0.28
43.80	98.6	1.79	1.81	137.2	7	117.8	2.63	1.71	0.93	0.77	31.5	24.1	UnDef	0.30
44.78	288.0	1.73	0.60	127.1	9	124.1	2.69	1.74	0.96	0.76	55.2	41.9	UnDef	0.00
45.77	324.5	2.13	0.66	82.7	9	124.1	2.75	1.77	0.99	0.75	62.2	46.8	UnDef	0.00
46.75	350.4	2.16	0.62	133.9	10	127.3	2.82	1.80	1.02	0.75	55.9	41.7	UnDef	0.00
47.74	356.6	2.08	0.58	184.0	10	127.3	2.88	1.83	1.05	0.74	56.9	42.1	UnDef	0.00
48.72	113.0	1.42	1.25	32.7	8	120.9	2.94	1.86	1.08	0.73	27.1	19.8	UnDef	0.25
49.70	84.9	1.14	1.34	76.8	8	120.9	3.00	1.89	1.11	0.73	20.3	14.8	UnDef	0.20

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4425
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-1
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 15:16
CPT File: 031C01.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.30 (ft): 14.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-03	0.01	1000.0	0.99	10	153.0	0.0	153.0	0.5	50	95.0	1.0	-0.40	0.0	38.2
1.48	5.0E-06	0.00	406.6	3.64	12	68.5	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
2.46	5.0E-05	0.00	159.3	2.43	7	44.2	14.5	58.7	14.2	44	52.4	10.0	-0.35	3.2	20.9
3.44	5.0E-05	0.00	110.1	1.91	7	42.7	15.5	58.2	15.0	42	46.7	10.0	-0.27	3.4	20.5
4.43	5.0E-06	0.00	79.9	3.29	7	39.8	41.0	80.9	24.0	UnDef	UnDef	10.0	UnDef	9.1	28.8
5.41	5.0E-06	0.00	66.1	3.16	7	36.8	45.6	82.3	25.7	UnDef	UnDef	10.0	UnDef	9.5	27.5
6.40	5.0E-08	0.00	52.3	4.49	6	31.7	102.6	134.3	33.6	UnDef	UnDef	10.0	UnDef	28.4	59.4
7.30	5.0E-05	0.00	95.7	2.12	7	61.3	29.7	91.1	17.2	42	53.3	10.0	-0.27	6.2	30.2
8.20	5.0E-04	0.00	89.2	1.85	7	60.7	27.3	88.0	16.6	42	52.9	1.0	-0.24	4.8	24.6
9.19	5.0E-04	0.00	105.8	1.56	9	76.1	22.5	98.6	13.5	42	59.4	1.0	-0.24	4.1	29.0
10.17	5.0E-02	0.00	220.7	0.70	9	166.6	0.0	166.6	3.6	46	81.9	1.0	-0.23	0.0	32.6
11.15	5.0E-02	0.00	196.1	0.58	9	155.6	0.0	155.6	3.3	46	80.0	1.0	-0.20	0.0	30.5
12.14	5.0E-03	0.00	121.0	1.40	9	100.7	21.3	122.0	11.5	42	67.5	1.0	-0.24	3.0	27.7
13.21	5.0E-05	0.02	59.7	1.99	7	52.3	41.6	93.8	21.6	40	48.7	10.0	-0.21	7.8	28.3
14.27	5.0E-03	0.01	75.1	0.75	9	67.9	13.5	81.4	11.2	40	56.2	1.0	-0.13	1.9	18.5
15.26	5.0E-02	0.01	162.4	0.31	9	148.3	0.0	148.3	2.1	44	78.6	1.0	-0.13	0.0	29.0
16.24	5.0E-02	0.00	178.7	0.38	9	166.1	0.0	166.1	2.3	44	81.8	1.0	-0.16	0.0	32.5
17.22	5.0E-02	0.00	143.1	0.83	9	135.5	7.2	142.6	6.9	44	76.0	1.0	-0.20	0.9	27.4
18.21	5.0E-02	0.00	179.0	1.03	9	171.9	8.4	180.4	6.8	44	82.8	1.0	-0.25	1.0	34.7
19.19	5.0E-03	0.00	154.9	1.23	9	151.3	17.1	168.3	8.8	44	79.1	1.0	-0.25	2.5	39.5
20.18	5.0E-03	0.00	95.0	1.14	9	94.6	21.7	116.4	12.0	42	65.7	1.0	-0.19	3.1	26.2
21.16	5.0E-03	0.00	73.3	1.20	7	74.3	26.1	100.4	14.7	40	58.8	1.0	-0.17	3.5	21.7
22.15	5.0E-04	0.02	36.8	1.66	7	38.5	48.6	87.1	25.9	38	39.9	1.0	-0.14	6.7	19.3
23.13	5.0E-05	0.01	26.8	1.44	7	28.7	51.7	80.5	29.1	36	31.5	6.0	-0.09	7.6	18.8
24.11	5.0E-02	0.01	158.0	0.40	9	165.1	0.0	165.1	3.0	44	81.6	1.0	-0.15	0.0	32.3
25.10	5.0E-02	0.00	197.7	0.46	9	209.0	0.0	209.0	2.4	46	88.4	1.0	-0.18	0.0	40.9
26.08	5.0E-02	0.00	128.8	0.90	9	138.4	12.4	150.9	8.1	44	76.6	1.0	-0.20	1.5	28.6
27.07	5.0E-06	0.14	19.1	2.83	6	22.0	88.1	110.1	43.4	UnDef	UnDef	6.0	UnDef	10.8	21.5
28.05	5.0E-06	0.37	8.9	2.93	4	11.1	44.4	55.6	60.8	UnDef	UnDef	3.0	UnDef	5.4	10.9
29.04	5.0E-04	0.13	29.2	1.55	7	33.6	56.9	90.5	28.5	36	36.0	1.0	-0.09	7.1	18.1
30.02	5.0E-02	0.01	158.1	0.50	9	177.4	0.0	177.4	3.9	44	83.7	1.0	-0.17	0.0	34.7
31.00	5.0E-02	0.01	188.2	0.51	9	213.3	0.0	213.3	3.0	44	89.0	1.0	-0.18	0.0	41.8
31.99	5.0E+00	0.00	185.9	0.40	9	213.1	0.0	213.1	2.2	44	89.0	1.0	-0.16	0.0	34.8
32.97	5.0E-04	0.03	65.7	1.71	7	77.2	46.1	123.3	19.0	40	59.9	1.0	-0.20	7.7	32.9
33.96	5.0E-03	0.04	70.6	1.50	7	83.7	39.5	123.3	17.0	40	62.2	1.0	-0.19	5.1	25.6
34.94	5.0E-04	0.08	42.1	1.58	7	51.2	50.1	101.3	23.5	38	48.1	1.0	-0.14	7.5	24.2
35.92	5.0E-03	0.03	132.6	1.35	9	158.9	27.8	186.7	10.6	44	80.5	1.0	-0.24	4.0	42.9
36.91	5.0E+00	0.01	246.8	0.51	9	297.1	0.0	297.1	1.8	46	95.0	1.0	-0.21	0.0	48.5
37.89	5.0E+00	0.01	232.1	0.58	9	282.6	0.0	282.6	2.5	46	95.0	1.0	-0.21	0.0	46.1
38.88	5.0E+00	0.01	222.4	0.57	9	273.7	0.0	273.7	2.7	46	95.0	1.0	-0.21	0.0	44.6
39.86	5.0E-02	0.01	196.5	1.27	9	244.5	17.7	262.2	7.5	46	92.9	1.0	-0.28	2.1	50.0
40.85	5.0E-02	0.04	161.1	0.73	9	202.7	2.6	205.2	5.5	44	87.5	1.0	-0.20	0.3	40.0

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-04	0.05	68.0	1.81	7	87.4	53.4	140.8	19.2	40	63.4	1.0	-0.21	8.9	37.4
42.81	5.0E-03	0.04	73.0	1.23	7	94.5	34.3	128.9	15.0	40	65.7	1.0	-0.17	4.6	27.8
43.80	5.0E-04	0.03	56.2	1.86	7	73.9	59.0	132.9	21.6	40	58.6	1.0	-0.19	9.3	33.4
44.78	5.0E-02	0.01	164.4	0.61	9	213.9	0.0	213.9	4.5	44	89.1	1.0	-0.19	0.0	41.9
45.77	5.0E-02	0.00	182.2	0.66	9	239.0	0.0	239.0	4.3	44	92.3	1.0	-0.20	0.0	46.8
46.75	5.0E+00	0.01	193.5	0.62	9	255.8	0.0	255.8	3.7	44	94.2	1.0	-0.20	0.0	41.7
47.74	5.0E+00	0.01	193.4	0.59	9	258.0	0.0	258.0	3.5	44	94.4	1.0	-0.20	0.0	42.1
48.72	5.0E-03	0.00	59.2	1.29	7	81.1	40.9	122.1	17.6	40	61.3	1.0	-0.16	5.3	25.1
49.70	5.0E-03	0.02	43.4	1.39	7	60.5	49.8	110.3	21.9	38	52.9	1.0	-0.14	5.8	20.6

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4447
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-2
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 07:39
CPT File: 890C02.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.30 (ft): 14.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
0.49	26.7	0.14	0.51	1.3	7	117.8	0.03	0.03	0.00	2.00	8.5	17.1	UnDef	0.09
1.48	16.1	0.16	0.97	0.8	6	114.6	0.09	0.09	0.00	2.00	6.2	12.3	1.28	0.08
2.46	16.0	0.16	1.01	-0.2	6	114.6	0.14	0.14	0.00	2.00	6.1	12.2	1.27	0.08
3.44	22.7	0.39	1.73	0.5	6	114.6	0.20	0.20	0.00	2.00	8.7	17.4	1.80	0.10
4.43	41.3	0.37	0.90	0.2	7	117.8	0.26	0.26	0.00	1.98	13.2	26.1	UnDef	0.13
5.41	33.2	0.48	1.43	-0.6	6	114.6	0.31	0.31	0.00	1.79	12.7	22.7	2.63	0.12
6.40	58.1	0.67	1.15	-0.3	7	117.8	0.37	0.37	0.00	1.64	18.5	30.5	UnDef	0.18
7.30	108.2	0.73	0.68	-0.6	8	120.9	0.42	0.42	0.00	1.54	25.9	39.8	UnDef	0.00
8.20	122.6	1.00	0.81	-0.5	9	124.1	0.48	0.48	0.00	1.44	23.5	33.9	UnDef	0.00
9.19	80.5	0.73	0.90	-2.5	8	120.9	0.54	0.54	0.00	1.36	19.3	26.2	UnDef	0.22
10.17	37.3	0.65	1.76	-3.4	6	114.6	0.60	0.60	0.00	1.29	14.3	18.5	2.94	0.13
11.15	10.5	0.41	3.87	0.0	3	111.4	0.65	0.65	0.00	1.24	10.1	12.5	0.79	0.00
12.14	12.1	0.47	3.88	2.9	3	111.4	0.71	0.71	0.00	1.19	11.6	13.8	0.91	0.00
13.21	11.3	0.56	4.96	2.3	3	111.4	0.77	0.77	0.00	1.14	10.8	12.3	0.84	0.00
14.27	93.6	0.88	0.94	-1.9	8	120.9	0.83	0.82	0.01	1.10	22.4	24.7	UnDef	0.22
15.26	127.4	1.06	0.83	-8.9	9	124.1	0.89	0.85	0.04	1.08	24.4	26.4	UnDef	0.34
16.24	120.5	1.13	0.94	-15.4	8	120.9	0.95	0.88	0.07	1.06	28.8	30.7	UnDef	0.32
17.22	108.7	1.08	0.99	-20.0	8	120.9	1.01	0.91	0.10	1.05	26.0	27.3	UnDef	0.27
18.21	46.9	0.93	1.98	-18.5	6	114.6	1.07	0.94	0.13	1.03	18.0	18.6	3.67	0.17
19.19	25.1	0.80	3.20	-17.0	5	114.6	1.12	0.96	0.16	1.02	12.0	12.2	1.92	0.26
20.18	10.9	0.34	3.15	-21.8	4	114.6	1.18	0.99	0.19	1.00	7.0	7.0	0.78	0.00
21.16	97.2	0.68	0.70	-14.2	8	120.9	1.24	1.02	0.22	0.99	23.3	23.1	UnDef	0.19
22.15	200.0	0.64	0.32	3.1	9	124.1	1.30	1.05	0.25	0.98	38.3	37.4	UnDef	0.00
23.13	207.2	0.57	0.27	0.7	9	124.1	1.36	1.08	0.28	0.96	39.7	38.2	UnDef	0.00
24.11	245.0	0.82	0.34	-6.7	10	127.3	1.42	1.11	0.31	0.95	39.1	37.1	UnDef	0.00
25.10	279.2	1.58	0.57	5.8	9	124.1	1.48	1.14	0.34	0.94	53.5	50.1	UnDef	0.00
26.08	200.2	1.70	0.85	6.1	9	124.1	1.54	1.17	0.37	0.92	38.4	35.5	UnDef	0.00
27.07	201.1	1.67	0.83	3.4	9	124.1	1.61	1.20	0.40	0.91	38.5	35.2	UnDef	0.00
28.05	209.3	1.04	0.50	-1.2	9	124.1	1.67	1.23	0.44	0.90	40.1	36.1	UnDef	0.00
29.04	234.0	0.66	0.28	-9.2	10	127.3	1.73	1.26	0.47	0.89	37.3	33.2	UnDef	0.00
30.02	277.1	0.79	0.29	-19.5	10	127.3	1.79	1.29	0.50	0.88	44.2	38.9	UnDef	0.00
31.00	273.2	0.92	0.34	-18.8	10	127.3	1.85	1.33	0.53	0.87	43.6	37.9	UnDef	0.00
31.99	278.4	0.82	0.30	-15.1	10	127.3	1.92	1.36	0.56	0.86	44.4	38.1	UnDef	0.00
32.97	95.3	1.51	1.58	7.5	7	117.8	1.98	1.39	0.59	0.85	30.4	25.8	UnDef	0.25
33.96	46.6	1.12	2.40	-8.1	6	114.6	2.03	1.41	0.62	0.84	17.8	15.0	3.56	0.41
34.94	72.8	1.13	1.55	-10.0	7	117.8	2.09	1.44	0.65	0.83	23.2	19.4	UnDef	0.19
35.92	73.7	1.23	1.67	-13.2	7	117.8	2.15	1.47	0.68	0.83	23.5	19.4	UnDef	0.21
36.91	102.1	1.32	1.30	-17.7	8	120.9	2.21	1.50	0.71	0.82	24.4	20.0	UnDef	0.23
37.89	38.7	0.79	2.03	-21.8	6	114.6	2.27	1.52	0.74	0.81	14.8	12.0	2.92	0.42
38.88	40.2	0.85	2.10	-16.5	6	114.6	2.32	1.55	0.77	0.80	15.4	12.4	3.03	0.45
39.86	16.5	0.38	2.30	-13.4	5	114.6	2.38	1.57	0.80	0.80	7.9	6.3	1.13	0.10
40.85	24.7	0.46	1.88	-12.5	6	114.6	2.43	1.60	0.84	0.79	9.4	7.5	1.78	0.16

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	10.7	0.31	2.93	-3.4	4	114.6	2.49	1.63	0.87	0.78	6.8	5.4	0.66	0.00
42.81	56.6	2.22	3.92	-8.7	5	114.6	2.55	1.65	0.90	0.78	27.1	21.1	4.32	0.00
43.80	332.4	3.79	1.14	-7.8	9	124.1	2.61	1.68	0.93	0.77	63.7	49.1	UnDef	0.00
44.78	441.3	3.14	0.71	-3.1	10	127.3	2.67	1.71	0.96	0.76	70.4	53.9	UnDef	0.00

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4447
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-2
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 07:39
CPT File: 890C02.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.30 (ft): 14.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-04	0.00	920.7	0.51	10	51.2	0.0	51.2	0.0	50	79.6	1.0	-0.33	0.0	17.1
1.48	5.0E-05	0.00	185.5	0.97	9	30.8	1.0	31.8	6.2	44	49.4	10.0	-0.24	0.2	12.6
2.46	5.0E-05	0.00	111.0	1.02	9	30.6	4.7	35.3	10.0	42	42.0	10.0	-0.20	1.1	13.3
3.44	5.0E-05	0.00	112.9	1.75	7	43.4	13.6	57.0	14.0	42	47.2	10.0	-0.26	3.1	20.4
4.43	5.0E-04	0.00	160.5	0.91	9	79.2	3.7	82.8	6.7	44	60.9	1.0	-0.22	0.7	26.8
5.41	5.0E-05	0.00	105.0	1.45	9	58.0	15.7	73.8	13.0	42	51.7	10.0	-0.23	3.5	26.2
6.40	5.0E-04	0.00	155.7	1.16	9	93.4	9.2	102.6	8.4	44	65.3	1.0	-0.24	1.8	32.3
7.30	5.0E-03	0.00	254.0	0.68	9	162.6	0.0	162.6	2.8	46	81.2	1.0	-0.24	0.0	39.8
8.20	5.0E-02	0.00	254.6	0.82	9	173.2	0.0	173.2	3.6	46	83.0	1.0	-0.26	0.0	33.9
9.19	5.0E-03	0.00	148.1	0.91	9	107.2	6.6	113.7	7.2	44	69.3	1.0	-0.22	1.0	27.2
10.17	5.0E-05	0.00	61.4	1.78	7	47.2	32.2	79.4	20.2	40	45.8	10.0	-0.20	6.3	24.8
11.15	5.0E-08	0.00	15.1	4.13	1	12.8	UnDef	UnDef	100.0	UnDef	UnDef	6.0	UnDef	UnDef	UnDef
12.14	5.0E-08	0.01	16.1	4.13	1	14.1	UnDef	UnDef	100.0	UnDef	UnDef	6.0	UnDef	UnDef	UnDef
13.21	5.0E-08	0.01	13.7	5.32	1	12.6	UnDef	UnDef	100.0	UnDef	UnDef	6.0	UnDef	UnDef	UnDef
14.27	5.0E-03	0.00	112.6	0.94	9	100.9	13.2	114.1	9.3	42	67.5	1.0	-0.19	1.9	26.6
15.26	5.0E-02	0.00	148.3	0.84	9	135.0	6.4	141.4	6.7	44	75.9	1.0	-0.21	0.8	27.2
16.24	5.0E-03	0.00	135.3	0.95	9	125.5	11.0	136.5	8.0	44	73.8	1.0	-0.21	1.6	32.3
17.22	5.0E-03	-0.01	118.1	1.00	9	111.4	14.6	126.0	9.3	42	70.4	1.0	-0.20	2.1	29.4
18.21	5.0E-05	-0.02	48.8	2.02	7	47.4	50.1	97.5	24.2	38	45.9	6.0	-0.19	8.8	27.3
19.19	5.0E-06	-0.03	24.8	3.35	6	25.0	100.0	125.0	41.1	UnDef	UnDef	6.0	UnDef	12.2	24.5
20.18	5.0E-07	-0.09	9.8	3.53	1	10.7	UnDef	UnDef	100.0	UnDef	UnDef	3.0	UnDef	UnDef	UnDef
21.16	5.0E-03	-0.01	94.3	0.71	9	94.3	11.3	105.5	9.0	42	65.6	1.0	-0.15	1.6	24.7
22.15	5.0E-02	0.00	189.7	0.32	9	191.3	0.0	191.3	1.5	44	85.9	1.0	-0.15	0.0	37.4
23.13	5.0E-02	0.00	191.1	0.28	9	195.4	0.0	195.4	1.1	44	86.5	1.0	-0.13	0.0	38.2
24.11	5.0E+00	0.00	219.7	0.34	9	227.7	0.0	227.7	1.0	46	90.9	1.0	-0.16	0.0	37.1
25.10	5.0E-02	0.00	243.6	0.57	9	255.9	0.0	255.9	2.3	46	94.2	1.0	-0.22	0.0	50.1
26.08	5.0E-02	0.00	169.8	0.85	9	181.1	4.8	186.0	6.0	44	84.3	1.0	-0.22	0.6	36.0
27.07	5.0E-02	0.00	166.2	0.84	9	179.6	4.9	184.5	6.0	44	84.1	1.0	-0.22	0.6	35.8
28.05	5.0E-02	0.00	168.7	0.50	9	184.6	0.0	184.6	3.5	44	84.9	1.0	-0.17	0.0	36.1
29.04	5.0E+00	0.00	184.0	0.28	9	203.8	0.0	203.8	1.3	44	87.7	1.0	-0.13	0.0	33.2
30.02	5.0E+00	0.00	212.7	0.29	10	238.4	0.0	238.4	0.7	46	92.2	1.0	-0.15	0.0	38.9
31.00	5.0E+00	0.00	204.7	0.34	9	232.2	0.0	232.2	1.3	46	91.4	1.0	-0.16	0.0	37.9
31.99	5.0E+00	0.00	203.6	0.30	9	233.8	0.0	233.8	1.0	46	91.6	1.0	-0.15	0.0	38.1
32.97	5.0E-04	0.00	67.2	1.61	7	79.1	43.1	122.3	18.2	40	60.6	1.0	-0.20	7.3	33.1
33.96	5.0E-05	-0.02	31.5	2.51	6	38.3	114.7	153.0	33.1	36	39.8	6.0	-0.17	13.2	28.2
34.94	5.0E-04	-0.01	49.1	1.60	7	59.4	47.9	107.3	21.7	38	52.3	1.0	-0.16	7.5	26.9
35.92	5.0E-04	-0.02	48.8	1.72	7	59.6	52.3	111.9	22.5	38	52.4	1.0	-0.17	8.0	27.5
36.91	5.0E-03	-0.01	66.8	1.32	7	81.7	36.3	118.0	16.5	40	61.5	1.0	-0.18	4.8	24.8
37.89	5.0E-05	-0.04	23.9	2.15	6	30.7	122.8	153.6	35.6	34	33.4	6.0	-0.12	12.0	24.0
38.88	5.0E-05	-0.03	24.5	2.23	6	31.6	126.6	158.2	35.6	34	34.3	6.0	-0.13	12.4	24.8
39.86	5.0E-06	-0.09	9.0	2.68	4	12.9	51.5	64.4	59.1	UnDef	UnDef	3.0	UnDef	6.3	12.6
40.85	5.0E-05	-0.06	13.9	2.09	6	19.1	76.3	95.4	45.5	32	30.0	6.0	-0.06	7.5	14.9

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-07	-0.12	5.1	3.82	1	8.2	UnDef	UnDef	100.0	UnDef	UnDef	1.5	UnDef	UnDef	UnDef
42.81	5.0E-06	-0.02	32.7	4.11	6	43.1	172.3	215.4	39.4	UnDef	UnDef	6.0	UnDef	21.1	42.2
43.80	5.0E-02	0.00	196.4	1.15	9	251.0	13.2	264.2	6.9	46	93.7	1.0	-0.27	1.6	50.7
44.78	5.0E+00	0.00	256.5	0.72	9	330.2	0.0	330.2	3.0	46	95.0	1.0	-0.24	0.0	53.9

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4469
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-3
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 14:37
CPT File: 890C03.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 5.70 (ft): 18.7
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	210.9	1.20	0.57	4.7	9	124.1	0.03	0.03	0.00	2.00	40.4	80.8	UnDef	0.00
1.48	181.0	2.57	1.42	3.0	8	120.9	0.09	0.09	0.00	2.00	43.3	86.7	UnDef	0.00
2.46	93.8	1.14	1.21	-0.8	8	120.9	0.15	0.15	0.00	2.00	22.5	44.9	UnDef	0.00
3.44	44.4	0.79	1.78	-2.1	7	117.8	0.21	0.21	0.00	2.00	14.2	28.3	UnDef	0.16
4.43	56.2	0.84	1.49	-1.4	7	117.8	0.27	0.27	0.00	1.94	17.9	34.7	UnDef	0.23
5.41	58.2	0.67	1.15	-1.6	7	117.8	0.33	0.33	0.00	1.75	18.6	32.6	UnDef	0.19
6.40	55.1	0.36	0.65	-1.3	8	120.9	0.38	0.38	0.00	1.61	13.2	21.3	UnDef	0.14
7.30	23.7	0.25	1.07	-1.8	6	114.6	0.44	0.44	0.00	1.51	9.1	13.8	1.86	0.09
8.20	20.3	0.35	1.71	-1.3	6	114.6	0.49	0.49	0.00	1.43	7.8	11.1	1.59	0.10
9.19	28.4	0.73	2.55	-1.1	6	114.6	0.55	0.55	0.00	1.35	10.9	14.8	2.23	0.14
10.17	19.7	0.73	3.71	1.8	4	114.6	0.60	0.60	0.00	1.29	12.6	16.3	1.53	0.26
11.15	16.8	0.71	4.24	8.5	3	111.4	0.66	0.66	0.00	1.23	16.1	19.8	1.29	0.00
12.14	13.5	0.68	5.05	7.6	3	111.4	0.71	0.71	0.00	1.19	13.0	15.4	1.03	0.00
13.21	25.0	0.86	3.42	9.0	5	114.6	0.77	0.77	0.00	1.14	12.0	13.6	1.94	0.33
14.27	64.0	1.40	2.19	7.8	7	117.8	0.83	0.83	0.00	1.10	20.4	22.4	UnDef	0.22
15.26	52.9	1.17	2.20	6.2	6	114.6	0.89	0.89	0.00	1.06	20.3	21.5	4.16	0.19
16.24	60.2	1.33	2.20	1.3	6	114.6	0.95	0.95	0.00	1.03	23.0	23.7	4.74	0.21
17.22	31.2	0.84	2.69	1.9	6	114.6	1.00	1.00	0.00	1.00	11.9	11.9	2.41	0.41
18.21	32.5	0.76	2.34	9.3	6	114.6	1.06	1.06	0.00	0.97	12.4	12.1	2.51	0.28
19.19	84.5	1.12	1.33	2.2	8	120.9	1.12	1.10	0.02	0.95	20.2	19.3	UnDef	0.20
20.18	30.3	0.89	2.94	-0.3	5	114.6	1.18	1.13	0.05	0.94	14.5	13.6	2.33	0.33
21.16	20.6	0.57	2.75	2.2	5	114.6	1.23	1.16	0.08	0.93	9.9	9.2	1.55	0.16
22.15	112.2	1.34	1.20	3.1	8	120.9	1.29	1.18	0.11	0.92	26.9	24.7	UnDef	0.27
23.13	178.7	1.24	0.70	3.6	9	124.1	1.35	1.21	0.14	0.91	34.2	31.1	UnDef	0.00
24.11	202.0	1.28	0.63	5.9	9	124.1	1.41	1.24	0.17	0.90	38.7	34.7	UnDef	0.00
25.10	222.3	1.19	0.54	5.7	9	124.1	1.47	1.27	0.20	0.89	42.6	37.7	UnDef	0.00
26.08	205.6	1.21	0.59	2.8	9	124.1	1.53	1.30	0.23	0.88	39.4	34.5	UnDef	0.00
27.07	233.0	1.53	0.66	3.1	9	124.1	1.60	1.33	0.26	0.87	44.6	38.6	UnDef	0.00
28.05	235.1	1.60	0.68	3.2	9	124.1	1.66	1.36	0.29	0.86	45.0	38.5	UnDef	0.00
29.04	275.6	1.63	0.59	4.6	9	124.1	1.72	1.39	0.32	0.85	52.8	44.7	UnDef	0.00
30.02	276.5	1.00	0.36	-0.6	10	127.3	1.78	1.43	0.35	0.84	44.1	37.0	UnDef	0.00
31.00	244.5	0.65	0.27	-9.1	10	127.3	1.84	1.46	0.38	0.83	39.0	32.3	UnDef	0.00
31.99	226.7	0.53	0.23	-5.7	10	127.3	1.90	1.49	0.41	0.82	36.2	29.6	UnDef	0.00
32.97	277.7	0.85	0.31	-6.0	10	127.3	1.97	1.52	0.45	0.81	44.3	35.9	UnDef	0.00
33.96	299.4	1.00	0.33	-9.7	10	127.3	2.03	1.55	0.48	0.80	47.8	38.3	UnDef	0.00
34.94	285.1	0.95	0.33	-5.8	10	127.3	2.09	1.59	0.51	0.79	45.5	36.1	UnDef	0.00
35.92	298.7	1.07	0.36	-3.2	10	127.3	2.16	1.62	0.54	0.79	47.7	37.5	UnDef	0.00
36.91	276.3	1.81	0.66	-7.7	9	124.1	2.22	1.65	0.57	0.78	52.9	41.2	UnDef	0.00
37.89	314.0	0.95	0.30	-2.2	10	127.3	2.28	1.68	0.60	0.77	50.1	38.7	UnDef	0.00
38.88	188.9	0.80	0.42	-7.8	9	124.1	2.34	1.71	0.63	0.76	36.2	27.7	UnDef	0.34
39.86	105.3	2.53	2.41	1.3	7	117.8	2.40	1.74	0.66	0.76	33.6	25.5	UnDef	0.46
40.85	222.2	2.74	1.23	-1.8	8	120.9	2.46	1.77	0.69	0.75	53.2	40.0	UnDef	0.00

Gregg In Situ, Inc.
Run No: 01-0316-0548-4469
CPT File: 890C03.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	380.5	4.18	1.10	-1.1	9	124.1	2.52	1.80	0.72	0.75	72.9	54.4	UnDef	0.00
42.81	125.9	2.85	2.26	5.9	7	117.8	2.58	1.83	0.75	0.74	40.2	29.7	UnDef	0.00
43.80	54.6	1.70	3.11	15.3	6	114.6	2.64	1.85	0.78	0.73	20.9	15.4	4.16	0.00
44.78	73.5	1.28	1.75	13.7	7	117.8	2.69	1.88	0.81	0.73	23.5	17.1	UnDef	0.25
45.77	17.7	0.45	2.55	134.0	5	114.6	2.75	1.91	0.85	0.72	8.5	6.1	1.20	0.10
46.75	32.2	0.72	2.22	200.4	6	114.6	2.81	1.93	0.88	0.72	12.3	8.9	2.35	0.22
47.74	152.6	2.63	1.72	102.8	8	120.9	2.86	1.96	0.91	0.71	36.5	26.1	UnDef	0.00
48.72	340.8	3.31	0.97	6.1	9	124.1	2.93	1.99	0.94	0.71	65.3	46.3	UnDef	0.00
49.70	427.5	3.91	0.92	16.3	9	124.1	2.99	2.02	0.97	0.70	81.9	57.6	UnDef	0.00
50.69	481.3	2.63	0.55	5.3	10	127.3	3.05	2.05	1.00	0.70	76.8	53.7	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. '2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4469
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-3
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 14:37
CPT File: 890C03.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 5.70 (ft): 18.7
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-02	0.00	1000.0	0.57	10	403.9	0.0	403.9	0.0	50	95.0	1.0	-0.34	0.0	80.8
1.48	5.0E-03	0.00	1000.0	1.42	12	346.6	UnDef	UnDef	0.0	50	95.0	1.0	-0.45	UnDef	UnDef
2.46	5.0E-03	0.00	622.9	1.22	9	179.7	0.0	179.7	2.4	50	92.0	1.0	-0.38	0.0	44.9
3.44	5.0E-04	0.00	211.1	1.79	9	84.9	11.9	96.8	9.6	46	65.8	1.0	-0.33	2.3	30.7
4.43	5.0E-04	0.00	209.3	1.49	9	106.4	10.2	116.5	8.3	46	69.0	1.0	-0.30	2.0	36.7
5.41	5.0E-04	0.00	178.0	1.15	9	99.9	7.1	106.9	7.5	44	67.2	1.0	-0.26	1.4	34.0
6.40	5.0E-03	0.00	142.7	0.66	9	87.1	1.6	88.7	5.7	44	63.3	1.0	-0.18	0.2	21.5
7.30	5.0E-05	0.00	53.3	1.09	7	35.2	17.3	52.5	17.3	40	37.3	10.0	-0.14	3.6	17.3
8.20	5.0E-05	0.00	40.6	1.75	7	28.5	33.0	61.5	25.1	38	31.3	6.0	-0.15	5.6	16.8
9.19	5.0E-05	0.00	51.2	2.60	7	37.7	50.9	88.6	26.5	38	39.3	10.0	-0.23	8.3	23.0
10.17	5.0E-07	0.00	31.8	3.82	6	24.9	99.7	124.6	38.8	UnDef	UnDef	6.0	UnDef	16.3	32.5
11.15	5.0E-08	0.02	24.5	4.42	1	20.2	UnDef	UnDef	100.0	UnDef	UnDef	6.0	UnDef	UnDef	UnDef
12.14	5.0E-08	0.02	18.0	5.33	1	15.7	UnDef	UnDef	100.0	UnDef	UnDef	6.0	UnDef	UnDef	UnDef
13.21	5.0E-06	0.01	31.4	3.53	6	27.9	111.5	139.3	37.8	UnDef	UnDef	6.0	UnDef	13.6	27.3
14.27	5.0E-04	0.00	75.7	2.22	7	68.5	46.2	114.8	20.1	40	56.4	1.0	-0.25	7.5	29.9
15.26	5.0E-05	0.00	58.3	2.24	7	54.8	51.7	106.5	23.2	40	50.1	10.0	-0.22	9.4	30.8
16.24	5.0E-05	0.00	62.5	2.24	7	60.5	52.2	112.7	22.3	40	52.9	10.0	-0.23	9.7	33.3
17.22	5.0E-05	0.00	30.0	2.78	6	30.4	121.7	152.2	35.1	36	33.2	6.0	-0.17	11.9	23.8
18.21	5.0E-05	0.01	29.6	2.42	6	30.9	99.2	130.1	33.6	36	33.6	6.0	-0.15	11.0	23.1
19.19	5.0E-03	0.00	75.6	1.35	7	78.8	30.3	109.0	15.4	40	60.4	1.0	-0.19	4.0	23.3
20.18	5.0E-06	0.00	25.7	3.05	6	27.9	111.5	139.4	39.1	UnDef	UnDef	6.0	UnDef	13.6	27.3
21.16	5.0E-06	0.00	16.8	2.93	6	18.8	75.1	93.9	46.5	UnDef	UnDef	6.0	UnDef	9.2	18.4
22.15	5.0E-03	0.00	93.7	1.21	9	100.9	25.5	126.4	12.6	42	67.5	1.0	-0.20	3.6	28.3
23.13	5.0E-02	0.00	146.2	0.70	9	158.8	3.7	162.4	5.8	44	80.5	1.0	-0.19	0.4	31.5
24.11	5.0E-02	0.00	161.4	0.64	9	177.3	0.0	177.3	4.8	44	83.7	1.0	-0.19	0.0	34.7
25.10	5.0E-02	0.00	173.4	0.54	9	192.8	0.0	192.8	3.7	44	86.1	1.0	-0.18	0.0	37.7
26.08	5.0E-02	0.00	156.6	0.60	9	176.3	0.0	176.3	4.6	44	83.5	1.0	-0.18	0.0	34.5
27.07	5.0E-02	0.00	173.5	0.66	9	197.4	0.0	197.4	4.6	44	86.8	1.0	-0.20	0.0	38.6
28.05	5.0E-02	0.00	171.1	0.69	9	196.9	0.0	196.9	4.8	44	86.7	1.0	-0.20	0.0	38.5
29.04	5.0E-02	0.00	196.4	0.59	9	228.4	0.0	228.4	3.4	46	90.9	1.0	-0.20	0.0	44.7
30.02	5.0E+00	0.00	192.7	0.37	9	226.6	0.0	226.6	1.8	44	90.7	1.0	-0.16	0.0	37.0
31.00	5.0E+00	0.00	166.5	0.27	9	198.2	0.0	198.2	1.6	44	86.9	1.0	-0.12	0.0	32.3
31.99	5.0E+00	0.00	150.9	0.23	9	181.7	0.0	181.7	1.8	44	84.4	1.0	-0.10	0.0	29.6
32.97	5.0E+00	0.00	181.2	0.31	9	220.3	0.0	220.3	1.6	44	89.9	1.0	-0.14	0.0	35.9
33.96	5.0E+00	0.00	191.4	0.33	9	235.1	0.0	235.1	1.5	44	91.8	1.0	-0.15	0.0	38.3
34.94	5.0E+00	0.00	178.5	0.34	9	221.6	0.0	221.6	1.9	44	90.1	1.0	-0.15	0.0	36.1
35.92	5.0E+00	0.00	183.3	0.36	9	229.8	0.0	229.8	2.0	44	91.1	1.0	-0.15	0.0	37.5
36.91	5.0E-02	0.00	166.3	0.66	9	210.6	0.0	210.6	4.8	44	88.6	1.0	-0.20	0.0	41.2
37.89	5.0E+00	0.00	185.6	0.30	9	237.1	0.0	237.1	1.4	44	92.0	1.0	-0.14	0.0	38.7
38.88	5.0E-02	0.00	109.0	0.43	9	141.3	0.0	141.3	5.0	42	77.2	1.0	-0.12	0.0	27.7
39.86	5.0E-04	-0.01	59.1	2.46	7	78.1	81.1	159.2	24.1	40	60.2	1.0	-0.24	11.9	37.4
40.85	5.0E-03	0.00	124.3	1.25	9	163.6	28.0	191.5	10.5	42	81.4	1.0	-0.23	4.0	44.0

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-02	0.00	210.3	1.11	9	277.8	9.5	287.3	6.2	46	95.0	1.0	-0.27	1.2	55.5
42.81	5.0E-04	0.00	67.5	2.31	7	91.2	74.1	165.3	21.8	40	64.6	1.0	-0.24	11.6	41.3
43.80	5.0E-05	-0.01	28.1	3.27	6	39.3	157.1	196.4	38.6	36	40.5	6.0	-0.19	15.4	30.8
44.78	5.0E-04	-0.01	37.7	1.81	7	52.5	70.9	123.4	26.5	38	48.8	1.0	-0.15	9.6	26.7
45.77	5.0E-06	0.22	7.9	3.01	4	12.6	50.2	62.8	64.4	UnDef	UnDef	3.0	UnDef	6.1	12.3
46.75	5.0E-05	0.18	15.2	2.43	6	22.7	90.7	113.4	45.7	32	30.0	6.0	-0.05	8.9	17.8
47.74	5.0E-03	0.02	76.5	1.76	7	106.7	54.5	161.2	17.7	40	69.1	1.0	-0.22	7.0	33.1
48.72	5.0E-02	0.00	170.0	0.98	9	236.6	11.6	248.1	6.7	44	92.0	1.0	-0.24	1.4	47.7
49.70	5.0E-02	0.00	210.3	0.92	9	294.5	1.5	296.0	5.2	46	95.0	1.0	-0.25	0.2	57.8
50.69	5.0E+00	0.00	233.4	0.55	9	329.0	0.0	329.0	2.3	46	95.0	1.0	-0.21	0.0	53.7

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4512
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-4
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 12:34
CPT File: 890C04.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.35 (ft): 11.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	40.5	0.74	1.82	-0.9	6	114.6	0.03	0.03	0.00	2.00	15.5	31.0	3.24	0.00
1.48	28.9	0.77	2.67	-1.3	6	114.6	0.08	0.08	0.00	2.00	11.1	22.1	2.30	0.00
2.46	58.7	0.52	0.88	-0.6	8	120.9	0.14	0.14	0.00	2.00	14.1	28.1	UnDef	0.21
3.44	86.6	0.42	0.49	0.2	8	120.9	0.20	0.20	0.00	2.00	20.7	41.5	UnDef	0.00
4.43	93.6	0.50	0.54	0.3	8	120.9	0.26	0.26	0.00	1.96	22.4	43.8	UnDef	0.00
5.41	90.7	0.52	0.58	0.3	8	120.9	0.32	0.32	0.00	1.76	21.7	38.3	UnDef	0.44
6.40	51.9	0.44	0.84	0.0	7	117.8	0.38	0.38	0.00	1.62	16.6	26.9	UnDef	0.14
7.30	11.2	0.37	3.28	-0.1	4	114.6	0.43	0.43	0.00	1.52	7.2	10.9	0.86	0.13
8.20	42.3	0.38	0.90	-0.1	7	117.8	0.48	0.48	0.00	1.44	13.5	19.4	UnDef	0.11
9.19	37.3	0.53	1.42	-0.7	7	117.8	0.54	0.54	0.00	1.36	11.9	16.2	UnDef	0.12
10.17	68.9	0.50	0.73	-1.8	8	120.9	0.60	0.60	0.00	1.29	16.5	21.3	UnDef	0.16
11.15	122.4	0.52	0.42	-1.8	9	124.1	0.66	0.66	0.00	1.23	23.4	28.9	UnDef	0.38
12.14	141.3	0.64	0.45	-1.6	9	124.1	0.72	0.69	0.04	1.21	27.1	32.6	UnDef	0.00
13.21	148.0	0.78	0.53	-0.9	9	124.1	0.79	0.72	0.07	1.18	28.3	33.4	UnDef	0.00
14.27	63.3	0.81	1.28	-1.2	7	117.8	0.85	0.75	0.10	1.15	20.2	23.3	UnDef	0.16
15.26	106.1	0.92	0.86	-1.2	8	120.9	0.91	0.78	0.13	1.13	25.4	28.8	UnDef	0.27
16.24	76.6	0.86	1.13	-1.8	8	120.9	0.97	0.81	0.16	1.11	18.3	20.4	UnDef	0.18
17.22	142.2	0.91	0.64	-1.8	9	124.1	1.03	0.84	0.19	1.09	27.2	29.7	UnDef	0.41
18.21	188.4	1.07	0.57	-1.5	9	124.1	1.09	0.87	0.23	1.07	36.1	38.7	UnDef	0.00
19.19	227.6	1.57	0.69	3.7	9	124.1	1.15	0.90	0.26	1.06	43.6	46.0	UnDef	0.00
20.18	237.0	1.19	0.50	5.1	9	124.1	1.22	0.93	0.29	1.04	45.4	47.1	UnDef	0.00
21.16	278.7	1.22	0.44	5.1	10	127.3	1.28	0.96	0.32	1.02	44.5	45.4	UnDef	0.00
22.15	158.4	1.86	1.18	5.1	8	120.9	1.34	0.99	0.35	1.00	37.9	38.1	UnDef	0.00
23.13	149.0	2.29	1.54	4.8	8	120.9	1.40	1.02	0.38	0.99	35.7	35.3	UnDef	0.00
24.11	217.5	2.83	1.30	3.5	8	120.9	1.46	1.05	0.41	0.98	52.1	50.9	UnDef	0.00
25.10	321.6	1.89	0.59	3.6	10	127.3	1.52	1.08	0.44	0.96	51.3	49.4	UnDef	0.00
26.08	321.2	2.97	0.93	3.6	9	124.1	1.58	1.11	0.47	0.95	61.5	58.4	UnDef	0.00
27.07	358.2	2.50	0.70	4.1	9	124.1	1.64	1.14	0.50	0.94	68.6	64.3	UnDef	0.00
28.05	416.1	3.91	0.94	4.0	9	124.1	1.70	1.17	0.53	0.92	79.7	73.7	UnDef	0.00
29.04	480.7	2.88	0.60	3.6	10	127.3	1.76	1.20	0.56	0.91	76.7	70.0	UnDef	0.00
30.02	444.7	4.37	0.98	4.4	9	124.1	1.83	1.23	0.59	0.90	85.2	76.7	UnDef	0.00
31.00	260.6	1.75	0.67	3.7	9	124.1	1.89	1.26	0.62	0.89	49.9	44.4	UnDef	0.00
31.99	309.3	1.60	0.52	4.2	10	127.3	1.95	1.29	0.66	0.88	49.4	43.4	UnDef	0.00
32.97	196.7	2.37	1.20	4.5	8	120.9	2.01	1.32	0.69	0.87	47.1	40.9	UnDef	0.00
33.96	174.0	2.34	1.34	4.8	8	120.9	2.07	1.35	0.72	0.86	41.7	35.8	UnDef	0.00
34.94	143.9	1.76	1.22	5.1	8	120.9	2.13	1.38	0.75	0.85	34.5	29.3	UnDef	0.38
35.92	131.0	1.90	1.45	6.2	8	120.9	2.19	1.41	0.78	0.84	31.4	26.4	UnDef	0.36
36.91	303.3	3.13	1.03	7.4	9	124.1	2.25	1.44	0.81	0.83	58.1	48.4	UnDef	0.00
37.89	339.7	2.85	0.84	7.9	9	124.1	2.31	1.47	0.84	0.82	65.1	53.7	UnDef	0.00
38.88	225.1	1.26	0.56	8.0	9	124.1	2.37	1.50	0.87	0.82	43.1	35.2	UnDef	0.00
39.86	29.3	0.73	2.48	8.8	6	114.6	2.43	1.53	0.90	0.81	11.2	9.1	2.15	0.22
40.85	46.5	0.95	2.04	9.5	6	114.6	2.49	1.55	0.93	0.80	17.8	14.3	3.52	0.34

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
41.83	53.2	0.76	1.43	9.5	7	117.8	2.54	1.58	0.96	0.80	17.0	13.5	UnDef	0.17
42.81	85.5	1.08	1.27	9.1	8	120.9	2.60	1.61	0.99	0.79	20.5	16.1	UnDef	0.19
43.80	128.5	1.41	1.10	9.8	8	120.9	2.66	1.64	1.02	0.78	30.8	24.0	UnDef	0.28
44.78	138.5	1.43	1.03	10.3	8	120.9	2.72	1.67	1.05	0.77	33.2	25.7	UnDef	0.30
45.77	286.9	1.35	0.47	12.2	10	127.3	2.78	1.70	1.09	0.77	45.8	35.2	UnDef	0.00
46.75	317.6	1.58	0.50	13.3	10	127.3	2.85	1.73	1.12	0.76	50.7	38.6	UnDef	0.00
47.74	340.5	1.91	0.56	13.3	10	127.3	2.91	1.76	1.15	0.75	54.4	41.0	UnDef	0.00
48.72	332.3	1.41	0.42	13.2	10	127.3	2.97	1.79	1.18	0.75	53.0	39.6	UnDef	0.00
49.70	146.5	3.01	2.06	11.8	7	117.8	3.03	1.82	1.21	0.74	46.8	34.6	UnDef	0.00
50.69	96.0	2.54	2.65	11.3	6	114.6	3.09	1.85	1.24	0.74	36.8	27.0	7.43	0.00
51.67	372.6	1.93	0.52	12.1	10	127.3	3.15	1.88	1.27	0.73	59.5	43.4	UnDef	0.00
52.66	413.0	2.47	0.60	12.9	10	127.3	3.21	1.91	1.30	0.72	65.9	47.7	UnDef	0.00
53.64	396.9	2.17	0.55	13.3	10	127.3	3.27	1.94	1.33	0.72	63.4	45.5	UnDef	0.00
54.63	401.2	2.20	0.55	13.8	10	127.3	3.34	1.97	1.36	0.71	64.0	45.6	UnDef	0.00
55.61	397.4	3.54	0.89	14.4	9	124.1	3.40	2.00	1.39	0.71	76.1	53.8	UnDef	0.00
56.59	405.2	5.36	1.32	15.6	9	124.1	3.46	2.03	1.42	0.70	77.6	54.4	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4512
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-4
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 12:34
CPT File: 890C04.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.35 (ft): 11.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-05	0.00	1000.0	1.83	12	77.5	UnDef	UnDef	0.0	50	91.9	10.0	-0.50	UnDef	UnDef
1.48	5.0E-05	0.00	340.6	2.68	12	55.3	UnDef	UnDef	0.0	48	66.5	10.0	-0.46	UnDef	UnDef
2.46	5.0E-03	0.00	410.9	0.89	9	112.5	0.0	112.5	2.1	48	79.3	1.0	-0.31	0.0	28.1
3.44	5.0E-03	0.00	427.8	0.49	10	165.9	0.0	165.9	0.0	48	85.5	1.0	-0.25	0.0	41.5
4.43	5.0E-03	0.00	357.0	0.54	10	179.2	0.0	179.2	0.6	48	84.0	1.0	-0.25	0.0	43.8
5.41	5.0E-03	0.00	281.5	0.58	9	156.6	0.0	156.6	1.7	46	80.1	1.0	-0.23	0.0	38.3
6.40	5.0E-04	0.00	135.5	0.85	9	82.3	5.6	87.9	7.4	44	61.7	1.0	-0.20	1.1	28.0
7.30	5.0E-07	0.00	24.9	3.41	6	16.7	66.7	83.4	41.3	UnDef	UnDef	6.0	UnDef	10.9	21.8
8.20	5.0E-04	0.00	86.3	0.92	9	59.4	12.0	71.4	11.3	42	52.4	1.0	-0.17	2.3	21.7
9.19	5.0E-04	0.00	67.7	1.44	7	49.5	23.7	73.2	17.1	40	47.1	1.0	-0.19	4.1	20.3
10.17	5.0E-03	0.00	113.5	0.73	9	86.9	7.0	93.9	7.8	42	63.3	1.0	-0.17	1.0	22.3
11.15	5.0E-02	0.00	185.3	0.42	9	147.8	0.0	147.8	2.4	44	78.5	1.0	-0.17	0.0	28.9
12.14	5.0E-02	0.00	204.5	0.46	9	166.7	0.0	166.7	2.2	46	81.9	1.0	-0.18	0.0	32.6
13.21	5.0E-02	0.00	204.4	0.53	9	170.6	0.0	170.6	2.8	46	82.6	1.0	-0.20	0.0	33.4
14.27	5.0E-04	0.00	83.1	1.30	9	71.5	23.2	94.7	14.2	42	57.6	1.0	-0.19	4.2	27.5
15.26	5.0E-03	0.00	134.9	0.87	9	117.6	8.6	126.1	7.5	44	71.9	1.0	-0.20	1.3	30.0
16.24	5.0E-03	0.00	93.6	1.14	9	83.4	19.6	103.0	12.1	42	62.1	1.0	-0.19	2.8	23.2
17.22	5.0E-02	0.00	168.4	0.64	9	152.0	0.0	152.0	4.6	44	79.3	1.0	-0.20	0.0	29.7
18.21	5.0E-02	0.00	215.7	0.57	9	197.8	0.0	197.8	2.8	46	86.8	1.0	-0.21	0.0	38.7
19.19	5.0E-02	0.00	252.0	0.69	9	234.9	0.0	234.9	2.9	46	91.8	1.0	-0.24	0.0	46.0
20.18	5.0E-02	0.00	253.9	0.51	9	240.7	0.0	240.7	1.6	46	92.4	1.0	-0.21	0.0	47.1
21.16	5.0E+00	0.00	289.0	0.44	10	278.4	0.0	278.4	0.7	46	95.0	1.0	-0.21	0.0	45.4
22.15	5.0E-03	0.00	158.6	1.19	9	155.7	15.6	171.3	8.4	44	80.0	1.0	-0.25	2.3	40.4
23.13	5.0E-03	0.00	144.8	1.55	9	144.4	27.5	171.9	11.0	44	77.8	1.0	-0.27	3.9	39.3
24.11	5.0E-03	0.00	206.2	1.31	9	207.9	14.6	222.5	7.4	46	88.3	1.0	-0.29	2.2	53.0
25.10	5.0E+00	0.00	296.8	0.59	9	303.1	0.0	303.1	1.6	46	95.0	1.0	-0.24	0.0	49.4
26.08	5.0E-02	0.00	288.1	0.93	9	298.4	0.0	298.4	3.7	46	95.0	1.0	-0.28	0.0	58.4
27.07	5.0E-02	0.00	312.8	0.70	9	328.3	0.0	328.3	2.1	46	95.0	1.0	-0.26	0.0	64.3
28.05	5.0E-02	0.00	354.1	0.94	9	376.4	0.0	376.4	3.0	48	95.0	1.0	-0.30	0.0	73.7
29.04	5.0E+00	0.00	398.7	0.60	10	429.2	0.0	429.2	0.7	48	95.0	1.0	-0.27	0.0	70.0
30.02	5.0E-02	0.00	359.3	0.99	9	392.0	0.0	392.0	3.1	48	95.0	1.0	-0.31	0.0	76.7
31.00	5.0E-02	0.00	204.9	0.68	9	226.9	0.0	226.9	3.8	46	90.8	1.0	-0.22	0.0	44.4
31.99	5.0E+00	0.00	237.5	0.52	9	266.1	0.0	266.1	2.0	46	95.0	1.0	-0.21	0.0	43.4
32.97	5.0E-03	0.00	147.0	1.22	9	167.3	20.5	187.7	9.1	44	82.0	1.0	-0.24	3.0	43.9
33.96	5.0E-03	0.00	127.1	1.36	9	146.4	27.6	174.0	10.9	44	78.2	1.0	-0.24	3.9	39.8
34.94	5.0E-03	0.00	102.6	1.24	9	119.8	27.4	147.2	12.0	42	72.5	1.0	-0.21	3.9	33.2
35.92	5.0E-03	0.00	91.3	1.48	7	107.9	36.1	144.0	14.4	42	69.5	1.0	-0.22	4.9	31.3
36.91	5.0E-02	0.00	209.0	1.04	9	247.3	6.2	253.5	5.9	46	93.2	1.0	-0.26	0.7	49.2
37.89	5.0E-02	0.00	229.4	0.85	9	274.1	0.0	274.1	4.3	46	95.0	1.0	-0.25	0.0	53.7
38.88	5.0E-02	0.00	148.4	0.57	9	179.8	0.0	179.8	4.7	44	84.1	1.0	-0.17	0.0	35.2
39.86	5.0E-05	-0.02	17.6	2.70	6	23.2	92.7	115.9	44.3	32	30.0	6.0	-0.11	9.1	18.1
40.85	5.0E-05	-0.01	28.3	2.15	6	36.5	105.0	141.5	32.8	36	38.4	6.0	-0.14	12.4	26.7

Gregg In Situ, Inc.
Run No: 01-0316-0548-4512
CPT File: 890C04.COR

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-04	-0.01	32.1	1.50	7	41.4	57.7	99.2	26.8	36	42.0	1.0	-0.11	7.7	21.3
42.81	5.0E-03	-0.01	51.5	1.31	7	65.9	40.7	106.6	19.3	38	55.3	1.0	-0.15	5.1	21.2
43.80	5.0E-03	-0.01	76.8	1.12	9	98.3	30.2	128.4	13.8	40	66.8	1.0	-0.17	4.1	28.2
44.78	5.0E-03	-0.01	81.5	1.05	9	105.0	27.4	132.4	12.8	42	68.7	1.0	-0.17	3.8	29.5
45.77	5.0E+00	0.00	167.4	0.47	9	215.5	0.0	215.5	3.3	44	89.3	1.0	-0.17	0.0	35.2
46.75	5.0E+00	0.00	182.1	0.50	9	236.4	0.0	236.4	3.1	44	91.9	1.0	-0.18	0.0	38.6
47.74	5.0E+00	0.00	191.7	0.57	9	251.1	0.0	251.1	3.3	44	93.7	1.0	-0.20	0.0	41.0
48.72	5.0E+00	0.00	183.7	0.43	9	242.9	0.0	242.9	2.5	44	92.7	1.0	-0.17	0.0	39.6
49.70	5.0E-04	-0.01	78.7	2.10	7	106.2	64.2	170.4	19.1	42	69.0	1.0	-0.25	10.7	45.3
50.69	5.0E-05	-0.01	50.2	2.74	7	69.1	102.7	171.8	27.4	38	56.7	10.0	-0.23	16.2	43.2
51.67	5.0E+00	0.00	196.8	0.52	9	266.1	0.0	266.1	2.9	46	95.0	1.0	-0.19	0.0	43.4
52.66	5.0E+00	0.00	214.6	0.60	9	292.5	0.0	292.5	3.1	46	95.0	1.0	-0.21	0.0	47.7
53.64	5.0E+00	0.00	202.8	0.55	9	278.8	0.0	278.8	3.0	46	95.0	1.0	-0.20	0.0	45.5
54.63	5.0E+00	0.00	201.6	0.55	9	279.5	0.0	279.5	3.0	46	95.0	1.0	-0.20	0.0	45.6
55.61	5.0E-02	0.00	196.5	0.90	9	274.7	3.1	277.8	5.4	46	95.0	1.0	-0.24	0.4	54.1
56.59	5.0E-02	0.00	197.4	1.34	9	278.0	22.7	300.7	7.8	46	95.0	1.0	-0.28	2.7	57.1

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005. RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4540
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-5
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 12:48
CPT File: 031C05.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.35 (ft): 11.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	20.3	0.41	2.03	30.9	6	114.6	0.03	0.03	0.00	2.00	7.8	15.6	1.62	0.00
1.48	16.7	0.44	2.62	9.4	5	114.6	0.08	0.08	0.00	2.00	8.0	16.0	1.33	0.09
2.46	9.8	0.26	2.67	26.3	4	114.6	0.14	0.14	0.00	2.00	6.3	12.6	0.78	0.08
3.44	11.7	0.26	2.21	40.0	5	114.6	0.20	0.20	0.00	2.00	5.6	11.2	0.92	0.09
4.43	21.2	0.15	0.72	41.5	6	114.6	0.25	0.25	0.00	1.99	8.1	16.1	1.68	0.09
5.41	43.7	0.14	0.32	10.8	8	120.9	0.31	0.31	0.00	1.79	10.5	18.8	UnDef	0.12
6.40	11.8	0.20	1.68	2.8	5	114.6	0.37	0.37	0.00	1.64	5.7	9.3	0.91	0.09
7.30	19.2	0.31	1.63	5.8	6	114.6	0.42	0.42	0.00	1.54	7.4	11.4	1.51	0.10
8.20	23.2	0.50	2.17	13.5	6	114.6	0.47	0.47	0.00	1.45	8.9	12.9	1.82	0.12
9.19	18.7	0.41	2.20	16.6	5	114.6	0.53	0.53	0.00	1.37	8.9	12.3	1.45	0.12
10.17	33.9	0.70	2.06	22.0	6	114.6	0.59	0.59	0.00	1.31	13.0	17.0	2.67	0.13
11.15	49.2	0.40	0.81	30.3	7	117.8	0.64	0.64	0.00	1.25	15.7	19.7	UnDef	0.12
12.14	143.0	0.36	0.25	43.1	9	124.1	0.70	0.67	0.04	1.22	27.4	33.5	UnDef	0.00
13.21	154.4	0.26	0.17	40.5	9	124.1	0.77	0.70	0.07	1.20	29.6	35.4	UnDef	0.00
14.27	139.3	0.15	0.11	31.8	9	124.1	0.83	0.73	0.10	1.17	26.7	31.2	UnDef	0.46
15.26	96.6	0.31	0.33	29.3	9	124.1	0.90	0.76	0.13	1.14	18.5	21.2	UnDef	0.20
16.24	49.0	0.44	0.90	14.7	7	117.8	0.96	0.79	0.16	1.12	15.6	17.6	UnDef	0.12
17.22	30.4	0.36	1.19	20.2	7	117.8	1.01	0.82	0.19	1.11	9.7	10.7	UnDef	0.10
18.21	41.5	0.42	1.00	26.8	7	117.8	1.07	0.85	0.23	1.09	13.3	14.4	UnDef	0.11
19.19	53.8	0.49	0.92	37.1	7	117.8	1.13	0.87	0.26	1.07	17.2	18.4	UnDef	0.12
20.18	119.2	0.56	0.47	57.4	9	124.1	1.19	0.90	0.29	1.05	22.8	24.0	UnDef	0.25
21.16	160.6	0.26	0.16	55.5	9	124.1	1.25	0.93	0.32	1.04	30.8	31.8	UnDef	0.00
22.15	129.9	0.37	0.29	38.2	9	124.1	1.31	0.96	0.35	1.02	24.9	25.4	UnDef	0.28
23.13	23.5	0.44	1.87	29.4	6	114.6	1.37	0.99	0.38	1.00	9.0	9.1	1.77	0.22
24.11	35.4	0.55	1.54	81.2	6	114.6	1.43	1.02	0.41	0.99	13.5	13.4	2.72	0.13
25.10	135.7	0.77	0.57	68.1	9	124.1	1.48	1.04	0.44	0.98	26.0	25.4	UnDef	0.30
26.08	150.4	0.83	0.55	53.0	9	124.1	1.55	1.08	0.47	0.96	28.8	27.8	UnDef	0.35
27.07	140.9	0.89	0.63	56.9	9	124.1	1.61	1.11	0.50	0.95	27.0	25.7	UnDef	0.31
28.05	270.5	0.71	0.26	81.5	10	127.3	1.67	1.14	0.53	0.94	43.2	40.5	UnDef	0.00
29.04	318.3	1.28	0.40	58.2	10	127.3	1.73	1.17	0.56	0.93	50.8	47.0	UnDef	0.00
30.02	277.3	1.13	0.41	55.4	10	127.3	1.79	1.20	0.59	0.91	44.3	40.4	UnDef	0.00
31.00	341.7	2.63	0.77	69.2	9	124.1	1.86	1.23	0.62	0.90	65.4	59.0	UnDef	0.00
31.99	335.2	1.77	0.53	60.0	10	127.3	1.92	1.26	0.66	0.89	53.5	47.6	UnDef	0.00
32.97	372.6	1.89	0.51	77.6	10	127.3	1.98	1.29	0.69	0.88	59.5	52.3	UnDef	0.00
33.96	303.8	0.87	0.29	79.9	10	127.3	2.04	1.33	0.72	0.87	48.5	42.1	UnDef	0.00
34.94	160.0	1.31	0.82	45.6	9	124.1	2.11	1.36	0.75	0.86	30.6	26.3	UnDef	0.38
35.92	161.3	1.77	1.10	45.6	8	120.9	2.17	1.39	0.78	0.85	38.6	32.8	UnDef	0.43
36.91	43.5	0.93	2.14	11.5	6	114.6	2.22	1.41	0.81	0.84	16.7	14.0	3.30	0.33
37.89	77.2	0.94	1.22	22.8	8	120.9	2.28	1.44	0.84	0.83	18.5	15.4	UnDef	0.17
38.88	318.2	1.83	0.57	52.6	10	127.3	2.34	1.47	0.87	0.82	50.8	41.9	UnDef	0.00
39.86	150.0	1.22	0.81	19.3	9	124.1	2.40	1.50	0.90	0.82	28.7	23.4	UnDef	0.32
40.85	105.0	1.37	1.30	48.8	8	120.9	2.46	1.53	0.93	0.81	25.1	20.3	UnDef	0.24

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	311.8	1.63	0.52	32.9	10	127.3	2.53	1.56	0.96	0.80	49.8	39.8	UnDef	0.00
42.81	348.2	2.35	0.68	30.7	9	124.1	2.59	1.59	0.99	0.79	66.7	52.8	UnDef	0.00
43.80	370.9	2.40	0.65	61.1	10	127.3	2.65	1.63	1.02	0.78	59.2	46.4	UnDef	0.00
44.78	434.6	3.28	0.75	73.1	10	127.3	2.71	1.66	1.05	0.78	69.4	53.9	UnDef	0.00
45.77	430.9	3.94	0.91	63.1	9	124.1	2.77	1.69	1.09	0.77	82.5	63.5	UnDef	0.00
46.75	380.9	3.21	0.84	68.8	9	124.1	2.84	1.72	1.12	0.76	73.0	55.7	UnDef	0.00
47.74	364.2	2.51	0.69	81.1	9	124.1	2.90	1.75	1.15	0.76	69.8	52.7	UnDef	0.00
48.72	453.4	4.32	0.95	98.2	9	124.1	2.96	1.78	1.18	0.75	86.8	65.1	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4540
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-5
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 12:48
CPT File: 031C05.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.35 (ft): 11.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-05	0.05	720.1	2.03	12	38.9	UnDef	UnDef	0.0	50	72.1	10.0	-0.48	UnDef	UnDef
1.48	5.0E-06	0.02	197.0	2.64	7	32.1	9.4	41.4	13.5	UnDef	UnDef	10.0	UnDef	2.6	18.7
2.46	5.0E-07	0.08	68.8	2.71	7	18.8	18.1	37.0	23.4	UnDef	UnDef	10.0	UnDef	5.6	18.1
3.44	5.0E-06	0.11	58.3	2.25	7	22.4	21.2	43.7	23.2	UnDef	UnDef	10.0	UnDef	4.9	16.1
4.43	5.0E-05	0.06	82.5	0.73	9	40.6	6.6	47.2	10.2	42	41.8	10.0	-0.14	1.5	17.7
5.41	5.0E-03	0.01	139.3	0.32	9	76.7	0.0	76.7	3.0	44	59.7	1.0	-0.12	0.0	18.8
6.40	5.0E-06	0.01	30.9	1.74	7	19.0	33.6	52.6	28.9	UnDef	UnDef	6.0	UnDef	6.2	15.5
7.30	5.0E-05	0.01	44.7	1.66	7	29.0	27.7	56.8	23.3	38	31.8	6.0	-0.16	5.0	16.4
8.20	5.0E-05	0.02	48.1	2.21	7	33.0	39.7	72.7	25.4	38	35.5	6.0	-0.20	6.7	19.6
9.19	5.0E-06	0.03	34.3	2.26	7	25.1	53.3	78.4	30.5	UnDef	UnDef	6.0	UnDef	9.1	21.4
10.17	5.0E-05	0.02	56.9	2.10	7	43.4	39.0	82.4	22.7	40	43.3	10.0	-0.21	7.1	24.1
11.15	5.0E-04	0.02	76.2	0.83	9	60.3	13.2	73.5	11.7	40	52.8	1.0	-0.14	2.5	22.2
12.14	5.0E-02	0.01	213.3	0.25	10	171.3	0.0	171.3	0.4	46	82.7	1.0	-0.14	0.0	33.5
13.21	5.0E-02	0.01	219.6	0.17	10	180.7	0.0	180.7	0.0	46	84.2	1.0	-0.11	0.0	35.4
14.27	5.0E-02	0.01	188.9	0.11	10	159.2	0.0	159.2	0.0	44	80.6	1.0	-0.05	0.0	31.2
15.26	5.0E-02	0.01	125.5	0.33	9	108.3	0.0	108.3	3.7	44	69.6	1.0	-0.11	0.0	21.2
16.24	5.0E-04	0.01	60.7	0.92	9	53.9	18.8	72.6	14.7	40	49.5	1.0	-0.13	3.4	21.0
17.22	5.0E-04	0.01	35.8	1.23	7	32.8	31.4	64.2	23.3	38	35.3	1.0	-0.11	4.7	15.4
18.21	5.0E-04	0.02	47.8	1.03	7	44.2	23.8	68.0	18.1	38	43.9	1.0	-0.12	4.0	18.5
19.19	5.0E-04	0.02	60.3	0.94	9	56.3	20.1	76.4	14.8	40	50.8	1.0	-0.13	3.6	22.0
20.18	5.0E-02	0.01	130.8	0.47	9	122.8	0.0	122.8	4.7	44	73.2	1.0	-0.14	0.0	24.0
21.16	5.0E-02	0.01	170.8	0.16	9	162.7	0.0	162.7	0.5	44	81.2	1.0	-0.08	0.0	31.8
22.15	5.0E-02	0.01	133.5	0.29	9	129.6	0.0	129.6	2.9	44	74.7	1.0	-0.11	0.0	25.4
23.13	5.0E-05	0.02	22.4	1.98	6	23.1	92.5	115.7	35.7	34	30.0	6.0	-0.10	9.1	18.1
24.11	5.0E-05	0.06	33.4	1.61	7	34.3	48.6	83.0	27.0	36	36.6	6.0	-0.12	7.8	21.2
25.10	5.0E-02	0.01	128.4	0.57	9	129.9	2.4	132.2	5.7	44	74.8	1.0	-0.16	0.3	25.7
26.08	5.0E-02	0.01	138.5	0.56	9	141.9	0.3	142.2	5.1	44	77.3	1.0	-0.16	0.0	27.8
27.07	5.0E-02	0.01	126.0	0.64	9	131.2	4.8	136.0	6.3	44	75.1	1.0	-0.17	0.6	26.3
28.05	5.0E+00	0.01	236.6	0.27	10	248.3	0.0	248.3	0.1	46	93.3	1.0	-0.15	0.0	40.5
29.04	5.0E+00	0.00	271.0	0.40	10	288.2	0.0	288.2	0.7	46	95.0	1.0	-0.20	0.0	47.0
30.02	5.0E+00	0.00	229.5	0.41	9	247.7	0.0	247.7	1.4	46	93.3	1.0	-0.18	0.0	40.4
31.00	5.0E-02	0.00	276.0	0.77	9	301.3	0.0	301.3	3.0	46	95.0	1.0	-0.26	0.0	59.0
31.99	5.0E+00	0.00	264.0	0.53	9	291.9	0.0	291.9	1.7	46	95.0	1.0	-0.22	0.0	47.6
32.97	5.0E+00	0.00	286.3	0.51	9	320.5	0.0	320.5	1.2	46	95.0	1.0	-0.22	0.0	52.3
33.96	5.0E+00	0.01	227.5	0.29	10	258.1	0.0	258.1	0.4	46	94.5	1.0	-0.15	0.0	42.1
34.94	5.0E-02	0.00	116.3	0.83	9	134.3	13.0	147.3	8.3	42	75.7	1.0	-0.18	1.5	27.8
35.92	5.0E-03	0.00	114.7	1.11	9	134.0	22.0	156.0	10.3	42	75.7	1.0	-0.21	3.2	36.0
36.91	5.0E-05	-0.01	29.2	2.25	6	35.8	104.1	139.9	32.9	36	37.8	6.0	-0.14	12.2	26.2
37.89	5.0E-03	0.00	52.0	1.26	7	62.9	36.9	99.8	18.9	38	54.0	1.0	-0.15	4.6	20.0
38.88	5.0E+00	0.00	214.6	0.58	9	256.7	0.0	256.7	2.9	46	94.3	1.0	-0.21	0.0	41.9
39.86	5.0E-02	0.00	98.2	0.83	9	119.7	16.6	136.3	9.6	42	72.4	1.0	-0.17	1.9	25.4
40.85	5.0E-03	0.01	66.9	1.34	7	83.0	37.1	120.1	16.6	40	61.9	1.0	-0.18	4.9	25.2

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E+00	0.00	197.9	0.53	9	244.1	0.0	244.1	2.9	46	92.9	1.0	-0.19	0.0	39.8
42.81	5.0E-02	0.00	216.8	0.68	9	269.9	0.0	269.9	3.5	46	95.0	1.0	-0.22	0.0	52.8
43.80	5.0E+00	0.00	226.6	0.65	9	284.7	0.0	284.7	3.1	46	95.0	1.0	-0.22	0.0	46.4
44.78	5.0E+00	0.00	260.6	0.76	9	330.4	0.0	330.4	3.2	46	95.0	1.0	-0.25	0.0	53.9
45.77	5.0E-02	0.00	253.6	0.92	9	324.5	0.0	324.5	4.2	46	95.0	1.0	-0.27	0.0	63.5
46.75	5.0E-02	0.00	220.0	0.85	9	284.3	0.0	284.3	4.5	46	95.0	1.0	-0.25	0.0	55.7
47.74	5.0E-02	0.00	206.6	0.69	9	269.5	0.0	269.5	3.9	46	95.0	1.0	-0.22	0.0	52.7
48.72	5.0E-02	0.00	253.1	0.96	9	332.6	0.0	332.6	4.5	46	95.0	1.0	-0.27	0.0	65.1

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4562
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-6
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 13:51
CPT File: 890C06.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.35 (ft): 11.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	28.8	0.67	2.35	0.1	6	114.6	0.03	0.03	0.00	2.00	11.0	22.1	2.30	0.00
1.48	33.2	0.80	2.40	0.1	6	114.6	0.08	0.08	0.00	2.00	12.7	25.4	2.65	0.00
2.46	34.4	0.81	2.34	0.6	6	114.6	0.14	0.14	0.00	2.00	13.2	26.3	2.74	0.12
3.44	43.8	1.08	2.46	1.2	6	114.6	0.20	0.20	0.00	2.00	16.8	33.6	3.49	0.18
4.43	25.3	0.77	3.03	1.5	5	114.6	0.25	0.25	0.00	1.99	12.1	24.1	2.01	0.14
5.41	16.2	0.59	3.67	1.5	4	114.6	0.31	0.31	0.00	1.80	10.3	18.5	1.27	0.16
6.40	9.5	0.31	3.29	1.5	4	114.6	0.37	0.37	0.00	1.65	6.1	10.1	0.73	0.12
7.30	30.6	1.05	3.44	1.5	5	114.6	0.42	0.42	0.00	1.55	14.7	22.7	2.41	0.19
8.20	122.1	1.46	1.20	2.2	8	120.9	0.47	0.47	0.00	1.46	29.2	42.6	UnDef	0.00
9.19	108.1	1.60	1.48	2.0	8	120.9	0.53	0.53	0.00	1.37	25.9	35.5	UnDef	0.46
10.17	133.9	1.46	1.09	2.1	8	120.9	0.59	0.59	0.00	1.30	32.1	41.7	UnDef	0.00
11.15	115.7	1.05	0.91	1.9	8	120.9	0.65	0.65	0.00	1.25	27.7	34.5	UnDef	0.36
12.14	132.7	0.29	0.22	1.6	9	124.1	0.71	0.67	0.04	1.22	25.4	30.9	UnDef	0.45
13.21	103.5	0.45	0.43	1.2	9	124.1	0.78	0.71	0.07	1.19	19.8	23.6	UnDef	0.24
14.27	122.1	0.24	0.19	1.0	9	124.1	0.84	0.74	0.10	1.16	23.4	27.2	UnDef	0.33
15.26	176.0	1.97	1.12	1.0	8	120.9	0.90	0.77	0.13	1.14	42.1	48.0	UnDef	0.00
16.24	168.1	0.61	0.36	1.3	9	124.1	0.96	0.80	0.16	1.12	32.2	36.0	UnDef	0.00
17.22	183.4	0.93	0.51	1.0	9	124.1	1.02	0.83	0.19	1.10	35.1	38.6	UnDef	0.00
18.21	81.4	0.98	1.21	0.9	8	120.9	1.08	0.86	0.23	1.08	19.5	21.0	UnDef	0.20
19.19	134.6	2.20	1.63	1.6	8	120.9	1.14	0.89	0.26	1.06	32.2	34.2	UnDef	0.00
20.18	311.9	1.68	0.54	2.4	10	127.3	1.21	0.92	0.29	1.04	49.8	51.9	UnDef	0.00
21.16	314.5	1.38	0.44	2.6	10	127.3	1.27	0.95	0.32	1.03	50.2	51.5	UnDef	0.00
22.15	248.9	1.14	0.46	2.4	10	127.3	1.33	0.98	0.35	1.01	39.7	40.1	UnDef	0.00
23.13	146.0	0.98	0.67	2.3	9	124.1	1.39	1.01	0.38	0.99	28.0	27.8	UnDef	0.36
24.11	99.1	0.81	0.82	2.2	8	120.9	1.45	1.04	0.41	0.98	23.7	23.2	UnDef	0.20
25.10	149.2	1.61	1.08	2.4	8	120.9	1.51	1.07	0.44	0.97	35.7	34.5	UnDef	0.44
26.08	284.0	1.25	0.44	3.0	10	127.3	1.57	1.10	0.47	0.95	45.3	43.2	UnDef	0.00
27.07	186.6	0.84	0.45	3.1	9	124.1	1.64	1.13	0.50	0.94	35.7	33.6	UnDef	0.00
28.05	111.3	1.11	1.00	3.2	8	120.9	1.70	1.16	0.53	0.93	26.6	24.7	UnDef	0.25
29.04	259.8	1.02	0.39	3.9	10	127.3	1.76	1.19	0.56	0.92	41.5	38.0	UnDef	0.00
30.02	280.2	1.12	0.40	4.3	10	127.3	1.82	1.23	0.59	0.90	44.7	40.4	UnDef	0.00
31.00	251.8	0.79	0.31	4.4	10	127.3	1.88	1.26	0.62	0.89	40.2	35.8	UnDef	0.00
31.99	70.0	0.98	1.40	4.5	7	117.8	1.94	1.29	0.66	0.88	22.3	19.7	UnDef	0.17
32.97	29.0	0.90	3.10	5.3	5	114.6	2.00	1.31	0.69	0.87	13.9	12.1	2.16	0.26
33.96	115.1	2.09	1.82	5.7	7	117.8	2.06	1.34	0.72	0.86	36.7	31.7	UnDef	0.36
34.94	218.1	4.63	2.12	6.2	7	117.8	2.11	1.37	0.75	0.86	69.6	59.6	UnDef	0.00
35.92	170.7	5.39	3.16	6.6	6	114.6	2.17	1.39	0.78	0.85	65.4	55.4	13.48	0.00
36.91	98.8	1.61	1.63	6.6	7	117.8	2.23	1.42	0.81	0.84	31.5	26.5	UnDef	0.27
37.89	13.3	0.57	4.31	11.5	3	111.4	2.29	1.45	0.84	0.83	12.8	10.6	0.88	0.00
38.88	207.8	0.95	0.46	13.6	9	124.1	2.34	1.47	0.87	0.82	39.8	32.8	UnDef	0.00
39.86	308.3	2.43	0.79	12.7	9	124.1	2.40	1.50	0.90	0.82	59.0	48.2	UnDef	0.00
40.85	270.7	3.92	1.45	12.4	8	120.9	2.46	1.53	0.93	0.81	64.8	52.3	UnDef	0.00

Gregg In Situ, Inc.
Run No: 01-0316-0548-4562
CPT File: 890C06.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	342.8	2.82	0.82	13.8	9	124.1	2.52	1.56	0.96	0.80	65.7	52.5	UnDef	0.00
42.81	273.2	2.84	1.04	14.4	9	124.1	2.59	1.59	0.99	0.79	52.3	41.5	UnDef	0.00
43.80	347.0	2.37	0.68	14.7	9	124.1	2.65	1.62	1.02	0.79	66.5	52.2	UnDef	0.00
44.78	222.6	2.35	1.06	14.6	9	124.1	2.71	1.65	1.05	0.78	42.6	33.2	UnDef	0.00
45.77	193.3	2.26	1.17	16.0	8	120.9	2.77	1.68	1.09	0.77	46.3	35.7	UnDef	0.00
46.75	277.5	1.81	0.65	16.3	9	124.1	2.83	1.71	1.12	0.76	53.1	40.6	UnDef	0.00
47.74	175.9	2.42	1.38	17.1	8	120.9	2.89	1.74	1.15	0.76	42.1	31.9	UnDef	0.00
48.72	429.2	5.16	1.20	18.6	9	124.1	2.95	1.77	1.18	0.75	82.2	61.8	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4562
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-6
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 13:51
CPT File: 890C06.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.35 (ft): 11.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-05	0.00	1000.0	2.35	12	55.1	UnDef	UnDef	0.0	50	82.1	10.0	-0.55	UnDef	UnDef
1.48	5.0E-05	0.00	391.0	2.41	12	63.5	UnDef	UnDef	0.0	48	70.4	10.0	-0.45	UnDef	UnDef
2.46	5.0E-05	0.00	242.7	2.35	9	65.8	12.6	78.4	11.0	46	64.1	10.0	-0.39	3.0	29.3
3.44	5.0E-05	0.00	221.1	2.47	9	84.0	19.5	103.5	12.1	46	66.3	10.0	-0.39	4.5	38.1
4.43	5.0E-06	0.00	98.8	3.06	7	48.5	35.8	84.3	20.9	UnDef	UnDef	10.0	UnDef	8.7	32.8
5.41	5.0E-07	0.00	51.1	3.74	6	28.4	66.8	95.2	31.3	UnDef	UnDef	10.0	UnDef	14.5	33.0
6.40	5.0E-07	0.01	25.0	3.42	6	15.4	61.7	77.1	41.2	UnDef	UnDef	6.0	UnDef	10.1	20.1
7.30	5.0E-06	0.00	72.2	3.49	6	46.3	58.7	105.0	25.9	UnDef	UnDef	10.0	UnDef	12.2	34.8
8.20	5.0E-03	0.00	257.9	1.20	9	174.0	3.3	177.2	5.7	46	83.1	1.0	-0.30	0.5	43.1
9.19	5.0E-03	0.00	202.7	1.49	9	145.2	14.7	159.9	8.4	46	78.0	1.0	-0.30	2.2	37.7
10.17	5.0E-03	0.00	225.7	1.10	9	170.5	3.7	174.2	5.8	46	82.6	1.0	-0.27	0.6	42.3
11.15	5.0E-03	0.00	178.3	0.91	9	141.0	4.0	145.0	6.0	44	77.1	1.0	-0.23	0.6	35.1
12.14	5.0E-02	0.00	195.6	0.22	10	158.0	0.0	158.0	0.4	44	80.4	1.0	-0.12	0.0	30.9
13.21	5.0E-02	0.00	145.2	0.43	9	120.5	0.0	120.5	3.8	44	72.6	1.0	-0.15	0.0	23.6
14.27	5.0E-02	0.00	163.8	0.20	9	138.9	0.0	138.9	1.0	44	76.7	1.0	-0.09	0.0	27.2
15.26	5.0E-03	0.00	227.3	1.13	9	196.2	5.1	201.3	5.9	46	86.6	1.0	-0.28	0.8	48.8
16.24	5.0E-02	0.00	208.9	0.37	9	183.9	0.0	183.9	1.4	46	84.7	1.0	-0.17	0.0	36.0
17.22	5.0E-02	0.00	219.7	0.51	9	197.0	0.0	197.0	2.3	46	86.7	1.0	-0.20	0.0	38.6
18.21	5.0E-03	0.00	93.4	1.22	9	85.9	22.1	108.0	12.7	42	62.9	1.0	-0.20	3.1	24.1
19.19	5.0E-03	0.00	150.2	1.64	9	139.8	27.7	167.4	11.2	44	76.9	1.0	-0.28	3.9	38.1
20.18	5.0E+00	0.00	338.1	0.54	10	318.4	0.0	318.4	0.8	48	95.0	1.0	-0.24	0.0	51.9
21.16	5.0E+00	0.00	329.4	0.44	10	315.6	0.0	315.6	0.3	48	95.0	1.0	-0.22	0.0	51.5
22.15	5.0E+00	0.00	252.0	0.46	9	245.8	0.0	245.8	1.3	46	93.0	1.0	-0.20	0.0	40.1
23.13	5.0E-02	0.00	142.7	0.68	9	141.9	3.2	145.1	5.8	44	77.3	1.0	-0.19	0.4	28.2
24.11	5.0E-03	0.00	93.6	0.83	9	94.9	14.5	109.5	10.0	42	65.8	1.0	-0.16	2.1	25.3
25.10	5.0E-03	0.00	137.8	1.09	9	141.0	16.0	157.0	8.8	44	77.1	1.0	-0.23	2.3	36.8
26.08	5.0E+00	0.00	256.2	0.44	9	264.7	0.0	264.7	1.2	46	95.0	1.0	-0.20	0.0	43.2
27.07	5.0E-02	0.00	163.1	0.45	9	171.5	0.0	171.5	3.3	44	82.7	1.0	-0.16	0.0	33.6
28.05	5.0E-03	0.00	94.2	1.02	9	101.0	20.2	121.2	11.3	42	67.6	1.0	-0.18	2.9	27.6
29.04	5.0E+00	0.00	216.2	0.40	9	232.7	0.0	232.7	1.5	46	91.5	1.0	-0.18	0.0	38.0
30.02	5.0E+00	0.00	227.2	0.40	9	247.7	0.0	247.7	1.3	46	93.3	1.0	-0.18	0.0	40.4
31.00	5.0E+00	0.00	198.7	0.32	9	219.7	0.0	219.7	1.2	46	89.8	1.0	-0.15	0.0	35.8
31.99	5.0E-04	-0.01	52.9	1.44	7	60.4	39.6	99.9	19.8	40	52.8	1.0	-0.16	6.5	26.2
32.97	5.0E-06	-0.02	20.6	3.33	6	24.8	99.1	123.9	44.5	UnDef	UnDef	6.0	UnDef	12.1	24.2
33.96	5.0E-04	0.00	84.3	1.85	7	97.3	46.8	144.0	17.2	42	66.5	1.0	-0.24	8.1	39.8
34.94	5.0E-04	0.00	158.0	2.15	7	182.5	50.4	233.0	13.1	44	84.5	1.0	-0.33	9.3	68.9
35.92	5.0E-05	0.00	121.0	3.20	7	141.5	88.9	230.5	19.5	42	77.2	10.0	-0.38	17.6	73.0
36.91	5.0E-04	-0.01	68.0	1.67	7	81.1	45.3	126.4	18.4	40	61.3	1.0	-0.20	7.6	34.1
37.89	5.0E-08	-0.04	7.7	5.20	1	10.9	UnDef	UnDef	100.0	UnDef	UnDef	3.0	UnDef	UnDef	UnDef
38.88	5.0E-02	0.00	139.5	0.46	9	167.6	0.0	167.6	4.2	44	82.1	1.0	-0.15	0.0	32.8
39.86	5.0E-02	0.00	203.5	0.80	9	246.1	0.0	246.1	4.6	46	93.1	1.0	-0.23	0.0	48.2
40.85	5.0E-03	0.00	175.0	1.46	9	213.9	27.2	241.2	9.2	44	89.1	1.0	-0.28	4.0	56.3

Gregg In Situ, Inc.
Run No: 01-0316-0548-4562
CPT File: 890C06.COR

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-02	0.00	217.8	0.83	9	268.4	0.0	268.4	4.4	46	95.0	1.0	-0.24	0.0	52.5
42.81	5.0E-02	0.00	169.9	1.05	9	211.9	13.0	224.9	7.2	44	88.8	1.0	-0.24	1.6	43.0
43.80	5.0E-02	0.00	212.2	0.69	9	266.6	0.0	266.6	3.7	46	95.0	1.0	-0.22	0.0	52.2
44.78	5.0E-02	0.00	133.0	1.07	9	169.4	19.8	189.2	8.9	44	82.4	1.0	-0.22	2.3	35.5
45.77	5.0E-03	0.00	113.2	1.19	9	145.8	27.0	172.8	10.8	42	78.1	1.0	-0.22	3.9	39.5
46.75	5.0E-02	0.00	160.4	0.66	9	207.5	0.0	207.5	5.0	44	88.2	1.0	-0.19	0.0	40.6
47.74	5.0E-03	0.00	99.3	1.40	9	130.4	36.5	166.9	13.2	42	74.9	1.0	-0.22	5.1	37.0
48.72	5.0E-02	0.00	240.6	1.21	9	315.6	9.3	324.9	6.1	46	95.0	1.0	-0.29	1.1	62.9

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4584
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-7
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 13:08
CPT File: 890C07.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 1.83 (ft): 6.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	53.2	0.71	1.33	0.3	7	117.8	0.03	0.03	0.00	2.00	17.0	34.0	UnDef	0.18
1.48	62.5	0.87	1.39	1.2	7	117.8	0.09	0.09	0.00	2.00	19.9	39.9	UnDef	0.24
2.46	54.3	1.47	2.71	1.6	6	114.6	0.14	0.14	0.00	2.00	20.8	41.6	4.33	0.00
3.44	92.0	2.62	2.84	2.3	6	114.6	0.20	0.20	0.00	2.00	35.3	70.5	7.35	0.00
4.43	147.1	2.90	1.97	3.1	7	117.8	0.26	0.26	0.00	1.97	47.0	92.5	UnDef	0.00
5.41	296.5	6.63	2.24	2.8	8	120.9	0.32	0.32	0.00	1.78	71.0	126.2	UnDef	0.00
6.40	200.7	4.16	2.07	1.6	7	117.8	0.38	0.36	0.01	1.66	64.1	106.4	UnDef	0.00
7.30	88.7	0.54	0.60	-0.3	8	120.9	0.43	0.39	0.04	1.60	21.2	34.1	UnDef	0.33
8.20	87.6	0.31	0.36	0.0	8	120.9	0.48	0.41	0.07	1.55	21.0	32.6	UnDef	0.30
9.19	110.1	0.26	0.23	0.5	9	124.1	0.54	0.44	0.10	1.50	21.1	31.6	UnDef	0.00
10.17	99.6	0.24	0.24	0.6	9	124.1	0.60	0.47	0.13	1.45	19.1	27.7	UnDef	0.34
11.15	84.0	0.19	0.22	0.6	8	120.9	0.67	0.50	0.16	1.41	20.1	28.3	UnDef	0.22
12.14	70.1	0.18	0.25	0.9	8	120.9	0.72	0.53	0.19	1.37	16.8	23.0	UnDef	0.16
13.21	72.9	0.38	0.52	1.4	8	120.9	0.79	0.56	0.22	1.33	17.4	23.2	UnDef	0.16
14.27	84.3	0.40	0.48	1.6	8	120.9	0.85	0.60	0.26	1.30	20.2	26.2	UnDef	0.19
15.26	130.3	1.01	0.77	0.8	9	124.1	0.91	0.62	0.29	1.27	25.0	31.6	UnDef	0.00
16.24	165.8	1.02	0.62	2.1	9	124.1	0.98	0.66	0.32	1.24	31.8	39.2	UnDef	0.00
17.22	91.9	0.80	0.87	2.2	8	120.9	1.04	0.68	0.35	1.21	22.0	26.6	UnDef	0.23
18.21	223.3	1.87	0.84	3.6	9	124.1	1.10	0.71	0.38	1.18	42.8	50.6	UnDef	0.00
19.19	296.4	3.33	1.12	4.3	9	124.1	1.16	0.74	0.41	1.16	56.8	65.8	UnDef	0.00
20.18	353.1	3.68	1.04	4.0	9	124.1	1.22	0.78	0.44	1.14	67.6	76.8	UnDef	0.00
21.16	346.3	3.00	0.87	4.8	9	124.1	1.28	0.81	0.47	1.11	66.3	73.9	UnDef	0.00
22.15	276.7	1.06	0.38	4.9	10	127.3	1.34	0.84	0.50	1.09	44.2	48.3	UnDef	0.00
23.13	270.7	0.84	0.31	4.4	10	127.3	1.40	0.87	0.53	1.07	43.2	46.4	UnDef	0.00
24.11	251.1	0.94	0.38	4.4	10	127.3	1.47	0.90	0.57	1.05	40.1	42.2	UnDef	0.00
25.10	185.3	0.78	0.42	4.3	9	124.1	1.53	0.93	0.60	1.04	35.5	36.8	UnDef	0.00
26.08	67.9	1.59	2.34	4.2	6	114.6	1.59	0.96	0.63	1.02	26.0	26.5	5.30	0.26
27.07	139.5	2.62	1.88	6.4	7	117.8	1.64	0.99	0.66	1.01	44.5	44.8	UnDef	0.00
28.05	87.5	1.57	1.80	16.7	7	117.8	1.70	1.01	0.69	0.99	27.9	27.8	UnDef	0.26
29.04	83.5	1.40	1.67	16.0	7	117.8	1.76	1.04	0.72	0.98	26.6	26.1	UnDef	0.23
30.02	66.1	2.01	3.04	21.1	6	114.6	1.82	1.07	0.75	0.97	25.3	24.5	5.15	0.39
31.00	145.1	2.84	1.96	13.1	7	117.8	1.87	1.09	0.78	0.96	46.3	44.3	UnDef	0.00
31.99	39.1	1.06	2.73	12.5	6	114.6	1.93	1.12	0.81	0.95	15.0	14.1	2.97	0.46
32.97	224.8	2.02	0.90	16.0	9	124.1	1.99	1.15	0.84	0.93	43.1	40.2	UnDef	0.00
33.96	199.1	3.02	1.52	16.3	8	120.9	2.05	1.18	0.87	0.92	47.7	43.9	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4584
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-7
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 13:08
CPT File: 890C07.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 1.83 (ft): 6.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-04	0.00	1000.0	1.33	9	101.9	0.0	101.9	1.8	50	95.0	1.0	-0.44	0.0	34.0
1.48	5.0E-04	0.00	717.6	1.40	9	119.6	0.0	119.6	2.8	50	88.2	1.0	-0.42	0.0	39.9
2.46	5.0E-05	0.00	375.7	2.72	12	104.0	UnDef	UnDef	0.0	48	76.9	10.0	-0.47	UnDef	UnDef
3.44	5.0E-05	0.00	458.0	2.85	12	176.3	UnDef	UnDef	0.0	48	87.3	10.0	-0.51	UnDef	UnDef
4.43	5.0E-04	0.00	570.1	1.97	12	281.8	UnDef	UnDef	0.0	50	95.0	1.0	-0.45	UnDef	UnDef
5.41	5.0E-03	0.00	936.0	2.24	12	515.8	UnDef	UnDef	0.0	50	95.0	1.0	-0.53	UnDef	UnDef
6.40	5.0E-04	0.00	552.2	2.08	12	326.1	UnDef	UnDef	0.0	50	95.0	1.0	-0.46	UnDef	UnDef
7.30	5.0E-03	0.00	227.2	0.61	9	139.2	0.0	139.2	2.8	46	76.8	1.0	-0.22	0.0	34.1
8.20	5.0E-03	0.00	210.0	0.36	9	133.1	0.0	133.1	1.4	46	75.5	1.0	-0.17	0.0	32.6
9.19	5.0E-02	0.00	246.5	0.23	10	161.6	0.0	161.6	0.0	46	81.0	1.0	-0.14	0.0	31.6
10.17	5.0E-02	0.00	208.5	0.24	10	141.4	0.0	141.4	0.4	46	77.2	1.0	-0.13	0.0	27.7
11.15	5.0E-03	0.00	165.2	0.23	9	115.7	0.0	115.7	1.3	44	71.5	1.0	-0.11	0.0	28.3
12.14	5.0E-03	0.00	130.2	0.26	9	94.0	0.0	94.0	2.8	44	65.5	1.0	-0.10	0.0	23.0
13.21	5.0E-03	0.00	127.7	0.52	9	94.9	0.8	95.7	5.3	44	65.8	1.0	-0.15	0.1	23.3
14.27	5.0E-03	0.00	140.1	0.48	9	106.9	0.0	106.9	4.4	44	69.2	1.0	-0.15	0.0	26.2
15.26	5.0E-02	0.00	207.0	0.78	9	161.3	0.0	161.3	4.4	46	81.0	1.0	-0.23	0.0	31.6
16.24	5.0E-02	0.00	251.5	0.62	9	200.4	0.0	200.4	2.5	46	87.2	1.0	-0.23	0.0	39.2
17.22	5.0E-03	0.00	132.6	0.88	9	108.6	8.5	117.1	7.7	44	69.6	1.0	-0.20	1.3	27.8
18.21	5.0E-02	0.00	311.1	0.84	9	258.6	0.0	258.6	2.9	46	94.5	1.0	-0.28	0.0	50.6
19.19	5.0E-02	0.00	396.4	1.13	9	336.1	0.0	336.1	3.4	48	95.0	1.0	-0.33	0.0	65.8
20.18	5.0E-02	0.00	454.0	1.05	9	392.5	0.0	392.5	2.6	48	95.0	1.0	-0.34	0.0	76.8
21.16	5.0E-02	0.00	428.4	0.87	9	377.6	0.0	377.6	1.9	48	95.0	1.0	-0.31	0.0	73.9
22.15	5.0E+00	0.00	329.1	0.39	10	296.0	0.0	296.0	0.0	48	95.0	1.0	-0.21	0.0	48.3
23.13	5.0E+00	0.00	310.1	0.31	10	284.3	0.0	284.3	0.0	46	95.0	1.0	-0.19	0.0	46.4
24.11	5.0E+00	0.00	277.3	0.38	10	259.0	0.0	259.0	0.4	46	94.6	1.0	-0.19	0.0	42.2
25.10	5.0E-02	0.00	197.3	0.42	9	187.9	0.0	187.9	2.1	46	85.4	1.0	-0.17	0.0	36.8
26.08	5.0E-05	-0.01	69.1	2.39	7	67.8	55.9	123.7	21.9	40	56.1	10.0	-0.25	10.5	37.0
27.07	5.0E-04	0.00	139.8	1.90	9	137.4	37.0	174.5	12.9	44	76.4	1.0	-0.29	6.9	51.7
28.05	5.0E-04	0.00	84.7	1.83	7	85.1	40.3	125.4	17.0	42	62.6	1.0	-0.24	7.0	34.7
29.04	5.0E-04	0.00	78.5	1.71	7	80.1	38.4	118.4	17.1	42	60.9	1.0	-0.22	6.6	32.8
30.02	5.0E-05	0.00	60.3	3.13	7	62.7	86.7	149.3	26.7	40	53.9	10.0	-0.28	14.0	38.5
31.00	5.0E-04	0.00	131.0	1.98	7	135.8	42.0	177.8	13.9	44	76.0	1.0	-0.29	7.7	52.0
31.99	5.0E-05	-0.01	33.1	2.87	6	36.1	123.9	160.0	34.0	36	38.1	6.0	-0.19	13.3	27.4
32.97	5.0E-02	0.00	194.1	0.91	9	205.3	3.1	208.4	5.6	44	87.9	1.0	-0.24	0.4	40.6
33.96	5.0E-03	0.00	167.4	1.53	9	179.6	26.9	206.5	9.9	44	84.1	1.0	-0.28	3.9	47.8

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4606
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-8
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 16:42
CPT File: 031C08.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.59 (ft): 8.5
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	11.6	0.63	5.40	0.5	3	111.4	0.03	0.03	0.00	2.00	11.1	22.3	0.93	0.00
1.48	7.9	0.32	4.05	-1.0	3	111.4	0.08	0.08	0.00	2.00	7.6	15.1	0.62	0.00
2.46	8.5	0.36	4.28	-0.7	3	111.4	0.14	0.14	0.00	2.00	8.1	16.3	0.67	0.09
3.44	27.8	0.38	1.35	-0.6	6	114.6	0.19	0.19	0.00	2.00	10.6	21.3	2.21	0.10
4.43	71.9	0.35	0.48	-0.1	8	120.9	0.25	0.25	0.00	2.00	17.2	34.4	UnDef	0.32
5.41	46.4	0.29	0.62	1.8	7	117.8	0.31	0.31	0.00	1.80	14.8	26.6	UnDef	0.13
6.40	8.1	0.23	2.88	2.5	4	114.6	0.37	0.37	0.00	1.65	5.1	8.5	0.61	0.11
7.30	6.0	0.18	3.09	5.5	3	111.4	0.42	0.42	0.00	1.55	5.7	8.8	0.44	0.09
8.20	13.0	0.39	2.98	6.6	4	114.6	0.47	0.47	0.00	1.46	8.3	12.1	1.00	0.15
9.19	18.1	0.52	2.87	6.3	5	114.6	0.52	0.50	0.02	1.41	8.7	12.2	1.40	0.19
10.17	28.4	0.43	1.52	6.2	6	114.6	0.58	0.53	0.05	1.37	10.9	14.9	2.22	0.11
11.15	15.2	0.50	3.31	6.2	4	114.6	0.64	0.55	0.08	1.34	9.7	13.0	1.16	0.17
12.14	33.7	0.43	1.26	6.1	7	117.8	0.69	0.58	0.11	1.31	10.8	14.1	UnDef	0.11
13.21	33.3	0.49	1.48	6.1	6	114.6	0.76	0.61	0.15	1.28	12.7	16.3	2.60	0.11
14.27	26.9	0.35	1.31	6.1	6	114.6	0.82	0.64	0.18	1.25	10.3	12.9	2.08	0.10
15.26	8.5	0.26	3.09	6.6	4	114.6	0.87	0.66	0.21	1.23	5.5	6.7	0.61	0.09
16.24	17.9	0.36	2.02	7.0	6	114.6	0.93	0.69	0.24	1.20	6.9	8.3	1.36	0.19
17.22	57.4	0.44	0.77	7.3	8	120.9	0.99	0.72	0.27	1.18	13.7	16.2	UnDef	0.13
18.21	149.5	0.84	0.56	8.5	9	124.1	1.05	0.75	0.30	1.16	28.6	33.2	UnDef	0.00
19.19	236.0	3.36	1.42	11.7	8	120.9	1.11	0.78	0.33	1.14	56.5	64.2	UnDef	0.00
20.18	269.6	2.56	0.95	16.9	9	124.1	1.17	0.80	0.36	1.11	51.6	57.6	UnDef	0.00
21.16	336.7	2.96	0.88	19.3	9	124.1	1.23	0.84	0.40	1.09	64.5	70.6	UnDef	0.00
22.15	374.2	3.10	0.83	27.1	9	124.1	1.29	0.87	0.43	1.07	71.7	77.0	UnDef	0.00
23.13	308.8	2.07	0.67	30.1	9	124.1	1.35	0.90	0.46	1.06	59.1	62.5	UnDef	0.00
24.11	253.9	1.81	0.71	31.6	9	124.1	1.41	0.93	0.49	1.04	48.6	50.5	UnDef	0.00
25.10	284.7	2.97	1.04	39.4	9	124.1	1.47	0.96	0.52	1.02	54.5	55.7	UnDef	0.00
26.08	260.6	2.10	0.81	42.4	9	124.1	1.54	0.99	0.55	1.01	49.9	50.2	UnDef	0.00
27.07	195.4	0.90	0.46	43.7	9	124.1	1.60	1.02	0.58	0.99	37.4	37.1	UnDef	0.00
28.05	60.5	0.96	1.59	57.6	7	117.8	1.66	1.05	0.61	0.98	19.3	18.9	UnDef	0.17
29.04	278.6	1.41	0.51	68.1	10	127.3	1.72	1.08	0.64	0.96	44.5	42.9	UnDef	0.00
30.02	256.4	1.18	0.46	66.3	10	127.3	1.78	1.11	0.67	0.95	40.9	38.9	UnDef	0.00
31.00	70.9	0.89	1.26	55.5	7	117.8	1.84	1.14	0.70	0.94	22.6	21.2	UnDef	0.16
31.99	72.1	1.19	1.65	49.1	7	117.8	1.90	1.16	0.73	0.93	23.0	21.3	UnDef	0.20
32.97	95.6	1.72	1.80	47.5	7	117.8	1.96	1.19	0.76	0.92	30.5	27.9	UnDef	0.28
33.96	61.9	1.02	1.66	45.9	7	117.8	2.01	1.22	0.79	0.91	19.8	17.9	UnDef	0.18
34.94	15.4	0.30	1.93	62.9	5	114.6	2.07	1.25	0.83	0.90	7.4	6.6	1.06	0.11
35.92	73.0	1.93	2.65	70.0	6	114.6	2.13	1.27	0.86	0.89	28.0	24.8	5.67	0.36
36.91	97.0	2.34	2.41	47.2	7	117.8	2.18	1.30	0.89	0.88	31.0	27.2	UnDef	0.39
37.89	21.6	0.71	3.28	49.7	5	114.6	2.24	1.32	0.92	0.87	10.4	9.0	1.55	0.15
38.88	25.7	0.84	3.27	57.0	5	114.6	2.30	1.35	0.95	0.86	12.3	10.6	1.87	0.20
39.86	56.1	1.55	2.76	57.4	6	114.6	2.35	1.38	0.98	0.85	21.5	18.3	4.30	0.00
40.85	266.2	2.69	1.01	58.1	9	124.1	2.41	1.40	1.01	0.84	51.0	43.0	UnDef	0.00

Gregg In Situ, Inc.
Run No: 01-0316-0548-4606
CPT File: 031C08.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	476.1	7.23	1.52	56.4	9	124.1	2.47	1.43	1.04	0.84	91.2	76.2	UnDef	0.00
42.81	261.8	4.78	1.83	59.2	8	120.9	2.53	1.46	1.07	0.83	62.7	51.8	UnDef	0.00
43.80	156.1	2.00	1.28	63.7	8	120.9	2.59	1.49	1.10	0.82	37.4	30.6	UnDef	0.43
44.78	209.4	1.99	0.95	67.4	9	124.1	2.65	1.52	1.13	0.81	40.1	32.5	UnDef	0.00
45.77	320.7	2.40	0.75	68.3	9	124.1	2.72	1.55	1.16	0.80	61.4	49.3	UnDef	0.00
46.75	295.8	1.79	0.60	68.1	9	124.1	2.78	1.58	1.19	0.80	56.7	45.1	UnDef	0.00
47.74	121.2	1.80	1.48	66.9	8	120.9	2.84	1.61	1.23	0.79	29.0	22.9	UnDef	0.31
48.72	263.7	1.62	0.62	69.8	9	124.1	2.90	1.64	1.26	0.78	50.5	39.4	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4606
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-8
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 16:42
CPT File: 031C08.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.59 (ft): 8.5
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-08	0.00	423.7	5.41	11	22.3	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
1.48	5.0E-08	0.00	94.9	4.09	11	15.1	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
2.46	5.0E-08	0.00	61.1	4.35	6	16.3	37.2	53.5	31.1	UnDef	UnDef	10.0	UnDef	12.5	28.8
3.44	5.0E-05	0.00	143.2	1.36	9	53.2	8.4	61.6	10.1	44	53.5	10.0	-0.25	2.0	23.3
4.43	5.0E-03	0.00	285.8	0.48	10	137.7	0.0	137.7	1.0	46	77.0	1.0	-0.22	0.0	34.4
5.41	5.0E-04	0.00	149.0	0.63	9	81.6	0.4	82.0	5.2	44	61.5	1.0	-0.18	0.1	26.7
6.40	5.0E-07	0.01	21.0	3.02	6	13.0	52.1	65.1	42.6	UnDef	UnDef	6.0	UnDef	8.5	17.0
7.30	5.0E-08	0.03	13.3	3.32	4	9.0	36.1	45.2	53.4	UnDef	UnDef	6.0	UnDef	8.8	17.7
8.20	5.0E-07	0.02	26.7	3.09	6	18.6	74.3	92.9	38.6	UnDef	UnDef	6.0	UnDef	12.1	24.2
9.19	5.0E-06	0.01	34.9	2.96	6	24.9	81.2	106.1	33.7	UnDef	UnDef	6.0	UnDef	11.2	23.4
10.17	5.0E-05	0.01	52.5	1.55	7	38.2	27.3	65.5	20.6	38	39.7	10.0	-0.17	5.3	20.2
11.15	5.0E-07	0.01	26.2	3.46	6	20.0	79.8	99.8	40.6	UnDef	UnDef	6.0	UnDef	13.0	26.0
12.14	5.0E-04	0.00	56.8	1.29	7	43.3	23.1	66.4	18.0	40	43.3	1.0	-0.16	3.9	18.0
13.21	5.0E-05	0.00	53.3	1.52	7	41.7	28.6	70.2	20.2	40	42.2	10.0	-0.17	5.6	21.9
14.27	5.0E-05	0.00	40.9	1.35	7	32.9	28.7	61.7	22.4	38	35.4	6.0	-0.13	5.3	18.2
15.26	5.0E-07	0.00	11.6	3.44	4	10.3	41.1	51.4	57.1	UnDef	UnDef	3.0	UnDef	6.7	13.4
16.24	5.0E-05	0.00	24.6	2.13	6	21.1	84.1	105.2	34.9	34	30.0	6.0	-0.12	8.3	16.5
17.22	5.0E-03	0.00	78.7	0.78	9	66.4	12.8	79.2	11.1	42	55.5	1.0	-0.14	1.8	18.1
18.21	5.0E-02	0.00	199.0	0.57	9	169.4	0.0	169.4	3.2	46	82.4	1.0	-0.20	0.0	33.2
19.19	5.0E-03	0.00	302.9	1.43	9	262.3	7.2	269.5	6.0	46	94.9	1.0	-0.33	1.1	65.3
20.18	5.0E-02	0.00	333.4	0.95	9	294.0	0.0	294.0	3.2	48	95.0	1.0	-0.30	0.0	57.6
21.16	5.0E-02	0.00	401.7	0.88	9	360.6	0.0	360.6	2.2	48	95.0	1.0	-0.31	0.0	70.6
22.15	5.0E-02	0.00	430.8	0.83	9	393.6	0.0	393.6	1.7	48	95.0	1.0	-0.31	0.0	77.0
23.13	5.0E-02	0.00	343.1	0.67	9	319.2	0.0	319.2	1.6	48	95.0	1.0	-0.26	0.0	62.5
24.11	5.0E-02	0.00	272.5	0.72	9	258.1	0.0	258.1	2.7	46	94.5	1.0	-0.25	0.0	50.5
25.10	5.0E-02	0.00	296.0	1.05	9	284.8	0.0	284.8	4.2	46	95.0	1.0	-0.29	0.0	55.7
26.08	5.0E-02	0.00	262.4	0.81	9	256.7	0.0	256.7	3.5	46	94.3	1.0	-0.26	0.0	50.2
27.07	5.0E-02	0.00	190.5	0.47	9	189.6	0.0	189.6	2.6	44	85.6	1.0	-0.18	0.0	37.1
28.05	5.0E-04	0.02	56.3	1.63	7	57.9	40.1	98.0	20.3	40	51.6	1.0	-0.18	6.5	25.4
29.04	5.0E+00	0.01	257.4	0.51	9	262.9	0.0	262.9	1.6	46	95.0	1.0	-0.21	0.0	42.9
30.02	5.0E+00	0.01	229.9	0.46	9	238.4	0.0	238.4	1.8	46	92.2	1.0	-0.19	0.0	38.9
31.00	5.0E-04	0.01	60.7	1.29	7	65.0	31.8	96.9	17.3	40	54.9	1.0	-0.16	5.5	26.7
31.99	5.0E-04	0.01	60.3	1.70	7	65.4	43.1	108.5	19.9	40	55.1	1.0	-0.19	7.1	28.4
32.97	5.0E-04	0.01	78.5	1.83	7	85.7	44.5	130.1	17.8	42	62.8	1.0	-0.23	7.6	35.5
33.96	5.0E-04	0.01	49.1	1.71	7	54.8	47.6	102.5	22.4	38	50.1	1.0	-0.17	7.3	25.2
34.94	5.0E-06	0.09	10.7	2.23	6	13.5	54.0	67.4	52.1	UnDef	UnDef	3.0	UnDef	6.6	13.2
35.92	5.0E-05	0.02	55.7	2.73	7	63.4	80.9	144.3	26.0	40	54.2	10.0	-0.24	13.4	38.2
36.91	5.0E-04	0.01	73.0	2.47	7	83.3	66.6	149.9	21.6	40	62.0	1.0	-0.26	10.5	37.6
37.89	5.0E-06	0.03	14.6	3.65	4	18.4	73.6	92.0	52.8	UnDef	UnDef	6.0	UnDef	9.0	18.0
38.88	5.0E-06	0.04	17.3	3.59	4	21.6	86.6	108.2	49.0	UnDef	UnDef	6.0	UnDef	10.6	21.2
39.86	5.0E-05	0.02	39.1	2.89	6	46.8	114.5	161.3	31.6	38	45.5	6.0	-0.21	14.6	33.0
40.85	5.0E-02	0.00	188.0	1.02	9	219.9	8.5	228.4	6.4	44	89.9	1.0	-0.25	1.0	44.1

Gregg In Situ, Inc.
Run No: 01-0316-0548-4606
CPT File: 031C08.COR

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-02	0.00	330.4	1.53	9	389.2	11.0	400.2	6.0	48	95.0	1.0	-0.35	1.3	77.5
42.81	5.0E-03	0.00	177.2	1.84	9	211.8	40.1	252.0	11.0	44	88.8	1.0	-0.31	5.7	57.6
43.80	5.0E-03	0.01	102.9	1.31	9	125.0	30.5	155.5	12.3	42	73.7	1.0	-0.22	4.3	34.9
44.78	5.0E-02	0.00	135.9	0.96	9	166.1	15.0	181.1	8.1	44	81.8	1.0	-0.21	1.8	34.3
45.77	5.0E-02	0.00	204.9	0.75	9	252.0	0.0	252.0	4.3	46	93.8	1.0	-0.23	0.0	49.3
46.75	5.0E-02	0.00	185.2	0.61	9	230.2	0.0	230.2	3.8	44	91.2	1.0	-0.20	0.0	45.1
47.74	5.0E-03	0.01	73.4	1.52	7	93.4	42.6	136.0	16.7	40	65.3	1.0	-0.20	5.6	28.4
48.72	5.0E-02	0.00	158.9	0.62	9	201.5	0.0	201.5	4.8	44	87.4	1.0	-0.19	0.0	39.4

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4633
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-9
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 10:23
CPT File: 890C09.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.81 (ft): 12.5
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	20.1	0.46	2.27	0.1	6	114.6	0.03	0.03	0.00	2.00	7.7	15.4	1.61	0.00
1.48	71.0	0.41	0.57	-1.6	8	120.9	0.09	0.09	0.00	2.00	17.0	34.0	UnDef	0.31
2.46	79.4	0.30	0.38	0.4	8	120.9	0.15	0.15	0.00	2.00	19.0	38.0	UnDef	0.41
3.44	30.2	0.17	0.56	0.6	7	117.8	0.20	0.20	0.00	2.00	9.6	19.3	UnDef	0.10
4.43	37.1	0.16	0.42	0.7	7	117.8	0.26	0.26	0.00	1.95	11.8	23.1	UnDef	0.11
5.41	33.4	0.14	0.41	0.6	7	117.8	0.32	0.32	0.00	1.77	10.7	18.9	UnDef	0.10
6.40	25.9	0.16	0.63	0.4	7	117.8	0.38	0.38	0.00	1.63	8.3	13.5	UnDef	0.09
7.30	13.9	0.24	1.71	0.2	5	114.6	0.43	0.43	0.00	1.52	6.6	10.1	1.08	0.10
8.20	42.5	0.20	0.47	-0.1	7	117.8	0.48	0.48	0.00	1.44	13.6	19.5	UnDef	0.10
9.19	47.0	0.31	0.65	-0.2	7	117.8	0.54	0.54	0.00	1.36	15.0	20.4	UnDef	0.11
10.17	27.3	0.43	1.56	-2.5	6	114.6	0.60	0.60	0.00	1.29	10.5	13.5	2.14	0.11
11.15	25.3	0.34	1.33	-3.8	6	114.6	0.65	0.65	0.00	1.24	9.7	12.0	1.97	0.10
12.14	122.4	0.42	0.34	-2.3	9	124.1	0.71	0.71	0.00	1.18	23.4	27.8	UnDef	0.35
13.21	120.3	0.28	0.23	-1.0	9	124.1	0.78	0.76	0.02	1.15	23.0	26.5	UnDef	0.31
14.27	99.2	0.14	0.14	-2.0	9	124.1	0.85	0.79	0.06	1.12	19.0	21.4	UnDef	0.20
15.26	19.8	0.26	1.33	-1.4	6	114.6	0.90	0.82	0.09	1.11	7.6	8.4	1.51	0.11
16.24	47.2	0.49	1.03	-0.5	7	117.8	0.96	0.84	0.12	1.09	15.1	16.4	UnDef	0.12
17.22	15.8	0.21	1.35	2.1	6	114.6	1.02	0.87	0.15	1.07	6.1	6.5	1.19	0.13
18.21	31.1	0.30	0.96	1.1	7	117.8	1.08	0.90	0.18	1.06	9.9	10.5	UnDef	0.10
19.19	140.0	0.40	0.28	0.8	9	124.1	1.14	0.93	0.21	1.04	26.8	27.9	UnDef	0.35
20.18	190.6	0.51	0.27	0.7	9	124.1	1.20	0.96	0.24	1.02	36.5	37.3	UnDef	0.00
21.16	225.0	0.56	0.25	-0.1	10	127.3	1.26	0.99	0.27	1.01	35.9	36.1	UnDef	0.00
22.15	243.8	0.79	0.32	-0.7	10	127.3	1.32	1.02	0.30	0.99	38.9	38.5	UnDef	0.00
23.13	287.8	1.94	0.68	-2.7	9	124.1	1.38	1.05	0.33	0.98	55.1	53.8	UnDef	0.00
24.11	269.4	1.65	0.61	-4.0	9	124.1	1.44	1.08	0.36	0.96	51.6	49.6	UnDef	0.00
25.10	315.5	2.84	0.90	-3.8	9	124.1	1.51	1.11	0.39	0.95	60.4	57.3	UnDef	0.00
26.08	246.9	1.07	0.43	-3.9	10	127.3	1.57	1.14	0.42	0.94	39.4	36.9	UnDef	0.00
27.07	280.1	1.88	0.67	-4.2	9	124.1	1.63	1.17	0.45	0.92	53.6	49.5	UnDef	0.00
28.05	307.8	1.66	0.54	-4.5	10	127.3	1.69	1.21	0.49	0.91	49.1	44.8	UnDef	0.00
29.04	262.3	1.30	0.50	-4.3	10	127.3	1.75	1.24	0.52	0.90	41.9	37.6	UnDef	0.00
30.02	299.0	1.80	0.60	-4.2	9	124.1	1.82	1.27	0.55	0.89	57.3	50.9	UnDef	0.00
31.00	177.6	0.84	0.48	-4.3	9	124.1	1.88	1.30	0.58	0.88	34.0	29.9	UnDef	0.41
31.99	236.1	1.59	0.67	-3.9	9	124.1	1.94	1.33	0.61	0.87	45.2	39.2	UnDef	0.00
32.97	384.4	2.23	0.58	-3.8	10	127.3	2.00	1.36	0.64	0.86	61.4	52.6	UnDef	0.00
33.96	373.1	1.50	0.40	-4.0	10	127.3	2.06	1.39	0.67	0.85	59.5	50.5	UnDef	0.00
34.94	402.0	1.82	0.45	-3.9	10	127.3	2.12	1.42	0.70	0.84	64.2	53.8	UnDef	0.00
35.92	431.3	2.11	0.49	-3.7	10	127.3	2.19	1.46	0.73	0.83	68.8	57.1	UnDef	0.00
36.91	418.0	3.01	0.72	-3.7	10	127.3	2.25	1.49	0.76	0.82	66.7	54.7	UnDef	0.00
37.89	350.2	3.93	1.12	-3.0	9	124.1	2.31	1.52	0.79	0.81	67.1	54.4	UnDef	0.00
38.88	91.8	2.15	2.34	-2.3	7	117.8	2.37	1.55	0.82	0.80	29.3	23.6	UnDef	0.38
39.86	153.4	1.18	0.77	-0.1	9	124.1	2.43	1.58	0.85	0.80	29.4	23.4	UnDef	0.31
40.85	183.9	2.88	1.56	1.3	8	120.9	2.49	1.61	0.89	0.79	44.0	34.7	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	427.9	2.41	0.56	2.6	10	127.3	2.55	1.64	0.92	0.78	68.3	53.4	UnDef	0.00
42.81	370.3	2.60	0.70	3.5	9	124.1	2.61	1.67	0.95	0.77	70.9	54.9	UnDef	0.00
43.80	317.4	1.45	0.46	2.9	10	127.3	2.68	1.70	0.98	0.77	50.7	38.9	UnDef	0.00
44.78	310.0	1.50	0.48	2.8	10	127.3	2.74	1.73	1.01	0.76	49.5	37.6	UnDef	0.00
45.77	315.0	1.48	0.47	2.3	10	127.3	2.80	1.76	1.04	0.75	50.3	37.9	UnDef	0.00
46.75	390.4	3.06	0.78	2.1	9	124.1	2.86	1.79	1.07	0.75	74.8	55.8	UnDef	0.00
47.74	463.3	5.16	1.11	2.2	9	124.1	2.92	1.82	1.10	0.74	88.7	65.7	UnDef	0.00
48.72	312.3	3.80	1.22	2.2	9	124.1	2.99	1.85	1.13	0.73	59.8	43.9	UnDef	0.00
49.70	337.1	2.53	0.75	2.7	9	124.1	3.05	1.88	1.16	0.73	64.6	47.0	UnDef	0.00
50.69	488.1	3.42	0.70	8.3	10	127.3	3.11	1.92	1.19	0.72	77.9	56.3	UnDef	0.00
51.67	445.9	2.75	0.62	10.6	10	127.3	3.17	1.95	1.22	0.72	71.2	51.0	UnDef	0.00
52.66	384.5	2.84	0.74	10.9	9	124.1	3.23	1.98	1.25	0.71	73.6	52.4	UnDef	0.00
53.64	321.3	2.16	0.67	9.8	9	124.1	3.29	2.01	1.28	0.71	61.5	43.4	UnDef	0.00
54.63	404.5	3.25	0.80	10.1	9	124.1	3.36	2.04	1.32	0.70	77.5	54.3	UnDef	0.00
55.61	290.8	4.57	1.57	9.9	8	120.9	3.42	2.07	1.35	0.70	69.6	48.4	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4633
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-9
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 10:23
CPT File: 890C09.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.81 (ft): 12.5
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-05	0.00	713.6	2.28	12	38.6	UnDef	UnDef	0.0	50	71.9	10.0	-0.50	UnDef	UnDef
1.48	5.0E-03	0.00	822.9	0.57	10	135.9	0.0	135.9	0.0	50	92.0	1.0	-0.33	0.0	34.0
2.46	5.0E-03	0.00	544.4	0.38	10	152.2	0.0	152.2	0.0	50	87.7	1.0	-0.25	0.0	38.0
3.44	5.0E-04	0.00	146.6	0.56	9	57.8	0.0	57.8	4.8	44	55.1	1.0	-0.17	0.0	19.3
4.43	5.0E-04	0.00	140.4	0.43	9	70.9	0.0	70.9	3.9	44	57.4	1.0	-0.14	0.0	23.1
5.41	5.0E-04	0.00	103.4	0.42	9	57.8	0.0	57.8	5.0	42	51.6	1.0	-0.12	0.0	18.9
6.40	5.0E-04	0.00	67.5	0.63	9	41.2	8.2	49.4	11.2	40	41.9	1.0	-0.11	1.6	15.0
7.30	5.0E-06	0.00	31.2	1.76	7	20.7	36.6	57.3	28.9	UnDef	UnDef	6.0	UnDef	6.7	16.9
8.20	5.0E-04	0.00	86.9	0.48	9	59.8	0.0	59.8	5.0	42	52.5	1.0	-0.11	0.0	19.5
9.19	5.0E-04	0.00	85.8	0.66	9	62.5	8.2	70.7	9.3	42	53.8	1.0	-0.14	1.6	22.0
10.17	5.0E-05	0.00	44.7	1.59	7	34.6	31.6	66.2	22.9	38	36.8	6.0	-0.15	5.8	19.3
11.15	5.0E-05	0.00	37.6	1.37	7	30.6	30.4	60.9	23.7	38	33.3	6.0	-0.12	5.4	17.4
12.14	5.0E-02	0.00	170.6	0.35	9	141.8	0.0	141.8	2.2	44	77.3	1.0	-0.14	0.0	27.8
13.21	5.0E-02	0.00	157.8	0.23	9	135.3	0.0	135.3	1.5	44	75.9	1.0	-0.10	0.0	26.5
14.27	5.0E-02	0.00	124.4	0.14	9	109.1	0.0	109.1	1.8	42	69.8	1.0	-0.04	0.0	21.4
15.26	5.0E-05	-0.01	23.1	1.40	7	21.4	49.4	70.9	31.1	34	30.0	6.0	-0.08	6.5	14.9
16.24	5.0E-04	0.00	54.7	1.05	7	50.2	23.0	73.3	16.8	40	47.5	1.0	-0.13	4.0	20.4
17.22	5.0E-05	-0.01	17.0	1.44	6	16.6	66.4	83.0	36.8	32	30.0	6.0	-0.05	6.5	13.0
18.21	5.0E-04	0.00	33.4	1.00	7	32.1	27.8	59.9	22.4	36	34.7	1.0	-0.08	4.3	14.8
19.19	5.0E-02	0.00	149.9	0.29	9	142.4	0.0	142.4	2.3	44	77.4	1.0	-0.12	0.0	27.9
20.18	5.0E-02	0.00	197.9	0.27	9	190.6	0.0	190.6	0.9	46	85.8	1.0	-0.14	0.0	37.3
21.16	5.0E+00	0.00	226.4	0.25	10	221.5	0.0	221.5	0.2	46	90.1	1.0	-0.14	0.0	36.1
22.15	5.0E+00	0.00	237.7	0.32	10	236.2	0.0	236.2	0.6	46	91.9	1.0	-0.17	0.0	38.5
23.13	5.0E-02	0.00	272.5	0.68	9	274.7	0.0	274.7	2.5	46	95.0	1.0	-0.24	0.0	53.8
24.11	5.0E-02	0.00	247.8	0.61	9	253.5	0.0	253.5	2.5	46	93.9	1.0	-0.23	0.0	49.6
25.10	5.0E-02	0.00	282.4	0.91	9	292.8	0.0	292.8	3.7	46	95.0	1.0	-0.28	0.0	57.3
26.08	5.0E+00	0.00	214.6	0.44	9	226.0	0.0	226.0	1.9	46	90.6	1.0	-0.18	0.0	36.9
27.07	5.0E-02	0.00	237.2	0.67	9	253.0	0.0	253.0	3.1	46	93.9	1.0	-0.23	0.0	49.5
28.05	5.0E+00	0.00	254.0	0.54	9	274.4	0.0	274.4	1.9	46	95.0	1.0	-0.22	0.0	44.8
29.04	5.0E+00	0.00	210.6	0.50	9	230.8	0.0	230.8	2.4	46	91.3	1.0	-0.19	0.0	37.6
30.02	5.0E-02	0.00	234.3	0.61	9	259.8	0.0	259.8	2.7	46	94.6	1.0	-0.22	0.0	50.9
31.00	5.0E-02	0.00	135.3	0.48	9	152.5	0.0	152.5	4.6	44	79.4	1.0	-0.15	0.0	29.9
31.99	5.0E-02	0.00	176.2	0.68	9	200.4	0.0	200.4	4.6	44	87.2	1.0	-0.20	0.0	39.2
32.97	5.0E+00	0.00	281.2	0.58	9	322.6	0.0	322.6	1.8	46	95.0	1.0	-0.23	0.0	52.6
33.96	5.0E+00	0.00	266.5	0.41	10	309.4	0.0	309.4	0.7	46	95.0	1.0	-0.20	0.0	50.5
34.94	5.0E+00	0.00	280.8	0.46	10	329.7	0.0	329.7	0.9	46	95.0	1.0	-0.21	0.0	53.8
35.92	5.0E+00	0.00	294.8	0.49	10	349.8	0.0	349.8	1.0	46	95.0	1.0	-0.22	0.0	57.1
36.91	5.0E+00	0.00	279.4	0.72	9	335.3	0.0	335.3	2.7	46	95.0	1.0	-0.25	0.0	54.7
37.89	5.0E-02	0.00	229.0	1.13	9	278.0	6.9	285.0	5.9	46	95.0	1.0	-0.28	0.8	55.3
38.88	5.0E-04	-0.01	57.8	2.40	7	72.2	75.0	147.2	24.1	40	57.9	1.0	-0.23	11.0	34.6
39.86	5.0E-02	-0.01	95.7	0.78	9	119.5	16.1	135.6	9.4	42	72.4	1.0	-0.16	1.9	25.3
40.85	5.0E-03	0.00	112.9	1.58	9	142.0	39.3	181.3	13.1	42	77.3	1.0	-0.25	5.4	40.2

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E+00	0.00	259.9	0.57	9	327.3	0.0	327.3	2.0	46	95.0	1.0	-0.22	0.0	53.4
42.81	5.0E-02	0.00	220.5	0.71	9	280.6	0.0	280.6	3.6	46	95.0	1.0	-0.23	0.0	54.9
43.80	5.0E+00	0.00	185.2	0.46	9	238.3	0.0	238.3	2.7	44	92.2	1.0	-0.17	0.0	38.9
44.78	5.0E+00	0.00	177.5	0.49	9	230.6	0.0	230.6	3.1	44	91.2	1.0	-0.18	0.0	37.6
45.77	5.0E+00	0.00	177.1	0.47	9	232.2	0.0	232.2	3.1	44	91.4	1.0	-0.17	0.0	37.9
46.75	5.0E-02	0.00	216.1	0.79	9	285.3	0.0	285.3	4.3	46	95.0	1.0	-0.24	0.0	55.8
47.74	5.0E-02	0.00	252.4	1.12	9	335.7	3.3	339.0	5.4	46	95.0	1.0	-0.29	0.4	66.1
48.72	5.0E-02	0.00	166.8	1.23	9	224.4	21.8	246.2	8.3	44	90.4	1.0	-0.26	2.6	46.5
49.70	5.0E-02	0.00	177.2	0.76	9	240.3	0.6	240.9	5.1	44	92.4	1.0	-0.22	0.1	47.1
50.69	5.0E+00	0.00	253.1	0.70	9	345.1	0.0	345.1	3.0	46	95.0	1.0	-0.24	0.0	56.3
51.67	5.0E+00	0.00	227.3	0.62	9	312.7	0.0	312.7	2.9	46	95.0	1.0	-0.22	0.0	51.0
52.66	5.0E-02	0.00	192.7	0.74	9	267.5	0.0	267.5	4.6	44	95.0	1.0	-0.22	0.0	52.4
53.64	5.0E-02	0.00	158.3	0.68	9	221.8	1.2	223.0	5.2	44	90.1	1.0	-0.19	0.1	43.6
54.63	5.0E-02	0.00	196.7	0.81	9	277.2	0.0	277.2	4.9	46	95.0	1.0	-0.23	0.0	54.3
55.61	5.0E-03	0.00	138.9	1.59	9	197.9	41.5	239.4	11.5	44	86.8	1.0	-0.27	5.9	54.3

For use with report dated 03/18/2005. RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4655
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-10
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 12:16
CPT File: 031C10.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.57 (ft): 15.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	14.6	0.47	3.23	69.4	4	114.6	0.03	0.03	0.00	2.00	9.3	18.6	1.16	0.00
1.48	21.7	0.28	1.28	28.7	6	114.6	0.08	0.08	0.00	2.00	8.3	16.6	1.73	0.09
2.46	48.1	0.11	0.23	14.3	8	120.9	0.14	0.14	0.00	2.00	11.5	23.1	UnDef	0.15
3.44	31.1	0.19	0.61	7.7	7	117.8	0.20	0.20	0.00	2.00	9.9	19.8	UnDef	0.10
4.43	14.9	0.26	1.72	6.6	6	114.6	0.26	0.26	0.00	1.97	5.7	11.2	1.17	0.09
5.41	12.2	0.26	2.16	23.9	5	114.6	0.31	0.31	0.00	1.78	5.9	10.4	0.95	0.10
6.40	13.2	0.30	2.24	17.0	5	114.6	0.37	0.37	0.00	1.64	6.3	10.4	1.03	0.11
7.30	17.1	0.27	1.56	6.3	6	114.6	0.42	0.42	0.00	1.54	6.5	10.1	1.33	0.09
8.20	9.7	0.18	1.86	12.1	5	114.6	0.47	0.47	0.00	1.45	4.6	6.7	0.74	0.11
9.19	55.7	0.18	0.32	15.6	8	120.9	0.53	0.53	0.00	1.37	13.3	18.3	UnDef	0.12
10.17	36.6	0.18	0.49	8.3	7	117.8	0.59	0.59	0.00	1.30	11.7	15.2	UnDef	0.10
11.15	10.7	0.30	2.75	6.1	5	114.6	0.65	0.65	0.00	1.24	5.1	6.4	0.81	0.11
12.14	17.3	0.24	1.38	15.3	6	114.6	0.70	0.70	0.00	1.19	6.6	7.9	1.33	0.11
13.21	69.3	0.25	0.36	25.5	8	120.9	0.77	0.77	0.00	1.14	16.6	18.9	UnDef	0.12
14.27	41.2	0.43	1.03	11.5	7	117.8	0.83	0.83	0.00	1.10	13.2	14.4	UnDef	0.11
15.26	35.0	0.24	0.69	9.2	7	117.8	0.89	0.88	0.01	1.07	11.2	11.9	UnDef	0.10
16.24	39.8	0.32	0.81	3.1	7	117.8	0.95	0.91	0.04	1.05	12.7	13.3	UnDef	0.10
17.22	69.9	0.46	0.66	-1.7	8	120.9	1.01	0.94	0.07	1.03	16.7	17.3	UnDef	0.13
18.21	86.9	0.43	0.50	-5.6	8	120.9	1.07	0.97	0.10	1.02	20.8	21.2	UnDef	0.16
19.19	98.5	0.42	0.43	14.8	9	124.1	1.13	1.00	0.13	1.00	18.9	18.9	UnDef	0.16
20.18	193.8	0.39	0.20	28.0	9	124.1	1.19	1.03	0.16	0.99	37.1	36.7	UnDef	0.00
21.16	142.5	0.97	0.68	28.4	9	124.1	1.25	1.06	0.19	0.97	27.3	26.6	UnDef	0.34
22.15	119.3	0.30	0.25	24.3	9	124.1	1.31	1.09	0.22	0.96	22.9	21.9	UnDef	0.21
23.13	125.1	0.52	0.42	3.2	9	124.1	1.37	1.12	0.25	0.95	24.0	22.7	UnDef	0.22
24.11	122.7	0.51	0.42	-2.5	9	124.1	1.43	1.15	0.28	0.93	23.5	21.9	UnDef	0.21
25.10	94.7	0.43	0.45	-0.6	8	120.9	1.49	1.18	0.32	0.92	22.7	20.9	UnDef	0.14
26.08	71.8	0.70	0.98	15.9	8	120.9	1.55	1.21	0.35	0.91	17.2	15.7	UnDef	0.15
27.07	50.1	0.47	0.94	7.7	7	117.8	1.61	1.23	0.38	0.90	16.0	14.4	UnDef	0.12
28.05	24.6	0.50	2.03	38.5	6	114.6	1.67	1.26	0.41	0.89	9.4	8.4	1.84	0.20
29.04	116.8	0.51	0.43	25.5	9	124.1	1.73	1.29	0.44	0.88	22.4	19.7	UnDef	0.18
30.02	193.0	0.86	0.44	5.3	9	124.1	1.79	1.32	0.47	0.87	37.0	32.2	UnDef	0.00
31.00	108.1	1.43	1.32	44.8	8	120.9	1.85	1.35	0.50	0.86	25.9	22.3	UnDef	0.26
31.99	285.3	1.12	0.39	41.0	10	127.3	1.91	1.38	0.53	0.85	45.5	38.8	UnDef	0.00
32.97	333.1	1.97	0.59	17.6	10	127.3	1.97	1.41	0.56	0.84	53.2	44.8	UnDef	0.00
33.96	339.2	2.24	0.66	10.6	9	124.1	2.03	1.44	0.59	0.83	65.0	54.1	UnDef	0.00
34.94	362.1	2.36	0.65	14.1	10	127.3	2.09	1.47	0.62	0.82	57.8	47.6	UnDef	0.00
35.92	317.4	3.10	0.98	-3.4	9	124.1	2.16	1.50	0.65	0.82	60.8	49.6	UnDef	0.00
36.91	294.2	3.02	1.03	10.7	9	124.1	2.22	1.53	0.68	0.81	56.4	45.5	UnDef	0.00
37.89	400.0	3.81	0.95	18.8	9	124.1	2.28	1.56	0.71	0.80	76.6	61.3	UnDef	0.00
38.88	383.2	1.91	0.50	15.4	10	127.3	2.34	1.60	0.75	0.79	61.2	48.4	UnDef	0.00
39.86	347.2	1.79	0.52	15.5	10	127.3	2.40	1.63	0.78	0.78	55.4	43.5	UnDef	0.00
40.85	364.8	1.40	0.38	26.4	10	127.3	2.47	1.66	0.81	0.78	58.2	45.2	UnDef	0.00

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	408.0	2.15	0.53	35.3	10	127.3	2.53	1.69	0.84	0.77	65.1	50.1	UnDef	0.00
42.81	465.7	2.49	0.53	23.7	10	127.3	2.59	1.72	0.87	0.76	74.3	56.6	UnDef	0.00
43.80	398.3	2.12	0.53	36.8	10	127.3	2.65	1.75	0.90	0.75	63.6	48.0	UnDef	0.00
44.78	571.0	4.75	0.83	89.4	10	127.3	2.72	1.79	0.93	0.75	91.1	68.2	UnDef	0.00
45.77	603.2	5.59	0.93	55.6	9	124.1	2.78	1.82	0.96	0.74	115.5	85.7	UnDef	0.00
46.75	383.2	5.91	1.54	69.4	8	120.9	2.84	1.85	0.99	0.74	91.7	67.5	UnDef	0.00
47.74	200.9	1.93	0.96	31.5	9	124.1	2.90	1.88	1.02	0.73	38.5	28.1	UnDef	0.00
48.72	209.8	1.40	0.67	45.2	9	124.1	2.96	1.91	1.05	0.72	40.2	29.1	UnDef	0.46

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4655
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-10
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 12:16
CPT File: 031C10.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.57 (ft): 15.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-07	0.15	516.2	3.24	12	27.9	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
1.48	5.0E-05	0.04	255.7	1.28	9	41.6	1.3	42.9	6.1	46	58.3	10.0	-0.30	0.3	17.0
2.46	5.0E-03	0.01	336.8	0.23	10	92.2	0.0	92.2	0.0	48	73.6	1.0	-0.17	0.0	23.1
3.44	5.0E-04	0.01	153.4	0.62	9	59.5	0.0	59.5	4.9	44	56.1	1.0	-0.18	0.0	19.8
4.43	5.0E-05	0.01	56.5	1.75	7	28.5	21.1	49.6	20.9	40	31.4	10.0	-0.19	4.1	15.3
5.41	5.0E-06	0.06	37.8	2.22	7	21.3	37.0	58.3	28.8	UnDef	UnDef	6.0	UnDef	6.9	17.3
6.40	5.0E-06	0.04	34.5	2.31	7	21.2	45.6	66.7	30.6	UnDef	UnDef	6.0	UnDef	7.7	18.1
7.30	5.0E-05	0.01	39.3	1.60	7	25.7	28.2	53.9	24.6	38	30.0	6.0	-0.14	4.9	14.9
8.20	5.0E-06	0.04	19.4	1.96	6	13.8	55.1	68.8	38.1	UnDef	UnDef	6.0	UnDef	6.7	13.5
9.19	5.0E-03	0.01	103.6	0.33	9	74.7	0.0	74.7	4.9	42	58.9	1.0	-0.09	0.0	18.3
10.17	5.0E-04	0.01	60.9	0.50	9	46.6	8.7	55.3	10.9	40	45.4	1.0	-0.08	1.7	16.9
11.15	5.0E-06	0.02	15.6	2.93	6	13.0	52.2	65.2	48.0	UnDef	UnDef	6.0	UnDef	6.4	12.8
12.14	5.0E-05	0.03	23.5	1.44	7	20.2	46.6	66.8	31.1	34	30.0	6.0	-0.08	6.1	14.0
13.21	5.0E-03	0.01	89.2	0.36	9	77.4	0.0	77.4	5.0	42	59.9	1.0	-0.09	0.0	18.9
14.27	5.0E-04	0.01	48.6	1.05	7	44.2	23.9	68.1	18.1	38	43.9	1.0	-0.12	4.1	18.5
15.26	5.0E-04	0.01	38.7	0.71	7	36.5	19.1	55.6	17.9	38	38.4	1.0	-0.07	3.3	15.2
16.24	5.0E-04	0.00	42.8	0.83	7	40.9	21.1	62.0	17.8	38	41.6	1.0	-0.09	3.6	17.0
17.22	5.0E-03	0.00	73.5	0.67	9	70.7	12.7	83.4	10.7	40	57.3	1.0	-0.12	1.8	19.1
18.21	5.0E-03	0.00	88.9	0.50	9	86.5	6.6	93.2	7.7	42	63.1	1.0	-0.12	1.0	22.2
19.19	5.0E-02	0.00	97.9	0.44	9	96.7	0.0	96.7	5.0	42	66.3	1.0	-0.11	0.0	18.9
20.18	5.0E-02	0.00	187.9	0.20	10	187.3	0.0	187.3	0.5	44	85.3	1.0	-0.11	0.0	36.7
21.16	5.0E-02	0.00	133.8	0.69	9	135.7	4.9	140.6	6.3	44	76.0	1.0	-0.18	0.6	27.2
22.15	5.0E-02	0.00	108.7	0.26	9	112.0	0.0	112.0	3.8	42	70.5	1.0	-0.08	0.0	21.9
23.13	5.0E-02	0.00	110.9	0.42	9	115.9	0.0	115.9	5.0	42	71.5	1.0	-0.12	0.0	22.7
24.11	5.0E-02	0.00	105.7	0.42	9	112.1	0.0	112.1	5.0	42	70.5	1.0	-0.12	0.0	21.9
25.10	5.0E-03	0.00	79.2	0.46	9	85.4	0.0	85.4	5.0	42	62.8	1.0	-0.10	0.0	20.9
26.08	5.0E-03	0.00	58.3	1.00	7	64.0	25.6	89.6	15.7	40	54.5	1.0	-0.14	3.4	19.1
27.07	5.0E-04	0.00	39.3	0.97	7	44.2	29.6	73.8	20.0	38	43.9	1.0	-0.10	4.8	19.2
28.05	5.0E-05	0.03	18.2	2.18	6	21.5	86.0	107.5	40.6	32	30.0	6.0	-0.08	8.4	16.8
29.04	5.0E-02	0.00	89.4	0.44	9	100.8	0.0	100.8	5.0	42	67.5	1.0	-0.11	0.0	19.7
30.02	5.0E-02	0.00	145.1	0.45	9	164.5	0.0	164.5	3.9	44	81.5	1.0	-0.15	0.0	32.2
31.00	5.0E-03	0.01	78.9	1.34	7	91.2	33.0	124.2	15.0	42	64.6	1.0	-0.19	4.4	26.8
31.99	5.0E+00	0.00	205.7	0.39	9	237.9	0.0	237.9	1.7	46	92.1	1.0	-0.17	0.0	38.8
32.97	5.0E+00	0.00	234.9	0.59	9	274.5	0.0	274.5	2.6	46	95.0	1.0	-0.22	0.0	44.8
33.96	5.0E-02	0.00	234.0	0.66	9	276.5	0.0	276.5	3.1	46	95.0	1.0	-0.23	0.0	54.1
34.94	5.0E+00	0.00	244.6	0.66	9	292.1	0.0	292.1	2.8	46	95.0	1.0	-0.23	0.0	47.6
35.92	5.0E-02	0.00	209.7	0.98	9	253.3	3.9	257.2	5.6	46	93.9	1.0	-0.26	0.5	50.1
36.91	5.0E-02	0.00	190.4	1.03	9	232.5	9.0	241.5	6.4	44	91.5	1.0	-0.25	1.1	46.6
37.89	5.0E-02	0.00	254.3	0.96	9	313.0	0.0	313.0	4.4	46	95.0	1.0	-0.27	0.0	61.3
38.88	5.0E+00	0.00	238.8	0.50	9	297.0	0.0	297.0	1.9	46	95.0	1.0	-0.21	0.0	48.4
39.86	5.0E+00	0.00	211.9	0.52	9	266.4	0.0	266.4	2.5	46	95.0	1.0	-0.20	0.0	43.5
40.85	5.0E+00	0.00	218.4	0.39	9	277.1	0.0	277.1	1.4	46	95.0	1.0	-0.17	0.0	45.2

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E+00	0.00	239.8	0.53	9	307.0	0.0	307.0	2.1	46	95.0	1.0	-0.21	0.0	50.1
42.81	5.0E+00	0.00	268.8	0.54	9	347.2	0.0	347.2	1.6	46	95.0	1.0	-0.22	0.0	56.6
43.80	5.0E+00	0.00	225.5	0.54	9	294.3	0.0	294.3	2.4	46	95.0	1.0	-0.21	0.0	48.0
44.78	5.0E+00	0.00	318.1	0.84	9	418.0	0.0	418.0	2.8	46	95.0	1.0	-0.28	0.0	68.2
45.77	5.0E-02	0.00	330.3	0.93	9	437.8	0.0	437.8	3.2	48	95.0	1.0	-0.29	0.0	85.7
46.75	5.0E-03	0.00	205.9	1.55	9	275.9	29.9	305.8	8.7	46	95.0	1.0	-0.31	4.4	71.9
47.74	5.0E-02	0.00	105.5	0.97	9	143.5	22.3	165.8	10.0	42	77.6	1.0	-0.19	2.6	30.7
48.72	5.0E-02	0.00	108.5	0.68	9	148.7	11.3	160.0	7.6	42	78.6	1.0	-0.16	1.3	30.4

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4677
Job No: 01-0315M
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-11
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 09:31
CPT File: 890C11.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.69 (ft): 12.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	65.5	1.11	1.69	-0.8	7	117.8	0.03	0.03	0.00	2.00	20.9	41.8	UnDef	0.00
1.48	41.4	0.35	0.83	-0.2	7	117.8	0.09	0.09	0.00	2.00	13.2	26.5	UnDef	0.13
2.46	30.9	0.25	0.80	0.0	7	117.8	0.14	0.14	0.00	2.00	9.9	19.7	UnDef	0.10
3.44	23.7	0.24	1.03	0.0	6	114.6	0.20	0.20	0.00	2.00	9.1	18.2	1.88	0.09
4.43	17.3	0.32	1.82	0.2	6	114.6	0.26	0.26	0.00	1.97	6.6	13.1	1.37	0.10
5.41	20.1	0.22	1.10	0.5	6	114.6	0.31	0.31	0.00	1.78	7.7	13.7	1.59	0.09
6.40	24.4	0.22	0.89	0.4	6	114.6	0.37	0.37	0.00	1.64	9.3	15.3	1.92	0.09
7.30	26.3	0.31	1.18	0.5	6	114.6	0.42	0.42	0.00	1.54	10.1	15.5	2.07	0.10
8.20	26.9	0.41	1.53	-0.2	6	114.6	0.47	0.47	0.00	1.45	10.3	15.0	2.12	0.10
9.19	13.6	0.26	1.90	0.0	5	114.6	0.53	0.53	0.00	1.37	6.5	8.9	1.04	0.13
10.17	18.1	0.28	1.56	-6.4	6	114.6	0.59	0.59	0.00	1.30	6.9	9.0	1.40	0.10
11.15	11.3	0.22	1.92	-8.6	5	114.6	0.64	0.64	0.00	1.25	5.4	6.7	0.85	0.11
12.14	28.1	0.28	0.99	-7.9	7	117.8	0.70	0.70	0.00	1.20	9.0	10.7	UnDef	0.10
13.21	94.6	0.43	0.45	-3.3	8	120.9	0.76	0.73	0.03	1.17	22.6	26.5	UnDef	0.20
14.27	110.2	0.38	0.34	-0.6	9	124.1	0.83	0.76	0.07	1.15	21.1	24.2	UnDef	0.26
15.26	131.9	0.57	0.43	-1.0	9	124.1	0.89	0.79	0.10	1.12	25.3	28.4	UnDef	0.36
16.24	102.6	0.51	0.50	0.3	9	124.1	0.95	0.82	0.13	1.10	19.6	21.7	UnDef	0.21
17.22	28.2	0.58	2.06	1.8	6	114.6	1.01	0.85	0.16	1.08	10.8	11.7	2.17	0.16
18.21	128.9	0.75	0.58	2.4	9	124.1	1.07	0.88	0.19	1.07	24.7	26.3	UnDef	0.31
19.19	205.2	0.97	0.47	-6.8	9	124.1	1.13	0.91	0.22	1.05	39.3	41.2	UnDef	0.00
20.18	245.8	1.68	0.69	-21.1	9	124.1	1.19	0.94	0.25	1.03	47.1	48.6	UnDef	0.00
21.16	203.7	2.37	1.17	-15.7	9	124.1	1.25	0.97	0.28	1.02	39.0	39.6	UnDef	0.00
22.15	94.2	1.08	1.15	-3.7	8	120.9	1.31	1.00	0.31	1.00	22.6	22.6	UnDef	0.22
23.13	157.5	0.96	0.61	0.5	9	124.1	1.37	1.03	0.34	0.99	30.2	29.7	UnDef	0.41
24.11	194.3	1.27	0.65	0.6	9	124.1	1.43	1.06	0.38	0.97	37.2	36.2	UnDef	0.00
25.10	301.2	1.13	0.37	5.5	10	127.3	1.50	1.09	0.41	0.96	48.1	46.0	UnDef	0.00
26.08	330.6	2.51	0.76	8.9	9	124.1	1.56	1.12	0.44	0.94	63.3	59.8	UnDef	0.00
27.07	286.0	0.85	0.30	9.3	10	127.3	1.62	1.15	0.47	0.93	45.6	42.5	UnDef	0.00
28.05	229.4	1.03	0.45	8.6	9	124.1	1.68	1.18	0.50	0.92	43.9	40.4	UnDef	0.00
29.04	291.5	1.74	0.60	4.6	9	124.1	1.74	1.21	0.53	0.91	55.8	50.7	UnDef	0.00
30.02	377.0	4.10	1.09	-6.4	9	124.1	1.80	1.24	0.56	0.90	72.2	64.7	UnDef	0.00
31.00	435.8	6.47	1.48	-9.3	9	124.1	1.87	1.27	0.59	0.89	83.5	73.9	UnDef	0.00
31.99	413.4	1.49	0.36	-9.4	10	127.3	1.93	1.31	0.62	0.88	66.0	57.7	UnDef	0.00
32.97	363.2	1.22	0.34	-9.4	10	127.3	1.99	1.34	0.65	0.86	58.0	50.1	UnDef	0.00
33.96	344.3	1.34	0.39	-9.5	10	127.3	2.05	1.37	0.68	0.85	54.9	47.0	UnDef	0.00
34.94	344.3	3.37	0.98	-10.0	9	124.1	2.11	1.40	0.71	0.84	65.9	55.7	UnDef	0.00
35.92	110.7	2.38	2.15	-5.0	7	117.8	2.17	1.43	0.74	0.84	35.3	29.6	UnDef	0.40
36.91	361.0	2.48	0.69	-4.0	9	124.1	2.23	1.46	0.77	0.83	69.2	57.3	UnDef	0.00
37.89	308.2	2.51	0.82	-3.7	9	124.1	2.29	1.49	0.81	0.82	59.0	48.4	UnDef	0.00
38.88	392.0	2.36	0.60	-3.5	10	127.3	2.36	1.52	0.84	0.81	62.6	50.7	UnDef	0.00
39.86	217.5	1.57	0.72	-3.6	9	124.1	2.42	1.55	0.87	0.80	41.7	33.5	UnDef	0.00
40.85	78.5	1.00	1.27	-3.4	8	120.9	2.48	1.58	0.90	0.80	18.8	15.0	UnDef	0.18

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
41.83	137.6	1.28	0.93	-2.9	9	124.1	2.54	1.61	0.93	0.79	26.4	20.8	UnDef	0.28
42.81	172.2	1.36	0.79	-1.8	9	124.1	2.60	1.64	0.96	0.78	33.0	25.7	UnDef	0.38
43.80	118.6	1.35	1.14	-1.6	8	120.9	2.66	1.67	0.99	0.77	28.4	22.0	UnDef	0.25
44.78	101.5	1.44	1.42	-1.3	8	120.9	2.72	1.70	1.02	0.77	24.3	18.6	UnDef	0.24
45.77	286.3	1.63	0.57	-1.1	9	124.1	2.78	1.73	1.05	0.76	54.8	41.7	UnDef	0.00
46.75	254.3	1.44	0.57	-1.0	9	124.1	2.84	1.76	1.08	0.75	48.7	36.7	UnDef	0.00
47.74	343.7	1.45	0.42	-0.8	10	127.3	2.90	1.79	1.11	0.75	54.9	41.0	UnDef	0.00
48.72	284.9	1.82	0.64	-1.2	9	124.1	2.96	1.82	1.14	0.74	54.6	40.4	UnDef	0.00
49.70	376.6	2.54	0.68	-1.4	10	127.3	3.03	1.85	1.17	0.73	60.1	44.2	UnDef	0.00
50.69	461.0	2.27	0.49	-1.2	10	127.3	3.09	1.88	1.20	0.73	73.6	53.6	UnDef	0.00
51.67	282.3	2.32	0.82	-1.8	9	124.1	3.15	1.92	1.24	0.72	54.1	39.1	UnDef	0.00
52.66	350.3	2.01	0.57	1.2	10	127.3	3.21	1.95	1.27	0.72	55.9	40.1	UnDef	0.00
53.64	410.2	2.28	0.56	1.2	10	127.3	3.28	1.98	1.30	0.71	65.5	46.6	UnDef	0.00
54.63	417.1	1.50	0.36	1.1	10	127.3	3.34	2.01	1.33	0.71	66.6	47.0	UnDef	0.00
55.61	418.8	1.52	0.36	1.5	10	127.3	3.40	2.04	1.36	0.70	66.8	46.8	UnDef	0.00
56.59	409.0	2.04	0.50	2.2	10	127.3	3.46	2.07	1.39	0.69	65.3	45.3	UnDef	0.00
57.58	449.8	2.95	0.66	2.3	10	127.3	3.53	2.11	1.42	0.69	71.8	49.5	UnDef	0.00
58.56	477.3	2.20	0.46	3.4	10	127.3	3.59	2.14	1.45	0.68	76.2	52.1	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4677
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-11
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 09:31
CPT File: 890C11.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.69 (ft): 12.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-04	0.00	1000.0	1.69	12	125.5	UnDef	UnDef	0.0	50	95.0	1.0	-0.48	UnDef	UnDef
1.48	5.0E-04	0.00	475.6	0.84	9	79.4	0.0	79.4	1.4	48	76.4	1.0	-0.32	0.0	26.5
2.46	5.0E-04	0.00	212.5	0.80	9	59.2	0.0	59.2	4.4	46	60.7	1.0	-0.24	0.0	19.7
3.44	5.0E-05	0.00	116.5	1.04	9	45.5	6.5	52.0	9.7	42	48.4	10.0	-0.21	1.5	19.7
4.43	5.0E-05	0.00	66.1	1.85	7	33.2	21.5	54.7	19.7	40	35.8	10.0	-0.21	4.3	17.3
5.41	5.0E-05	0.00	62.9	1.12	7	35.1	14.2	49.3	15.8	40	37.3	10.0	-0.15	3.0	16.8
6.40	5.0E-05	0.00	64.6	0.91	9	39.1	12.2	51.3	13.9	40	40.4	10.0	-0.14	2.7	18.0
7.30	5.0E-05	0.00	61.1	1.20	7	39.5	17.8	57.4	16.6	40	40.7	10.0	-0.16	3.7	19.2
8.20	5.0E-06	0.00	55.8	1.55	7	38.3	25.4	63.6	19.9	40	39.7	10.0	-0.17	5.0	20.0
9.19	5.0E-05	-0.01	24.5	1.97	6	18.2	63.3	81.5	34.1	UnDef	UnDef	6.0	UnDef	8.4	17.3
10.17	5.0E-06	-0.03	29.8	1.61	7	23.1	39.6	62.7	28.7	36	30.0	6.0	-0.11	5.9	15.0
11.15	5.0E-04	-0.01	16.5	2.04	6	13.8	55.1	68.8	41.6	UnDef	UnDef	6.0	UnDef	6.7	13.5
12.14	5.0E-03	0.00	39.1	1.01	7	32.8	23.1	55.9	20.4	38	35.3	1.0	-0.10	3.7	14.4
13.21	5.0E-02	0.00	128.5	0.46	9	108.3	0.0	108.3	4.7	44	69.6	1.0	-0.14	0.0	26.5
14.27	5.0E-02	0.00	143.6	0.35	9	123.6	0.0	123.6	3.1	44	73.3	1.0	-0.13	0.0	24.2
15.26	5.0E-02	0.00	165.3	0.43	9	145.0	0.0	145.0	3.1	44	77.9	1.0	-0.16	0.0	28.4
16.24	5.0E-02	0.00	123.5	0.51	9	110.7	1.1	111.8	5.4	42	70.2	1.0	-0.15	0.1	21.8
17.22	5.0E-05	0.00	32.0	2.13	7	29.9	66.2	96.1	30.8	36	32.7	6.0	-0.15	8.9	20.6
18.21	5.0E-02	0.00	145.4	0.59	9	134.5	0.1	134.6	5.0	44	75.8	1.0	-0.17	0.0	26.3
19.19	5.0E-02	0.00	224.5	0.48	9	210.6	0.0	210.6	2.0	46	88.6	1.0	-0.19	0.0	41.2
20.18	5.0E-02	0.00	260.4	0.69	9	248.2	0.0	248.2	2.7	46	93.3	1.0	-0.24	0.0	48.6
21.16	5.0E-02	0.00	208.7	1.17	9	202.4	9.3	211.7	6.7	46	87.5	1.0	-0.27	1.1	40.7
22.15	5.0E-03	0.00	93.0	1.16	9	92.3	22.4	114.7	12.3	42	65.0	1.0	-0.20	3.1	25.7
23.13	5.0E-02	0.00	151.7	0.61	9	152.0	0.0	152.0	5.0	44	79.3	1.0	-0.18	0.0	29.7
24.11	5.0E-02	0.00	182.1	0.66	9	184.8	0.0	184.8	4.3	44	84.9	1.0	-0.20	0.0	36.2
25.10	5.0E+00	0.00	274.8	0.38	10	282.2	0.0	282.2	0.4	46	95.0	1.0	-0.19	0.0	46.0
26.08	5.0E-02	0.00	293.3	0.76	9	305.5	0.0	305.5	2.7	46	95.0	1.0	-0.26	0.0	59.8
27.07	5.0E+00	0.00	246.7	0.30	10	260.7	0.0	260.7	0.2	46	94.7	1.0	-0.16	0.0	42.5
28.05	5.0E-02	0.00	192.3	0.45	9	206.3	0.0	206.3	2.5	44	88.0	1.0	-0.18	0.0	40.4
29.04	5.0E-02	0.00	238.7	0.60	9	258.9	0.0	258.9	2.6	46	94.5	1.0	-0.22	0.0	50.7
30.02	5.0E-02	0.00	301.5	1.09	9	330.7	0.0	330.7	4.4	46	95.0	1.0	-0.30	0.0	64.7
31.00	5.0E-02	0.00	340.4	1.49	9	377.7	7.6	385.3	5.7	48	95.0	1.0	-0.35	0.9	74.9
31.99	5.0E+00	0.00	315.0	0.36	10	354.0	0.0	354.0	0.0	46	95.0	1.0	-0.20	0.0	57.7
32.97	5.0E+00	0.00	270.0	0.34	10	307.3	0.0	307.3	0.2	46	95.0	1.0	-0.18	0.0	50.1
33.96	5.0E+00	0.00	249.8	0.39	10	287.8	0.0	287.8	0.9	46	95.0	1.0	-0.19	0.0	47.0
34.94	5.0E-02	0.00	244.2	0.98	9	284.6	0.0	284.6	4.8	46	95.0	1.0	-0.27	0.0	55.7
35.92	5.0E-04	-0.01	75.9	2.20	7	90.6	60.3	150.9	20.0	40	64.4	1.0	-0.25	9.8	39.4
36.91	5.0E-02	0.00	246.0	0.69	9	292.5	0.0	292.5	3.0	46	95.0	1.0	-0.24	0.0	57.3
37.89	5.0E-02	0.00	205.4	0.82	9	247.2	0.0	247.2	4.7	46	93.2	1.0	-0.24	0.0	48.4
38.88	5.0E+00	0.00	256.3	0.60	9	311.1	0.0	311.1	2.3	46	95.0	1.0	-0.23	0.0	50.7
39.86	5.0E-02	0.00	138.6	0.73	9	170.9	6.5	177.4	6.4	44	82.6	1.0	-0.19	0.8	34.2
40.85	5.0E-03	-0.01	48.1	1.31	7	61.1	41.4	102.5	20.1	38	53.2	1.0	-0.14	5.1	20.0

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-02	-0.01	83.9	0.95	9	106.1	23.3	129.4	11.8	42	69.0	1.0	-0.17	2.6	23.4
42.81	5.0E-02	-0.01	103.3	0.80	9	131.5	15.7	147.2	9.0	42	75.1	1.0	-0.17	1.8	27.6
43.80	5.0E-03	-0.01	69.4	1.17	7	89.8	33.2	122.9	15.1	40	64.2	1.0	-0.17	4.5	26.4
44.78	5.0E-03	-0.01	58.1	1.45	7	76.2	44.7	120.9	18.9	40	59.5	1.0	-0.17	5.6	24.3
45.77	5.0E-02	0.00	164.0	0.57	9	213.1	0.0	213.1	4.2	44	89.0	1.0	-0.18	0.0	41.7
46.75	5.0E-02	0.00	142.9	0.57	9	187.6	0.1	187.7	5.0	44	85.3	1.0	-0.17	0.0	36.7
47.74	5.0E+00	0.00	190.4	0.42	9	251.4	0.0	251.4	2.3	44	93.7	1.0	-0.17	0.0	41.0
48.72	5.0E-02	0.00	154.8	0.65	9	206.6	0.6	207.1	5.1	44	88.1	1.0	-0.19	0.1	40.5
49.70	5.0E+00	0.00	201.7	0.68	9	270.8	0.0	270.8	3.9	46	95.0	1.0	-0.22	0.0	44.2
50.69	5.0E+00	0.00	243.0	0.49	9	328.6	0.0	328.6	1.8	46	95.0	1.0	-0.21	0.0	53.6
51.67	5.0E-02	0.00	145.7	0.83	9	199.6	9.8	209.4	6.8	44	87.1	1.0	-0.21	1.2	40.3
52.66	5.0E+00	0.00	178.3	0.58	9	245.7	0.0	245.7	3.8	44	93.0	1.0	-0.19	0.0	40.1
53.64	5.0E+00	0.00	205.7	0.56	9	285.4	0.0	285.4	3.0	46	95.0	1.0	-0.20	0.0	46.6
54.63	5.0E+00	0.00	205.8	0.36	9	287.8	0.0	287.8	1.5	46	95.0	1.0	-0.16	0.0	47.0
55.61	5.0E+00	0.00	203.4	0.37	9	286.8	0.0	286.8	1.5	46	95.0	1.0	-0.16	0.0	46.8
56.59	5.0E+00	0.00	195.5	0.50	9	277.9	0.0	277.9	2.8	46	95.0	1.0	-0.19	0.0	45.3
57.58	5.0E+00	0.00	211.9	0.66	9	303.3	0.0	303.3	3.5	46	95.0	1.0	-0.22	0.0	49.5
58.56	5.0E+00	0.00	221.5	0.47	9	319.4	0.0	319.4	1.9	46	95.0	1.0	-0.19	0.0	52.1

For use with report dated 03/18/2005: RTF Job No 2004-700-21

Gregg In Si... .c.
Interpretation Output - Release 1.00.19a
Run No: 01-0318-0548-4705
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: SCPT-12
Engineer: MARK FRANKIAN
CPT Date: 1/31/01
CPT Time: 15:54
CPT File: 031S12.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.99 (ft): 9.8
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	43.5	0.22	0.51	21.3	7	117.8	0.03	0.03	0.00	2.00	13.9	27.8	UnDef	0.13
1.48	20.4	0.04	0.18	16.2	7	117.8	0.09	0.09	0.00	2.00	6.5	13.1	UnDef	0.09
2.46	24.6	0.02	0.08	10.5	7	117.8	0.14	0.14	0.00	2.00	7.8	15.7	UnDef	0.09
3.44	39.0	0.02	0.05	10.4	8	120.9	0.20	0.20	0.00	2.00	9.3	18.7	UnDef	0.12
4.43	28.4	0.02	0.07	9.5	7	117.8	0.26	0.26	0.00	1.95	9.1	17.7	UnDef	0.09
5.41	26.2	0.03	0.11	6.0	7	117.8	0.32	0.32	0.00	1.77	8.4	14.8	UnDef	0.09
6.40	17.0	0.20	1.20	5.8	6	114.6	0.38	0.38	0.00	1.63	6.5	10.6	1.33	0.09
7.30	11.0	0.19	1.75	5.8	5	114.6	0.43	0.43	0.00	1.53	5.3	8.0	0.85	0.11
8.20	18.9	0.12	0.62	4.7	6	114.6	0.48	0.48	0.00	1.44	7.3	10.5	1.48	0.09
9.19	19.5	0.25	1.30	3.9	6	114.6	0.54	0.54	0.00	1.36	7.5	10.2	1.52	0.09
10.17	86.1	0.41	0.47	2.8	8	120.9	0.60	0.58	0.01	1.31	20.6	27.0	UnDef	0.20
11.15	67.8	0.62	0.91	1.6	8	120.9	0.65	0.61	0.04	1.28	16.2	20.7	UnDef	0.16
12.14	35.3	0.86	2.45	0.2	6	114.6	0.71	0.64	0.07	1.25	13.5	16.9	2.76	0.16
13.21	15.5	0.45	2.91	-1.1	5	114.6	0.77	0.67	0.11	1.22	7.4	9.1	1.18	0.15
14.27	47.1	0.30	0.63	-1.8	7	117.8	0.84	0.70	0.14	1.20	15.0	18.0	UnDef	0.11
15.26	70.9	0.52	0.74	-1.6	8	120.9	0.89	0.72	0.17	1.18	17.0	20.0	UnDef	0.15
16.24	171.4	0.44	0.25	-0.1	9	124.1	0.95	0.75	0.20	1.15	32.8	37.8	UnDef	0.00
17.22	232.6	0.59	0.25	1.6	10	127.3	1.02	0.78	0.23	1.13	37.1	41.9	UnDef	0.00
18.21	253.3	1.31	0.52	8.4	9	124.1	1.08	0.82	0.26	1.11	48.5	53.7	UnDef	0.00
19.19	344.1	2.23	0.65	14.9	10	127.3	1.14	0.85	0.29	1.09	54.9	59.7	UnDef	0.00
20.18	317.4	1.91	0.60	18.3	10	127.3	1.20	0.88	0.32	1.07	50.7	54.0	UnDef	0.00
21.16	314.1	2.10	0.67	22.1	9	124.1	1.26	0.91	0.35	1.05	60.2	63.1	UnDef	0.00
22.15	310.9	1.51	0.48	21.2	10	127.3	1.33	0.94	0.39	1.03	49.6	51.1	UnDef	0.00
23.13	306.4	2.13	0.70	20.9	9	124.1	1.39	0.97	0.42	1.01	58.7	59.5	UnDef	0.00
24.11	228.6	2.03	0.89	21.3	9	124.1	1.45	1.00	0.45	1.00	43.8	43.7	UnDef	0.00
25.10	223.2	0.91	0.41	19.2	9	124.1	1.51	1.03	0.48	0.98	42.8	42.1	UnDef	0.00
26.08	73.5	0.52	0.70	15.9	8	120.9	1.57	1.06	0.51	0.97	17.6	17.1	UnDef	0.14
27.07	23.2	0.36	1.55	19.9	6	114.6	1.63	1.09	0.54	0.96	8.9	8.5	1.73	0.20
28.05	79.0	0.74	0.94	33.3	8	120.9	1.69	1.12	0.57	0.95	18.9	17.9	UnDef	0.16
29.04	83.1	0.86	1.04	27.5	8	120.9	1.75	1.15	0.60	0.93	19.9	18.6	UnDef	0.17
30.02	42.2	0.57	1.36	26.0	7	117.8	1.81	1.17	0.63	0.92	13.5	12.4	UnDef	0.13
31.00	12.1	0.41	3.37	34.5	4	114.6	1.86	1.20	0.66	0.91	7.7	7.1	0.82	0.00
31.99	207.5	1.25	0.60	41.0	9	124.1	1.92	1.23	0.69	0.90	39.7	35.9	UnDef	0.00
32.97	214.9	1.22	0.57	26.3	9	124.1	1.98	1.26	0.72	0.89	41.2	36.7	UnDef	0.00
33.96	101.6	0.75	0.74	22.2	8	120.9	2.04	1.29	0.75	0.88	24.3	21.4	UnDef	0.19
34.94	15.9	0.42	2.63	22.7	5	114.6	2.10	1.32	0.78	0.87	7.6	6.7	1.11	0.11
35.92	19.7	0.64	3.25	46.1	5	114.6	2.16	1.34	0.82	0.86	9.4	8.1	1.40	0.00
36.91	255.5	1.58	0.62	53.2	9	124.1	2.22	1.37	0.85	0.85	48.9	41.8	UnDef	0.00
37.89	202.8	2.82	1.39	30.9	8	120.9	2.28	1.40	0.88	0.85	48.6	41.1	UnDef	0.00
38.88	425.9	3.74	0.88	28.4	9	124.1	2.34	1.43	0.91	0.84	81.6	68.3	UnDef	0.00
39.86	376.1	2.16	0.57	22.0	10	127.3	2.40	1.46	0.94	0.83	60.0	49.7	UnDef	0.00
40.85	319.3	1.70	0.53	21.0	10	127.3	2.46	1.49	0.97	0.82	51.0	41.7	UnDef	0.00

Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4705

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
41.83	240.9	1.74	0.72	19.1	9	124.1	2.52	1.52	1.00	0.81	46.1	37.4	UnDef	0.00
42.81	185.2	1.73	0.93	19.0	9	124.1	2.58	1.55	1.03	0.80	35.5	28.5	UnDef	0.00
43.80	179.8	1.31	0.73	22.8	9	124.1	2.64	1.58	1.06	0.79	34.4	27.4	UnDef	0.40
44.78	86.1	1.28	1.48	21.7	7	117.8	2.70	1.61	1.09	0.79	27.5	21.6	UnDef	0.22
45.77	316.9	1.74	0.55	23.7	10	127.3	2.76	1.64	1.12	0.78	50.6	39.5	UnDef	0.00
46.75	361.3	2.67	0.74	25.4	9	124.1	2.83	1.67	1.15	0.77	69.2	53.5	UnDef	0.00
47.74	430.5	5.17	1.20	29.8	9	124.1	2.89	1.70	1.18	0.77	82.5	63.2	UnDef	0.00
48.72	422.2	4.37	1.04	30.5	9	124.1	2.95	1.73	1.22	0.76	80.9	61.4	UnDef	0.00
49.70	373.3	3.47	0.93	32.3	9	124.1	3.01	1.76	1.25	0.75	71.5	53.8	UnDef	0.00
50.69	406.8	2.99	0.74	31.7	9	124.1	3.07	1.79	1.28	0.75	77.9	58.2	UnDef	0.00
51.67	468.4	3.49	0.75	30.8	10	127.3	3.13	1.83	1.31	0.74	74.8	55.3	UnDef	0.00
52.66	391.8	5.21	1.33	31.1	9	124.1	3.19	1.86	1.34	0.73	75.0	55.1	UnDef	0.00
53.64	349.6	4.57	1.31	38.7	9	124.1	3.26	1.89	1.37	0.73	67.0	48.8	UnDef	0.00
54.63	137.4	2.12	1.54	44.4	8	120.9	3.32	1.92	1.40	0.72	32.9	23.8	UnDef	0.37
55.61	205.2	2.73	1.33	44.2	8	120.9	3.38	1.95	1.43	0.72	49.1	35.2	UnDef	0.00
56.59	502.7	3.66	0.73	45.6	10	127.3	3.44	1.98	1.46	0.71	80.2	57.1	UnDef	0.00
57.58	427.1	6.05	1.42	49.2	9	124.1	3.50	2.01	1.49	0.71	81.8	57.8	UnDef	0.00
58.56	339.2	5.35	1.58	49.8	8	120.9	3.56	2.04	1.52	0.70	81.2	56.9	UnDef	0.00
59.55	127.1	2.83	2.22	49.1	7	117.8	3.62	2.06	1.55	0.70	40.6	28.3	UnDef	0.00
60.53	171.8	4.19	2.44	45.0	7	117.8	3.68	2.09	1.58	0.69	54.9	37.9	UnDef	0.00
61.52	377.2	5.28	1.40	42.4	9	124.1	3.73	2.12	1.61	0.69	72.2	49.6	UnDef	0.00
62.42	499.5	5.91	1.18	42.3	9	124.1	3.79	2.15	1.64	0.68	95.7	65.3	UnDef	0.00
63.32	719.9	4.46	0.62	41.9	10	127.3	3.85	2.18	1.67	0.68	114.9	77.9	UnDef	0.00
64.30	636.3	5.85	0.92	46.8	10	127.3	3.91	2.21	1.70	0.67	101.6	68.3	UnDef	0.00
65.29	662.9	5.61	0.85	61.0	10	127.3	3.97	2.24	1.73	0.67	105.8	70.7	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Si.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4705
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: SCPT-12
Engineer: MARK FRANKIAN
CPT Date: 1/31/01
CPT Time: 15:54
CPT File: 031S12.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.99 (ft): 9.8
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	0.00	0.02	1000.0	0.51	10	83.3	0.0	83.3	0.0	50	93.5	1.0	-0.33	0.0	27.8
1.48	0.00	0.02	234.2	0.18	10	39.2	0.0	39.2	0.0	46	56.2	1.0	-0.11	0.0	13.1
2.46	0.00	0.01	168.5	0.08	10	47.0	0.0	47.0	0.0	44	54.1	1.0	-0.02	0.0	15.7
3.44	0.01	0.01	190.8	0.05	10	74.8	0.0	74.8	0.0	44	62.5	1.0	0.01	0.0	18.7
4.43	0.00	0.01	107.1	0.07	9	54.2	0.0	54.2	2.1	42	49.7	1.0	0.03	0.0	17.7
5.41	0.00	0.01	80.9	0.11	9	45.3	0.0	45.3	4.1	42	44.6	1.0	0.02	0.0	14.8
6.40	0.00	0.01	44.0	1.23	7	27.0	19.4	46.4	20.6	38	30.0	6.0	-0.13	3.7	14.3
7.30	0.00	0.02	24.6	1.82	6	16.4	49.0	65.4	33.0	UnDef	UnDef	6.0	UnDef	7.1	15.1
8.20	0.00	0.01	38.4	0.63	7	26.7	12.9	39.6	17.2	38	30.0	6.0	-0.06	2.7	13.1
9.19	0.00	0.01	35.3	1.34	7	26.1	27.7	53.7	24.3	38	30.0	6.0	-0.11	4.8	15.0
10.17	0.01	0.00	146.6	0.48	9	110.3	0.0	110.3	4.1	44	70.1	1.0	-0.16	0.0	27.0
11.15	0.01	0.00	109.6	0.92	9	84.7	11.2	96.0	9.4	42	62.5	1.0	-0.19	1.6	22.4
12.14	0.00	0.00	54.0	2.50	7	43.1	51.5	94.6	25.4	40	43.2	10.0	-0.23	8.7	25.6
13.21	0.00	-0.01	22.1	3.06	6	18.6	74.4	92.9	41.8	UnDef	UnDef	6.0	UnDef	9.1	18.2
14.27	0.00	0.00	66.4	0.64	9	55.2	11.4	66.6	11.4	40	50.3	1.0	-0.11	2.2	20.2
15.26	0.01	0.00	96.7	0.74	9	81.5	9.9	91.5	9.1	42	61.4	1.0	-0.16	1.5	21.4
16.24	0.05	0.00	226.2	0.26	10	193.2	0.0	193.2	0.2	46	86.2	1.0	-0.14	0.0	37.8
17.22	5.00	0.00	295.2	0.25	10	257.0	0.0	257.0	0.0	46	94.3	1.0	-0.17	0.0	41.9
18.21	0.05	0.00	309.2	0.52	10	274.5	0.0	274.5	1.0	46	95.0	1.0	-0.23	0.0	53.7
19.19	5.00	0.00	404.9	0.65	10	365.9	0.0	365.9	0.9	48	95.0	1.0	-0.28	0.0	59.7
20.18	5.00	0.00	359.7	0.61	9	331.3	0.0	331.3	1.0	48	95.0	1.0	-0.26	0.0	54.0
21.16	0.05	0.00	343.8	0.67	9	322.2	0.0	322.2	1.6	48	95.0	1.0	-0.26	0.0	63.1
22.15	5.00	0.00	328.9	0.49	10	313.6	0.0	313.6	0.6	48	95.0	1.0	-0.23	0.0	51.1
23.13	0.05	0.00	313.6	0.70	9	304.0	0.0	304.0	2.1	46	95.0	1.0	-0.26	0.0	59.5
24.11	0.05	0.00	226.6	0.90	9	223.4	0.0	223.4	4.7	46	90.3	1.0	-0.25	0.0	43.7
25.10	0.05	0.00	214.6	0.41	9	214.9	0.0	214.9	1.6	46	89.2	1.0	-0.18	0.0	42.1
26.08	0.01	0.00	67.7	0.72	9	69.8	15.8	85.6	11.9	40	57.0	1.0	-0.12	2.2	19.3
27.07	0.00	0.00	19.8	1.67	6	21.8	87.1	108.8	35.8	34	30.0	6.0	-0.07	8.5	17.0
28.05	0.01	0.01	69.2	0.96	9	73.2	22.0	95.1	13.6	40	58.3	1.0	-0.15	3.0	20.9
29.04	0.01	0.00	71.0	1.06	9	75.9	24.5	100.4	14.1	40	59.4	1.0	-0.16	3.3	21.9
30.02	0.00	0.00	34.4	1.42	7	38.1	44.8	82.9	25.2	38	39.6	1.0	-0.12	6.3	18.8
31.00	0.00	0.04	8.5	3.98	1	10.8	UnDef	UnDef	100.0	UnDef	UnDef	3.0	UnDef	UnDef	UnDef
31.99	0.05	0.00	167.4	0.61	9	183.2	0.0	183.2	4.4	44	84.6	1.0	-0.19	0.0	35.9
32.97	0.05	0.00	169.1	0.58	9	187.4	0.0	187.4	4.1	44	85.3	1.0	-0.19	0.0	36.7
33.96	0.01	0.00	77.3	0.75	9	87.6	16.6	104.2	11.0	40	63.5	1.0	-0.14	2.4	23.8
34.94	0.00	-0.01	10.5	3.03	4	13.6	54.4	68.0	57.2	UnDef	UnDef	3.0	UnDef	6.7	13.3
35.92	0.00	0.04	13.1	3.65	1	16.6	UnDef	UnDef	100.0	UnDef	UnDef	6.0	UnDef	UnDef	UnDef
36.91	0.05	0.00	185.0	0.62	9	213.7	0.0	213.7	3.9	44	89.0	1.0	-0.20	0.0	41.8
37.89	0.01	0.00	143.4	1.40	9	167.8	27.6	195.5	10.3	44	82.1	1.0	-0.26	4.0	45.0
38.88	0.05	0.00	296.6	0.88	9	348.8	0.0	348.8	3.3	46	95.0	1.0	-0.28	0.0	68.3
39.86	5.00	0.00	256.1	0.58	9	304.7	0.0	304.7	2.1	46	95.0	1.0	-0.22	0.0	49.7
40.85	5.00	0.00	212.5	0.54	9	255.9	0.0	255.9	2.6	46	94.2	1.0	-0.20	0.0	41.7

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	0.05	0.00	156.6	0.73	9	191.1	3.2	194.3	5.6	44	85.8	1.0	-0.20	0.4	37.8
42.81	0.05	0.00	117.6	0.95	9	145.5	17.5	162.9	9.0	42	78.0	1.0	-0.20	2.0	30.5
43.80	0.05	0.00	111.9	0.74	9	139.8	11.8	151.6	7.9	42	76.9	1.0	-0.17	1.4	28.8
44.78	0.00	0.00	51.7	1.53	7	66.4	47.9	114.2	20.7	38	55.5	1.0	-0.16	7.7	29.3
45.77	5.00	0.00	191.4	0.55	9	242.1	0.0	242.1	3.3	44	92.6	1.0	-0.19	0.0	39.5
46.75	0.05	0.00	214.3	0.75	9	273.4	0.0	273.4	4.0	46	95.0	1.0	-0.23	0.0	53.5
47.74	0.05	0.00	251.1	1.21	9	322.8	7.5	330.3	5.9	46	95.0	1.0	-0.30	0.9	64.1
48.72	0.05	0.00	241.9	1.04	9	313.8	1.4	315.2	5.2	46	95.0	1.0	-0.28	0.2	61.6
49.70	0.05	0.00	210.0	0.94	9	275.1	2.1	277.2	5.3	46	95.0	1.0	-0.25	0.3	54.1
50.69	0.05	0.00	225.0	0.74	9	297.2	0.0	297.2	3.7	46	95.0	1.0	-0.23	0.0	58.2
51.67	5.00	0.00	254.9	0.75	9	339.3	0.0	339.3	3.2	46	95.0	1.0	-0.25	0.0	55.3
52.66	0.05	0.00	209.3	1.34	9	281.4	20.3	301.7	7.5	46	95.0	1.0	-0.29	2.4	57.5
53.64	0.05	0.00	183.6	1.32	9	249.1	23.2	272.3	8.2	44	93.4	1.0	-0.27	2.7	51.5
54.63	0.01	0.00	70.0	1.58	7	97.1	49.2	146.4	17.6	40	66.4	1.0	-0.20	6.3	30.1
55.61	0.01	0.00	103.8	1.35	9	144.0	36.4	180.4	12.6	42	77.7	1.0	-0.22	5.1	40.3
56.59	5.00	0.00	252.8	0.73	9	350.0	0.0	350.0	3.2	46	95.0	1.0	-0.24	0.0	57.1
57.58	0.05	0.00	211.1	1.43	9	295.0	24.7	319.8	7.9	46	95.0	1.0	-0.30	2.9	60.7
58.56	0.01	0.00	164.8	1.59	9	232.6	38.2	270.8	10.3	44	91.5	1.0	-0.29	5.5	62.4
59.55	0.00	0.00	59.8	2.29	7	86.6	81.0	167.6	23.1	40	63.2	1.0	-0.23	12.2	40.5
60.53	0.00	0.00	80.4	2.49	7	116.3	83.9	200.2	20.7	42	71.6	1.0	-0.27	13.5	51.4
61.52	0.05	0.00	176.1	1.42	9	253.5	29.9	283.4	8.9	44	93.9	1.0	-0.28	3.5	53.1
62.42	0.05	0.00	230.8	1.19	9	333.6	11.0	344.6	6.2	46	95.0	1.0	-0.29	1.3	66.6
63.32	5.00	0.00	329.0	0.62	9	477.5	0.0	477.5	1.4	48	95.0	1.0	-0.25	0.0	77.9
64.30	5.00	0.00	286.3	0.93	9	419.0	0.0	419.0	3.7	46	95.0	1.0	-0.28	0.0	68.3
65.29	5.00	0.00	294.1	0.85	9	433.4	0.0	433.4	3.2	46	95.0	1.0	-0.27	0.0	70.7

For use with report dated 03/18/2005. RTF Job No 2004-700-21

For use with report dated 03/18/2005. RTF Job No: 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4732
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-14
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 13:46
CPT File: 031C14.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 1.77 (ft): 5.8
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	43.1	0.74	1.72	31.9	7	117.8	0.03	0.03	0.00	2.00	13.8	27.5	UnDef	0.00
1.48	27.5	0.78	2.83	12.7	5	114.6	0.09	0.09	0.00	2.00	13.2	26.4	2.20	0.00
2.46	16.6	0.73	4.38	0.7	3	111.4	0.14	0.14	0.00	2.00	15.9	31.9	1.32	0.00
3.44	12.6	0.32	2.52	-0.9	5	114.6	0.20	0.20	0.00	2.00	6.0	12.1	0.99	0.09
4.43	9.6	0.34	3.56	3.9	3	111.4	0.25	0.25	0.00	1.99	9.2	18.3	0.75	0.15
5.41	27.1	0.48	1.77	29.0	6	114.6	0.31	0.31	0.00	1.80	10.4	18.7	2.14	0.11
6.40	17.7	0.60	3.39	18.8	4	114.6	0.36	0.35	0.02	1.70	11.3	19.2	1.39	0.15
7.30	70.7	0.64	0.90	31.1	8	120.9	0.42	0.37	0.05	1.64	16.9	27.8	UnDef	0.22
8.20	97.4	0.27	0.28	16.4	9	124.1	0.47	0.40	0.07	1.58	18.7	29.6	UnDef	0.40
9.19	137.2	0.48	0.35	11.7	9	124.1	0.53	0.43	0.11	1.53	26.3	40.1	UnDef	0.00
10.17	129.3	0.78	0.60	14.3	9	124.1	0.60	0.46	0.14	1.48	24.8	36.6	UnDef	0.00
11.15	70.3	0.95	1.35	18.9	7	117.8	0.65	0.49	0.17	1.43	22.4	32.1	UnDef	0.22
12.14	99.7	0.53	0.53	30.5	8	120.9	0.71	0.52	0.20	1.39	23.9	33.3	UnDef	0.31
13.21	71.4	0.68	0.95	27.0	8	120.9	0.78	0.55	0.23	1.35	17.1	23.1	UnDef	0.18
14.27	319.0	2.94	0.92	48.5	9	124.1	0.84	0.58	0.26	1.31	61.1	80.3	UnDef	0.00
15.26	336.1	2.89	0.86	83.0	9	124.1	0.90	0.61	0.30	1.28	64.4	82.5	UnDef	0.00
16.24	363.2	4.31	1.19	147.9	9	124.1	0.97	0.64	0.33	1.25	69.6	87.0	UnDef	0.00
17.22	324.7	1.78	0.55	110.1	10	127.3	1.03	0.67	0.36	1.22	51.8	63.3	UnDef	0.00
18.21	255.1	1.32	0.52	148.4	9	124.1	1.09	0.70	0.39	1.19	48.9	58.3	UnDef	0.00
19.19	178.9	1.18	0.66	114.7	9	124.1	1.15	0.73	0.42	1.17	34.3	40.1	UnDef	0.00
20.18	275.1	1.72	0.63	135.0	9	124.1	1.21	0.76	0.45	1.15	52.7	60.3	UnDef	0.00
21.16	257.9	1.26	0.49	90.8	10	127.3	1.27	0.79	0.48	1.12	41.2	46.2	UnDef	0.00
22.15	223.3	1.39	0.62	56.4	9	124.1	1.34	0.82	0.51	1.10	42.8	47.1	UnDef	0.00
23.13	282.5	1.70	0.60	60.2	9	124.1	1.40	0.86	0.54	1.08	54.1	58.5	UnDef	0.00
24.11	326.8	3.01	0.92	65.8	9	124.1	1.46	0.89	0.57	1.06	62.6	66.5	UnDef	0.00
25.10	382.2	3.26	0.85	45.3	9	124.1	1.52	0.92	0.60	1.04	73.2	76.5	UnDef	0.00
26.08	268.3	0.89	0.33	34.6	10	127.3	1.58	0.95	0.63	1.03	42.8	44.0	UnDef	0.00
27.07	183.1	1.75	0.96	26.7	9	124.1	1.64	0.98	0.66	1.01	35.1	35.5	UnDef	0.00
28.05	273.3	2.60	0.95	37.8	9	124.1	1.70	1.01	0.69	1.00	52.4	52.1	UnDef	0.00
29.04	74.4	1.31	1.76	28.9	7	117.8	1.76	1.04	0.73	0.98	23.8	23.3	UnDef	0.21
30.02	164.1	2.69	1.64	48.2	8	120.9	1.82	1.07	0.76	0.97	39.3	38.1	UnDef	0.00
31.00	388.9	3.68	0.95	44.8	9	124.1	1.88	1.09	0.79	0.96	74.5	71.2	UnDef	0.00
31.99	440.3	3.94	0.90	43.9	9	124.1	1.94	1.13	0.82	0.94	84.3	79.5	UnDef	0.00
32.97	397.4	2.56	0.64	44.5	10	127.3	2.00	1.16	0.85	0.93	63.4	59.0	UnDef	0.00
33.96	360.4	1.57	0.43	119.4	10	127.3	2.07	1.19	0.88	0.92	57.5	52.8	UnDef	0.00
34.94	368.9	2.19	0.59	98.9	10	127.3	2.13	1.22	0.91	0.91	58.9	53.3	UnDef	0.00
35.92	393.5	2.03	0.52	102.9	10	127.3	2.19	1.25	0.94	0.89	62.8	56.1	UnDef	0.00
36.91	408.6	1.77	0.43	105.0	10	127.3	2.26	1.28	0.97	0.88	65.2	57.6	UnDef	0.00
37.89	436.7	2.59	0.59	97.2	10	127.3	2.32	1.32	1.00	0.87	69.7	60.8	UnDef	0.00
38.88	428.1	2.98	0.70	87.7	10	127.3	2.38	1.35	1.03	0.86	68.3	58.9	UnDef	0.00
39.86	468.1	2.83	0.60	166.4	10	127.3	2.44	1.38	1.06	0.85	74.7	63.6	UnDef	0.00
40.85	490.3	3.13	0.64	185.7	10	127.3	2.51	1.41	1.09	0.84	78.3	65.9	UnDef	0.00

For use with report dated 03/18/2005. RTF Job No 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	498.7	3.93	0.79	140.9	10	127.3	2.57	1.44	1.12	0.83	79.6	66.3	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No: 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4732
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-14
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 13:46
CPT File: 031C14.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 1.77 (ft): 5.8
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-04	0.02	1000.0	1.73	12	82.6	UnDef	UnDef	0.0	50	93.3	1.0	-0.48	UnDef	UnDef
1.48	5.0E-06	0.01	318.8	2.84	12	52.8	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
2.46	5.0E-08	0.00	116.3	4.42	11	31.9	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
3.44	5.0E-06	0.00	62.8	2.56	7	24.1	24.3	48.4	23.8	UnDef	UnDef	10.0	UnDef	5.5	17.6
4.43	5.0E-08	0.01	37.1	3.65	6	18.4	73.8	92.2	35.7	UnDef	UnDef	6.0	UnDef	18.3	36.7
5.41	5.0E-05	0.03	86.8	1.79	7	47.8	21.3	69.1	16.6	42	46.1	10.0	-0.23	4.5	23.2
6.40	5.0E-07	0.03	50.1	3.46	6	29.5	62.7	92.1	30.5	UnDef	UnDef	10.0	UnDef	14.2	33.4
7.30	5.0E-03	0.01	189.4	0.91	9	113.6	2.1	115.7	5.7	44	70.9	1.0	-0.24	0.3	28.1
8.20	5.0E-02	0.00	243.3	0.28	10	151.0	0.0	151.0	0.1	46	79.1	1.0	-0.16	0.0	29.6
9.19	5.0E-02	0.00	318.8	0.35	10	205.1	0.0	205.1	0.0	46	87.9	1.0	-0.20	0.0	40.1
10.17	5.0E-02	0.00	280.5	0.61	9	186.8	0.0	186.8	1.9	46	85.2	1.0	-0.24	0.0	36.6
11.15	5.0E-04	0.01	142.8	1.36	9	98.5	15.5	114.0	10.1	44	66.8	1.0	-0.25	3.0	35.1
12.14	5.0E-03	0.01	192.0	0.54	9	135.9	0.0	135.9	3.1	44	76.1	1.0	-0.19	0.0	33.3
13.21	5.0E-03	0.01	129.0	0.96	9	94.4	9.5	103.9	8.4	44	65.6	1.0	-0.21	1.4	24.5
14.27	5.0E-02	0.00	549.5	0.92	9	410.2	0.0	410.2	1.4	50	95.0	1.0	-0.34	0.0	80.3
15.26	5.0E-02	0.01	550.2	0.86	9	421.4	0.0	421.4	1.1	50	95.0	1.0	-0.33	0.0	82.5
16.24	5.0E-02	0.01	566.3	1.19	9	444.4	0.0	444.4	2.6	50	95.0	1.0	-0.37	0.0	87.0
17.22	5.0E+00	0.01	482.6	0.55	10	388.0	0.0	388.0	0.0	48	95.0	1.0	-0.28	0.0	63.3
18.21	5.0E-02	0.02	361.9	0.52	10	298.0	0.0	298.0	0.5	48	95.0	1.0	-0.24	0.0	58.3
19.19	5.0E-02	0.02	242.8	0.66	9	204.6	0.0	204.6	2.9	46	87.8	1.0	-0.23	0.0	40.1
20.18	5.0E-02	0.01	359.1	0.63	9	308.3	0.0	308.3	1.2	48	95.0	1.0	-0.26	0.0	60.3
21.16	5.0E+00	0.01	323.3	0.49	10	283.3	0.0	283.3	0.7	48	95.0	1.0	-0.23	0.0	46.2
22.15	5.0E-02	0.01	269.0	0.63	9	240.6	0.0	240.6	2.2	46	92.4	1.0	-0.23	0.0	47.1
23.13	5.0E-02	0.00	328.6	0.60	9	298.9	0.0	298.9	1.3	48	95.0	1.0	-0.25	0.0	58.5
24.11	5.0E-02	0.00	367.4	0.93	9	339.8	0.0	339.8	2.7	48	95.0	1.0	-0.30	0.0	66.5
25.10	5.0E-02	0.00	415.5	0.86	9	390.7	0.0	390.7	1.9	48	95.0	1.0	-0.31	0.0	76.5
26.08	5.0E+00	0.00	281.6	0.33	10	269.8	0.0	269.8	0.0	46	95.0	1.0	-0.18	0.0	44.0
27.07	5.0E-02	0.00	185.4	0.97	9	181.1	5.8	186.9	6.2	44	84.3	1.0	-0.24	0.7	36.2
28.05	5.0E-02	0.00	269.3	0.96	9	266.3	0.0	266.3	4.2	46	95.0	1.0	-0.28	0.0	52.1
29.04	5.0E-04	0.00	70.0	1.80	7	71.5	41.7	113.2	18.8	40	57.7	1.0	-0.21	7.0	30.3
30.02	5.0E-03	0.00	152.4	1.66	9	155.6	30.6	186.2	11.2	44	80.0	1.0	-0.28	4.4	42.4
31.00	5.0E-02	0.00	353.5	0.95	9	363.7	0.0	363.7	3.0	48	95.0	1.0	-0.30	0.0	71.2
31.99	5.0E-02	0.00	389.5	0.90	9	406.2	0.0	406.2	2.4	48	95.0	1.0	-0.30	0.0	79.5
32.97	5.0E+00	0.00	341.9	0.65	9	361.7	0.0	361.7	1.4	48	95.0	1.0	-0.26	0.0	59.0
33.96	5.0E+00	0.01	301.5	0.44	10	323.5	0.0	323.5	0.5	46	95.0	1.0	-0.21	0.0	52.8
34.94	5.0E+00	0.01	300.6	0.60	9	326.8	0.0	326.8	1.6	46	95.0	1.0	-0.24	0.0	53.3
35.92	5.0E+00	0.01	312.5	0.52	10	344.2	0.0	344.2	1.0	46	95.0	1.0	-0.23	0.0	56.1
36.91	5.0E+00	0.01	316.4	0.43	10	352.8	0.0	352.8	0.4	46	95.0	1.0	-0.22	0.0	57.6
37.89	5.0E+00	0.00	330.1	0.60	9	372.5	0.0	372.5	1.2	48	95.0	1.0	-0.25	0.0	60.8
38.88	5.0E+00	0.00	315.8	0.70	9	360.9	0.0	360.9	2.0	46	95.0	1.0	-0.26	0.0	58.9
39.86	5.0E+00	0.01	337.5	0.61	9	390.0	0.0	390.0	1.2	48	95.0	1.0	-0.25	0.0	63.6
40.85	5.0E+00	0.01	345.5	0.64	9	403.8	0.0	403.8	1.4	48	95.0	1.0	-0.26	0.0	65.9

Gregg In Situ, Inc.
Run No: 01-0316-0548-4732
CPT File: 031C14.COR

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E+00	0.01	343.7	0.79	9	406.2	0.0	406.2	2.3	48	95.0	1.0	-0.28	0.0	66.3

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4760
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-15
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 13:19
CPT File: 031C15.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.90 (ft): 9.5
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60	(N1)60 (blows/ft)	Su (tsf)	CRR
0.49	121.8	1.12	0.92	33.9	8	120.9	0.03	0.03	0.00	2.00	29.2	58.3	UnDef	0.00
1.48	34.7	1.05	3.03	62.4	5	114.6	0.09	0.09	0.00	2.00	16.6	33.2	2.77	0.00
2.46	28.3	0.46	1.62	54.2	6	114.6	0.14	0.14	0.00	2.00	10.9	21.7	2.25	0.10
3.44	13.4	0.51	3.80	42.7	3	111.4	0.20	0.20	0.00	2.00	12.9	25.7	1.06	0.11
4.43	12.2	0.54	4.41	41.3	3	111.4	0.25	0.25	0.00	1.98	11.7	23.2	0.96	0.23
5.41	21.1	0.38	1.79	48.8	6	114.6	0.31	0.31	0.00	1.80	8.1	14.5	1.66	0.10
6.40	11.7	0.31	2.65	35.5	5	114.6	0.37	0.37	0.00	1.65	5.6	9.2	0.90	0.15
7.30	32.3	0.34	1.07	34.5	7	117.8	0.42	0.42	0.00	1.55	10.3	15.9	UnDef	0.10
8.20	51.1	0.29	0.56	27.5	8	120.9	0.47	0.47	0.00	1.45	12.2	17.8	UnDef	0.12
9.19	16.7	0.42	2.51	18.5	5	114.6	0.53	0.53	0.00	1.37	8.0	11.0	1.29	0.17
10.17	78.9	0.30	0.39	23.2	8	120.9	0.59	0.57	0.02	1.33	18.9	25.1	UnDef	0.18
11.15	108.6	0.29	0.27	24.5	9	124.1	0.65	0.60	0.05	1.29	20.8	26.9	UnDef	0.32
12.14	127.6	0.39	0.31	26.1	9	124.1	0.71	0.63	0.08	1.26	24.4	30.9	UnDef	0.44
13.21	133.4	0.32	0.24	25.9	9	124.1	0.78	0.66	0.12	1.23	25.6	31.4	UnDef	0.00
14.27	108.9	0.23	0.21	25.5	9	124.1	0.84	0.69	0.15	1.20	20.9	25.0	UnDef	0.27
15.26	35.1	0.38	1.08	24.0	7	117.8	0.90	0.72	0.18	1.18	11.2	13.2	UnDef	0.10
16.24	45.3	0.29	0.63	29.3	7	117.8	0.96	0.75	0.21	1.16	14.5	16.7	UnDef	0.10
17.22	167.3	0.52	0.31	39.2	9	124.1	1.02	0.78	0.24	1.13	32.0	36.3	UnDef	0.00
18.21	164.8	0.70	0.42	83.4	9	124.1	1.08	0.81	0.27	1.11	31.6	35.1	UnDef	0.00
19.19	185.2	0.91	0.49	73.8	9	124.1	1.14	0.84	0.30	1.09	35.5	38.7	UnDef	0.00
20.18	201.3	1.26	0.63	72.5	9	124.1	1.20	0.87	0.33	1.07	38.6	41.4	UnDef	0.00
21.16	238.3	1.14	0.48	92.7	9	124.1	1.26	0.90	0.36	1.05	45.6	48.1	UnDef	0.00
22.15	324.2	3.40	1.05	113.0	9	124.1	1.32	0.93	0.39	1.04	62.1	64.4	UnDef	0.00
23.13	282.7	2.44	0.86	102.5	9	124.1	1.39	0.96	0.43	1.02	54.2	55.3	UnDef	0.00
24.11	276.5	1.67	0.60	122.2	9	124.1	1.45	0.99	0.46	1.00	53.0	53.2	UnDef	0.00
25.10	300.7	1.89	0.63	142.4	9	124.1	1.51	1.02	0.49	0.99	57.6	57.0	UnDef	0.00
26.08	291.4	1.10	0.38	122.6	10	127.3	1.57	1.05	0.52	0.97	46.5	45.4	UnDef	0.00
27.07	292.7	1.40	0.48	119.3	10	127.3	1.63	1.08	0.55	0.96	46.7	44.9	UnDef	0.00
28.05	299.2	2.01	0.67	130.3	9	124.1	1.69	1.12	0.58	0.95	57.3	54.3	UnDef	0.00
29.04	309.0	1.83	0.59	118.6	10	127.3	1.76	1.15	0.61	0.93	49.3	46.1	UnDef	0.00
30.02	396.9	2.64	0.67	130.0	10	127.3	1.82	1.18	0.64	0.92	63.4	58.4	UnDef	0.00
31.00	165.4	1.70	1.03	88.1	9	124.1	1.88	1.21	0.67	0.91	31.7	28.8	UnDef	0.00
31.99	35.9	1.24	3.46	81.0	5	114.6	1.94	1.24	0.70	0.90	17.2	15.5	2.72	0.45
32.97	23.9	0.43	1.80	96.6	6	114.6	2.00	1.26	0.73	0.89	9.2	8.1	1.75	0.18
33.96	33.2	0.68	2.05	74.4	6	114.6	2.05	1.29	0.76	0.88	12.7	11.2	2.49	0.35
34.94	246.6	1.02	0.41	60.4	10	127.3	2.11	1.32	0.79	0.87	39.4	34.3	UnDef	0.00
35.92	222.8	1.34	0.60	41.7	9	124.1	2.17	1.35	0.83	0.86	42.7	36.8	UnDef	0.00
36.91	24.6	0.53	2.18	26.9	6	114.6	2.23	1.38	0.86	0.85	9.4	8.0	1.79	0.18
37.89	10.8	0.13	1.23	164.6	5	114.6	2.29	1.40	0.89	0.84	5.2	4.3	0.68	0.09
38.88	30.9	0.58	1.89	197.6	6	114.6	2.35	1.43	0.92	0.84	11.8	9.9	2.28	0.27
39.86	119.1	2.29	1.93	83.0	7	117.8	2.40	1.45	0.95	0.83	38.0	31.5	UnDef	0.39
40.85	144.6	2.17	1.50	63.7	8	120.9	2.46	1.48	0.98	0.82	34.6	28.4	UnDef	0.42

Gregg In Situ, Inc.
Run No: 01-0316-0548-4760
CPT File: 031C15.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
41.83	185.1	1.91	1.03	45.3	9	124.1	2.52	1.51	1.01	0.81	35.4	28.8	UnDef	0.00
42.81	293.6	1.40	0.48	40.5	10	127.3	2.58	1.54	1.04	0.81	46.9	37.7	UnDef	0.00
43.80	289.9	1.36	0.47	38.4	10	127.3	2.65	1.58	1.07	0.80	46.3	36.9	UnDef	0.00
44.78	188.4	0.54	0.29	59.2	9	124.1	2.71	1.61	1.10	0.79	36.1	28.5	UnDef	0.37
45.77	28.1	0.51	1.83	41.8	6	114.6	2.77	1.63	1.13	0.78	10.8	8.4	2.02	0.20
46.75	14.8	0.30	2.04	68.6	5	114.6	2.82	1.66	1.16	0.78	7.1	5.5	0.96	0.10
47.74	97.3	1.56	1.61	98.1	7	117.8	2.88	1.69	1.19	0.77	31.1	23.9	UnDef	0.26
48.72	283.5	2.70	0.95	66.0	9	124.1	2.94	1.72	1.22	0.76	54.3	41.5	UnDef	0.00

For use with report dated 03/18/2005. RTF Job No 2004-700-21

For use with report dated 03/18/2005, RTF Job No. '2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4760
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-15
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 13:19
CPT File: 031C15.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.90 (ft): 9.5
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-03	0.01	1000.0	0.92	10	233.3	0.0	233.3	0.1	50	95.0	1.0	-0.39	0.0	58.3
1.48	5.0E-06	0.06	394.7	3.04	12	66.5	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
2.46	5.0E-05	0.06	195.6	1.62	9	54.3	7.0	61.3	9.3	44	58.3	10.0	-0.30	1.7	23.4
3.44	5.0E-08	0.10	66.2	3.85	6	25.7	42.4	68.1	28.3	UnDef	UnDef	10.0	UnDef	16.4	42.1
4.43	5.0E-08	0.11	47.0	4.50	6	23.4	93.6	117.0	35.2	UnDef	UnDef	6.0	UnDef	23.2	46.4
5.41	5.0E-05	0.07	66.9	1.81	7	37.0	23.0	60.0	19.4	40	38.8	10.0	-0.20	4.6	19.1
6.40	5.0E-06	0.10	30.8	2.74	6	18.9	70.2	89.1	34.5	UnDef	UnDef	6.0	UnDef	9.0	18.2
7.30	5.0E-04	0.03	76.0	1.08	9	48.8	14.6	63.4	13.6	40	46.7	1.0	-0.17	2.7	18.6
8.20	5.0E-03	0.02	107.0	0.57	9	72.7	3.8	76.5	6.9	42	58.1	1.0	-0.14	0.6	18.4
9.19	5.0E-06	0.04	30.4	2.60	6	22.4	77.4	99.8	34.0	UnDef	UnDef	6.0	UnDef	10.3	21.3
10.17	5.0E-03	0.01	138.0	0.39	9	102.5	0.0	102.5	3.7	44	68.0	1.0	-0.13	0.0	25.1
11.15	5.0E-02	0.01	180.7	0.27	9	137.5	0.0	137.5	1.3	44	76.4	1.0	-0.13	0.0	26.9
12.14	5.0E-02	0.01	202.2	0.31	9	157.6	0.0	157.6	1.1	46	80.3	1.0	-0.15	0.0	30.9
13.21	5.0E-02	0.01	200.8	0.24	10	160.7	0.0	160.7	0.5	46	80.9	1.0	-0.13	0.0	31.4
14.27	5.0E-02	0.01	155.8	0.21	9	127.9	0.0	127.9	1.4	44	74.3	1.0	-0.10	0.0	25.0
15.26	5.0E-04	0.02	47.4	1.11	7	40.4	23.7	64.1	18.8	38	41.3	1.0	-0.12	4.0	17.2
16.24	5.0E-04	0.02	59.2	0.64	9	51.3	12.9	64.2	12.5	40	48.1	1.0	-0.10	2.4	19.1
17.22	5.0E-02	0.01	213.7	0.31	9	185.6	0.0	185.6	0.9	46	85.0	1.0	-0.15	0.0	36.3
18.21	5.0E-02	0.01	202.5	0.42	9	179.4	0.0	179.4	2.0	46	84.0	1.0	-0.17	0.0	35.1
19.19	5.0E-02	0.01	219.4	0.49	9	197.9	0.0	197.9	2.2	46	86.8	1.0	-0.19	0.0	38.7
20.18	5.0E-02	0.01	230.2	0.63	9	211.3	0.0	211.3	2.9	46	88.7	1.0	-0.22	0.0	41.4
21.16	5.0E-02	0.01	263.5	0.48	9	245.9	0.0	245.9	1.3	46	93.1	1.0	-0.21	0.0	48.1
22.15	5.0E-02	0.01	347.1	1.05	9	328.9	0.0	328.9	3.6	48	95.0	1.0	-0.31	0.0	64.4
23.13	5.0E-02	0.01	292.9	0.87	9	282.3	0.0	282.3	3.3	46	95.0	1.0	-0.27	0.0	55.3
24.11	5.0E-02	0.01	277.7	0.61	9	271.9	0.0	271.9	2.0	46	95.0	1.0	-0.23	0.0	53.2
25.10	5.0E-02	0.01	293.1	0.63	9	291.3	0.0	291.3	1.9	46	95.0	1.0	-0.24	0.0	57.0
26.08	5.0E+00	0.01	275.5	0.38	10	278.0	0.0	278.0	0.4	46	95.0	1.0	-0.19	0.0	45.4
27.07	5.0E+00	0.01	268.5	0.48	9	275.1	0.0	275.1	1.3	46	95.0	1.0	-0.21	0.0	44.9
28.05	5.0E-02	0.01	266.8	0.68	9	277.2	0.0	277.2	2.6	46	95.0	1.0	-0.24	0.0	54.3
29.04	5.0E+00	0.01	268.0	0.59	9	282.4	0.0	282.4	2.0	46	95.0	1.0	-0.23	0.0	46.1
30.02	5.0E+00	0.01	335.3	0.67	9	357.8	0.0	357.8	1.6	48	95.0	1.0	-0.26	0.0	58.4
31.00	5.0E-02	0.01	135.2	1.04	9	147.2	15.7	162.8	8.6	44	78.4	1.0	-0.22	1.8	30.7
31.99	5.0E-06	0.05	27.5	3.66	6	31.6	126.5	158.1	40.6	UnDef	UnDef	6.0	UnDef	15.5	30.9
32.97	5.0E-05	0.10	17.3	1.96	6	20.8	83.3	104.1	40.2	32	30.0	6.0	-0.06	8.1	16.3
33.96	5.0E-05	0.05	24.1	2.18	6	28.6	114.3	142.9	35.6	34	31.4	6.0	-0.11	11.2	22.4
34.94	5.0E+00	0.00	185.6	0.42	9	210.2	0.0	210.2	2.4	44	88.6	1.0	-0.17	0.0	34.3
35.92	5.0E-02	0.00	163.6	0.61	9	187.8	0.0	187.8	4.5	44	85.3	1.0	-0.19	0.0	36.8
36.91	5.0E-05	0.00	16.2	2.39	6	20.5	81.9	102.4	44.2	32	30.0	6.0	-0.08	8.0	16.0
37.89	5.0E-06	0.50	6.0	1.56	4	8.9	35.6	44.4	61.1	UnDef	UnDef	1.5	UnDef	4.3	8.7
38.88	5.0E-05	0.18	20.0	2.04	6	25.3	101.1	126.4	38.1	34	30.0	6.0	-0.07	9.9	19.8
39.86	5.0E-04	0.01	80.2	1.97	7	96.6	52.9	149.6	18.3	42	66.3	1.0	-0.24	9.0	40.5
40.85	5.0E-03	0.01	95.9	1.53	7	116.2	38.0	154.3	14.2	42	71.6	1.0	-0.23	5.2	33.6

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-02	0.00	120.7	1.04	9	147.3	19.9	167.2	9.5	42	78.4	1.0	-0.21	2.3	31.2
42.81	5.0E+00	0.00	188.6	0.48	9	231.3	0.0	231.3	2.8	44	91.3	1.0	-0.18	0.0	37.7
43.80	5.0E+00	0.00	182.4	0.47	9	226.1	0.0	226.1	2.9	44	90.7	1.0	-0.18	0.0	36.9
44.78	5.0E-02	0.00	115.6	0.29	9	145.5	0.0	145.5	3.8	42	78.0	1.0	-0.09	0.0	28.5
45.77	5.0E-05	0.01	15.5	2.03	6	21.5	86.0	107.4	42.9	32	30.0	6.0	-0.06	8.4	16.8
46.75	5.0E-06	0.08	7.2	2.52	4	11.3	45.1	56.4	63.5	UnDef	UnDef	3.0	UnDef	5.5	11.0
47.74	5.0E-04	0.02	56.0	1.65	7	73.3	51.7	125.1	20.5	40	58.4	1.0	-0.18	8.4	32.3
48.72	5.0E-02	0.00	163.6	0.96	9	211.8	11.2	223.0	6.9	44	88.8	1.0	-0.23	1.3	42.8

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4782
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: SCPT-16
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 08:09
CPT File: 031S16.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.57 (ft): 15.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60	(N1)60 (blows/ft)	Su (tsf)	CRR
0.49	11.2	0.17	1.53	14.6	5	114.6	0.03	0.03	0.00	2.00	5.3	10.7	0.89	0.00
1.48	10.3	0.24	2.28	10.9	5	114.6	0.08	0.08	0.00	2.00	5.0	9.9	0.82	0.00
2.46	18.7	0.28	1.50	6.0	6	114.6	0.14	0.14	0.00	2.00	7.2	14.4	1.49	0.09
3.44	39.0	0.15	0.38	8.3	7	117.8	0.20	0.20	0.00	2.00	12.4	24.9	UnDef	0.12
4.43	27.3	0.13	0.49	6.6	7	117.8	0.26	0.26	0.00	1.98	8.7	17.2	UnDef	0.09
5.41	31.0	0.13	0.42	4.2	7	117.8	0.31	0.31	0.00	1.78	9.9	17.7	UnDef	0.09
6.40	20.8	0.12	0.60	1.7	6	114.6	0.37	0.37	0.00	1.64	8.0	13.1	1.63	0.09
7.30	14.7	0.13	0.86	2.2	6	114.6	0.42	0.42	0.00	1.54	5.6	8.6	1.14	0.09
8.20	45.9	0.09	0.20	5.4	8	120.9	0.48	0.48	0.00	1.45	11.0	15.9	UnDef	0.11
9.19	78.1	0.18	0.23	6.4	8	120.9	0.54	0.54	0.00	1.37	18.7	25.5	UnDef	0.19
10.17	103.0	0.28	0.27	6.1	9	124.1	0.60	0.60	0.00	1.30	19.7	25.6	UnDef	0.29
11.15	110.4	0.33	0.30	6.4	9	124.1	0.66	0.66	0.00	1.23	21.1	26.1	UnDef	0.30
12.14	100.5	0.48	0.47	3.9	9	124.1	0.72	0.72	0.00	1.18	19.2	22.7	UnDef	0.23
13.21	63.6	0.53	0.84	9.5	8	120.9	0.78	0.78	0.00	1.13	15.2	17.2	UnDef	0.14
14.27	14.9	0.25	1.70	21.4	6	114.6	0.85	0.85	0.00	1.09	5.7	6.2	1.13	0.13
15.26	13.8	0.39	2.82	23.7	5	114.6	0.90	0.89	0.01	1.06	6.6	7.0	1.03	0.11
16.24	50.3	0.50	0.99	21.6	7	117.8	0.96	0.92	0.04	1.04	16.1	16.7	UnDef	0.12
17.22	43.1	0.60	1.40	26.3	7	117.8	1.02	0.95	0.07	1.03	13.8	14.1	UnDef	0.13
18.21	132.5	0.38	0.28	17.8	9	124.1	1.08	0.98	0.10	1.01	25.4	25.7	UnDef	0.29
19.19	162.8	0.55	0.34	11.0	9	124.1	1.14	1.01	0.13	1.00	31.2	31.1	UnDef	0.45
20.18	177.8	0.32	0.18	18.7	9	124.1	1.20	1.04	0.16	0.98	34.1	33.4	UnDef	0.00
21.16	166.9	0.32	0.19	20.1	9	124.1	1.26	1.07	0.19	0.97	32.0	30.9	UnDef	0.45
22.15	169.1	0.80	0.47	12.6	9	124.1	1.32	1.10	0.22	0.95	32.4	30.9	UnDef	0.45
23.13	292.4	0.48	0.16	5.8	10	127.3	1.38	1.13	0.25	0.94	46.7	43.9	UnDef	0.00
24.11	315.1	0.80	0.25	2.0	10	127.3	1.45	1.16	0.28	0.93	50.3	46.7	UnDef	0.00
25.10	194.2	0.48	0.25	1.5	9	124.1	1.51	1.19	0.32	0.92	37.2	34.1	UnDef	0.00
26.08	138.1	0.41	0.29	0.9	9	124.1	1.57	1.22	0.35	0.90	26.4	23.9	UnDef	0.25
27.07	156.7	0.53	0.34	11.6	9	124.1	1.63	1.25	0.38	0.89	30.0	26.8	UnDef	0.32
28.05	286.4	0.53	0.18	19.3	10	127.3	1.69	1.28	0.41	0.88	45.7	40.3	UnDef	0.00
29.04	286.9	0.32	0.11	15.2	10	127.3	1.75	1.32	0.44	0.87	45.8	39.9	UnDef	0.00
30.02	259.5	0.38	0.15	18.2	10	127.3	1.82	1.35	0.47	0.86	41.4	35.7	UnDef	0.00
31.00	99.8	1.04	1.04	21.2	8	120.9	1.88	1.38	0.50	0.85	23.9	20.4	UnDef	0.20
31.99	26.3	0.69	2.62	32.1	5	114.6	1.94	1.41	0.53	0.84	12.6	10.6	1.95	0.20
32.97	20.5	0.65	3.20	41.3	5	114.6	1.99	1.43	0.56	0.84	9.8	8.2	1.48	0.13
33.96	15.2	0.42	2.74	56.9	5	114.6	2.05	1.46	0.59	0.83	7.3	6.0	1.05	0.10
34.94	231.5	0.76	0.33	54.1	10	127.3	2.11	1.49	0.62	0.82	36.9	30.3	UnDef	0.00
35.92	351.2	1.84	0.52	24.4	10	127.3	2.17	1.52	0.65	0.81	56.1	45.5	UnDef	0.00
36.91	280.6	1.84	0.66	26.2	9	124.1	2.23	1.55	0.68	0.80	53.7	43.2	UnDef	0.00
37.89	242.4	0.95	0.39	22.3	10	127.3	2.30	1.58	0.71	0.80	38.7	30.8	UnDef	0.00
38.88	53.7	0.86	1.61	23.4	7	117.8	2.36	1.61	0.75	0.79	17.1	13.5	UnDef	0.20
39.86	32.2	0.61	1.90	57.3	6	114.6	2.41	1.64	0.78	0.78	12.3	9.7	2.39	0.25
40.85	247.1	0.92	0.37	78.0	10	127.3	2.47	1.67	0.81	0.78	39.4	30.6	UnDef	0.00

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
41.83	407.5	2.22	0.55	45.7	10	127.3	2.53	1.70	0.84	0.77	65.0	49.9	UnDef	0.00
42.81	447.9	3.23	0.72	37.7	10	127.3	2.60	1.73	0.87	0.76	71.5	54.4	UnDef	0.00
43.80	432.4	3.82	0.88	52.1	9	124.1	2.66	1.76	0.90	0.75	82.8	62.4	UnDef	0.00
44.78	519.3	2.78	0.54	53.3	10	127.3	2.72	1.79	0.93	0.75	82.9	61.9	UnDef	0.00
45.77	472.7	3.19	0.68	51.8	10	127.3	2.78	1.82	0.96	0.74	75.5	55.9	UnDef	0.00
46.75	440.0	2.26	0.51	45.8	10	127.3	2.85	1.86	0.99	0.73	70.2	51.6	UnDef	0.00
47.74	288.5	3.04	1.05	37.8	9	124.1	2.91	1.89	1.02	0.73	55.3	40.2	UnDef	0.00
48.72	215.9	2.59	1.20	38.4	8	120.9	2.97	1.92	1.05	0.72	51.7	37.3	UnDef	0.00
49.70	399.1	2.15	0.54	36.1	10	127.3	3.03	1.95	1.08	0.72	63.7	45.7	UnDef	0.00
50.69	407.0	2.76	0.68	24.9	10	127.3	3.09	1.98	1.11	0.71	65.0	46.2	UnDef	0.00
51.67	378.4	1.99	0.53	24.8	10	127.3	3.16	2.01	1.15	0.71	60.4	42.6	UnDef	0.00
52.66	374.1	2.10	0.56	25.6	10	127.3	3.22	2.04	1.18	0.70	59.7	41.8	UnDef	0.00
53.64	184.9	1.13	0.61	29.2	9	124.1	3.28	2.07	1.21	0.69	35.4	24.6	UnDef	0.34
54.63	50.7	1.10	2.17	31.0	6	114.6	3.34	2.10	1.24	0.69	19.4	13.4	3.79	0.00
55.61	90.9	1.80	1.98	26.5	7	117.8	3.40	2.13	1.27	0.69	29.0	19.9	UnDef	0.37
56.59	61.0	1.15	1.89	22.7	7	117.8	3.45	2.15	1.30	0.68	19.5	13.3	UnDef	0.46
57.58	411.6	3.27	0.79	24.3	9	124.1	3.51	2.18	1.33	0.68	78.8	53.3	UnDef	0.00
58.56	360.1	1.20	0.33	23.4	10	127.3	3.57	2.21	1.36	0.67	57.5	38.6	UnDef	0.00
59.55	333.3	1.69	0.51	26.4	10	127.3	3.64	2.25	1.39	0.67	53.2	35.5	UnDef	0.00
60.53	497.3	2.80	0.56	22.1	10	127.3	3.70	2.28	1.42	0.66	79.4	52.6	UnDef	0.00
61.52	483.0	2.11	0.44	26.1	10	127.3	3.76	2.31	1.45	0.66	77.1	50.7	UnDef	0.00
62.42	499.0	3.04	0.61	30.0	10	127.3	3.82	2.34	1.48	0.65	79.6	52.1	UnDef	0.00
63.32	443.5	3.79	0.85	53.2	9	124.1	3.88	2.37	1.51	0.65	85.0	55.2	UnDef	0.00
64.30	499.9	3.23	0.65	62.5	10	127.3	3.94	2.40	1.54	0.65	79.8	51.5	UnDef	0.00
65.29	524.1	2.00	0.38	70.1	10	127.3	4.00	2.43	1.57	0.64	83.7	53.7	UnDef	0.00
66.27	533.9	2.79	0.52	74.2	10	127.3	4.06	2.46	1.60	0.64	85.2	54.3	UnDef	0.00
67.26	618.2	4.19	0.68	91.7	10	127.3	4.13	2.50	1.63	0.63	98.7	62.5	UnDef	0.00
68.24	524.3	2.69	0.51	119.4	10	127.3	4.19	2.53	1.66	0.63	83.7	52.7	UnDef	0.00
69.22	499.9	1.58	0.32	102.2	10	127.3	4.25	2.56	1.69	0.63	79.8	49.9	UnDef	0.00
70.21	512.0	2.32	0.45	72.4	10	127.3	4.31	2.59	1.72	0.62	81.7	50.8	UnDef	0.00
71.19	551.7	4.02	0.73	58.8	10	127.3	4.38	2.62	1.75	0.62	88.1	54.4	UnDef	0.00
72.18	446.7	5.67	1.27	63.8	9	124.1	4.44	2.65	1.79	0.61	85.6	52.5	UnDef	0.00
73.16	212.0	1.56	0.73	66.1	9	124.1	4.50	2.68	1.82	0.61	40.6	24.8	UnDef	0.40
74.15	68.2	1.27	1.87	75.5	7	117.8	4.56	2.71	1.85	0.61	21.8	13.2	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4782
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: SCPT-16
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 08:09
CPT File: 031S16.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.57 (ft): 15.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-06	0.04	394.9	1.53	9	21.4	0.2	21.5	5.3	UnDef	UnDef	10.0	UnDef	0.1	10.7
1.48	5.0E-06	0.03	121.3	2.30	7	19.8	8.1	27.9	15.9	UnDef	UnDef	10.0	UnDef	2.2	12.1
2.46	5.0E-05	0.01	131.9	1.51	9	35.9	7.5	43.4	11.5	44	46.7	10.0	-0.26	1.7	16.1
3.44	5.0E-04	0.01	195.6	0.38	9	74.6	0.0	74.6	1.8	44	62.8	1.0	-0.16	0.0	24.9
4.43	5.0E-04	0.01	105.7	0.49	9	52.3	0.0	52.3	5.0	42	49.0	1.0	-0.13	0.0	17.2
5.41	5.0E-04	0.00	97.8	0.42	9	54.2	0.0	54.2	5.0	42	49.7	1.0	-0.11	0.0	17.7
6.40	5.0E-05	0.00	55.0	0.61	9	33.4	9.0	42.3	12.9	40	35.8	10.0	-0.09	2.0	15.1
7.30	5.0E-05	0.00	33.7	0.89	7	22.1	17.0	39.1	21.3	36	30.0	6.0	-0.07	3.2	11.9
8.20	5.0E-03	0.00	95.5	0.20	9	65.2	0.0	65.2	4.0	42	55.0	1.0	-0.05	0.0	15.9
9.19	5.0E-03	0.00	144.8	0.23	9	104.4	0.0	104.4	2.0	44	68.5	1.0	-0.10	0.0	25.5
10.17	5.0E-02	0.00	171.8	0.27	9	130.5	0.0	130.5	1.5	44	74.9	1.0	-0.12	0.0	25.6
11.15	5.0E-02	0.00	167.0	0.30	9	133.2	0.0	133.2	1.9	44	75.5	1.0	-0.13	0.0	26.1
12.14	5.0E-02	0.00	138.9	0.48	9	116.0	0.0	116.0	4.4	44	71.5	1.0	-0.15	0.0	22.7
13.21	5.0E-03	0.00	80.2	0.85	9	70.3	14.6	85.0	11.4	42	57.2	1.0	-0.15	2.1	19.3
14.27	5.0E-05	0.05	16.6	1.80	6	15.9	63.5	79.4	39.9	32	30.0	6.0	-0.06	6.2	12.4
15.26	5.0E-06	0.06	14.4	3.02	6	14.3	57.1	71.3	50.1	UnDef	UnDef	6.0	UnDef	7.0	14.0
16.24	5.0E-04	0.01	53.6	1.01	7	51.3	23.3	74.6	16.7	40	48.2	1.0	-0.13	4.1	20.8
17.22	5.0E-04	0.02	44.4	1.43	7	43.3	35.7	79.1	21.9	38	43.3	1.0	-0.14	5.6	19.7
18.21	5.0E-02	0.00	134.5	0.29	9	131.2	0.0	131.2	2.9	44	75.1	1.0	-0.11	0.0	25.7
19.19	5.0E-02	0.00	160.4	0.34	9	158.7	0.0	158.7	2.4	44	80.5	1.0	-0.14	0.0	31.1
20.18	5.0E-02	0.00	170.2	0.18	9	170.8	0.0	170.8	0.7	44	82.6	1.0	-0.09	0.0	33.4
21.16	5.0E-02	0.00	155.1	0.19	9	158.0	0.0	158.0	1.3	44	80.4	1.0	-0.09	0.0	30.9
22.15	5.0E-02	0.00	152.7	0.47	9	157.8	0.0	157.8	3.8	44	80.4	1.0	-0.16	0.0	30.9
23.13	5.0E+00	0.00	257.6	0.17	10	269.2	0.0	269.2	0.0	46	95.0	1.0	-0.12	0.0	43.9
24.11	5.0E+00	0.00	270.0	0.26	10	286.1	0.0	286.1	0.0	46	95.0	1.0	-0.16	0.0	46.7
25.10	5.0E-02	0.00	161.5	0.25	9	174.0	0.0	174.0	1.6	44	83.1	1.0	-0.11	0.0	34.1
26.08	5.0E-02	0.00	111.6	0.30	9	122.2	0.0	122.2	4.1	42	73.0	1.0	-0.09	0.0	23.9
27.07	5.0E-02	0.00	123.7	0.34	9	136.9	0.0	136.9	3.9	42	76.3	1.0	-0.11	0.0	26.8
28.05	5.0E+00	0.00	221.6	0.19	10	247.2	0.0	247.2	0.0	46	93.2	1.0	-0.11	0.0	40.3
29.04	5.0E+00	0.00	216.6	0.11	10	244.7	0.0	244.7	0.0	46	92.9	1.0	-0.07	0.0	39.9
30.02	5.0E+00	0.00	191.1	0.15	10	218.7	0.0	218.7	0.0	44	89.7	1.0	-0.08	0.0	35.7
31.00	5.0E-03	0.00	71.0	1.06	9	83.2	26.7	109.9	14.1	40	62.0	1.0	-0.16	3.6	24.0
31.99	5.0E-06	0.02	17.3	2.82	6	21.7	86.9	108.6	45.3	UnDef	UnDef	6.0	UnDef	10.6	21.3
32.97	5.0E-06	0.04	12.9	3.54	4	16.7	67.0	83.7	55.1	UnDef	UnDef	6.0	UnDef	8.2	16.4
33.96	5.0E-06	0.09	9.0	3.17	4	12.3	49.2	61.4	61.8	UnDef	UnDef	3.0	UnDef	6.0	12.0
34.94	5.0E+00	0.00	154.3	0.33	9	185.8	0.0	185.8	2.6	44	85.0	1.0	-0.13	0.0	30.3
35.92	5.0E+00	0.00	229.9	0.53	9	278.9	0.0	278.9	2.2	46	95.0	1.0	-0.21	0.0	45.5
36.91	5.0E-02	0.00	179.7	0.66	9	220.6	0.0	220.6	4.4	44	90.0	1.0	-0.20	0.0	43.2
37.89	5.0E+00	0.00	152.0	0.40	9	188.7	0.0	188.7	3.2	44	85.5	1.0	-0.14	0.0	30.8
38.88	5.0E-04	0.00	31.9	1.68	7	41.4	66.5	107.9	28.1	36	42.0	1.0	-0.12	8.5	22.0
39.86	5.0E-05	0.03	18.2	2.05	6	24.7	98.6	123.3	39.8	32	30.0	6.0	-0.08	9.7	19.3
40.85	5.0E+00	0.01	146.9	0.37	9	187.4	0.0	187.4	3.2	44	85.3	1.0	-0.14	0.0	30.6

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E+00	0.00	238.6	0.55	9	306.1	0.0	306.1	2.2	46	95.0	1.0	-0.21	0.0	49.9
42.81	5.0E+00	0.00	257.5	0.73	9	333.3	0.0	333.3	3.0	46	95.0	1.0	-0.25	0.0	54.4
43.80	5.0E-02	0.00	244.2	0.89	9	319.0	0.0	319.0	4.2	46	95.0	1.0	-0.26	0.0	62.4
44.78	5.0E+00	0.00	288.4	0.54	9	379.7	0.0	379.7	1.4	46	95.0	1.0	-0.23	0.0	61.9
45.77	5.0E+00	0.00	257.8	0.68	9	342.6	0.0	342.6	2.7	46	95.0	1.0	-0.24	0.0	55.9
46.75	5.0E+00	0.00	235.7	0.52	9	316.1	0.0	316.1	2.0	46	95.0	1.0	-0.21	0.0	51.6
47.74	5.0E-02	0.00	151.4	1.06	9	205.6	17.8	223.4	8.0	44	87.9	1.0	-0.23	2.1	42.4
48.72	5.0E-03	0.00	111.1	1.22	9	152.6	30.2	182.8	11.2	42	79.4	1.0	-0.22	4.3	41.6
49.70	5.0E+00	0.00	203.5	0.54	9	279.9	0.0	279.9	2.9	46	95.0	1.0	-0.20	0.0	45.7
50.69	5.0E+00	0.00	204.2	0.68	9	283.2	0.0	283.2	3.8	46	95.0	1.0	-0.22	0.0	46.2
51.67	5.0E+00	0.00	186.7	0.53	9	261.2	0.0	261.2	3.2	44	94.8	1.0	-0.19	0.0	42.6
52.66	5.0E+00	0.00	181.6	0.57	9	256.2	0.0	256.2	3.6	44	94.2	1.0	-0.19	0.0	41.8
53.64	5.0E-02	0.00	87.6	0.62	9	125.7	14.5	140.2	8.9	42	73.8	1.0	-0.13	1.7	26.3
54.63	5.0E-05	-0.01	22.5	2.32	6	34.2	136.9	171.1	37.6	34	36.5	6.0	-0.12	13.4	26.8
55.61	5.0E-04	-0.01	41.1	2.06	7	61.0	84.3	145.3	26.7	38	53.1	1.0	-0.17	11.3	31.2
56.59	5.0E-04	-0.01	26.7	2.01	6	40.7	118.6	159.3	32.9	36	41.5	1.0	-0.12	11.6	24.8
57.58	5.0E-02	0.00	186.9	0.80	9	272.6	0.6	273.2	5.1	44	95.0	1.0	-0.23	0.1	53.4
58.56	5.0E+00	0.00	161.0	0.34	9	236.8	0.0	236.8	2.4	44	92.0	1.0	-0.14	0.0	38.6
59.55	5.0E+00	0.00	146.7	0.51	9	217.6	0.0	217.6	4.4	44	89.6	1.0	-0.16	0.0	35.5
60.53	5.0E+00	0.00	216.6	0.57	9	322.4	0.0	322.4	2.8	46	95.0	1.0	-0.21	0.0	52.6
61.52	5.0E+00	0.00	207.4	0.44	9	311.0	0.0	311.0	2.0	46	95.0	1.0	-0.18	0.0	50.7
62.42	5.0E+00	0.00	211.6	0.61	9	319.3	0.0	319.3	3.2	46	95.0	1.0	-0.21	0.0	52.1
63.32	5.0E-02	0.00	185.7	0.86	9	282.1	3.8	285.9	5.5	44	95.0	1.0	-0.23	0.5	55.7
64.30	5.0E+00	0.00	206.7	0.65	9	315.8	0.0	315.8	3.6	46	95.0	1.0	-0.21	0.0	51.5
65.29	5.0E+00	0.00	213.9	0.39	9	328.9	0.0	328.9	1.5	46	95.0	1.0	-0.17	0.0	53.7
66.27	5.0E+00	0.00	215.1	0.53	9	332.9	0.0	332.9	2.5	46	95.0	1.0	-0.20	0.0	54.3
67.26	5.0E+00	0.00	246.1	0.68	9	383.0	0.0	383.0	3.0	46	95.0	1.0	-0.24	0.0	62.5
68.24	5.0E+00	0.00	205.8	0.52	9	322.8	0.0	322.8	2.6	46	95.0	1.0	-0.19	0.0	52.7
69.22	5.0E+00	0.00	193.7	0.32	9	305.8	0.0	305.8	1.4	44	95.0	1.0	-0.15	0.0	49.9
70.21	5.0E+00	0.00	196.0	0.46	9	311.3	0.0	311.3	2.4	46	95.0	1.0	-0.18	0.0	50.8
71.19	5.0E+00	0.00	208.7	0.73	9	333.3	0.0	333.3	4.1	46	95.0	1.0	-0.23	0.0	54.4
72.18	5.0E-02	0.00	166.7	1.28	9	268.4	28.6	296.9	8.6	44	95.0	1.0	-0.26	3.4	55.9
73.16	5.0E-02	0.00	77.3	0.75	9	126.6	24.0	150.7	11.0	40	74.0	1.0	-0.14	2.7	27.5
74.15	5.0E-04	0.01	23.5	2.00	6	40.5	163.1	203.6	35.0	34	41.4	1.0	-0.11	13.3	26.5

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4809
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-16
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 08:49
CPT File: 890C16.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.57 (ft): 15.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	89.9	1.32	1.47	-0.3	7	117.8	0.03	0.03	0.00	2.00	28.7	57.4	UnDef	0.00
1.48	49.6	0.72	1.45	-0.1	7	117.8	0.09	0.09	0.00	2.00	15.8	31.7	UnDef	0.16
2.46	40.6	0.89	2.20	-0.3	6	114.6	0.14	0.14	0.00	2.00	15.6	31.1	3.24	0.14
3.44	35.4	1.13	3.19	-0.5	5	114.6	0.20	0.20	0.00	2.00	16.9	33.9	2.81	0.00
4.43	45.1	0.94	2.09	-0.4	6	114.6	0.26	0.26	0.00	1.97	17.3	34.1	3.59	0.19
5.41	40.7	0.54	1.33	-0.9	7	117.8	0.31	0.31	0.00	1.78	13.0	23.2	UnDef	0.13
6.40	37.6	0.47	1.25	-1.5	7	117.8	0.37	0.37	0.00	1.64	12.0	19.7	UnDef	0.12
7.30	33.7	0.33	0.99	-1.2	7	117.8	0.43	0.43	0.00	1.53	10.8	16.5	UnDef	0.10
8.20	20.1	0.29	1.46	0.4	6	114.6	0.48	0.48	0.00	1.45	7.7	11.1	1.57	0.10
9.19	65.3	0.36	0.55	-1.0	8	120.9	0.54	0.54	0.00	1.37	15.6	21.4	UnDef	0.15
10.17	82.1	0.74	0.89	-1.2	8	120.9	0.59	0.59	0.00	1.30	19.7	25.5	UnDef	0.21
11.15	124.8	0.77	0.62	-1.4	9	124.1	0.66	0.66	0.00	1.24	23.9	29.5	UnDef	0.40
12.14	158.6	0.80	0.51	-1.5	9	124.1	0.72	0.72	0.00	1.18	30.4	35.9	UnDef	0.00
13.21	170.6	0.84	0.49	-2.5	9	124.1	0.78	0.78	0.00	1.13	32.7	36.9	UnDef	0.00
14.27	162.0	0.57	0.35	-3.9	9	124.1	0.85	0.85	0.00	1.09	31.0	33.7	UnDef	0.00
15.26	132.7	0.48	0.36	-8.7	9	124.1	0.91	0.90	0.01	1.05	25.4	26.8	UnDef	0.32
16.24	56.7	0.58	1.03	-4.1	7	117.8	0.97	0.93	0.04	1.04	18.1	18.8	UnDef	0.13
17.22	28.3	0.43	1.51	1.9	6	114.6	1.03	0.96	0.07	1.02	10.8	11.1	2.18	0.13
18.21	33.5	0.55	1.65	-15.2	6	114.6	1.08	0.98	0.10	1.01	12.8	13.0	2.59	0.14
19.19	23.1	0.39	1.68	-8.1	6	114.6	1.14	1.01	0.13	1.00	8.9	8.8	1.76	0.20
20.18	119.8	0.75	0.63	2.3	9	124.1	1.20	1.04	0.16	0.98	22.9	22.5	UnDef	0.25
21.16	233.3	0.51	0.22	0.4	10	127.3	1.26	1.07	0.19	0.97	37.2	36.0	UnDef	0.00
22.15	259.0	0.58	0.23	-3.2	10	127.3	1.32	1.10	0.22	0.95	41.3	39.4	UnDef	0.00
23.13	256.6	0.57	0.22	-9.4	10	127.3	1.39	1.13	0.25	0.94	41.0	38.5	UnDef	0.00
24.11	236.8	1.06	0.45	-12.3	9	124.1	1.45	1.16	0.28	0.93	45.4	42.1	UnDef	0.00
25.10	279.1	2.35	0.84	-14.5	9	124.1	1.51	1.19	0.32	0.92	53.5	49.0	UnDef	0.00
26.08	247.7	1.46	0.59	-14.9	9	124.1	1.57	1.22	0.35	0.90	47.4	42.9	UnDef	0.00
27.07	313.8	2.64	0.84	-17.1	9	124.1	1.63	1.25	0.38	0.89	60.1	53.7	UnDef	0.00
28.05	301.1	0.92	0.31	-13.9	10	127.3	1.69	1.28	0.41	0.88	48.1	42.4	UnDef	0.00
29.04	119.9	1.00	0.84	-1.6	8	120.9	1.75	1.31	0.44	0.87	28.7	25.0	UnDef	0.24
30.02	98.7	0.90	0.92	-3.2	8	120.9	1.81	1.34	0.47	0.86	23.6	20.4	UnDef	0.19
31.00	74.8	1.12	1.50	0.9	7	117.8	1.87	1.37	0.50	0.85	23.9	20.4	UnDef	0.19
31.99	201.6	0.81	0.40	15.1	9	124.1	1.93	1.40	0.53	0.85	38.6	32.6	UnDef	0.00
32.97	108.0	1.24	1.15	-1.5	8	120.9	1.99	1.43	0.56	0.84	25.8	21.6	UnDef	0.23
33.96	87.5	1.45	1.66	-7.5	7	117.8	2.05	1.46	0.59	0.83	27.9	23.1	UnDef	0.24
34.94	323.7	1.34	0.41	-11.1	10	127.3	2.11	1.49	0.62	0.82	51.7	42.4	UnDef	0.00
35.92	192.5	1.74	0.90	-16.6	9	124.1	2.17	1.52	0.65	0.81	36.9	29.9	UnDef	0.00
36.91	188.8	1.28	0.68	-18.0	9	124.1	2.23	1.55	0.68	0.80	36.2	29.1	UnDef	0.44
37.89	150.3	1.54	1.02	-17.7	9	124.1	2.29	1.58	0.71	0.80	28.8	22.9	UnDef	0.34
38.88	101.8	1.14	1.12	-18.5	8	120.9	2.35	1.61	0.75	0.79	24.4	19.2	UnDef	0.21
39.86	210.4	0.86	0.41	-18.2	9	124.1	2.41	1.64	0.78	0.78	40.3	31.5	UnDef	0.00
40.85	134.4	1.16	0.87	-18.7	9	124.1	2.48	1.67	0.81	0.77	25.7	19.9	UnDef	0.26

For use with report dated 03/18/2005, RTF Job No 2004-700-21

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	64.0	0.83	1.29	-15.9	7	117.8	2.54	1.70	0.84	0.77	20.4	15.7	UnDef	0.17
42.81	169.9	1.11	0.66	-12.6	9	124.1	2.60	1.73	0.87	0.76	32.5	24.8	UnDef	0.33
43.80	134.7	3.27	2.43	-19.7	7	117.8	2.65	1.76	0.90	0.75	43.0	32.5	UnDef	0.00
44.78	247.1	3.08	1.25	-24.9	9	124.1	2.71	1.78	0.93	0.75	47.3	35.4	UnDef	0.00

For use with report dated 03/18/2005. RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4809
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-16
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 08:49
CPT File: 890C16.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 4.57 (ft): 15.0
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-04	0.00	1000.0	1.47	12	172.3	UnDef	UnDef	0.0	50	95.0	1.0	-0.46	UnDef	UnDef
1.48	5.0E-04	0.00	570.0	1.46	9	95.1	0.0	95.1	3.7	50	81.6	1.0	-0.40	0.0	31.7
2.46	5.0E-05	0.00	280.7	2.21	9	77.8	11.0	88.7	9.6	46	68.6	10.0	-0.39	2.6	33.7
3.44	5.0E-06	0.00	175.4	3.21	12	67.7	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
4.43	5.0E-05	0.00	174.5	2.11	9	86.4	20.6	107.0	12.2	44	63.3	10.0	-0.33	4.7	38.7
5.41	5.0E-04	0.00	128.5	1.34	9	71.0	12.9	83.9	10.7	44	57.5	1.0	-0.24	2.5	25.6
6.40	5.0E-04	0.00	100.1	1.26	9	60.3	14.6	75.0	12.3	42	52.8	1.0	-0.21	2.7	22.4
7.30	5.0E-04	0.00	78.3	1.00	9	50.6	13.2	63.8	12.8	42	47.8	1.0	-0.16	2.5	19.0
8.20	5.0E-05	0.00	41.1	1.49	7	28.4	27.2	55.7	23.3	38	31.2	6.0	-0.14	4.9	16.0
9.19	5.0E-03	0.00	120.9	0.55	9	87.3	2.1	89.4	5.9	42	63.4	1.0	-0.15	0.3	21.7
10.17	5.0E-03	0.00	137.1	0.90	9	104.2	7.9	112.1	7.6	44	68.5	1.0	-0.21	1.2	26.7
11.15	5.0E-02	0.00	189.5	0.62	9	150.9	0.0	150.9	3.8	44	79.1	1.0	-0.20	0.0	29.5
12.14	5.0E-02	0.00	220.4	0.51	9	183.4	0.0	183.4	2.3	46	84.7	1.0	-0.20	0.0	35.9
13.21	5.0E-02	0.00	217.0	0.49	9	188.7	0.0	188.7	2.2	46	85.5	1.0	-0.19	0.0	36.9
14.27	5.0E-02	0.00	189.9	0.35	9	172.1	0.0	172.1	1.7	44	82.8	1.0	-0.15	0.0	33.7
15.26	5.0E-02	0.00	146.1	0.36	9	136.7	0.0	136.7	3.1	44	76.2	1.0	-0.13	0.0	26.8
16.24	5.0E-04	0.00	59.9	1.05	7	57.5	23.2	80.7	15.8	40	51.4	1.0	-0.14	4.1	22.9
17.22	5.0E-05	0.00	28.5	1.56	7	28.3	50.5	78.8	29.0	36	31.1	6.0	-0.11	7.4	18.5
18.21	5.0E-05	-0.02	33.0	1.70	7	33.1	51.0	84.1	27.7	36	35.6	6.0	-0.13	7.9	20.9
19.19	5.0E-05	-0.02	21.8	1.76	6	22.5	86.9	109.4	34.7	34	30.0	6.0	-0.09	8.7	17.5
20.18	5.0E-02	0.00	114.4	0.63	9	115.2	6.3	121.5	6.9	42	71.3	1.0	-0.16	0.8	23.3
21.16	5.0E+00	0.00	217.4	0.22	10	221.0	0.0	221.0	0.1	46	90.0	1.0	-0.13	0.0	36.0
22.15	5.0E+00	0.00	234.4	0.23	10	241.8	0.0	241.8	0.0	46	92.6	1.0	-0.14	0.0	39.4
23.13	5.0E+00	0.00	225.6	0.23	10	236.1	0.0	236.1	0.0	46	91.9	1.0	-0.13	0.0	38.5
24.11	5.0E-02	0.00	202.5	0.45	9	214.9	0.0	214.9	2.2	46	89.2	1.0	-0.18	0.0	42.1
25.10	5.0E-02	0.00	232.8	0.85	9	250.1	0.0	250.1	4.2	46	93.6	1.0	-0.25	0.0	49.0
26.08	5.0E-02	0.00	201.2	0.59	9	219.2	0.0	219.2	3.3	46	89.8	1.0	-0.20	0.0	42.9
27.07	5.0E-02	0.00	249.1	0.84	9	274.3	0.0	274.3	3.9	46	95.0	1.0	-0.26	0.0	53.7
28.05	5.0E+00	0.00	233.1	0.31	10	260.0	0.0	260.0	0.5	46	94.7	1.0	-0.16	0.0	42.4
29.04	5.0E-03	0.00	89.8	0.85	9	102.3	17.4	119.7	10.5	42	67.9	1.0	-0.16	2.5	27.5
30.02	5.0E-03	-0.01	72.1	0.93	9	83.3	22.8	106.1	13.0	40	62.0	1.0	-0.15	3.2	23.6
31.00	5.0E-04	-0.01	53.1	1.54	7	62.5	43.7	106.1	20.4	40	53.8	1.0	-0.17	7.1	27.4
31.99	5.0E-02	0.00	142.5	0.41	9	166.7	0.0	166.7	3.6	44	81.9	1.0	-0.14	0.0	32.6
32.97	5.0E-03	-0.01	74.1	1.17	9	88.3	30.0	118.3	14.5	40	63.7	1.0	-0.17	4.1	25.7
33.96	5.0E-04	-0.01	58.6	1.70	7	70.9	48.5	119.4	20.2	40	57.4	1.0	-0.19	7.9	31.0
34.94	5.0E+00	0.00	216.1	0.42	9	259.7	0.0	259.7	1.7	46	94.6	1.0	-0.18	0.0	42.4
35.92	5.0E-02	-0.01	125.3	0.91	9	152.9	14.9	167.8	8.3	44	79.4	1.0	-0.20	1.8	31.7
36.91	5.0E-02	-0.01	120.4	0.69	9	148.4	8.4	156.8	7.0	42	78.6	1.0	-0.17	1.0	30.1
37.89	5.0E-02	-0.01	93.7	1.04	9	117.0	24.4	141.4	11.5	42	71.8	1.0	-0.19	2.8	25.7
38.88	5.0E-03	-0.01	61.8	1.15	7	78.5	33.3	111.9	16.2	40	60.3	1.0	-0.16	4.4	23.6
39.86	5.0E-02	-0.01	126.9	0.41	9	160.8	0.0	160.8	4.4	44	80.9	1.0	-0.13	0.0	31.5
40.85	5.0E-02	-0.01	79.1	0.88	9	101.8	22.6	124.4	11.8	42	67.8	1.0	-0.15	2.6	22.5

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Dei(n1)60	(N1)60cs
41.83	5.0E-04	-0.02	36.2	1.34	7	48.0	49.5	97.5	24.0	38	46.3	1.0	-0.12	7.3	23.0
42.81	5.0E-02	-0.01	96.9	0.67	9	126.5	12.7	139.3	8.4	42	74.0	1.0	-0.15	1.5	26.3
43.80	5.0E-04	-0.01	75.2	2.48	7	99.5	77.2	176.7	21.4	40	67.1	1.0	-0.27	12.2	44.7
44.78	5.0E-02	-0.01	137.0	1.26	9	181.0	26.8	207.8	9.8	44	84.3	1.0	-0.24	3.1	38.5

For use with report dated 03/18/2005. RTF Job No. 2004-700-21

For use with report dated 03/18/2005: RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e

Run No: 01-0316-0548-4837
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-17
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 11:27
CPT File: 031C17.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.47 (ft): 8.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	11.9	0.28	2.35	2.5	5	114.6	0.03	0.03	0.00	2.00	5.7	11.4	0.95	0.00
1.48	14.5	0.44	3.07	3.6	5	114.6	0.08	0.08	0.00	2.00	6.9	13.8	1.15	0.00
2.46	15.8	0.69	4.37	4.2	3	111.4	0.14	0.14	0.00	2.00	15.1	30.2	1.25	0.00
3.44	10.7	0.48	4.44	4.3	3	111.4	0.20	0.20	0.00	2.00	10.3	20.6	0.84	0.13
4.43	19.7	0.37	1.88	4.8	6	114.6	0.25	0.25	0.00	2.00	7.5	15.0	1.55	0.10
5.41	23.2	0.31	1.32	5.1	6	114.6	0.31	0.31	0.00	1.80	8.9	16.1	1.83	0.10
6.40	74.9	0.26	0.35	6.3	8	120.9	0.36	0.36	0.00	1.66	17.9	29.7	UnDef	0.25
7.30	88.5	0.33	0.38	6.7	8	120.9	0.42	0.42	0.00	1.54	21.2	32.7	UnDef	0.30
8.20	81.4	0.17	0.21	7.3	8	120.9	0.47	0.47	0.00	1.46	19.5	28.4	UnDef	0.23
9.19	56.1	0.10	0.18	8.6	8	120.9	0.53	0.50	0.03	1.41	13.4	19.0	UnDef	0.12
10.17	70.5	0.13	0.18	8.9	8	120.9	0.59	0.53	0.06	1.38	16.9	23.2	UnDef	0.16
11.15	97.2	0.17	0.17	9.6	9	124.1	0.65	0.56	0.10	1.34	18.6	24.9	UnDef	0.27
12.14	93.4	0.15	0.16	10.7	9	124.1	0.71	0.59	0.13	1.30	17.9	23.3	UnDef	0.24
13.21	101.1	0.12	0.11	11.7	9	124.1	0.78	0.62	0.16	1.27	19.4	24.6	UnDef	0.26
14.27	54.0	0.42	0.78	11.8	8	120.9	0.85	0.65	0.19	1.24	12.9	16.0	UnDef	0.12
15.26	33.1	0.60	1.82	12.6	6	114.6	0.90	0.68	0.22	1.21	12.7	15.4	2.58	0.13
16.24	75.8	0.47	0.62	13.6	8	120.9	0.96	0.71	0.25	1.19	18.2	21.6	UnDef	0.16
17.22	181.5	0.41	0.23	15.3	9	124.1	1.02	0.74	0.28	1.16	34.8	40.5	UnDef	0.00
18.21	199.9	0.51	0.26	16.7	9	124.1	1.08	0.77	0.32	1.14	38.3	43.7	UnDef	0.00
19.19	238.6	0.70	0.29	20.4	10	127.3	1.15	0.80	0.35	1.12	38.1	42.6	UnDef	0.00
20.18	262.6	0.77	0.29	21.4	10	127.3	1.21	0.83	0.38	1.10	41.9	46.0	UnDef	0.00
21.16	365.7	3.03	0.83	24.2	9	124.1	1.27	0.86	0.41	1.08	70.0	75.5	UnDef	0.00
22.15	237.6	0.84	0.35	32.2	10	127.3	1.33	0.89	0.44	1.06	37.9	40.1	UnDef	0.00
23.13	233.6	0.61	0.26	34.5	10	127.3	1.39	0.92	0.47	1.04	37.3	38.8	UnDef	0.00
24.11	237.9	0.66	0.28	35.9	10	127.3	1.46	0.96	0.50	1.02	38.0	38.8	UnDef	0.00
25.10	241.6	0.62	0.26	38.7	10	127.3	1.52	0.99	0.53	1.01	38.6	38.8	UnDef	0.00
26.08	235.4	0.89	0.38	40.5	10	127.3	1.58	1.02	0.56	0.99	37.6	37.2	UnDef	0.00
27.07	255.4	0.80	0.31	40.7	10	127.3	1.64	1.05	0.59	0.97	40.8	39.7	UnDef	0.00
28.05	257.1	0.89	0.35	41.2	10	127.3	1.71	1.08	0.62	0.96	41.0	39.4	UnDef	0.00
29.04	273.7	1.26	0.46	43.0	10	127.3	1.77	1.12	0.65	0.95	43.7	41.3	UnDef	0.00
30.02	236.6	1.75	0.74	43.2	9	124.1	1.83	1.15	0.68	0.93	45.3	42.3	UnDef	0.00
31.00	179.3	1.24	0.69	43.6	9	124.1	1.89	1.18	0.72	0.92	34.3	31.6	UnDef	0.00
31.99	39.3	0.80	2.05	51.2	6	114.6	1.95	1.21	0.75	0.91	15.0	13.7	2.98	0.24
32.97	33.7	0.57	1.68	54.5	6	114.6	2.01	1.23	0.78	0.90	12.9	11.7	2.54	0.20
33.96	186.7	0.97	0.52	57.9	9	124.1	2.07	1.26	0.81	0.89	35.8	31.9	UnDef	0.00
34.94	310.9	1.17	0.38	52.7	10	127.3	2.13	1.29	0.84	0.88	49.6	43.7	UnDef	0.00
35.92	363.9	1.46	0.40	47.9	10	127.3	2.19	1.32	0.87	0.87	58.1	50.5	UnDef	0.00
36.91	323.8	1.61	0.50	47.1	10	127.3	2.25	1.35	0.90	0.86	51.7	44.4	UnDef	0.00
37.89	299.0	1.46	0.49	48.0	10	127.3	2.32	1.39	0.93	0.85	47.7	40.5	UnDef	0.00
38.88	259.0	1.09	0.42	48.8	10	127.3	2.38	1.42	0.96	0.84	41.3	34.7	UnDef	0.00
39.86	198.4	0.43	0.22	47.9	9	124.1	2.44	1.45	0.99	0.83	38.0	31.6	UnDef	0.00
40.85	143.5	0.41	0.29	46.9	9	124.1	2.50	1.48	1.02	0.82	27.5	22.6	UnDef	0.22

Gregg In Situ, Inc.
Run No: 01-0316-0548-4837
CPT File: 031C17.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	54.2	0.94	1.73	47.7	7	117.8	2.56	1.51	1.05	0.81	17.3	14.1	UnDef	0.21
42.81	307.4	1.03	0.34	56.7	10	127.3	2.62	1.54	1.08	0.81	49.1	39.6	UnDef	0.00
43.80	274.8	1.54	0.56	54.2	9	124.1	2.68	1.57	1.11	0.80	52.6	42.0	UnDef	0.00
44.78	154.8	0.48	0.31	49.1	9	124.1	2.75	1.60	1.15	0.79	29.6	23.4	UnDef	0.24
45.77	18.4	0.26	1.42	45.0	6	114.6	2.80	1.63	1.18	0.78	7.0	5.5	1.25	0.11
46.75	29.3	0.61	2.07	51.7	6	114.6	2.86	1.65	1.21	0.78	11.2	8.7	2.12	0.21
47.74	53.9	1.52	2.81	84.1	6	114.6	2.92	1.68	1.24	0.77	20.7	15.9	4.08	0.00
48.72	160.6	3.63	2.26	96.1	7	117.8	2.97	1.71	1.27	0.77	51.3	39.3	UnDef	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005: RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4837
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-17
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 11:27
CPT File: 031C17.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.47 (ft): 8.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-06	0.01	420.1	2.36	12	22.7	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
1.48	5.0E-06	0.01	169.9	3.09	12	27.7	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
2.46	5.0E-08	0.01	111.6	4.41	11	30.2	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
3.44	5.0E-08	0.01	54.0	4.52	6	20.6	63.2	83.7	33.3	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
4.43	5.0E-05	0.01	77.4	1.90	7	37.6	20.7	58.4	18.3	40	39.9	10.0	-0.23	4.3	19.3
5.41	5.0E-05	0.01	74.6	1.34	7	41.0	16.0	57.0	15.5	40	41.7	10.0	-0.19	3.4	19.5
6.40	5.0E-03	0.00	204.2	0.35	9	121.3	0.0	121.3	1.4	46	72.8	1.0	-0.16	0.0	29.7
7.30	5.0E-03	0.00	210.0	0.38	9	133.7	0.0	133.7	1.5	46	75.6	1.0	-0.17	0.0	32.7
8.20	5.0E-03	0.00	171.8	0.21	9	116.1	0.0	116.1	0.9	44	71.5	1.0	-0.10	0.0	28.4
9.19	5.0E-03	0.00	111.2	0.19	9	77.6	0.0	77.6	2.9	42	60.0	1.0	-0.06	0.0	19.0
10.17	5.0E-03	0.00	132.3	0.18	9	94.9	0.0	94.9	1.9	44	65.8	1.0	-0.07	0.0	23.2
11.15	5.0E-02	0.00	173.1	0.17	9	127.4	0.0	127.4	0.6	44	74.2	1.0	-0.09	0.0	24.9
12.14	5.0E-02	0.00	157.6	0.16	9	119.2	0.0	119.2	0.8	44	72.3	1.0	-0.07	0.0	23.3
13.21	5.0E-02	0.00	161.5	0.12	10	125.5	0.0	125.5	0.3	44	73.8	1.0	-0.05	0.0	24.6
14.27	5.0E-03	0.00	81.4	0.79	9	65.4	12.2	77.6	10.9	42	55.1	1.0	-0.15	1.7	17.7
15.26	5.0E-05	0.01	47.4	1.87	7	39.3	39.6	78.9	23.8	38	40.5	6.0	-0.18	7.0	22.4
16.24	5.0E-03	0.00	105.8	0.62	9	88.2	6.1	94.3	7.4	42	63.7	1.0	-0.15	0.9	22.5
17.22	5.0E-02	0.00	244.7	0.23	10	206.8	0.0	206.8	0.0	46	88.1	1.0	-0.14	0.0	40.5
18.21	5.0E-02	0.00	258.9	0.26	10	223.2	0.0	223.2	0.0	46	90.3	1.0	-0.16	0.0	43.7
19.19	5.0E+00	0.00	297.2	0.29	10	261.2	0.0	261.2	0.0	46	94.8	1.0	-0.18	0.0	42.6
20.18	5.0E+00	0.00	314.6	0.30	10	281.9	0.0	281.9	0.0	46	95.0	1.0	-0.18	0.0	46.0
21.16	5.0E-02	0.00	422.8	0.83	9	385.5	0.0	385.5	1.7	48	95.0	1.0	-0.30	0.0	75.5
22.15	5.0E+00	0.00	264.6	0.35	10	246.1	0.0	246.1	0.4	46	93.1	1.0	-0.18	0.0	40.1
23.13	5.0E+00	0.00	251.0	0.26	10	237.7	0.0	237.7	0.0	46	92.1	1.0	-0.15	0.0	38.8
24.11	5.0E+00	0.00	247.1	0.28	10	238.0	0.0	238.0	0.1	46	92.1	1.0	-0.16	0.0	38.8
25.10	5.0E+00	0.00	242.8	0.26	10	237.8	0.0	237.8	0.0	46	92.1	1.0	-0.15	0.0	38.8
26.08	5.0E+00	0.00	229.1	0.38	9	228.0	0.0	228.0	1.2	46	90.9	1.0	-0.18	0.0	37.2
27.07	5.0E+00	0.00	241.0	0.32	10	243.6	0.0	243.6	0.4	46	92.8	1.0	-0.17	0.0	39.7
28.05	5.0E+00	0.00	235.4	0.35	10	241.5	0.0	241.5	0.8	46	92.6	1.0	-0.17	0.0	39.4
29.04	5.0E+00	0.00	243.5	0.46	9	253.5	0.0	253.5	1.5	46	93.9	1.0	-0.20	0.0	41.3
30.02	5.0E-02	0.00	204.6	0.74	9	216.1	0.0	216.1	4.2	46	89.4	1.0	-0.23	0.0	42.3
31.00	5.0E-02	0.00	150.6	0.70	9	161.7	2.7	164.4	5.6	44	81.0	1.0	-0.19	0.3	32.0
31.99	5.0E-05	0.02	30.9	2.15	6	35.0	83.7	118.7	31.4	36	37.2	6.0	-0.14	10.8	24.5
32.97	5.0E-05	0.03	25.8	1.78	7	29.8	77.6	107.4	32.1	36	32.5	6.0	-0.10	9.6	21.3
33.96	5.0E-02	0.01	146.6	0.53	9	162.8	0.0	162.8	4.5	44	81.2	1.0	-0.16	0.0	31.9
34.94	5.0E+00	0.00	239.2	0.38	10	267.8	0.0	267.8	1.0	46	95.0	1.0	-0.18	0.0	43.7
35.92	5.0E+00	0.00	273.4	0.40	10	309.6	0.0	309.6	0.7	46	95.0	1.0	-0.20	0.0	50.5
36.91	5.0E+00	0.00	237.4	0.50	9	272.3	0.0	272.3	1.9	46	95.0	1.0	-0.20	0.0	44.4
37.89	5.0E+00	0.00	214.0	0.49	9	248.5	0.0	248.5	2.3	46	93.4	1.0	-0.19	0.0	40.5
38.88	5.0E+00	0.00	180.9	0.42	9	212.8	0.0	212.8	2.5	44	88.9	1.0	-0.17	0.0	34.7
39.86	5.0E-02	0.00	135.2	0.22	9	161.3	0.0	161.3	2.2	44	81.0	1.0	-0.09	0.0	31.6
40.85	5.0E-02	0.00	95.3	0.29	9	115.4	0.0	115.4	5.0	42	71.4	1.0	-0.08	0.0	22.6

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-04	0.01	34.2	1.81	7	43.2	67.9	111.1	27.9	38	43.2	1.0	-0.14	8.7	22.8
42.81	5.0E+00	0.00	198.1	0.34	9	242.6	0.0	242.6	1.4	46	92.7	1.0	-0.15	0.0	39.6
43.80	5.0E-02	0.00	173.4	0.56	9	214.7	0.0	214.7	3.9	44	89.2	1.0	-0.19	0.0	42.0
44.78	5.0E-02	0.00	95.0	0.32	9	119.8	0.0	119.8	5.0	42	72.4	1.0	-0.08	0.0	23.4
45.77	5.0E-05	0.01	9.6	1.67	6	14.1	56.4	70.5	50.6	30	30.0	3.0	0.00	5.5	11.0
46.75	5.0E-05	0.02	16.0	2.29	6	22.3	89.3	111.6	43.8	32	30.0	6.0	-0.08	8.7	17.5
47.74	5.0E-05	0.03	30.4	2.97	6	40.7	162.9	203.7	35.9	36	41.5	6.0	-0.18	15.9	31.9
48.72	5.0E-04	0.01	92.4	2.30	7	120.3	67.3	187.6	18.4	42	72.6	1.0	-0.28	11.4	50.6

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4864
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-18
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 11:01
CPT File: 031C18.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.83 (ft): 9.3
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	10.0	0.34	3.38	8.9	3	111.4	0.03	0.03	0.00	2.00	9.6	19.2	0.80	0.00
1.48	23.8	0.98	4.11	36.2	4	114.6	0.08	0.08	0.00	2.00	15.2	30.3	1.89	0.00
2.46	19.3	0.78	4.06	31.6	3	111.4	0.14	0.14	0.00	2.00	18.5	36.9	1.53	0.00
3.44	20.3	0.34	1.69	19.0	6	114.6	0.19	0.19	0.00	2.00	7.8	15.5	1.61	0.09
4.43	9.9	0.24	2.43	8.0	5	114.6	0.25	0.25	0.00	2.00	4.7	9.5	0.77	0.10
5.41	18.4	0.31	1.69	10.8	6	114.6	0.31	0.31	0.00	1.80	7.0	12.7	1.45	0.10
6.40	47.6	0.26	0.55	24.9	8	120.9	0.36	0.36	0.00	1.66	11.4	18.9	UnDef	0.12
7.30	27.7	0.24	0.88	17.9	7	117.8	0.42	0.42	0.00	1.55	8.8	13.6	UnDef	0.10
8.20	13.0	0.50	3.84	27.1	3	111.4	0.47	0.47	0.00	1.46	12.4	18.1	1.00	0.15
9.19	25.1	0.81	3.23	55.9	5	114.6	0.53	0.53	0.00	1.38	12.0	16.6	1.97	0.20
10.17	42.3	0.80	1.89	62.4	6	114.6	0.58	0.56	0.03	1.34	16.2	21.7	3.34	0.14
11.15	14.9	0.45	3.03	43.7	5	114.6	0.64	0.58	0.06	1.31	7.1	9.4	1.14	0.16
12.14	110.8	0.59	0.54	140.1	9	124.1	0.70	0.61	0.09	1.28	21.2	27.2	UnDef	0.33
13.21	149.9	0.56	0.37	87.8	9	124.1	0.76	0.64	0.12	1.25	28.7	35.8	UnDef	0.00
14.27	125.0	0.36	0.29	63.3	9	124.1	0.83	0.67	0.16	1.22	23.9	29.2	UnDef	0.39
15.26	23.3	0.52	2.22	54.3	6	114.6	0.89	0.70	0.19	1.19	8.9	10.7	1.79	0.16
16.24	28.6	0.83	2.89	101.6	5	114.6	0.95	0.73	0.22	1.17	13.7	16.0	2.21	0.25
17.22	137.4	0.74	0.54	157.1	9	124.1	1.00	0.76	0.25	1.15	26.3	30.3	UnDef	0.42
18.21	157.9	0.36	0.23	94.8	9	124.1	1.06	0.79	0.28	1.13	30.2	34.1	UnDef	0.00
19.19	142.9	0.36	0.25	62.8	9	124.1	1.13	0.82	0.31	1.11	27.4	30.3	UnDef	0.42
20.18	170.6	0.55	0.32	82.9	9	124.1	1.19	0.85	0.34	1.09	32.7	35.5	UnDef	0.00
21.16	254.5	1.51	0.59	133.4	9	124.1	1.25	0.88	0.37	1.07	48.8	52.0	UnDef	0.00
22.15	240.3	1.64	0.68	94.6	9	124.1	1.31	0.91	0.40	1.05	46.0	48.3	UnDef	0.00
23.13	233.4	1.33	0.57	69.1	9	124.1	1.37	0.94	0.43	1.03	44.7	46.1	UnDef	0.00
24.11	260.9	1.43	0.55	93.1	9	124.1	1.43	0.97	0.46	1.02	50.0	50.8	UnDef	0.00
25.10	266.9	1.05	0.39	114.0	10	127.3	1.49	1.00	0.49	1.00	42.6	42.6	UnDef	0.00
26.08	267.4	1.14	0.42	61.7	10	127.3	1.56	1.03	0.52	0.98	42.7	42.0	UnDef	0.00
27.07	288.9	1.46	0.50	61.6	10	127.3	1.62	1.06	0.55	0.97	46.1	44.7	UnDef	0.00
28.05	276.3	1.18	0.43	101.5	10	127.3	1.68	1.10	0.59	0.96	44.1	42.1	UnDef	0.00
29.04	270.5	1.55	0.57	65.6	9	124.1	1.74	1.13	0.62	0.94	51.8	48.8	UnDef	0.00
30.02	266.4	1.66	0.62	50.1	9	124.1	1.80	1.16	0.65	0.93	51.0	47.4	UnDef	0.00
31.00	253.8	1.49	0.59	75.5	9	124.1	1.87	1.19	0.68	0.92	48.6	44.6	UnDef	0.00
31.99	220.8	2.00	0.91	75.4	9	124.1	1.93	1.22	0.71	0.91	42.3	38.3	UnDef	0.00
32.97	352.8	2.06	0.58	78.0	10	127.3	1.99	1.25	0.74	0.89	56.3	50.4	UnDef	0.00
33.96	440.1	4.36	0.99	171.6	9	124.1	2.05	1.28	0.77	0.88	84.3	74.5	UnDef	0.00
34.94	222.8	3.02	1.35	106.5	8	120.9	2.11	1.31	0.80	0.87	53.3	46.6	UnDef	0.00
35.92	72.1	1.35	1.87	64.7	7	117.8	2.17	1.34	0.83	0.86	23.0	19.9	UnDef	0.23
36.91	96.1	1.41	1.46	66.1	8	120.9	2.23	1.37	0.86	0.86	23.0	19.7	UnDef	0.24
37.89	22.0	0.62	2.83	115.0	5	114.6	2.29	1.39	0.89	0.85	10.5	8.9	1.58	0.15
38.88	36.1	0.39	1.08	164.8	7	117.8	2.34	1.42	0.92	0.84	11.5	9.7	UnDef	0.13
39.86	23.8	0.42	1.78	191.3	6	114.6	2.40	1.45	0.95	0.83	9.1	7.6	1.72	0.16
40.85	83.2	0.76	0.91	37.5	8	120.9	2.46	1.47	0.98	0.82	19.9	16.4	UnDef	0.16

Gregg In Situ, Inc.
Run No: 01-0316-0548-4864
CPT File: 031C18.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
41.83	75.8	1.18	1.56	64.7	7	117.8	2.52	1.50	1.02	0.82	24.2	19.8	UnDef	0.20
42.81	302.0	2.03	0.67	42.3	9	124.1	2.58	1.53	1.05	0.81	57.8	46.8	UnDef	0.00
43.80	278.5	1.63	0.59	32.7	9	124.1	2.64	1.56	1.08	0.80	53.3	42.7	UnDef	0.00
44.78	232.2	2.24	0.96	30.6	9	124.1	2.70	1.59	1.11	0.79	44.5	35.3	UnDef	0.00
45.77	300.3	2.29	0.76	35.1	9	124.1	2.76	1.62	1.14	0.79	57.5	45.2	UnDef	0.00
46.75	321.9	1.39	0.43	48.1	10	127.3	2.82	1.65	1.17	0.78	51.4	40.0	UnDef	0.00
47.74	283.7	1.47	0.52	49.0	10	127.3	2.88	1.68	1.20	0.77	45.3	34.9	UnDef	0.00
48.72	182.3	3.74	2.05	38.1	7	117.8	2.94	1.71	1.23	0.76	58.2	44.5	UnDef	0.00

For use with report dated 03/18/2005. RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4864
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-18
Engineer: MARK FRANKIAN
CPT Date: 01/31/01
CPT Time: 11:01
CPT File: 031C18.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 2.83 (ft): 9.3
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-08	0.03	364.9	3.39	12	19.2	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
1.48	5.0E-07	0.05	285.1	4.12	12	45.5	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
2.46	5.0E-08	0.05	138.0	4.09	12	36.9	UnDef	UnDef	0.0	UnDef	UnDef	10.0	UnDef	UnDef	UnDef
3.44	5.0E-05	0.03	103.5	1.70	7	38.9	13.2	52.1	14.5	42	44.4	10.0	-0.24	2.9	18.5
4.43	5.0E-06	0.03	38.6	2.49	7	19.0	37.6	56.6	29.9	UnDef	UnDef	6.0	UnDef	6.7	16.2
5.41	5.0E-05	0.02	58.9	1.72	7	32.5	22.4	54.9	20.3	40	35.0	10.0	-0.19	4.4	17.1
6.40	5.0E-03	0.02	129.4	0.55	9	77.1	1.0	78.1	5.5	44	59.8	1.0	-0.16	0.1	19.0
7.30	5.0E-04	0.02	65.1	0.89	9	41.8	12.7	54.5	13.7	40	42.3	1.0	-0.13	2.3	16.0
8.20	5.0E-08	0.07	26.6	3.98	6	18.5	74.1	92.6	42.5	UnDef	UnDef	6.0	UnDef	18.1	36.2
9.19	5.0E-06	0.07	46.8	3.30	6	33.9	75.1	109.0	30.8	UnDef	UnDef	6.0	UnDef	12.6	29.1
10.17	5.0E-05	0.05	75.1	1.92	7	55.5	32.0	87.6	18.7	40	50.4	10.0	-0.22	6.5	28.2
11.15	5.0E-06	0.09	24.5	3.16	6	19.1	76.5	95.6	40.4	UnDef	UnDef	6.0	UnDef	9.4	18.7
12.14	5.0E-02	0.04	180.8	0.54	9	138.9	0.0	138.9	3.4	44	76.7	1.0	-0.18	0.0	27.2
13.21	5.0E-02	0.02	232.4	0.37	9	183.1	0.0	183.1	1.0	46	84.6	1.0	-0.18	0.0	35.8
14.27	5.0E-02	0.01	184.1	0.29	9	149.0	0.0	149.0	1.4	44	78.7	1.0	-0.13	0.0	29.2
15.26	5.0E-05	0.07	31.9	2.31	6	27.2	68.3	95.5	31.8	36	30.0	6.0	-0.15	8.6	19.3
16.24	5.0E-06	0.11	38.0	2.98	6	32.8	90.1	122.9	32.5	UnDef	UnDef	6.0	UnDef	13.6	29.6
17.22	5.0E-02	0.03	180.3	0.54	9	154.6	0.0	154.6	3.5	44	79.8	1.0	-0.18	0.0	30.3
18.21	5.0E-02	0.02	199.3	0.23	10	174.2	0.0	174.2	0.5	46	83.2	1.0	-0.12	0.0	34.1
19.19	5.0E-02	0.01	173.5	0.25	9	154.7	0.0	154.7	1.3	44	79.8	1.0	-0.12	0.0	30.3
20.18	5.0E-02	0.01	199.9	0.32	9	181.4	0.0	181.4	1.3	46	84.3	1.0	-0.15	0.0	35.5
21.16	5.0E-02	0.01	288.6	0.60	9	265.9	0.0	265.9	1.7	46	95.0	1.0	-0.24	0.0	52.0
22.15	5.0E-02	0.01	263.1	0.69	9	246.7	0.0	246.7	2.7	46	93.2	1.0	-0.24	0.0	48.3
23.13	5.0E-02	0.01	247.2	0.57	9	235.8	0.0	235.8	2.2	46	91.9	1.0	-0.22	0.0	46.1
24.11	5.0E-02	0.01	267.8	0.55	9	259.4	0.0	259.4	1.7	46	94.6	1.0	-0.22	0.0	50.8
25.10	5.0E+00	0.01	265.4	0.40	10	261.2	0.0	261.2	0.7	46	94.8	1.0	-0.19	0.0	42.6
26.08	5.0E+00	0.01	257.7	0.43	9	257.6	0.0	257.6	1.0	46	94.4	1.0	-0.20	0.0	42.0
27.07	5.0E+00	0.00	270.1	0.51	9	274.1	0.0	274.1	1.4	46	95.0	1.0	-0.22	0.0	44.7
28.05	5.0E+00	0.01	250.7	0.43	9	258.3	0.0	258.3	1.1	46	94.5	1.0	-0.19	0.0	42.1
29.04	5.0E-02	0.01	238.5	0.58	9	249.4	0.0	249.4	2.4	46	93.5	1.0	-0.22	0.0	48.8
30.02	5.0E-02	0.00	228.6	0.63	9	242.3	0.0	242.3	2.9	46	92.6	1.0	-0.22	0.0	47.4
31.00	5.0E-02	0.01	212.1	0.59	9	227.9	0.0	227.9	3.0	46	90.9	1.0	-0.21	0.0	44.6
31.99	5.0E-02	0.01	179.7	0.92	9	195.8	5.5	201.3	6.0	44	86.5	1.0	-0.23	0.7	39.0
32.97	5.0E+00	0.00	280.9	0.59	9	309.0	0.0	309.0	1.8	46	95.0	1.0	-0.23	0.0	50.4
33.96	5.0E-02	0.01	342.2	0.99	9	380.6	0.0	380.6	3.4	48	95.0	1.0	-0.30	0.0	74.5
34.94	5.0E-03	0.01	168.5	1.37	9	190.5	22.7	213.2	9.0	44	85.8	1.0	-0.27	3.3	49.9
35.92	5.0E-04	0.02	52.2	1.93	7	61.0	55.8	116.7	22.9	40	53.1	1.0	-0.19	8.5	28.4
36.91	5.0E-03	0.01	68.7	1.50	7	80.4	39.4	119.8	17.3	40	61.0	1.0	-0.19	5.1	24.8
37.89	5.0E-06	0.14	14.2	3.16	4	18.3	73.0	91.3	51.2	UnDef	UnDef	6.0	UnDef	8.9	17.9
38.88	5.0E-04	0.13	23.8	1.15	7	29.6	51.3	80.9	28.7	34	32.4	1.0	-0.05	6.3	16.0
39.86	5.0E-05	0.23	14.8	1.98	6	19.4	77.6	97.0	43.4	32	30.0	6.0	-0.03	7.6	15.2
40.85	5.0E-03	0.00	54.8	0.94	7	67.1	27.5	94.5	15.9	40	55.8	1.0	-0.12	3.6	20.1

For use with report dated 03/18/2005; RTF Job No: 2004-700-21

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E-04	0.01	48.8	1.61	7	60.6	49.7	110.2	21.9	38	52.9	1.0	-0.16	7.8	27.5
42.81	5.0E-02	0.00	195.7	0.68	9	238.9	0.0	238.9	4.0	46	92.2	1.0	-0.21	0.0	46.8
43.80	5.0E-02	0.00	176.8	0.59	9	218.2	0.0	218.2	4.0	44	89.6	1.0	-0.19	0.0	42.7
44.78	5.0E-02	0.00	144.3	0.97	9	180.1	14.3	194.5	7.8	44	84.1	1.0	-0.22	1.7	37.0
45.77	5.0E-02	0.00	183.6	0.77	9	230.8	0.0	230.8	5.0	44	91.3	1.0	-0.22	0.0	45.2
46.75	5.0E+00	0.00	193.1	0.44	9	245.1	0.0	245.1	2.3	44	93.0	1.0	-0.17	0.0	40.0
47.74	5.0E+00	0.00	166.8	0.52	9	214.0	0.0	214.0	3.8	44	89.1	1.0	-0.18	0.0	34.9
48.72	5.0E-04	0.00	104.7	2.08	7	136.3	58.5	194.8	16.3	42	76.2	1.0	-0.28	10.3	54.8

For use with report dated 03/18/2005, RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4886
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-19
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 09:59
CPT File: 890C19.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.69 (ft): 12.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60	Su (tsf)	CRR
0.49	70.3	0.27	0.39	0.9	8	120.9	0.03	0.03	0.00	2.00	16.8	33.6	UnDef	0.31
1.48	102.3	0.41	0.40	1.2	9	124.1	0.09	0.09	0.00	2.00	19.6	39.2	UnDef	0.00
2.46	75.9	0.31	0.41	1.2	8	120.9	0.15	0.15	0.00	2.00	18.2	36.4	UnDef	0.37
3.44	77.9	0.27	0.34	1.3	8	120.9	0.21	0.21	0.00	2.00	18.6	37.3	UnDef	0.39
4.43	54.2	0.20	0.37	0.8	8	120.9	0.27	0.27	0.00	1.93	13.0	25.0	UnDef	0.18
5.41	66.9	0.25	0.38	0.5	8	120.9	0.33	0.33	0.00	1.74	16.0	27.9	UnDef	0.22
6.40	99.1	0.35	0.35	0.5	9	124.1	0.39	0.39	0.00	1.60	19.0	30.4	UnDef	0.43
7.30	87.6	0.37	0.42	0.5	8	120.9	0.44	0.44	0.00	1.50	21.0	31.5	UnDef	0.28
8.20	43.8	0.36	0.82	0.2	7	117.8	0.50	0.50	0.00	1.42	14.0	19.8	UnDef	0.11
9.19	38.0	0.18	0.47	-0.6	7	117.8	0.56	0.56	0.00	1.34	12.1	16.3	UnDef	0.09
10.17	62.3	0.24	0.39	-0.9	8	120.9	0.62	0.62	0.00	1.28	14.9	19.0	UnDef	0.12
11.15	88.1	0.25	0.28	-0.8	9	124.1	0.68	0.68	0.00	1.22	16.9	20.5	UnDef	0.19
12.14	97.5	0.15	0.15	-0.7	9	124.1	0.74	0.74	0.00	1.17	18.7	21.8	UnDef	0.21
13.21	112.6	0.18	0.16	-0.5	9	124.1	0.80	0.77	0.03	1.14	21.6	24.6	UnDef	0.26
14.27	119.3	0.18	0.15	-0.4	9	124.1	0.87	0.80	0.07	1.12	22.8	25.5	UnDef	0.29
15.26	98.3	0.15	0.15	-0.2	9	124.1	0.93	0.83	0.10	1.10	18.8	20.6	UnDef	0.19
16.24	37.3	0.41	1.11	-0.2	7	117.8	0.99	0.86	0.13	1.08	11.9	12.8	UnDef	0.11
17.22	24.6	0.34	1.39	0.3	6	114.6	1.05	0.89	0.16	1.06	9.4	10.0	1.88	0.12
18.21	26.8	0.41	1.53	0.5	6	114.6	1.10	0.91	0.19	1.05	10.3	10.7	2.05	0.13
19.19	106.8	0.27	0.25	2.1	9	124.1	1.16	0.94	0.22	1.03	20.5	21.1	UnDef	0.20
20.18	173.5	1.03	0.60	2.7	9	124.1	1.22	0.97	0.25	1.02	33.2	33.7	UnDef	0.00
21.16	197.1	0.91	0.46	4.4	9	124.1	1.28	1.00	0.28	1.00	37.7	37.7	UnDef	0.00
22.15	202.1	0.38	0.19	6.5	9	124.1	1.34	1.03	0.31	0.98	38.7	38.1	UnDef	0.00
23.13	216.4	0.47	0.22	6.5	10	127.3	1.41	1.06	0.34	0.97	34.5	33.5	UnDef	0.00
24.11	205.8	0.91	0.44	6.4	9	124.1	1.47	1.09	0.38	0.96	39.4	37.7	UnDef	0.00
25.10	260.9	1.19	0.46	8.4	10	127.3	1.53	1.12	0.41	0.94	41.6	39.3	UnDef	0.00
26.08	259.9	1.39	0.53	10.0	9	124.1	1.59	1.16	0.44	0.93	49.8	46.3	UnDef	0.00
27.07	278.3	0.95	0.34	10.8	10	127.3	1.65	1.19	0.47	0.92	44.4	40.8	UnDef	0.00
28.05	298.4	2.74	0.92	9.0	9	124.1	1.72	1.22	0.50	0.91	57.1	51.8	UnDef	0.00
29.04	262.2	0.84	0.32	6.3	10	127.3	1.78	1.25	0.53	0.89	41.9	37.5	UnDef	0.00
30.02	176.0	2.02	1.15	5.8	8	120.9	1.84	1.28	0.56	0.88	42.1	37.3	UnDef	0.00
31.00	244.0	1.67	0.68	6.1	9	124.1	1.90	1.31	0.59	0.87	46.7	40.9	UnDef	0.00
31.99	145.8	1.19	0.82	5.6	9	124.1	1.96	1.34	0.62	0.86	27.9	24.1	UnDef	0.32
32.97	300.3	1.81	0.60	5.7	9	124.1	2.02	1.37	0.65	0.85	57.5	49.2	UnDef	0.00
33.96	361.3	3.05	0.85	3.1	9	124.1	2.08	1.40	0.68	0.85	69.2	58.5	UnDef	0.00
34.94	309.3	1.79	0.58	3.3	10	127.3	2.14	1.43	0.71	0.84	49.4	41.3	UnDef	0.00
35.92	181.9	2.45	1.35	3.9	8	120.9	2.21	1.46	0.74	0.83	43.5	36.0	UnDef	0.00
36.91	136.8	2.54	1.86	5.5	7	117.8	2.26	1.49	0.77	0.82	43.7	35.8	UnDef	0.46
37.89	256.5	1.25	0.49	6.6	10	127.3	2.32	1.52	0.81	0.81	40.9	33.2	UnDef	0.00
38.88	111.5	0.41	0.37	5.4	9	124.1	2.39	1.55	0.84	0.80	21.4	17.2	UnDef	0.14
39.86	98.3	0.69	0.70	5.1	8	120.9	2.45	1.58	0.87	0.80	23.5	18.7	UnDef	0.17
40.85	283.5	1.01	0.35	4.0	10	127.3	2.51	1.61	0.90	0.79	45.2	35.7	UnDef	0.00

Gregg In Situ, Inc.
Run No: 01-0316-0548-4886
CPT File: 890C19.COR

Depth (ft)	AvgQt (tsf)	AvgFs (tsf)	AvgRf (%)	AvgUd (ft)	SBT	U.Wt. pcf	TStress (tsf)	EStress (tsf)	Ueq (tsf)	Cn	N60 (blows/ft)	(N1)60 (blows/ft)	Su (tsf)	CRR
41.83	284.7	1.33	0.47	-0.7	10	127.3	2.57	1.64	0.93	0.78	45.4	35.5	UnDef	0.00
42.81	297.3	1.11	0.37	-1.4	10	127.3	2.63	1.67	0.96	0.77	47.4	36.7	UnDef	0.00
43.80	303.5	1.24	0.41	-1.9	10	127.3	2.70	1.71	0.99	0.77	48.4	37.1	UnDef	0.00
44.78	312.7	1.29	0.41	-2.2	10	127.3	2.76	1.74	1.02	0.76	49.9	37.9	UnDef	0.00
45.77	314.0	1.61	0.51	-2.8	10	127.3	2.82	1.77	1.05	0.75	50.1	37.7	UnDef	0.00
46.75	357.5	1.88	0.53	-2.7	10	127.3	2.88	1.80	1.08	0.75	57.1	42.5	UnDef	0.00
47.74	373.8	1.83	0.49	-2.5	10	127.3	2.95	1.83	1.11	0.74	59.7	44.1	UnDef	0.00
48.72	368.5	1.28	0.35	-1.7	10	127.3	3.01	1.87	1.14	0.73	58.8	43.1	UnDef	0.00
49.70	323.2	1.20	0.37	-2.3	10	127.3	3.07	1.90	1.17	0.73	51.6	37.5	UnDef	0.00
50.69	298.4	1.44	0.48	-2.9	10	127.3	3.13	1.93	1.20	0.72	47.6	34.3	UnDef	0.00
51.67	277.8	1.35	0.49	-3.2	10	127.3	3.20	1.96	1.24	0.71	44.3	31.7	UnDef	0.00
52.66	198.1	0.73	0.37	-3.3	9	124.1	3.26	1.99	1.27	0.71	37.9	26.9	UnDef	0.32
53.64	68.1	0.90	1.32	-3.5	7	117.8	3.32	2.02	1.30	0.70	21.7	15.3	UnDef	0.19
54.63	78.9	2.22	2.81	-3.4	6	114.6	3.38	2.05	1.33	0.70	30.2	21.1	6.04	0.00

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005. RTF Job No. 2004-700-21

Gregg In Situ, Inc.
Interpretation Output - Release 1.00.19e
Run No: 01-0316-0548-4886
Job No: 01-031SH
Client: R.T. FRANKIAN
Project: CPT Site Investigation
Site: TRACT #53295
Location: CPT-19
Engineer: MARK FRANKIAN
CPT Date: 01/19/12
CPT Time: 09:59
CPT File: 890C19.COR
Northing (m): 0.000
Easting (m): 0.000
Elevation (m): 0.000

Water Table (m): 3.69 (ft): 12.1
Su Nkt used: 12.50
Averaging Increment (m): 0.30
Phi Method : Robertson and Campanella, 1983
Dr Method : Jamiolkowski - All Sands
State Parameter M: 1.20
Used Unit Weights Assigned to Soil Zones
Values of 1.0E9 or UnDef are printed for parameters that are not valid for the material type (SBT)

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
0.49	5.0E-03	0.00	1000.0	0.39	10	134.6	0.0	134.6	0.0	50	95.0	1.0	-0.31	0.0	33.6
1.48	5.0E-02	0.00	1000.0	0.40	10	195.9	0.0	195.9	0.0	50	95.0	1.0	-0.31	0.0	39.2
2.46	5.0E-03	0.00	503.9	0.41	10	145.4	0.0	145.4	0.0	48	85.9	1.0	-0.25	0.0	36.4
3.44	5.0E-03	0.00	370.1	0.34	10	149.2	0.0	149.2	0.0	48	81.9	1.0	-0.21	0.0	37.3
4.43	5.0E-03	0.00	200.1	0.37	9	102.1	0.0	102.1	1.6	46	67.9	1.0	-0.16	0.0	25.0
5.41	5.0E-03	0.00	202.4	0.38	9	114.2	0.0	114.2	1.7	46	71.1	1.0	-0.17	0.0	27.9
6.40	5.0E-02	0.00	253.5	0.35	10	155.4	0.0	155.4	0.5	46	79.9	1.0	-0.18	0.0	30.4
7.30	5.0E-03	0.00	196.2	0.42	9	128.6	0.0	128.6	2.1	46	74.5	1.0	-0.17	0.0	31.5
8.20	5.0E-04	0.00	86.9	0.83	9	60.7	10.6	71.3	10.6	42	53.0	1.0	-0.16	2.0	21.8
9.19	5.0E-04	0.00	67.3	0.48	9	49.9	0.0	49.9	5.0	40	47.3	1.0	-0.09	0.0	16.3
10.17	5.0E-03	0.00	100.2	0.40	9	77.7	0.0	77.7	5.0	42	60.0	1.0	-0.11	0.0	19.0
11.15	5.0E-02	0.00	129.4	0.29	9	104.9	0.0	104.9	3.1	44	68.6	1.0	-0.10	0.0	20.5
12.14	5.0E-02	0.00	131.7	0.15	9	111.3	0.0	111.3	1.6	44	70.3	1.0	-0.05	0.0	21.8
13.21	5.0E-02	0.00	145.5	0.16	9	125.7	0.0	125.7	1.2	44	73.8	1.0	-0.07	0.0	24.6
14.27	5.0E-02	0.00	147.9	0.15	9	130.4	0.0	130.4	1.0	44	74.9	1.0	-0.06	0.0	25.5
15.26	5.0E-02	0.00	117.1	0.15	9	105.5	0.0	105.5	2.2	42	68.8	1.0	-0.04	0.0	20.6
16.24	5.0E-04	0.00	42.2	1.14	7	39.3	27.8	67.1	20.5	38	40.5	1.0	-0.12	4.5	17.3
17.22	5.0E-05	-0.01	26.6	1.45	7	25.6	47.3	72.9	29.3	36	30.0	6.0	-0.09	6.8	16.9
18.21	5.0E-05	-0.01	28.1	1.60	7	27.4	51.6	79.0	29.5	36	30.2	6.0	-0.11	7.4	18.2
19.19	5.0E-02	0.00	112.3	0.25	9	107.8	0.0	107.8	3.6	42	69.4	1.0	-0.08	0.0	21.1
20.18	5.0E-02	0.00	177.5	0.60	9	172.3	0.0	172.3	4.0	44	82.9	1.0	-0.19	0.0	33.7
21.16	5.0E-02	0.00	195.6	0.47	9	192.8	0.0	192.8	2.5	44	86.1	1.0	-0.18	0.0	37.7
22.15	5.0E-02	0.00	194.7	0.19	10	194.7	0.0	194.7	0.2	44	86.4	1.0	-0.11	0.0	38.1
23.13	5.0E+00	0.00	202.3	0.22	10	205.4	0.0	205.4	0.3	46	87.9	1.0	-0.12	0.0	33.5
24.11	5.0E-02	0.00	186.8	0.45	9	192.6	0.0	192.6	2.6	44	86.1	1.0	-0.17	0.0	37.7
25.10	5.0E+00	0.00	230.6	0.46	9	240.8	0.0	240.8	1.7	46	92.5	1.0	-0.19	0.0	39.3
26.08	5.0E-02	0.00	223.4	0.54	9	236.5	0.0	236.5	2.4	46	92.0	1.0	-0.20	0.0	46.3
27.07	5.0E+00	0.00	233.0	0.34	10	249.9	0.0	249.9	0.8	46	93.5	1.0	-0.17	0.0	40.8
28.05	5.0E-02	0.00	243.5	0.92	9	264.6	0.0	264.6	4.5	46	95.0	1.0	-0.26	0.0	51.8
29.04	5.0E+00	0.00	208.5	0.32	9	229.6	0.0	229.6	1.1	46	91.1	1.0	-0.15	0.0	37.5
30.02	5.0E-03	0.00	136.1	1.16	9	152.3	19.8	172.1	9.3	44	79.3	1.0	-0.23	2.9	40.2
31.00	5.0E-02	0.00	184.9	0.69	9	208.7	0.0	208.7	4.4	44	88.4	1.0	-0.21	0.0	40.9
31.99	5.0E-02	0.00	107.4	0.83	9	123.2	14.3	137.5	8.9	42	73.3	1.0	-0.18	1.7	25.8
32.97	5.0E-02	0.00	217.8	0.61	9	251.1	0.0	251.1	3.0	46	93.7	1.0	-0.21	0.0	49.2
33.96	5.0E-02	0.00	256.5	0.85	9	298.8	0.0	298.8	3.8	46	95.0	1.0	-0.26	0.0	58.5
34.94	5.0E+00	0.00	214.6	0.58	9	253.0	0.0	253.0	2.9	46	93.9	1.0	-0.21	0.0	41.3
35.92	5.0E-03	0.00	122.9	1.36	9	147.2	29.3	176.5	11.2	42	78.4	1.0	-0.24	4.2	40.2
36.91	5.0E-04	0.00	90.3	1.89	7	109.7	49.8	159.5	16.7	42	69.9	1.0	-0.25	8.7	44.5
37.89	5.0E+00	0.00	167.3	0.49	9	203.6	0.0	203.6	3.5	44	87.7	1.0	-0.17	0.0	33.2
38.88	5.0E-02	-0.01	70.4	0.38	9	87.6	0.0	87.6	5.0	40	63.5	1.0	-0.07	0.0	17.2
39.86	5.0E-03	-0.01	60.7	0.72	9	76.6	20.7	97.3	13.0	40	59.6	1.0	-0.11	2.9	21.6
40.85	5.0E+00	0.00	174.5	0.36	9	218.6	0.0	218.6	2.2	44	89.7	1.0	-0.15	0.0	35.7

Gregg In Situ, Inc.
Run No: 01-0316-0548-4886
CPT File: 890C19.COR

Depth (ft)	k (cm/s)	Bq	Qtn	Rfn	SBTn	Qc1N	DeltaQc1N	Qc1Ncs	Fc (%)	Phi (Deg)	Dr (%)	OCR	State Param	Del(n1)60	(N1)60cs
41.83	5.0E+00	0.00	171.8	0.47	9	217.4	0.0	217.4	3.2	44	89.5	1.0	-0.17	0.0	35.5
42.81	5.0E+00	0.00	176.0	0.38	9	224.8	0.0	224.8	2.3	44	90.5	1.0	-0.15	0.0	36.7
43.80	5.0E+00	0.00	176.3	0.41	9	227.4	0.0	227.4	2.6	44	90.8	1.0	-0.16	0.0	37.1
44.78	5.0E+00	0.00	178.3	0.42	9	232.1	0.0	232.1	2.6	44	91.4	1.0	-0.16	0.0	37.9
45.77	5.0E+00	0.00	175.8	0.52	9	231.0	0.0	231.0	3.4	44	91.3	1.0	-0.18	0.0	37.7
46.75	5.0E+00	0.00	196.8	0.53	9	260.6	0.0	260.6	3.0	46	94.7	1.0	-0.19	0.0	42.5
47.74	5.0E+00	0.00	202.2	0.49	9	270.1	0.0	270.1	2.5	46	95.0	1.0	-0.19	0.0	44.1
48.72	5.0E+00	0.00	195.9	0.35	9	264.0	0.0	264.0	1.6	46	95.0	1.0	-0.16	0.0	43.1
49.70	5.0E+00	0.00	168.7	0.37	9	229.6	0.0	229.6	2.5	44	91.1	1.0	-0.15	0.0	37.5
50.69	5.0E+00	0.00	153.0	0.49	9	210.2	0.0	210.2	3.9	44	88.6	1.0	-0.16	0.0	34.3
51.67	5.0E+00	0.00	140.0	0.49	9	194.1	0.0	194.1	4.5	44	86.3	1.0	-0.16	0.0	31.7
52.66	5.0E-02	-0.01	97.8	0.37	9	137.3	0.0	137.3	5.0	42	76.4	1.0	-0.10	0.0	26.9
53.64	5.0E-04	-0.02	32.0	1.39	7	46.9	60.1	106.9	26.0	36	45.6	1.0	-0.11	8.3	23.6
54.63	5.0E-05	-0.02	36.9	2.94	6	54.0	152.9	206.9	32.7	38	49.6	6.0	-0.21	18.2	39.3

For use with report dated 03/18/2005. RTF Job No 2004-700-21

3.3 Summary of Seismic Results

GREGG

Project No: 01-031SH
Client: R.T. Frankian
Location: Tract #53295 Valencia, Ca.
Sounding: SCPT-12
Sounding Date: January 31st, 2001

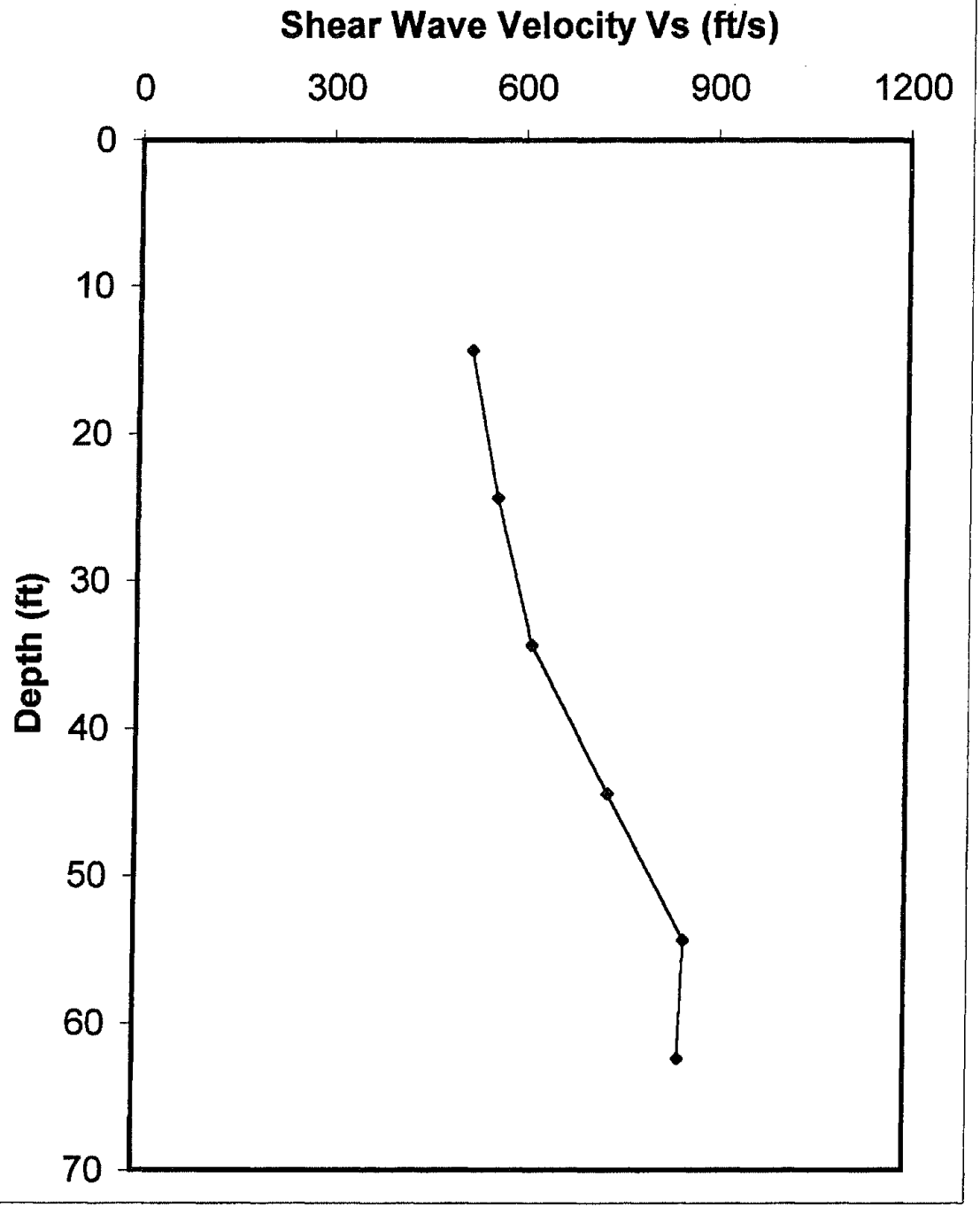
Shear Wave Velocity Calculations

Geophone Offset (feet) 0.66
Source Offset (feet) 3.00

Test Depth (feet)	Geophone Depth (feet)	Ray Path (feet)	Incremental Distance (feet)	Time Interval (ms)	Interval Velocity (ft/s)	Interval Depth (feet)
10.01	9.35	9.82				
20.01	19.35	19.58	9.76	18.80	519	14.35
30.01	29.35	29.51	9.92	17.67	562	24.35
40.02	39.36	39.48	9.97	16.16	617	34.36
50.02	49.36	49.45	9.98	13.54	737	44.36
60.02	59.36	59.44	9.98	11.65	857	54.36
66.09	65.43	65.50	6.06	7.14	849	62.40

Shear Wave Velocity Profile

Project: 01-031sh Tract # 53295 Valencia, Ca.
Location: SCPT-12
Sounding Date: January 31st, 2001



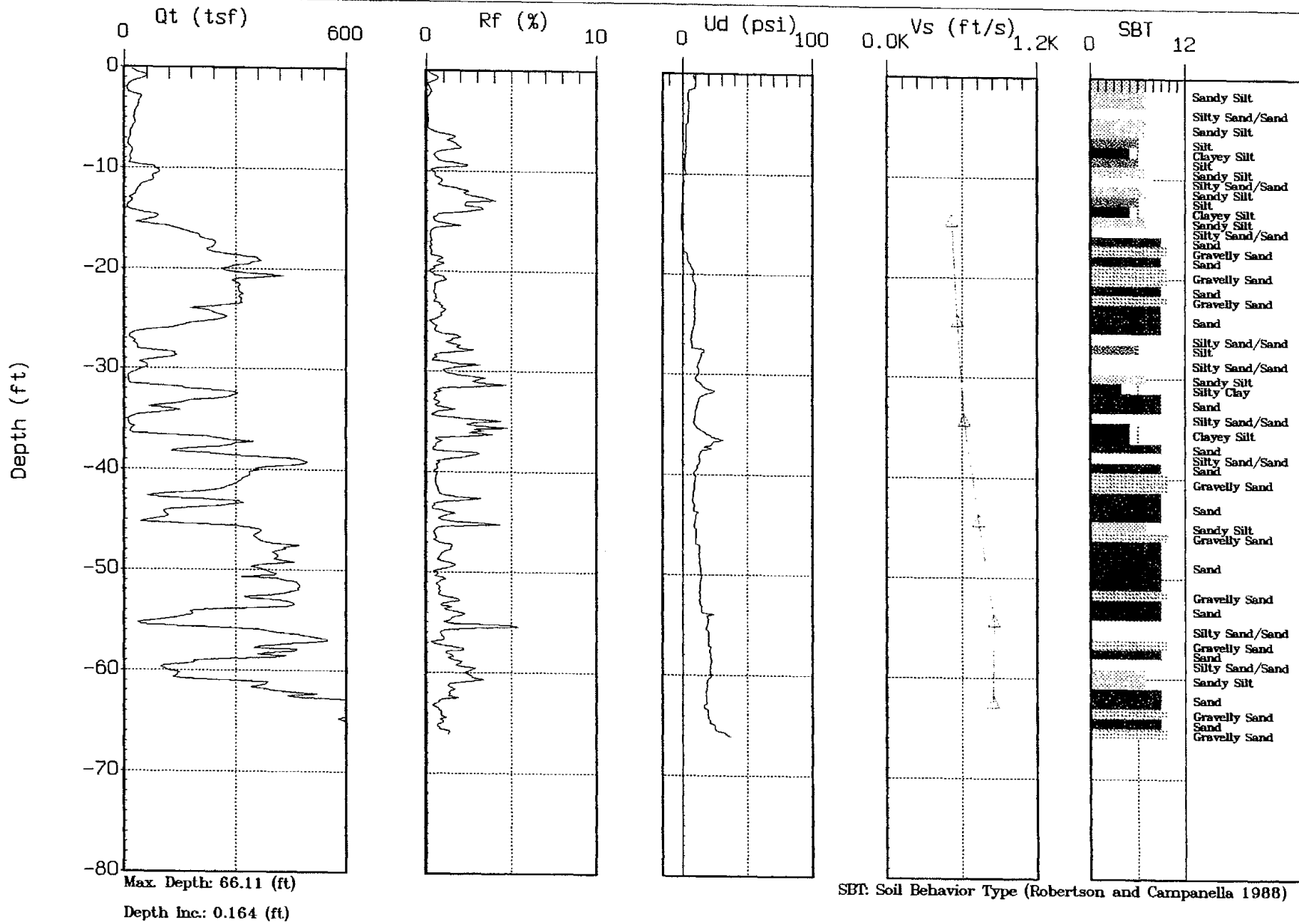
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT. #53295
Location : SCPT-12

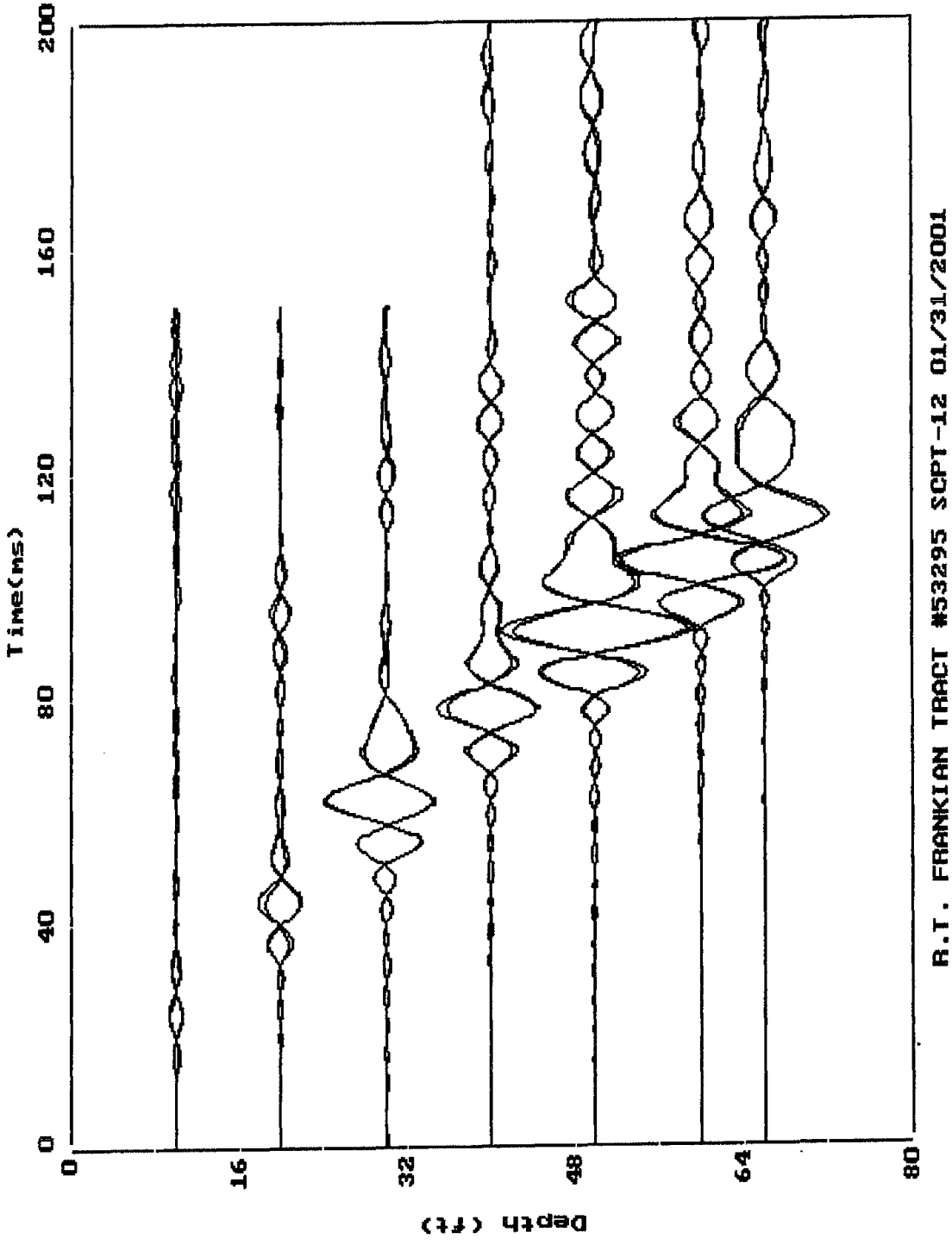
Engineer : MARK FRANKIAN
Date : 01:31:01 15:54



Max. Depth: 66.11 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)


Time(ms)
0
40
80
120
160
200
Depth (ft)
0
16
32
48
64
80
R.T. FRANKIAN TRACT #53295 SCPT-12 01/31/2001

GREGG

Project No: 01-031sh
Client: R.T. Frankian
Location: Tract #53295 Valencia, Ca.
Sounding: SCPT-16
Sounding Date: January 31st, 2001

Shear Wave Velocity Calculations

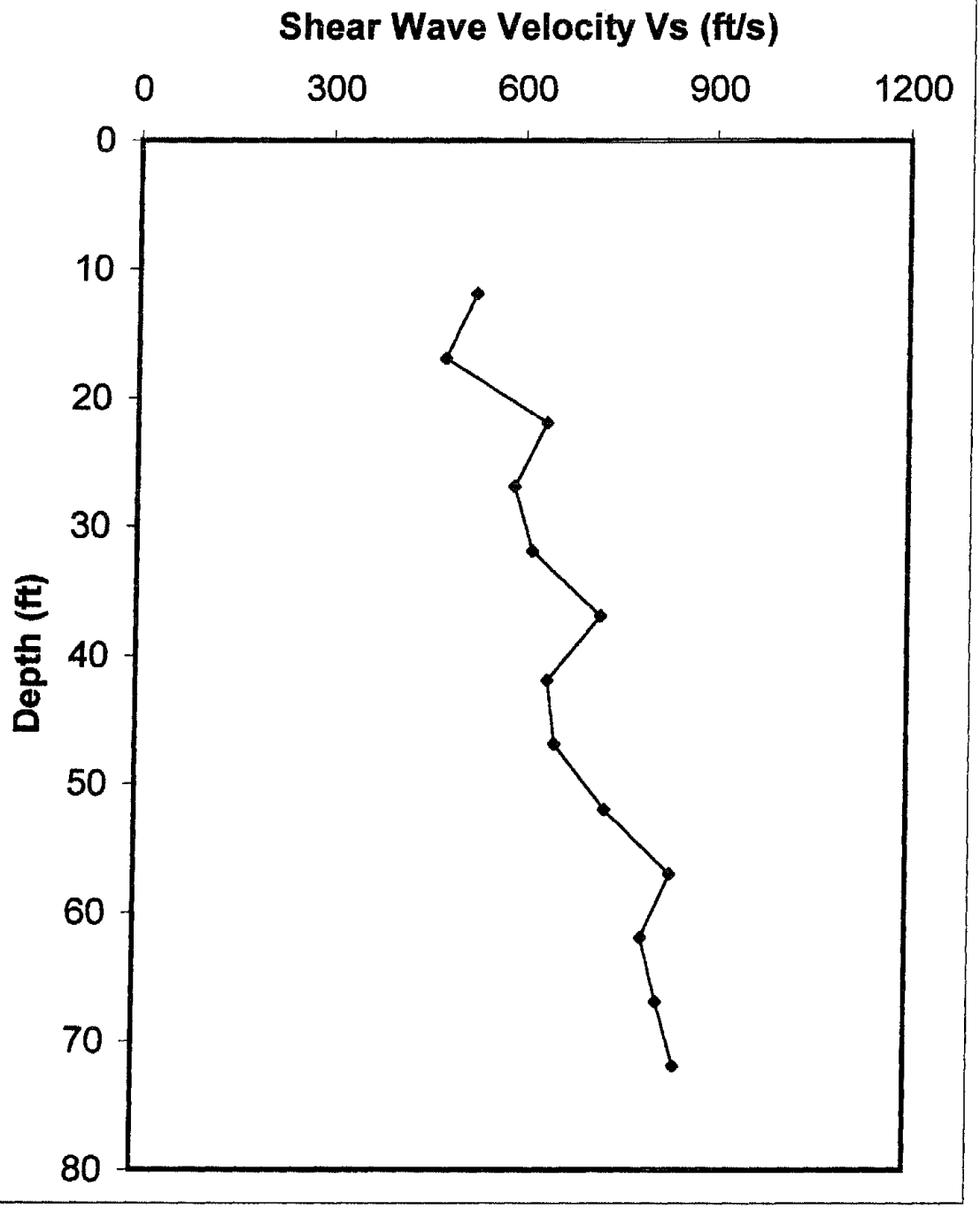
Geophone Offset (feet) 0.66
Source Offset (feet) 3.00

Test Depth (feet)	Geophone Depth (feet)	Ray Path (feet)	Incremental Distance (feet)	Time Interval (ms)	Interval Velocity (ft/s)	Interval Depth (feet)
10.00	9.34	9.81				
15.09	14.43	14.74	4.93	9.40	524	11.89
20.01	19.35	19.58	4.84	10.15	477	16.89
25.09	24.43	24.62	5.03	7.89	638	21.89
29.98	29.32	29.48	4.86	8.27	588	26.88
35.10	34.44	34.57	5.10	8.27	616	31.88
40.02	39.36	39.48	4.90	6.77	724	36.90
45.10	44.44	44.54	5.07	7.90	641	41.90
50.02	49.36	49.45	4.91	7.51	654	46.90
55.27	54.61	54.70	5.24	7.15	733	51.99
59.99	59.33	59.41	4.71	5.64	836	56.97
65.11	64.45	64.52	5.11	6.46	792	61.89
70.03	69.37	69.44	4.92	6.02	816	66.91
75.11	74.45	74.51	5.08	6.01	845	71.91

Shear Wave Velocity Profile

GREGG

Project: 01-031sh Tract #53295 Valencia, Ca.
Location: SCPT-16
Sounding Date: January 31st, 2001



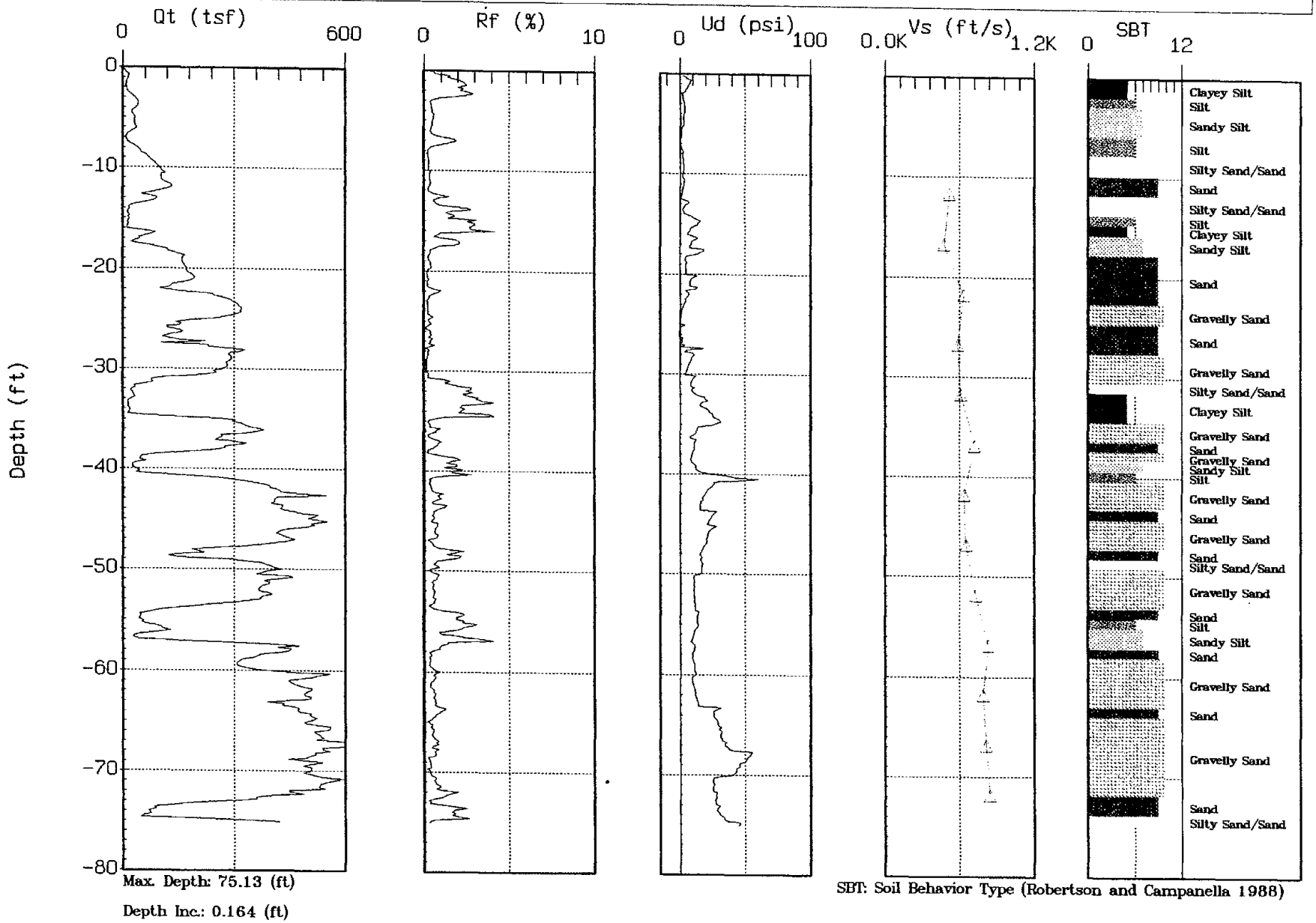
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Site : TRACT #53295
Location : SCPT-16

Engineer : MARK FRANKIAN
Date : 01:31:01 08:09

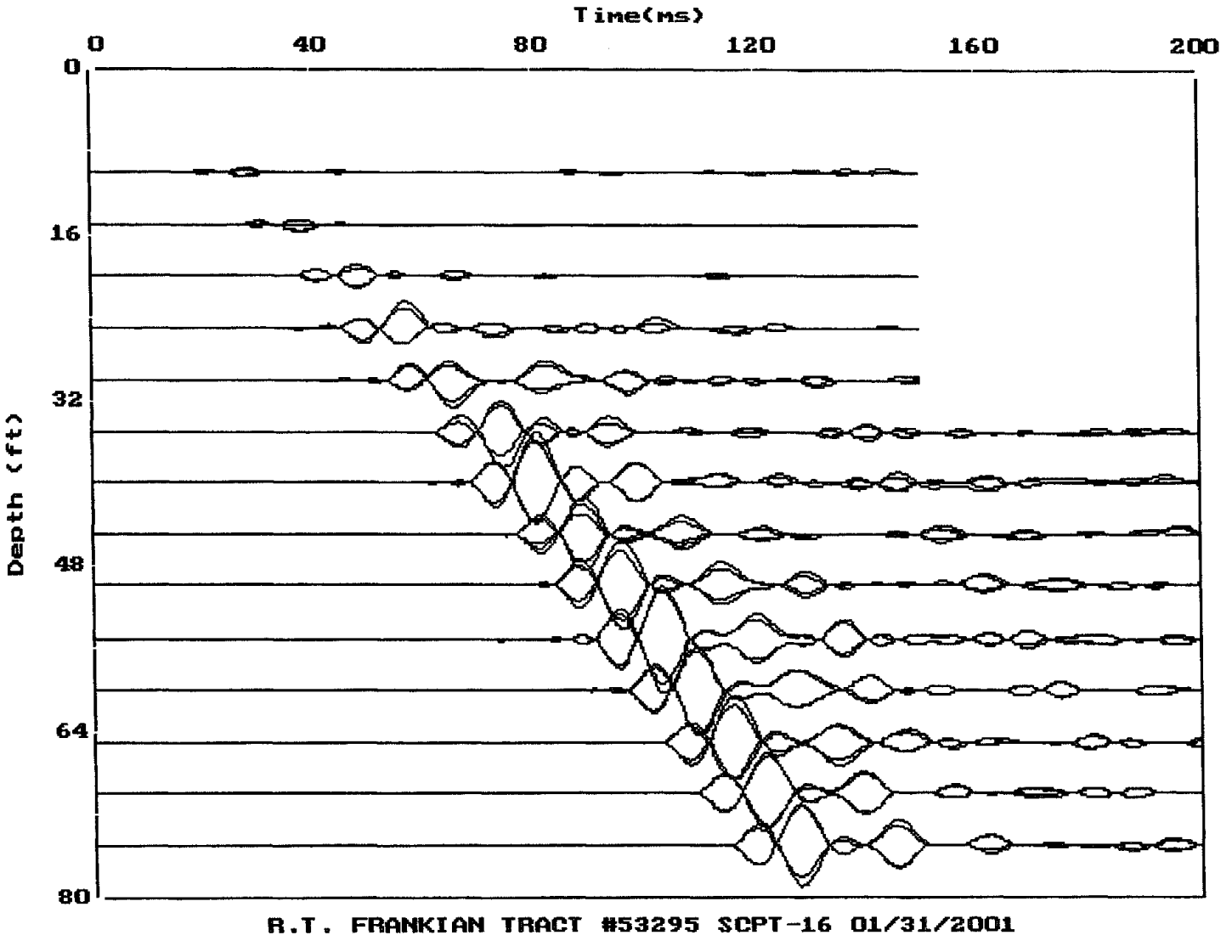


Max. Depth: 75.13 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

For use with report dated 03/18/2005; RTF Job No. 2004-700-21



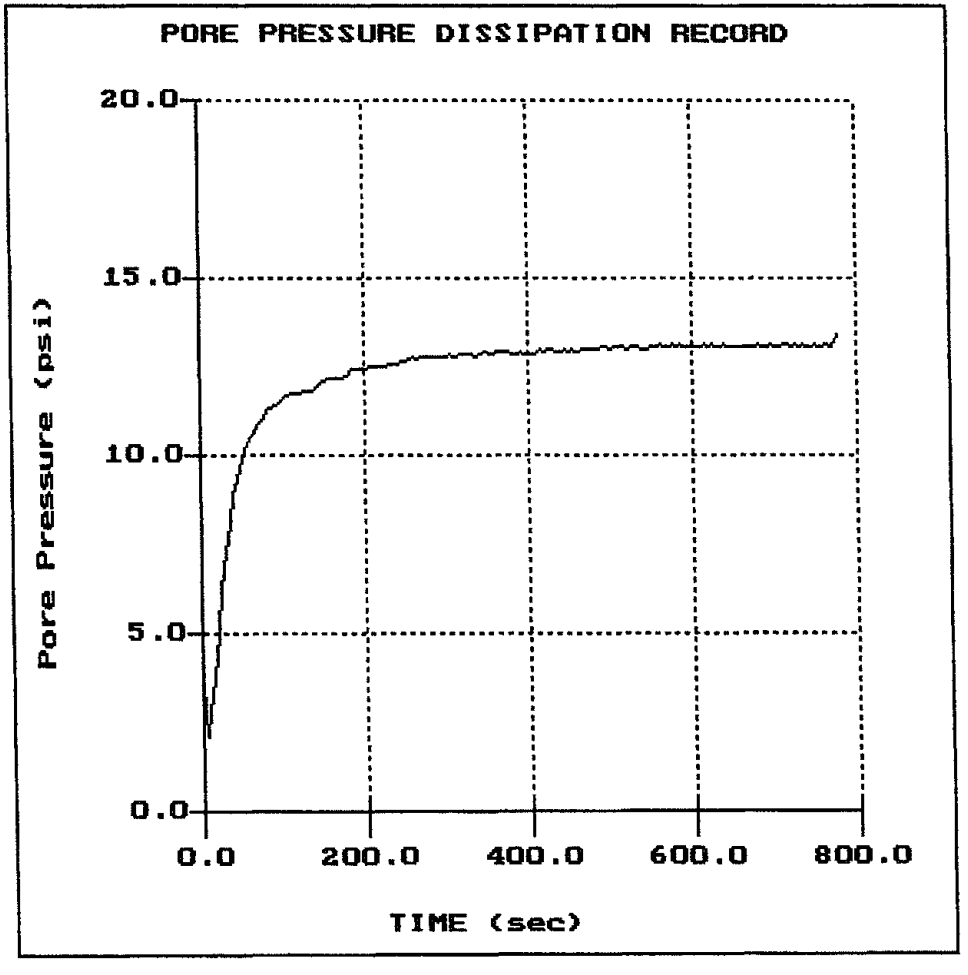
3.4 Pore Pressure Dissipation Tests

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

R.T. FRANKIAN

Site: TRACT #53295
Location: CPT-2

Engineer: MARK FRANKIAN
Date:12:19:01 07:39



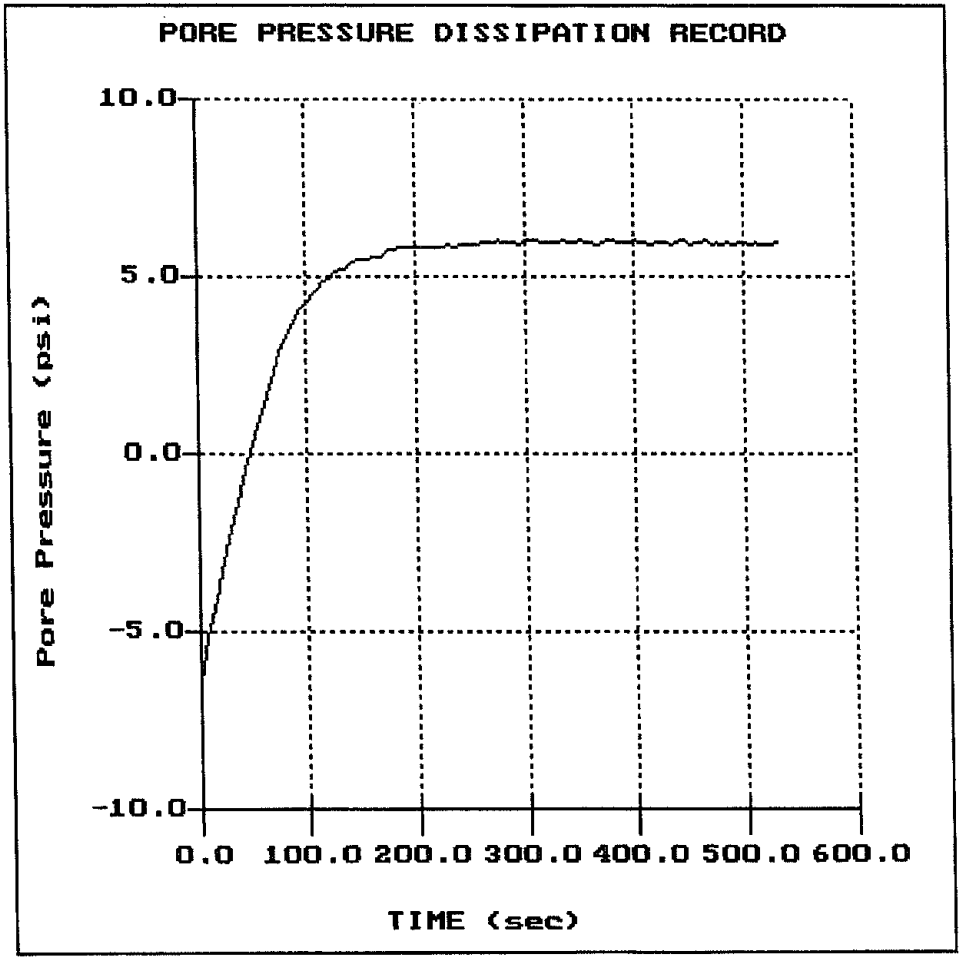
File: 890CO2.PPC
Depth (m): 13.95
(ft): 45.77
Duration : 775.0s
U-min: 2.05 5.0s
U-max: 13.41 775.0s

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

R.T. FRANKIAN

Site: TRACT #53295
Location: CPT-16

Engineer: MARK FRANKIAN
Date:12:19:01 08:49



File: 890C16.PPC
Depth (m): 8.85
(ft): 29.04
Duration : 530.0s
U-min: -6.43 0.0s
U-max: 6.06 380.0s

GREGG IN SITU, INC.
01-031sh
February 6, 2001

R.T. Frankian
Tract 53295
Valencia, Ca.

We hope the information presented is sufficient for your purposes. If you have any questions, please do not hesitate to contact our office at (562) 427-6899.

Sincerely,
GREGG IN SITU, INC.

Brian Savela
Operations Manager

APPENDIX

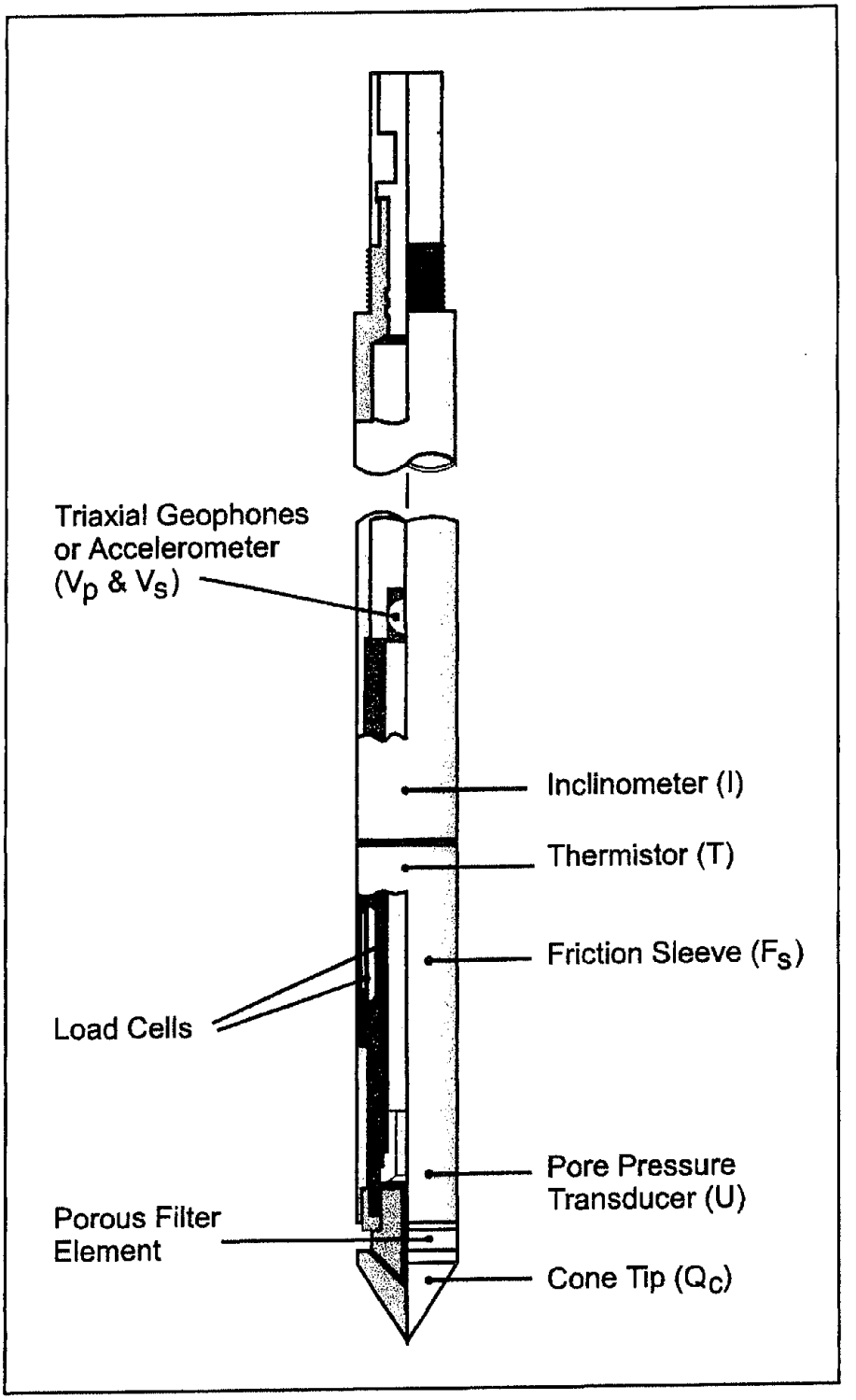

Triaxial Geophones
or Accelerometer
(V_p & V_S)
Inclinometer (I)
Thermistor (T)
Friction Sleeve (F_S)
Load Cells
Pore Pressure
Transducer (U)
Porous Filter
Element
Cone Tip (Q_C)

Figure 1

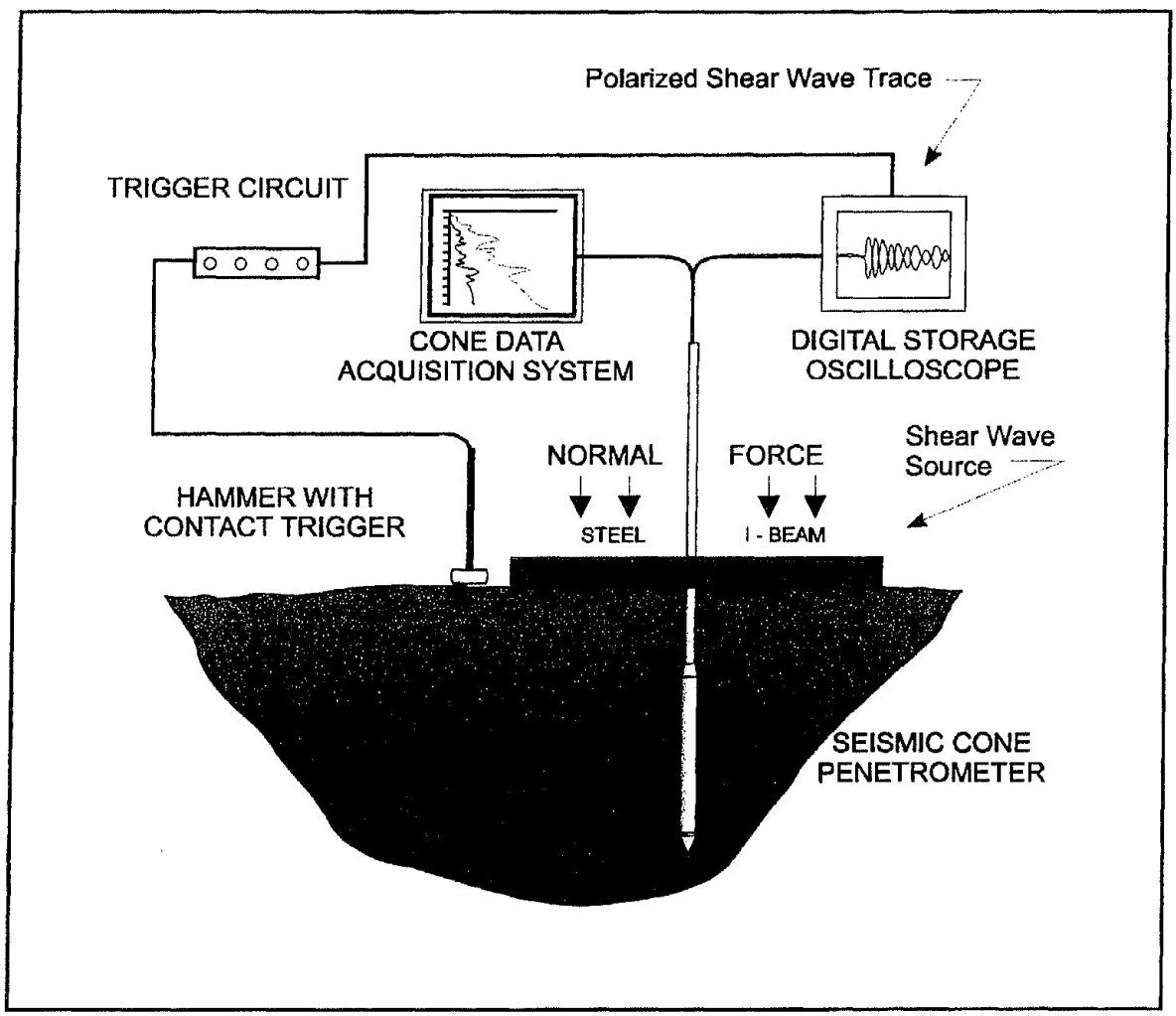
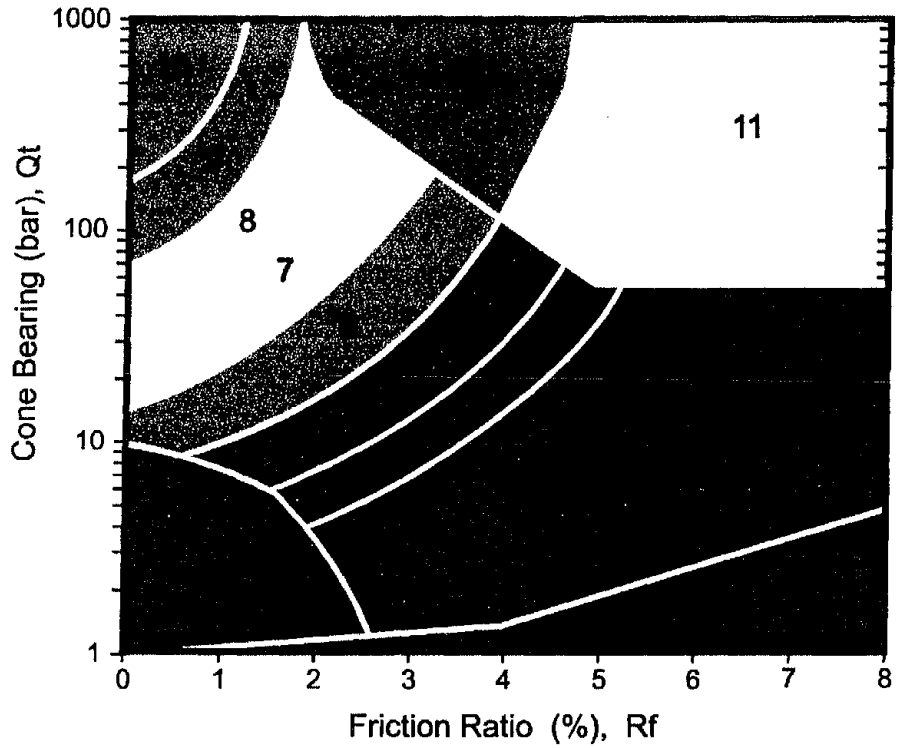

Polarized Shear Wave Trace
TRIGGER CIRCUIT
CONE DATA
ACQUISITION SYSTEM
DIGITAL STORAGE
OSCILLOSCOPE
NORMAL
FORCE
Shear Wave
Source
HAMMER WITH
CONTACT TRIGGER
STEEL
I - BEAM
SEISMIC CONE
PENETROMETER

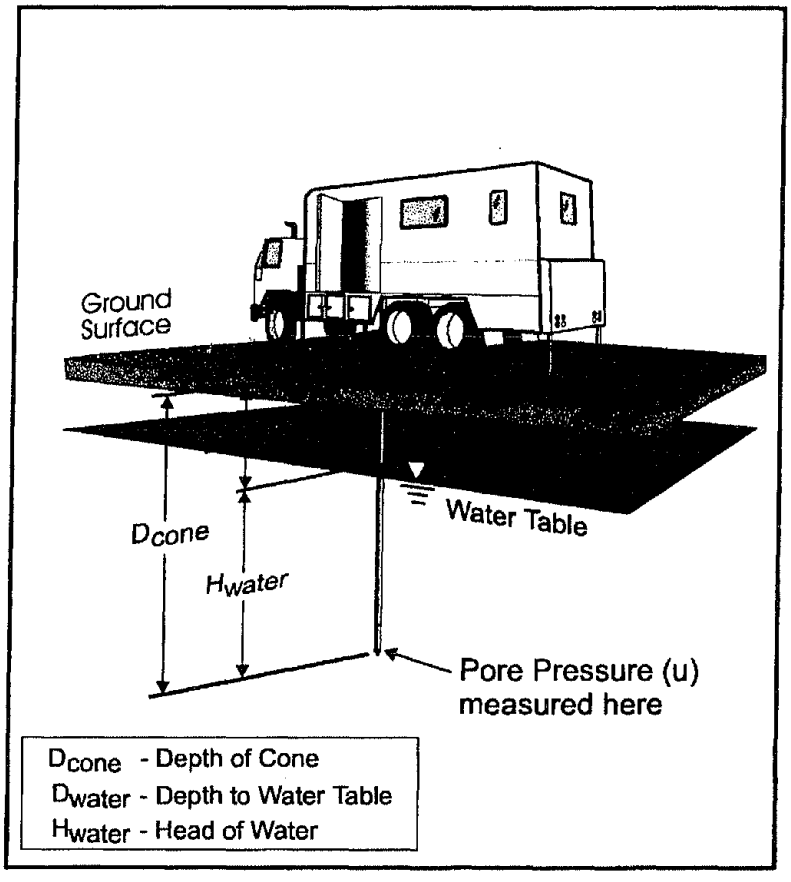
Figure 2

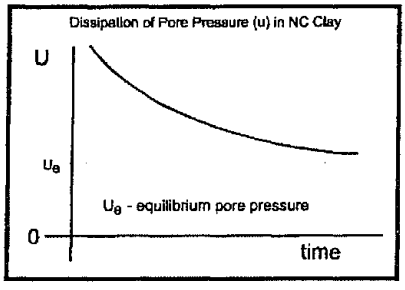


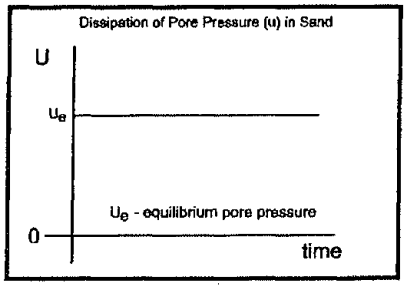
Zone	Q_t / N	Soil Behaviour Type
1	2	sensitive fine grained
2	1	organic material
3	1	clay
4	1.5	silty clay to clay
5	2	clayey silt to silty clay
6	2.5	sandy silt to clayey silt
7	3	silty sand to sandy silt
8	4	sand to silty sand
9	5	sand
10	6	gravelly sand to sand
11	1	very stiff fine grained *
12	2	sand to clayey sand *

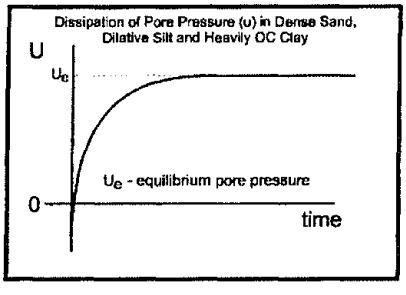
* overconsolidated or cemented

Figure 3









Water Table Calculation

$$D_{water} = D_{cone} - H_{water}$$

where $H_{water} = U_e$ (depth units)

Useful Conversion Factors: 1psi = 0.704m = 2.31 feet (water)
1tsf = 0.958 bar = 13.9 psi
1m = 3.28 feet

Figure 4

REFERENCES

Robertson, P.K. and Campanella, R.G. and Wightman, A., 1983 "SPT-CPT Correlations", Journal of the Geotechnical Division, ASCE, Vol. 109, No. GT11, Nov., pp. 1449-1460.

Robertson, P.K. and Campanella, R.G., 1985 "Evaluation of Liquefaction Potential of Sands Using the CPT", Journal of Geotechnical Division, ASCE, Vol. III, No. 3, Mar., pp. 384-407.

Robertson, P.K. and Campanella, R.G., Gillespie, D. and Grieg, J., 1986, "Use of Piezometer Cone Data", Proceedings of In Situ 86, ASCE Specialty Conference, Blacksburg, Virginia.

Robertson, P.K. and Campanella, R.G., 1988, "Guidelines for Use, Interpretation and Application of the CPT and CPTU", UBC, Soil Mechanics Series No. 105, Civil Eng. Dept., Vancouver, B.C., V6T 1W5, Canada; also available from Hogentogler and Co., P.O. Box 385, Gaithersburg, MD 20877, 3rd Edition, 197 pp.

Robertson, P.K., Campanella, R.G., Gillespie, D. and Rice, A., 1986, "Seismic CPT to Measure In Situ Shear Wave Velocity", Journal of Geotechnical Engineering, ASCE, Vol. 112, No. 8, pp. 791-803.

Gregg In Situ CPT Interpretations as of January 7, 1999 (Release 1.00.19)

Gregg In Situ's interpretation routine should be considered a calculator of current published CPT correlations and is subject to change to reflect the current state of practice. The interpreted values are not considered valid for all soil types. The interpretations are presented only as a guide for geotechnical use and should be carefully scrutinized for consideration in any geotechnical design. Reference to current literature is strongly recommended.

The CPT interpretations are based on values of tip, sleeve friction and pore pressure averaged over a user specified interval (typically 0.25m). Note that Qt is the recorded tip value, Qc, corrected for pore pressure effects. Since all Gregg In Situ cones have equal end area friction sleeves, pore pressure corrections to sleeve friction, Fs, are not required.

The tip correction is: $Qt = Qc + (1-a) \bullet Ud$

where: *Qt* is the corrected tip load
Qc is the recorded tip load
Ud is the recorded dynamic pore pressure
a is the Net Area Ratio for the cone (typically 0.85 for Gregg In Situ cones)

Effective vertical overburden stresses are calculated based on a hydrostatic distribution of equilibrium pore pressures below the water table or from a user defined equilibrium pore pressure profile (this can be obtained from CPT dissipation tests). The stress calculations use unit weights assigned to the Soil Behavior Type zones or from a user defined unit weight profile.

Details regarding the interpretation methods for all of the interpreted parameters is given in table 1. The appropriate references referred to in table 1 are listed in table 2.

The estimated Soil Behavior Type is based on the charts developed by Robertson and Campanella shown in figure 1.

Table 1 CPT Interpretation Methods

Interpreted Parameter	Description	Equation	Ref
Depth	mid layer depth		
AvgQt	Averaged corrected tip (Qt)	$AvgQt = \frac{1}{n}\sum_{i=1}^{n} Qt_i$	
AvgFs	Averaged sleeve friction (Fs)	$AvgFs = \frac{1}{n}\sum_{i=1}^{n} Fs_i$	
AvgRf	Averaged friction ratio (Rf)	$AvgRf = 100\% \bullet \frac{AvgFs}{AvgQt}$	
AvgUd	Averaged dynamic pore pressure (Ud)	$AvgUd = \frac{1}{n}\sum_{i=1}^{n} Ud_i$	
SBT	Soil Behavior Type as defined by Robertson and Campanella		1

CPT Interpretations

U.Wt.	Unit Weight of soil determined from: 1) uniform value or 2) value assigned to each SBT zone 3) user supplied unit weight profile		
TStress	Total vertical overburden stress at mid layer depth	$TStress = \sum_{i=1}^{n} \gamma_i h_i$ where γ_i is layer unit weight h_i is layer thickness	
EStress	Effective vertical overburden stress at mid layer depth	$EStress = TStress - Ueq$	
Ueq	Equilibrium pore pressure determined from: 1) hydrostatic from water table depth 2) user supplied profile		
Cn	SPT N_{60} overburden correction factor	$Cn=(\sigma_v')^{-0.5}$ where σ_v' is in tsf $0.5 < C_n < 2.0$	
N_{60}	SPT N value at 60% energy calculated from Qt/N ratios assigned to each SBT zone		3
$(N1)_{60}$	SPT N_{60} value corrected for overburden pressure	$N1_{60} = Cn \bullet N_{60}$	3
$\Delta(N1)_{60}$	Equivalent Clean Sand Correction to $(N1)_{60}$	$\Delta(N1)_{60} = \frac{K_{SPT}}{1 - K_{SPT}} \bullet (N1)_{60}$ Where: K_{SPT} is defined as: 0.0 for FC < 5% 0.0167 • (FC - 5) for 5% < FC < 35% 0.5 for FC > 35% FC - Fines Content in %	7
$(N1)_{60cs}$	Equivalent Clean Sand $(N1)_{60}$	$(N1)_{60cs} = (N1)_{60} + \Delta(N1)_{60}$	7
Su	Undrained shear strength - Nkt is use selectable	$Su = \frac{Qt - \sigma_v}{N_{kt}}$	2
k	Coefficient of permeability (assigned to each SBT zone)		6
Bq	Pore pressure parameter	$Bq = \frac{\Delta u}{Qt - \sigma_v}$	2
Qtn	Normalized Qt for Soil Behavior Type classification as defined by Robertson, 1990	$Qtn = \frac{Qt - \sigma_v}{\sigma'_v}$	4
Rfn	Normalized Rf for Soil Behavior Type classification as defined by Robertson, 1990	$Rfn = 100\% \bullet \frac{f_s}{Qt - \sigma_v}$	4
SBTn	Normalized Soil Behavior Type (slightly modified from that published by Robertson, 1990. This version includes all the soil zones of the original non-normalized SBT chart - see figure 1)		4
Qc1	Normalized Qt for seismic analysis	$qc1 = qc \bullet (Pa/\sigma_v')^{0.5}$ where: Pa = atm. pressure	5
Qc1N	Dimensionless Normalized Qt1	qc1N = qc1 / Pa where: Pa = atm. pressure	

CPT Interpretations

ΔQc1N1	Equivalent clean sand correction	$\Delta qc1N = \frac{K_{CPT}}{1 - K_{CPT}} \bullet qc1N$ Where: K_{CPT} is defined as: 0.0 for FC < 5% 0.0267 • (FC - 5) for 5% < FC < 35% 0.5 for FC > 35% FC - Fines Content in %	5
Qc1Ncs	Clean Sand equivalent Qc1N	$qc1Ncs = qc1N + \Delta qc1N$	5
Ic	Soil index for estimating grain characteristics	$Ic = [(3.47 - logQ)^2 + (log F + 1.22)^2]^{0.5}$	5
FC	Fines content (%)	$FC=1.75(Ic^{3.25}) - 3.7$ $FC=100$ for $Ic > 3.5$ $FC=0$ for $Ic < 1.26$ $FC = 5\%$ if $1.64 < Ic < 2.6$ AND $Rfn<0.5$	8
PHI	Friction Angle	Campanella and Robertson Durunoglu and Mitchel Janbu	1
Dr	Relative Density	Ticino Sand Hokksund Sand Schmertmann 1976 Jamiolkowski - All Sands	1
OCR	Over Consolidation Ratio		1
State Parameter			9
CRR	Cyclic Resistance Ratio		7

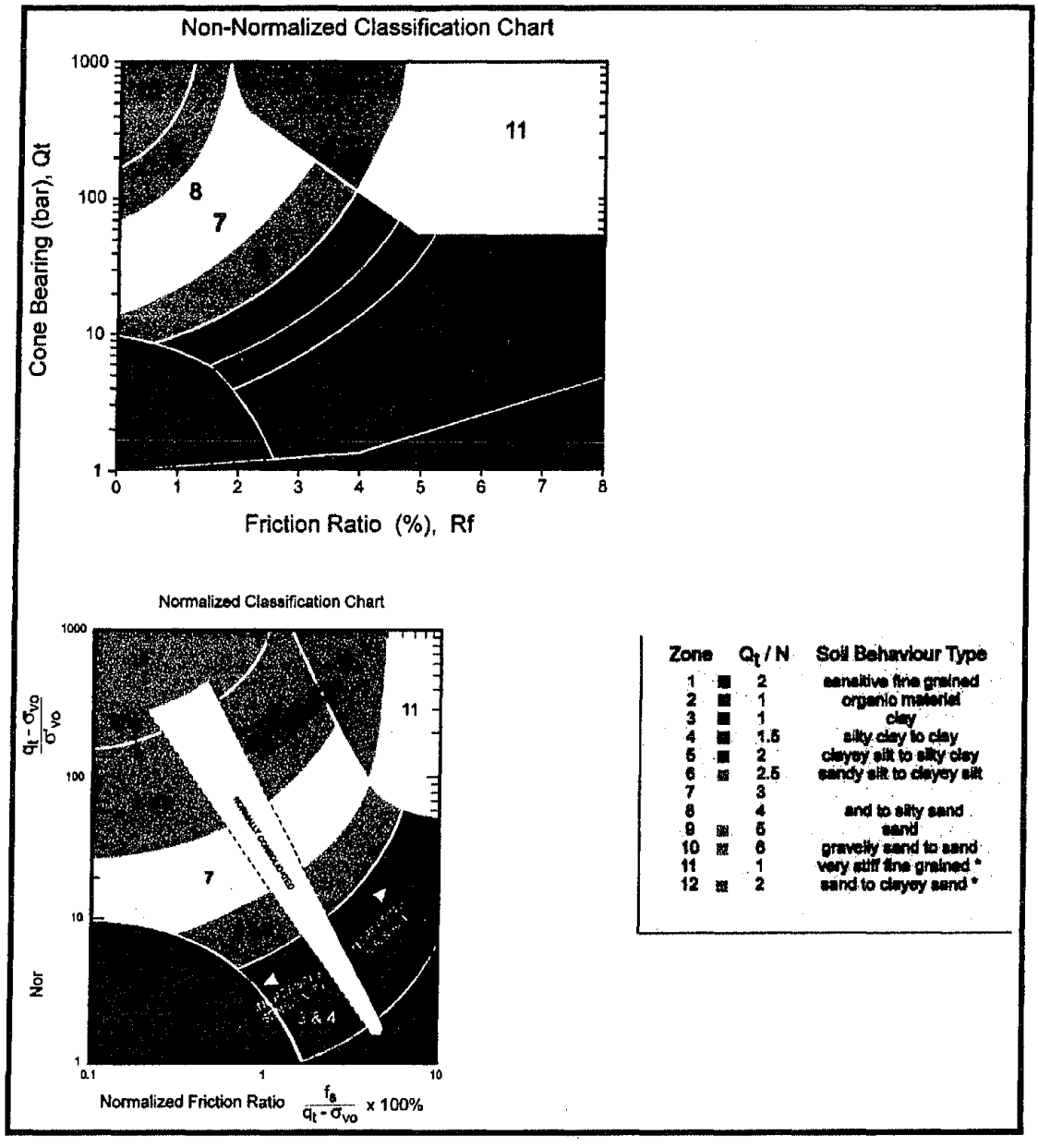


Figure 1 Non-Normalized and Normalized Soil Behavior Type Classification Charts

Table 2 References

No.	Reference
1	Robertson, P.K. and Campanella, R.G., 1986, "Guidelines for Use, Interpretation and Application of the CPT and CPTU", UBC, Soil Mechanics Series No. 105, Civil Eng. Dept., Vancouver, B.C., Canada
2	Robertson, P.K., Campanella, R.G., Gillespie, D. and Greig, J., 1986, "Use of Piezometer Cone Data", Proceedings of InSitu 86, ASCE Specialty Conference, Blacksburg, Virginia.
3	Robertson, P.K. and Campanella, R.G., 1989, "Guidelines for Geotechnical Design Using CPT and CPTU", UBC, Soil Mechanics Series No. 120, Civil Eng. Dept., Vancouver, B.C., Canada
4	Robertson, P.K., 1990, "Soil Classification Using the Cone Penetration Test", Canadian Geotechnical Journal, Volume 27.
5	Robertson, P.K. and Fear, C.E., 1995, "Liquefaction of Sands and its Evaluation", Keynote Lecture, First International Conference on Earthquake Geotechnical Engineering, Tokyo, Japan.
6	Gregg In Situ Internal Report
7	Robertson, P.K. and Wride, C.E., 1997, "Cyclic Liquefaction and its Evaluation Based on SPT and CPT", NCEER Workshop Paper, January 22, 1997
8	Wride, C.E. and Robertson, P.K., 1997, "Phase II Data Review Report (Massey and Kidd Sites, Fraser River Delta)", Volume 1 - Data Report (June 1997), University of Alberta.
9	Plewes, H.D., Davies, M.P. and Jefferies, M.G., 1992, "CPT Based Screening Procedure for Evaluating Liquefaction Susceptibility", 45th Canadian Geotechnical Conference, Toronto, Ontario, October 1992.

Cone Penetration Test Sounding
RTF&A 96-115-21 Report Dated 3-23-98

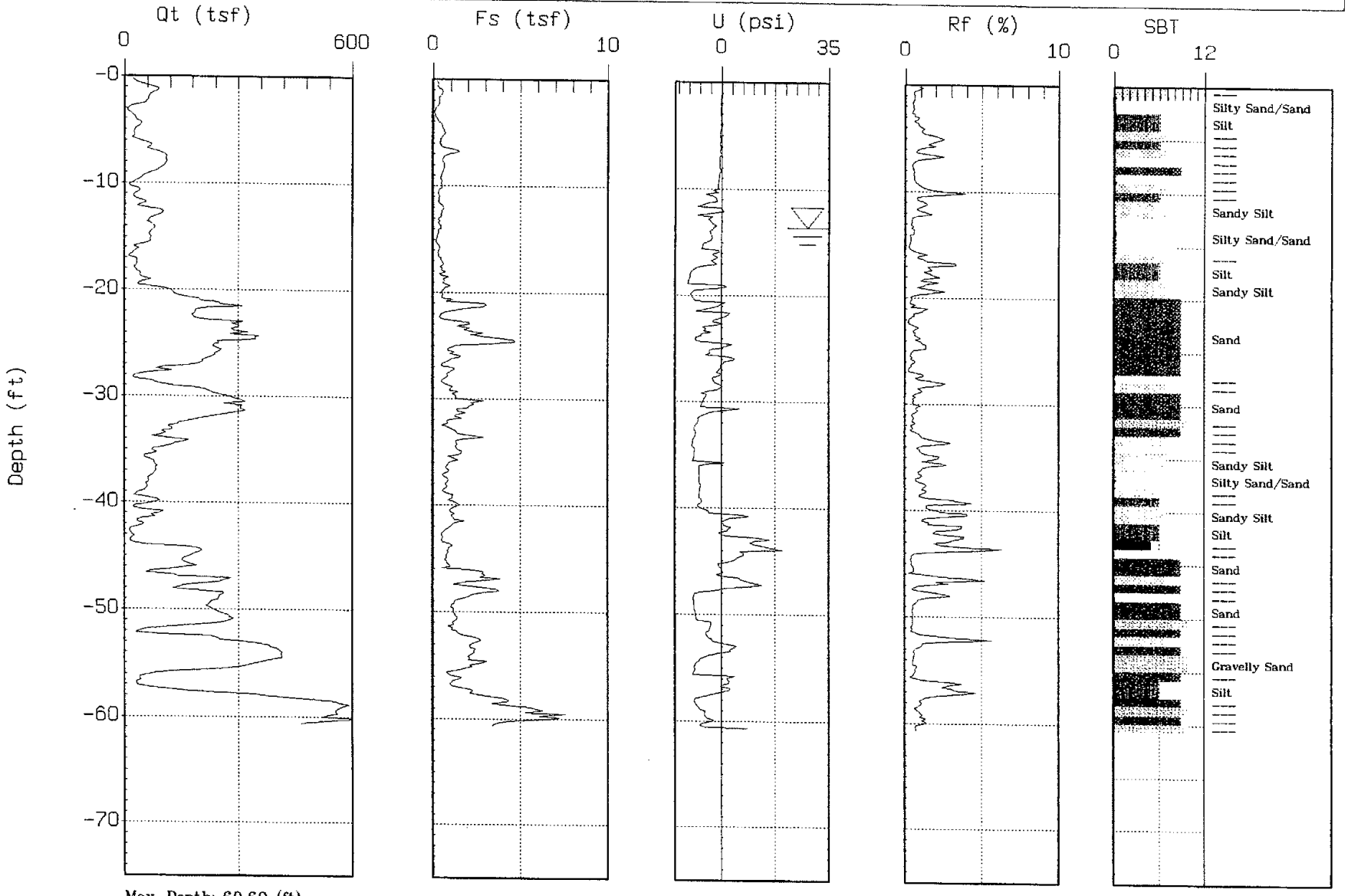
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Project No. : 96-115-S
Location : CPT-1

Engineer : A. SIMITOB
Date : 12:05:96 10:48



Max. Depth: 60.69 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

Estimated Phreatic Surface

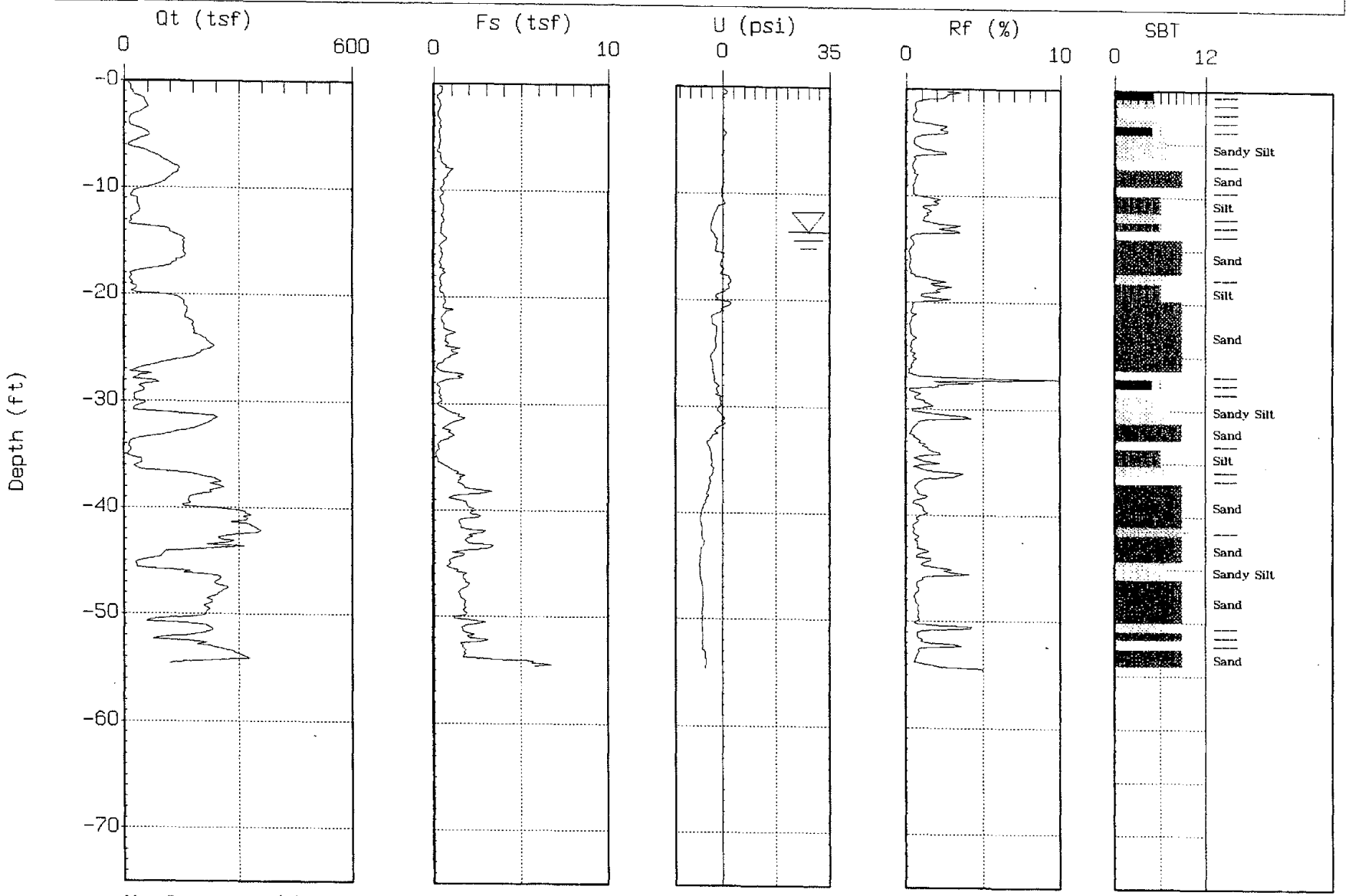
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Project No. : 96-115-S
Location : CPT-2

Engineer : A. SIMITOB
Date : 12:05:96 12:20



Max. Depth: 54.63 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

Estimated Phreatic Surface

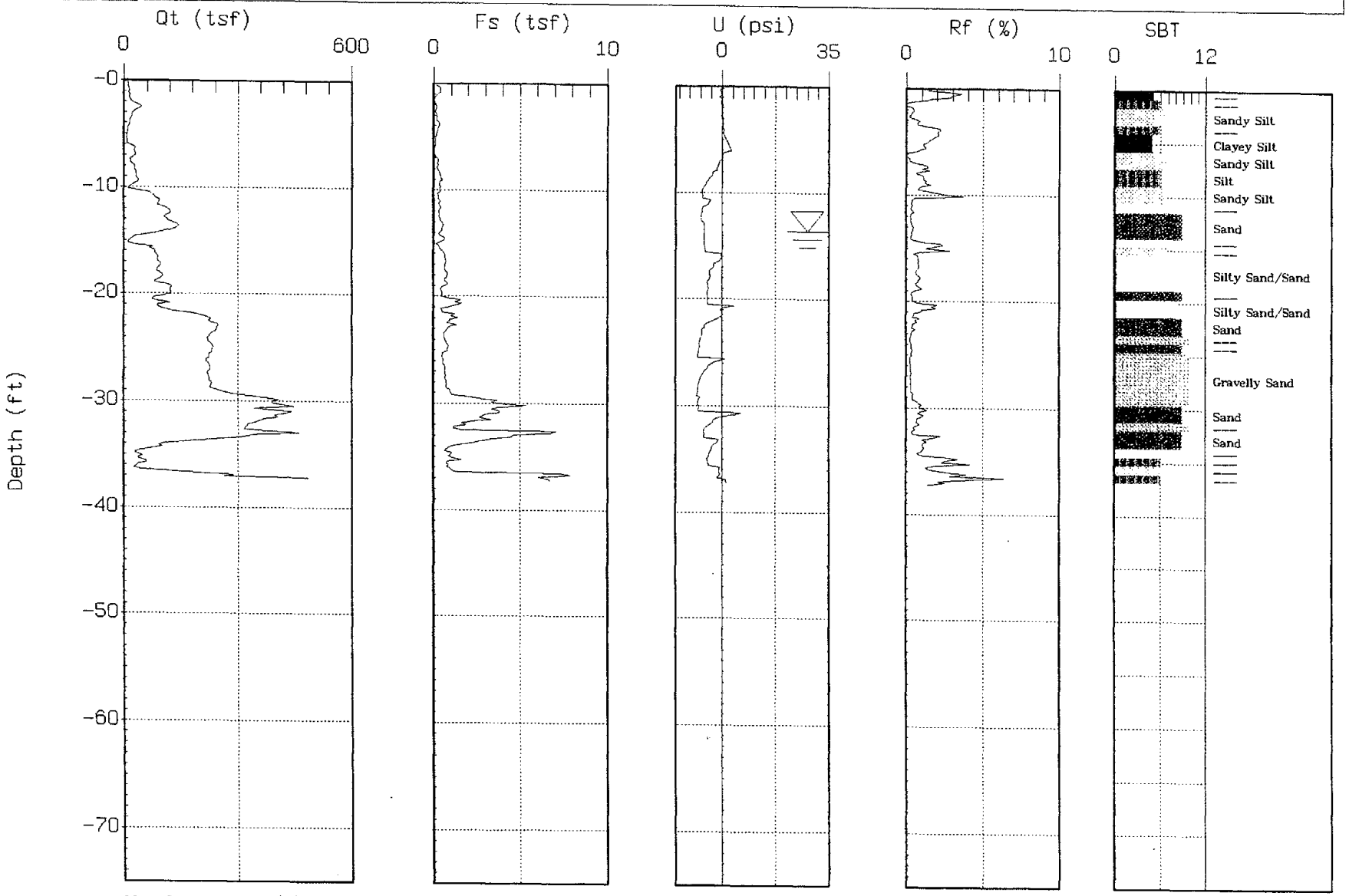
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Project No. : 96-115-S
Location : CPT-3

Engineer : A. SIMITOB
Date : 12:05:96 13:33



Max. Depth: 37.24 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

Estimated Phreatic Surface

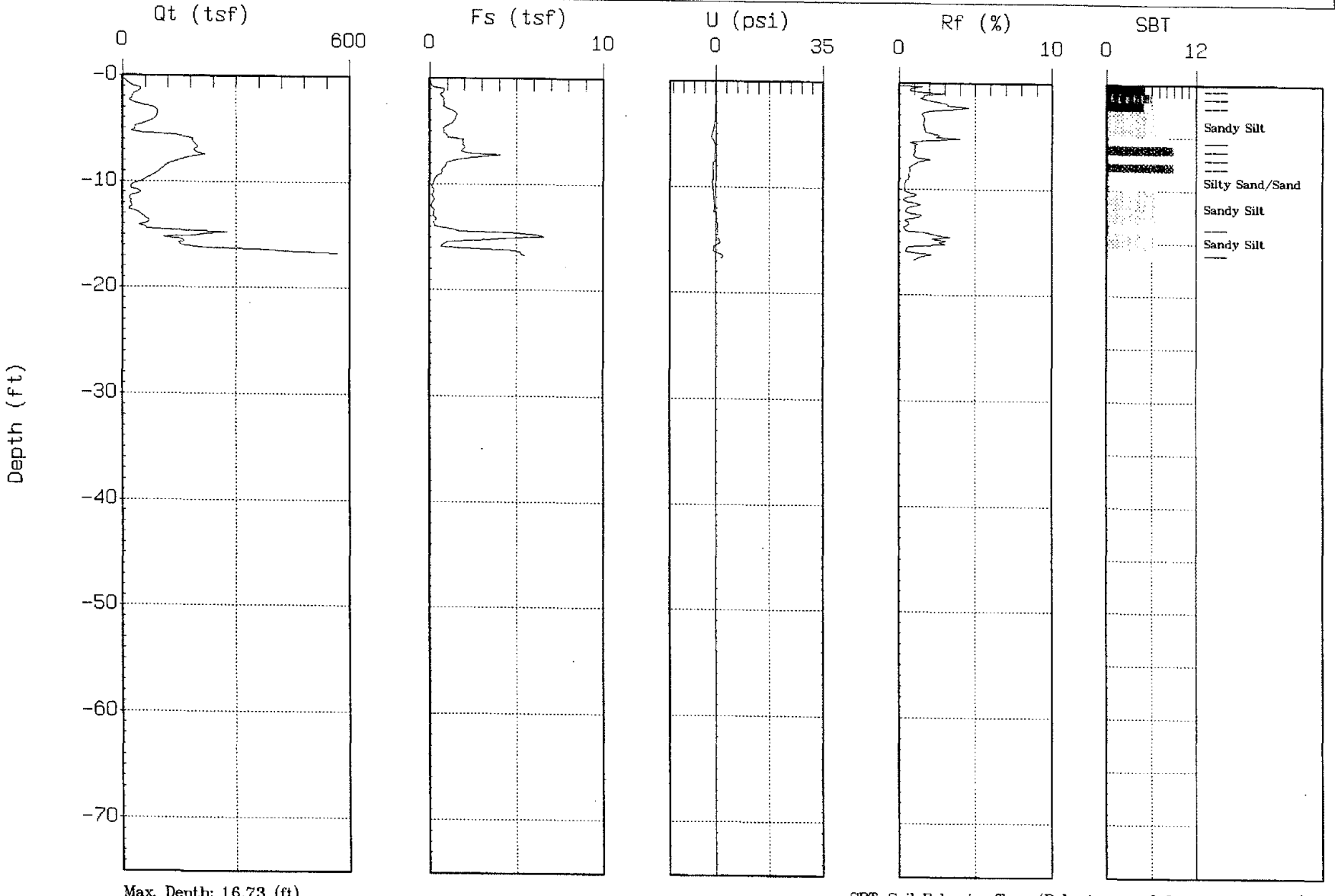
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Project No. : 96-115-S
Location : CPT-4

Engineer : A. SIMITOP
Date : 12:05:96 14:52



Max. Depth: 16.73 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

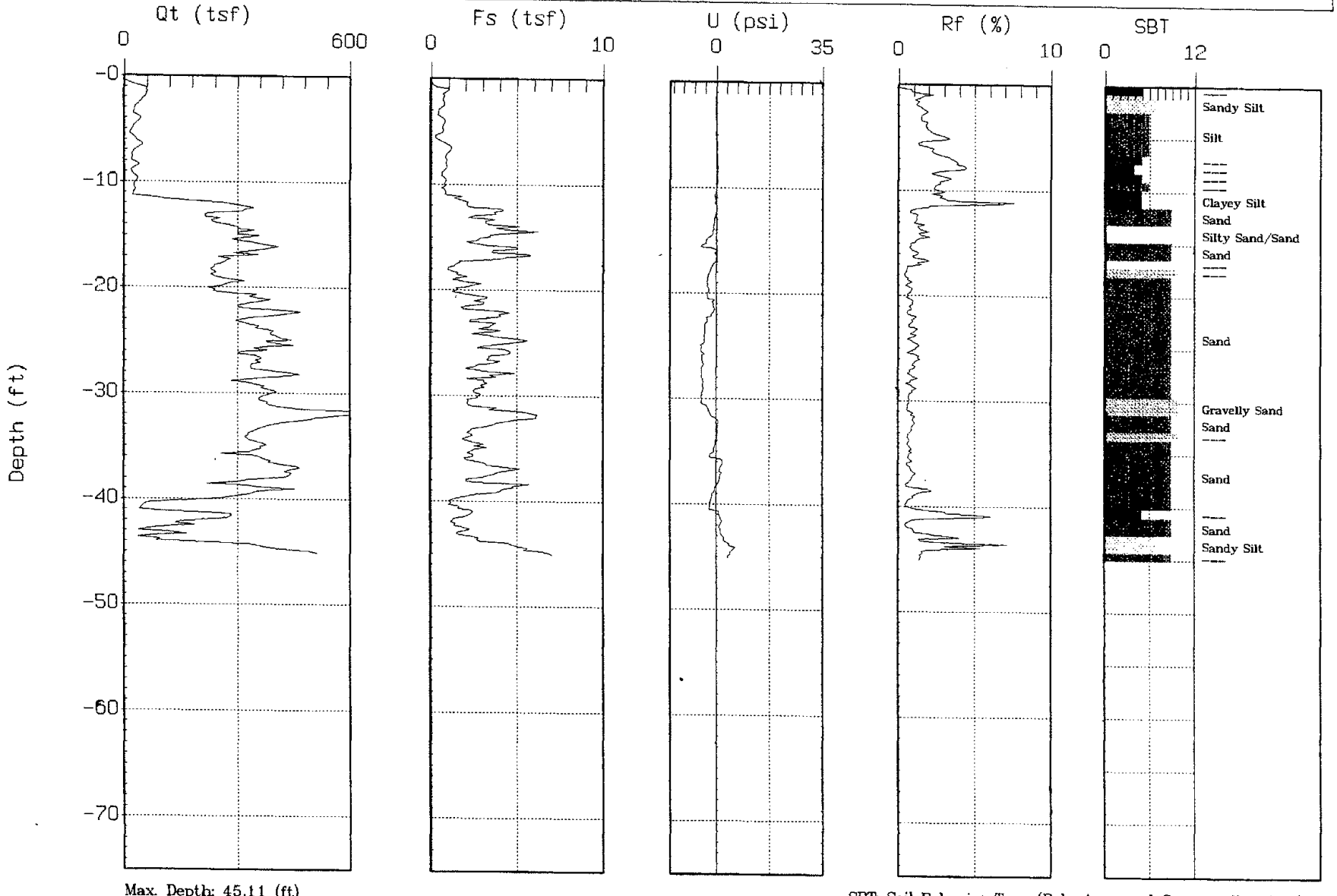
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Project No. : 96-115-S
Location : CPT-5

Engineer : A. SIMITOB
Date : 12:05:96 15:23



Max. Depth: 45.11 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

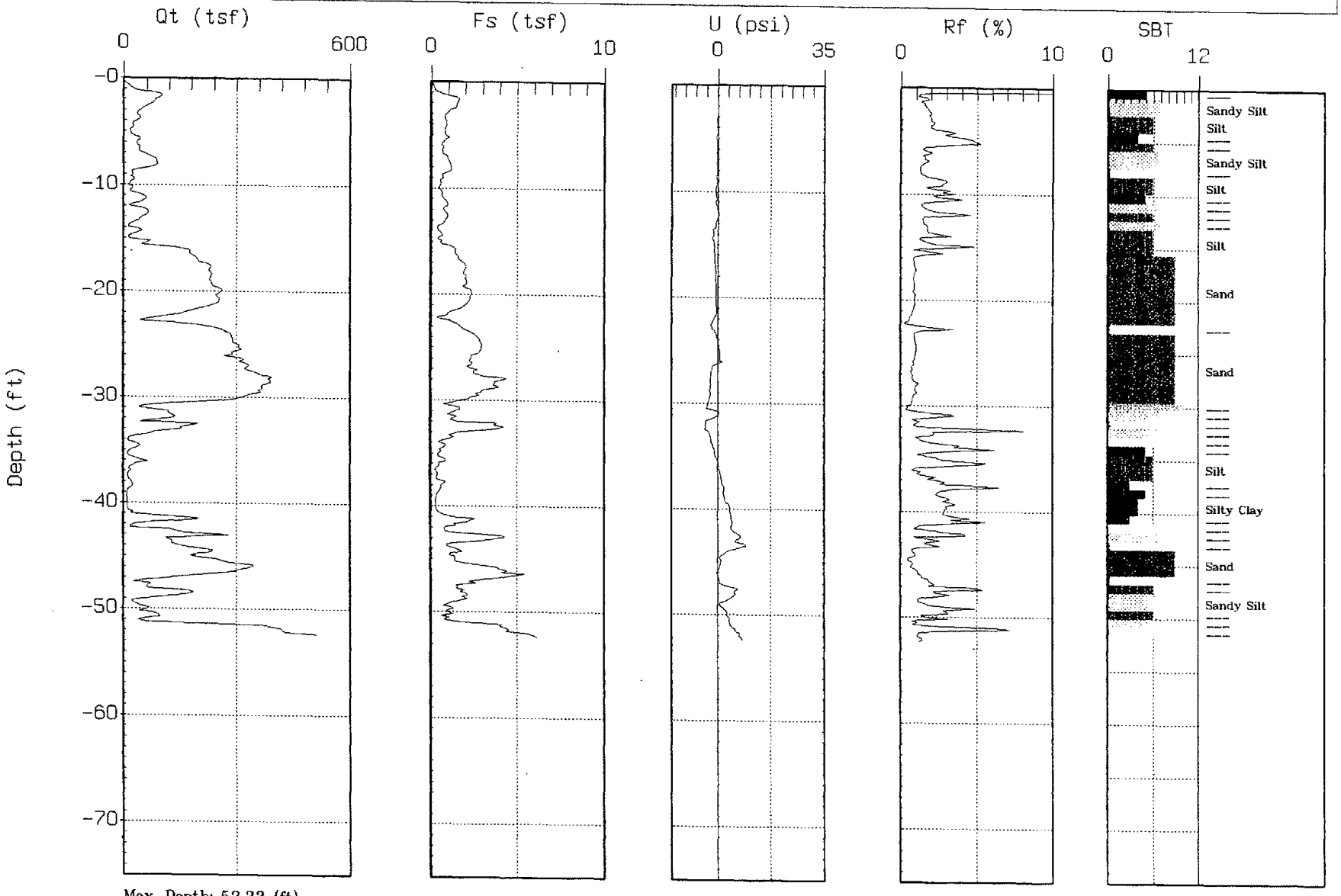
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

GREGG

R.T. FRANKIAN

Project No. : 96-115-S
Location : CPT-6

Engineer : A. SIMITOB
Date : 12:05:96 16:53

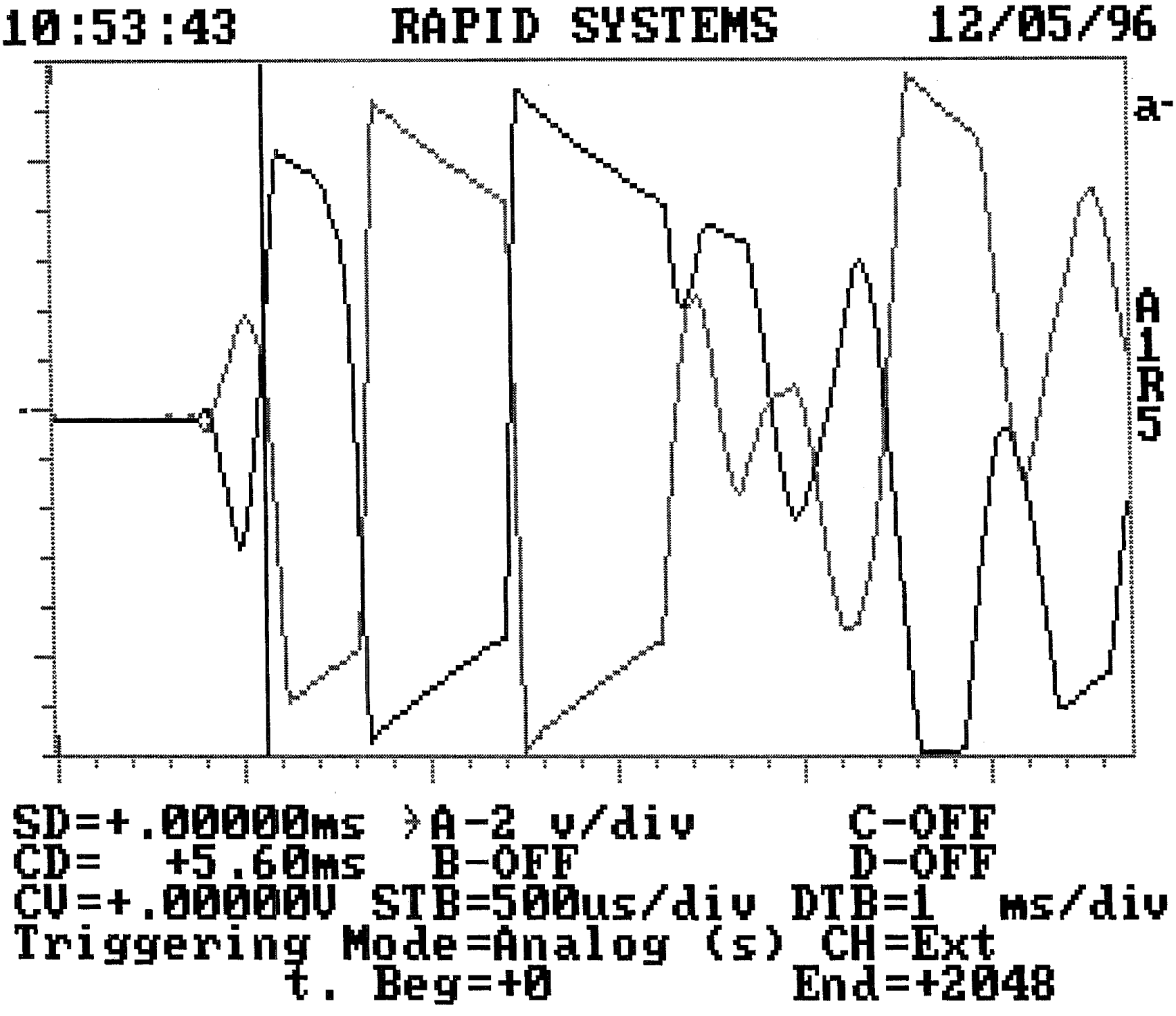


Max. Depth: 52.33 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

For use with report dated 03/18/2005; RTF Job No. 2004-700-21



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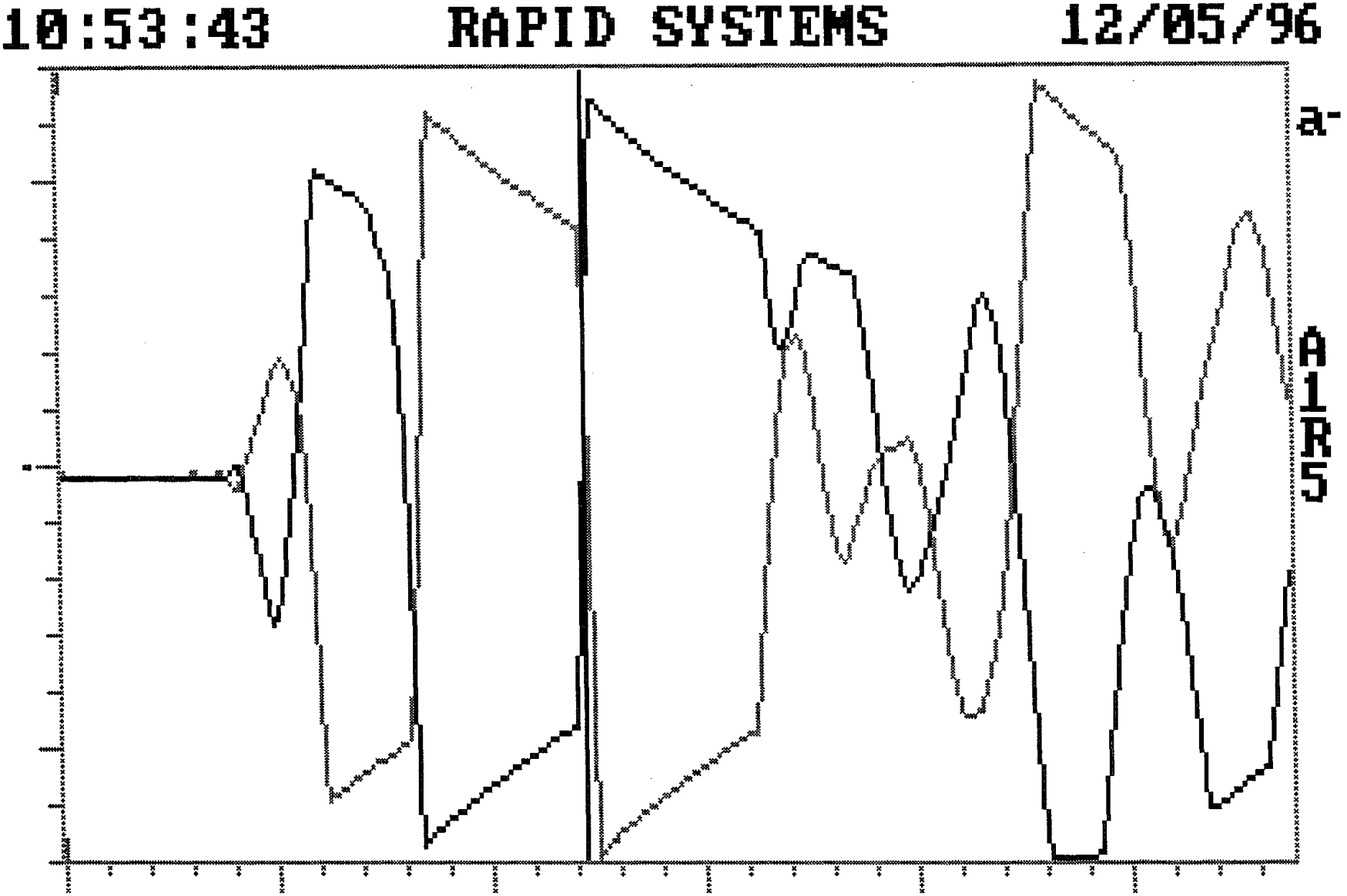

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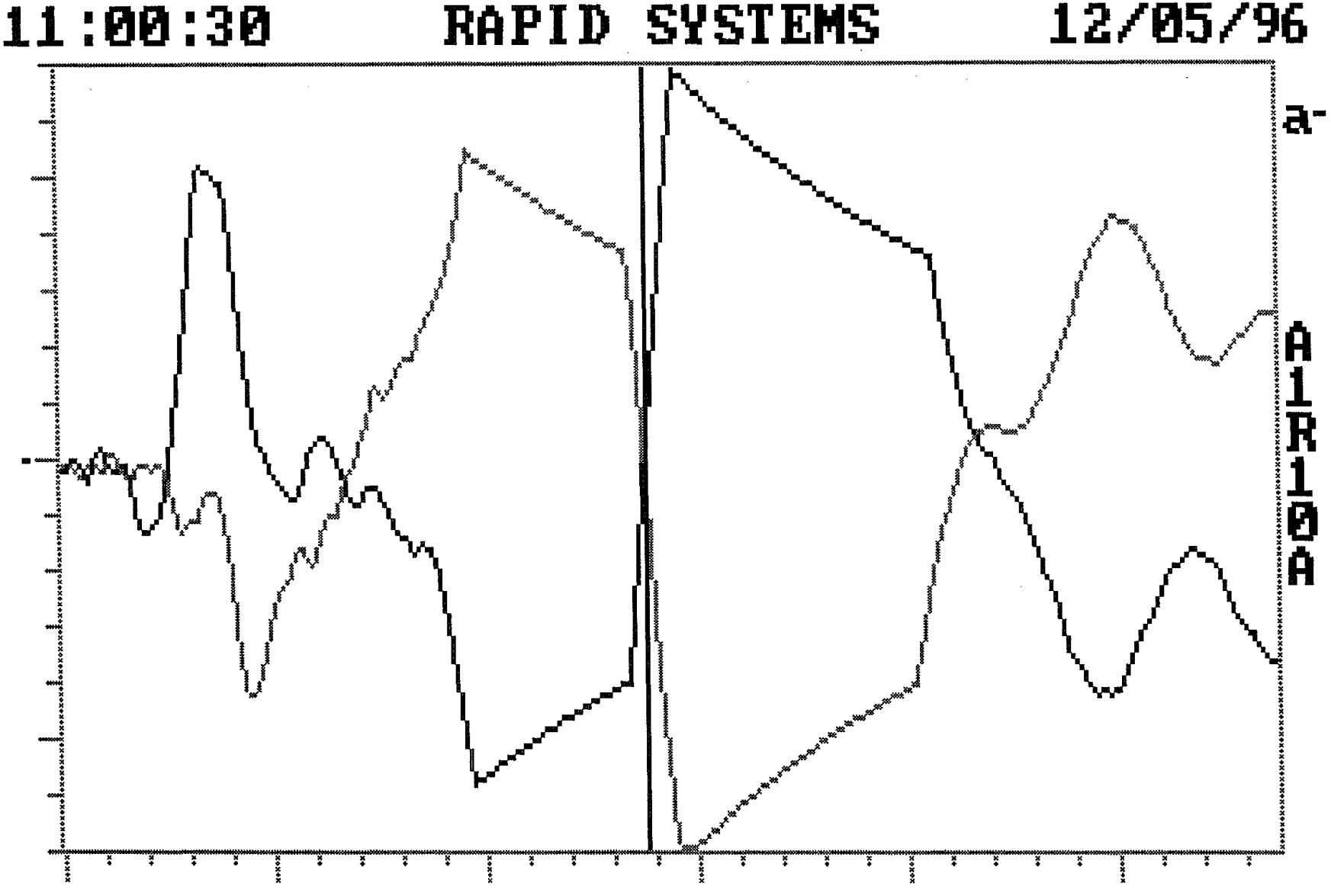

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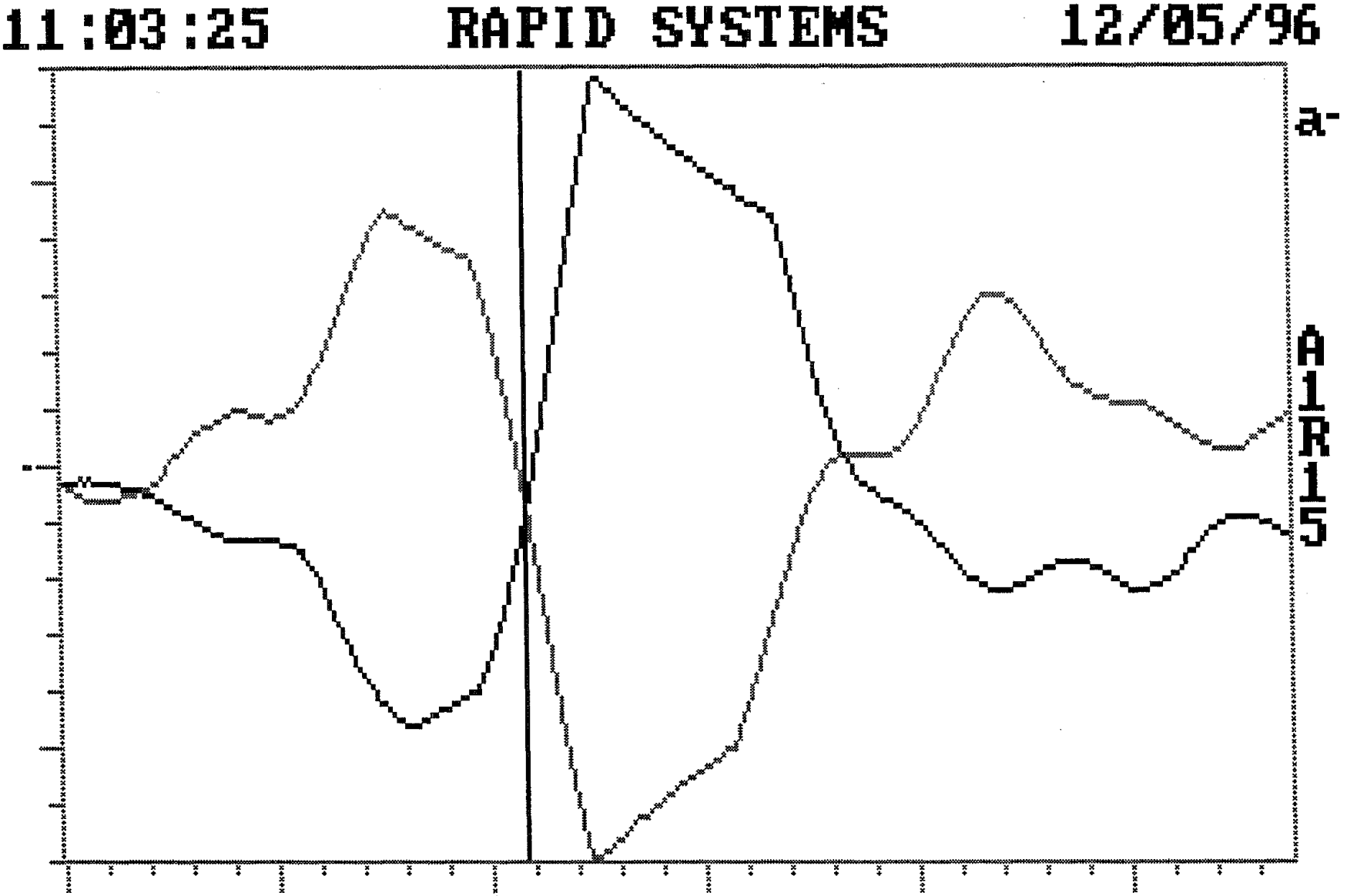

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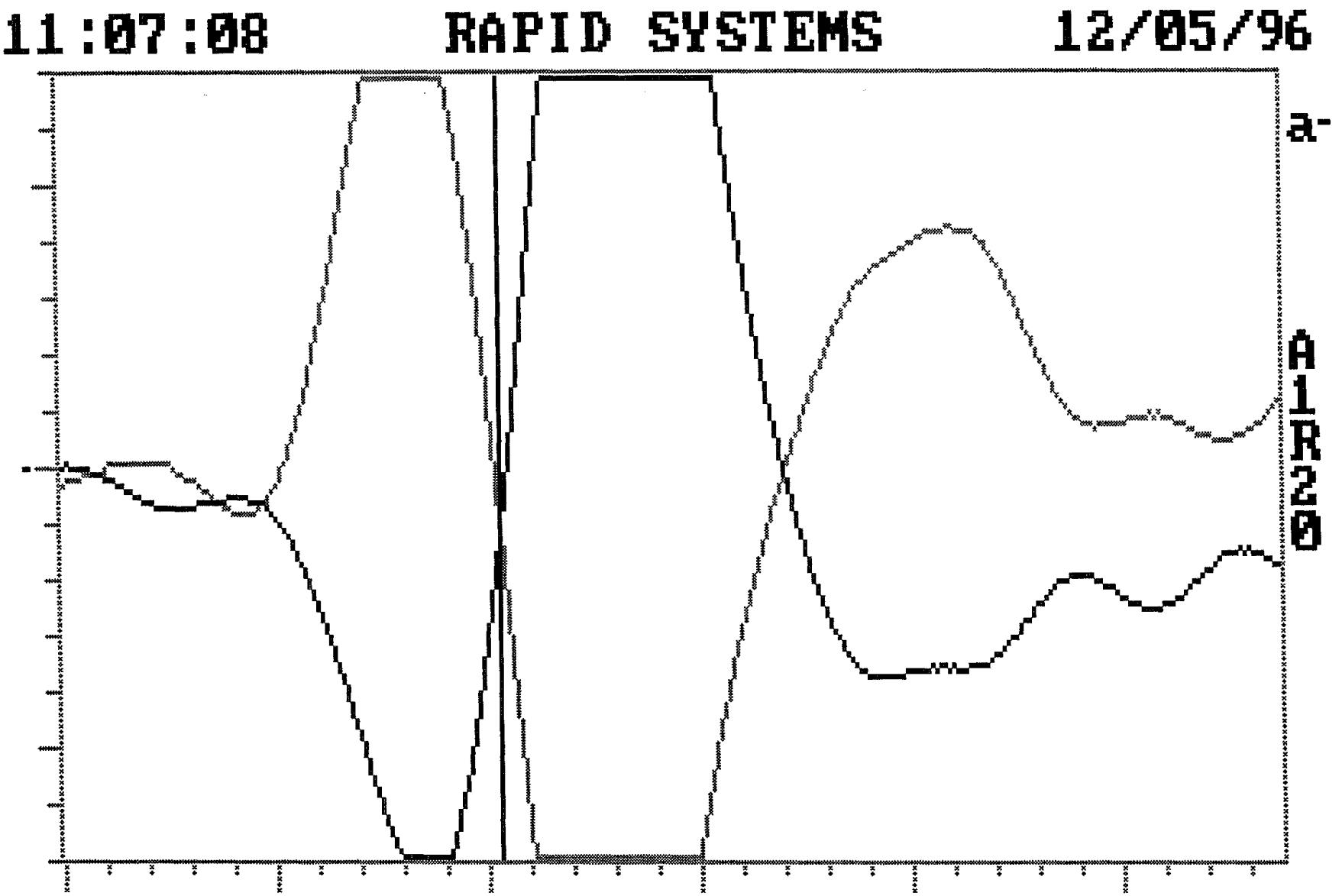

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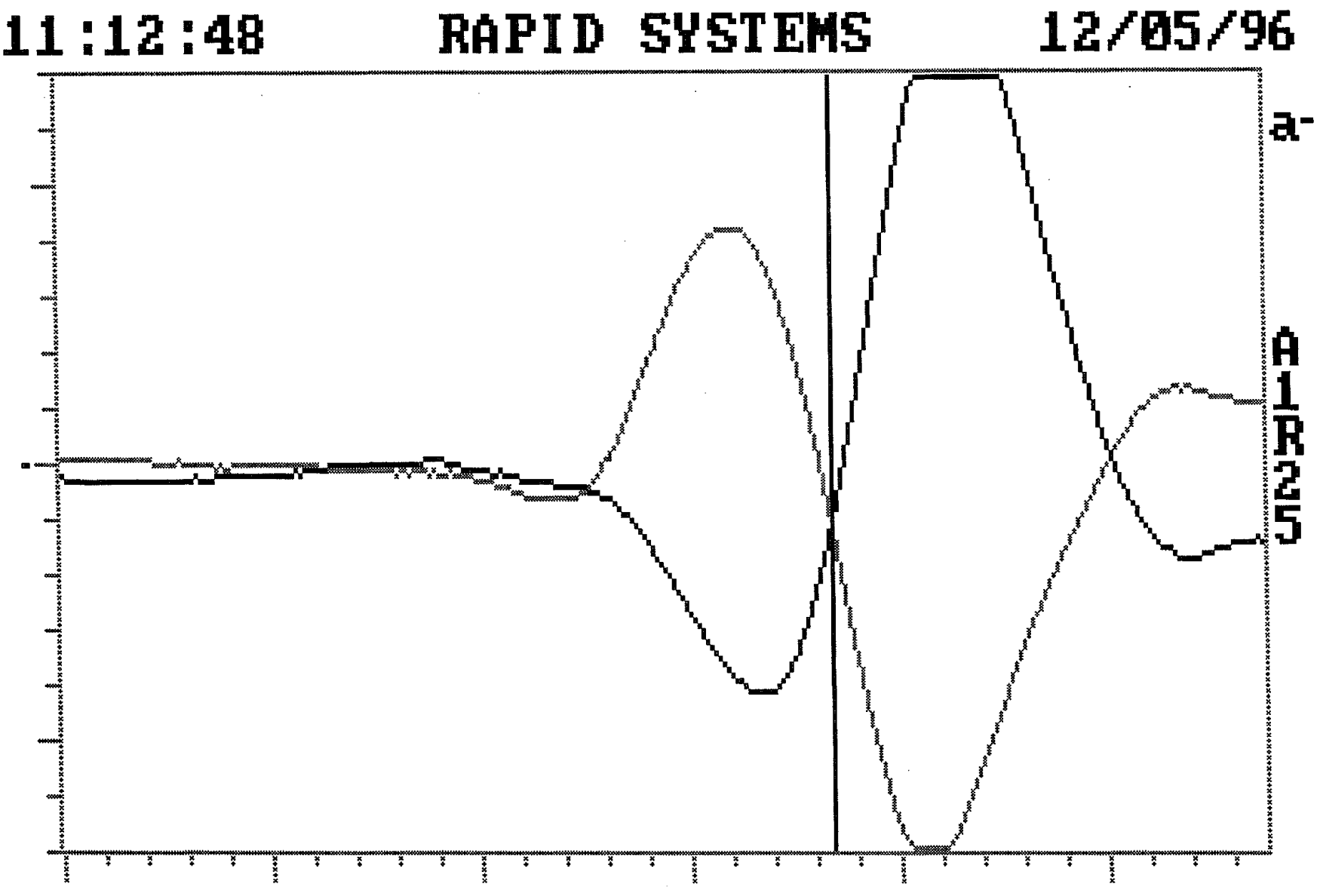
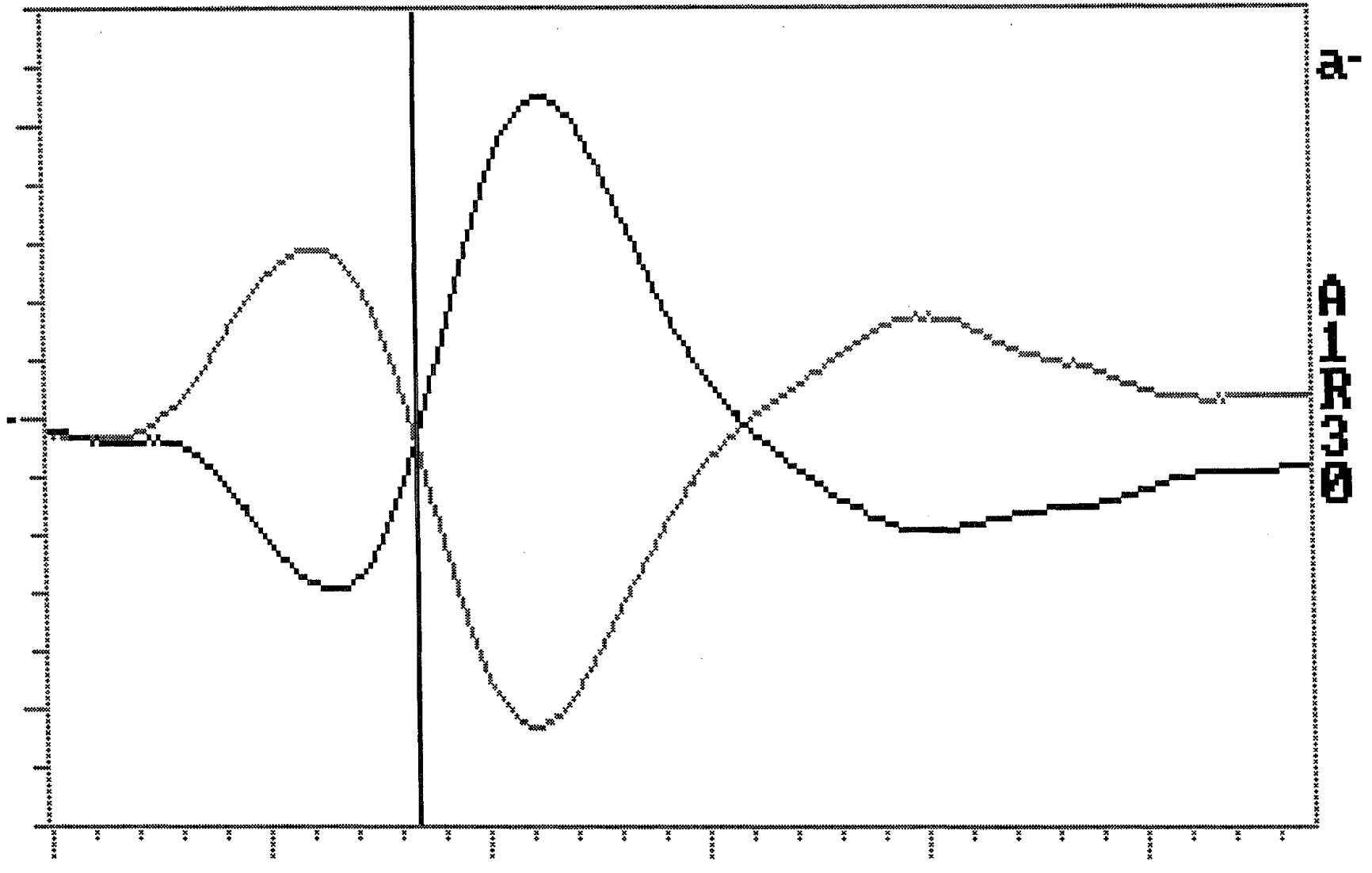


For use with report dated 03/18/2005; RTF Job No. 2004-700-21

11:16:51 RAPID SYSTEMS 12/05/96



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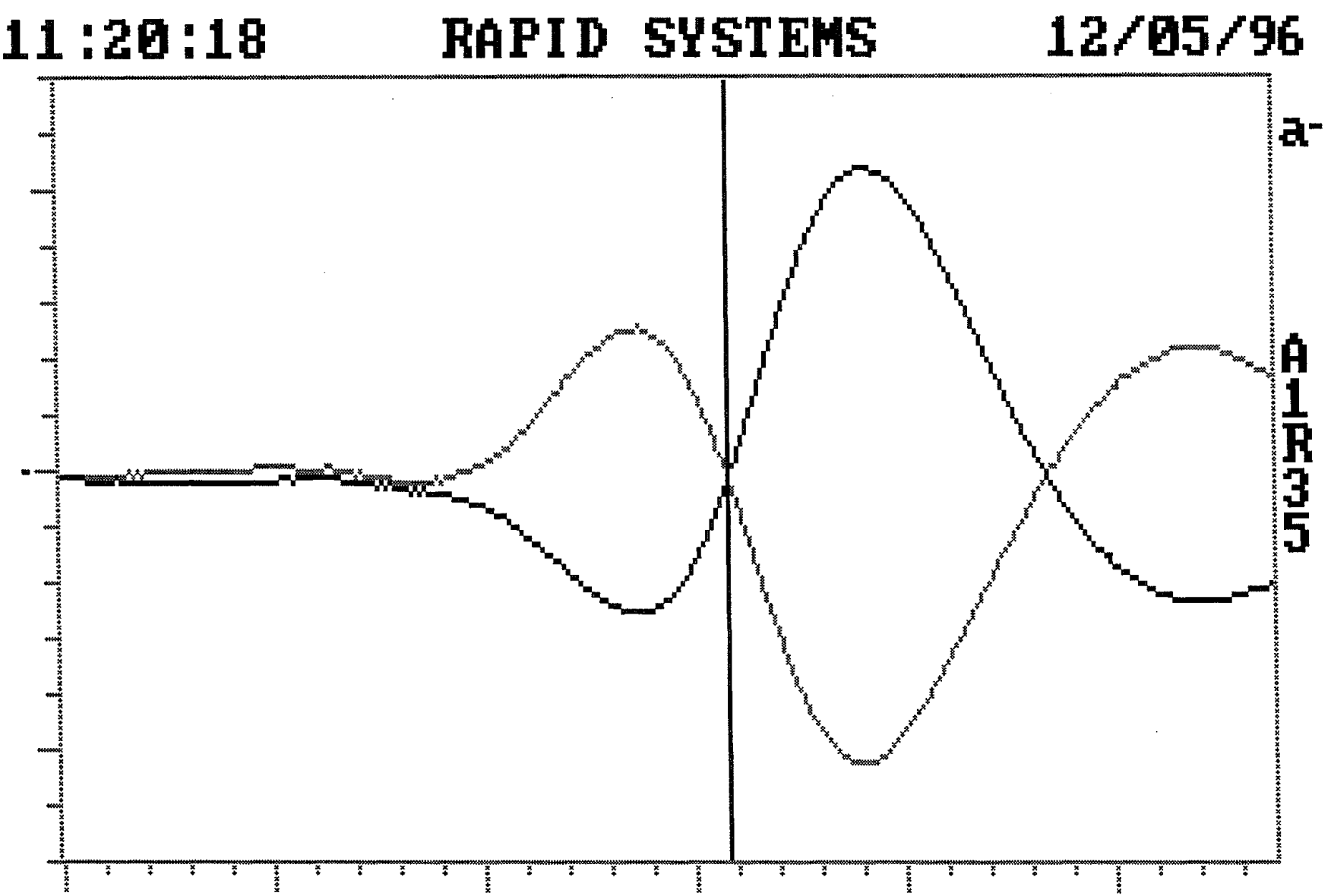

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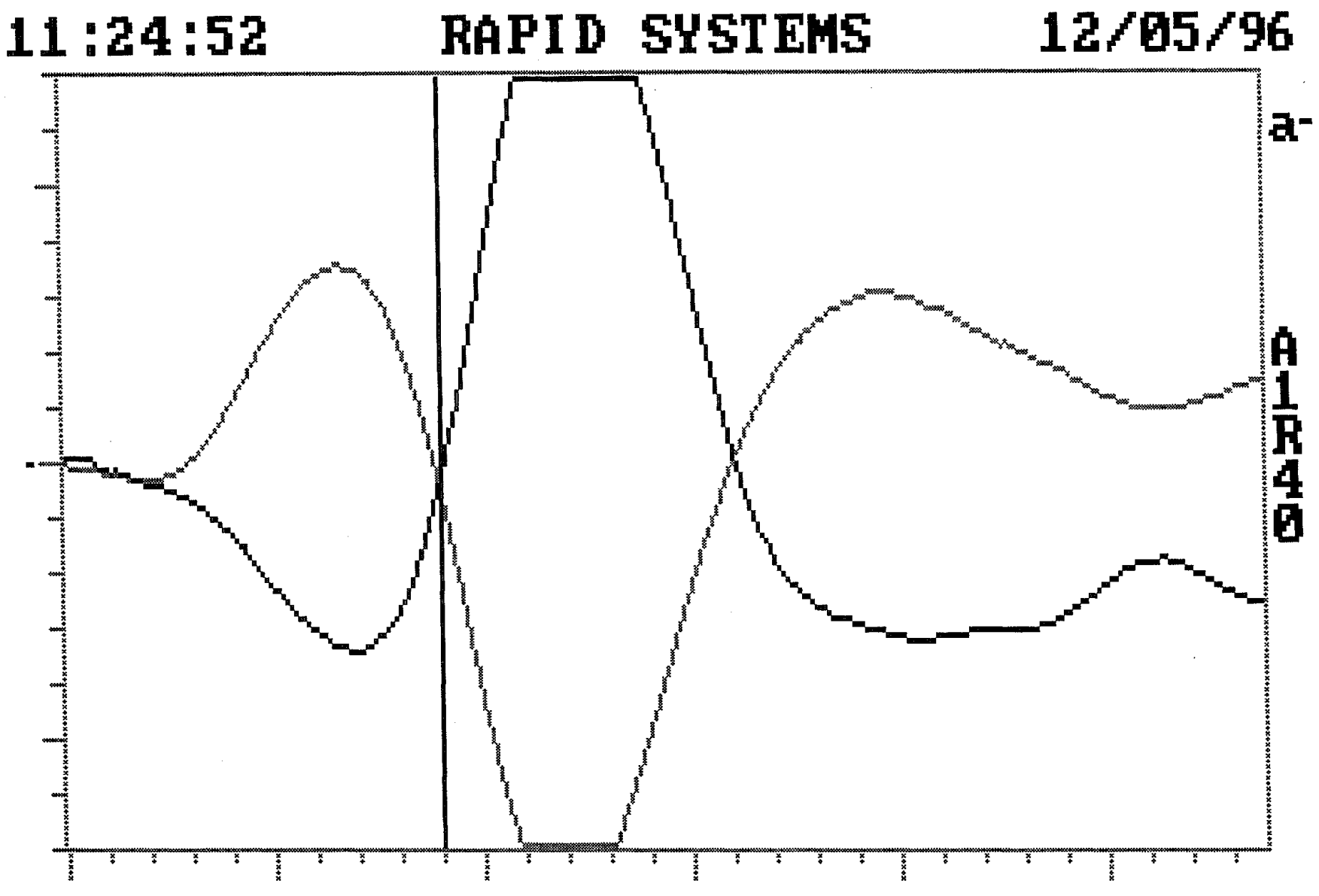
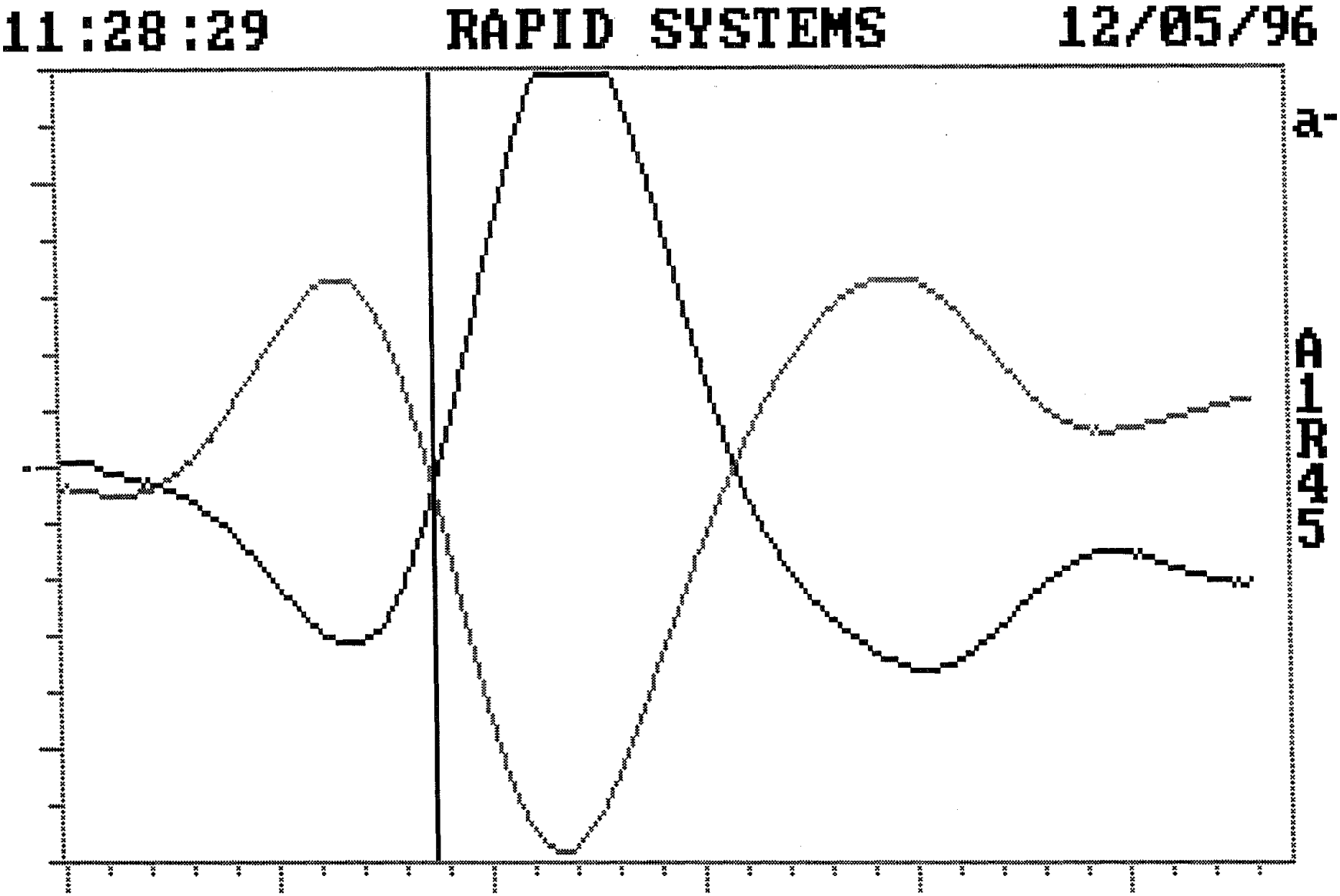
CD= +65.40ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
Beg=+0 End=+2048

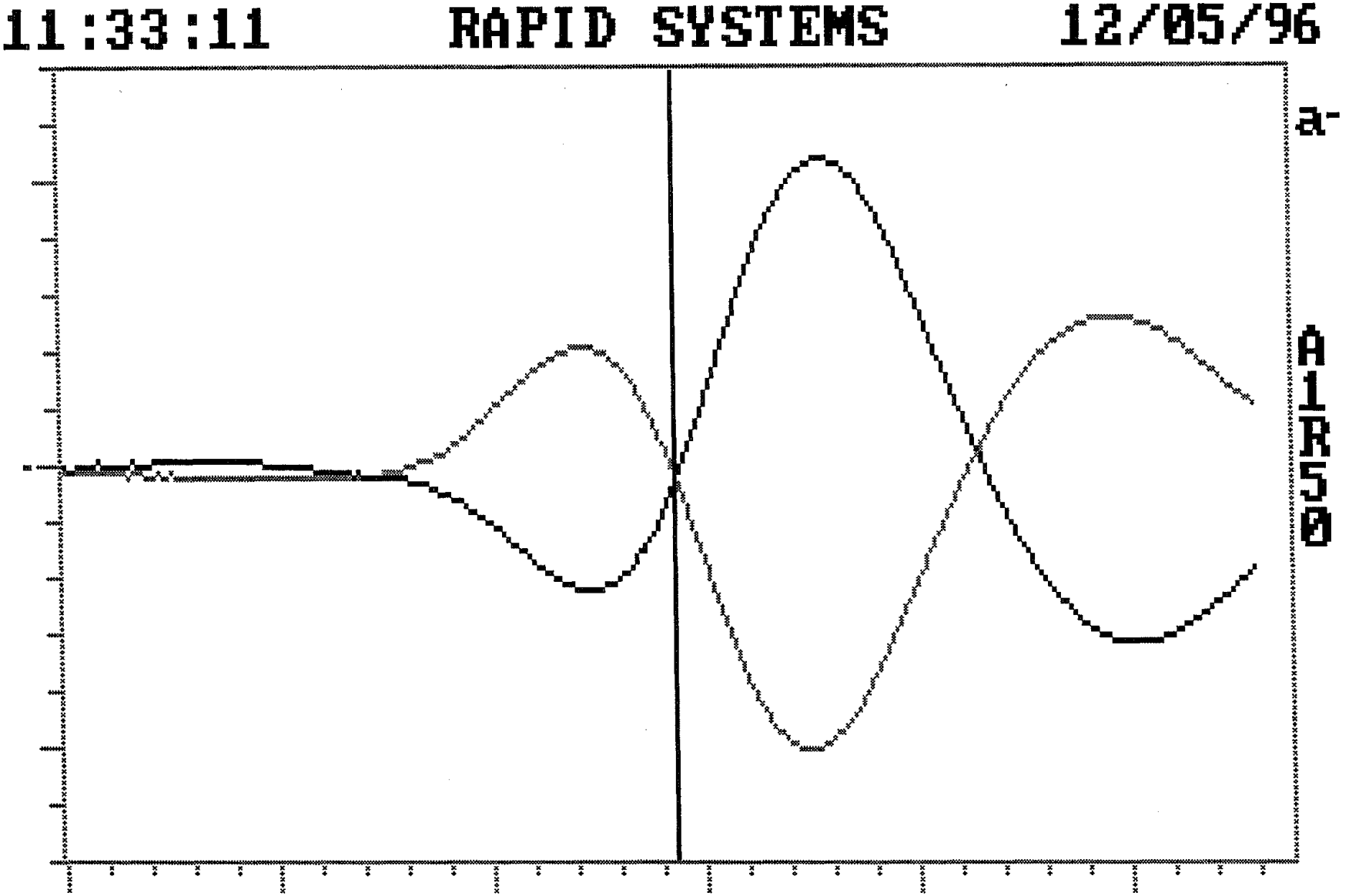
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



For use with report dated 03/18/2005; RTF Job No. 2004-700-21



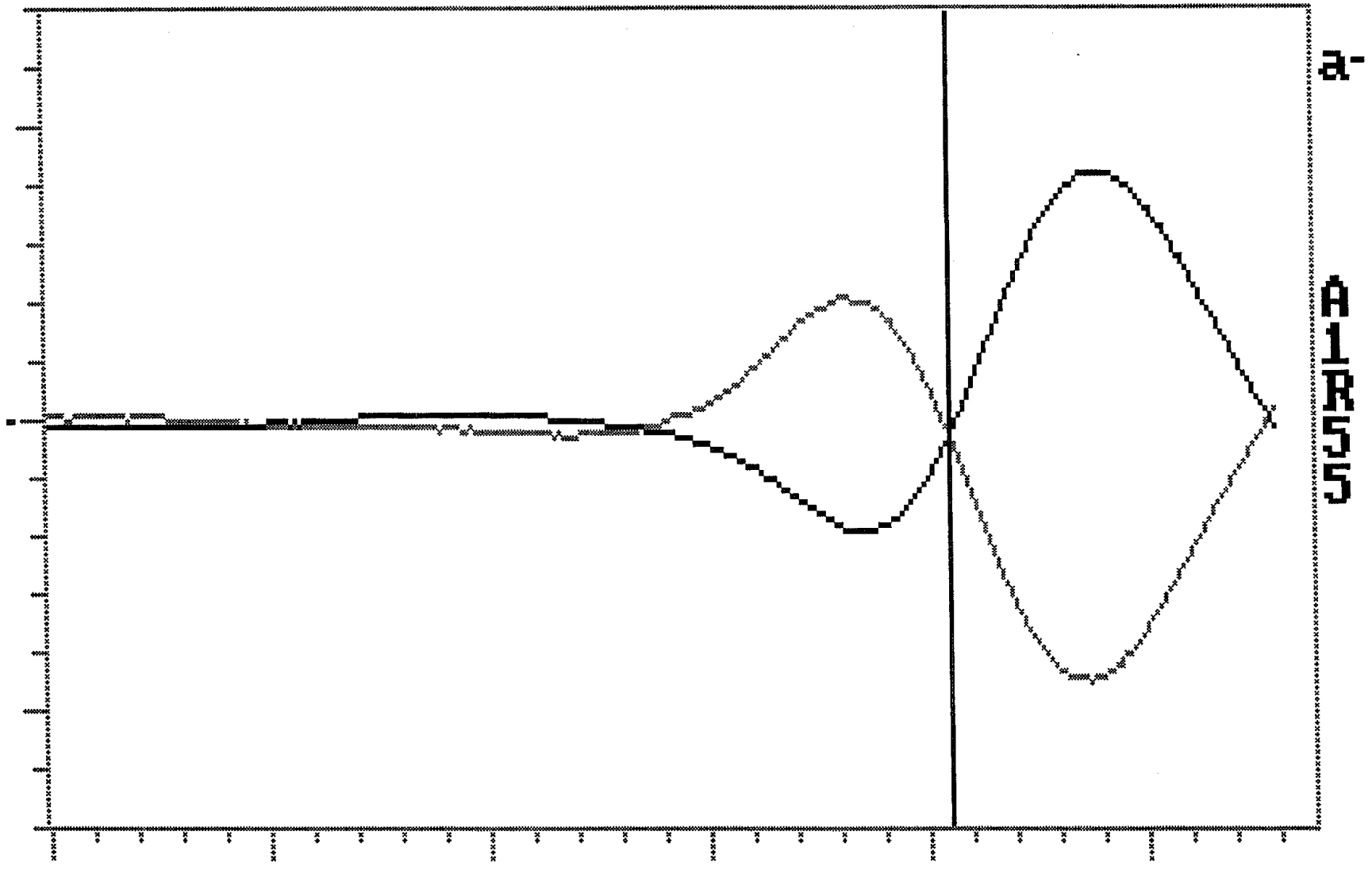
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



SD= +74.40ms >A-2 v/div C-OFF
CD= +88.70ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

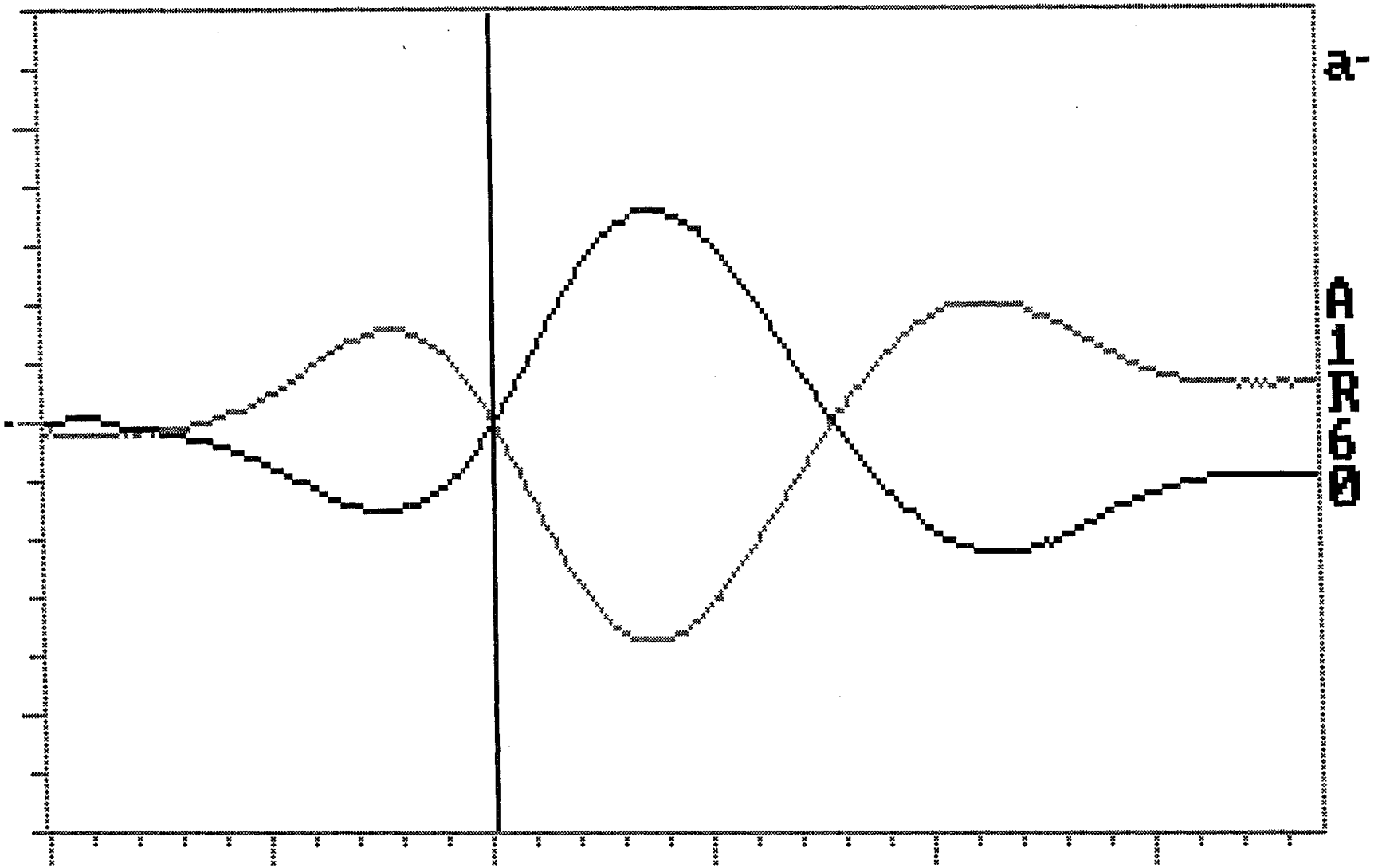
11:38:40 RAPID SYSTEMS 12/05/96



SD= +74.40ms A-2 v/div C-OFF
CD= +94.90ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
=End Ret. Beg=+0 End=+2048

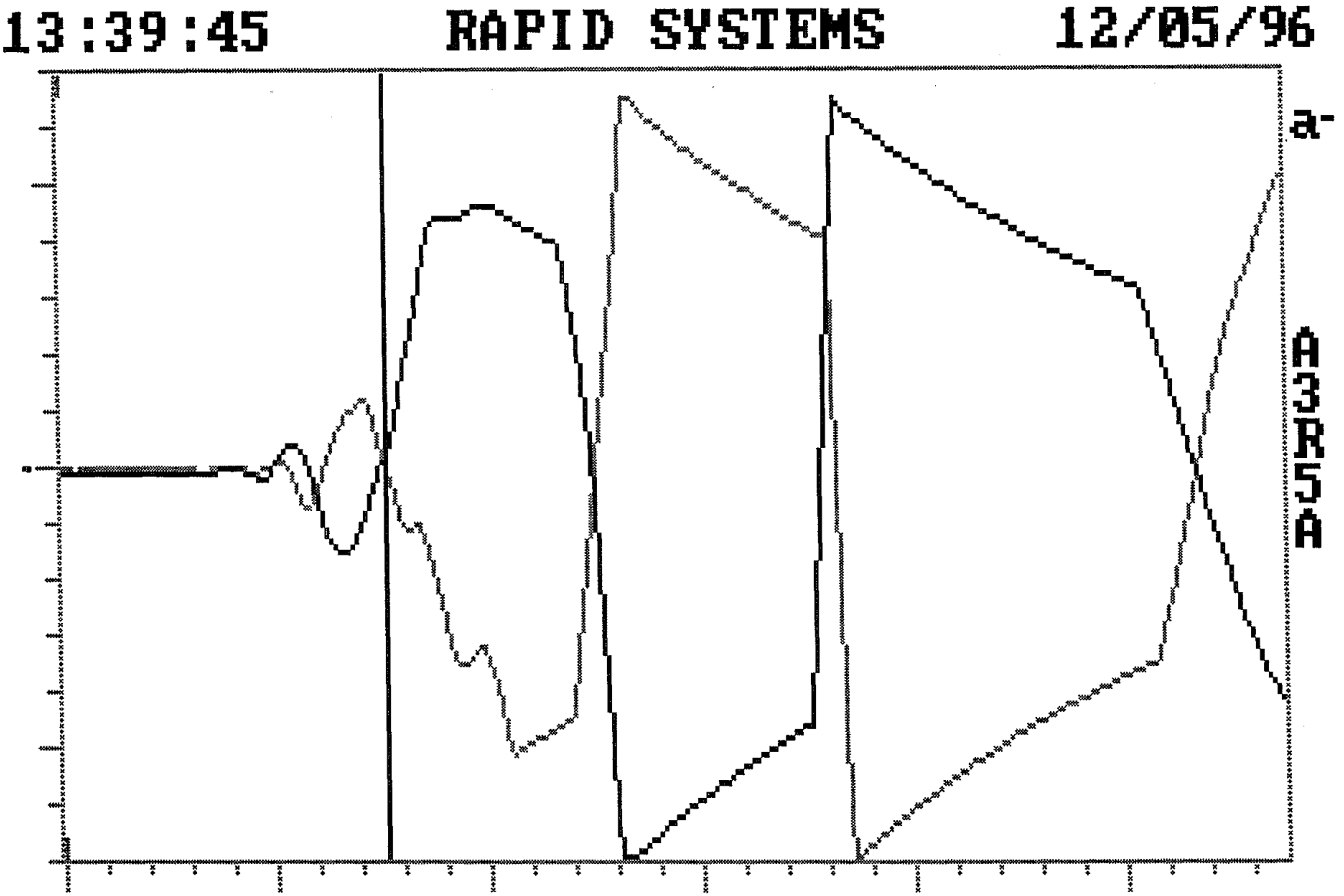
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

11:51:28 RAPID SYSTEMS 12/05/96



SD= +90.50ms >A-500mv/div C-OFF
CD=+100.60ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR=End Ret. Beg=+0 End=+3456

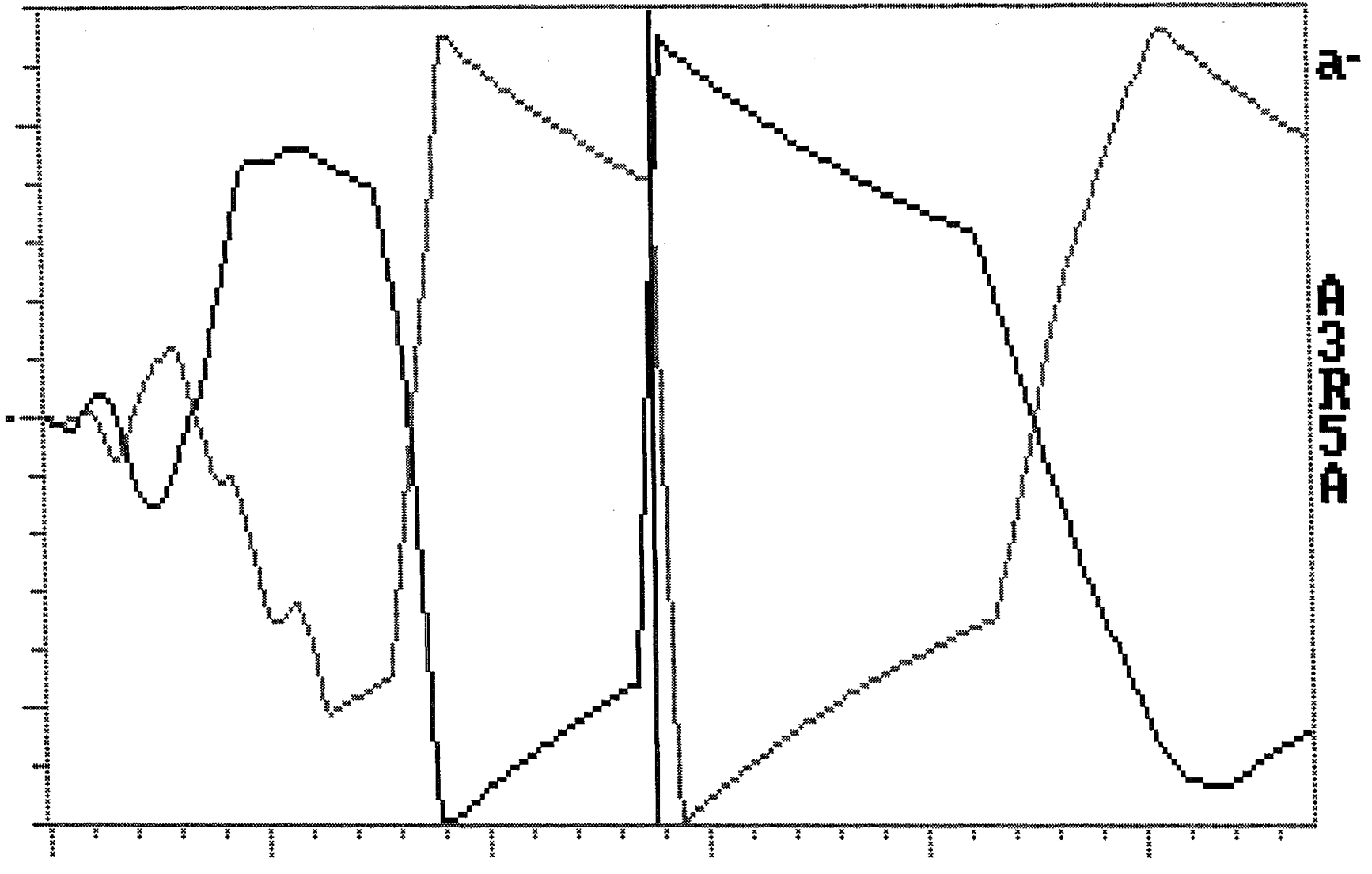
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



SD=+.00000ms A-2 v/div C-OFF
CD= +7.60ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR=End Re* Beg=+0 End=+2048

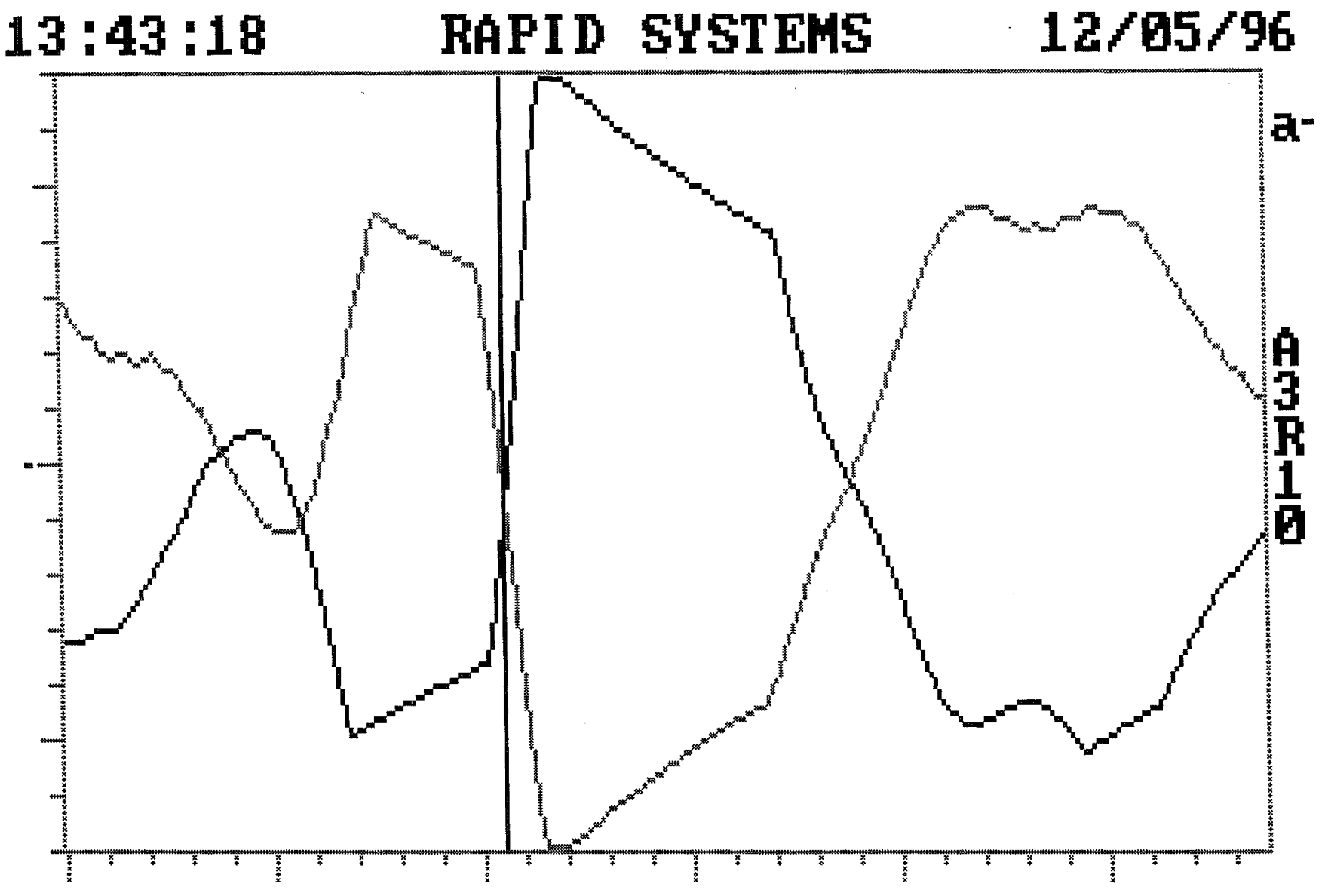
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

13:39:45 RAPID SYSTEMS 12/05/96



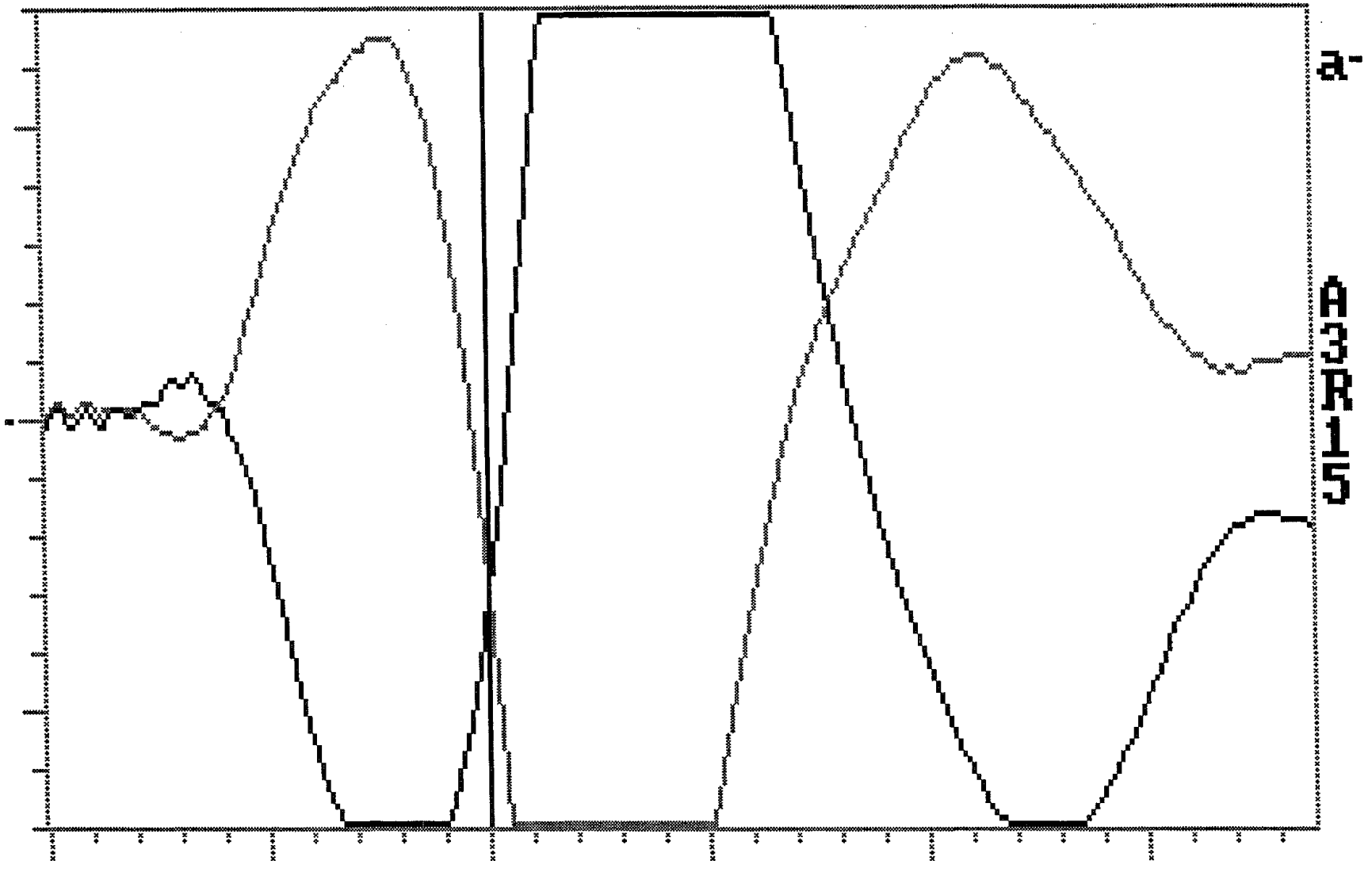
SD= +4.20ms A-2 v/div C-OFF
CD= +18.00ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21



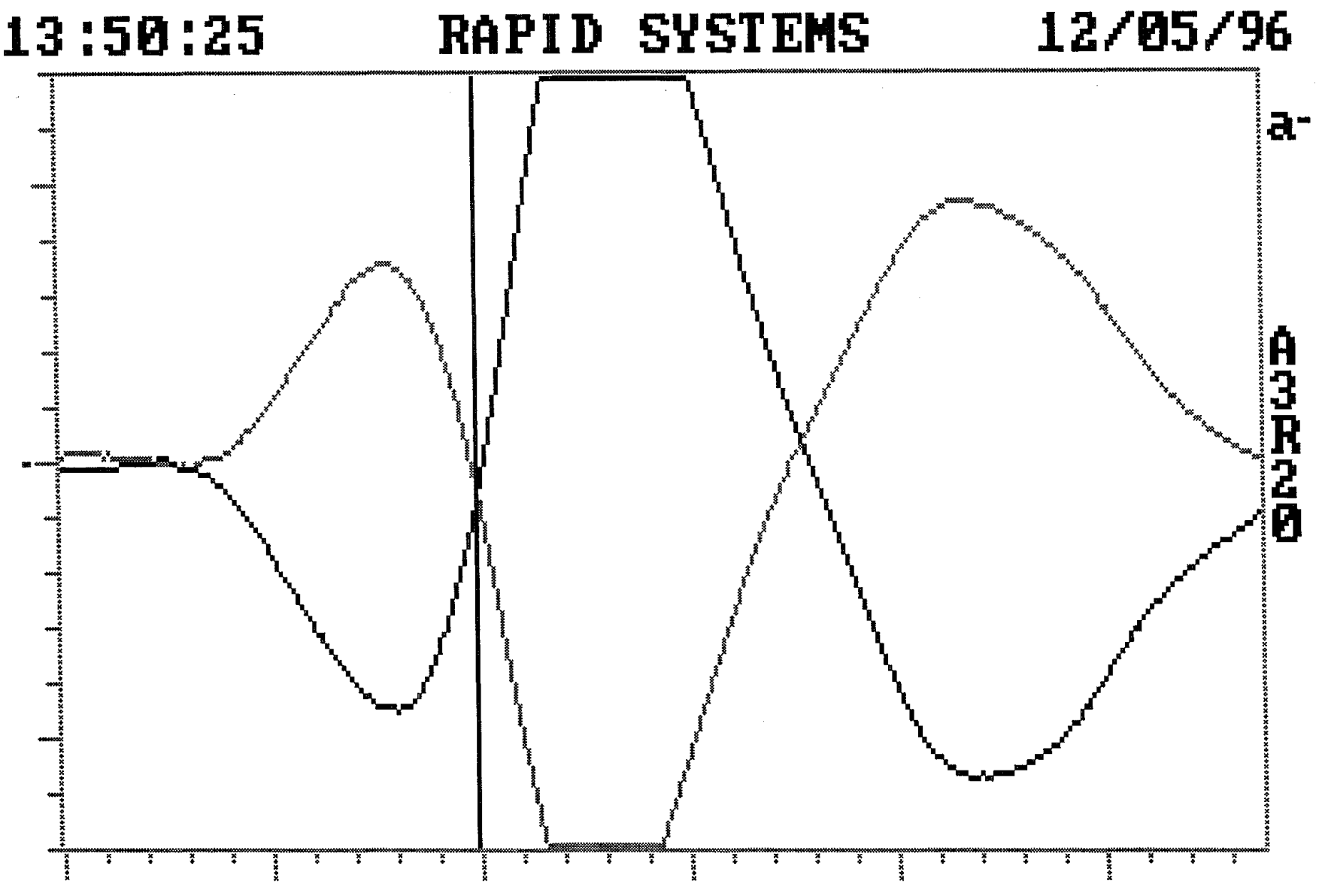
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

13:46:28 RAPID SYSTEMS 12/05/96

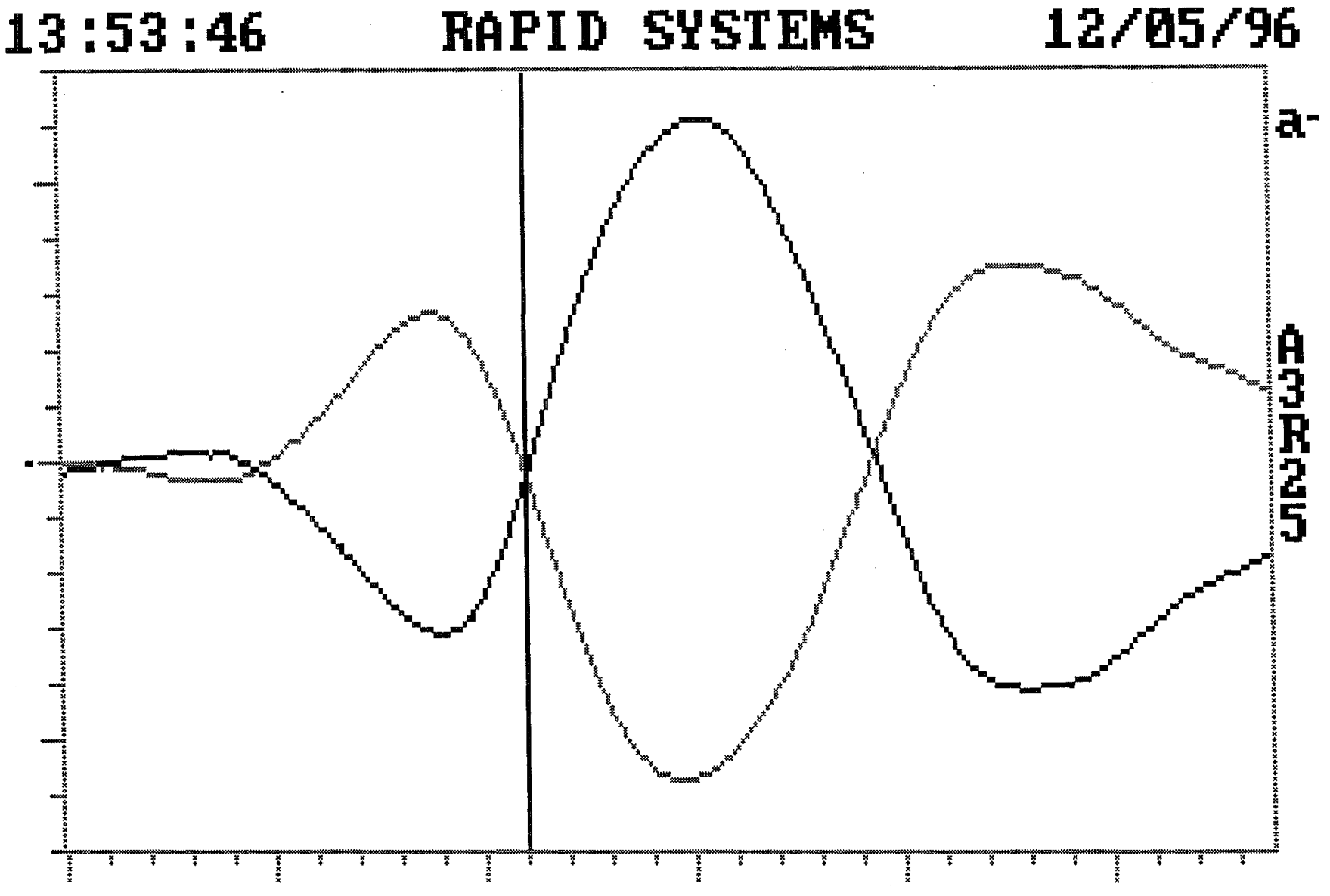


SD= +27.90ms A-2 v/div C-OFF
CD= +37.90ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR=End Ret. Beg=+0 End=+2048

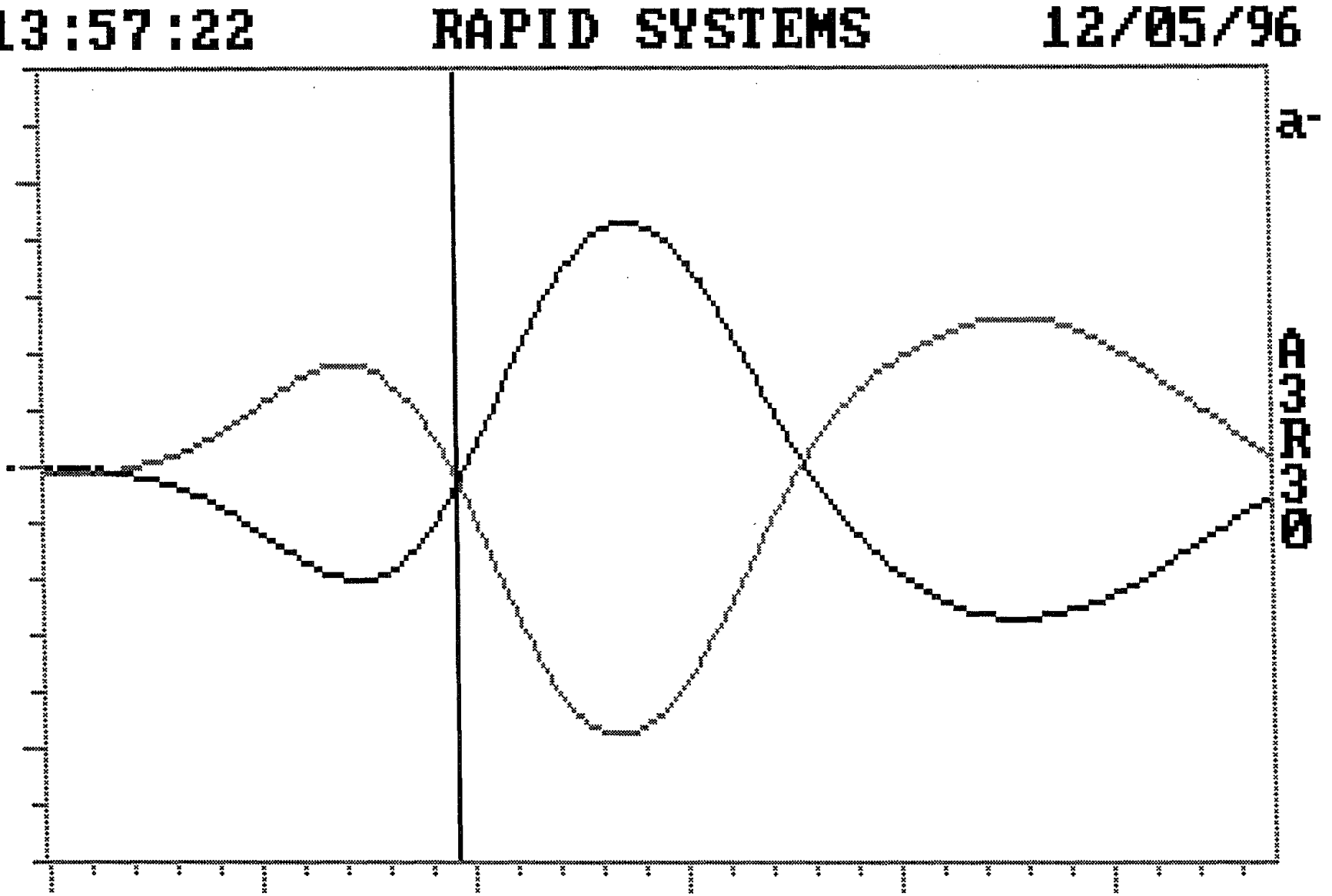
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



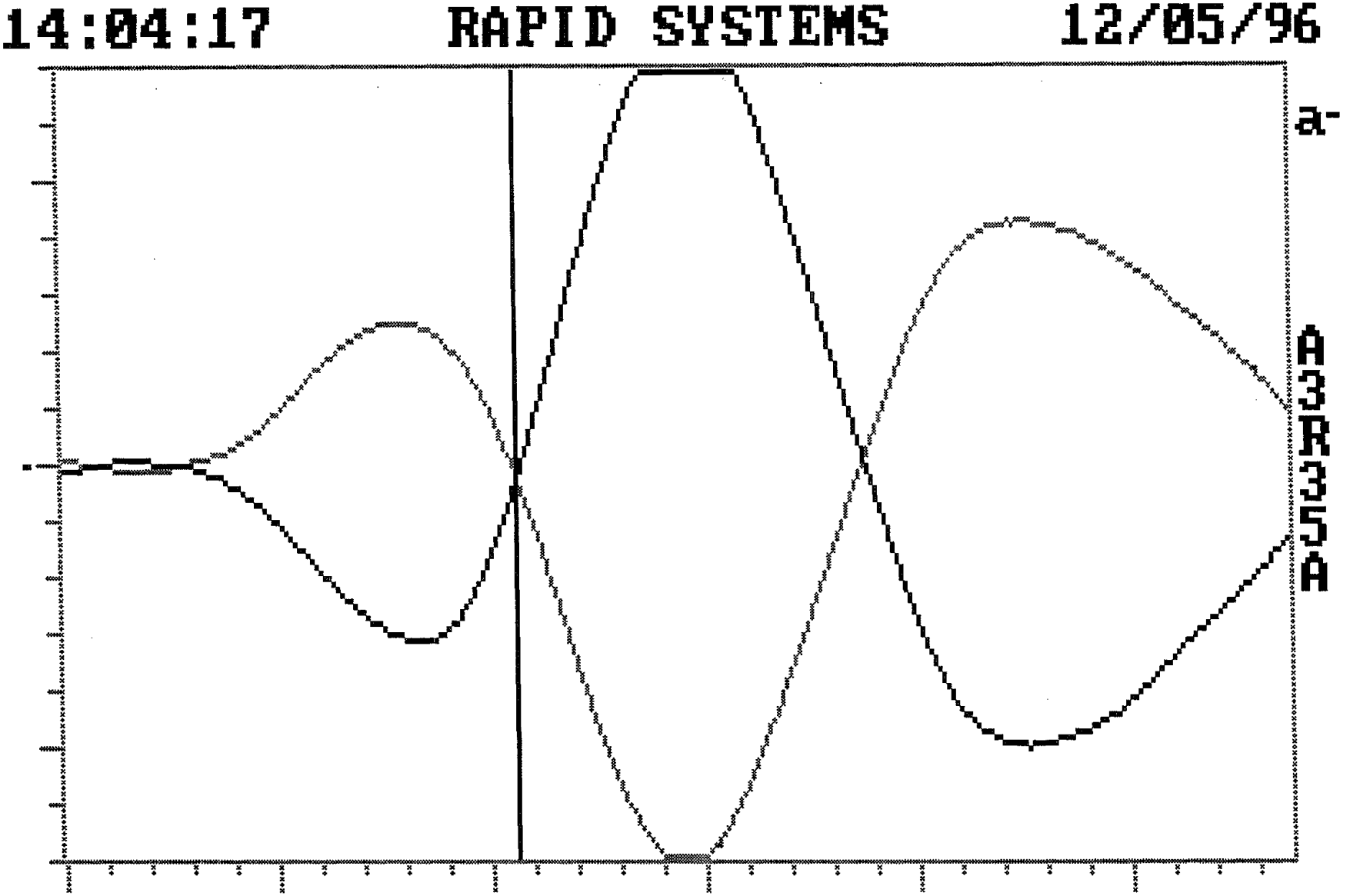
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



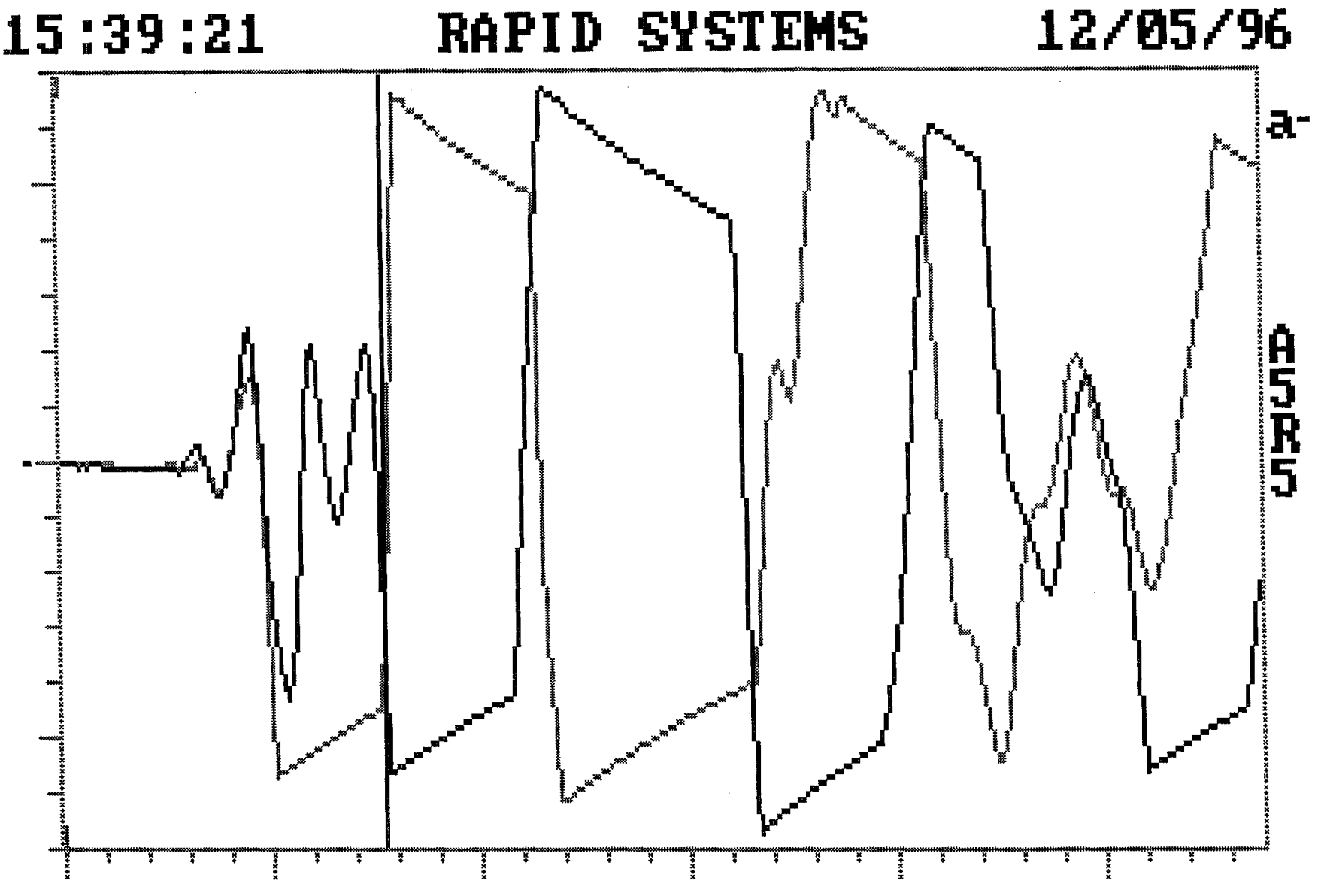
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



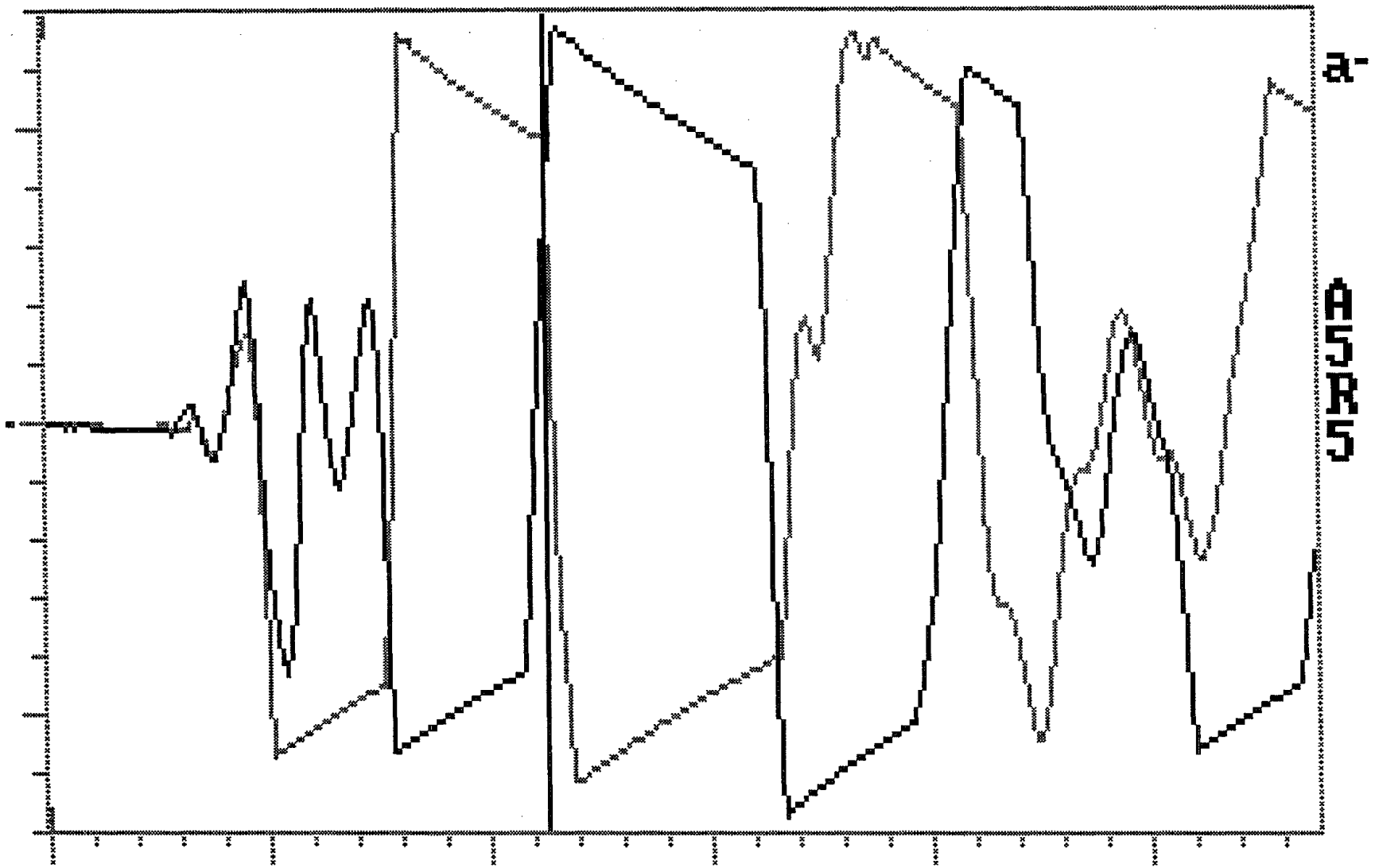
For use with report dated 03/18/2005; RTF Job No. 2004-700-21



For use with report dated 03/18/2005; RTF Job No. 2004-700-21

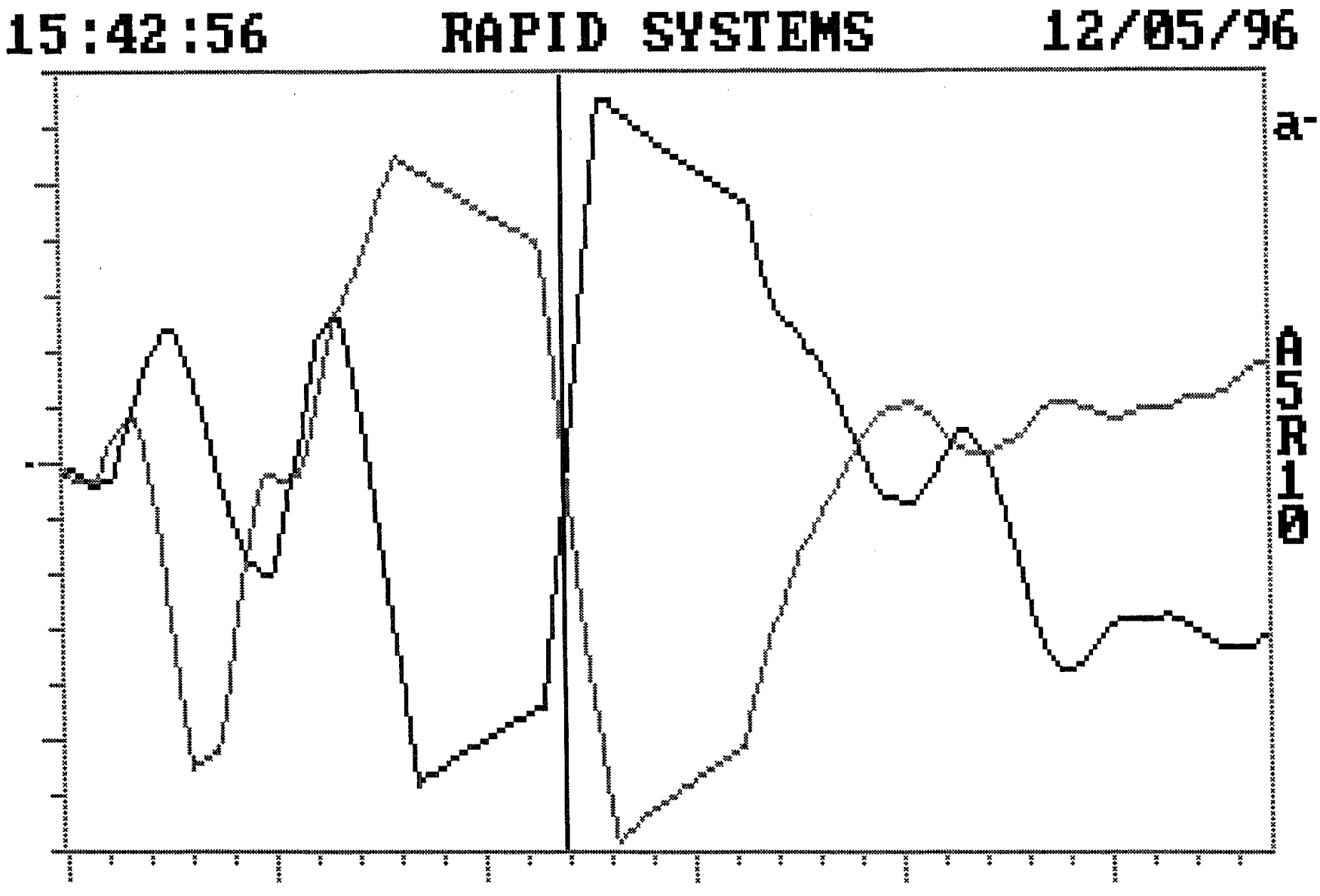


For use with report dated 03/18/2005; RTF Job No. 2004-700-21



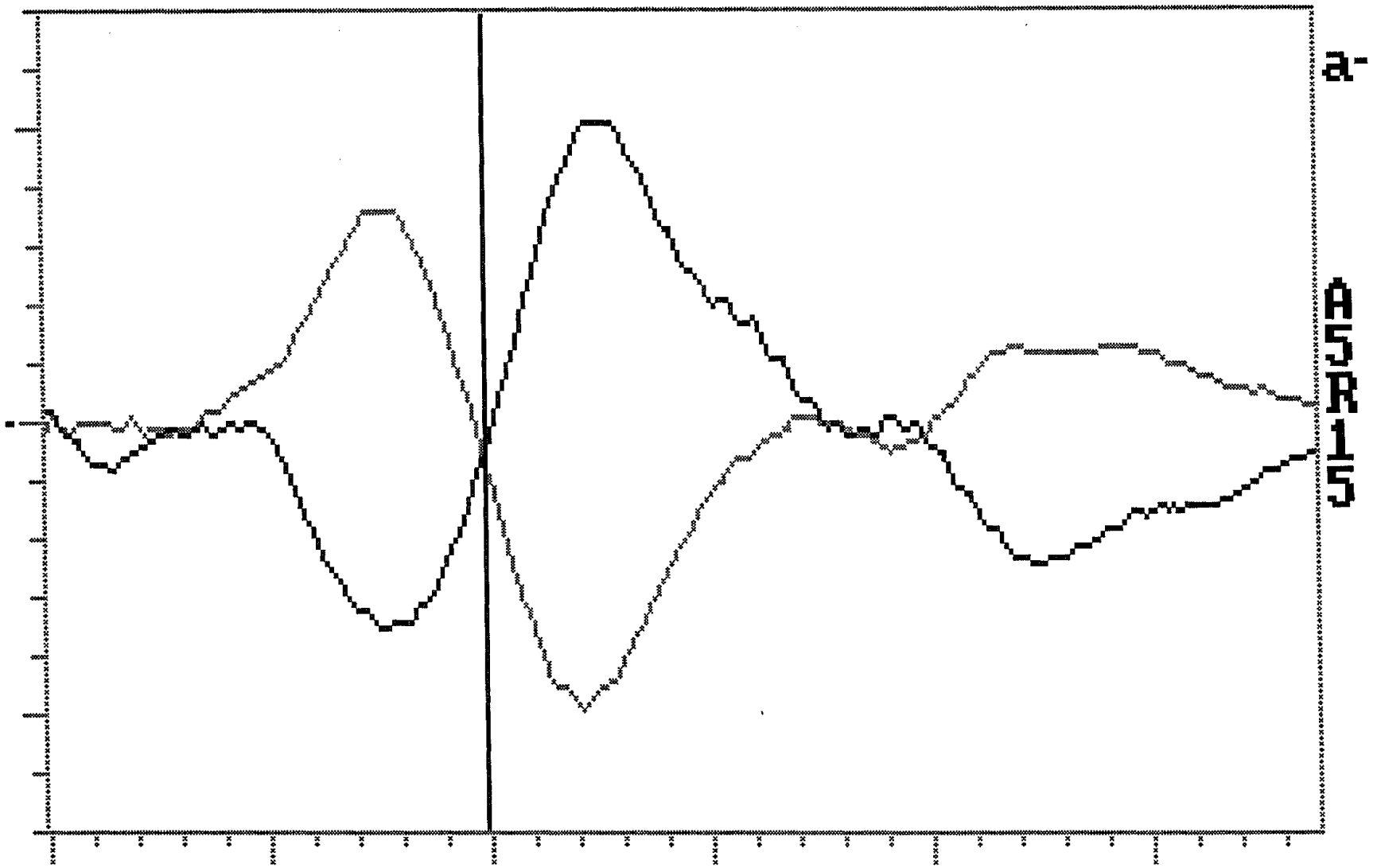
SD=+.00000ms >A-2 v/div C-OFF
CD= +11.30ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
<t. Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21



For use with report dated 03/18/2005; RTF Job No. 2004-700-21

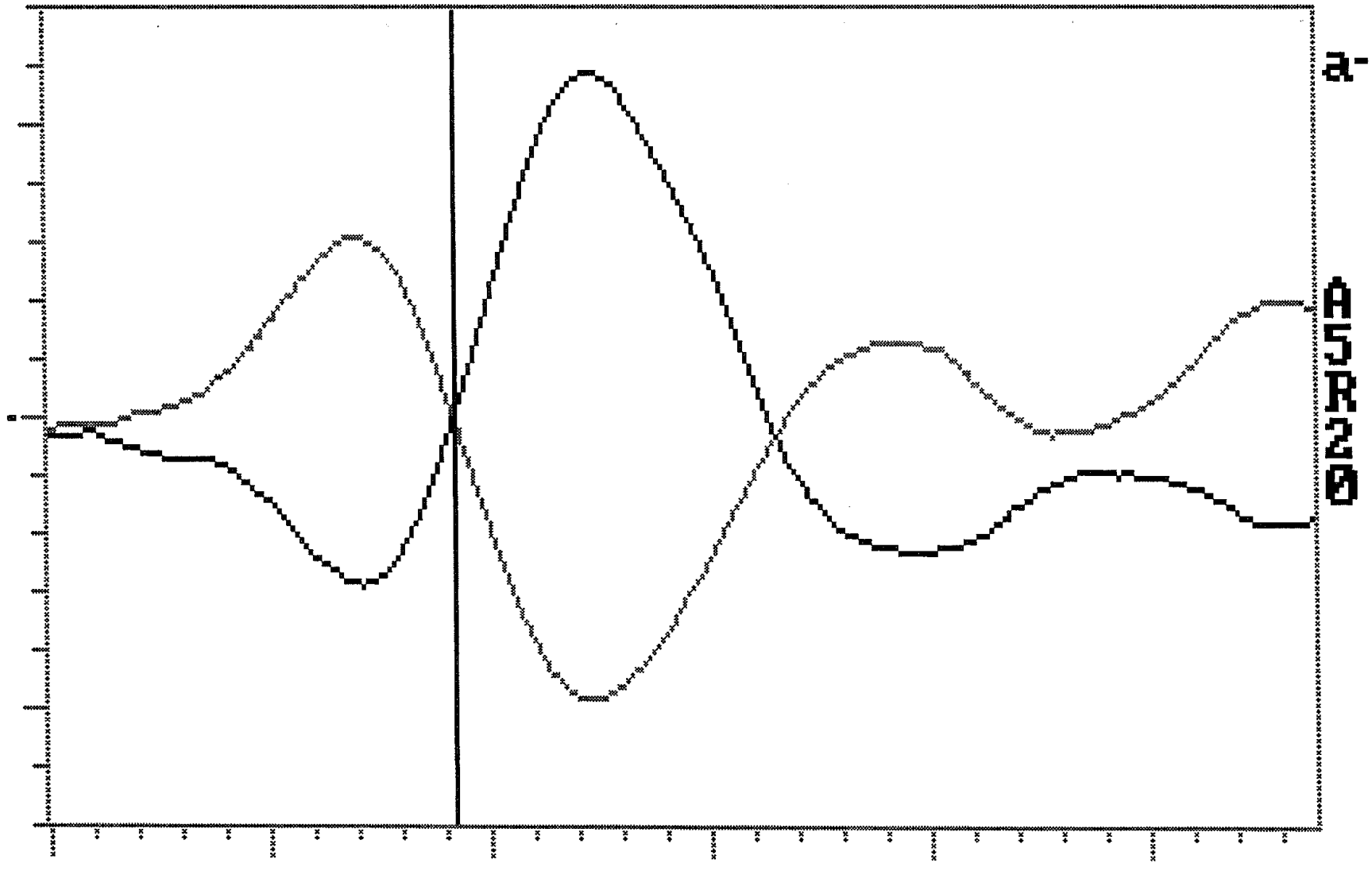
15:53:06 RAPID SYSTEMS 12/05/96



SD= +19.50ms >A-2 v/div C-OFF
CD= +29.40ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR=End Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

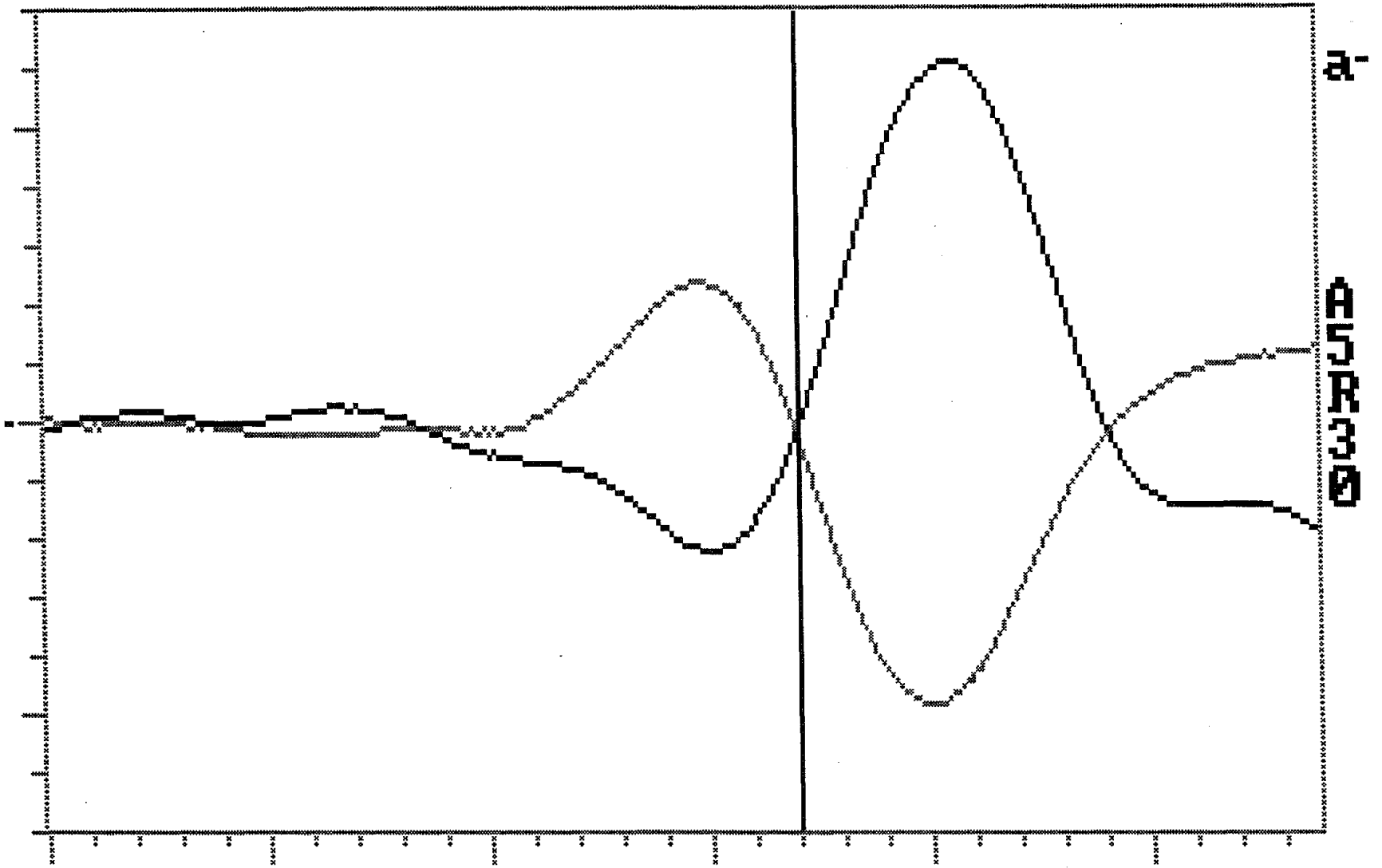
15:57:37 RAPID SYSTEMS 12/05/96



SD= +27.00ms A-2 v/div C-OFF
CD= +36.20ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

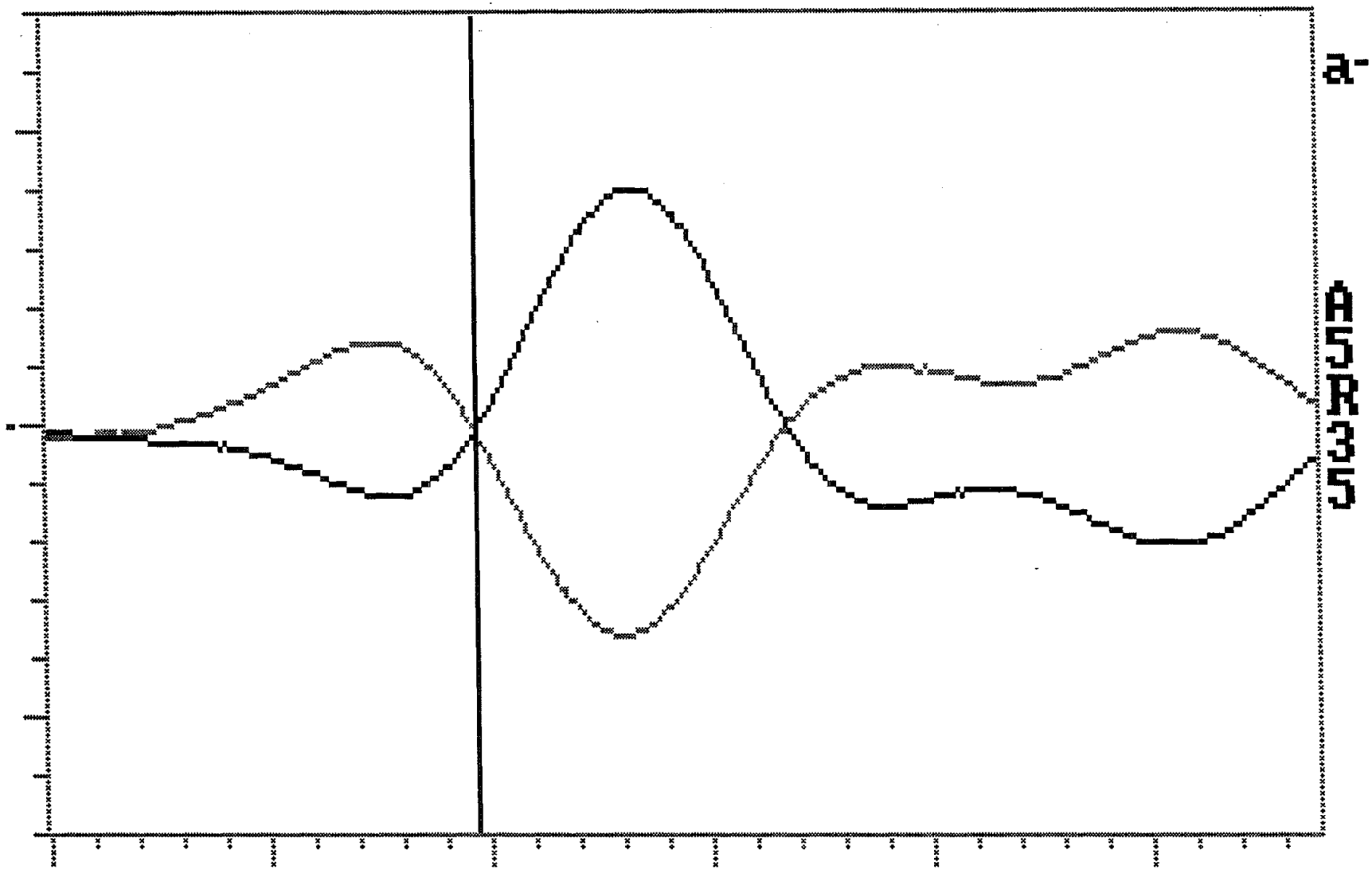
16:10:21 RAPID SYSTEMS 12/05/96



SD= +33.20ms >A-2 v/div C-OFF
CD= +50.20ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
C Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

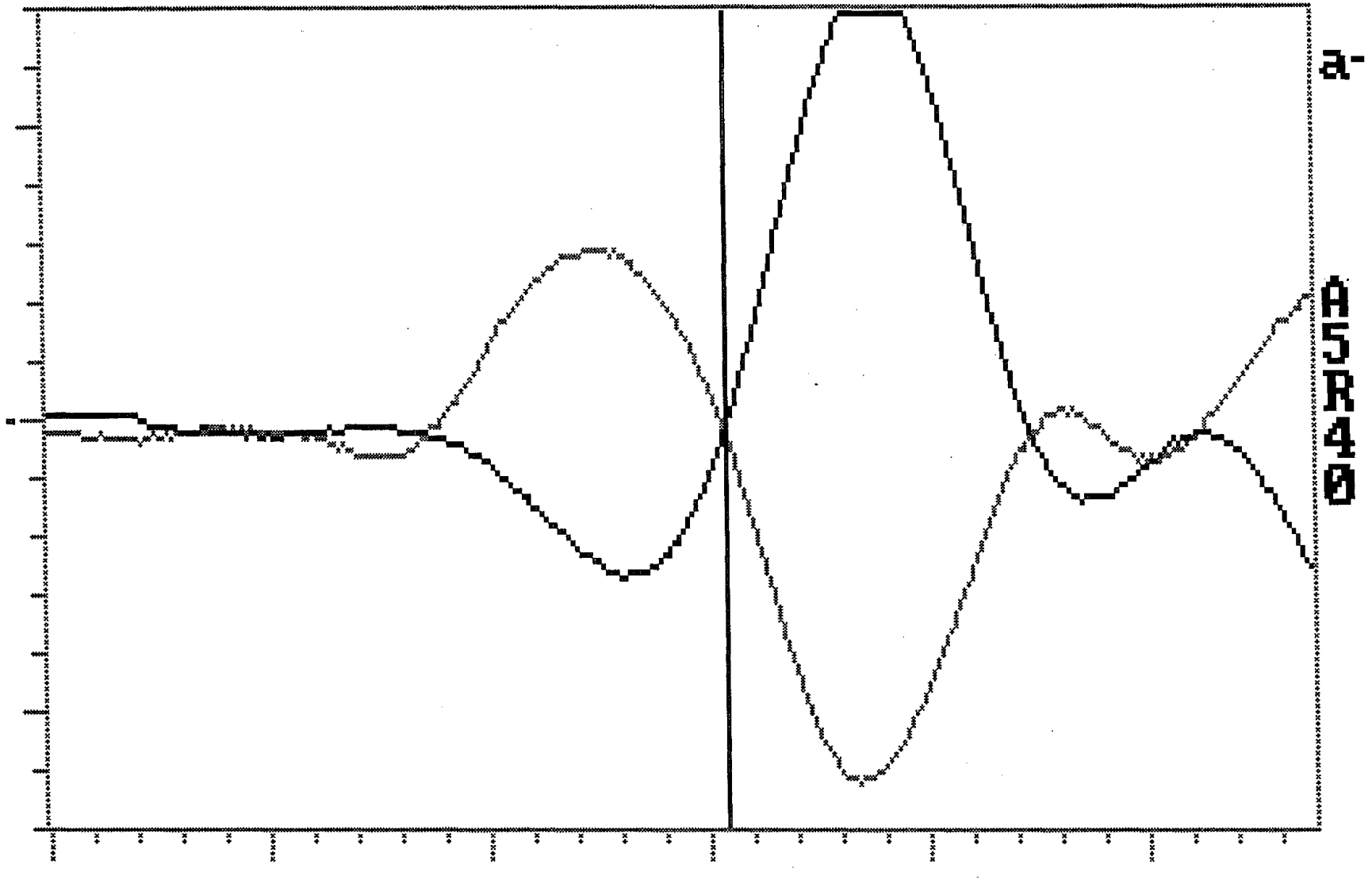
16:18:51 RAPID SYSTEMS 12/05/96



SD= +47.00ms A-2 v/div C-OFF
CD= +56.70ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR=End Ret. Beg=+0 End=+2048

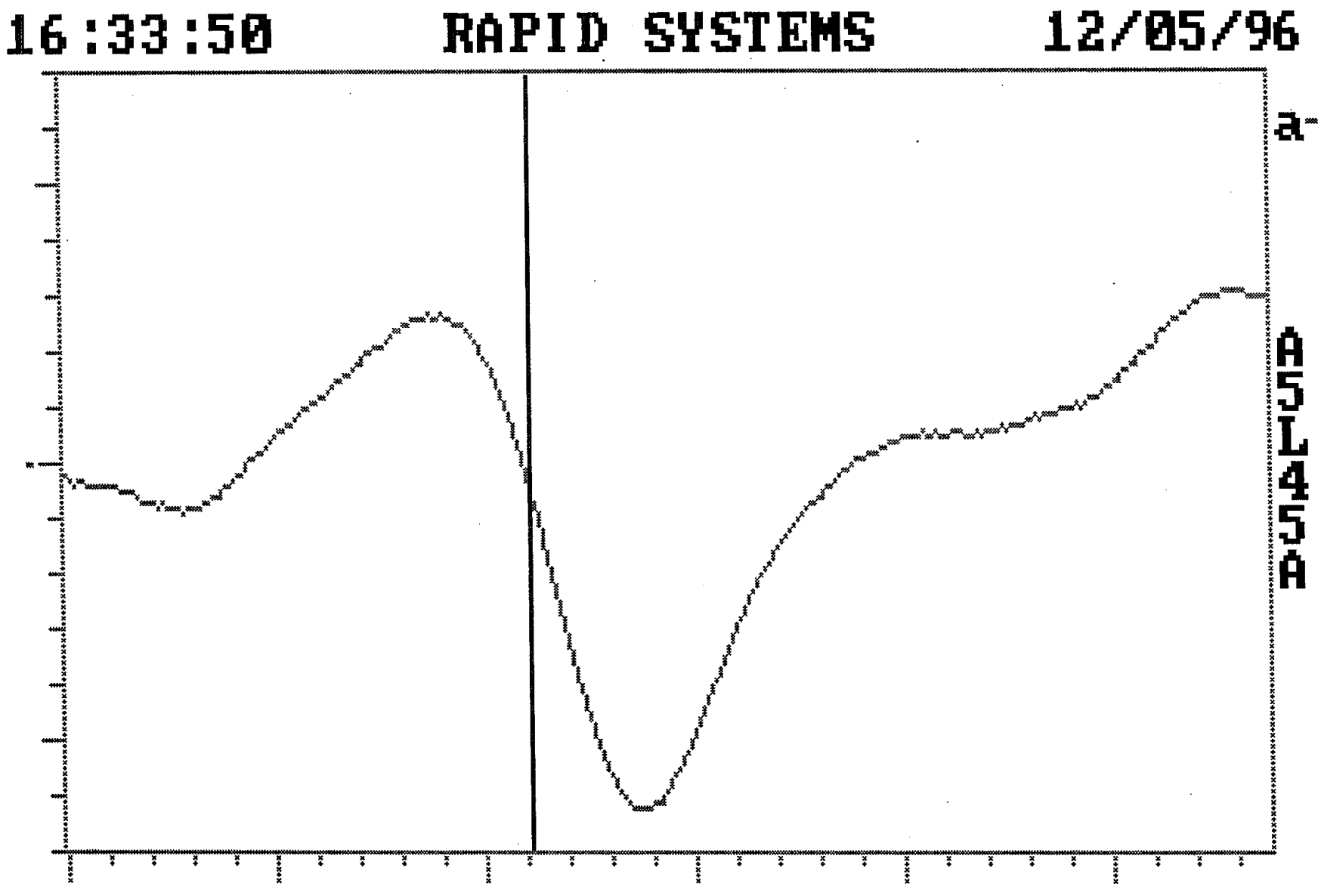
For use with report dated 03/18/2005; RTF Job No. 2004-700-21

16:25:17 RAPID SYSTEMS 12/05/96

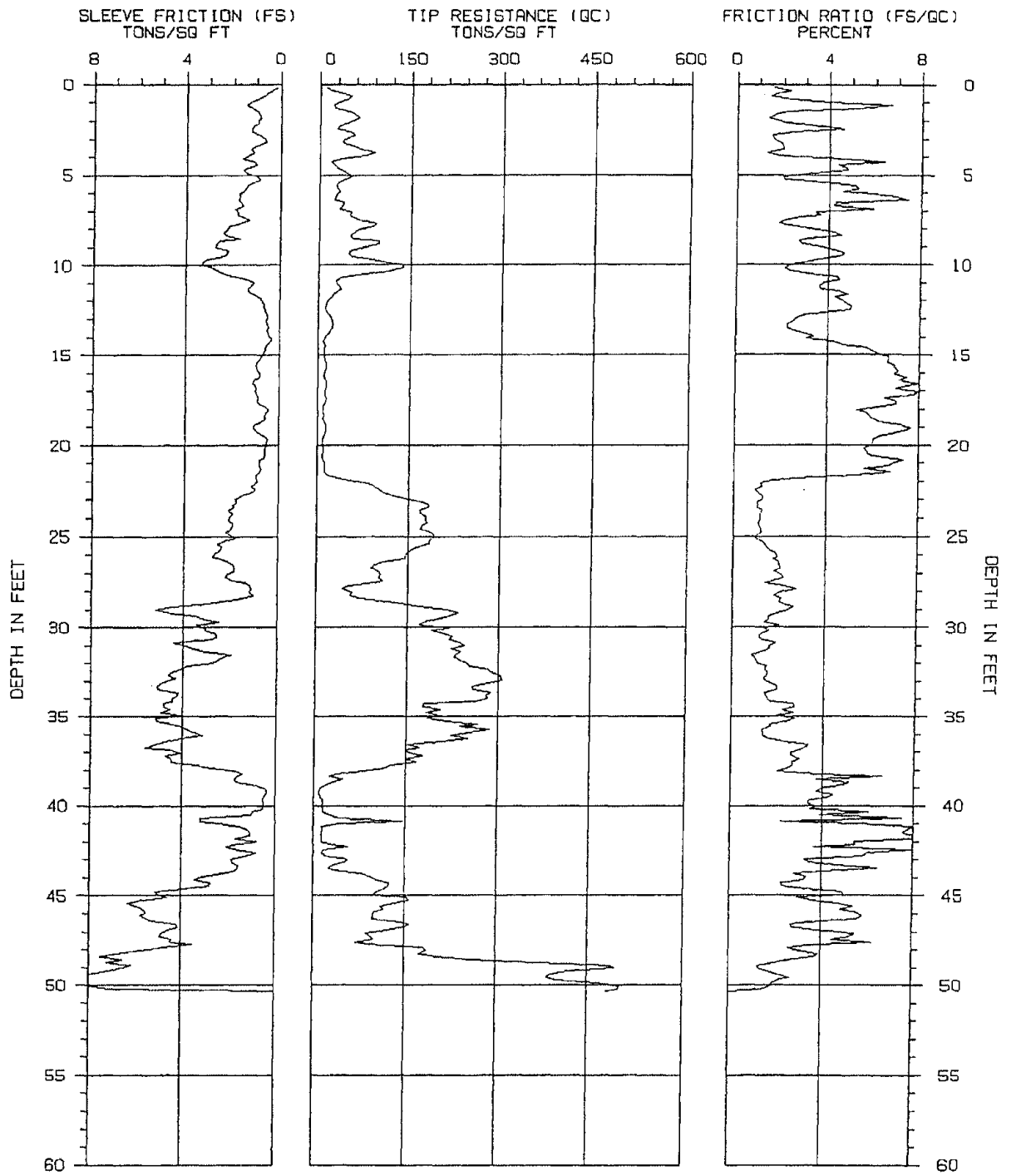


SD= +47.00ms A-2 v/div C-OFF
CD= +62.40ms B-OFF D-OFF
CV=+.00000V STB=500us/div DTB=1 ms/div
Triggering Mode=Analog (s) CH=Ext
CR=E Beg=+0 End=+2048

For use with report dated 03/18/2005; RTF Job No. 2004-700-21



Cone Penetration Test Sounding,
AES 5-25-00



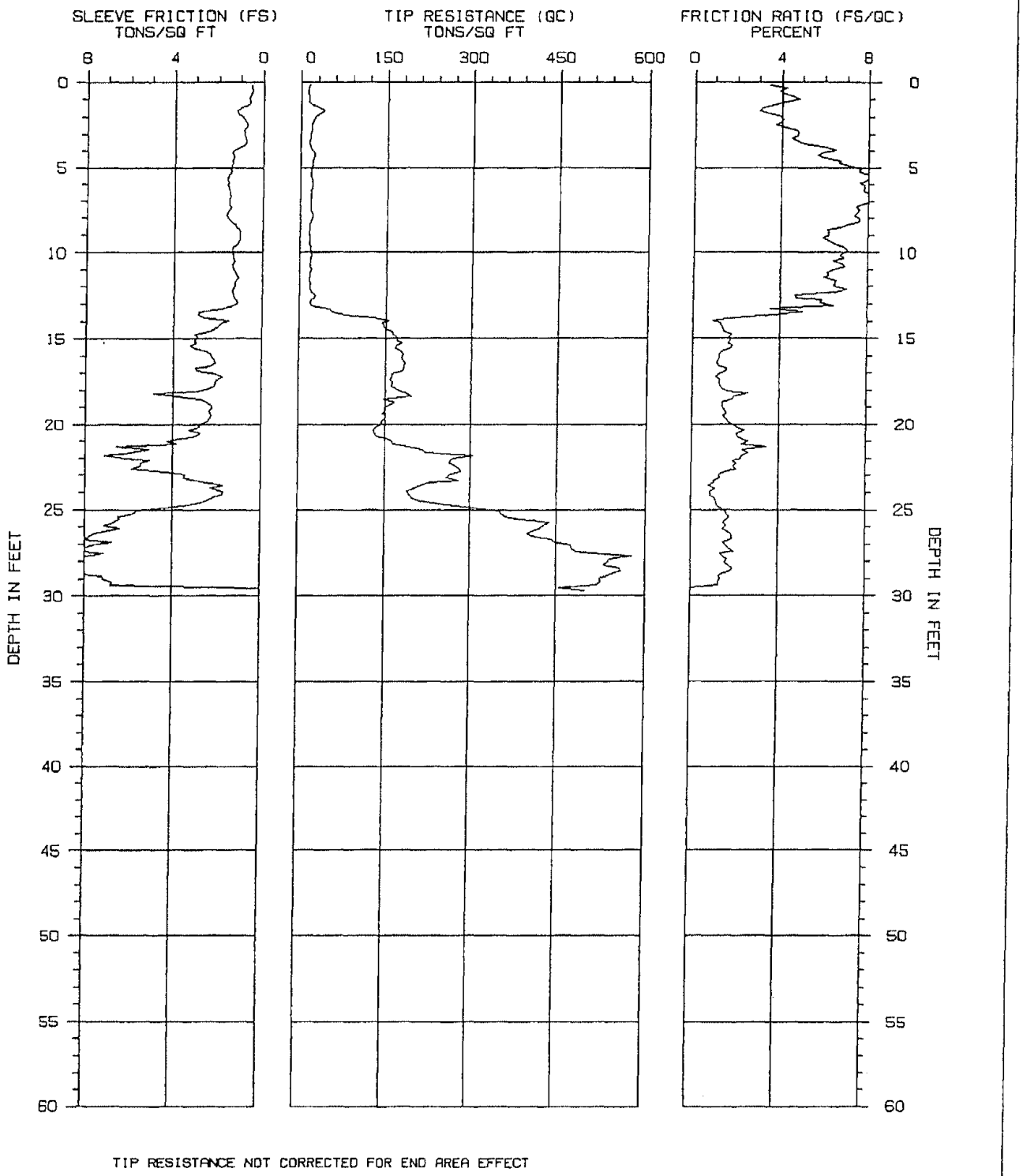
TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST SOUNDING NUMBER: CPT-01

PROJECT NAME : AES/MAGIC MTN
PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3
DATE/TIME: 03-20-00 08:16

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-02

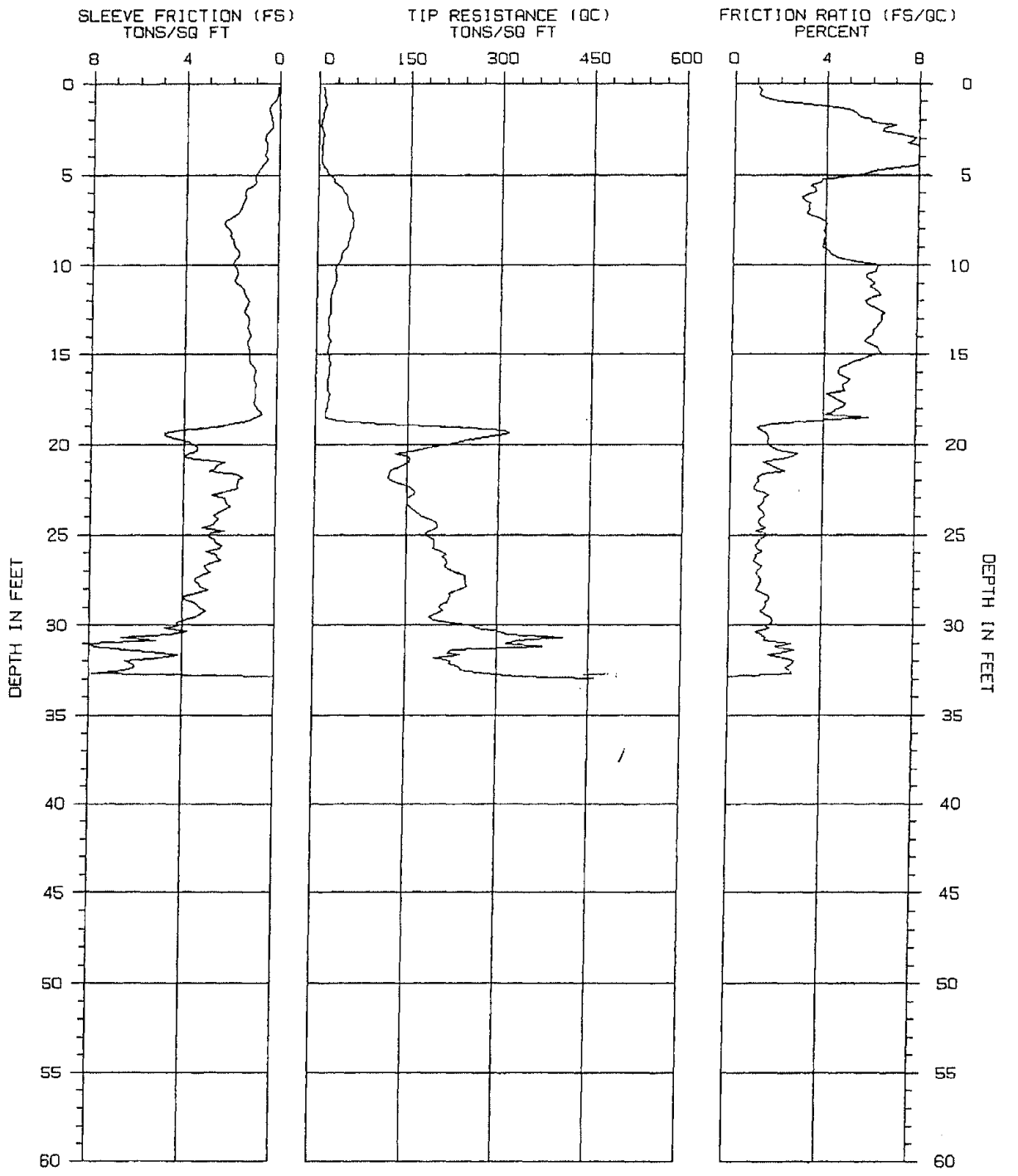
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.VO/R=3

DATE/TIME: 03-20-00 10:12

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-03

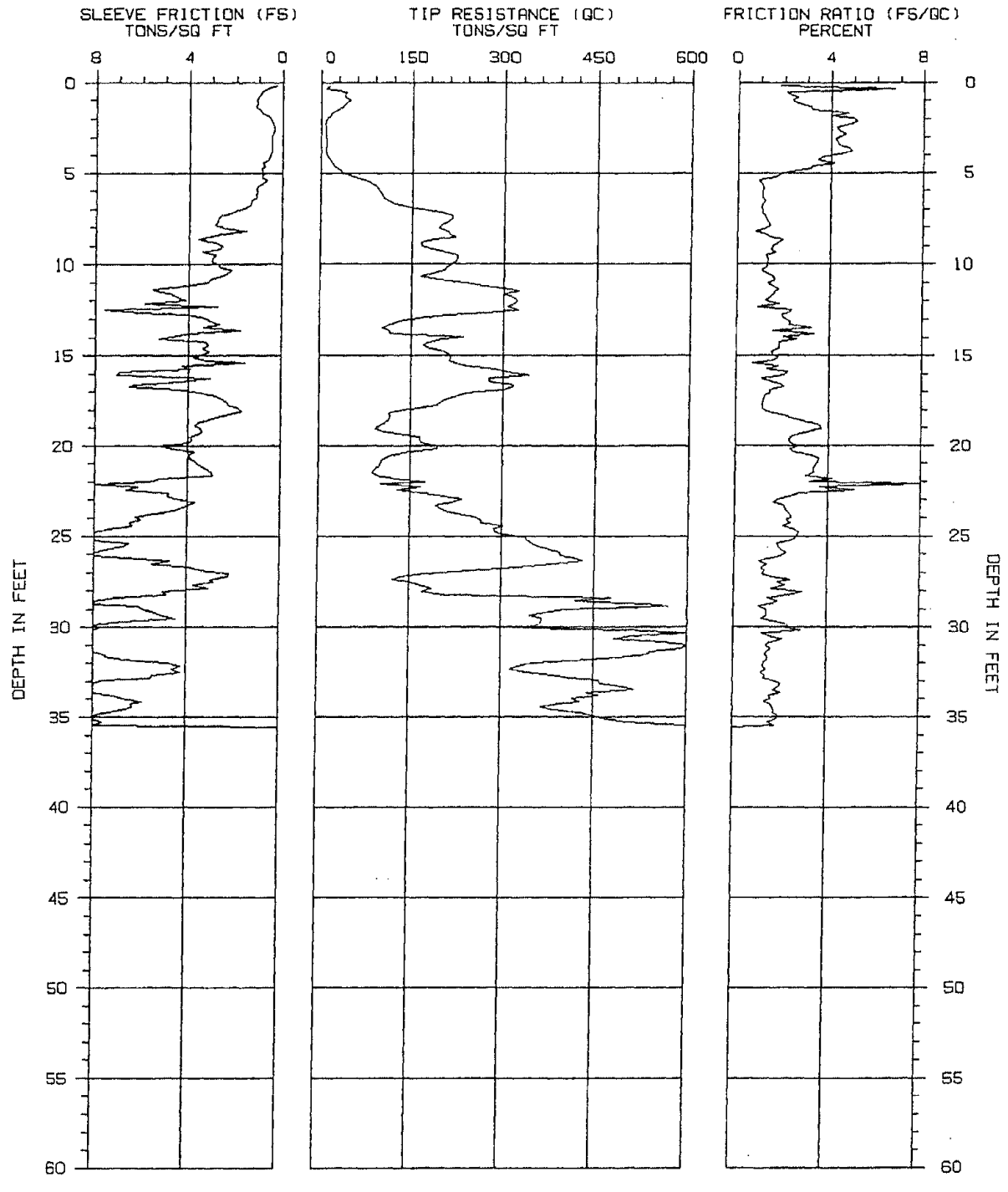
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.VO/R=3

DATE/TIME: 03-20-00 09:27

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST — SOUNDING NUMBER: CPT-04 SEIS

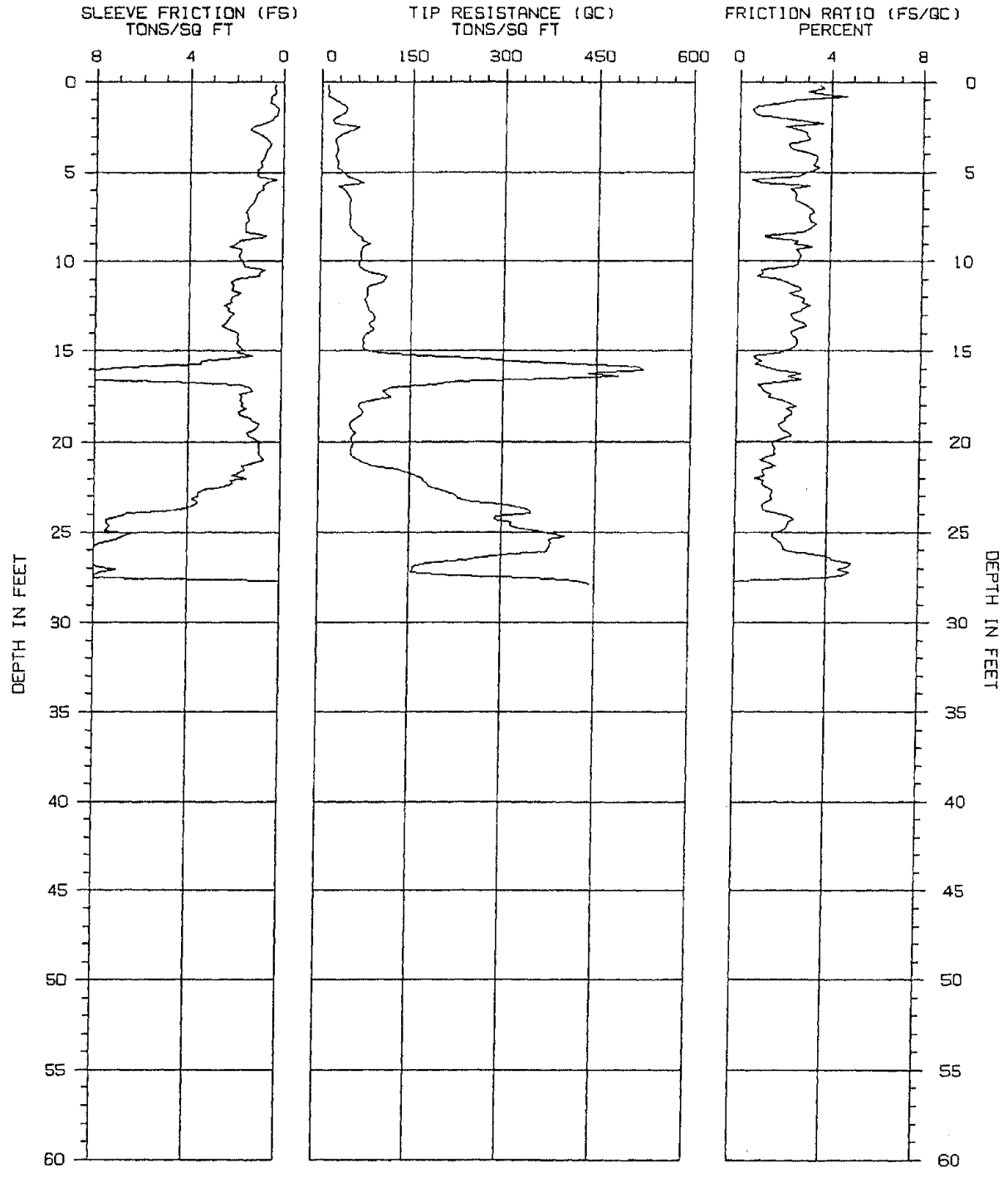
PROJECT NAME : AES/MAGIC MTN

PROJECT NUMBER : 00-1729-1

CONE/RIG : 722/BH.JH/R=3

DATE/TIME: 04-08-00 10:46

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-05

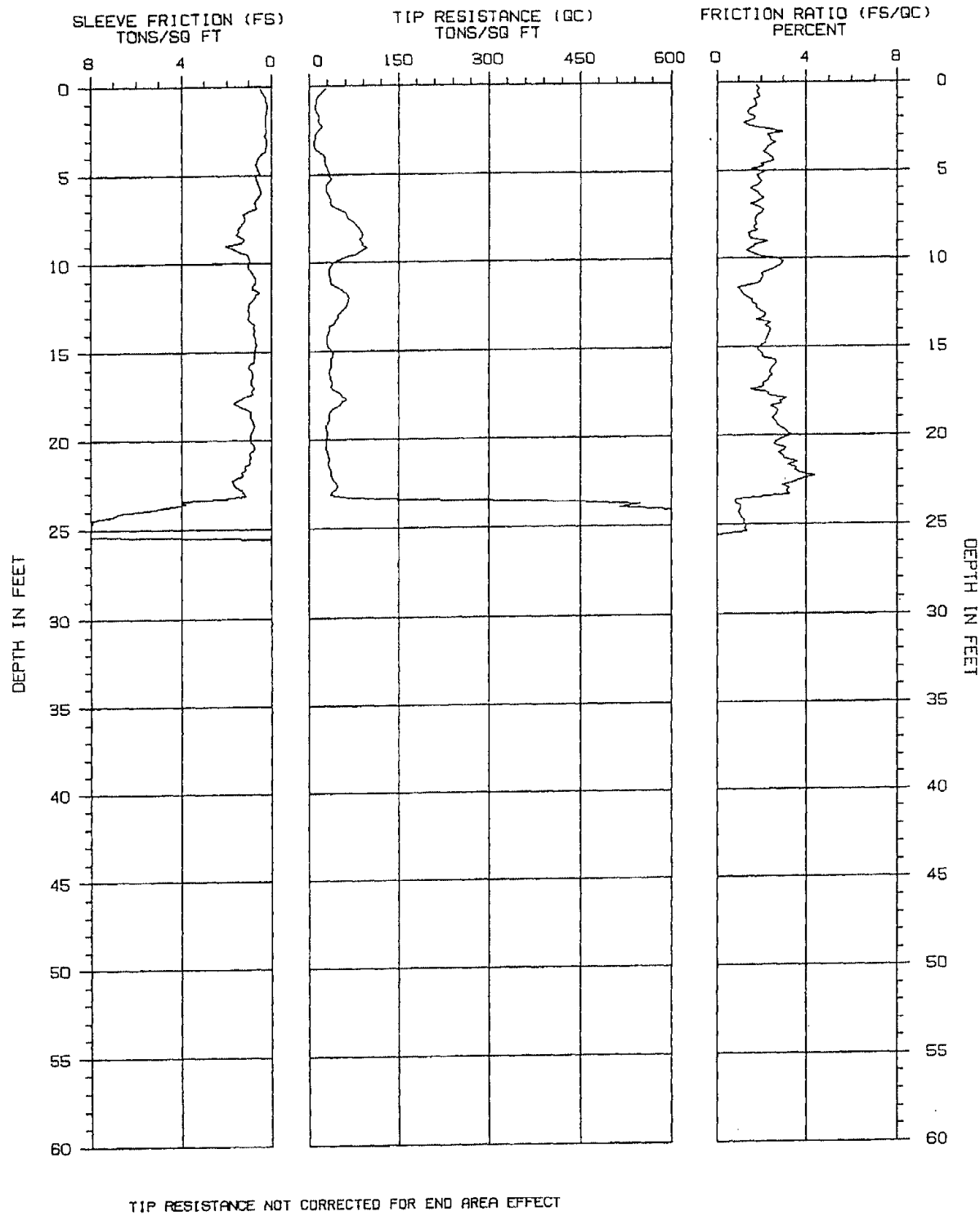
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3

DATE/TIME: 03-21-00 10:18

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-06

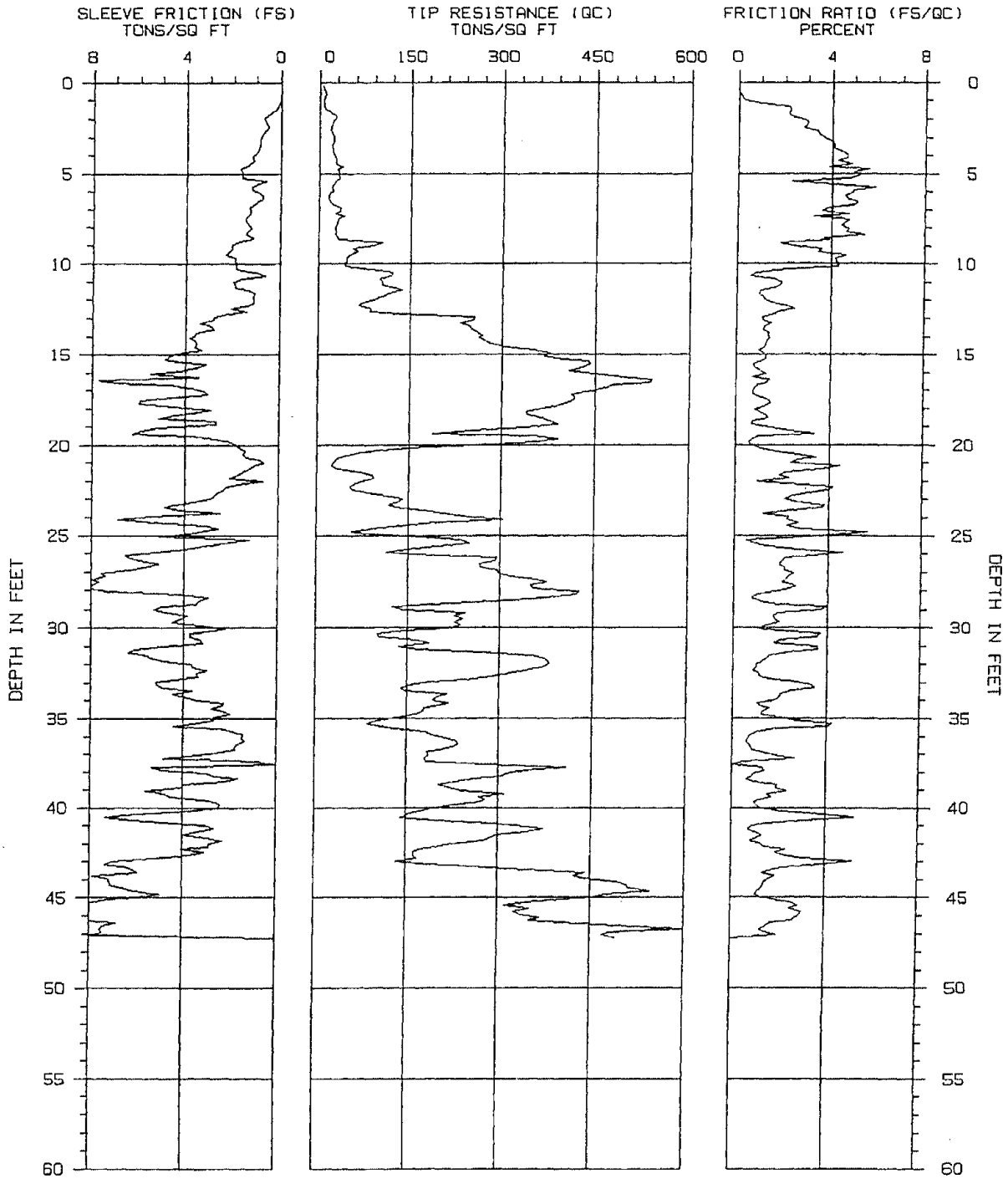
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3

DATE/TIME: 03-21-00 09:24

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST — SOUNDING NUMBER: CPT-07

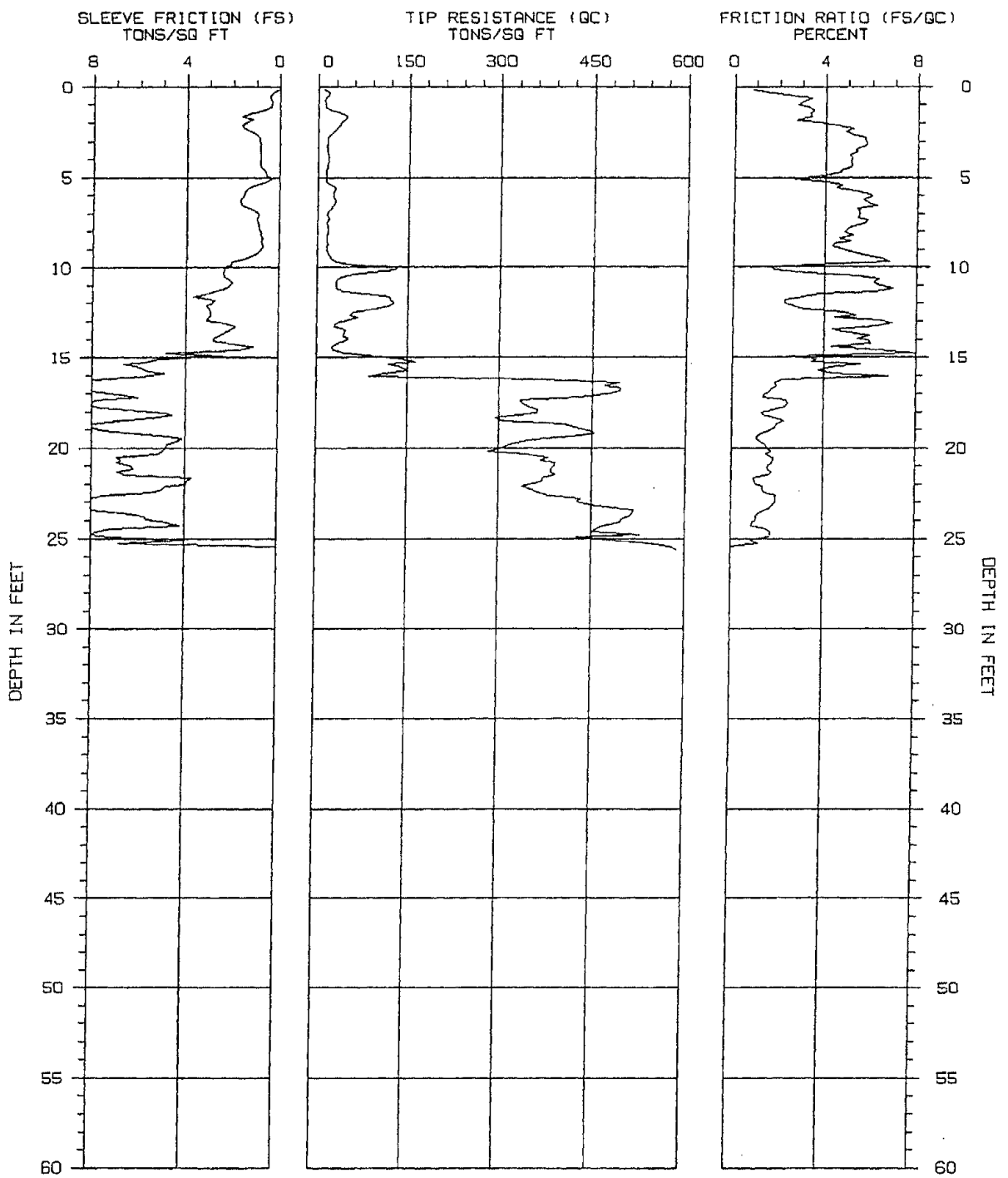
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R#3

DATE/TIME: 03-21-00 08:02

HFA



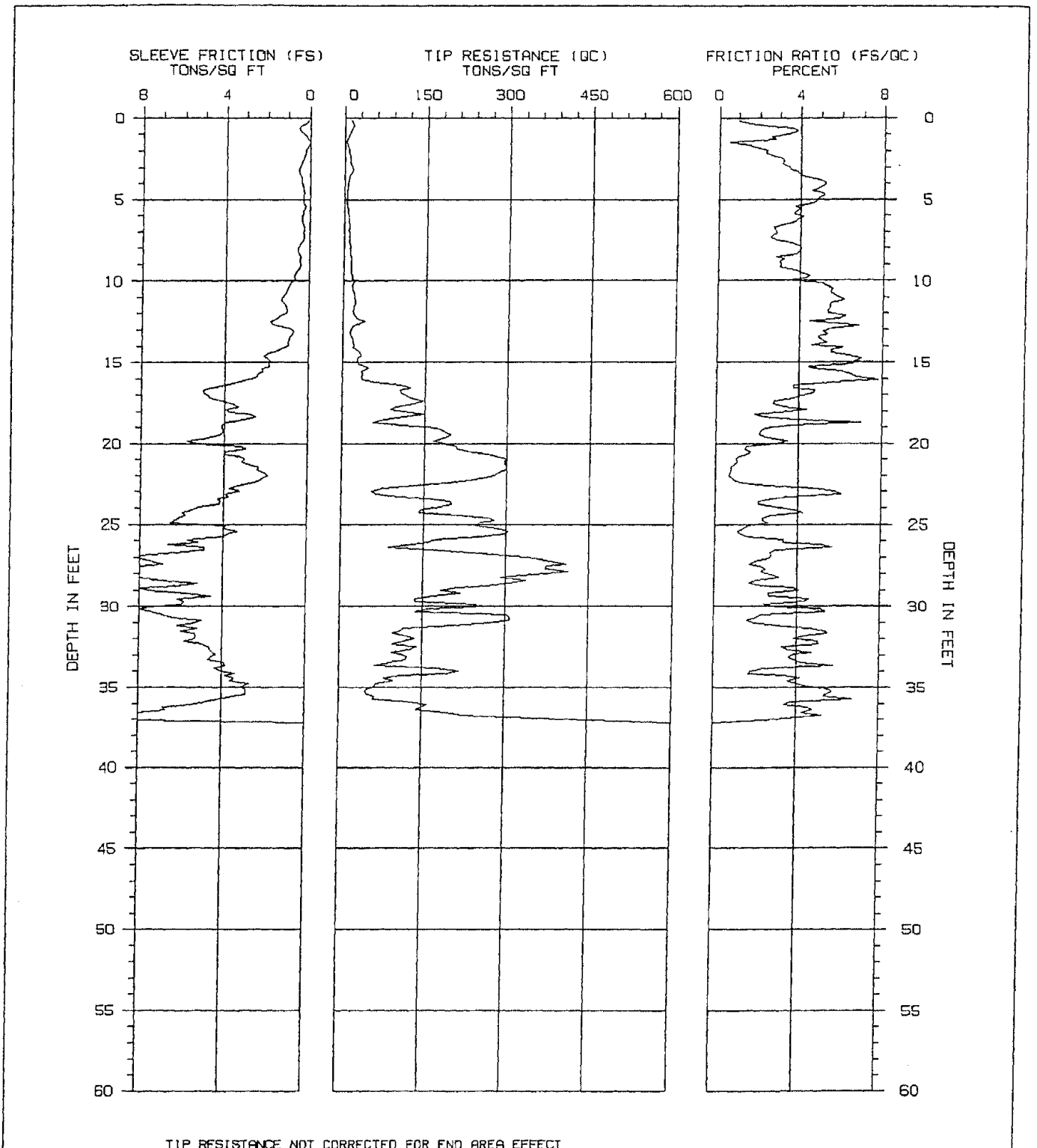
TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST SOUNDING NUMBER: CPT-08

PROJECT NAME : AES/MAGIC MTN.
PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3
DATE/TIME: 03-20-00 16:15

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-09

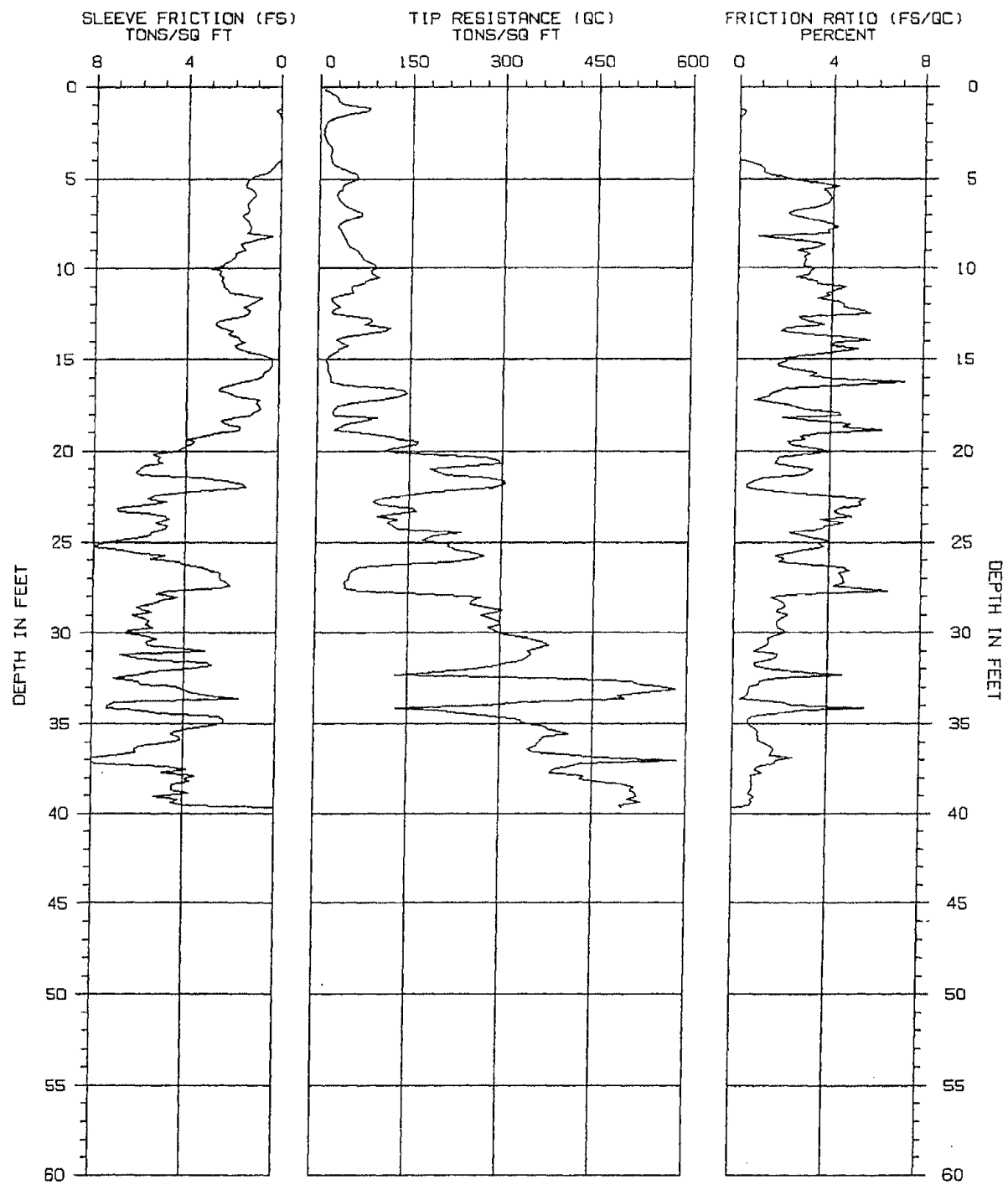
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3

DATE/TIME: 03-20-00 15:34

HFA



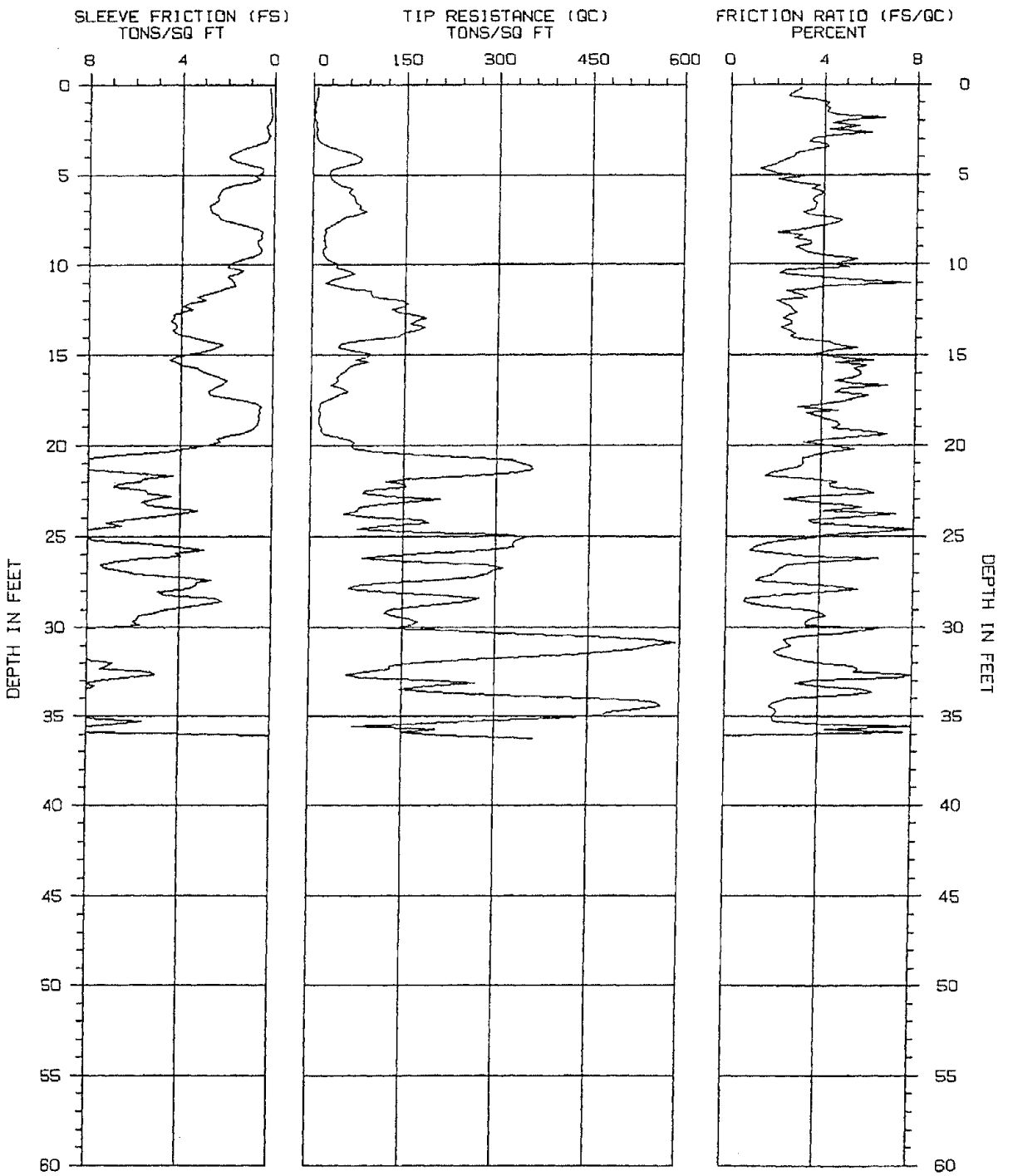
TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST SOUNDING NUMBER: CPT-10

PROJECT NAME : AES/MAGIC MTN.
PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R#3
DATE/TIME: 03-21-00 07:21

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-11 SEIS

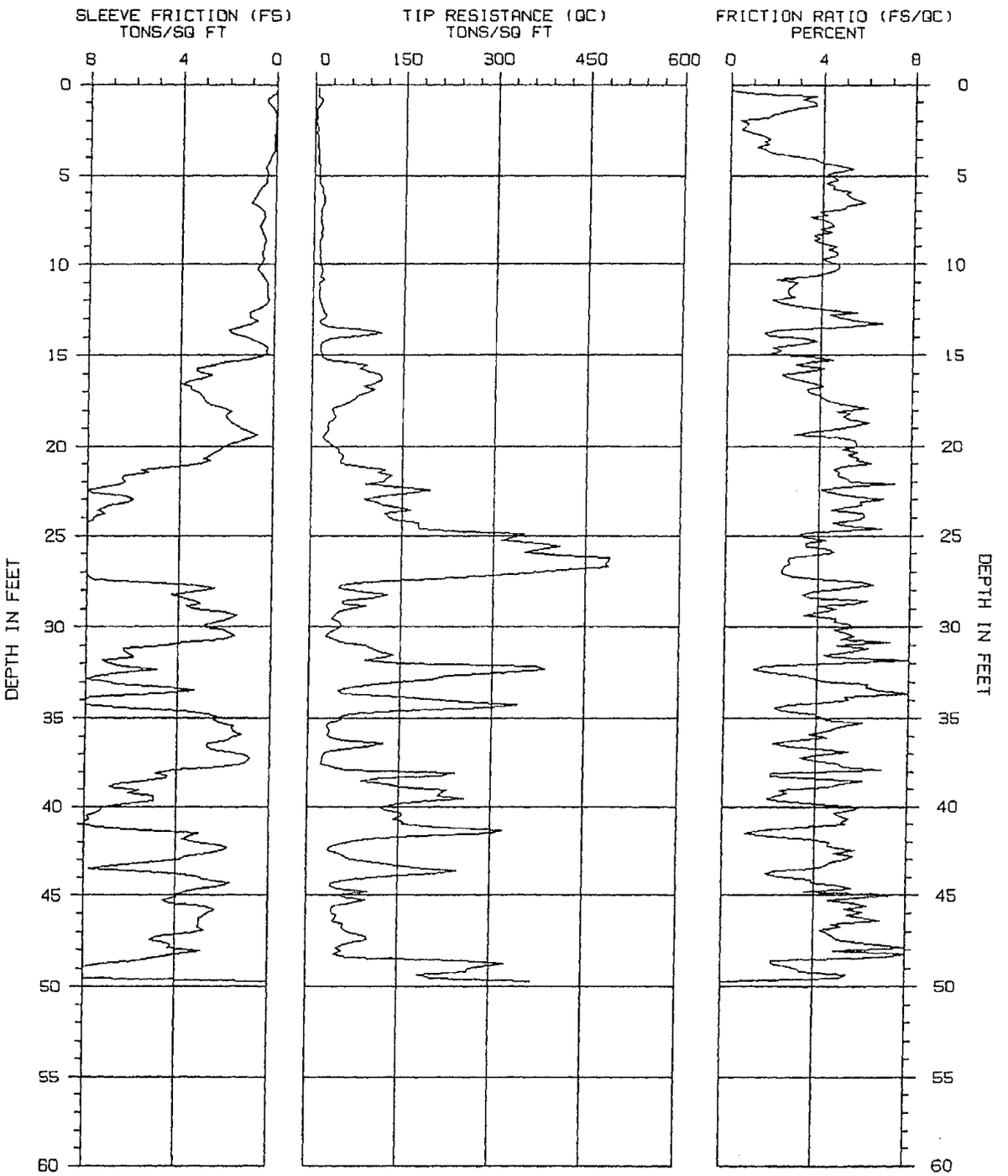
PROJECT NAME : AES/MAGIC MTN

PROJECT NUMBER : 00-1729-1

CONE/RIG : 722/BH.GO/R±3

DATE/TIME: 04-06-00 16:40

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-12

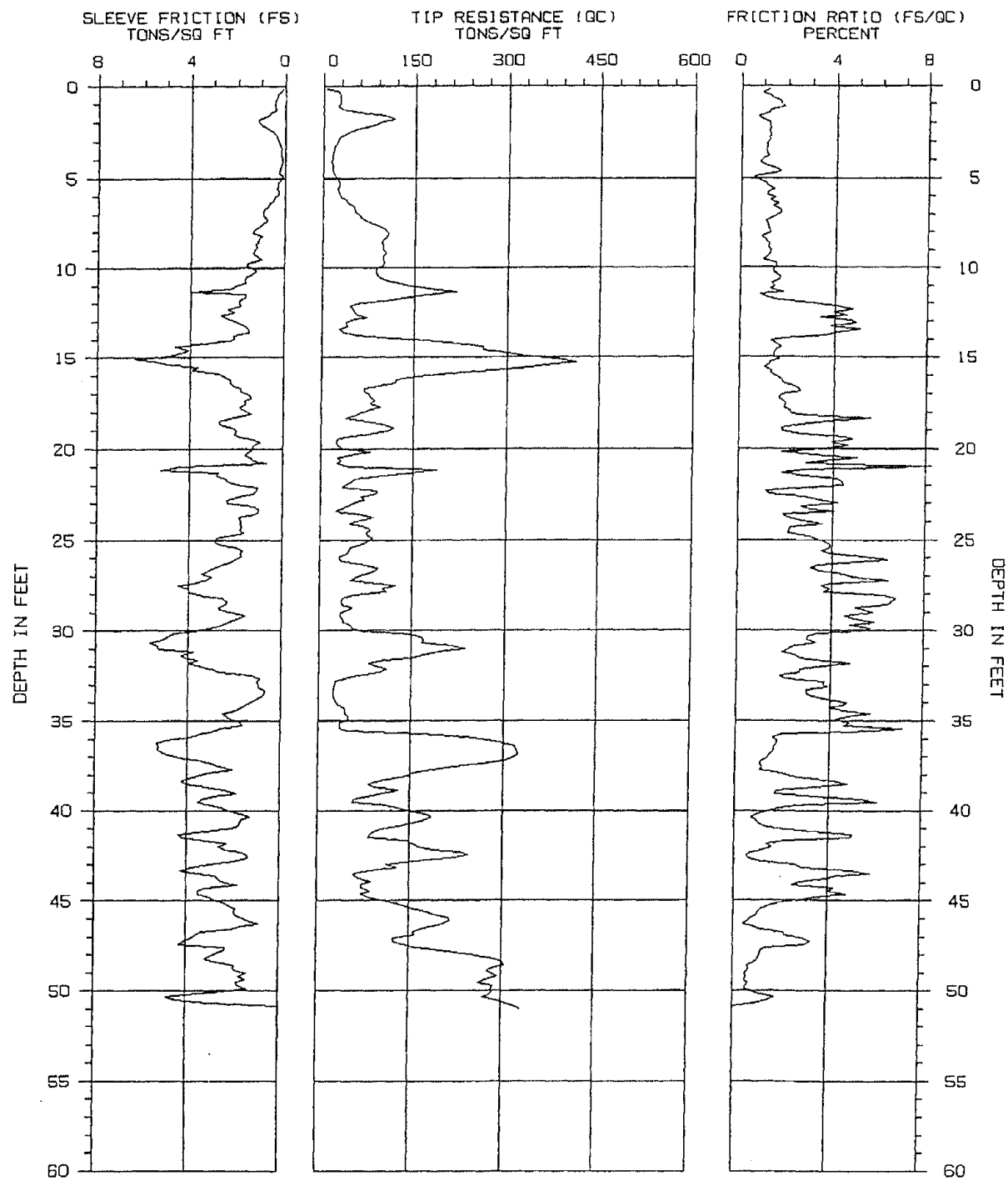
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3

DATE/TIME: 03-20-00 14:51

HFA



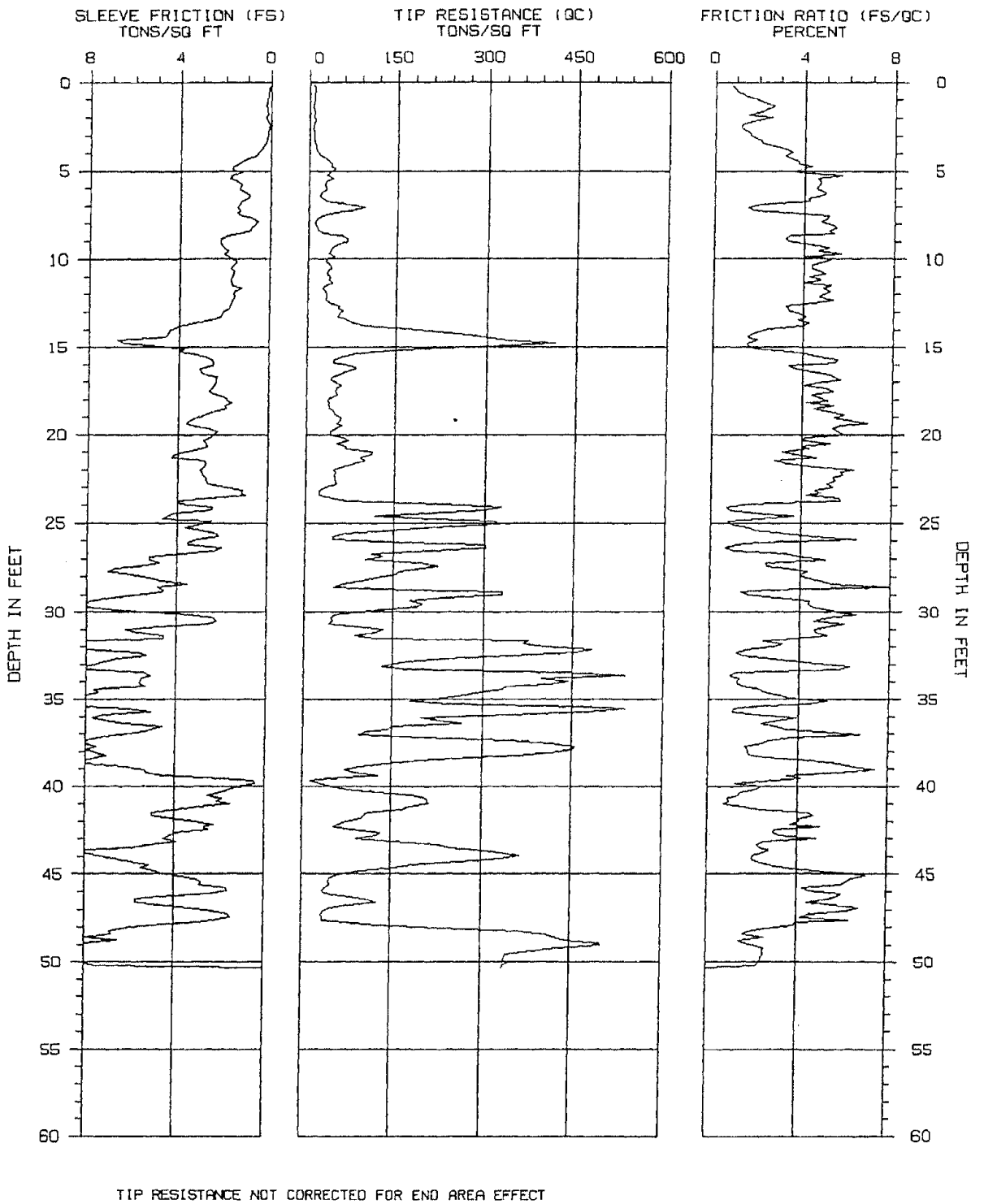
TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST SOUNDING NUMBER: CPT-13

PROJECT NAME : AES/MAGIC MTN. CONE/RIG : 473/BH.V0/R=3

PROJECT NUMBER : 00-1729-1 DATE/TIME: 03-20-00 12:32

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-14

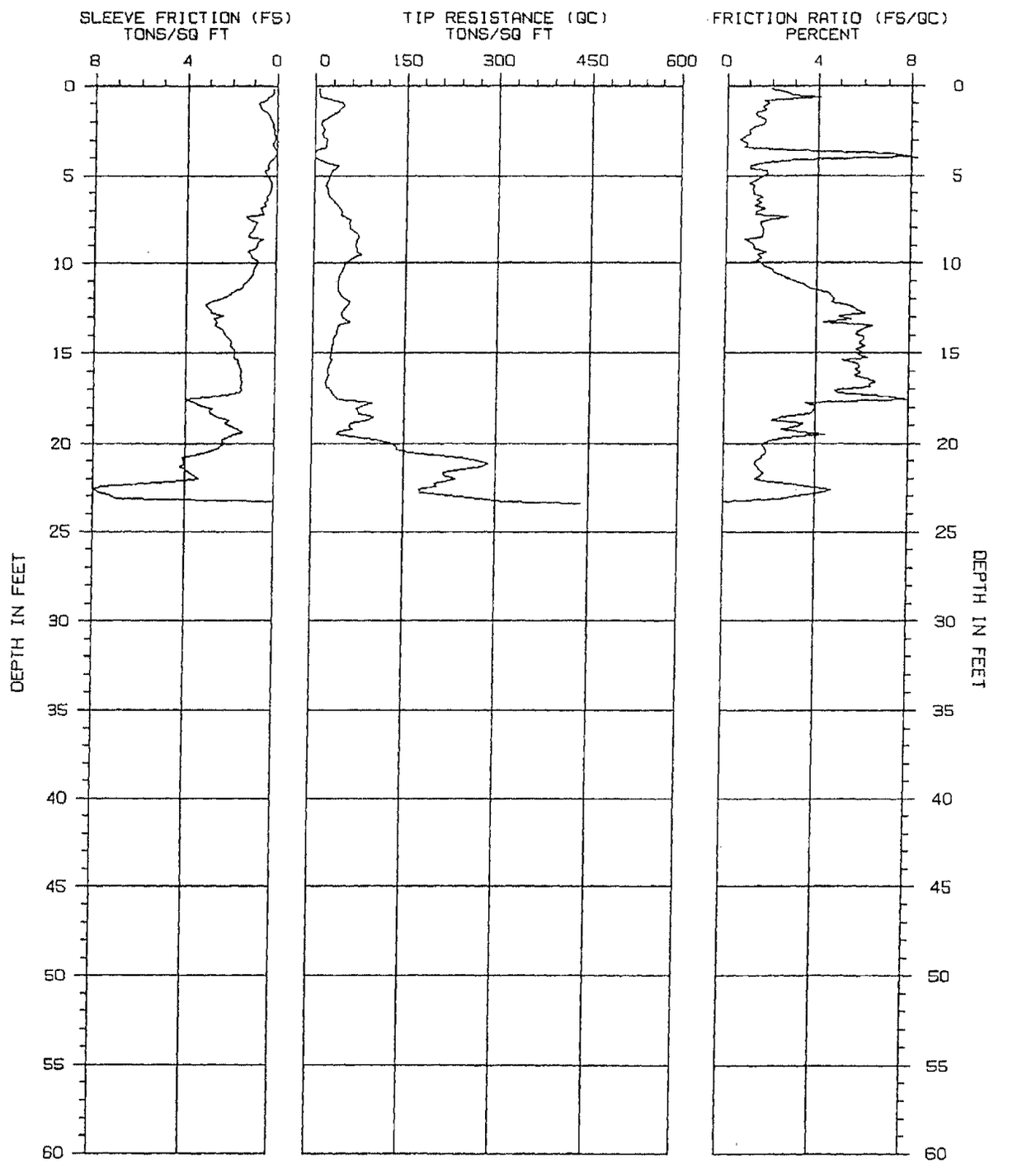
PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.VO/R#3

DATE/TIME: 03-20-00 14:03

HFA



TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST

SOUNDING NUMBER: CPT-15

PROJECT NAME : AES/MAGIC MTN.

PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3

DATE/TIME: 03-20-00 11:30

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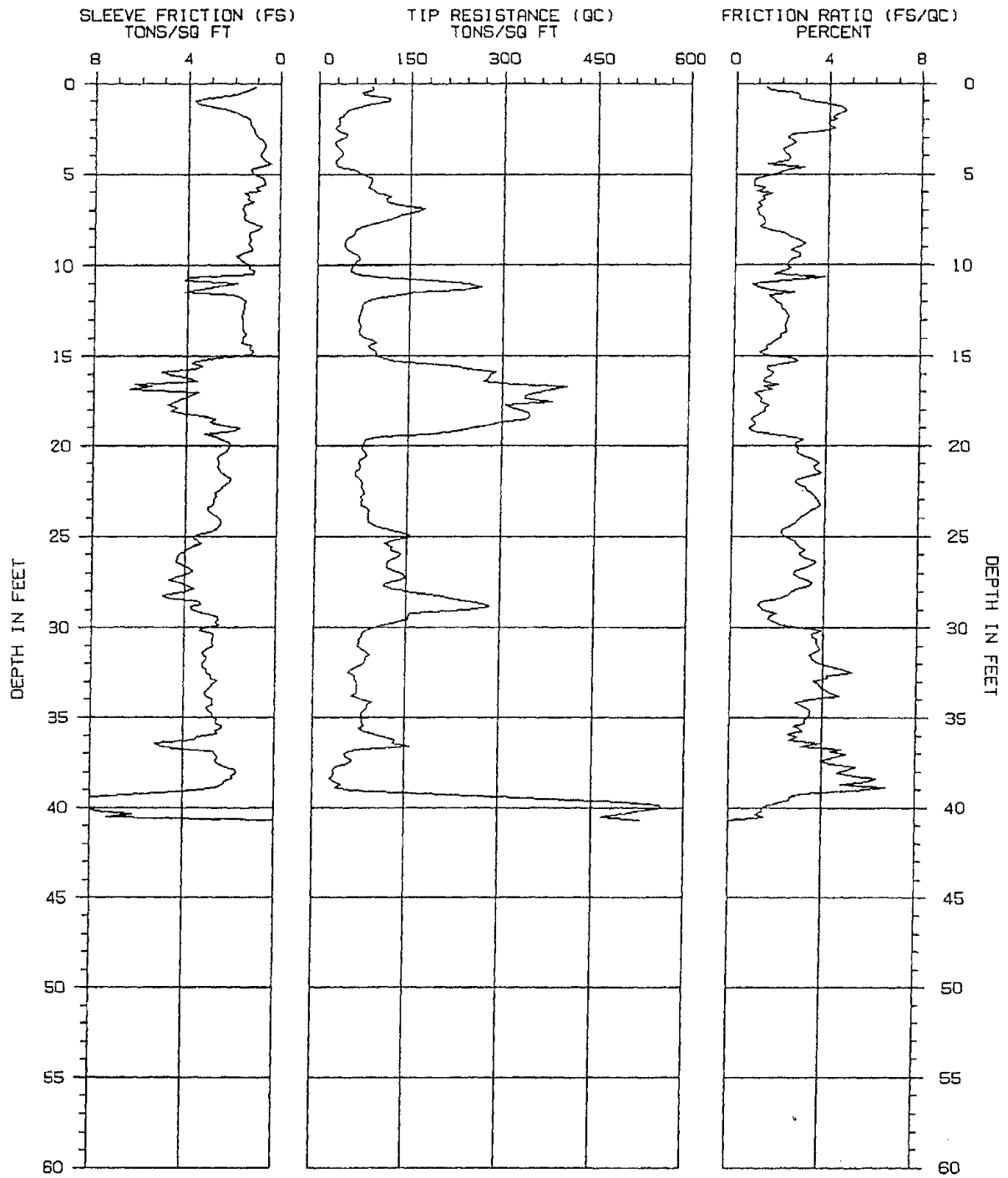

TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

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PROJECT NAME : AES/MAGIC MTN
PROJECT NUMBER : 00-1729-1

CONE/RIG : 722/BH.GO/R#3
DATE/TIME: 04-05-90 16:36

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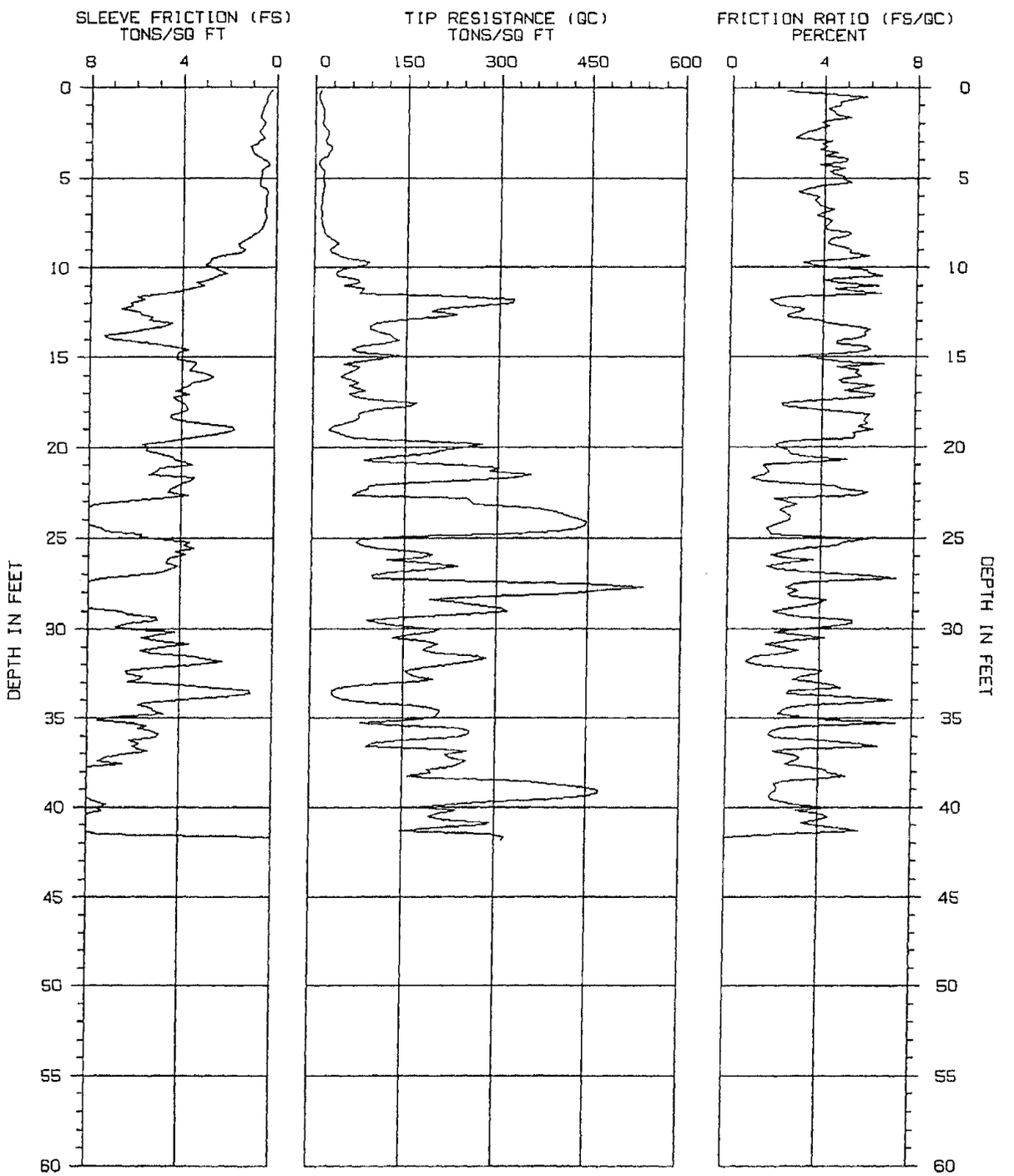

TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

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PROJECT NAME : AES/MAGIC MTN.
PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R±3
DATE/TIME: 03-23-00 03:33

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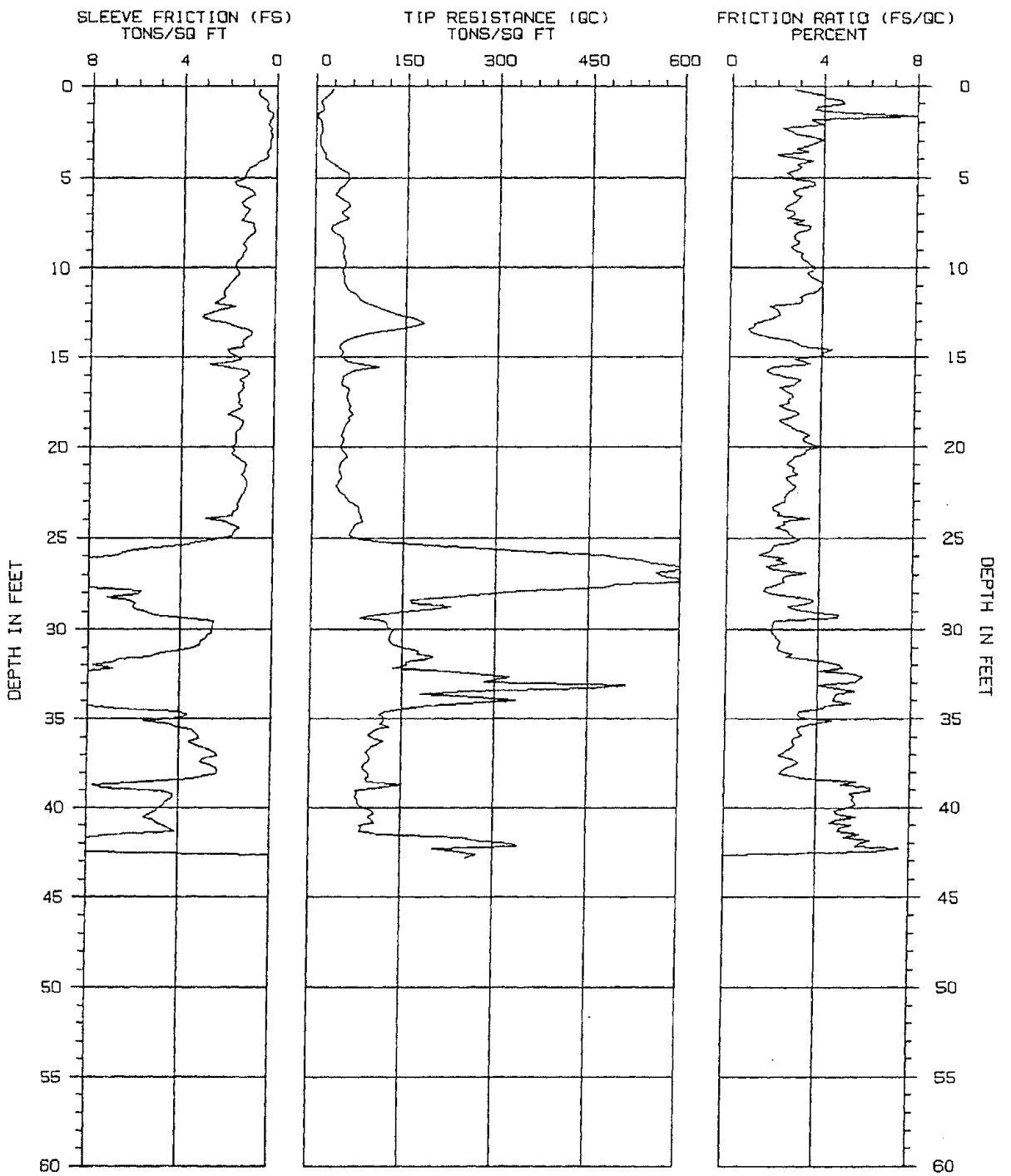

TIP RESISTANCE NOT CORRECTED FOR END AREA EFFECT

CONE PENETRATION TEST SOUNDING NUMBER: CPT-18

PROJECT NAME : AES/MAGIC MTN.
PROJECT NUMBER : 00-1729-1

CONE/RIG : 473/BH.V0/R=3
DATE/TIME: 03-23-00 04:37

HFA

Newhall Land and Farming Company
March 18, 2005
2004-700-21

APPENDIX E

LIQUEFACTION ANALYSIS FROM AES, MAY 25,2000

RTF&A
GEOTECHNICAL ENGINEERING & ENGINEERING GEOLOGY

PRELIMINARY LIQUEFACTION POTENTIAL ASSESSMENT AND EVALUATION OF EARTHQUAKE-INDUCED SETTLEMENTS

1.0 INTRODUCTION

By an examination of continuous, enhanced CPT data for the site, subsurface soils at certain depths consist of medium dense granular materials. Liquefaction may occur at some critical locations where these materials are present below the historical high ground water level. Thus, we have performed liquefaction potential and seismic settlement analyses for this site. Seismic settlements were assessed for materials above and below the historic groundwater level.

2.0 DATA AND ASSUMPTIONS

A seismicity study was performed for this site which has been included in our report, which includes the ground shaking parameters.

Basic data also included soil types and continuous blow counts obtained from CPT data generated by field explorations. Approximate CPT locations are shown on Plate 1.

Historic high ground water below the existing ground surface was used for analyses. Per boring log data, ground water depths at the time of the explorations ranged between 3 feet and 30 feet. A detailed discussion on the ground water surface is given in this report on Section 5.6.

3.0 ASSESSMENT OF LIQUEFACTION POTENTIAL AND SEISMIC SETTLEMENT

3.1 Liquefaction Potential Assessment

3.1.1 Methodology

Liquefaction is a phenomenon whereby a saturated granular soil temporarily loses its strength because of the buildup of pore water pressure during seismic excitation. This loss of strength may cause structures founded on these soils to experience subsidence and/or lateral movement.

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The analyses presented in this report are based on the attached references. The principal references used were: Bartlett & Youd (1995); Ishihara (1996); Robertson & Fear (1995); Seed, Idriss and Arango (1983); Seed, Tokimatsu, et al (1984); Tokimatsu & Seed (1987); USC (1999); Youd, Hanson, et al (1999); and Youd & Idriss (1997).

3.1.2 Results of Liquefaction Potential Assessment

Theoretical depth interval-specific induced cyclic stress and cyclic resistive stresses were calculated. These results are shown in the Figures E-1 through E-18. The potentially liquefiable soil layers will have a lower cyclic strength that the induced stress. As shown, for the locations analyzed, potentially liquefiable soils were identified at various depths below the existing ground surface. However, those layers found below ground water table are thin isolated layers and are considered to be not significant in liquefaction.

3.2 Earthquake-Induced Settlement

3.2.1 Methodology

Earthquake-induced settlements were estimated using procedures presented by Tokimatsu and Seed (1987) for dry/moist soils (above the water table) and saturated sands. Settlement analyses were performed for the same exploration locations analyzed for liquefaction potential to estimate possible range of settlements to be expected at the project site.

Volumetric strain was estimated using the calculated earthquake-induced cyclic shear stress and corrected blow count. The settlement was obtained by multiplying the thickness of the liquefied soil layer by the volumetric strain.

3.2.2 Results of Earthquake-Induced Settlement Analysis

The results of our detailed analyses are presented on the computer outputs in Figures E-1 through E-18. Based on the analysis the maximum estimated settlement is on the order of 0.6 inches. Based on the guidelines for implementation of CDMG SP 117, actual differential seismic settlement will be 0.4 inches (2/3x0.6=0.4).

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4.0 CONCLUSIONS

1. The results of the preliminary liquefaction assessment indicate that some isolated liquefaction-prone soils exist at the site at various depths. However, the thickness of the liquefiable soils below water table are considered to be very thin layers.

2. The results of our liquefaction and cyclic settlement analyses are documented in the attached computerized output Figures No. E-1 through E-18. The results indicate that based upon conservative historic high ground water data, potential earthquake-induced total settlements range between approximately 0 and 0.6".

3. Based on Los Angeles County-adopted Recommended Procedures for Implementation of CDMG Special Publication 117, Guidelines for Analyzing and Mitigating Liquefaction in California, by the Southern California Earthquake Center (SCEC, 1999), and the respective workshop held on June 17,1999, a conservative maximum differential cyclic settlement of 0.4 inches (2/3 x 0.6=0.4) between adjacent footings within the site may be used for County compliance.

5.0 RECOMMENDATIONS

Based on the results of our analysis considering the current and historic ground water surface, the seismic potential and settlement and not considered a prominent problem. Hence, no special consideration is necessary in planning of any structures.

The ground water surface at southern part of the site is located at 30 feet or below. If the ground water surface in raised due to the proposed development, the anticipated water surface should be incorporated in the detailed future seismic evaluations. If ground water surface is expected to be shallower than 10 feet in the southern part of the site, some localized areas (e.g. CPT–6) may require more detailed investigation and seismic potential evaluation.

The following attachments complete this appendix.

- Results of Preliminary Assessment of Liquefaction Potential and Earthquake-Induced Settlements: Figures E-1 through E-18

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-1

Figure E-1 (a)

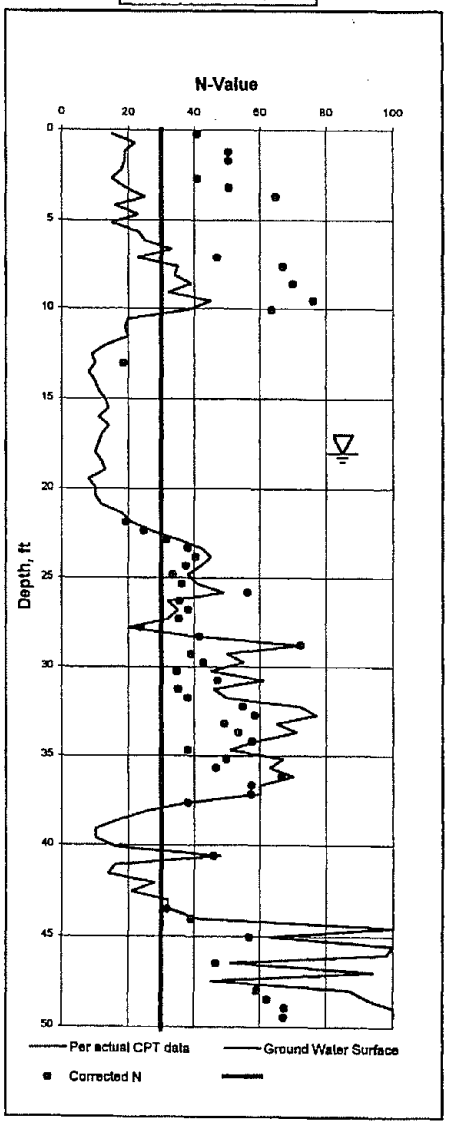


Figure E-1 (b)

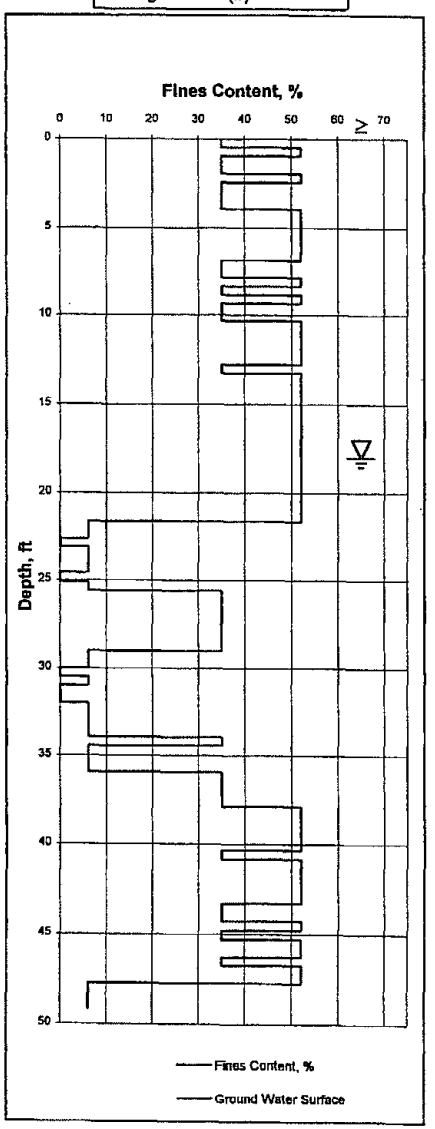


Figure E-1 (c)

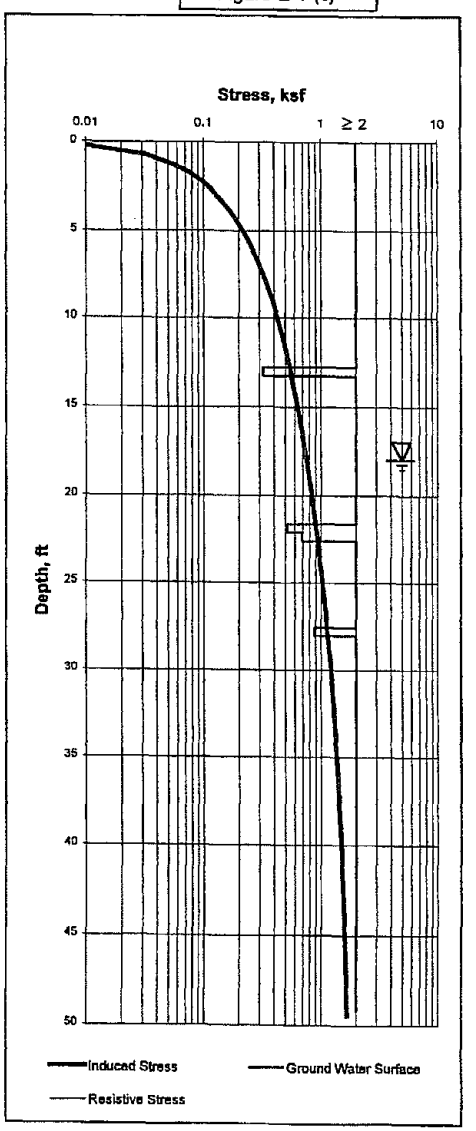
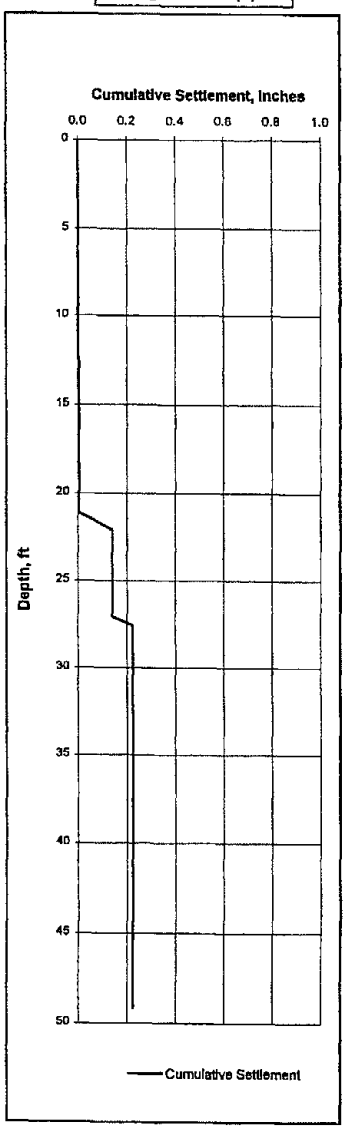


Figure E-1 (d)



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Geological and Geotechnical Consultants

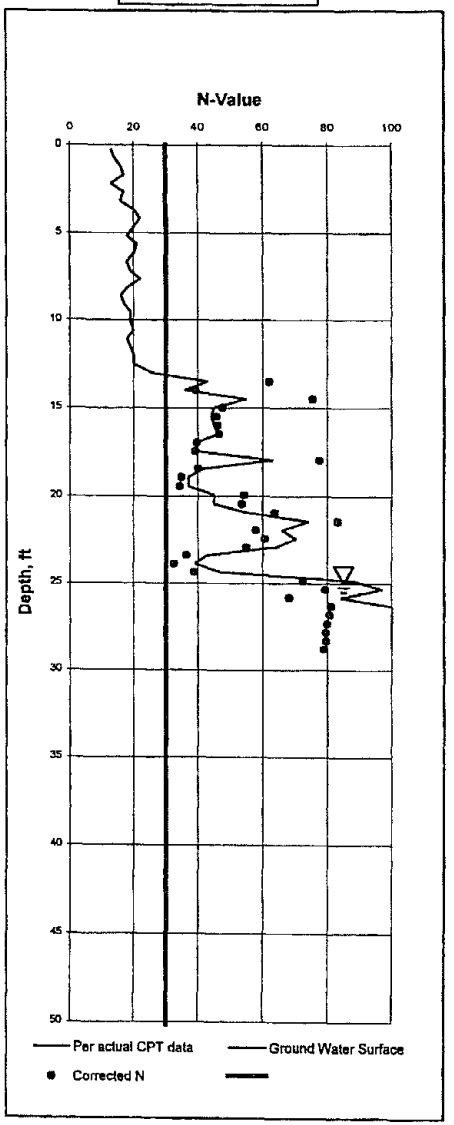
Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-1
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-2

Figure E-2 (a)



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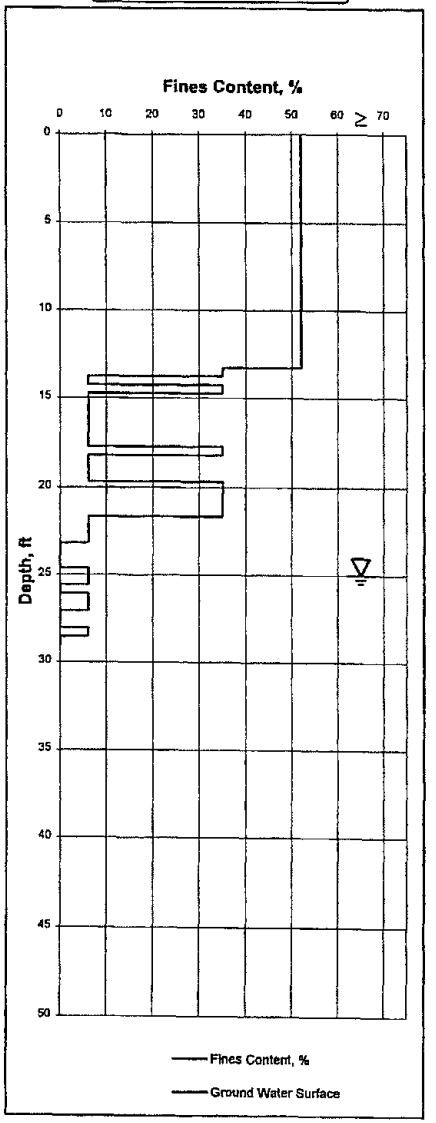

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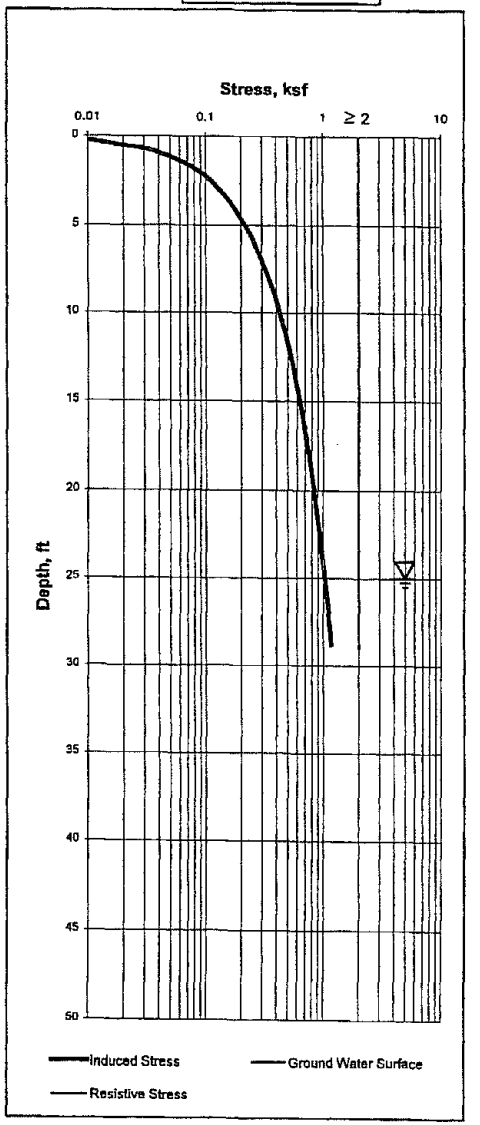

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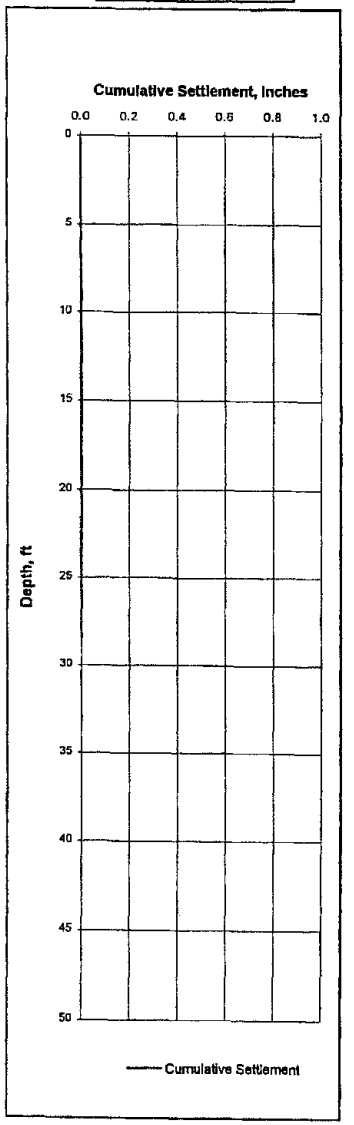

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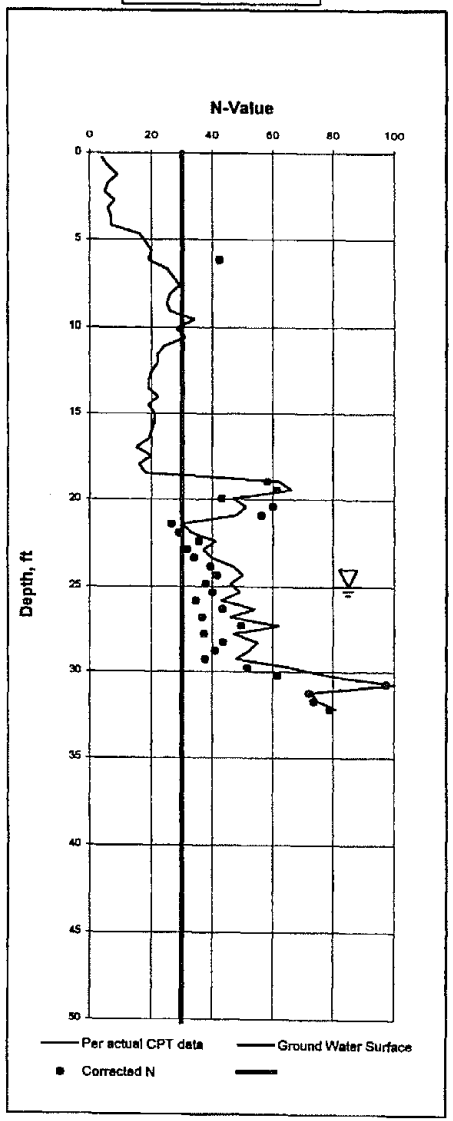
Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-2
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-3

Figure 3-E (a)



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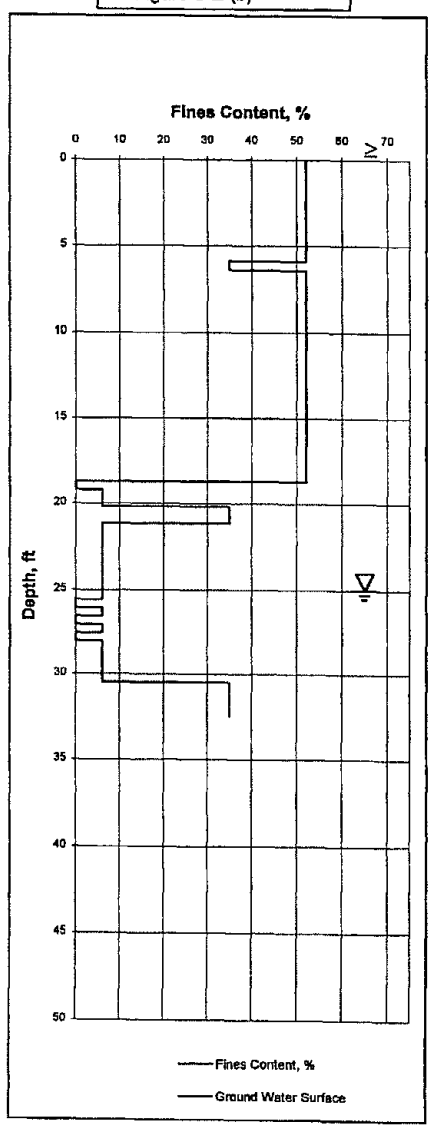

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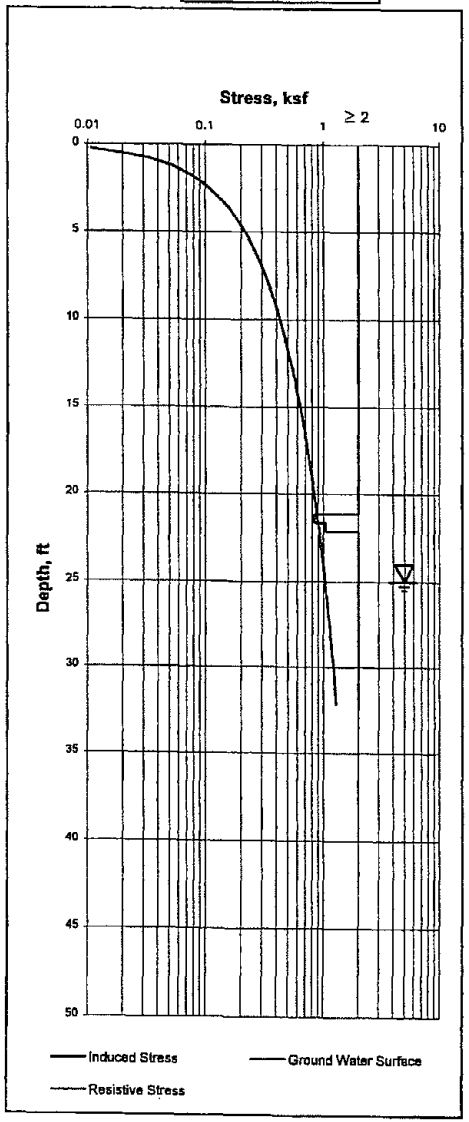

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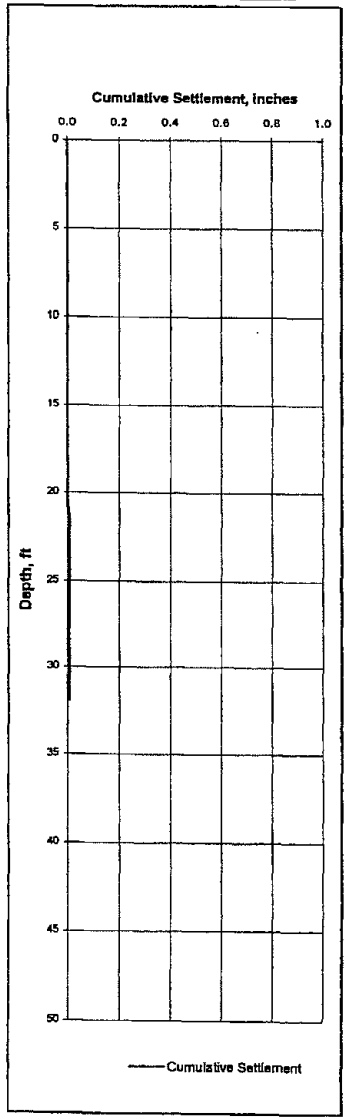

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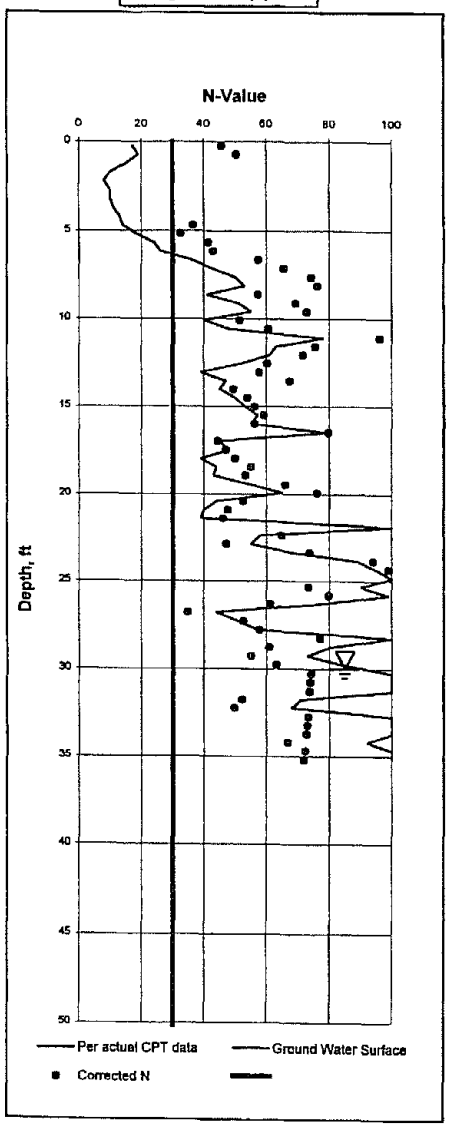
Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-3
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-4

Figure E-4 (a)



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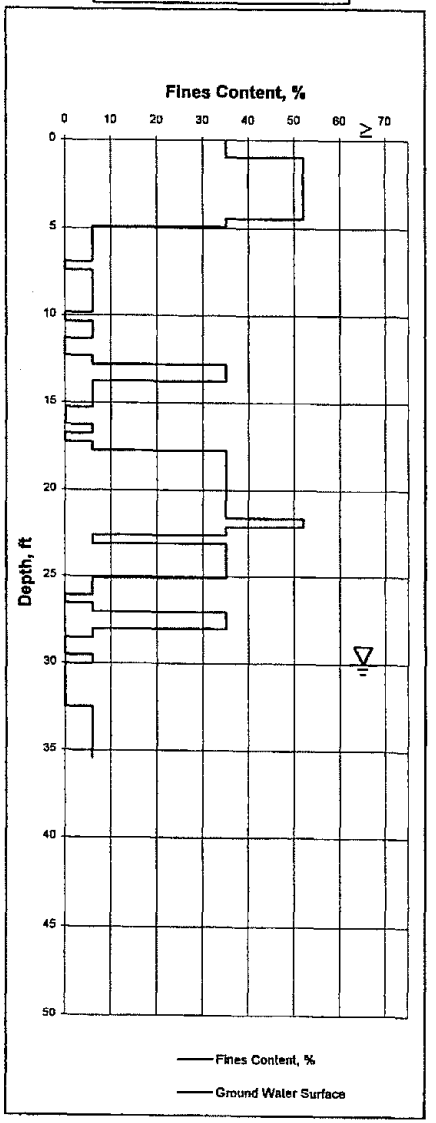

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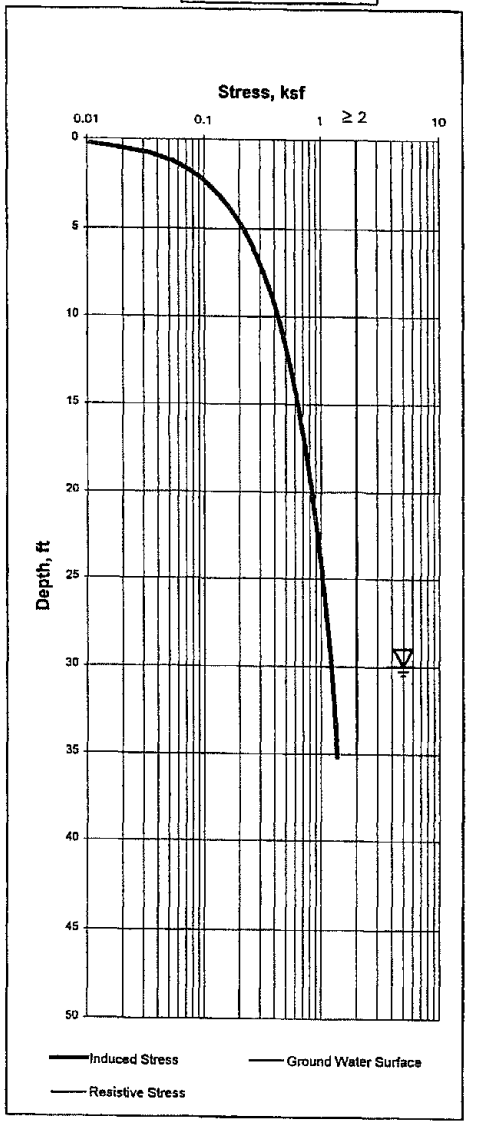

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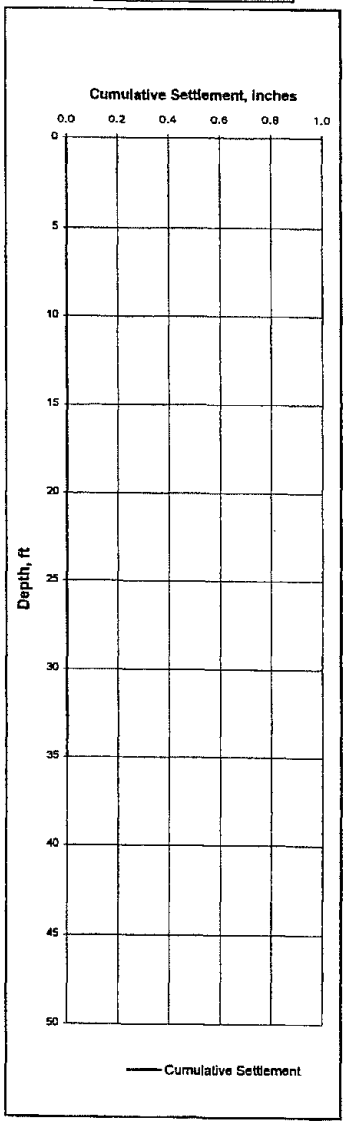

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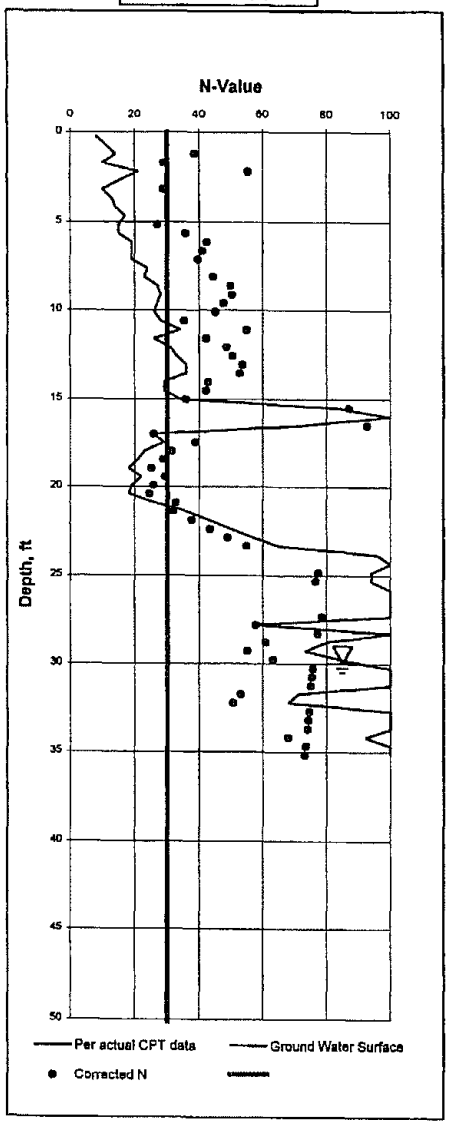
Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-4
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-5

Figure 5-E (a)



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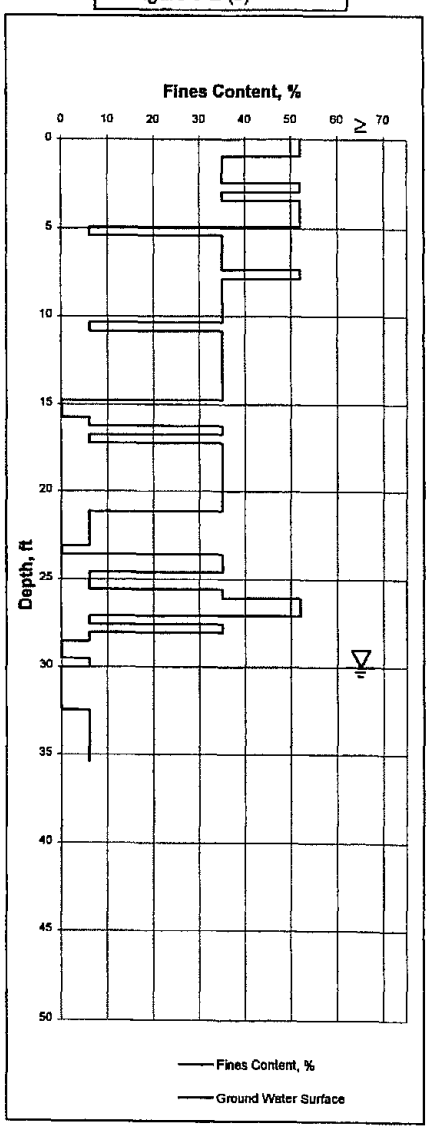

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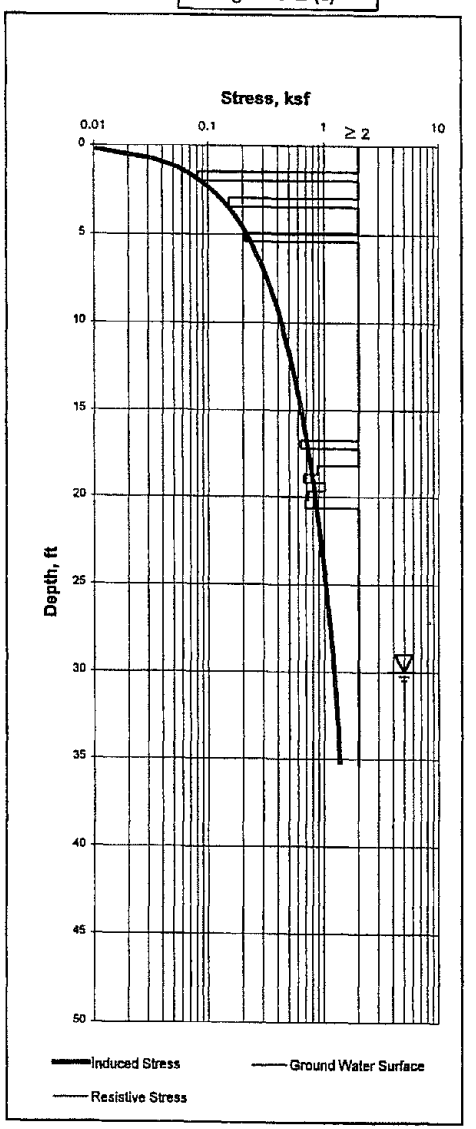
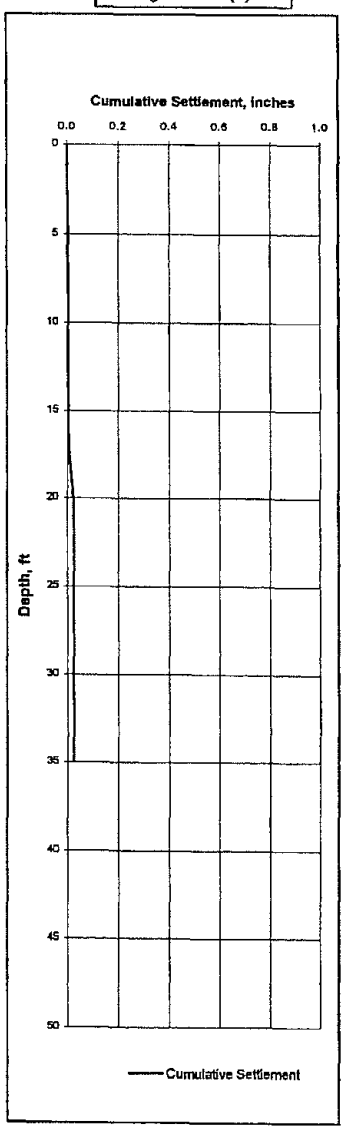


Figure 5-E (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-5
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-6

Figure E-6 (a)

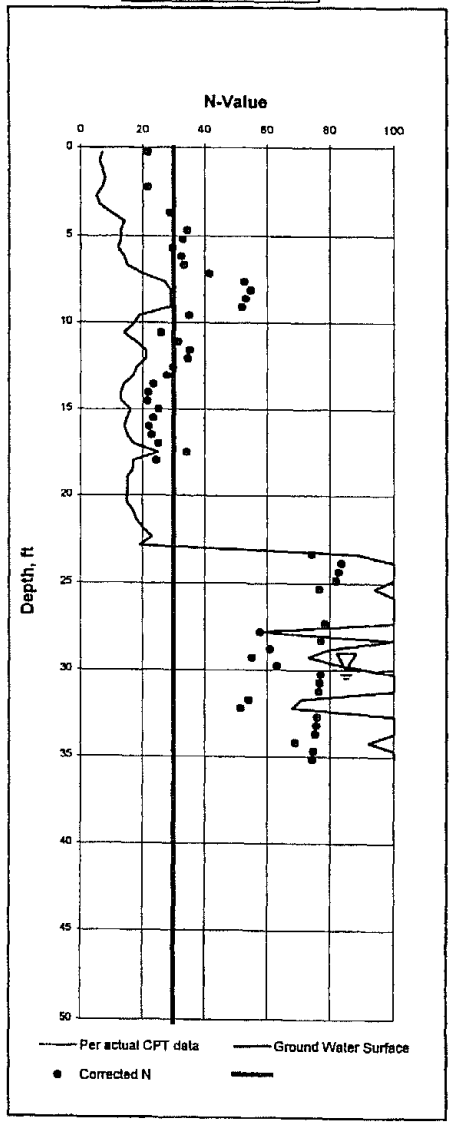
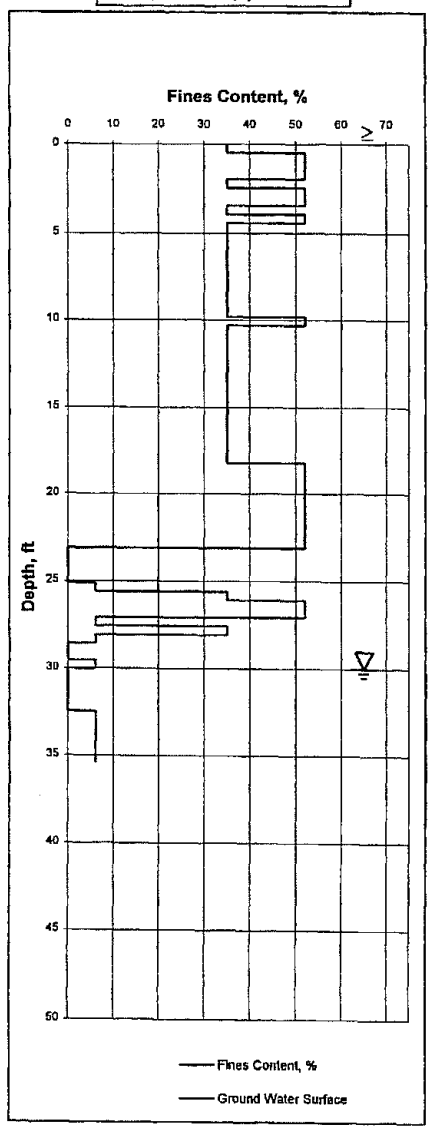


Figure E-6 (b)



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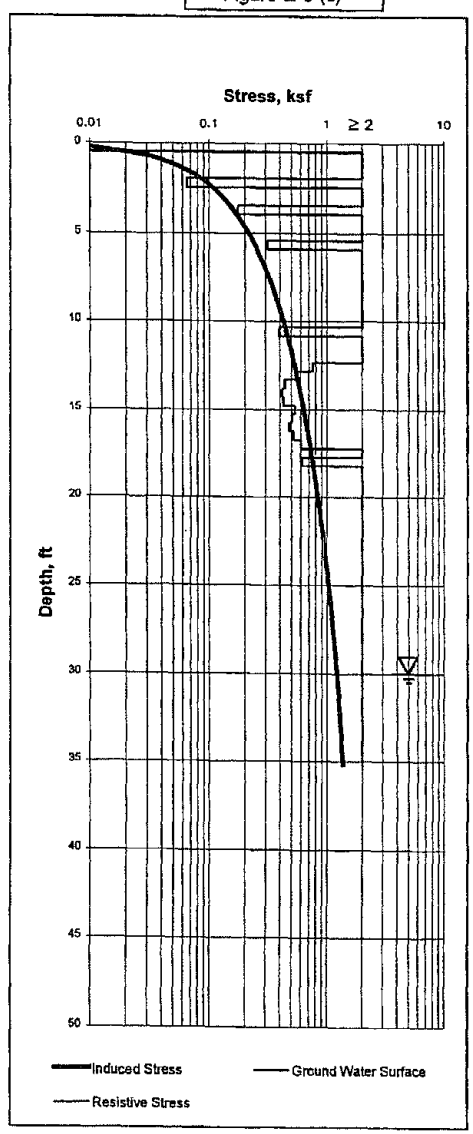

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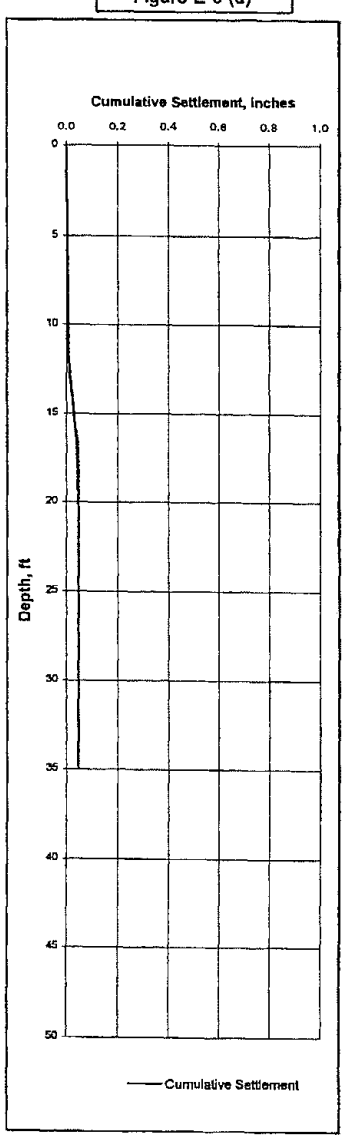

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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-6
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-7

Figure E-7 (a)

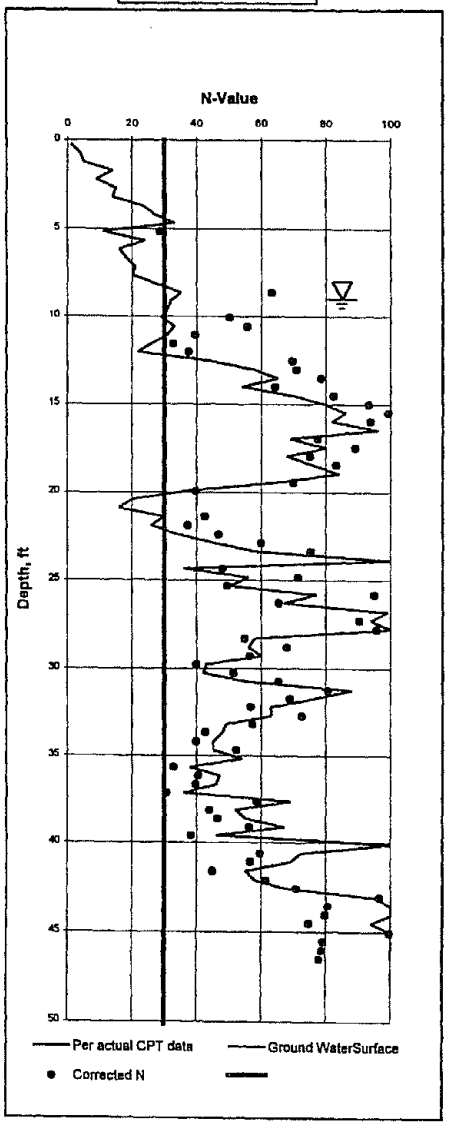
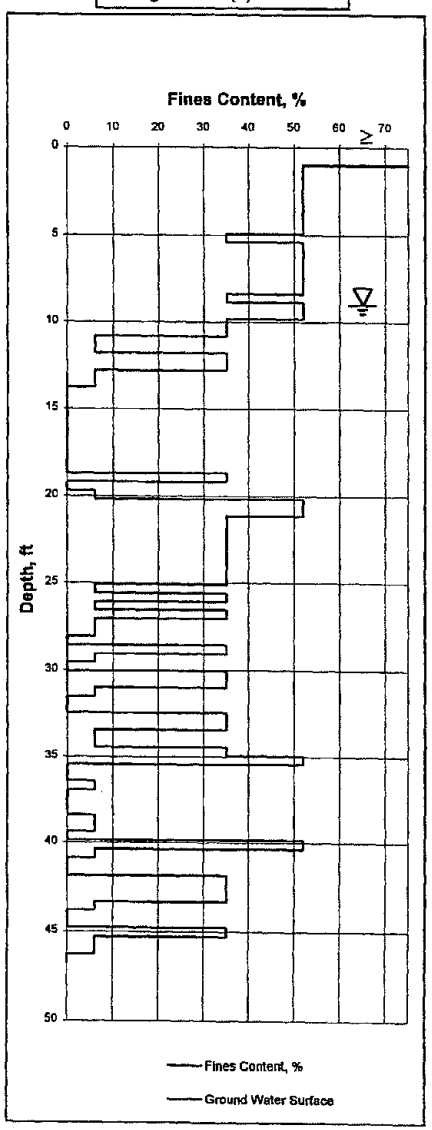


Figure E-7 (b)



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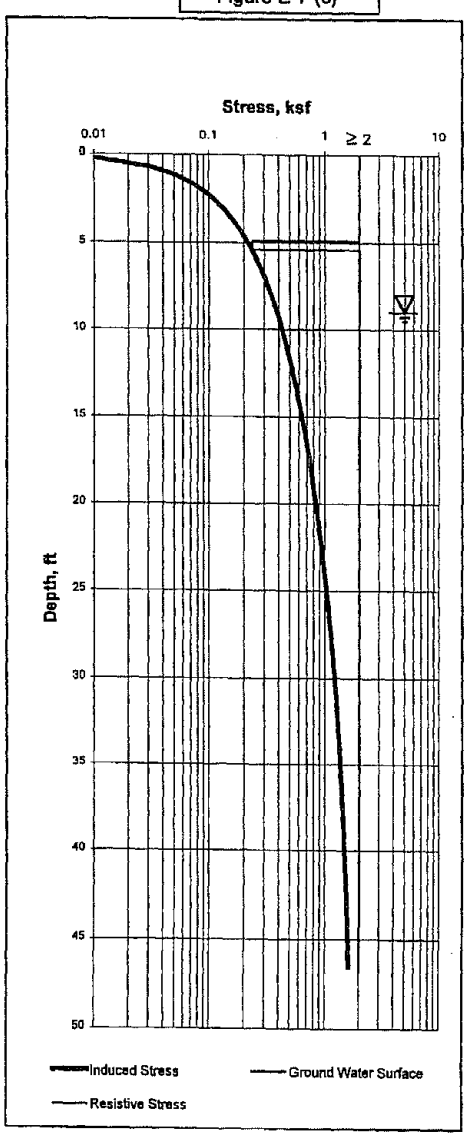

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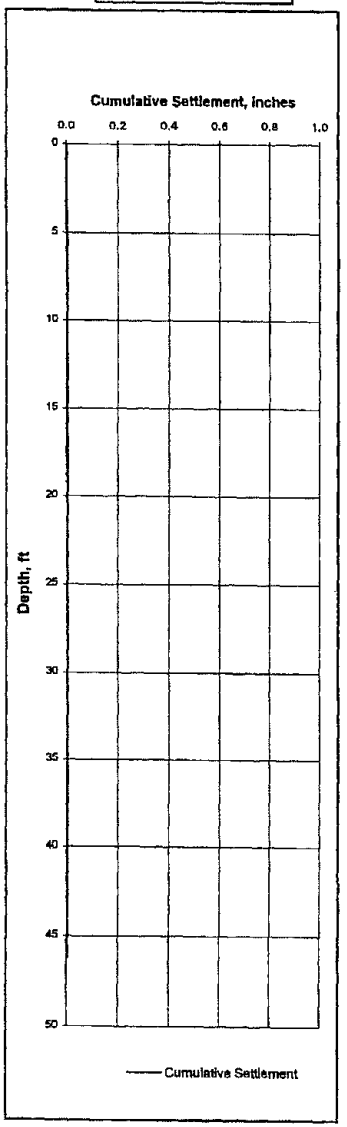

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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertainment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-7
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-8

Figure E-8 (a)

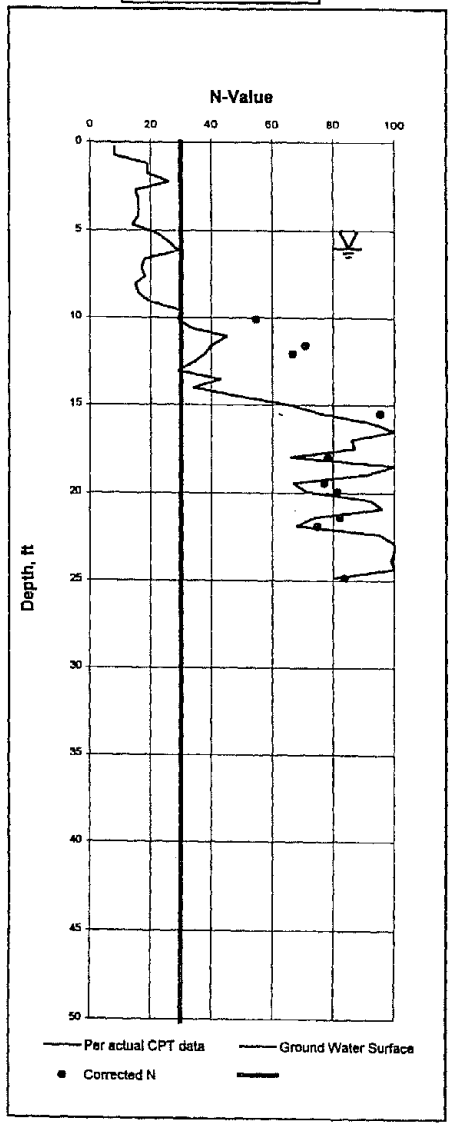
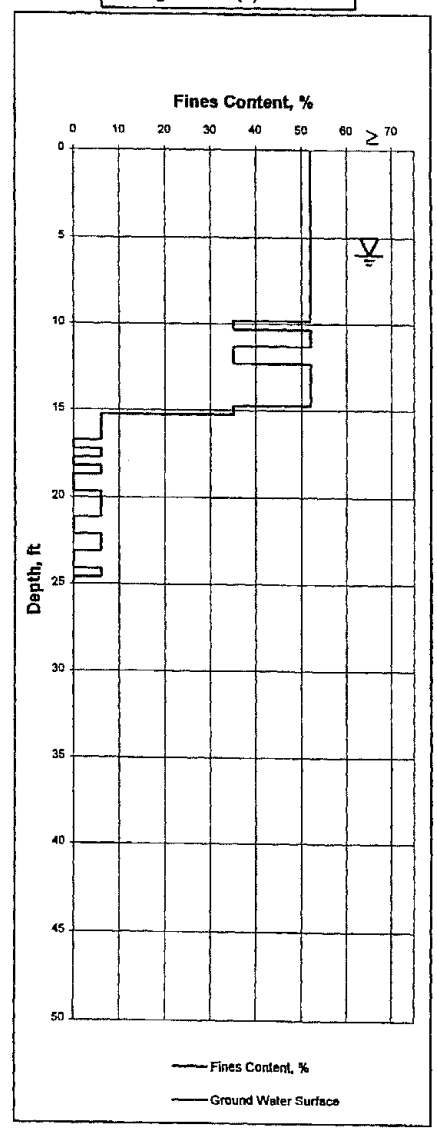


Figure E-8 (b)



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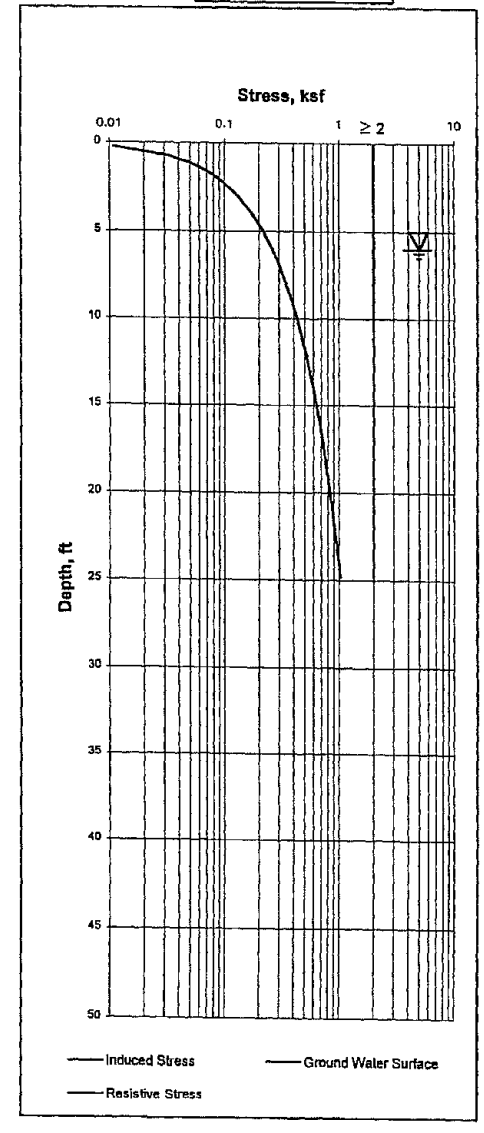
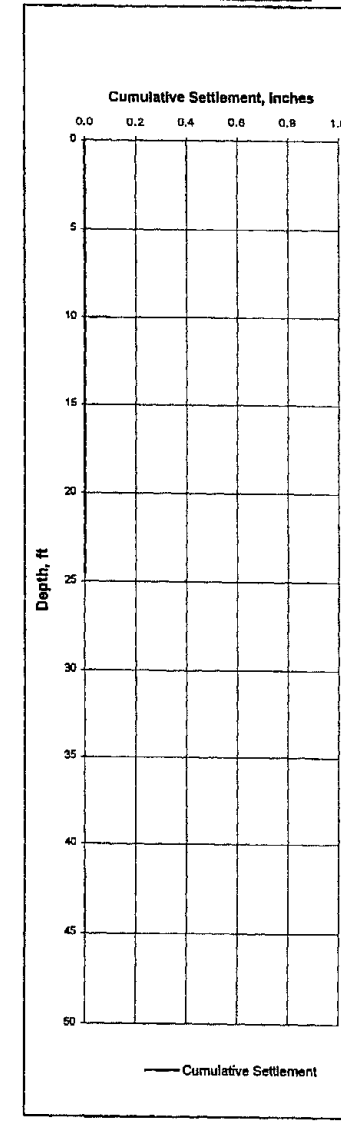


Figure E-8 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-8
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-9

Figure E-9 (a)

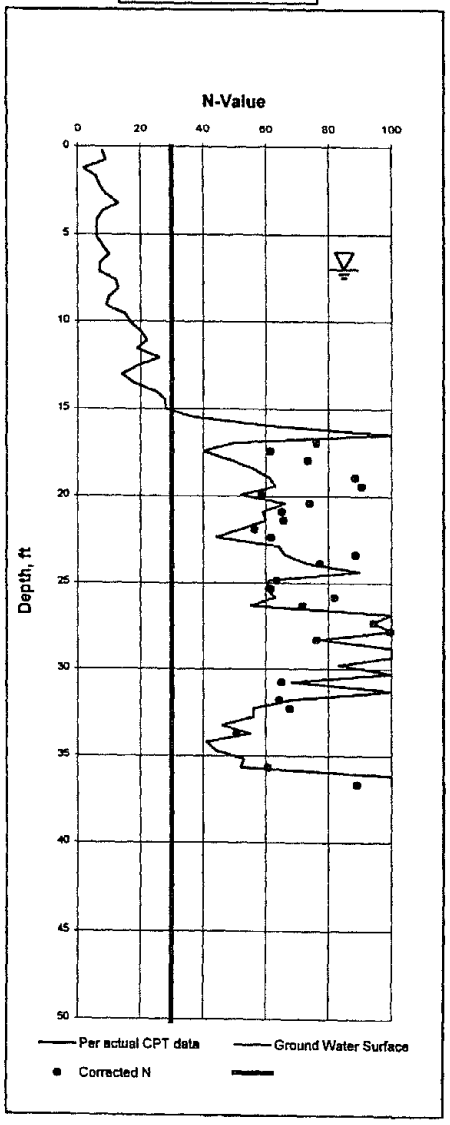


Figure E-9 (b)

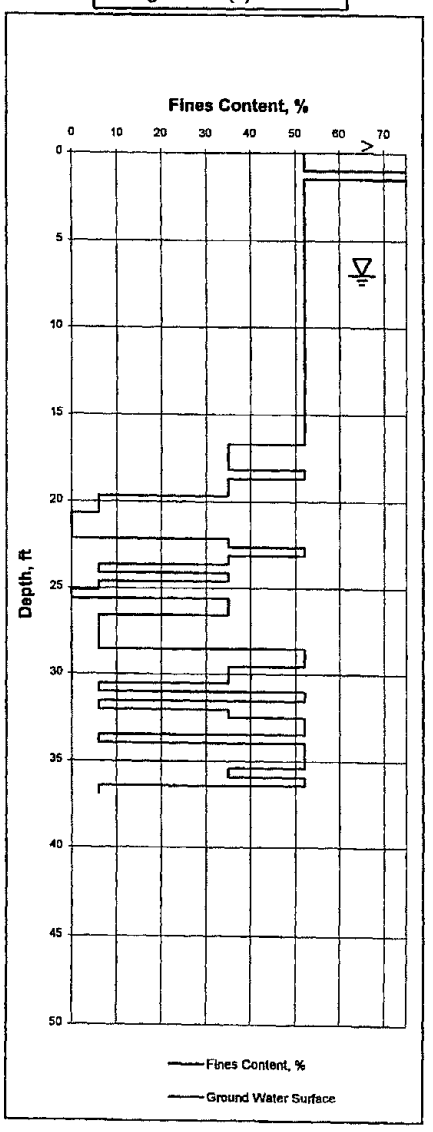


Figure E-9 (c)

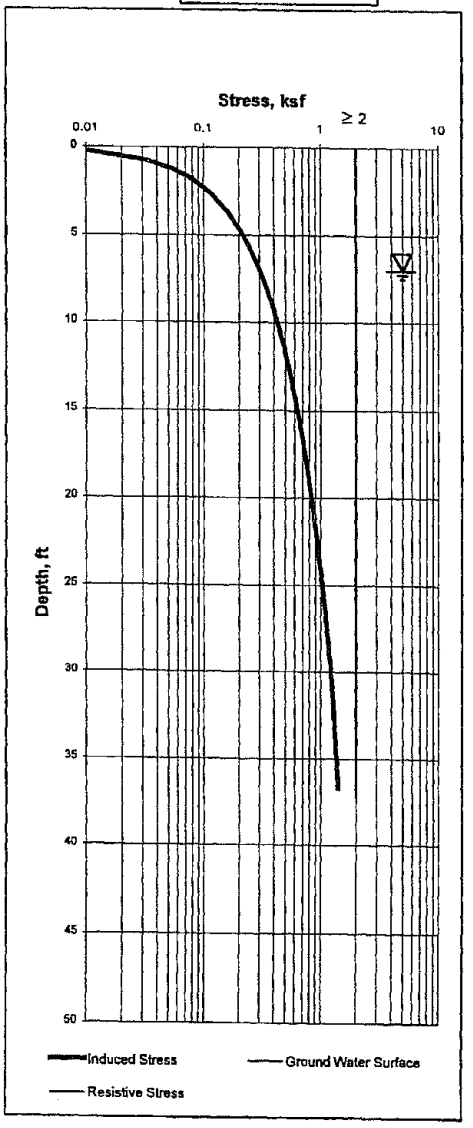
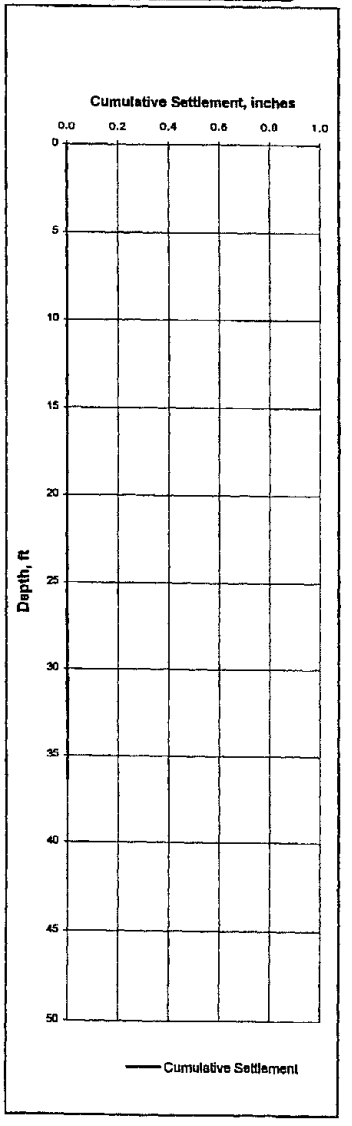


Figure E-9 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-9
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-10

Figure E-10 (a)

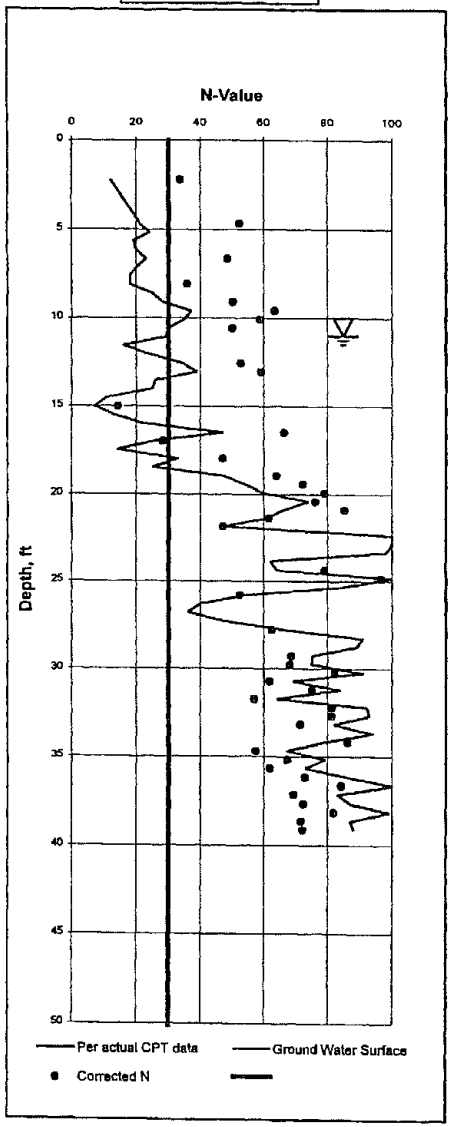


Figure E-10 (b)

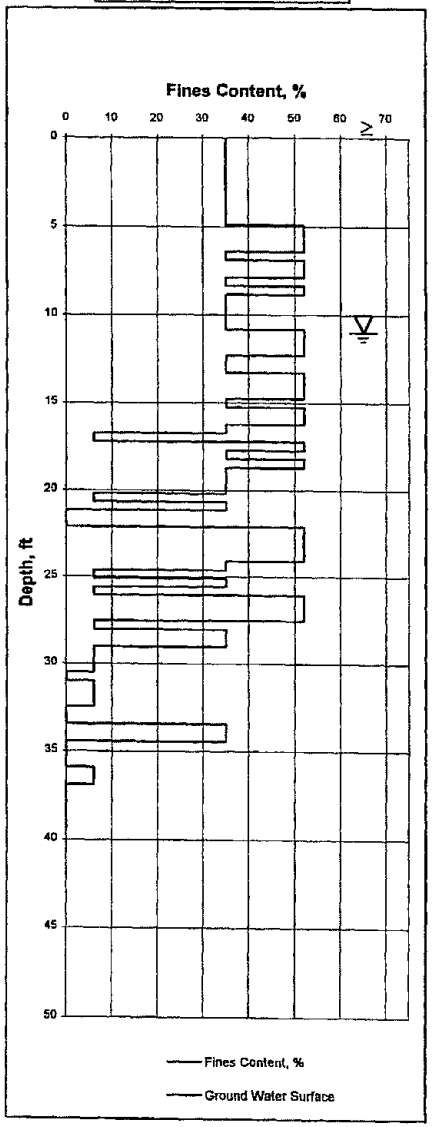


Figure E-10 (c)

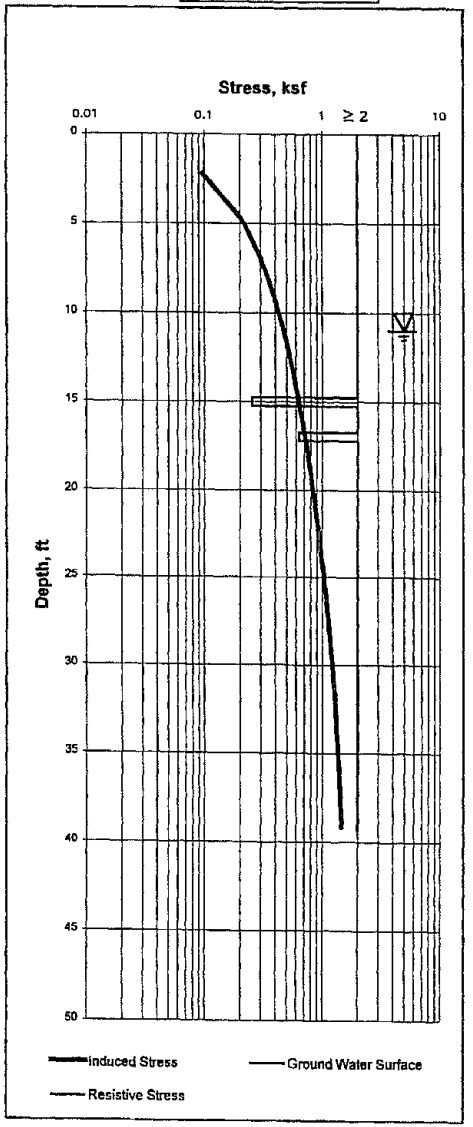
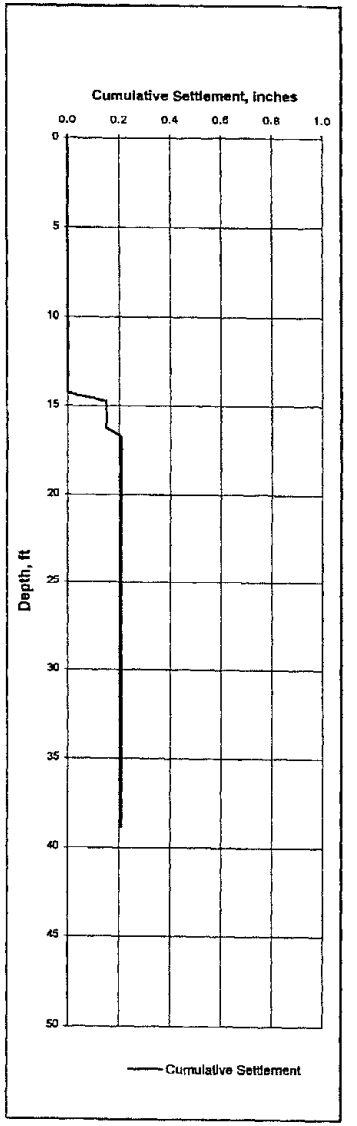


Figure E-10 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-10
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-11

Figure E11 (a)

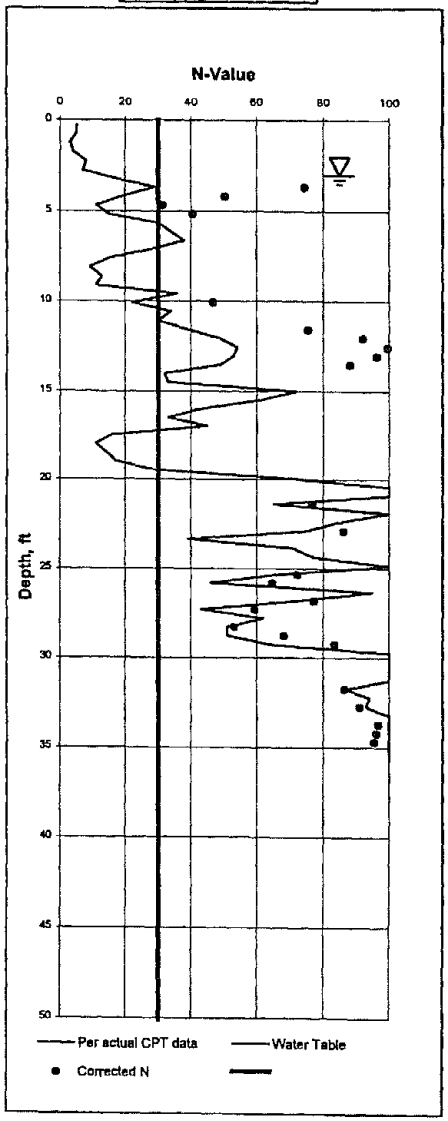


Figure E-11 (b)

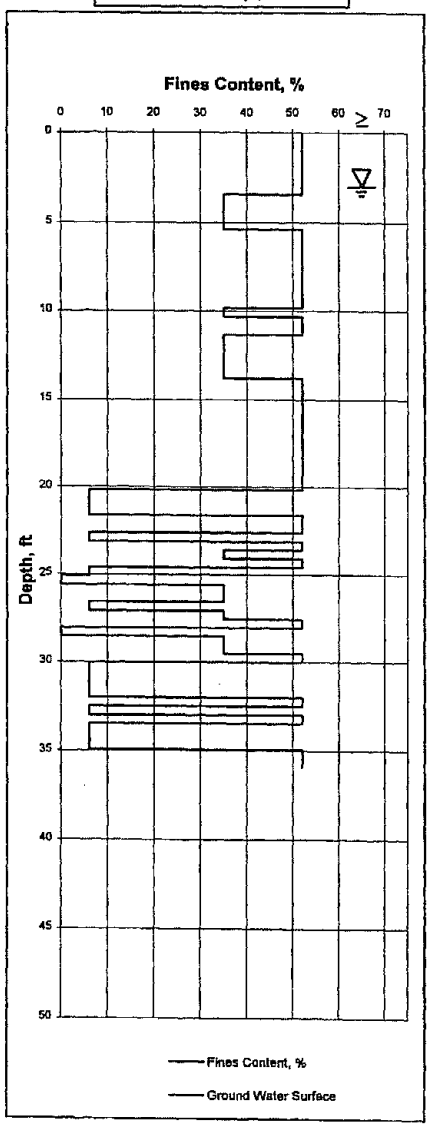


Figure E-11 (c)

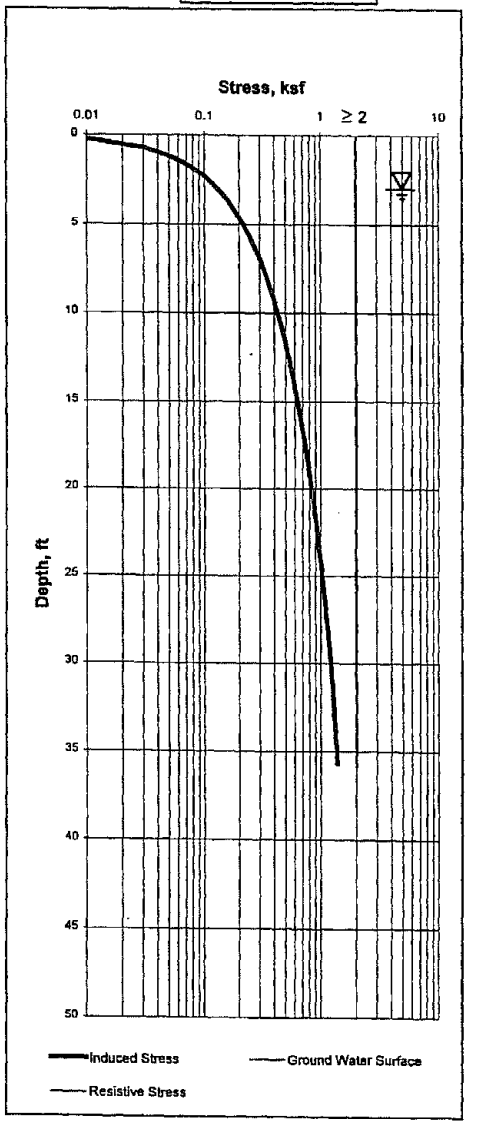
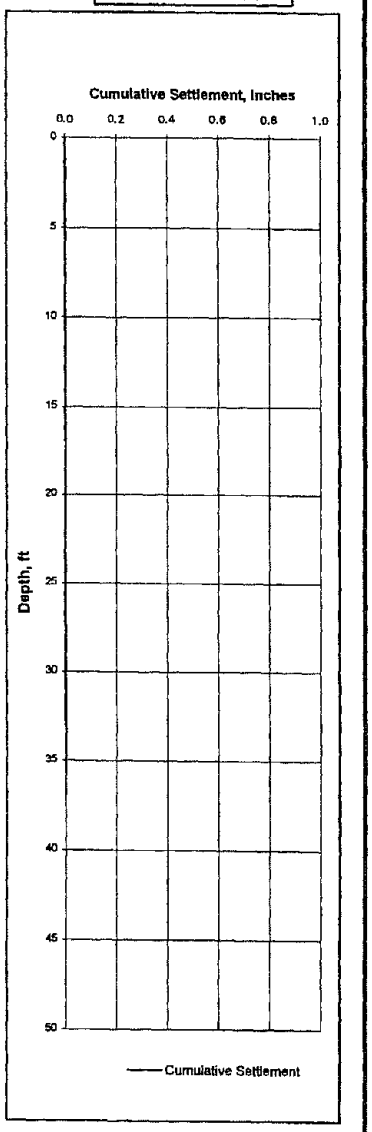


Figure E-11 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-11
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-12

Figure E-12 (a)

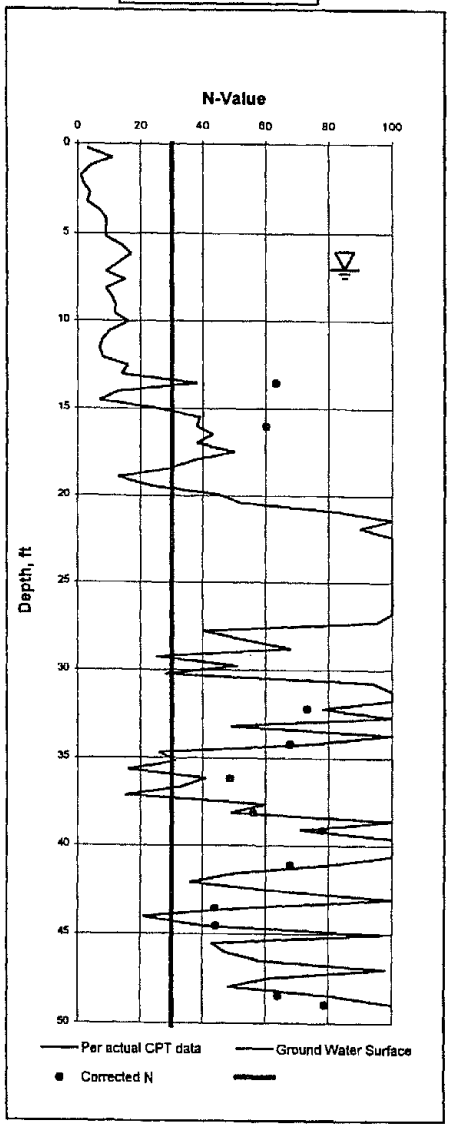


Figure E-12 (b)

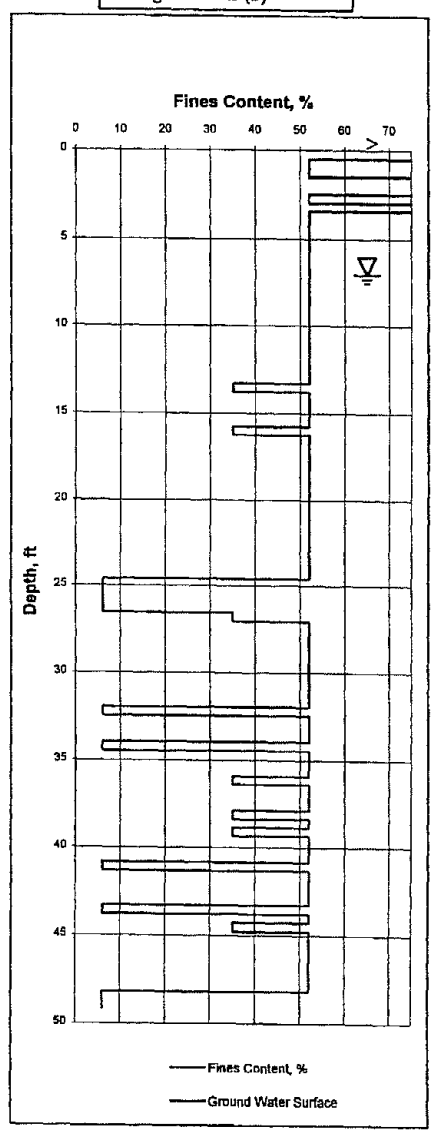


Figure E-12 (c)

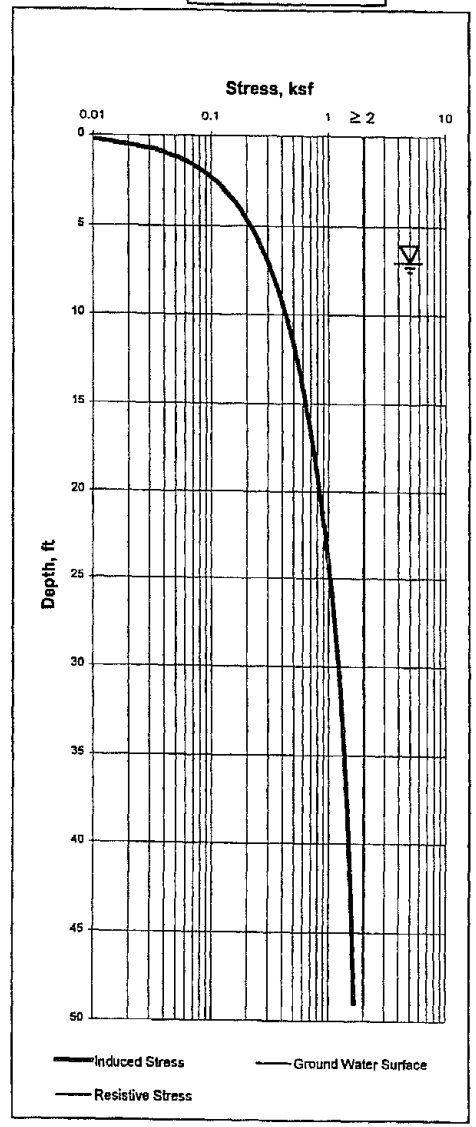
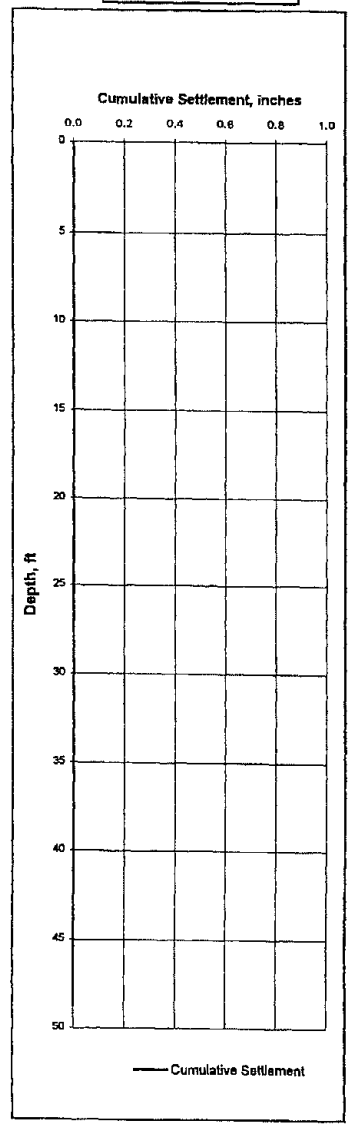


Figure E-12 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-12
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-13

Figure E-13 (a)

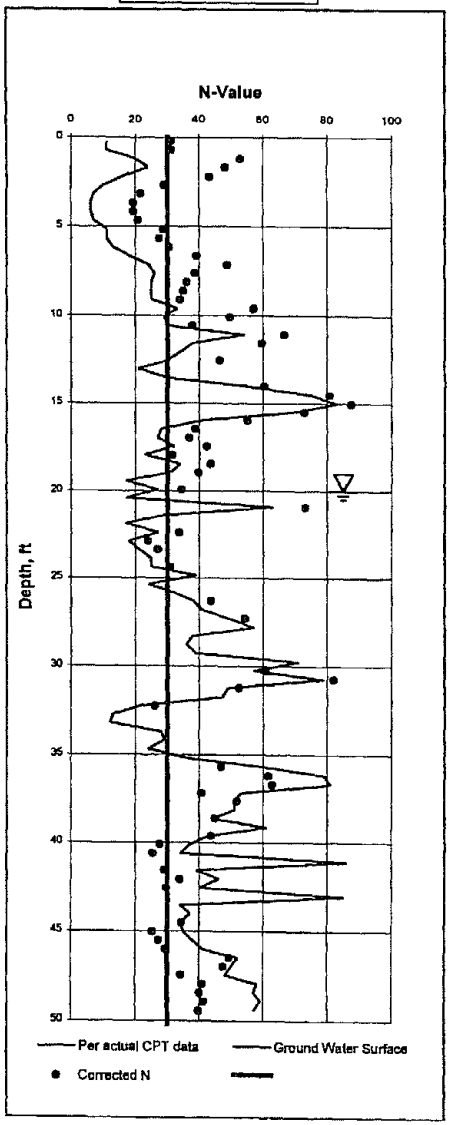


Figure E-13 (b)

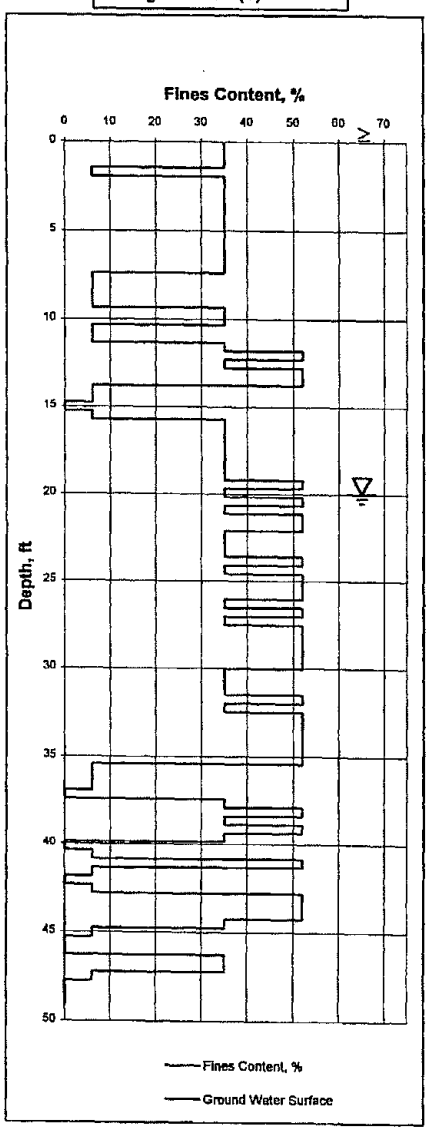


Figure E-13 (c)

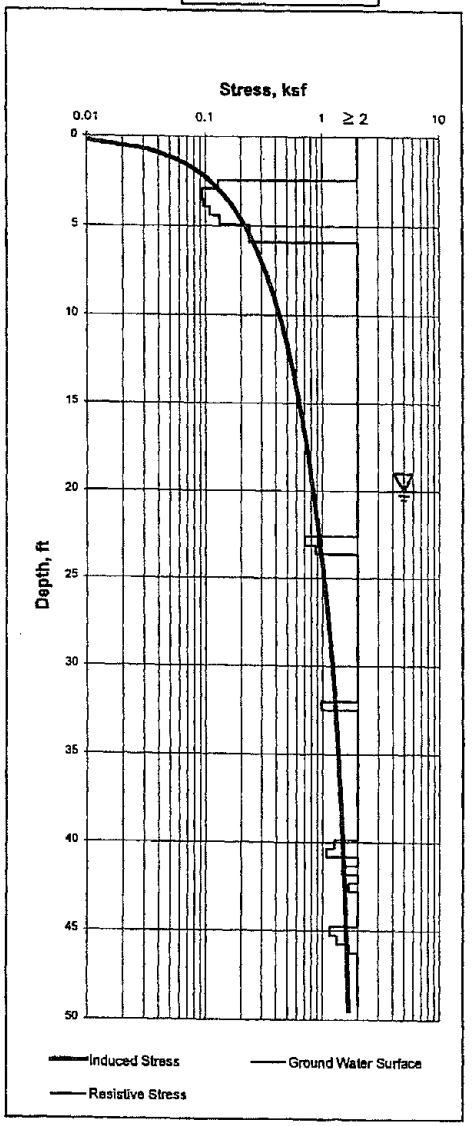
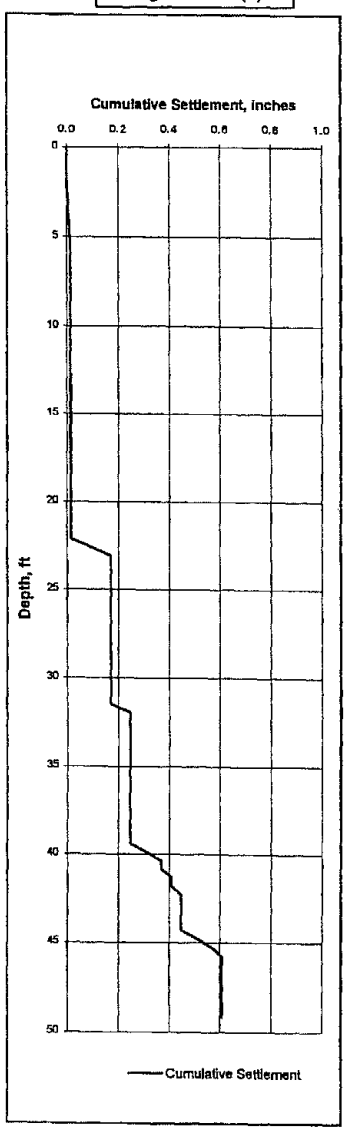


Figure E-13 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-13
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-14

Figure E-14 (a)

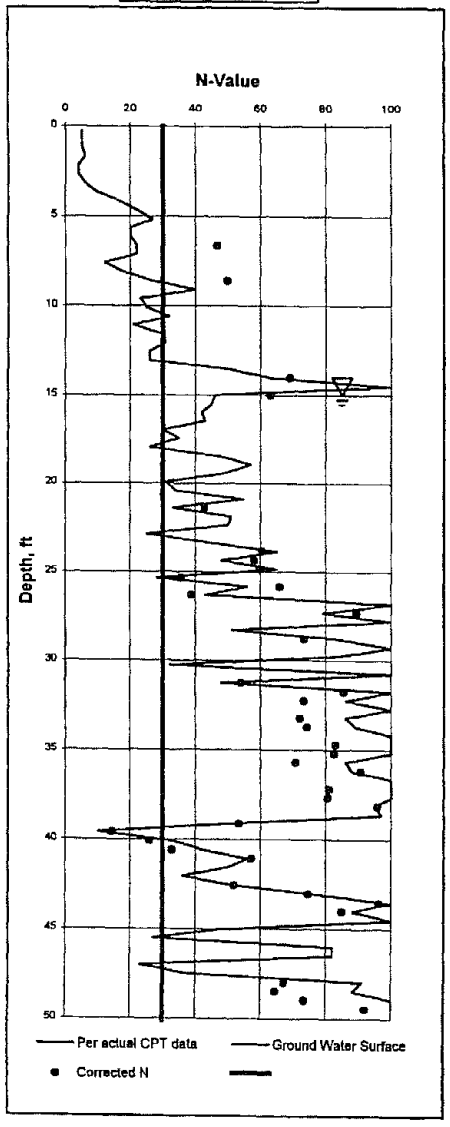


Figure E-14 (b)

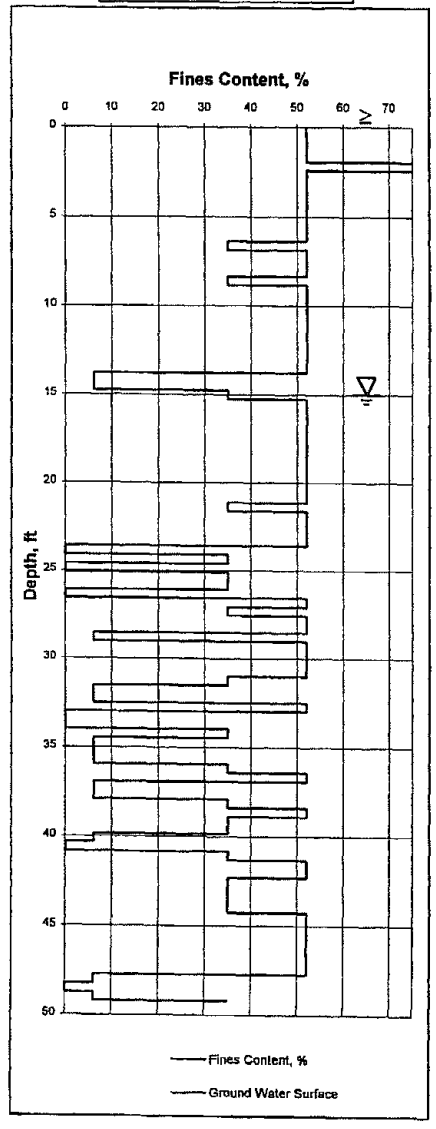


Figure E-14 (c)

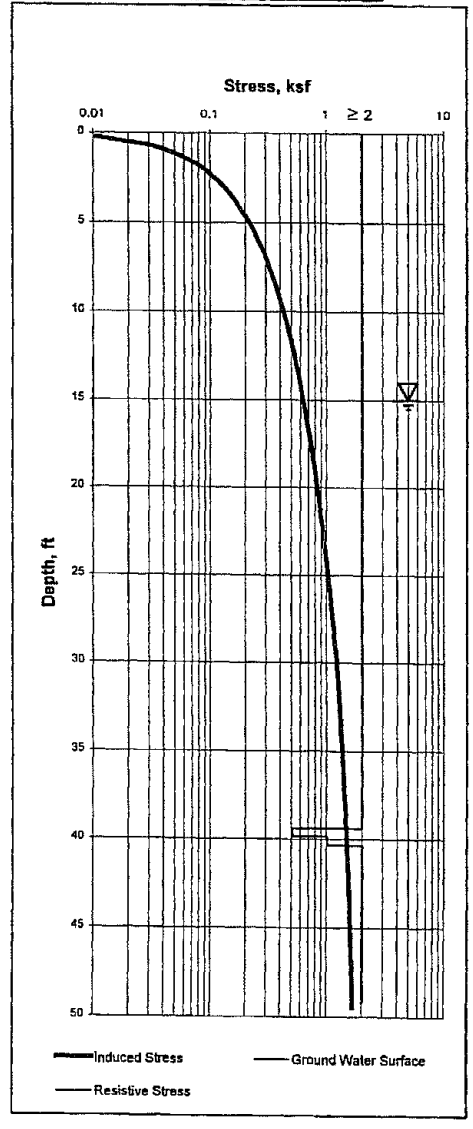
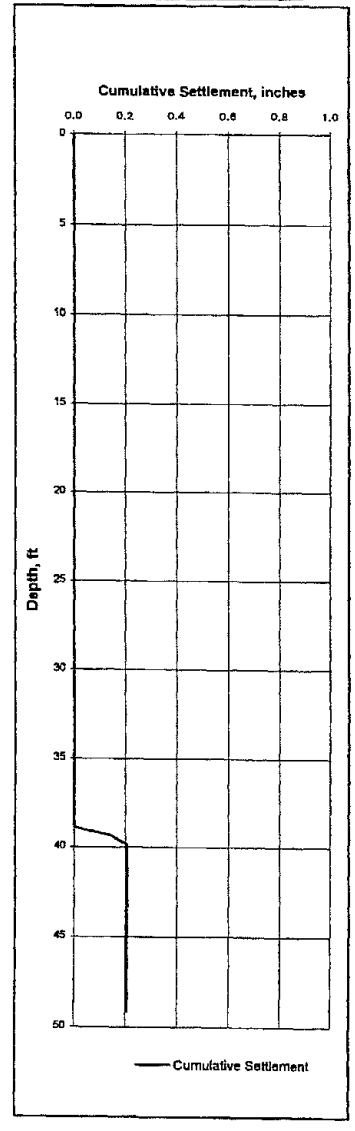


Figure E-14 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-14
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-15

Figure E-15 (a)

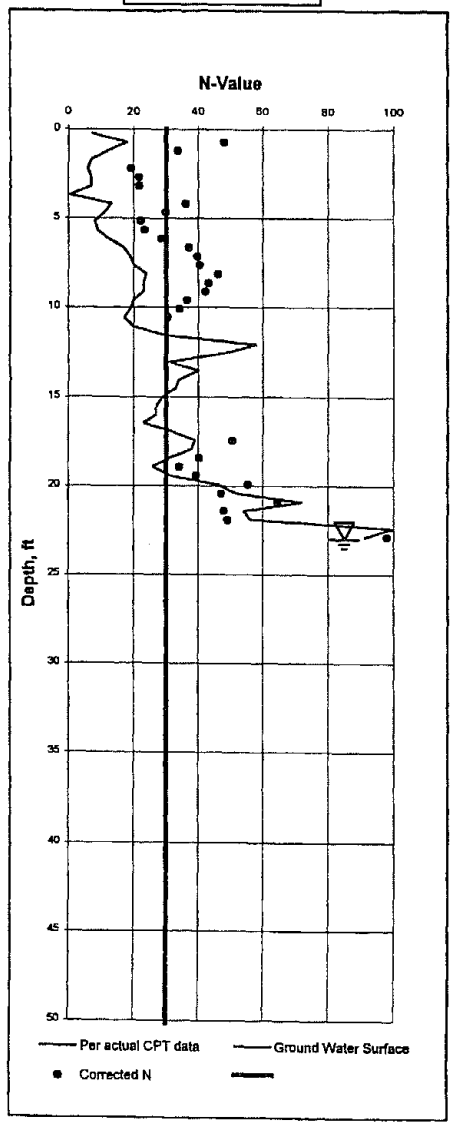


Figure E-15 (b)

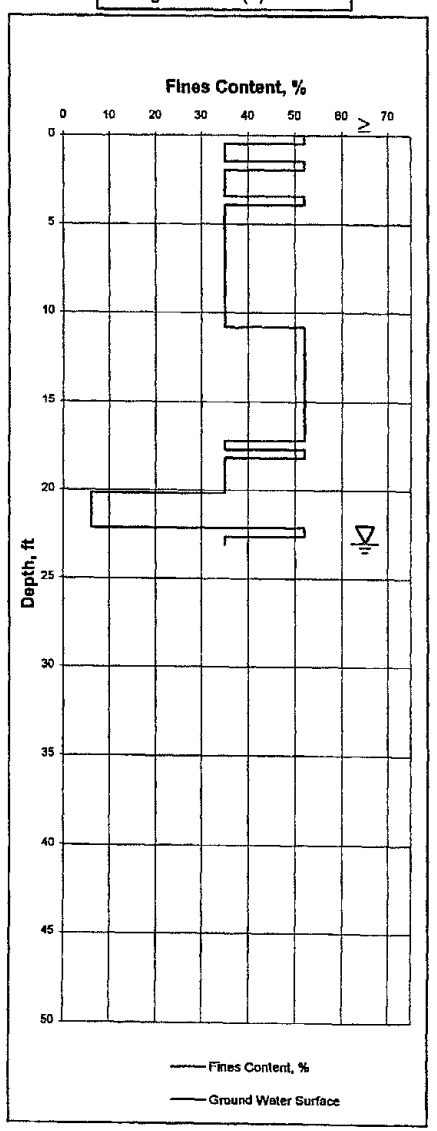


Figure E-15 (c)

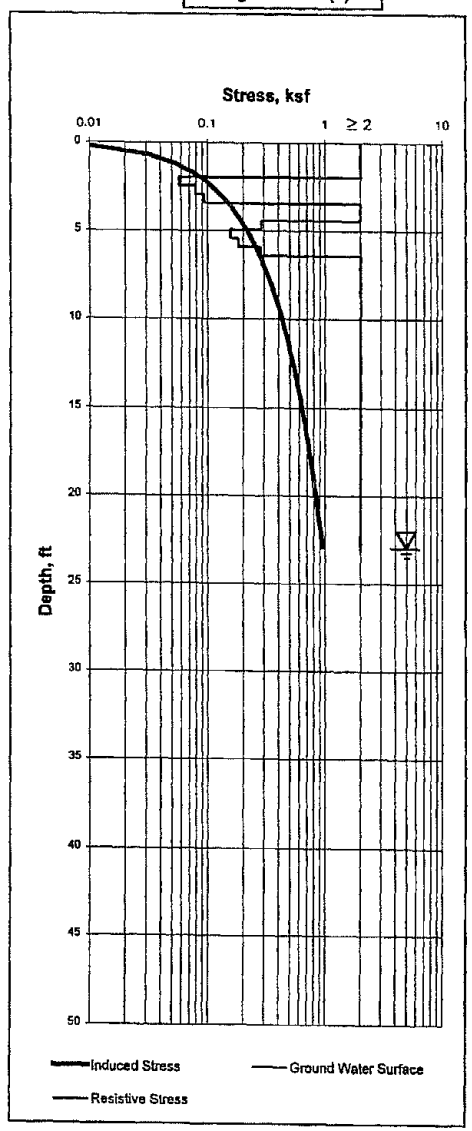
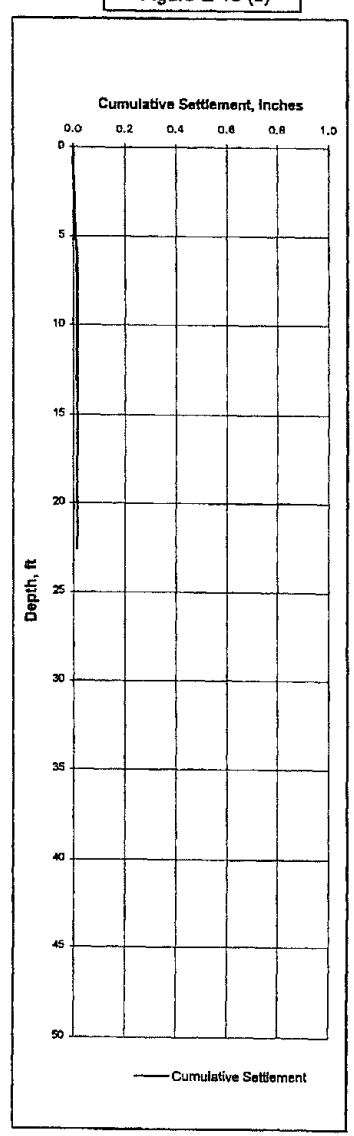


Figure E-15 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-15
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-16

Figure E-16 (a)

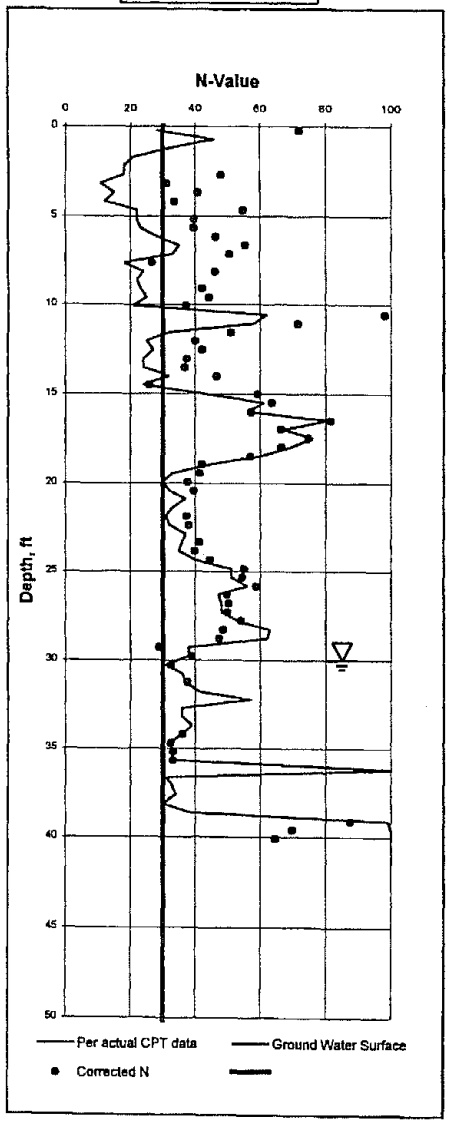


Figure E-16 (b)

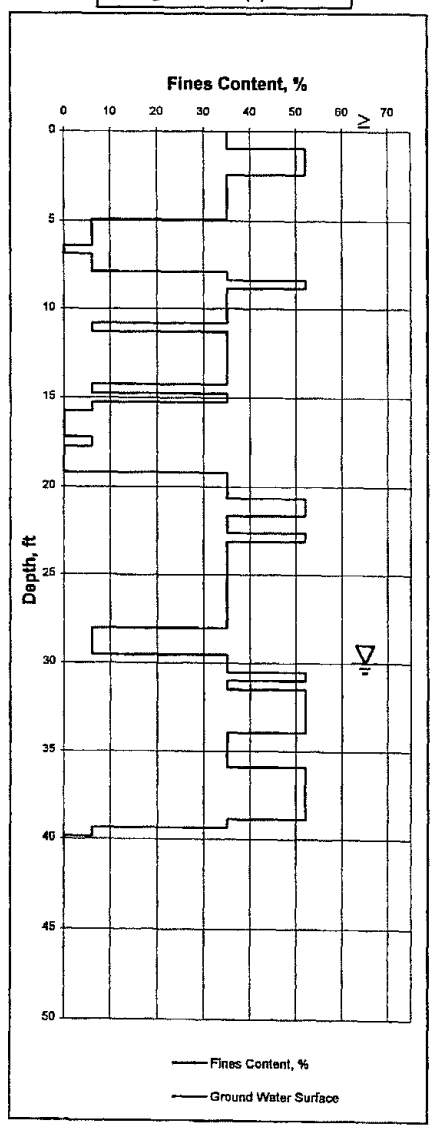


Figure E-16 (c)

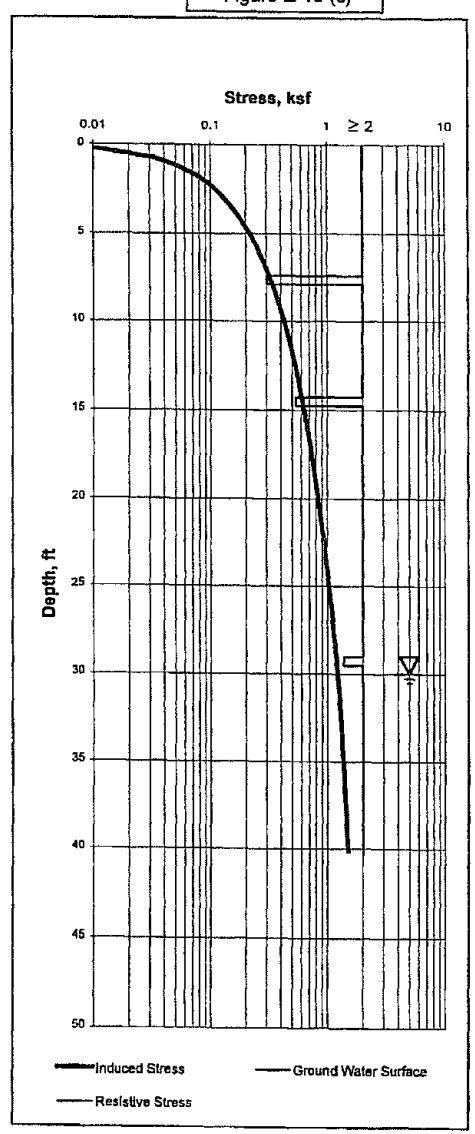
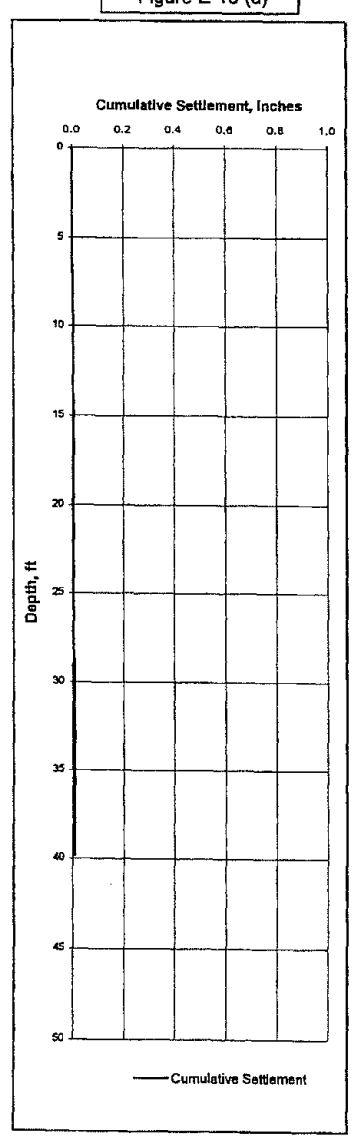


Figure E-16 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertainment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-16
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-17

Figure E-17 (a)

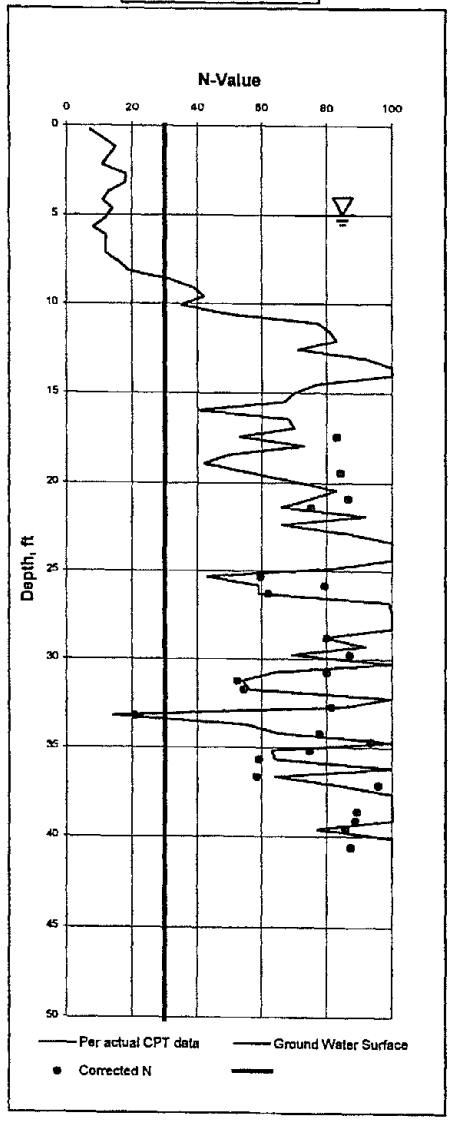


Figure E-17 (b)

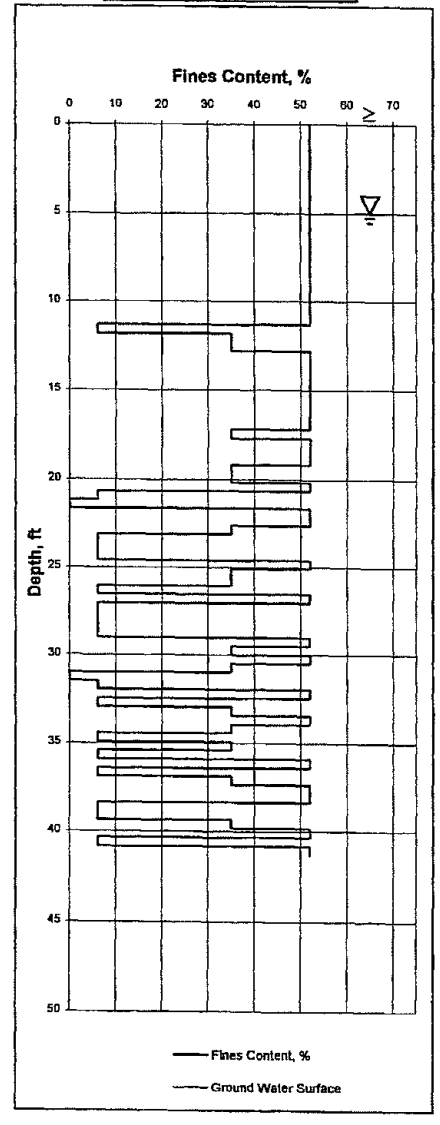


Figure E-17 (c)

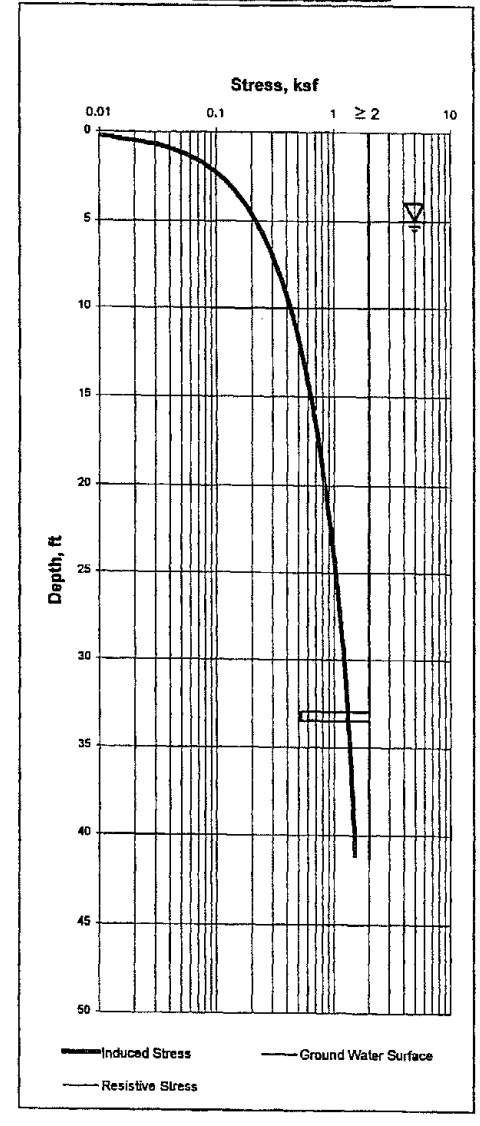
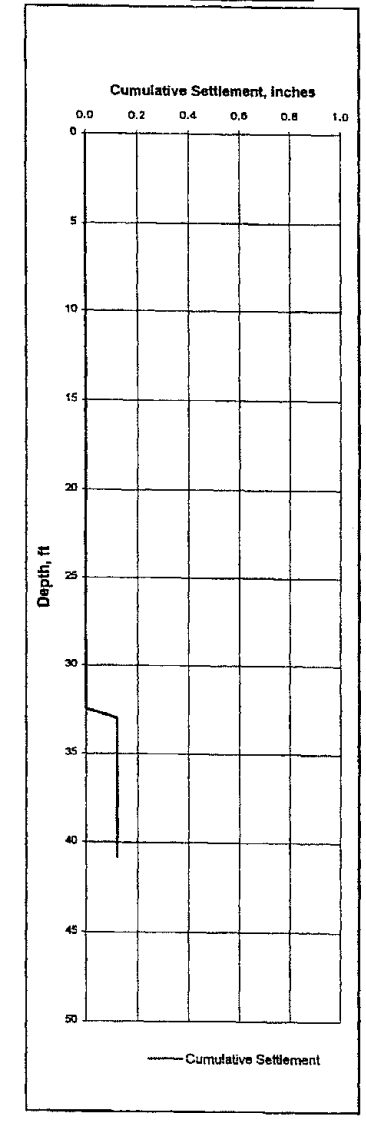


Figure E-17 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-17
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000

For use with report dated 03/18/2005; RTF Job No. 2004-700-21

Sounding Location: CPT-18

Figure E-18 (a)

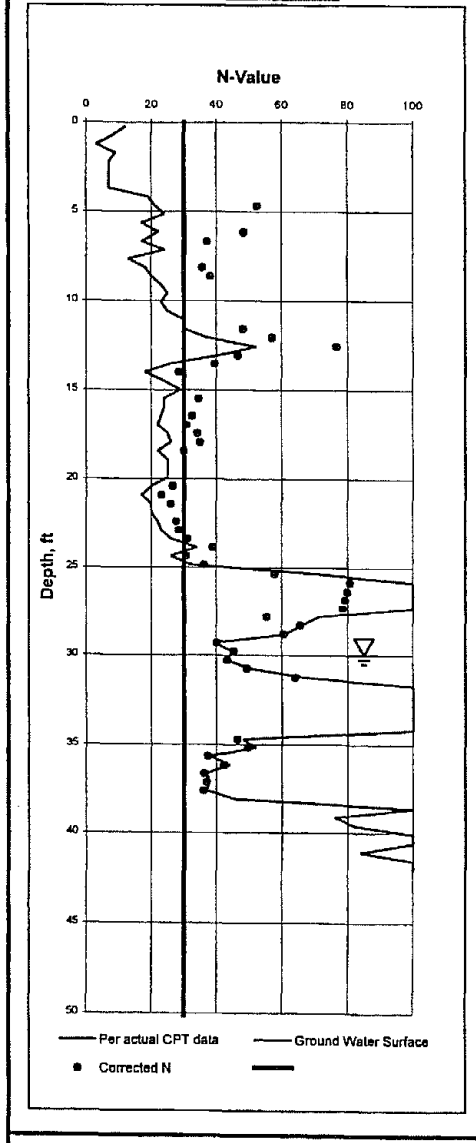


Figure E-18 (b)

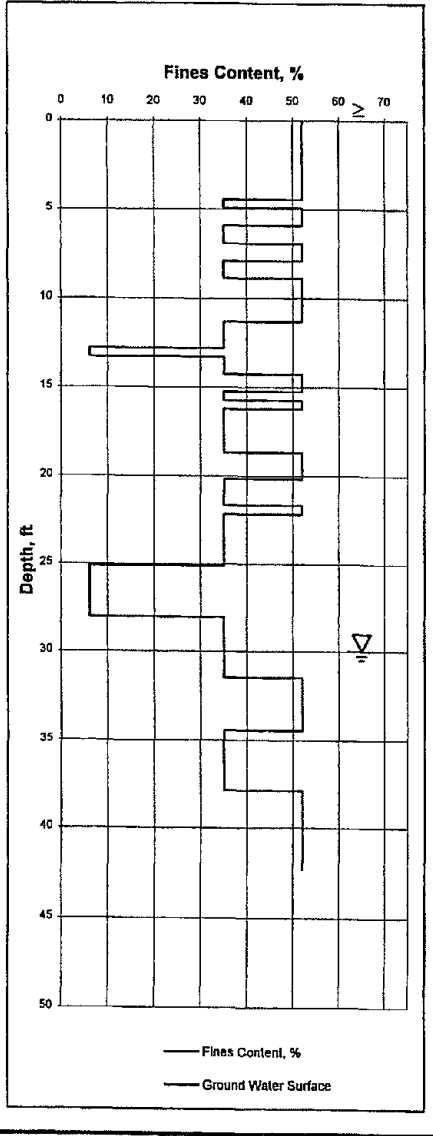


Figure E-18 (c)

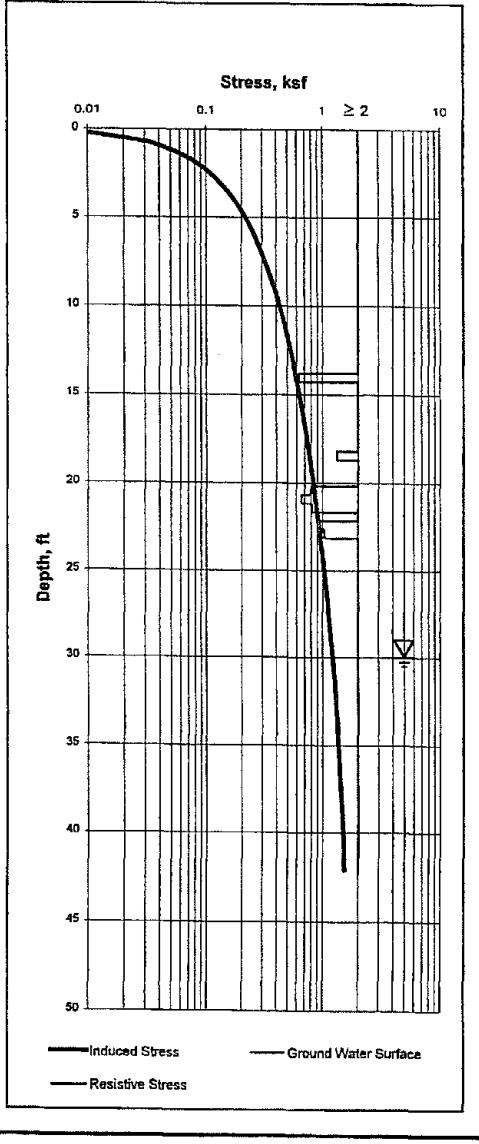
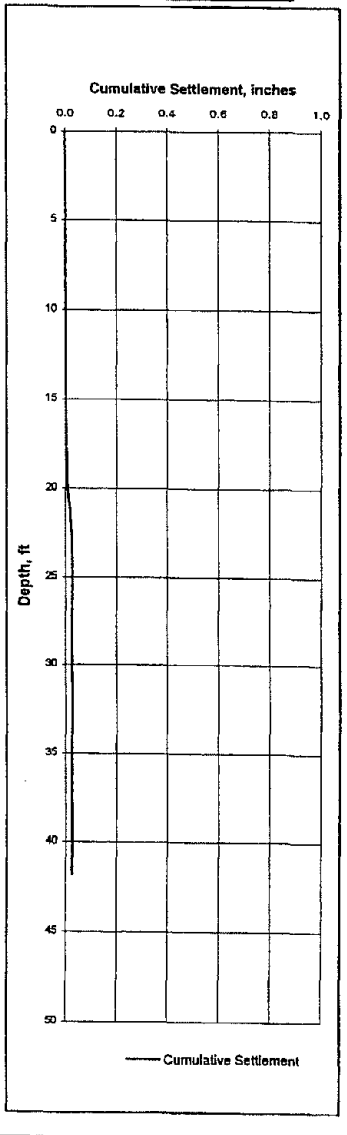


Figure E-18 (d)



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Analysis of Liquefaction Potential Based on N-Value (Interpreted from CPT Data)

Magic Mountain Entertaintment	Peak Gr. Acc. (M=7.5)	0.56	Project No.	00-1729-1
Santa Clarita, California	Design Magnitude	6.5	Figure No.	E-18
For: Valencia Company	Magnification Factor	1	Date.	4/17/2000