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GEI Consultants, Inc.

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1996 SLOPE INCLINOMETER INSTALLATION PROGRAM
BALL MOUNTAIN DAM
JAMAICA, VERMONT

Submitted to:

U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

1021 Main Street
Winchester, MA 01890-1970
(617) 721-4000

February 1997
Project 96164

1996 SLOPE INCLINOMETER INSTALLATION PROGRAM

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Prepared by:

GEI Consultants, Inc.
1021 Main Street
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(617) 721-4000

Project 96164

Alton P. Davis, Jr., P.E.
Vice President, Design Division

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REFERENCES

[1] GEI Consultants, Inc. (1988). "Slope Inclinometer Monitoring and Data Manipulation at Ball Mountain Dam, Jamaica, Vermont," June 22.

[2] GEI Consultants, Inc. (1989). "Slope Inclinometer Monitoring and Data Manipulation at Ball Mountain Dam, Jamaica, Vermont," February 14.

[3] GEI Consultants, Inc. (1993). "Slope Inclinometer Monitoring, Ball Mountain Dam, Jamaica, Vermont," June 21.

[4] GEI Consultants, Inc. (1993). "Slope Inclinometer Monitoring, Ball Mountain Dam, Jamaica, Vermont," December.

[5] GEI Consultants, Inc. (1994). "Slope Inclinometer Monitoring, Ball Mountain Dam, Jamaica, Vermont," September.

1. INTRODUCTION

1.1 Purpose

This report summarizes the quality assurance services provided by GEI Consultants Inc. (GEI) for the installation of four Slope Inclinometers at Ball Mountain Dam in Jamaica, Vermont. The installations were performed by U.S. Army Corps of Engineers drillers from the Mobile District. An additional three inclinometers were installed at Ball Mountain Dam as part of this project under the supervision of personnel from the New England Division of the Corps of Engineers (CENED). The installation logs and boring logs for work performed under the supervision of CENED personnel are included with this report.

1.2 Scope

The scope of work performed for this study was as follows:

a. Provide full-time quality assurance during the drilling for and installation of four slope inclinometers at Ball Mountain Dam.

b. Conduct weekly safety meetings during the field work.

c. Prepare an engineering report containing boring logs, inclinometer casing installation logs, daily activity logs, weekly safety meeting reports, and a location plan drawing.

1.3 Authorization

This study was authorized by Sheila A. Winston, Contracting Officer of the CENED, in the contract for Delivery Order No. 0002 for Contract No. DACW 33-95-D-0008 dated June 14, 1996 with modification No. 000201 dated July 24, 1996.

1.4 Project Personnel

The following personnel at GEI Consultants Inc. (GEI) conducted the field work, reduced the field data, and prepared this report:

Alton P. Davis, Jr.	Vice President, Design Division
Stephen J. Sarandis	Project Engineer

1.5 Project Datum

All elevations in this report refer to National Geodetic Vertical Datum. Horizontal coordinates are in Vermont State Grid System unless otherwise noted.

2. SITE AND PROJECT DESCRIPTION

Ball Mountain Dam is located on the West River in Jamaica, Vermont (Fig. 1). It is an element of the Connecticut River Basin Flood Control Plan. The dam is located about 29 miles upstream of the confluence of the Connecticut and West Rivers in Brattleboro, Vermont. It is 9.5 miles upstream of the Townsend Flood Control Dam. Construction of the dam was completed in 1961. The dam is owned and operated by the U.S. Army Corps of Engineers.

A plan of the dam is shown in Fig. 2. The dam is a rockfill and earthfill embankment with a concrete spillway and a low-level outlet tunnel in the right abutment. The embankment is 915 feet long and has a maximum height of 265 feet. The dam crest is 20 feet wide at El. 1,052. The downstream slope of the embankment is 1.75H:1V. The upstream slope of the embankment is 2H:1V above El. 1,017 and 2.5H:1V below El. 1,017.

The embankment dam consists of a rolled, glacial-till impervious core with riprap/rockfill protection on the upstream slope and a rockfill downstream shell. There are gravel filter transition layers between the impervious core and the rockfill shells and between the downstream rockfill shell and the underlying foundation soils. To reduce seepage beneath the dam, there is a compacted, glacial-till cutoff trench under the impervious core extending to natural glacial till under the central portion of the dam and to bedrock under the abutments. In addition, there is a grout curtain in the bedrock in the abutments.

Relatively soon after construction, an apparent bulge was reported on the downstream slope about 175 feet down slope from the crest and extending the entire length of the dam. Photographs of the dam during construction indicate a haul road existed in the approximate location of the bulge. Portions of the downstream crest have reportedly settled up to 2 feet (1961-1985). The settlement areas were regraded with gravel during 1985-1986. Based on visual observations in 1992 and 1996, it appears that additional differential crest settlement is still occurring.

Six slope inclinometers were installed in the dam between October 1985 and January 1986 to monitor embankment movements in the downstream shell. Readings of the slope inclinometers were started in April 1986. Results of readings obtained by GEI from April 1986 through December 1994 are presented in References 1 through 5.

Seven new slope inclinometers were installed in the downstream slope of the dam between June 1996 and September 1996 to better monitor embankment movements. GEI provided full-time observation quality assurance for the drilling and installation of four of the inclinometers. Personnel from CENED observed the installation of the remaining three inclinometers.

3. QUALITY ASSURANCE

3.1 General

The proposed locations of the seven new slope inclinometers were staked in the field by CENED personnel prior to GEI's arrival on site. The seven inclinometers were installed in borings numbered FD-96-1 through FD-96-7. The inclinometer installations were numbered IC-96-1 through IC-96-7. The borings were numbered in the sequence in which they were performed. The inclinometer installation numbers were assigned in advance of the work and do not correspond to the boring numbers. Table 1 provides a summary of boring numbers, inclinometer installation numbers, survey coordinates and installation information. The surveyed locations of the inclinometers are shown in Fig. 2. Inclinometer installation logs are presented in Appendix A. Boring logs are presented in Appendix B. Daily activity logs and weekly safety meeting reports are presented in Appendix C and Appendix D, respectively.

3.2 GEI Responsibilities

GEI was on site to observe four borings and the installation of slope inclinometers in each of the completed borings. GEI observed borings FD-96-1 through FD-96-4 and the installation of inclinometers IC-96-1, IC-96-2, IC-96-4, and IC-96-6. CENED provided personnel to observe borings FD-96-5 through FD-96-7 and the installation of inclinometers IC-96-3, IC-96-5, and IC-96-7.

3.3 Drilling

The four borings GEI was on site to observe were drilled using a Failing 314 rotary drill rig mounted on the back of a 10-wheel Army flatbed truck. The truck rig was winched down the downstream slope of the dam to the boring locations by hydraulic winches mounted on the back of bulldozers anchored at the crest of dam. Once at the boring location on the downstream slope the driller would level the drill rig for drilling by raising the flat-bed section of the truck with hydraulic pistons.

The Corps' drillers used the Odex system down-the-hole hammer with an eccentric reamer and 6-inch-diameter casing to advance the borings. The driller used compressed air to power the down-the-hole hammer and to remove cuttings from the borehole. All borings were advanced a minimum of 10 feet into bedrock with the exception of boring FD-96-4 (IC-96-2). In borings FD-96-2 and FD-96-4, the drive shoe of the 6-inch Odex casing broke off while advancing the boring in the embankment of the dam. The Corps' drillers telescoped to 4-inch-diameter casing to continue the borehole. Boring FD-96-4 was terminated above the bedrock at a depth of 270.5 feet because the drillers encountered refusal with the 4-inch-diameter casing.

3.4 Soil and Rock Sampling

Soil samples were obtained in borings FD-96-1 and FD-96-4 at depths corresponding to projected soil interfaces within the dam embankment and the foundation soils. Soil samples were obtained with a 5-foot-long, 3-inch-I.D. solid spoon sampler driven with a 300-lb. hammer dropping 18 inches. Soil samples were not obtained in borings FD-96-2 and FD-96-3, which were advanced primarily in rock fill.

The Corps' drillers cored bedrock in boring FD-96-1 with a 3.75-inch-O.D. by 10-foot-long core barrel. After coring the bedrock the drillers reamed the hole with a 5-inch-O.D. roller bit. At boring locations FD-96-2 and FD-96-3, the Corps' drillers advanced the borehole a minimum of 10 feet into bedrock with 5-inch-O.D., down-the-hole hammer. At boring location FD-96-4 the borehole was terminated in the foundation soils below the embankment before bedrock was encountered.

Boring logs prepared by GEI with sampling information and soil descriptions are presented in Appendix B. Estimated strata changes are shown on the boring logs and on the inclinometer installation sheets in Appendix A.

3.5 Inclinometer Installation

The Corps' drillers installed slope inclinometer casing in each of the completed boreholes. The slope inclinometers consisted of 2.32 inch-I.D. by 2.75-inch-O.D. ABS plastic inclinometer casing manufactured by the Slope Indicator Company (SINCO) of Seattle, Washington. The inclinometer casing came in 10-foot lengths and was joined together with self-aligning flush joint couplings. The drillers attached the couplings to the casing using pop rivets and PVC cement. For inclinometer installation IC-96-1 the drillers preassembled the inclinometer casing in 20-foot lengths prior to bringing the casing to the boring location to reduce installation time in the field. For inclinometer installations IC-96-2 , IC-96-4, and IC-96-6, the drillers only preassembled the couplings on one end of each 10-foot length of inclinometer casing prior to bringing the inclinometer casing to the boring location. A one-foot-long piece of 1.5-inch- diameter PVC pipe was placed in the bottom of the bottom piece of inclinometer casing to act as a stopper to prevent the Digitilt Inclinometer Probe from reaching the very bottom of the inclinometer casing.

The inclinometer casing was set so that one set of grooves(B-B) was aligned parallel to the axis of the dam, and the other set of grooves (A-A) was aligned perpendicular to the axis of the dam. Once the inclinometer casing was assembled and aligned in the borehole, GEI ran a dummy inclinometer probe up and down the inclinometer casing to confirm that the grooves were tracking correctly. GEI checked the alignment of the grooves at each location with a Brunton compass.

The Corps' drillers backfilled the annulus between the inclinometer casing and the borehole with 3/8-inch gravel. The lengths of the boreholes in the rockfill section of the embankment took significantly more gravel to backfill than the theoretical volume. The total amount of gravel required to backfill each inclinometer was estimated by GEI and is reported on the inclinometer installation sheet. GEI also recorded the approximate depths where voids were observed during the backfill operations. The lengths of the borehole that penetrated the gravel filter zone of the embankment were backfilled with a fine to medium sand. This was done to prevent any migration of fine-grained soil from the core of the embankment through the backfilled borehole into the rockfill downstream shell.

A 10-foot length of 4-inch-I.D. steel casing with a threaded coupling and cap was installed at the ground surface to protect the slope inclinometer casing. The steel casing was secured in the slope by backfilling around it with the 3/8-inch gravel. The horizontal location and the elevation of the slope inclinometers was surveyed in November of 1996 by the BSC Group(BSC). The horizontal location of each inclinometer was obtained by placing a centering jig with a survey target inside the top of the slope inclinometer casing. The horizontal location reported for each inclinometer is the center of the slope inclinometer casing. The elevation of the top of the inclinometer casing was obtained at the high point of the casing. BSC also obtained the elevation of the top of each 10-foot length of protective steel casing without the threaded coupling attached. The horizontal location and elevation for each slope inclinometer is reported in Table 1.

REFERENCES

[1] GEI Consultants, Inc. (1988). "Slope Inclinometer Monitoring and Data Manipulation at Ball Mountain Dam, Jamaica, Vermont," June 22.

[2] GEI Consultants, Inc. (1989). "Slope Inclinometer Monitoring and Data Manipulation at Ball Mountain Dam, Jamaica, Vermont," February 14.

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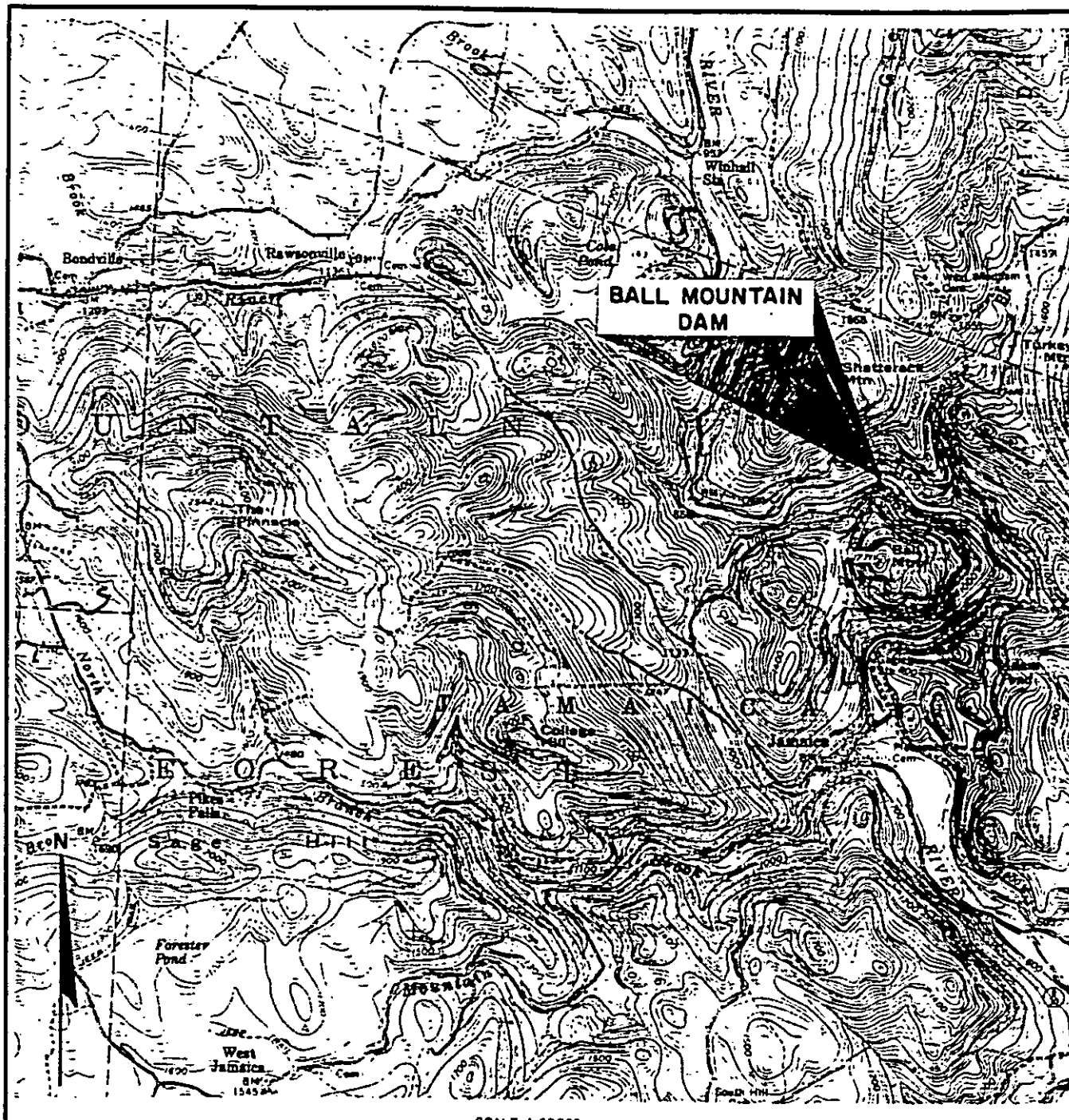
TABLE 1 - SUMMARY OF INCLINOMETER INSTALLATIONS
1996 Slope Inclinometer Installation Program
Ball Mountain Dam
Jamaica, Vermont

Inclinometer Number	Boring Number	Observed By	Station Number	Offset from Center Line of Dam (feet)	Coordinates		Start Date	Completion Date	Elevation Top Inclinometer Casing (feet)	Length of Inclinometer Casing (feet)	Elevation Bottom Inclinometer Casing (feet)	Orientation of B-B Grooves of Inclinometer Casing	Orientation Center Line of Dam at Instrument Station
					Northing	Easting							
IC-96-1	FD-96-1	GEI	8+50	75	228628.4	1567332.4	6/14/96	6/27/96	1017.1	158.4	858.7	N 4 deg. W	N 2 deg. E
IC-96-2	FD-96-4	GEI	6+00	75	228853.5	1567357.5	7/30/96	8/13/96	1017.5	261.8	755.7	N 9 deg. E	N 9 deg. E
IC-96-3	FD-96-6	CENED	3+50	75	229074.5	1567411.3	9/06/96	9/9/96	1017.7	136.5	881.2	N 22 deg. W	N 18 deg. E
IC-96-4	FD-96-2	GEI	7+80	190	228675.1	1567451.3	7/10/96	7/20/96	951.2	148.7	802.5	N 2 deg. W	N 4 deg. E
IC-96-5	FD-96-7	CENED	4+30	190	229005.1	1567510.6	9/12/96	9/16/96	950.7	136.0	881.2	N 5 deg. E	N 13 deg. E
IC-96-6	FD-96-3	GEI	7+80	300	228664.0	1567564.5	7/23/96	7/26/96	886.1	107.4	778.7	N 4 deg. E	N 4 deg. E
IC-96-7	FD-96-5	CENED	6+00	300	228815.5	1567579.0	8/16/96	8/29/96	888.2	186.0	702.2	N 7 deg. E	N 9 deg. E

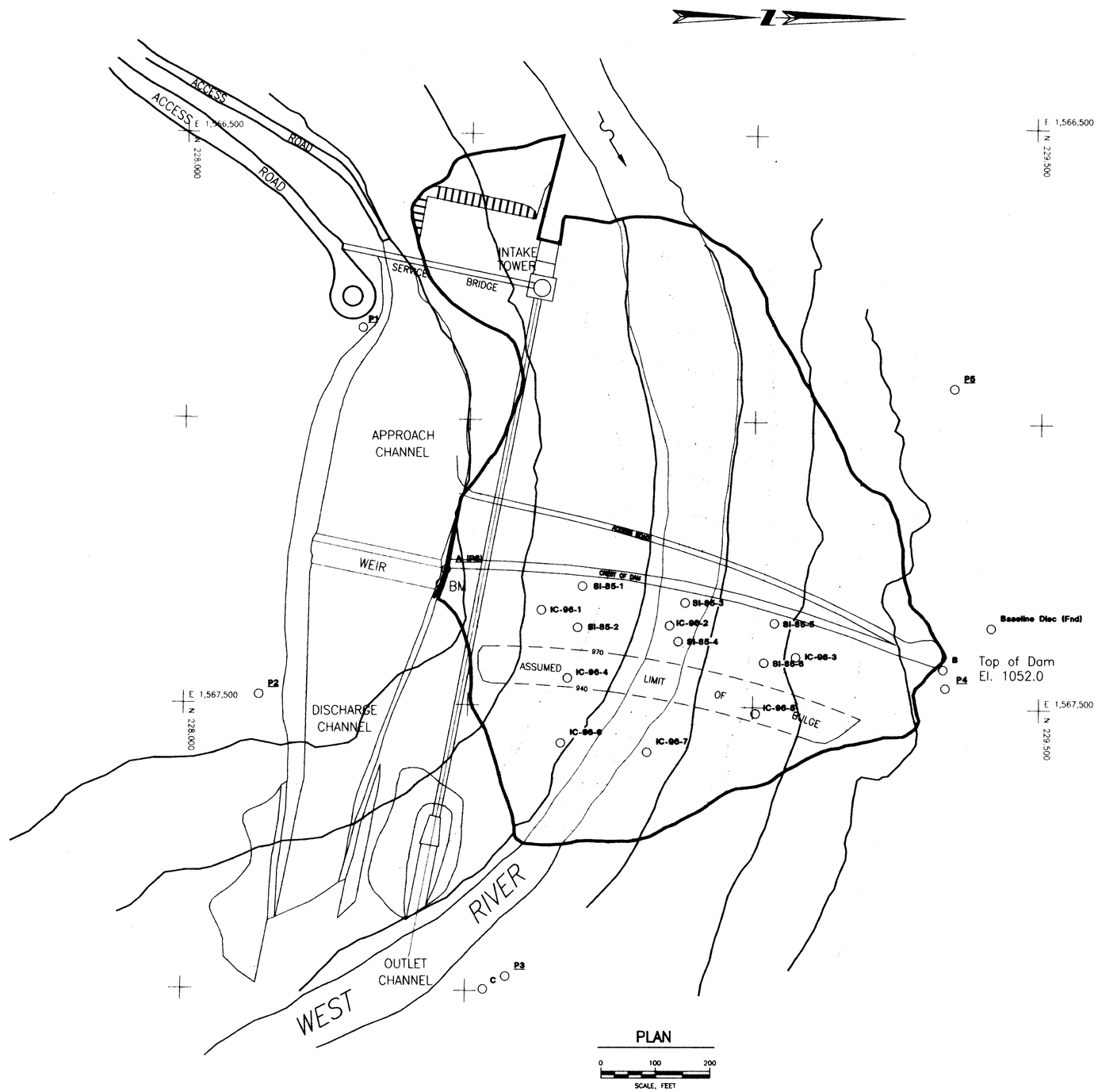
Notes:

1. Elevations are referenced to NGVD.
2. Station Numbers and Offsets are referenced to the center line of the dam and were provided by the Corps of Engineers.
3. Coordinates are referenced to the Vermont State Grid System.
4. Orientation of the center line of the dam and the B-B Grooves of the inclinometer casing were measured in the field with a Brunton Compass.
5. Elevations and Coordinates were surveyed in November 1996 by The BSC Group.



Map taken from U.S.G.S. Topographic 15 Minute Series.
Londonderry, Vermont Quadrangle.
Datum is National Geodetic Vertical Datum (NGVD).
Contour Interval is 20 feet.

U.S. Army Corps of Engineers Waltham, Massachusetts	1996 Slope Inclinometer Installation Program Ball Mountain Dam Jamaica, Vermont	SITE LOCATION MAP
GEI Consultants, Inc.	Project 96164	January 1997 Fig. 1



PLAN

0 100 200

SCALE, FEET

SCHEDULE OF COORDINATES IN U.S. SURVEY FEET DECEMBER, 1996

	NAD 83 Vermont State Plane		Corps Local Geodetic		Elevation	Elevation	Remarks
Station	Northing (Y) [US Ft.]	Easting (X) [US Ft.]	Northing (Y) [US Ft.]	Easting (X) [US Ft.]	Guard pipe (Z) [US Ft.]	(Inclinometer Casing) [US Ft.]	
SI-85-1	228700.215	1567290.943	1725.187	1406.621	1043.705	1043.195	Slope Inclinometer
SI-85-2	228692.381	1567362.190	1654.528	1418.665	1001.648	1001.108	Slope Inclinometer
SI-85-3	228880.497	1567317.761	1748.934	1587.333	1040.700	1040.340	Slope Inclinometer
SI-85-4	228868.837	1567385.254	1680.833	1594.669	1002.229	1002.239	Slope Inclinometer
SI-85-5	229037.176	1567352.059	1759.006	1747.408	1043.715	1043.745	Slope Inclinometer
SI-85-6	229019.014	1567421.576	1687.175	1749.045	1002.009	1002.039	Slope Inclinometer
IC-96-1	228628.388	1567332.430	1665.558	1348.957	1015.887	1017.097	Slope Inclinometer Boring FD-96-1
IC-96-2	228853.463	1567357.535	1703.264	1572.267	1016.271	1017.491	Slope Inclinometer Boring FD-96-4
IC-96-3	229074.486	1567411.301	1712.296	1799.560	1016.425	1017.675	Slope Inclinometer Boring FD-96-6
IC-96-4	228675.054	1567451.334	1564.055	1426.500	950.087	951.167	Slope Inclinometer Boring FD-96-2
IC-96-5	229005.103	1567510.553	1597.799	1760.115	950.654	950.654	Slope Inclinometer Boring FD-96-7
IC-96-6	228663.962	1567564.519	1452.176	1446.933	884.690	886.100	Slope Inclinometer Boring FD-96-3
IC-96-7	228815.507	1567579.030	1479.863	1596.634	886.731	888.221	Slope Inclinometer Boring FD-96-5
BM					1045.760		Reference Nail in Spillway wingwall

NOTES:

1. The locations of the slope inclinometers are based upon field surveys conducted during September and November, 1996. For detailed information consult "Ball Mountain Dam Survey Report" by The BSC Group dated December, 1996.
2. This drawing based upon an original prepared by the Corps of Engineers dated July, 1996.

DEPARTMENT OF THE ARMY New England Division Corps of Engineers Waltham, Massachusetts	1996 Slope Inclinometer Installation Ball Mountain Dam Jamaica, Vermont	INSTRUMENTATION LOCATION PLAN
GEI Consultants, Inc. WINCHESTER · MASSACHUSETTS	Project 96164	January 1997 Fig. 2

\96164\Fig-2.dwg 2/27/97 AAB

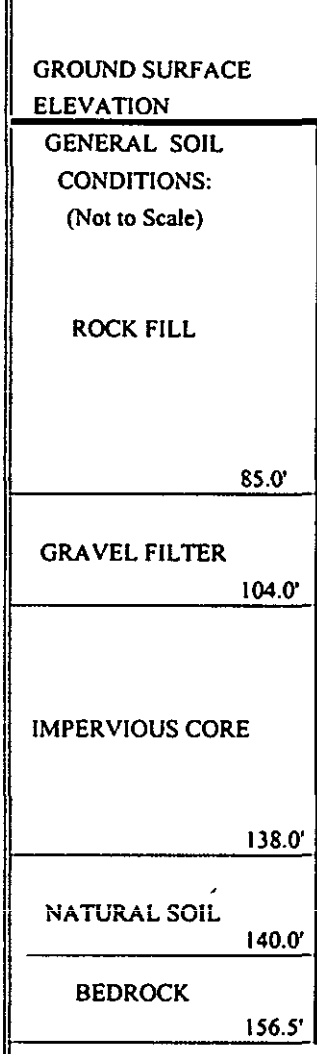
APPENDIX A

Inclinometer Installation Sheets

INCLINOMETER INSTALLATION LOG

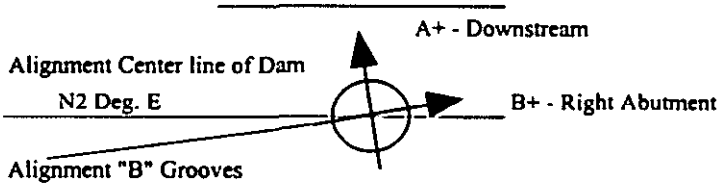
IC-96-1

PROJECT	1996 Slope Inclinometer Installation Program	PROJECT NO.	96164
	Ball Mountain Dam	BORING NO.	FD-96-1
LOCATION	Jamaica, Vermont	ELEVATION:	
CLIENT	Corps of Engineers - New England Division	GROUND SURFACE	1014.8
CONTRACTOR	Corps of Engineers — DRILLER: C. Brown	INCLINOMETER CASING	1017.1
OBSERVED BY	S. Sarandis — DATE INST.: 06/26/96	LOCATION:	
CHECKED BY	DATE CHKD.:	NORTHING	228628.4
		EASTING	1567332.4

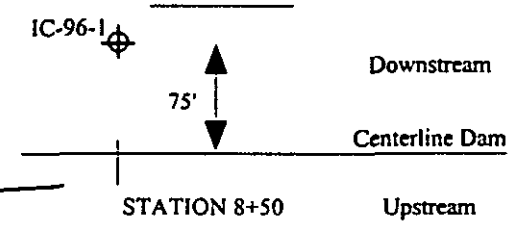


STICKUP OF STEEL EXTENSION	2.5 ft.
STICKUP OF INCLINOMETER CASING	2.3 ft.
STICKUP OF STEEL PROTECTIVE CASING	1.1 ft.
DIAMETER OF STEEL PROTECTIVE CASING	4 in.
DEPTH BOTTOM OF PROTECTIVE STEEL CASING	9.9 ft.
TYPE OF INCLINOMETER CASING	Sinco - Standard
ID AND OD OF INCLINOMETER CASING	2.32/2.75 in.
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
Note: void from about 67 ft. 70 ft.; took about 1.25 c.y. to backfill	
TYPE OF BACKFILL USED THROUGH GRAVEL FILTER ZONE	Fine to Coarse Sand (94.3 ft. to 104.2 ft.)
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TOTAL BACKFILL USED ABOUT 4 CUBIC YARDS	
DIAMETER OF BOREHOLE	6.5 in. ; 0.0 to 147.8 ft. 5.5 in.; 147.8 to 156.5 ft.
A ONE FOOT LENGTH OF 1-1/2 in. DIAMETER PVC PLACED AT BOTTOM OF INCLINOMETER CASING FOR A STOPPER	
DEPTH BOTTOM OF INCLINOMER CASING	156.1 ft.
DEPTH BOTTOM OF BOREHOLE	156.5 ft.

GROOVE ORIENTATION



PLAN VIEW



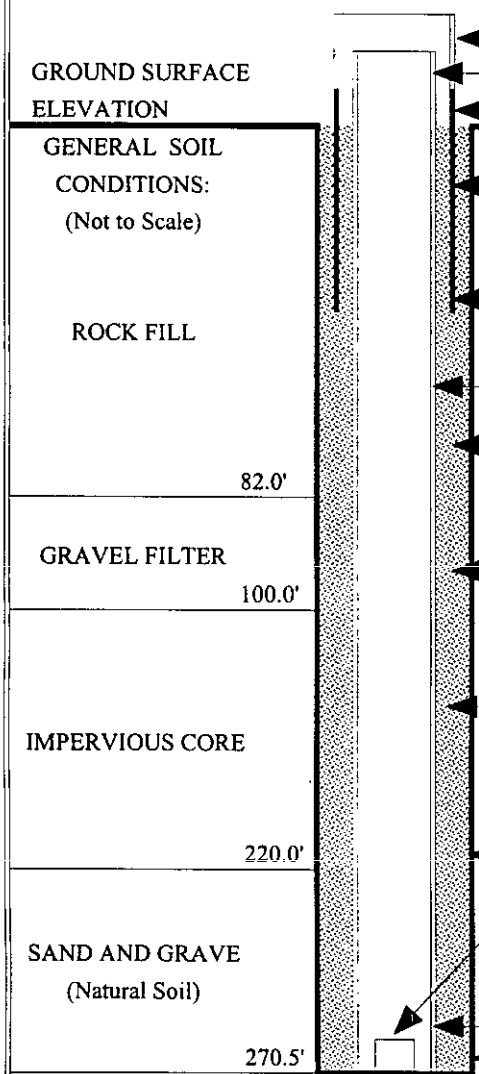
NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96-1 for information on soil stratigraphy.

INCLINOMETER INSTALLATION LOG

IC-96-2

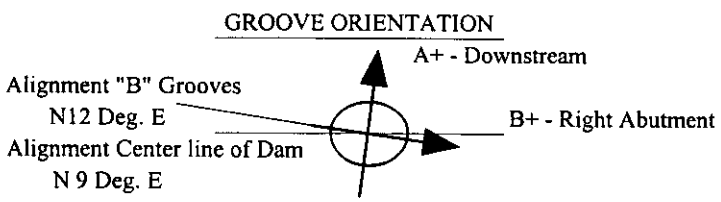
PROJECT	1996 SlopeInclinometer Installation Program		
	Ball Mountain Dam		
LOCATION	Jamaica, Vermont		
CLIENT	Corps of Engineers - New England Division		
CONTRACTOR.	Corps of Engineers	DRILLER	C. Brown
OBSERVED BY	S. Sarandis	DATE INST.	08/10/96
CHECKED BY		DATE CHKD.	

PROJECT NO.	96164
BORING NO.	FD-96-4
ELEVATION:	
GROUND SURFACE	1015.7
INCLINOMETER CASING	1017.5
LOCATION:	
NORTHING	228853.5
EASTING	1567357.7

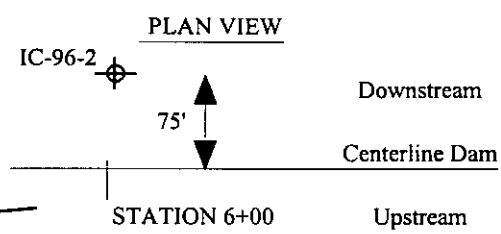


STICKUP OF STEEL EXTENSION	2.5 ft.
STICKUP OF INCLINOMETER CASING	2.4 ft.
STICKUP OF STEEL PROTECTIVE CASING	1.1 ft.
DIAMETER OF STEEL PROTECTIVE CASING	
DEPTH BOTTOM OF PROTECTIVE STEEL CASING	9.9 ft.
TYPE OF INCLINOMETER CASING	Sinco - Standard
ID AND OD OF INCLINOMETER CASING	2.32/2.75 in.
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TYPE OF BACKFILL USED THROUGH GRAVEL FILTER ZONE	-3/8 in. Gravel (same backfill used through the filter zone because 6 in. casing left in place)
120' OF 6" CASING BROKE OFF IN HOLE (from 30' to 150')	
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TOTAL BACKFILL USED ABOUT 2 CUBIC YARDS	
DIAMETER OF BOREHOLE	6.5 in. ; 0.0 to 162.0 ft. 4.5 in.; 162.0 to 264.0 ft. 3.8 in.; 264.0 to 270.5 ft.
A ONE FOOT LENGTH OF 1-1/2 in. DIAMETER PVC PLACED AT BOTTOM OF INCLINOMETER CASING FOR A STOPPER	
10' OF 4" CASING BROKE OFF IN HOLE (from 250' to 260')	
DEPTH BOTTOM OF INCLINOMER CASING	259.4 ft.
DEPTH BOTTOM OF BOREHOLE	270.5 ft.

GROOVE ORIENTATION



PLAN VIEW

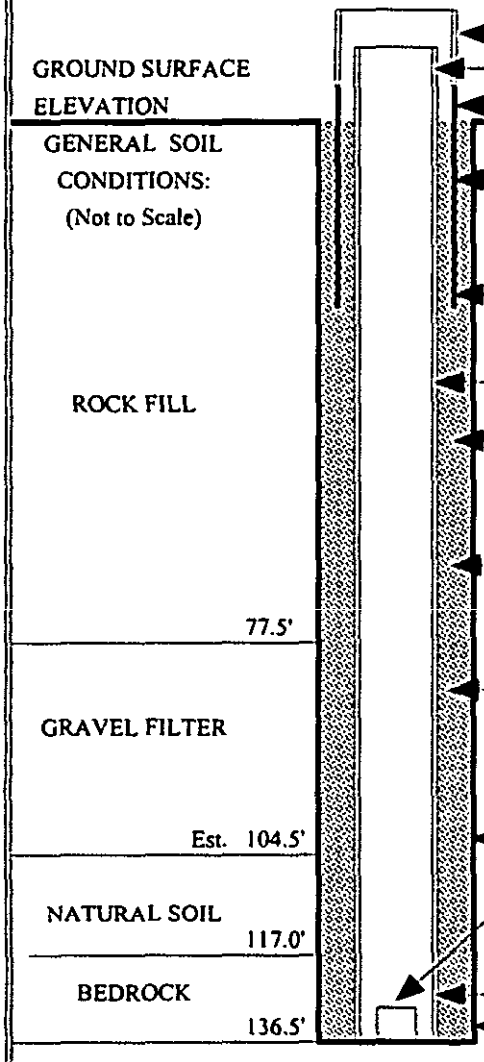


NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96-4 for information on soil stratigraphy.

INCLINOMETER INSTALLATION LOG

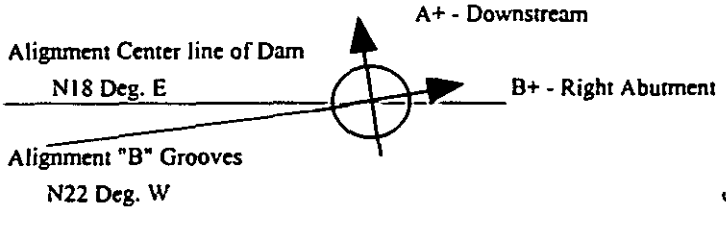
IC-96-3

PROJECT	1996 Slope Inclinometer Installation Program	PROJECT NO.	96164
	Ball Mountain Dam	BORING NO.	FD-96-6
LOCATION	Jamaica, Vermont	ELEVATION:	
CLIENT	Corps of Engineers - New England Division	GROUND SURFACE	1014.8
CONTRACTOR	Corps of Engineers — DRILLER: C. Brown	INCLINOMETER CASING	1017.7
OBSERVED BY	R. Pretto — DATE INST.: 9/9/96	LOCATION:	
CHECKED BY	DATE CHKD.	NORTHING	229074.5
		EASTING	1567411.3

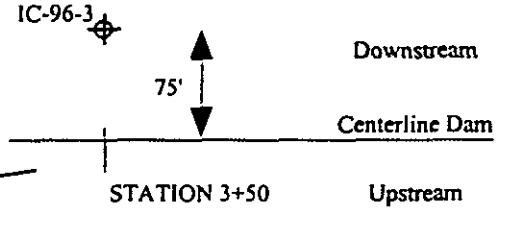


STICKUP OF STEEL EXTENSION	3.0 ft.
STICKUP OF INCLINOMETER CASING	2.9 ft.
STICKUP OF STEEL PROTECTIVE CASING	1.6 ft.
DIAMETER OF STEEL PROTECTIVE CASING	4 in.
DEPTH BOTTOM OF PROTECTIVE STEEL CASING	8.4 ft.
TYPE OF INCLINOMETER CASING	Sinco - Standard
ID AND OD OF INCLINOMETER CASING	2.32/2.75 in.
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TYPE OF BACKFILL USED THROUGH GRAVEL FILTER ZONE	-3/8 in. Gravel
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TOTAL BACKFILL USED ABOUT (N/R) CUBIC YARDS	
DIAMETER OF BOREHOLE	6.5 in. 0.0 to 121.0 ft. 5.5 in. 121.0 ft. to 136.0 ft.
A ONE FOOT LENGTH OF 1-1/2 in. DIAMETER PVC PLACED AT BOTTOM OF INCLINOMETER CASING FOR A STOPPER	
DEPTH BOTTOM OF INCLINOMER CASING	136.5 ft.
DEPTH BOTTOM OF BOREHOLE	136.5 ft.

GROOVE ORIENTATION



PLAN VIEW



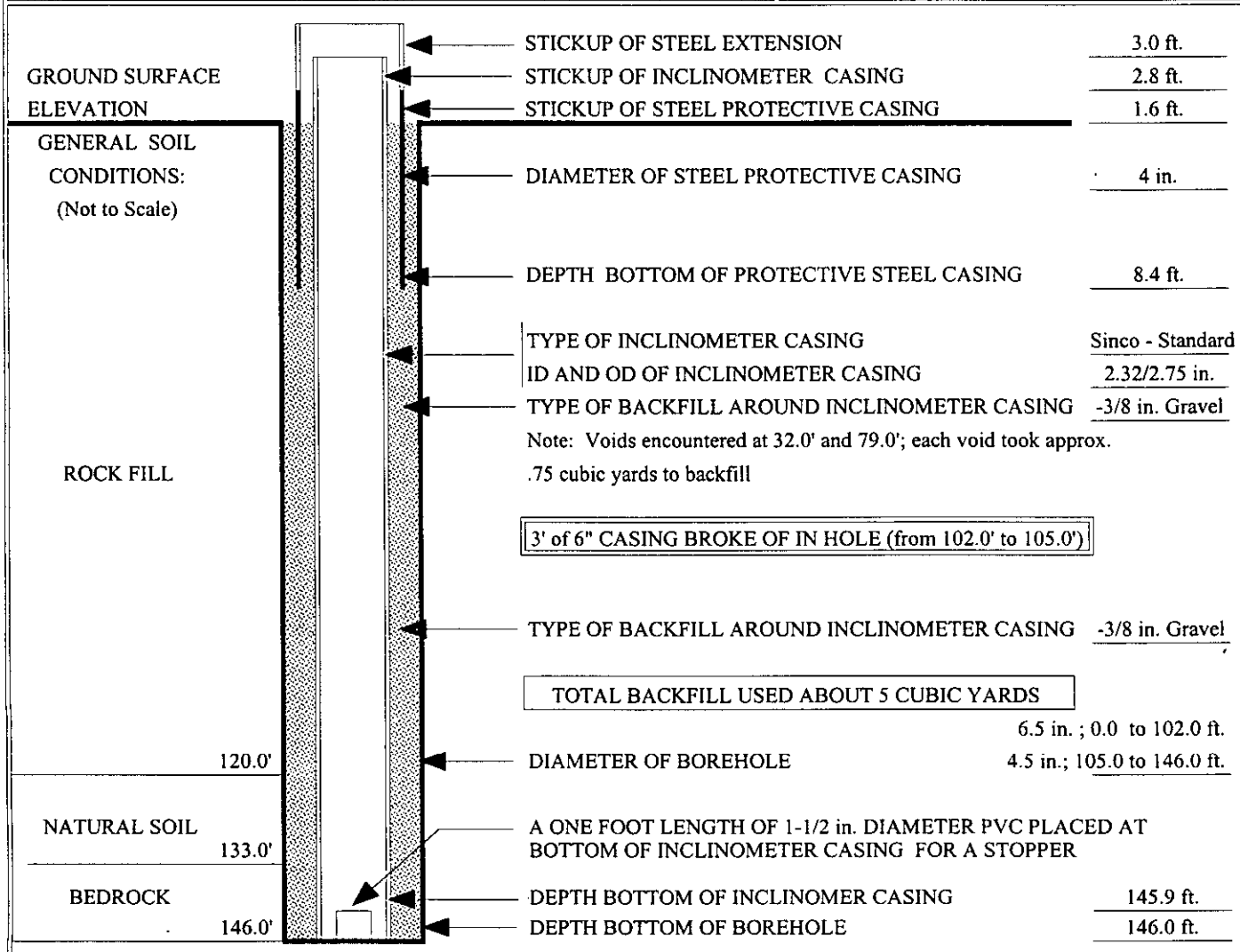
NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96- 6 for information on soil stratigraphy.

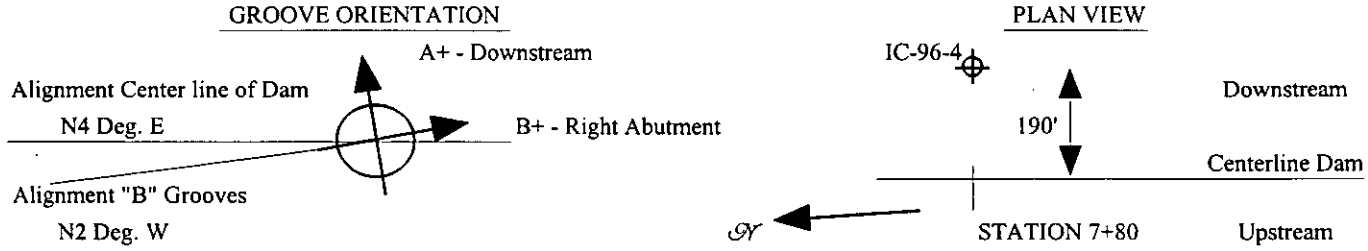
INCLINOMETER INSTALLATION LOG

IC-96-4

PROJECT	1996 Slope Inclinometer Installation Program		
	Ball Mountain Dam		
LOCATION	Jamaica, Vermont		
CLIENT	Corps of Engineers - New England Division		
CONTRACTOR	Corps of Engineers	DRILLER	C. Brown
OBSERVED BY	S. Sarandis	DATE INST.	07/20/96
CHECKED BY		DATE CHKD.	

PROJECT NO.	96164
BORING NO.	FD-96-2
ELEVATION:	
GROUND SURFACE	948.4
INCLINOMETER CASING	951.2
LOCATION:	
NORTHING	228675.1
EASTING	1567451.3



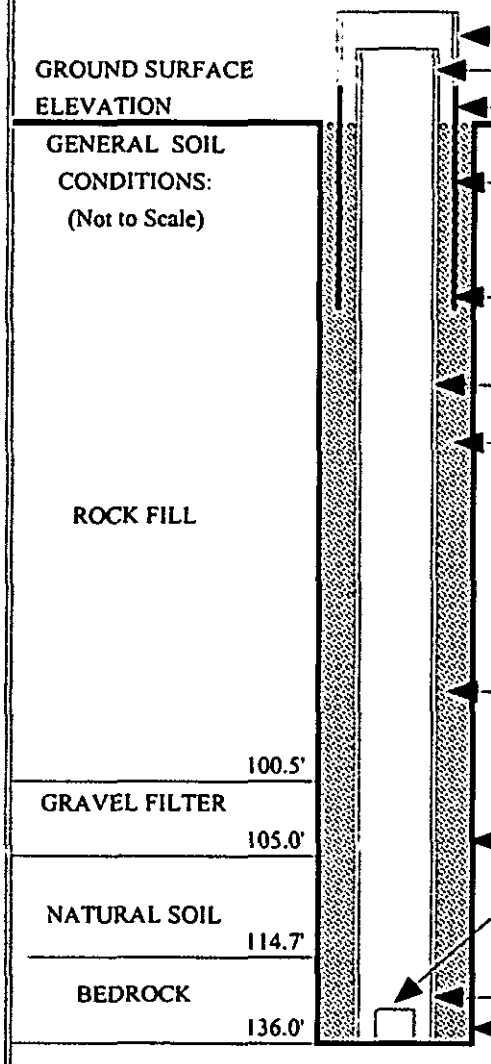


NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96-2 for information on soil stratigraphy.

INCLINOMETER INSTALLATION LOG

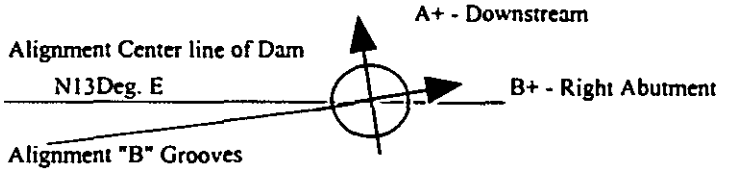
IC-96-5

PROJECT	1996 Slope Inclinometer Installation Program	PROJECT NO.	96164
	Ball Mountain Dam	BORING NO.	FD-96-7
LOCATION	Jamaica, Vermont	ELEVATION:	
CLIENT	Corps of Engineers - New England Division	GROUND SURFACE	948.3
CONTRACTOR	Corps of Engineers — DRILLER: C. Brown	INCLINOMETER CASING	950.7
OBSERVED BY	R. Pretto — DATE INST.: 09/16/97	LOCATION:	
CHECKED BY	DATE CHKD.	NORTHING	229005.1
		EASTING	1567510.6

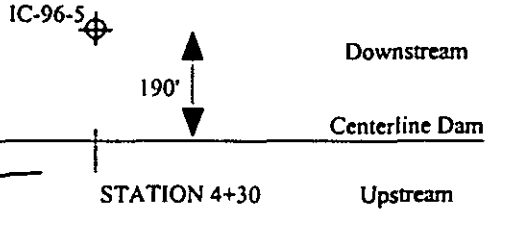


STICKUP OF STEEL EXTENSION	2.5 ft.
STICKUP OF INCLINOMETER CASING	2.4 ft.
STICKUP OF STEEL PROTECTIVE CASING	1.1 ft.
DIAMETER OF STEEL PROTECTIVE CASING	4 in.
DEPTH BOTTOM OF PROTECTIVE STEEL CASING	8.9 ft.
TYPE OF INCLINOMETER CASING	Sinco - Standard
ID AND OD OF INCLINOMETER CASING	2.32/2.75 in.
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TYPE OF BACKFILL AROUND INCLINOMETER CASING	-3/8 in. Gravel
TOTAL BACKFILL USED ABOUT (N/R) CUBIC YARDS	
	6.5 in. 0.0 to 114.0 ft.
DIAMETER OF BOREHOLE	5.5 in. 114.0 ft. to 136.0 ft.
A ONE FOOT LENGTH OF 1-1/2 in. DIAMETER PVC PLACED AT BOTTOM OF INCLINOMETER CASING FOR A STOPPER	
DEPTH BOTTOM OF INCLINOMER CASING	136.0 ft.
DEPTH BOTTOM OF BOREHOLE	136.0 ft.

GROOVE ORIENTATION



PLAN VIEW

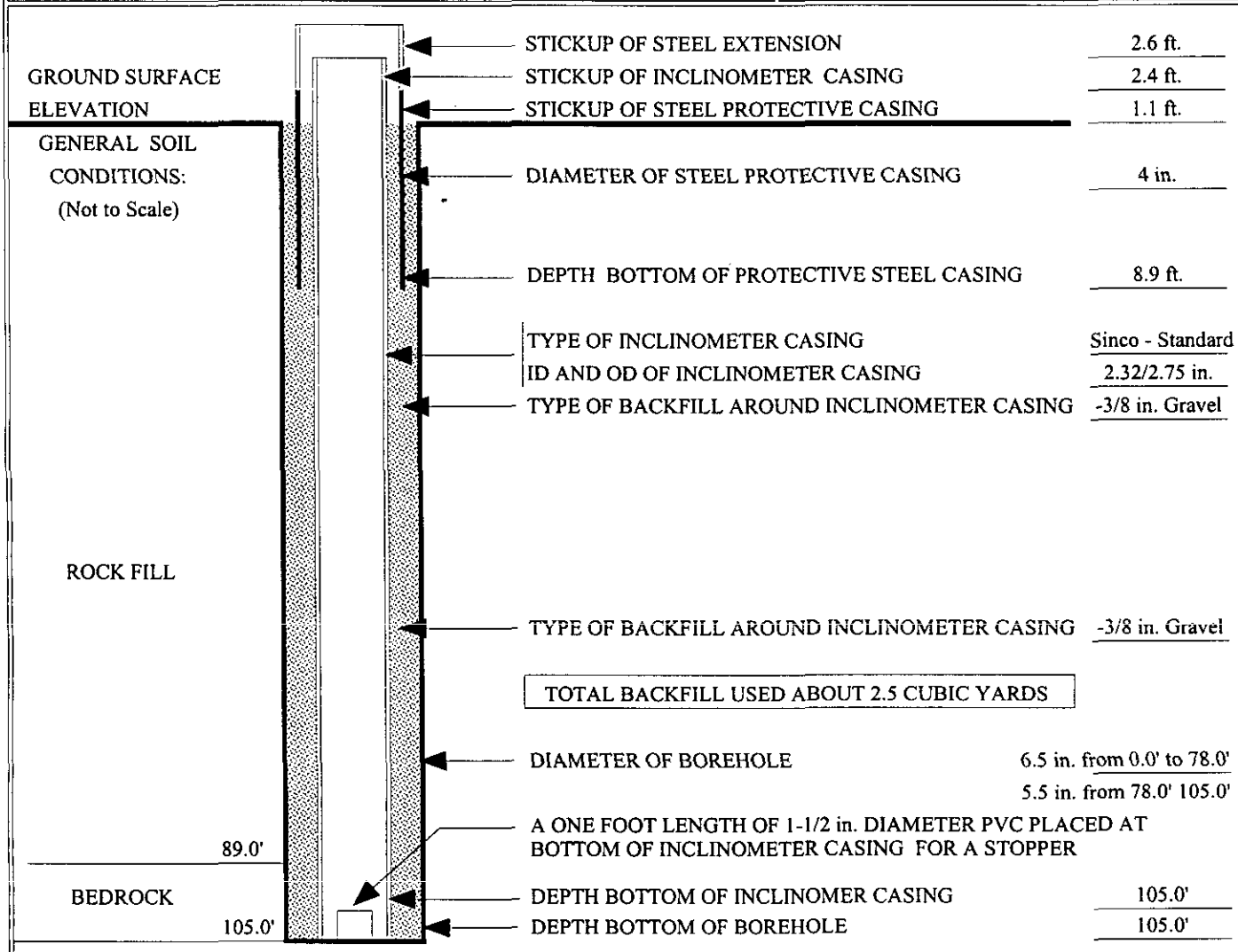


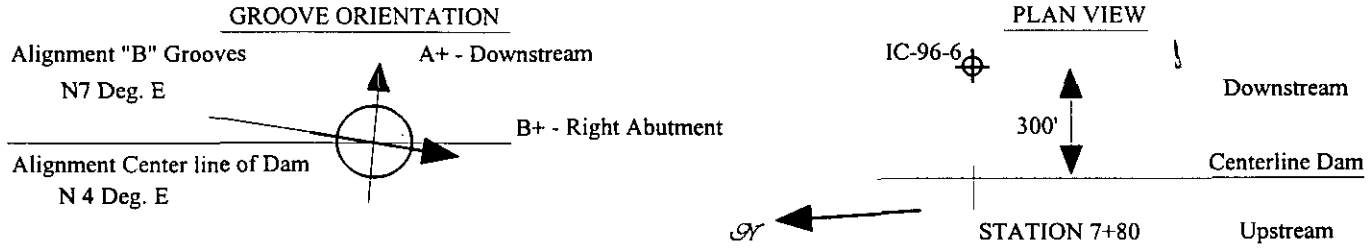
NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96- 7 for information on soil stratigraphy.

INCLINOMETER INSTALLATION LOG

IC-96-6

PROJECT	1996 Slope Inclinometer Installation Program	PROJECT NO.	96164
	Ball Mountain Dam	BORING NO.	FD-96-3
LOCATION	Jamaica, Vermont	ELEVATION:	
CLIENT	Corps of Engineers - New England Division	GROUND SURFACE	883.7
CONTRACTOR	Corps of Engineers — DRILLER	INCLINOMETER CASING	886.1
OBSERVED BY	DATE INST.	LOCATION:	
CHECKED BY	DATE CHKD.	NORTHING	228664.0
		EASTING	1567564.5



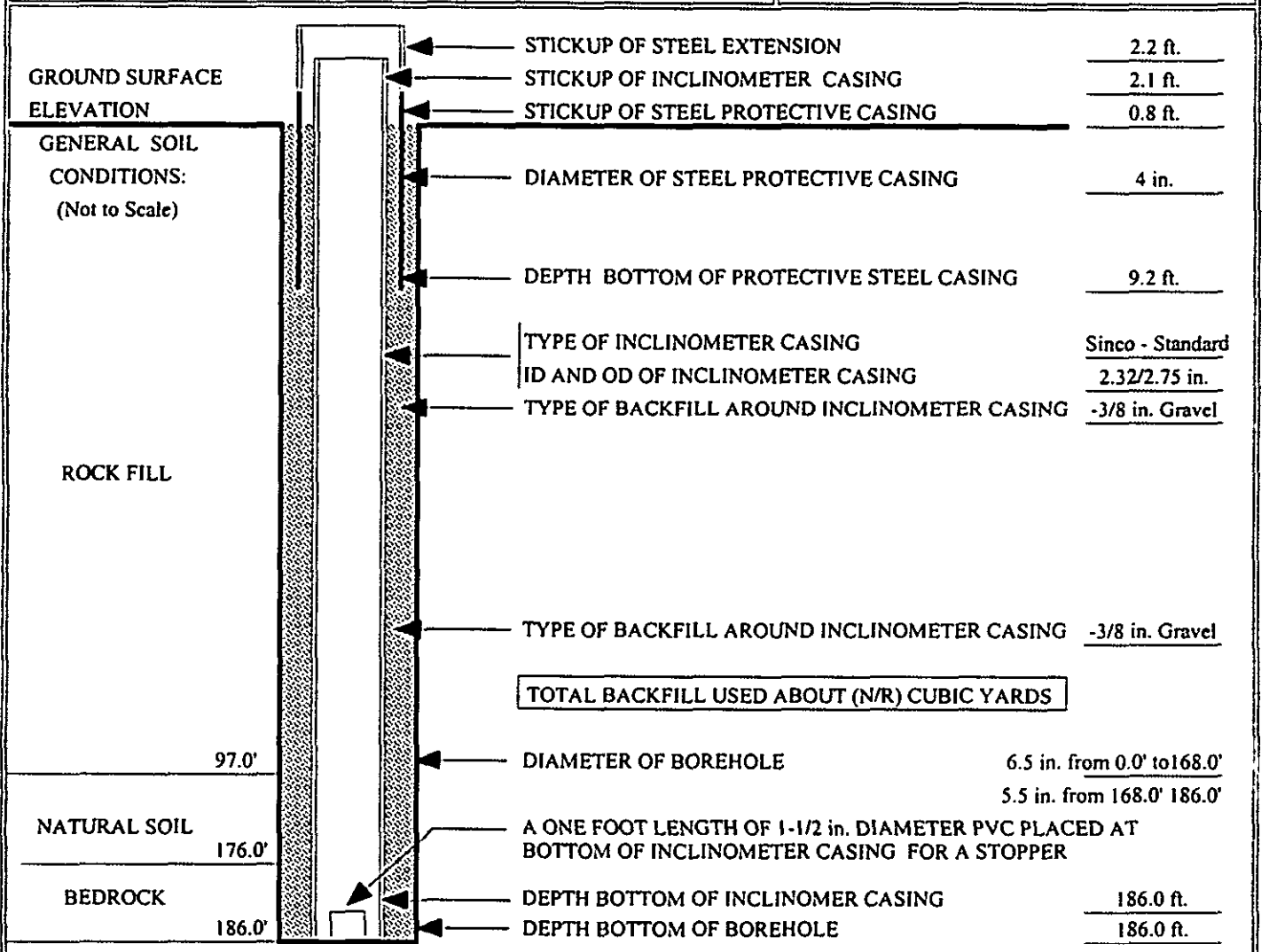


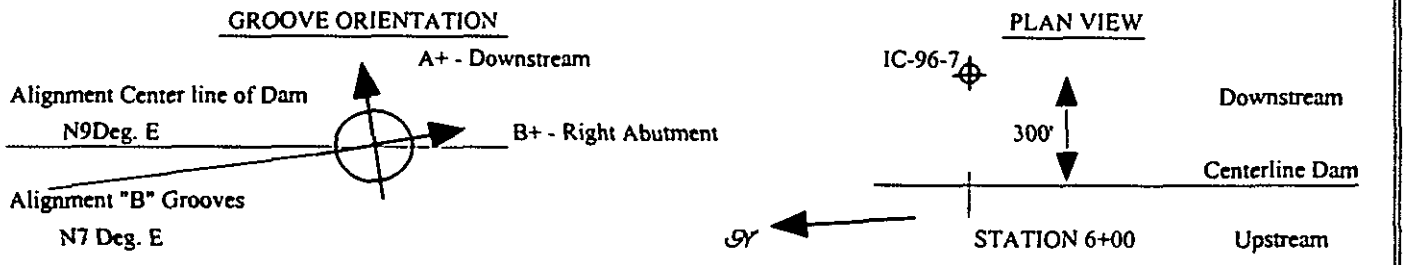
NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96- 3 for information on soil stratigraphy.

INCLINOMETER INSTALLATION LOG

IC-96-7

PROJECT	1996 Slope Inclinometer Installation Program	PROJECT NO.	96164
	Ball Mountain Dam	BORING NO.	FD-96-5
LOCATION	Jamaica, Vermont	ELEVATION:	
CLIENT	Corps of Engineers - New England Division	GROUND SURFACE	886.1
CONTRACTOR	Corps of Engineers — DRILLER: C. Brown	INCLINOMETER CASING	888.2
OBSERVED BY	E. Mathews/R. Pretto — DATE INST.: 08/29/96	LOCATION:	
CHECKED BY	DATE CHKD.	NORTHING	228815.5
		EASTING	1567579.0





NOTES:
1. Elevations are referenced to NGVD.
2. Northing and Easting coordinates are referenced to the Vermont State Grid System.
3. Station and offset are approximate and are referenced to the center line of the dam.
4. Alignment of inclinometer casing grooves and the centerline of the dam was measured with a Brunton Compass
5. See log for boring FD-96- 5 for information on soil stratigraphy.

APPENDIX B

Boring Logs

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. GEI * 96164

Site Ball Mountain Dam

Page 1 of 7 Pages

Hole No. FD-96-1 / IC-96-1 Diam. (Casing) 6"

Boring Started June 14, 1996

Co-ordinates: N 228628.4 E 1567332.4

Boring Completed June 26, 1996

Drilled by Charles Brown / Mobile Dist.

Report Submitted

Purpose of Exploration To install slope inclinometer casing through down stream slope of dam into bedrock.

Elevation Top of Hole 1014.8 ~~M.S.L.~~ NGVD

Total Overburden Drilled 140.0 Feet

Elevation Top of Rock 874.8 ~~M.S.L.~~ NGVD

Elevation Bottom of Hole 858.3 ~~M.S.L.~~ NGVD

Total Rock Drilled 16.5 Feet

Total Depth of Hole 156.5' Feet

Core Recovered 97.8 %

Core Recovered 9.0 Ft.: 2 3/8" Diam. ____ In.

Soil Samples 3.0 In. Diam. 4 No.

Soil Samples ____ In. Diam. ____ No.

Casing Left in Place 158.4 Feet

2.33"/2.75" Slope Inclinometer casing

Wx Rock 140.0' — 146.0'

Sound Rock 146.0' — 156.5'

Water Table Depth DRY

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	147.0'	Odex Down the Hole Hammer
		with 6" I.D. Casing
146.0	156.0'	Cored bedrock with HQ
		core barrel

INDEX

Ground Water	Back of Page 1
Boring Location Sketch	Back of Page 1
Overburden Record	Page 2-7
Rock Drilling	Page 7
	Page
	Page
	Page

Prepared by [signature] Field Data ____ Lab. Data

Submitted by

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

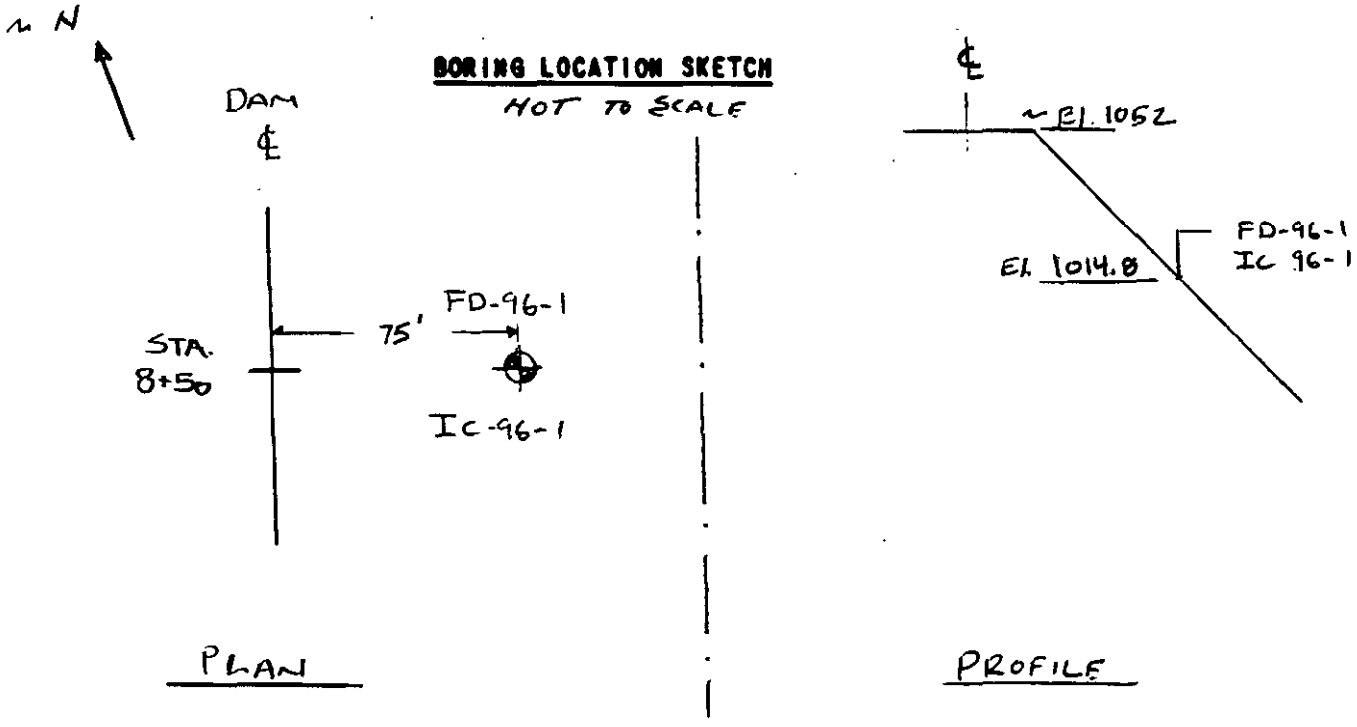
GROUND WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF HOLE	DEPTH TO WATER	ELEVATION WATER	REMARKS
6/15	8:00	—				
6/17	8:00	45'	46'	DRY		
6/18	8:00	65'	66'	DRY		
6/19	8:00	108'	109'	DRY		
6/25	10:00	147'	156.5	DRY	< 858.3'	
AVERAGE GROUND WATER ELEVATION _____						

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

NOT TO SCALE



U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site: BALL MOUNTAIN DAM — Page 2 of 7 Pages

Boring No. FD-96-1 Desig. _____ Diam. (Casing) 6 inch

Co-ordinates: N 228628.4 E 1567332.4

Elevation Top of Boring: 1014.8 NGVD ~~M.S.L.~~
Total Overburden Drilled: 140.0 Feet
Elevation Top of Rock: 874.8 NGVD ~~M.S.L.~~
Total Rock Drilled: 16.5 Feet
Elevation Bottom of Boring: 858.3 NGVD ~~M.S.L.~~
Total Depth of Boring: 156.5' Feet
Core Recovered: 97.8 % No. Boxes: 1
Core Recovered: _____ Ft: _____ Diam. _____ In.
Soil Samples: 3.0 In. Diam. 4 No.
Soil Samples: _____ In. Diam. _____ No.

Hammer Wt.: 300 lb. Boring Started: June 14, 1996
Hammer Drop: 18 inch Boring Completed: June 26, 1996
Casing Left: None
Subsurface Water Data: DRY Page: See of page 1
Obs. Well: _____
Drilled By: Charles Brown / Mobile
Mfg. Des. Drill: Failing 300
Inspected By: Steve Sarandis
Classification By: Steve Sarandis
Classification By: _____

DEPTH 1"=N.T.S.	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0, 1, 2					Boring advanced from 0 to 87.5' without sampling. Boring advanced using "ODex" down the hole hammer and 6" I.D. Casing	ROCK FILL
BREAK						
84, 85					Top of Fine Rock (Based on action of drill rig)	FILL @ 85.0'
86, 87, 88, 89	S1	3.0	87.5 – 82.5	24 / 300	REC. = 9"	S1: Sandy GRAVEL (GW) ~60% fine to coarse gravel, ~35% fine to coarse sand, ~5% silty fines, trace root fibers, coarse gravel pieces broken up by sampler. -DRY-

GENERAL REMARKS:
Depth Scale of boring log is not Continous.

Site BALL MOUNTAIN DAM	Boring No. FD-96-1	Page 3 of 7

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
91	S2	3.0	91.0	102	REC.=36"	S2: Top 24" SCHIST. Moderately to completely weathered, moderately fractured, ~60% of sample completely weathered - able to crumble schist up into fine to medium sand.
92				58		
93				47		
94				85		
95				46	Top of Gravel Filter at 95.0'	S2: Bot. 12" Gravelly SAND (SW) ~65% fine to coarse sand, ~30% subrounded fine gravel, ~5% silty fines. Brown.
96			96.0			
97						
98						
99						
100						
101						
102						
103						
104					Top of Impervious core at 104.0' (Based on cuttings brought to surface)	
105						
106						

Site: BALL MOUNTAIN DAM

Boring No. FD-96-1

DEPTH (ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
107						
108						
109						S3: SILTY GRAVEL (GM) ~50% subrounded to angular gravel, ~35% fine to coarse sand, ~15% silt, fines Gray - Brown
110						
111						
112			111.5	250		
113				97		
114	S3	3.0		67	REC.: 46"	
115				86		
116			116.5	125		
117						
118						
119						
120						
122						
123						<IMP. core>

Site: BALL MOUNTAIN DAM	Boring No. FD-96-1	Page 5 of 7

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
125					Advanced boring 116.5' to 137.2 without sampling. Used "ODEX" system with 6" casing	
126						
127						
128						
129						
130						
131						
132						
133						
134						
135						S4: Top 10" Narrowly Graded SAND with silt (SP-SM) Mostly fine sand, ~ 10% M.-c. sand, ~ 15% f. gravel, ~ 10% silty fines, Tan-olive
136						
137			137.2	21		
138					Top of natural soil at 138.0	
139	S4			66	Rec. = 30"	S4: MID 10" GRAVELLY SAND (SW) ~ 40% f.-c. gravel, <5% fines. Brown-Gray
140				271		
			145.6	175/4"	Top of weathered rock at 140.0'	

Site: BALL MOUNTAIN DAM	Boring No. FD-96-1	Page 6 of 7

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECV'Y	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
142					Advanced 6" casing to 147.0'	Weathered Rock
143						
144						
145						
146					Top of competent rock @ 146.0'	
147	C1	HQ 2 3/8"	146.6 – 147.8	0.5'		C1, C2, C3: Lt. Grey-Brown SCHIST, hard, very slightly weathered, joint spacing 6" to 24"
148		HQ	147.8			
149						
150	C2	2 3/8" TJ		5.5'	After coring with HQ core barrel, driller reamed hole with 5 1/2" roller bit to 156.5' in preparation of installing Slope Inclinometer Casing.	
151		3 7/8" O.D.				
152						
153			153.0			
154	C3	HQ 2 3/8"	153.0	3.0		
155						
156			156.0			
157					Bottom of Borehole @	156.5'

FIELD LOG OF TEST BORING IN ROCK

SITE Ball Mountain Dam HOLE NO. FD-96-1 PAGE 7 of 7

DATE	DEPTH FT. FROM	DEPTH FT. TO	RUN FT.	RUN REC'V'Y FT.	REC'V'Y %	DRILLING BEHAVIOR: FEED	DRILLING BEHAVIOR: WATER	DRILLING BEHAVIOR: REASON FOR PULL	ACTUAL DRILLING TIME	BIT NO. SIZE AND TYPE	ADDITIONAL REMARKS
6/22/96	146.8	147.8	1.0	0.5	50	Drilled with Air		(1)	65 min	HQ 2 3/8" I.D.	3 7/8" O.D.
1.7' 6/24/96	147.8	153.0	5.2	5.5	+100	No Drill	Water Return		N.R.	HQ 2 3/8 I.D.	~ 7 min/ft
6/24/96	153.0	156.0	3.0	3.0	100	"	"		N.R.	HQ 2 3/8" I.D.	

N.R. = Not Recorded

TOTAL BED ROCK DRILLED 9.2 FEET

TOTAL BED ROCK RECOVERED 9.0 FEET

BED ROCK RECOVERY 98 PERCENT

DRILLER Charles Brown

INSPECTOR Stephen Saroudis

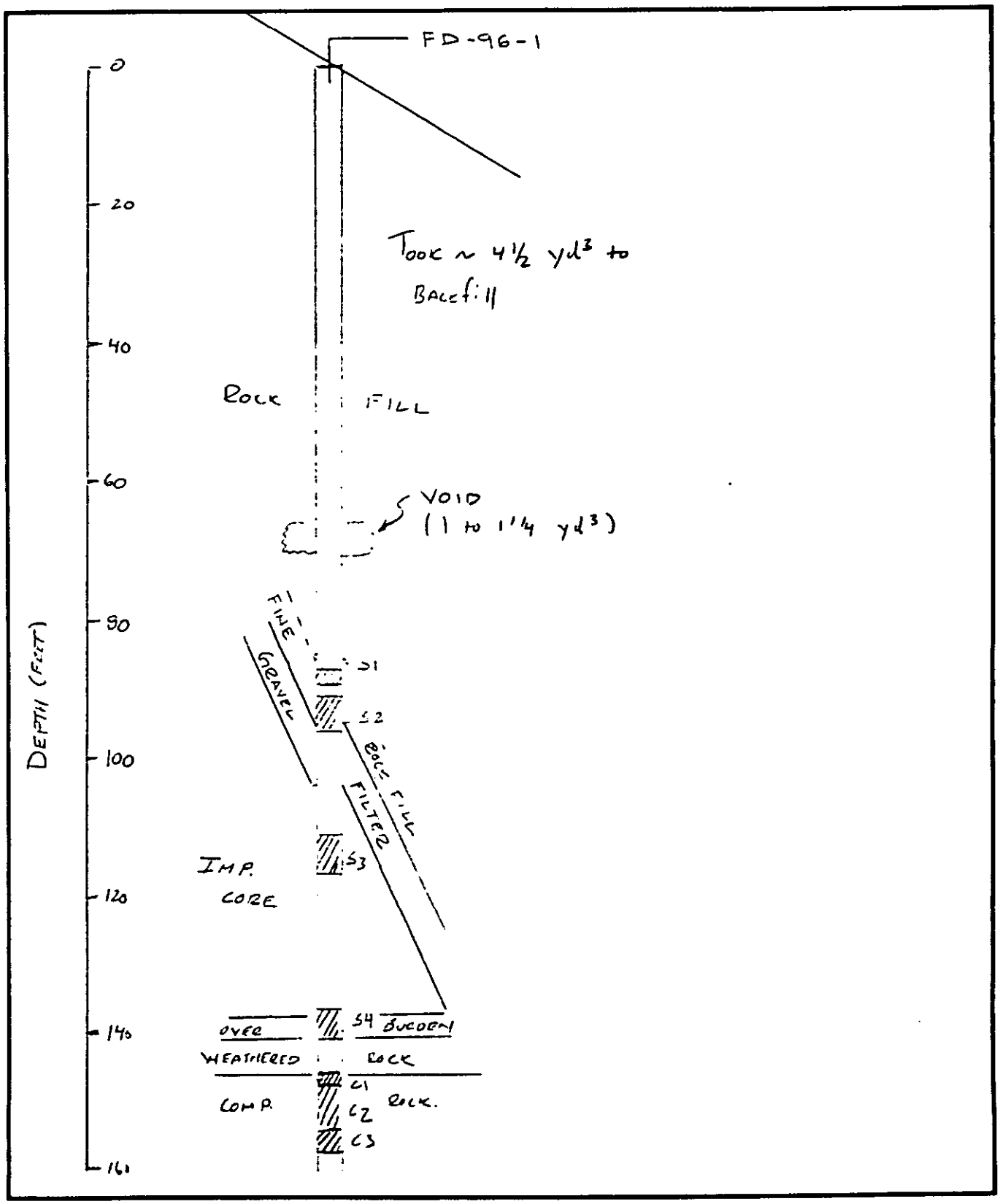
NED FORM (DEC 63) 130

PREVIOUS EDITION OF APR 63 WHICH MAY BE USED UNTIL EXHAUSTED

(1) Burned out bit. To keep bit cool the driller would have to ~~pump~~ increase air pressure, conversely this would force the core barrel off the bottom of the hole. Driller decided to switch to water.

GEI Consultants, Inc.

Project 96164	Page 11		
Client CENED	Date 6/19/96	By SJS	
Subject FD-96-1	Checked	By	
	Approved	By	



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. GEI # 96164

Site Ball Mountain Dam

Page 1 of 2 Pages

Hole No. FD-96-2 FC-96-4 Diam. (Casing) 6" I.D. 4" I.D.

Boring Started July 11TH, 1996

Co-ordinates: N 228675.1 E 1567451.3

Boring Completed July 20TH, 1996

Drilled by Charles Brown / Mobile District

Report Submitted

Purpose of Exploration To install Slope Inclinometer casing in Down stream slope of Dam

Elevation Top of Hole 948.4 N.G.V.D. M.S.L.

Total Overburden Drilled 133.0' Feet

Elevation Top of Rock 815.4 N.G.V.D. M.S.L.

Elevation Bottom of Hole 802.4 N.G.V.D. M.S.L.

Total Rock Drilled 13.0' Feet

Total Depth of Hole 146.0' Feet

Core Recovered NONE %

Core Recovered ____ Ft.: ____ Diam. ____ in.

Soil Samples NONE in. Diam. ____ No.

Soil Samples ____ in. Diam. ____ No.

Casing Left in Place ____ Feet

ROCK FILL 0'-120'
SOIL 120' - 133'

Wx rock 133.0' → 136.0'
SOUND ROCK 136.0 → 146.0'

Water Table Depth ≈ 136.0'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	105	ODEX SYSTEM WITH DOWN-THE
		HOLE HAMMER AND 6" CASING
105'	146.0	OPEN HOLE WITH DOW-THE-HOLE
		HAMMER - 6" CASING BROKEN AT
		102'
		OPEN HOLE SECTION OF BORE HOLE
		COLLAPSED AT 128'
		TELESCOPE 4" CASING

INDEX

Ground Water	Back of Page 1
Boring Location Sketch	Back of Page 1
Overburden Record	Page 2
Rock Drilling	Page 2
	Page
	Page
	Page

Prepared by Stephen Sarandis / GEI Consultants
Field Data Lab. Data

Submitted by

NED FORM DEC 63 121

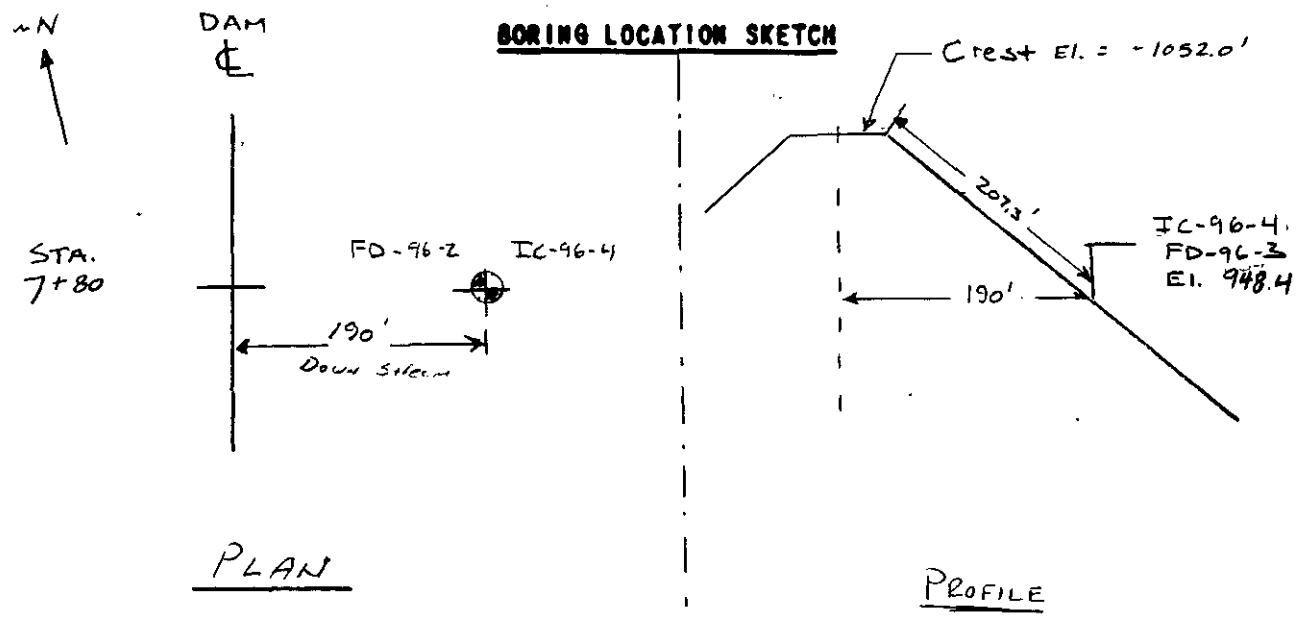
REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

GROUND WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF HOLE	DEPTH TO WATER	ELEVATION WATER	REMARKS
7/11/96	1700	18'	~19'	DRY		
7/12/96	1720	54'	55'	DRY		
7/16/96	1530	105.0'	146.0	DRY		
7/19/96	1400	105.0	~136.0	~136.0	812.4	Water Small amount of water blown out with air hammer
AVERAGE GROUND WATER ELEVATION NOT ENCOUNTERED						

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site: Ball Mountain Dam — Page 2 of ___ Pages

Boring No.: FD-96-2 — Desig.: IC-96-4 — Diam. (Casing): 6"/4"

Co-ordinates: N ___ E ___

Elevation Top of Boring ___ M.S.L.
Total Overburden Drilled: 133.0 Feet
Elevation Top of Rock ___ M.S.L.
Total Rock Drilled: 13.0 Feet
Elevation Bottom of Boring ___ M.S.L.
Total Depth of Boring: 146.0' Feet
Core Recovered: None % No. Boxes ___
Core Recovered: None Ft. ___ Diam. ___ In.
Soil Samples: None In. Diam. ___ No.
Soil Samples ___ In. Diam. ___ No.

Hammer Wt.: N/A Boring Started: 7/11/96
Hammer Drop: N/A Boring Completed ___
Casing Left: 1
Subsurface Water Data: DRY Page: Back of ~~Page 1~~
Obs. Well: None
Drilled By: Charles Brown / Mobile District
Mfg. Des. Drill: Failing 300
Inspected By: Steve Scranelis / GEI
Classification By: ___
Classification By: ___

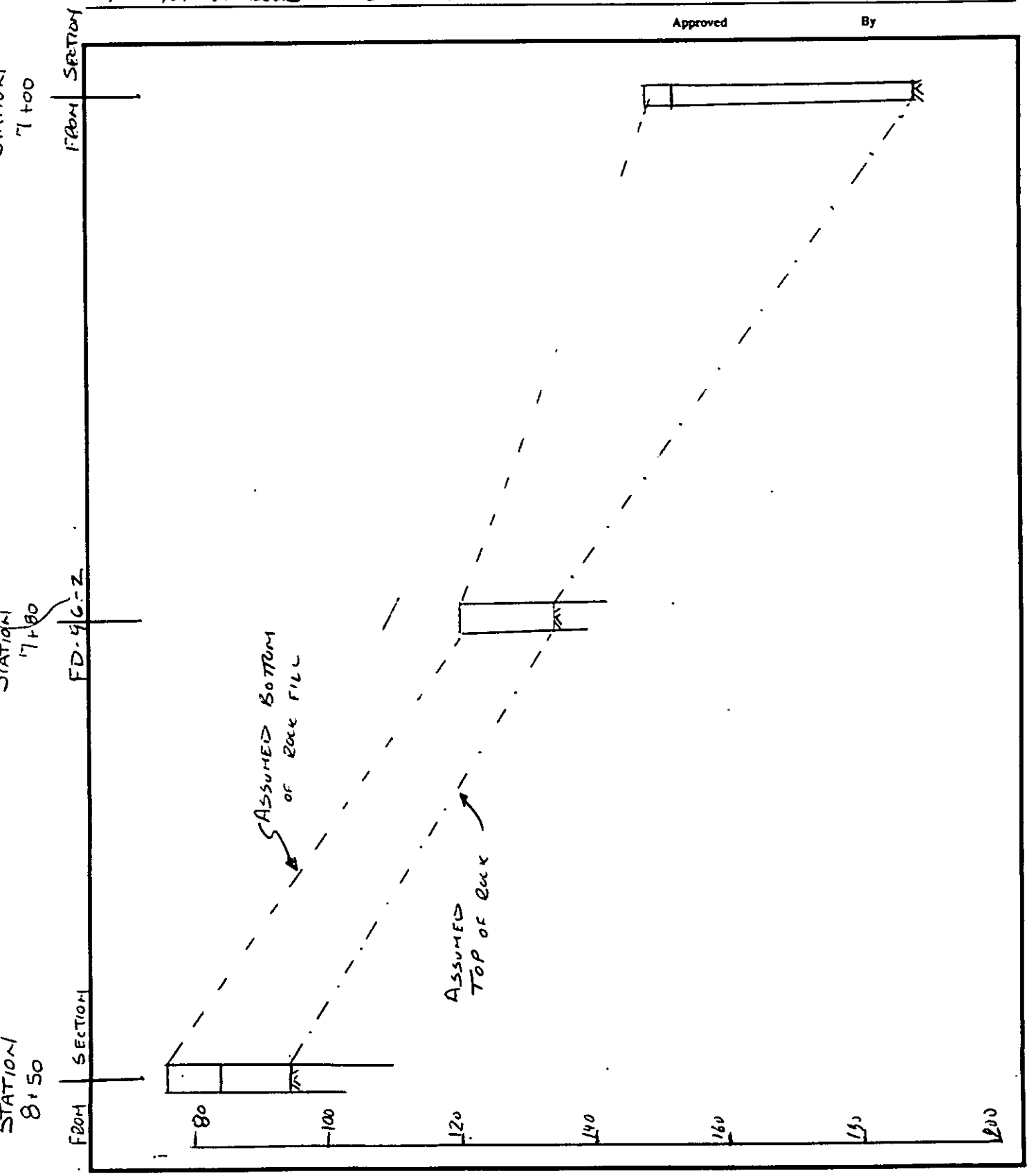
DEPTH 1" = 40'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
20, 40, 60, 80, 100, 120, 140, 160					Advanced boring without sampling to a depth of 105' using an ODEX Down Hole hammer with 6' casing. At 105.0' the bottom piece of 6" casing broke off. Advanced boring open hole without sampling to 146.0' with standard air hammer. Boring caved in at 137.0' and 128.0'. Telescoped 4" casing to 146.0' and installed inclinometer casing.	
				120.0'	ROCK FILL	
				133.0'	GRANULAR MATERIAL	
				136.0'	WEATHERED ROCK	
					SOUND ROCK	
					Bottom of Borehole at 146.0'	

GENERAL REMARKS: Installed 148.7' of Slope Indicator Inclinometer casing in the completed borehole. (2.7' stick up)

ED FORM 58 (Test) Boring No. FD-96-2

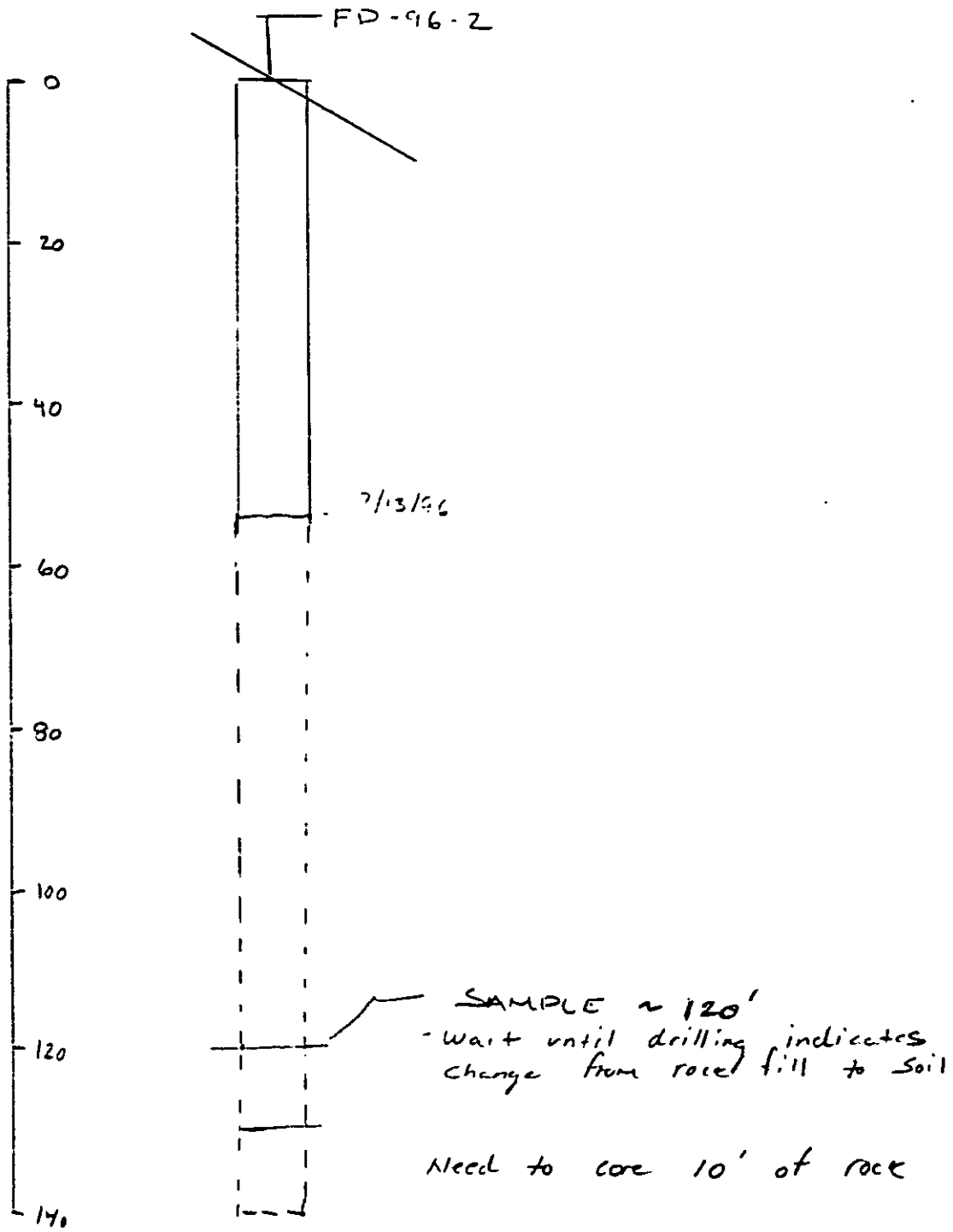
GEI Consultants, Inc.

Project 96164	Page 1/1		
Client CENED	Date	By	
Subject TOP OF ROCK LOCATION "F"	Checked	By	
	Approved	By	



GEI Consultants, Inc.

		Project 96164	Page 1/1
Client	CENED	Date 7/13/96	By SJS
Subject	FD-96-2 LOCATION "D"	Checked	By
		Approved	By



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. GEI 96164

Site: Ball Mountain Dam — Page 1 of 2 Pages

Hole No. FD-96-3 / IC-96-6 Diam. (Casing) 6 inch I.D. — Boring Started: July 23, 1996 (Tuesday)

Co-ordinates: N 228664.0 E 1567564.5 — Boring Completed: July 26, 1996 (Friday)

Drilled by: Charles Brown / Mobile — Report Submitted:

Purpose of Exploration: To install Sinco Slope Inclinometer Casing in the down stream slope.

Elevation Top of Hole: 883.7 N.G.V.D. ~~M.S.L.~~ — Casing Left in Place: ____ Feet

Total Overburden Drilled: 89.0' Feet

Elevation Top of Rock: 794.7 N.G.V.D. ~~M.S.L.~~

Elevation Bottom of Hole: 778.7 N.G.V.D. ~~M.S.L.~~

Total Rock Drilled: 16.0' Feet

Total Depth of Hole: 105.0' Feet

Core Recovered: N/A %

Core Recovered N/A Ft.: ____ Diam. ____ In.

Soil Samples N/A In. Diam. ____ No.

Soil Samples N/A In. Diam. ____ No. — Water Table Depth: ~91.0'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	78'	ODEX System with a Down
		the Hole Hammer and 6"
		Casing.
78'	105	Standard Down the Hole
		Hammer with no casing

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Overburden Record	Page ____
Rock Drilling	Page ✓
	Page ____
	Page ____
	Page ____

Prepared by: Stephen Sarandis / GEI
Field Data — Lab. Data

Submitted by:

NED FORM DEC 63 121 — REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

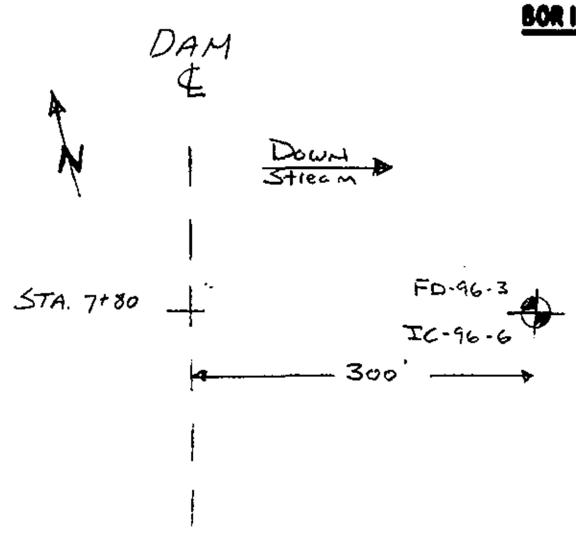
GROUND WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF HOLE	DEPTH TO WATER	ELEVATION WATER	REMARKS
7/25/96	14:00	78.0	105.0'	~ 91.0'	792.7	Estimated based on
						bouyent force on inclinometer
						case during installation.
						Water not encountered
						during drilling.

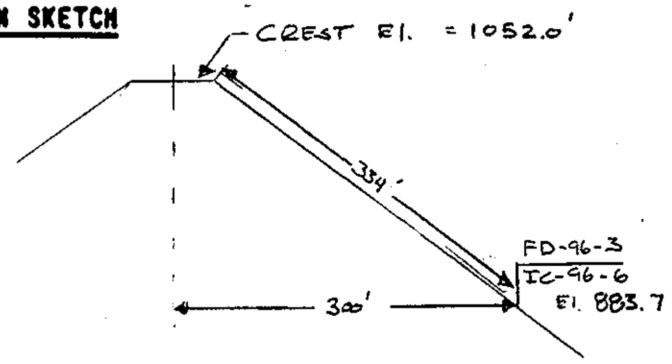
AVERAGE GROUND WATER ELEVATION ________

Note: Depths are in feet below original ground

BORING LOCATION SKETCH



PLAN



PROFILE

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Ball Mountain Dam Page 1 of ___ Pages

Boring No. FD-96-3 Desig. IC-96-6 Diam. (Casing) 6 inch

Co-ordinates: N ___ E ___

Elevation Top of Boring ___ M.S.L.
Total Overburden Drilled 89.0 Feet
Elevation Top of Rock ___ M.S.L.
Total Rock Drilled 16.0 Feet
Elevation Bottom of Boring ___ M.S.L.
Total Depth of Boring 105.0 Feet
Core Recovered N/A % No. Boxes N/A
Core Recovered N/A Ft : ___ Diam. ___ In.
Soil Samples N/A In. Diam. ___ No.
Soil Samples N/A In. Diam. ___ No.

Hammer Wt. N/A Boring Started 7/23/96
Hammer Drop N/A Boring Completed 7/26/96
Casing Left ___
Subsurface Water Data 91.0' Page ___
Obs. Well No
Drilled By Charles Brown
Mfg. Des. Drill Failing 314 Drill Rig
Inspected By: Stephen Serandis / GET
Classification By: ___
Classification By: ___

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10, 20, 30					Advanced boring from 0 to 78' using ODEX Down the Hole Hammer with 6 inch casing. Advanced boring from 78' to 105' open hole with Standard Down the Hole Hammer (5"). No Samples were taken.	Rock; Fill; 7' Foot boulder from 72' - 79'
SCALE BREAK						
70, 80, 90					Top of Bedrock at 89.0'	
100, 110					Bottom of Borehole at 105.0'	

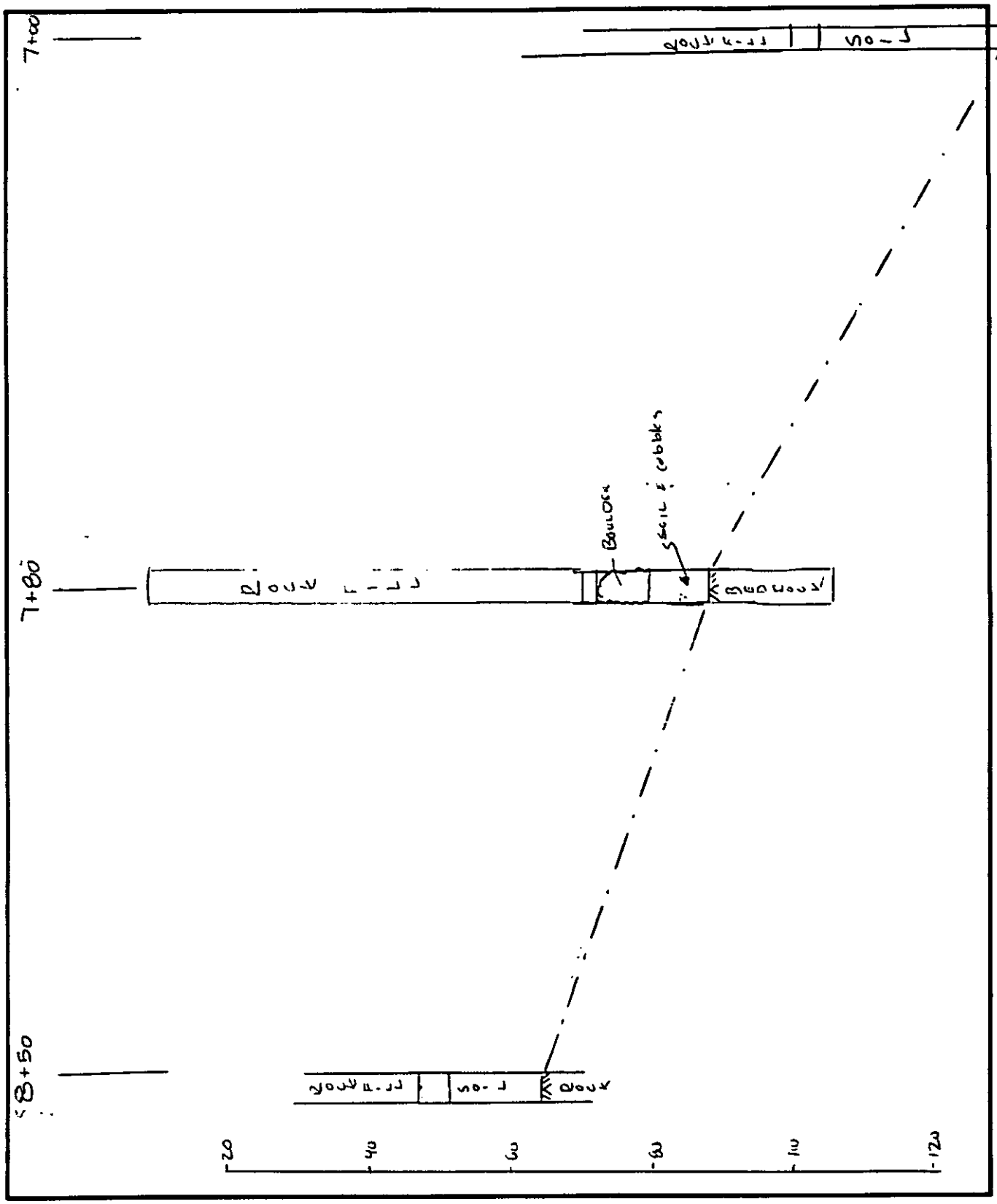
GENERAL REMARKS:
Installed 107.4' of SINCO Inclinometer casing in the completed borehole. (2.4' Stick up)

NED FORM MAR 71 58 (Test)

Boring No. FD-96-3

GEI Consultants, Inc.

Project	96164	Page	1/1
Client	CENED	Date	7/24/96
Subject	IC-76-[illegible]	By	SJS
		Checked	
		By	
		Approved	
		By	



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. 96164

Site: Ball Mountain Dam

Page 1 of 6 Pages

Hole No. FD-96-4 / IC-96-2 Diam. (Casing) 6" / 4"

Boring Started: July 30, 1996

Co-ordinates: N 228852.5 E 1567357.5

Boring Completed: Aug. 13, 1996

Drilled by: C. Brown

Report Submitted:

Purpose of Exploration: To define soil interfaces within the dam and foundation soils. Install slope inclinometer casing in completed borehole

Elevation Top of Hole: 1015.1 ~~M.S.L.~~ NGVD

Casing Left in Place: _____ Feet

Total Overburden Drilled: 270.5 Feet

Elevation Top of Rock: Not encountered ~~M.S.L.~~ NGVD

Elevation Bottom of Hole: 744.6 ~~M.S.L.~~ NGVD

Total Rock Drilled: — Feet

Total Depth of Hole: 270.5' Feet

Core Recovered: _____ %

Core Recovered: _____ Ft.: _____ Diam. _____ in.

Soil Samples: 3 in. Diam. 5 No.

Soil Samples: _____ in. Diam. _____ No.

Water Table Depth: _____

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	162	Odex down-the-hole hammer
		with 6" Casing
162	210	Open hole with 5" diam
		hammer - then telescoped
		4" Casing
210	264	4" casing with tricone (3 7/8")
		roller bit
264	270.5	NX core barrel

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	Page	
	Page	

Prepared by: Stephen J. Belardi
Field Data — Lab. Data

Submitted by: _____

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

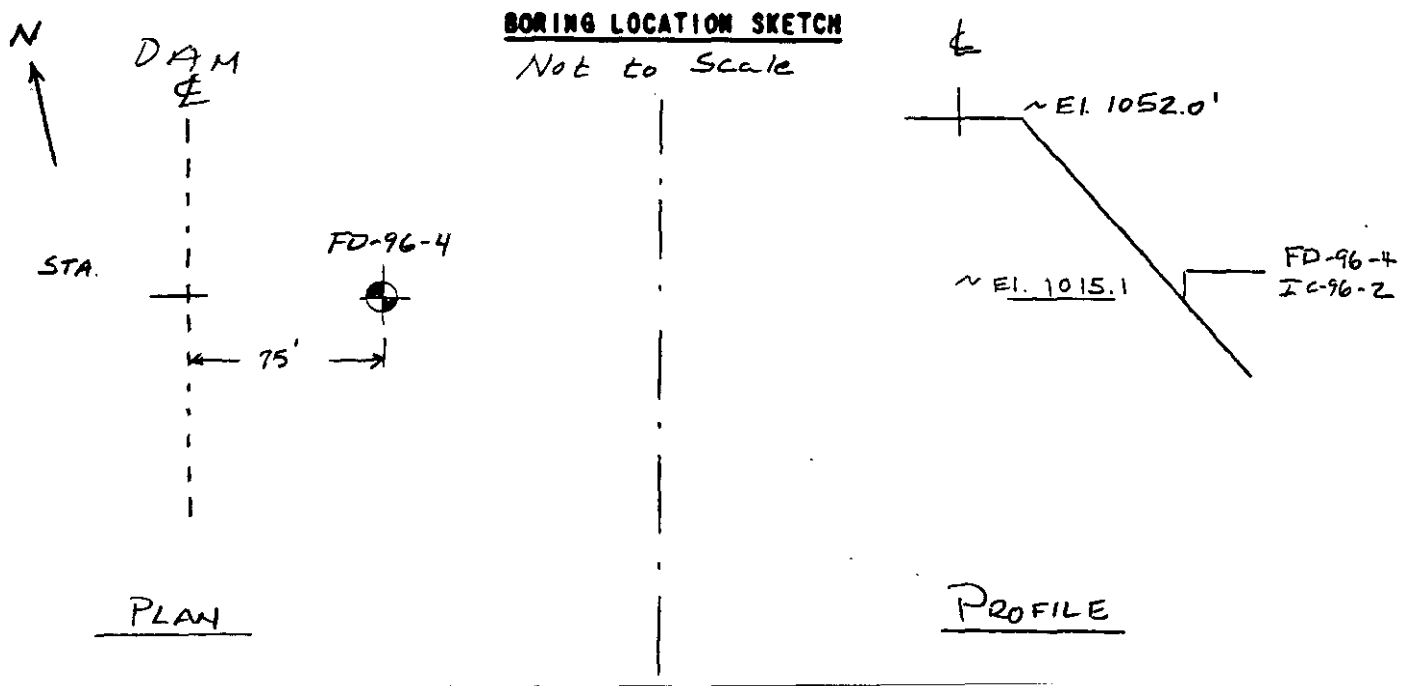
GROUND WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF HOLE	DEPTH TO WATER	ELEVATION WATER	REMARKS
8/8/97	0730	240.0'	240.0'	190.5'	824.6	
8/9/97	0745	264.0'	264.0'	189.6'	825.5	
						AVERAGE GROUND WATER ELEVATION _____

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to Scale



U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site: Ball Mountain Dam — Page 2 of 6 Pages

Boring No.: FD-96-4 — Desig. ____ — Diam. (Casing): 6"/4"

Co-ordinates: N 228853.5 E 1567357.5

Elevation Top of Boring: 1015.1 N.G.V.D. ~~M.S.L.~~
Total Overburden Drilled: 270.5 Feet
Elevation Top of Rock: Not encountered M.S.L.
Total Rock Drilled: 0 Feet
Elevation Bottom of Boring: 744.6 N.G.V.D. ~~M.S.L.~~
Total Depth of Boring: 156.5' Feet
Core Recovered: ___ % No. Boxes: ___
Core Recovered: ___ Ft: ___ Diam. ___ In.
Soil Samples: 3.0 In. Diam. 5 No.
Soil Samples: ___ In. Diam. ___ No.

Hammer Wt.: 300 lb. Boring Started: July 30, 1996
Hammer Drop: 18 inch Boring Completed: Aug. 13, 1996
Casing Left: None
Subsurface Water Data: 18 Page: 189.6'
Obs. Well: N/A
Drilled By: Charles Brown / Mobile
Mfg. Des. Drill: Failing 300
Inspected By: Steve Sarandis
Classification By: Steve Sarandis
Classification By: ____

DEPTH 1"=N.T.S.	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. (1) / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0, 1, 2					Boring advanced from 0 to 83.5' without sampling. Boring advanced using "ODex" down the hole hammer and 6" I.D. Casing	Rock Fill
BREAK						
81, 82						
83					Top of Fine Rock (Based on action of drill rig)	Fill @ 82.0'
84			83.5	21		S1A: (top 19") Gravelly SAND (SW) ~55% widely graded sand, ~40% subangular fine to coarse gravel, ~5% fines, pockets of comp. weathered rock pieces. Brown.
				39		
				28		
85	S1	3.0		21	Rec.: 24"	
				33		
86				25		S1B: (bot. 5") Silty SAND (SM) ~55% widely graded sand, ~30% subangular fine to coarse gravel, ~15% low plasticity fines. Gray.
				6		

GENERAL REMARKS:
Depth Scale of boring log is not Continous.
(1) Blows per six inch intervals

Site: BALL MOUNTAIN DAM	Boring No. FD-96-4	Page 3 of 6

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECV'Y	(1) SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
88	S1	3.0"	88.5	9, 21, 16		
89						
90, 91, 92	S2	3.0"	89.5, 92.0	10, 29, 20, 72, 140	REC. = 14"	S2. Gravelly SAND (SW) ~55% widely graded sand, ~45% fine to coarse subangular gravel Brown
93, 94, 95						
96, 97, 98	S3	30"	95.5, 97.9	6, 32, 28, 33, 80/5"	REC. = 20"	S3: Widely graded SAND with silt and gravel (SM) ~55% fine to coarse sand, ~35% fine to coarse subrounded to subangular gravel, ~10% fines. Dark Brown
99, 100, 101					TOP OF IMPERVIOUS CORE AT 100.0' (fine grained soils sticking to air rods)	
102, 103	S4	3.0"	101.5	24, 10, 20, 14, 60	(1) Blow per six inches	

Site: Ball Mountain Dam	Boring No. FD-96-4	Page 4 of 6

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. (1) / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
105	S4	3.0"		28, 15, 27, 27, 21	REC. = 44"	S4: Silty SAND (SM) ~55% fine to coarse sand, ~30% fine to coarse sub-angular to subrounded gravel, ~15% fines, pockets of comp. weathered rock. Dark Brown to Dark Gray.
106			106.5			
107						
108						
109						
110						
	BREAK					
					Drive shoe for six casing. Broke at 162.0'. Advanced open hole with 5" hammer from 162.0' to 205.0'.	
194						
195						
196						
197						
198						
199						
200						
201						

(1) Blows per six inches

Site	Boring No.	Page 5 of 6
BALL MOUNTAIN DAM	FD-96-4	

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT.(1) / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
203						
204						
205						
			205.0	66		SS: SILTY SAND (SM) ~55% fine to coarse sand, ~25% fine to coarse sub-rounded gravel, ~20% non to slightly plastic silt, pockets of sample have up to 35% clayey and silty fines, light gray - greenish gray
206				25.		
				24		
				41		
207	SS	30"		30	REC.: 50"	
				35		
208				55		
				80		
209			209.2	200/2"		
210					Unable to advance boring, open hole past 210.0'. Telescoped HW (4") casing.	
211						
212						
213						
214						
215						
216					Approx. top of natural soil at 216.0'	
217					Drilling becomes more difficult past 216.0' Encounter frequent cobbles.	
218						

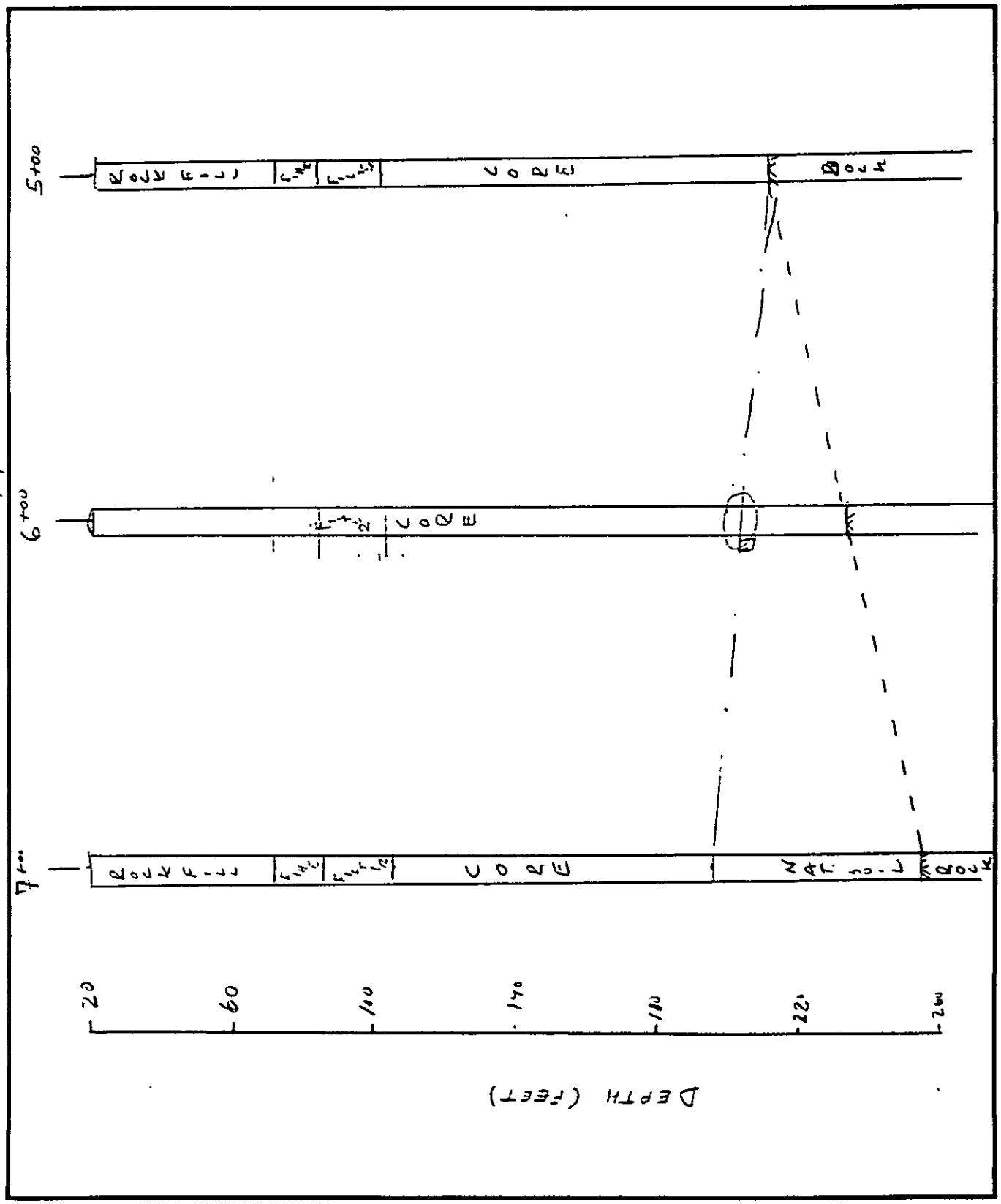
(1) Blows per six inches

Site	Boring No.	Page 6 of 6
BALL MOUNTAIN DAM	FD-96-4	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECVY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
221					Advanced boring through SAND & GRAVEL WITH frequent cobbles and boulders. (possible old river bed)	
222						
BREAK					4" casing refusal at 264.0'	
262						
263						
264			264.0			
265						C1: Recovered 48" of coarse gravel to 6" cobbles, various lithologies.
266						
267	C1	NX			Rec. 48"	
268						
269						
270			270.5			
271					Bottom of Borehole at 270.5	
272						
273						
274						

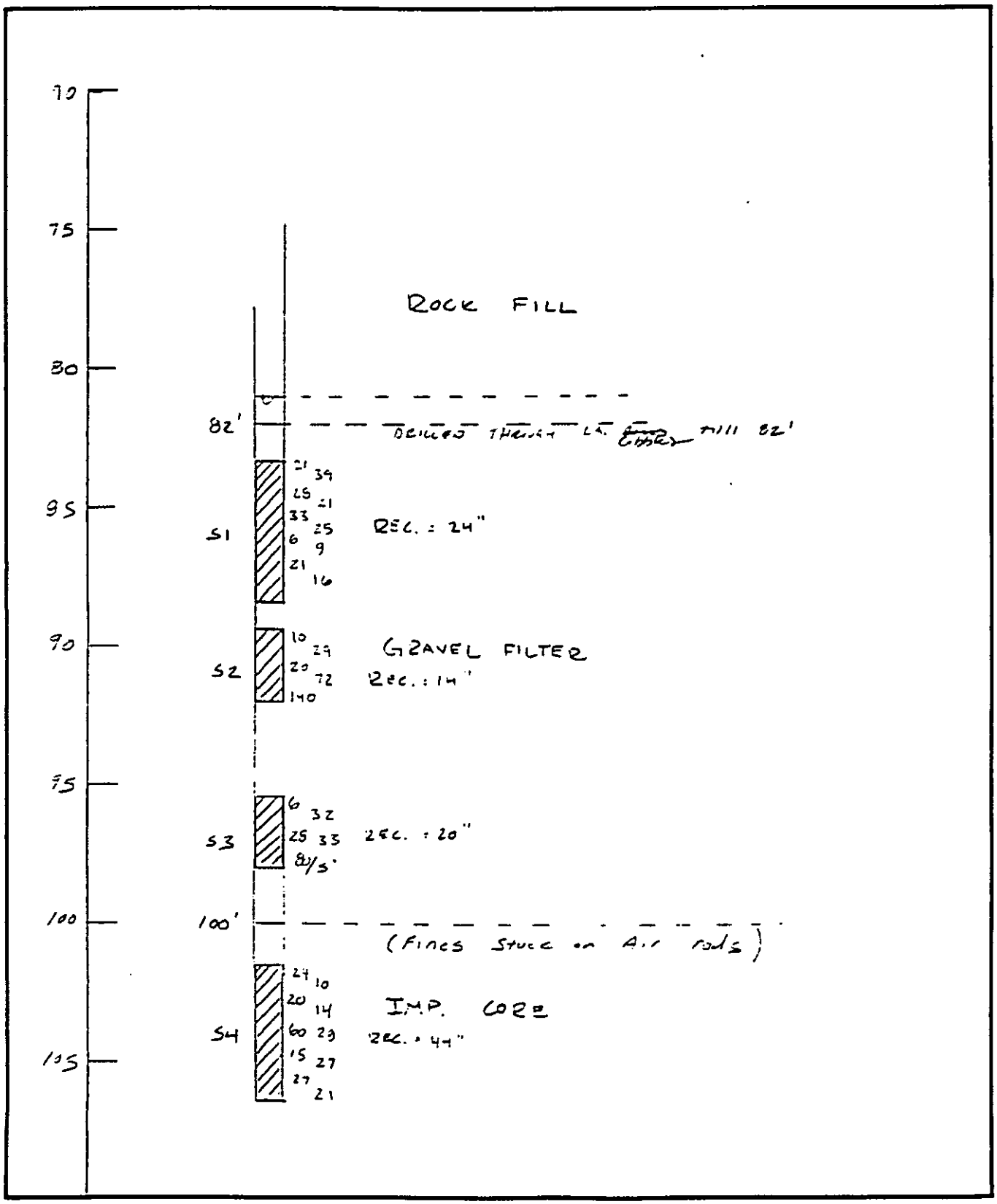
GEI Consultants, Inc.

Client	CENED 75' OFFSET	Project 96164	Page
Subject		Date	By
		Checked	By
		Approved	By



GEI Consultants, Inc.

		Project 96164	Page
Client CENED		Date	By SJS
Subject Ball Mountain Dam FD-96-4		Checked	By
		Approved	By



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. _____

Site: Bell Mountain Dam

Page 1 of 8 Pages

Hole No.: FD-96-5 / IC-96-7

Diam. (Casing): 6"

Boring Started: August 16, 1996

Co-ordinates: N _____ E _____

Boring Completed: August 29, 1996

Drilled by: Charles Brown / Mobile Drill

Report Submitted _____

Purpose of Exploration: To install Slope Inclinometer Casing in the down stream slope.

Elevation Top of Hole: 886.1 M.S.L.

Total Overburden Drilled: 176 Feet

Elevation Top of Rock: 710.1 M.S.L.

Elevation Bottom of Hole: 700.1 M.S.L.

Total Rock Drilled: 10 Feet

Total Depth of Hole: 186 Feet

Core Recovered: N/A %

Core Recovered: N/A Ft.: N/A Diam. N/A In.

Soil Samples: 3.0 In. Diam. 2 No.

Soil Samples: N/A In. Diam. N/A No.

Casing Left in Place: 10 feet 4" prot pipe

Water Table Depth: 93 feet

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	168	ODEX Down the Hole Hammer
		with 6" I.D. casing
168	176	Down hole hammer
176	186	Down hole through Rock

INDEX

Ground Water	Back of Page
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Overburden Record	Page
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	Page
	Page

Prepared by _____ Field Data _____ Lab Data

Submitted by _____

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site BALL MTN. DAM — Page 2 of 8 Pages

Boring No. FD-96-5 Desig. G Diam. (Casing) 6"

Co-ordinates: N _____ E _____

Elevation Top of Boring 886.1 M.S.L.
Total Overburden Drilled 176 Feet
Elevation Top of Rock 710.1 M.S.L.
Total Rock Drilled 10 Feet
Elevation Bottom of Boring 700.1 M.S.L.
Total Depth of Boring 186 Feet
Core Recovered N/A % No. Boxes N/A
Core Recovered N/A Ft: N/A Diam. N/A in.
Soil Samples 3.0 in. Diam. 2 No.
Soil Samples N/A in. Diam. N/A No.

Hammer Wt. 300# Boring Started 8/16/96
Hammer Drop 18" Boring Completed 8/29/96
Casing Left 10' Subsurface Water Data _____ Page Back of page 1
Obs. Well N/A
Drilled By Charles Brown/Mobile
Mfg. Des. Drill Failing 300
Inspected By: Erik Matthews/R. Pretto
Classification By: Erik Matthews/R Pretto
Classification By: _____

DEPTH 1" = 1'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1						
				BREAK		
91						
					Top of Gravel Fill (Based on Action of Drill Rig)	
92			92.0			
				16	groundwater encountered at ~93ft	
				12		Sandy GRAVEL (GW) grayish-brown with gravel pieces broken by sampling spoon ~60% gravel ~35% sand ~5% silt
93	S1A					
	S1B	3.0		40	Rec=36" Advance hole with ODEX, Sample with 300# hammer, 18" drop driving sample spoon 5 ft.	
	S1C			36		
94	S1D			28		

GENERAL REMARKS:
Depth scale of boring log is not continuous.

Site	Boring No.	Page 3 of 8
BALL MTN. DAM	FD-96-5	

DEPTH (Ft. 1')	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
	S1E			50		Sandy GRAVEL (GW) grayish-brown
95	S1F			96		
		3.0			Rec. = 36"	Some gravel pieces broken by sampler
				52		
96	S1G					~60% gravel ~35% sand ~5% fines
				79		
				69		
			97.0			
97			97.0		Top of Foundation at 97.0'	
	S2A			58		silty GRAVEL w/sand (GM)
	S2B					
	S2C	3.0		175	Rec. = 18"	gray
98	S2D					~60% gravel
	S2E			165		~15% sand
			98.5			~25% silty fines
99						angular → subrounded gravel pieces - some broken by sampler
100						
101					Advanced casing from 98.5' to 148.5' without sampling. Used "ODEX" system with 6" casing	
102						
103						

Site	Boring No.	Page 4 of 8
BALL MTN. DAM	FD-96-5	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER 6" / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
104						
BREAK						
147					Advanced casing from 98.5' to 148.5' without sampling. Used ODEX system w/ 6" casing	
148						
149					ADVANCED CASING FROM 148.5' TO 168' WITHOUT SAMPLING USED ODEX SYSTEM W/6" CASING	
150						
151						
152						
153						
154						

Site	Boring No.	Page 5 of 8
Ball Mountain	FD-96-5	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
154						
155						
156						
					BREAK	
167						
168					BORING WAS CONTINUED FROM 168' TO 186' W/O SAMPLING AND W/O ADVANCING CASING USING A DOWN HOLE HAMMER.	
169						
170					DRILLER CONTINUED TO USE DOWN HOLE HAMMER UNTIL BEDROCK WAS HIT @ 176' AND CONTINUED 10' MORE.	
171						
172						

Site	Boring No.	Page 6 of 8
BALL MTN DAM, VT	FD-96-6	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
107						
112					BREAK	
117					TOP OF WEATHERED ROCK	
118						
119						
120						
121					TOP OF BEDROCK	
122					ADVANCED BORING W/ AIR HAMMER & ROCK BIT TO 136.5'	
122						
123						
124						

Site	Boring No.	Page 7 of 8
Ball Mtn Dam, VT	FD-96-6	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
124						
133						
					Break	
134						
135						
136						
					Bottom of Hole 136.5'	
137						

Site	Boring No.	Page 8 of 8
Ball Mtn	FD-96-5	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
181						
182						
183						
184						
185						
186					Bottom of Bore Hole	

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

Site BALL MOUNTAIN DAM PROJECT NO. _____

Page 1 of 8 Pages

Hole No. FD-96-6 ~~FC-96-3~~ Diam. (Casing) 6"

Boring Started 6 SEPT 96

Co-ordinates: N _____ E _____

Boring Completed 9 SEPT 96

Drilled by CHARLES BROWN / MOBILE DIST

Report Submitted _____

Purpose of Exploration TO INSTALL INCLINOMETER CASING IN THE D/S SLOPE

Elevation Top of Hole 1014.8 M.S.L.

Total Overburden Drilled 121 Feet

Elevation Top of Rock 893.8 M.S.L.

Elevation Bottom of Hole 878.3 M.S.L.

Total Rock Drilled 15.5 Feet

Total Depth of Hole 136.5 Feet

Core Recovered N/A %

Core Recovered N/A Ft.: N/A Diam. N/A in.

Soil Samples 3 in. Diam. 4 No.

Soil Samples N/A in. Diam. N/A No.

Casing Left in Place 16 feet 4" prot. pipe feet

Water Table Depth _____

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	121	ODEX w/6" CASING
121	136.5	AIR HAMMER W/ ROCK BIT

INDEX

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Prepared by _____ Field Data _____ Lab. Data

Submitted by _____

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Ball Mtn Lake Dam, VT Page 2 of 8 Pages

Boring No. FD-96-6 Desig. C Diam. (Casing) 6"

Co-ordinates: N _____ E _____

Elevation Top of Boring 1014.8 M.S.L.
Total Overburden Drilled 121.0' Feet
Elevation Top of Rock 893.8 M.S.L.
Total Rock Drilled 15.5' Feet
Elevation Bottom of Boring 878.3 M.S.L.
Total Depth of Boring 136.5 Feet
Core Recovered ____ % No. Boxes ____
Core Recovered ____ Ft. ____ Diam. ____ In.
Soil Samples 43 In. Diam. 4 No.
Soil Samples ____ In. Diam. ____ No.

Hammer Wt. 300 Boring Started 6 Sept 96
Hammer Drop 18"
Casing Left 10' Boring Completed 9 Sept 96
Subsurface Water Data ____ Page ____
Obs. Well ____
Drilled By Charles Brown / Mobile Dist
Mfg. Des. Drill ____
Inspected By: Reggie Pretto
Classification By: Reggie Pretto
Classification By: ____

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
1					ADVANCED CASING WITHOUT SAMPLING TO 75.5' USING ODEX	
2						
3						
4						
5						

GENERAL REMARKS:

Site	Boring No.	Page 2 of 8
Ball Mtn Dam, VT	FD-96-6	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
73						
					BREAK	
74						
75						
				27	SAMPLED w/ 3" DIA 5' SOLID SPOON SAMPLER	GR. GRAVEL w/ROCK FRAGMENTS GP
76				18		ROCK FILL
	S-1A			54		
77				56		Filter
				8		BR., GR, MOIST SILTY (5-10) GRAVEL w/SAND (15-20) GP-GM
78	S-1B			9		
				25		GR., SILTY (10-15) GRAVEL w/ROCK FRAGMENTS GM
79				31		
	S-1C			40		
80				44		
				3.8'		
					NO SAMPLE	
81						

Site	Boring No.	Page 3 of 8
Ball Mtn Dam, VT	FD-96-6	

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
82	S-2A			12 14 52	Sampled w/ 3" Dia 5' Solid Spoon Sampler	Gr. Gravel Rock Fragments GP
83–84	S-2B			13 14 7 6		Br, moist ~~Gra~~ Sandy (30-35) Gravel GP
85–86	S-2C			18 73 27 3.6'		Br, moist m-f Sand w/ Gravel (10-15) SP
87					No Sample	
88	S-3A			81 40 17 167	Sampled w/ 3" Dia. 5' Solid Spoon Sampler	Gr., Gravel Rock Fragments GP
89–90	S-3B			54 45		Br, Gr, Gravel w/ Sand (10-15) & Rock Fragments GP

Site	Boring No.	Page 4 of 8
BALL MTN DAM, VT	FD-96-6	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
90				43		
				21		
91				19		
	S-3C			45		GR. GRAVEL ROCK FRAGMENTS GP
92				3.6		
					NO SAMPLE FROM 92.0'-96.5' SAMPLE SPOON WOULD NOT GO THROUGH ROCK ODEX WAS USED TO ADVANCE CASING TO A MORE SUITABLE MATERIAL FOR SAMPLING.	
93						
94						
95						
96						
				17	SAMPLED W/3" DIA. 5' SOLID SPOON SAMPLER	GR. GRAVEL ROCK FRAGMENTS GP
97	S-4A			21		
				18		
98				28		

Site	Boring No.	Page 5 of 8
BALL MTN DAM, VT	FD-96-6	

DEPTH (ft)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				35		
99				37		
				51		
100						
				30		LT. BR., TAN, MOIST SAND W/GRAVEL (10-15) ROCK FRAGMENTS
	S-4B			23		SP
101						
				10 1.9'		
					NO SAMPLE ~~FROM~~ ADVANCED CASING TO 121' (BEDROCK)	
102						
103						
104						
105						
106						
107						

Site	Boring No.	Page 6 of 8
BALL MTN DAM, VT	FD-96-6	

DEPTH (Ft.)	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
107						
					BREAK	
117					TOP OF WEATHERED ROCK	
118						
119						
120						
121					TOP OF BEDROCK	
					ADVANCED BORING W/ AIR HAMMER & ROCK BIT TO 136.5'	
122						
123						
124						

Site	Boring No.	Page 7 of 8
Ball Mtn Dam, VT	FD-96-6	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
124						
129						
					Break	
134						
135						
136						
					Bottom of Hole 136.5'	
137						

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. _____

Site: Ball Mountain Dam

Page 1 of 4 Pages

Hole No. ~~EC-96-05~~ FD-96-7 Diam. (Casing) 6"

Boring Started: 12 Sept 1996

Co-ordinates: N _____ E _____

Boring Completed: 16 Sept 1996

Drilled by: Charles Brown / Mobile Dist

Report Submitted _____

Purpose of Exploration: To install inclinometer casing in the D/S slope

Elevation Top of Hole: 948.3 M.S.L.

Total Overburden Drilled: 114.7 Feet

Elevation Top of Rock: 833.6 M.S.L.

Elevation Bottom of Hole: 812.3 M.S.L.

Total Rock Drilled: 21.3 Feet

Total Depth of Hole: 136 Feet

Core Recovered: N/A %

Core Recovered N/A Ft.: N/A Diam. N/A in.

Soil Samples: 3 in. Diam. 1 No.

Soil Samples: N/A in. Diam. N/A No.

Casing Left in Place: 4" x 10 ft protective pipe ~~Feet~~

Water Table Depth _____

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	114	ODEX w/6" Casing & Sample
114	136	Air Hammer w/Rock Bit

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Prepared by _____ Field Data _____ Lab. Data

Submitted by _____

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Ball Mtn Lake Dam, VT Page 2 of 4 Pages

Boring No. ED-96-7 Desig. E Diam. (Casing) 6"

Co-ordinates: N _____ E _____

Elevation Top of Boring 948.3 M.S.L.
Total Overburden Drilled 114.7 Feet
Elevation Top of Rock 833.6 M.S.L.
Total Rock Drilled 21.3 Feet
Elevation Bottom of Boring 812.3 M.S.L.
Total Depth of Boring 136.0 Feet
Core Recovered N/A % No. Boxes N/A
Core Recovered N/A Ft: N/A Diam. N/A In.
Soil Samples 3 In. Diam. 1 No.
Soil Samples N/A In. Diam. N/A No.

Hammer Wt. 300 Boring Started 12 Sept 96
Hammer Drop 18"
Casing Left 10' Boring Completed 16 Sept 96
Subsurface Water Data _____ Page _____
Obs. Well _____
Drilled By Charles Brown/Mobile Dist
Mfg. Des. Drill _____
Inspected By: Reggie Pretto
Classification By: Reggie Pretto
Classification By: _____

DEPTH 1"=	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
					Advanced Casing without sampling to 103.5' using Odex	Rock Fill
1						
2						
					Break	
101						
102					Top of Gravel Drain Layer (From Wash)	
103						

GENERAL REMARKS:

D FORM MAR 71 58(Test)

Boring No. ED-96-7

Site	Boring No.	Page 2 of 4
Ball Mtn, VT	FD-96-7	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
103.5						
104	S-1A			175	SAMPLED w/3" DIA 5' SOLID SPOON SAMPLER ONLY ABLE TO SAMPLE 1.5' DUE TO HIGH BLOW COUNTS	LT. BR, GR. MOIST GRAVEL w/m-c SAND (20-25) GP
	S-1B			200		LT. BR, MOIST GRAVELLY (35-40) m-c SAND SP
				355 1.5'		
105					NO SAMPLE ADVANCED CASING TO 114 USING ODEX	
106						
107						
					BREAK	
110						
111					TOP OF WEATHERED ROCK	(FROM WASH)
112						
113						

Site	Boring No.	Page 3 of 4
Ball Mtn, VT	FD-96-7	

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE REC'VY	SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
114					Advanced Boring w/ Air Hammer & Rock Bit	
					Top of Bedrock	
115						
					Break	
134						
135						
136					Bottom of Hole 136.0'	

APPENDIX C

Daily Activity Logs

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 1 DATE June 14, 1996 FRIDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site office
PHONE 802-874-4881 TIME _____ TEMPERATURE: MAX. 85° MIN. 60°
WEATHER Sunny 60° - 85°F

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 8150 75' D.S.	0	5'	5	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sam Rankin	10
Henry "Peyton" Herman	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing Drill Rig 314	10	700 - 1800
Caterpillar Dozer J	10	0700 - 1800
John Deere Dozer 850J	6	0700 - 1400
Ingersoll Rand 750 Comp.	10	0700 - 1800
Chev. Support truck	10	0700 - 1800

Stephen A. Sarandis
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Completed mob to location "A" [FD-96-1] STA 8+50; 75' D.S

2. Set up compressor & air lines.

3. Drilled 0 to 5' in rock fill with Hammer - no casing

VISITORS: Terry Wong
Eric Mathews

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.	7			3							10
J. K.	7			3							10
S. R.	7			3							10
H. H.	7			3							10

WORK FOR TOMORROW

1. Continue drilling FD-96-1 through rock fill

FIELD PURCHASES

ITEM	AMOUNT
600' 7/8" Steel Cable	
400' 5/8" Steel Cable	

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 2 DATE JUNE 15, 1996 SATURDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802)874-4881 TIME _____ TEMPERATURE: ___ MAX. 65° MIN. 85°

WEATHER SUNNY

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 75, 8+50 D.S.	5.0'	40.0	35.0	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sam Rankin	10
Henry Herman	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
I.R. 750 Comp.	10	
Chevy Support truck	10	

Stephen J. Schmidt
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced FD-96-1 from 5.0 to 40.0 using the "ODEX" System w/ 6" casing.

2. Spent ~ 2 hours starting hole - trying to get casing straight

3. 1530 hrs unable to break drill rods from "kelly" bar - Spent 1 1/2 hours trying various techniques - no success

MAN-HOUR WORK BREAKDOWN

See Item 3 ab

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.				8.5						1.5	10
J. K.				8.5						1.5	10
S. R.				8.5						1.5	10
H. H.				8.5						1.5	10

WORK FOR TOMORROW

1. Get torches to heat drill rod/kelly bar connection to break rods
2. Continue Drilling

FIELD PURCHASES

ITEM	AMOUNT
None	

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 3 DATE JUNE 17, 1996 MONDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802) - 874 - 4881 TIME _____ TEMPERATURE: ___ MAX. 75° MIN. 60°

WEATHER SUNNY

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA 8+50 75' D.S.	40.0	65.0	25.0	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sammie Rankin	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	7.5	
Cat Shovel Dozer	7.5	
I.R. 750 Comp.	7.5	
Chevy Support Truck	7.5	

Stephen A. [illegible]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Crew went to Massachusetts (0700 - 1000) to purchase 100' of hose for cutting torch (see rep # 2)

2. Using the cutting torch to heat drill rods the driller is able to break rods from "kelly" bar.

3. Driller is now using a piece of string and anti-seize grease on rod connections.

4. Advanced boring from 40.0 to 65.0' using "ODEX" System with "6" Casing - No air return for 55' to 65'.

MAN-HOUR WORK BREAKDOWN

See item 1 above

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.				7.0						3.0	10
J. K.				7.0						3.0	10
S. R.				7.0						3.0	10

WORK FOR TOMORROW

1. Continue advancing FD-96-1

FIELD PURCHASES

ITEM	AMOUNT
100' cutting torch hose	
Cutting torch fittings & nose piece	
1100' Sinco Inclinometer	
Casing w/ couplings	

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 4 DATE JUNE 18, 1996 TUESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site Office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site Office
PHONE (802) - 874-4881 TIME _____ TEMPERATURE: MAX. 72° MIN. 60°
WEATHER SUNNY

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD 96-1	STA. 8+50' 75' D.S.	66.0'	111.5'	45.5'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sammie Rankin	10
Steve Scrandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat. Shovel Dozer	10	
I.R. 750 Comp.	10	
Chevy Support Truck	10	

Stephen J. Schmidt
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced FD-96-1 from 65.0' to 111.5' using ODEX System with 6" Casing.

2. Obtained Soil Samples at the following depths:

S1	87.5' - 89.5'	Rec. = 9"
S2	91.0' - 96.0'	Rec. = 36"

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				10							10
J.K.				10							10
S.R.				10							10

WORK FOR TOMORROW

1. Obtain Sample at 111.5'
2. Continue to advance FD-96-1

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 5 DATE JUNE 19, 1996 WEDNESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802)-874-4861 TIME _____ TEMPERATURE: MAX. 70° MIN. 58°

WEATHER Overcast, P.M. Showers

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 8+50 75' D.S	111.5'	135.0	23.5'	Advanced open hole w/ roller bit

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sammie Rankin	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
I. R. 750 Comp.	10	
Chevy Supply Truck	10	

Stephen A. Sarah
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced FD-96-1 from 111.5' to 135.0' open hole with a tricone roller bit.

2. Obtained one soil sample

S3 111.5' – 116.5' Rec. 46"

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				10							10
J.K.				10							10
S.R				10							10

WORK FOR TOMORROW

1. Advance 6" casing from 111.5' to 135.0' - then continue borehole deeper

FIELD PURCHASES

ITEM	AMOUNT
Steel sled ~ 20' long	
Steel Box ~ 5'x2.5'	

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 6 DATE June 20, 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site Office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site Office
PHONE (802)-874-4881 TIME _____ TEMPERATURE: MAX. 70° MIN. 60°
WEATHER Overcast

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 8+50 79' D.S.	135.0'	137.0	2.0'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sammie Rankin	10
Steve Serandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
I.R. 750 Compressor	10	
Chevy Support Truck	10	

CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced 6" "ODEx" casing from 111.5' to 135.0'

2. Advanced bore hole from 135.0' to 137.0' with ODEx system and 6" casing.

3. Progress slowed by soil "caking" up inside 6" casing - binding up drill rods

4. Obtained one soil sample

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				10							10
J.K.				10							10
S.Q.				10							10

WORK FOR TOMORROW

1. Continue Drilling FD-96-1

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 7 DATE JUNE 21, 1996 FRIDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Beall Mountain Dam
TEMPORARY ADDRESS Site Office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site office
PHONE (802)-874-4831 TIME _____ TEMPERATURE: MAX. 75° MIN. 63°
WEATHER Overcast AM Sunny P.M

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 8+50 75' D.S	137.0'	146.0	9.0'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jamie Knox	10
Sammie Rankin	10
Steve Scrandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
I.R. Compressor (750)	10	
Chevy Support Truck	10	

CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced boring from 137.0' to 146.0'. Hit top of weathered rock @ ≈ 140.0'

2. Obtained one soil sample.

SH 137'-3" — 140'-7" Rec. 30"

3. Had 7 cubic yards of -3/8" stone delivered to the site by Leroy Brown of Boldville

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.				10							10
J. K.				10							10
S. R.				10							10

WORK FOR TOMORROW

1. @ Core 10' of rock - Complete the borehole

FIELD PURCHASES

ITEM	AMOUNT
7 cubic yards -3/8" stone	

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 8 DATE June 22, 1996 SATURDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802)-874-4881 TIME _____ TEMPERATURE: ___ MAX. 65° MIN. 62°

WEATHER Sunny - AM, Showers P.M.

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 8+50 75' D.S.	146.0	147.8	1.8'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sammie Rankin	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat. Shovel Dozer	10	
Ingersoll Rand 750 Comp.	10	
Chevy Support Truck	10	

Stephen J. Sarandi
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced boring from 146.0' - 147.0' with Odex System and 6" Casing - Competent bedrock at 146.0'

2. Pulled air rods - Sent HQ core barrel down with "N" rods - Tried to core with air - Cored from 147.0' to 147.8' - recovered 6" - C. Brown decided to switch to water - Spent afternoon converting drill rig operation from air to water

3. C. Brown & S. Scrandis make trip to Brattleboro - ~~make~~ purchase necessary supplies for Inclinometer installation

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.				2.5	2.5					5(1)	10
S. R.				2.5	2.5					5(2)	10
J. K.				2.5	2.5					5(2)	10

(1) - Spent afternoon getting supplies ready for inclinometer installation.
(2) - Spent afternoon switching drill rig operations from air to water

WORK FOR TOMORROW

1. Complete rock core
2. Install Inclinometer

FIELD PURCHASES

ITEM	AMOUNT
Small tools & supplies for inclinometer installation	

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 9 DATE JUNE 24, 1996 MONDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site Office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site Office
PHONE (802)-874-4881 TIME _____ TEMPERATURE: MAX. 75° MIN. 65°
WEATHER Cloudy AM, Sunny P.M.

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD 46-1	STA. 8+50 75' D.S.	147.8'	156.5	8.7'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Sammie Rankin	10
James Knox	10
Tom Cooper	10
Steve Saroudis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 3/4 Drill Rig	10	
Cat. Shovel Dozer	10	
I.R. 750 Compressor	10	
Chevy Support Truck	10	

Stephen J. Saroudis
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Cored the bedrock from 147.8' to 156.0' with HQ core barrel.

2. Reamed bedrock section of borehole with 5" roller bit

3. Pre-assemble inclinometer casing into 20' sections

Visitors: Terry Klong / GEI
Alton Davis / GEI

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVR.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.					6					*4	10
J.K.					10						10
S.R					10						10
T.C.					10						10
* Spent morning pre-assembling inclinometer casing											

WORK FOR TOMORROW

1. Install inclinometer casing

FIELD PURCHASES

ITEM	AMOUNT	ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO: 10 DATE June 25, 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site Office Jamaica Vt
LOCATION WHERE CAN BE REACHED Site office
PHONE (802) -874- 4861 TIME _____ TEMPERATURE: MAX. 65° MIN. 58°
WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-961	Sta. 850 75' D.S				No Drilling
					Inclinometer installation.

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Semmie Bowen	10
Tom Cooper	10
Steve Saraudis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Stephen J. Saunders
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Installed @ 159.9' of inclinometer casing
   Stickup = 3.7'

2. Backfilled borehole from 156.1' to 104.2' with -3/8" gravel. (156.5' - 156.1' - Soil caved in)

3. Backfilled from 104.2' to 94.3' with fine to coarse sand

Dry hole - No tremie pipe

MAN-HOUR WORK BREAKDOWN

Install Inclinometer

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.										10	10
J.K.										10	10
S.R.										10	10
T.C.										10	10

WORK FOR TOMORROW

1. Complete installation of inclinometer

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 11 DATE JUNE 26, 1996 WEDNESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site Office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site Office
PHONE (802)-874-4681 TIME _____ TEMPERATURE: MAX. 65° MIN. 55°
WEATHER SUNNY

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 6+50 75' D.S.				NO Drilling
					Install Inclinometer

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Seymour Perkins	10
James Knox	10
Tom Cooper	10
Steve Scrandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat. Shovel Dozer	10	
I.R. 750 Compressor	10	
Chevy Support Truck	10	

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Complete installation of inclinometer in bore hole FD-96-1 - is now IC-96-1
2. Install 10' Surface casing

MAN-HOUR WORK BREAKDOWN

Install Inclinometer

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
Charles Brown										10	10
J. K.										10	10
S. R.										10	10
T. C.										10	10

WORK FOR TOMORROW

1. Move to location "D" - STA. ~~850~~ 780, 190' D.S.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 12 DATE JUNE 27, 1996 THURSDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802) 874-4881 TIME _____ TEMPERATURE: MAX. 70° MIN. 60°

WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-1	STA. 8+50 75' D.S.				No Drilling
FD-96-2	STA 7+80 790' U.S.				— Move —

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Sammie Rankin	10
James Knox	10
Tom Cooper	10
Steve Saranelis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand Compressor	10	
Chevy Support Truck	10	

Stephen [illegible]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Began move from location "A" to location "D"
- moved air lines
- secured site for Holiday weekend

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.			10								10
J. K.			10								10
S. R.			10								10
T. C.			10								10

WORK FOR TOMORROW

1. Job will be shut down
FRIDAY JUNE 28 → TUESDAY July 9, 1996

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 13 DATE July 10, 1996 WEDNESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE (802) 874-4881 TIME _____ TEMPERATURE: MAX. 75° MIN. 70°

WEATHER 1130 → 1730 hrs

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-86-2	STA. 7+80 190' D.S.				No Drilling Today

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarendis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
John Deere 850 Dozer	10	
Ingersoll Rand Compressor	10	
Chevy Support Truck	10	

Stephen A. Gerardi
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. I ran inclinometer probe down inclinometer casing IC-96-1 (STA. 8+50-75' D.S.) Casing tracked properly

2. Drill crew continued move to location "D", FD-96-2, IC-96-4 @ [7+80, 190' D.S.]

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.			10								10
J. E.			10								10
R. R			10								10

WORK FOR TOMORROW

1. Begin Drilling FD-96-2

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 14 DATE July 11, 1996 Thursday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802) 874-4881 TIME _____ TEMPERATURE: ___ MAX. 75° MIN. 55°

WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-2	7+80 190' D.S.	0	18	18'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	6.5	3.5
Cat Shovel Dozer	10	
Ingersol Rand Compressor	10	
Chevy Support Truck	10	

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Started Drilling FD-96-2 advanced hole from 0 to 18' using ODEX System with 6" I.D. Casing

2. @ 1330 Drill rig Breaks Down Electrical Problem
Rig down rest of day

Replaced solenoid - travel to replace alternator - new one wrong size

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				6.5			3.5				10
J.C				6.5			3.5				10
R.B				6.5			3.5				10

WORK FOR TOMORROW

1. Fix drill rig
2. Continue FD-96-2

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 15 DATE July 12, 1996 FRIDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site office
PHONE (802) 874-4881 TIME _____ TEMPERATURE: MAX. 85 MIN. 65°
WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-2	STA. 9+80 120' D.S	18'	54'	36'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Saranchs	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 34 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersoll Rand Compressor	10	
Chevy Support Truck	10	

Stephen J. Bender
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Driller unable to locate problem with electrical system - ran rig using battery off of truck.

2. At 1530 hrs - ODEX CASING advancing very slowly - C. Brown decides to remove drill rods and Chem Bit. The eccentric reamer needs to be replaced. Spent rest of day trying to remove reamer.

MAN-HOUR WORK BREAKDOWN

Electrical problems

replacing reamer

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				7			1			2	10
J.K.				7			1			2	10
R.R.				7			1			2	10

WORK FOR TOMORROW

1. Continue Drilling FD-96-2 loc. "D"

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 16 DATE July 13, 1996 SATURDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802) 874-4881 TIME _____ TEMPERATURE: ___ MAX. 65° MIN. 65°

WEATHER Heavy Rain

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-96-2	7+50 190' ds				No Drilling

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
~~E~~		
Failing 314 Drill Rig	0	
Caterpillar Dozer	0	
Ingersol Rand Compress	0	
Cheavy Support Truck	0	

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Spent 2 hours in morning replacing reamer on hammer.

2. Torrential rains the rest of the day.
   a. Assembled core boxes
   b. Assembled inclinometer casing

MAN-HOUR WORK BREAKDOWN

replace reamer

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.								8		2	10
J. K.								8		2	10
R. R.								8		2	10

WORK FOR TOMORROW

1. Continue drilling FO-96-2 "loc. D")

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 17 DATE July 16, 1996 TUESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802) 874-4881 TIME _____ TEMPERATURE: ___ MAX. 85° MIN. 70°

WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-2	STA. 7+80 190' D.S.	104'	146'	42'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Ronald Reeves	10
Charles Brown	10
James Knox	10
Sammie Rankin	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
FAILING 314 DRILL RIG	10	
CAT SHOVEL DOZER	10	
INGERSOL RAND 750	10	
CHEVY SUPPORT TRUCK	10	

Stephen J. [illegible]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. S. SARANIDIS not on-site previous day
Advanced hole ~~50'~~ 54' → 104'. At ~ 104'
bottom piece of "ODEX" casing broke off.

2. Today driller advanced boring from 104' to
146' open hole
Top of wx rock @ 133'
Top of comp. rock @ 146'

3. Hole CAVED IN TWICE
- 1ST @ 136'
- 2ND @ 128'
Driller needs to telescope 4" (HW) casing

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
Charles Brown				8	2						10
James Knox				8	2						10
Ronald Reeves				8	2						10
Sammie Reeves				9	2						10

WORK FOR TOMORROW

1. Telescope 4" casing
2. Install inclinometer casing

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 18 DATE July 17, 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam
TEMPORARY ADDRESS Site office Jamaica Vt.
LOCATION WHERE CAN BE REACHED Site office
PHONE (802) 874-4881 TIME _____ TEMPERATURE: MAX. 90° MIN. 68°
WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-2	7+80 / 90' O.S	146'	146'	0	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Sammie Rankin	10
Ronald Reeves	10
Steve Saranchis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	7	
Cat Black Dozer	10	
Ingersoll Rand Compressor	10	
Chevy support truck	10	

Stephen J. Schmidt
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Transported 148' of 4" (HW) casing down to the location of the drill rig.

2. Advanced 4" to 137' by 1400 hrs

3. @ 1400 hrs rig breakdown - problem with electrical system - Down the rest of the day

Visitors: Terry Wong
Eric Matthews
Reggie

MAN-HOUR WORK BREAKDOWN

Electrical problem

Telescoping 4" casing

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.							3			7	10
J.K.							3			7	10
S.R.							3			7	10
R.R.							3			7	10

WORK FOR TOMORROW

1. Fix drill rig
2. Install inclinometer casing.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 19 DATE July 18, 1996 THURSDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Bell Mountain Dam

TEMPORARY ADDRESS Site Office, Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE 802) 874-4581 TIME _____ TEMPERATURE: MAX. 91° MIN. 65°

WEATHER Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-SC-2	Sta. 7+80 190' D.S.	146	146	0	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Seamore Rankin	10
Ronald Reives	10
Steve Saranchs	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Fix electrical system on drill rig until ~12:00
2. Advance 4" (HW) casing to 146.0'
   water @ 136'
3. Installed 150.0' of slope inclinometer casing
4. Pulled 4" (HW) casing out of hole.
5. Backfilled borehole up to 124'
6. Sammie Rankin injured @ 1725hrs - See Seperate incident report

MAN-HOUR WORK BREAKDOWN

Electrical Problem

Advance 4" casing install inclinometer casing

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.							5			5	10
R.R.							5			5	10
S.R.							5			5	10
J.K.							5			5	10

WORK FOR TOMORROW

1. Continue inclinometer installation (backfill)

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

FIELD OBSERVATION REPORT

PROJECT Ball Mountain Dam

CLIENT COE - N.E.D

CONTRACTOR COE - Mobile District

Date July 18th, 1996

Report No. 19

Project No. 96164

Page 1 of 1

Accident Report

1. @ ~1725 his Sammie Rankin of the C.O.E. - Mobile district was injured on the job. Mr. Rankin was injured when he tripped and fell while running to avoid a piece of 4" casing which had come loose from a cable and was "free-falling" on pulley/cable assembly from the crest of the dam.

   Mr. Rankin was bleeding from the nose, ~~and~~ and chest and complained of aches in his hands and knees.

   I took Mr. Rankin to the emergency room of Townsend Hospital.

2. I informed Terry Wong/COE-N.E.D of the accident on Friday July 19, 1996.

3. Mr. Rankin never returned to the job site

Form 4.3.1-18 JUL 88

GEI Consultants, Inc.

By [signature] App'd

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 20 DATE July 19, 1996 FRIDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT BALL MOUNTAIN DAM

TEMPORARY ADDRESS Site OFFICE, Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office.

PHONE (802) 874-4881 TIME _____ TEMPERATURE: ___ MAX. 80° MIN. 65°

WEATHER Overcast afternoon RAIN

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-2	7+80 190' D.S				No Drilling

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
CAT Shovel Dozer	10	
Lyndal Rail Corp.	10	
Cherry Support Truck	10	

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Continued inclinometer installation
   - Backfilled inclinometer 124' to 88'
   - Very Difficult to transport gravel to rig location -
   - Gravel transported in 5-gallon buckets

MAN-HOUR WORK BREAKDOWN

RAIN @ 1530

Inclinometer installat

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.								1.5		8.5	10.0
J.K.								1.5		8.5	10.0
R.R.								1.5		8.5	10.0

WORK FOR TOMORROW

1. Complete Inclinometer installation

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 21 DATE July 20, 1996 SATURDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT BALL MOUNTAIN DAM

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE (802) 874-4881 TIME _____ TEMPERATURE: ___ MAX. 68° MIN. 58°

WEATHER Sunny; very windy

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-2	7+80 190' D.S.				No Drilling

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersoll Rand 750 Comp.	10	
Chevy support truck	10	

Stephen J. Edwards
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Completed installation of inclinometer at this location - designated IC-96-4

@ a) took ~ 5 yd³ to backfill
b) large voids @ 79' (3/4 yd) and 32' (1/2 yd)
c) One 3' piece of ODEX casing @ 102'

2. Begin move to location "F"
STA. 7+80, 300' D.S.

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.			2							8	10
J.K.			2							8	10
R.R.			2							8	10

WORK FOR TOMORROW

1. Complete move to location "F"
STA. 7+80 300' D.S.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 22 DATE July 23, 1996 TUESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE 802-874-4881 TIME _____ TEMPERATURE: MAX. 75° MIN. 65°

WEATHER Overcast, morning showers

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-3	STA. 7+80 75' D.S.	0.0	39.0'	39.0'	Advanced w/ 6" casing and ODex system

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charlie Brown	10
James Knox	10
Ronald Reeves	10
Steve Saranelis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand 750 Comp.	10	
Chevy Support truck	10	

Stephen J. Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Completed move from STA 7+80; 190 D.S. to STA. 7+80; 300'D.S.

2. Started drilling FD-96-3 (loc. F). Advanced boring from 0.0' to 39.0' using the ODEX SYSTEM w/ 6" casing.

3. Sammie Rankin returned to Mobile Alabama

4. S. Sarandis not on-site Yesterday (7-22-96)

MAN-HOUR WORK BREAKDOWN

Driving S. Rankin to Gilbolt

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.			2	3						5	10
J. K.			7	3							10
R. R.			7	3							10

WORK FOR TOMORROW

1. Continue Drilling FD-96-#3

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 23 DATE July 24, 1996 Wednesday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4861 TIME _____ TEMPERATURE: MAX. 78° MIN. 63°

WEATHER Overcast AM, Sunny P.M

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-3	STA. 7+80 300' D.S.	39.0'	105.0'	66.0'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Saranelis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersoll Rand 750 comp.	10	
Chevy Sport truck	10	

Stephen J. Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced boring FD-96-3 from 39.0' to 78.0' using ODEX System ~~to~~ w/ 6" casing. Advanced boring from 78.0' to ~~106.0~~ 105.0' open hole with down hole hammer.

2 Encountered top of rock @ 89.5'
Bottom of hole @ ~~106.0~~ 105.0'

MAN-HOUR WORK BREAKDOWN

* check and clean spark plugs / carburetor

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				6	3		1				10
J.K.				6	3		1				10
R.R.				6	3		1				10

WORK FOR TOMORROW

1. Install Inclinometer Casing

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 24 DATE July 25, 1996 THURSDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4881 TIME _____ TEMPERATURE: MAX. 75° MIN. 60

WEATHER Overcast, Showers

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-3					NO DRILLING

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Serandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat. Shovel Dozer	10	
Ingersoll Rand 250 Compressor	10	
Chevy Support Truck	10	

Stephen J. Smith
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Installed 110' of inclinometer casing in FD-96-3 (IC-96-6)

2. Transported ~ 2 yd^3 of -3/8 stone down to borehole location.

3. Backfilled hole back to 78'

MAN-HOUR WORK BREAKDOWN

Drive to Airport pick up new men

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.									4	6	10
J.K.										10	10
R.D.										10	10

Install Incline

WORK FOR TOMORROW

1. Complete Inclinometer Installation.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 25 DATE July 26, 1996 Friday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE _____ TIME _____ TEMPERATURE: ___ MAX. 75° MIN. 60°

WEATHER Morning rain, Afternoon Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-96-3					No Drilling

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Wesley Harris	10
Steve Saranchis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersoll Rand 750 Comp.	10	
Chevy Support Truck	10	

Stephen A. Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Heavy rain in the A.M.
Work in site office assembling inclinometer casing & core boxes.

2. Complete installation IC-96-6
install guard pipe
check tracking of grooves with "dummy probe".

total gravel backfill ~ 2.5 yd³
encountered one void @ ~ 22'

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.								3	7	7	10
J.K.								3		7	10
R.R.								3		7	10
W.H.								3		7	10

Install Inclinom

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 26

DATE July 31, 1996
WEDNESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4881 TIME _____ TEMPERATURE: ___ MAX. 70° MIN. 60°

WEATHER Overcast, occ showers

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-4	STA. 6+00 75' O.S.	82.0	106.5	24.5'	obtained 4 soil samples

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 514 Drill Rig	10	
Chevy Support truck	10	
Cat Shovel Dozer	10	
Ingersol Rand 750 Comp.	10	

Stephen J. Sarandis
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. 0700 - 0830 Met with Mobile District safety officer discussed ways to make work place safer.
   a. Keep one hand free going up/down slopes
   b. Need safety rail around winchs at top of dozer
   c. At locations further down slope - install rope hand rail
2. Advanced boring from 82.0' to 106.5' using ODEX system w/ 6" casing. Took 4 - soil samples 3" I.D. x 5.0 long spoon - 300# hammer / 24" Drop

3.

Visitors: Brad

MAN-HOUR WORK BREAKDOWN

Safety meeting

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B				8.5						1.5	10
J.K.				8.5						1.5	10
R.R.				8.5						1.5	10
				8.5						1.5	10

WORK FOR TOMORROW

1. Continue Drilling FD-96-4

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 27 DATE Aug. 1, 1996 THURSDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4881 TIME TEMPERATURE: MAX. 75° MIN. 65°

WEATHER Overcast showers, rain after 1700 hrs.

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-96-4	STA. 6+00 75' O.S.	106.5	162.0	55.5	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald. Reeves	10
Wesley Harris	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand 750 compressor	10	
Chevy support Truck	10	
J.D. 850 Bulldozer		

Stephen A. Bernard
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced hole from 106.5' to using the ODEX system with 6" casing.

2. Progress became very slow at 150.0'

3. Bottom piece of ODEX CASING BROKE OFF @ 162.0' (1500 hrs.)

4. Spent remainder of day pulling air rods to switch hammers to the one without the reamer. Difficult to pull rods.

VISITORS: Eric Mathews
Laura Fraiser

MAN-HOUR WORK BREAKDOWN

Pulling air rods to switch hammers.

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
G. B.				8	3					2	10
J. K.				8						2	10
R. R.				8						2	10
W. H.				8						2	10

WORK FOR TOMORROW

1. Continue advancing borehole open hole sample @ 205'

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 28 DATE Aug. 2, 1996 Friday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4881 TIME _____ TEMPERATURE: MAX. 80° MIN. 62°

WEATHER Morning Fog, PM Sun

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
BD-96-4	STA. 6+00 75' DS	162.0	209.2	47.2'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Wesley Harris	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand 750 Comp.	10	
Chevy Support truck	10	
J.D. 850 Bulldozer	10	

Stephen J. Smith
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advance borehole from 162' to 205' open hole with standard air hammer

2. Took ~~split~~ spoon sample 205.0' to 209.2' Recovered 50" embankment material

3. Attempt to continue advancing borehole with Air hammer - hole would not stay open past ~~20~~ 208' - remove air hammer and air rods from hole

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				10							10
J.K.				10							10
R.R.				10							10
W.H.				10							10

WORK FOR TOMORROW

1. Install 210' of 4" casing in hole
2. Continue to advance boring

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 29 DATE Aug. 3, 1996 SATURDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE _____ TIME _____ TEMPERATURE: ____ MAX. _____ MIN. _____

WEATHER _____

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-4	STA. 6+00 75' D.S.	209.2	210	0 8	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	7
James Knox	7
Ronald Reeves	7
Wesley Harris	7
Steve Sarandis	7

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	7	
Cat Shovel dozer	7	
Ingersol Rand 750 Comp.	7	
J.D. 850 Bulldozer	7	
Chevy support truck	7	

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Transport 210' of 4" casing to the rig located on the down stream slope

2. Install 4" casing to depth of 210'

3. Attempt to advance hole past 210' with "N" rods and 3" tricone roller bit - bit jams below casing - takes ~ 2 hours to free up - end of day

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.				7							7
J. K.				7							7
R. R.				7							7
M. H.				7							7

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 30 DATE August 5th, 1996 MONDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4981 TIME _____ TEMPERATURE: ___ MAX. 85° MIN. 62°

WEATHER _____

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-4	STA. 6+00 75' O.S.	210	230	20.0	4" CASING to 220', hole open to 230.0'

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Wesley Harris	10
Steve Saranelis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersoll Rand Comp.	10	
Chevy Support truck	10	
J.D 850 Dullizer	10	

[signature] CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Discovered bottom 10' of 4" casing came unscrewed on Saturday (8/3/90) when bit jammed.
2. Pulled 210' of "N" rods from hole.
3. Pulled ~~210'~~ 200' of 4" casing from hole
4. Retrieved the piece of 4" casing using "N" rods with 4" casing flush plug on the end
5. Advanced 4" Casing ~~back~~ back to 210'
6. Advanced hole to 220' w/ open hole w/ roller bit
7. Advanced 4" casing to 220'
8. Advanced hole to 230' w/ roller bit

MAN-HOUR WORK BREAKDOWN

Time associated with retrieval of 4" casing

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.				2						8	10
J. K.				2						8	10
R. R				2						8	10
W. H				2						8	10

WORK FOR TOMORROW

1. Continue advancing the bore hole

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 31 DATE August 6th 1996 TUESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT BALL MT. DAM

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802, 874-4881 TIME _____ TEMPERATURE: ___ MAX. 92 MIN. 62

WEATHER SUNNY

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-4	STA. 6+00 75 D.S.	220			4" CASING Advanced to

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Wesley Harris	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand Comp. 750	10	
Chevy Support Truck	10	
J.D. 850 Bulldozer	10	

Stephen J. Bunch
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Advanced 4" casing from 210.0' to 230.0'

2. Advanced borehole with 3 7/8" roller bit from 230' to 240'. Hit cobble 230' - 231', otherwise encountered fine to coarse gravel.

3. Roller bit jammed @ 235.0', took ~ 1 1/2 hours to free up.

4. Advanced 4" casing from 230.0' to 240.0'

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				10							10
J.K.				10							10
R.E.				10							10
W.H.				10							10

WORK FOR TOMORROW

1. Continue to advance borehole down to rock

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 32 DATE August 7, 1996 Wednesday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4881 TIME _____ TEMPERATURE: MAX. 90° MIN. 60°

WEATHER Morning fog, then Hazy Sun

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-96-4	STA. 6+00	240.0	263.0	23.0	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Wesley Harris	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat. Shovel Dozer	10	
Ingersol Rand 750 Compressor	10	
John Deere 850 Bulldozer	10	
Chevy Support Truck	10	

Stephen A. Schaub
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Measured depth water in borehole 1st thing in A.M. borehole to 240.0', 4" casing to 240.0' depth to water from top of 6" casing (s.u. = 2') was 192.4'
2. Drill crew spent 1st 1.5 hours replacing cut head rope and frayed section of cable on "Sand line"
3. Advanced borehole from 240.0' to 263.0'; advanced 4" casing from 240.0' to ~ 260'.
4. Borehole advanced through primarily gravel.
5. Possible bedrock at 263.0' - drilling very hard.

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				8.5		1.5					10
J.K.				8.5		1.5					10
R.E.				8.5		1.5					10
W.H.				8.5		1.5					10

WORK FOR TOMORROW

1. Core bedrock - complete the borehole.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 33 DATE August 8th, 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4681 TIME _____ TEMPERATURE: ___ MAX. _____ MIN. 68°

WEATHER Morning fog, then hazy sun –

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-4	STA. 6+00 75' O.S.	263	270.5	7.5'	

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Saranelis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat. Shovel Dozer	10	
Ingersol Rand Compressor	—	10
Chevy Support Truck	10	
John Deere 850 Bulldozer	10	

Stephen N. Sabourin
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Wesly Harris returned to Mobile Alabama (sister is in hospital)
2. Depth to ground water 189.6 from top of 6" casing. (s.u. = 2.0')
3. D.L. Thomas mechanic on site to service compressor. He needed to take fan ~~cab~~ apart and replace the seals on the fan bearings. Compressor ~~with~~ was down for entire day
4. Pulled 250' of "N" rods from borehole; - 3 7/8" roller bit had lost all three rollers
5. Drove 4" casing to ~ 262'
6. Cored from ~ 264' to 270.5' with HQ core barrel - recovered ~ 4' of cobbles & coarse gravel.
7. Hole would not stay open past ~ ~~262~~ 262'

Drove W. Harris to Airport

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				7						3	10
J.K.				10							10
R.E.				10							10

WORK FOR TOMORROW

1. - Either Install Inclinometer casing or Make arrangements to get 3" inclinometer casing to go deeper.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 34

DATE August 9th, 1996
FRIDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT: BALL MOUNTAIN DAM

TEMPORARY ADDRESS: Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED: Site Office

PHONE: 802-874-4681 TIME: TEMPERATURE: MAX. 68 MIN. 78°

WEATHER: Overcast Steady light rain

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-96-4	STA. 6+00 75' D.S				No Drilling today

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charlie Brown	10
James Knox	10
Ronald Reeves	10
Steve Sarandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand 750 Comp.	10	
J.D. 850 Bulldozer	10	
Chevy Support Truck	10	

CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Several communications with COE - Waltham (Eric Mathews) & COE Mobile (Phil Dickey) - Waltham decided to install the inclinometer at the current depth of the borehole.

2. Crew assisted D.L. Thomas Mechanics in repairs to Compressor

3. Crew assembled inclinometer pipe in Maintenance building

4. I did not want to install inclinometer casing - during rain

MAN-HOUR WORK BREAKDOWN

Working on Compressor

Assembling Inclinometer Pipe

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.						2		6		2	10
J.K.								6		4	10
R.E.								6		4	10

WORK FOR TOMORROW

1. Install Inclinometer Pipe

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 35

DATE August 10th, 1996 SATURDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mt. Dam

TEMPORARY ADDRESS Site office Jamaica Vt

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4801 TIME _____ TEMPERATURE: ____ MAX. ____ MIN. ____

WEATHER _____

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-96-4	STA. 6+00 75' D.S.				No Drilling
					Install inclinometer casing

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Serandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Ingersol Rand Comp.	10	
Cat Shovel Dozer	10	
J.D. 850 Bulldozer	10	
Chevy Support truck	10	

Stephen A. Schaub
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Installed 270' of inclinometer casing in FD-96-1 (IC-96-2) (loc. B") cut off 8.2'

2. Started to "bump" back 4" casing with 300 lb. hammer when casing off 30' below ground surface (still inside 6" casing) Drill crew spent 4 hours unthreading broken piece of casing and re-attaching a new piece of casing

3. 4" Casing was very difficult to remove from borehole. At end of day crew removed 4' of 4" casing

MAN-HOUR WORK BREAKDOWN

Retrieving broken piece of casing.

Install inclinometer casing/bump back 4" cas

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.								4		6	10
J.K.								4		6	10
R.R.								4		6	10

WORK FOR TOMORROW

1. Continue inclinometer installation

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 36 DATE August 12th, 1996 Monday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt

LOCATION WHERE CAN BE REACHED Site Office

PHONE 802-874-4881 TIME TEMPERATURE: MAX. 80° MIN. 60°

WEATHER Partly to Mostly cloudy

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-4	STA. 6+00 75' DS				No Drilling
					Install Inclinometer

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Serandis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersoll Rand 750 Compressor	10	
J.D. 850 Bulldozer	10	
Chevy Support Truck	10	

Stephen P. Sands
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Continued to "bump" back 4" casing
   - Needed to use 300 lb. hammer to "bump" casing back to 200' (1630 hrs)
   - above 200' able to pull casing with "SAND LINE"

2. At end of day 4" casing back 180'

MAN-HOUR WORK BREAKDOWN

Inclinometer Installation

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C. B.										10	10
J. K.										10	10
R. R.										10	10

WORK FOR TOMORROW

1. Finnish Inclinometer Installation

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 37

DATE August 13th, 1986 TUESDAY

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site Office

PHONE 802-874-4881 TIME _____ TEMPERATURE: MAX. 80° MIN. 65°

WEATHER Mostly Cloudy A.M., Sunny P.M.

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-56-4	STA. 6+00 75' D.S.				No Drilling
					Install Inclinometer

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Saradis	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Cat Shovel Dozer	10	
Ingersol Rand 750 Compressor	10	
J.D. 850 Bulldozer	10	
Chevy Support Truck	10	

Stephen J. Ford
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Pulled 180' of 4" casing out of borehole

2. Started to bump back 6" casing
   - Casing broke off in the hole
   - Left 120' of 6" casing in hole [30'-150']

3. Completed installation of Inclinometer
   Used ~ 2 yd³ of backfill

Visitors: T. Wong
Reggie

MAN-HOUR WORK BREAKDOWN

Inclinometer Installation

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.										10	10
J.K.										10	10
R.R.										10	10

WORK FOR TOMORROW

1. Move to Location "G" Station 6+00, 300' O.S.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 38 DATE August 16, 1996 Friday

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site Office Jamaica VT.

LOCATION WHERE CAN BE REACHED Site Office

PHONE _____ TIME _____ TEMPERATURE: ___ MAX. 78° MIN. 62°

WEATHER Partly Sunny A.M., Showers P.M.

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FO-56-5	STA. 6+00 300' D.S.	0	21	21	6" CASING w/ DDEX HAMMER

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ronald Reeves	10
Steve Serandis	

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig	10	
Ingersol Rand Compressor	4	6
Cat Shovel Dozer	10	
Chevy Support Truck	10	

Stephen J. Salamis
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

1. Compressor broke down in A.M. - D.L. Thomas Mechanic on-site, Compressor fixed & running @ 1300 hrs

2. Started drilling FD-96-5 (Loc. G) STA. 6+00 - 300' D.S. Advanced hole from 0 to 21' with 6" casing

MAN-HOUR WORK BREAKDOWN

Compressor Breakdown

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL
C.B.				4			6				10
J.K.				4			6				10
R.R.				4			6				10

WORK FOR TOMORROW

1. Continue drilling FD-96-5

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 39 DATE August 17, 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Site office Jamaica Vt.

LOCATION WHERE CAN BE REACHED Site office

PHONE 802-874-4881 TIME _____ TEMPERATURE: ____ MAX. ____ MIN. ____

WEATHER _____

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-46-5	STA. 6+00 300' D.S.	21			

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	
James Knox	
Ronald Reeves	
Steve Serandis	

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS
Failing 314 Drill Rig		
Ingersol Rand Compressor		
Cat Shovel Dozer		
Clay Supplies Truck		

[signature]
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 41 DATE 8/19/96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mtn Dam Inclinometer Installation

TEMPORARY ADDRESS

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 65

WEATHER Sunny, warm

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
96-5	Loc. G	85.5	117'	31.5	gravel filter. foundation

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ron Reeves	10
Erik Matthews (inspector)	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

Drove casing to 92' depth
split spoon sample 92'-97'
split spoon sample 97'-98.5'
drove casing to 117' with ODEX

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 42 DATE 20 Aug 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Rte. 30, Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 65

WEATHER Sunny, clear

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD 96-5	STA 5+00 275' D.S	117'	146'	29'	foundation (gravel & sands)

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ron Reeves	10
Phil Matthews / Inspector	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

Advanced casing to 133.5' w/ODEX
Based on action of drilling foreman
assumed bedrock surface was hit.

Air hammered through rock (possibly boulder)
and hit another gravel layer - drilled
to 146' depth and did not hit rock.

Additional casing will be needed to finish
this job (80+ feet of casing still in hole B)
Foreman will have to obtain casing from
Baltimore.

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

Obtain feet of 6" casing from Baltimore

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 43 DATE 8/22/96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mtn. Dam Inclinometer Installation

TEMPORARY ADDRESS Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 90 MIN. 65

WEATHER Clear, pt. cloudy.

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
96-5	Loc. G. STA 60	133.5	148.5	15.0'	foundation

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jim Knox	10
Ron Reeves	10
Erik Matthews (inspector)	8

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

drilled to 148.5 ft - problems with drill rig - operations ceased for rig maintenance

Additional casing obtained from Baltimore district

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 44 DATE 8/23/46

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Bald Mtn. Dam Inclinometer Installation

TEMPORARY ADDRESS [illegible]

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 60

WEATHER Cloudy, Clear

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
[illegible]	[illegible]	148.5	164	16'	Foundation

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jim Knox	10
Ron Reeves	10
Erik Matthews (inspector)	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

Rig operational - ODEX hammer not functioning properly. ODEX hammer removed, rock hammer used to continue hole without advancing casing. Hole drilled to 164' without hitting bedrock - when bit pulled up, hole collapsed

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

Crew will use a regular down hole hammer to advance casing through foundation material

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 45 DATE 26 Aug 1996

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam

TEMPORARY ADDRESS Rte. 30 Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 65

WEATHER Warm, Sunny, Cloud

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-5	Sta 5+00 275' D.S.	156'	186'	30'	20' of Boulders & Sands 10' Bedrock

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ron Reeves	10
Reggie Pretto	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

ADVANCED CASING 19' TO ASSUMED BEDROCK. AIR HAMMER REVEALED THAT IT WAS NOT BEDROCK. AIR HAMMER WAS ADVANCED UNTIL TRUE BEDROCK WAS HIT @ 176'. AIR HAMMER WAS THEN ADVANCED 10' INTO BEDROCK. END OF HOLE @ 186'

INCLINOMETER WAS INSTALLED AND BEGAN TO BACKFILL WITH GRAVEL AND REMOVE CASING.

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

COMPLETE BACKFILL & REMOVING OF CASING.
CLEAN-UP AREA GET PREPARED TO
MOVE RIG TO NEXT LOCATION.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 46 DATE 27 AUG 96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mtn Dam Inclinometer Installation

TEMPORARY ADDRESS Rte. 30, Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 65

WEATHER Warm, Cloudy

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
James Knox	10
Ron Reynos	10
Roger Pretto	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

BACK FILLING HOLE AND REMOVING CASING.
RISER PIPE INSTALLED.

BEGIN CLEAN-UP FOR MOVE NEXT DAY.

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

CLEAN-UP WORK AREA AND MOVE TO NEXT LOCATION.

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 47 ~~FD-96-6~~ DATE 6 Sept '96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mtn Dam

TEMPORARY ADDRESS Rte. 30, Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 85 MIN. 65

WEATHER Warm, Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-6	Loc. C	0'	21'	21'	Rock Fill

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jim Knox	10
Ron Reeves	10
Reggie Preston	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

Set Up of Drill Rig

Odot through 21' of Rock fill

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

Drill

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 48 DATE 7 Sept '96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mtn Dam

TEMPORARY ADDRESS Rte. 30, Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 65

WEATHER Warm, Sunny

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-86	Lev. C	21	99	78	Rock Fill, Sand & Gravels

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jim Knox	10
Ron Rogers	10
Reggie Proctor	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

ODEX THROUGH ROCK FILL

4 SAMPLES WERE TAKEN @ 5' ea.

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

DRILL

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 49 DATE 9 SEPT 96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mtn Dam

TEMPORARY ADDRESS Rte 30, Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. 80 MIN. 65

WEATHER Warm, Cloudy

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-86	Lox. C	99	136.5	37.5	Rock fill, Sands & Gravels, Boulder

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jim Knox	10
Ron Ronos	10
Reggie Pretto	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

ODEX THROUGH ROCK FILL & SANDS AND GRAVEL,

BORED INTO BEDROCK ~15'

INCLINOMETER WAS SET IN BORE HOLE AND BEGAN TO BACKFILL W/ GRAVEL & PULL CASING

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

PULL CASING AND BACK FILL W/ GRAVEL

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 50 DATE 9/12/96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam, VT

TEMPORARY ADDRESS Rte 30, Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. MIN.

WEATHER

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-7	Loc E	0	75	75	Rock Fill

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	10
Jim Knox	10
Ron Reeves	10
Reggie Frotto	10

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

DRILL INTO ROCK FILL 75'

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

NEW ENGLAND DIVISION
CORPS OF ENGINEERS, U.S. ARMY
WALTHAM, MASSACHUSETTS

FOUNDATIONS & MATERIALS BRANCH

LOG NO. 51 DATE 9/14/96

DAILY LOG OF FIELD EXPLORATIONS

PROJECT Ball Mountain Dam, VT

TEMPORARY ADDRESS Rte. 30 Jamaica, VT

LOCATION WHERE CAN BE REACHED

PHONE TIME TEMPERATURE: MAX. MIN.

WEATHER

DRILLING TODAY

HOLE	AREA	FOOTAGE FROM	FOOTAGE TO	FOOTAGE TODAY	MATERIAL
FD-96-7	Loc E	75	114	39	Rock Fill, Sands & Gravels, Weathered Rock

TEST PITS OR AUGER BORINGS TODAY

HOLE	AREA	DEPTH	MATERIAL

HOLE	AREA	DEPTH	MATERIAL

PERSONNEL

NAME	HOURS
Charles Brown	W
Jim Knox	10
Ron Reeves	10
Robbie Protto	W

PLANT USED

ITEM	HOURS	BREAKDOWN HOURS

Charles Brown
CHIEF OF FIELD PARTY

NED FORM DEC 63 198 REPLACES EDITION OF MAY 62 WHICH MAY BE USED UNTIL EXHAUSTED

(OVER)

NARRATIVE OF DAYS OPERATIONS

Odex 39' in D/S slope.

1 Sample Taken

MAN-HOUR WORK BREAKDOWN

NAME	MOB.	DEMOB.	MOVING	DRILL OVB.	DRILL BEDROCK	PREV. MAINT.	EQUIP. FAILURE	LOST TIME (WEATHER)	INSP. & SUPER.	MISC.	TOTAL

WORK FOR TOMORROW

FIELD PURCHASES

ITEM	AMOUNT

ITEM	AMOUNT

APPENDIX D

Weekly Safety Meeting Reports

WEEKLY SAFETY MEETING

Job site Ball Mt. Dam
Date held June 17, 1996 Monday
Time 11:30am - 12:00
Report No. 1

NEDSO

THRU: Geotechnical Engineering Branch

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) THREE

CHARLES BROWN
SAMUEL RANKIN
JAMES KNOX

Subjects discussed (Note, delete, or add):

Individual Protective Equipment - Safety Glasses Boots

Prevention of Falls - use safety rope

Safe Lifting Techniques -

Emergency Communications - LISTED EMERGENCY NUMBER AND DIRECTIONS to HOSPITAL NEXT PHONE IN OFFICE.

Fire Prevention -

Sanitation, First Aid -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment -

Ropes, Hooks, Chains and Slings -

~~Electrical Grounding, Temporary Wiring~~ -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding -

~~Excavations~~ - Not applicable

Loose Rock and Steep Slopes - DANGEROUS SITUATION! BE AWARE

~~Explosives~~ - Not applicable

~~Water Safety~~ - NOT Applicable

Other -

Prepared by Stephen Serandis Title FIELD ENGINE

2. Forwarded.

Signature Stephen J. Serandis

* EXPOSURE HOURS:

3 men x 2 days x 10 hours/day

Work Date: 6/14 — 6/15/96 60 M-Hours (Mobile)

Non-Work Date: 6/16/96 ____ M-Hours (Contractor)

* STARTING SINCE MY ARRIVAL 6/14/96

FIG. No. 11

D FL 251

WEEKLY SAFETY MEETING

Job site Ball Mt. Dam
Date held June 24, 1996 Monday
Time 12:00 pm
Report No. 2

NEDSO

THRU: Geotechnical Engineering Branch

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) Four

New person Tom Cooper arrived today
James Knox
Charles Brown
Sammie Rankin

Subjects discussed (Note, delete, or add):

Individual Protective Equipment -

Prevention of Falls - ✓ keep one hand free

Safe Lifting Techniques -

Emergency Communications -

Fire Prevention -

Sanitation, First Aid -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment -

Ropes, Hooks, Chains and Slings -

~~Electrical Grounding, Temporary Wiring~~ -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding -

~~Excavations~~ -

Loose Rock and Steep Slopes - ✓ keep one hand free while climbing slopes

~~Explosives~~ -

~~Water Safety~~ -

Other -

Prepared by Stephen Sarcedis Title Field Engineer

2. Forwarded.

Signature Stephen A. Sarcedis

EXPOSURE HOURS:

Work Date: 6/17/ → 6/24/96 3 men × 10 hr/day × 6 days 180 M-Hours (Mobile)

Non-Work Date: _____ ____ M-Hours (Contractor)

FIG. No. 11

NED FL 251

WEEKLY SAFETY MEETING

NEDSO

THRU: Geotechnical Engineering Branch

TO: Safety Office, NED

Job site BALL MT. DAM
Date held July 15, 1996
Time Monday 12:00
Report No. 3

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) 3

C. Brown
J. Knox
R. Reeves

Subjects discussed (Note, delete, or add):

✓ Individual Protective Equipment - Safety Glasses
✓ Prevention of Falls -
✓ Safe Lifting Techniques -
✓ Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber -
Staging, Ladders, Concrete Forms -
Hand Tools, Portable Power Tools, Woodworking Machinery -
Equipment Maintenance (Zero defects) -
Hoisting Equipment -
Ropes, Hooks, Chains and Slings -
~~Electrical Grounding, Temporary Wiring~~ -
Lockouts for safe clearance procedures - electrical, pressure, moving parts -
Welding -
~~Excavations~~ -
✓ Loose Rock and Steep Slopes -
~~Explosives~~ -
~~Water Safety~~ -
Other -

Prepared by Stephen Saravelis (not present) Title Field Engineer

2. Forwarded.

Signature [signature]

EXPOSURE HOURS:

Work Date: See below
Non-Work Date: _____

270 M-Hours (Mobile)
____ M-Hours (Contractor)

6/24 - 6/27/96 4 men x 10 Hr/Day x 4 days = 120 Hr
4th of July Break

7/9/96 → 7/13/96 3 men x 10 Hr/Day x 5 days = 150 Hr

FIG. No. 11

FL 251

WEEKLY SAFETY MEETING

Job site BALL MT. DAM
Date held July 22, 1996 MONDAY
Time 12:00 PM
Report No. 4

NEDSO

THRU: Geotechnical Engineering Branch

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) 3

C. Brown
S. Knox
R. Reeves

Subjects discussed (Note, delete, or add):

Individual Protective Equipment -

Prevention of Falls - ✓

Safe Lifting Techniques -

Emergency Communications -

Fire Prevention -

Sanitation, First Aid -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment - ← Discussed cause of accident to S. Rankin. No rope should be used to secure equipment to cable system from rig to crest of dam.

Ropes, Hooks, Chains and Slings -

~~Electrical Grounding, Temporary Wiring~~ -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding -

~~Excavations~~ -

Loose Rock and Steep Slopes - ✓

~~Explosives~~ -

~~Water Safety~~ -

Other -

Prepared by Steve Serandis (not present) Title Field Engineer

2. Forwarded.

Signature [signature]

EXPOSURE HOURS:

Work Date: 7/15 - 7/20/96 3 men x 10 hr/day 6 days; 1 man x 10 hr/day 2 days 200 M-Hours (Mobile)

Non-Work Date: _____ ____ M-Hours (Contractor)

FIG. No. 11

NED APD FL 251

WEEKLY SAFETY MEETING

Job site Ball Mt. Dam
Date held July 29, 1996

NEDSO

THRU: Geotechnical Engineering Branch

Time 12:00
Report No. 5

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) 4

Subjects discussed (Note, delete, or add):

Individual Protective Equipment ✓ -
Prevention of Falls ✓ -
Safe Lifting Techniques -
Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber -
Staging, Ladders, Concrete Forms -
Hand Tools, Portable Power Tools, Woodworking Machinery -
Equipment Maintenance (Zero defects) -
Hoisting Equipment -
Ropes, Hooks, Chains and Slings -
Electrical Grounding, Temporary Wiring -
Lockouts for safe clearance procedures - electrical, pressure, moving parts -
Welding -
Excavations -
Loose Rock and Steep Slopes ✓ -
Explosives -
Water Safety -
Other -

Wesley Harris on site 7/26/96
Ronald Reeves
James Knox

Prepared by Stephen Serandis (not present) Title Field Engineer

2. Forwarded.

Signature Stephen J. Serandis

EXPOSURE HOURS:
Work Date: 7/22 - 7/27/96 3 men x 10 hr, 6 days / 1 man x 10 hr/day x 2 days
Non-Work Date: _____

200 M-Hours (Mobile)
____ M-Hours (Contractor)

FIG. No. 11

0 FL 251

WEEKLY SAFETY MEETING

Job site Ball Mt. Dam
Date held 8/5/96

NEDSO

THRU: Geotechnical Engineering Branch

Time 12:00

TO: Safety Office, NED

Report No. 6

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) 4

Subjects discussed (Note, delete, or add):

C. Brown
J. Knox
R. Reeves
W. Harris

Individual Protective Equipment -

Prevention of Falls - Built safety rail around top of bulldozer where air winches are mounted.

Safe Lifting Techniques -

Emergency Communications - ~~vz~~ use two way radio's when "tagging" ~~when~~ equipment on cable system from the crest of dam to the rig.

Fire Prevention -

Sanitation, First Aid -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms - Purchase ladder to get top of bulldozer where air winches are mounted.

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Maintenance (Zero defects) -

Hoisting Equipment -

Ropes, Hooks, Chains and Slings -

~~Electrical Grounding, Temporary Wiring~~ -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding -

~~Excavations~~ -

Loose Rock and Steep Slopes -

~~Explosives~~ -

~~Water Safety~~ -

Other -

Prepared by Stephen Serendis Title Field Engineer

2. Forwarded.

Signature [signature]

EXPOSURE HOURS:

Work Date: 7/29 - 8/3/96 4 men 10 hr/day 6 days 240 M-Hours (Mobile)

Non-Work Date: _____ ____ M-Hours (Contractor)

FIG. No. 11

NED FL APR 71 251

WEEKLY SAFETY MEETING

Job site BALL MT. DAM
Date held Aug. 11, 1996

NEDSO

THRU: Geotechnical Engineering Branch

Time 12:00

TO: Safety Office, NED

Report No. 7

1. Weekly safety meeting was held this date for the following personnel:

2544 No. _____ Contractor Mobile District - Explorations Unit

Conducted By C. Brown Personnel present (Contr) _____
(Sub) _____
(Govt) 3
C. Brown
J. Knox
R. Reeves

M. Harris left site on 8/7/96

Subjects discussed (Note, delete, or add):

Individual Protective Equipment -
Prevention of Falls -
Safe Lifting Techniques -
Emergency Communications -
Fire Prevention -
Sanitation, First Aid -
Tripping Hazards - trash, hose, nails in lumber -
Staging, Ladders, Concrete Forms -
Hand Tools, Portable Power Tools, Woodworking Machinery -
Equipment Maintenance (Zero defects) -
Hoisting Equipment -
Ropes, Hooks, Chains and Slings -
~~Electrical Grounding, Temporary Wiring~~ -
Lockouts for safe clearance procedures - electrical, pressure, moving parts -
~~Welding~~ -
~~Excavations~~ -
Loose Rock and Steep Slopes -
~~Explosives~~ -
~~Water Safety~~ -
Other -

Prepared by Steve Scrandis Title Field Engineer

2. Forwarded.

Signature Stephen J. Scrandis

EXPOSURE HOURS:
Work Date: 11 men x 3 days x 10 hr/day
Non-Work Date: 3 men x 2 days x 10 hr/day

210 ~~210~~ M-Hours (Mobile)
____ M-Hours (Contractor)

FIG. No. 11

ED APD FL 7, 251