Trow Thunder Bay Branch

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February 1, 1995

Homestake Canada Ltd.
1000 – 700 West Pender Street
Vancouver, B.C.
V6C 1G8

Attention: Mr. Bill Napier, Manager Environmental Affairs

RE: Cullaton Lake Gold Mine
Our Reference No. F–90132–B/E

Dear Mr. Napier,

1.0 INTRODUCTION

The undersigned visited the Cullaton Lake Gold Mine during the period of June 25 to June 28, 1994 to examine the Tailings Containment Area and to conduct a topographic survey of this area.

2.0 SURVEY

A topographic survey was conducted to accurately establish the water elevations in the Tailings Pond and Polishing Pond, the size of the tailings pond, the depth of cover material, typical cross sections of the dams, locations of the thermistors and monitoring wells and locations of the mill buildings and shops. The elevations of these features are referenced to a temporary bench mark established on a concrete slab at the northeast corner of the mill building and given an assumed elevation of 100.00 m. Details are shown on Drawing No. 1. Typical sections of the tailings dams are shown on Drawing No.s 2 and 3.

3.0 THERMISTORS

Readings of the previously installed thermistors were recorded by Mr. Rodney McKay of McKay Environmental Industries Ltd. The results are given in the following table and are shown graphically on Drawings, No.s 4 through 7 along with readings from previous years.

Thermistor No.	Readings (June 27, 1994) 0	1	2	3	4	5
1	7.67 15.51	9.37 11.26	12.68 5.03	16.51 -0.21	18.17 -2.07	19.40 (kilohms) -3.33 (°C)
2	7.71 15.40	7.76 15.26	10.31 9.27	14.49 2.35	17.31 -1.13	19.04 (kilohms) -2.97 (°C)
3	7.71 15.40	8.52 13.27	11.67 6.72	16.47 -0.16	18.05 -1.94	19.20 (kilohms) -3.13 (°C)
4	7.74 15.32	8.37 13.65	11.53 6.97	16.24 0.10	17.87 -1.74	19.40 (kilohms) -3.33 (°C)

The comparative results from the four thermistor installations indicate that there is an upward trend in the level of permafrost. The average depth of frost was approximately 400 mm below the tailings ground surface during the time of this study. This compares to a frost level of a 800 mm below the ground surface during a similar time period in 1992 (July 6, 1992). It should be noted, however, that the greatest depth of thaw occurs at the end of the summer season which will lower the level of frost to the greatest seasonal depth. To obtain the level of maximum thaw, thermistor readings should be taken sometime in the month of September. A more accurate level of permafrost can then be recorded. At the current rate of

rise in frost levels, it is expected that the covered tailings area will be in a permanently frozen state (permafrost) in 2 to 3 more years.

4.0 TAILINGS AREAS

A visual examination was conducted on the dams for Tailing Area No.s 1 and 2. The average water elevations measured on Dam No.s 1 and 2 are approximately 94.0 m and 89.4 m, respectively. There was no evidence of any seepage on the downstream side of each of the dams.

A visual examination of Tailings Dam No. 1 indicates that the dam is stable under current conditions. A stability analysis was carried out on this dam in Trow's, "Abandonment and Restoration Plan", dated May 7, 1991 prior to closure. The dams have since been lowered and the face flattened which increases the stability (see Trow report of July 19, 1993). The current water elevation of 94.0 m is controlled by the spillway constructed on the east side of the dam.

The spillways at each of the two dams appear to be in good condition. However, some levelling of some small rock piles immediately adjacent to the spillway in Dam No. 2 would provide a better appearance and provide better control of surface runoff. A slight trickle of water was noted through the rock fill in the spillway on Dam No. 1. *Photographs, No.s 1 and 2 show the conditions of the two spillways.*

Attempts were made to determine the profile of the bottom of Tailings Pond No. 1 by depth soundings using a canoe. Unfortunately, strong wind conditions during this field study proved to be too dangerous to take soundings with a canoe. Topographic information from a 1990 survey by H I W Surveys Ltd. was used in combination with our survey to provide a profile of Tailings Pond No. 1. Based on

this combined survey information, there is a maximum water depth of approximately 3.0 m (10 ft.) in Tailings Pond No. 1.

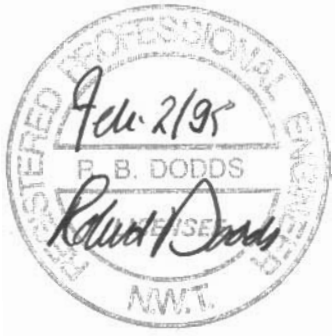
There was no evidence of any exposed tailings in Tailings Area No. 1. Field measurements from a September 1990 site visit indicate that the maximum depth of seasonal thawing (active zone) is estimated to be 1.4 m. Measurements from a subsequent field visit of August 11, 1992 show that the cover material over the tailings is approximately 1.2 m thick. Photographs, No.s 3 and 4 show the covered tailings area.

A small section of the dam in the northwest corner of Tailings Dam No. 2 is not well defined. It is assumed that this section was disturbed when material was being used to cover the exposed tailings in Tailings Area No. 1. A stockpile of waste rock immediately adjacent to this area could be used to shape the dam to the conditions similar to the rest of the dam. Mr. Rodney McKay stated that this would be done during this site visit.

Based on our examination, the structures associated with the former tailings disposal system are stable. A visual inspection of Tailings Dam No. 1 shows that the dam is stable under current conditions. There is no evidence of seepage from the dams in Tailings Pond No. 1. The water level in Tailings Pond No. 1 is remaining stable at the level of the invert of the spillway (El 94.1 m). The permafrost level is rising in the covered tailings as predicated.

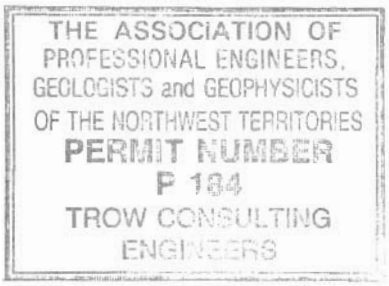
If there are any questions or comments regarding this information, please contact us at your convenience.

Yours truly,
TROW CONSULTING ENGINEERS LTD.



Donald E. Kaluza, P. Eng.

Robert B. Dodds, Ph.D., P.Eng.
Thunder Bay Branch Manager



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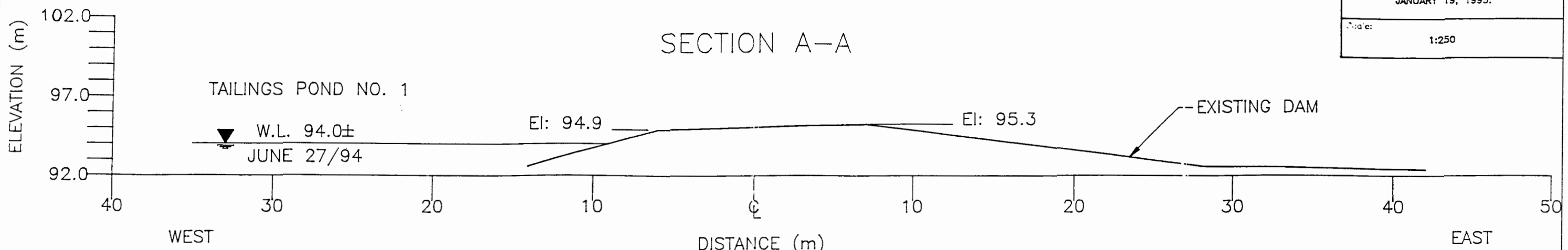
DRAWINGS

TROW CONSULTING ENGINEERS LTD.
Thunder Bay, Ontario, Canada

Client:	HOMESTAKE CANADA
Project:	CULLATON LAKE MINE CLOSURE
Title:	CROSS SECTIONS TAILINGS DAM NO. 1
Project No.	F-90132-A/E
Dwg. No.:	2
Drawn By:	D.T.
Reviewed By:	D.K.
Date:	JANUARY 19, 1995.
Scale:	1:250

SECTION A–A



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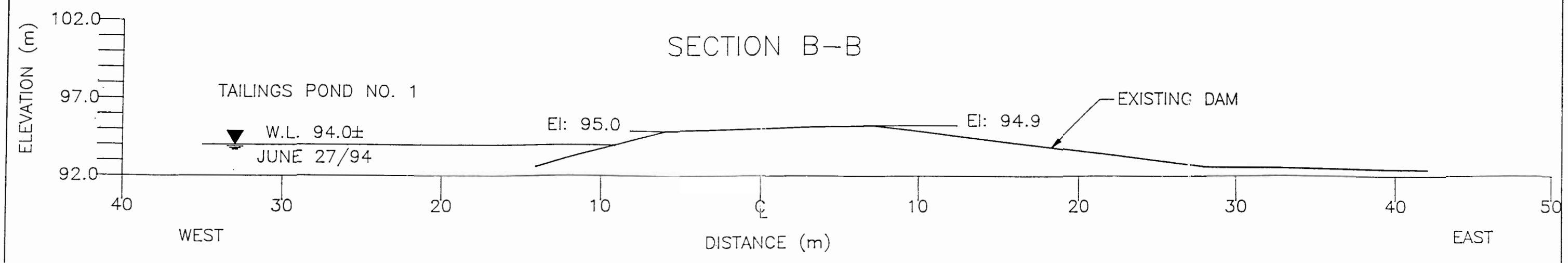
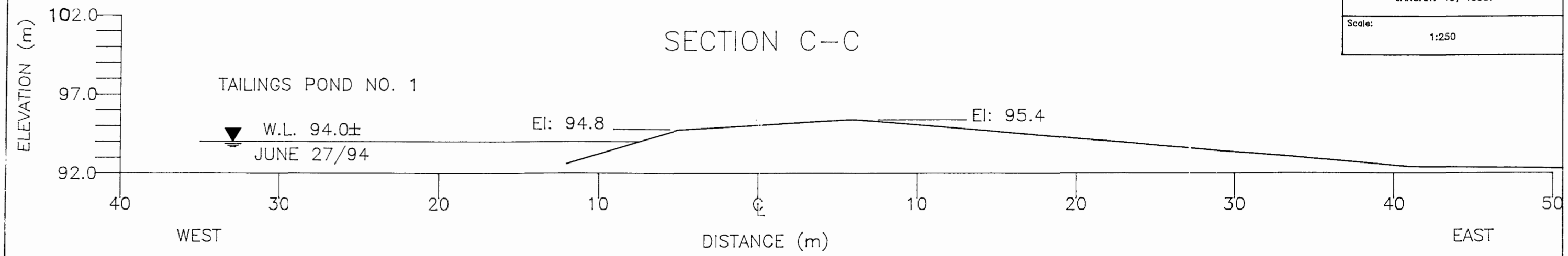
VERTICAL SCALE: 1:250

SECTION B–B



TROW CONSULTING ENGINEERS LTD. Thunder Bay, Ontario, Canada	
Client: HOMESTAKE CANADA	
Project: CULLATON LAKE MINE CLOSURE	
Title: CROSS SECTIONS TAILINGS DAM NO. 1	
Project No. F-90132-A/E	Dwg. No.: 3
Drawn By: D.T.	Reviewed By: D.K.
Date: JANUARY 19, 1995.	
Scale: 1:250	

SECTION C-C



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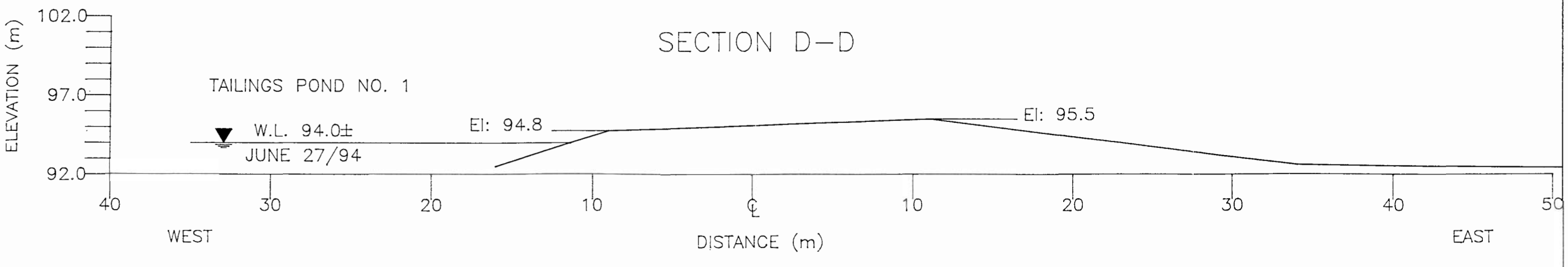
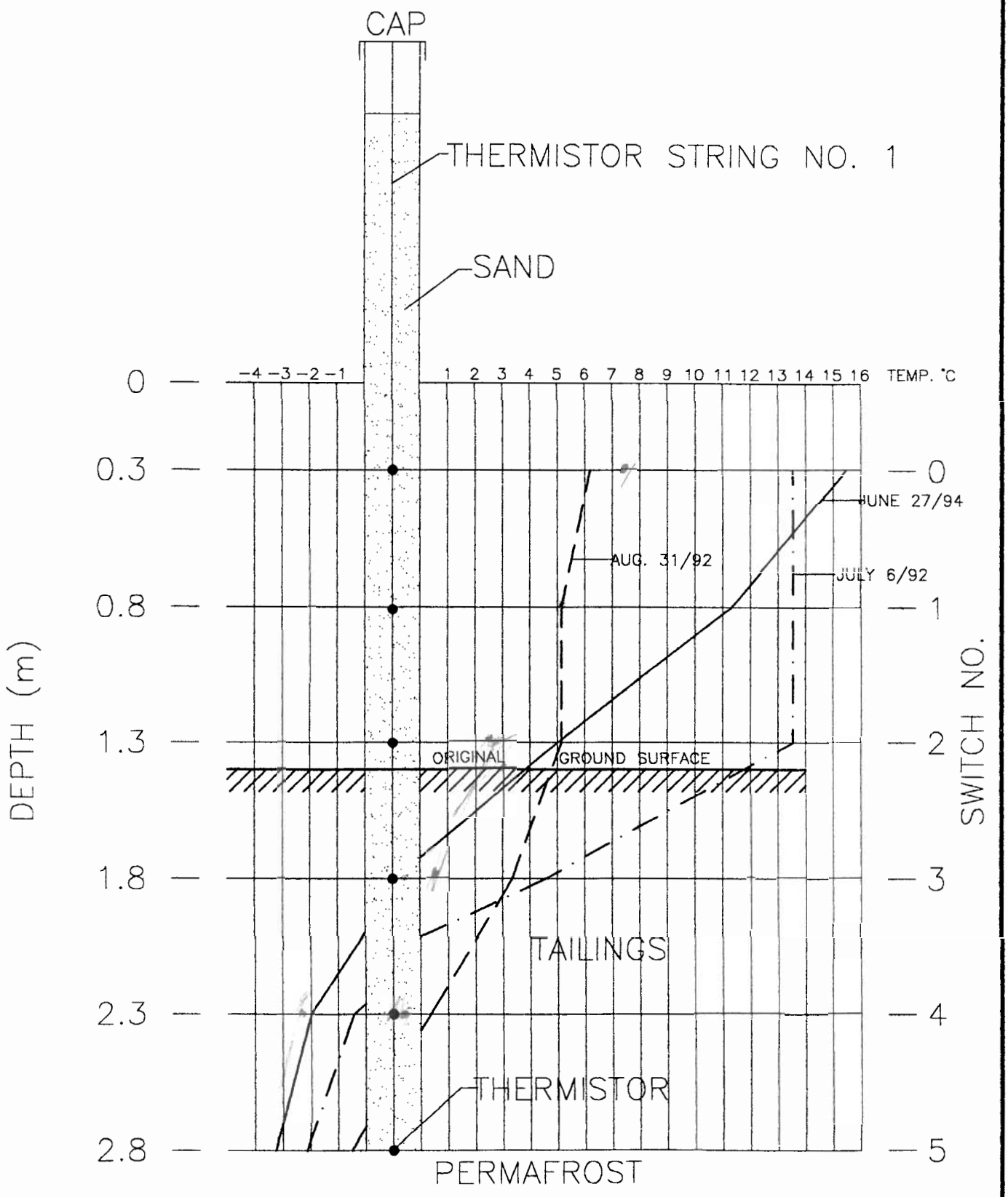
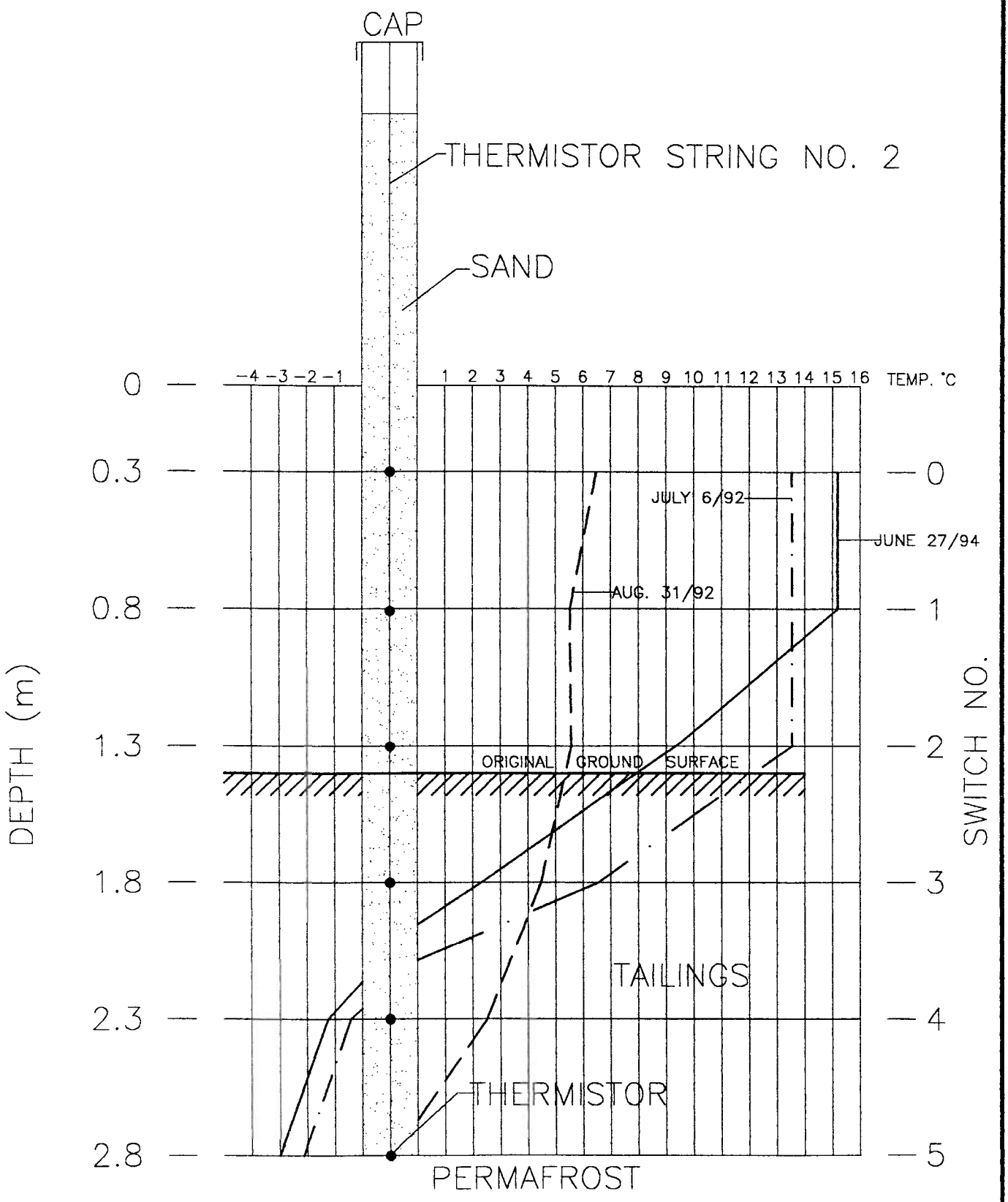
SECTION D-D





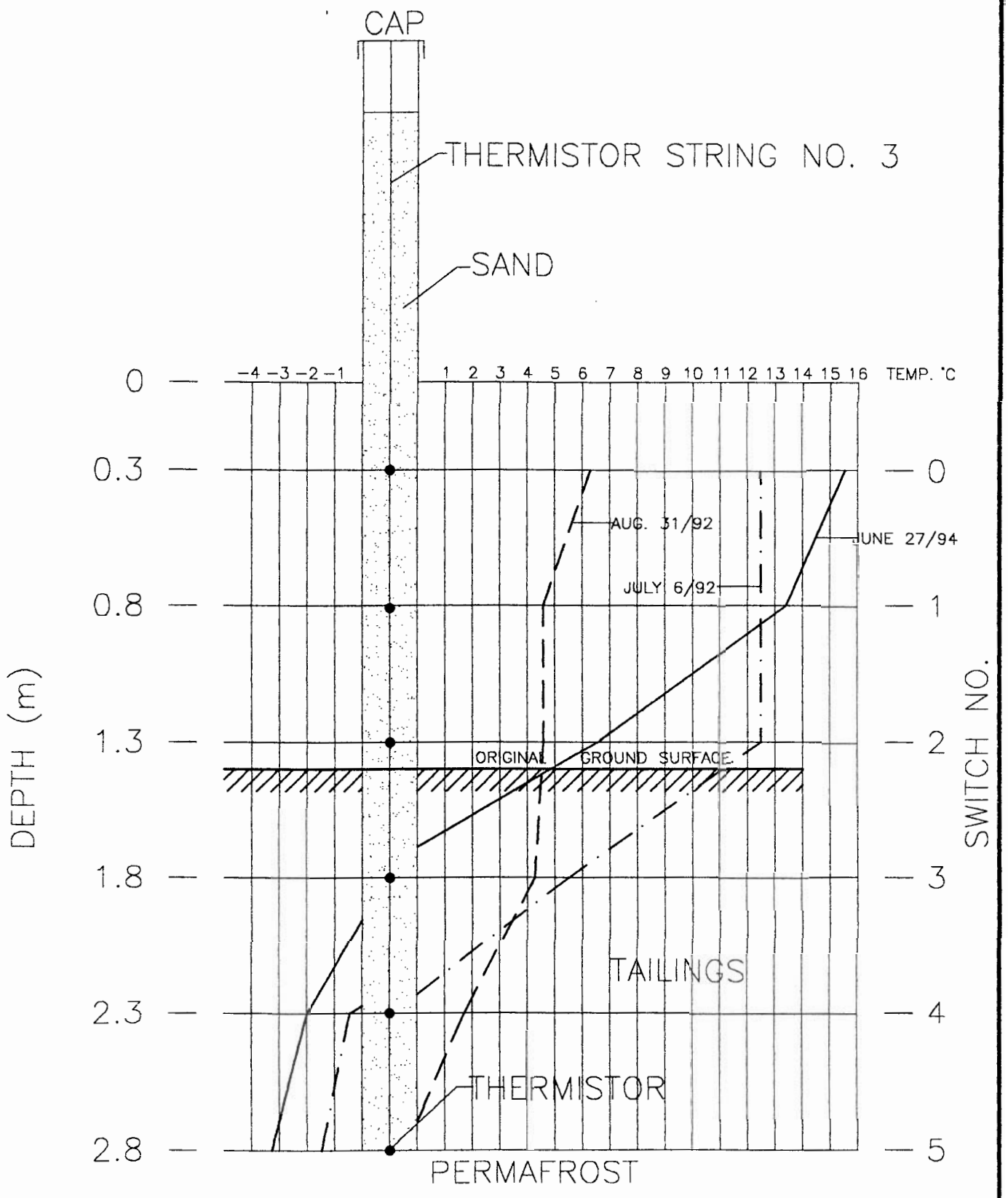
THERMISTOR STRING CONFIGURATION

INSTALLED AUGUST 23, 1991



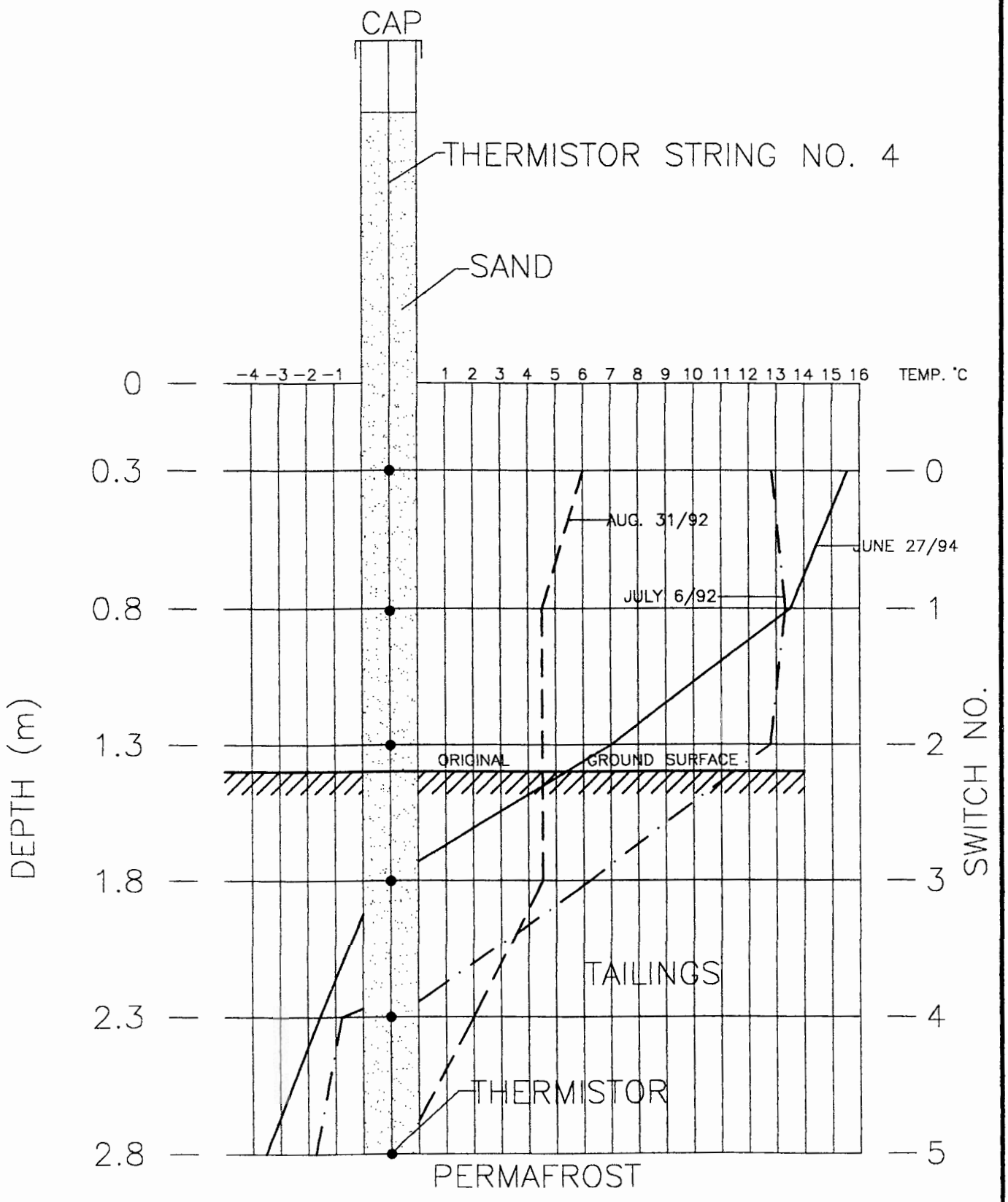
THERMISTOR STRING CONFIGURATION

INSTALLED AUGUST 23, 1991



THERMISTOR STRING CONFIGURATION

INSTALLED AUGUST 23, 1991



THERMISTOR STRING CONFIGURATION

INSTALLED AUGUST 23, 1991

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PHOTOGRAPHS

Photograph No. 1
Spillway at Tailings Dam No. 1

Photograph No. 2
Spillway at Tailings Dam No. 2

Photograph No. 3
Covered Tailings at Tailings Pond No. 1
View Looking South

Photograph No. 4
Covered Tailings at Tailings Pond No. 1
View Looking North