



RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

Geotechnical Consultants

1400 140th Avenue N.E.

Bellevue, Washington 98005

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T 27 N
R 9 E

27-9E.6

21 April 1987

W-5092

HDR Infrastructure, Inc.
1100 - East Lake Avenue, East
Seattle, Washington 98109-4408

Attention: Mr. Kenneth L. Anderson
Vice-President

Subject: Subsurface Exploration and Geotechnical Engineering Report
Proposed Replacement of Whiteman Bridge No. 108
Snohomish County, Washington

Gentlemen:

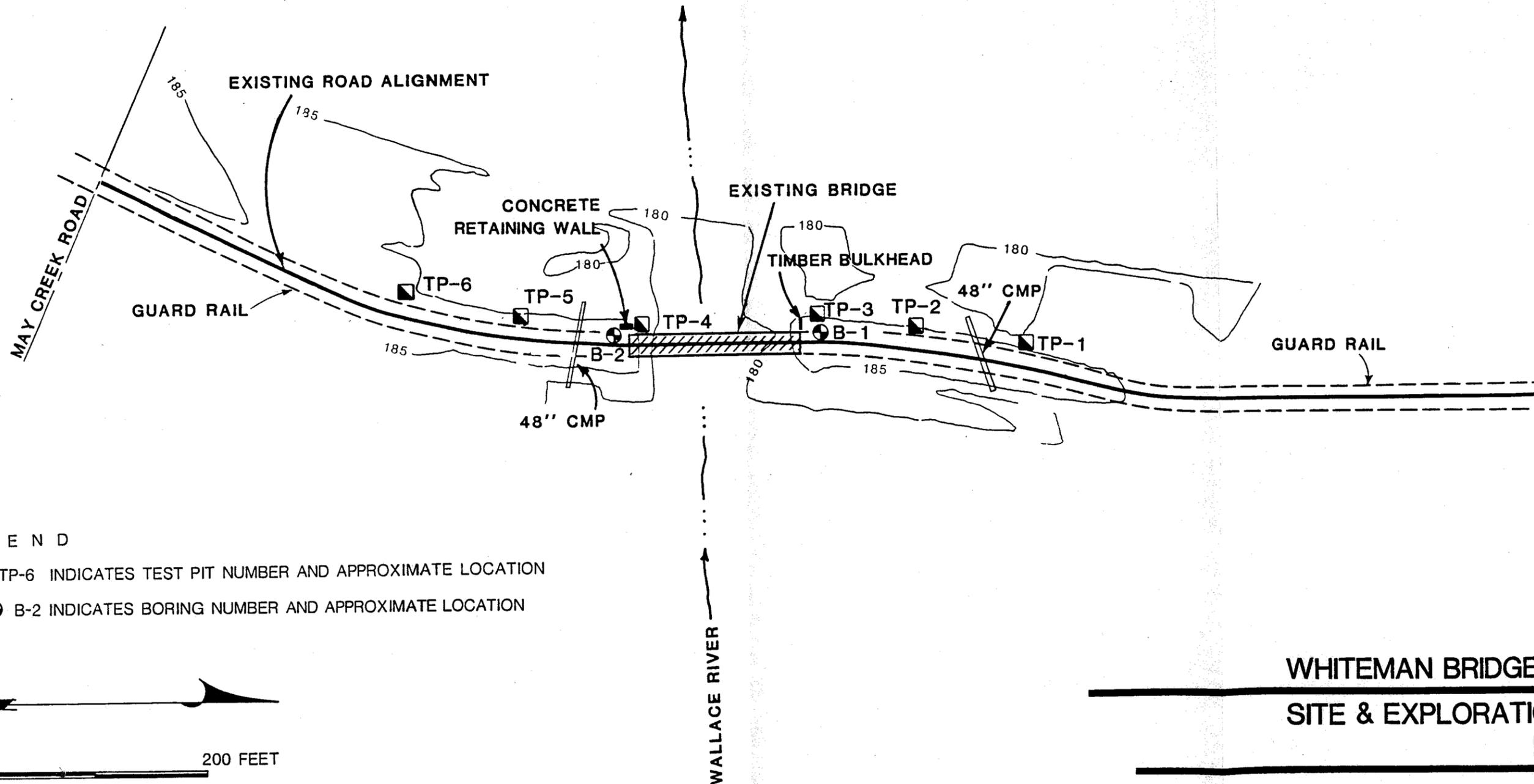
We are pleased to present herein a copy of the above referenced report. This report presents the result of our subsurface exploration and final geotechnical engineering study relative to the foundation and construction consideration for the proposed project. Notice to proceed with this study was granted on 23 February 1987, in accordance with our sub-consultant agreement executed on 21 January 1987.

We appreciate this opportunity to be of service to you and would be pleased to discuss the contents of this report or other aspects of the project with you at your convenience.

Respectfully submitted,

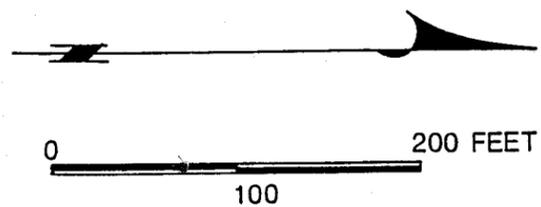
RITTENHOUSE-ZEMAN & ASSOCIATES, INC.

Kurt W. Groesch, P.E.
Associate



LEGEND

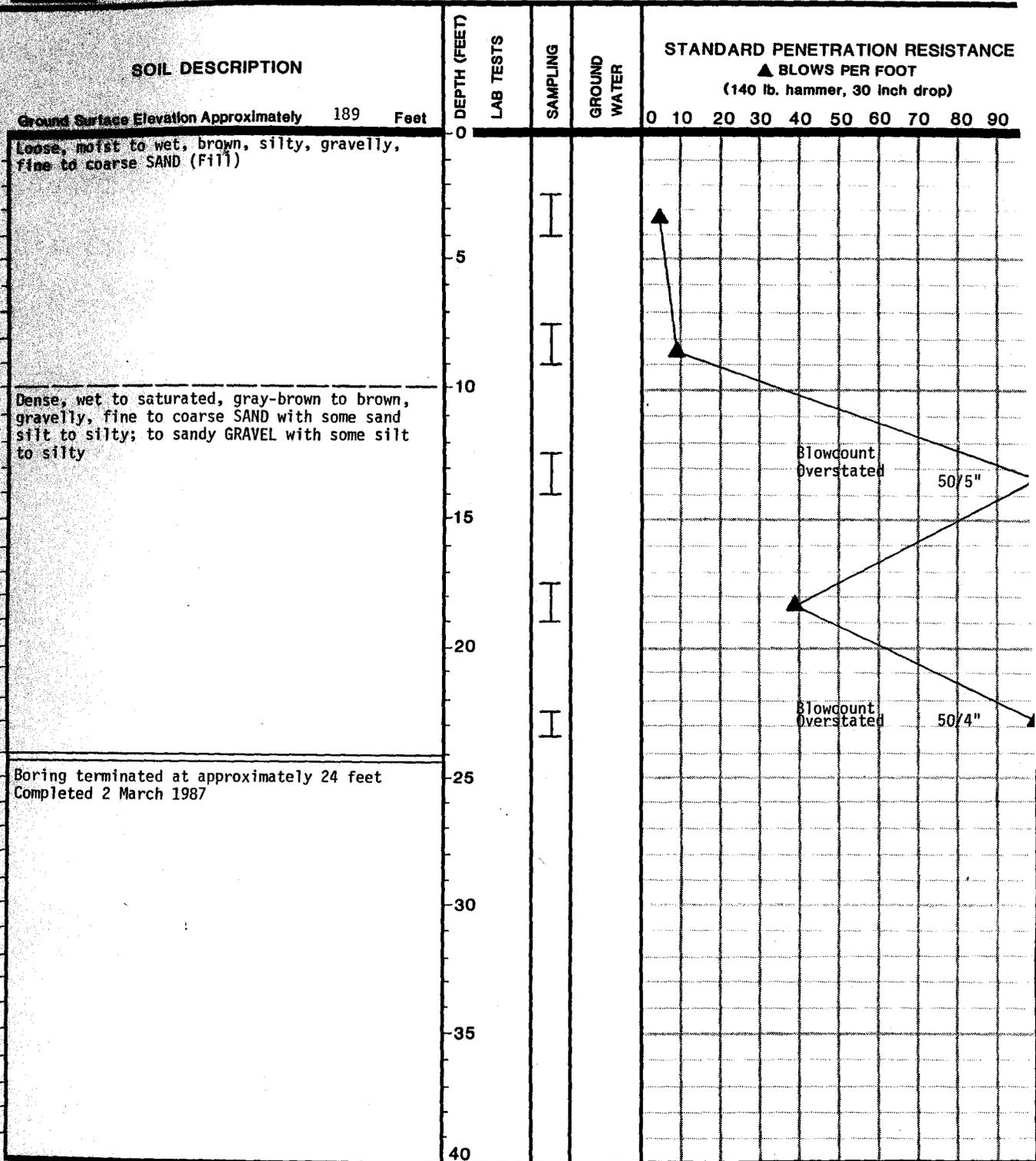
- ▣ TP-6 INDICATES TEST PIT NUMBER AND APPROXIMATE LOCATION
- ⊕ B-2 INDICATES BORING NUMBER AND APPROXIMATE LOCATION



**WHITEMAN BRIDGE No. 10
SITE & EXPLORATION PLAN
FIGURE**

W.O.	W-5092	RITTENHOUSE-ZEMAN & ASSOCIATES, INC.
By	RRL	
Date	MARCH 1987	Geotechnical Consultants
Scale	NOTED	1400 140th Avenue N.E. Bellevue, Washington 98005

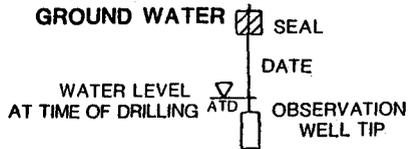




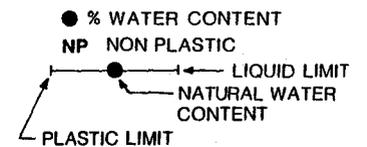
SAMPLING

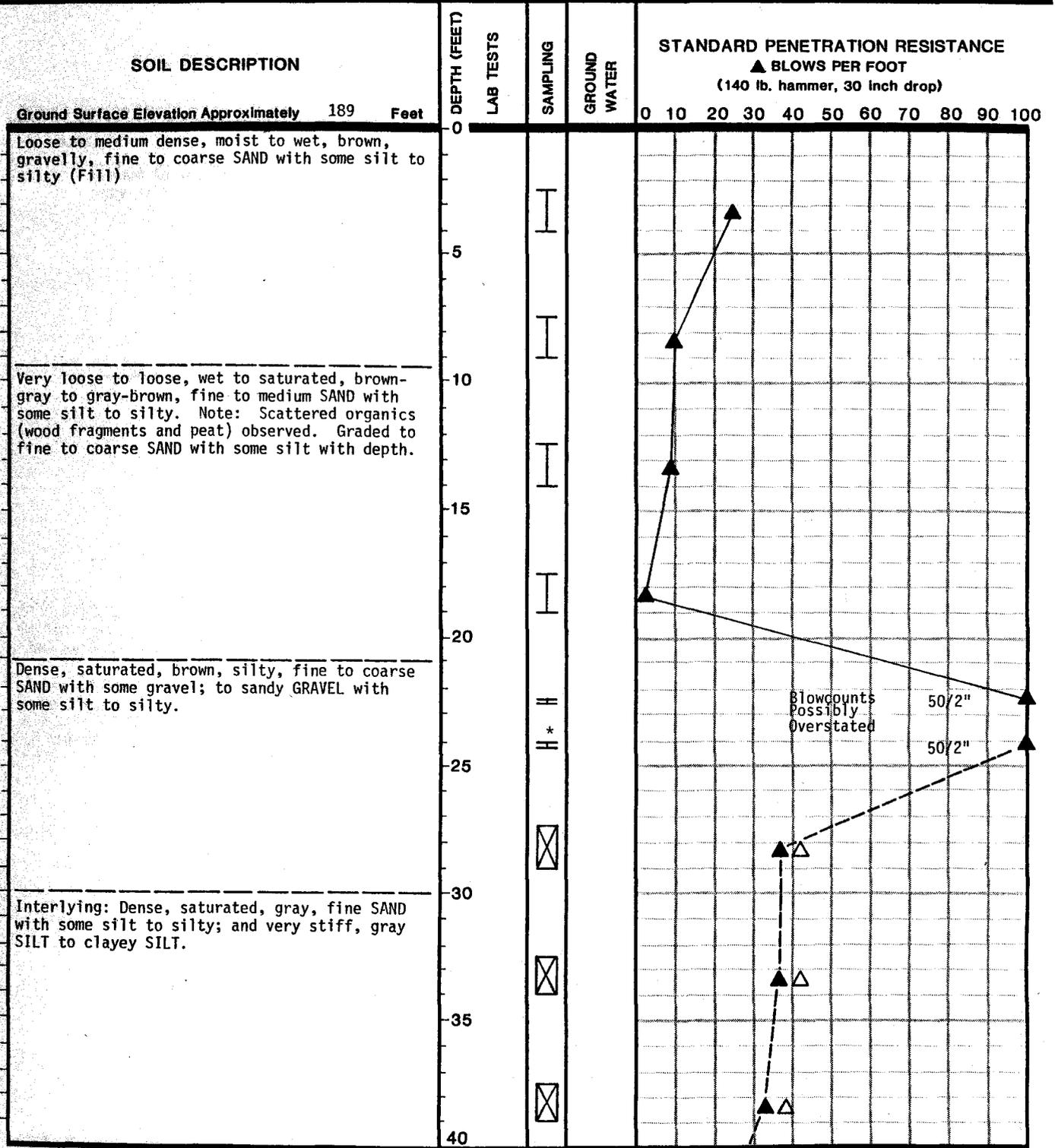
- I 2' OD SPLIT SPOON SAMPLE
- II 3' OD SHELBY SAMPLE
- ☒ 2.5" ID RING SAMPLE
- B BULK SAMPLE
- * SAMPLE NOT RECOVERED

GROUND WATER



LABORATORY TESTS

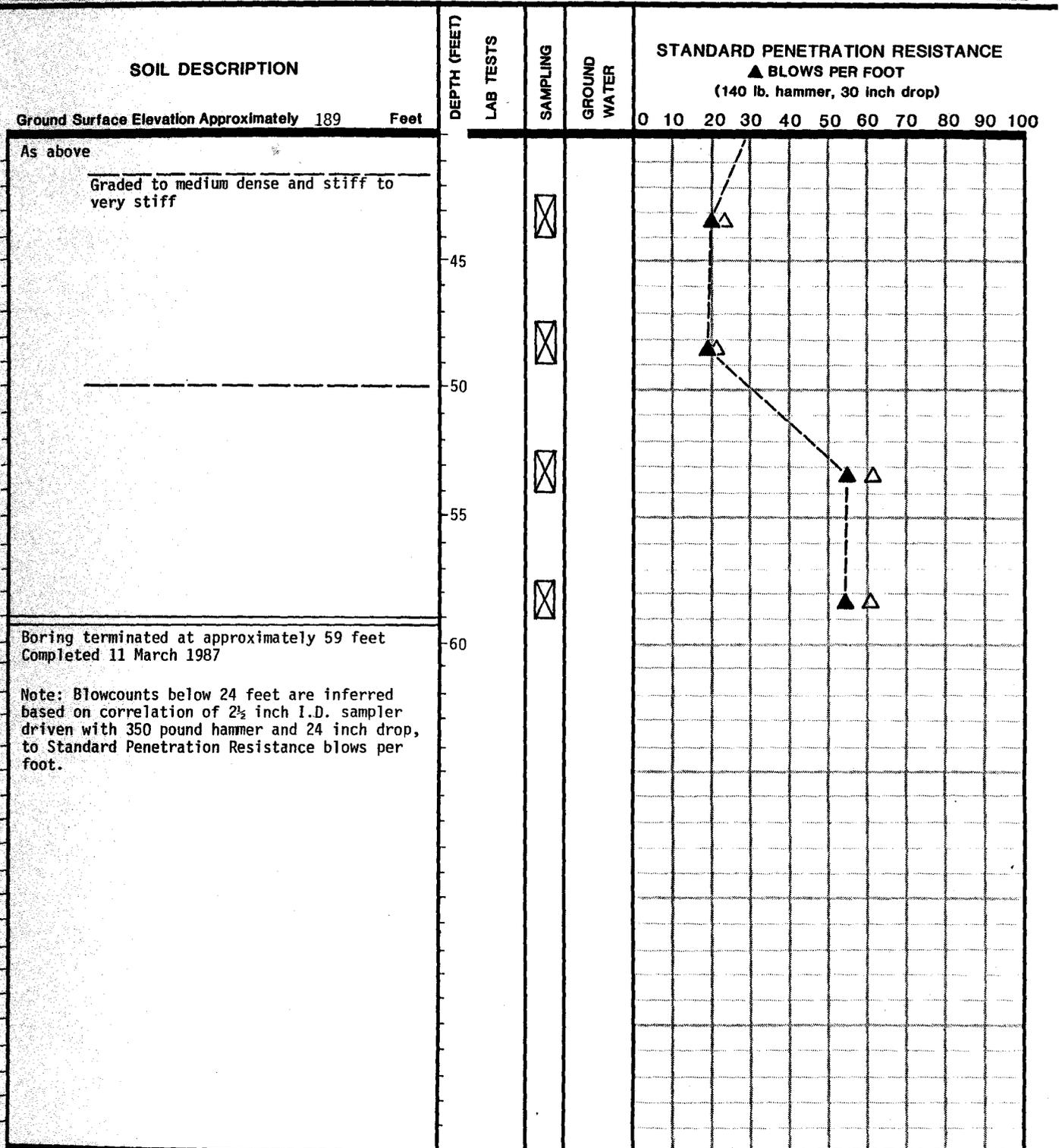




- SAMPLING**
- I 2' OD SPLIT SPOON SAMPLE
 - II 3' OD SHELBY SAMPLE
 - ☒ 2.5' ID RING SAMPLE
 - B BULK SAMPLE
 - * SAMPLE NOT RECOVERED
 - △ BLOWS PER FOOT FOR SAMPLE DRIVEN WITH 350 POUND HAMMER, 24 INCH DROP

- GROUND WATER**
- ☒ SEAL
 - DATE
 - ▽ WATER LEVEL AT TIME OF DRILLING
 - ATD
 - OBSERVATION WELL TIP

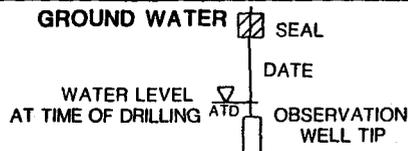
- LABORATORY TESTS**
- % WATER CONTENT
 - NP NON PLASTIC
 - LIQUID LIMIT
 - NATURAL WATER CONTENT
 - PLASTIC LIMIT



SAMPLING

- I 2" OD SPLIT SPOON SAMPLE
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GROUND WATER



LABORATORY TESTS

