

**EASTERN FEDERAL LANDS HIGHWAY DIVISION**

**GEOTECHNICAL DATA TEAM**

**FINAL REPORT**

**JUNE 1998**

# GEOTECHNICAL DATA TEAM FINAL REPORT

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## INTRODUCTION

As a result of differing site condition claims filed by the contractors on Projects CHCH 27(2), CUGA 25E4, and SUIT 1CD13, a meeting was held on March 20, 1997, with the Division Engineer and representatives of the EFLHD branches. At this meeting the geotechnical data provided in each of these contracts was discussed. From these discussions several recommendations concerning payment methods for foundations, geotechnical data to be provided in the contract, etc. were developed. (Minutes appear at Appendix 1 of this Report.) How these recommendations were to be implemented was not identified at this meeting.

At the August 18, 1997, Status Meeting, these recommendations were discussed and the Division Engineer directed that a team be put together to further review the issues and recommendations from the March 20, 1997, meeting and to draft an EFLHD policy for geotechnical data. The following item was placed on the Status Meeting Action Register:

### “Soil Boring Data

Determine what information to provide to contractors. No interpretative data to be included. Use notes from bridge foundation (March 20, 1997) meeting as guide. Put this in Design Manual.”

## GEOTECHNICAL DATA TEAM

The Team consisted of the following EFLHD personnel:

Gary Brown - P&C (Team Leader)  
Don Miller - Construction  
Greg Dolson - Project Development  
Julia Perry - Legal Counsel  
Bob Leary - Technical Services  
Mark Clabaugh - Bridge

The Team held 6 meetings over 7 months to discuss the issues, research pertinent documents, develop recommendations, and finalize the report. The Team reviewed those reference documents considered pertinent to the issue. A list of reference documents follows:

- FHWA, Geotechnical Engineering Notebook, Guideline No. 15, Differing Site Conditions
- FLH Project Development and Design Manual, Chapters 6, 9, 10
- FAR Clause 52.236-2, Differing Site Conditions
- FP, Standard Specifications, Section 565, Drilled Shafts

The Team presented a summary of its recommendations to the Division Engineer on April 1, 1998.

## **SUMMARY OF RECOMMENDATIONS**

### **1. INTRODUCTION**

As a result of its work, the Team developed three recommendations. The first is that, since information regarding subsurface conditions identified by the Geotechnical Report cannot be withheld from bidders in accordance with the determinations of the Contract Appeals Boards and the Court of Federal Claims, it is recommended that the information in the Geotechnical Report be carefully identified as to whether it is factual or interpretive. A proposed format for the Geotechnical Report to implement this recommendation appears below. It is also recommended that the Geotechnical Report be made available to bidders and provided on request.

The second recommendation involves proposed changes to the representation of information involving structural foundations - including measurement, testing, and payment - in order to clarify this information and prevent disputes related to interpretation of the subsurface conditions. This relates to driven piles, drilled shafts, and spread footings. The proposed changes are discussed below.

Finally it has been noted that some of the problems encountered in the field regarding subsurface conditions relates to the need to provide training and assistance to Construction in the identification of subsurface conditions, and particularly the soil/rock interface. Proposals to address this issue appear in the section on structural foundations referred to in the previous paragraph.

### **2. LEGAL ANALYSIS**

Legal Counsel reviewed the case law involving boring logs, subsurface reports, and disclaimers. The following conclusions were developed from this analysis:

- a. If we disclose information regarding subsurface conditions, and the information is wrong or inaccurate, the Contractor is entitled to costs under the Differing Site Conditions clause.
- b. If we have information regarding subsurface conditions, and fail to disclose it, and it could have helped the Contractor in preparing a more precise bid, then the Contractor is entitled to costs under the Changes clause on the theory of Superior Knowledge or Misrepresentation.
- c. If we disclose information regarding subsurface conditions, we cannot require the Contractor to verify our information by performing subsurface explorations as part of a Pre-

Bid Site Inspection.

d. While the Contractor is entitled to factual information, the Government is not bound by incorrect interpretations developed by the Contractor from that information.

e. Our goal then should be to obtain the most accurate information possible and disclose it to bidders.

Also see further discussion in Appendix 5.

### 3. FORMAT OF THE GEOTECHNICAL REPORT

FHWA, Geotechnical Engineering Notebook, Guideline No. 15 (Differing Site Conditions) was used by the Team as the basis for defining differing site conditions and types of subsurface information. The Team discussed the types and quantity of factual data that are obtained in the field. The Team agreed that the minimum data guidelines outlined in the FHWA Project Development and Design Manual at Chapter 6 must be followed. The factual data provided to bidders must be both accurate and provide sufficient coverage to establish a well-defined geotechnical baseline. Budgets for subsurface investigations must consider the minimum data required to provide for an accurate geotechnical baseline.

Recommendations for improvements from this Team are intended to address ways to avoid Type I DSC claims on our projects. (Type I claims allege that the subsurface conditions at the site differ materially from those indicated in the Contract.) One recommendation is that the information presented in the Geotechnical Report be clearly identified as to whether it is qualified, factual or interpretive. Guideline 15 defines each as follows:

**Factual information** represents an actual condition that exists at a specific location at a specific time such as soil borings, lab tests, actual soil samples, etc.

**Interpretive information** represents the opinions- based on factual and qualified data- of qualified geotechnical engineers of the agency such as subsurface profiles, etc.

**Qualified information** is historic subsurface information not under the control of the agency.

The team agreed that all subsurface data in the Geotechnical Report must be clearly labeled as to its type. A proposed format for the Geotechnical Report, to be included in the FHWA Project Design and Development Manual, was developed as follows:

## Organization of the Geotechnical REPORT -

**a. Introduction** - Describe the Project and identify and summarize background (qualified) information, including Regional Geology.

Purpose: Presents the known background information for the area of the Project. All qualified information needs to be in the Introduction section. (Qualified information is information that was developed or collected by others.)

**b. Procedures and Results** - Factual information - Information obtained from observation (including standardized tests and measurements)

Purpose: Presents the factual information determined from:

- 1) standardized tests and measurements taken at the site, and
- 2) the results of laboratory tests and analysis.

When standardized field tests, field measurements, or laboratory tests are used, they should be referenced (identified). When standardized tests, etc., are not used, the reason why they were not used should be explained.

The actual test results, boring logs, and the boring location plan, should be placed in Appendices referenced by that Section.

Nothing in this Section, or in the referenced Appendices, should be interpretive data (for example, subsurface profile lines should not be added to boring profile sheets).

**c. Analysis and Conclusions** - Interpretation of Findings

Purpose: Presents the interpretation of the factual and qualified information by the author.

Each conclusion in the Analysis section should have a firm, supportable basis that is stated in the conclusion. Examples of such a basis are:

- 1) reference to factual or qualified information included previously;
- 2) a specific method of analysis, which is identified; and
- 3) the judgment or experience of the individual(s) performing the analysis.

**d. Recommendations**

Purpose: Presents the recommendations of the author (concurrent in by the Geotechnical

Engineer) regarding design, construction methods or options, and testing. (Refer to the checklist in Chapter 6 of the PDDM at Section .6b.)

**e. Signature Block** - The Report shall be signed by the Preparer/Author and by the Geotechnical Engineer (“Reviewed by”)

**f. Appendices**

Appendices shall be separated into background, factual, and interpretive.

**g. Documentation of Design Changes Prior to Bidding**

Purpose: Design changes made prior to bidding but after the recommendations of the Geotechnical Report were made could alter the recommendations. Design changes made prior to bidding shall be documented by a memorandum which is inserted in this Report after the Title Page. If there are no design changes, that shall be documented in the same way.

**h. Disclaimer Clause** - The following Disclaimer Clause shall be included in all Geotechnical Reports prior to the Signature:

“DISCLAIMER/LIMITATIONS CLAUSE:

The subsurface explorations and tests described in the Section on Procedures and Results have been conducted in accordance with standard practices and procedures (except as specifically noted). The results of these explorations and tests represent conditions at the specific locations indicated. Subsurface conditions between these locations may vary. The Analysis and Conclusions Section and the Recommendations Section in this report include interpretations and recommendations developed by the Government in the process of preparing the design. These interpretations are not intended as a substitute for the personal investigation, independent interpretation, and judgment of the Contractor.”

It is recommended that the Geotechnical Report be made available to bidders, including mailing to non-local bidders, as requested.

Sample Table of Contents for Geotechnical Reports appear in Appendix 2.

#### 4. STRUCTURAL FOUNDATIONS

A major problem identified from the March 20, 1997, meeting was the measurement and payment methods for foundation pay items. The Team agreed that many past differing site condition claims may have been avoided if the contract had contained different pay item methods. At minimum, EFLHD could have argued a quantity variation versus a differing site condition. The Team agreed that the Division policy should outline the methods for measurement and payment for foundation pay items.

The following recommendations are made as to specifications, methods of measurement, and payment for foundation pay items:

##### A. DRIVEN PILES

Plans -

- 1) Give an estimated total length of pile for each substructure element on the Foundation Layout sheet in the Bridge/Structure plans.
- 2) Minimum pile tip elevations will be given on the Foundation Layout sheet only when recommended by Hydraulics for scour, or other subsurface conditions requiring a pre-bored layer (eg. chert).
- 3) Show subsurface borings on the plans, including the disclaimer/limitation.

Disclaimer/limitation:           THE BORING LOGS ON THIS SHEET REPRESENT THE  
SUBSURFACE CONDITIONS ENCOUNTERED AT THE  
BORING LOCATIONS SHOWN.    SUBSURFACE  
CONDITIONS MAY VARY BETWEEN THESE  
LOCATIONS.

- 4) Show on the Foundation Layout sheet in the Bridge/Structure plans the Ultimate Pile Capacity and Design Capacity for the piling.

Specifications -

- 1) When deemed appropriate the contract will include the requirement to drive piles to determine length prior to ordering.
- 2) Pile load tests shall be done by the dynamic method unless static load testing is recommended by Geotechnical.





1) Define rock/soil quality for the load carrying area of the drilled shaft as stated in the Geotechnical Report. Include probe hole or test cores to determine rock/soil quality as recommended by Geotechnical.

2) Identify when soil excavation changes to rock excavation and require a trial shaft before production drilling starts. The point at which soil excavation stops and rock excavation begins will be determined by mutual agreement between the engineer and the contractor in the field based on drilling technique or spoil material/cuttings as generated by the trial shaft. Consider having someone from Geotechnical or consultant specialist on site to establish the conditions.

3) If drilled shaft load tests are required (such as for projects with large numbers of shafts), the tests will be static load tests.

Measurement -

1) Measure drill shaft by soil excavation and rock excavation as two separate items.

2) Include a bid price for steel casing ( by size ) on projects where permanent casing is to be left-in-place. Put a note in the Special Contract Requirements that the engineer will have the authority to direct the contractor when to leave casing in the hole.

Suggested Pay Items -

1) Item no. 56501M ... Drilled shafts, ( dia. ) , soil excavation ..... Meter

2) Item no. 56501M ... Drilled shafts, ( dia. ) , rock excavation ..... Meter

3) Item no. 56502 ..... Trial Drilled Shaft, ( dia. ) ..... Each

4) Item no. 565\_\_ ..... Steel Casing, ( dia. ) ..... Meter

Sample Bridge Plans appear in Appendix 3. Sample Boring Location Plan sheets for roadway and structures appear in Appendix 4.

**IMPLEMENTATION OF RECOMMENDATIONS**

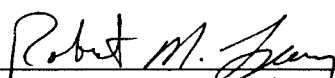
The following documents will need to be developed to fully implement these recommendations:

1) Proposed Special Contract Requirements (SCR) for the Library of Specifications (LOS).

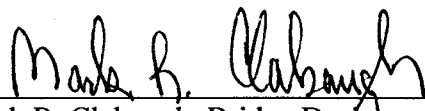
- (a) Measurement and Payment Methods for appropriate Sections.
  - (b) Test piles or static load testing.
  - (c) Tests by Contractor for Determining Quality of Inplace Materials for Drilled Shafts and for Spread Footings.
- 2) Proposed EFLHD Policy for Disseminating Subsurface Information to Bidders. Supplement to the Design Manual.

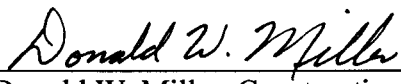
The Team recommends that the above proposals and procedures be adopted by the Division.

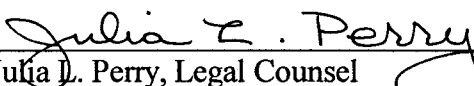
  
 \_\_\_\_\_  
 Gary L. Brown, Planning & Coordination,  
 Team Leader

  
 \_\_\_\_\_  
 Robert M. Leary, Technical Services,  
 Geotechnical Engineer

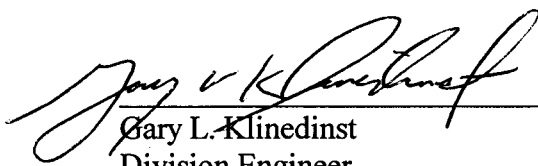
  
 \_\_\_\_\_  
 Gregory A. Dolson, Project Development

  
 \_\_\_\_\_  
 Mark R. Clabaugh, Bridge Design

  
 \_\_\_\_\_  
 Donald W. Miller, Construction

  
 \_\_\_\_\_  
 Julia L. Perry, Legal Counsel

I hereby concur in the recommendations of the Team.

  
 \_\_\_\_\_  
 Gary L. Klinedinst  
 Division Engineer

7/6/98  
 Date

**APPENDICES**

APPENDIX 1 Notes from March 20, 1997, Meeting

**DRILLED SHAFTS MEETING  
MARCH 20, 1997  
MEETING MINUTES**

**ATTENDEES:** Gary Klinedinst, Greg Dolson, Julia Perry, Shoukey Elnahal, John Seabrook, Gary Brown, Ricky Meyer, Paul Nishimoto, Dave Weber, Randy Galpin, Harold Rohde, Mark Clabaugh, Gary Jakovich, Joseph Wu, Bob Sparrow

**SUMMARY:**

The meeting was called to identify problem areas in the specifications and contract drawings that are provided to the contractors/bidders. The contractor claims received on the CHCH 27(2), CGA 25E4, and SUIT 1CD13 projects were described along with the contents of the EFLHD plans and specifications.

After much discussion, the following changes were agreed upon by those present:

1. Do not group major items of work together into one pay item. For example, in lieu of using a single drilled shaft pay item, break that down into two pay items; drilled shaft in soil, and drilled shaft in rock.
2. Do not include boring logs on the plans. Include them as a separate supplemental information packet.
3. Provide minimum requirements or parameters (IE end bearing in 20 TSF material, a minimum of 5 feet) in lieu of tip elevations or any other interpretive information.
4. Do not tell contractors how to do the work. Don't list the sequence that work must be completed in unless absolutely necessary.
5. Utilize trial drilled shafts and test piles for driving on the projects. Contact Geotech prior to conducting these tests so that they may be present at the site during this work. After completion of the tests, Geotech will provide parameters for drilling and end bearing to Construction for their use in inspecting the project.
6. On projects with pile driving, use a separate pay item for test piles (each), piles delivered (m), and piles installed (m).

**ACTION ITEMS:**

Engineering Coordination will review the FP-96 and current LOS to ensure that any additionally required specifications are included. Changes will be forwarded to the LOS Committee for consideration.

APPENDIX 2. Sample Table of Contents for Geotechnical Reports

# SAMPLE TABLE OF CONTENTS FOR STRUCTURE REPORT

<u>REPORT SECTION</u>	<u>PAGE</u>
<b>INTRODUCTION (Includes Appendix A)</b>	
<b>General</b> .....	?
<b>Project Description</b> .....	?
<b>Regional Geology</b> .....	?
<b>PROCEDURES AND RESULTS (Includes Appendices B, C and D)</b>	
<b>Soil Borings</b> .....	?
<b>Sampling</b> .....	?
<b>Field Tests and Measurements</b> .....	?
<b>Data Summary</b> .....	?
<b>Laboratory Investigation</b> .....	?
<b>Findings</b> .....	?
<b>ANALYSIS AND CONCLUSIONS (Includes Appendices E, F, and G)</b>	
<b>Foundations</b> .....	?
<b>Embankment Slopes</b> .....	?
<b>Settlement</b> .....	?
<b>RECOMMENDATIONS (Includes Appendix H)</b>	
<b>Foundations</b> .....	?
<b>Embankments</b> .....	?
<b>Retaining Walls</b> .....	?

## **DISCLAIMER/LIMITATIONS**

## **APPENDICES**

- APPENDIX A - Figures**
- APPENDIX B - Boring Location Plans and Profiles**
- APPENDIX C - Boring Logs**
- APPENDIX D - Laboratory Data**
- APPENDIX E - Pile Axial Capacity Charts & Calculations**
- APPENDIX F - Pile Lateral Capacity Charts & Calculations**
- APPENDIX G - Slope Stability Analysis**
- APPENDIX H - Special Contract Requirements**

**Note: Design changes subsequent to publication of this report and prior to project advertisement will be documented by a memo inserted after the title page. If no changes have been made, a memo stating this fact will be inserted.**

## SAMPLE TABLE OF CONTENTS FOR ROADWAY REPORT

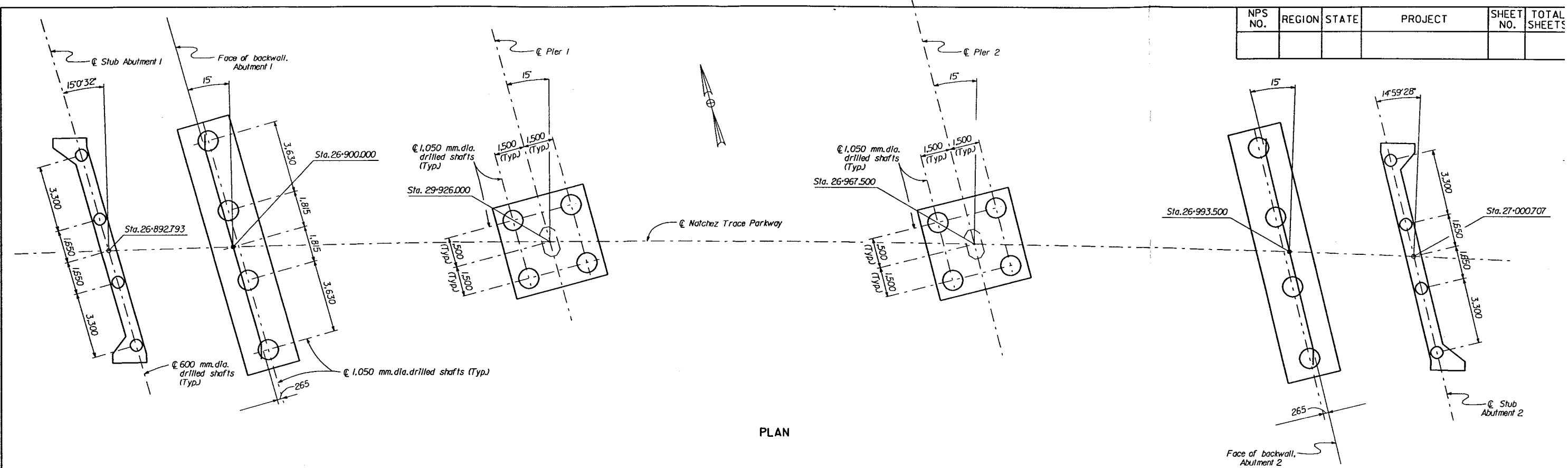
<u>REPORT SECTION</u>	<u>PAGE</u>
<b>INTRODUCTION (Includes Appendix A)</b>	
<b>General</b> .....	?
<b>Project Description</b> .....	?
<b>Regional Geology</b> .....	?
<b>PROCEDURES AND RESULTS (Includes Appendices B, C and D)</b>	
<b>Soil Borings</b> .....	?
<b>Sampling</b> .....	?
<b>Field Tests and Measurements</b> .....	?
<b>Data Summary</b> .....	?
<b>Laboratory Investigation</b> .....	?
<b>Findings</b> .....	?
<b>ANALYSES AND CONCLUSIONS (Includes Appendices E, F, and G)</b>	
<b>Slope Stability</b> .....	?
<b>Pavement Design</b> .....	?
<b>RECOMMENDATIONS (Includes Appendix H)</b>	
<b>Cuts</b> .....	?
<b>Fills</b> .....	?
<b>Earthwork Factor</b> .....	?
<b>Culverts</b> .....	?
<b>Pavement</b> .....	?
<b>Underdrains</b> .....	?
<b>DISCLAIMER/LIMITATIONS</b>	
<u><b>APPENDICES</b></u>	
<b>APPENDIX A - Figures</b>	
<b>APPENDIX B - Boring Plans</b>	
<b>APPENDIX C - Boring Logs</b>	
<b>APPENDIX D - Laboratory Data</b>	
<b>APPENDIX E - Design Data</b>	
<b>APPENDIX F - Special Contract Requirements</b>	

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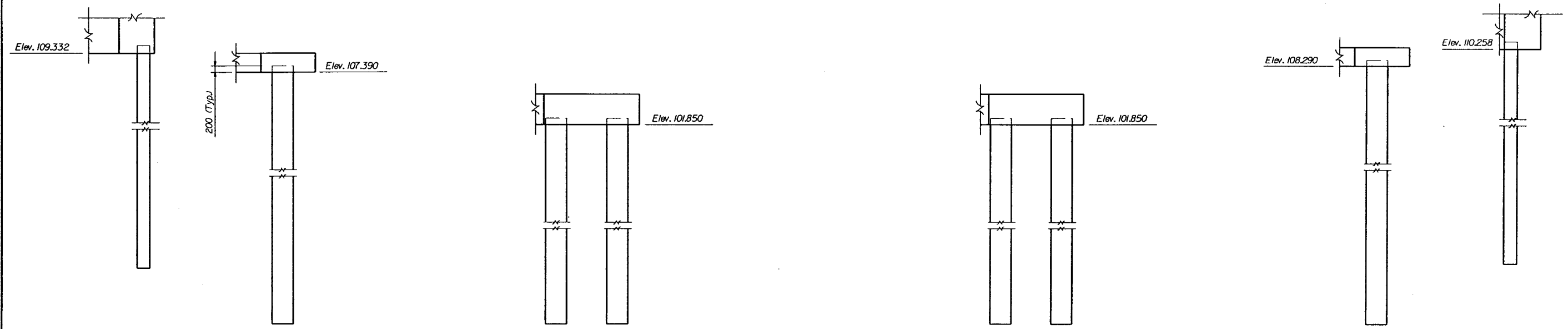


APPENDIX 3. Sample Bridge Plans

NPS NO.	REGION	STATE	PROJECT	SHEET NO.	TOTAL SHEETS



PLAN



ELEVATION

- Notes:**
1. Measure drilled shaft spacing along bottom face of footing.
  2. Measure skew angles for substructure from radial lines.
  3. See "ABUTMENT 1 LAYOUT", "ABUTMENT 2 LAYOUT", and "PIER FOOTING" sheets for footing dimensions.

Estimated lengths of drilled shafts:

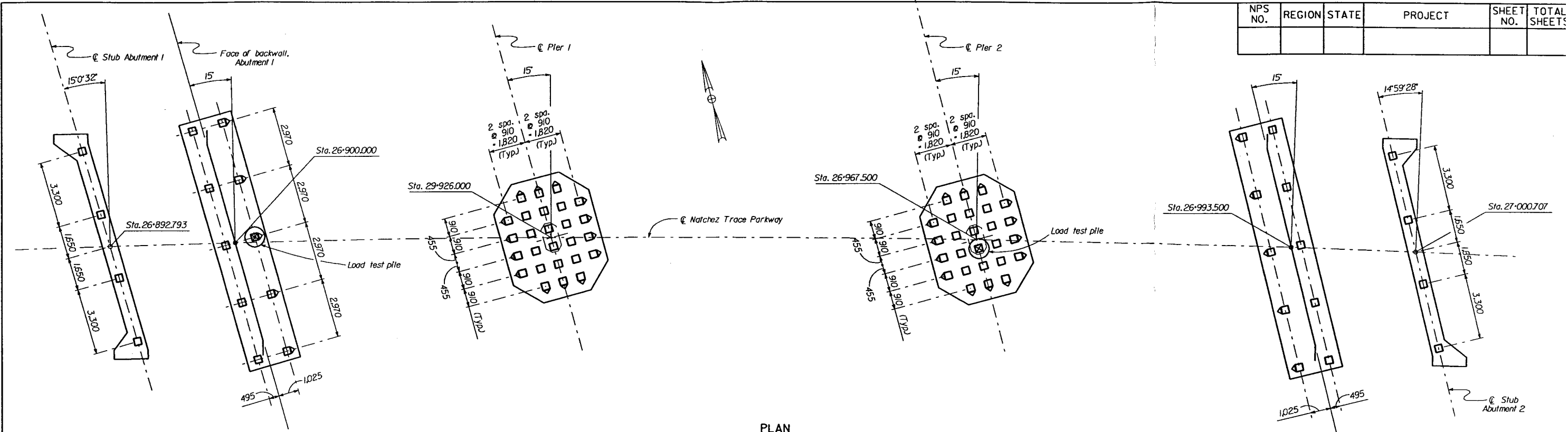
Location	Estimated total length of drilled shafts	Min. rock embedment length
Stub Abutment 1	_____	_____
Abutment 1	_____	_____
Stub Abutment 2	_____	_____
Abutment 2	_____	_____
Pier 1	_____	_____
Pier 2	_____	_____

U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

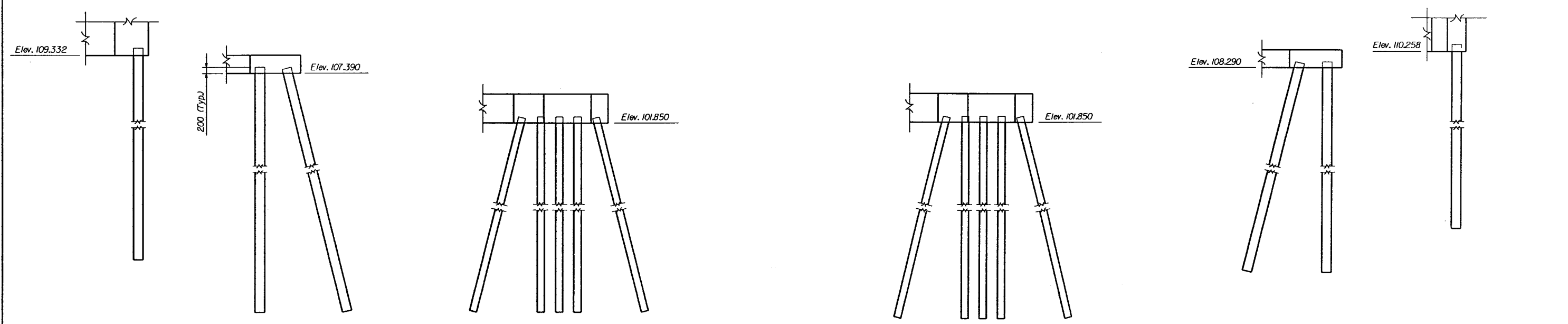
**SAMPLE FOUNDATION LAYOUT  
 DRILL SHAFT EXAMPLE**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.

NPS NO.	REGION	STATE	PROJECT	SHEET NO.	TOTAL SHEETS



PLAN



ELEVATION

- Notes:**
1. Measure pile spacing along bottom face of footing.
  2. Furnish 355 mm x 355mm prestressed concrete piles. See "PRESTRESSED CONCRETE PILE" sheet for pile details.
  3. - Indicates direction of 4V:1H batter.
  4. - Indicates pile used for dynamic pile load test.
  5. Measure skew angles for substructure from radial lines.

Drive piles to the ultimate pile capacity as shown below.

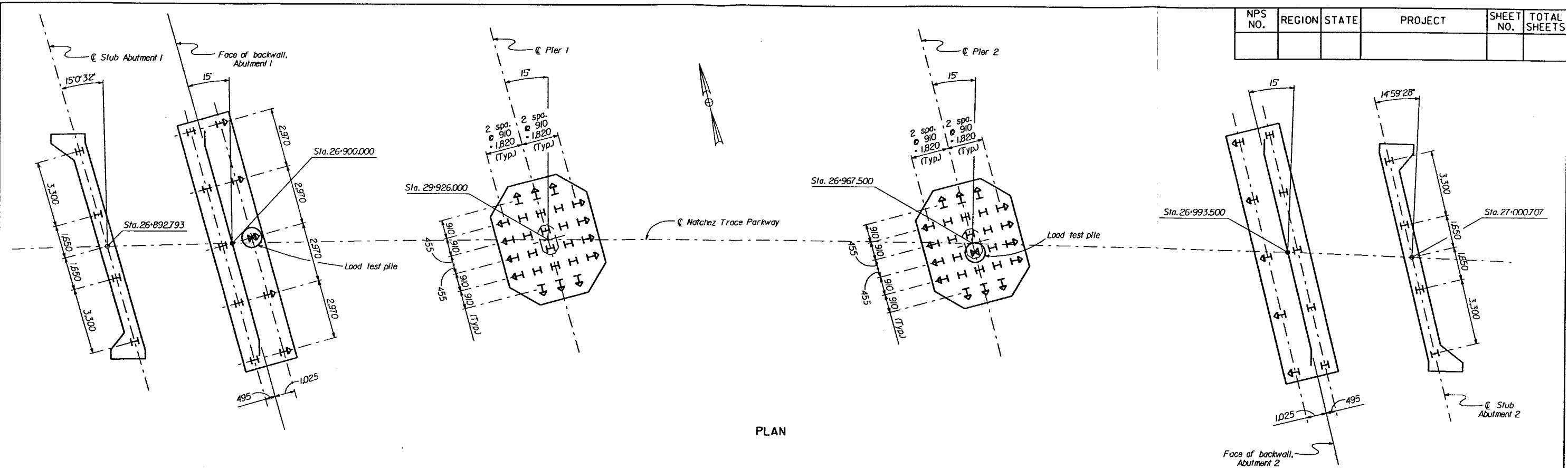
Location	Ultimate capacity	Design capacity	Estimated total length of vertical piles	Estimated total length of battered piles
Stub Abutment 1				
Abutment 1				
Stub Abutment 2				
Abutment 2				
Pier 1				
Pier 2				

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 FEDERAL HIGHWAY ADMINISTRATION  
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

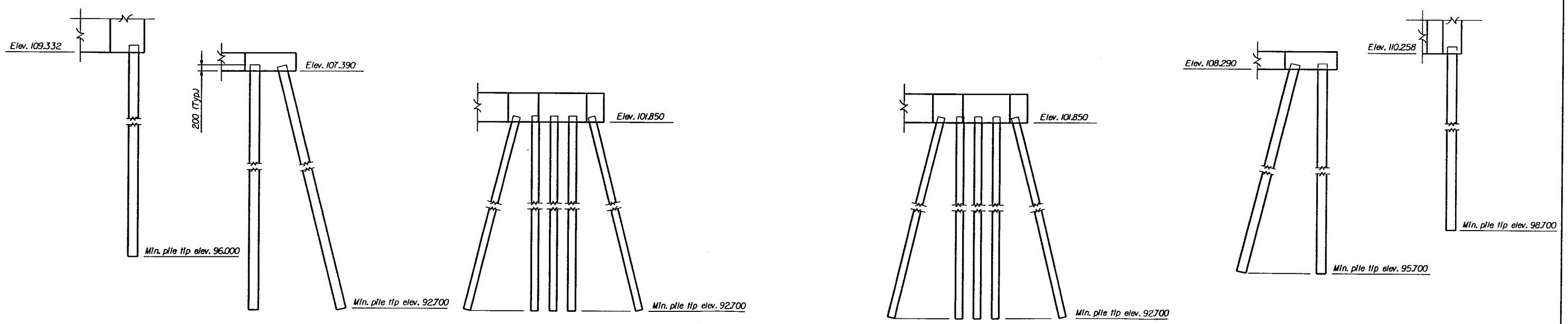
**SAMPLE FOUNDATION LAYOUT  
 DRIVEN PILES EXAMPLE**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.

NPS NO.	REGION	STATE	PROJECT	SHEET NO.	TOTAL SHEETS



PLAN



ELEVATION

- Notes:
1. Measure pile spacing along bottom face of footing.
  2. Furnish HP 360 x 132 piles.
  3. ↑ - Indicates direction of A:H batter.
  4. ⌘ - Indicates pile used for dynamic pile load test.
  5. Measure skew angles for substructure from radial lines.

Drive piles to the ultimate pile capacity as shown below.

Location	Ultimate capacity	Design capacity
Stub Abutment 1		
Abutment 1		
Stub Abutment 2		
Abutment 2		
Pier 1		
Pier 2		

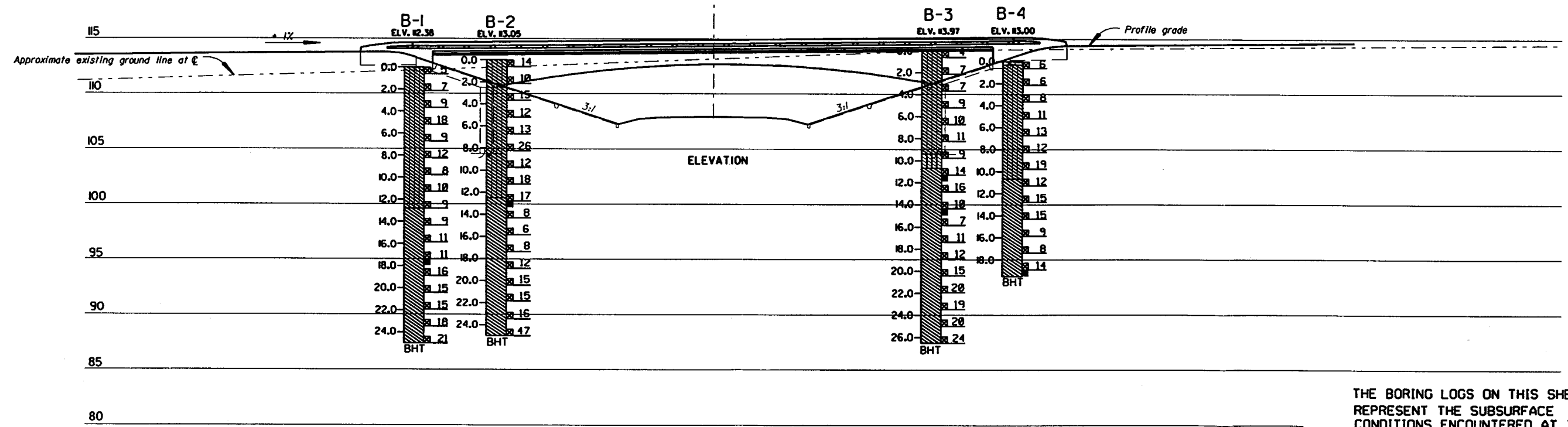
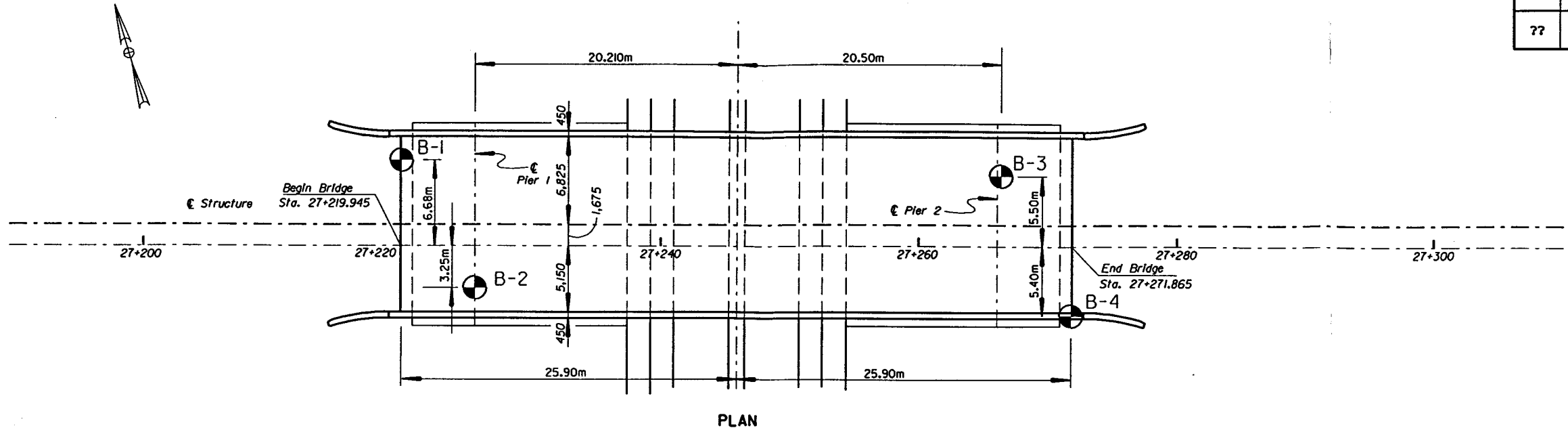
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EASTERN FEDERAL LANDS HIGHWAY DIVISION

**SAMPLE FOUNDATION LAYOUT  
DRIVEN PILES EXAMPLE  
WITH TIP ELEVATIONS**

NO.	DATE	BY	REVISIONS	NO.	DATE	BY	REVISIONS	DESIGNED BY	DRAWN BY	CHECKED BY	SCALE	PROJECT TEAM LEADER	BRIDGE DRAWING	DATE	DRAWING NO.

APPENDIX 4. Sample Boring Location Plan Sheets

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
??	??	PROJECT NUMBER		



THE BORING LOGS ON THIS SHEET REPRESENT THE SUBSURFACE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS SHOWN. SUBSURFACE CONDITIONS MAY VARY BETWEEN THESE LOCATIONS.

SYMBOL		MATERIAL		TEST BORING		MISCELLANEOUS	
	TOPSOIL		SILTY CLAY	BORING NUMBER B-N STANDARD PENETRATION TEST WATER LEVEL AFTER DRILLING COMPLETION WATER LEVEL AT TIME OF DRILLING DEPTH INDICATORS BHT OR BHR CRZ ROD N	N BLOWS/300 mm SHELBY TUBE	1. SPT-STANDARD PENETRATION TEST --AASHTO T206-87 2. R-REFUSAL, SPT 100 BLOWS/300 mm 3. %CR-PERCENT CORE RECOVERY 4. ROD-ROCK QUALITY DESIGNATION 5. BHT-BORE HOLE TERMINATED 6. BHR-BORE HOLE REFUSAL 7. GEOPHYSICAL TEST SITE: SEISMIC 8. WOH-WEIGHT OF HAMMER	
	CLAY		CLAYEY SILT			SCALE 0 5 10 SCALE IN METERS	
						RESISTIVITY	

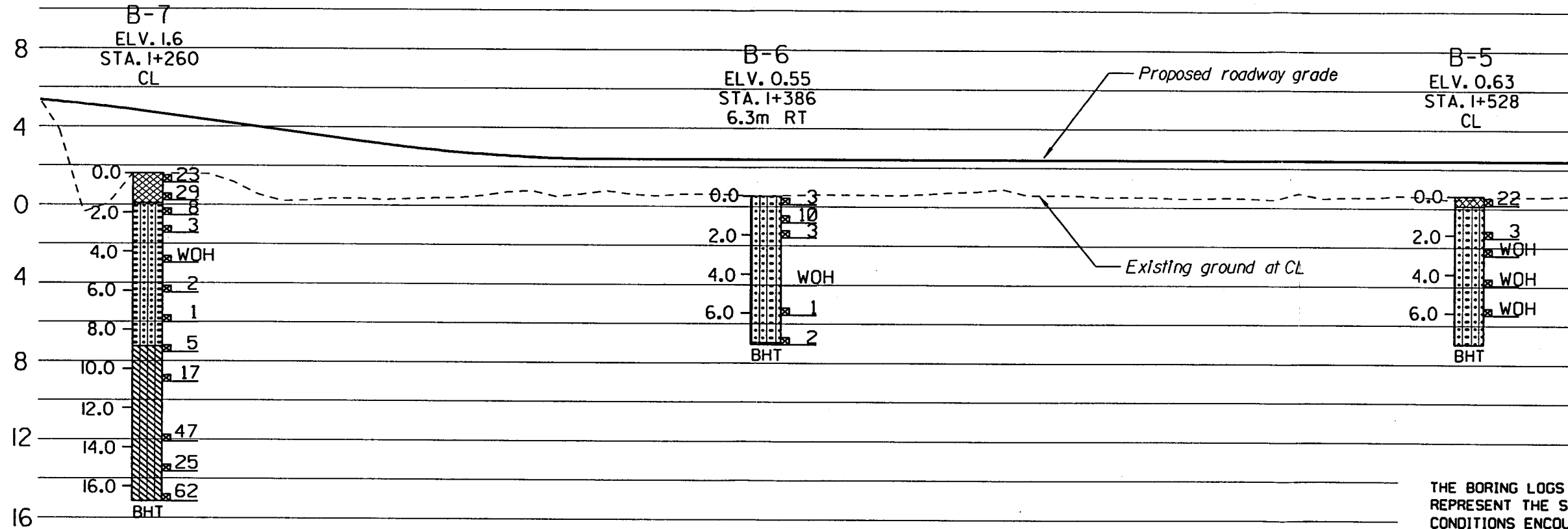
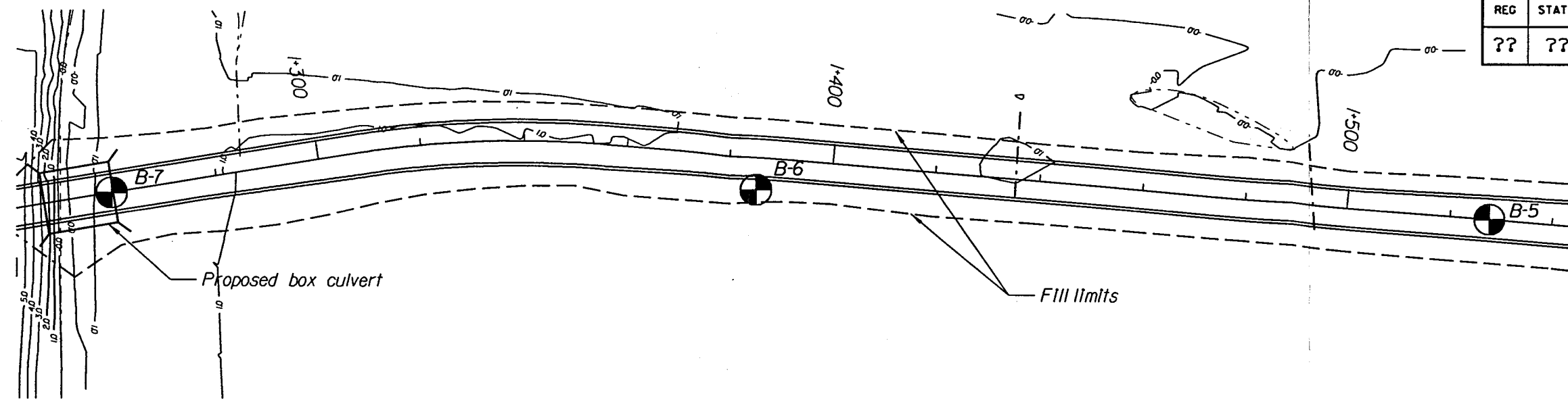
U. S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
EASTERN FEDERAL LANDS HIGHWAY DIVISION

PROJECT TITLE  
PARK OR FOREST

**STRUCTURE BORING  
LOCATION  
PLAN & PROFILE**

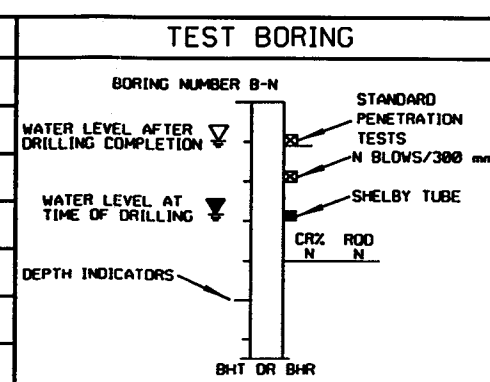
PROJECT NUMBER  
GEOTECHNICAL REPORT 00-00

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
??	??	PROJECT NUMBER		



THE BORING LOGS ON THIS SHEET REPRESENT THE SUBSURFACE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS SHOWN. SUBSURFACE CONDITIONS MAY VARY BETWEEN THESE LOCATIONS.

SYMBOL	TYPE OF MATERIAL
	FILL (SILTY SAND/SANDY SILT WITH ROCK FRAGMENTS)
	SANDY SILT/SILTY SAND WITH SHELL FRAGMENTS, TRACE CLAY
	SILTY CLAY



- MISCELLANEOUS**
- SPT-STANDARD PENETRATION TEST -AASHTO T206-87
  - R-REFUSAL, SPT 100 BLOWS/300 mm
  - CRZ-PERCENT OF RECOVERY
  - ROD-ROCK QUALITY DESIGNATION
  - BHT-BORE HOLE TERMINATED
  - BHR-BORE HOLE REFUSAL
  - GEOPHYSICAL TEST SITE: SEISMIC
  - WOH-WEIGHT OF HAMMER
- SCALE: PLAN SCALE IN METERS  
 PROFILE VERT. SCALE IN METERS

U.S. DEPARTMENT OF TRANSPORTATION  
 FEDERAL HIGHWAY ADMINISTRATION  
 EASTERN FEDERAL LANDS HIGHWAY DIVISION

PROJECT TITLE  
 PARK OR FOREST

**ROADWAY BORING  
 LOCATION  
 PLAN & PROFILE**

PROJECT NUMBER  
 GEOTECHNICAL REPORT 00-00

## APPENDIX 5. Legal Analysis

### 1. Does a Contractor have to conduct a Pre-Bid Site Investigation?

No, the caselaw does not require the Contractor to conduct a Pre-Bid Site Investigation. If the Contractor could have seen a specific site condition during a pre-bid site investigation (such as boulders), but did not because he did not conduct such an investigation, then the Contractor is held responsible for such a condition as if he did conduct an investigation.

However, the Courts will not extend that rule to conditions below the surface that are not visible without drilling or other subsurface investigation. (If the boulder breaks through the surface of the ground, then the contractor is responsible for knowing about it, whether or not he conducted an investigation. If the boulder is one inch below the surface, he is not responsible for knowing about it.)

Contractors are allowed by the Courts to rely explicitly on any subsurface information in the Contract or accompanying documents. The only time when contractors are expected to conduct a subsurface investigation is when the Contract contains no information about subsurface conditions.

### 2. Can the Agency protect itself with a waiver clause?

No. The Courts have held that the information provided in a Contract is presumed to be correct, even if the Contract contains a waiver clause.

The only way the Government can protect itself is by being explicit as to what is being described by the subsurface information, so that information from drill holes taken 200 feet apart, for example, cannot be held to be applicable to the entire area of the Project.

However, a Disclaimer Clause can be used to point out to the bidder what limitations exist on the information available.

### 3. What does the Contractor have to prove to prove a Differing Site Condition?

The Contractor must prove, by a preponderance of the evidence, that:

1. the solicitation affirmatively indicated or represented the subsurface conditions which form the basis of the claim [this is Type I; Type II is "no reference in the Contract and no experienced bidder would anticipate such a condition"] ;
2. it acted as a reasonable, prudent contractor in interpreting the solicitation;
3. it reasonably relied upon the indications of subsurface conditions contained in the solicitation [this means considered in establishing its bid prices];
4. the subsurface conditions actually encountered differed materially from those indicated in the solicitation;



5. the actual subsurface conditions must have been reasonably unforeseeable; and
6. its claims for excess costs must be shown to be solely attributable to the materially different subsurface conditions.

[From Weeks Dredging & Construction, Inc. v. United States, 13 Ct.Cl. 193, 218-19 (1987), as cited in LAMB ENGINEERING & CONSTRUCTION COMPANY, Department of Energy Board of Contract Appeals, 1997 EBCA LEXIS 7, July 28, 1997. ("We refer herein to these six elements drawn from Weeks Dredging as the "Weeks elements." ")]

4. Do contractors always win when they bring Differing Site Conditions claims?

No. Quoting from a case before the Department of Transportation Board of Contract Appeals (APPEAL OF MINGUS CONSTRUCTORS, INC., 85-2 B.C.A. (CCH) P18,034, April 17, 1985):

"In the instant case, the appellant [the contractor] has not demonstrated that it was damaged as the result of the differing site conditions which did exist. It was damaged solely as a result of its own failings, as follows:

- (1) It selected drilling equipment without resort to a materials report which would have indicated that the underlying strata was penetrable and therefore augerable.
- (2) It selected drilling equipment not capable of penetrating cobbles in clay, the existence of which was shown on the contract drawings.
- (3) It failed to have on the site equipment capable of sinking casings to the depth, shown on the plans, of a stratum into which the casings could have been sealed, with such failure resulting in considerable water intrusion into the drilled holes.
- (4) It did not have equipment capable of withdrawing the casings to permit their salvage.

The appellant's claim is denied in its entirety."