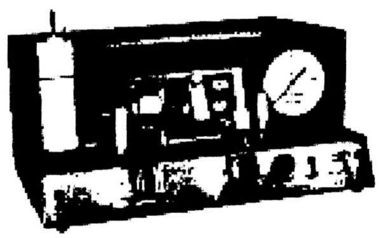

**DIRECT SHEAR TESTING
& RECORDING APPARATUS**

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

Figure 2.5-300
Sheet 1 of 2

DIRECT SHEAR AND FRICTION
TESTS (METHOD)

NOTES FOR FIGURE 2.5-300

Method of Performing Direct Shear and Friction Tests

Direct shear tests are performed to detemine the shearing strengths of soils. Friction tests are performed to determine the frictional resistances between soils and various other materials such as wood, steel, or concrete. The tests are performed in the laboratory to simulate anticipated field conditions.

Each sample is tested within three brass rings, two and one-half inches in diameter and one inch in length. Undisturbed samples of in-place soils are tested in rings taken from the sampling device in which the samples were obtained. Loose samples of soils to be used in constructing earth fills are compacted in rings to predetermined conditions and tested.

Direct Shear Tests

A three-inch length of the sample is tested in direct double shear. A constant pressure, appropriate to the conditions of the problem for which the test is being performed, is applied normal to the ends of the sample through porous stones. A shearing failure of the sample is caused by moving the center ring in a direction perpendicular to the axis of the sample. Transverse movement of the outer rings is prevented.

The shearing failure may be accomplished by applying to the center ring either a constant rate of load, a constant rate of deflection, or increments of load or deflection. In each case, the shearing load and the deflections in both the axial and transverse directions are recorded and plotted. The shearing strength of the soil is determined from the resulting load-deflection curves.

Friction Tests

In order to determine the frictional resistance between soil and the surfaces of various materials, the center ring of soil in the direct shear test is replaced by a disk of the material to be tested. The test is then performed in the same manner as the direct shear test by forcing the disk of material from the soil surfaces.

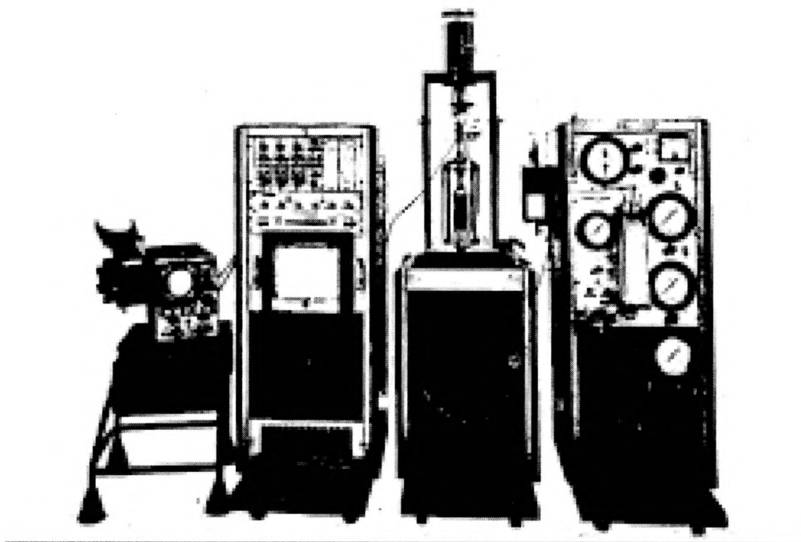

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Figure 2.5-301
Sheet 1 of 2

PULSATING LOAD TRIAXIAL
TEST (METHOD)

NOTES FOR FIGURE 2.5-301

Methods of Performing Pulsating Load Triaxial Tests

Pulsating axial load tests are performed to evaluate the dynamic properties and the liquefaction potential of the soils under simulated anticipated field loading conditions.

Pulsating load tests are stress controlled and are performed on undisturbed or reconstituted samples of soil approximately six inches in length and two and one-half inches in diameter. The samples are encased in a rubber membrane, placed in a test chamber, and subjected to confining pressure throughout the duration of the test. The tests may be run on soils at field moisture content or on artificially saturated samples. The triaxial equipment acting through a Bellofram system applies a pulsating axial load. The cycling speed of the load can be varied between one-half to five cycles per second to simulate the field loading frequency.

Dynamic Properties Determination

To evaluate the dynamic parameters, the soil sample is loaded in cyclic compression. The load and deflection are recorded on two channels of a recording oscillograph. By tapping the output of the load and deflection transducers and applying these to vertical and horizontal plates, respectively, of a cathode ray oscilloscope, a hysteresis loop is produced. This loop is photographed, and the photograph is used to evaluate the damping value present. The procedure is repeated at various strain amplitudes to evaluate the dynamic properties in the range of interest on a particular sample. The load and deflection values obtained from the oscillograph are used to evaluate the dynamic moduli of elasticity.

Liquefaction Potential

To evaluate the liquefaction potential, the soil sample is subjected to axial cyclic loading, the magnitude, frequency, duration and sequence of loading is determined on the basis of past earthquake records. The load deflection, and pore pressure are recorded on three channels of a recording oscillograph. These records are used to evaluate the liquefaction potential for that particular soil type under the test conditions.

STRUCTURAL FILL BORROW

COMBINED BULK SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 80% RELATIVE DENSITY (123 PCF), AT THE 10TH CYCLE

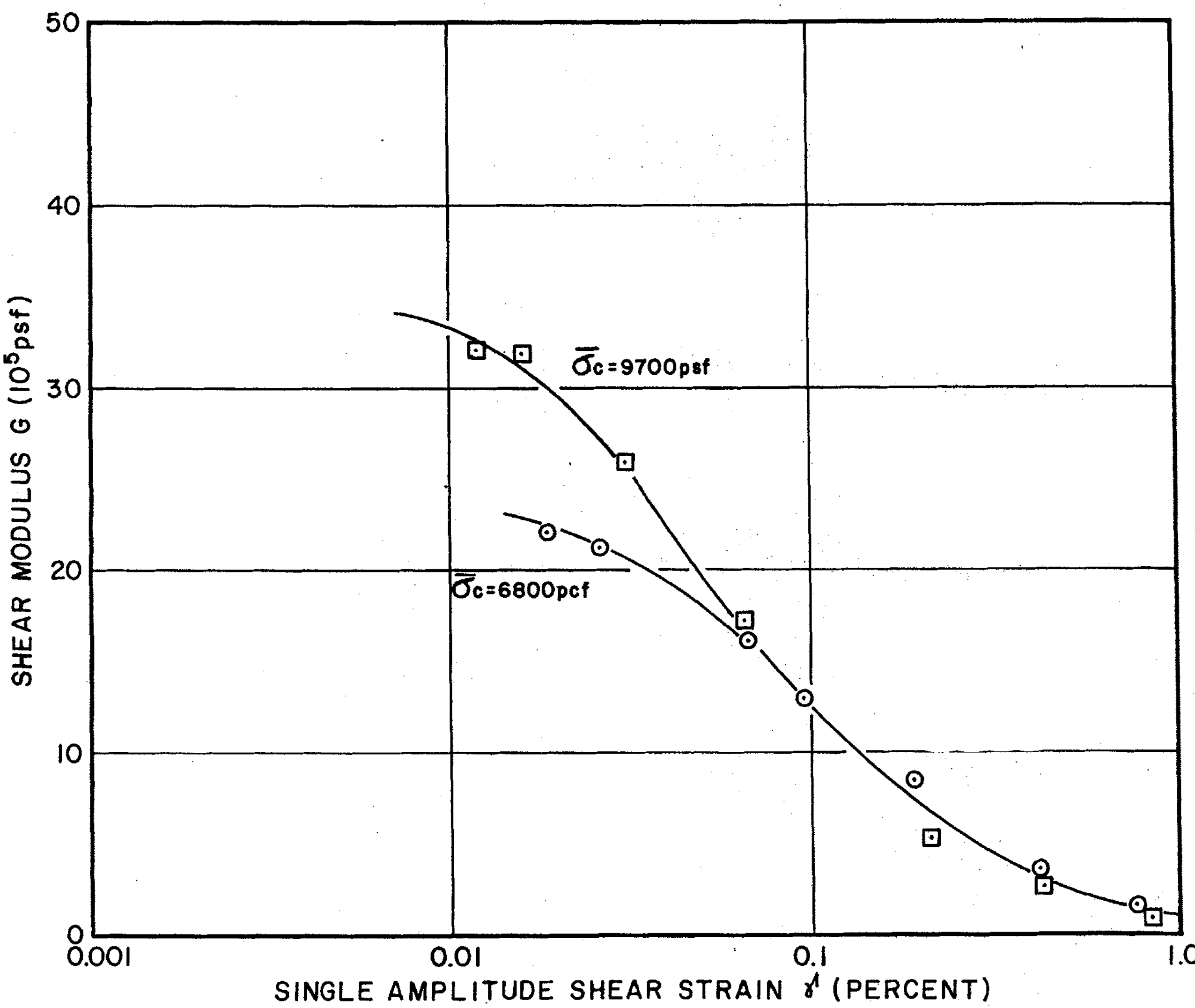

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FIGURE 2.5-302

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BULK SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 80% RELATIVE DENSITY (123 PCF), AT THE 10TH CYCLE

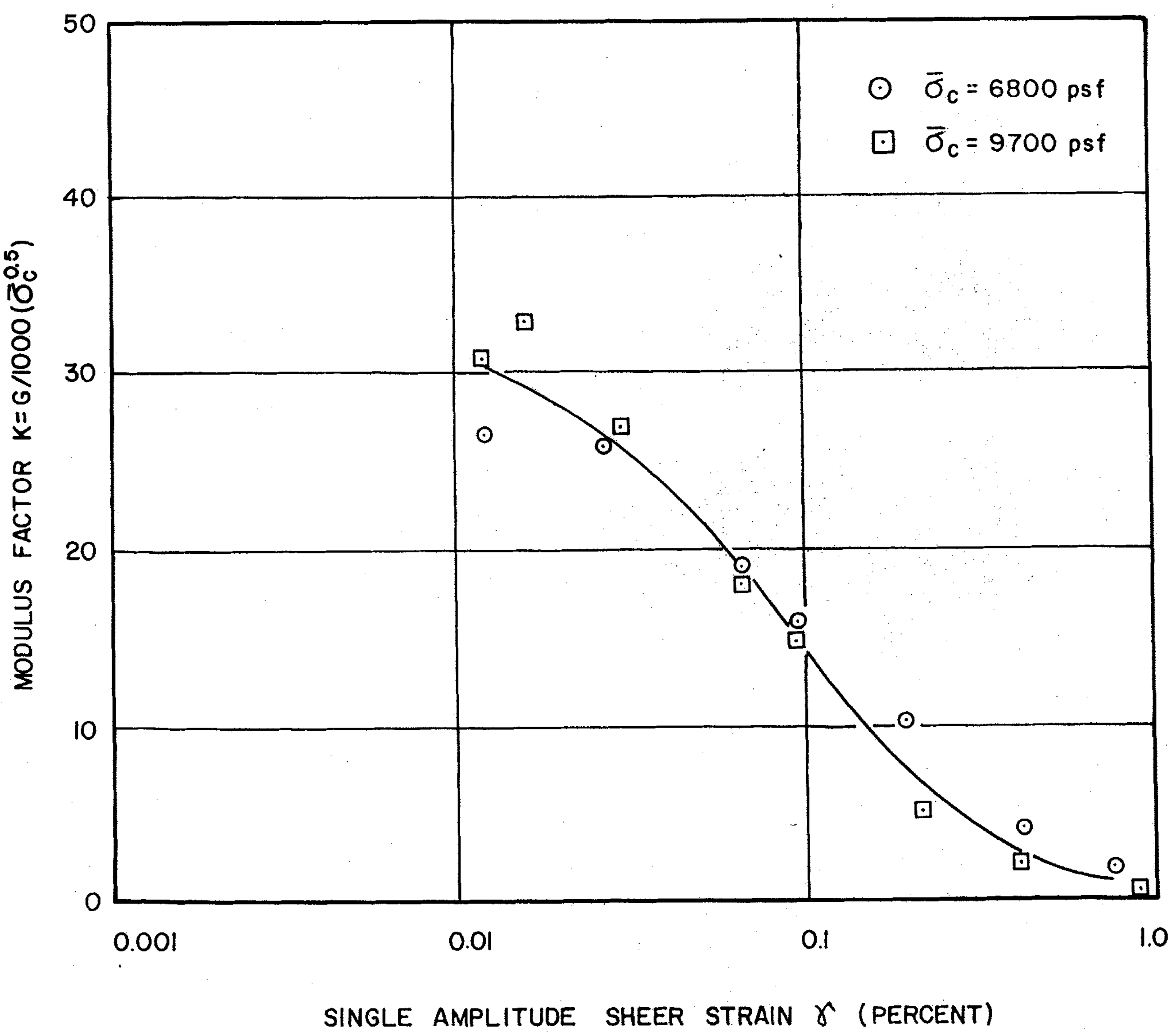

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FIGURE 2.5-303

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BULK SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 80% RELATIVE DENSITY (123 PCF), AT THE 10TH CYCLE

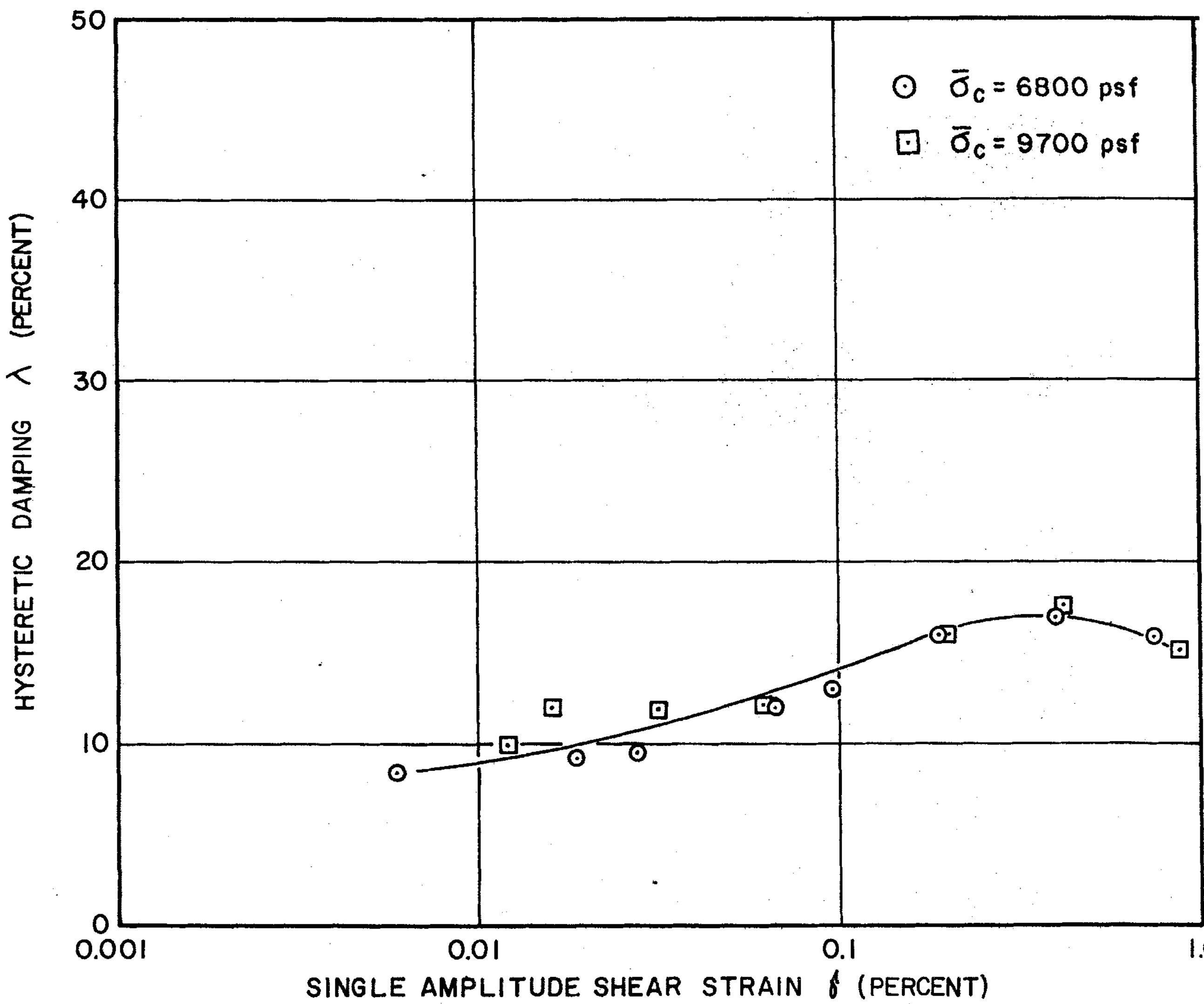

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FIGURE 2.5-304

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BULK SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 80% RELATIVE DENSITY (123 PCF), AT THE 10TH CYCLE

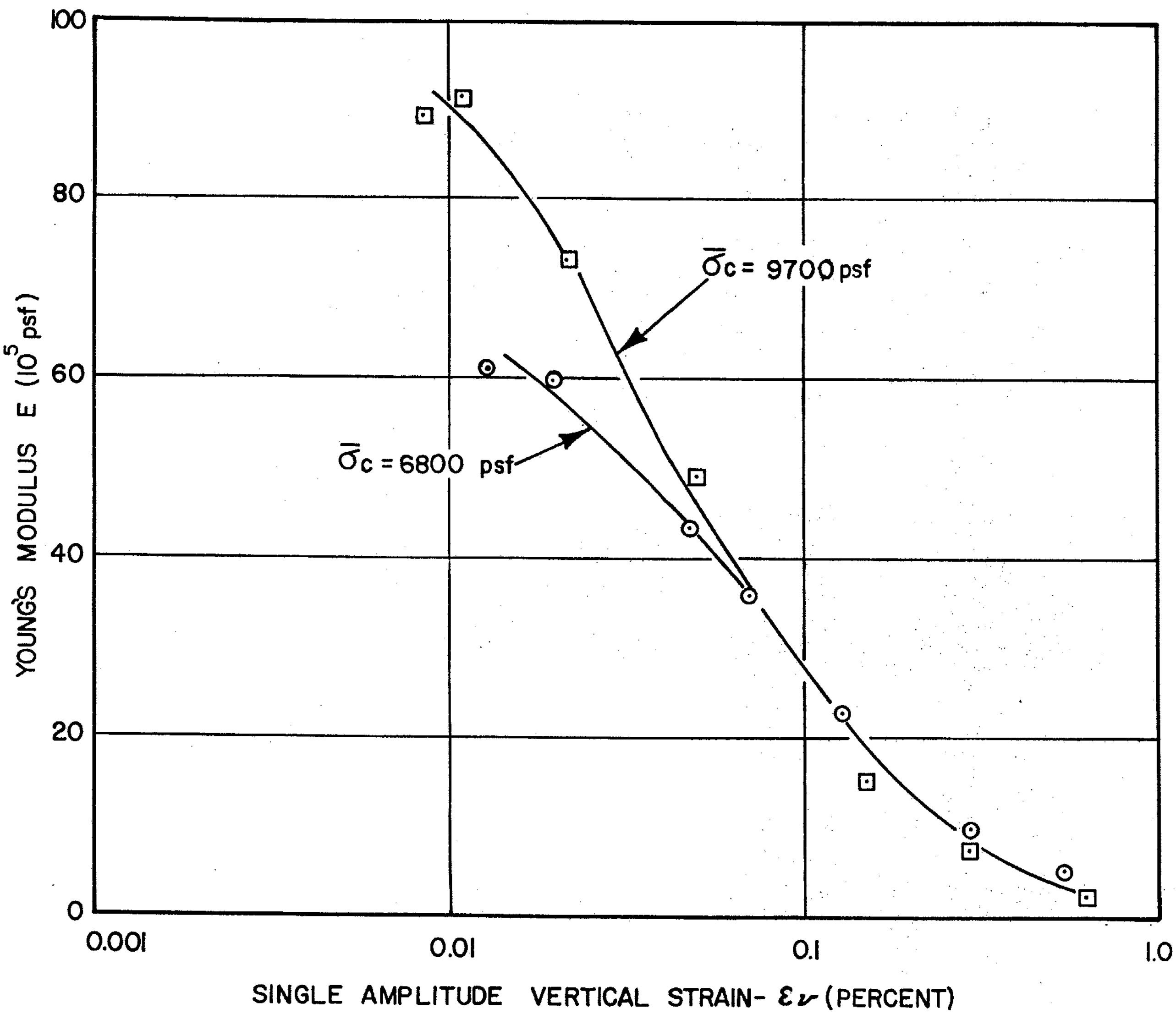

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FIGURE 2.5-305

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BULK SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 80% RELATIVE DENSITY (123 PCF), AT THE 10TH CYCLE

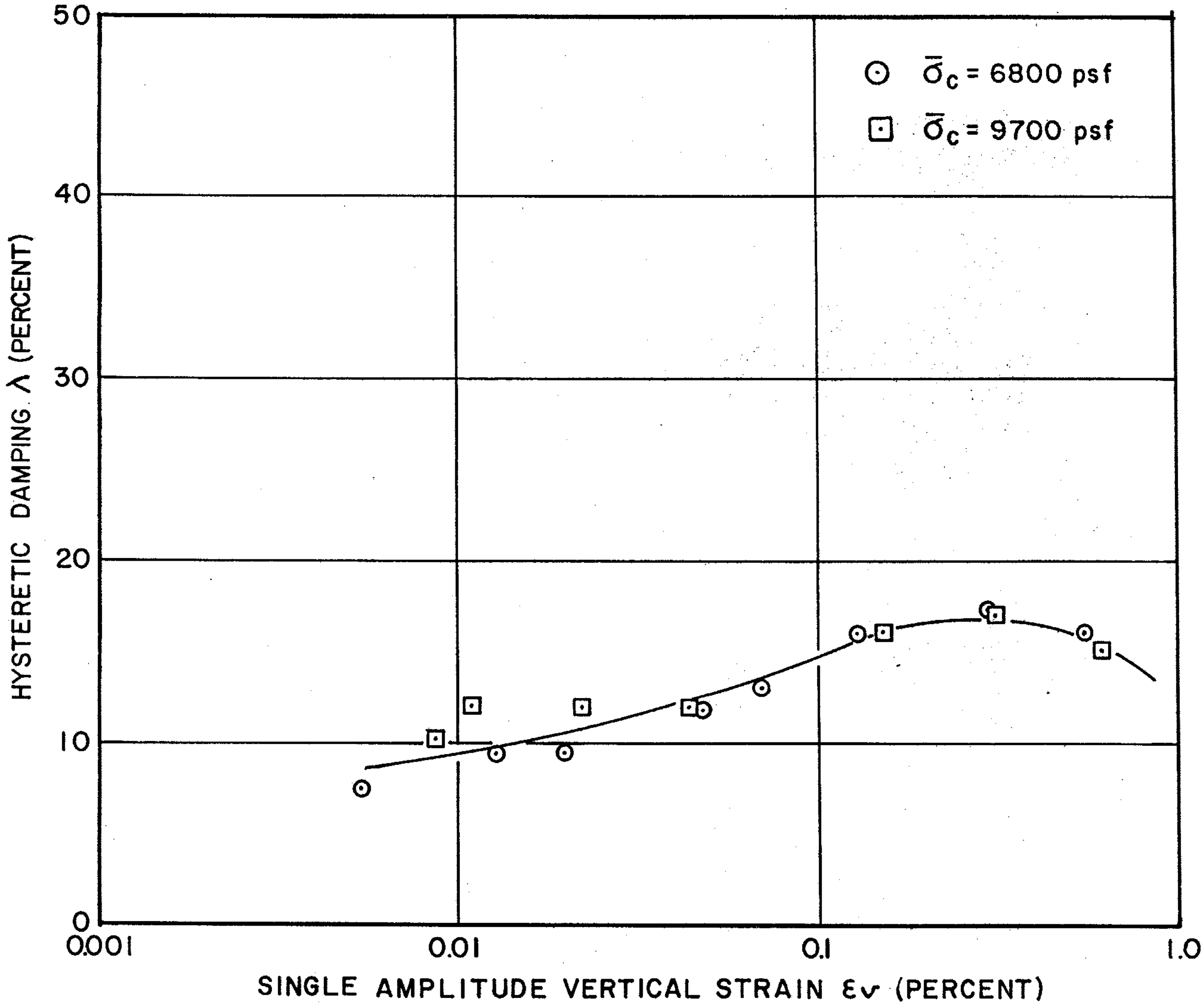

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FIGURE 2.5-306

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BORROW SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 90% RELATIVE DENSITY (129 PCF), AT THE 10TH CYCLE

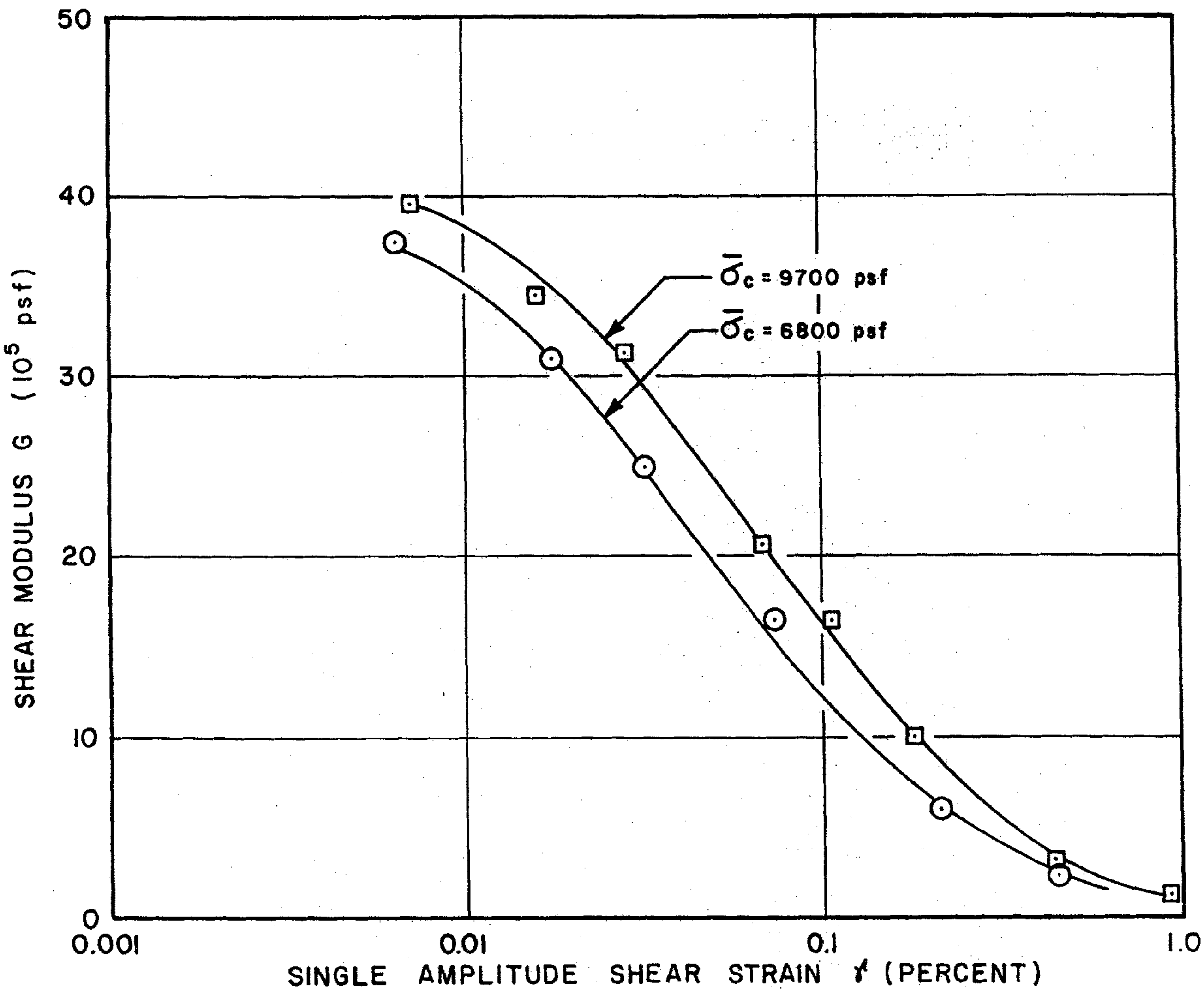

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FIGURE 2.5-307

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BORROW SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 90% RELATIVE DENSITY (129 PCF), AT THE 10TH CYCLE

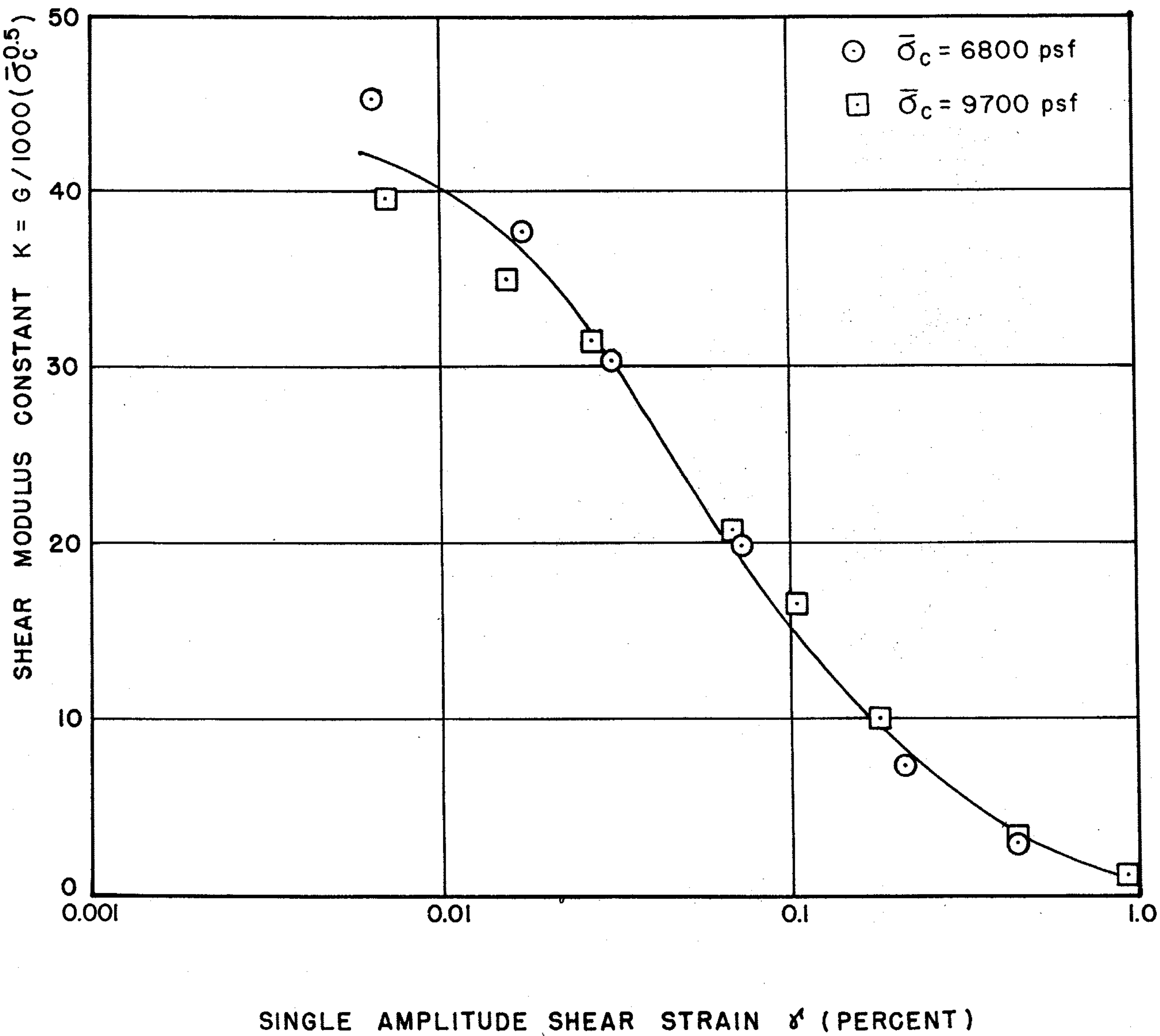

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FIGURE 2.5-308

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BORROW SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 90% RELATIVE DENSITY (129 PCF), AT THE 10TH CYCLE

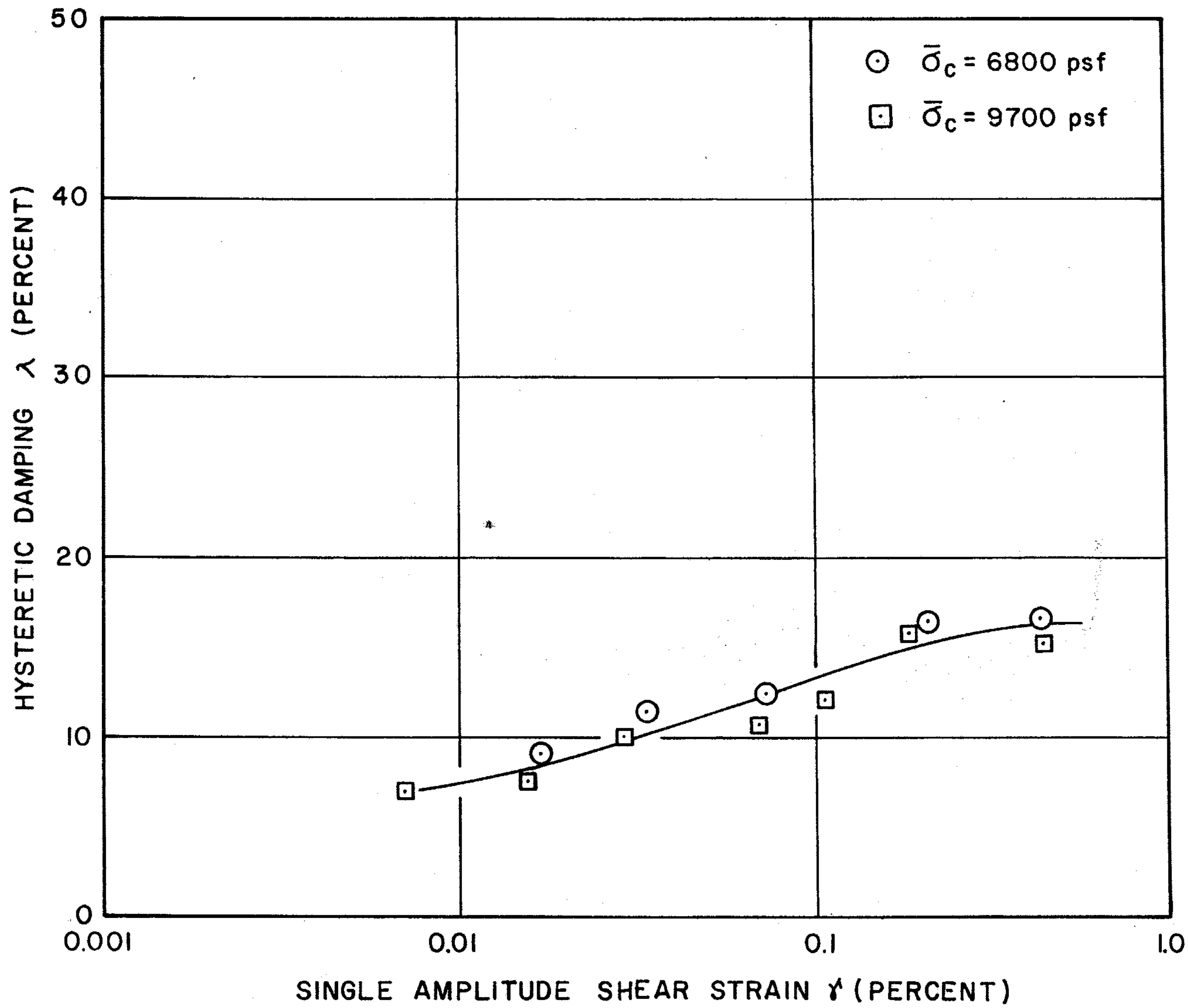

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FIGURE 2.5-309

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BORROW SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 90% RELATIVE DENSITY (129 PCF),
AT THE 10TH CYCLE

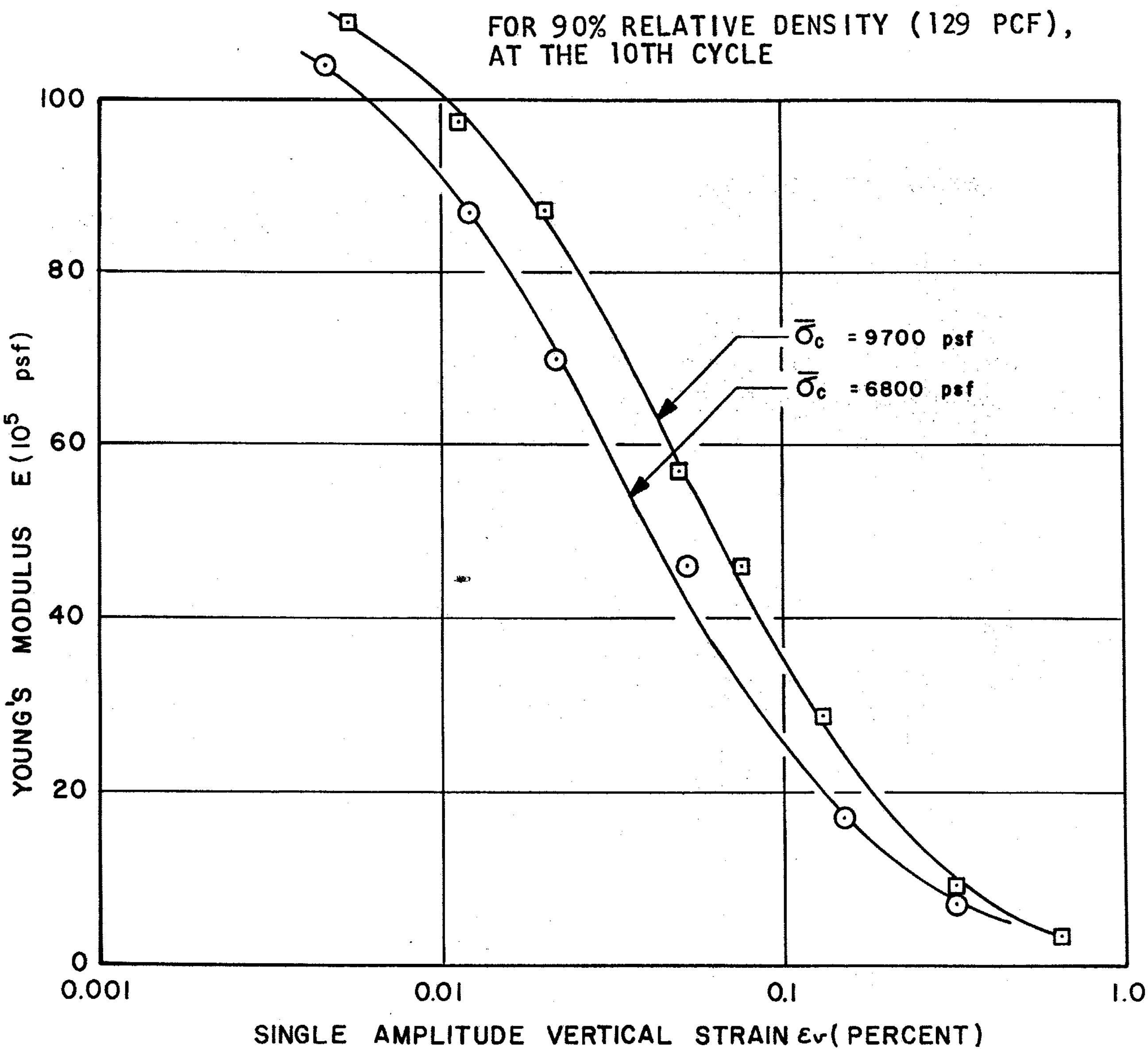

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FIGURE 2.5-310

DYNAMIC TRIAXIAL COMPRESSION TESTS

STRUCTURAL FILL BORROW

COMBINED BORROW SAMPLE:

G-18 (ELEV. 663-654)
G-19 (ELEV. 673-663)
G-20 (ELEV. 657-647)

FOR 90% RELATIVE DENSITY (129 PCF), AT THE 10TH CYCLE

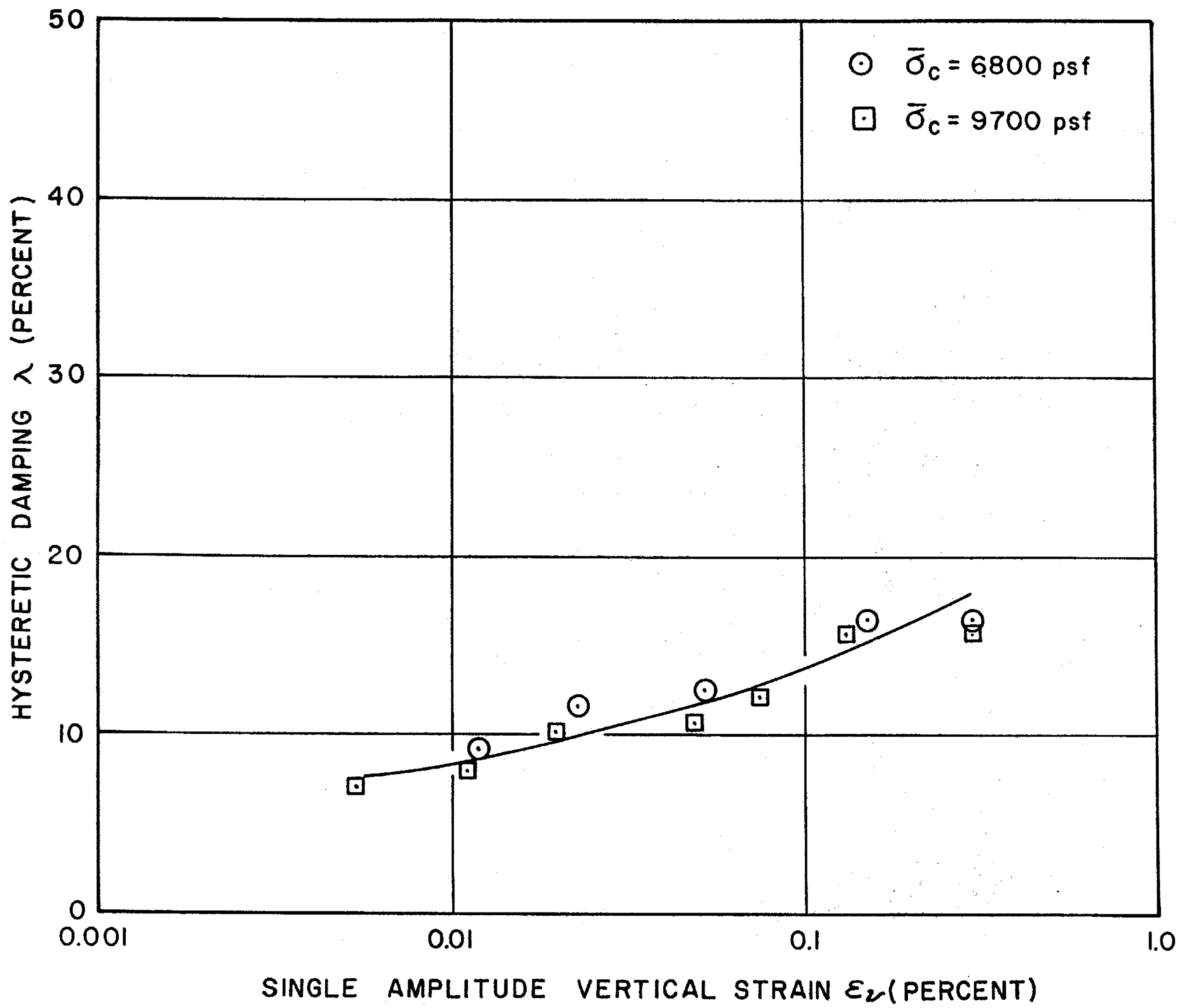

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FIGURE 2.5-311

DYNAMIC TRIAXIAL COMPRESSION TESTS

BORING H-6 @ ELEVATION 619.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

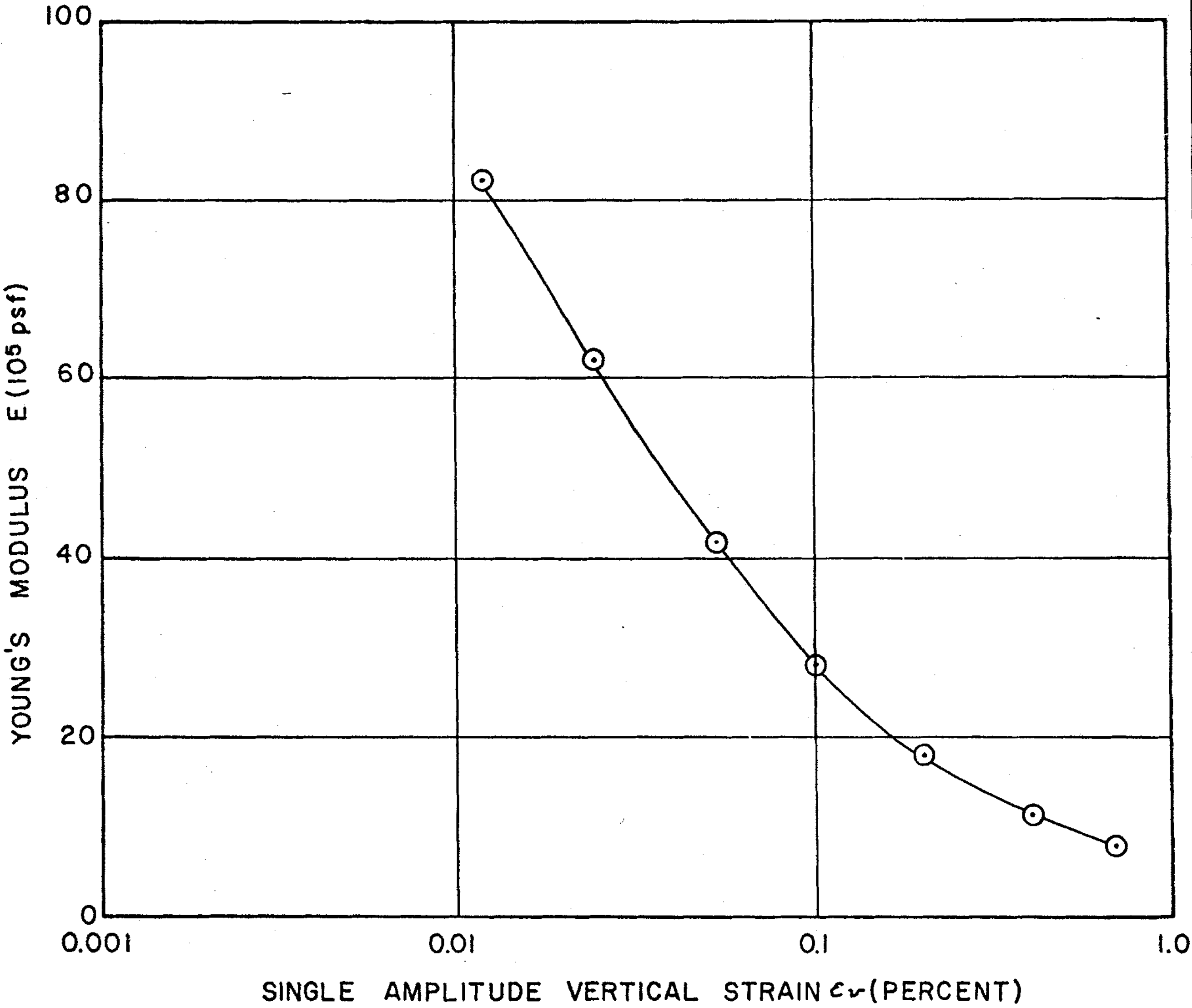

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FIGURE 2.5-312

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-6)

(SHEET 1 of 4)

BORING H-6 @ ELEVATION 619.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

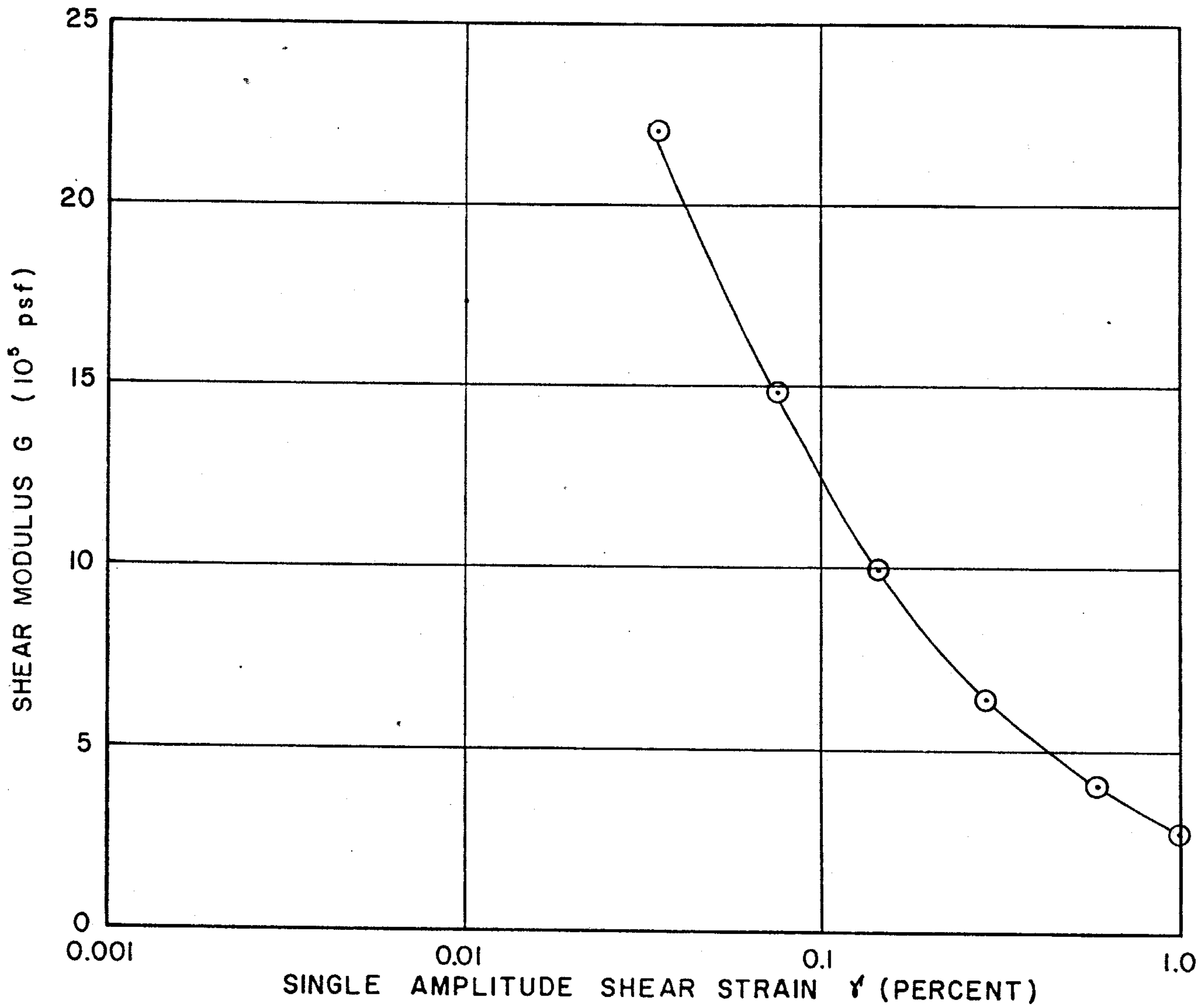

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FIGURE 2.5-312

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-6)

(SHEET 2 of 4)

BORING H-6 @ ELEVATION 619.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

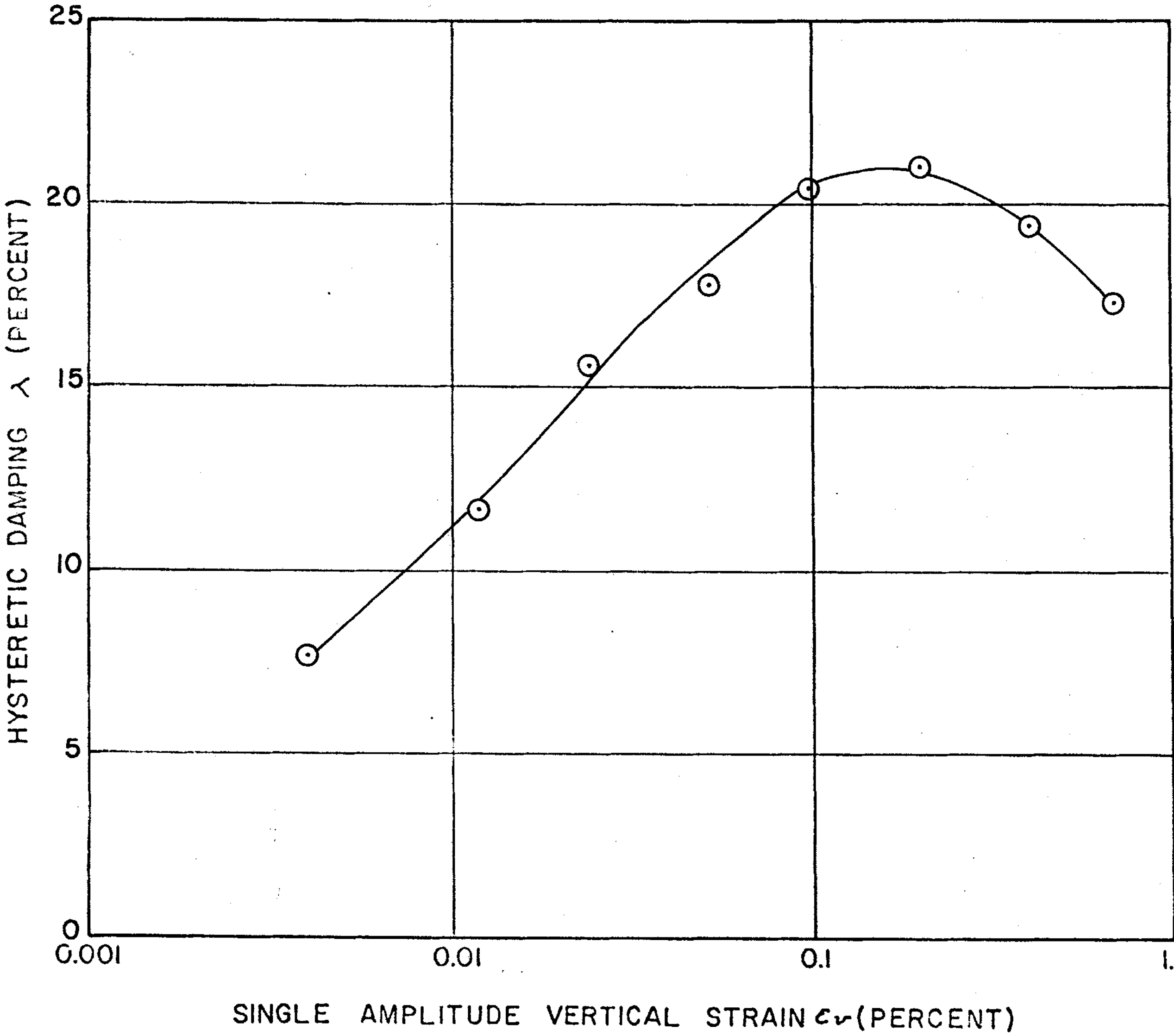

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FIGURE 2.5-312

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-6)
(SHEET 3 of 4)

BORING H-6 @ ELEVATION 619.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

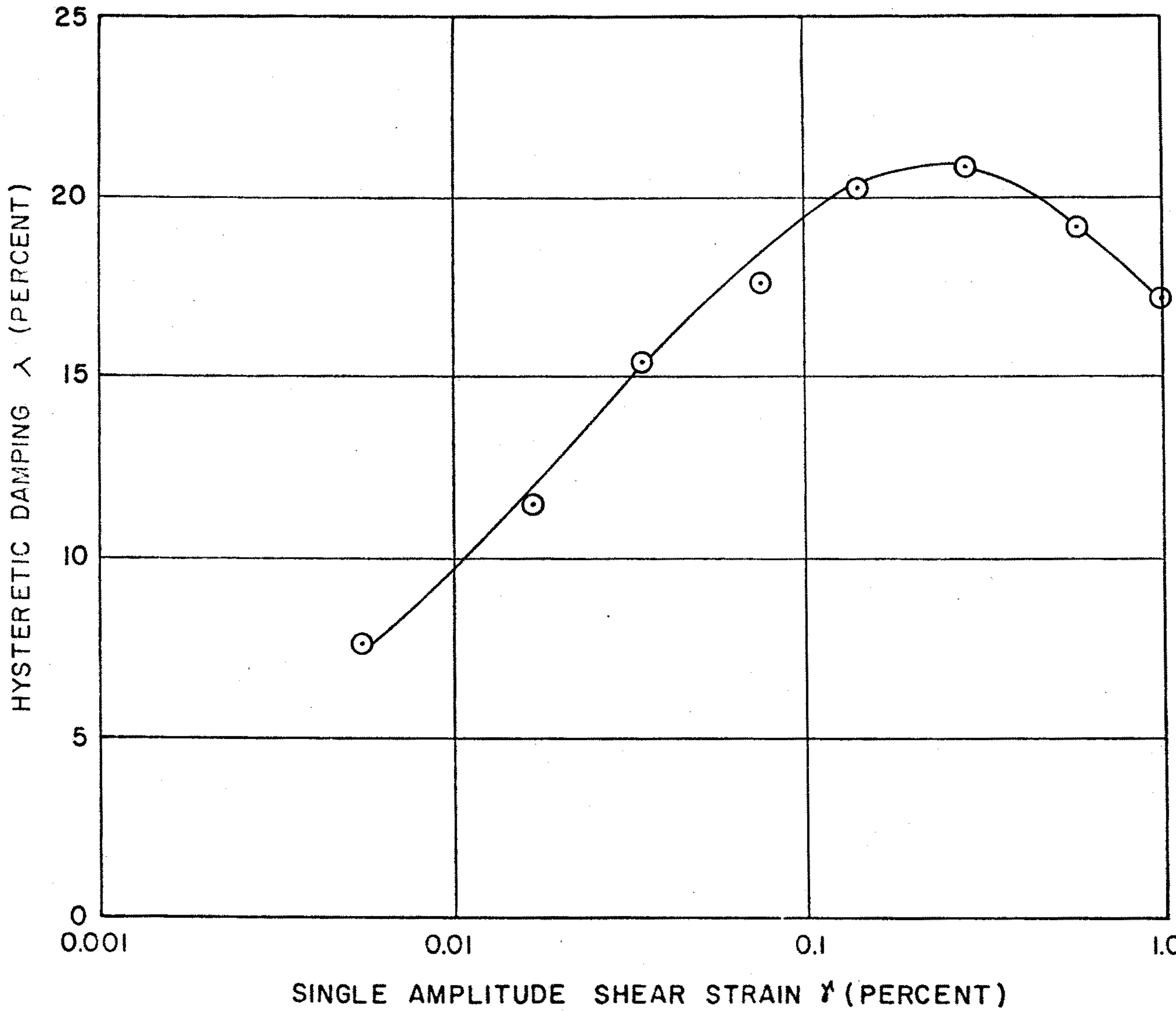

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FIGURE 2.5-312

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-6)

(SHEET 4 of 4)

BORING H-14 @ ELEVATION 635.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.5%
FIELD DRY DENSITY: 140 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

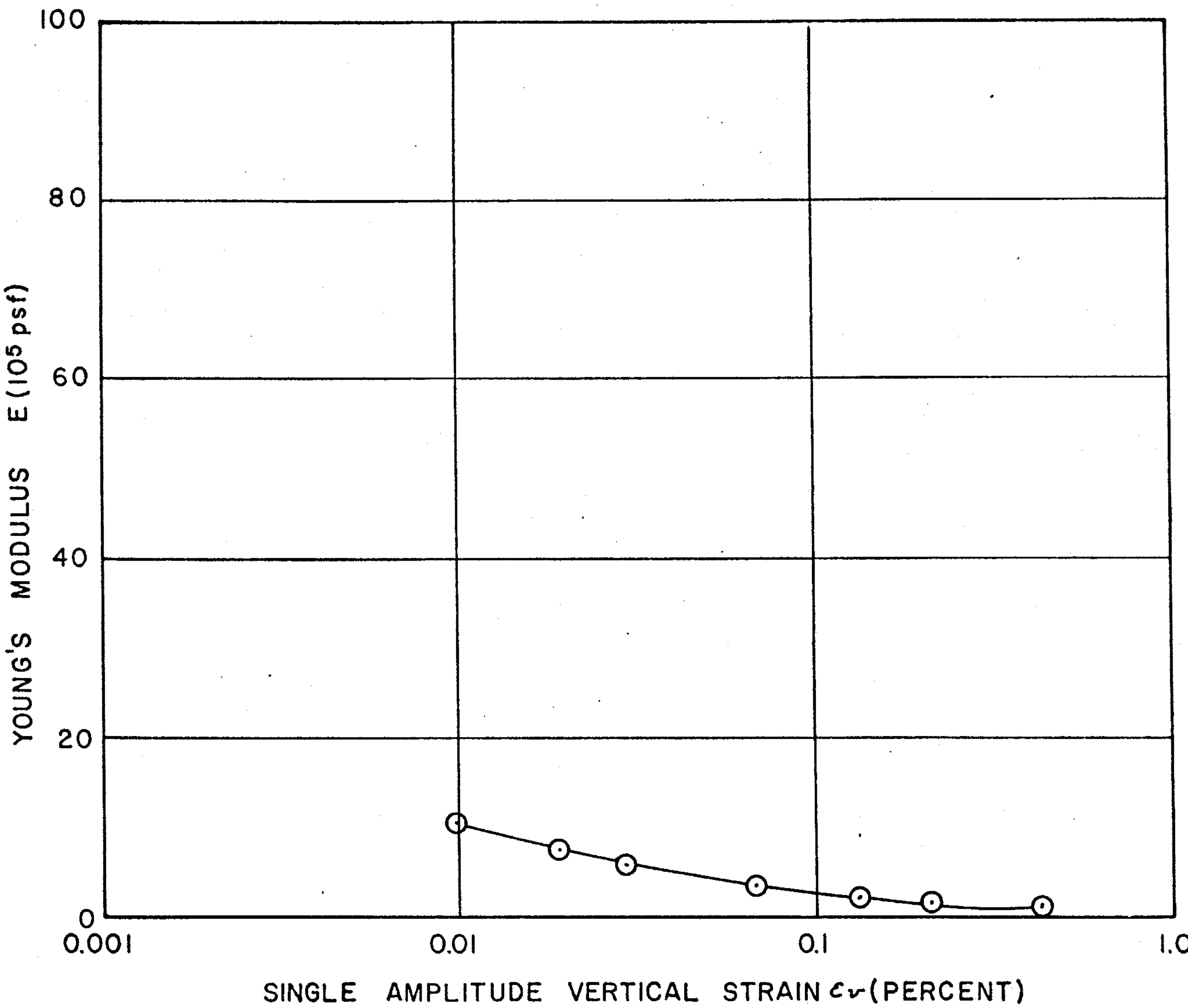

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FIGURE 2.5-313

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-14)

(SHEET 1 of 4)

BORING H-14 @ ELEVATION 635.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.5%
FIELD DRY DENSITY: 140 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

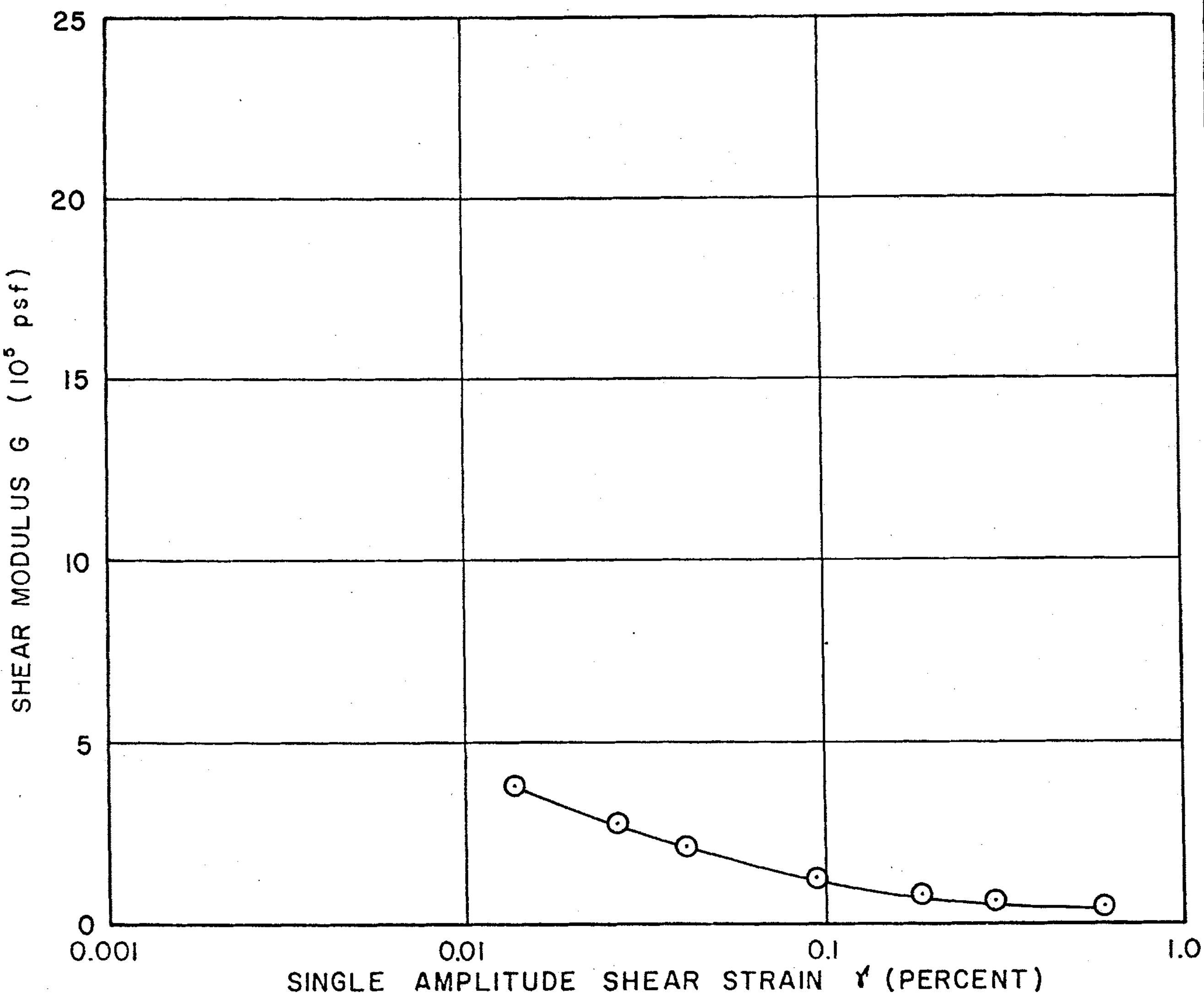

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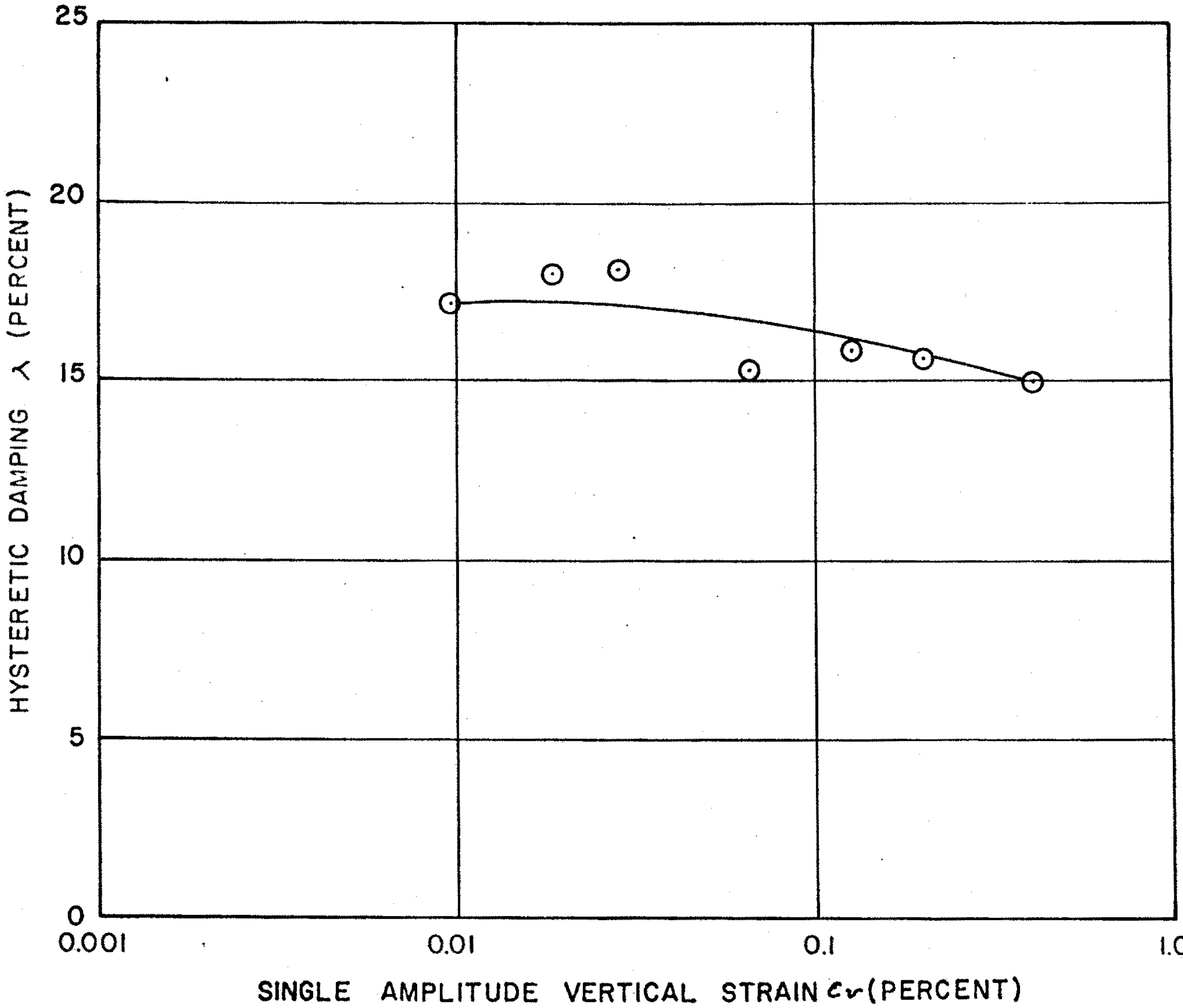
FIGURE 2.5-313

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-14)

(SHEET 2 of 4)

BORING H-14 @ ELEVATION 635.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.5%
FIELD DRY DENSITY: 140 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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FIGURE 2.5-313

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-14)

(SHEET 3 of 4)

BORING H-14 @ ELEVATION 635.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.5%
FIELD DRY DENSITY: 140 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

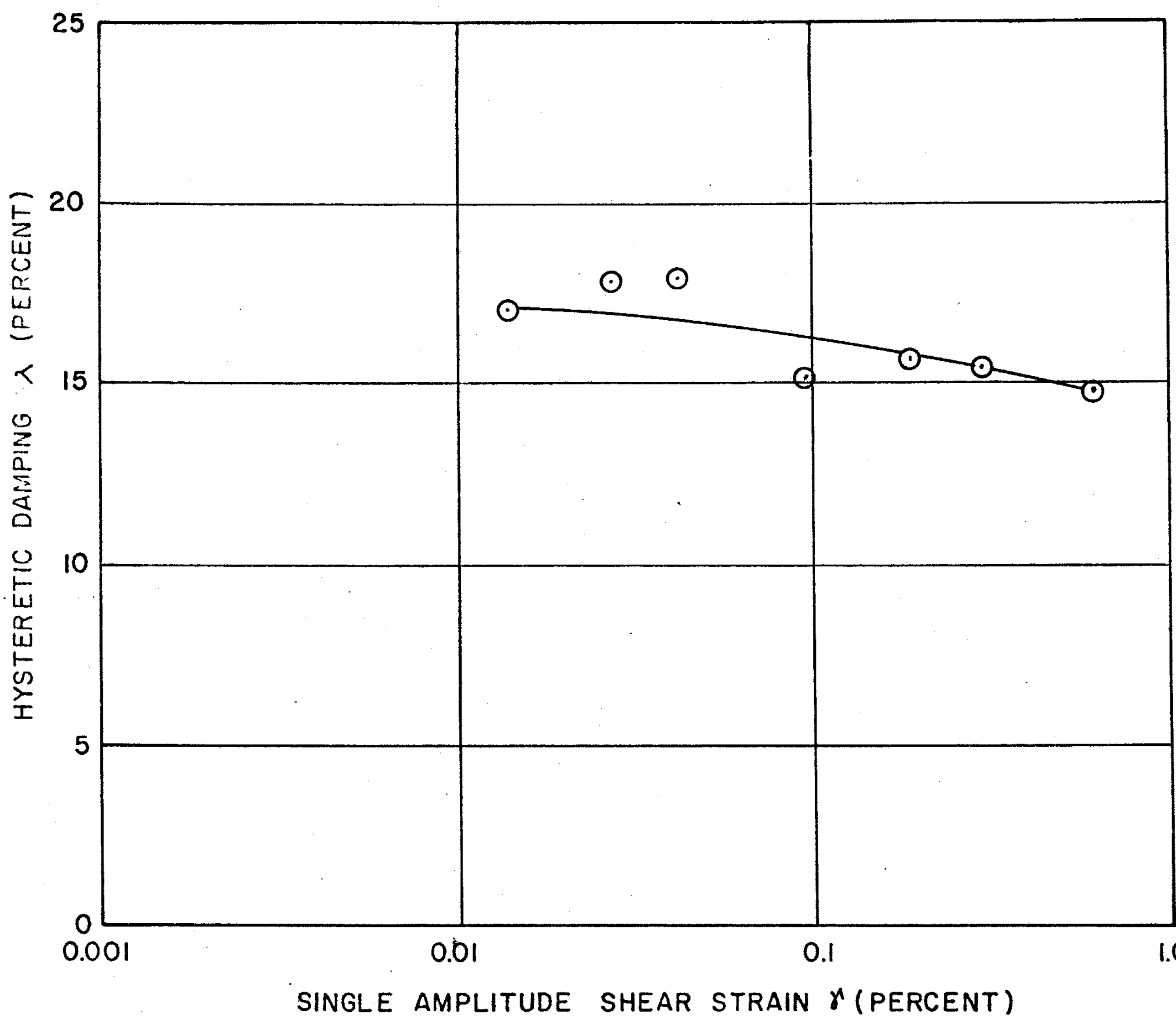

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FIGURE 2.5-313

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-14)

(SHEET 4 of 4)

BORING H-20 @ ELEVATION 706.8 FEET
GRAY FINE SANDY SILT WITH SOME CLAY
AND MEDIUM TO COARSE SAND AND GRAVEL
(WISCONSINAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

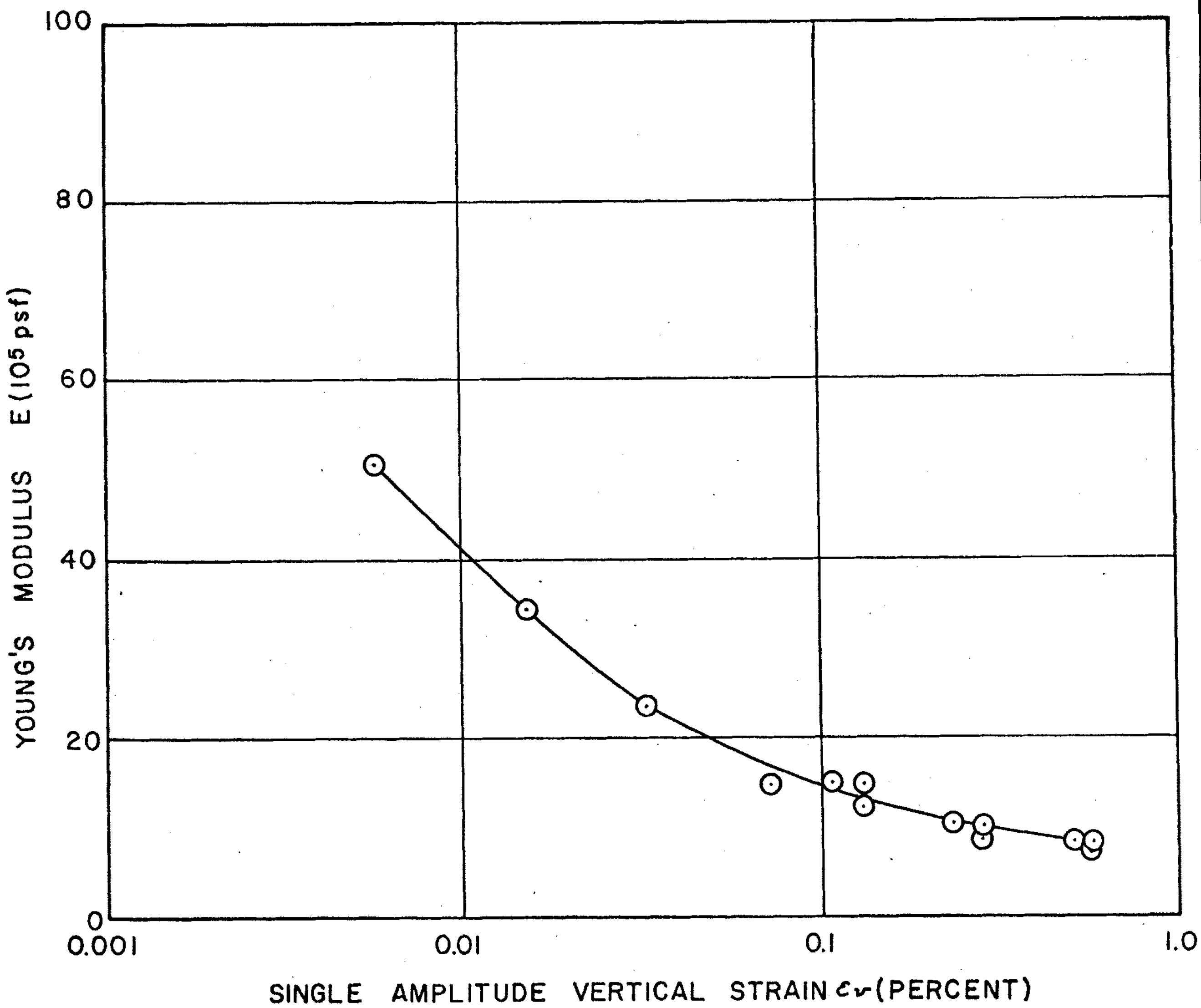

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FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 1 of 12)

BORING H-20 @ ELEVATION 706.8 FEET
GRAY FINE SANDY SILT WITH SOME CLAY
AND MEDIUM TO COARSE SAND AND GRAVEL
(WISCONSINAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

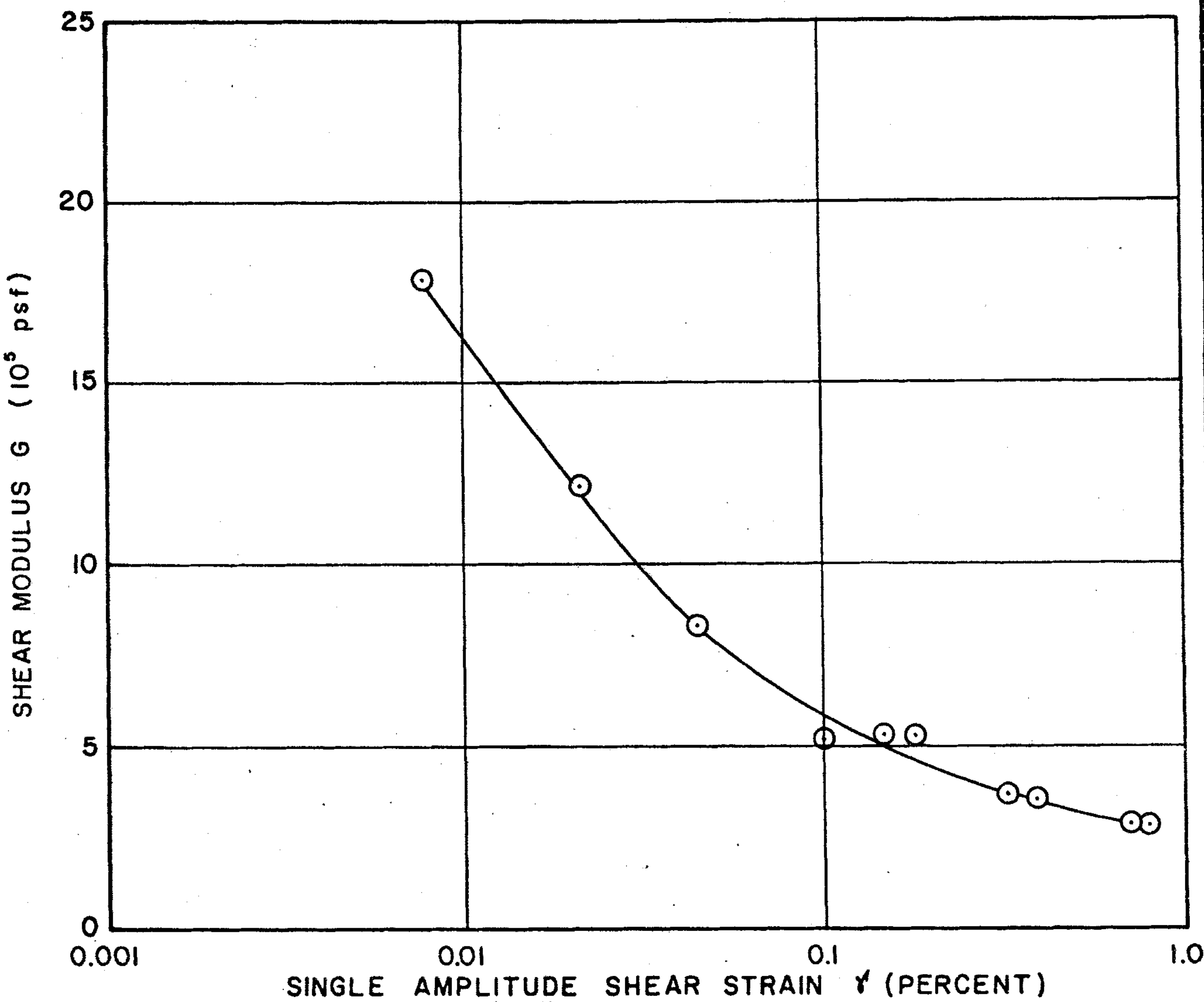

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FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 2 of 12)

BORING H-20 @ ELEVATION 706.8 FEET
GRAY FINE SANDY SILT WITH SOME CLAY
AND MEDIUM TO COARSE SAND AND GRAVEL
(WISCONSINAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

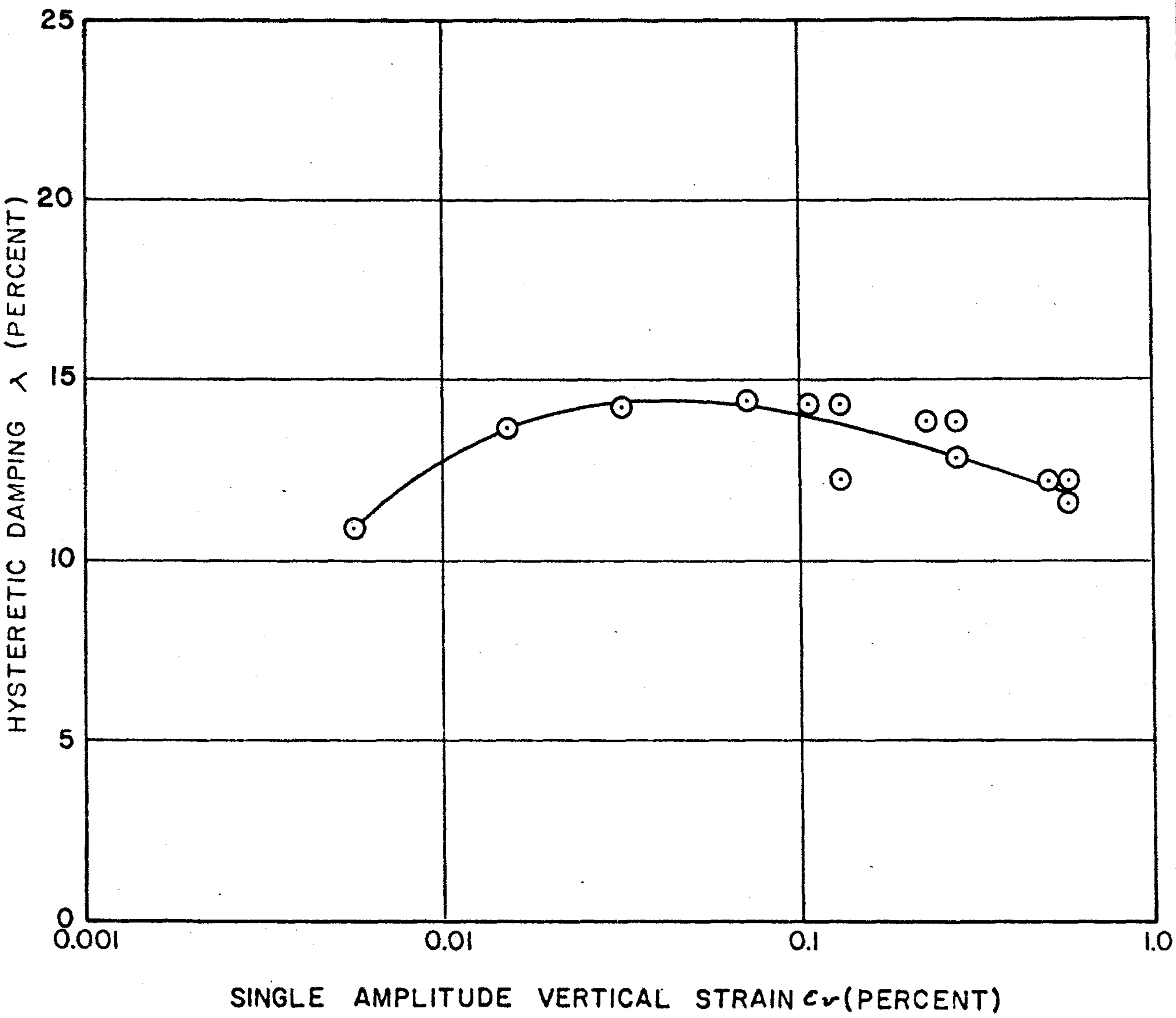

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FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)
(SHEET 3 of 12)

BORING H-20 @ ELEVATION 706.8 FEET
GRAY FINE SANDY SILT WITH SOME CLAY
AND MEDIUM TO COARSE SAND AND GRAVEL
(WISCONSINAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 8.6%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

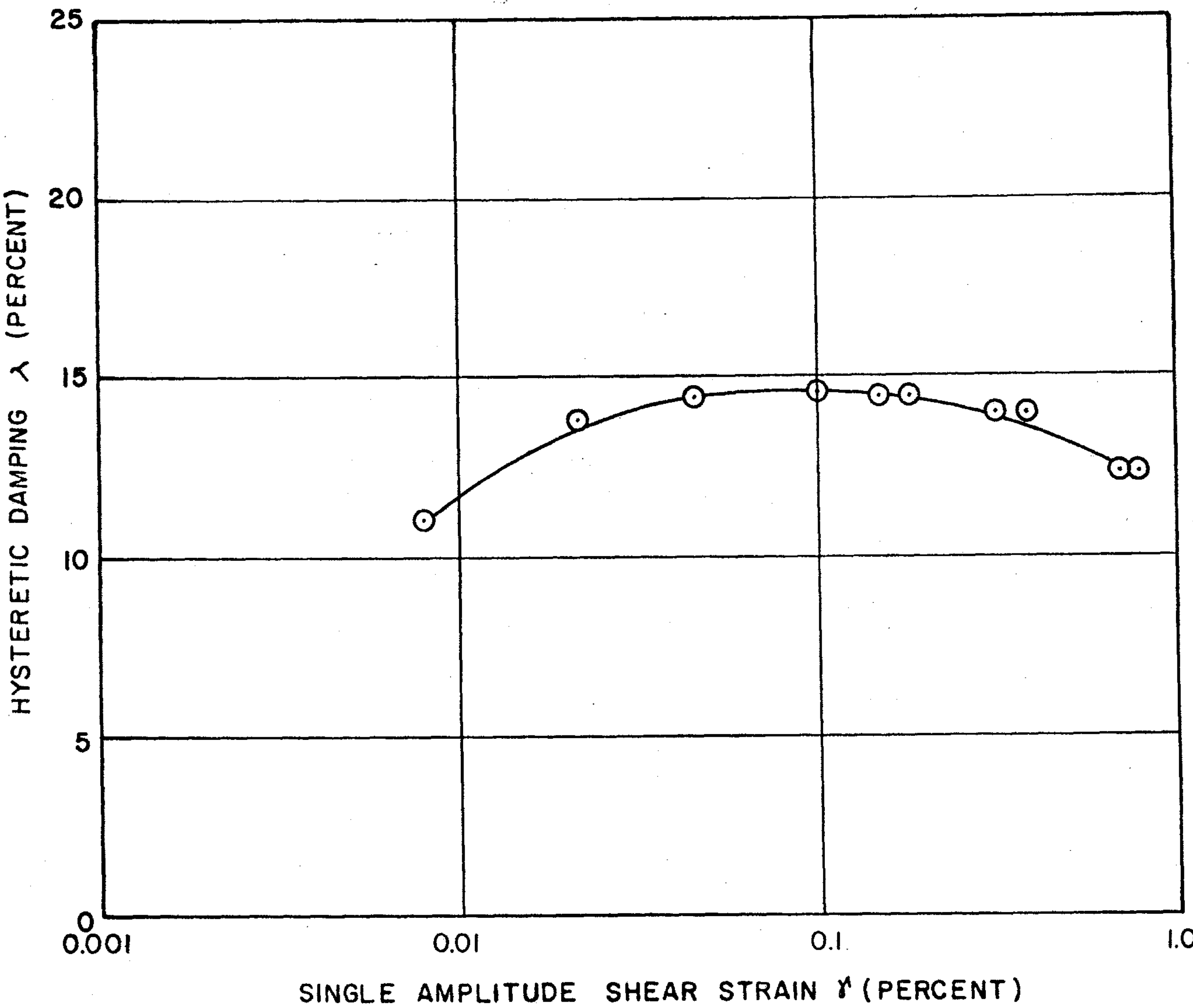

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FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 4 of 12)

BORING H-20 @ ELEVATION 686.8 FEET
DARK GRAY CLAYEY SILT WITH TRACES OF FINE SAND
(INTERGLACIAL SOIL)
FIELD MOISTURE CONTENT:
FIELD DRY DENSITY:
TEST DATA OBTAINED FROM PITCHER SAMPLE

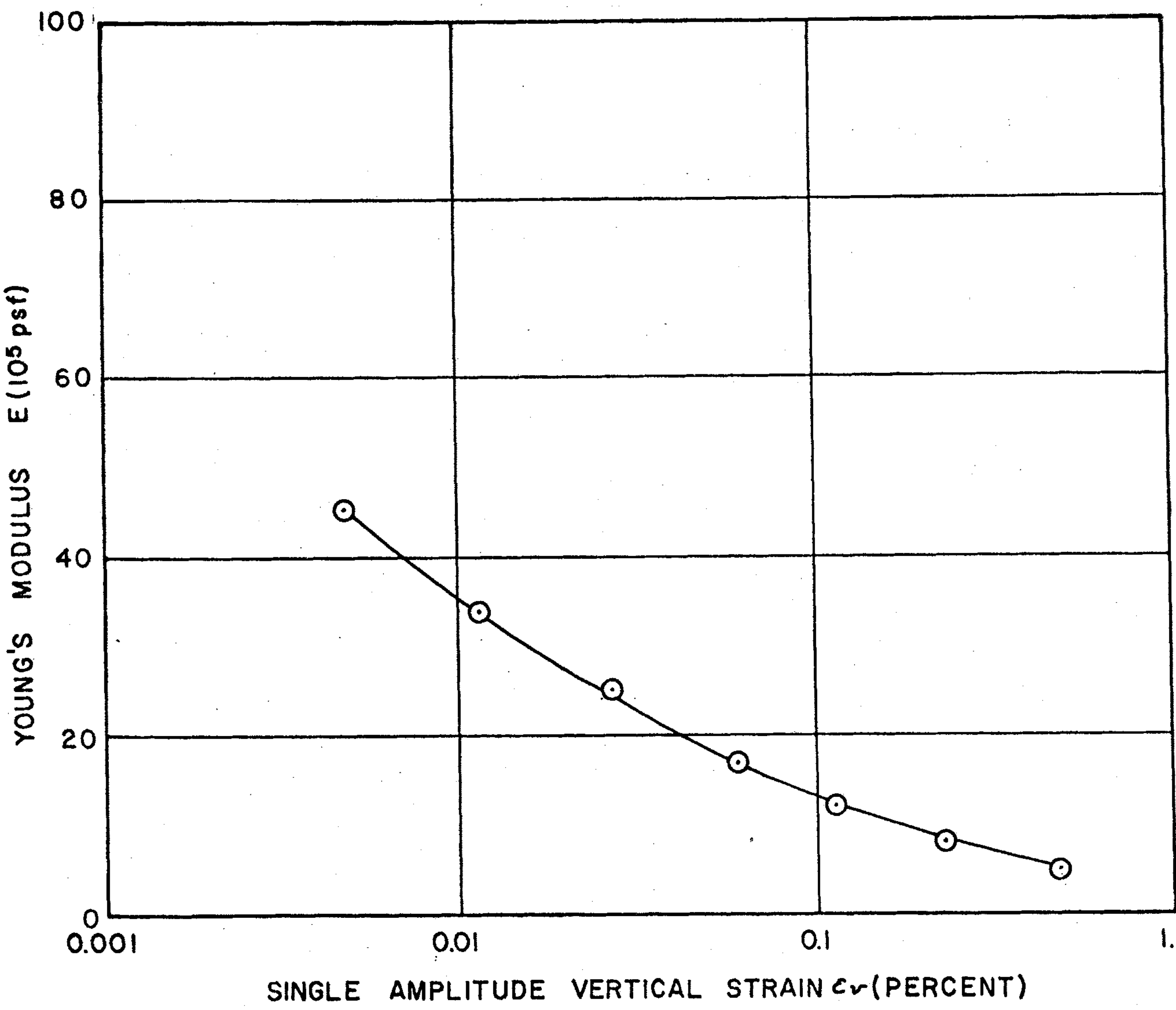

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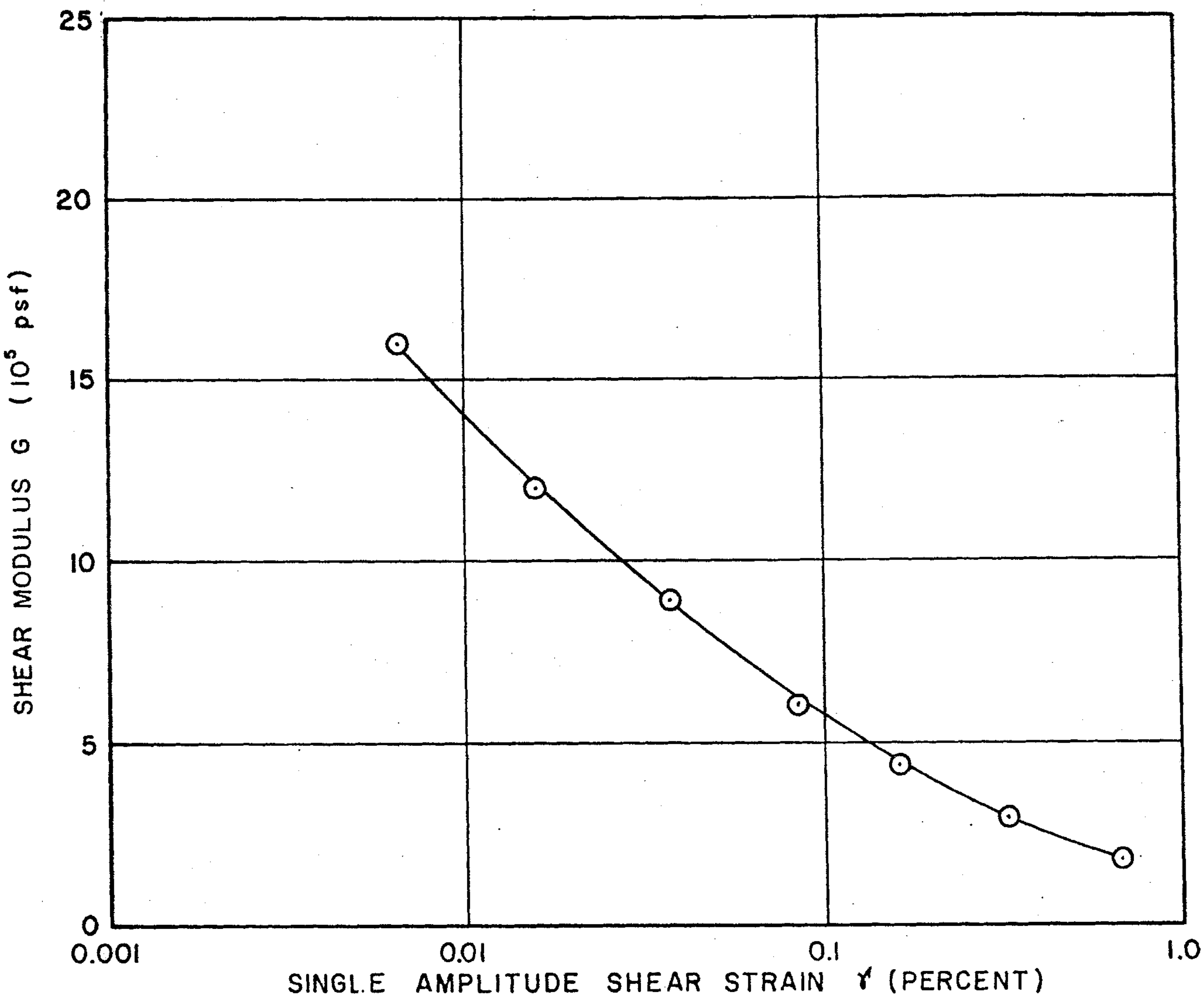
FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 5 of 12)

BORING H-20 @ ELEVATION 686.8 FEET
DARK GRAY CLAYEY SILT WITH TRACES
OF FINE SAND
(INTERGLACIAL SOIL)
FIELD MOISTURE CONTENT:
FIELD DRY DENSITY:
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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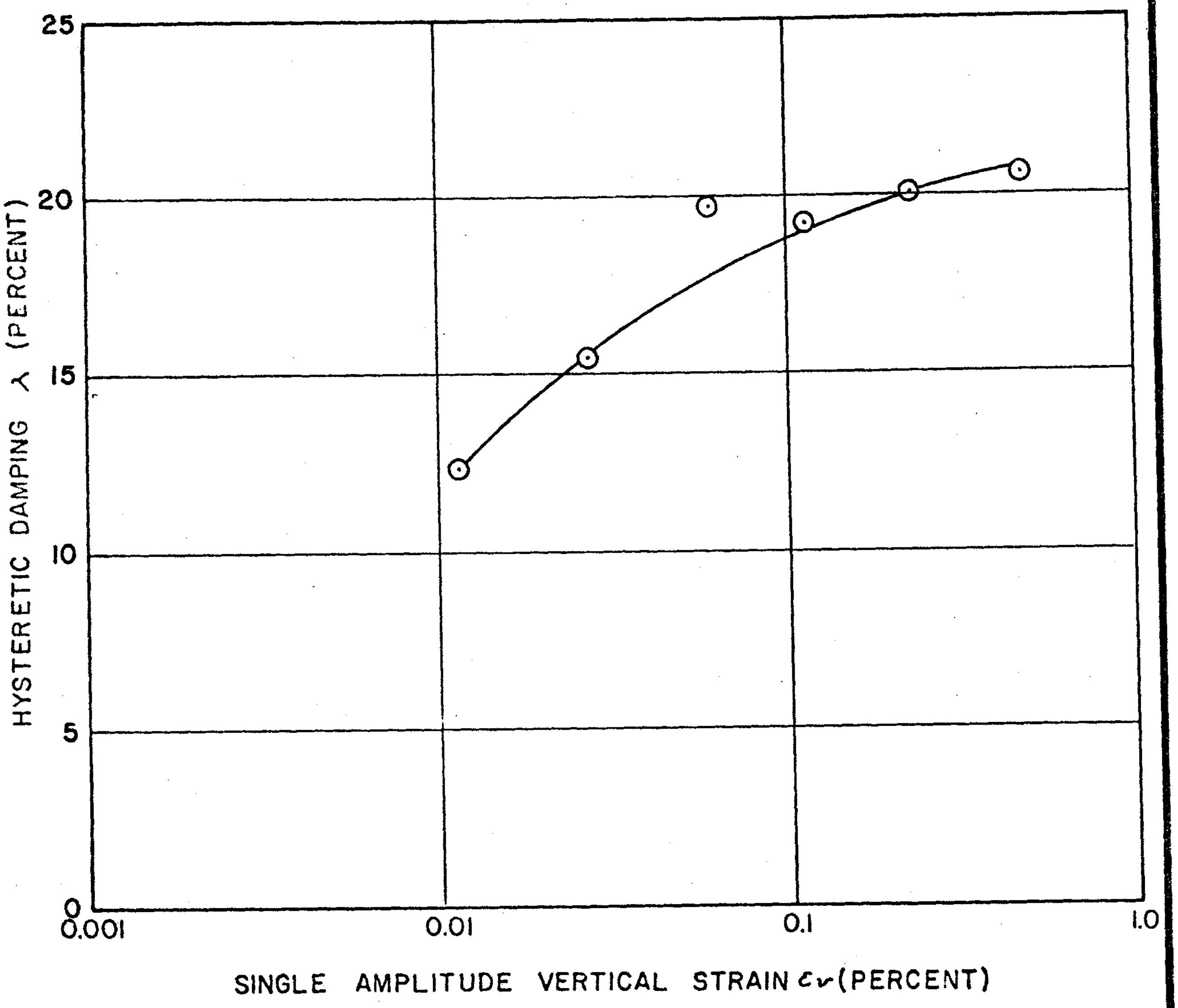
FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 6 of 12)

BORING H-20 @ ELEVATION 686.8 FEET
DARK GRAY CLAYEY SILT WITH TRACES
OF FINE SAND
(INTERGLACIAL SOIL)
FIELD MOISTURE CONTENT:
FIELD DRY DENSITY:
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 7 of 12)

BORING H-20 @ ELEVATION 686.8 FEET
DARK GRAY CLAYEY SILT WITH TRACES
OF FINE SAND
(INTERGLACIAL SOIL)
FIELD MOISTURE CONTENT:
FIELD DRY DENSITY:
TEST DATA OBTAINED FROM PITCHER SAMPLE

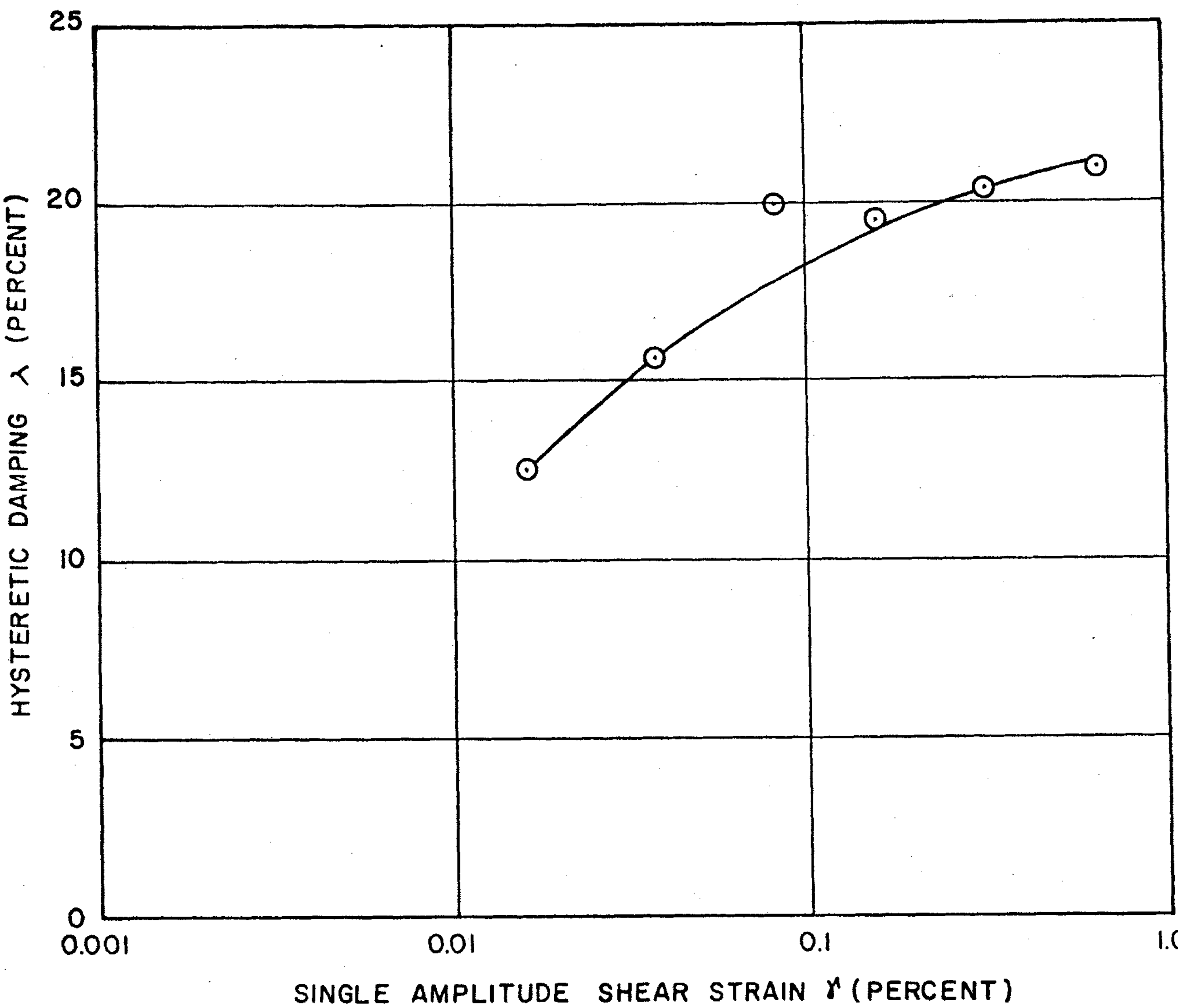

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FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 8 of 12)

BORING H-20 @ ELEVATION 672.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 10.5%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

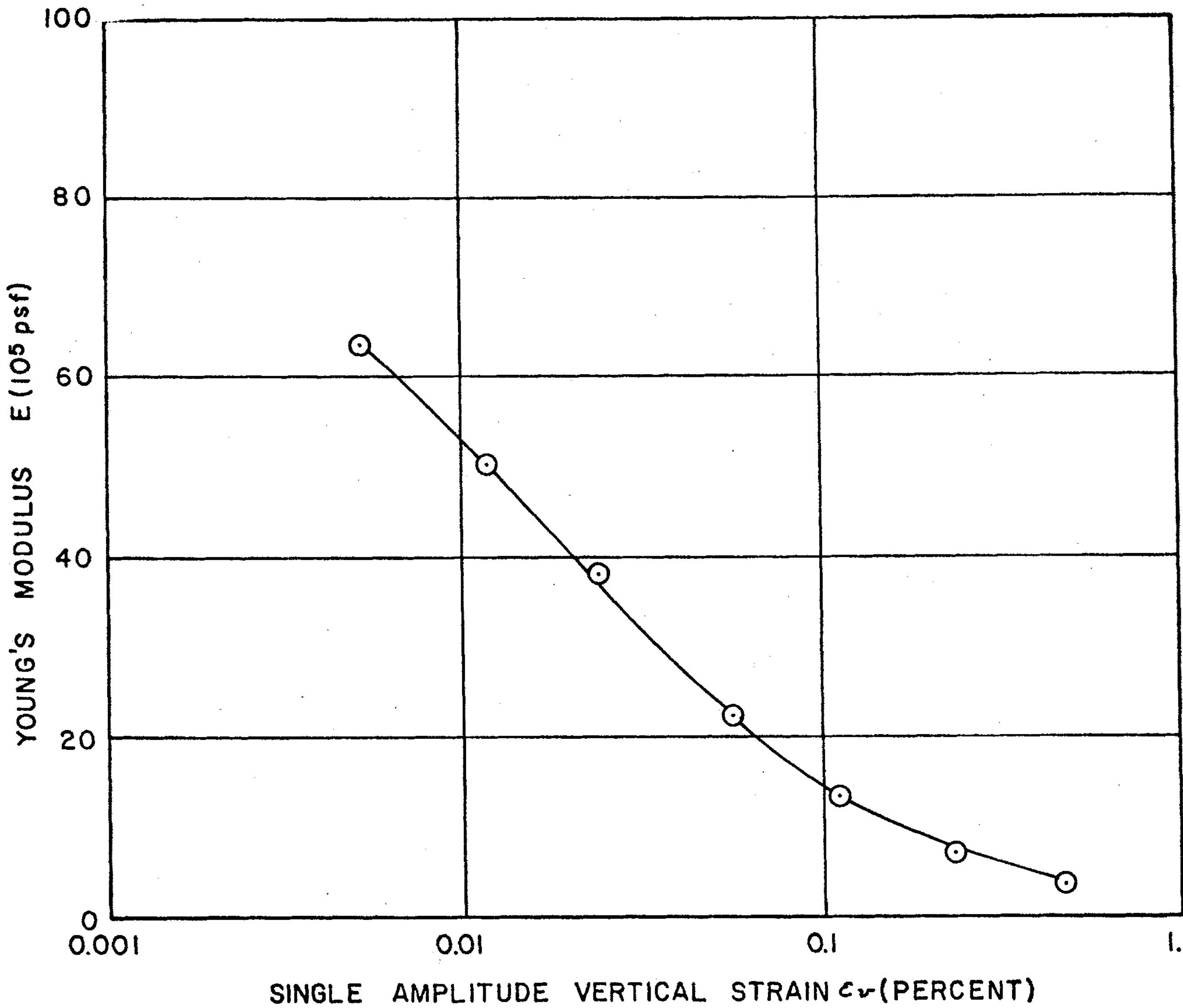

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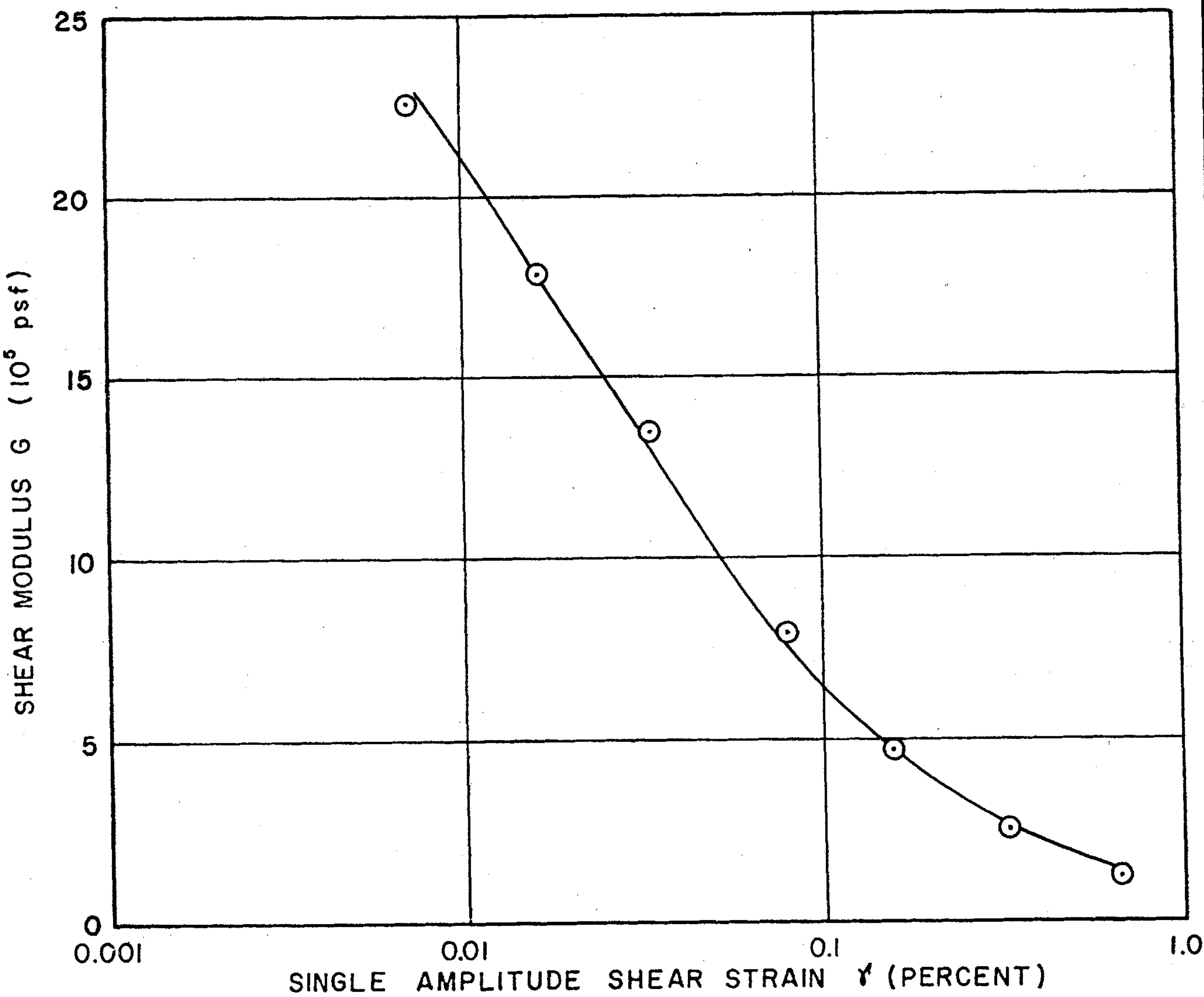
FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 9 of 12)

BORING H-20 @ ELEVATION 672.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 10.5%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



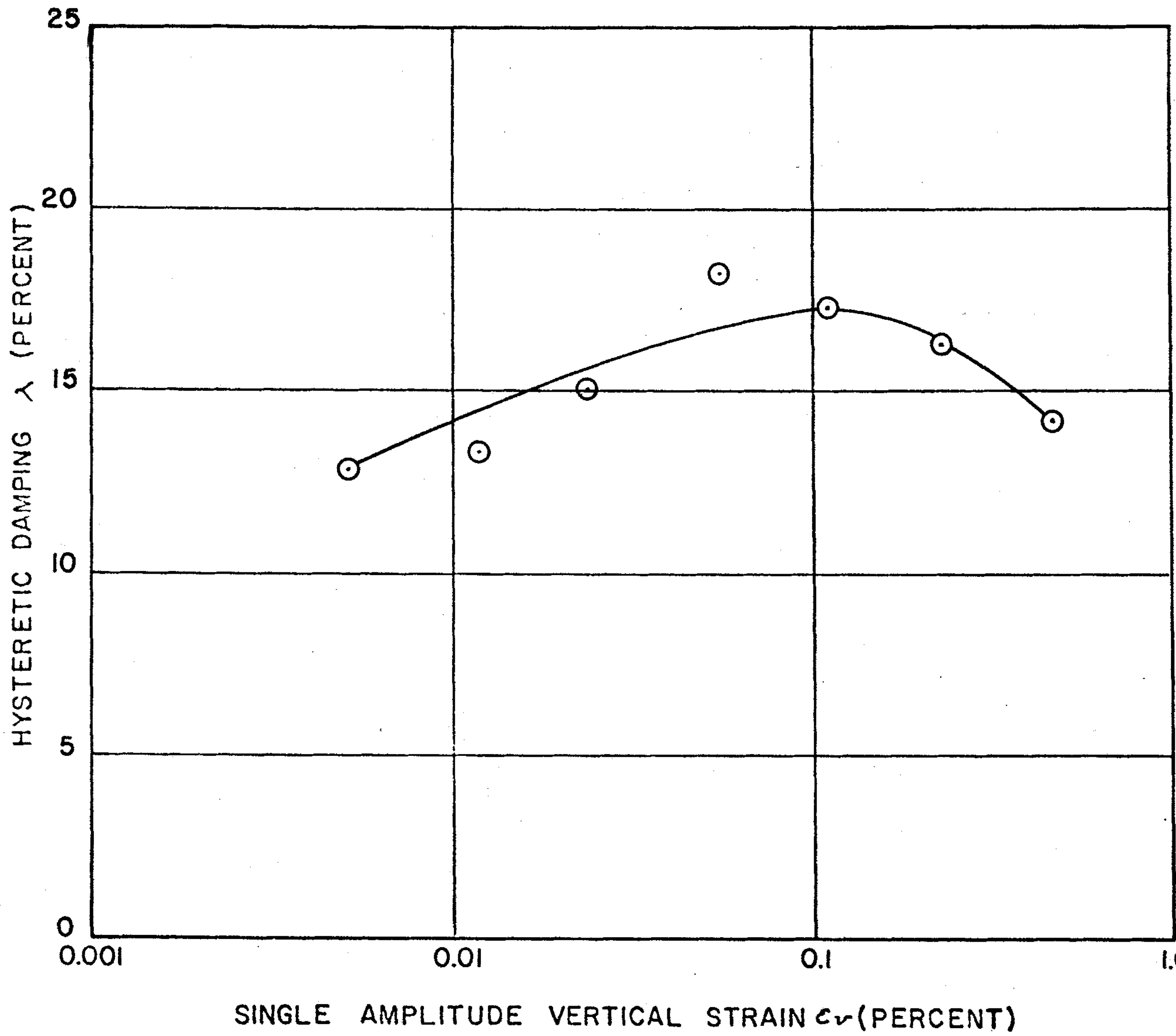
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 10 of 12)

BORING H-20 @ ELEVATION 672.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 10.5%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



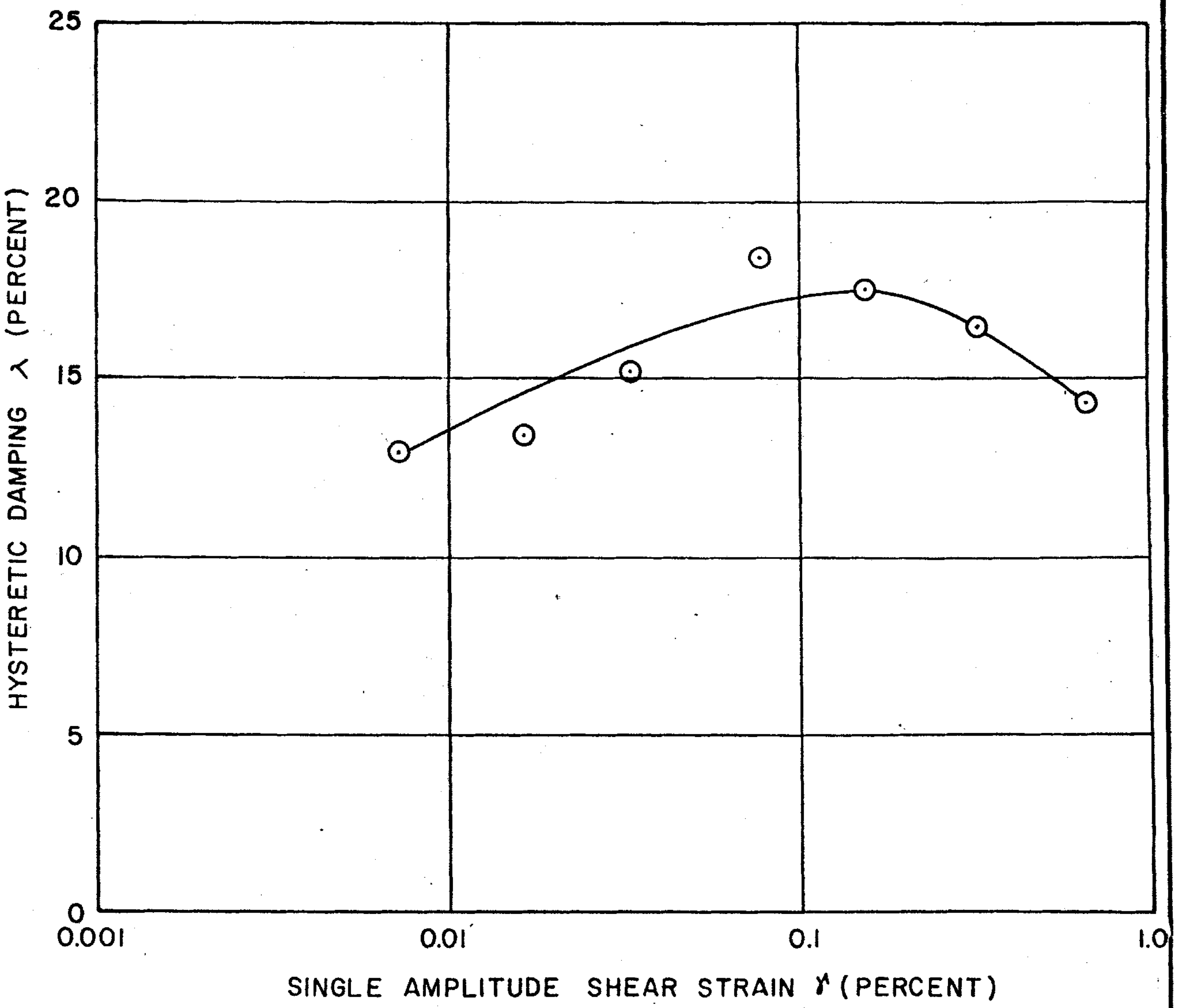
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 11 of 12)

BORING H-20 @ ELEVATION 672.3 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 10.5%
FIELD DRY DENSITY: 136 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-314

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-20)

(SHEET 12 of 12)

BORING H-23 @ ELEVATION 677.8 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.1%
FIELD DRY DENSITY: 138 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

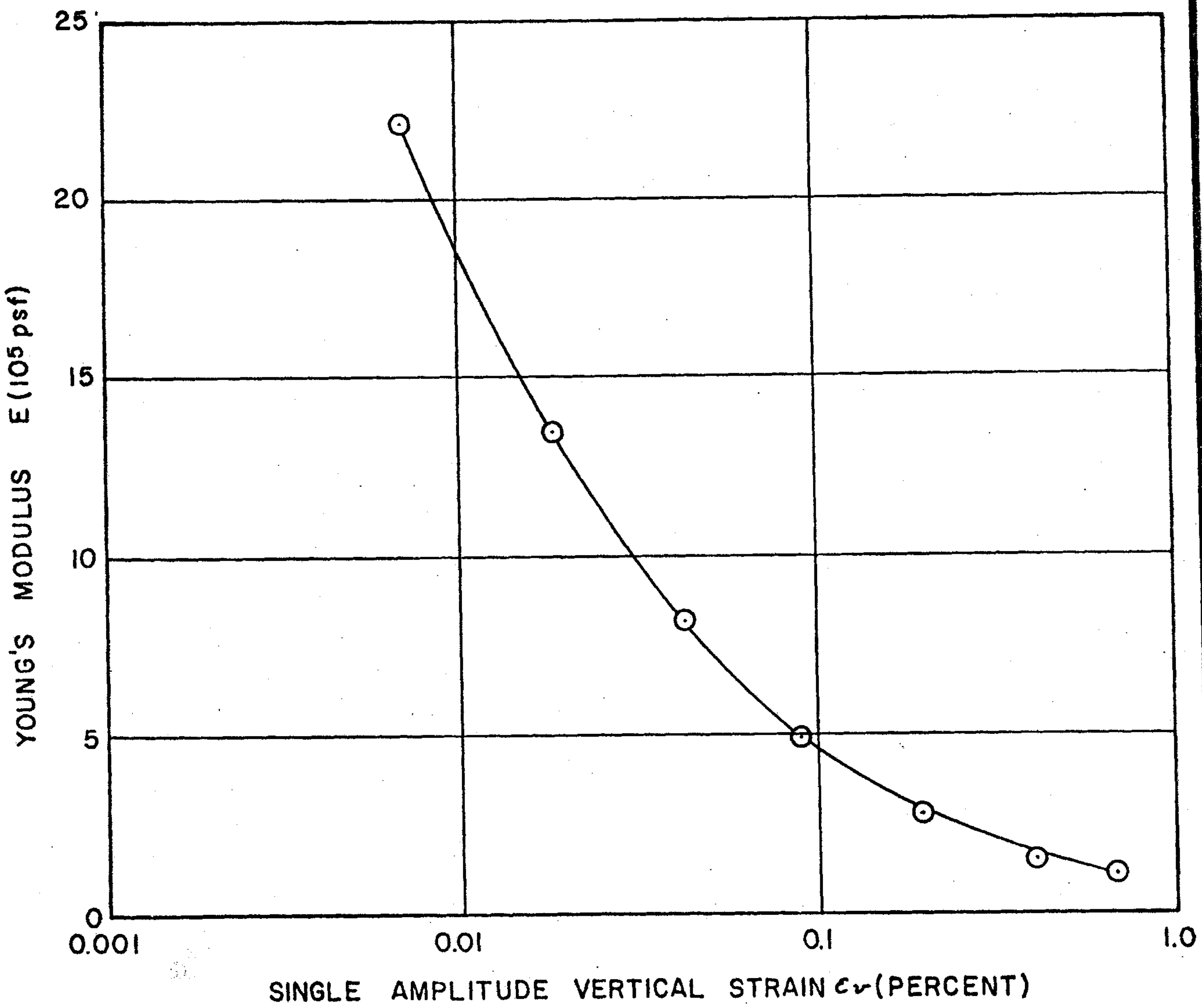


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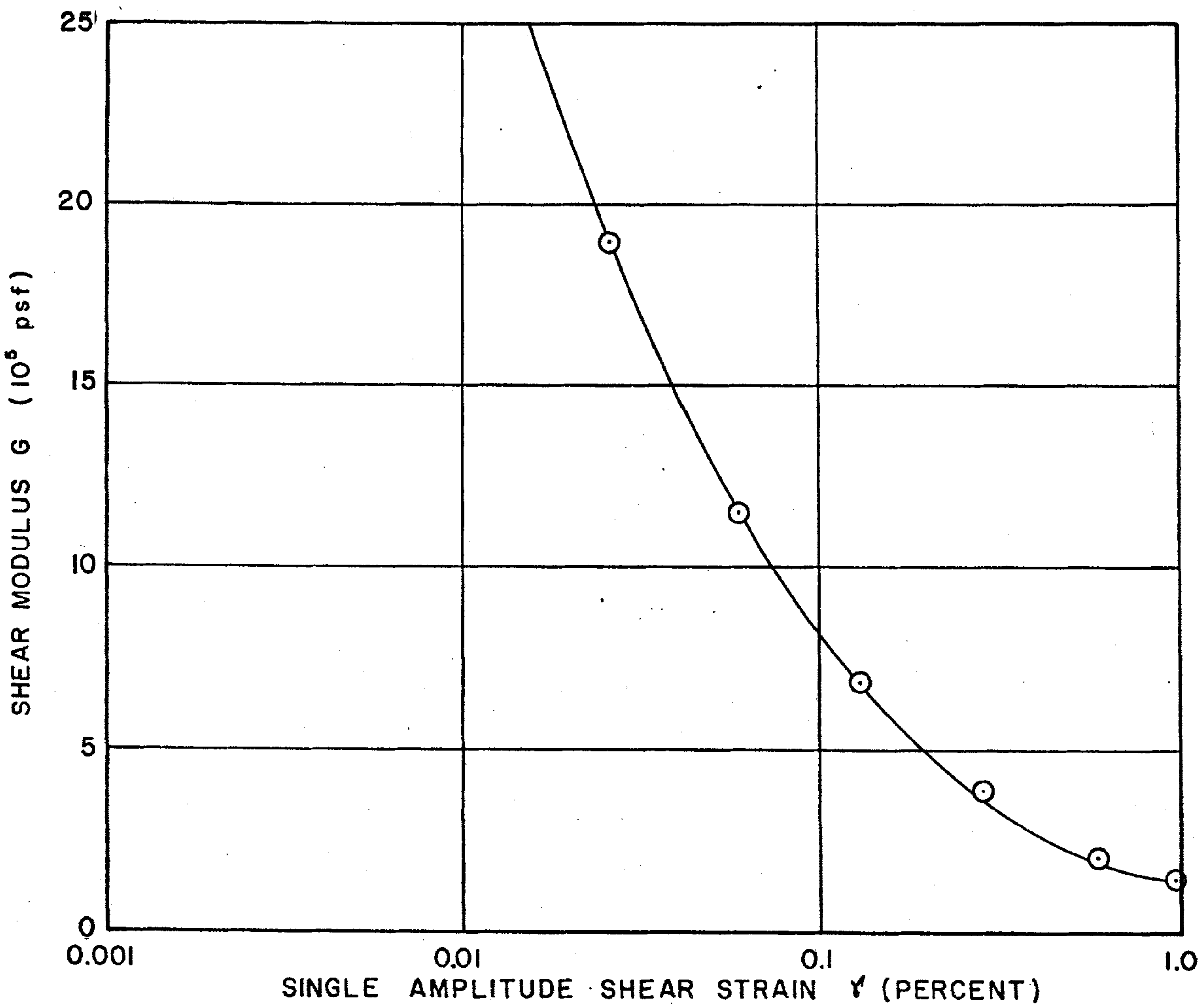
FIGURE 2.5-315

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-23)

(SHEET 1 of 4)

BORING H-23 @ ELEVATION 677.8 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.1%
FIELD DRY DENSITY: 138 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



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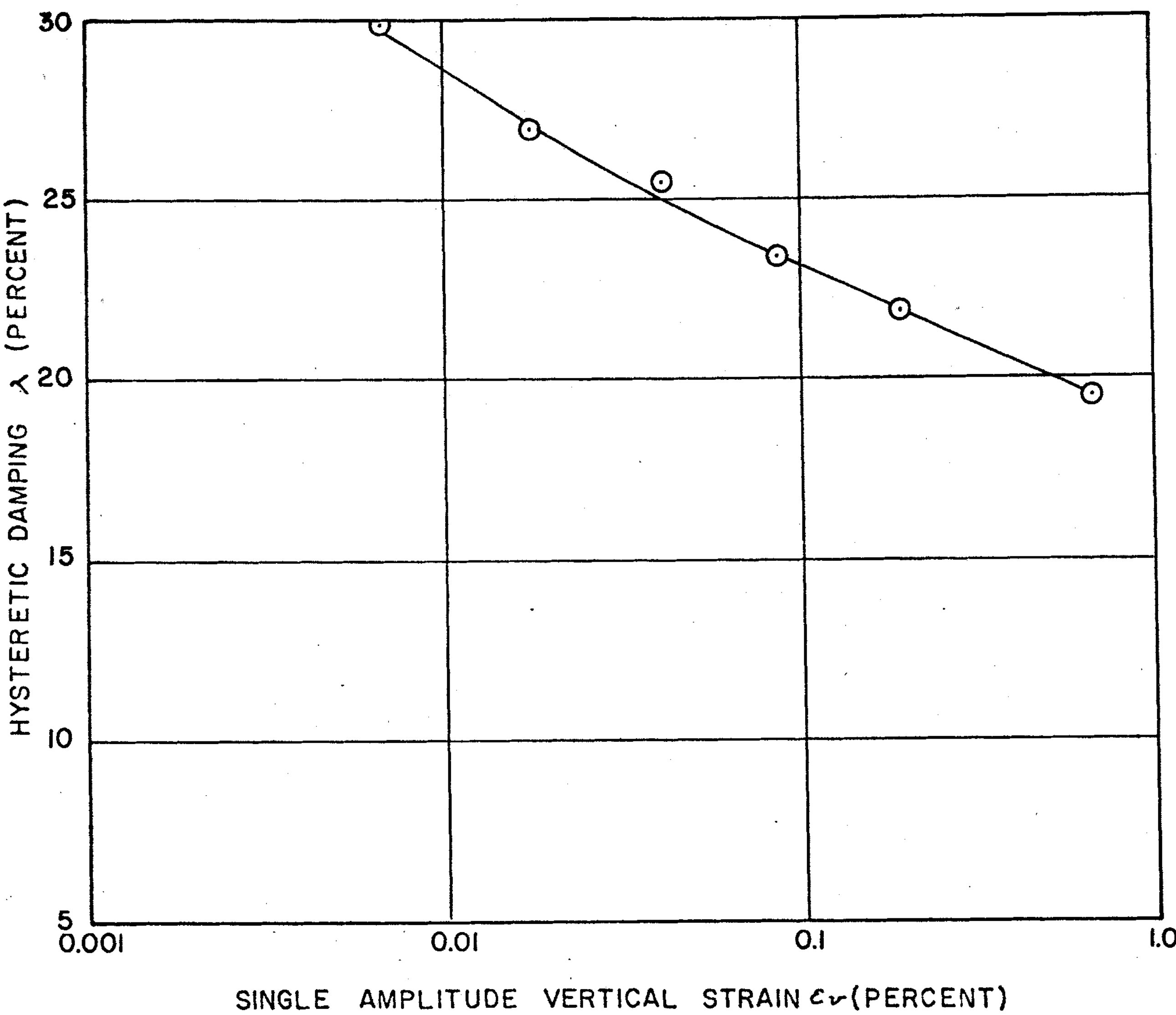
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-315

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-23)

(SHEET 2 of 4)

BORING H-23 @ ELEVATION 677.8 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.1%
FIELD DRY DENSITY: 138 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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FIGURE 2.5-315

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-23)

(SHEET 3 of 4)

BORING H-23 @ ELEVATION 677.8 FEET
GRAY FINE TO COARSE SANDY SILT WITH
SOME CLAY AND FINE GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.1%
FIELD DRY DENSITY: 138 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

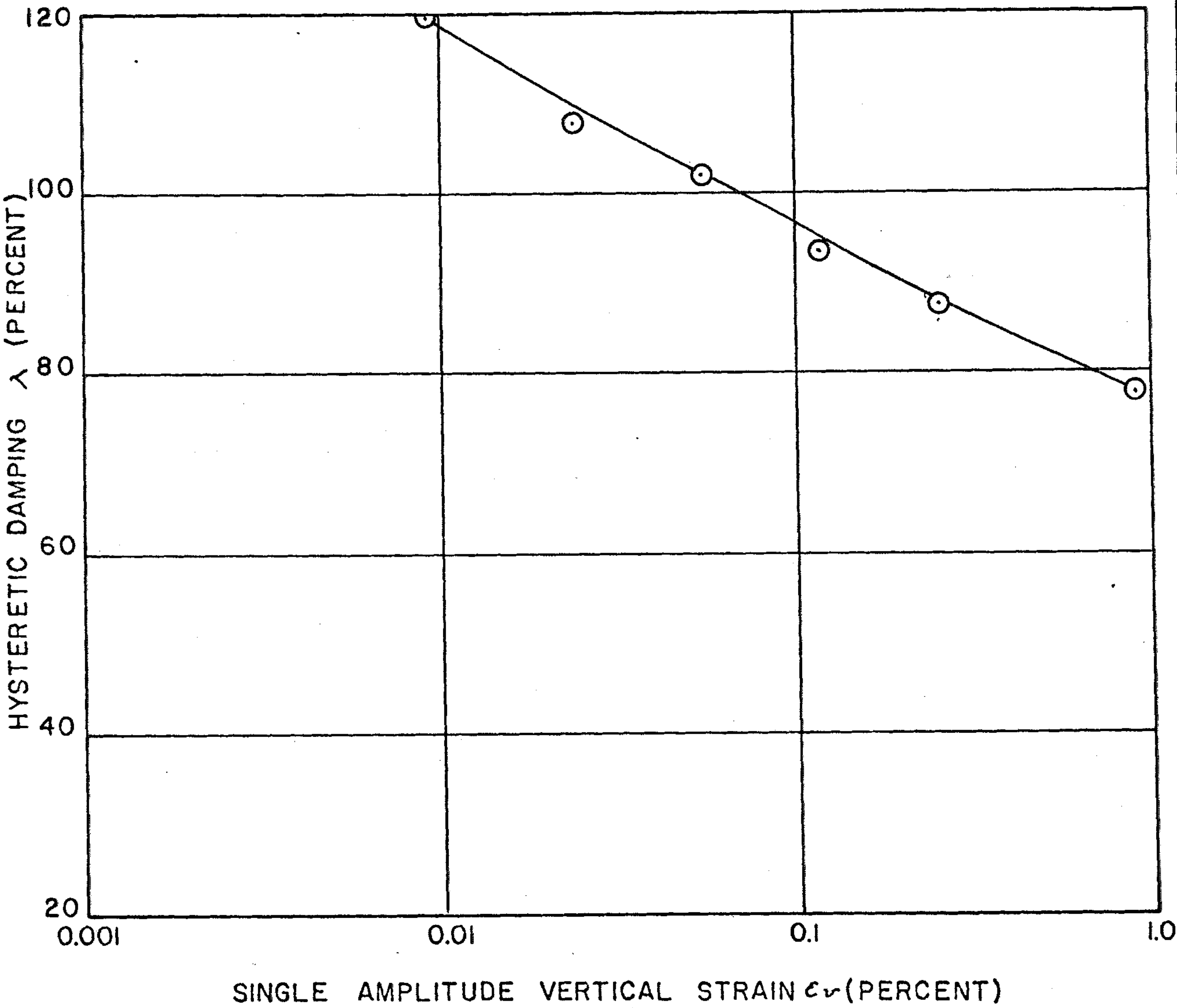

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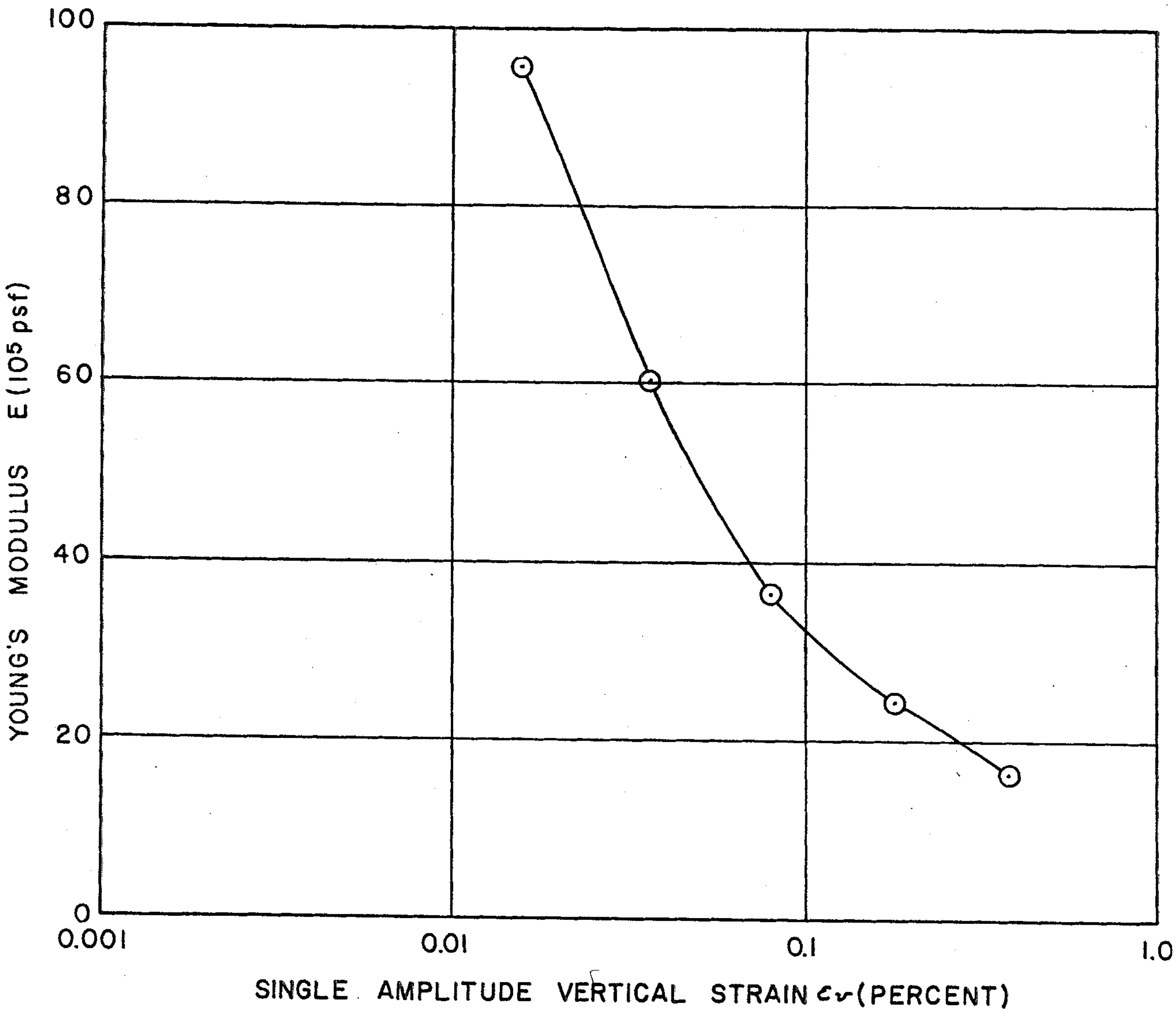
FIGURE 2.5-315

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-23)

(SHEET 4 of 4)

BORING H-30 @ ELEVATION 638.5 FEET
DARK GRAY FINE TO COARSE SANDY SILT
WITH SOME GRAVEL AND TRACES OF CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 6.8%
FIELD DRY DENSITY: 145 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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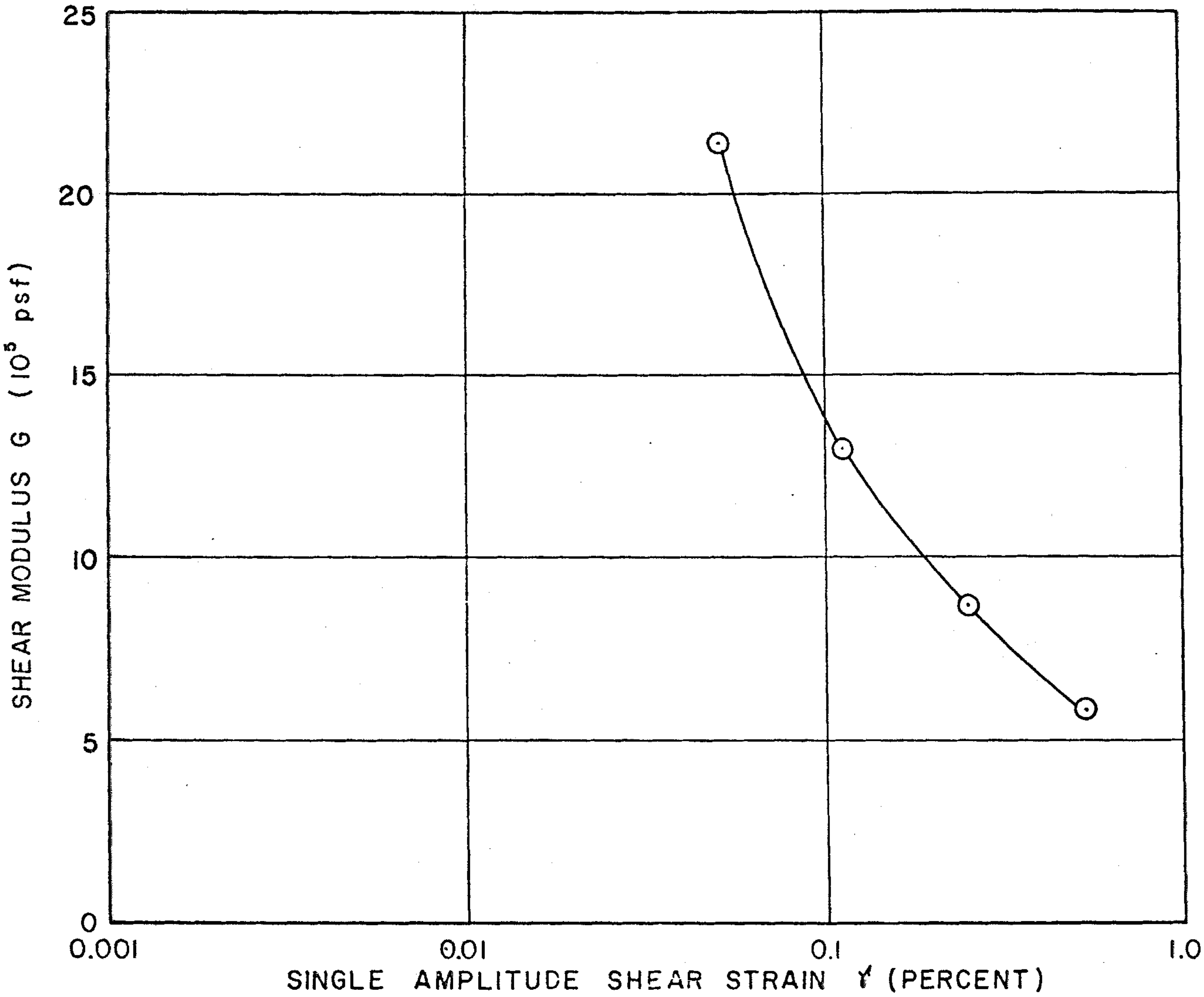
FIGURE 2.5-316

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-30)

(SHEET 1 of 4)

BORING H-30 @ ELEVATION 638.5 FEET
DARK GRAY FINE TO COARSE SANDY SILT
WITH SOME GRAVEL AND TRACES OF CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 6.8%
FIELD DRY DENSITY: 145 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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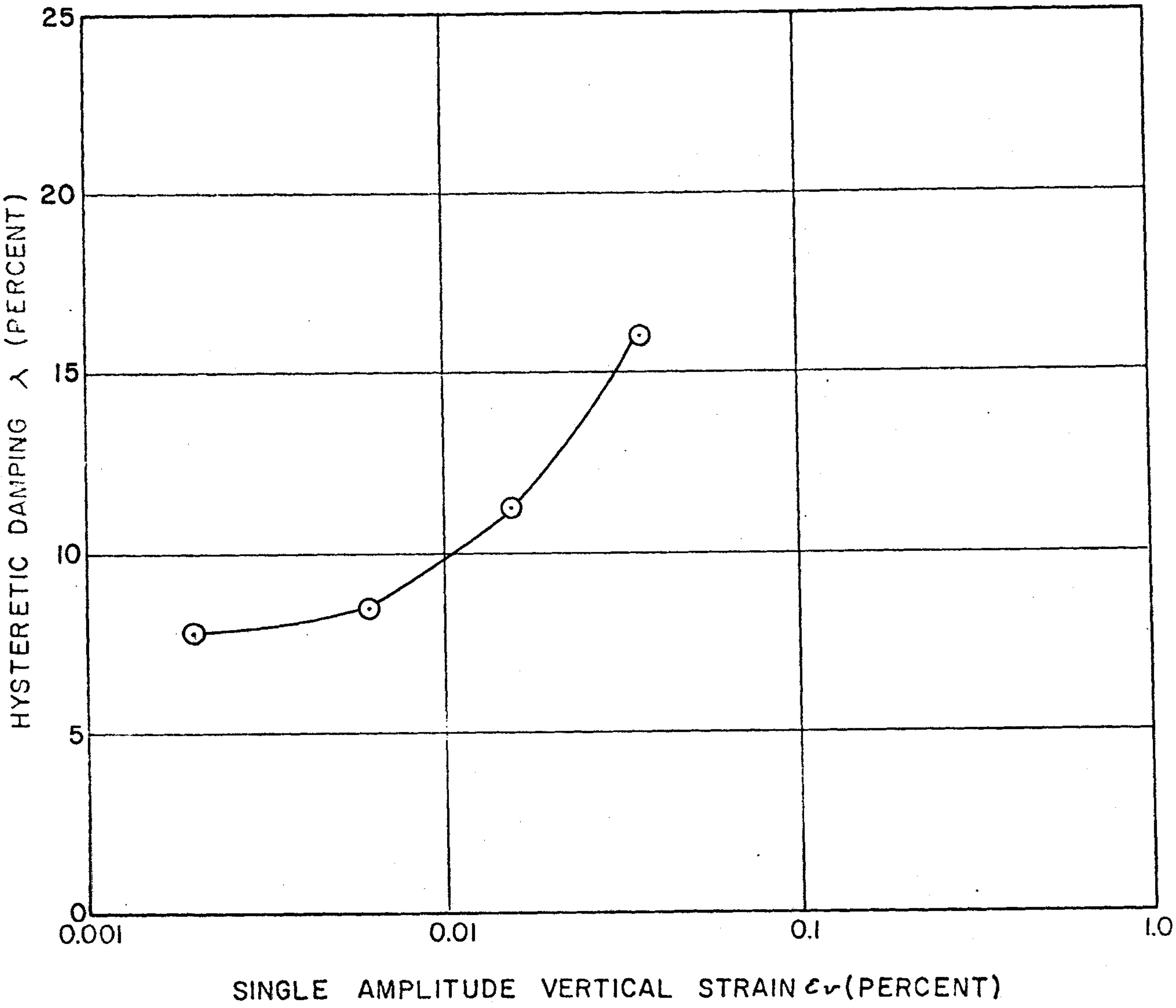
FIGURE 2.5-316

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-30)

(SHEET 2 of 4)

BORING H-30 @ ELEVATION 638.5 FEET
DARK GRAY FINE TO COARSE SANDY SILT
WITH SOME GRAVEL AND TRACES OF CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 6.8%
FIELD DRY DENSITY: 145 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-316

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-30)

(SHEET 3 of 4)

BORING H-30 @ ELEVATION 638.5 FEET
DARK GRAY FINE TO COARSE SANDY SILT
WITH SOME GRAVEL AND TRACES OF CLAY
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 6.8%
FIELD DRY DENSITY: 145 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

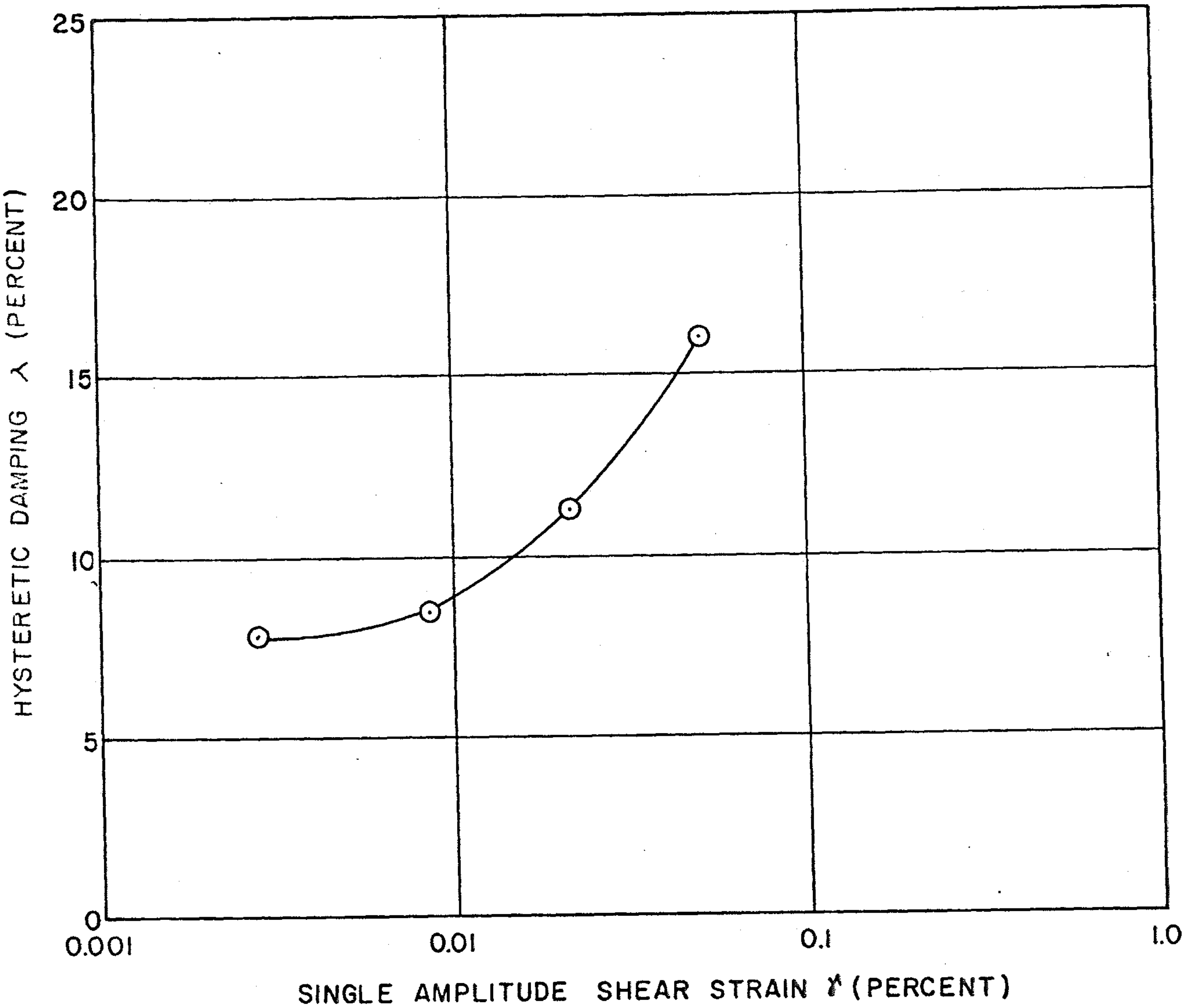


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FIGURE 2.5-316

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-30)

(SHEET 4 of 4)

BORING H-36 @ ELEVATION 622.7 FEET
GRAY CLAYEY SILT WITH SOME FINE TO
COARSE SAND AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.4%
FIELD DRY DENSITY: 137 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

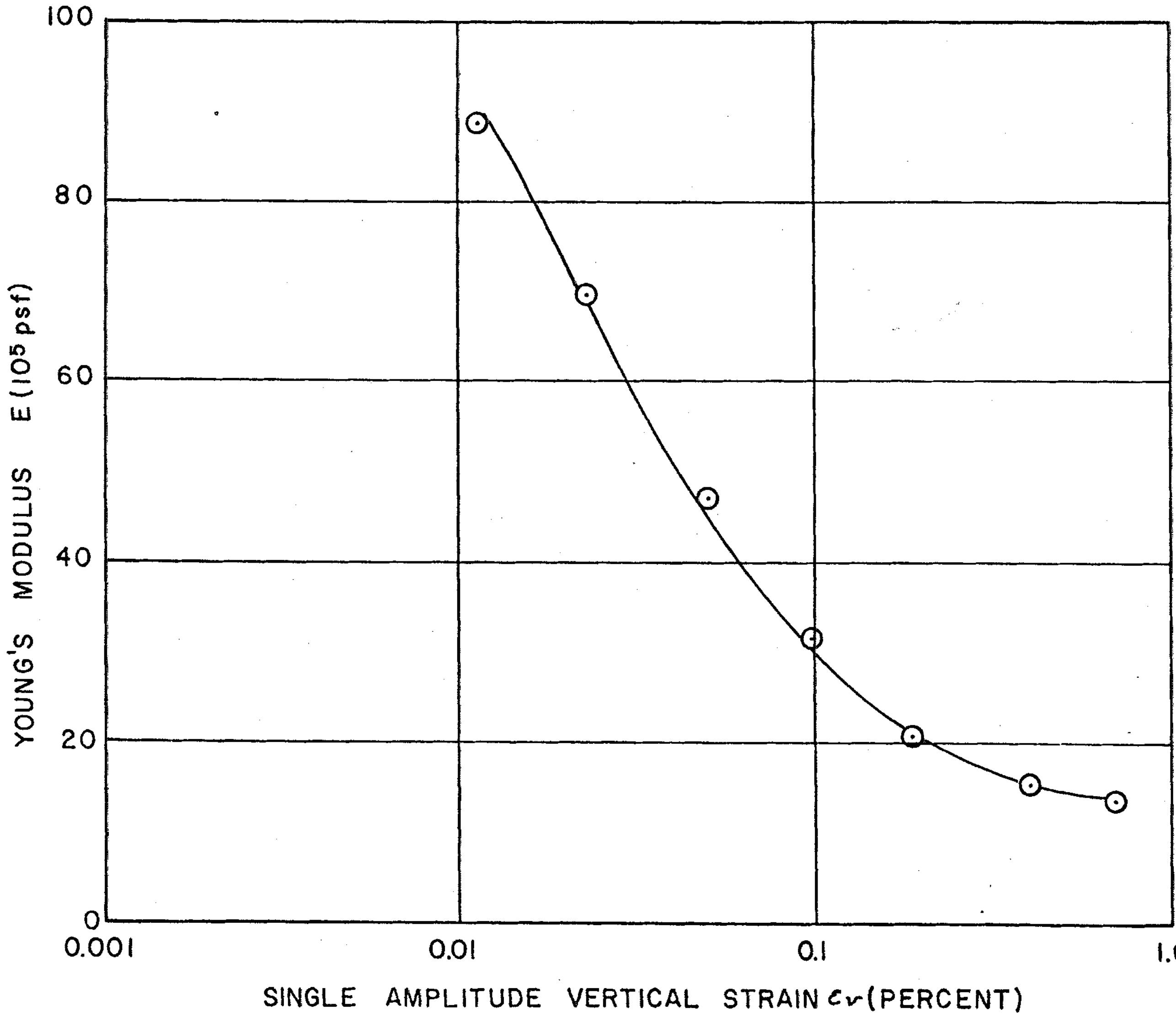

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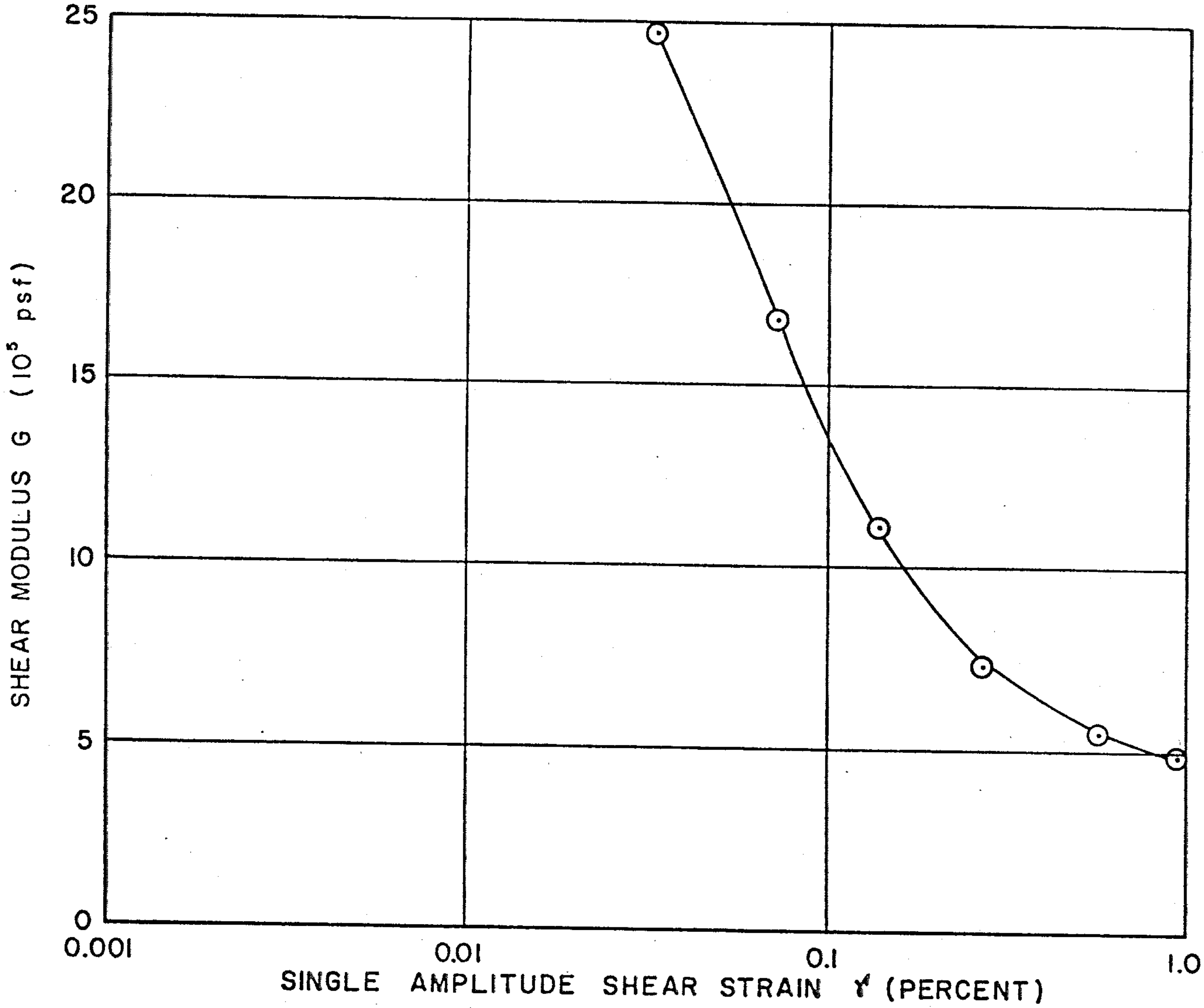
FIGURE 2.5-317

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-36)

(SHEET 1 of 4)

BORING H-36 @ ELEVATION 622.7 FEET
GRAY CLAYEY SILT WITH SOME FINE TO
COARSE SAND AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.4%
FIELD DRY DENSITY: 137 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
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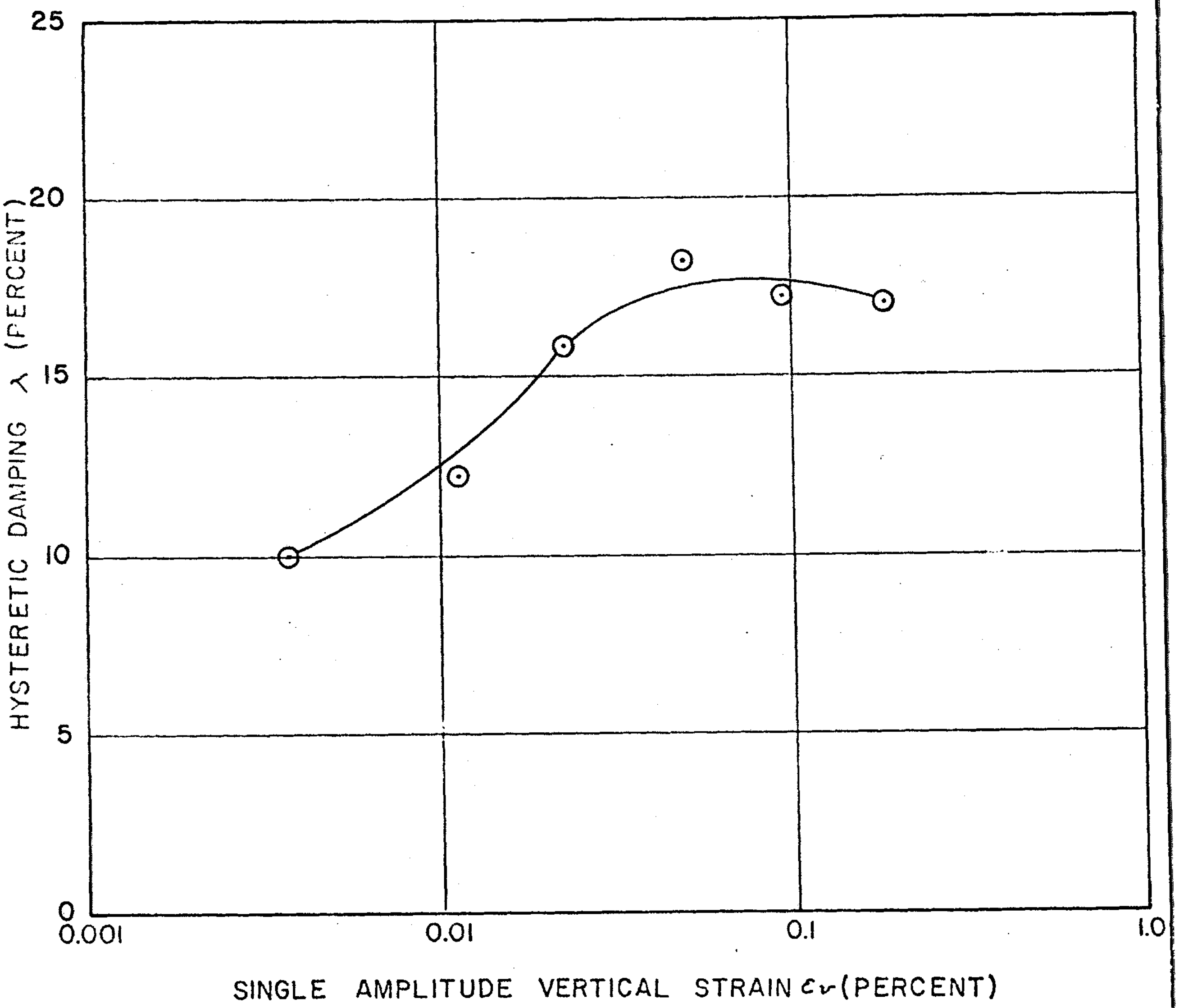
FIGURE 2.5-317

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-36)

(SHEET 2 of 4)

BORING H-36 @ ELEVATION 622.7 FEET
GRAY CLAYEY SILT WITH SOME FINE TO
COARSE SAND AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.4%
FIELD DRY DENSITY: 137 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-317

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-36)
(SHEET 3 of 4)

BORING H-36 @ ELEVATION 622.7 FEET
GRAY CLAYEY SILT WITH SOME FINE TO
COARSE SAND AND GRAVEL
(ILLINOIAN GLACIAL TILL)
FIELD MOISTURE CONTENT: 9.4%
FIELD DRY DENSITY: 137 LBS./CU.FT.
TEST DATA OBTAINED FROM PITCHER SAMPLE

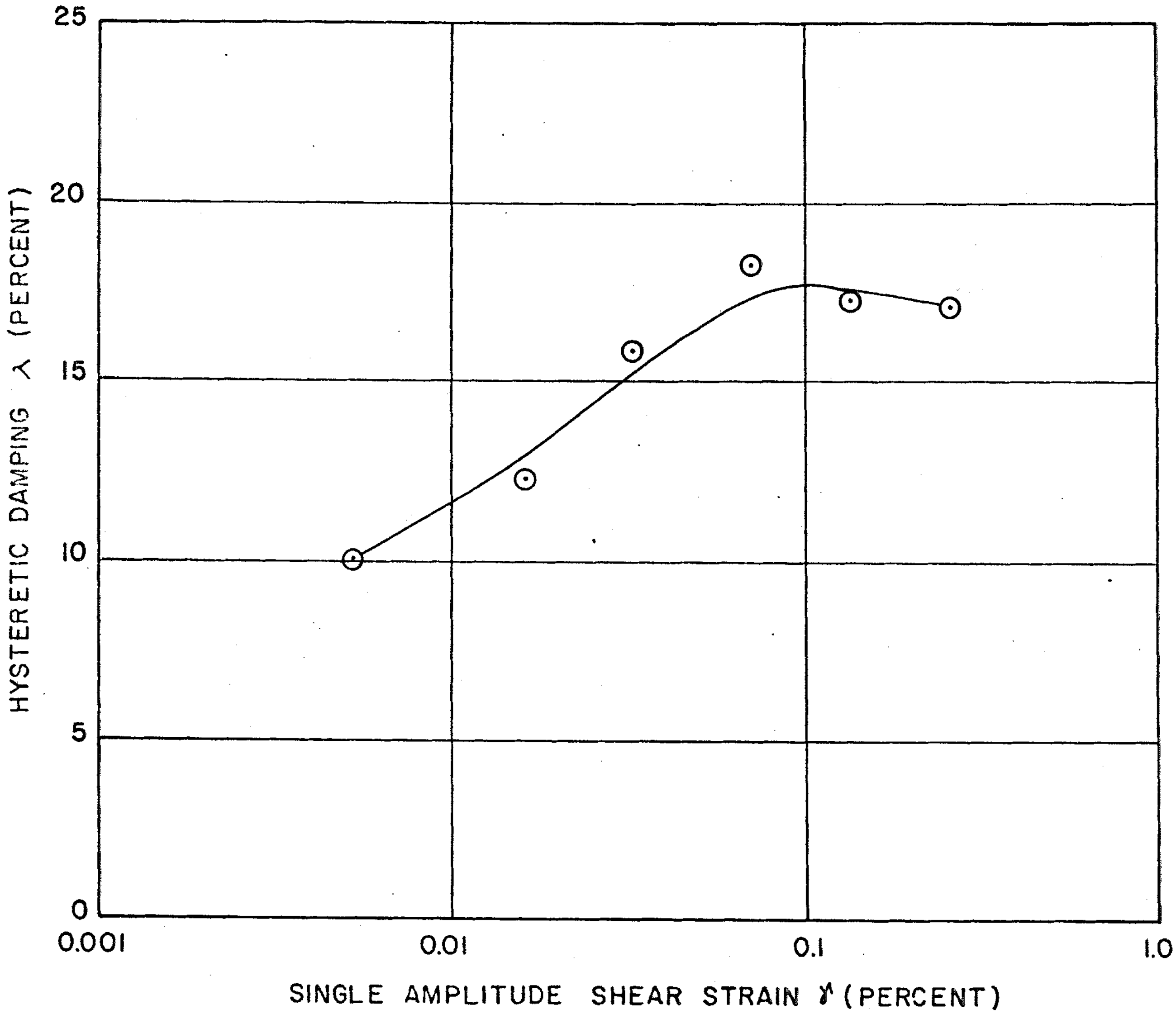


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FIGURE 2.5-317

DYNAMIC TRIAXIAL COMPRESSION TESTS
(BORING H-36)
(SHEET 4 of 4)

METHOD OF PERFORMING RESONANT COLUMN TESTS

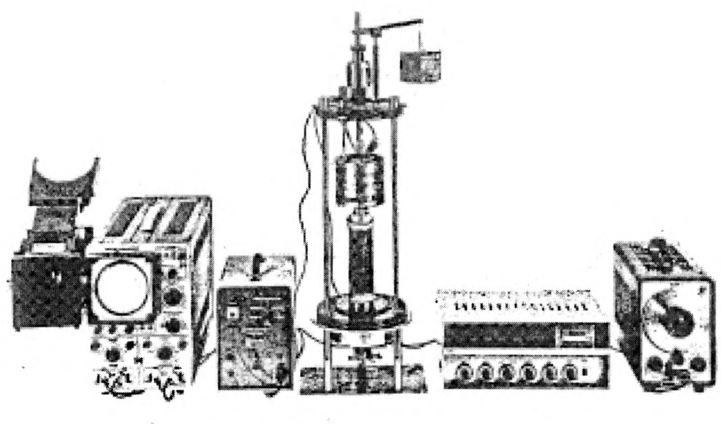

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Figure 2.5-318
Sheet 1 of 2

RESONANT COLUMN TESTS
(METHOD)

<u>Method of Performing Resonant Column Tests</u>

Resonant column tests are performed to determine the dynamic properties of soils under high frequency, small amplitude cyclic strains. The test is based on the fact that analytical solutions can relate the stiffness of the soil column to its resonant frequency. In the test the sample is excited by an oscillating device and the frequency is varied until the maximum response, or resonant frequency, is found.

The Dames and Moore resonant column apparatus subjects solid cylindrical samples to torsional oscillations. The sample base is fixed and the top of the sample is excited by a Hardin oscillator which is driven by a variable frequency sine wave generator. The response of the sample is measured by an accelerometer mounted in the oscillator and the output is displayed on an oscilloscope.

The equivalent linear shear modulus of the soil is obtained from the resonant frequency of the system after the manner suggested by Drnevich and Hardin ("Proposed Standard for Modulus and Damping of Soils by the Resonant Column Method", ASTM Committee D18.09, May 1974). The shear modulus of soils varies with the shear strain amplitude and thus actually varies along the radius of the sample but in calculating the shear modulus the average shear strain is taken to correspond to the cyclic shear strain developed two-thirds of the distance along the radius. The damping ratio at small strains may be computed from measurements of the logarithmic decrement which are obtained by subjecting the sample to a steady state oscillation and then shutting off the input voltage. The decay curve is retained on a recording oscilloscope and may be photographed to make a permanent record.

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Figure 2.5-318 Sheet 2 of 2 RESONANT COLUMN TESTS (METHOD)

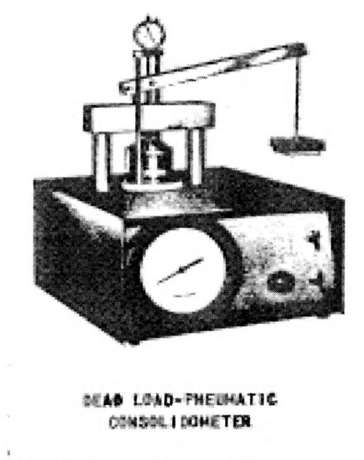

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Figure 2.5-319
Sheet 1 of 2

CONSOLIDATION TESTS
(METHOD)

<u>Method of Performing Consolidation Tests</u>

Consolidation tests are performed to evaluate the volume changes of soils subjected to increased loads. Time-consolidation and pressure-consolidation curves may be plotted from the data obtained in the tests. Engineering analyses based on these curves permit estimates to be made of the probable magnitude and rate of settlement of the tested soils under applied loads.

Each sample is tested within brass rings two and one-half inches in diameter and one inch is length. Undisturbed samples of in-place soils are tested in rings taken from the sampling device in which the samples were obtained. Loose samples of soils to be used in constructing earth fills are compacted in rings to predetermined conditions and tested.

In testing, the sample is rigidly confined laterally by the brass ring. Axial loads are transmitted to the ends of the sample by porous disks. The disks allow drainage of the loaded sample. The axial compression or expansion of the sample is measured by a micrometer dial indicator at appropriate time intervals after each load increment is applied. Each load is ordinarily twice the preceding load. The increments are selected to obtain consolidation data representing the field loading conditions for which the test is being performed. Each load increment is allowed to act over an interval of time dependent on the type and extent of the soil in the field.

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Figure 2.5-319 Sheet 2 of 2 CONSOLIDATION TESTS (METHOD)

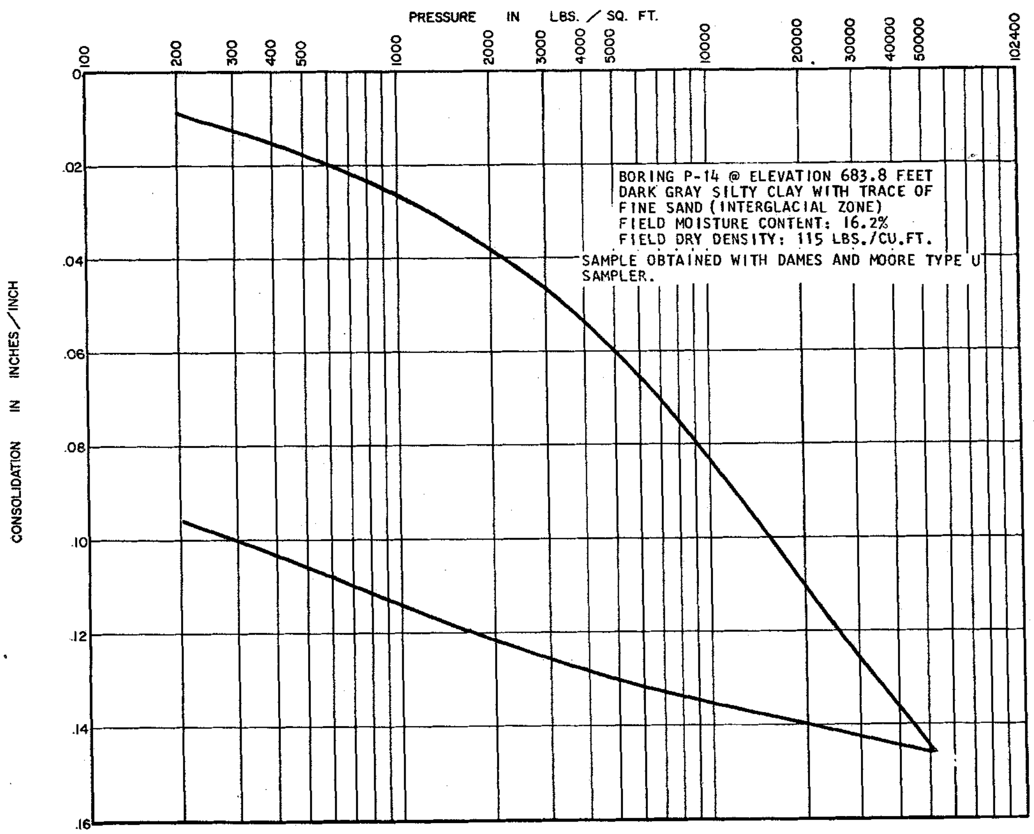

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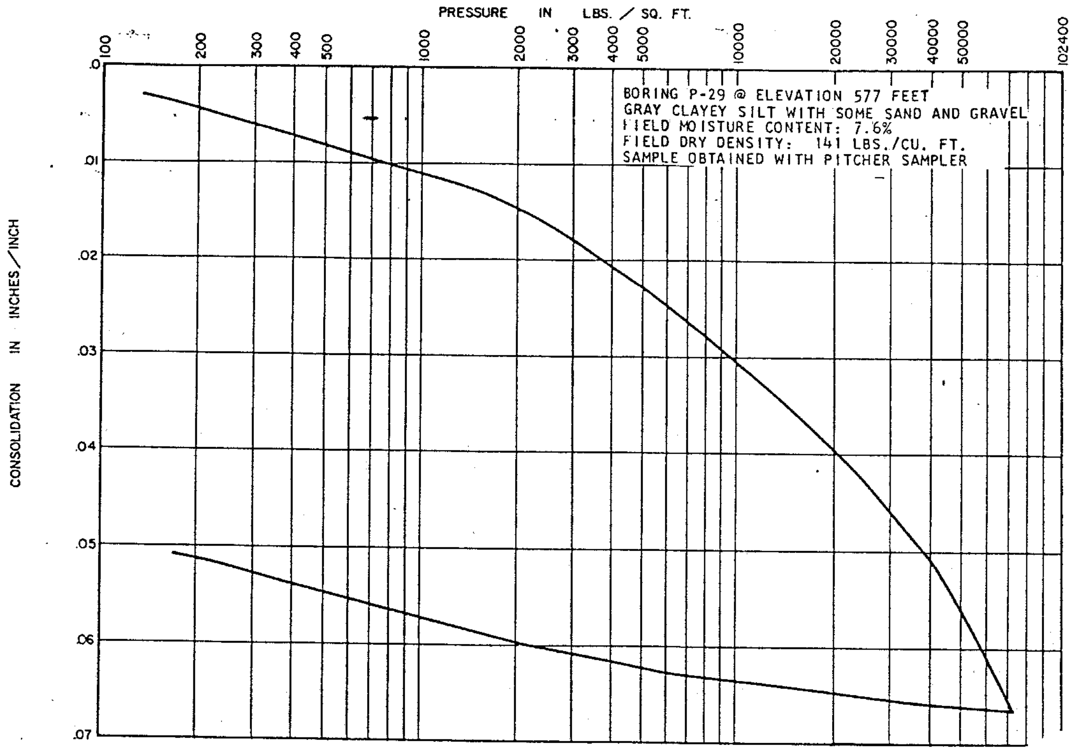
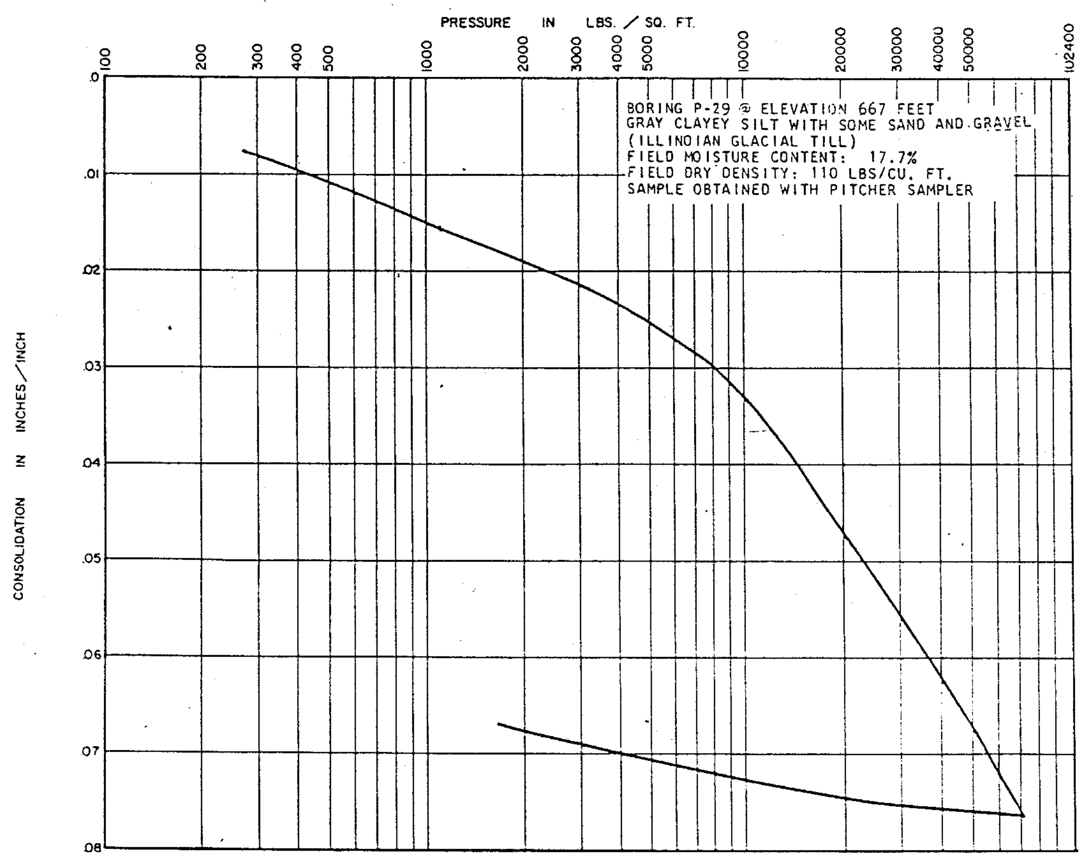
FIGURE 2.5-320

CONSOLIDATION TEST (BORING P-14)





CLINTON POWER STATION

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FIGURE 2.5-321

CONSOLIDATION TEST (BORING P-29)

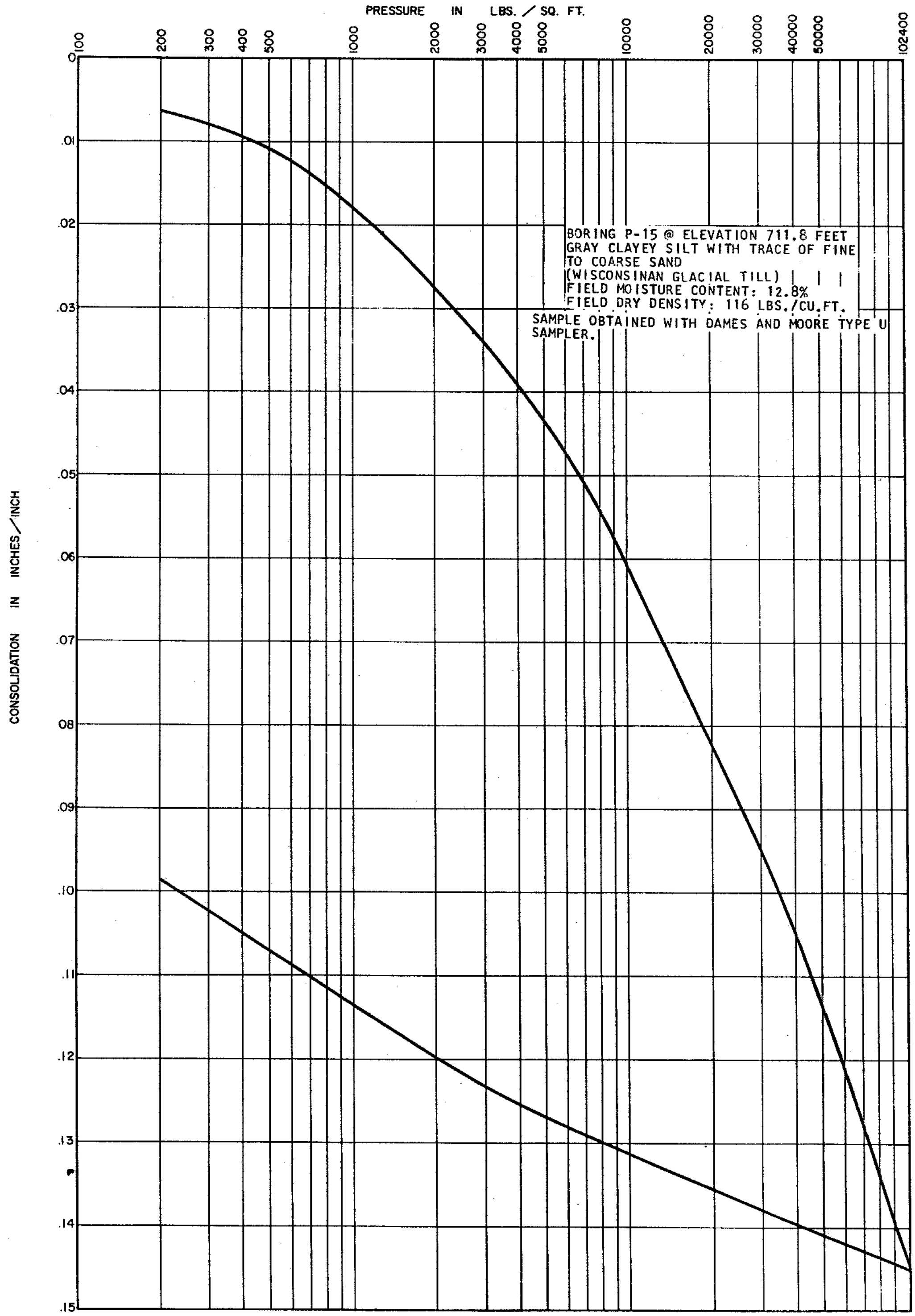

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FIGURE 2.5-322

CONSOLIDATION TEST (BORING P-15)

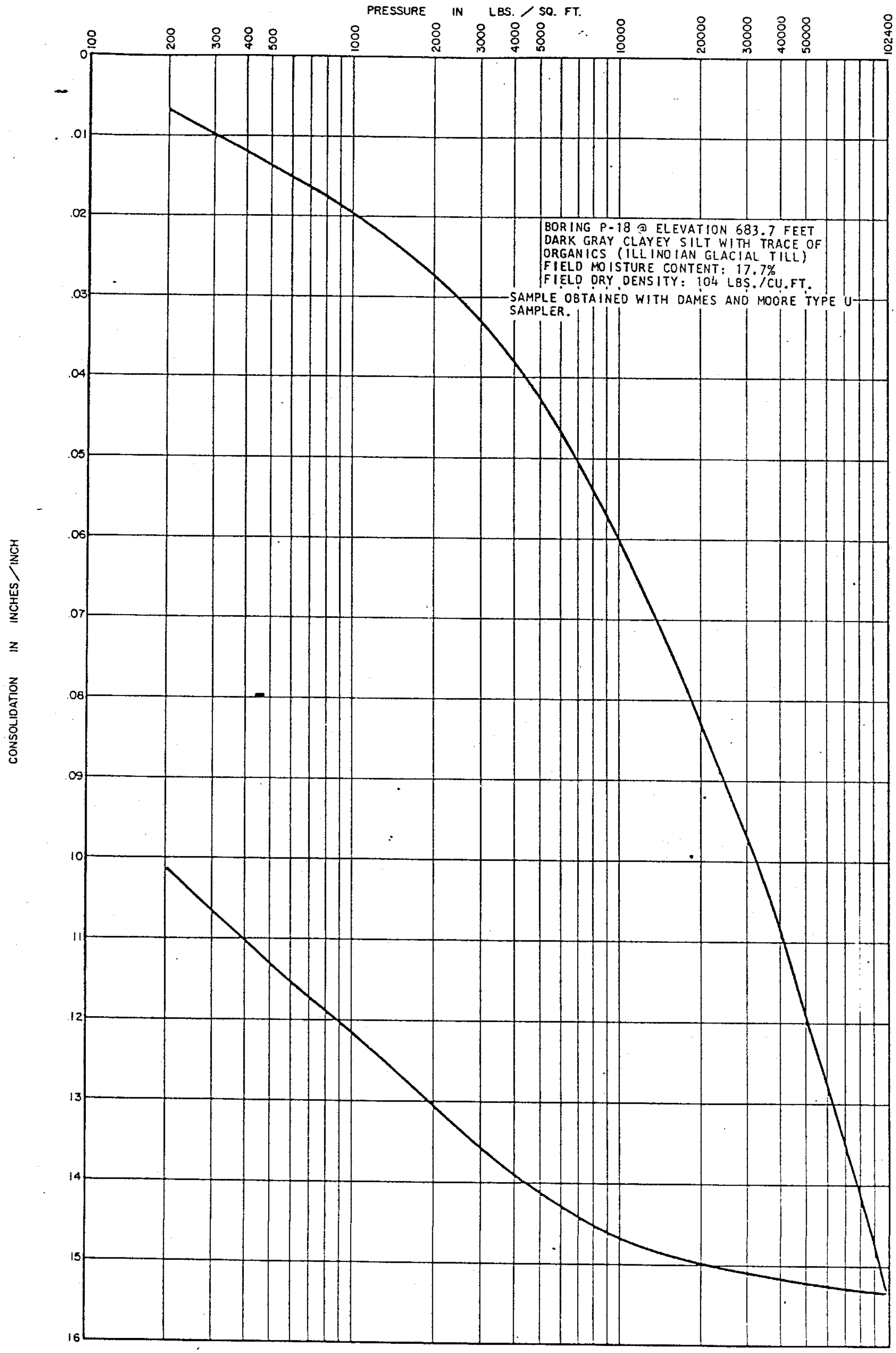

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FIGURE 2.5-323

CONSOLIDATION TEST (BORING P-18)

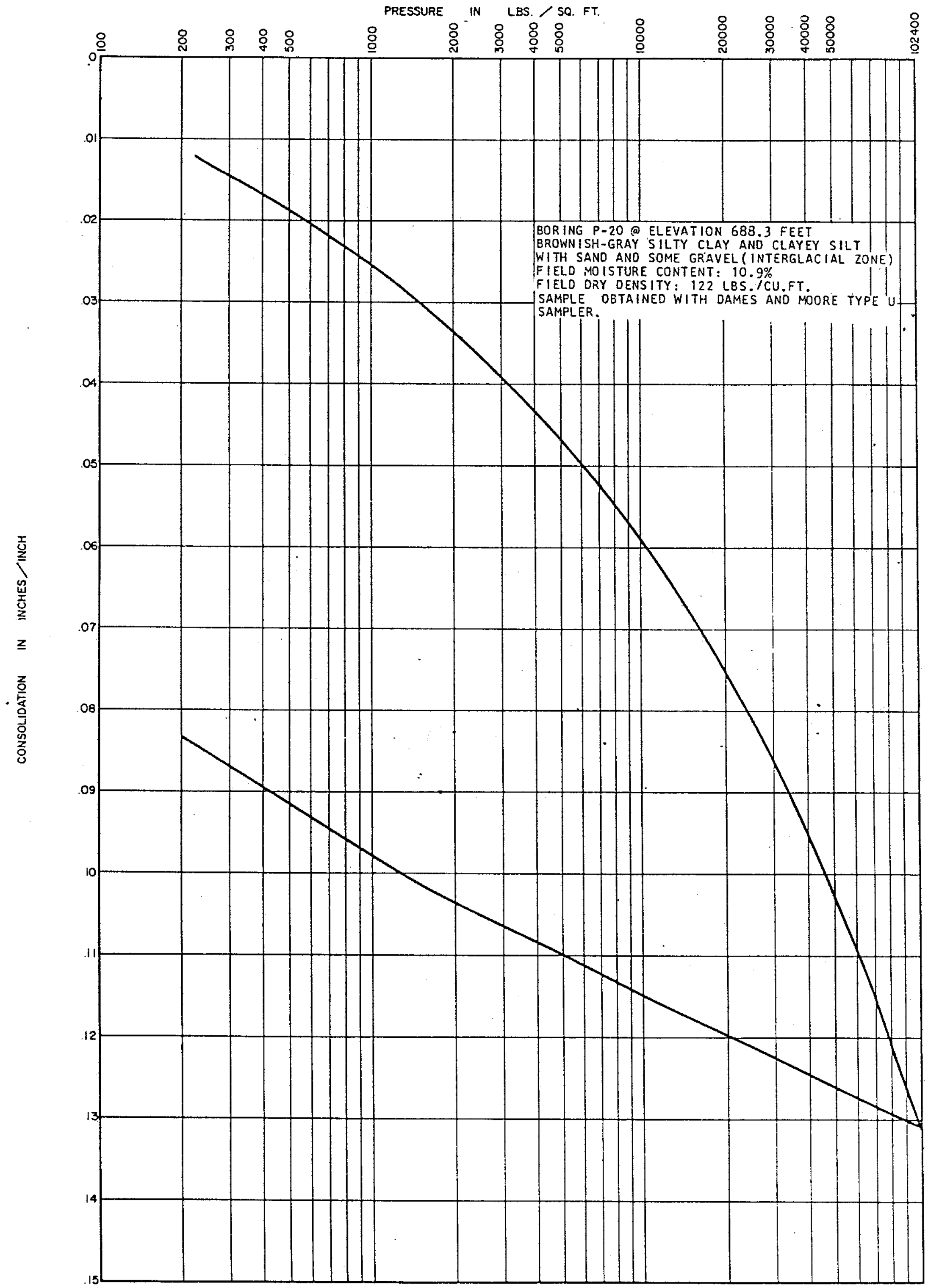

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FIGURE 2.5-324

CONSOLIDATION TEST (BORING P-20)

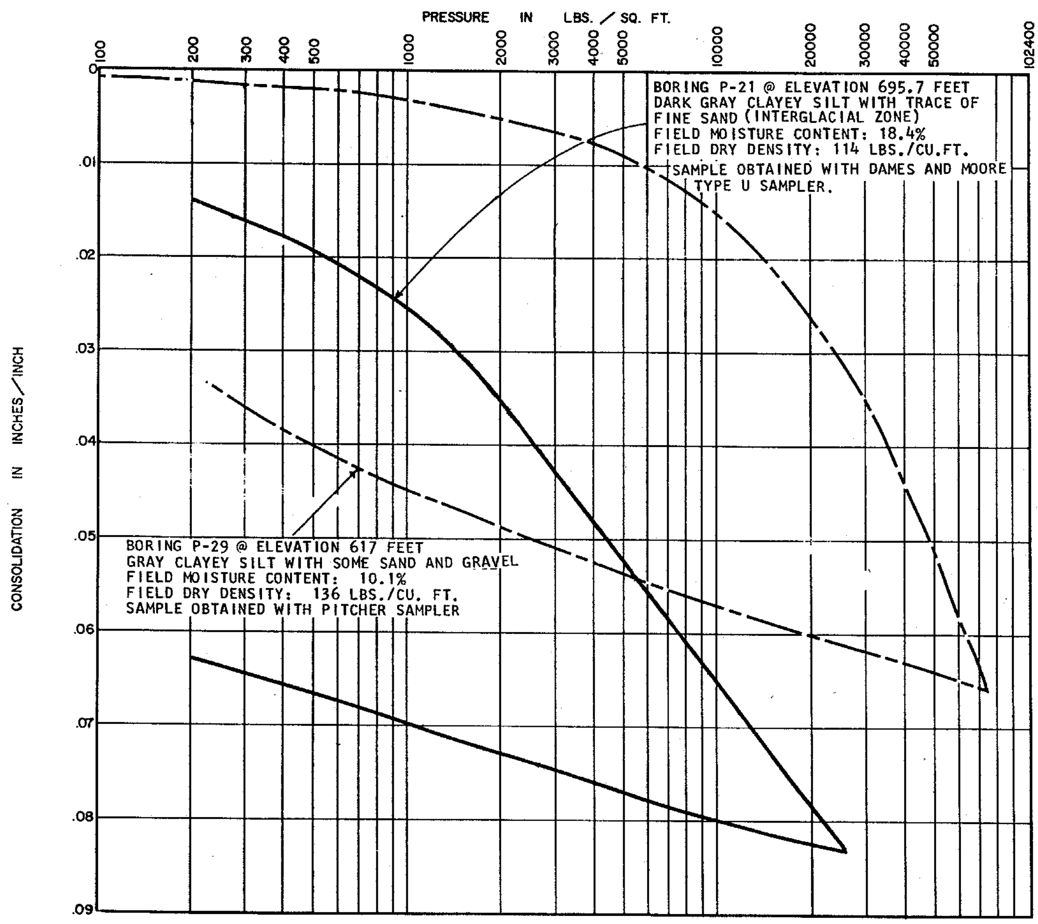

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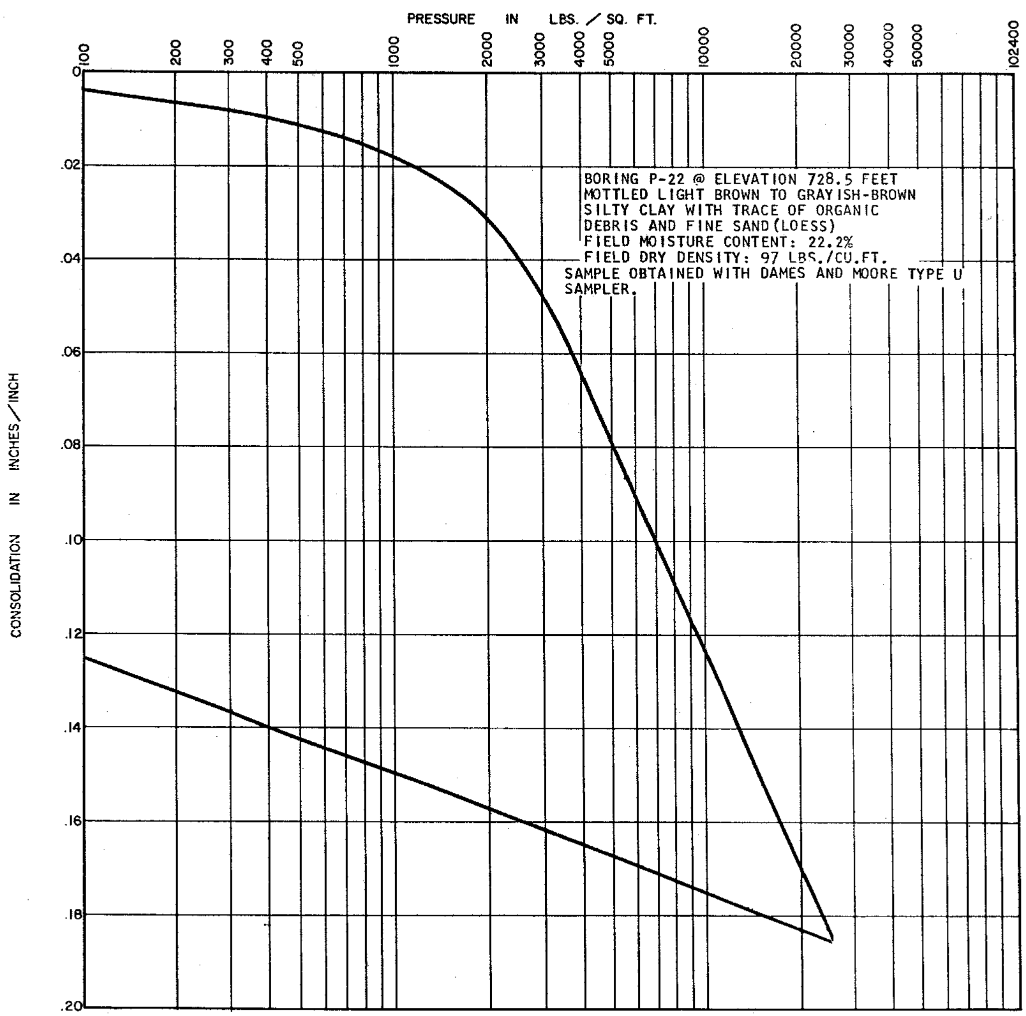
FIGURE 2.5-325

CONSOLIDATION TEST (BORING P-21)



CLINTON POWER STATION

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FIGURE 2.5-326

CONSOLIDATION TEST (BORING P-22)

(SHEET 1 of 2)

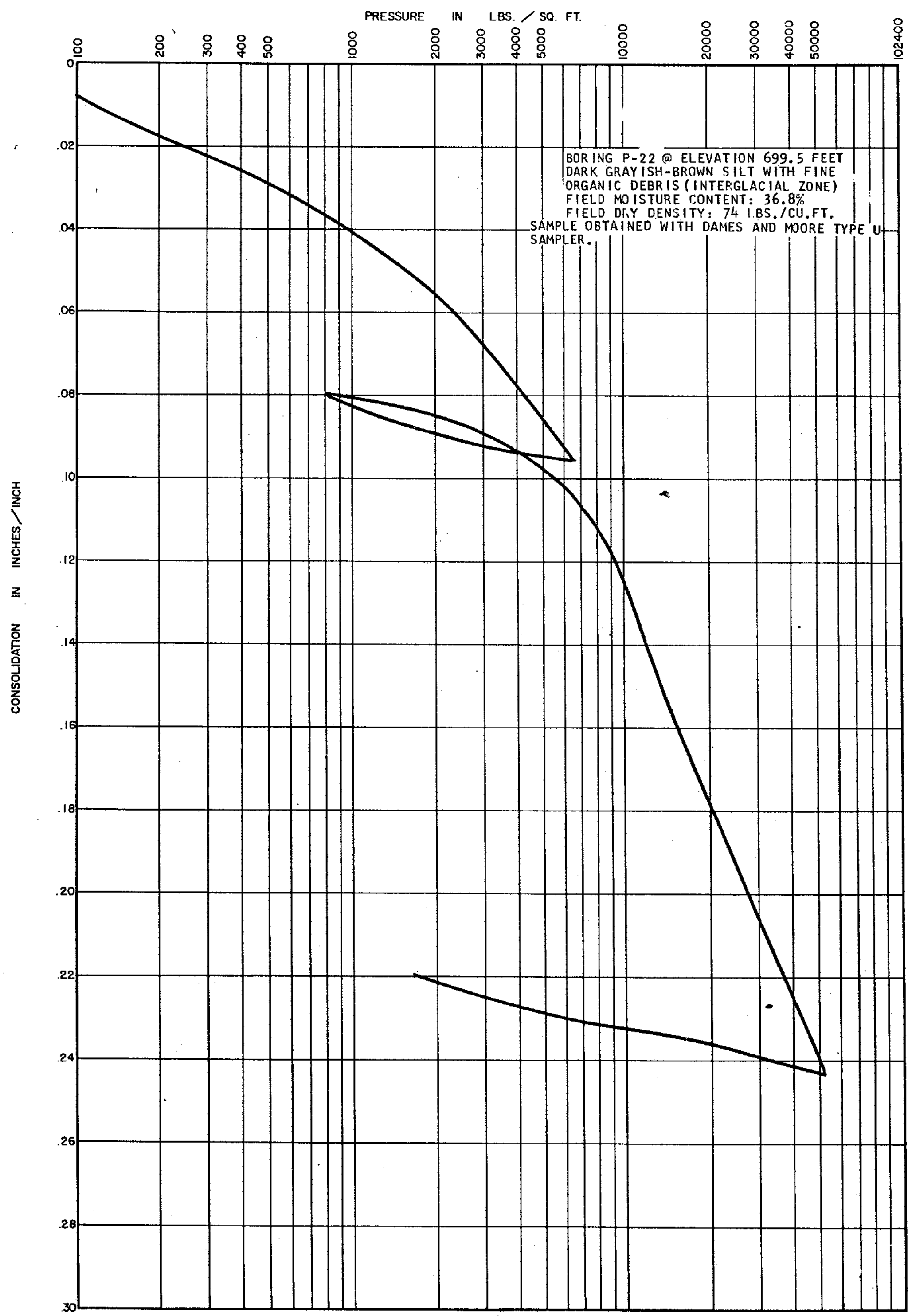

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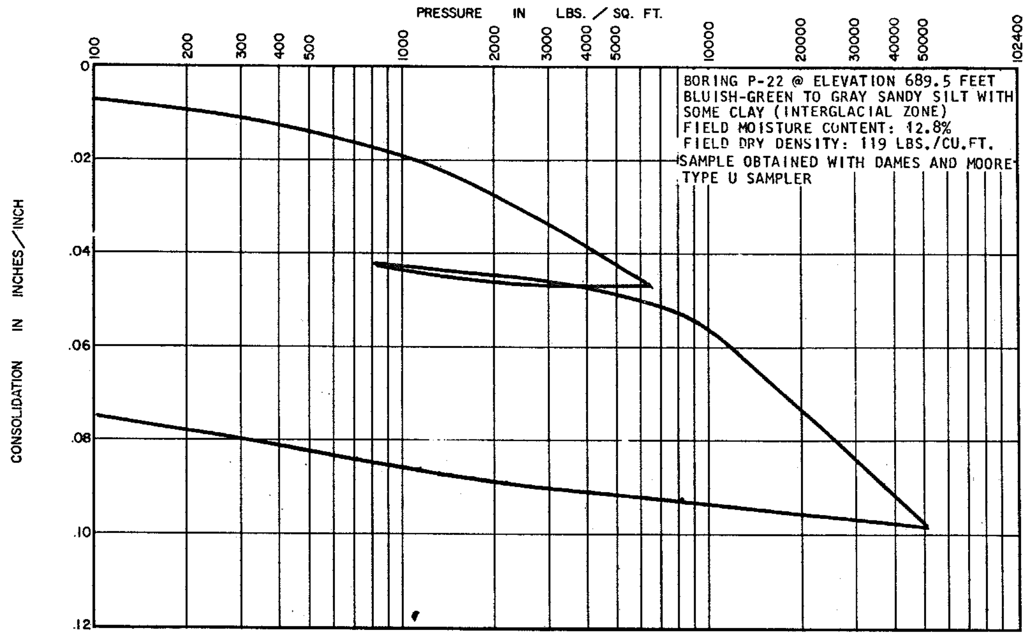
FIGURE 2.5-326

CONSOLIDATION TEST (BORING P-22)
(SHEET 2 of 2)



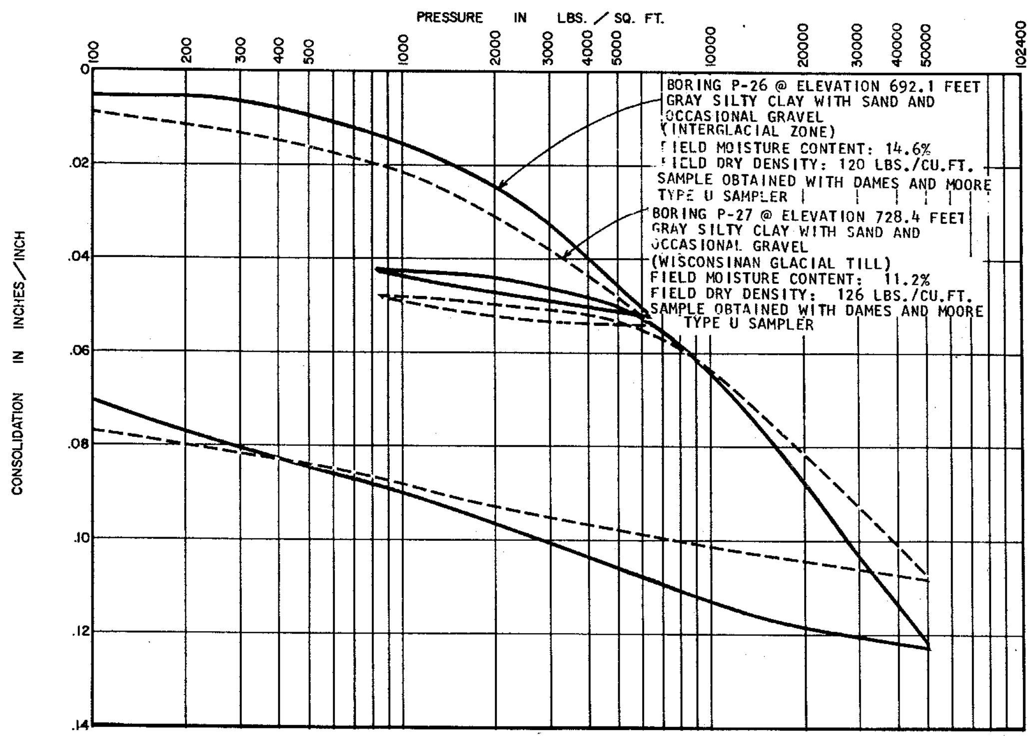


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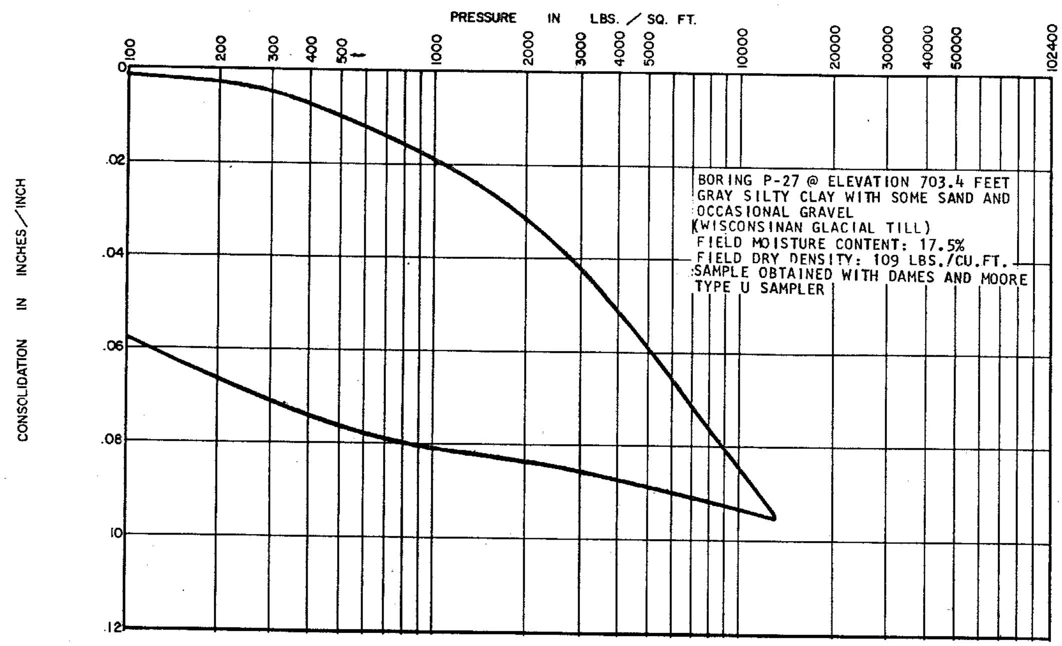
FIGURE 2.5-327

CONSOLIDATION TEST (BORINGS P-22, P-26 AND P-27)



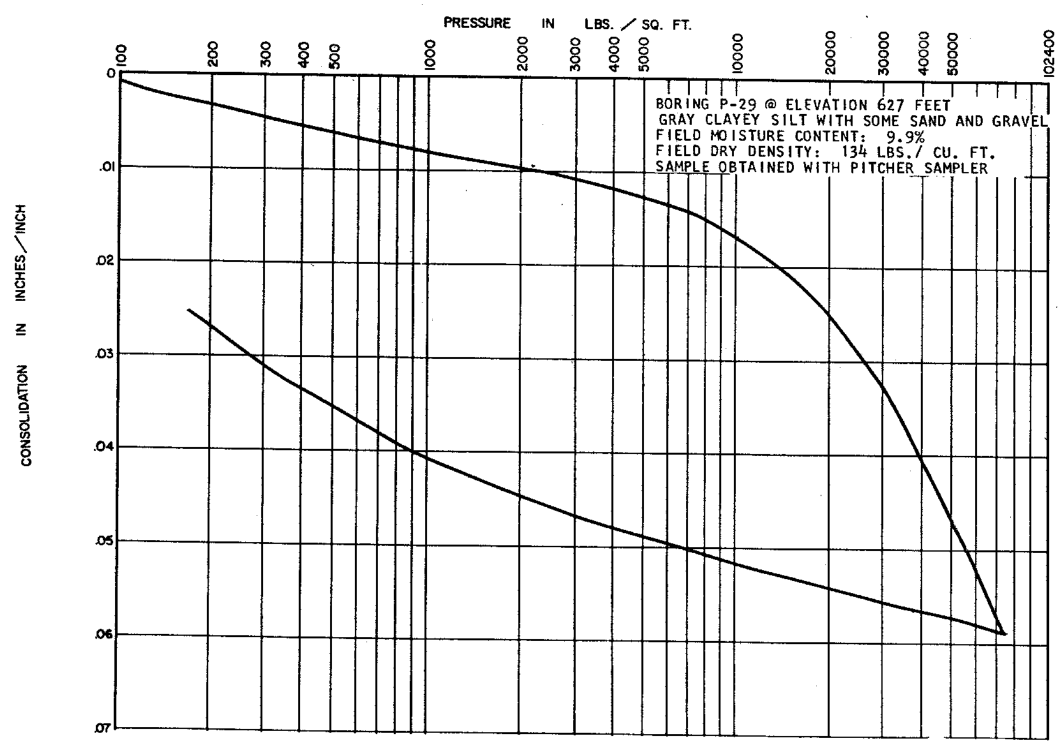


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FIGURE 2.5-328

CONSOLIDATION TEST (BORINGS P-27 AND P-29)

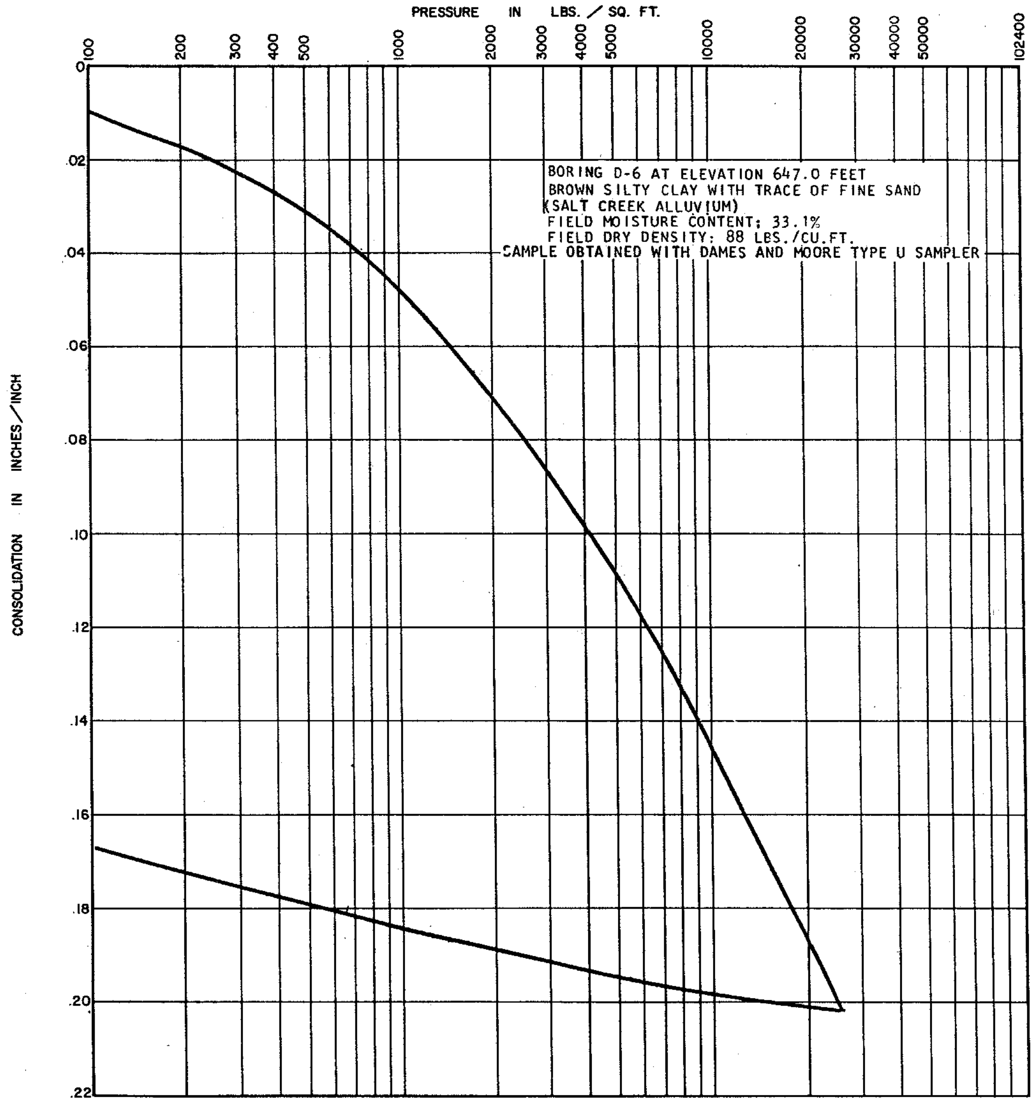

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FIGURE 2.5-329

CONSOLIDATION TEST (BORING D-6)

(SHEET 1 of 2)

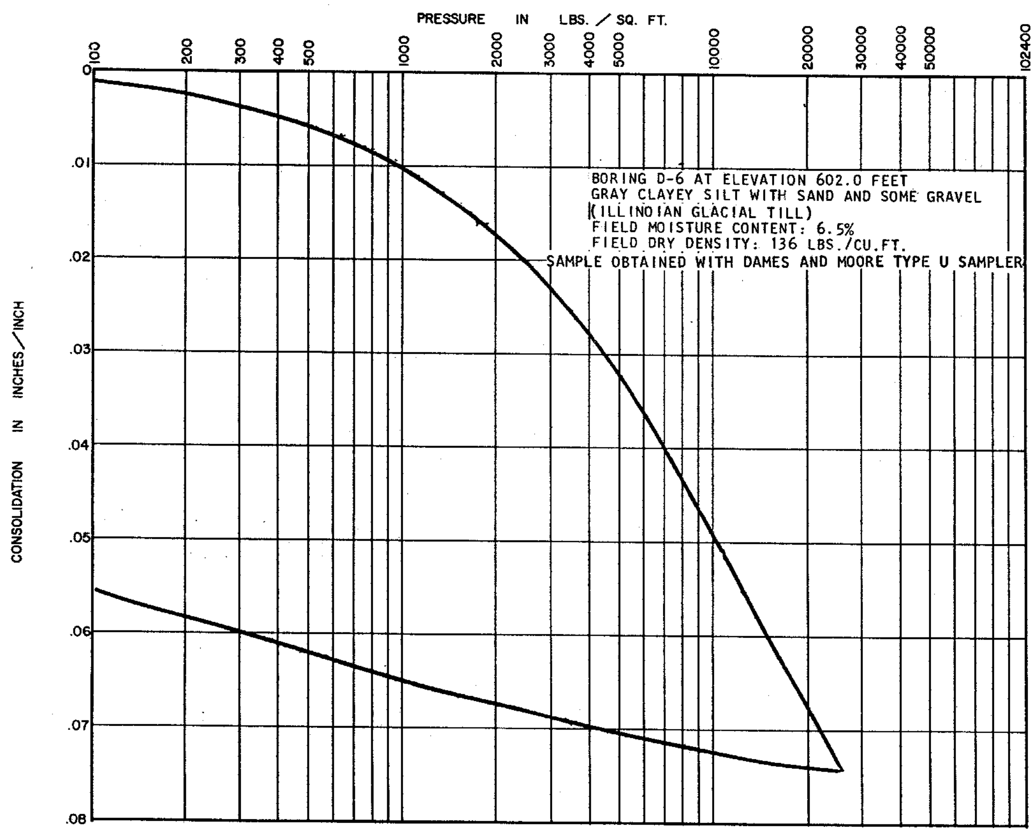

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FIGURE 2.5-329

CONSOLIDATION TEST (BORING D-6)
(SHEET 2 of 2)

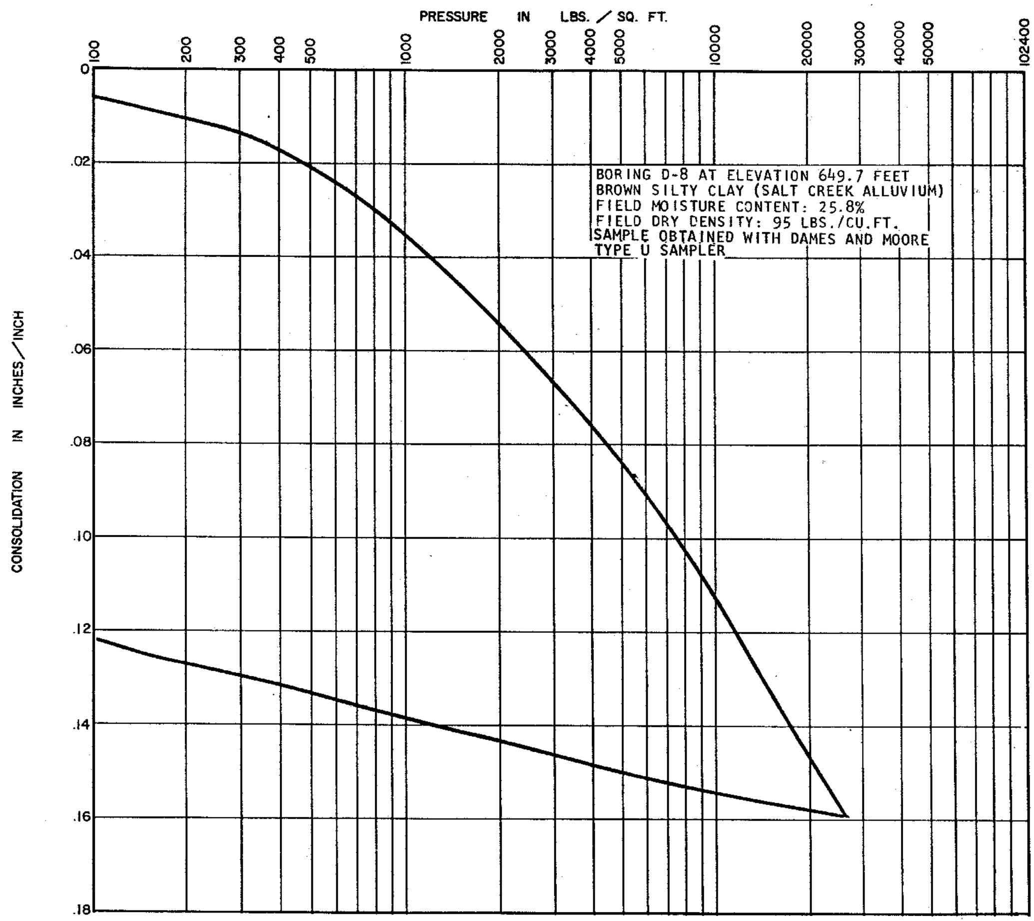

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FIGURE 2.5-330

CONSOLIDATION TEST (BORING D-8)

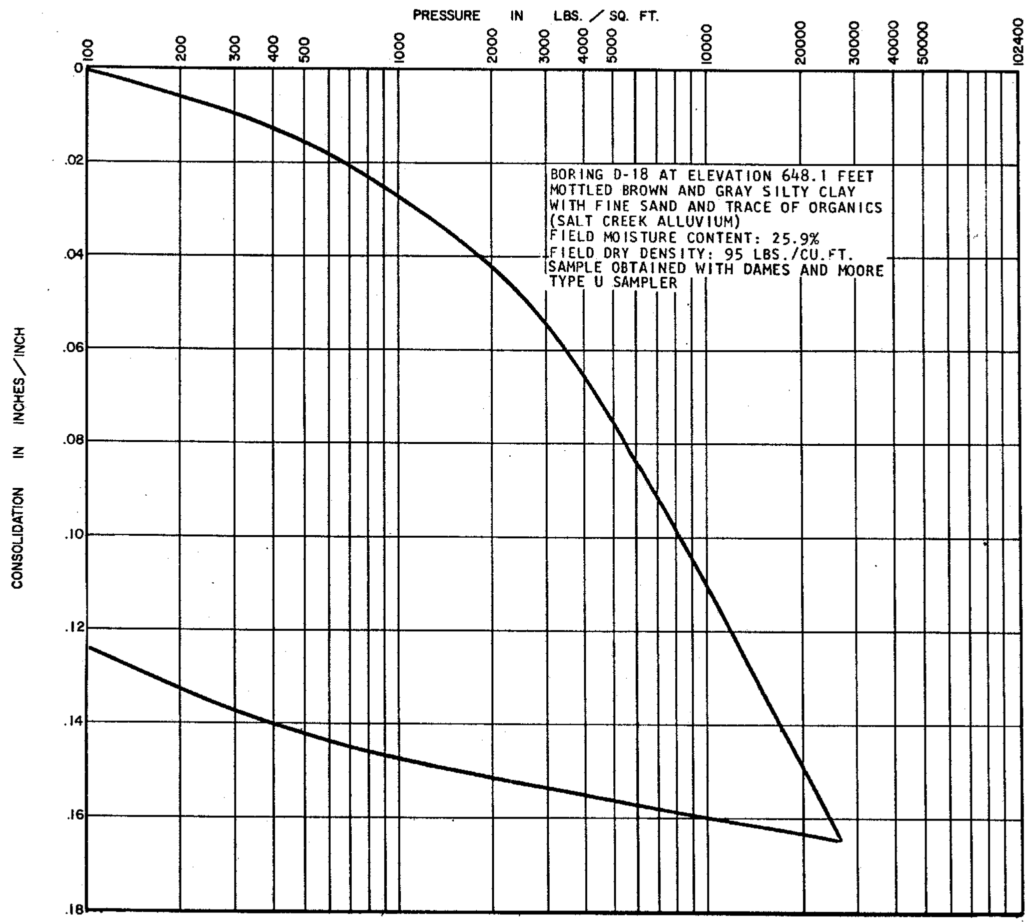

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FIGURE 2.5-331

CONSOLIDATION TEST (BORING D-18)

(SHEET 1 of 2)

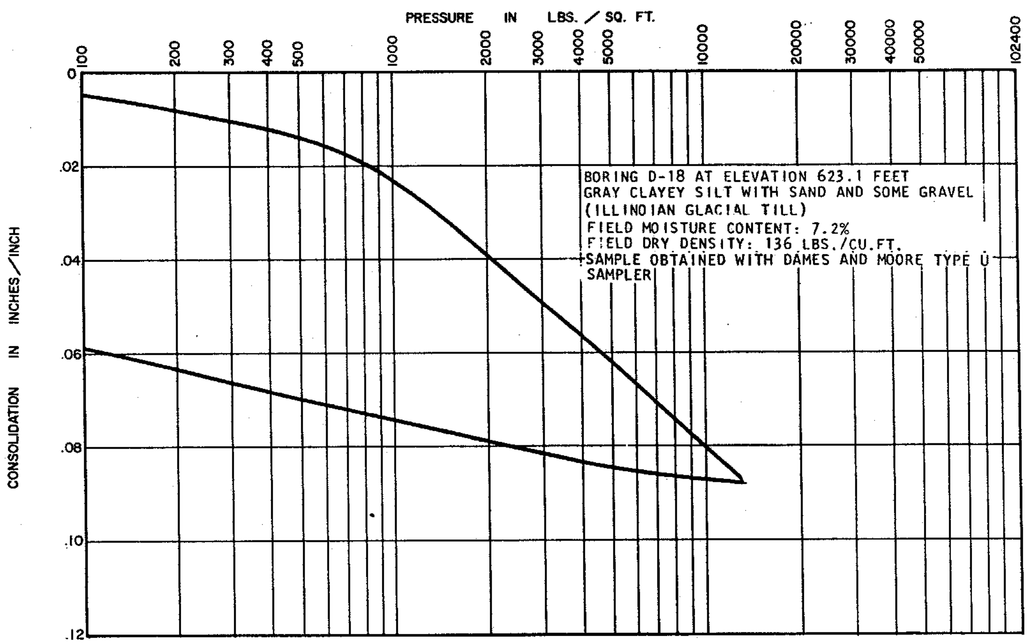

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FIGURE 2.5-331

CONSOLIDATION TEST (BORING D-18)
(SHEET 2 of 2)

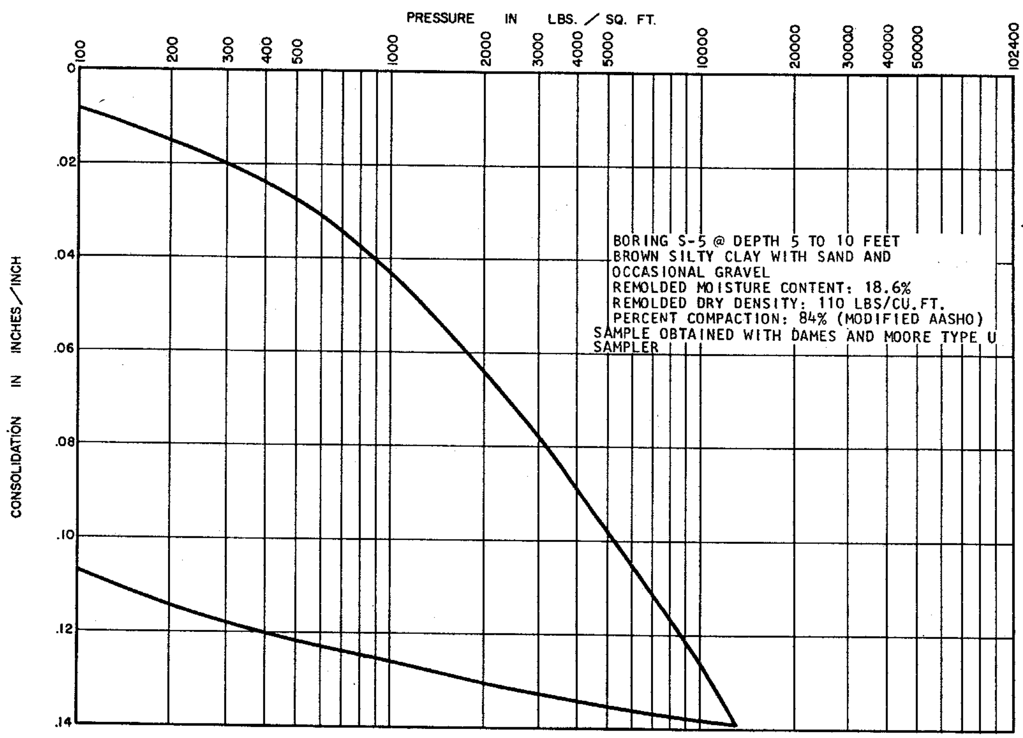

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FIGURE 2.5-332

CONSOLIDATION TEST (BORING S-5)
(SHEET 1 of 2)

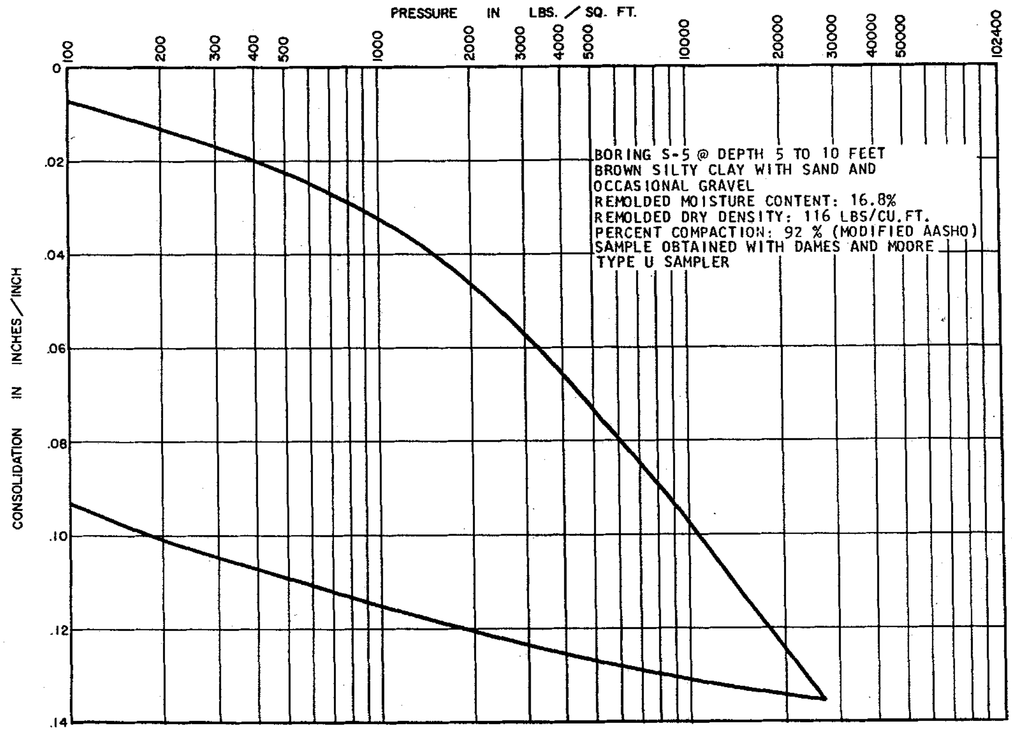

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FIGURE 2.5-332

CONSOLIDATION TEST (BORING S-5)

(SHEET 2 of 2)

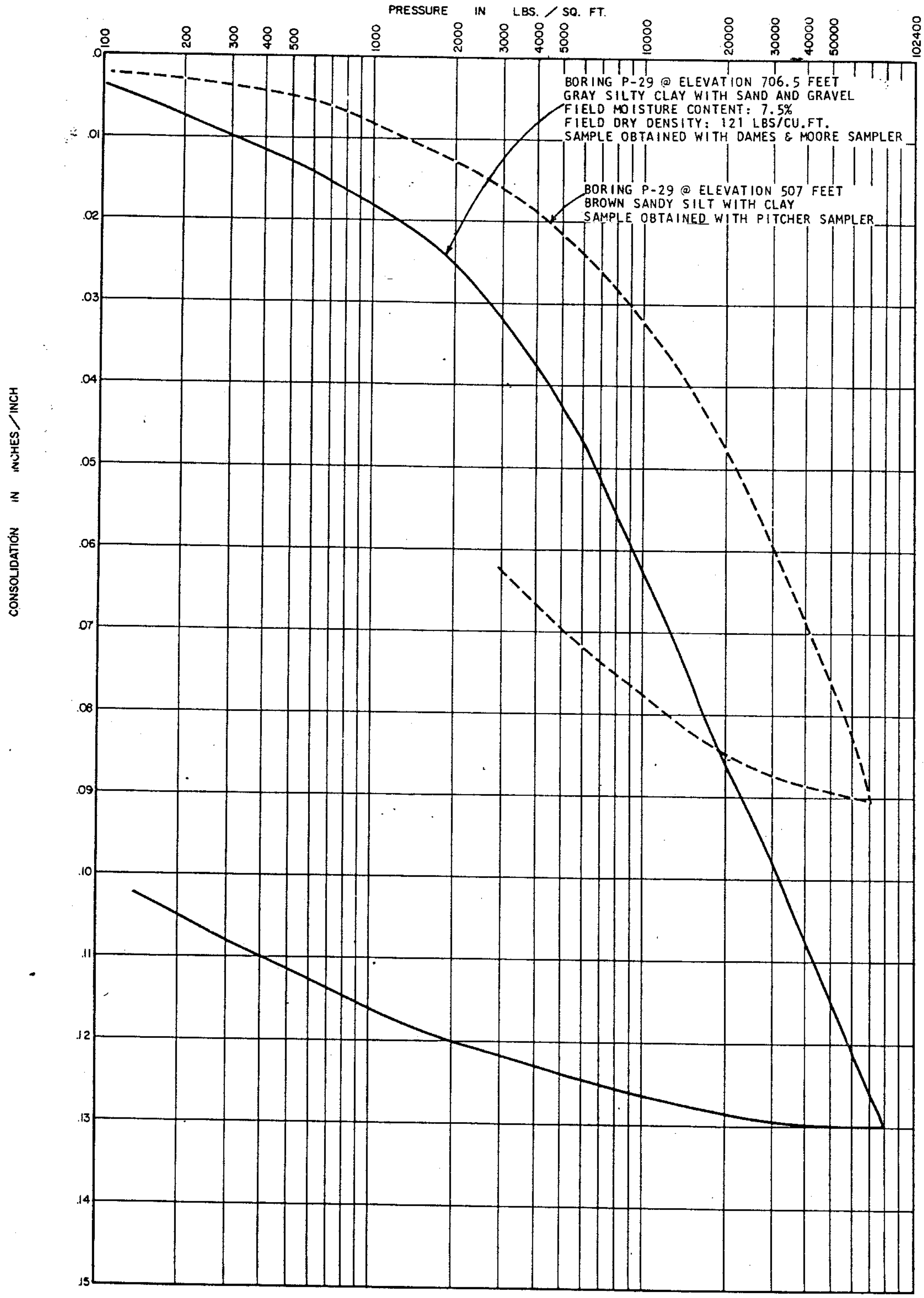

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FIGURE 2.5-333

CONSOLIDATION TEST (BORING P-29)
(SHEET 1 of 3)

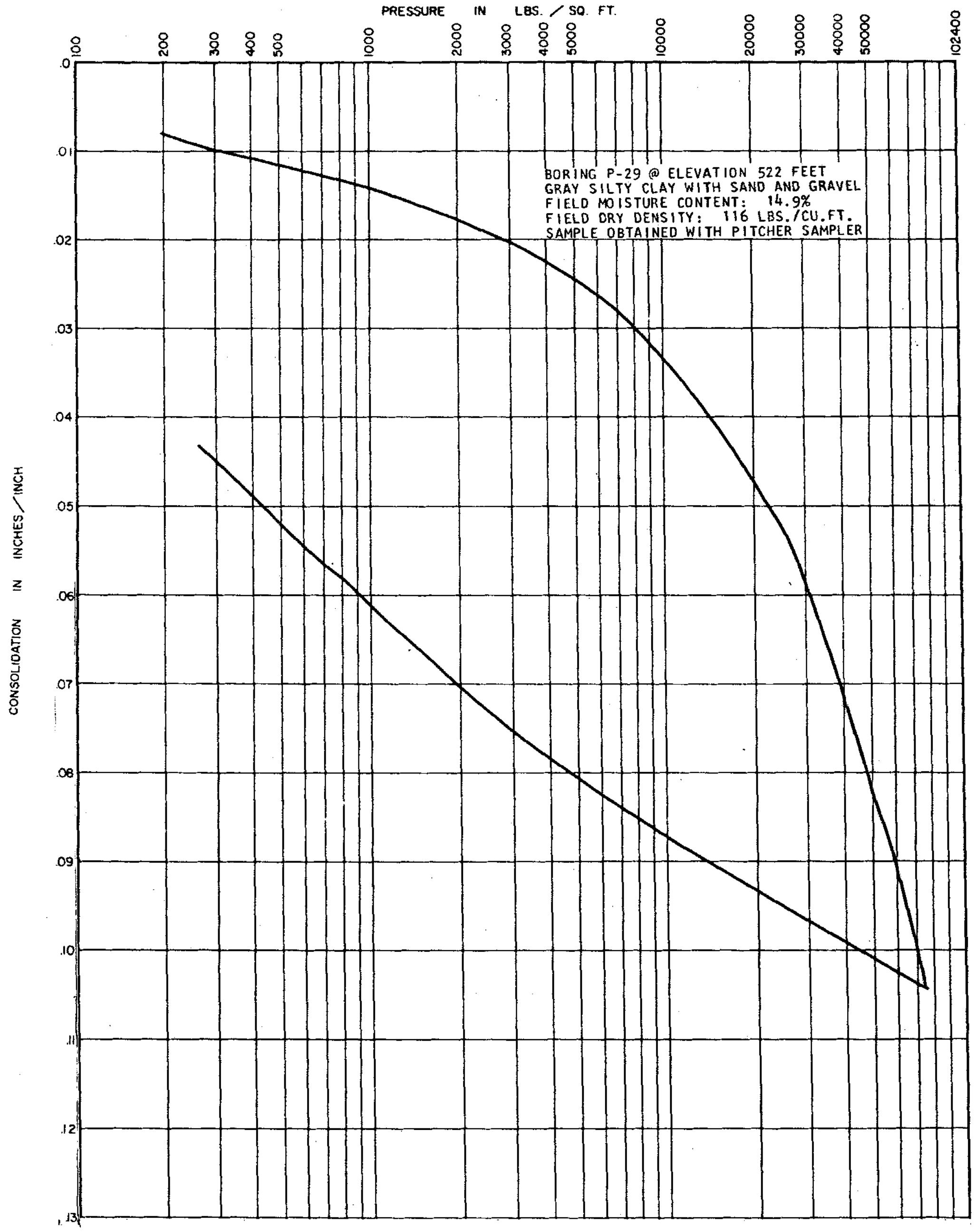

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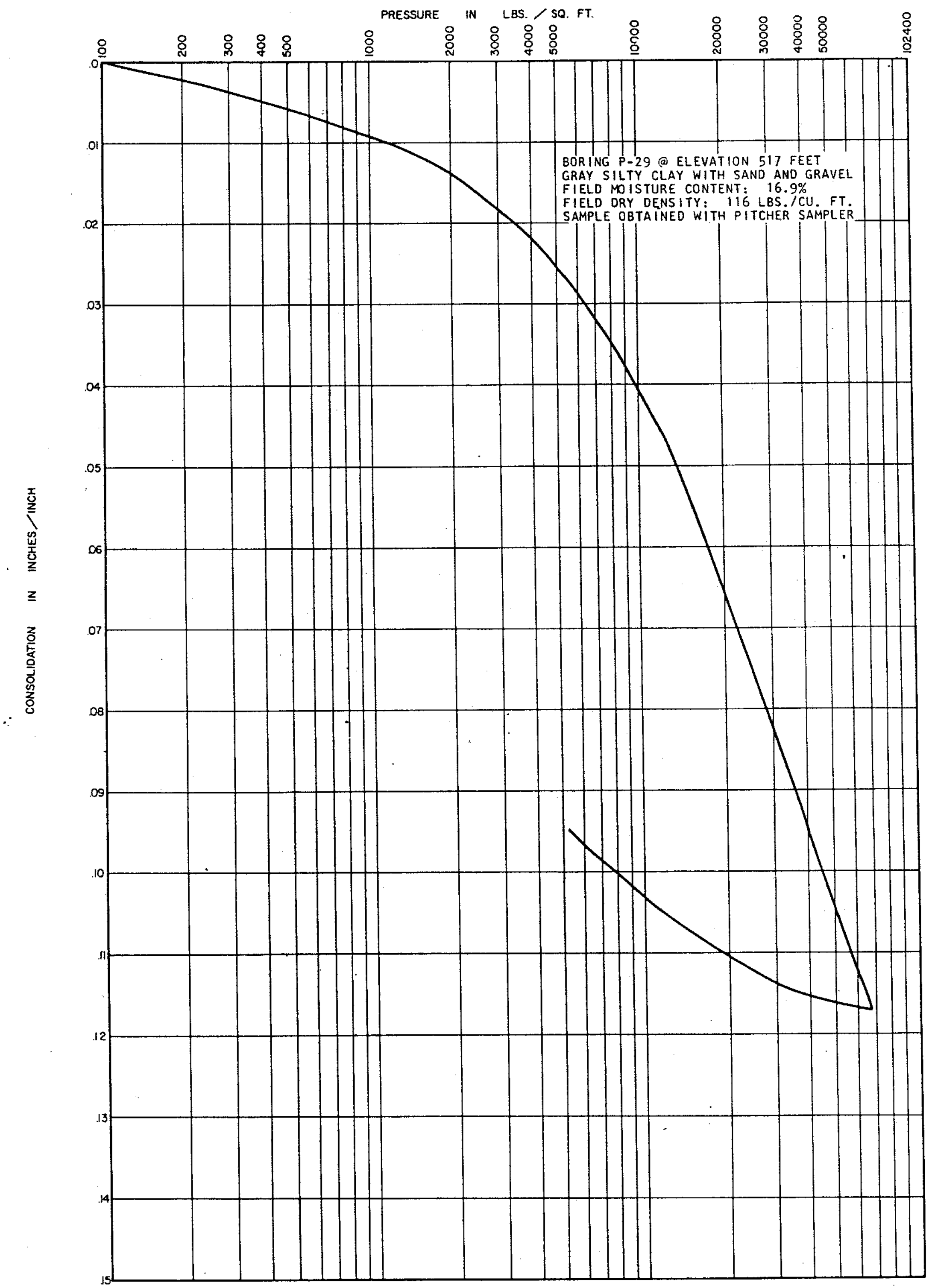
FIGURE 2.5-333

CONSOLIDATION TEST (BORING P-29)

(SHEET 2 of 3)



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UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-333

CONSOLIDATION TEST (BORING P-29)

(SHEET 3 of 3)

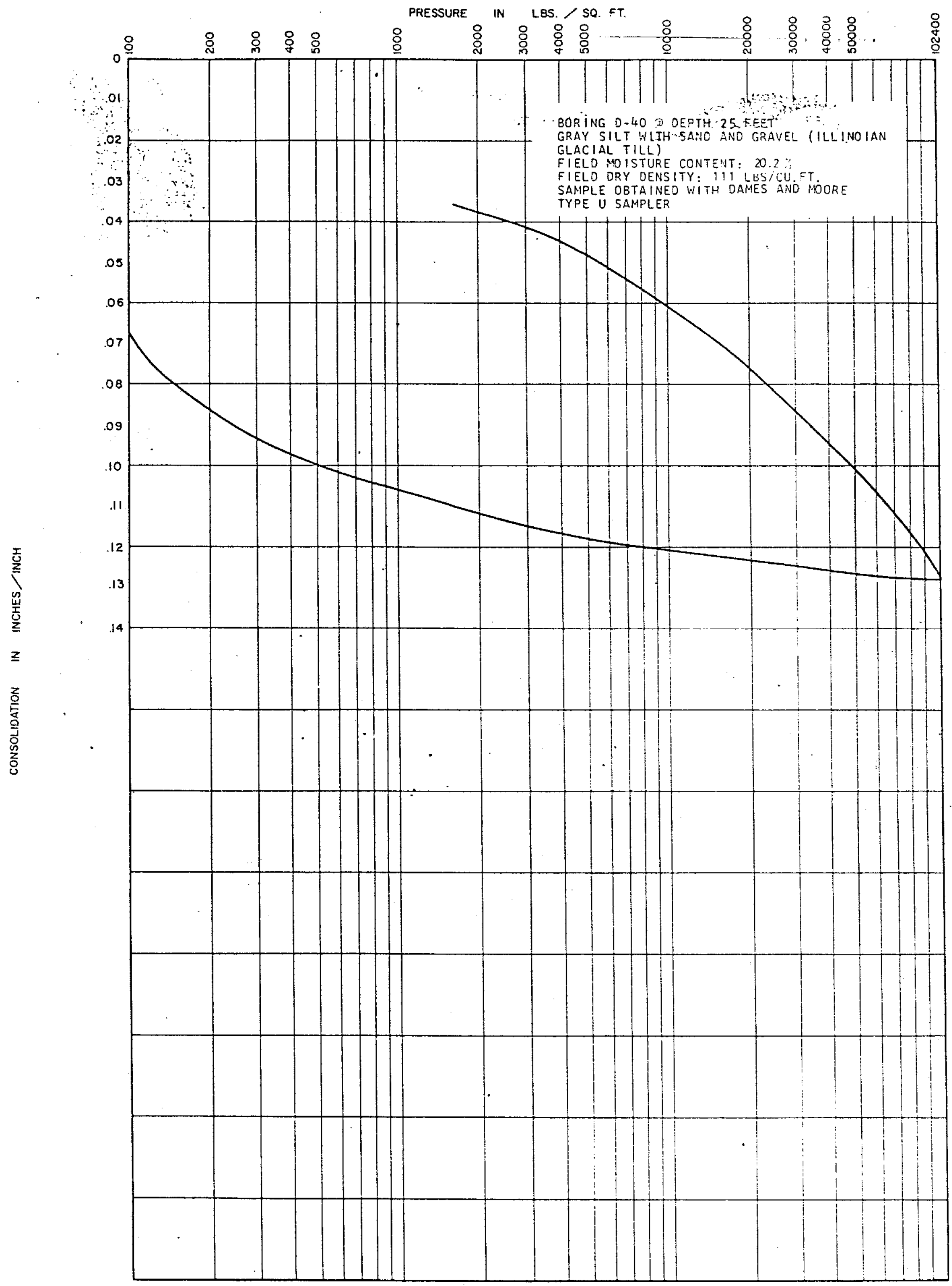

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FIGURE 2.5-334

CONSOLIDATION TEST (BORING D-40)

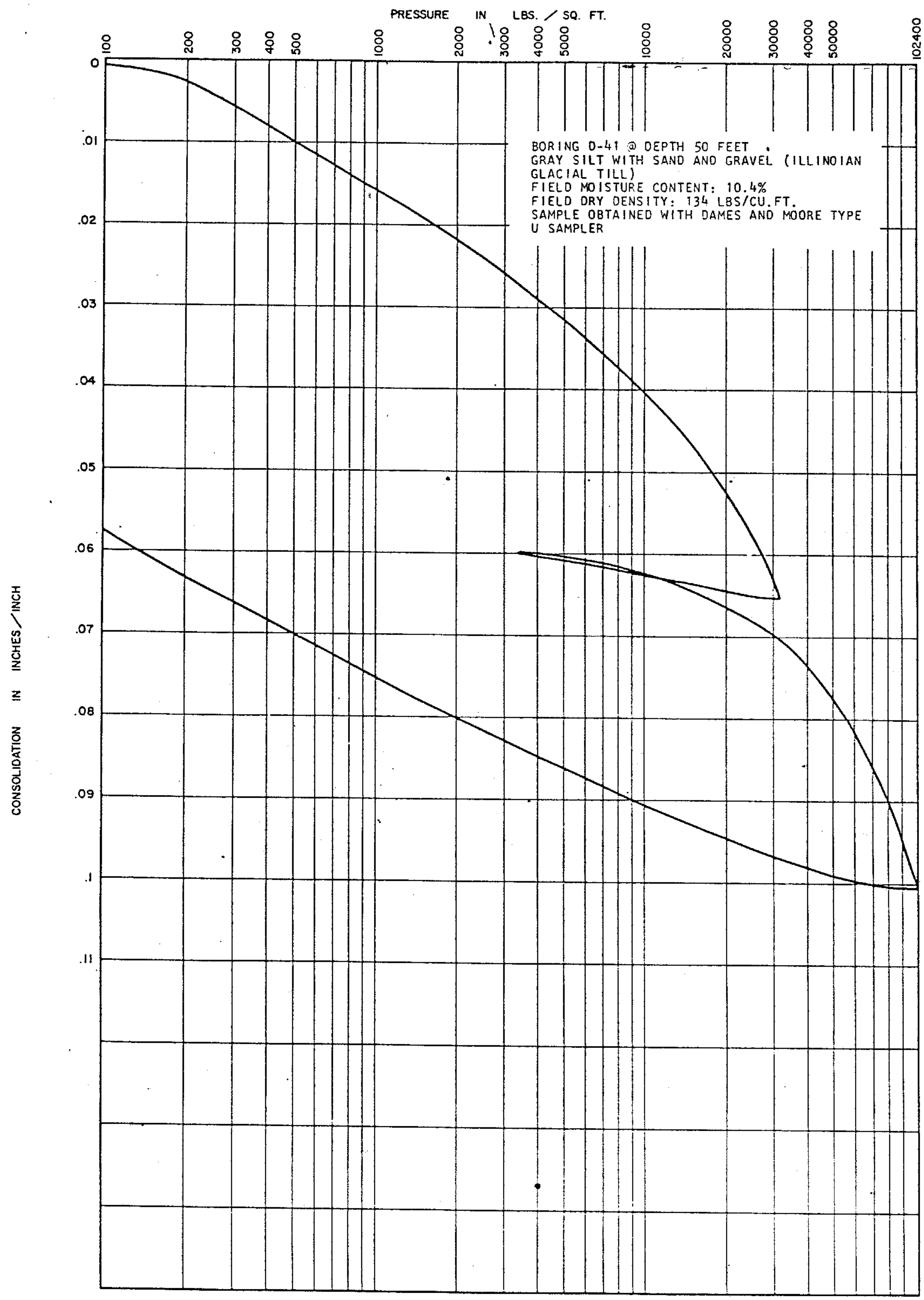

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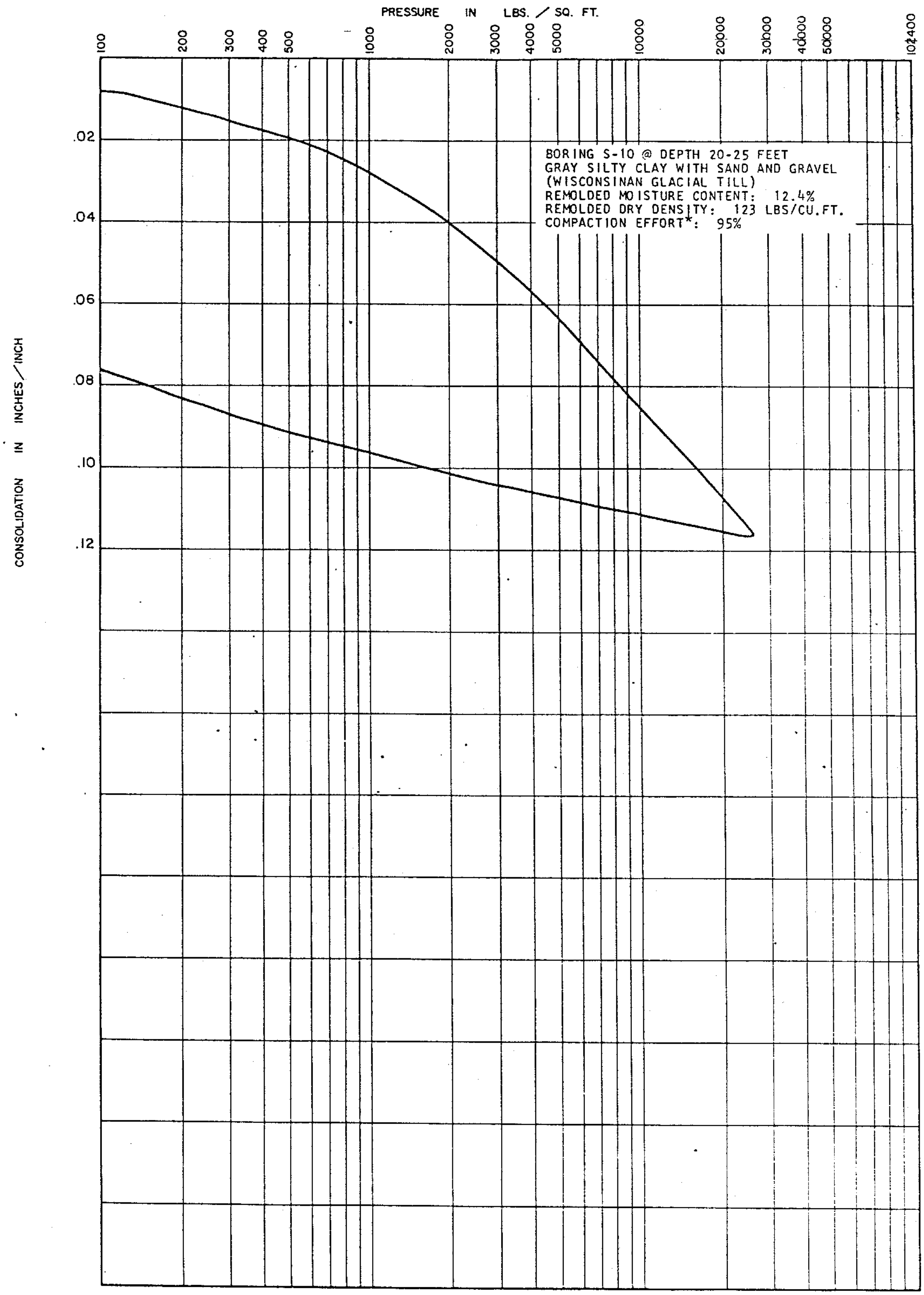
FIGURE 2.5-335

CONSOLIDATION TEST (BORING D-41)



* A.A.S.H.O. TEST DESIGNATION T-180

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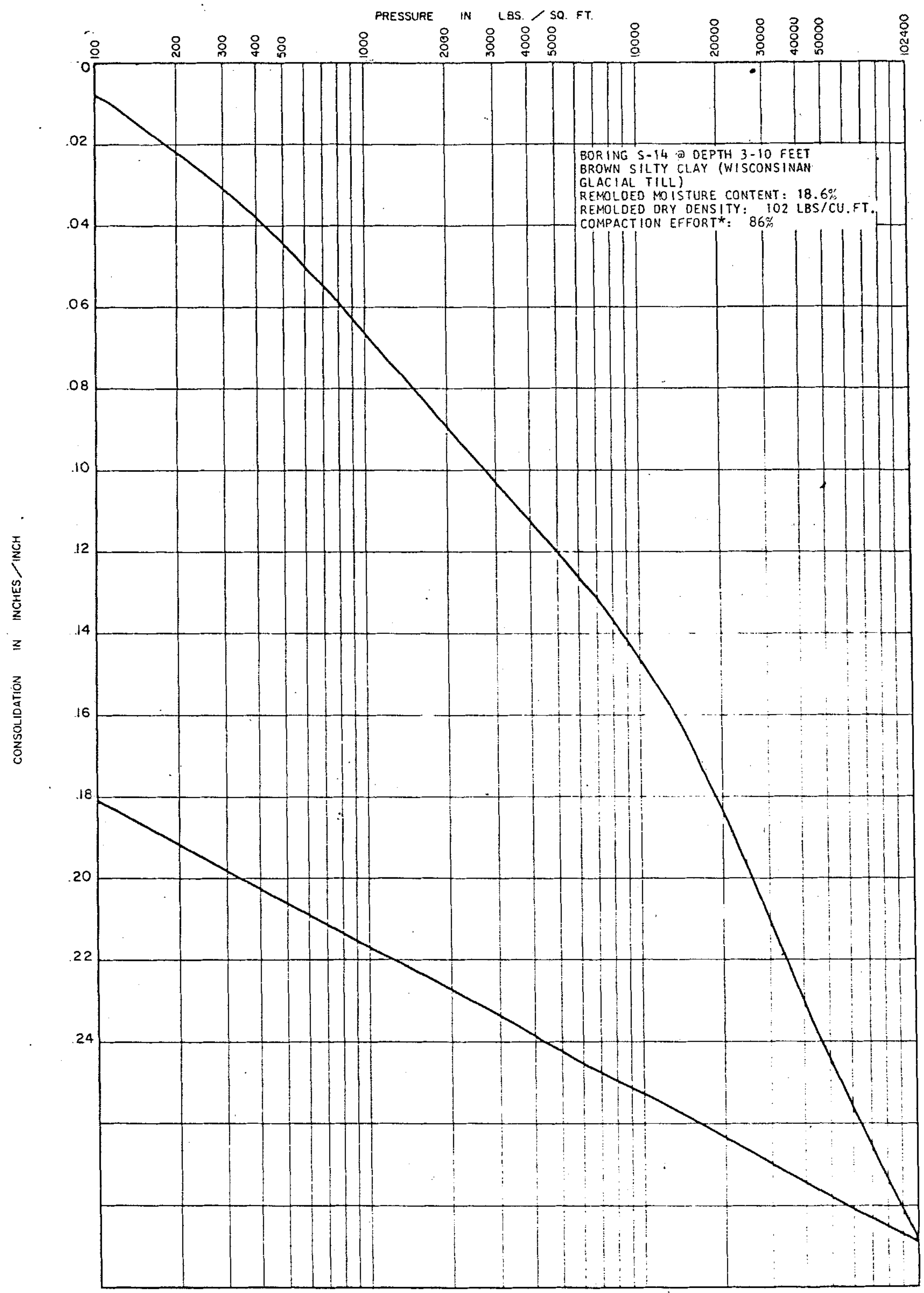
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-336

CONSOLIDATION TEST (BORING S-10)



* A.A.S.H.O. TEST DESIGNATION T-180

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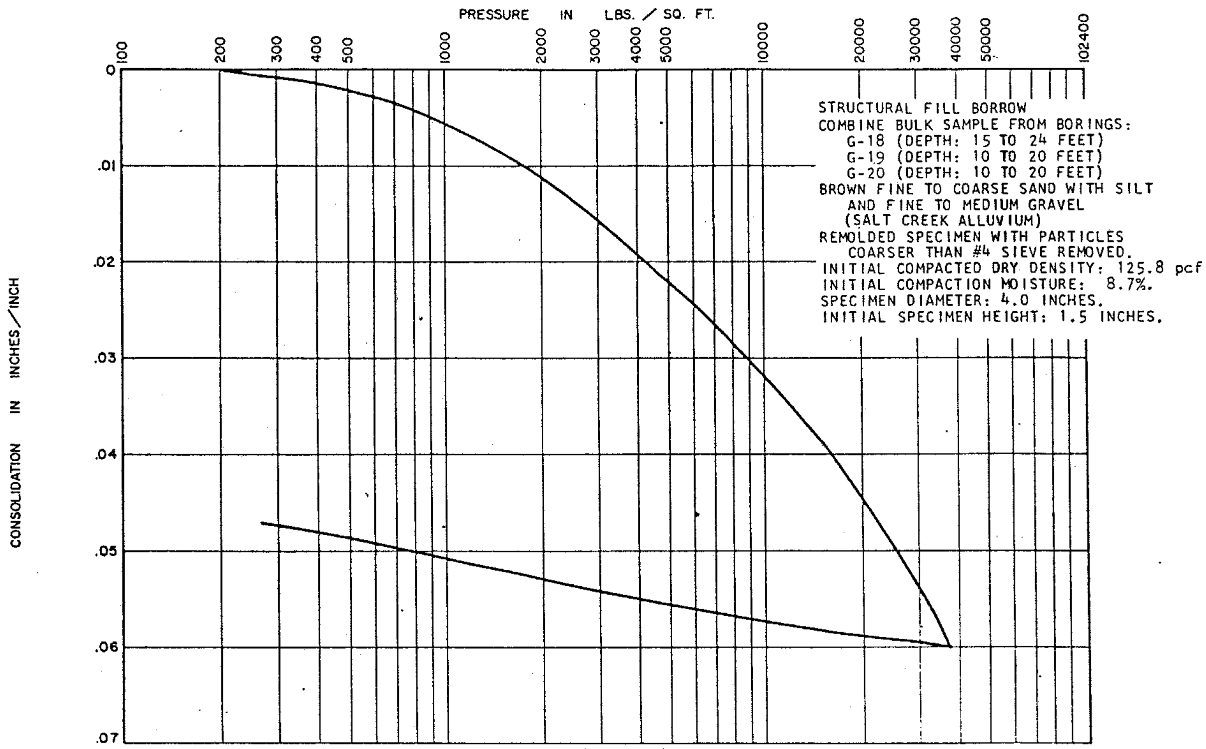
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-337

CONSOLIDATION TEST (BORING S-14)



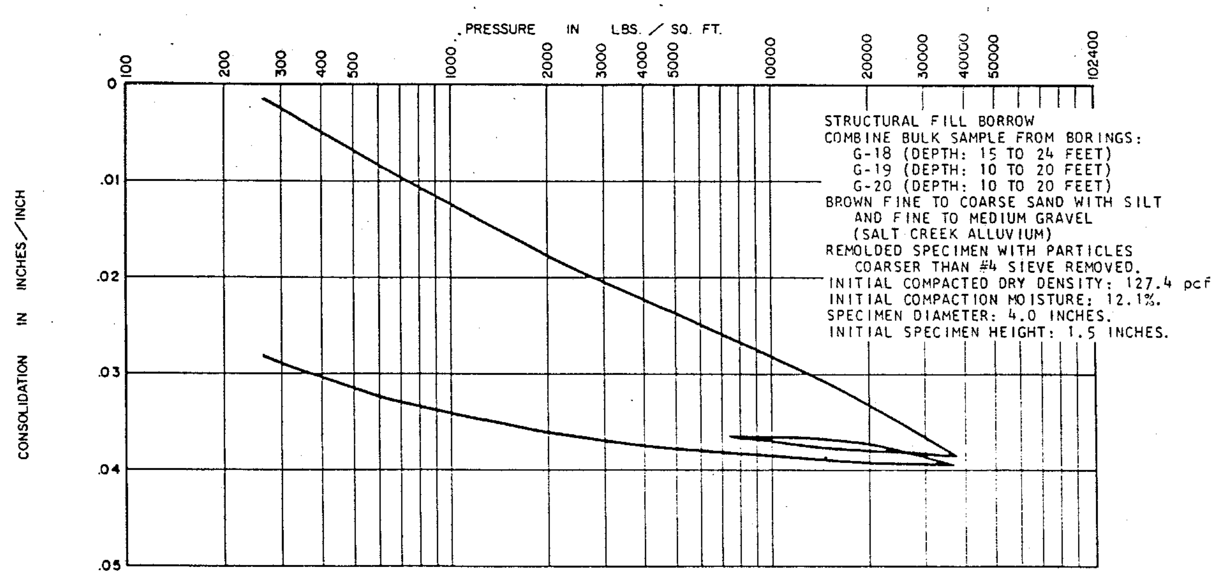


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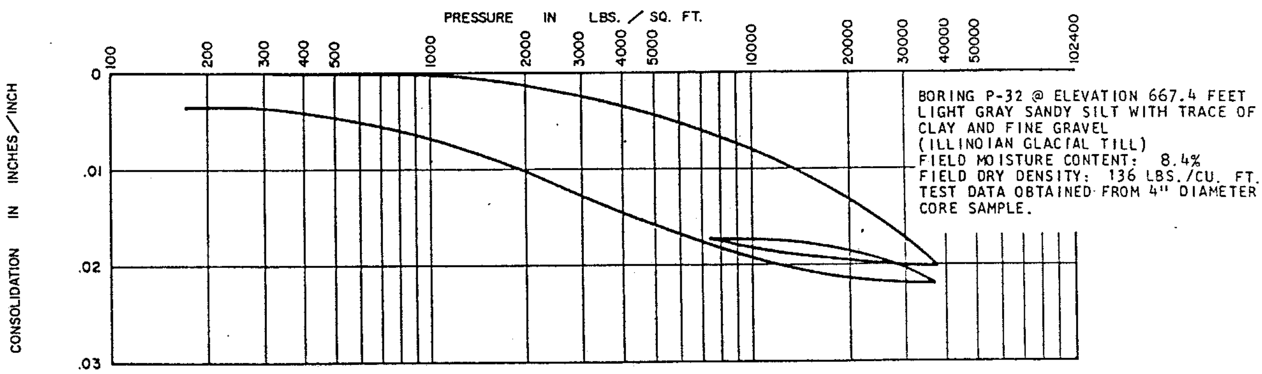
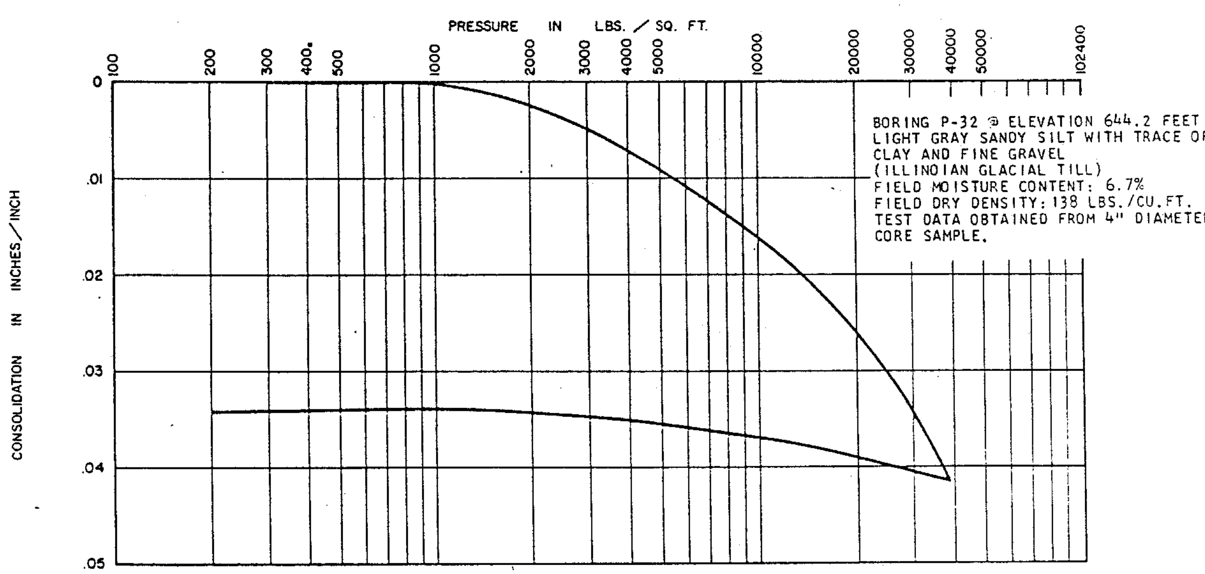
FIGURE 2.5-338

CONSOLIDATION TEST (BORINGS G-18, G-19 AND G-20)





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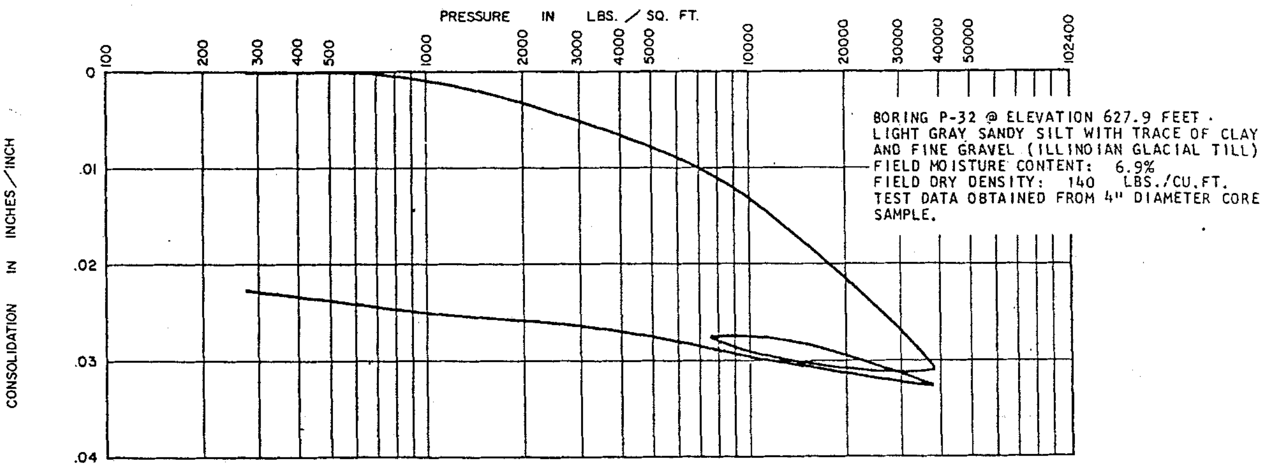
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-339

CONSOLIDATION TEST (BORING P-32)
(SHEET 1 of 2)



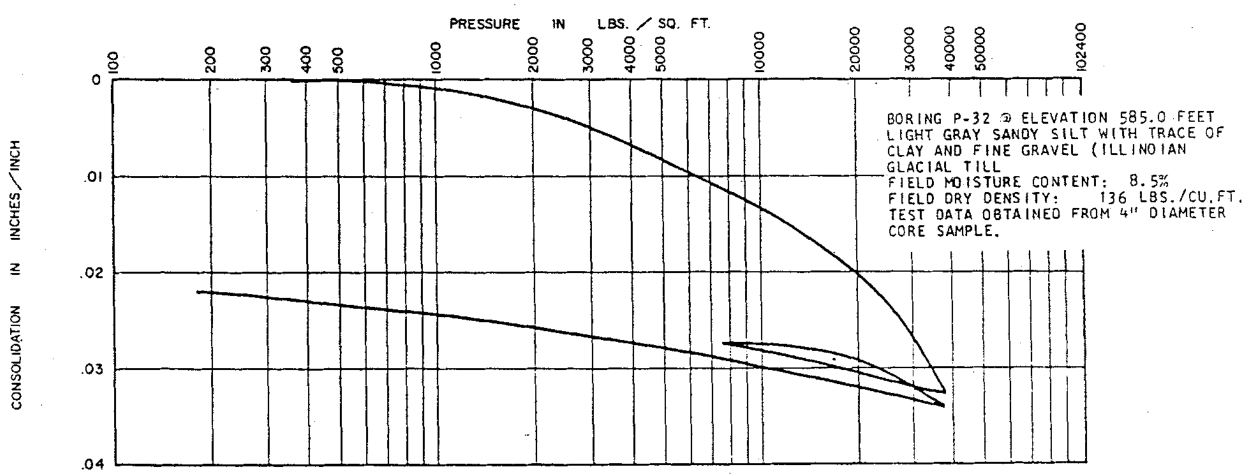


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FIGURE 2.5-339

CONSOLIDATION TEST (BORING P-32)
(SHEET 2 of 2)

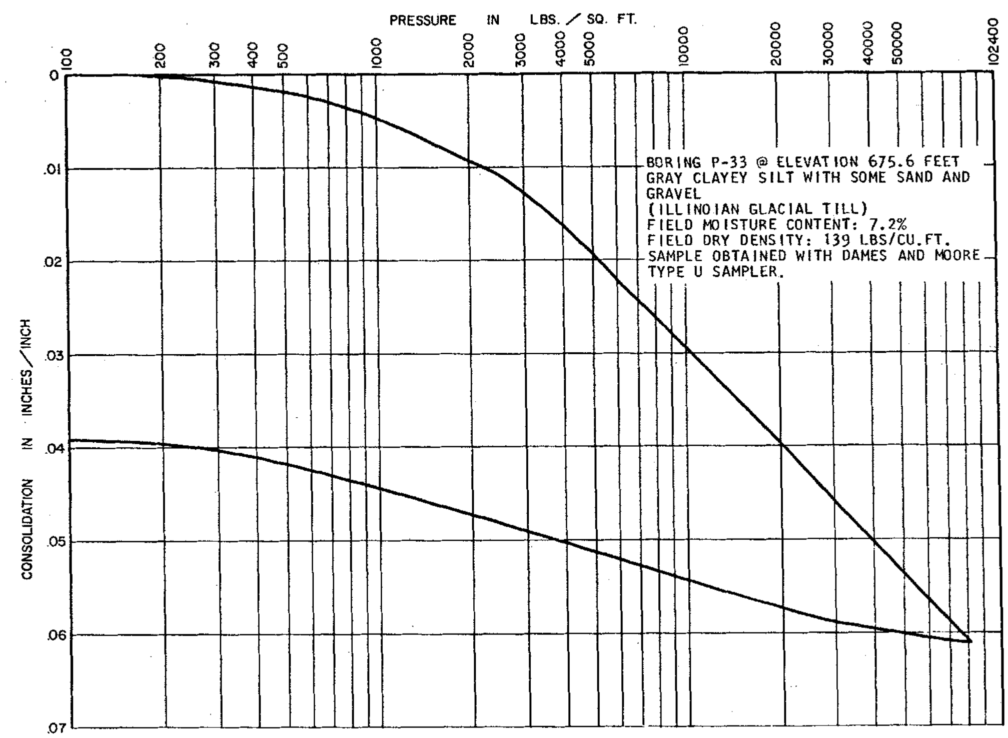

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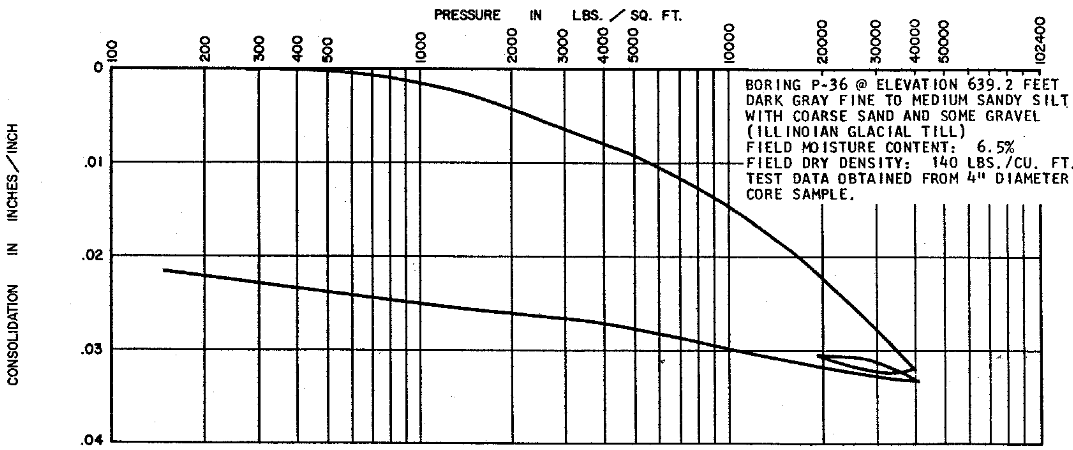
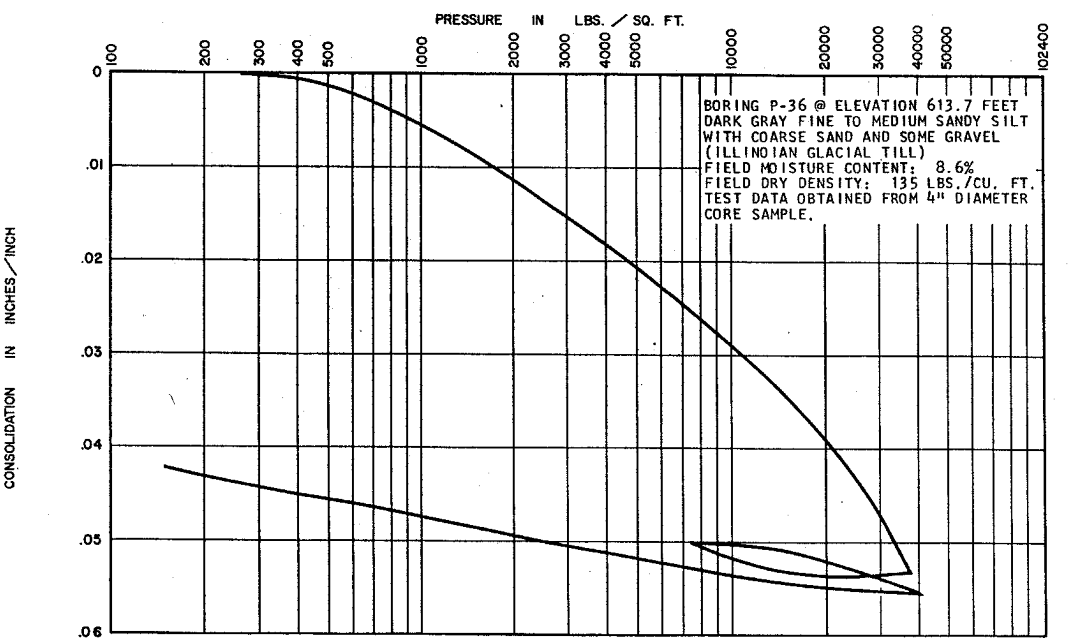
FIGURE 2.5-340

CONSOLIDATION TEST (BORING P-33)

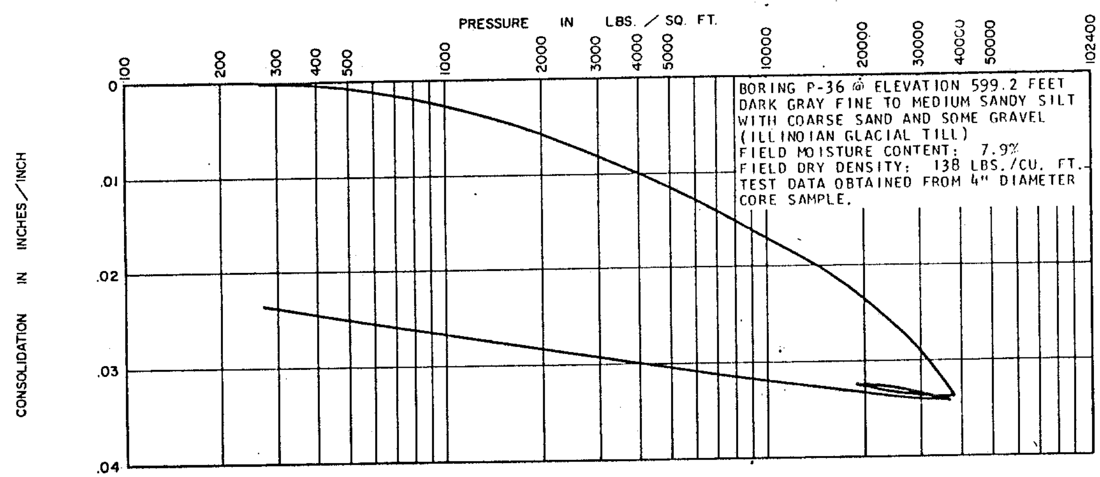


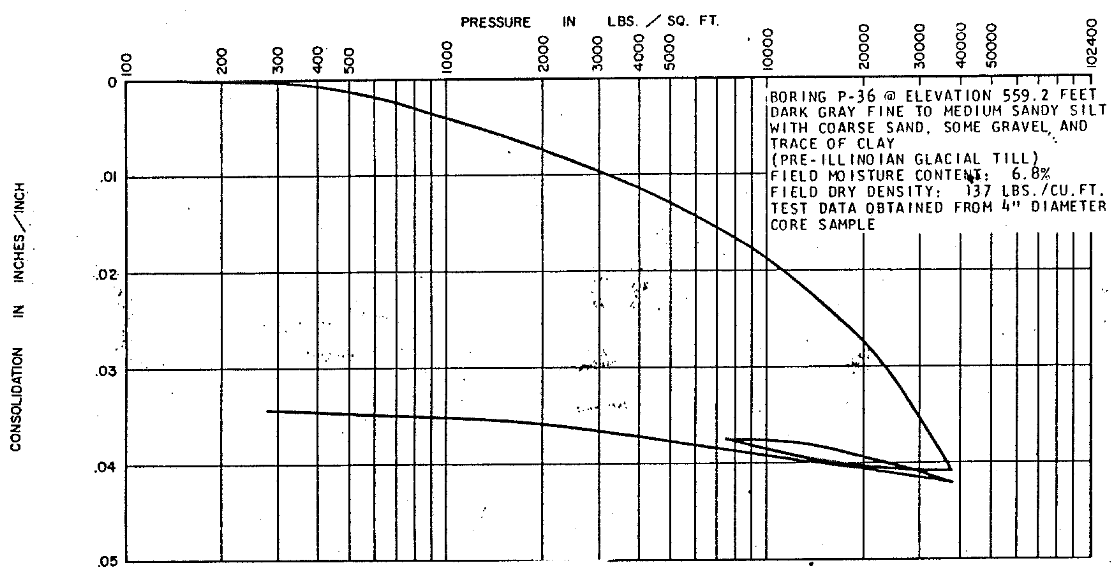


CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-341

CONSOLIDATION TEST (BORING P-36)
(SHEET 1 of 3)





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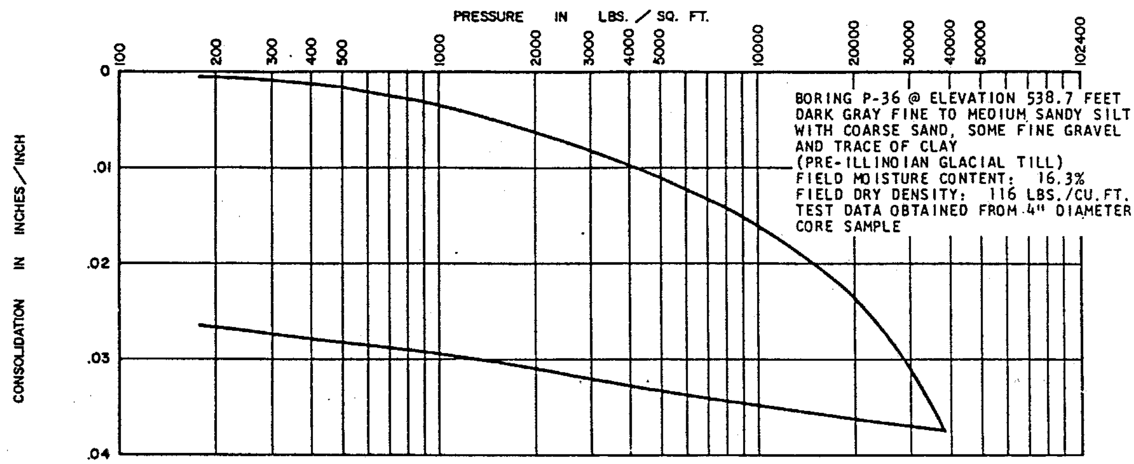
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-341
CONSOLIDATION TEST (BORING P-36)
(SHEET 2 of 3)



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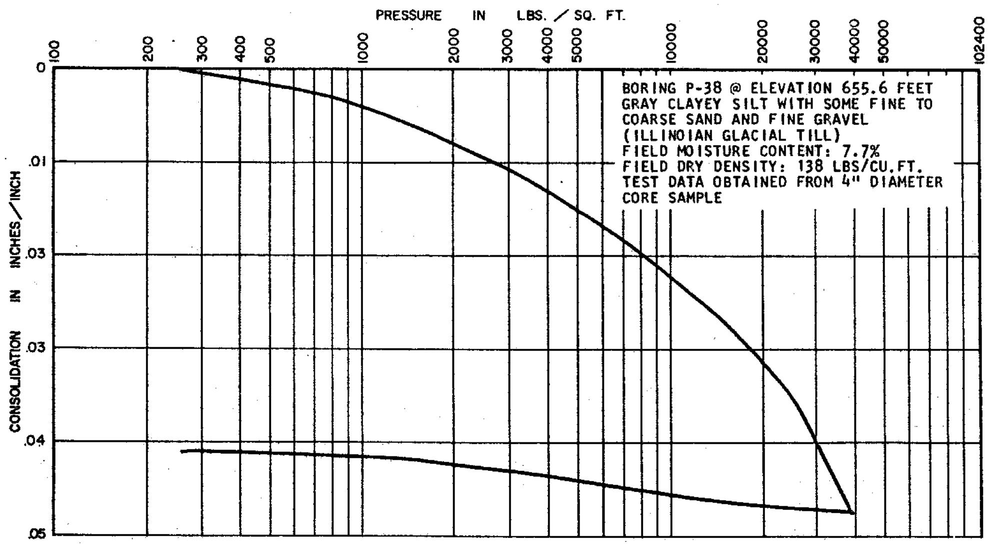
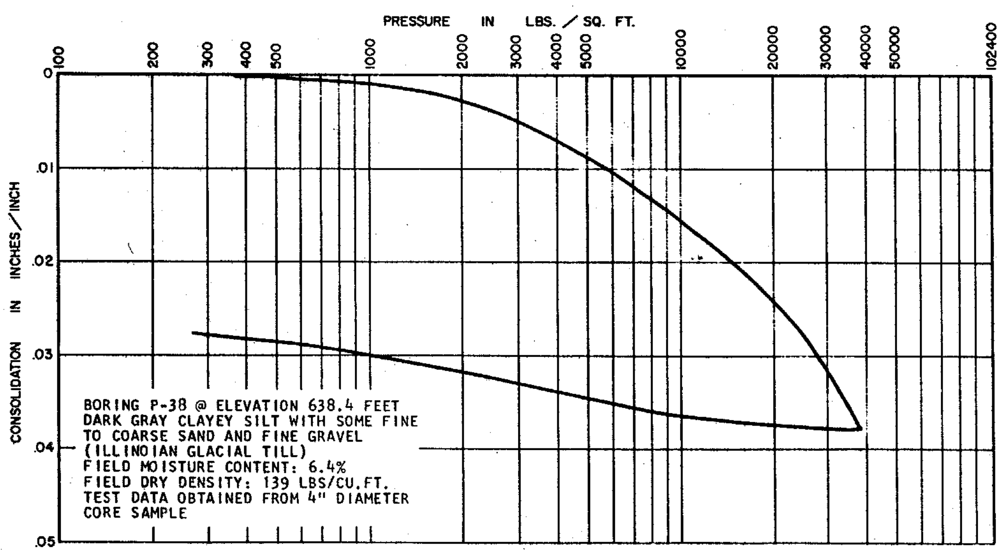
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-341

CONSOLIDATION TEST (BORING P-36)

(SHEET 3 of 3)





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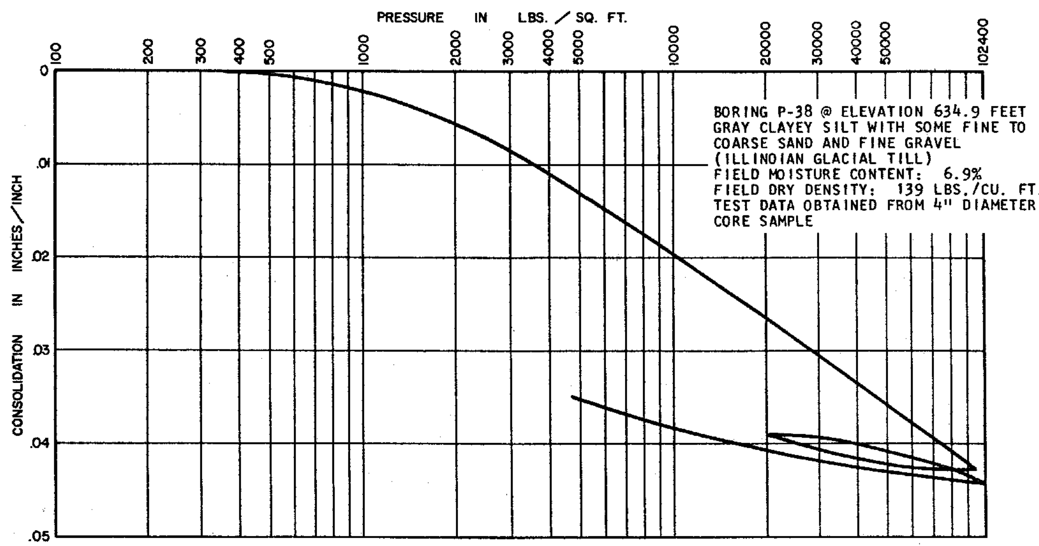
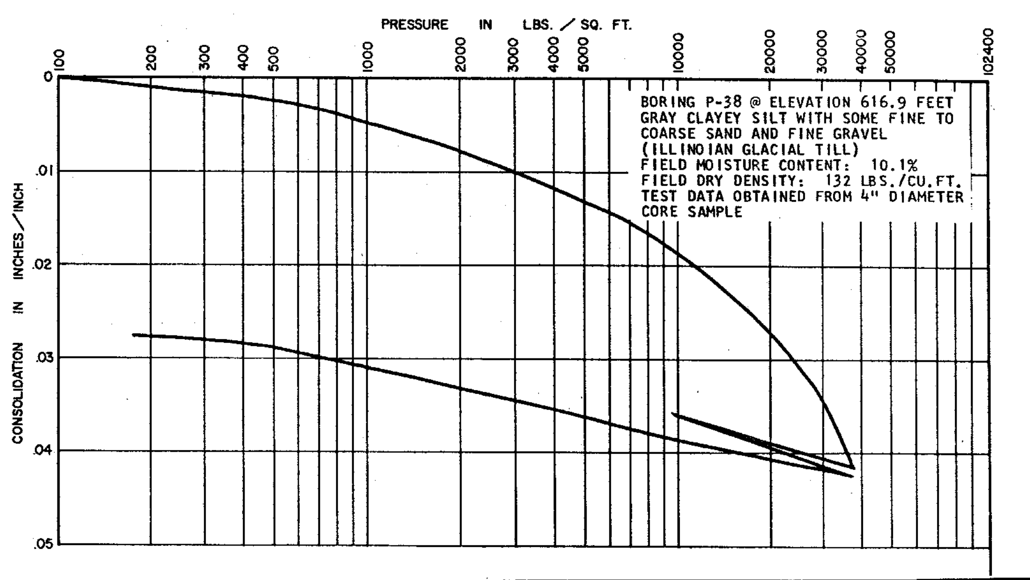
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-342

CONSOLIDATION TEST (BORING P-38)
(SHEET 1 of 5)





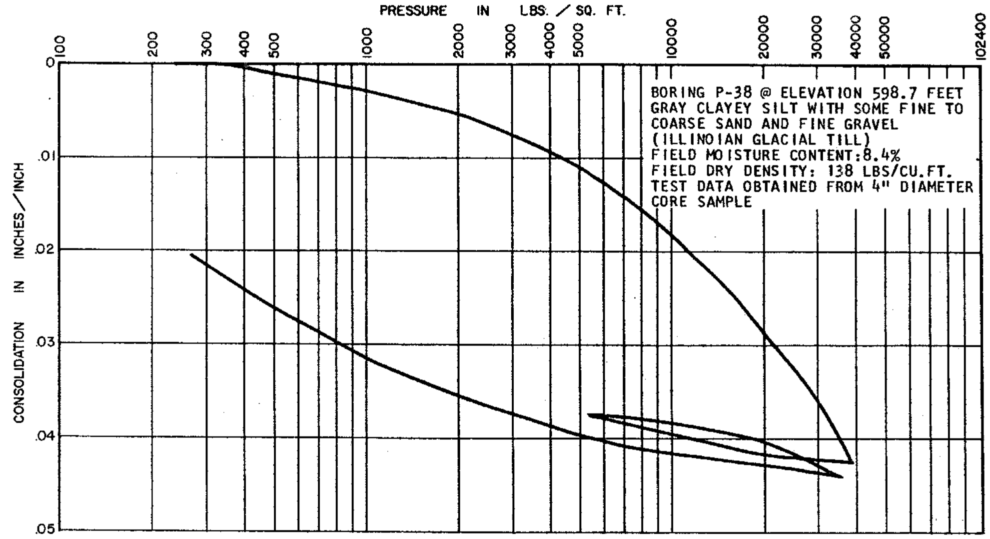
CLINTON POWER STATION

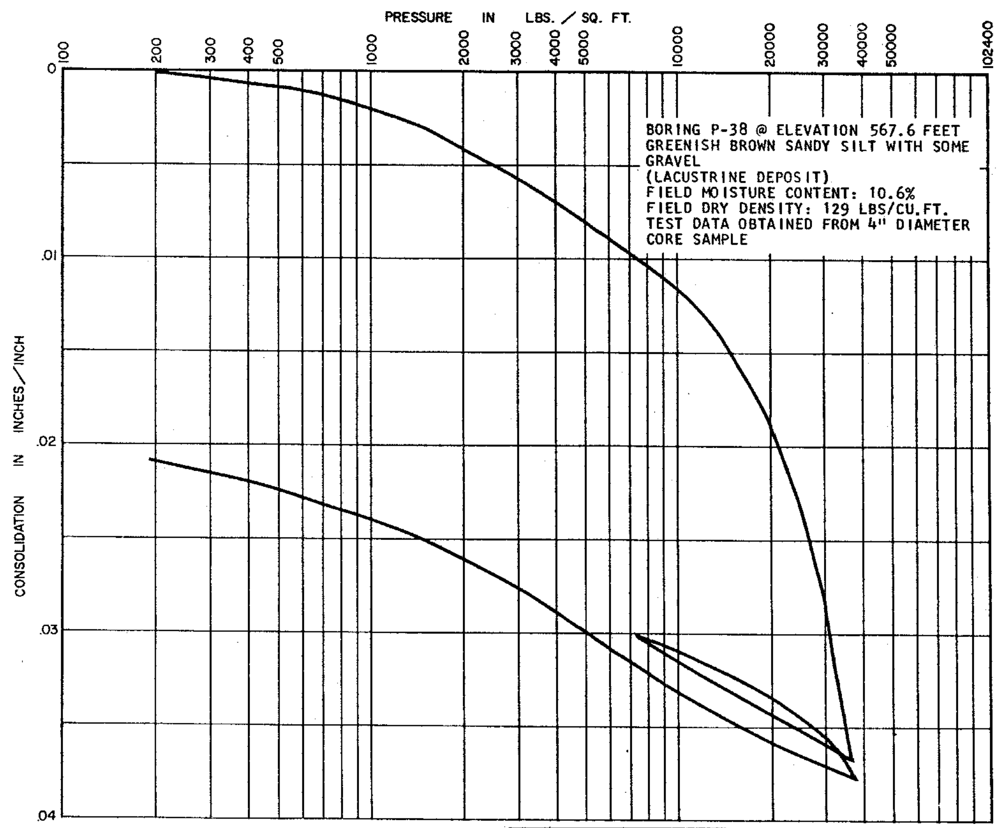
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-342

CONSOLIDATION TEST (BORING P-38)

(SHEET 2 of 5)





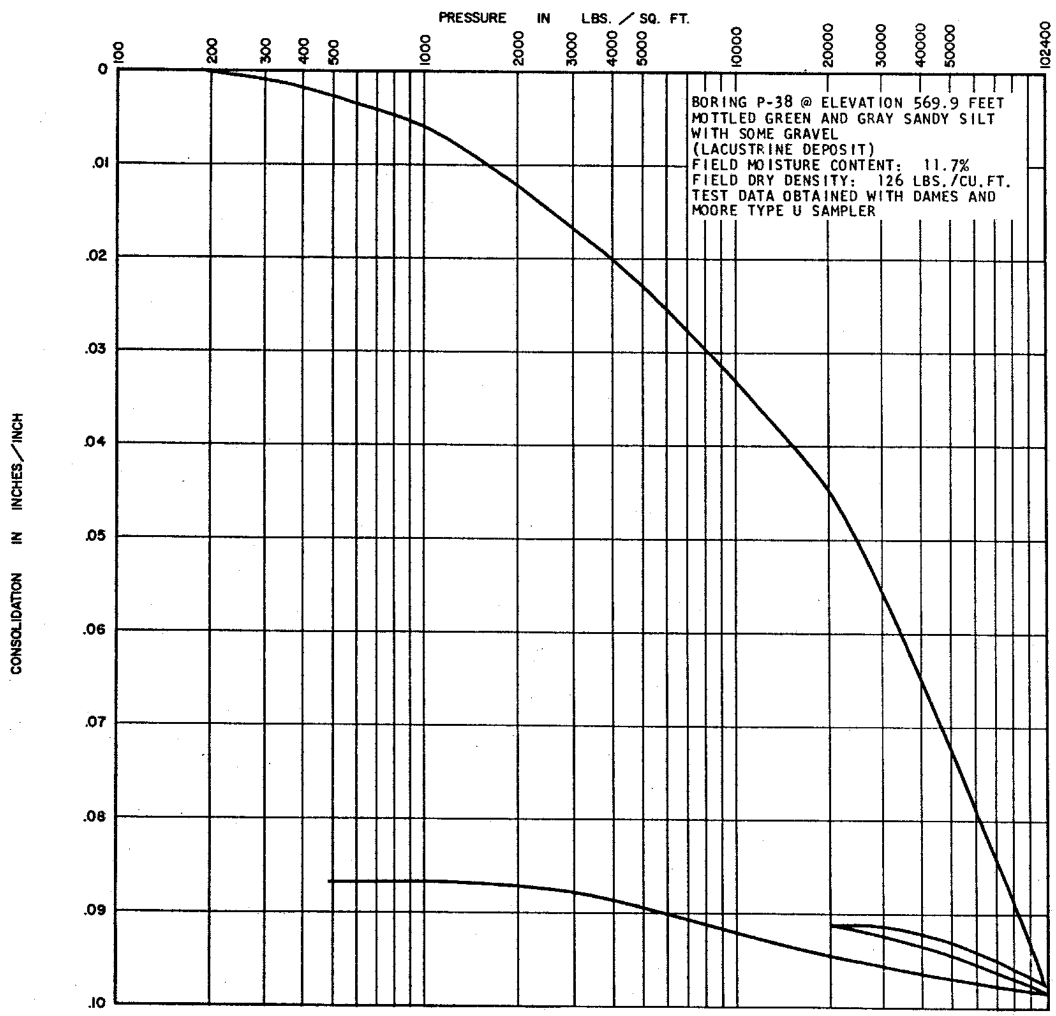
CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-342

CONSOLIDATION TEST (BORING P-38)

(SHEET 3 of 5)



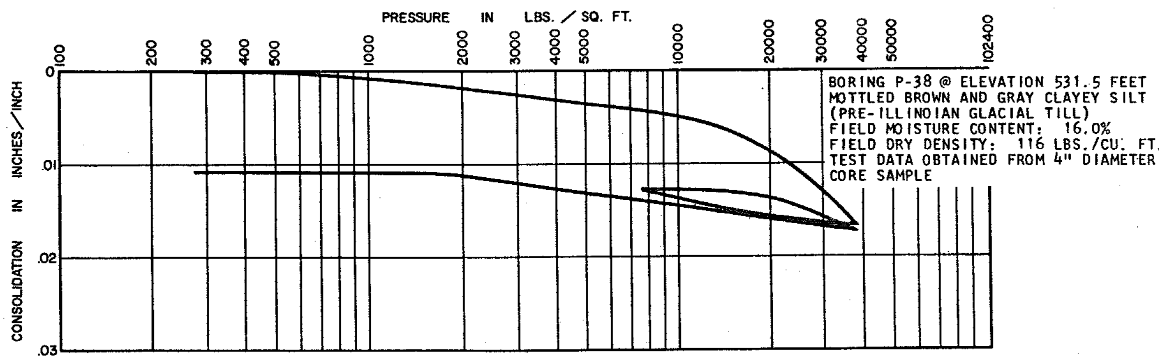
CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-342

CONSOLIDATION TEST (BORING P-38)

(SHEET 4 of 5)



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UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-342

CONSOLIDATION TEST (BORING P-38)
(SHEET 5 of 5)

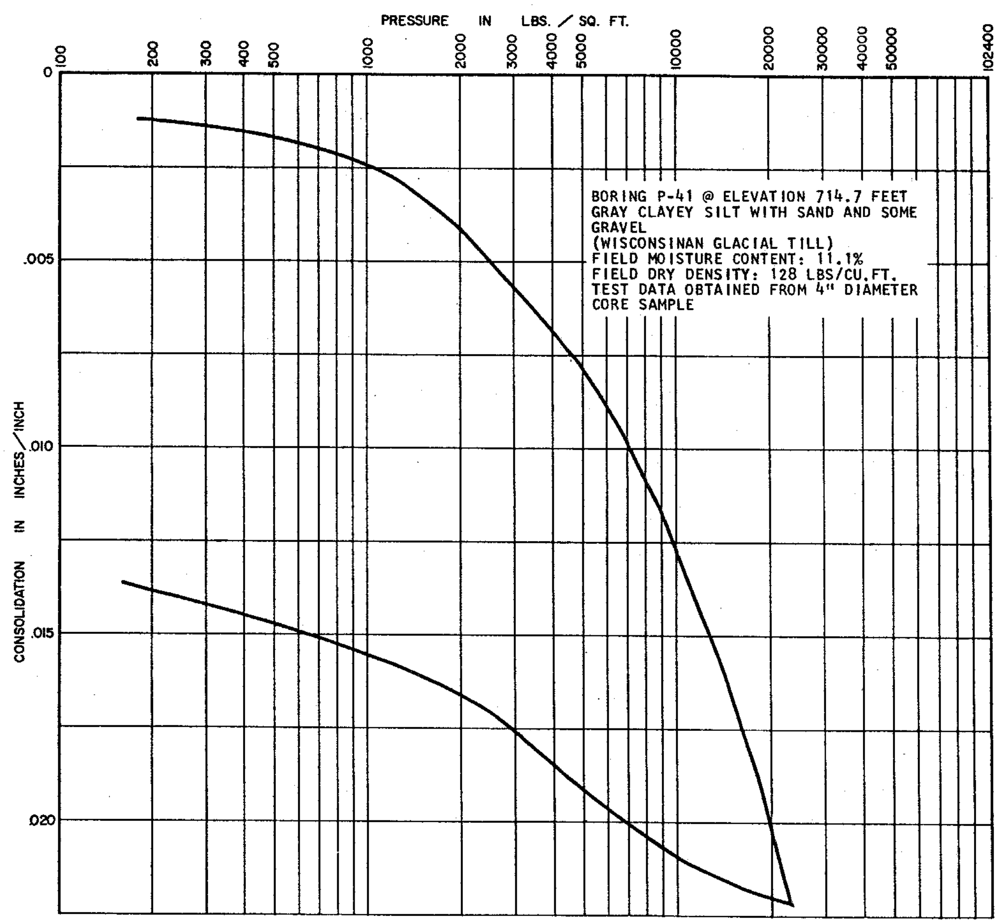

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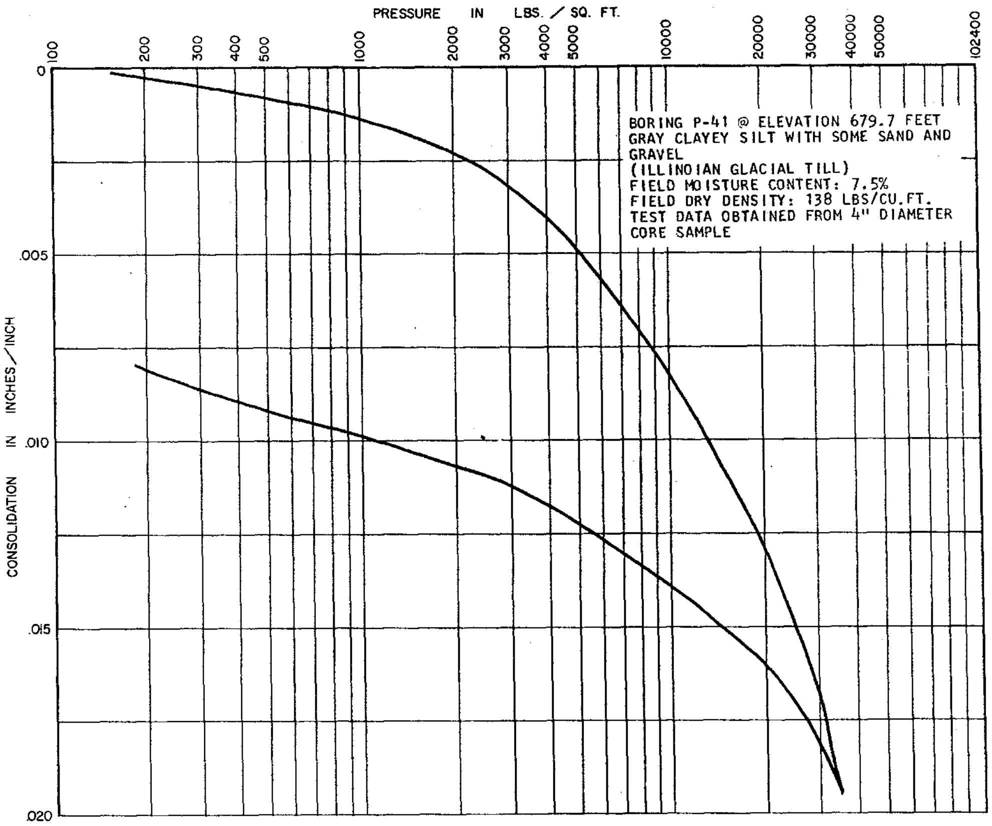
FIGURE 2.5-343

CONSOLIDATION TEST (BORING P-41)

(SHEET 1 of 2)

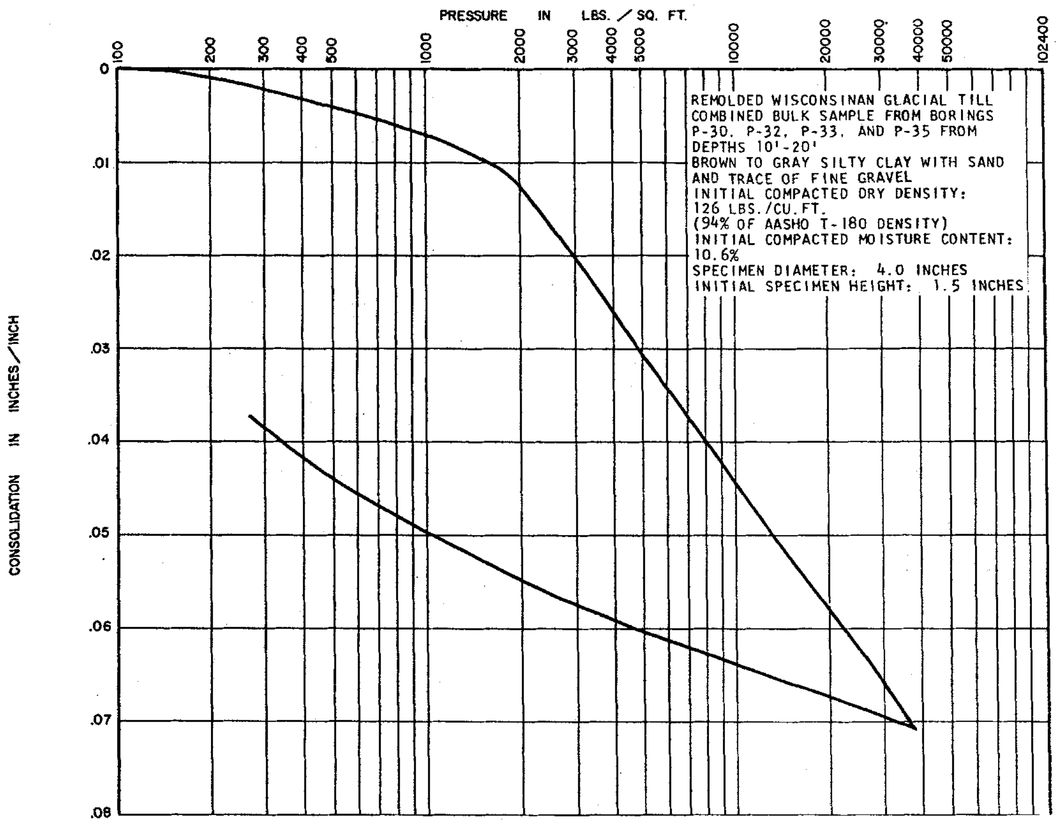


CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-343

CONSOLIDATION TEST (BORING P-41)

(SHEET 2 of 2)



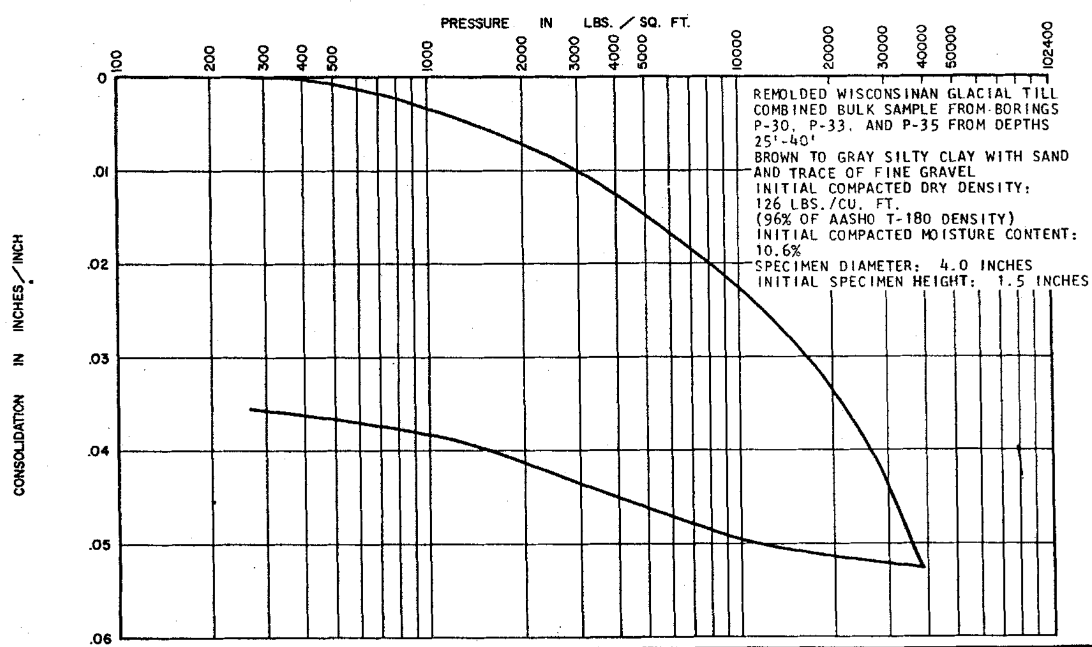


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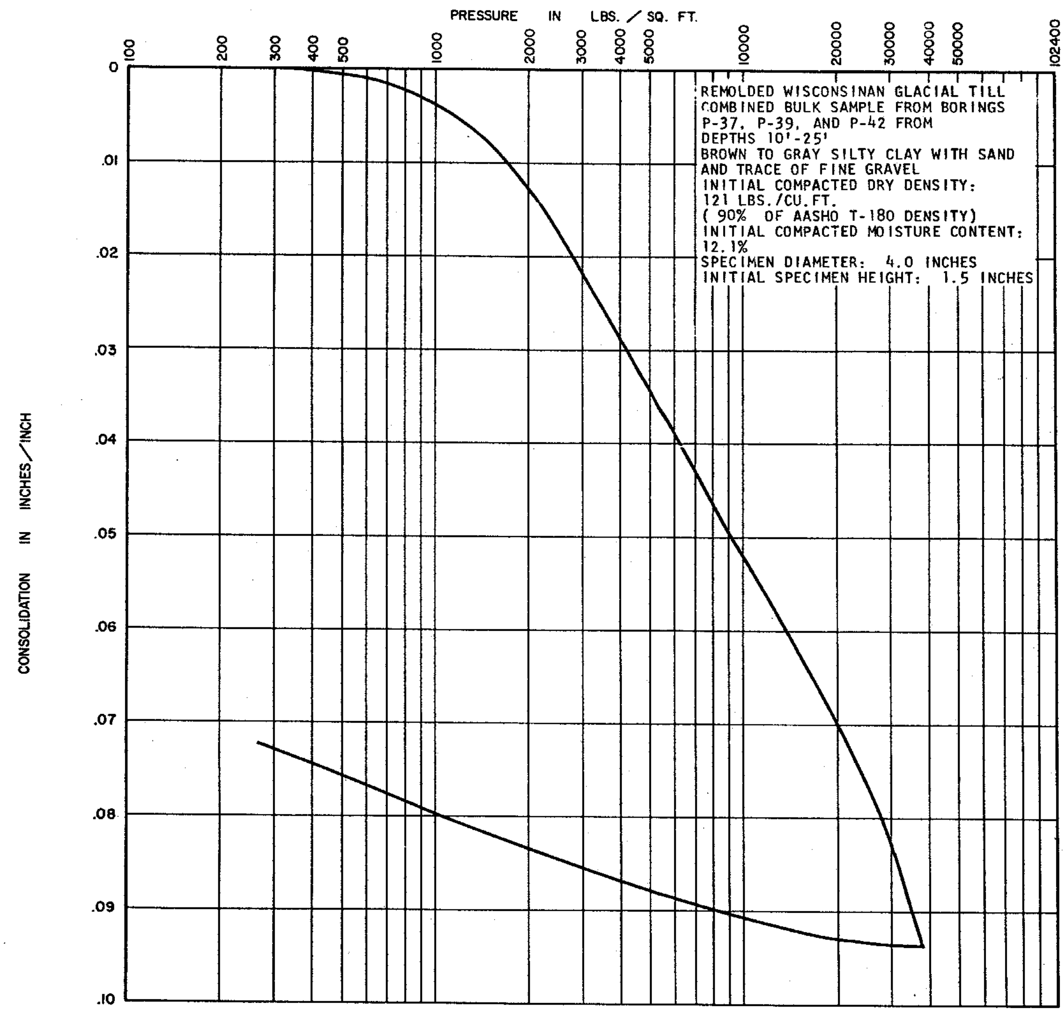
FIGURE 2.5-344

CONSOLIDATION TEST (COMBINED BULK SAMPLE)

(SHEET 1 of 3)



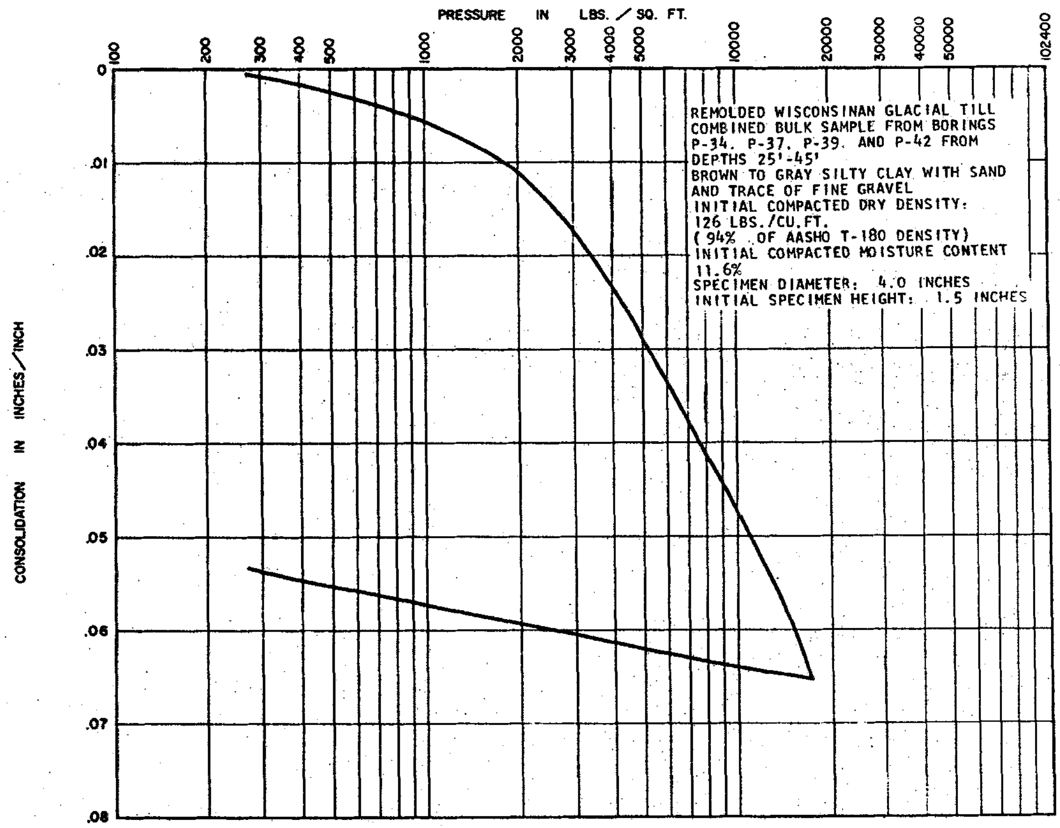
CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-344

CONSOLIDATION TEST (COMBINED BULK SAMPLE)

(SHEET 2 of 3)



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-344

CONSOLIDATION TEST (COMBINED BULK SAMPLE)

(SHEET 3 of 3)

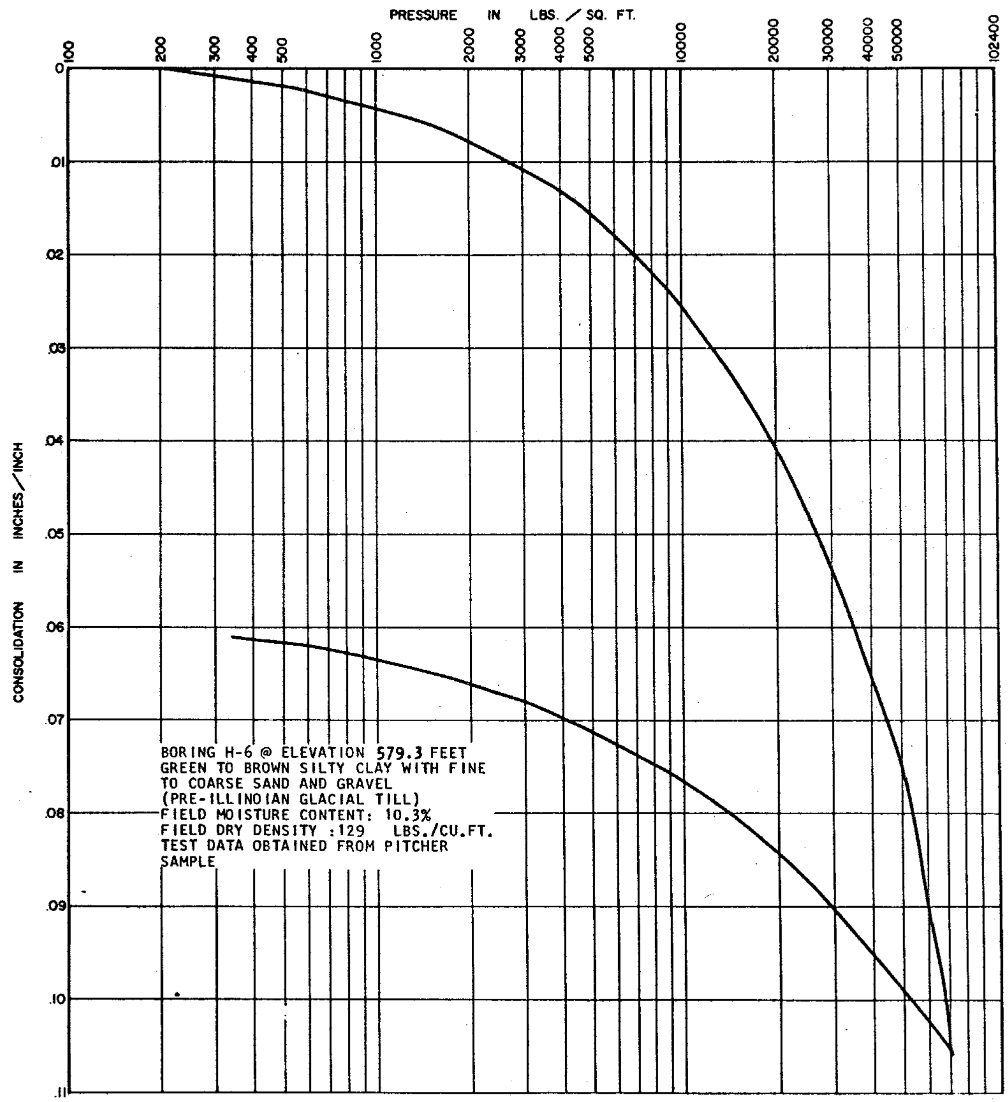


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FIGURE 2.5-345

CONSOLIDATION TEST (BORING H-6)

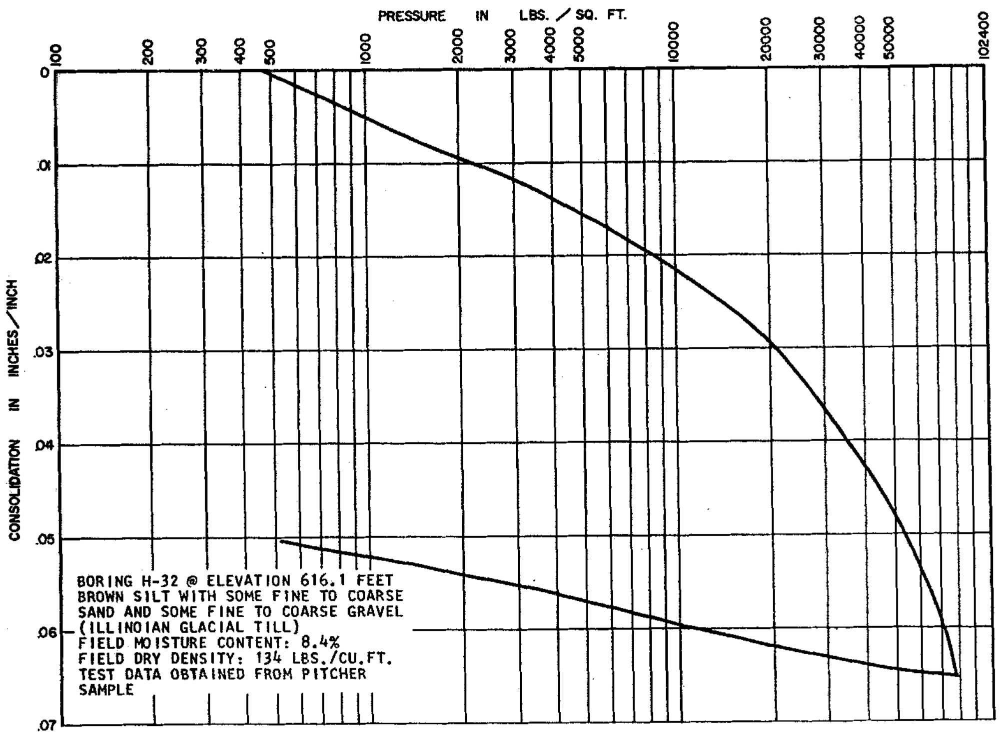

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FIGURE 2.5-346

CONSOLIDATION TEST (BORING H-32)

(SHEET 1 of 2)

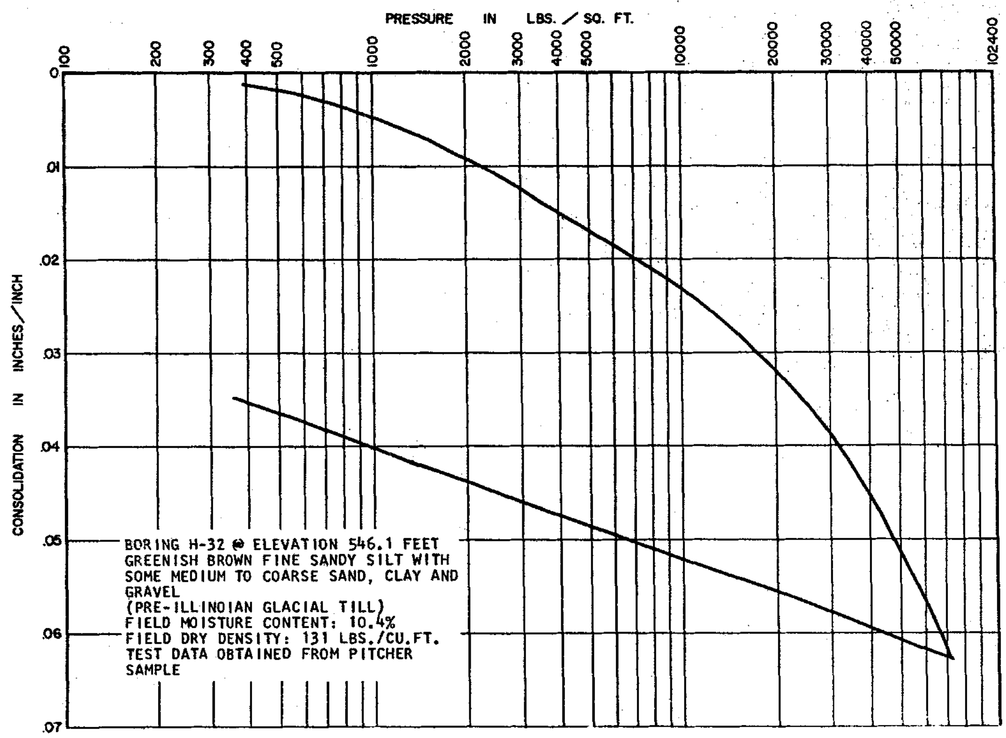

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FIGURE 2.5-346

CONSOLIDATION TEST (BORING H-32)
(SHEET 2 of 2)

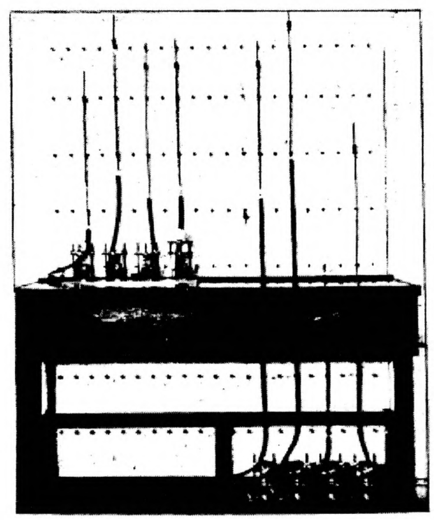

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Figure 2.5-347
Sheet 1 of 2

PERCOLATION TEST (METHOD)

NOTES FOR FIGURE 2.5-347

Methods of Performing Percolation Tests

The quantity and the velocity of flow of water which will escape through an earth structure or percolate through soil are dependent upon the permeability of the earth structure or soil. The permeability of soil has often been calculated by empirical formulas but is best determined by laboratory tests, especially in the case of compacted soils.

A one inch length of the core sample is sealed in the percolation apparatus, placed under a confining load, or surcharge pressure, and subjected to the pressure of a known head of water. The percolation rate is computed from the measurements of the volume of water which flows through the sample in a series of time intervals. These rates are usually expressed as the velocity of flow in feet per year under a hydraulic gradient of one and at a temperature of 20 degrees Centigrade. The rate so expressed may be adjusted for any set of conditions involving the same soil by employing established physical laws. Generally, the percolation rate varies over a wide range at the beginning of the test and gradually approaches equilibrium as the test progresses.

During the performance of the test, continuous readings of the deflection of the sample are taken by means of micrometer dial gauges. The amount of compression or expansion, expressed as a percentage of the original length of the sample, is a valuable indication of the compression of the soil which will occur under the action of load or the expansion of the soil as saturation takes place.

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Figure 2.5-347
Sheet 2 of 2

PERCOLATION TEST (METHOD)

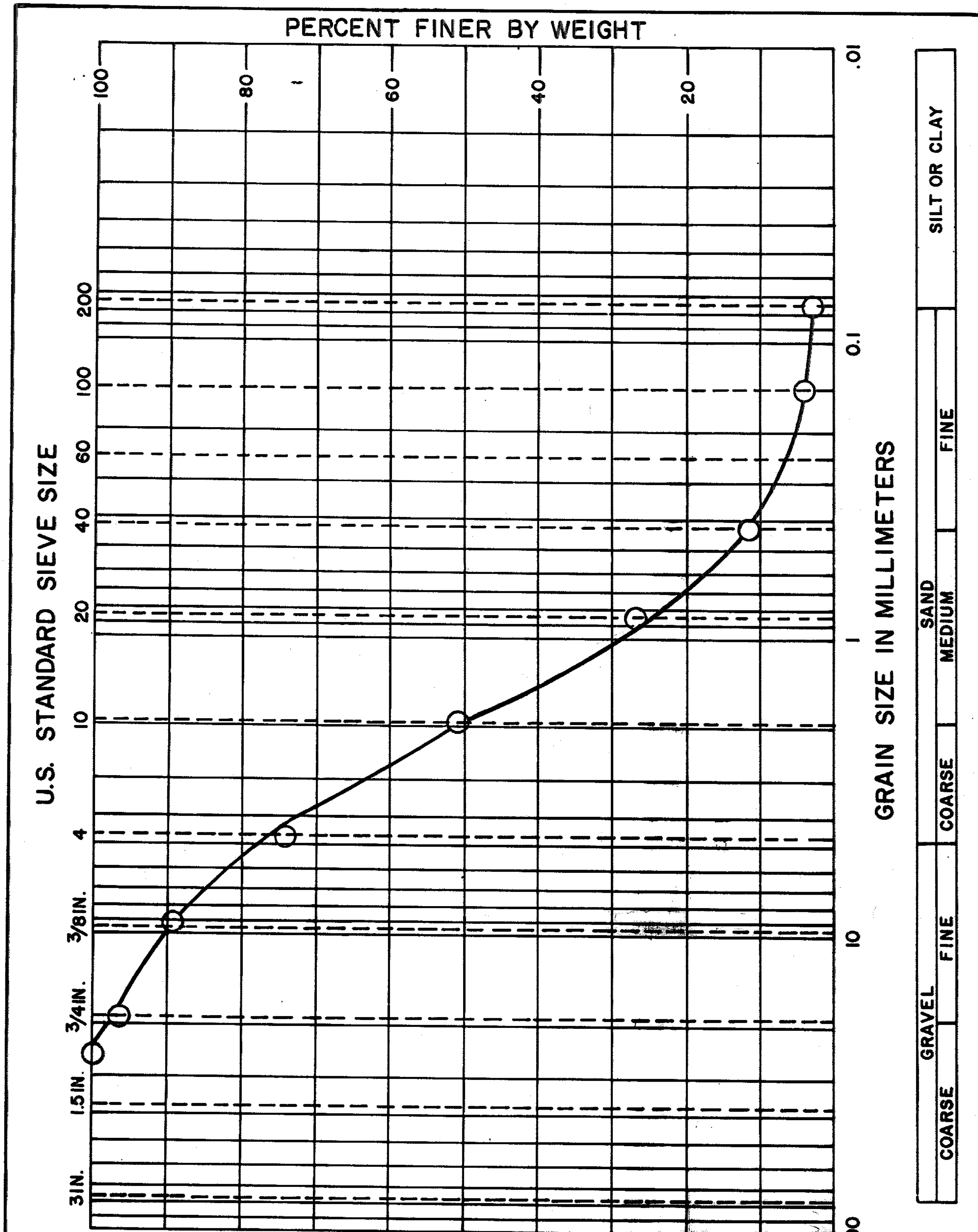

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FIGURE 2.5-348

PARTICLE SIZE ANALYSIS - TYPE B MATERIAL - LIQUEFACTION SAMPLE

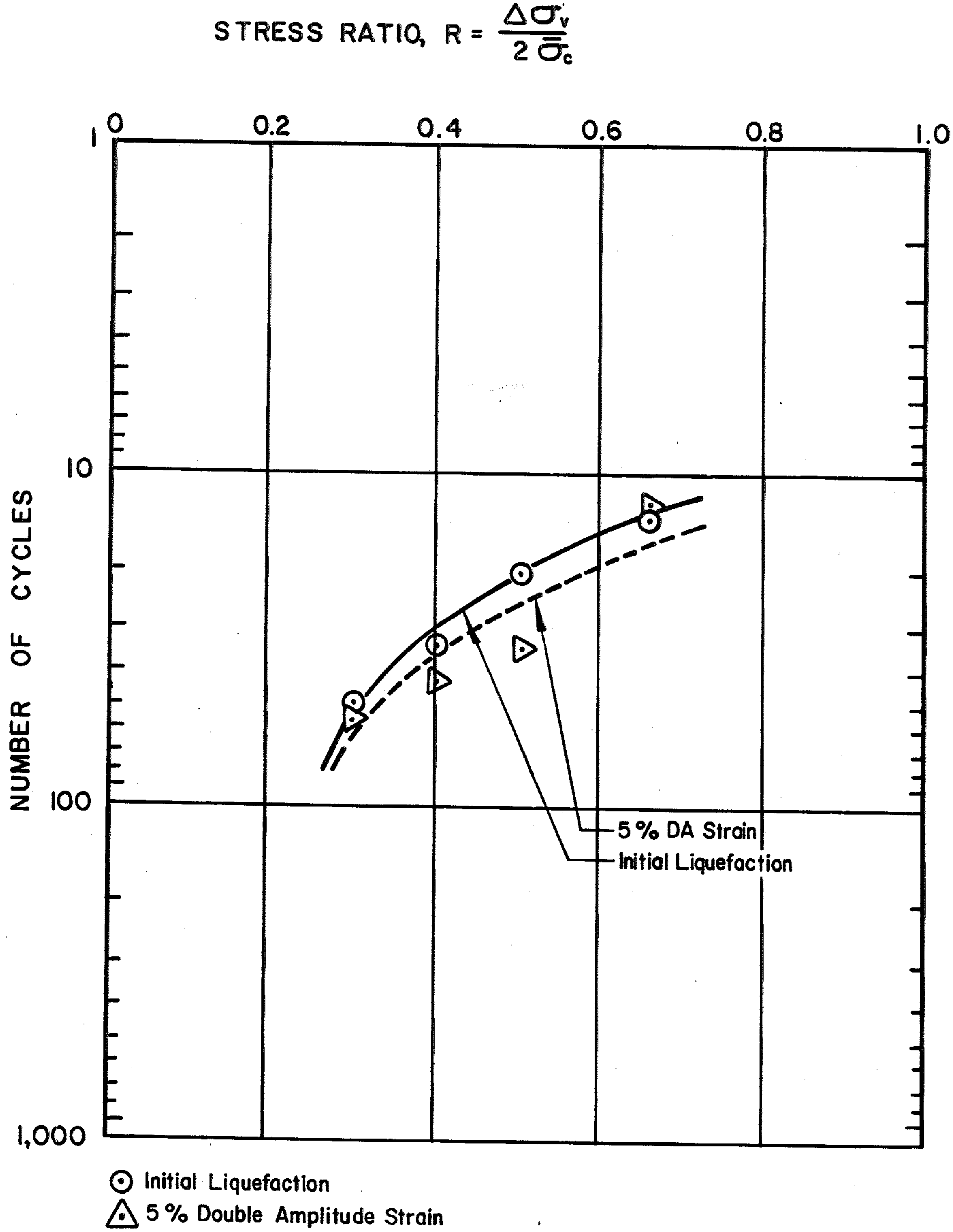

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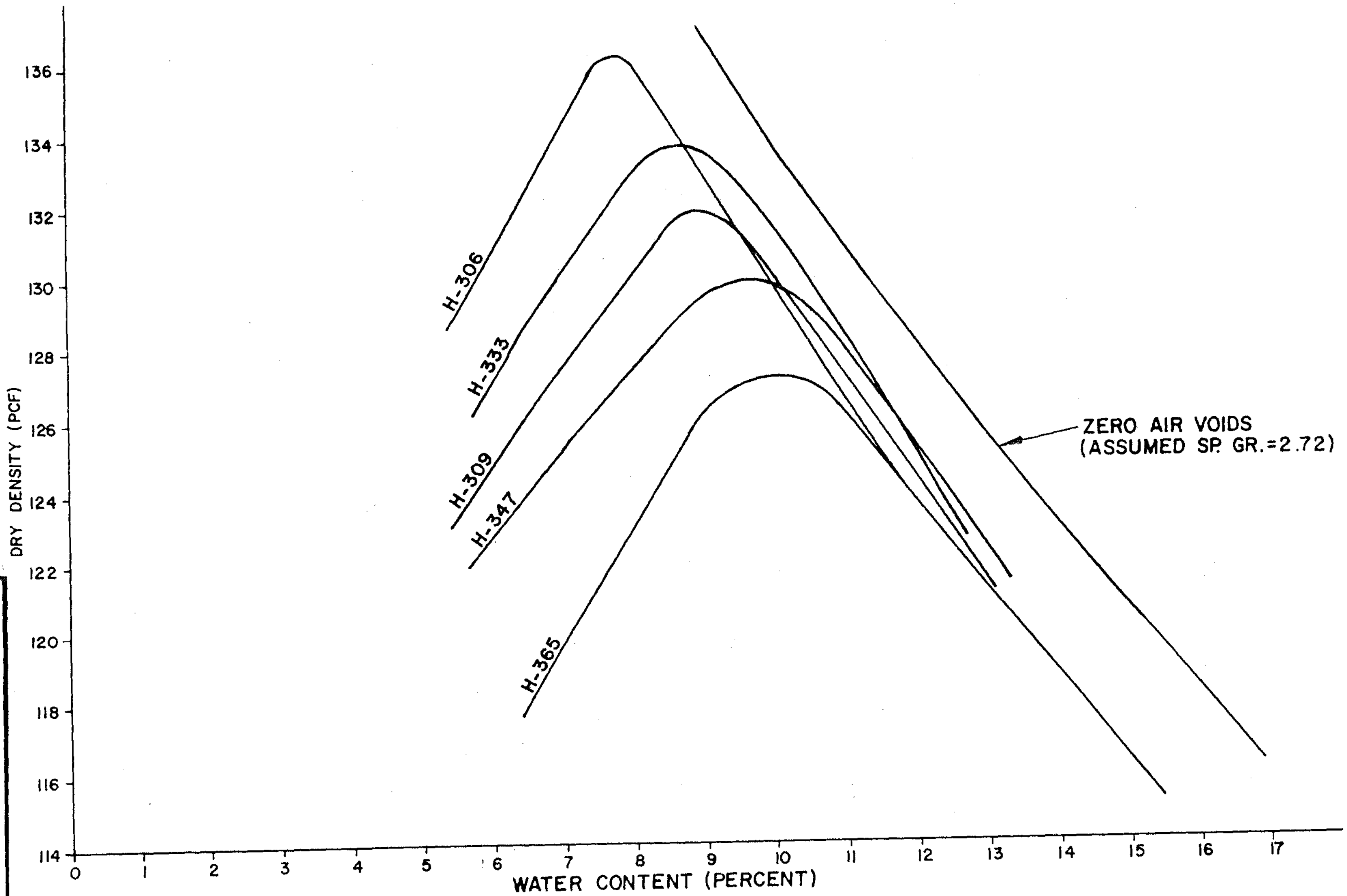
FIGURE 2.5-349

LIQUEFACTION TESTS OF TYPE B MATERIAL



NOTES

1. Moisture density relationships based on modified Proctor test ASTM D1557.
2. Data based on field laboratory testing of type A & C material used as backfill around the screenhouse and main plant.
3. H-306, H-333, H-309, H-347 and H-365 denote field sample number.

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FIGURE 2.5-350

TYPICAL MOISTURE-DENSITY RELATIONSHIPS - SCREEN HOUSE AND MAIN PLANT AREAS

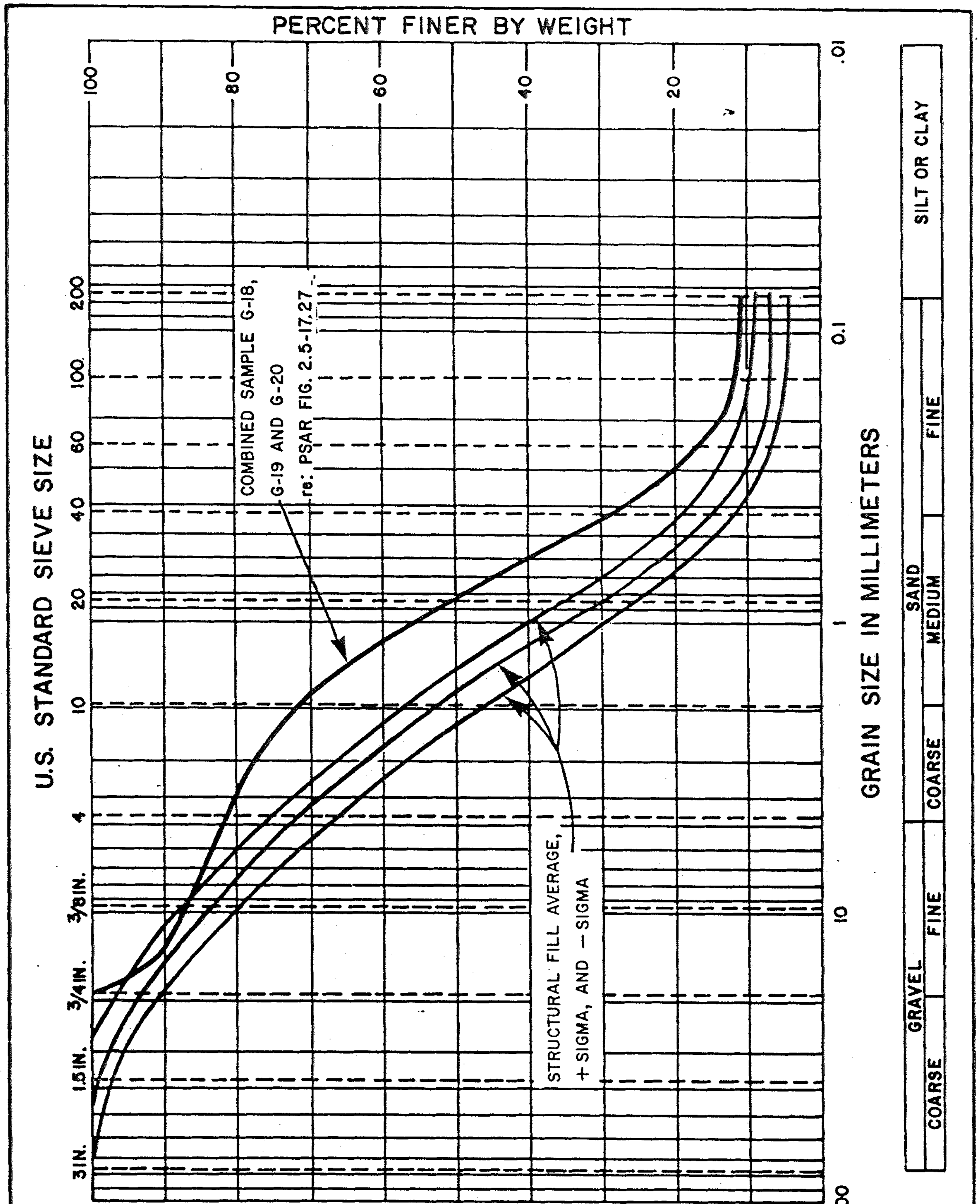

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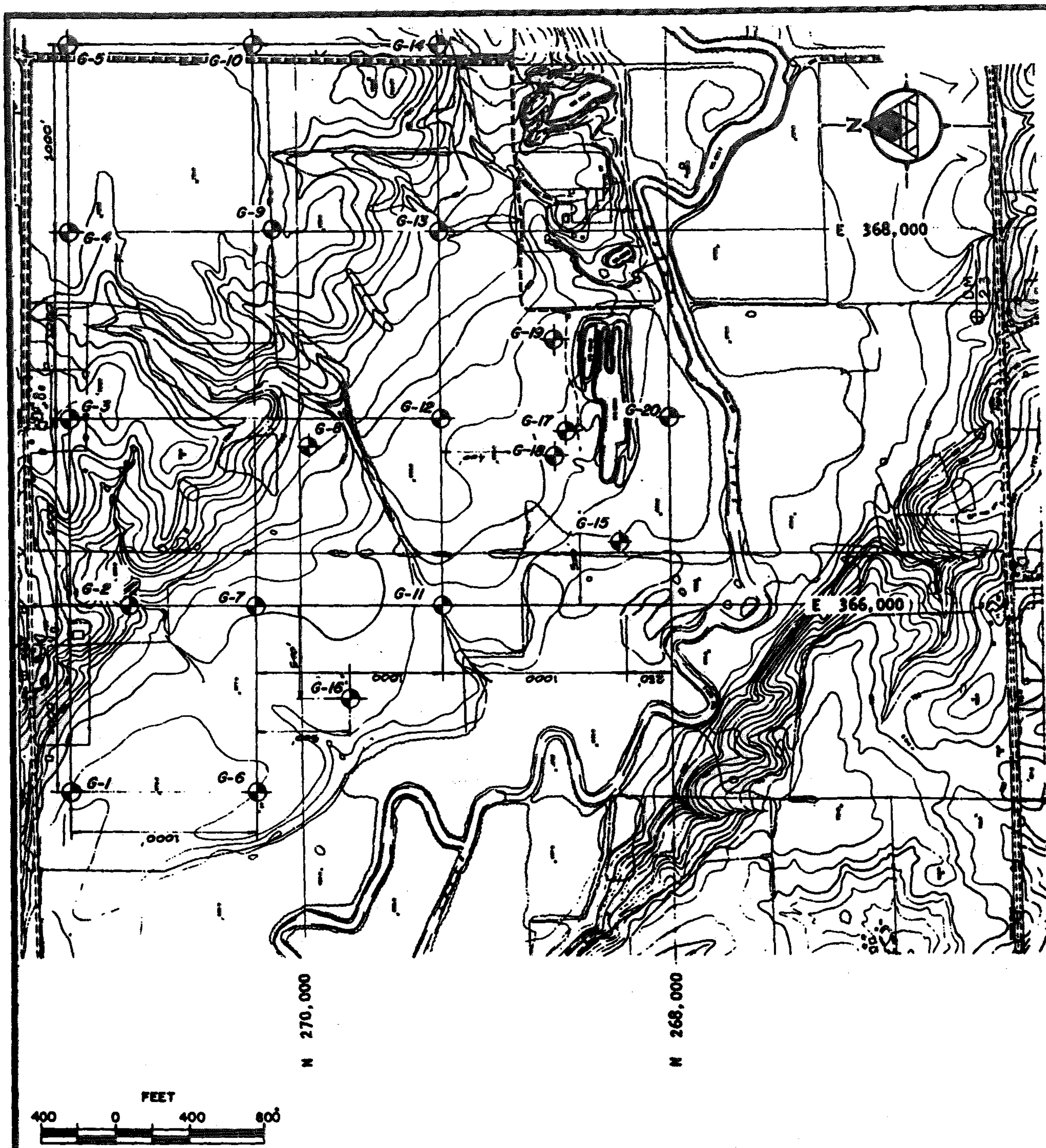
FIGURE 2.5-351

PARTICLE SIZE ANALYSIS - TYPE B MATERIAL - STATISTICAL AVERAGE GRADATION



LEGEND:

TOPOGRAPHIC CONTOURS

BORING LOCATION

NOTES:

1. SEE FIGURE 2.5-14 FOR LOCATION OF BORROW AREA.
2. REFER TO FIGURES 2.5-152 THROUGH 2.5-161 FOR LOGS OF BORINGS.

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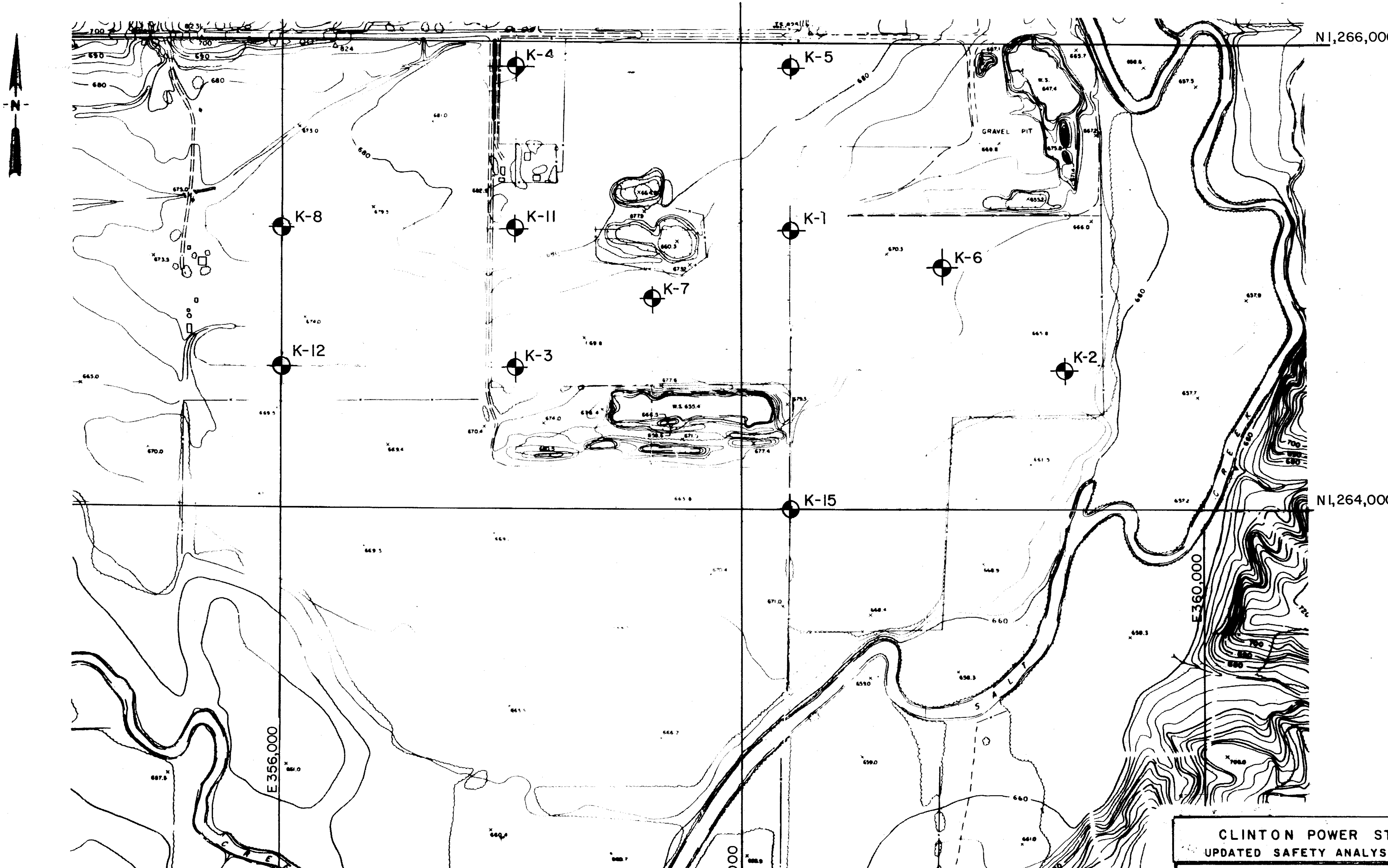
FIGURE 2.5-352

PLOT PLAN - PROPOSED BORROW AREA FOR STRUCTURAL FILL



NOTE

REFER TO FIGURES 2.5-243 THROUGH 2.5-253 FOR LOG OF BORINGS.

LEGEND

BORINGS

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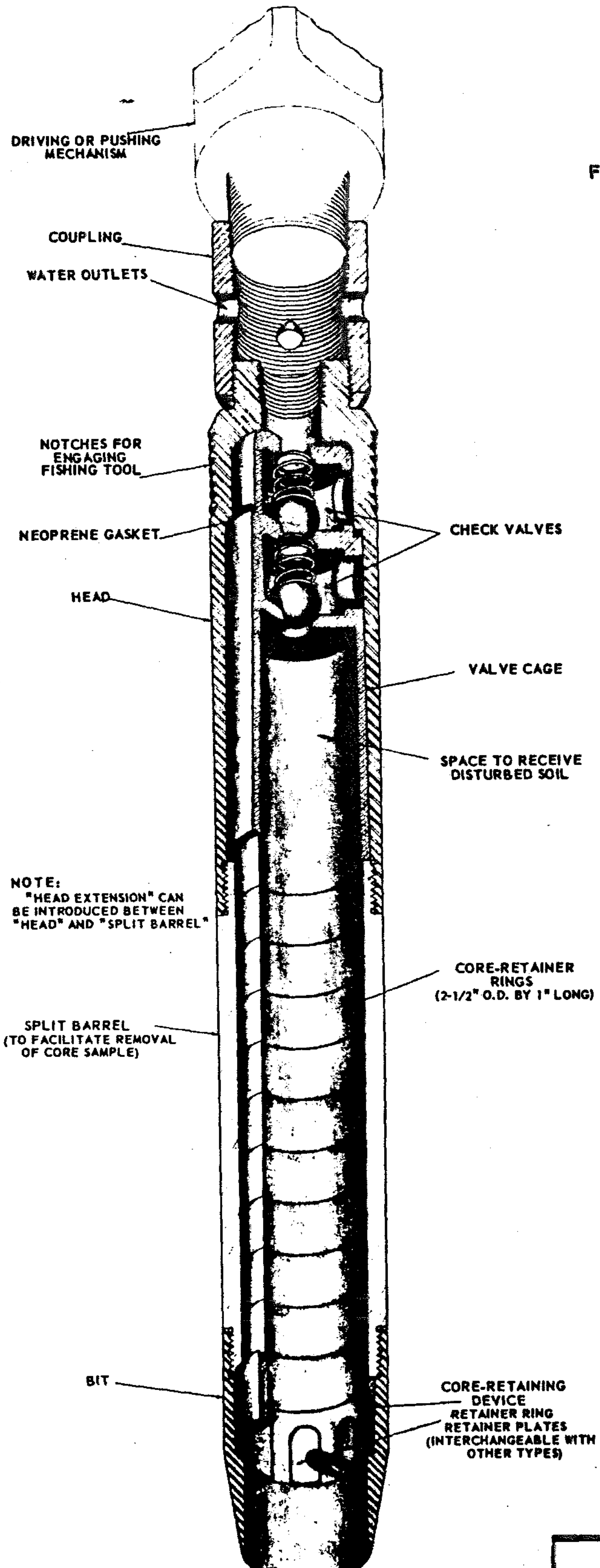
FIGURE 2.5-353

PLOT PLAN - TYPE B STRUCTURAL FILL BORROW AREA

SOIL SAMPLER TYPE U

FOR SOILS DIFFICULT TO RETAIN IN SAMPLER
U. S. PATENT NO. 2,318,062



ALTERNATE ATTACHMENTS

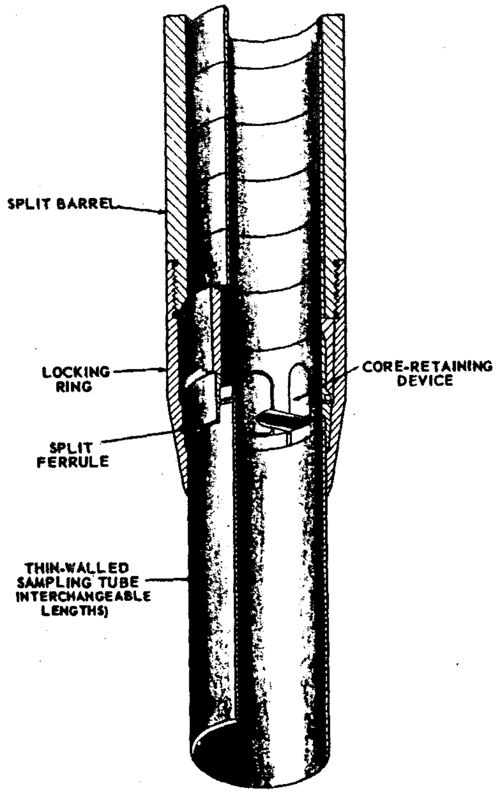


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FIGURE 2.5-354

DAMES AND MOORE U-TYPE SAMPLER

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			WOODWARD-CLYDE CONSULTANTS			DAMES AND MOORE			SARGENT & LUNDY ENGINEERS		
			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION	GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION	GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTION
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (little or no fines)					GW	Well-graded gravels, gravel - sand mixtures, little or no fines.		GW	Well-graded gravels, gravel - sand mixtures, little or no fines.
				SP-GP GP-SP GP	Gravelly sand, sandy gravel, poorly graded gravel.		GP	Poorly-graded gravels, gravel - sand mixtures, little or no fines.		GP	Poorly-graded gravels, gravel - sand mixtures, little or no fines.
	More than 50% of coarse fraction RETAINED on No. 4 sieve	GRAVELS WITH FINES (appreciable amount of fines)		GM GP-GM	Sandy GRAVEL, with trace or some silt, silty GRAVEL.		GM	Silty gravels, gravel-sand-silt mixtures.		GM	Silty gravels, gravel-sand-silt mixtures.
							GC	Clayey gravels, gravel-sand-clay mixtures.		GC	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	CLEAN SAND (little or no fines)		SP SP-SM SW	Sand with trace silt.		SW	Well-graded sands, gravelly sands, little or no fines.		SW	Well-graded sands, gravelly sands, little or no fines.
More than 50% of material is LARGER than No. 200 sieve size							SP	Poorly-graded sands, gravelly sands, little or no fines.		SP	Poorly-graded sands, gravelly sands, little or no fines.
	More than 50% of coarse fraction PASSING No. 4 sieve	SANDS WITH FINES (appreciable amount of fines)		SM ML	Sand with some silt, silty sand, sandy silt.		SM	Silty sands, sand-silt mixtures.		SM	Silty sands, sand-silt mixtures.
				SC	Clayey SAND.		SC	Clayey sands, sand-clay mixtures.		SC	Clayey sands, sand-clay mixtures.
FINE GRAINED SOILS	SILTS AND CLAYS	Liquid limit LESS than 50		ML	SILT, Clayey SILT.		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.		ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
				CL CL-ML	Silty clay.		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, clays, lean clays.		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
							OL	Organic silts and organic silty clays of low plasticity.		OL	Organic silts and organic silty clays of low plasticity.
More than 50% of material is SMALLER than No. 200 sieve size	SILTS AND CLAYS	Liquid limit GREATER than 50					MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils.		MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils.
				CH	CLAY (High plasticity)		CH	Inorganic clays of high plasticity, fat clays.		CH	Inorganic clays of high plasticity, fat clays.
							OH	Organic clays of medium to high plasticity, organic silts.		OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS							PT	Peat, humus swamp soils with high organic contents.		PT	Peat, humus, swamp soils with high organic contents.
					Topsoil						

NOTES:

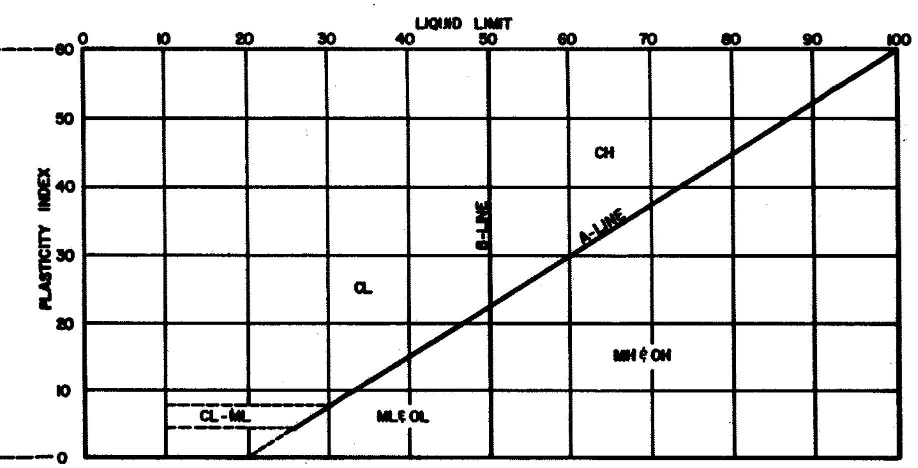
1. Woodward-Clyde Consultants presents only those materials encountered by their field study.
2. Dual symbols are used to indicate borderline classifications.
3. When shown on the boring logs, the following terms are used to describe the consistency of cohesive soils and the relative compactness of cohesionless soils.

CONSISTENCY OF COHESIVE SOILS			RELATIVE DENSITY OF GRANULAR SOILS	
NO. BLOWS/FT	UNCONFINED COMPRESSIVE STRENGTH (tsf)	CONSISTENCY	NO. OF BLOWS/FT	RELATIVE DENSITY
< 2	< 0.25	Very Soft	0-3	Very Loose
2-3	0.25-0.49	Soft	4-9	Loose
4-7	0.50-0.99	Medium	10-29	Medium
8-14	1.00-1.99	Stiff	30-49	Dense
15-30	2.00-4.00	Very stiff	50-80	Very Dense
>30	>4.00	Hard	> 80	Extremely dense

MATERIAL SIZE	PARTICLE SIZE			
	LOWER LIMIT		UPPER LIMIT	
	MILLIMETERS	SIEVE SIZE	MILLIMETERS	SIEVE SIZE
SAND				
FINE	.074	# 200*	0.42	# 40*
MEDIUM	0.42	# 40*	2.00	# 10*
COARSE	2.00	# 10*	4.76	# 4*
GRAVEL				
FINE	4.76	# 4*	19.1	3/4"•
COARSE	19.1	3/4"•	76.2	3"•
COBBLES	76.2	3"•	304.8	12"•
BOULDERS	304.8	12"•	914.4	36"•

* U.S. STANDARD   • CLEAR SQUARE OPENINGS

GRADATION CHART

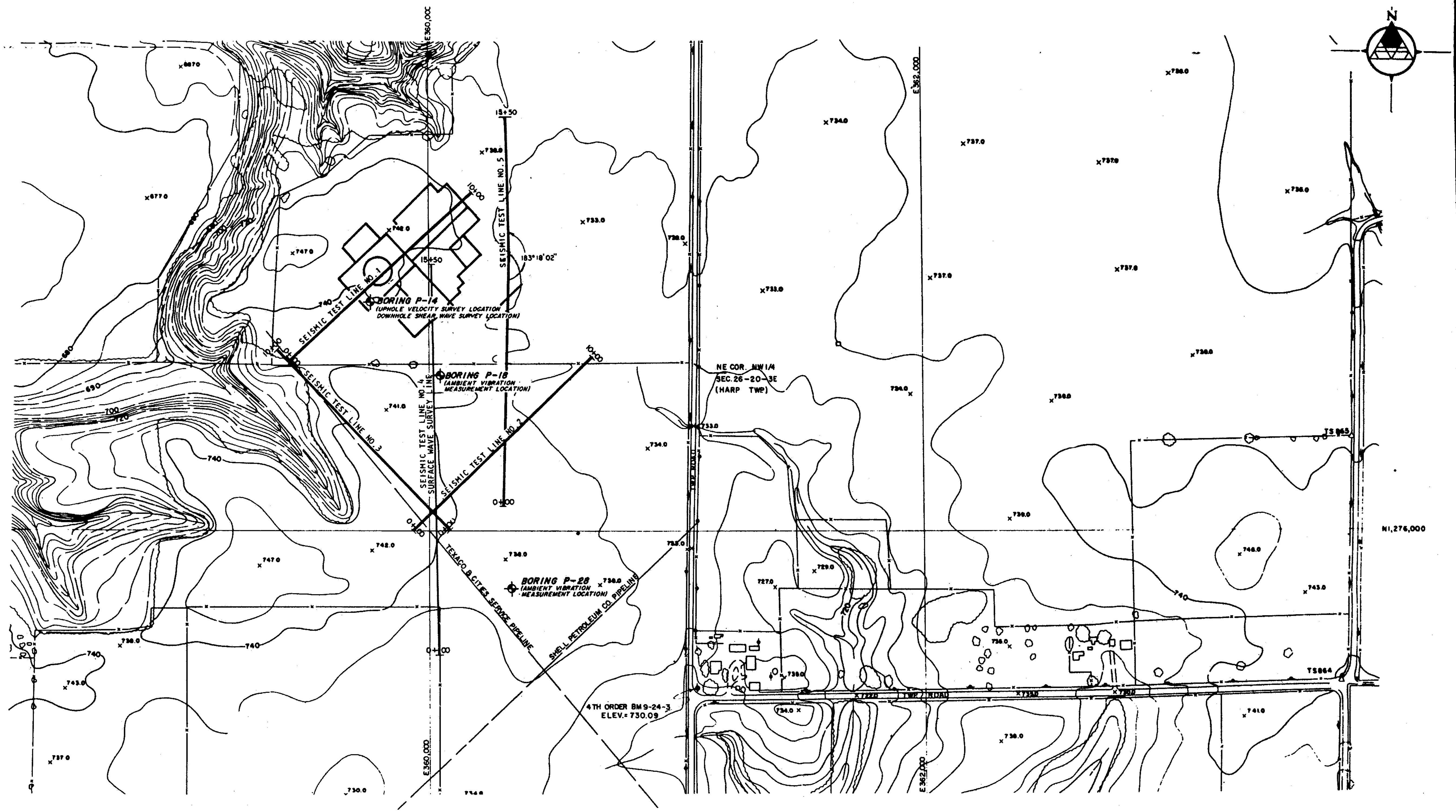


PLASTICITY CHART

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-355

UNIFIED SOIL CLASSIFICATION SYSTEM



NOTES:

1. REFER TO FIGURES 2.5-359 THROUGH 2.5-363 FOR SEISMIC REFRACTION SURVEYS NO. 1 THROUGH NO. 5.
2. REFER TO FIGURE 2.5-366 FOR UPHOLE VELOCITY SURVEY IN BORING P-14.

LEGEND

740 TOPOGRAPHIC CONTOURS

BORING P-28 BORING LOCATION

FEET

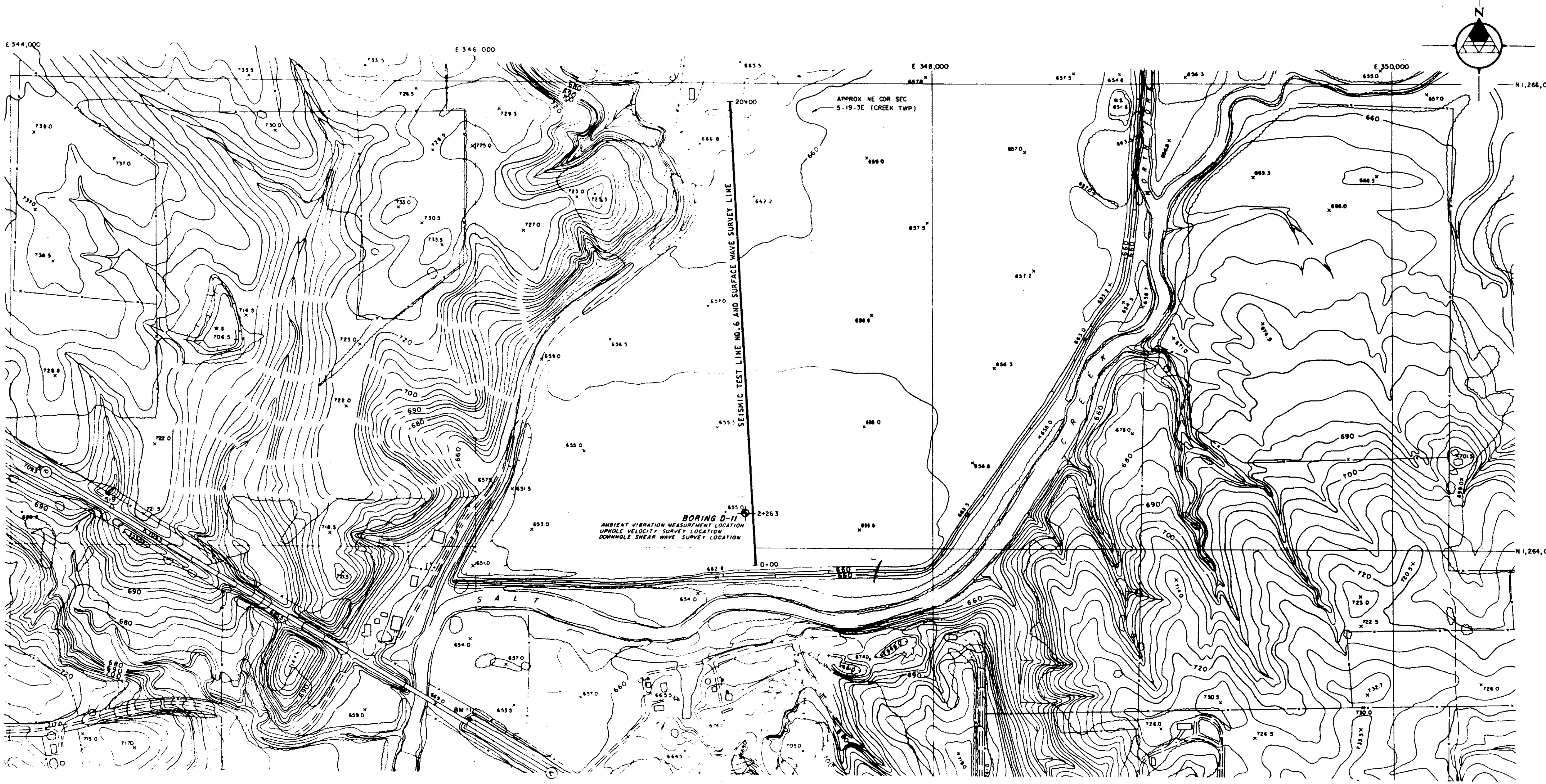
100 0 100 200 300 400 500

CONTOUR INTERVAL 3 1/3 FEET

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-356

PLOT PLAN OF GEOPHYSICAL EXPLORATIONS
STATION SITE



NOTES:

1. REFER TO FIGURE 2.5-364 FOR SEISMIC REFRACTION SURVEY LINE NO. 6.
2. REFER TO FIGURE 2.5-367 FOR UPHOLE VELOCITY SURVEY IN BORING D-11.

LEGEND

690 TOPOGRAPHIC CONTOURS

BORING D-11 BORING LOCATION

FEET

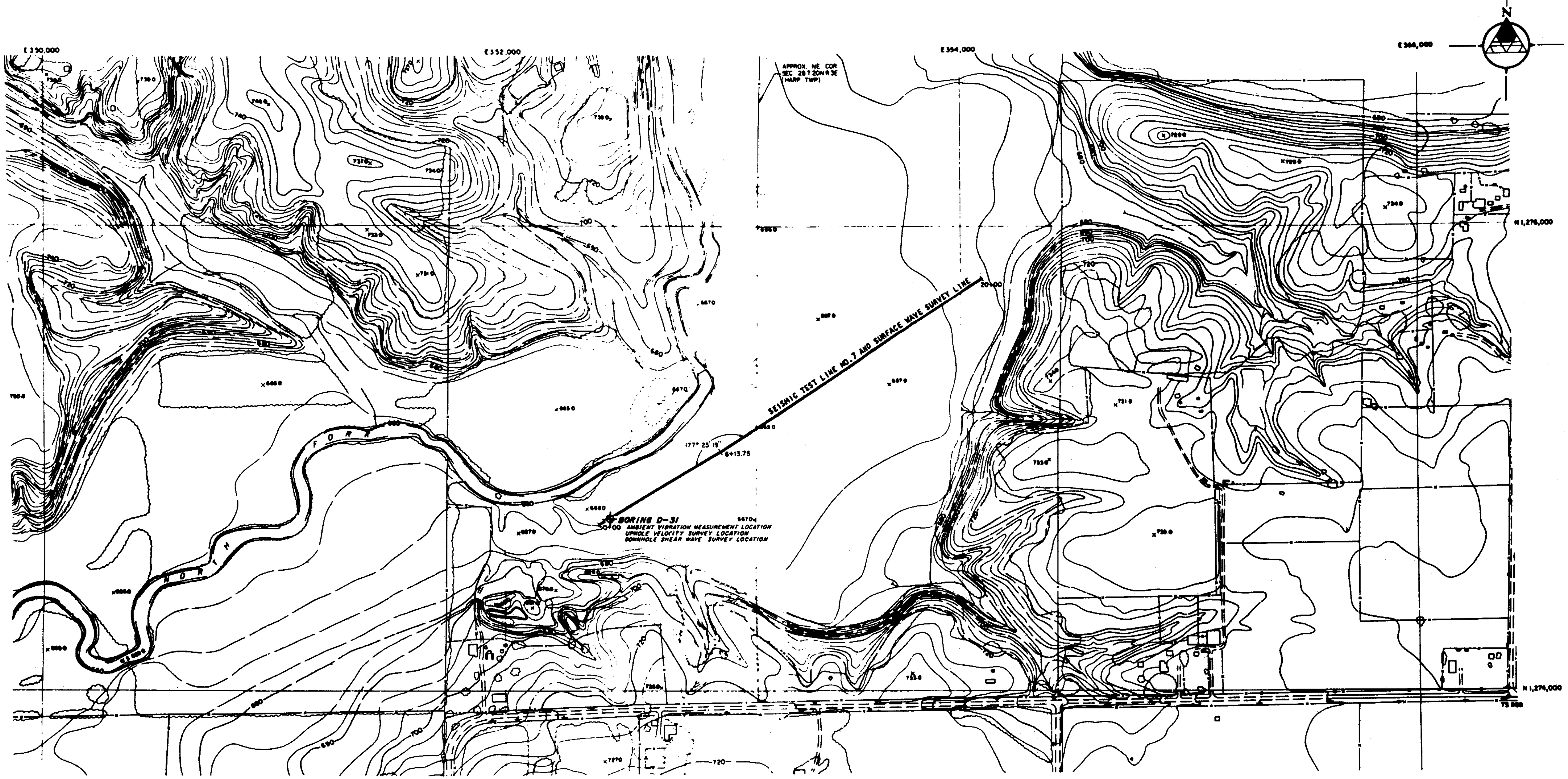
100 0 100 200 300 400 500

CONTOUR INTERVAL 3 1/3 FEET

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-357

PLOT PLAN OF GEOPHYSICAL EXPLORATIONS
DAM SITE



NOTES:

1. REFER TO FIGURE 2.5-364 FOR SEISMIC REFRACTION SURVEY LINE NO. 7.
2. REFER TO FIGURE 2.5-368 FOR UPHOLE VELOCITY SURVEY IN BORING D-31.

LEGEND

690 TOPOGRAPHIC CONTOURS

BORING D-31 BORING LOCATION

FEET

100 0 100 200 300 400 500

CONTOUR INTERVAL 3 1/3 FEET

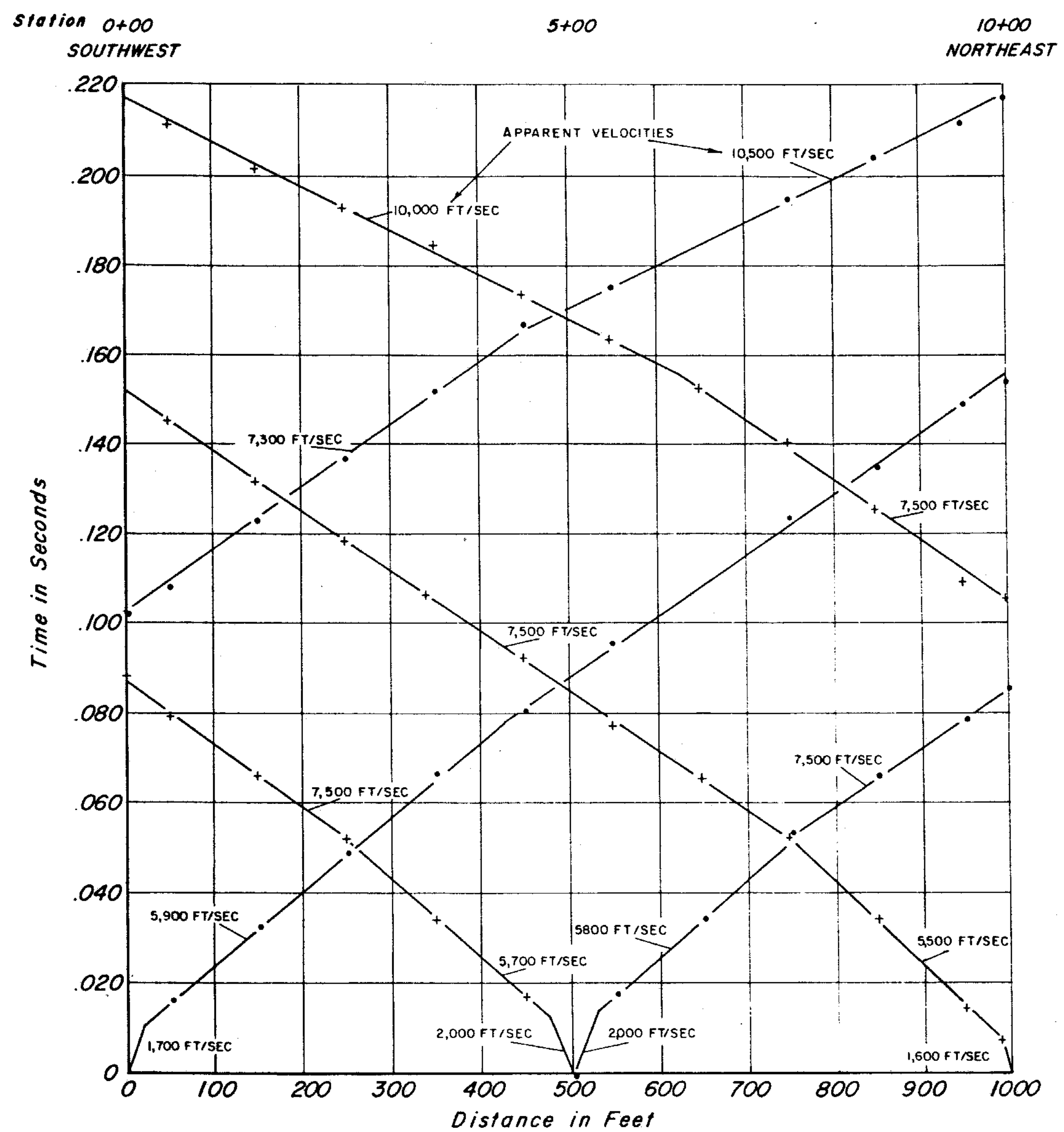
CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

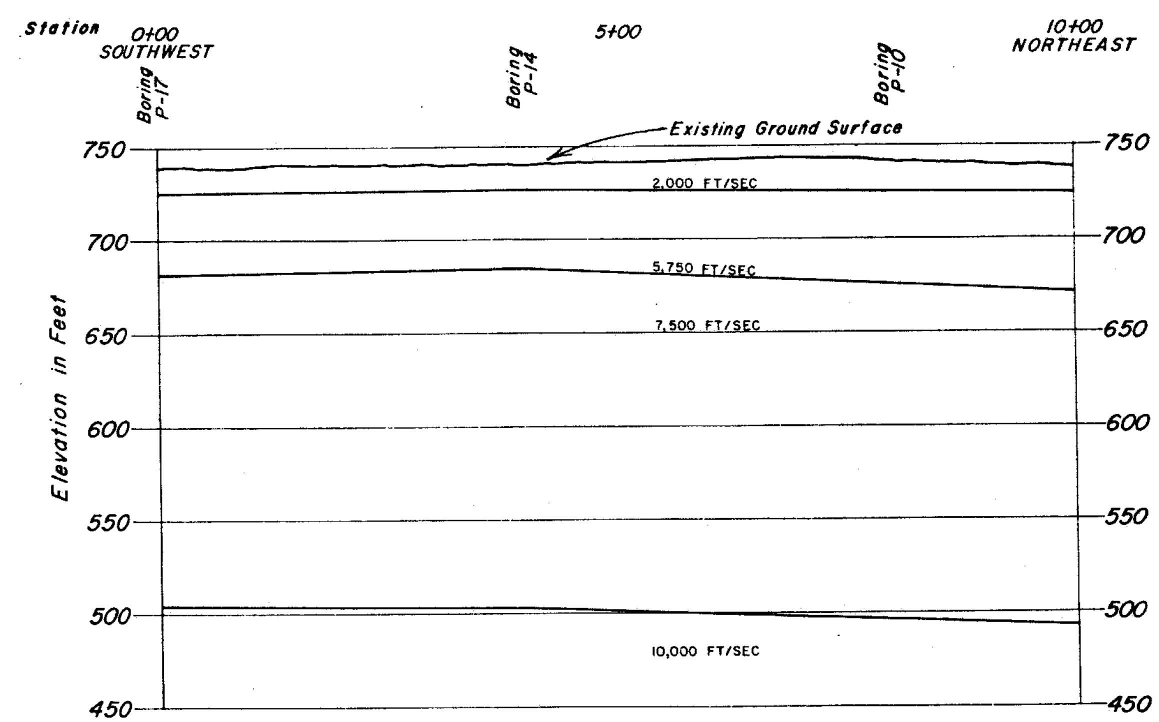
FIGURE 2.5-358

PLOT PLAN OF GEOPHYSICAL EXPLORATIONS ALONG NORTH FORK OF SALT CREEK

TIME-DISTANCE PLOT – SEISMIC LINE I



SUBSURFACE SECTION–SEISMIC LINE I



NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE. FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA. SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-356 FOR LOCATION OF SEISMIC TEST LINE NO. 1.

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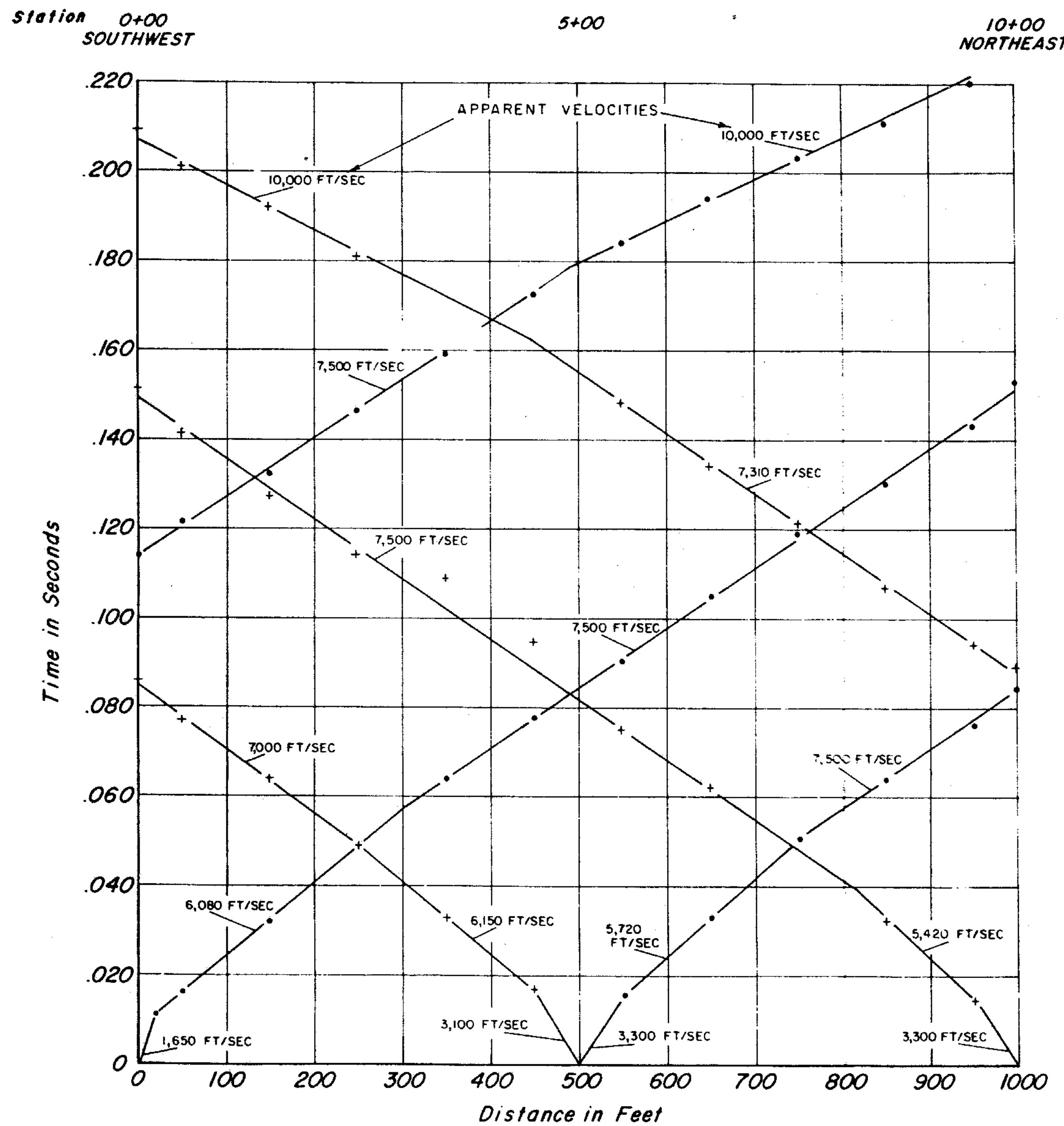
UPDATED SAFETY ANALYSIS REPORT

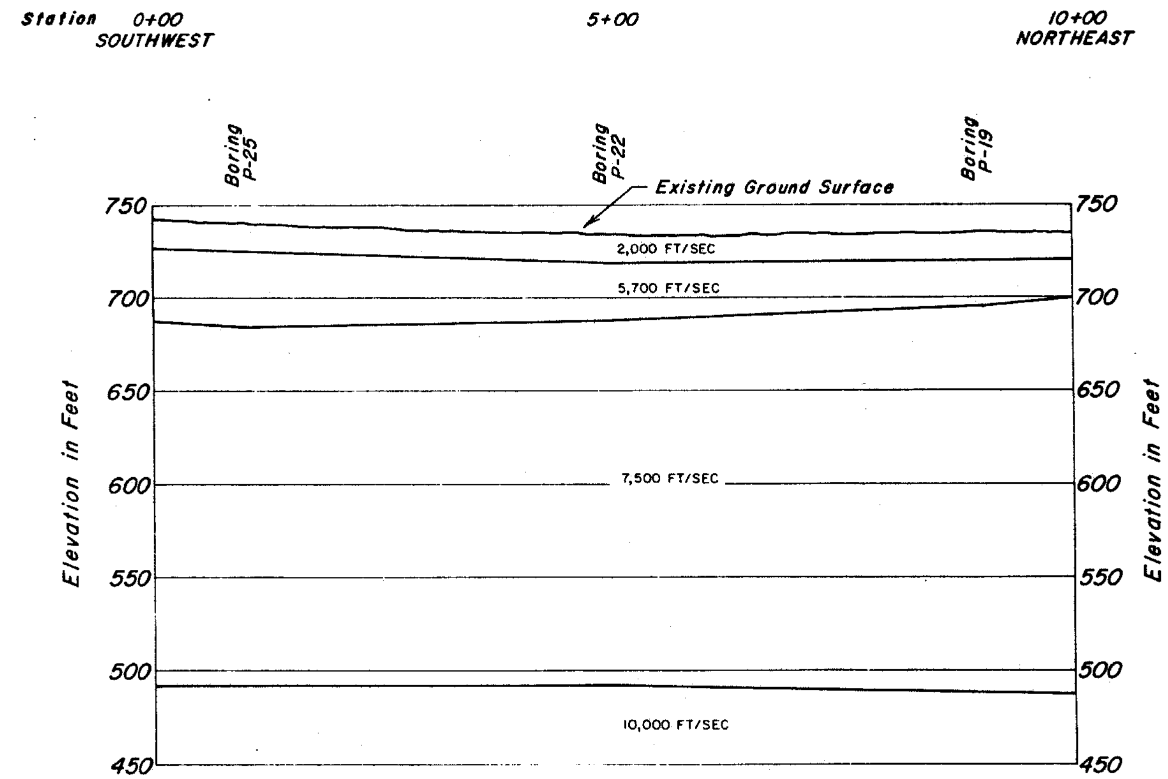
FIGURE 2.5-359

SEISMIC REFRACTION SURVEY LINE 1
STATION SITE

TIME-DISTANCE PLOT - SEISMIC LINE 2



SUBSURFACE SECTION-SEISMIC LINE 2



NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE. FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA. SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-356 FOR LOCATION OF SEISMIC TEST LINE NO. 2.

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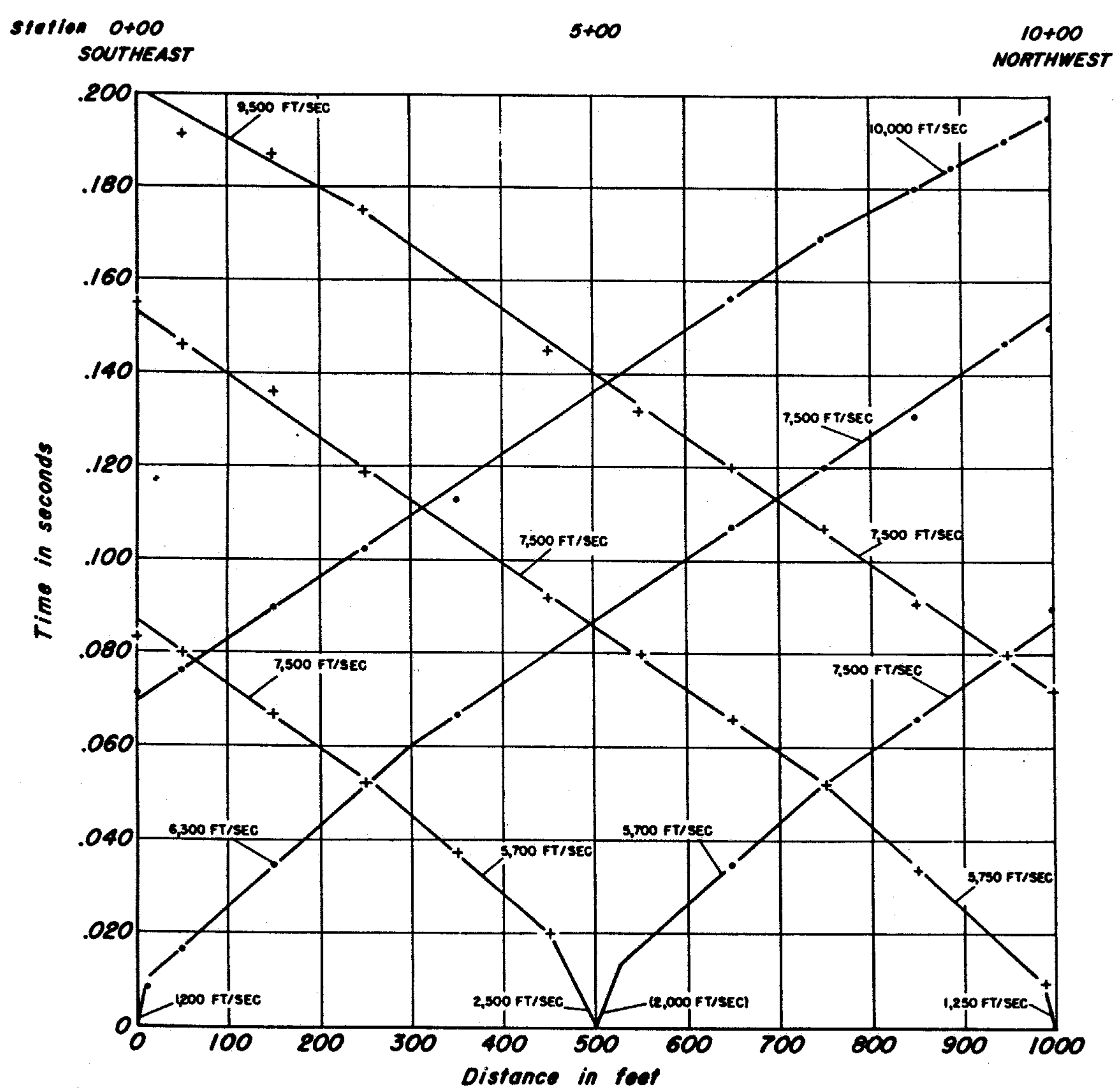
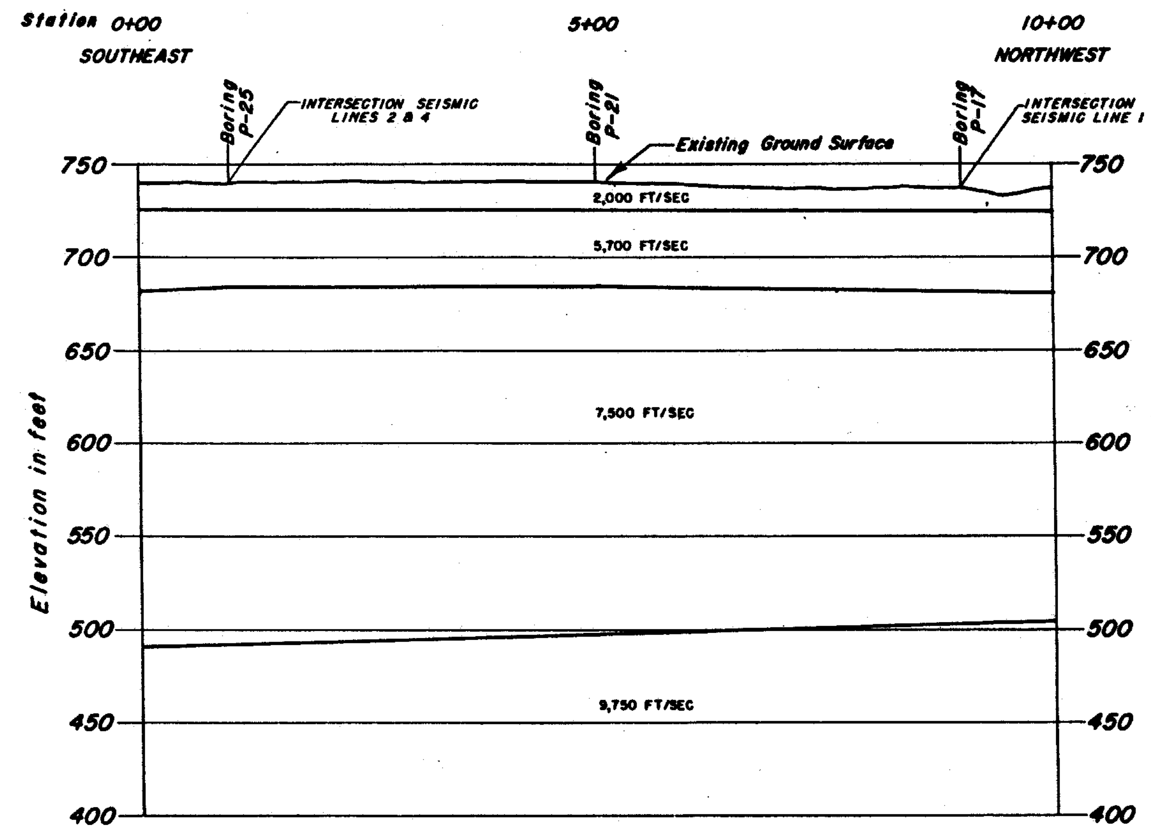
FIGURE 2.5-360

SEISMIC REFRACTION SURVEY LINE 2
STATION SITE

TIME-DISTANCE PLOT - SEISMIC LINE 3



SUBSURFACE SECTION-SEISMIC LINE 3



NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE, FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA, SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-356 FOR LOCATION OF SEISMIC TEST LINE NO. 3.

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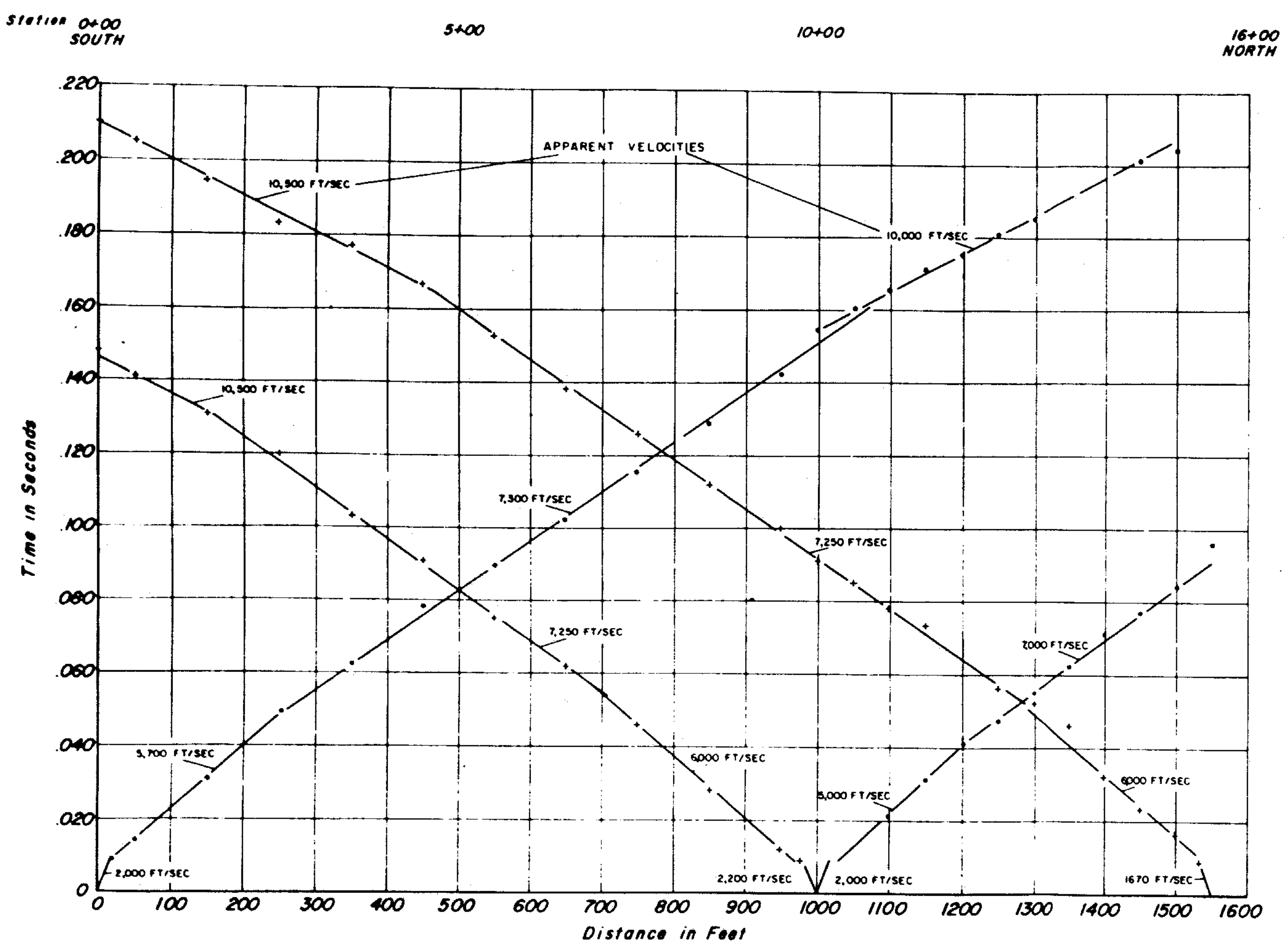
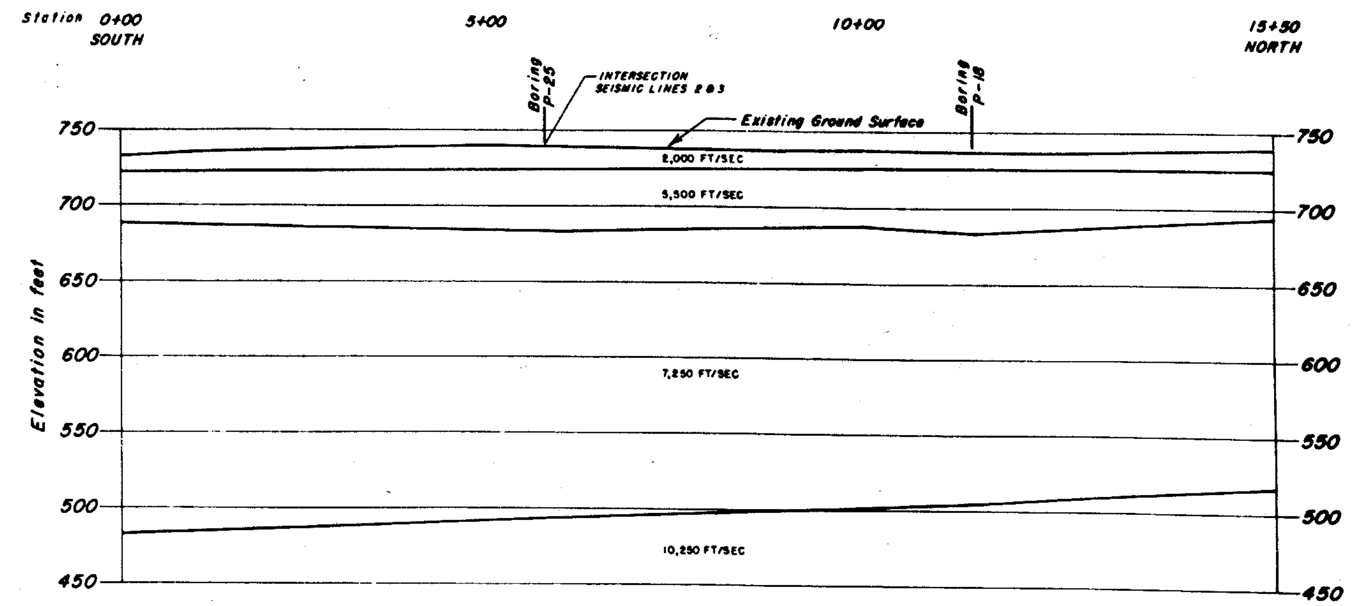
FIGURE 2.5-361

SEISMIC REFRACTION SURVEY LINE 3
STATION SITE

TIME-DISTANCE PLOT – SEISMIC LINE 4



SUBSURFACE SECTION – SEISMIC LINE 4



NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE, FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA, SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-356 FOR LOCATION OF SEISMIC TEST LINE NO. 4.

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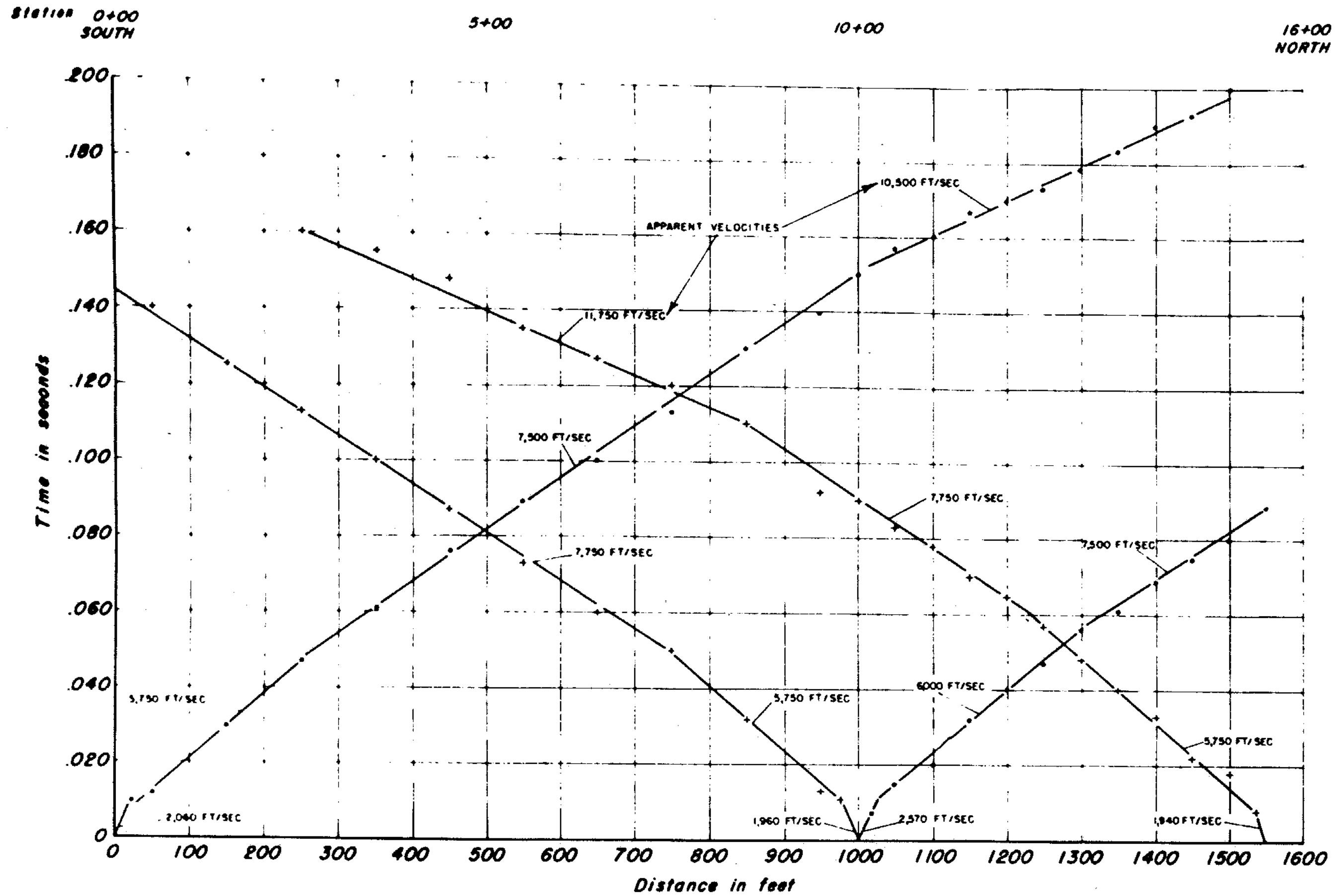
UPDATED SAFETY ANALYSIS REPORT

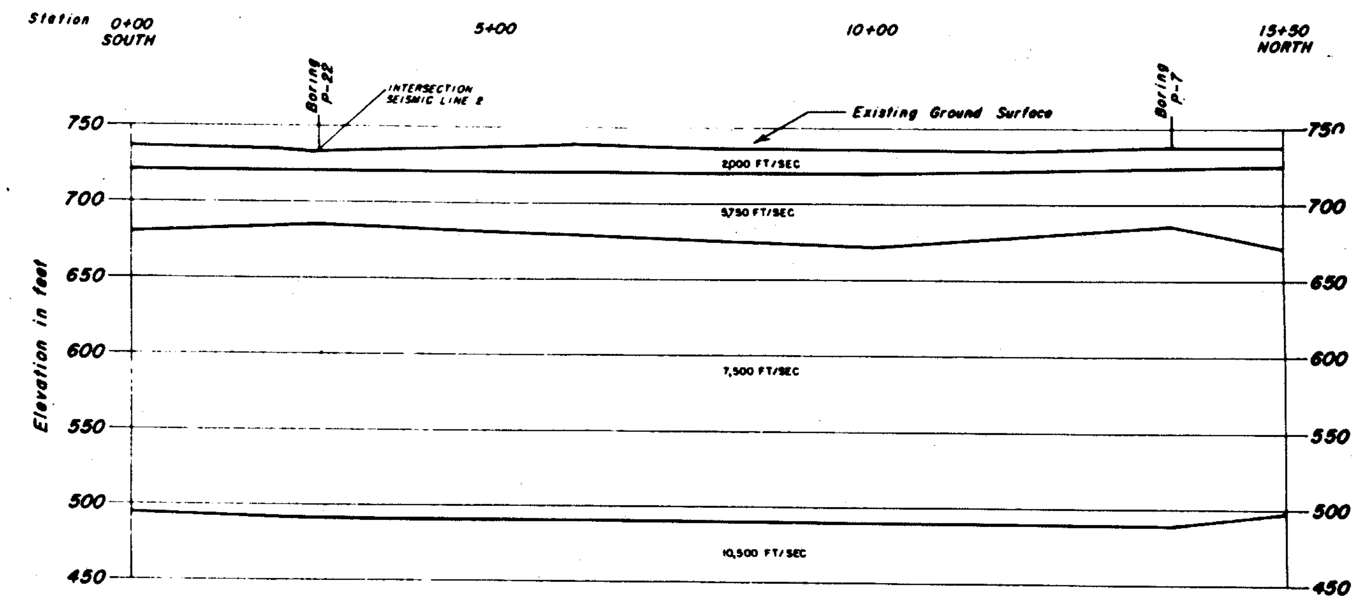
FIGURE 2.5-362

SEISMIC REFRACTION SURVEY LINE 4 – STATION SITE

TIME-DISTANCE PLOT – SEISMIC LINE 5



SUBSURFACE SECTION–SEISMIC LINE 5



NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE, FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA, SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-356 FOR LOCATION OF SEISMIC TEST LINE NO. 5.

CLINTON POWER STATION
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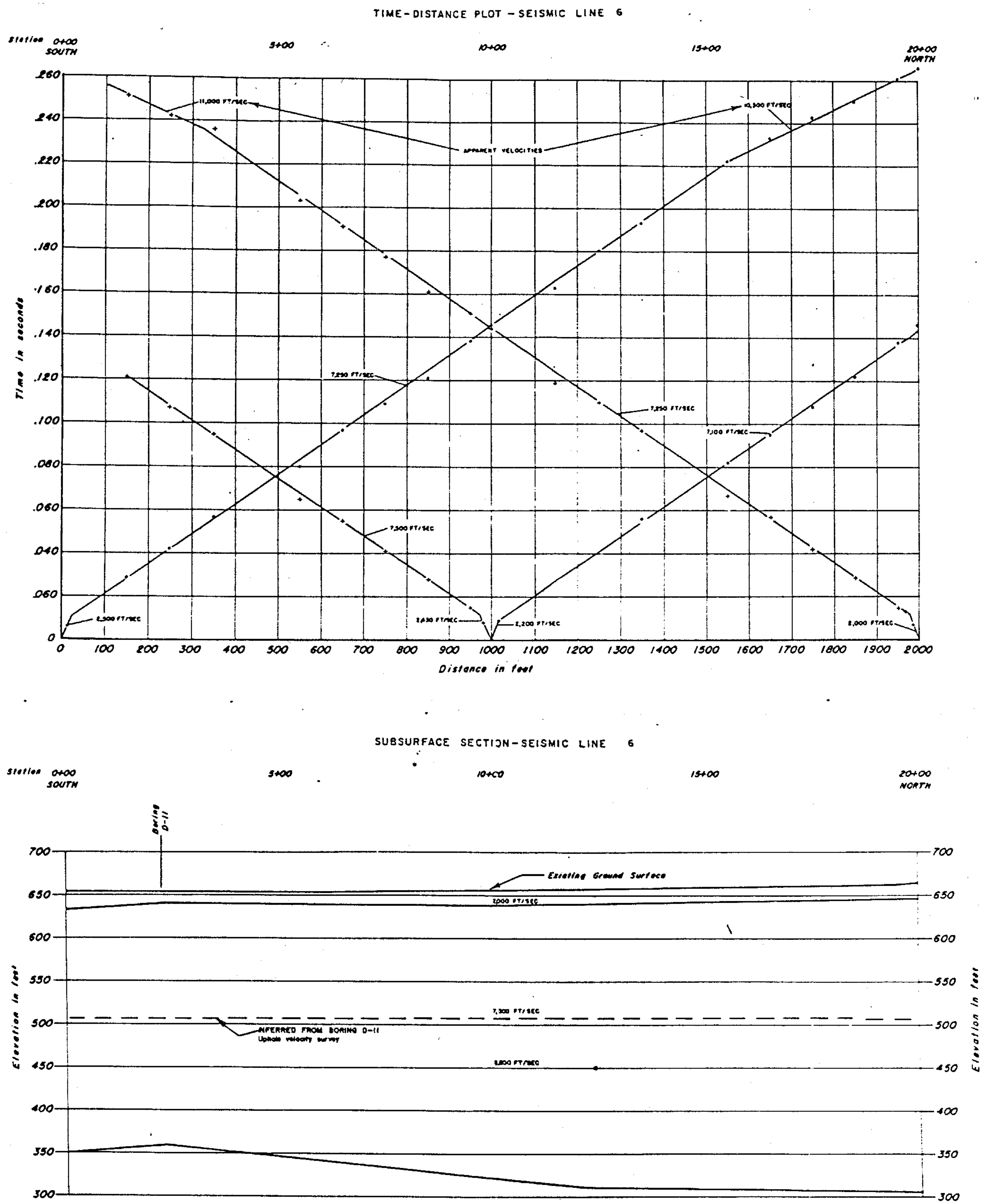
FIGURE 2.5-363

SEISMIC REFRACTION SURVEY LINE 5 - STATION SITE



NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE, FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA, SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-357 FOR LOCATION OF SEISMIC TEST LINE NO. 6.

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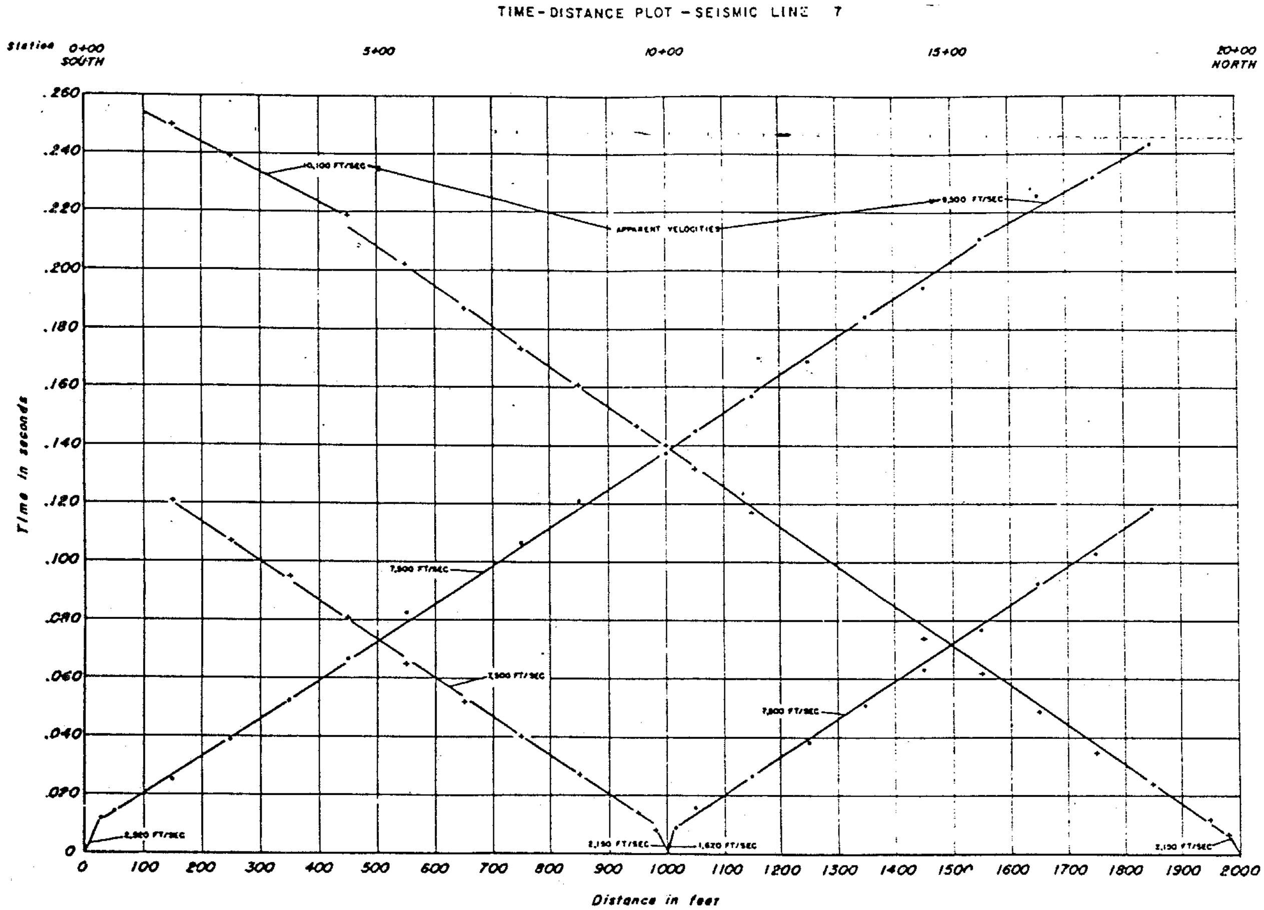
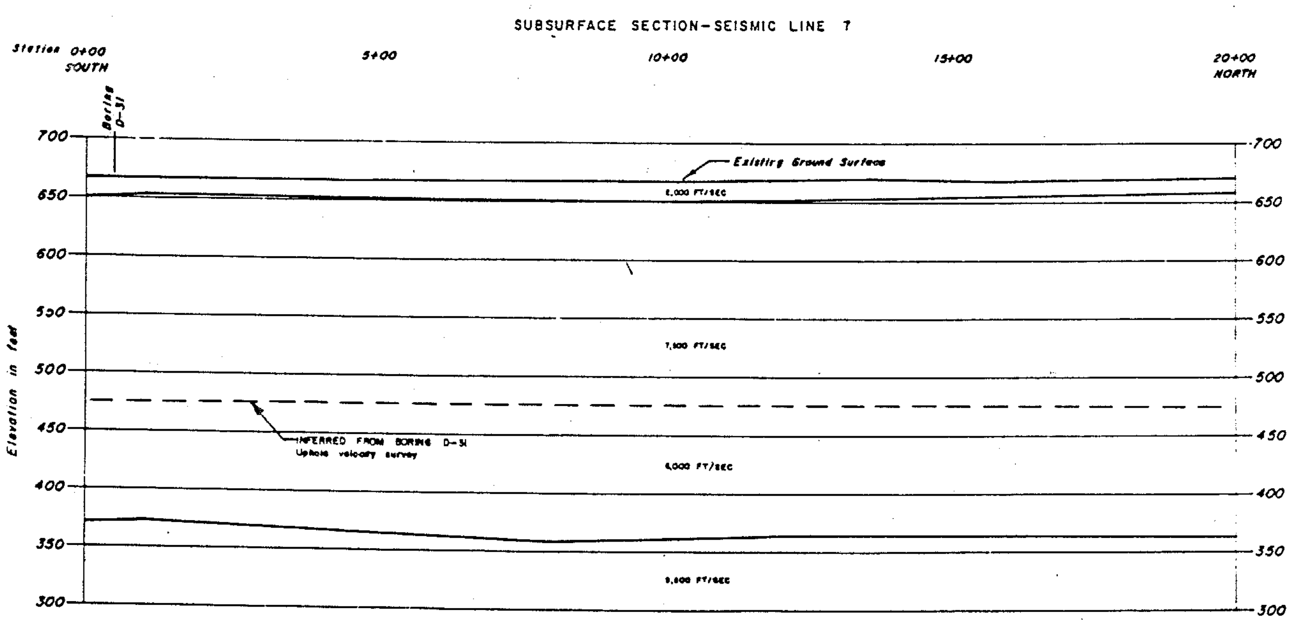
FIGURE 2.5-364

SEISMIC REFRACTION SURVEY LINE 6 - DAM SITE





NOTES:

1. TIME DISTANCE PLOTS SHOW INFORMATION COLLECTED FROM SHOT POINTS MADE AT SEVERAL LOCATIONS ALONG A SEISMIC LINE. FOR CLARIFICATION, TWO PLOT SYMBOLS HAVE BEEN USED TO INDICATE THE ORIGIN OF THE ENERGY: FROM THE LEFT (.) FROM THE RIGHT (+).
2. THE SUBSURFACE SECTIONS SHOWN PRESENT OUR EVALUATION OF THE MOST PROBABLE SUBSURFACE CONDITIONS BASED UPON OUR INTERPRETATION OF PRESENTLY AVAILABLE DATA. SOME VARIATIONS FROM THESE CONDITIONS MUST BE EXPECTED.
3. REFER TO FIGURE 2.5-358 FOR LOCATION OF SEISMIC TEST LINE NO. 7.

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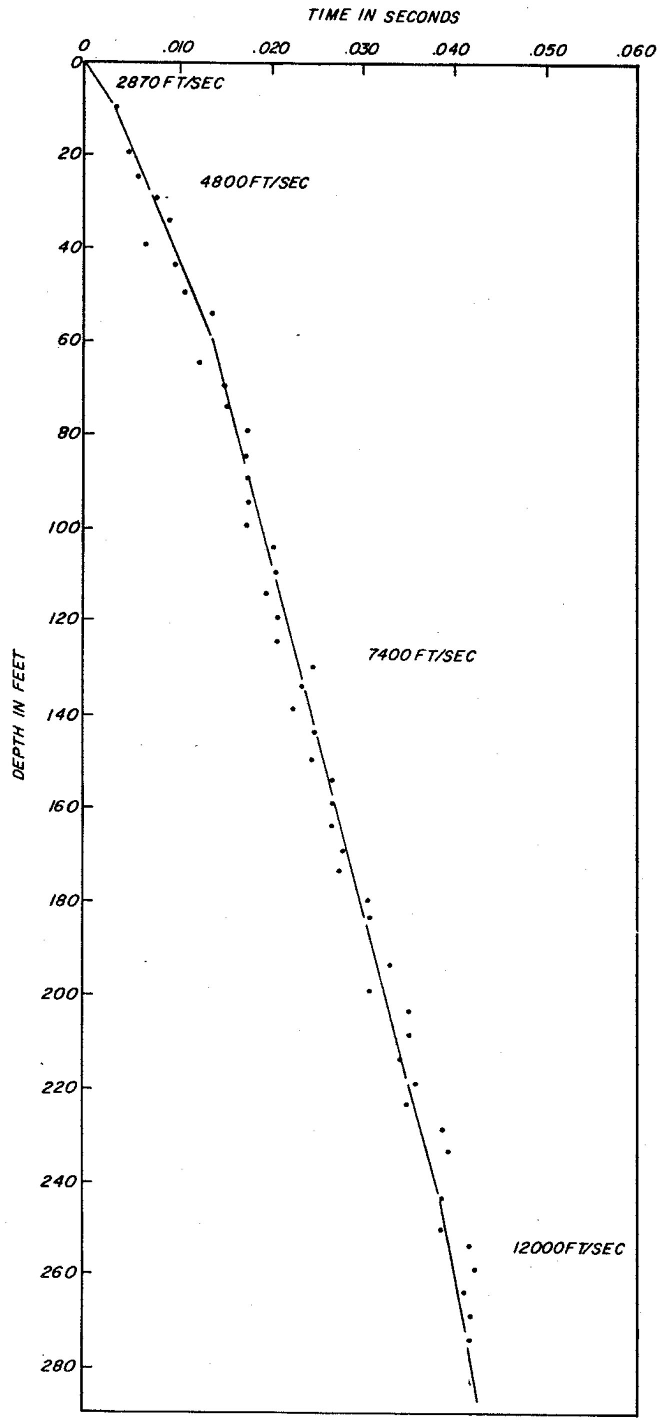
FIGURE 2.5-365

SEISMIC REFRACTION SURVEY LINE 7 - SECTION E-E' ALONG NORTH FORK OF SALT CREEK

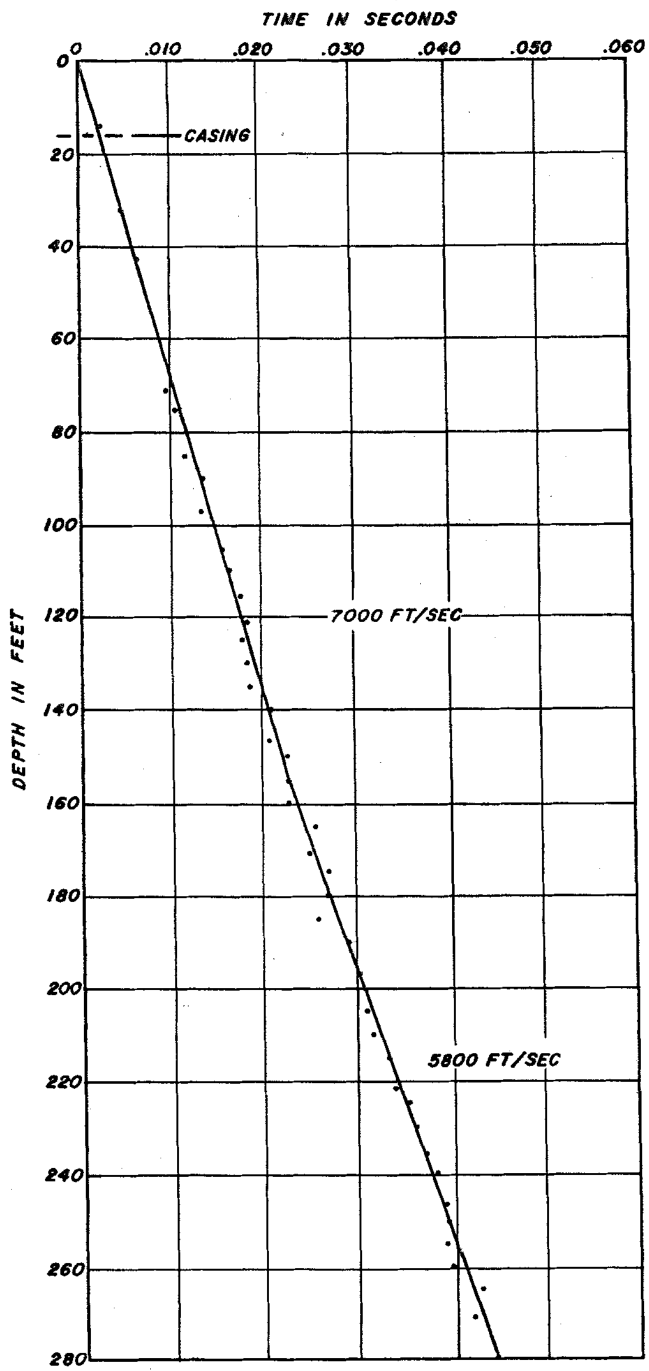


NOTE:
REFER TO FIGURE 2.5-356 FOR LOCATION OF BORING P-14.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-366

UPHOLE (COMPRESSIONAL) VELOCITY SURVEY - BORING P-14, STATION SITE

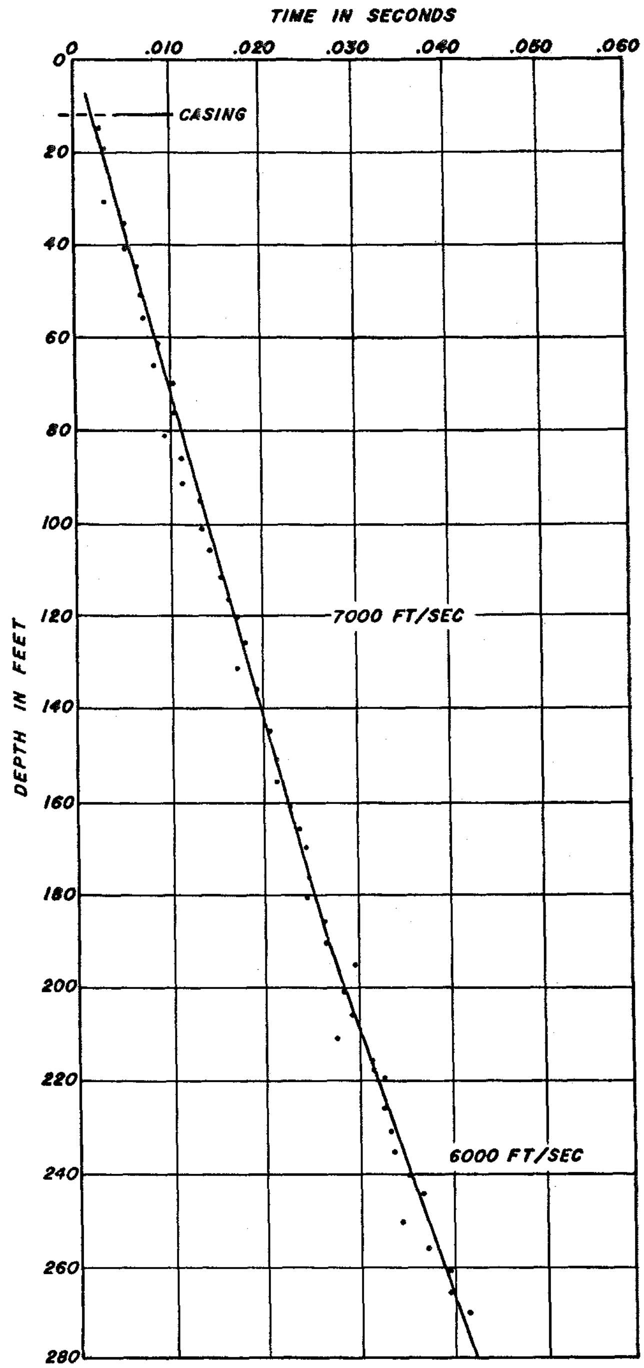


NOTE:
REFER TO FIGURE 2.5-357 FOR LOCATION OF BORING D-11.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-367

UPHOLE (COMPRESSIONAL) VELOCITY SURVEY - BORING D-11A, DAM SITE



NOTE:
REFER TO FIGURE 2.5-358 FOR LOCATION OF BORING D-31.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-368

UPHOLE (COMPRESSIONAL) VELOCITY SURVEY - BORING D-31 SECTION E-E' ALONG NORTH FORK OF SALT CREEK

AVERAGE THICKNESS IN FEET (NOT TO SCALE)	GRAPHIC COLUMN		UNIT DESCRIPTION	COMPRESSIONAL WAVE VELOCITY FT/SEC	POISSONS RATIO	SHEAR WAVE VELOCITY FT/SEC	UNIT WEIGHT (pcf) DRY	UNIT WEIGHT (pcf) WET
7		OVERBURDEN	LOESS, weathered; overlain by organic topsoil					
9		OVERBURDEN	WISCONSINAN GLACIAL TILL, weathered to brown, moist	2000	0.37	900	110	130
19		OVERBURDEN	WISCONSINAN GLACIAL TILL, unweathered	5700	0.48	1100	115	135
12		OVERBURDEN	INTERGLACIAL ZONE; local ALLUVIAL DEPOSITS					
113		OVERBURDEN	ILLINOIAN GLACIAL TILL; local OUTWASH AND LACUSTRINE DEPOSITS					
10		OVERBURDEN	LACUSTRINE DEPOSIT (Yarmouthian)	7500	0.46	2100	135	147
65		OVERBURDEN	PRE-ILLINOIAN GLACIAL TILL locally underlain by PRE-ILLINOIAN LACUSTRINE DEPOSIT					
5		BEDROCK	LIMESTONE					
15		BEDROCK	SHALE	10,500	0.29	5700	155	160
		BEDROCK	SILTSTONE					

NOTE:
REFER TO LEGEND ON FIGURES 2.5-275 AND 2.5-276 FOR DETAILED DESCRIPTION OF OVERBURDEN UNITS.

CLINTON POWER STATION
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FIGURE 2.5-369

TYPICAL GEOLOGIC PROFILE SHOWING GEOPHYSICAL PROPERTIES - STATION SITE

AVERAGE THICKNESS IN FEET (NOT TO SCALE)		UNIT DESCRIPTION	COMPRESSIONAL WAVE VELOCITY FT/SEC	POISSONS RATIO	SHEAR WAVE VELOCITY FT/SEC	UNIT WEIGHT (pcf) DRY	UNIT WEIGHT (pcf) WET
10 8	OVERBURDEN	SALT CREEK ALLUVIUM; overlain by organic topsoil	2000	0.37	900	100	122
112	OVERBURDEN	ILLINOIAN GLACIAL TILL; local OUTWASH AND LACUSTRINE DEPOSITS	7300	0.46	2000	135	145
20	OVERBURDEN	PRE-ILLINOIAN LACUSTRINE AND GLACIAL TILL DEPOSITS present locally					
140	OVERBURDEN	BEDROCK VALLEY OUTWASH DEPOSIT (Pre-Illinoian Mahomet Valley Deposit)	5800	0.45	1750	109	127
5	BEDROCK	LIMESTONE	10,500	0.29	5700	155	160
10	BEDROCK	SHALE					
	BEDROCK	SILTSTONE					

NOTE:

* VALUES ARE ESTIMATED

REFER TO BORING D-11 AND LEGEND ON FIGURE 2.5-277 FOR DETAILED DESCRIPTION OF OVERBURDEN UNITS.

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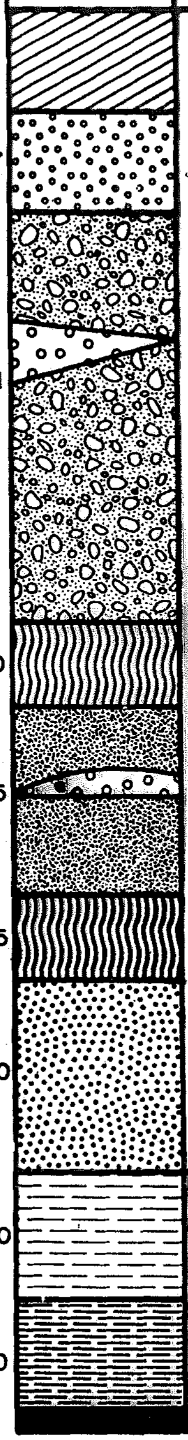
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-370

TYPICAL GEOLOGIC PROFILE SHOWING GEOPHYSICAL PROPERTIES - DAM SITE

AVERAGE THICKNESS IN FEET (NOT TO SCALE)



Average Thickness (ft)		Unit Description	Compressional Wave Velocity ft/sec	Poissons Ratio	Shear Wave Velocity ft/sec	Unit Weight (pcf) Dry	Unit Weight (pcf) Wet
7 / 7	OVERBURDEN	SALT CREEK ALLUVIUM; overlain by organic topsoil	2000	0.37	900	105	125
81	OVERBURDEN	ILLINOIAN GLACIAL TILL local OUTWASH AND LACUSTRINE DEPOSITS	7500	0.46	2100	132	145
10	OVERBURDEN	LACUSTRINE DEPOSIT (Yarmouthian)					
65	OVERBURDEN	PRE-ILLINOIAN GLACIAL TILL; local OUTWASH DEPOSITS					
25	OVERBURDEN	PRE-ILLINOIAN OUTWASH AND ALLUVIAL DEPOSIT					
110	OVERBURDEN	BEDROCK VALLEY OUTWASH DEPOSIT (Pre-Illinoian Mahomet Valley Deposit)	6000	0.45	1800	106	124
20	BEDROCK	SILTSTONE	10,000	0.28 TO 0.30	5300 TO 5500	155	160
30	BEDROCK	SHALE					
	BEDROCK	COAL					

NOTE:

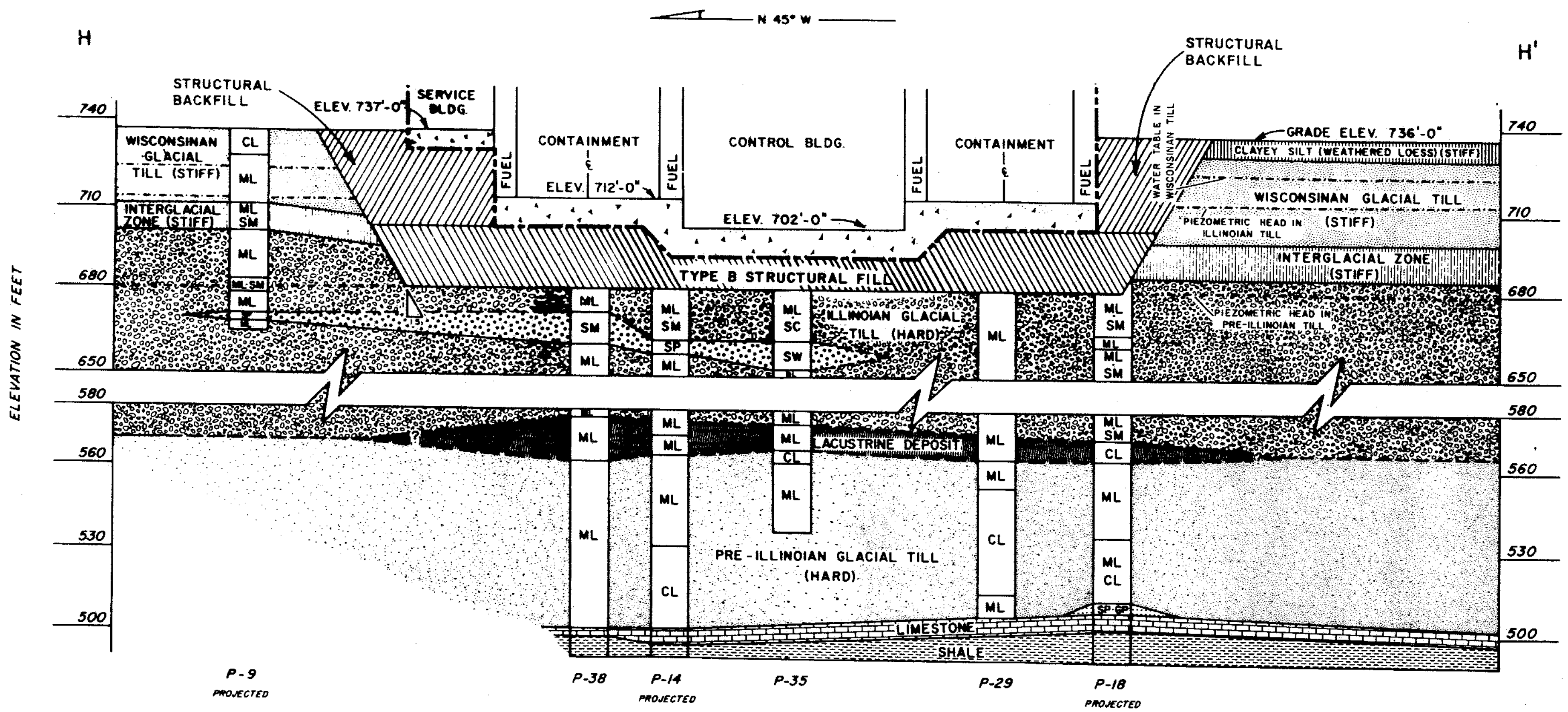
* VALUES ARE ESTIMATED

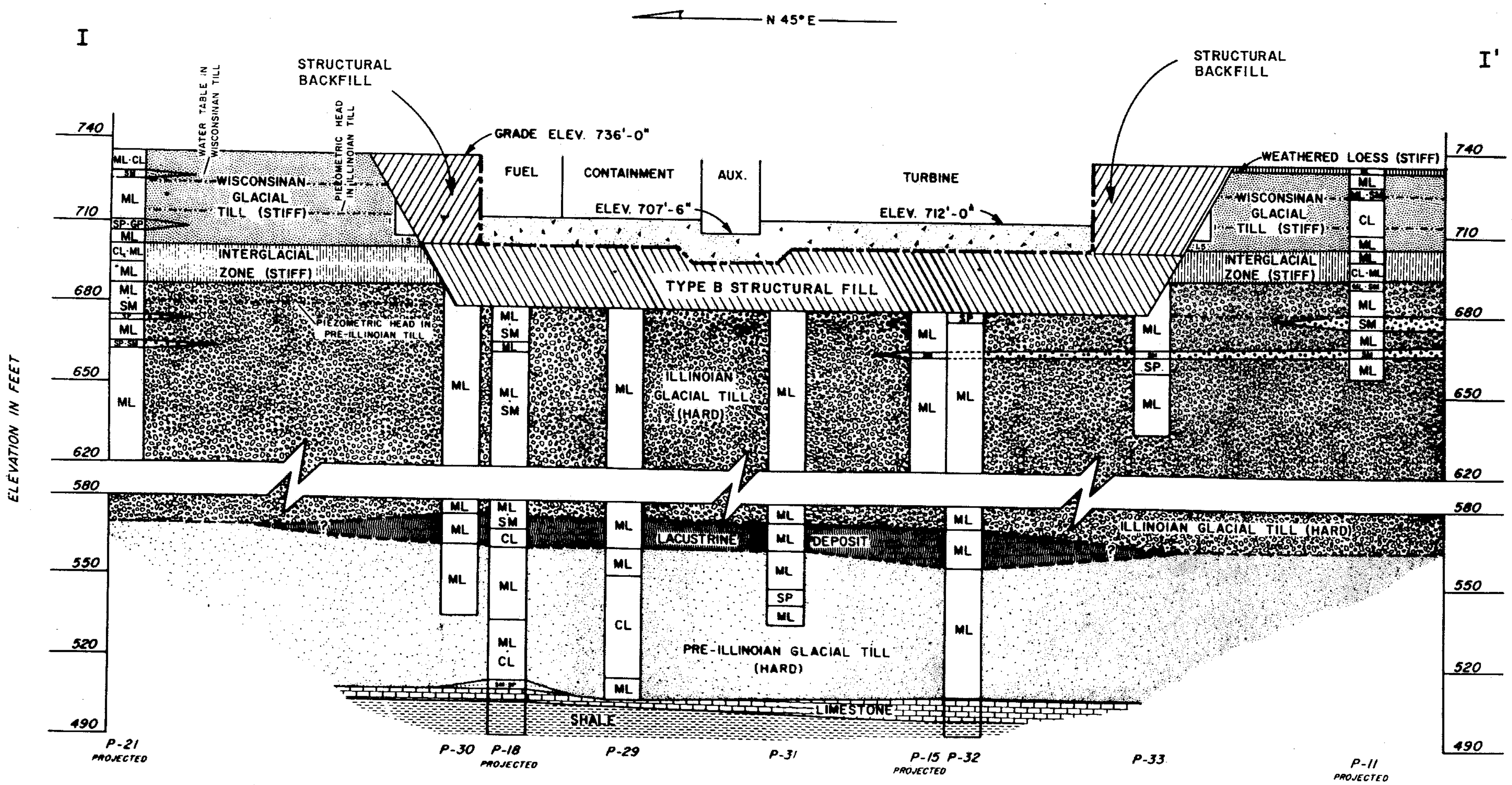
REFER TO LEGEND ON FIGURE 2.5-278 FOR DETAILED DESCRIPTION OF OVERBURDEN UNITS.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-371

TYPICAL GEOLOGIC PROFILE SHOWING GEOPHYSICAL PROPERTIES - SECTION E-E' ALONG NORTH FORK OF SALT CREEK





LEGEND

TYPE B GRANULAR STRUCTURAL BACKFILL

TYPE B GRANULAR STRUCTURAL FILL

CONCRETE

QUATERNARY

WISCONSINAN

LOESS - BROWN TO MOTTLED BROWN AND GRAY CLAYEY SILT OR SILTY CLAY WITH TRACE OF FINE SAND; WEATHERED

WISCONSINAN GLACIAL TILL - BROWNISH-GRAY TO GRAY CLAYEY SILT OR SILTY CLAY WITH SAND AND GRAVEL; CONTAINS IRREGULAR AND DISCONTINUOUS LENSES OF SAND AND SILT THROUGHOUT (GLACIAL OUTWASH AND POSSIBLY LOCAL LACUSTRINE DEPOSITS)

SANGAMONIAN

INTERGLACIAL ZONE - INCLUDES DARK GRAY TO GRAY ORGANIC CLAYEY SILT OR SILTY CLAY (COLLUVIAL SOILS), GREENISH TO BLUISH-GRAY CLAYEY SILT WITH SAND AND GRAVEL (REWORKED AND WEATHERED ILLINOIAN GLACIAL TILL)

ILLINOIAN

ILLINOIAN GLACIAL TILL - BROWNISH-GRAY TO GRAY CLAYEY SILT WITH SAND AND GRAVEL TO VERY SANDY SILT OR SILTY SAND WITH SOME CLAY AND GRAVEL; INTERBEDDED OUTWASH DEPOSITS IN UPPER HORIZONS.

SAND - IRREGULAR, DISCONTINUOUS LAYERS OF ALLUVIAL SAND AND GRAVEL (GLACIAL OUTWASH AND DEPOSITS)

YARMOUTH-IAN

LACUSTRINE DEPOSIT - BROWNISH-GRAY TO BLACK AND GRAY CLAYEY SILT TO SILT, ORGANIC IN ZONES; INCLUDES GREENISH TO BLUISH-GRAY CLAYEY SILT WITH SAND AND GRAVEL (REWORKED AND WEATHERED PRE-ILLINOIAN GLACIAL TILL); ASSIGNMENT TO YARMOUTHIAN GLACIAL STAGE IS TENTATIVE

KANSAN

PRE-ILLINOIAN GLACIAL TILL - GRAYISH-BROWN TO BROWN SILTY CLAY AND CLAYEY SILT WITH SOME SAND AND GRAVEL; BROWN COLOR AND RELATIVELY HIGH CLAY CONTENT IS CHARACTERISTIC; TENTATIVELY ASSIGNED TO KANSAN GLACIAL STAGE ON THE BASIS OF CLAY ANALYSIS BY ILLINOIS STATE GEOLOGICAL SURVEY

PENNSYLVANIAN

BEDROCK - INTERBEDDED LAYERS OF LIMESTONE, SHALE AND SILTSTONE ASSIGNED TO THE McLEANSBORO GROUP, MODESTO FORMATION ON THE BASIS OF SPORE ANALYSIS OF THE COAL ENCOUNTERED IN BORING D-31

LIMESTONE - GREENISH-GRAY, GRAY AND BROWN, FINE TO COARSELY CRYSTALLINE, SILTY, THIN BEDDED TO MASSIVE, NUMEROUS SHALE PARTINGS IN ZONES, FOSSILIFEROUS

SHALE - GRAY TO DARK GRAY SHALE, CARBONACEOUS TO CALCAREOUS; CLAYEY IN ZONES, EXPANSIVE, SLICKENSIDES; OCCASIONAL CONCRETION

NOTES:

1. REFER TO FIGURES 2.5-271 AND 2.5-374 FOR LOCATION OF SUBSURFACE SECTIONS.
2. REFER TO FIGURES 2.5-26, 2.5-27, 2.5-29, 2.5-30, 2.5-34, 2.5-37, 2.5-45 THROUGH 2.5-49, 2.5-51 AND 2.5-55 FOR LOG OF BORINGS.
3. FOR DETAILED WATER LEVEL DATA REFER TO FIGURE 2.4-36.
4. STRATIGRAPHIC NOMENCLATURE OF THE QUATERNARY DEPOSITS USED IN THE FSAR TEXT DIFFERS FROM THAT USED ON THIS FIGURE AND ON THE BORING LOGS, AND IS CROSS REFERENCED ON FIGURE 2.5-274.
5. STRUCTURAL BACKFILL FOR THE MAIN PLANT CONSISTS OF TYPE B GRANULAR MATERIAL EXCEPT ON THE NORTH AND WEST SIDES OF UNIT 1. IN THESE AREAS, AND ABOVE APPROXIMATE ELEVATION 720 FEET, TYPES A & C COHESIVE MATERIAL WAS USED AS STRUCTURAL BACKFILL.

FEET

50 0 50 100

HORIZONTAL SCALE

CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-372

GEOLOGIC SECTIONS H-H' AND I-I' - STATION SITE

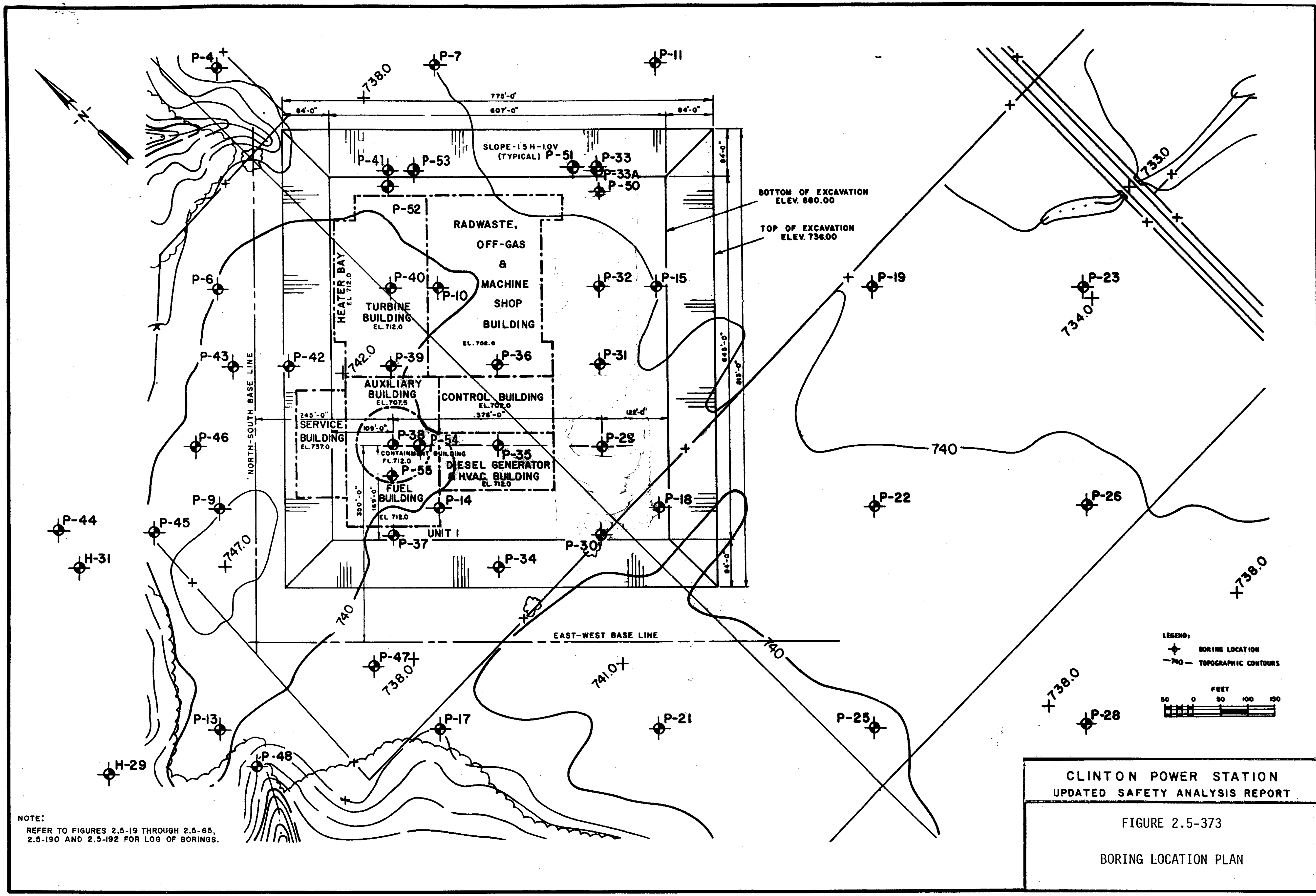


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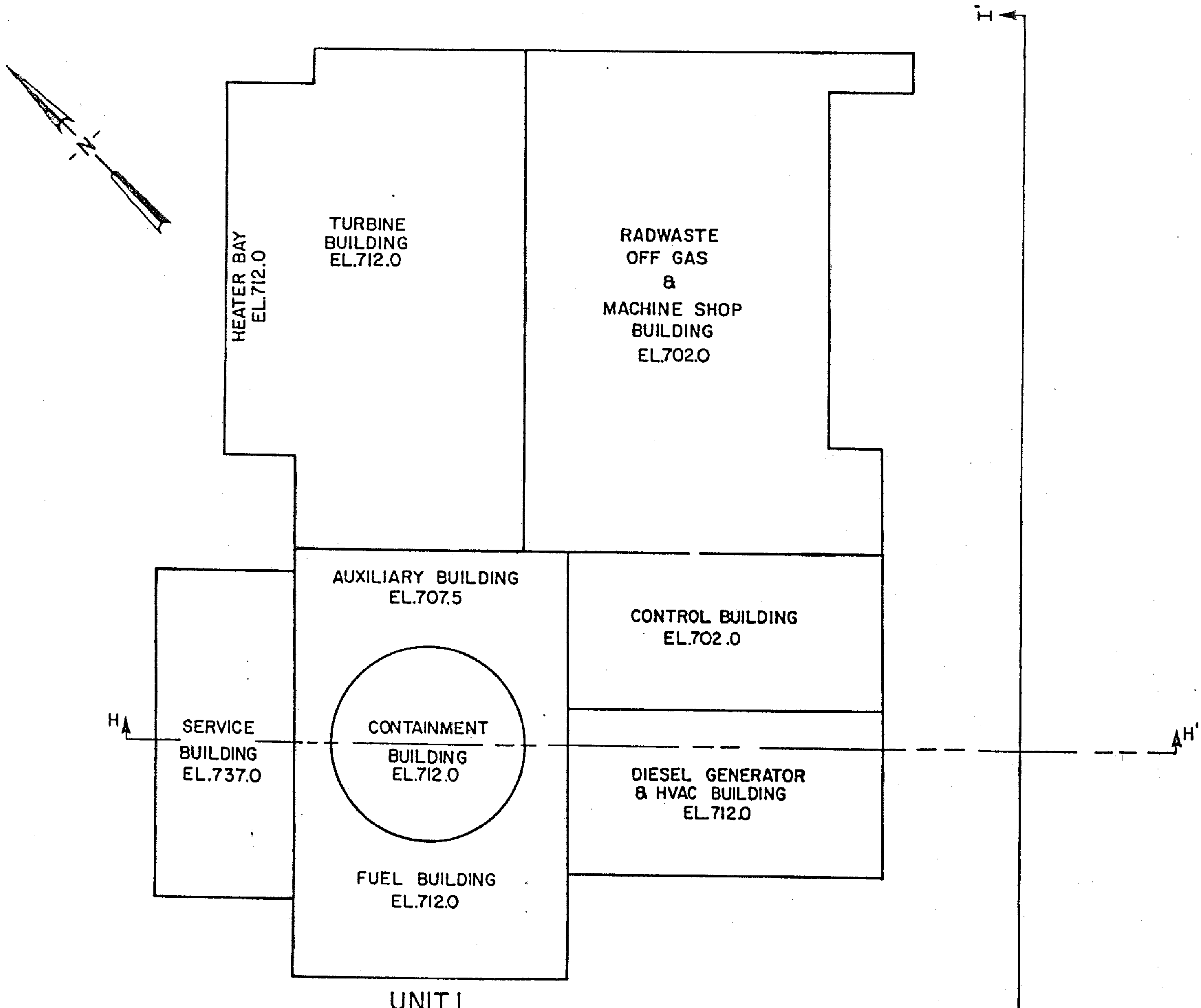
FIGURE 2.5-373

BORING LOCATION PLAN



LOADING AREA	STATIC FND. LOADING KSF.
SERVICE BUILDING	1.5
FUEL BUILDING	6.5
CONTAINMENT BLDG.	6.5
AUXILIARY BLDG.	6.5
TURBINE BLDG.	5.7
DIESEL GEN. & H.V.A.C. BLDG.	4.7
CONTROL BLDG.	4.7
RADWASTE BLDG.	4.8
MACHINE SHOP	4.8
OFF-GAS BLDG.	.4.8

NOTE:

1. REFER TO FIGURE 2.5-372 FOR SUBSURFACE SECTIONS.

LEGEND:

---- INDICATES SUBSURFACE SECTION LOCATION.

0 25 50 75 100

Scale in Feet

CLINTON POWER STATION
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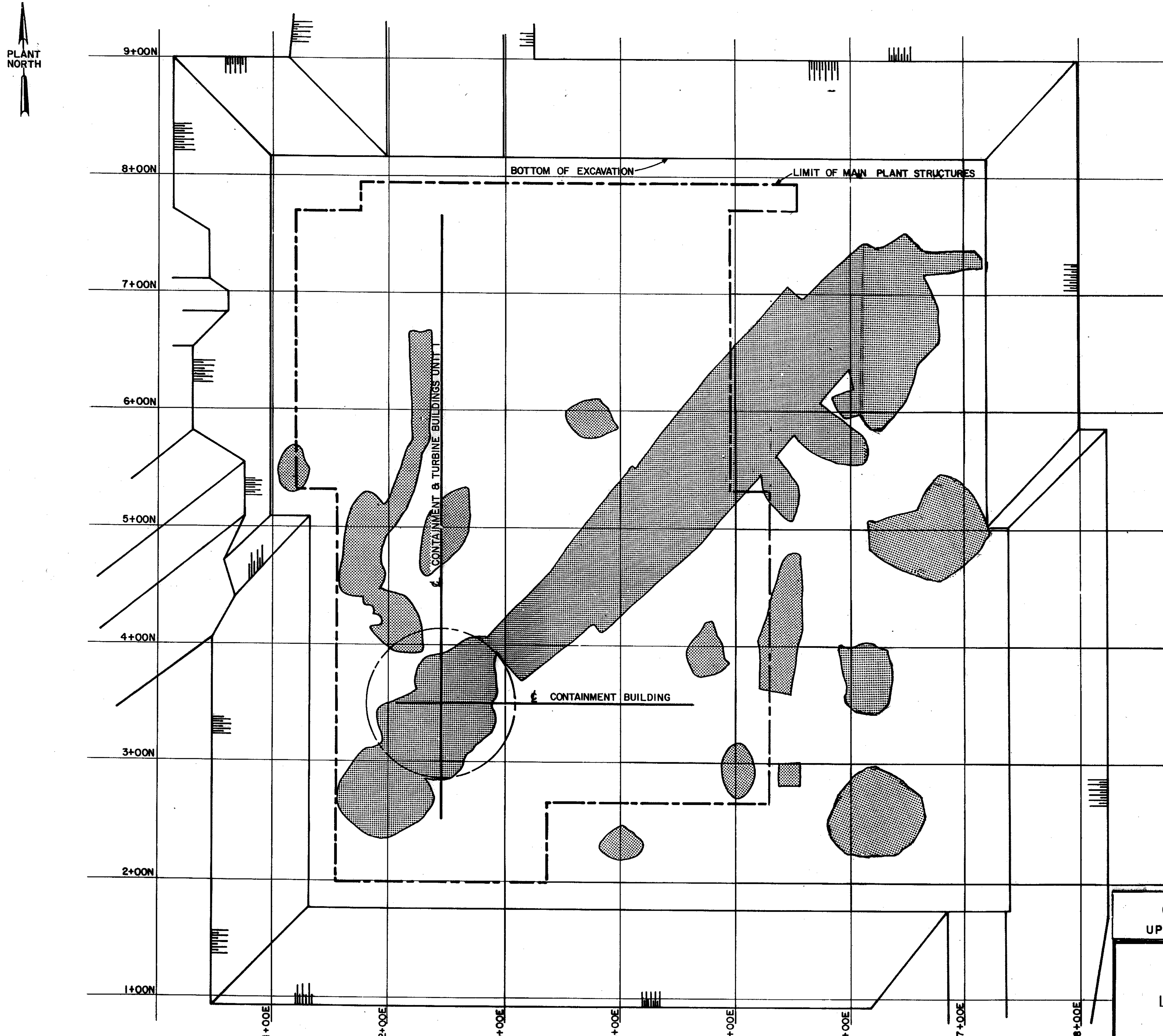
FIGURE 2.5-374

STATION PLOT PLAN - FOUNDATION LOADING



LEGEND

AREAS OF FLYASH MIXTURE PLACEMENT

1+00N MAIN PLANT COORDINATES

NOTES

1. DRAWING PRODUCED FROM BALDWIN ASSOCIATES QUALITY CONTROL RECORDS FOR FLYASH MIXTURE PLACEMENT.

2. FLYASH MIXTURE, CONSISTING OF SAND, CEMENT AND FLYASH, PREPARED AND PLACED IN ACCORDANCE WITH S & L SPECIFICATION K-2942.

50 0 50

SCALE IN FEET

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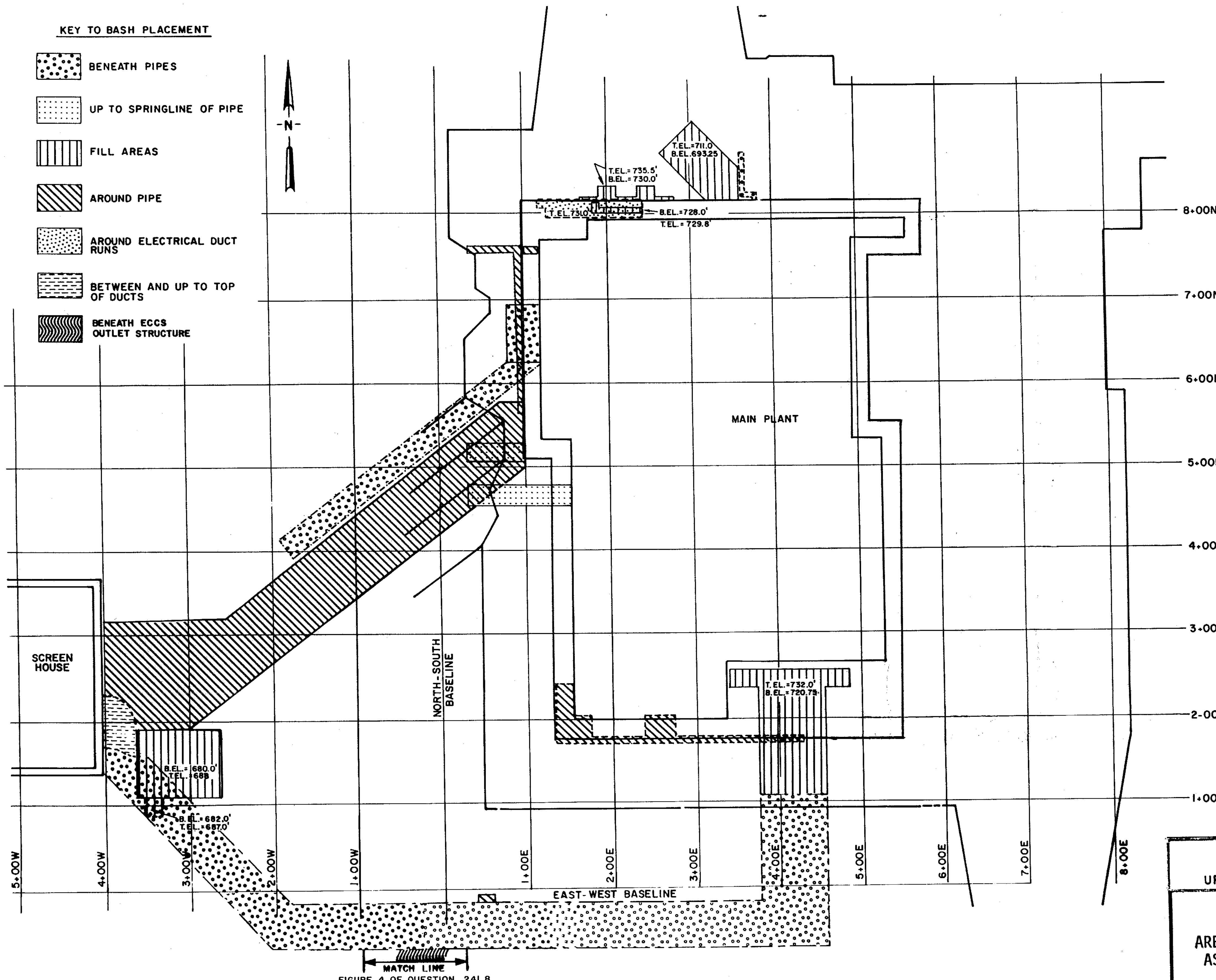
FIGURE 2.5-375

LOCATION OF FLY ASH MIXTURE IN MAIN PLANT SUBGRADE



NOTE
AREAS OF BASH PLACEMENT DETERMINED FROM BALDWIN ASSOCIATES CONSTRUCTION TRAVELERS.

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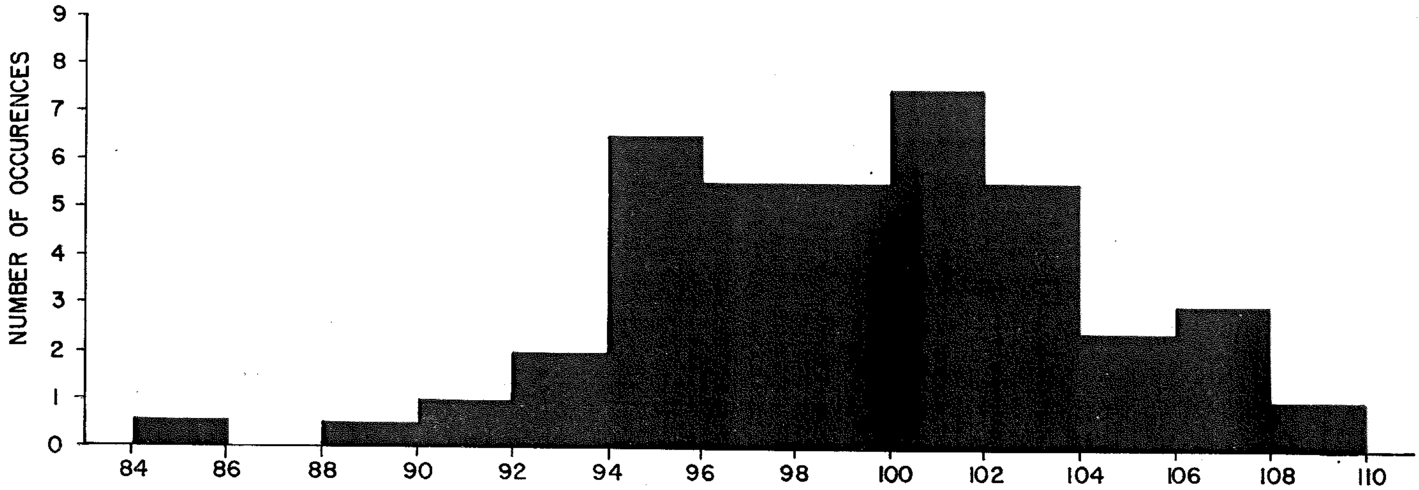
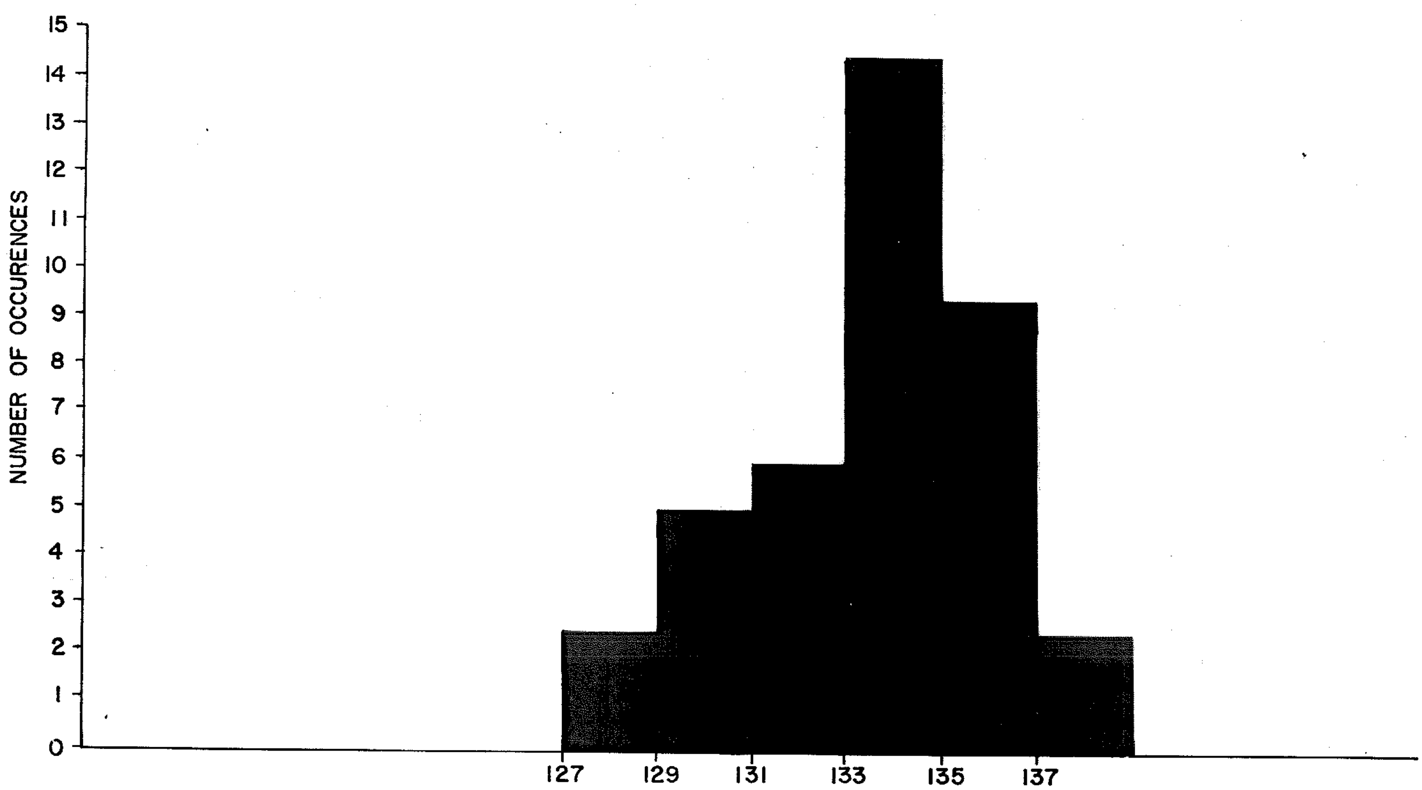
FIGURE 2.5-376

AREAS WHERE FLY ASH MIXTURE IS USED AS FILL AND BACKFILL IN THE MAIN PLANT AND SCREEN HOUSE AREAS



MINIMUM DRY UNIT WEIGHT
AVERAGE MINIMUM DRY UNIT
WEIGHT = 98.9 PCF



MAXIMUM DRY UNIT WEIGHT
AVERAGE MAXIMUM DRY UNIT
WEIGHT = 133.1 PCF

NOTES

1. Relative density test-data based on ASTM D2049.
2. Number of occurences based on average of two pounds per cubic foot range.

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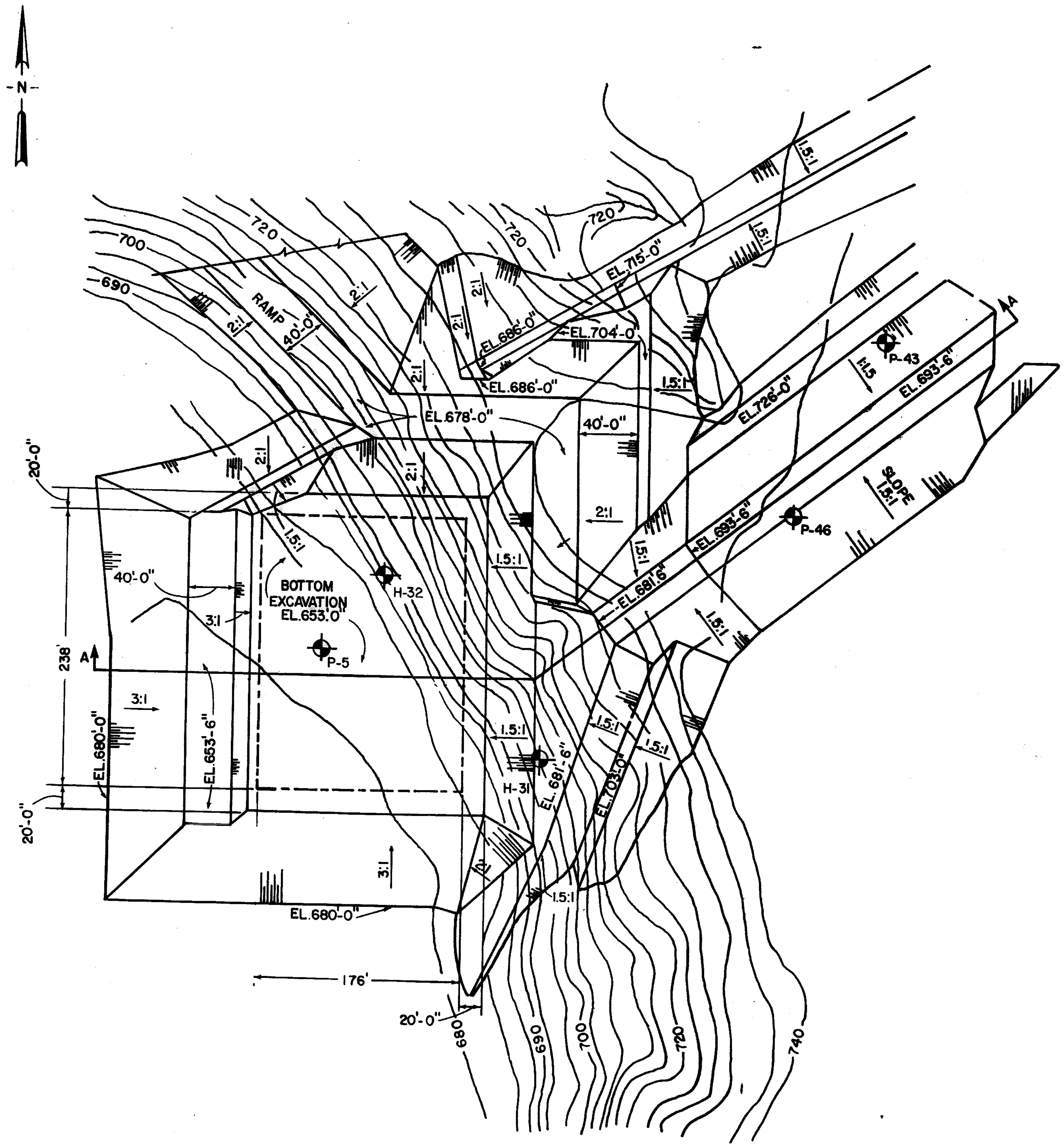
FIGURE 2.5-377

POWER BLOCK RELATIVE DENSITY
TEST SUMMARY



NOTE

See Figure 2.5-379 for section through screen house.

LEGEND

Borings

0 100 200
Scale in Feet

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FIGURE 2.5-378

EXCAVATION PLAN FOR CIRCULATING WATER SCREEN HOUSE

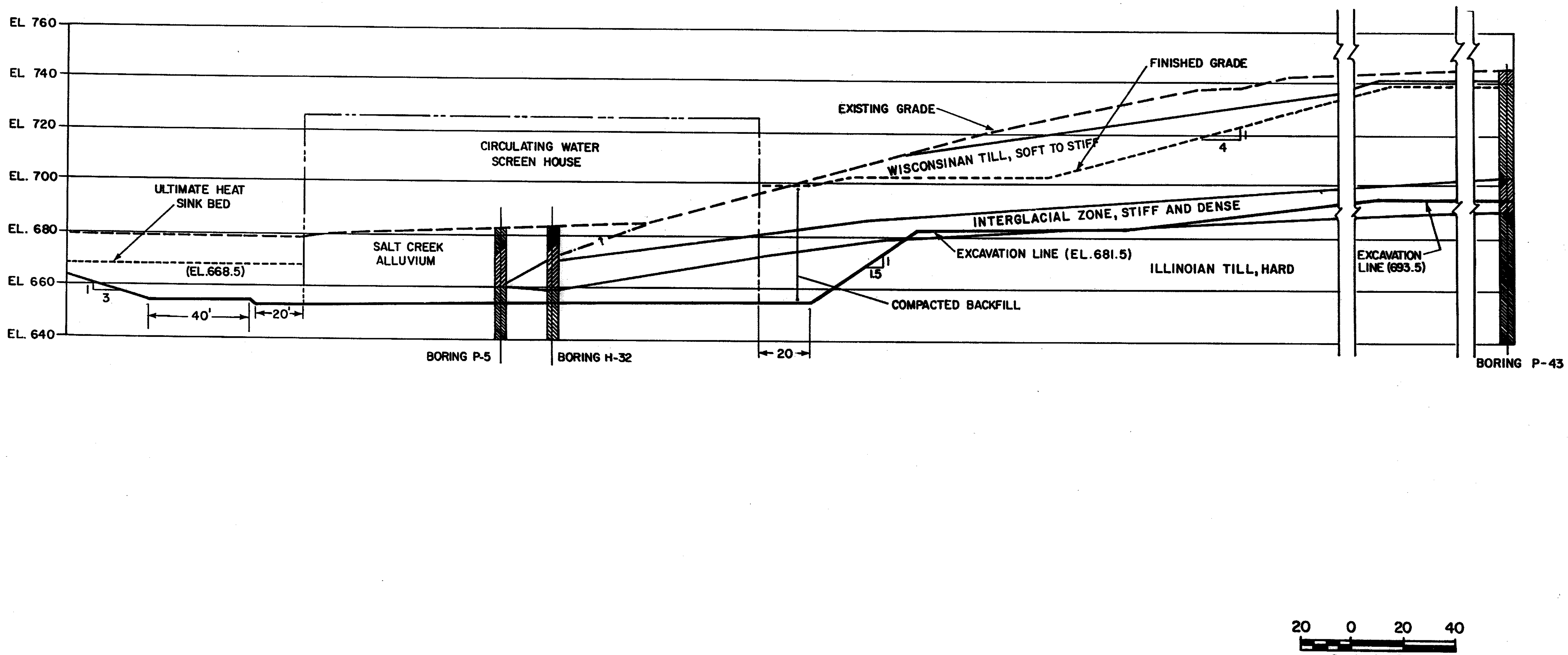

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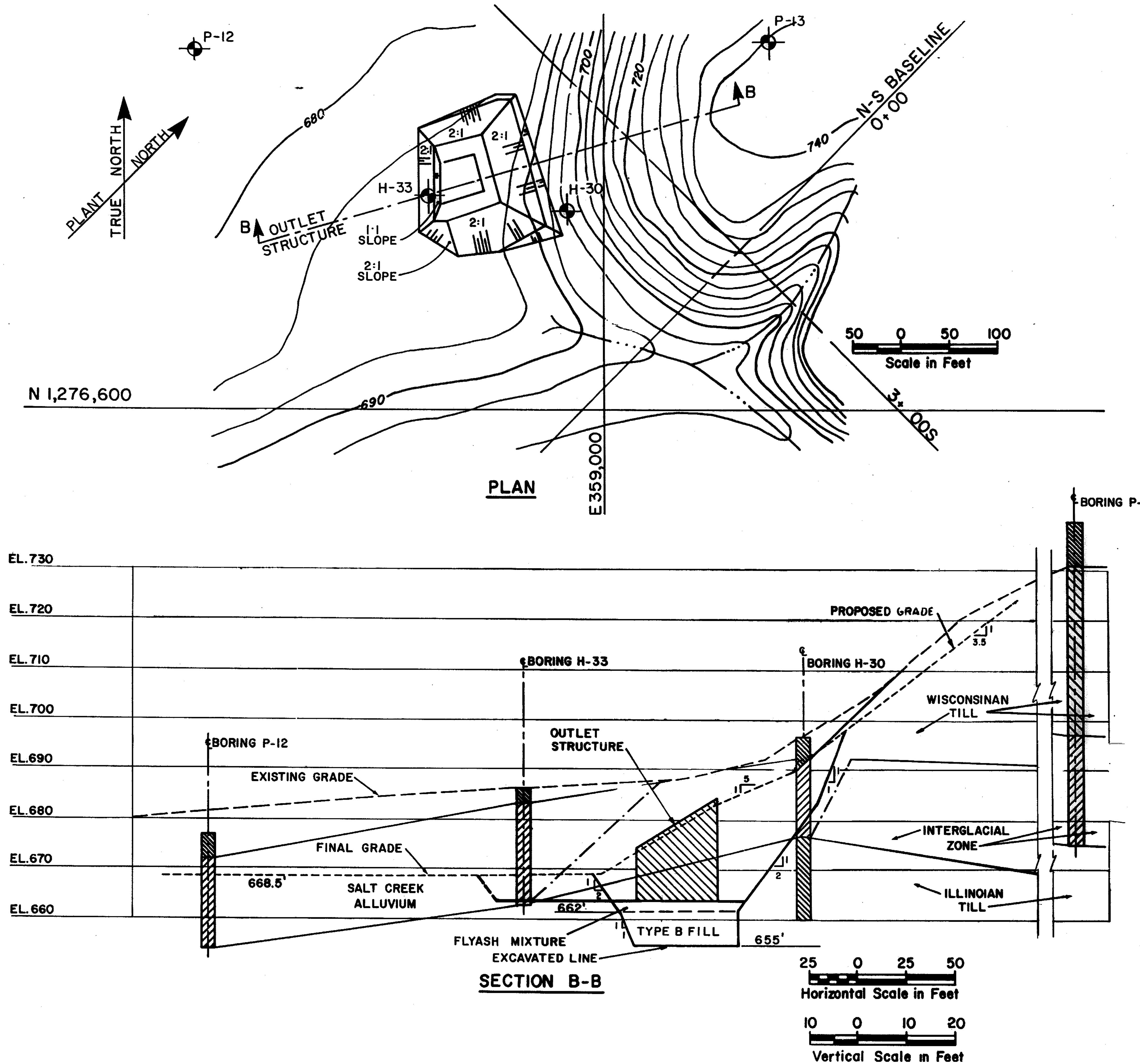
FIGURE 2.5-379

SECTION THROUGH CIRCULATING WATER SCREEN HOUSE SHOWING EXCAVATION LINE

FIGURE 2.5-380

HAS BEEN DELETED



LEGEND

Borings

NOTE

1. The soil profile shows the projection of Borings P-12, H-30 and P-13 along the center line of the outlet structure.

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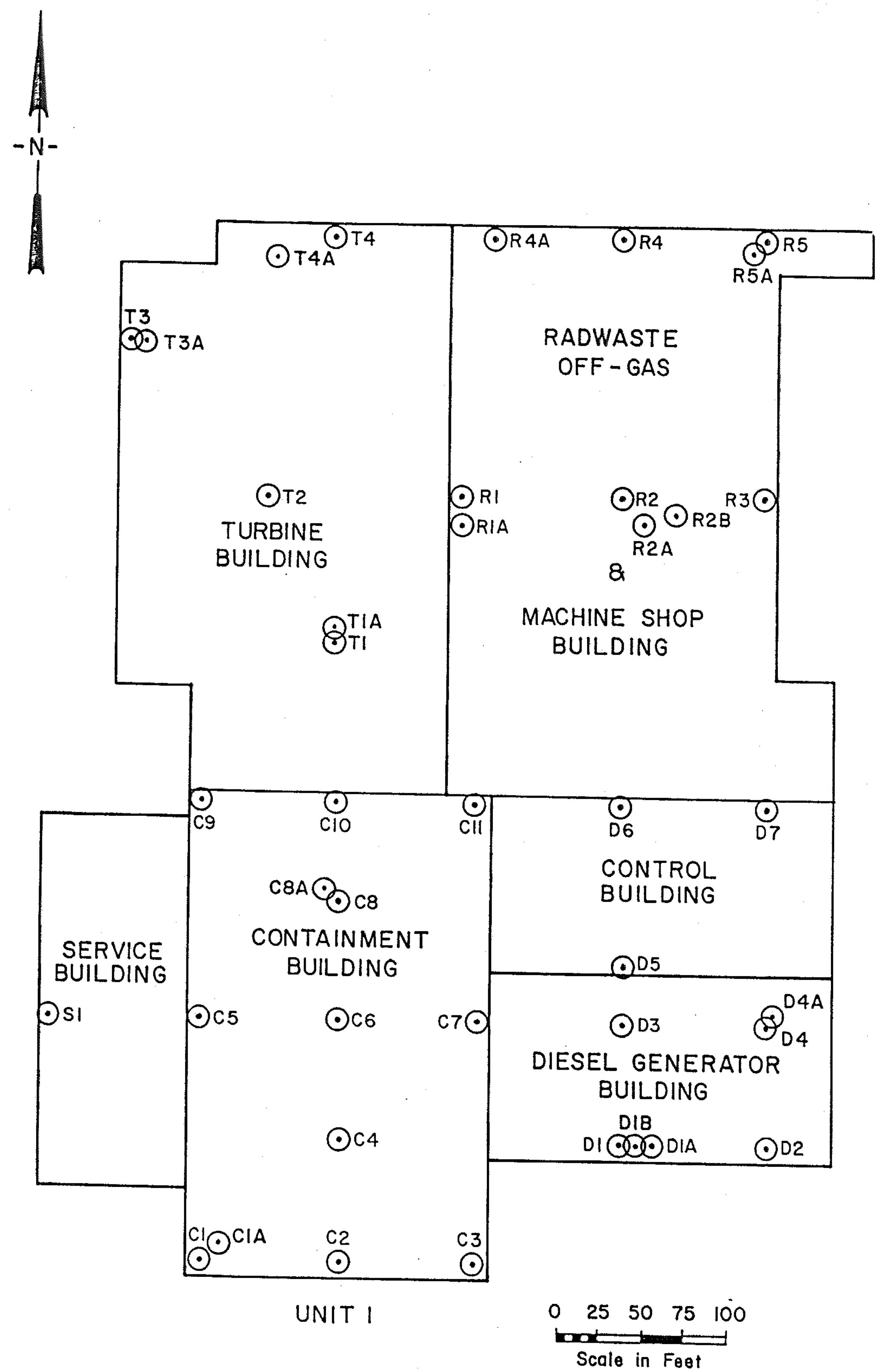
FIGURE 2.5-381

EXCAVATION PLAN AND SECTION FOR OUTLET STRUCTURE



NOTE

1. ⊙ C1 SETTLEMENT MONUMENT LOCATION.

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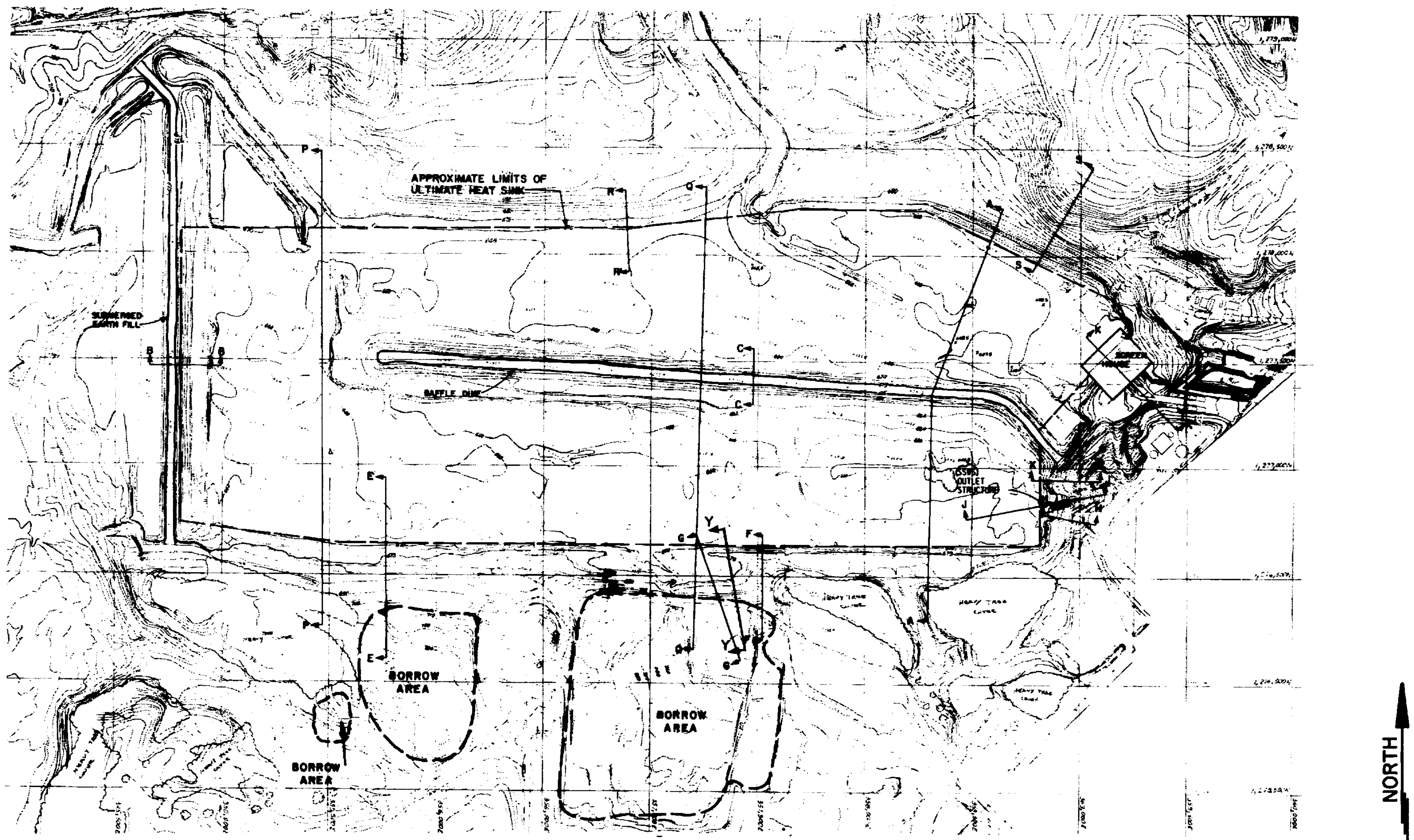
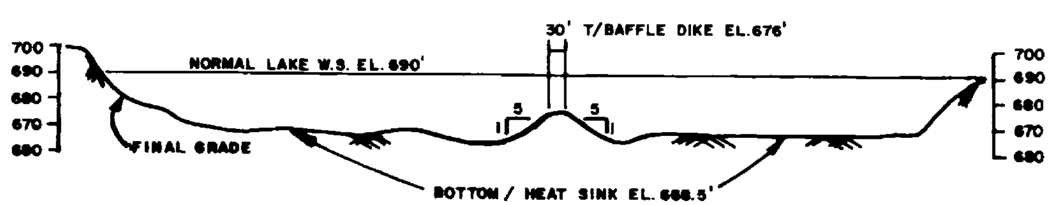
FIGURE 2.5-382

LOCATIONS OF SETTLEMENT MONUMENTS - MAIN PLANT

Figure 2.5-383
Deleted

REVISION 9
JANUARY 2001





SECTION A-A

0 100 200
SCALE IN FEET

LEGEND

SECTIONS

BORROW AREA

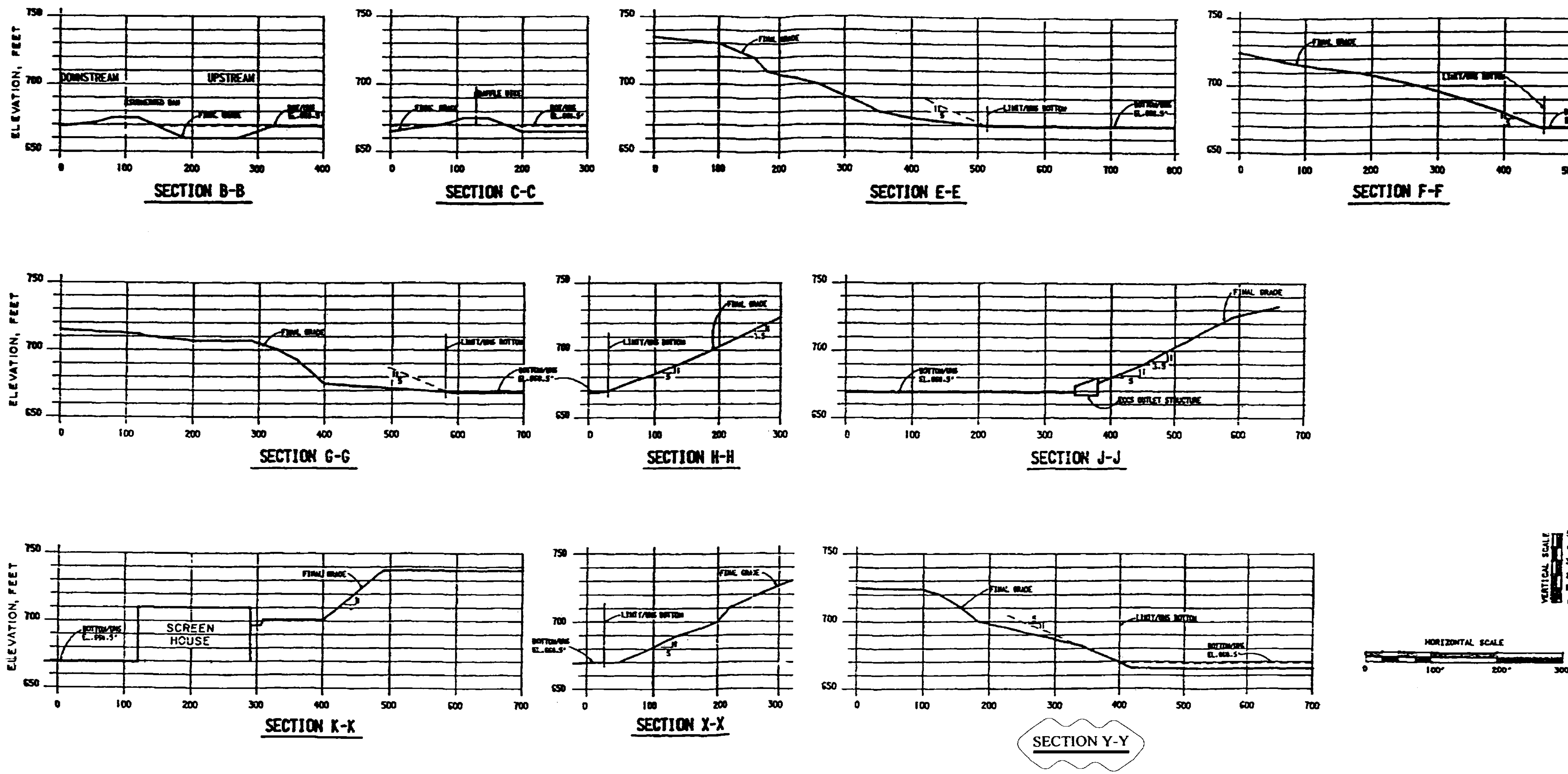
NOTE

1. FOR SECTIONS SEE FIGURE 2.5-385.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-384

ULTIMATE HEAT SINK



FOR LOCATION OF SECTIONS, SEE FIGURE 2.5-384.

NOTE:
HORIZONTAL AND VERTICAL SCALES ARE DISTORTED

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FIGURE 2.5-385

SECTIONS - ULTIMATE HEAT SINK

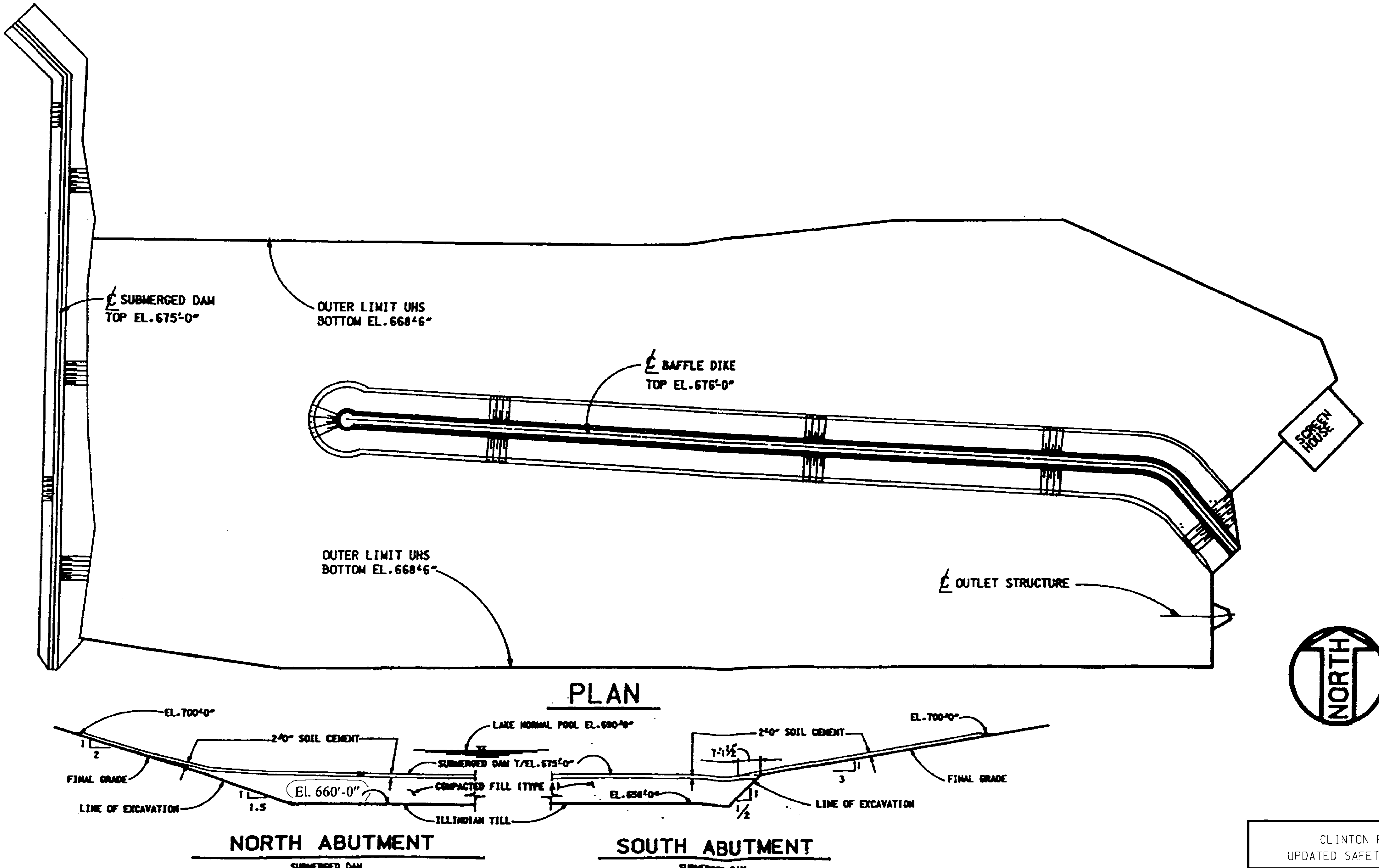

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FIGURE 2.5-386
PLAN AND SECTIONS FOR SUBMERGED EARTH
FILL AND BAFFLE DIKE

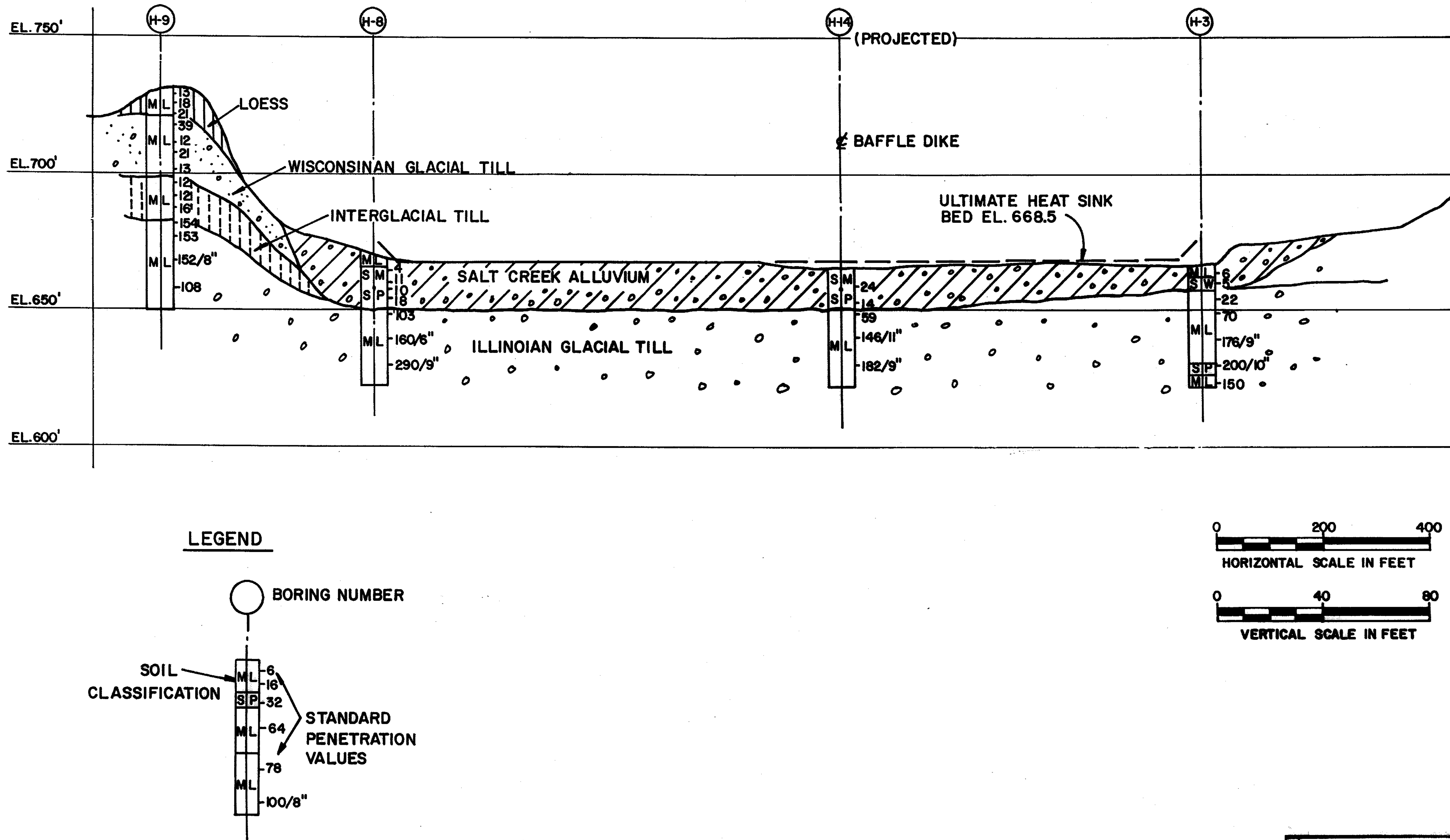

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FIGURE 2.5-387

SOIL PROFILE - ULTIMATE HEAT SINK
SECTION P-P

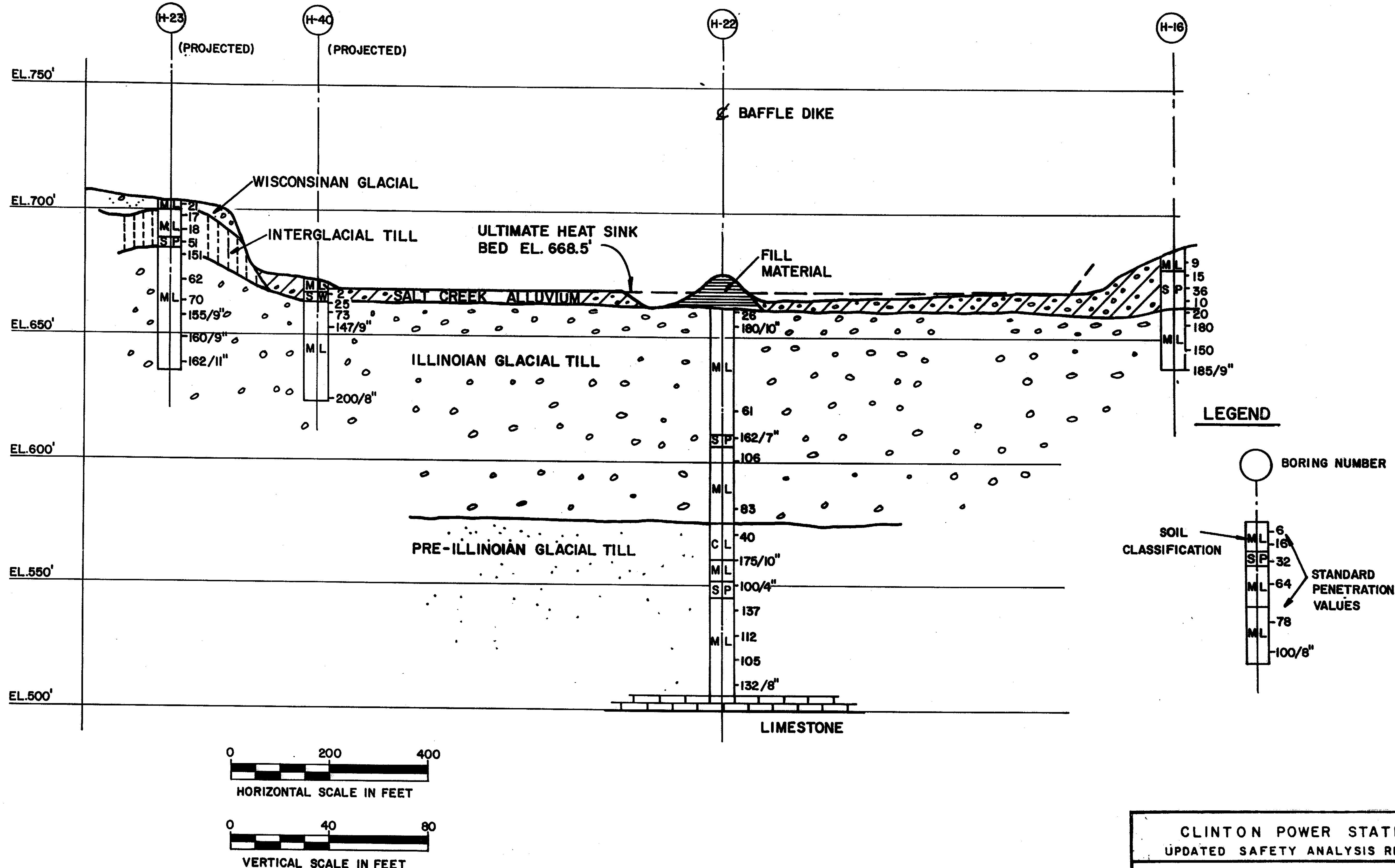

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FIGURE 2.5-388

SOIL PROFILE - ULTIMATE HEAT SINK
SECTION Q-Q

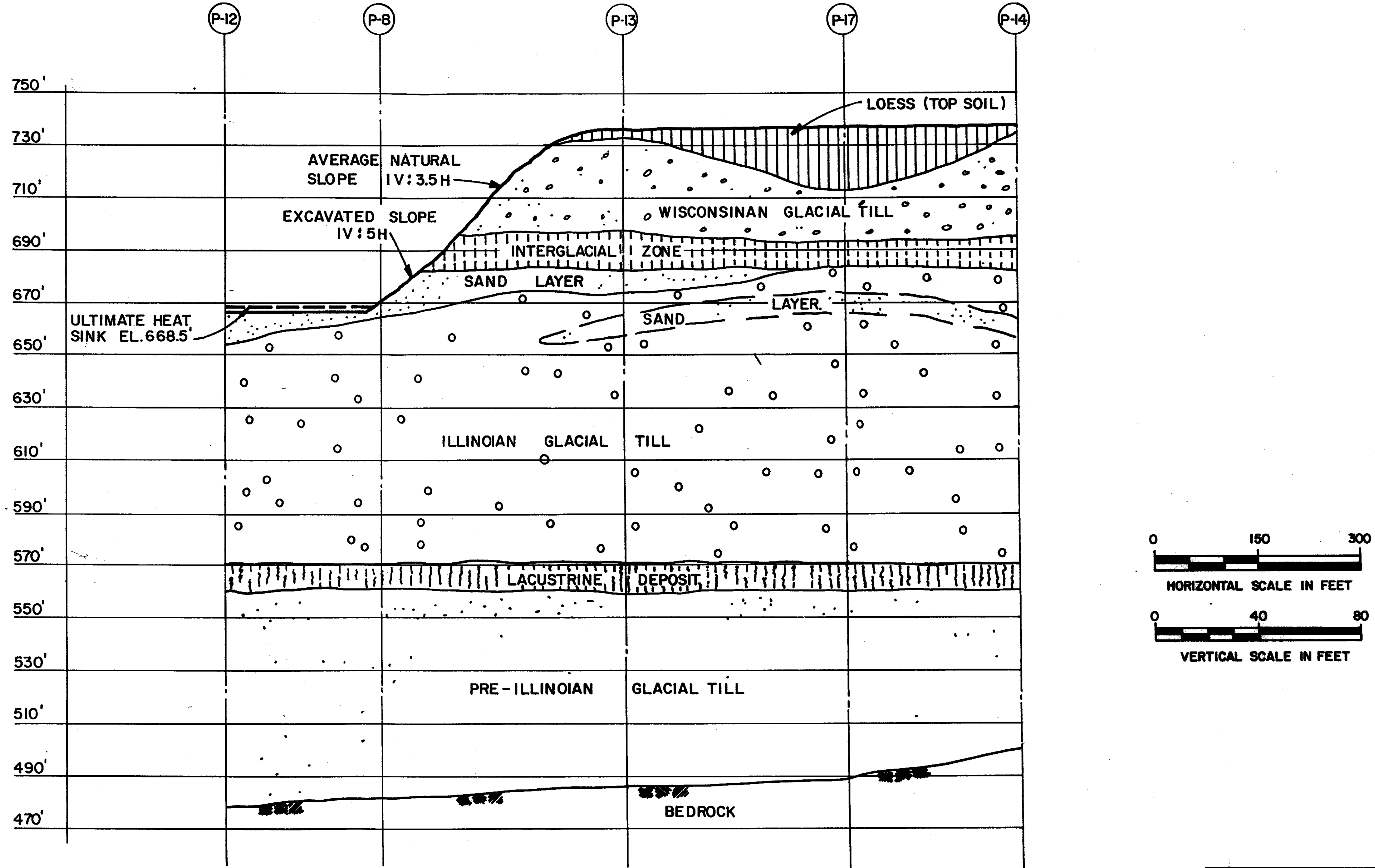

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FIGURE 2.5-389

SOIL PROFILE - ULTIMATE HEAT SINK
SECTION X-X

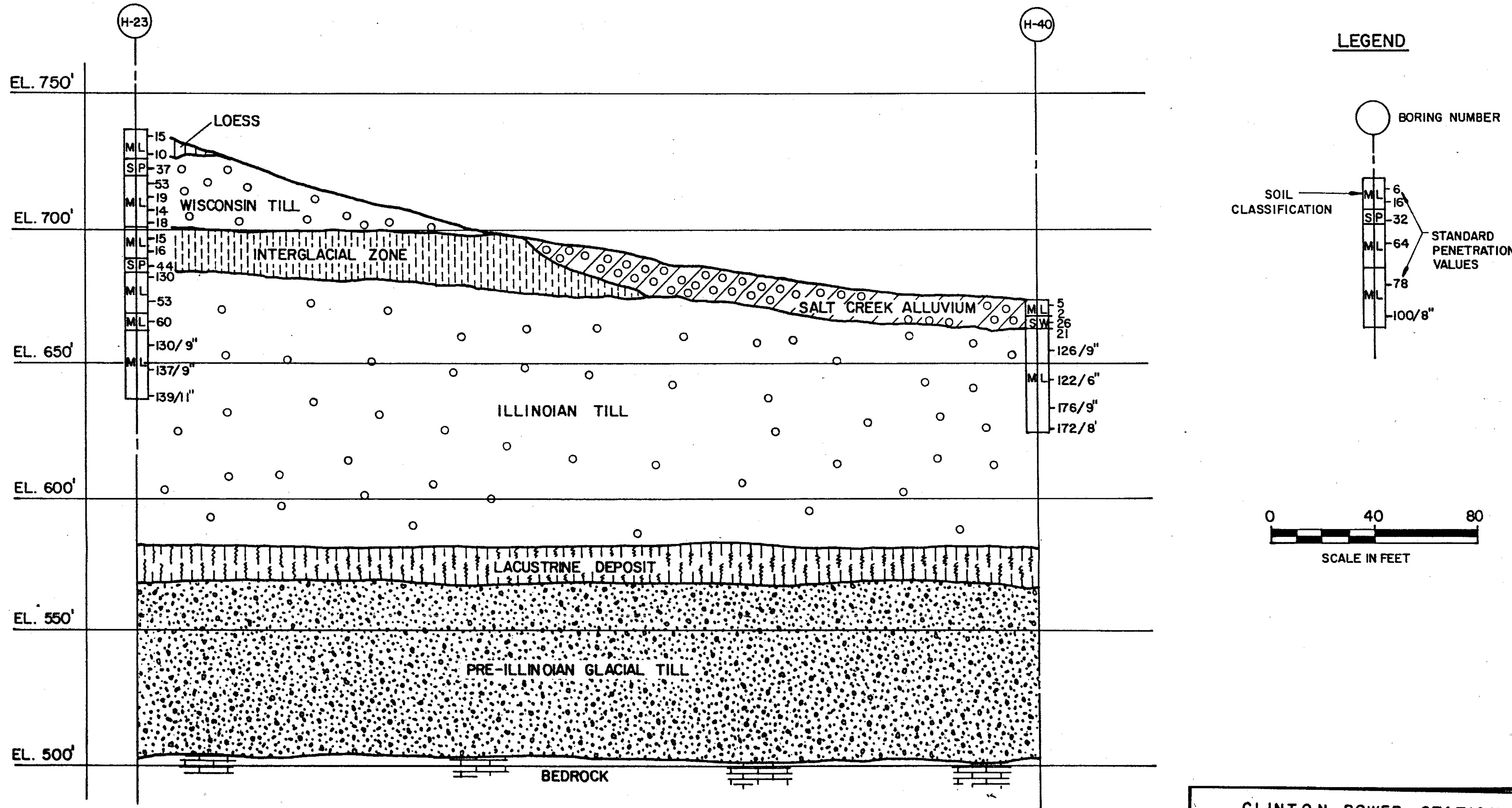

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FIGURE 2.5-390

SOIL PROFILE - ULTIMATE
HEAT SINK SECTION Y-Y

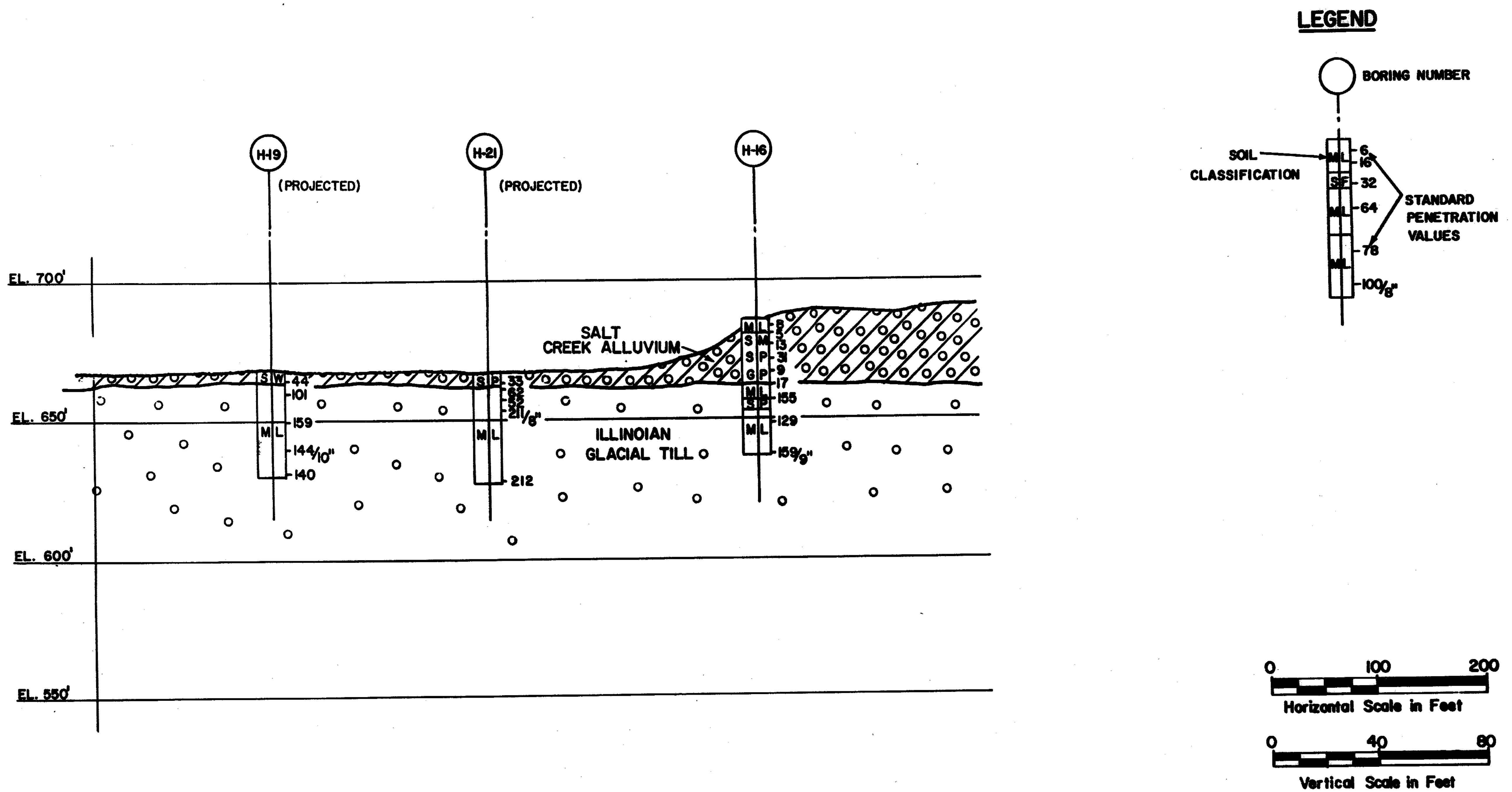

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FIGURE 2.5-391

SOIL PROFILE - ULTIMATE HEAT SINK
SECTION R-R

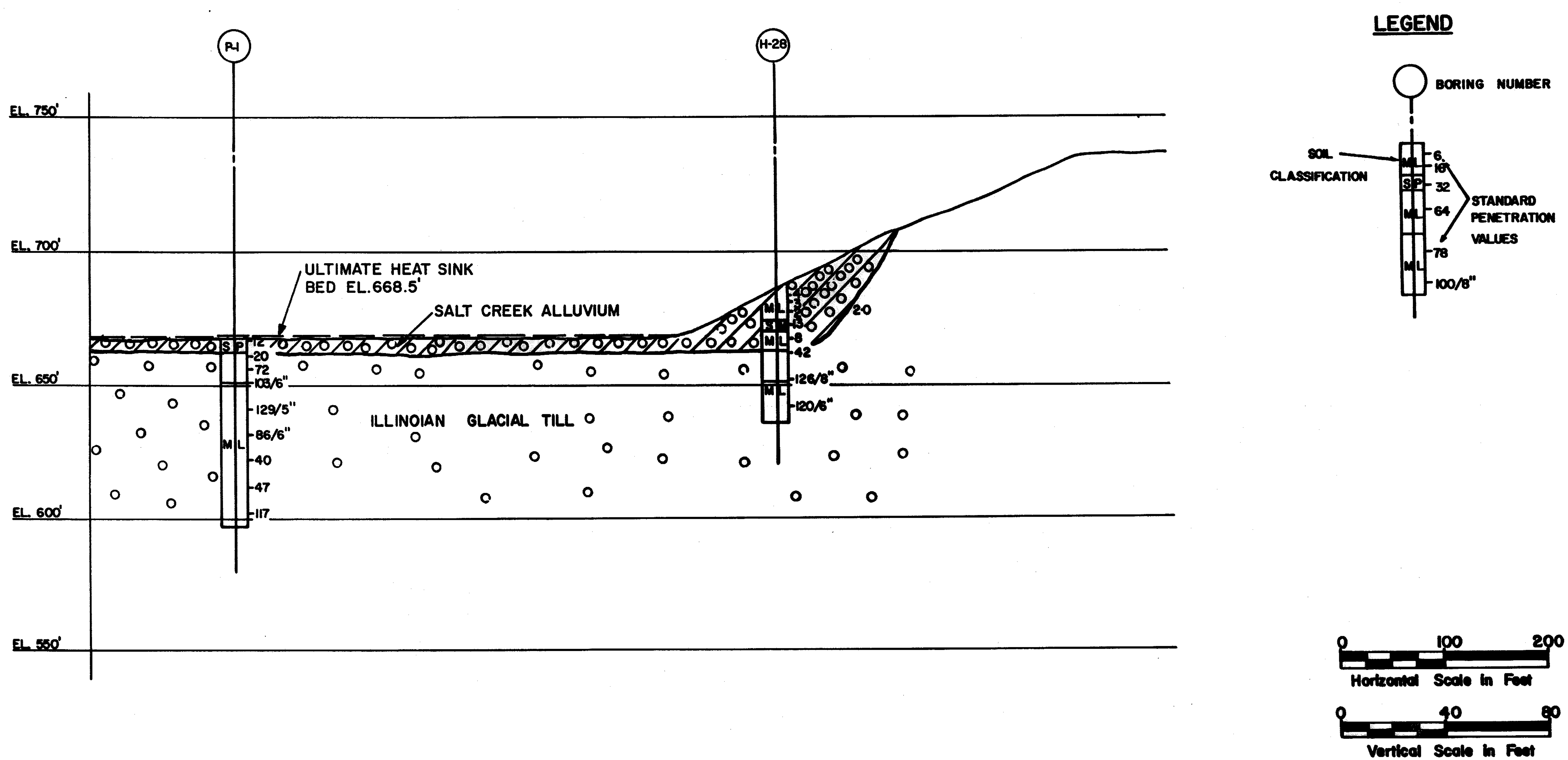

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FIGURE 2.5-392

SOIL PROFILE - ULTIMATE HEAT SINK
SECTION S-S

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	Ø'
1	COMPACTED WISCONSINAN TILL	130	1300*	0*
2	SALT CREEK ALLUVIUM	120	400	0
3	SAND DRAINAGE BLANKET	125	0	30
4	SALT CREEK ALLUVIUM (SAND)	125	0	33
5	ILLINOIAN TILL	140	4000	0
6	DUMMY LAYER	0	0	0
7	DUMMY LAYER	0	0	0

*THESE VALUES ARE TOTAL STRENGTH PARAMETERS

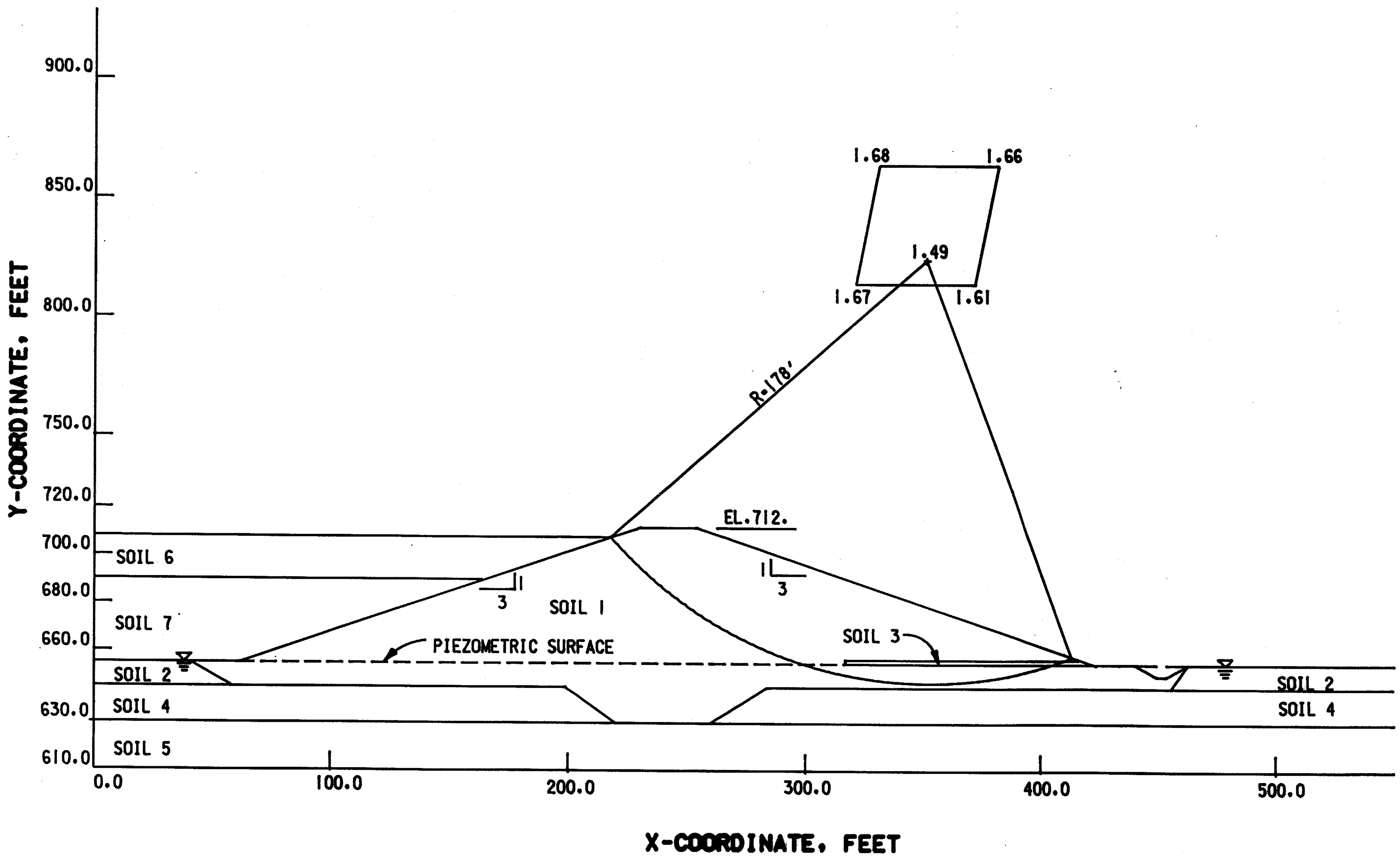

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FIGURE 2.5-393

STABILITY ANALYSIS - END OF CONSTRUCTION CONDITION - MAIN DAM

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	ø'
1	COMPACTED WISCONSINAN TILL	130	200	33
2	SALT CREEK ALLUVIUM	120	400	0
3	SAND DRAINAGE BLANKET	125	0	30
4	SALT CREEK ALLUVIUM (SAND)	125	0	33
5	ILLINOIAN TILL	140	4000	0
6	DUMMY LAYER	0	0	0
7	WATER	62.4	0	0

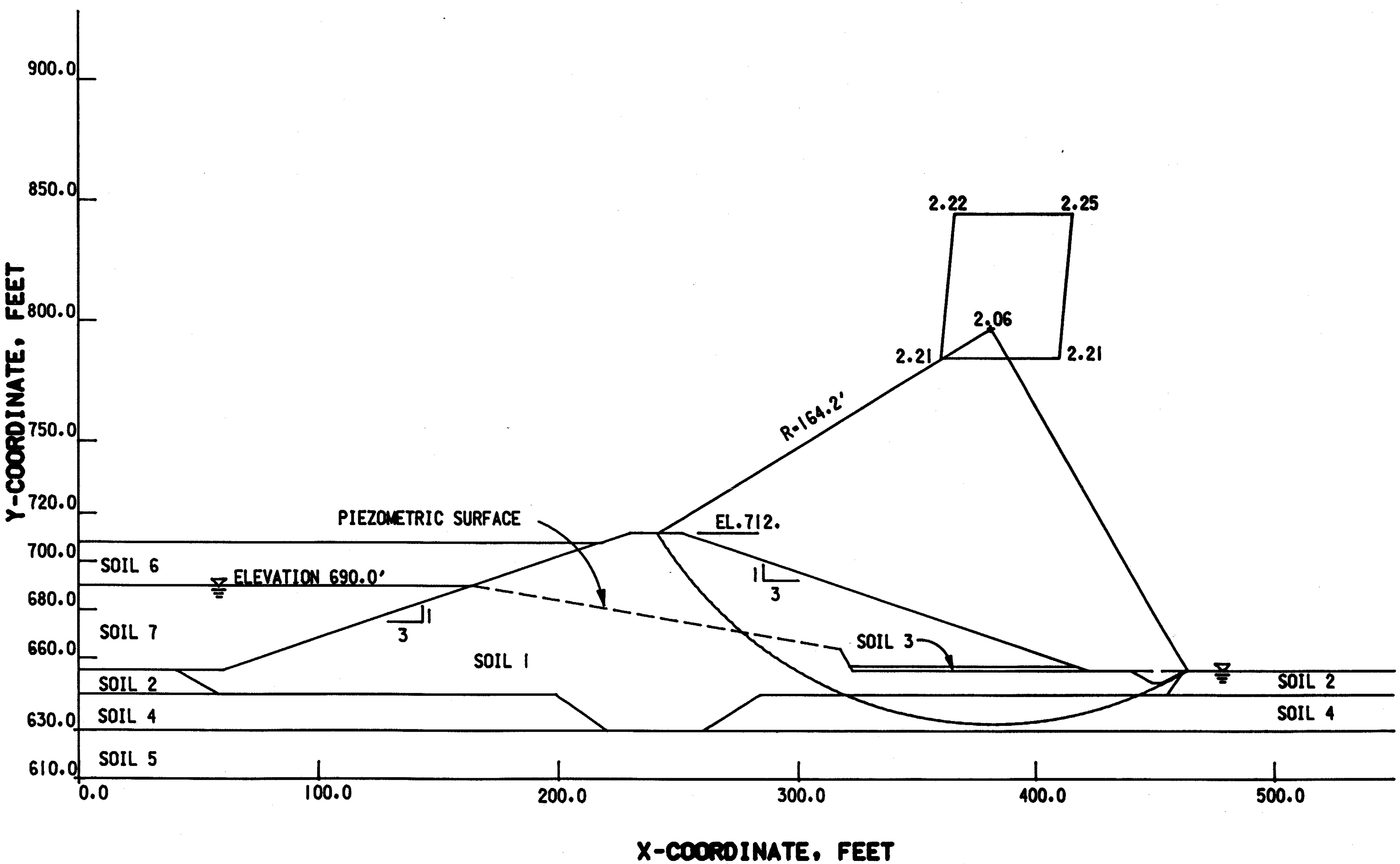

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FIGURE 2.5-394

STABILITY ANALYSIS - NORMAL POOL CONDITION - MAIN DAM

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	ϕ'
1	COMPACTED WISCONSINAN TILL	130	200	33
2	SALT CREEK ALLUVIUM	120	400	0
3	SAND DRAINAGE BLANKET	125	0	30
4	SALT CREEK ALLUVIUM (SAND)	125	0	33
5	ILLINOIAN TILL	140	4000	0
6	DUMMY LAYER	0	0	0
7	WATER	62.4	0	0

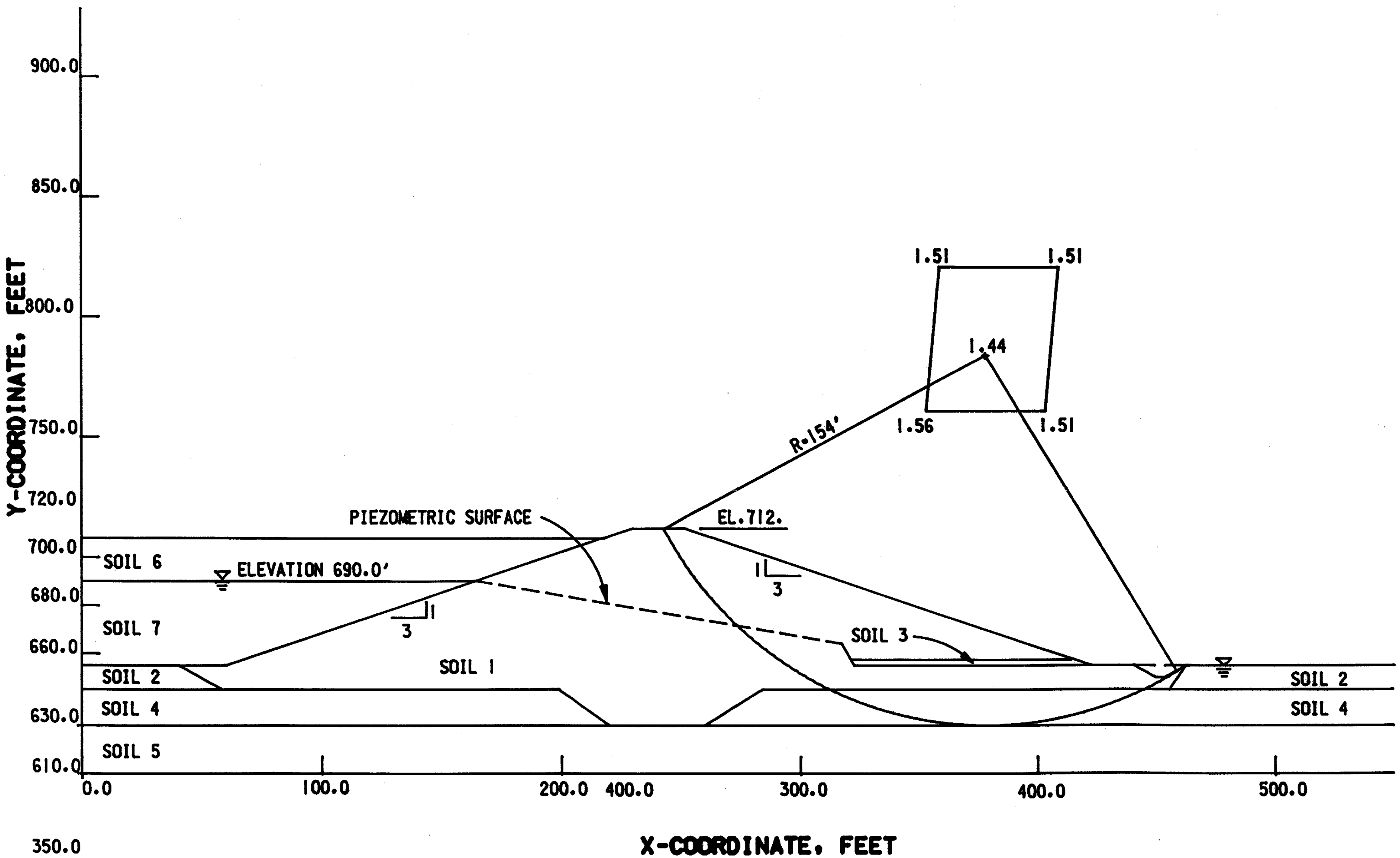

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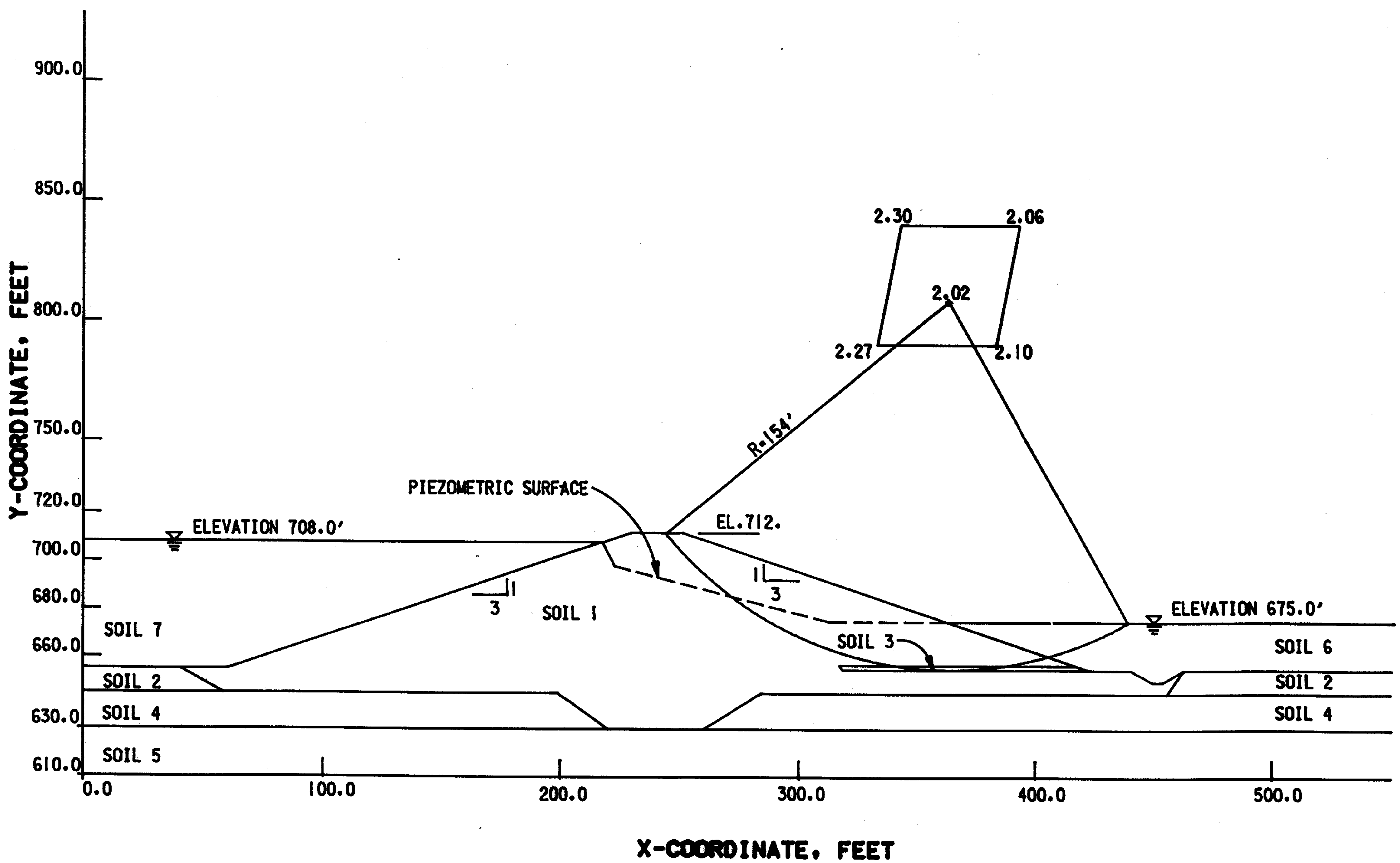
FIGURE 2.5-395

STABILITY ANALYSIS - NORMAL POOL WITH 0.1g EARTHQUAKE LOADING CONDITION - MAIN DAM

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	Ø'
1	COMPACTED WISCONSINAN TILL	130	200	33
2	SALT CREEK ALLUVIUM	120	400	0
3	SAND DRAINAGE BLANKET	125	0	30
4	SALT CREEK ALLUVIUM (SAND)	125	0	33
5	ILLINOIAN TILL	140	4000	0
6	WATER	62.4	0	0
7	WATER	62.4	0	0



CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-396

STABILITY ANALYSIS - MAXIMUM POOL CONDITION - MAIN DAM

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	ø'
1	COMPACTED WISCONSINAN TILL	130	200	33
2	SALT CREEK ALLUVIUM	120	400	0
3	SAND DRAINAGE BLANKET	125	0	30
4	SALT CREEK ALLUVIUM (SAND)	125	0	33
5	ILLINOIAN TILL	140	4000	0
6	DUMMY LAYER	0	0	0
7	DUMMY LAYER	0	0	0

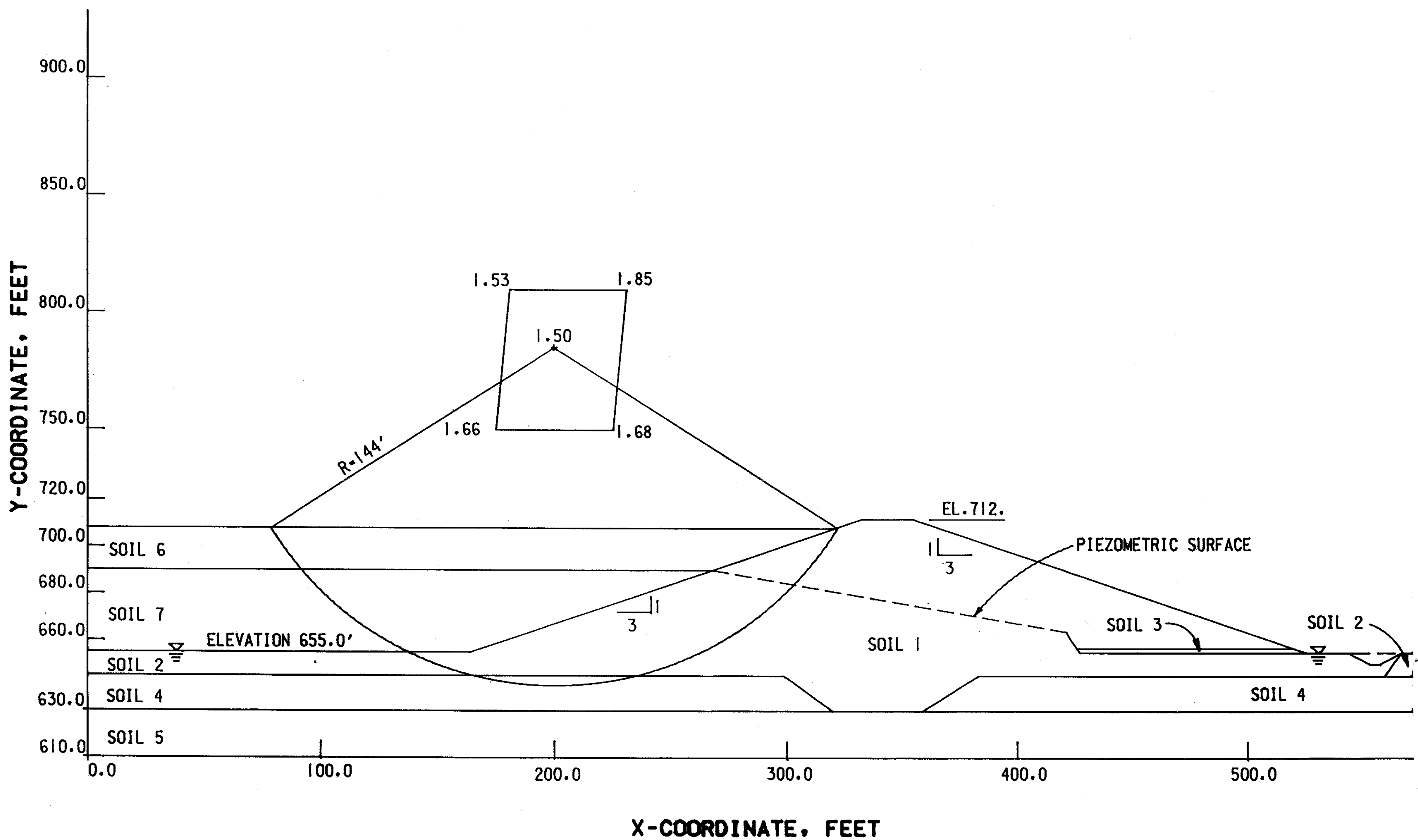


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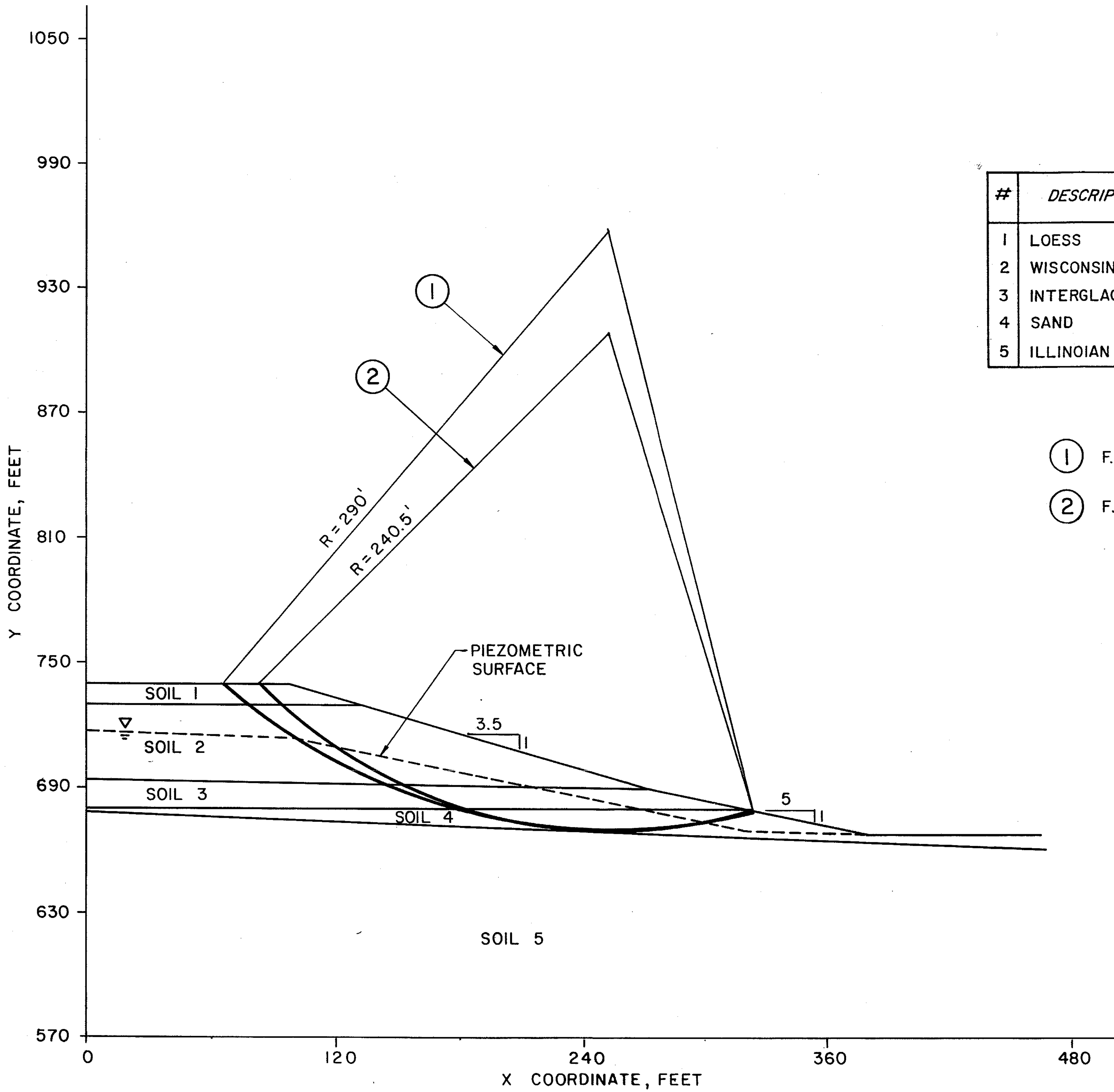
FIGURE 2.5-397

STABILITY ANALYSIS - RAPID DRAWDOWN CONDITION - MAIN DAM



#	DESCRIPTION	SOIL DATA		
		γ (PCF)	C' (PSF)	Φ'
1	LOESS	120.0	0	20
2	WISCONSIN TILL	137.0	600	30
3	INTERGLACIAL	131.0	600	30
4	SAND	125.0	0	38
5	ILLINOIAN TILL	150.0	0	47

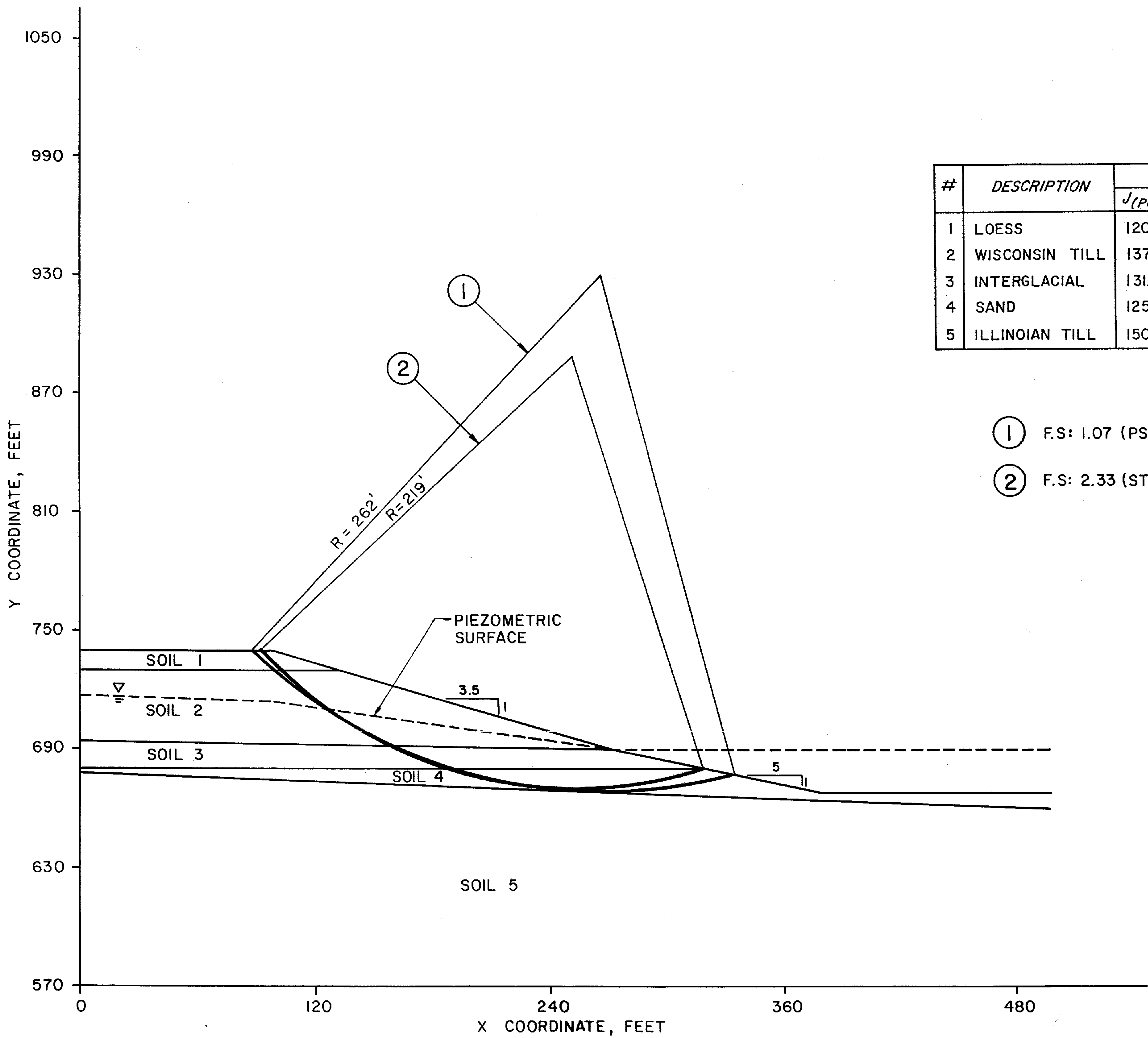
1 F.S: 1.24 (PSEUDO)

2 F.S: 2.60 (STATIC)

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-398

STABILITY ANALYSIS - END OF CONSTRUCTION CONDITION - SECTION X-X, ULTIMATE HEAT SINK



#	DESCRIPTION	SOIL DATA		
		J (PCF)	C' (PSF)	Φ'
1	LOESS	120.0	0	20
2	WISCONSIN TILL	137.0	600	30
3	INTERGLACIAL	131.0	600	30
4	SAND	125.0	0	38
5	ILLINOIAN TILL	150.0	0	47

1 F.S: 1.07 (PSEUDO)

2 F.S: 2.33 (STATIC)

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FIGURE 2.5-399

STABILITY ANALYSIS - FULL COOLING LAKE CONDITION - SECTION X-X, ULTIMATE HEAT SINK

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	ϕ'
1	COMPACTED WISCONSINAN TILL(FILL)	135	400	29
2	SAND AND GRAVEL	120	0	38
3	WISCONSINAN TILL	139	600	30
4	WATER	62.4	0	0

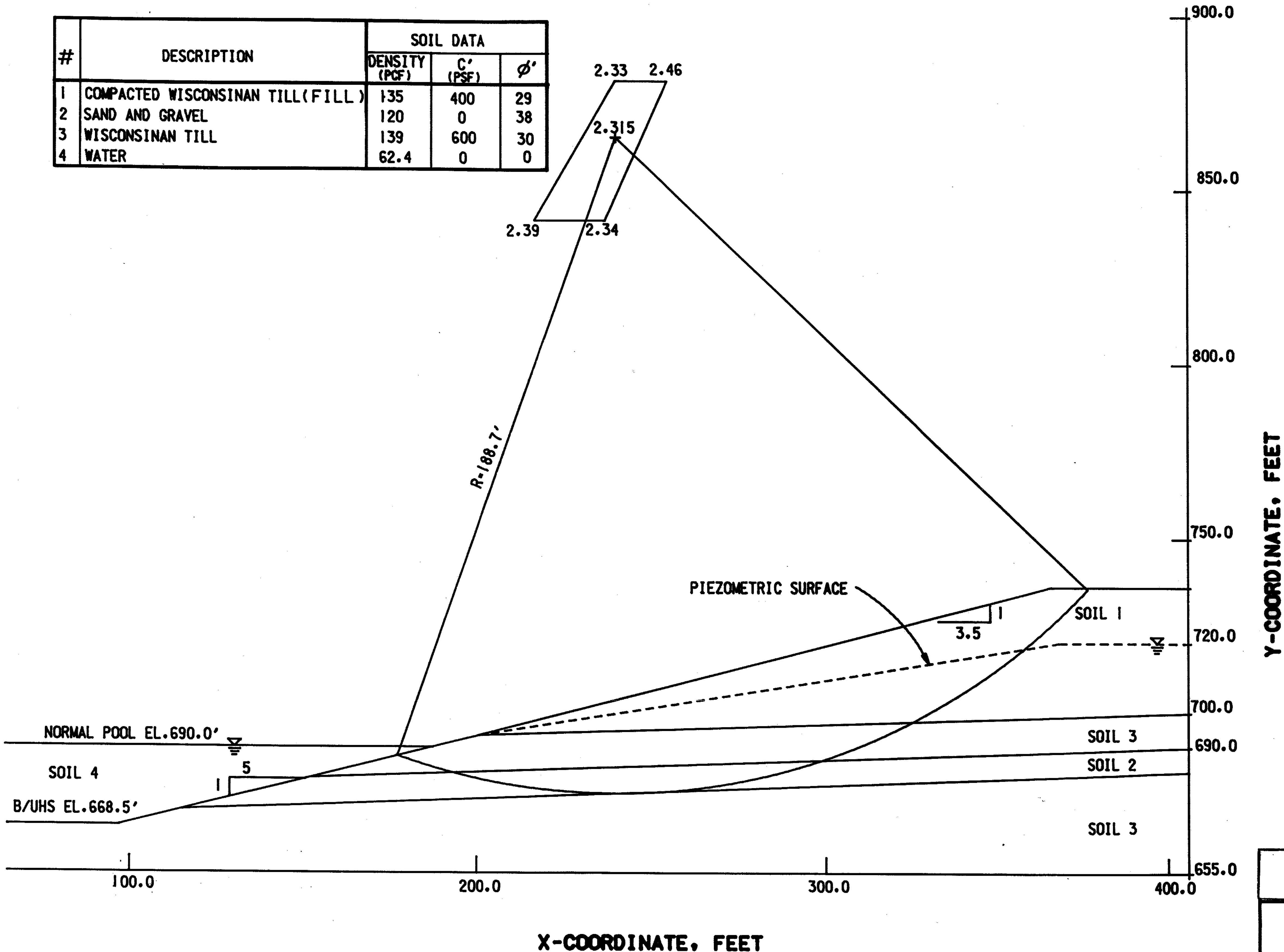

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FIGURE 2.5-400

STABILITY ANALYSIS - FULL COOLING LAKE CONDITION - SECTION H-H', ULTIMATE HEAT SINK

#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	ϕ'
1	COMPACTED WISCONSINAN TILL (FILL)	.35	400	29
2	SAND AND GRAVEL	120	0	38
3	WISCONSINAN TILL	139	600	30
4	WATER	62.4	0	0

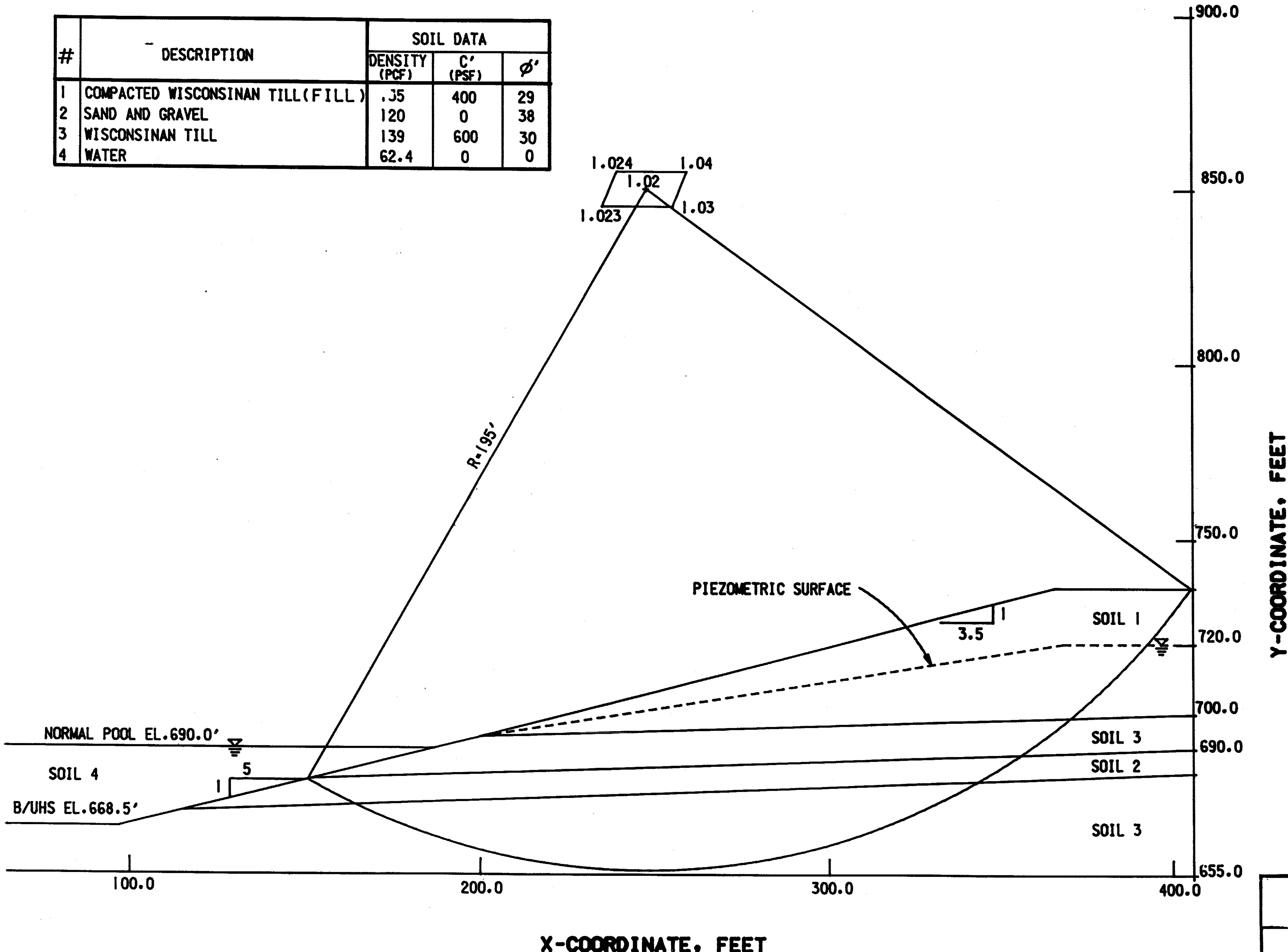

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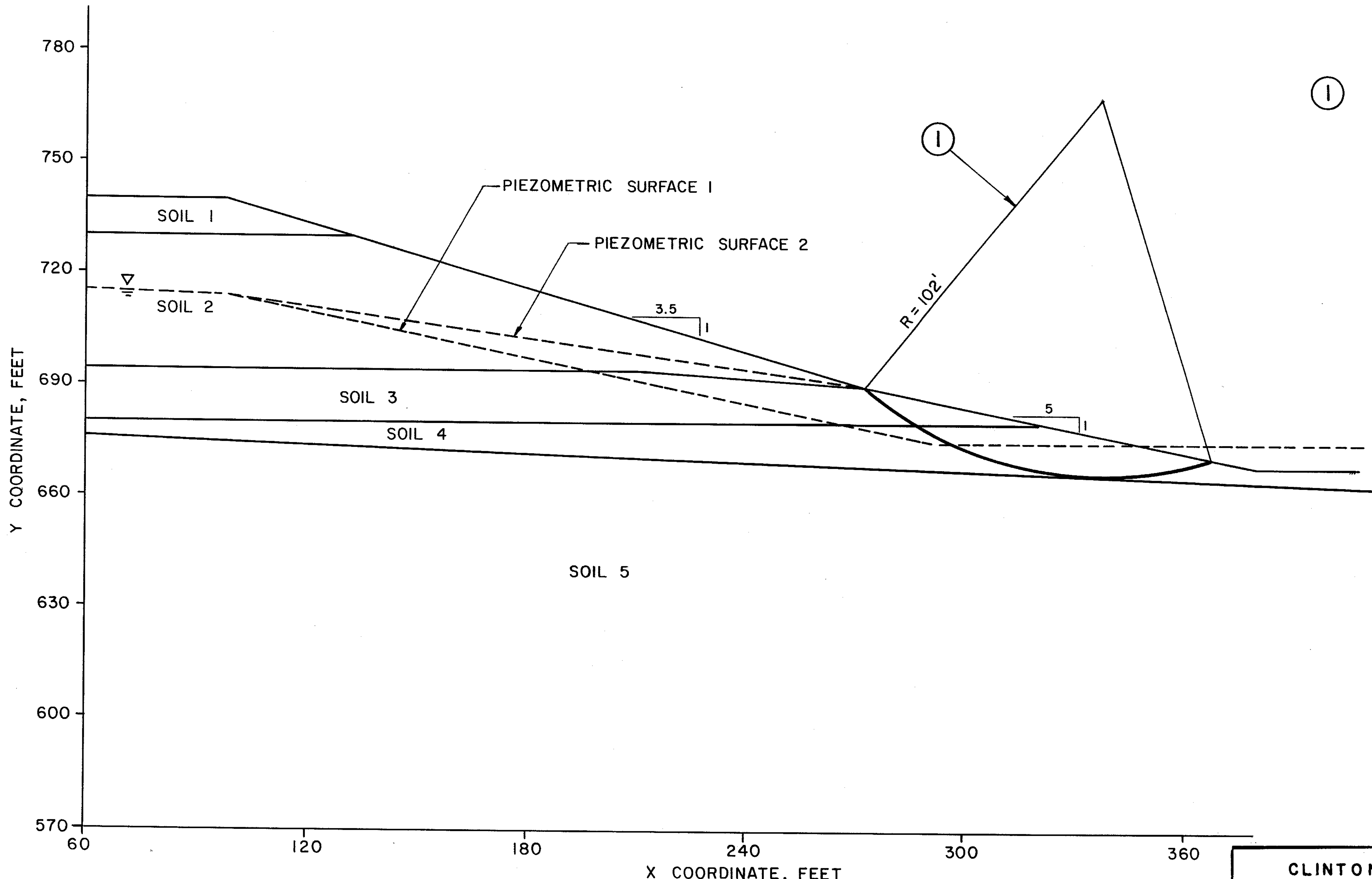
FIGURE 2.5-401

STABILITY ANALYSIS - FULL COOLING LAKE WITH 0.25g EARTHQUAKE LOADING CONDITION - SECTION H-H, ULTIMATE HEAT SINK



NOTE

SEE FIGURE 2.5-398
FOR SOIL DATA

CLINTON POWER STATION
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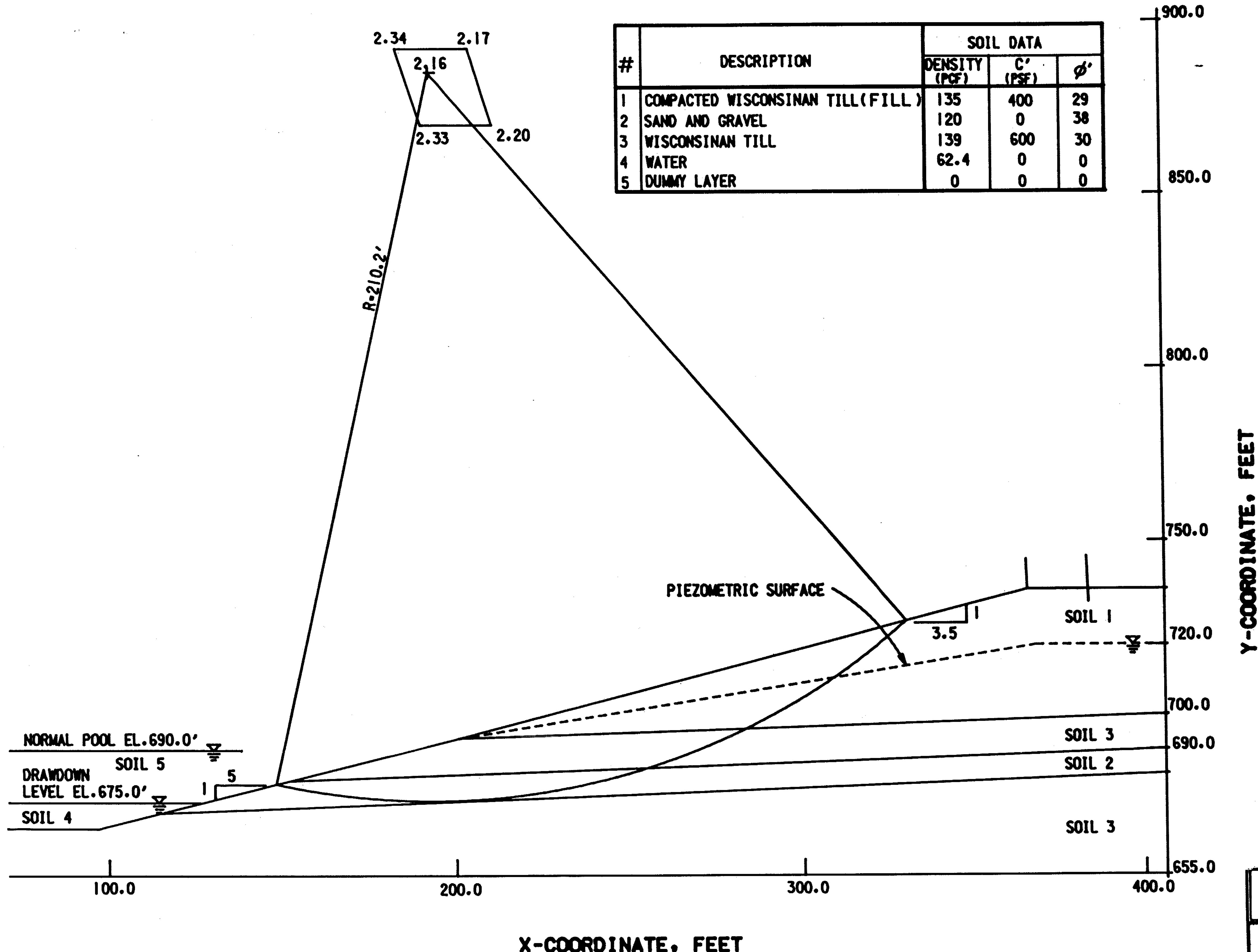
FIGURE 2.5-402

STABILITY ANALYSIS - EMPTY COOLING
LAKE CONDITION SECTION X-X,
ULTIMATE HEAT SINK



#	DESCRIPTION	SOIL DATA		
		DENSITY (PCF)	C' (PSF)	ϕ'
1	COMPACTED WISCONSINAN TILL(FILL)	135	400	29
2	SAND AND GRAVEL	120	0	38
3	WISCONSINAN TILL	139	600	30
4	WATER	62.4	0	0
5	DUMMY LAYER	0	0	0

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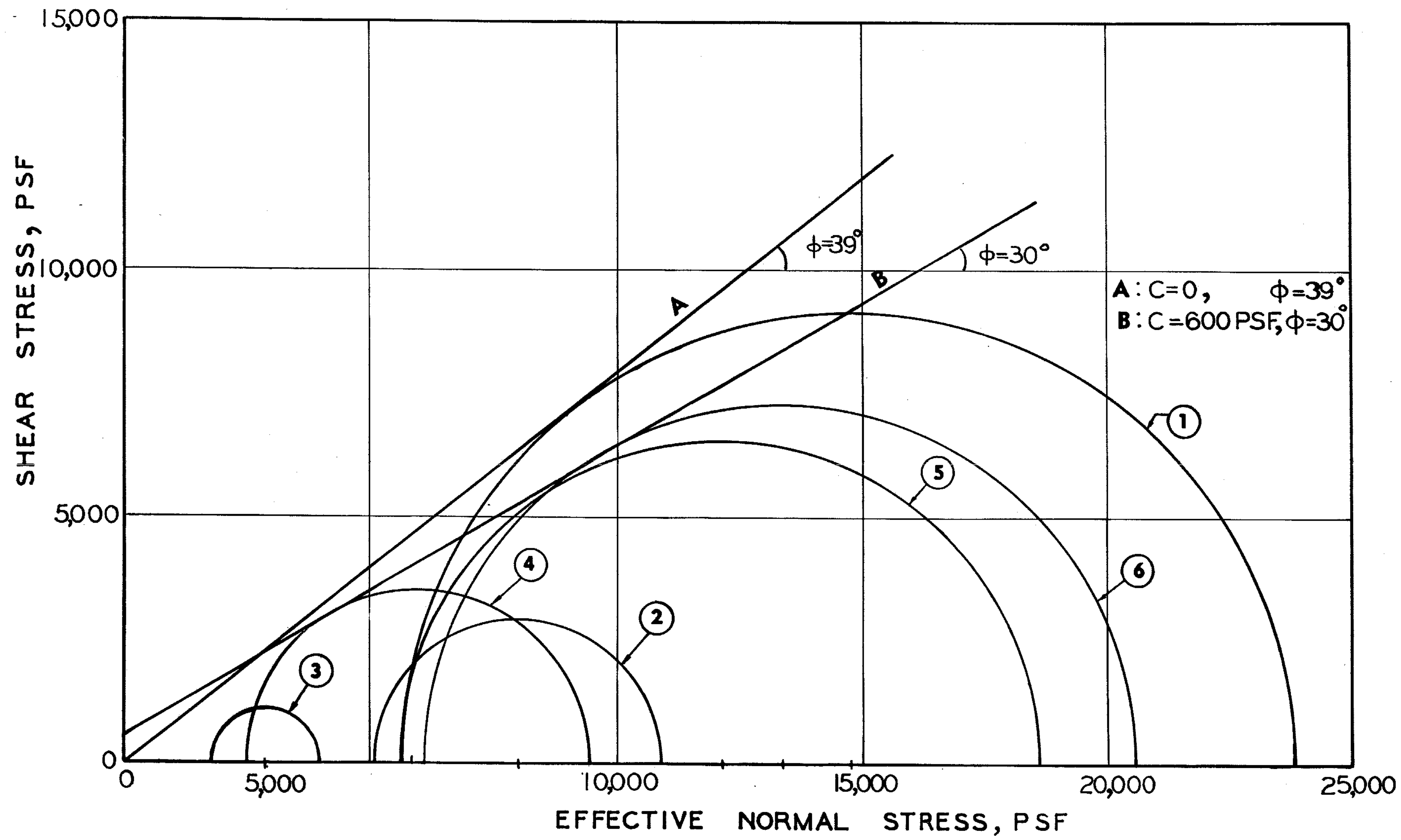
FIGURE 2.5-403

STABILITY ANALYSIS - EMPTY COOLING LAKE CONDITION SECTION H-H, ULTIMATE HEAT SINK

TRIAXIAL COMPRESSION TESTS

CONSOLIDATED UNDRAINED WITH PORE PRESSURE MEASUREMENTS

KEY	BORING	ELEVATION	SOIL TYPE	BLOW COUNTS/FT.	DRY DENSITY IN PCF
1	H-20	721.8	SP	85	130.3
2	H-38	712.9	ML	20	123.5
3	D-48	709.3	CL	9	123.0
4	H-23	707.3	ML	14	121.4
5	D-48	704.3	CL	21	123.8
6	D-48	689.3	CL	17	108.8



CLINTON POWER STATION
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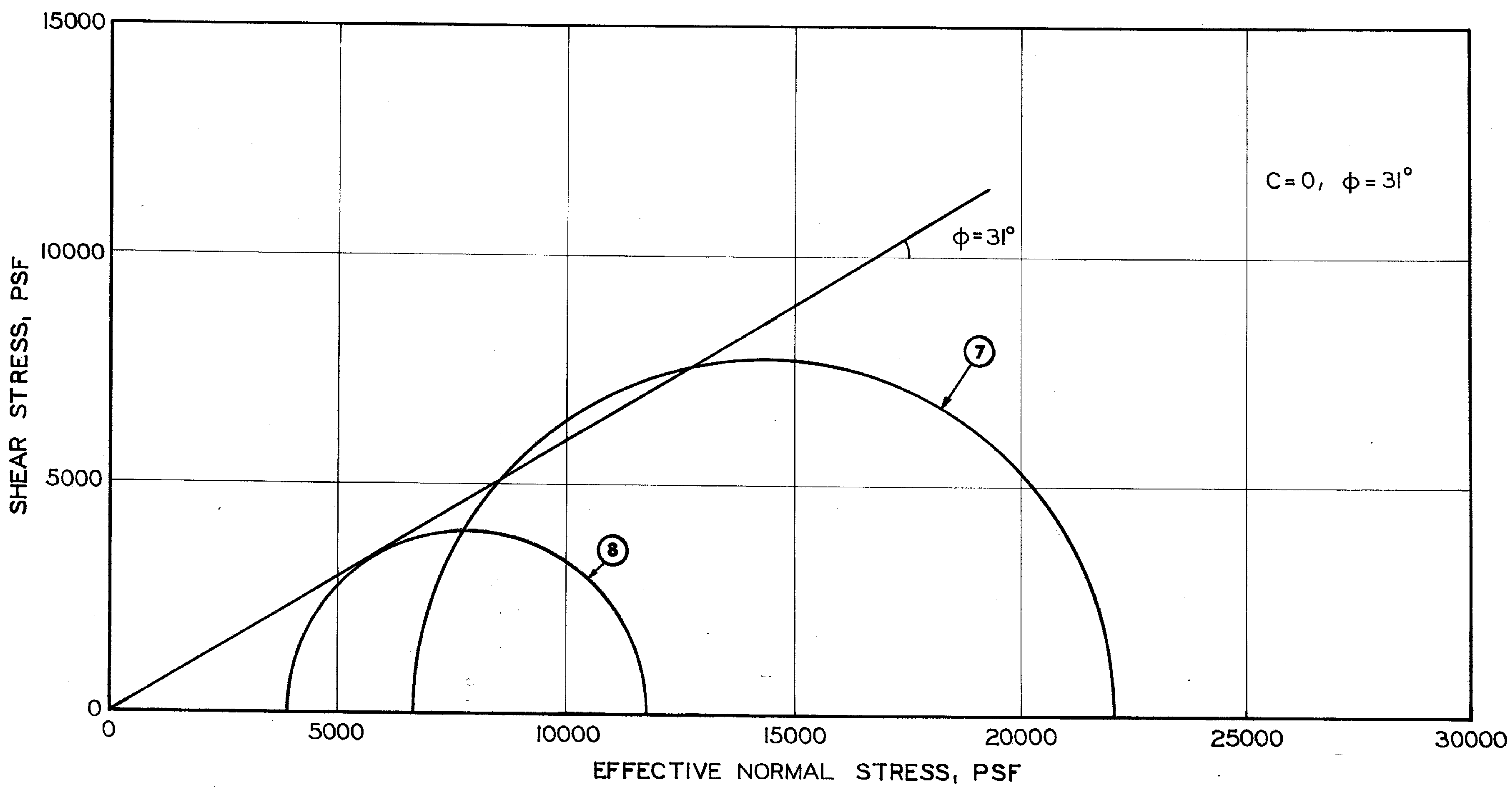
FIGURE 2.5-404

MOHR CIRCLES - WISCONSINAN GLACIAL TILL

TRIAXIAL COMPRESSION TESTS

CONSOLIDATED-UNDRAINED WITH PORE PRESSURE MEASUREMENTS

TEST NO.	BORING NO.	ELEVATION	SOIL TYPE	BLOW COUNT/FT.	DRY DENSITY IN PCF
7	H-23	692.3	ML	15	103
8	H-38	687.9	ML	8	–



CLINTON POWER STATION
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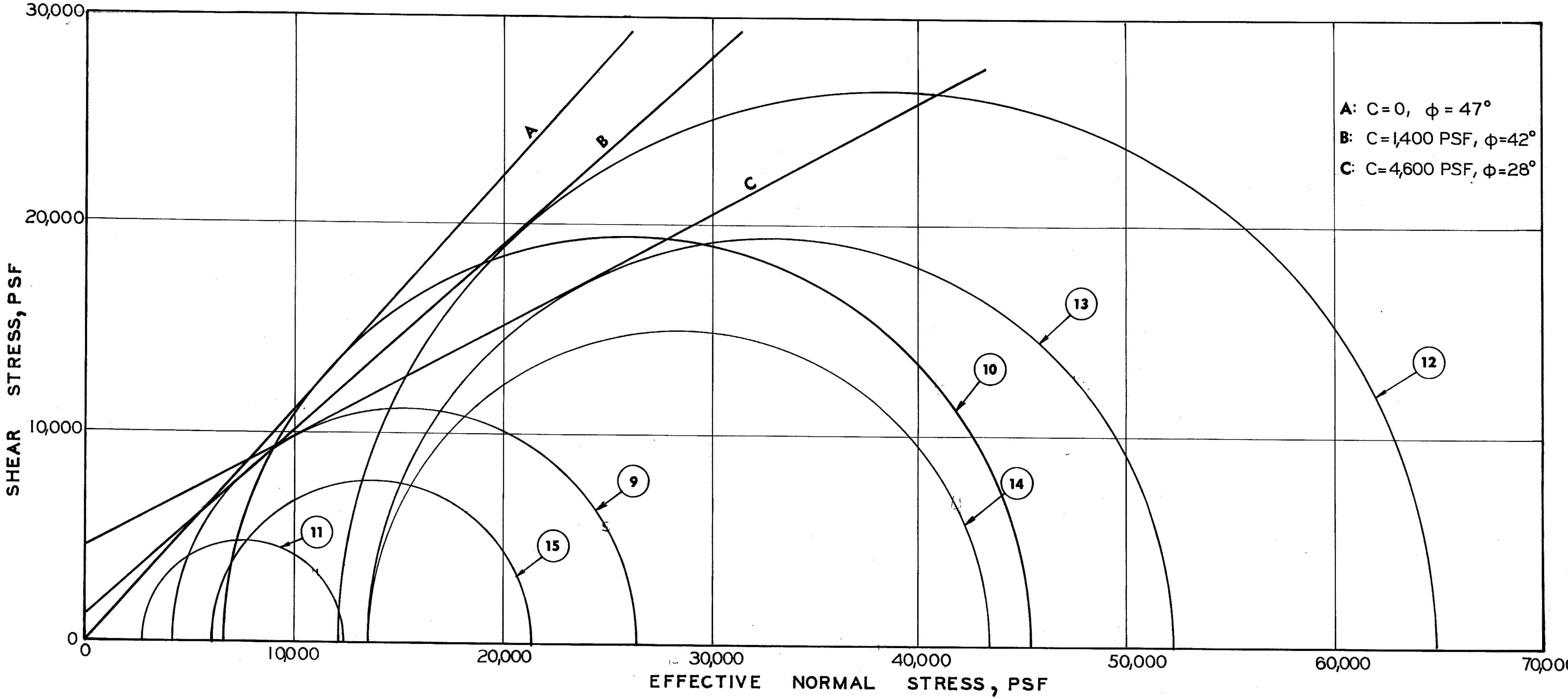
FIGURE 2.5-405

MOHR CIRCLES - INTERGLACIAL TILL

TRIAXIAL COMPRESSION TESTS

CONSOLIDATED — UNDRAINED WITH PORE PRESSURE MEASUREMENTS



KEY	BORING	ELEVATION	SOIL TYPE	BLOW COUNTS/FT	DRY DENSITY IN PCF
9	H-38	673.4	ML	154/11"	123.5
10	P-38	648.5	ML	100/6"	138
11	H-3	645.1	ML	60	139
12	H-25	633.7	ML	100/4"	146
13	D-8	631.7	ML	94	135.2
14	D-8	591.7	ML	83	132
15	H-6	504.3	ML	31	109

CLINTON POWER STATION
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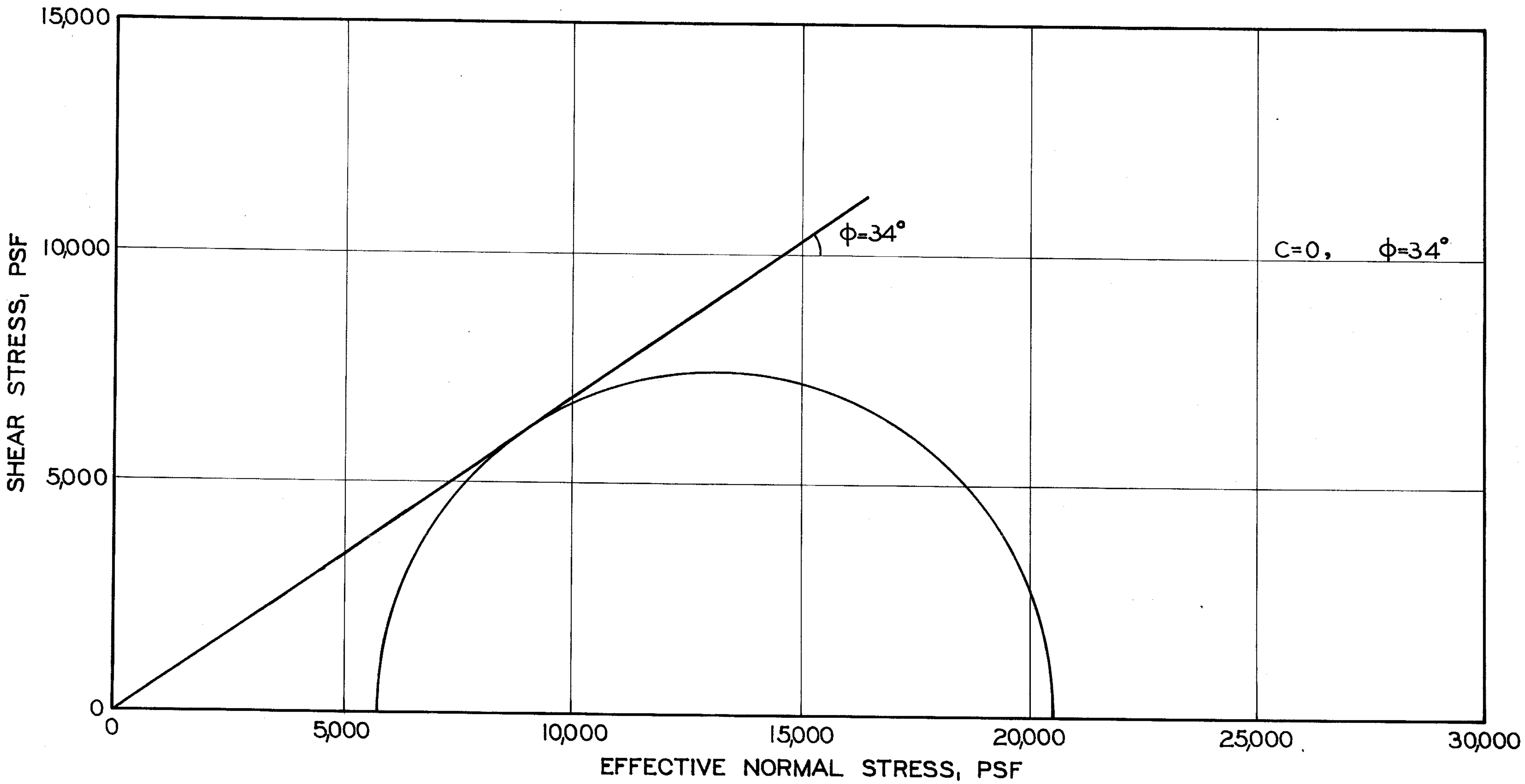
FIGURE 2.5-406

MOHR CIRCLES - ILLINOIAN GLACIAL TILL

TRIAXIAL COMPRESSION TEST
CONSOLIDATED-UNDRAINED WITH PORE PRESSURE MEASUREMENTS

KEY	BORING	ELEVATION	SOIL TYPE	BLOW COUNTS/FT.	DRY DENSITY IN PCF
16	P-38	572.9	ML	48	125.9



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

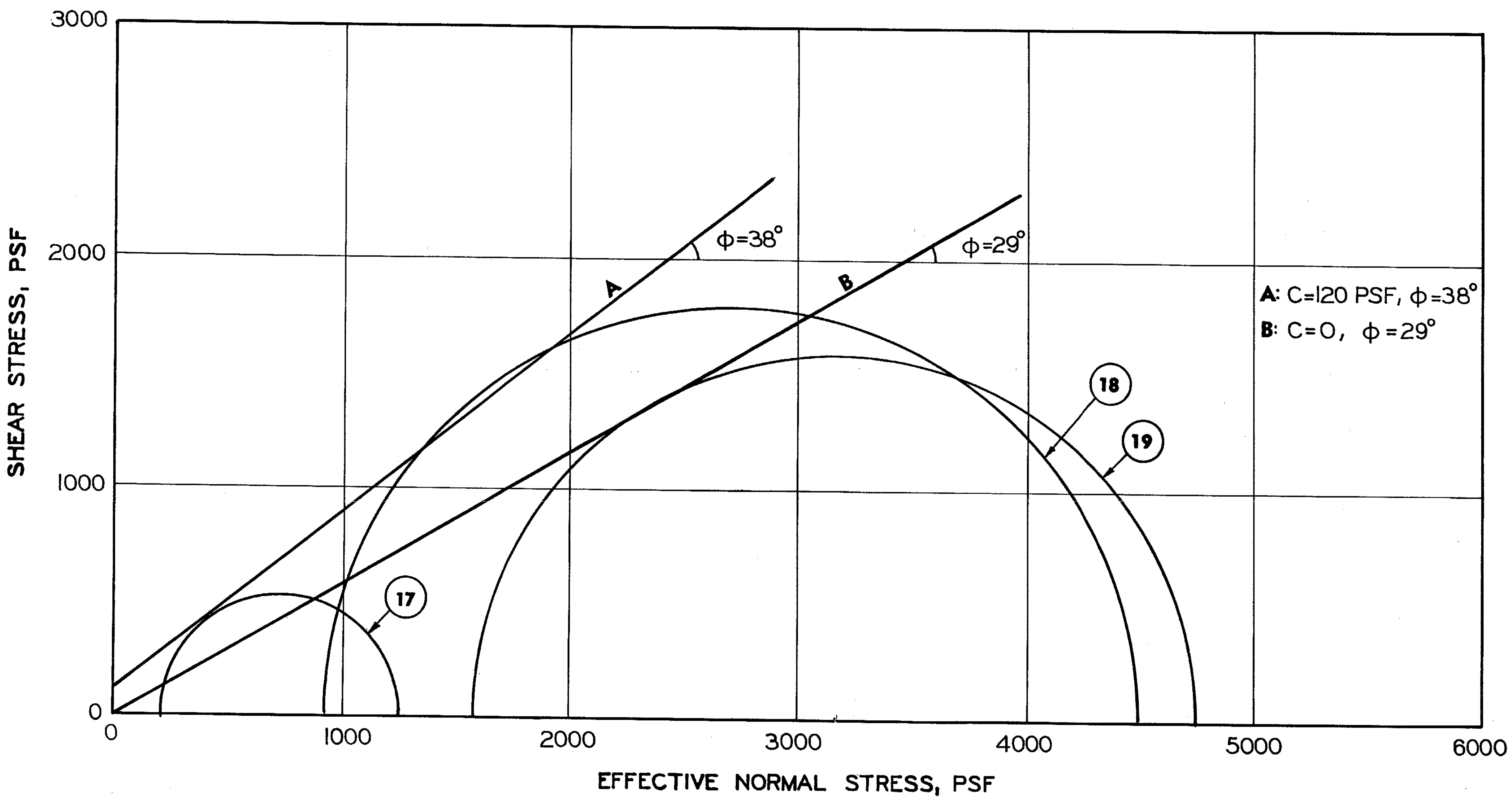
FIGURE 2.5-407

MOHR CIRCLE - LACUSTRINE DEPOSITS

TRIAXIAL COMPRESSION TESTS

CONSOLIDATED-UNDRAINED WITH PORE PRESSURE MEASUREMENTS

KEY	BORING	ELEVATION	SOIL TYPE	BLOW COUNT/FT.	DRY DENSITY IN PCF
17	H-25	674.7	ML	3	–
18	H-13	673.6	ML	6	102
19	H-24	670.7	SM	2	–

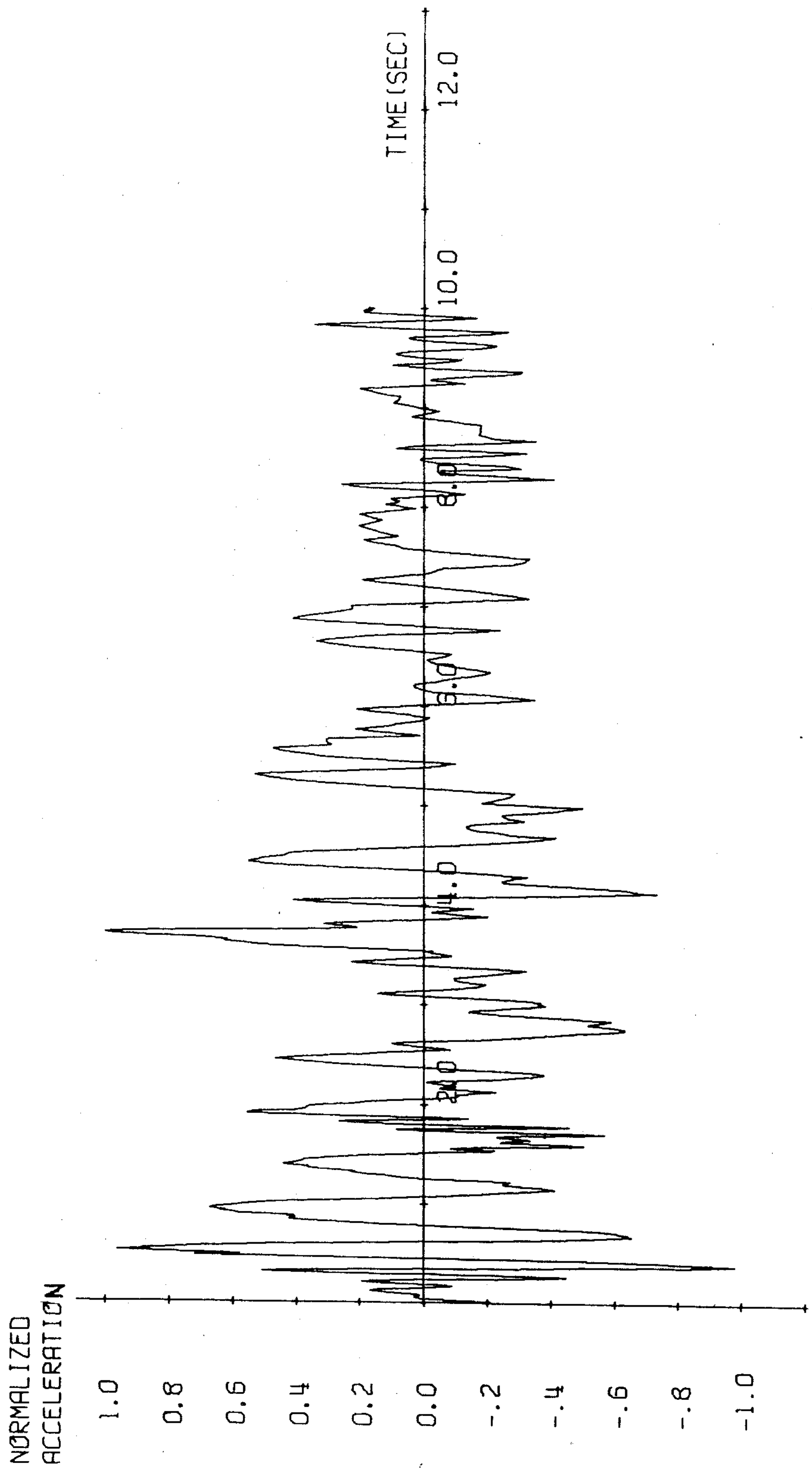


CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-408

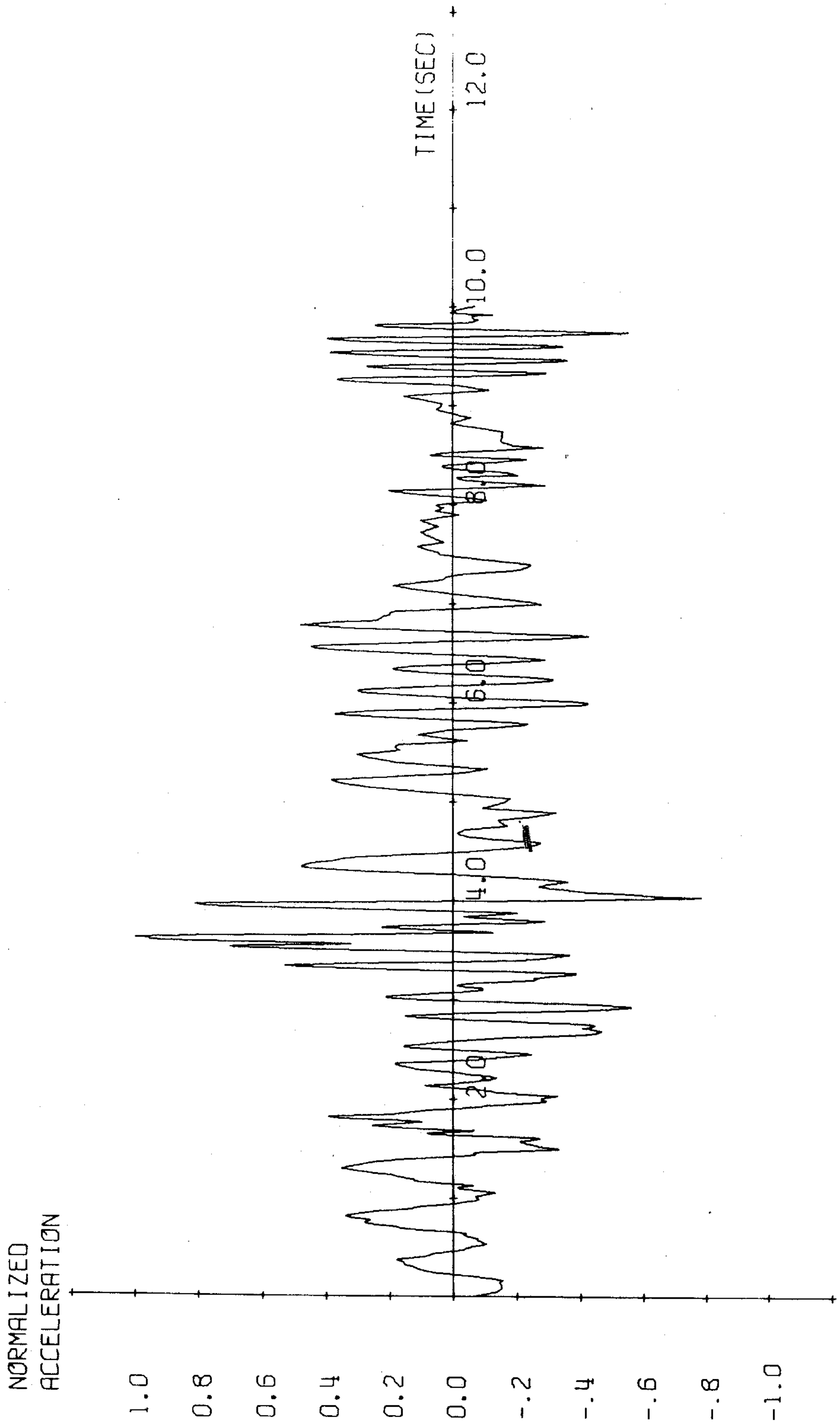
MOHR CIRCLES - SALT CREEK ALLUVIUM



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-409

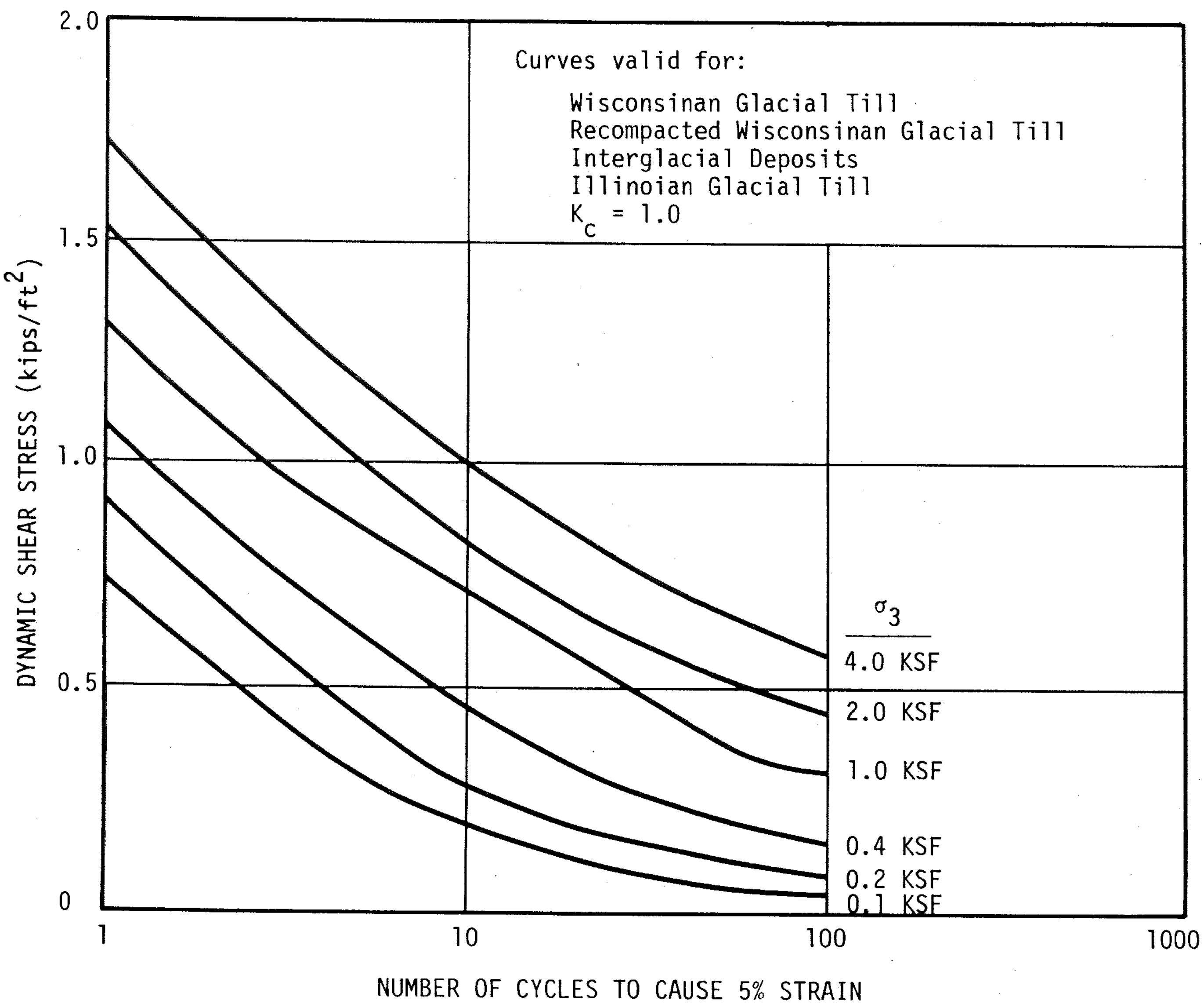
ARTIFICIAL ACCELEROGRAM FOR
HORIZONTAL GROUND MOTION



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-410

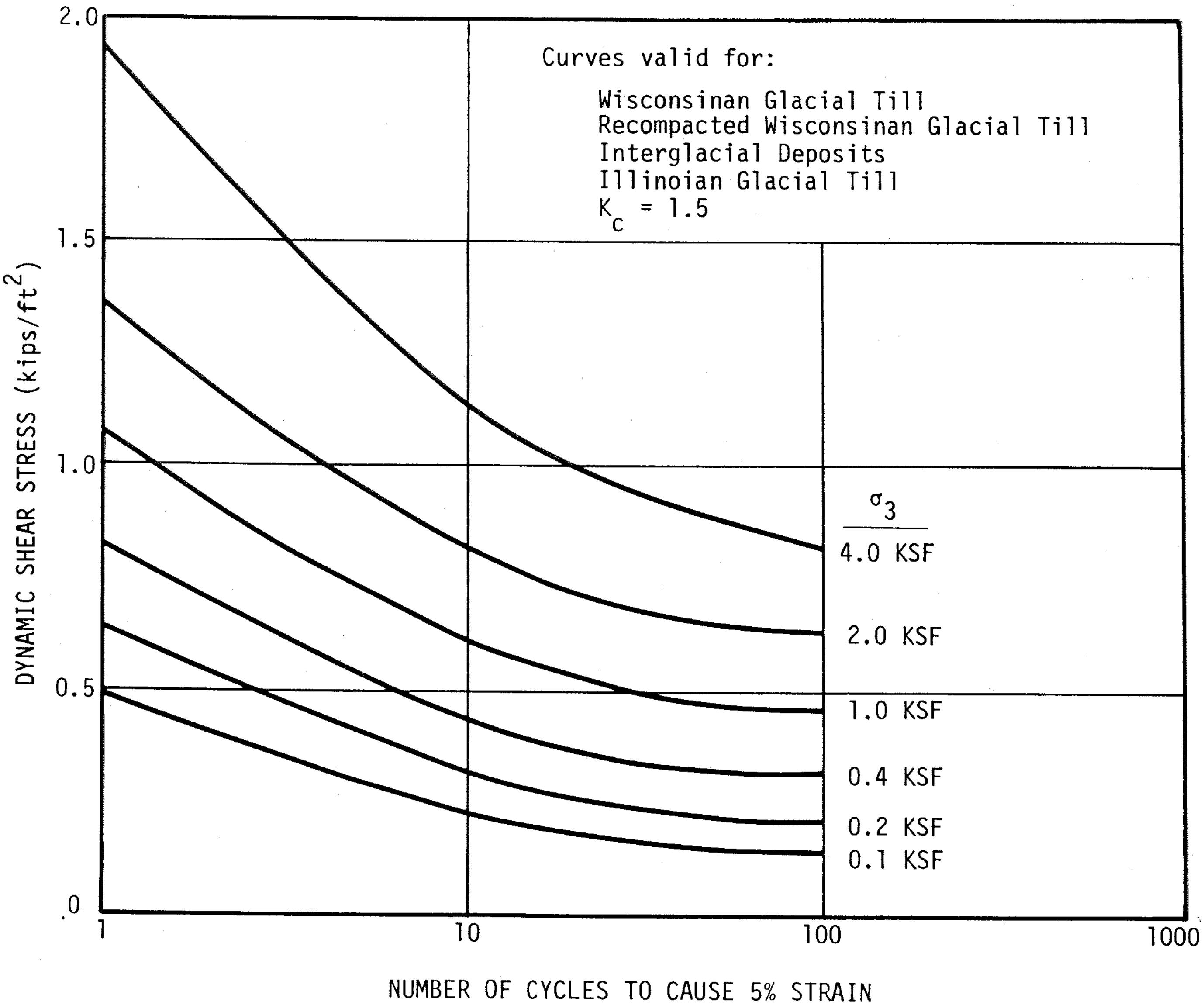
ARTIFICIAL ACCELEROGRAM FOR
VERTICAL GROUND MOTION



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-411

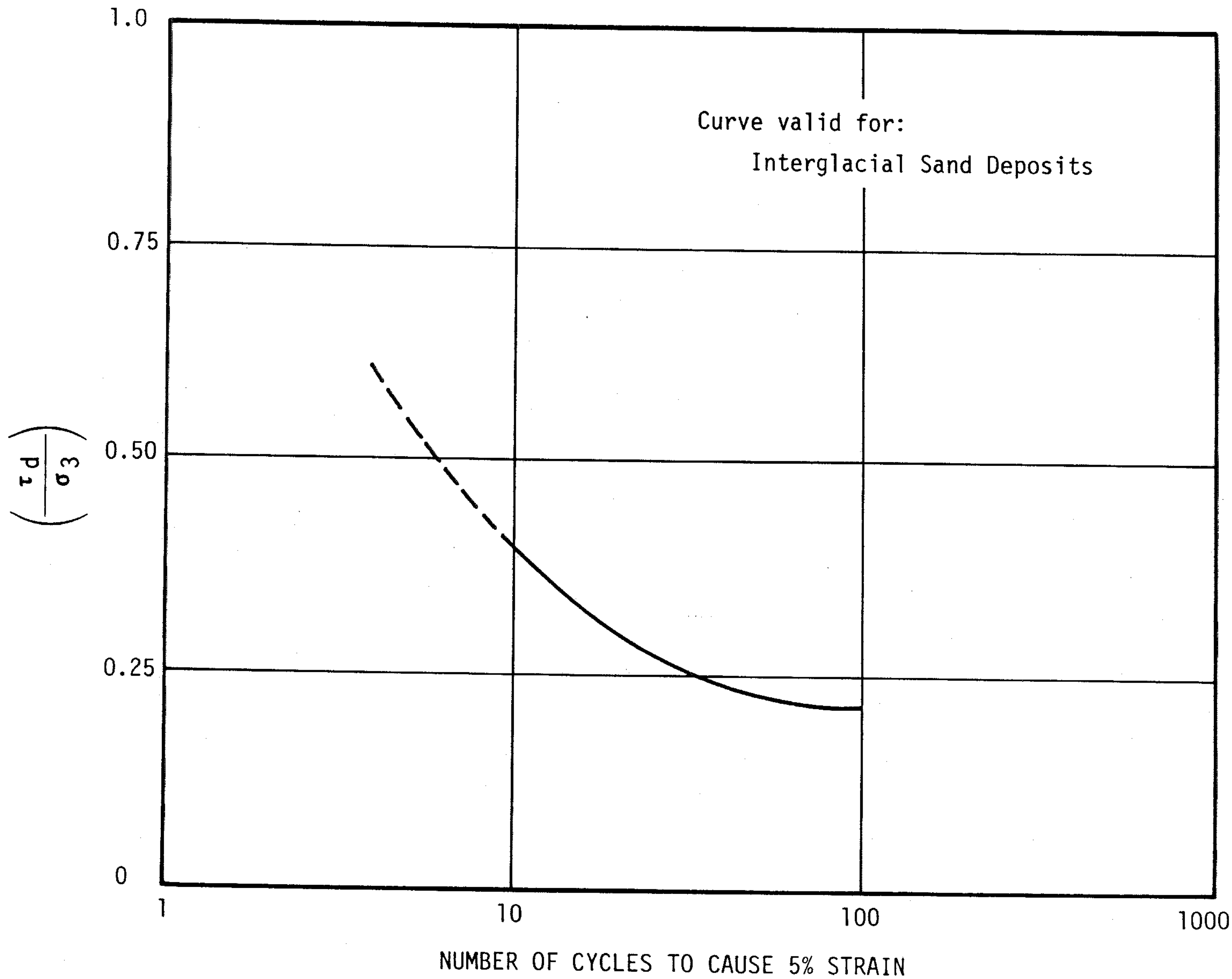
DYNAMIC SHEAR STRESS VS. NUMBER OF CYCLES TO CAUSE 5% STRAIN - K_c = 1.0



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-412

DYNAMIC SHEAR STRESS VS. NUMBER OF CYCLES TO CAUSE 5% STRAIN - K_c = 1.5

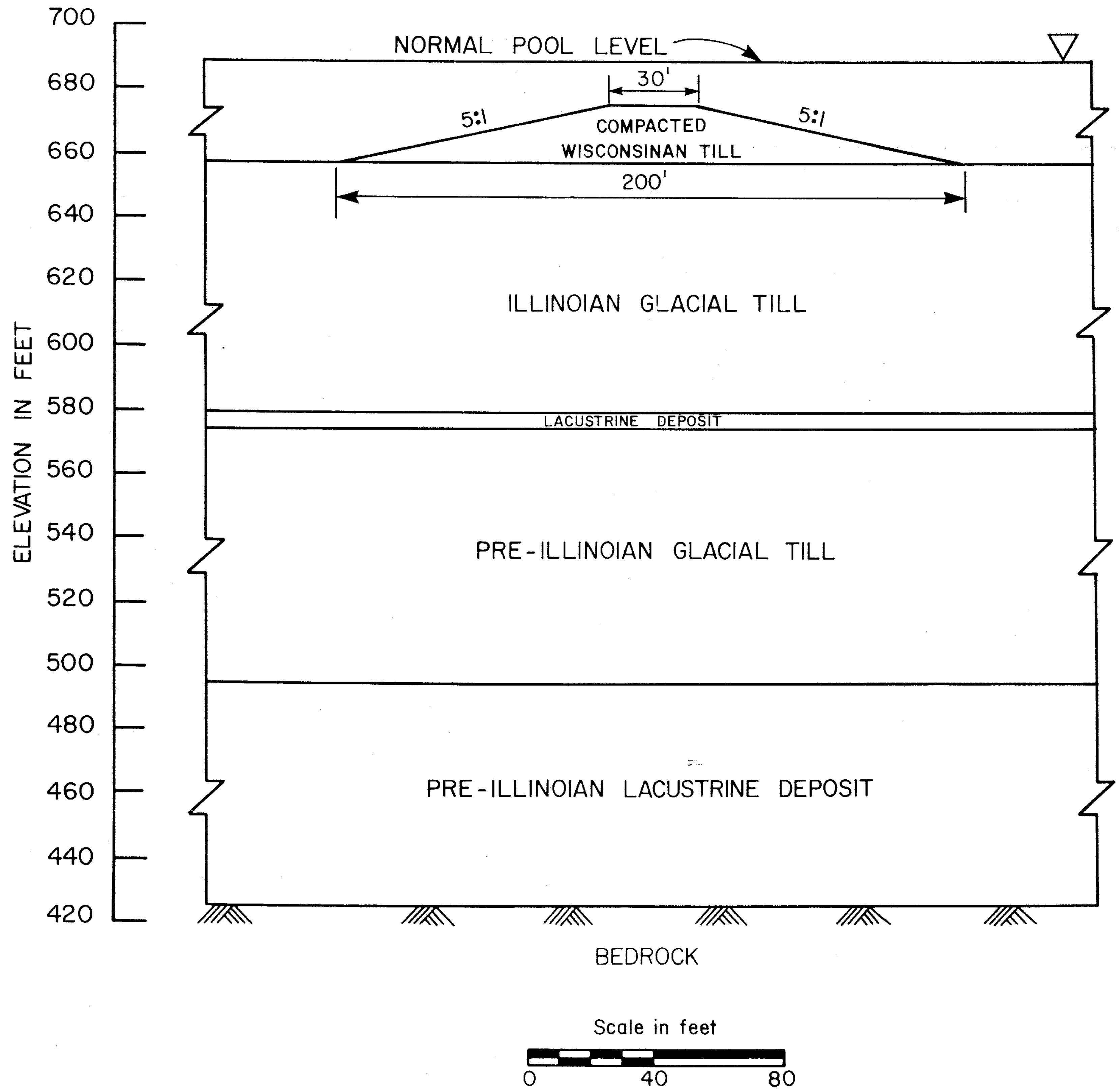


CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-413

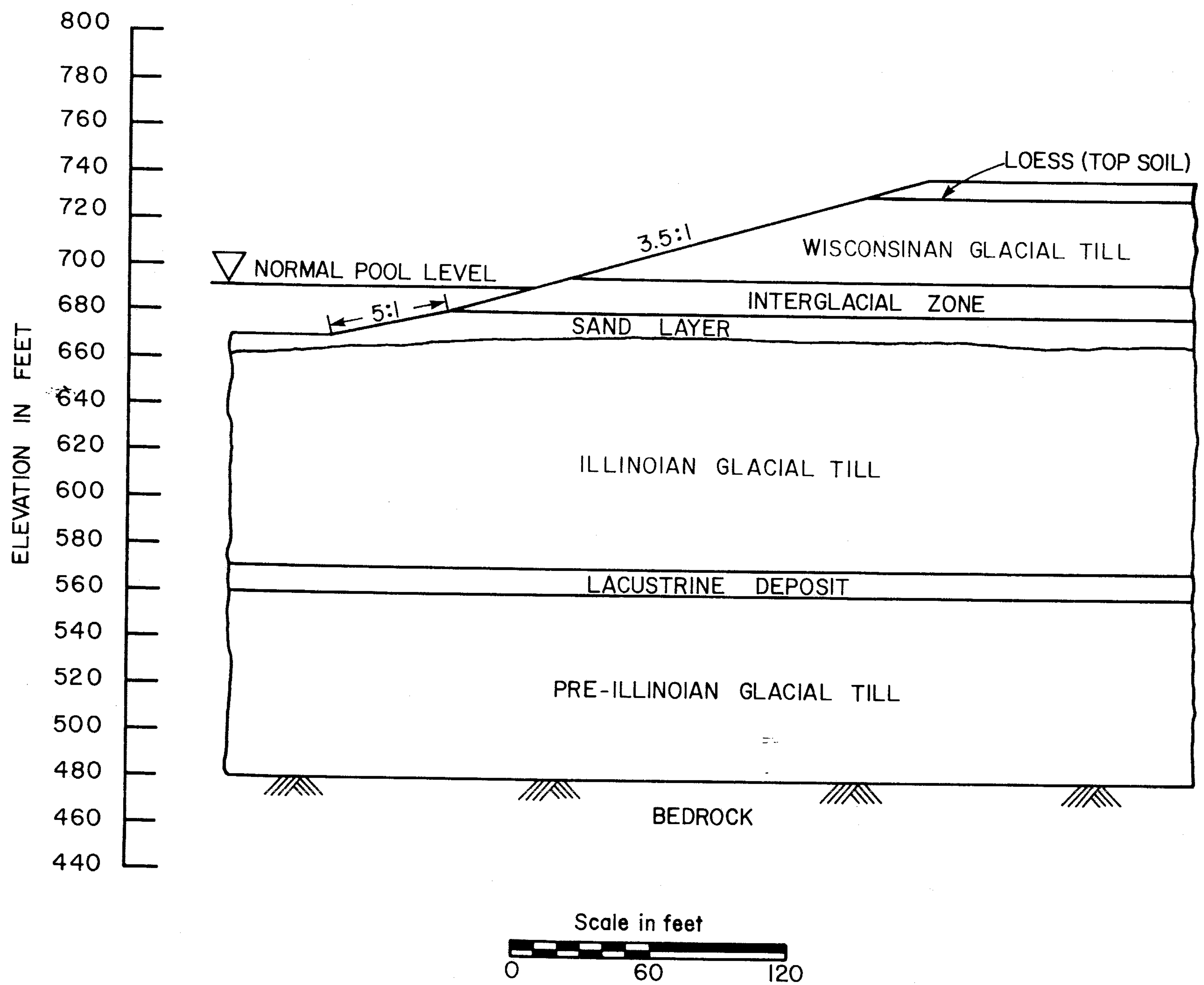
DYNAMIC SHEAR STRESS TO MINOR PRINCIPAL STRESS RATIO VS. NUMBER OF CYCLES TO CAUSE 5% STRAIN



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-414

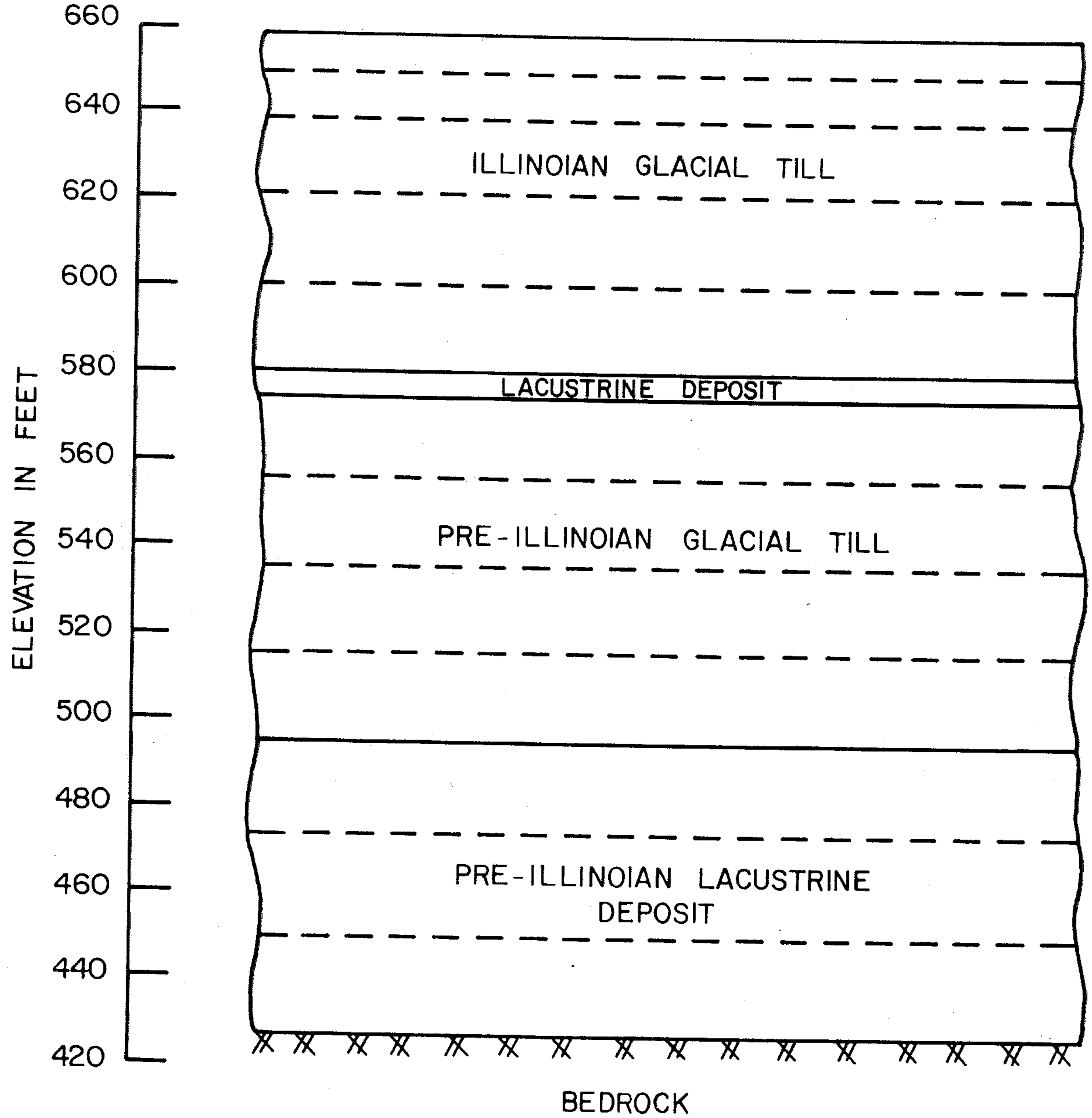
SUBMERGED DIKE - CROSS SECTION ANALYZED FOR SEISMIC STABILITY



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-415

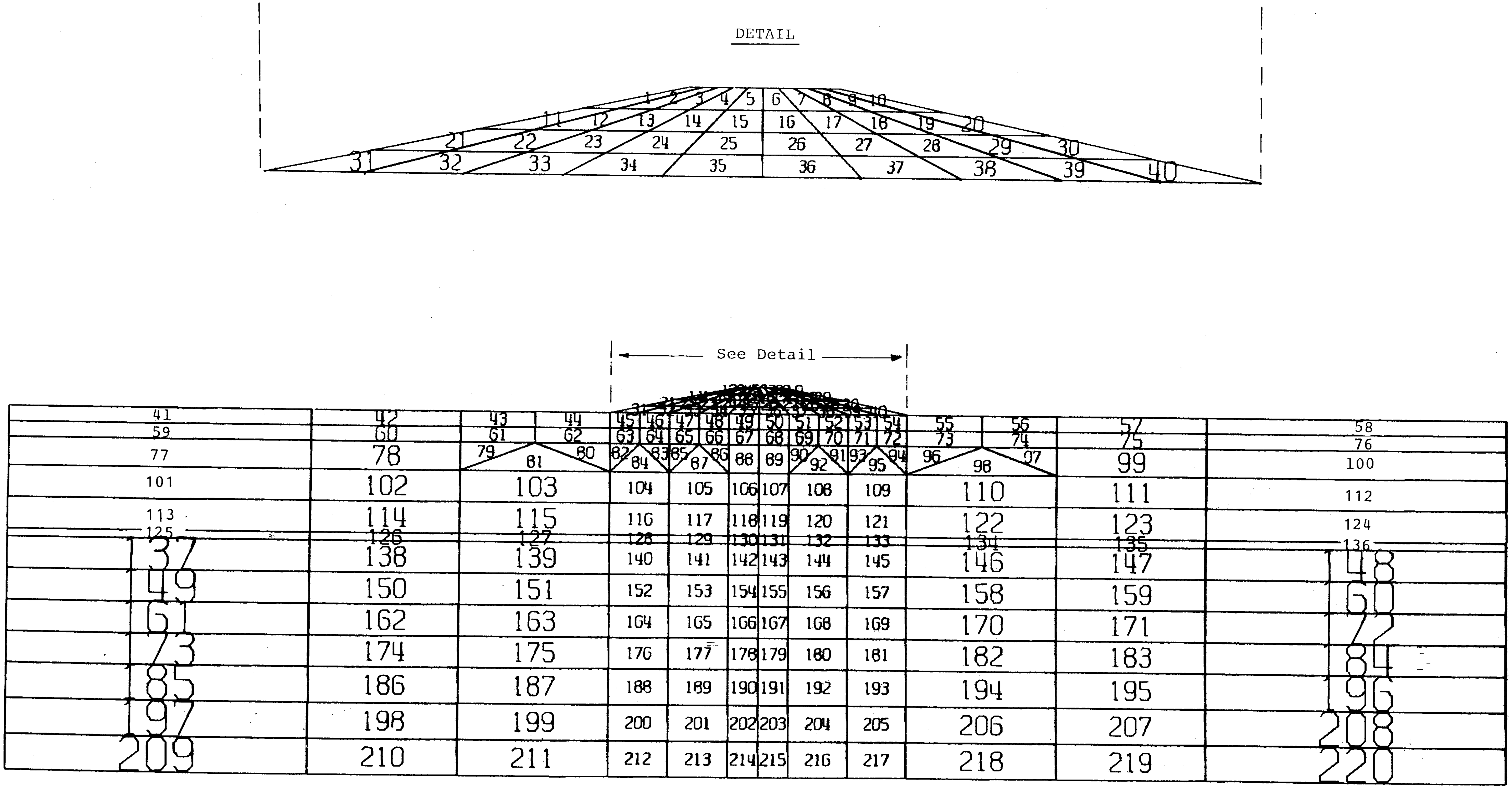
NATURAL SLOPE - CROSS SECTION ANALYZED FOR SEISMIC STABILITY



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-416

SHEAR LAYER MODEL FOR THE SUBMERGED DIKE FOUNDATION

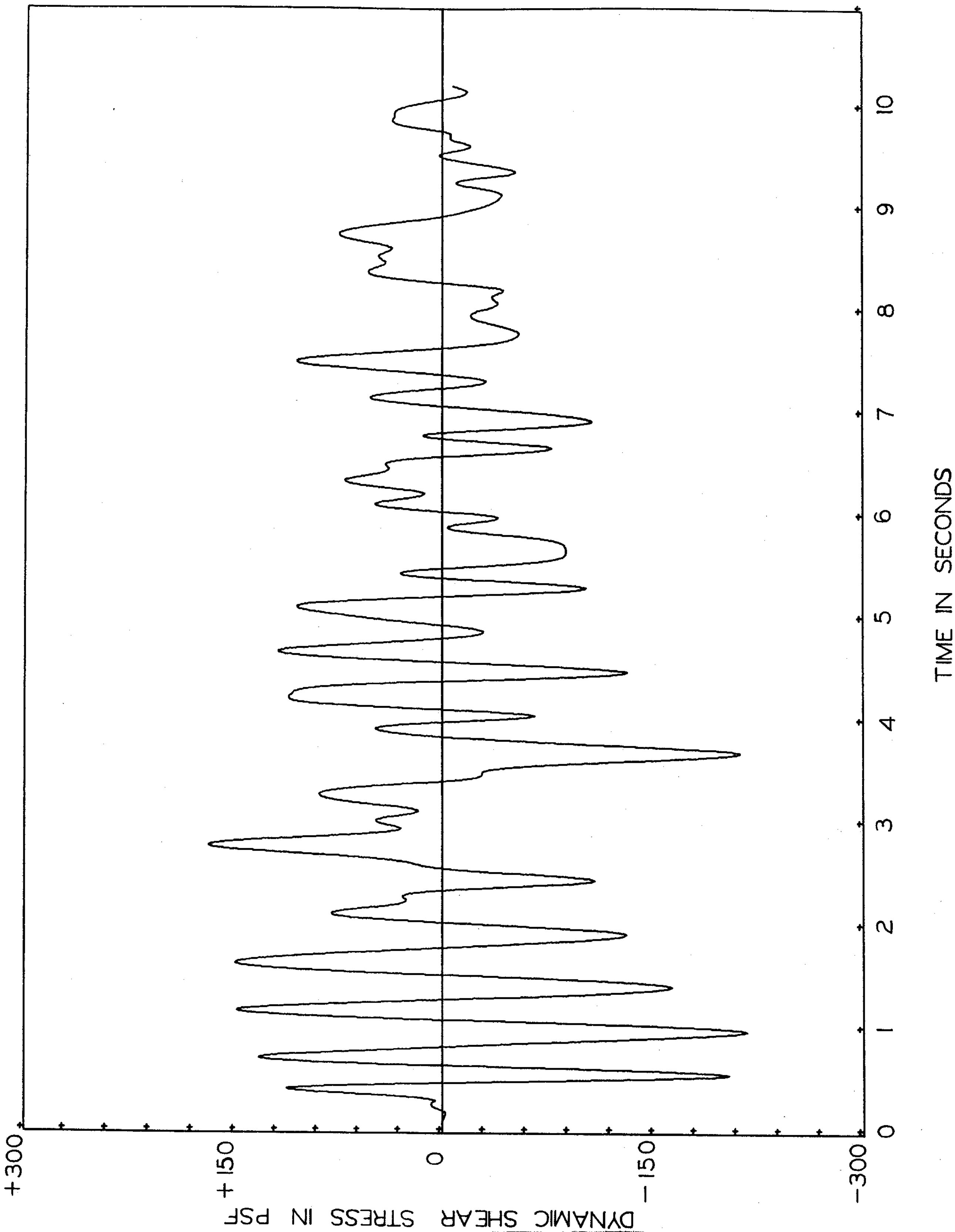


SCALE= 1./ 66.667

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-417

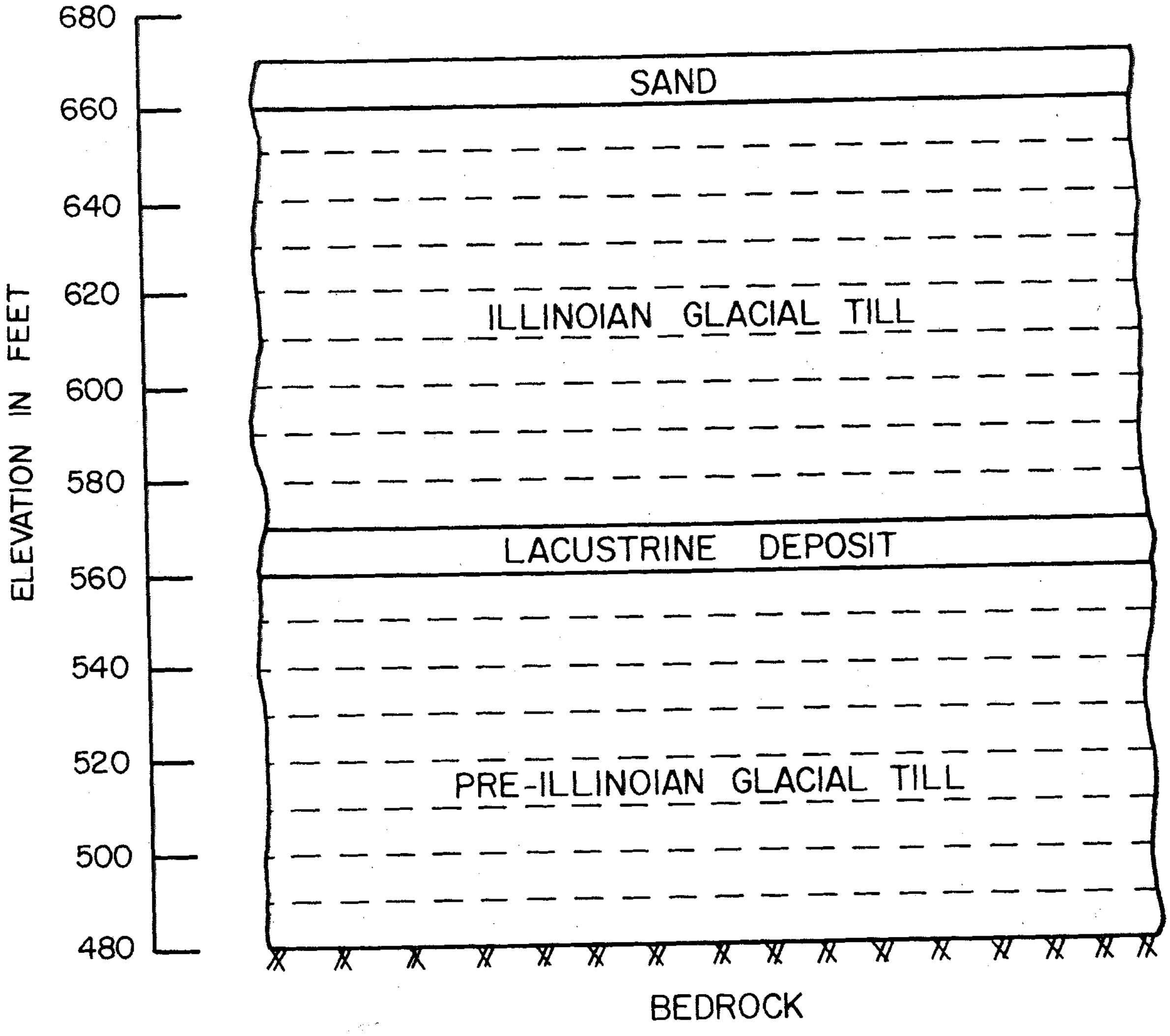
FINITE ELEMENT MODEL FOR THE DIKE



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-418

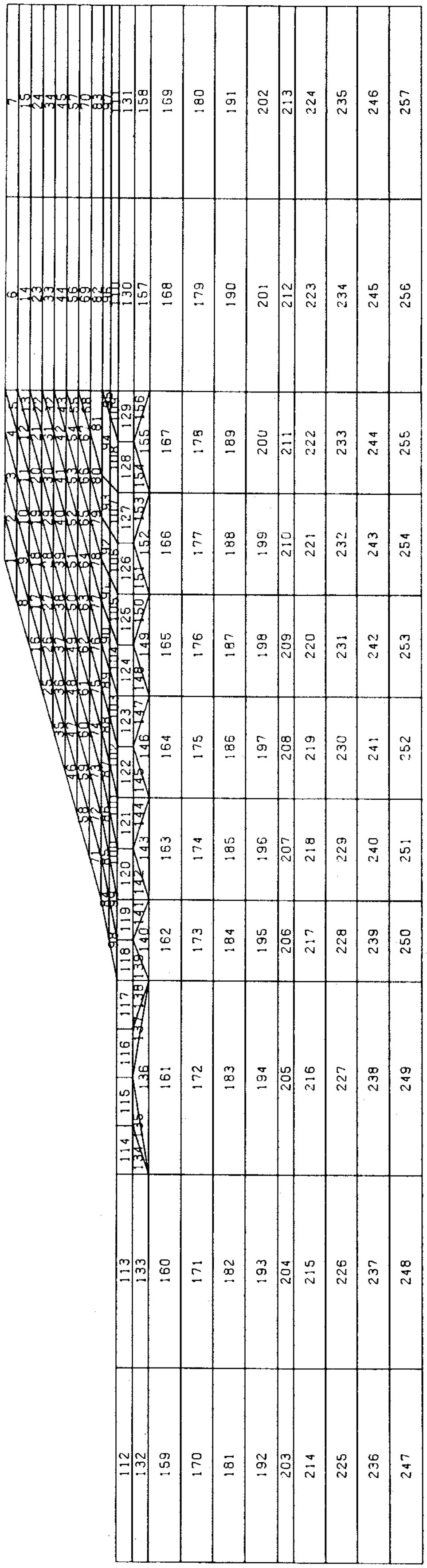
TYPICAL SHEAR STRESS TIME HISTORY



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-419

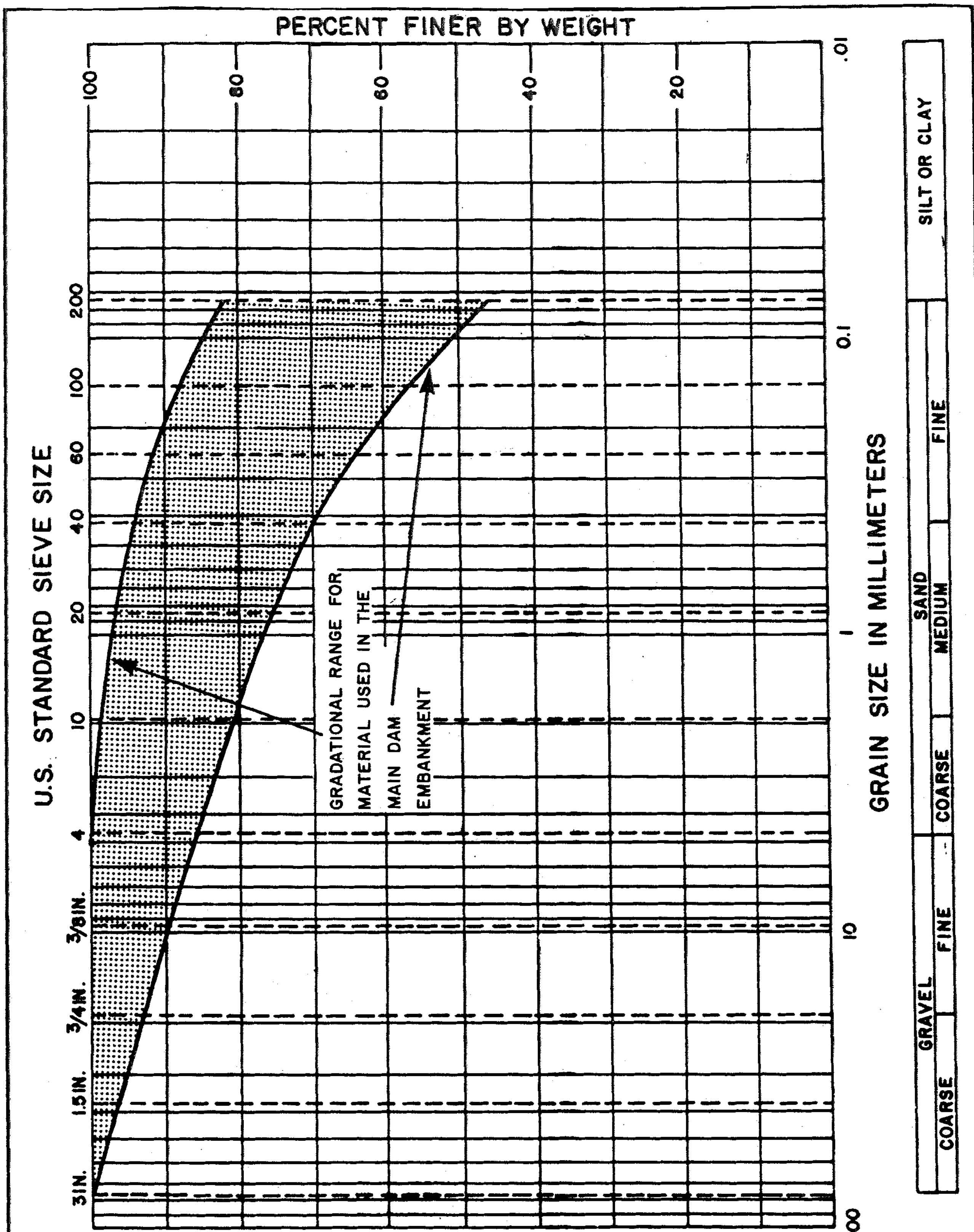
SHEAR LAYER MODEL FOR NATURAL SLOPE FOUNDATION



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-420

FINITE ELEMENT MODEL USED FOR NATURAL SLOPE STABILITY ANALYSIS



NOTE:

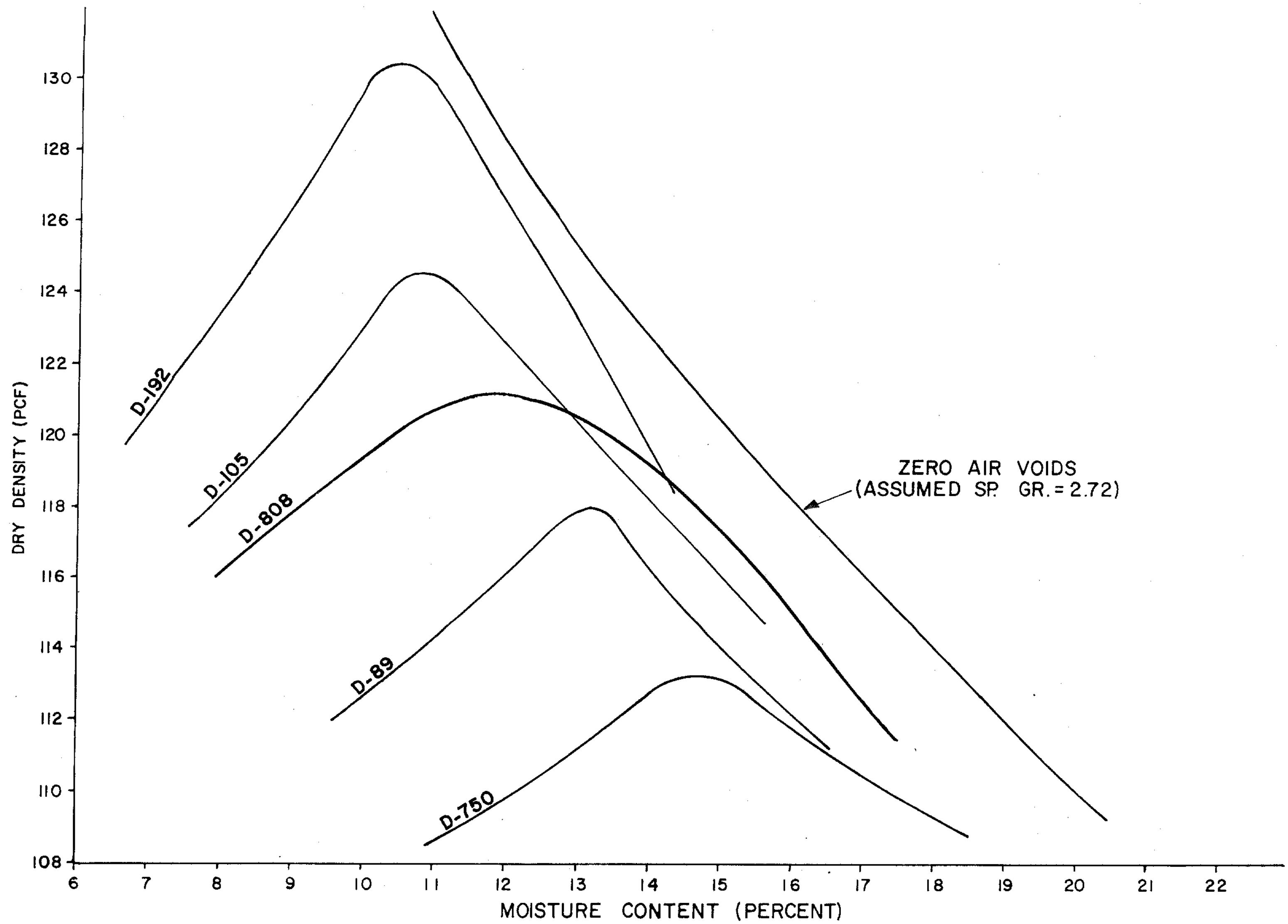
The gradational range for the embankment materials is based on a composite of grain size analyses performed.

CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-421

GRADATION OF EMBANKMENT MATERIALS - MAIN DAM



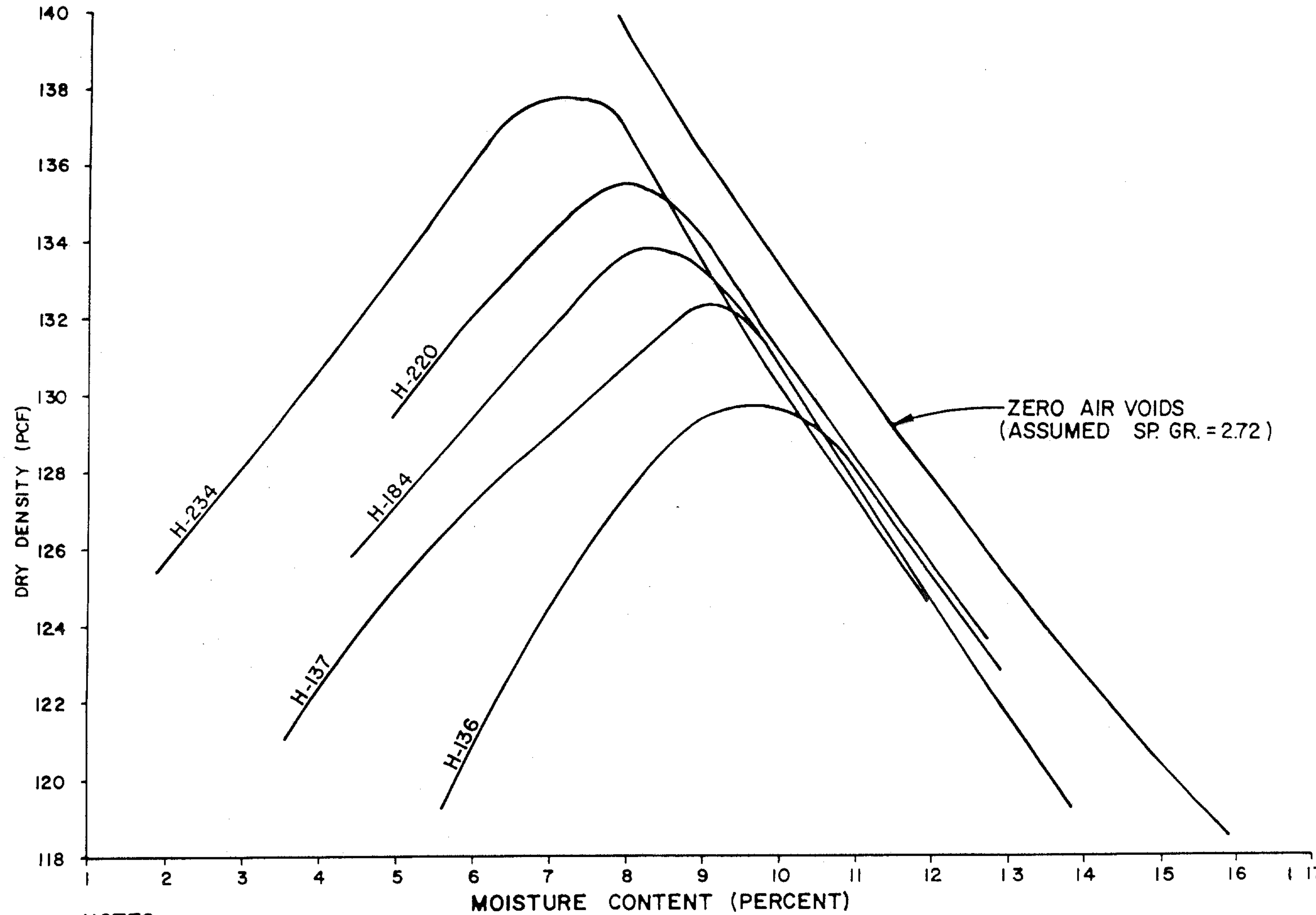
NOTES

1. Moisture density relationships based on standard Proctor test ASTM D698.
2. Data based on field laboratory testing of type A material used as fill for Main Dam.
3. D-192, D-105, D-808, D-89 and D-750 denote field sample numbers.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-422

TYPICAL MOISTURE - DENSITY RELATIONSHIP - MAIN DAM



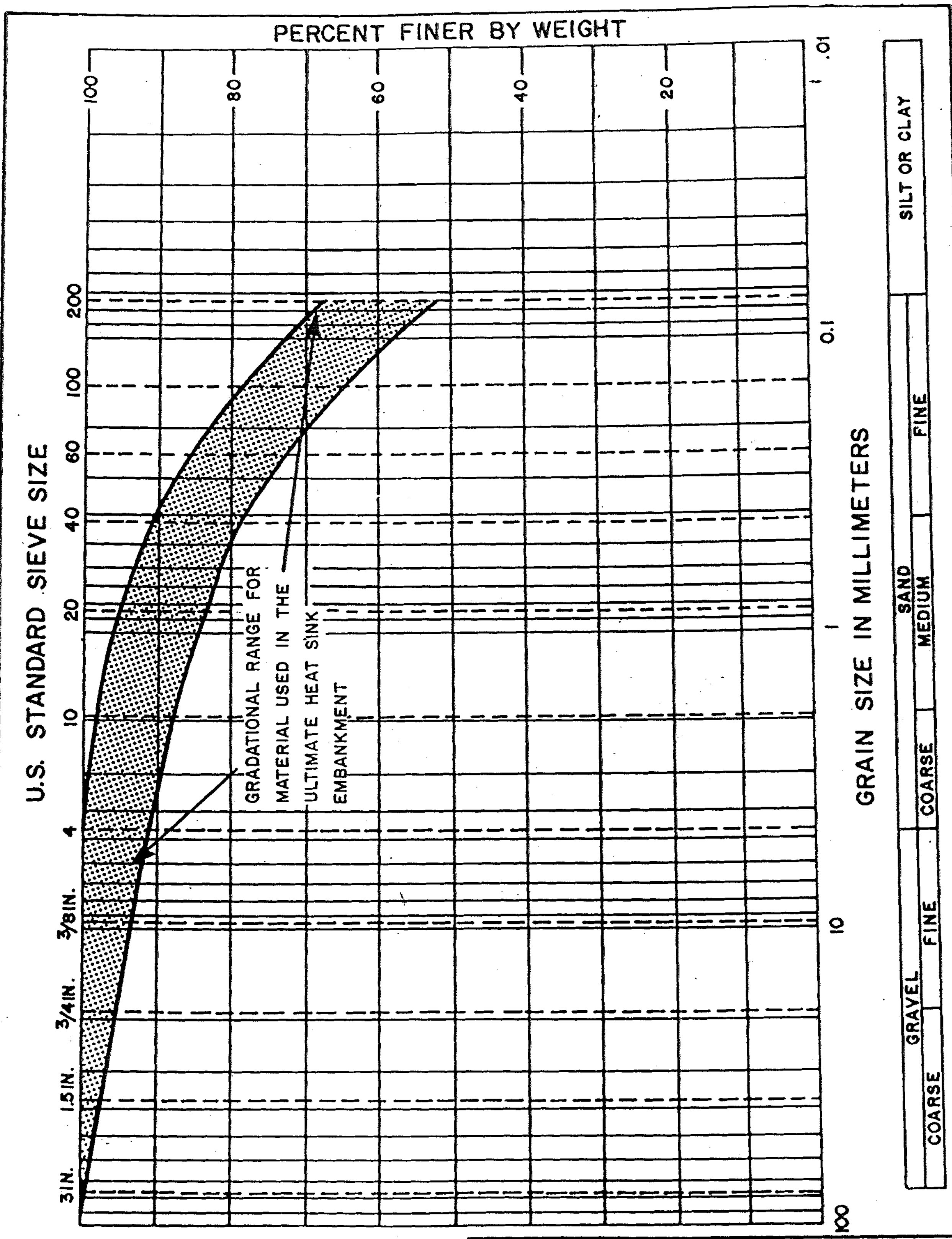
NOTES

1. Moisture density relationships based on modified Proctor test ATSM D1557.
2. Data based on field laboratory testing type A material used as fill for ultimate heat sink dam and baffel dike.
3. H-234, H-220, H-184, H-137 and H-136 denote field sample numbers.

CLINTON POWER STATION
FINAL SAFETY ANALYSIS REPORT

FIGURE 2.5-423

TYPICAL MOISTURE-DENSITY RELATIONSHIPS - ULTIMATE HEAT SINK



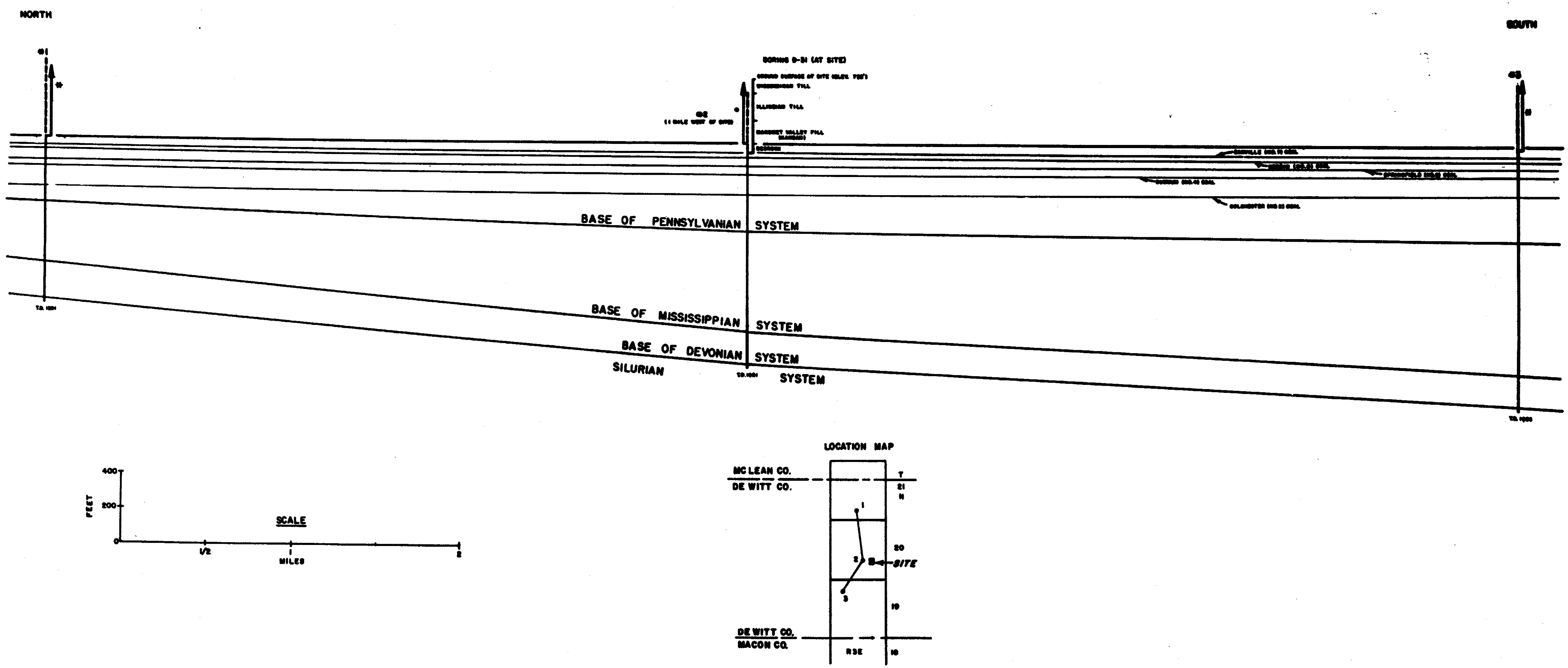
CLINTON POWER STATION
FINAL SAFETY ANALYSIS REPORT

FIGURE 2.5-424

GRADATION OF EMBANKMENT MATERIALS - ULTIMATE HEAT SINK

NOTE:

The gradational range for the embankment materials is based on a composite of grain size analyses performed.



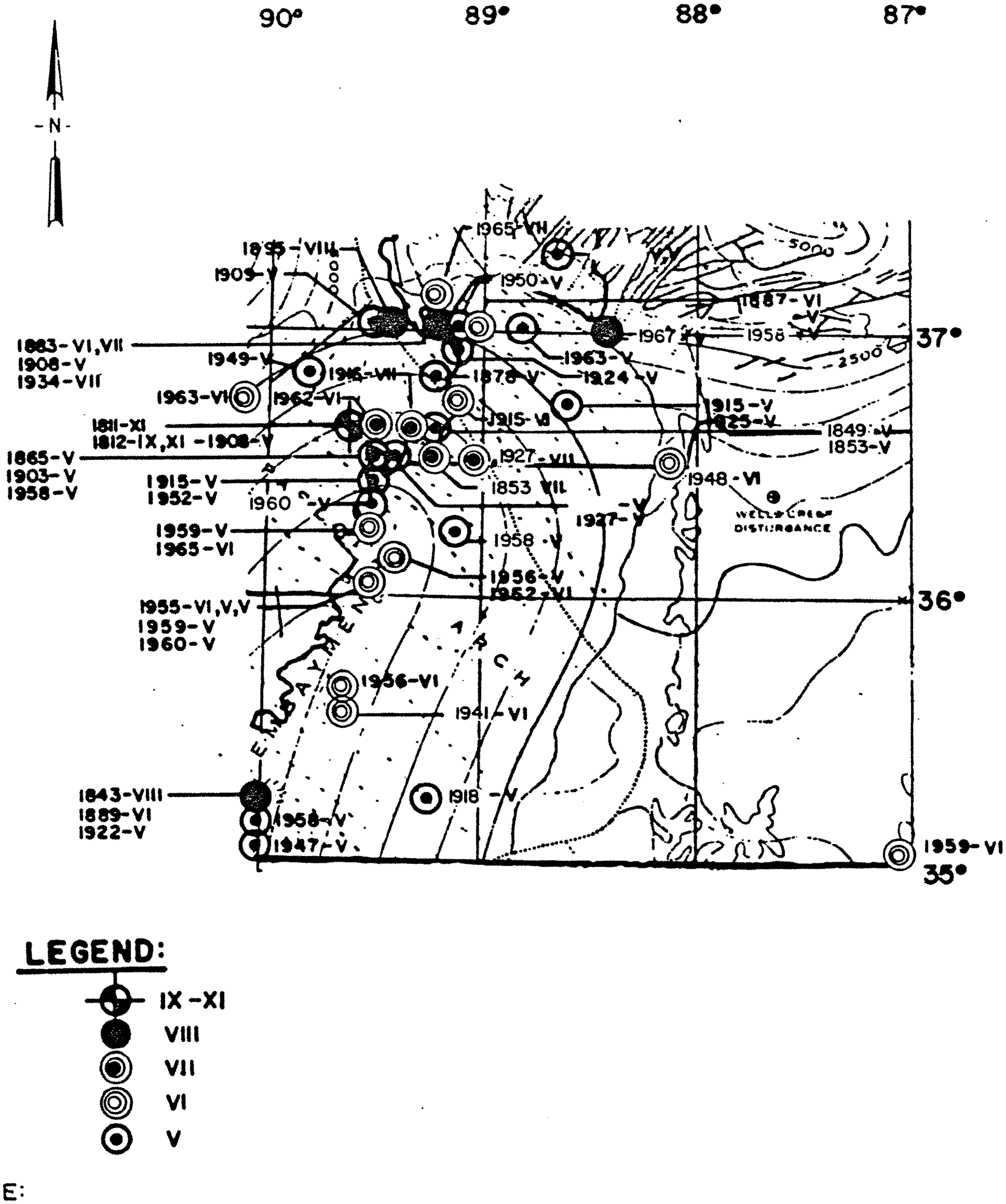
NOTE:

1. * NOT PROVIDED IN AVAILABLE LOG
2. COMPILED FROM DATA TABULATED IN: ILLINOIS GEOLOGICAL SURVEY CIRCULAR 377.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-425

REGIONAL CORRELATION BETWEEN DEEP BORINGS



NOTE:

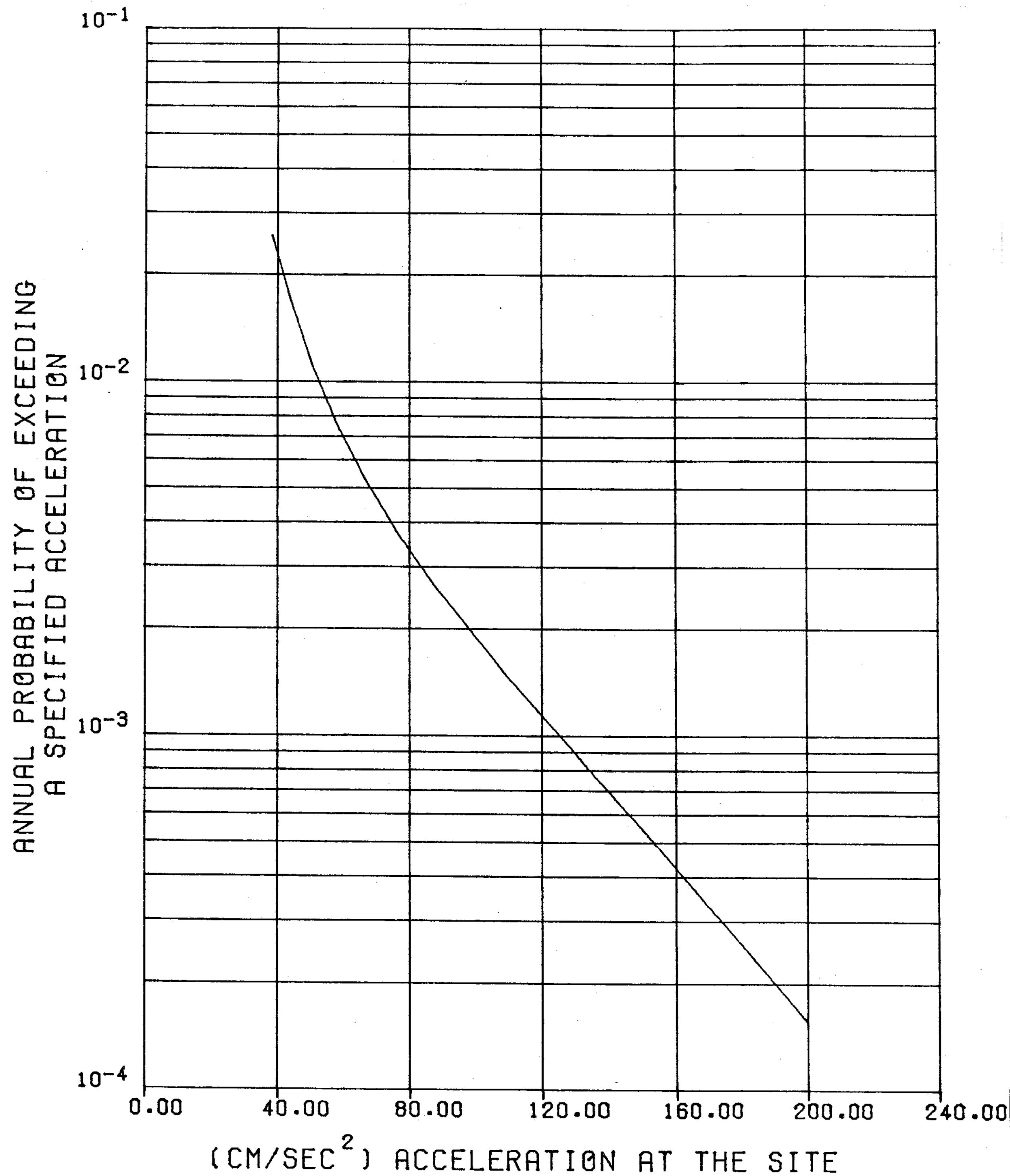
FROM TECTONIC MAP OF THE UNITED STATES, UNITED STATES GEOLOGICAL SURVEY AND AMERICAN ASSOCIATION OF PETROLEUM GEOLOGISTS, 1962.

EARTHQUAKE DATA COMPILED FROM COFFMAN, J.L. AND VONHAKE, C.A. (1973) EARTHQUAKE HISTORY OF THE UNITED STATES, U.S. DEPT. COMMERCE, NOAA, PUBLICATION 41-1 AND FROM OTHER SOURCES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-426

EARTHQUAKE EPICENTER MAP - BELOW 37°



CLINTON SEISMIC RISK ANALYSIS

CLINTON POWER STATION

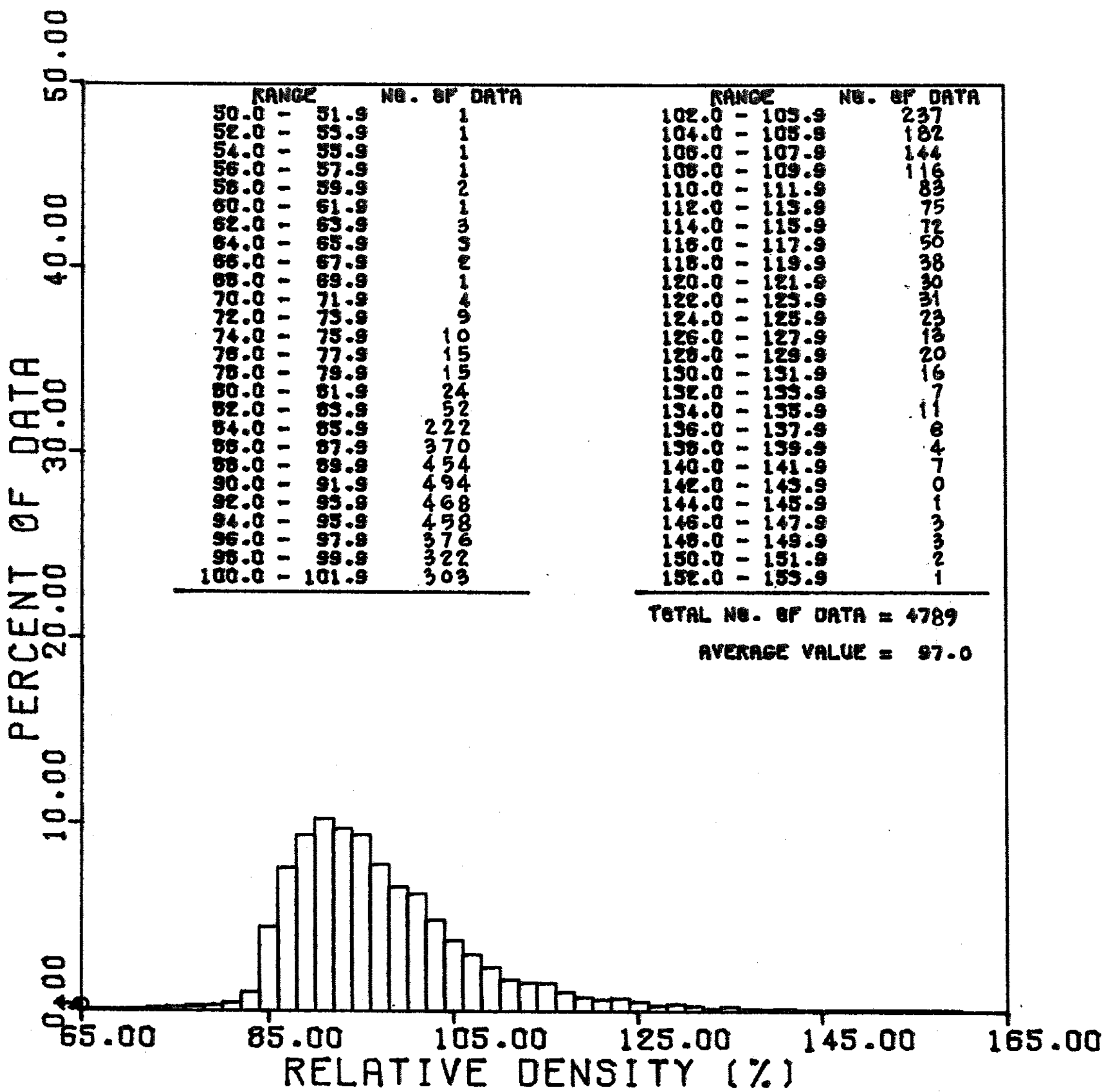
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-427

SEISMIC RISK CURVE

G-6249

DISTRIBUTION OF RELATIVE DENSITY



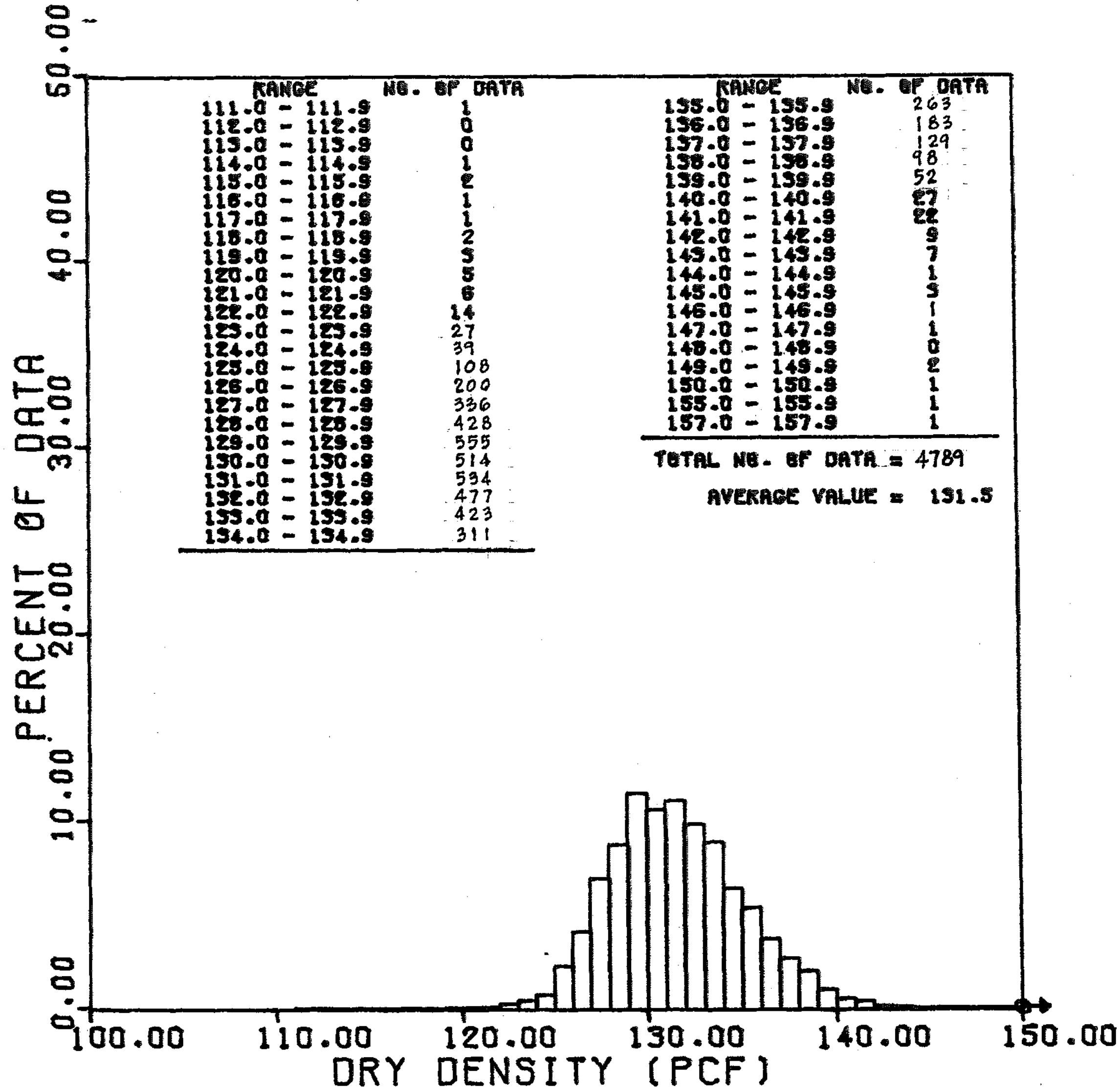
CLINTON STA. COMPACTION TESTS
ALL PASSING DATA
ELEVATIONS 671.00 TO 703.00

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-428

TYPE B GRANULAR FILL DISTRIBUTION OF RELATIVE DENSITY

DISTRIBUTION OF DRY DENSITY



RANGE	NO. OF DATA
111.0 - 111.9	1
112.0 - 112.9	0
113.0 - 113.9	0
114.0 - 114.9	1
115.0 - 115.9	2
116.0 - 116.9	1
117.0 - 117.9	1
118.0 - 118.9	2
119.0 - 119.9	3
120.0 - 120.9	5
121.0 - 121.9	6
122.0 - 122.9	14
123.0 - 123.9	27
124.0 - 124.9	39
125.0 - 125.9	108
126.0 - 126.9	200
127.0 - 127.9	336
128.0 - 128.9	428
129.0 - 129.9	555
130.0 - 130.9	514
131.0 - 131.9	534
132.0 - 132.9	477
133.0 - 133.9	423
134.0 - 134.9	311

RANGE	NO. OF DATA
135.0 - 135.9	263
136.0 - 136.9	183
137.0 - 137.9	129
138.0 - 138.9	98
139.0 - 139.9	52
140.0 - 140.9	27
141.0 - 141.9	22
142.0 - 142.9	9
143.0 - 143.9	7
144.0 - 144.9	1
145.0 - 145.9	3
146.0 - 146.9	1
147.0 - 147.9	1
148.0 - 148.9	0
149.0 - 149.9	2
150.0 - 150.9	1
155.0 - 155.9	1
157.0 - 157.9	1

TOTAL NO. OF DATA = 4789

AVERAGE VALUE = 131.5

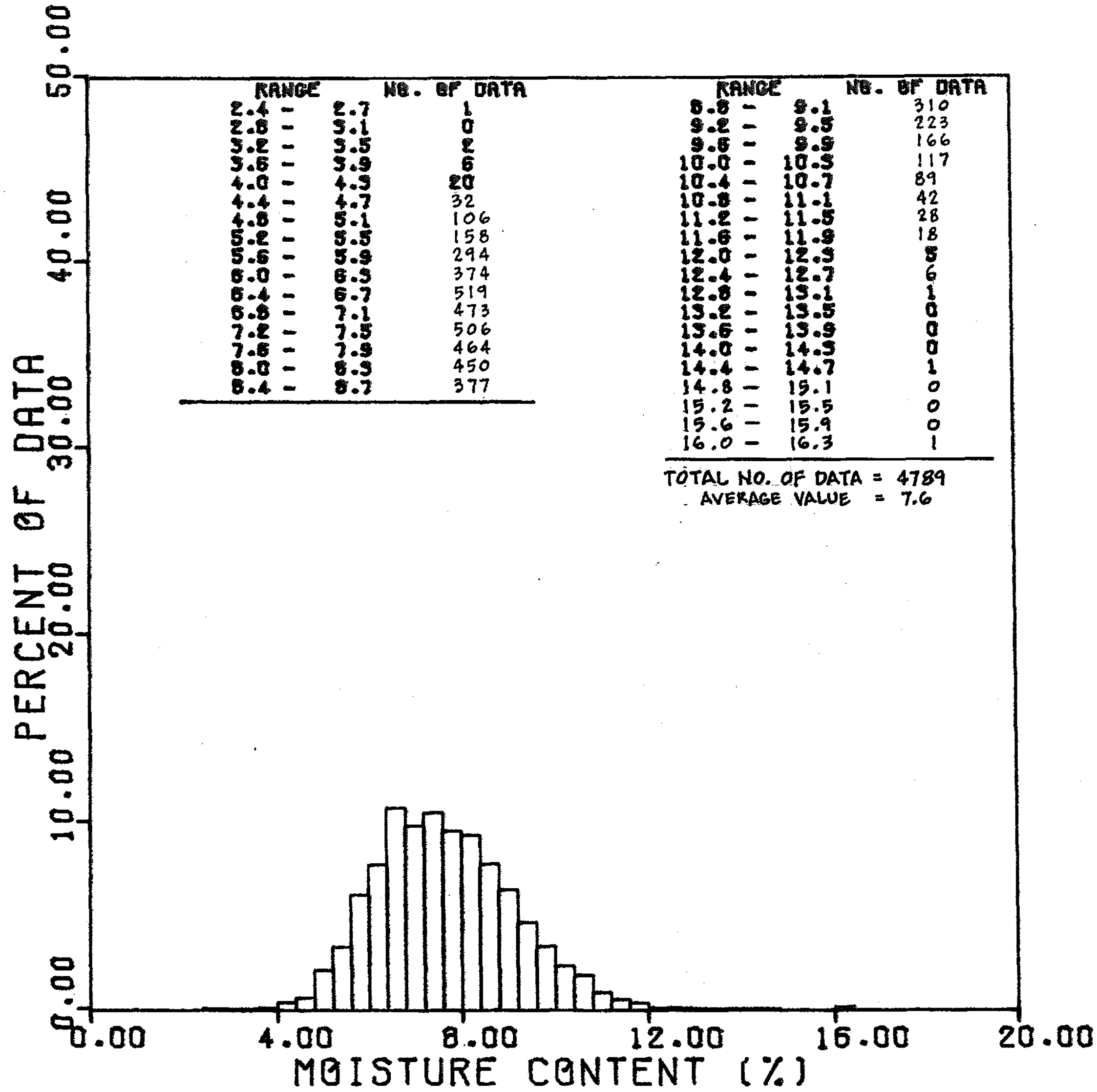
CLINTON STA. COMPACTION TESTS
ALL PASSING DATA
ELEVATIONS 671.00 TO 703.00

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-429

TYPE B GRANULAR FILL DISTRIBUTION OF DRY DENSITY

DISTRIBUTION OF MOISTURE CONTENT



RANGE	NO. OF DATA
2.4 - 2.7	1
2.8 - 3.1	0
3.2 - 3.5	2
3.6 - 3.9	6
4.0 - 4.3	20
4.4 - 4.7	32
4.8 - 5.1	106
5.2 - 5.5	158
5.6 - 5.9	294
6.0 - 6.3	374
6.4 - 6.7	519
6.8 - 7.1	473
7.2 - 7.5	506
7.6 - 7.9	464
8.0 - 8.3	450
8.4 - 8.7	377

RANGE	NO. OF DATA
8.8 - 9.1	310
9.2 - 9.5	223
9.6 - 9.9	166
10.0 - 10.3	117
10.4 - 10.7	89
10.8 - 11.1	42
11.2 - 11.5	28
11.6 - 11.9	18
12.0 - 12.3	5
12.4 - 12.7	6
12.8 - 13.1	1
13.2 - 13.5	0
13.6 - 13.9	0
14.0 - 14.3	0
14.4 - 14.7	1
14.8 - 15.1	0
15.2 - 15.5	0
15.6 - 15.9	0
16.0 - 16.3	1

TOTAL NO. OF DATA = 4789
AVERAGE VALUE = 7.6

CLINTON STA. COMPACTION TESTS
ALL PASSING DATA
ELEVATIONS 671.00 TO 703.00

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-430

TYPE B GRANULAR FILL DISTRIBUTION OF MOISTURE CONTENT

LOW DENSITY TESTS BY LIFTS AND GRIDS

GRID

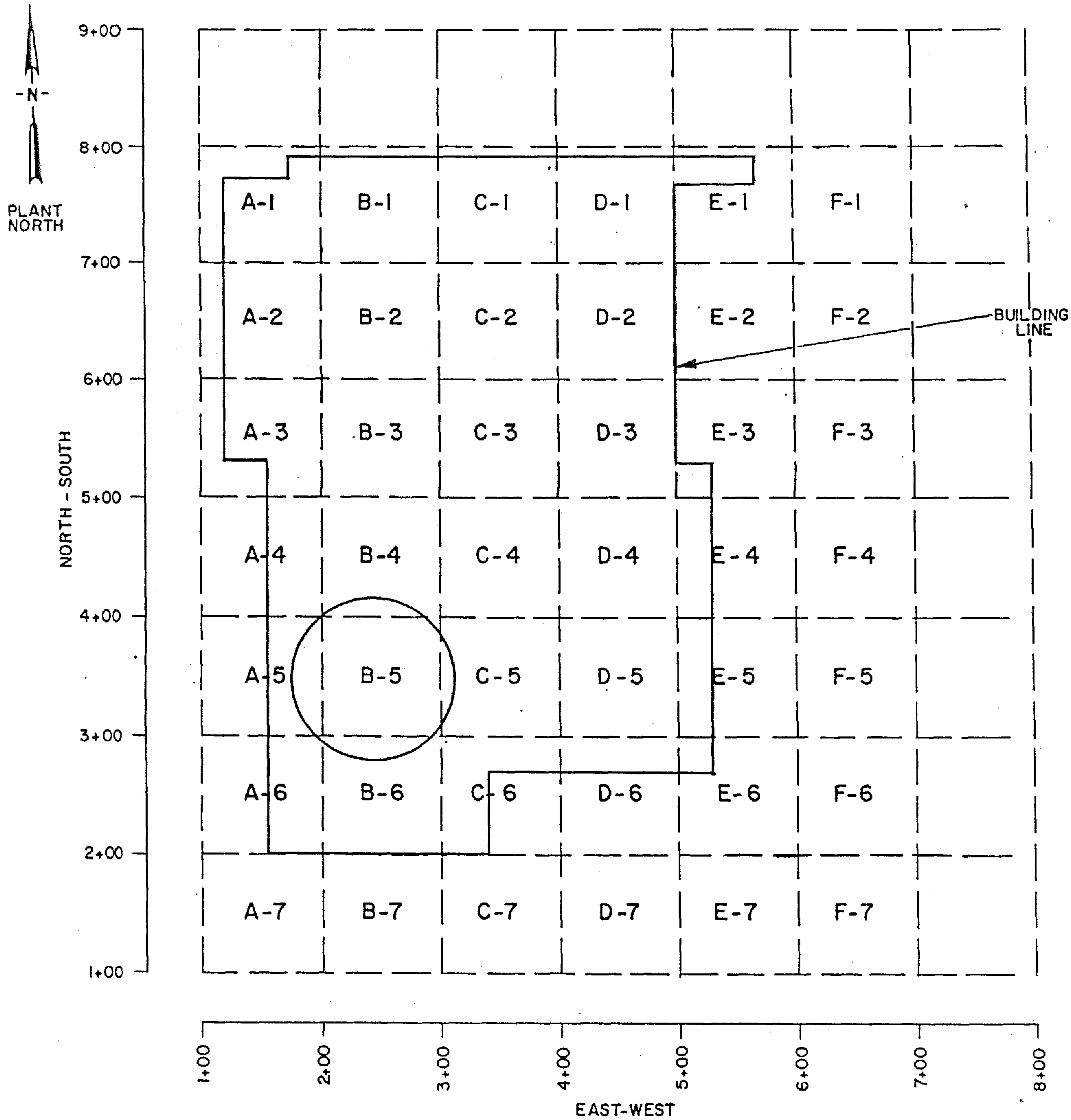
ELEVATION FEET (MSL)	A						B						C						D						E						F						
	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	1	2	3	4	5	6	7
671																																					
672																																					
673																																					
674																					1																
675																																					
676																																					
677																																					
678																																					
679																																					
680										3																	1										
681				1	2										1				3																		
682					1												1			1																2	
683					2	1		1												1	1				1						4				1		
684				1					1			1				1				2										2	1	1				4	1
685																												1					2				
686								1														1								1	3		1				
687																											1				2					2	
688	3		2											1				1	1						2				1		1						
689				4					2												1				1	1				1						1	
690	3			2		1					1							2		1			1							2	1			2			
691		3				1	1		2		3											2								2						1	
692						2	1						2												2						1				1		
693				2						2																		1							1		
694		1				1					1							5							1			1				1					
695						5		1				3						1																			
696		1				1		1	1															2													
697								1		1														1					2								2
698			3		1	1	1																	1													
699												1												1													
700					2		1																														
701																																					
702																								1													

NOTE: The numbers indicate the quantity of low density tests in a grid at a corresponding elevation.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-431

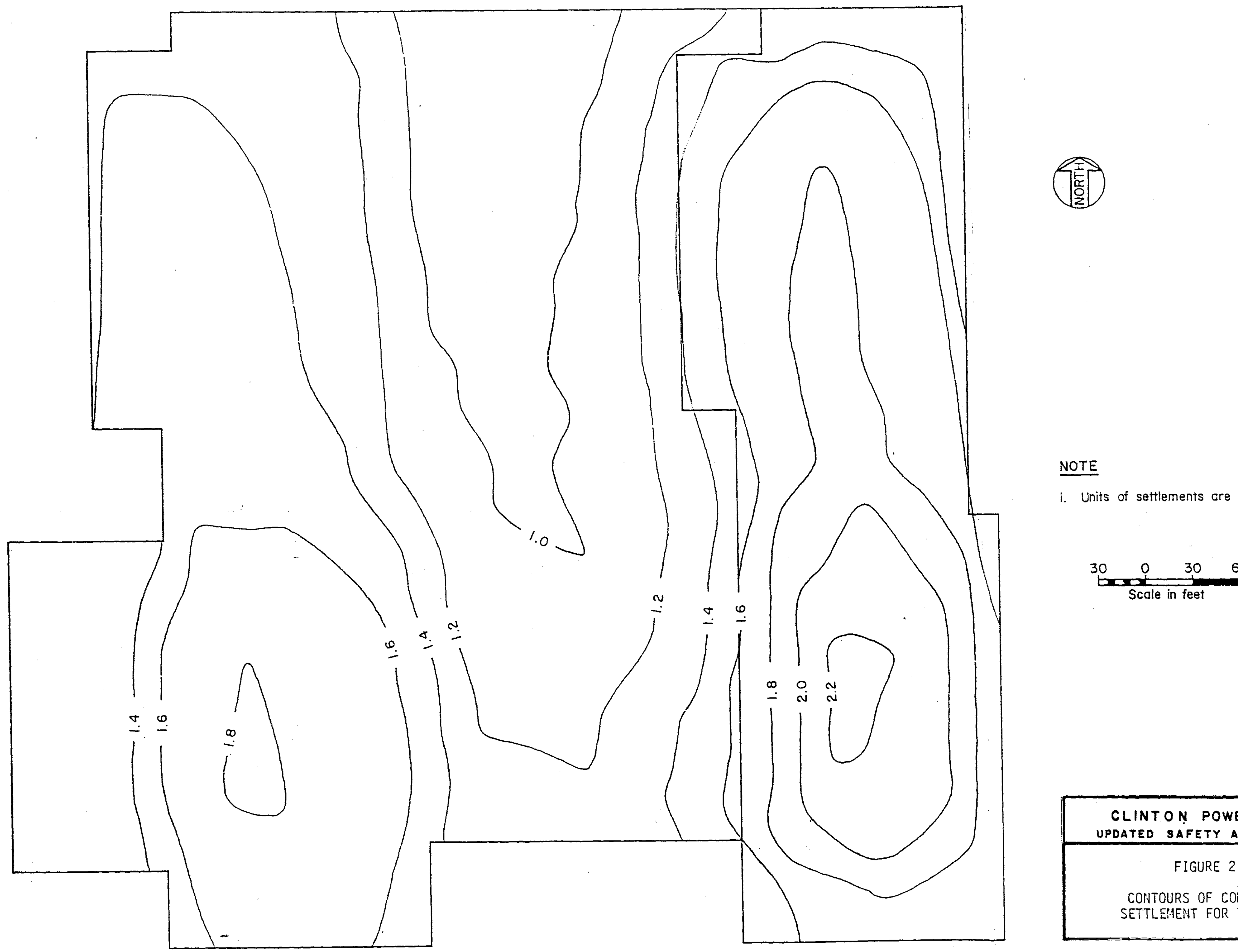
DISTRIBUTION OF IN-PLACE LOW DENSITY TESTS



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-432

POWER BLOCK GRID SYSTEM



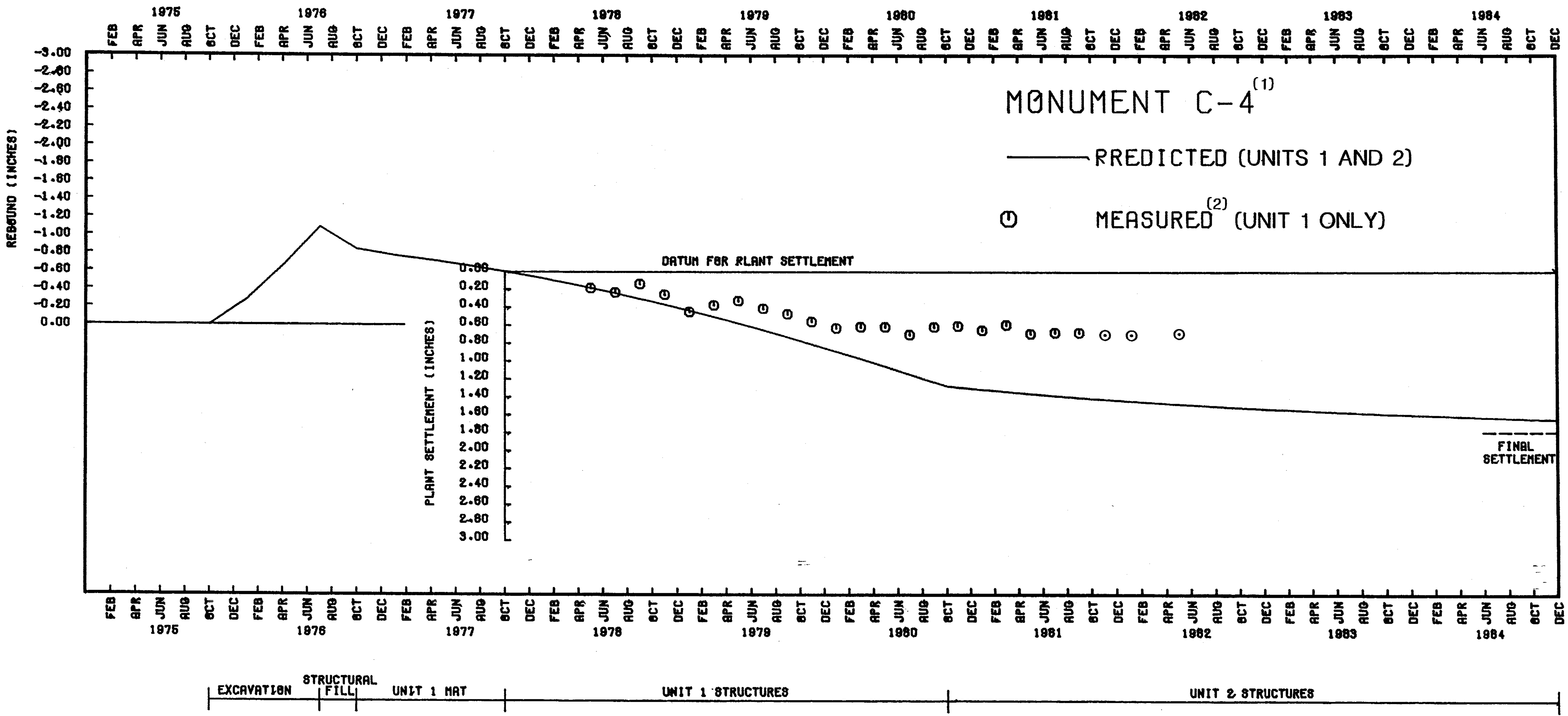
NOTE

1. Units of settlements are inches

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-433

CONTOURS OF COMPUTED FINAL SETTLEMENT FOR THE MAIN PLANT

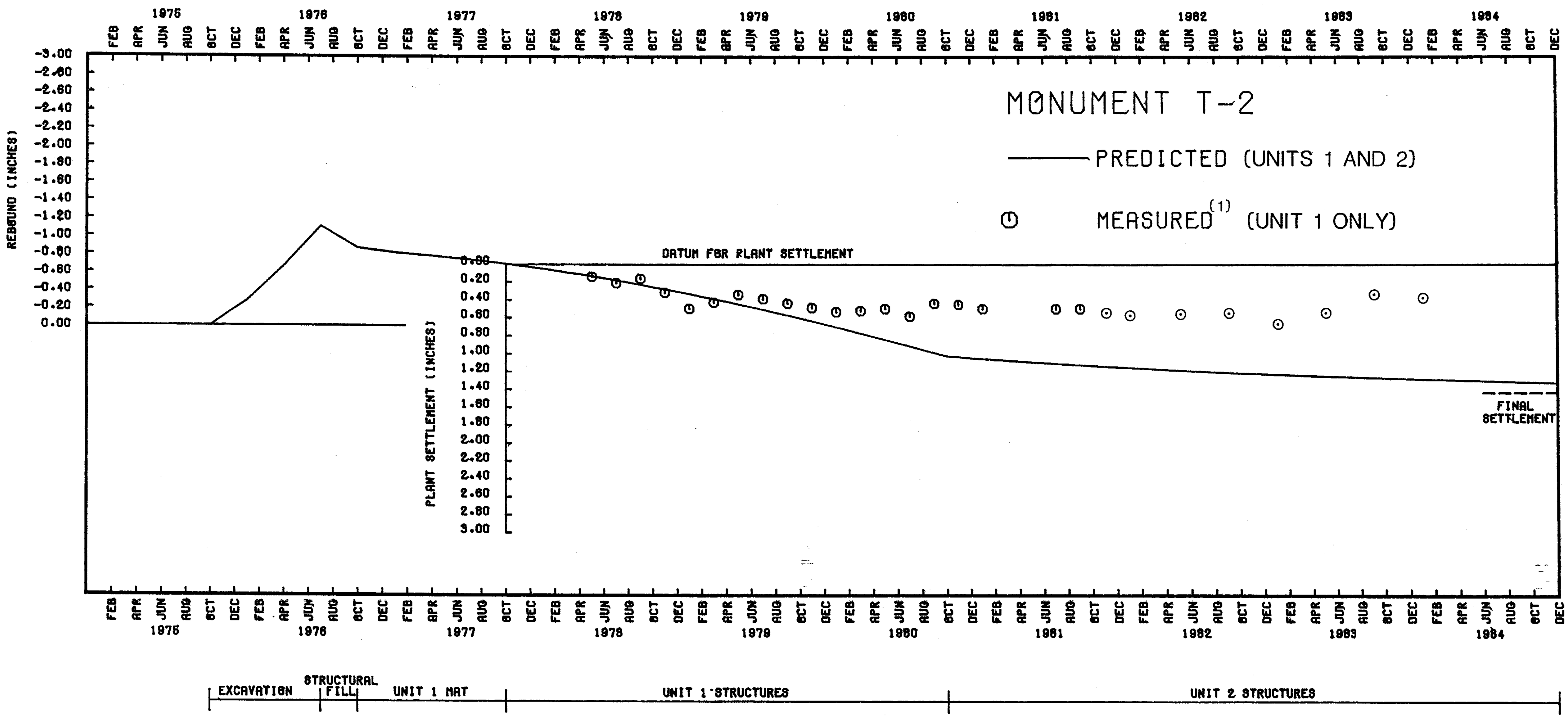


NOTES
1. THIS MONUMENT WAS REPLACED BY C-4A AFTER SEPTEMBER 1982.
2. UNIT 2 HAS BEEN CANCELLED.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-434

COMPARISON OF PREDICTED AND MEASURED SETTLEMENT TIME HISTORIES AT SETTLEMENT MONUMENT C4 (CONTAINMENT BUILDING)

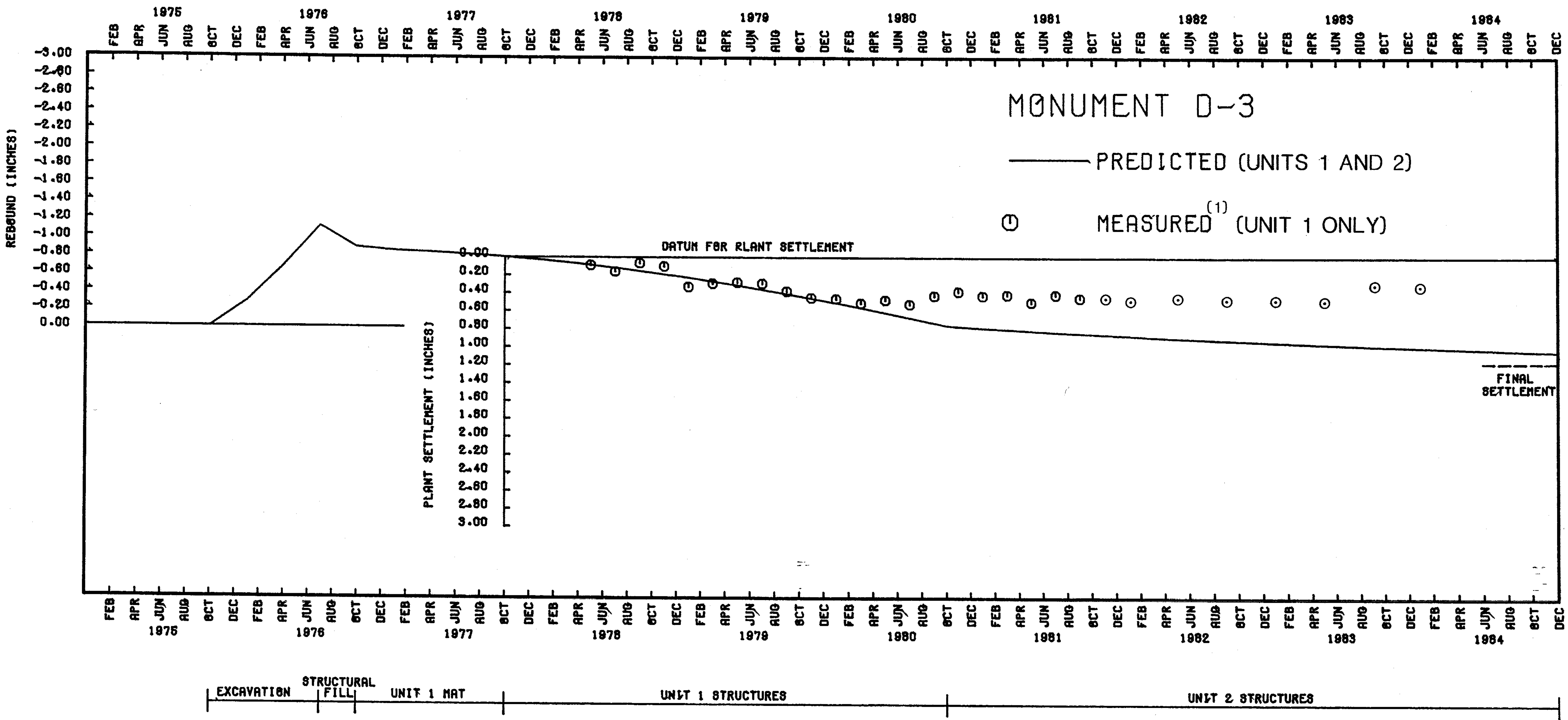


NOTES
1. UNIT 2 HAS BEEN CANCELLED.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-435

COMPARISON OF PREDICTED AND MEASURED SETTLEMENT TIME HISTORIES AT SETTLEMENT MONUMENT T1 (TURBINE BUILDING)

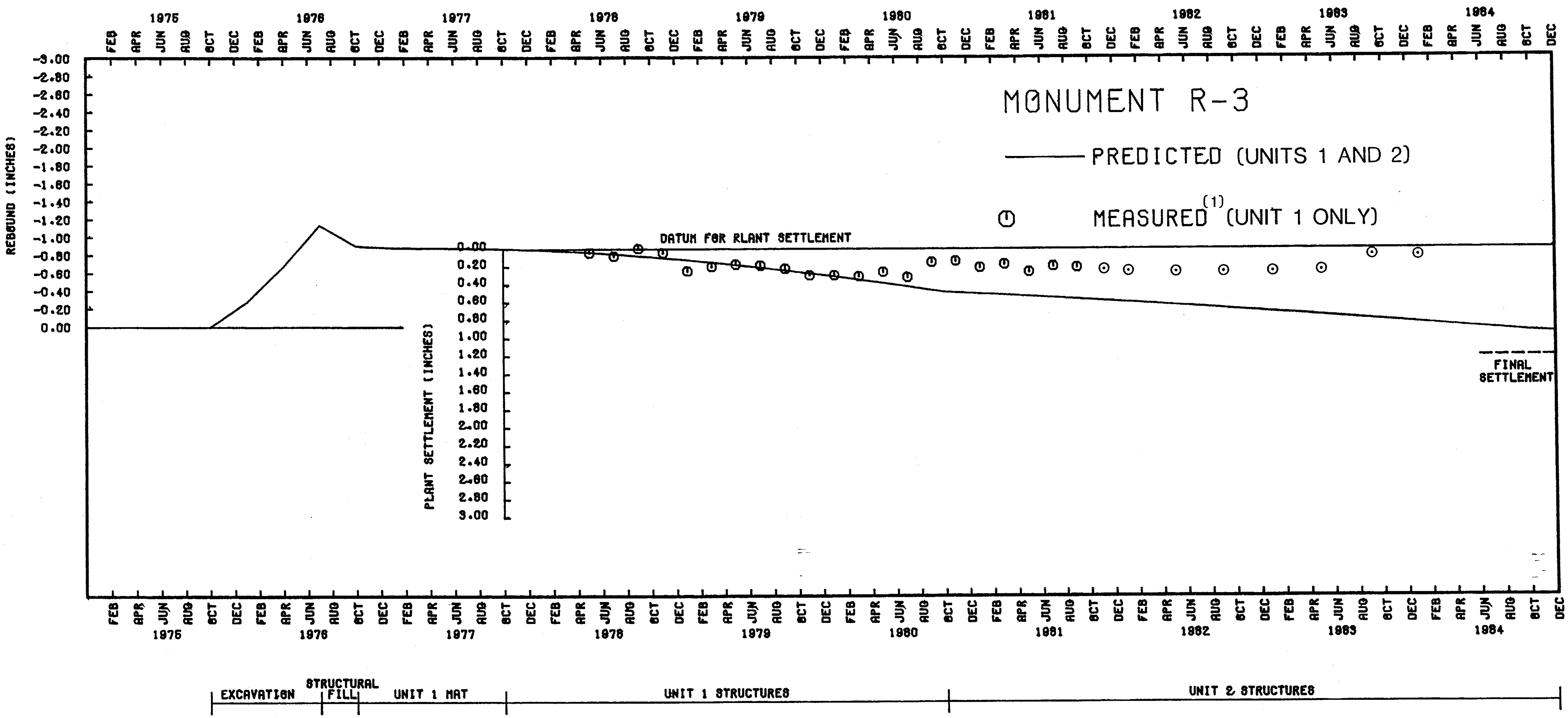


NOTES
1. UNIT 2 HAS BEEN CANCELLED.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-436

COMPARISON OF PREDICTED AND MEASURED SETTLEMENT TIME HISTORIES AT SETTLEMENT MONUMENT D3 (DIESEL GENERATOR BUILDING)

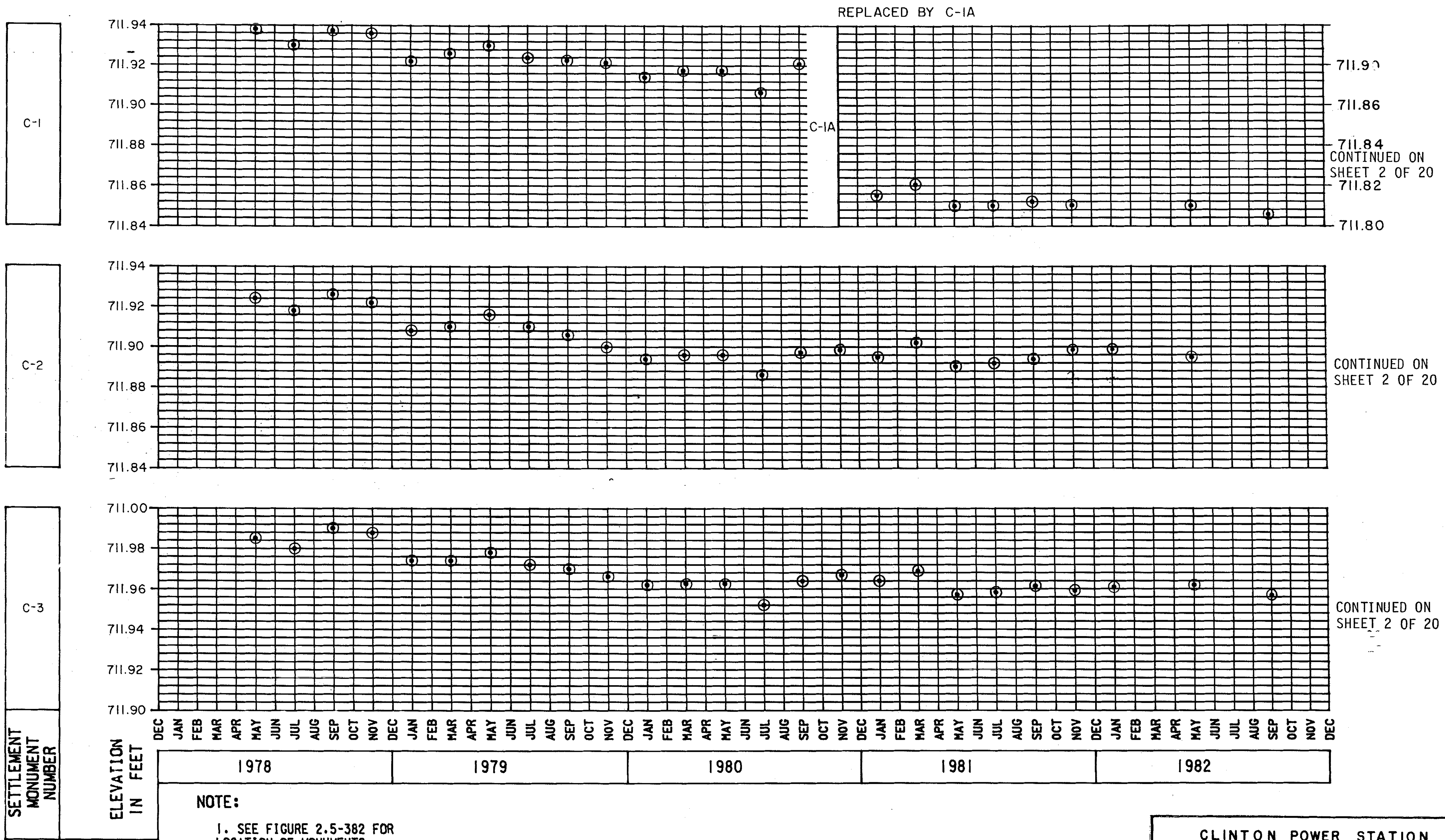


NOTES
1. UNIT 2 HAS BEEN CANCELLED.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-437

COMPARISON OF PREDICTED AND MEASURED SETTLEMENT TIME HISTORIES AT SETTLEMENT MONUMENT R3 (RADWASTE BUILDING)



NOTE:

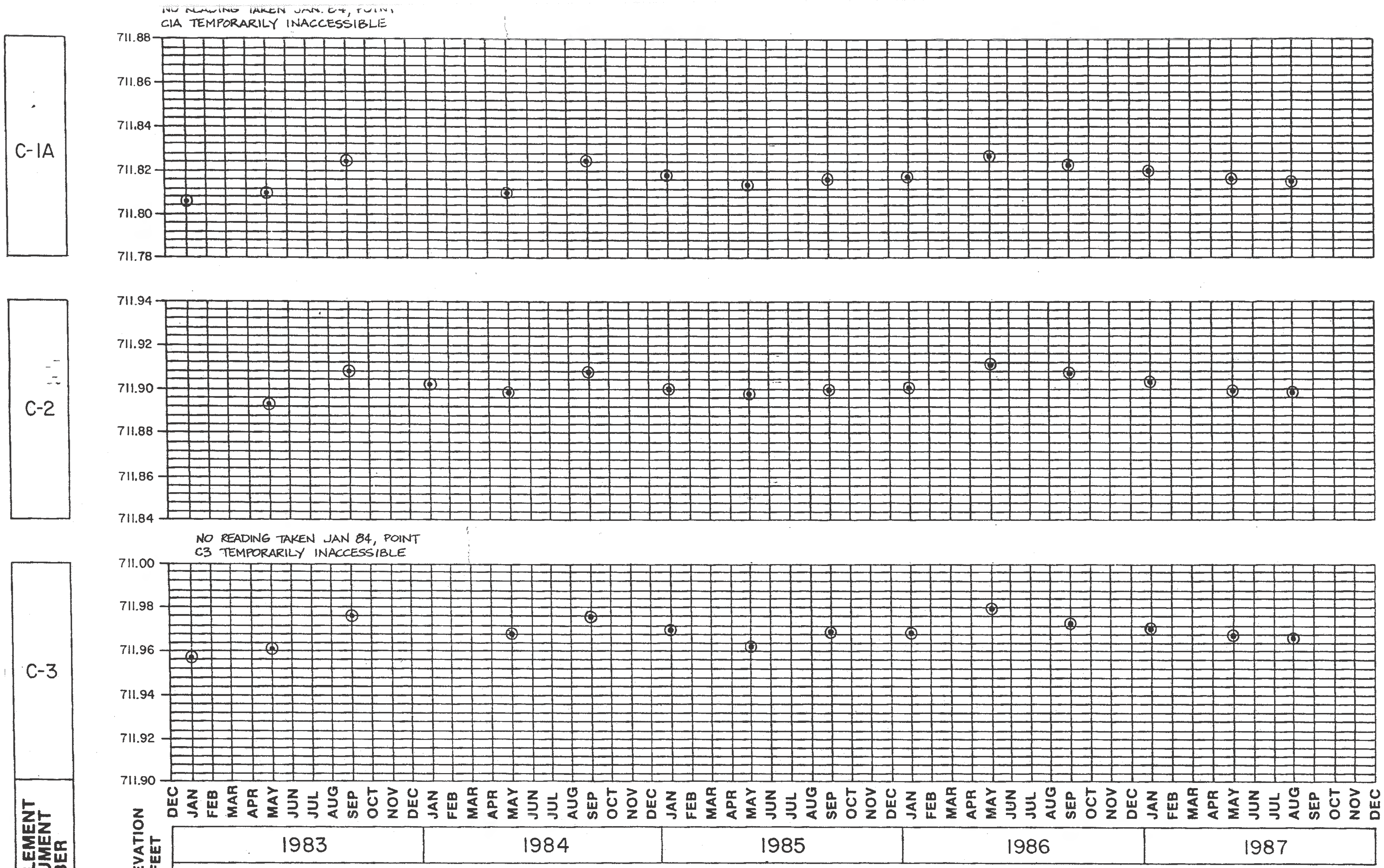
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 1 OF 20)



NOTE:

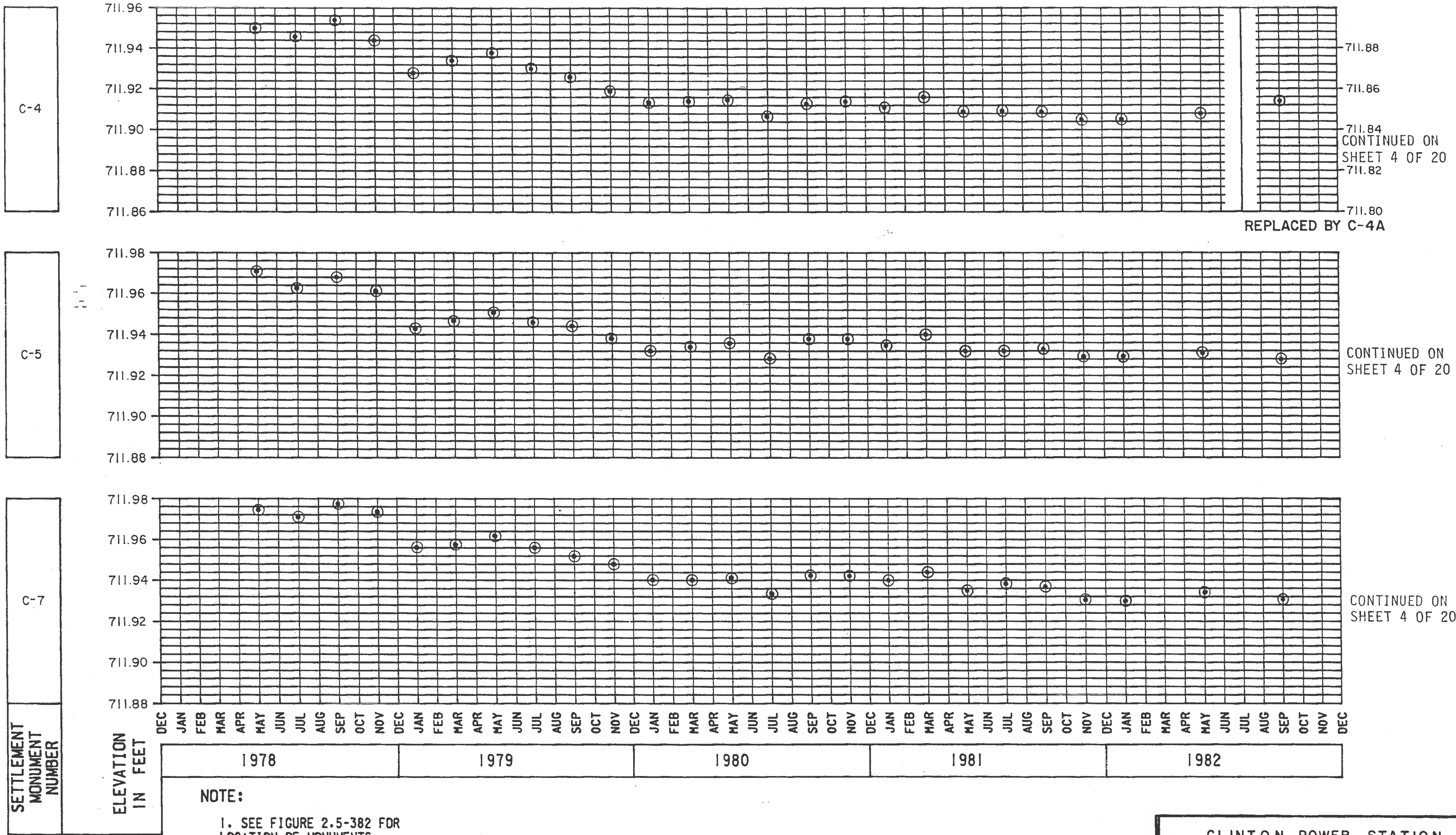
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 2 OF 20)



NOTE:

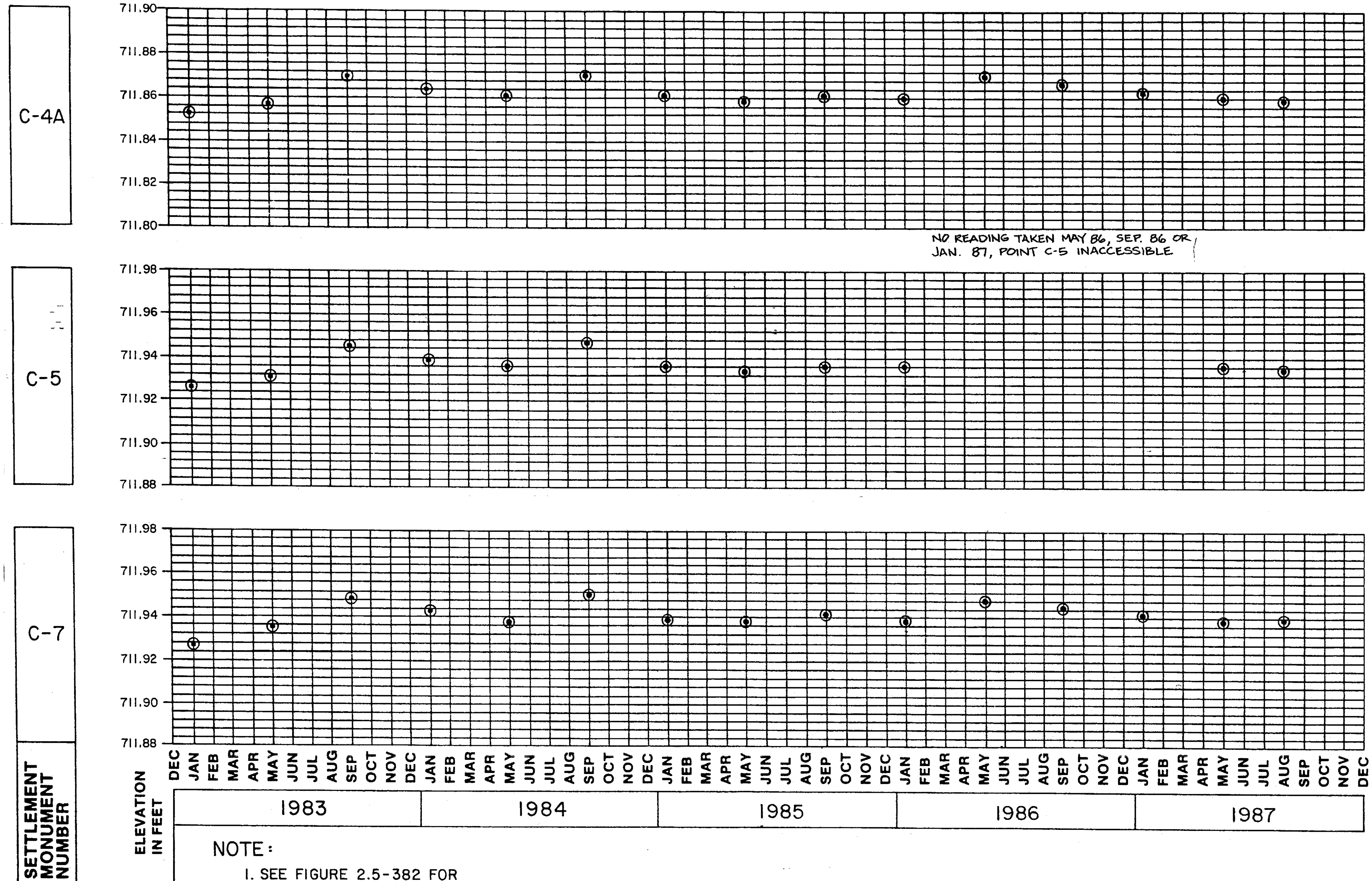
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 3 OF 20)



NOTE:

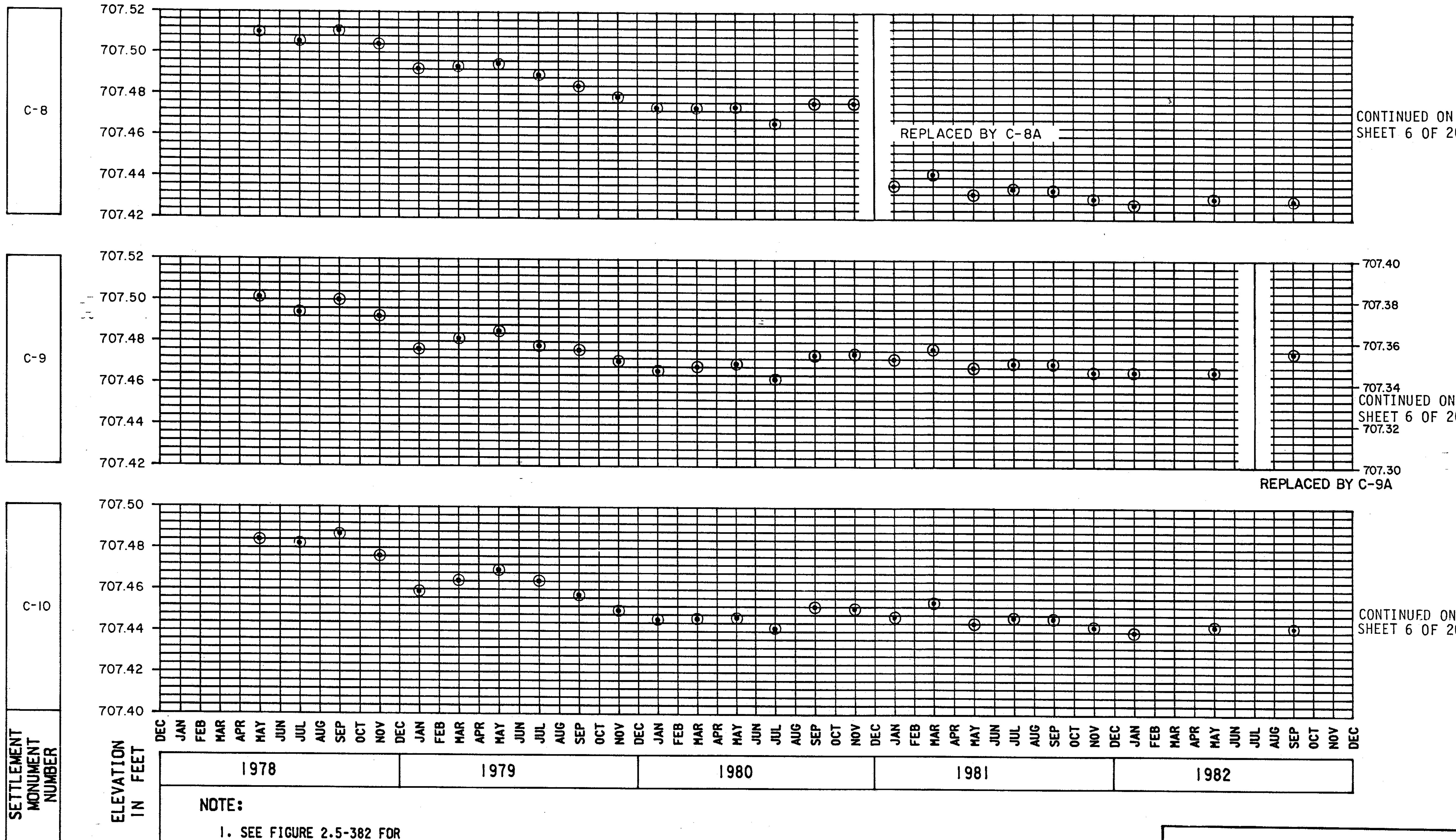
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 4 OF 20)



NOTE:

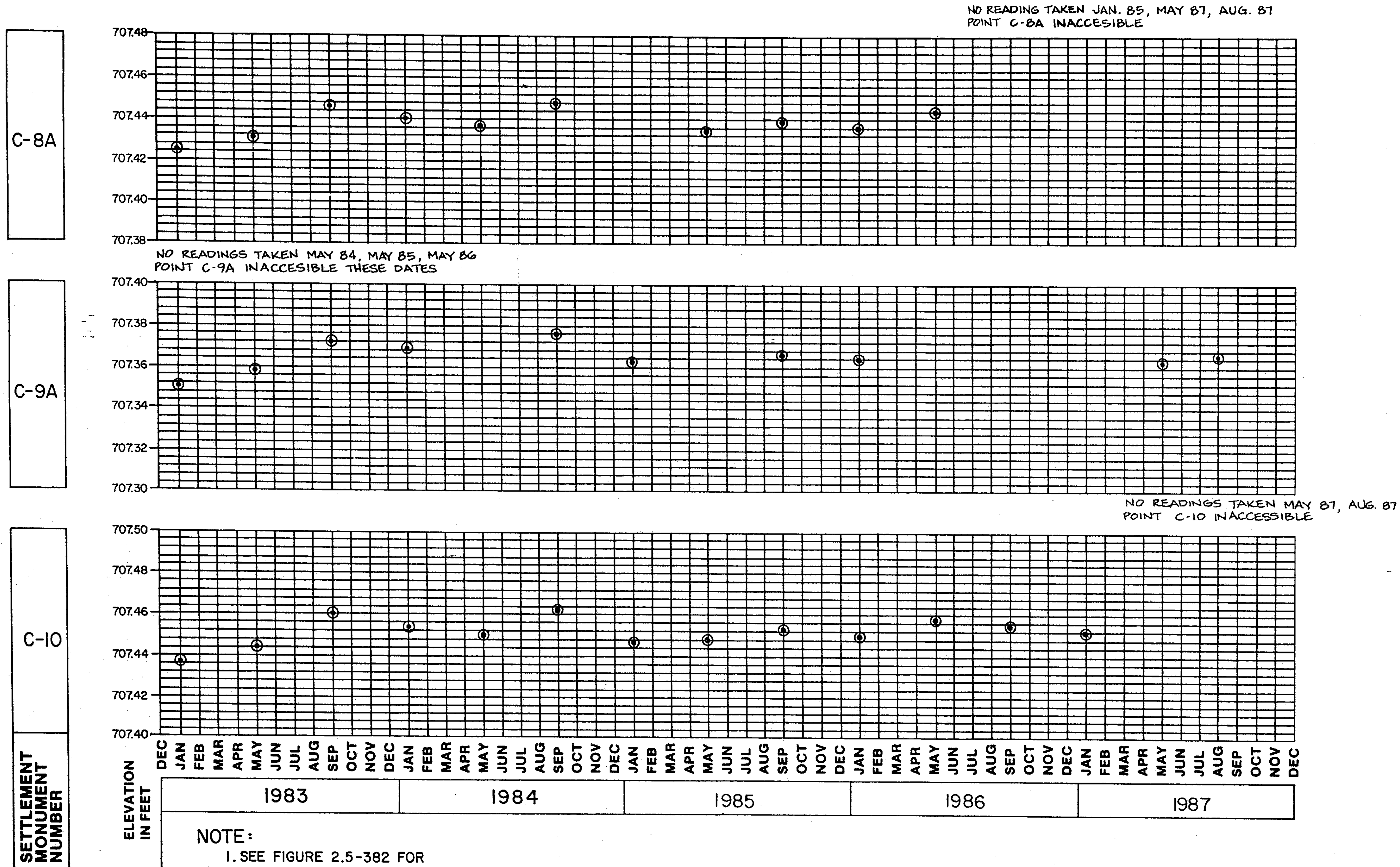
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT SETTLEMENT MEASUREMENTS

(SHEET 5 OF 20)



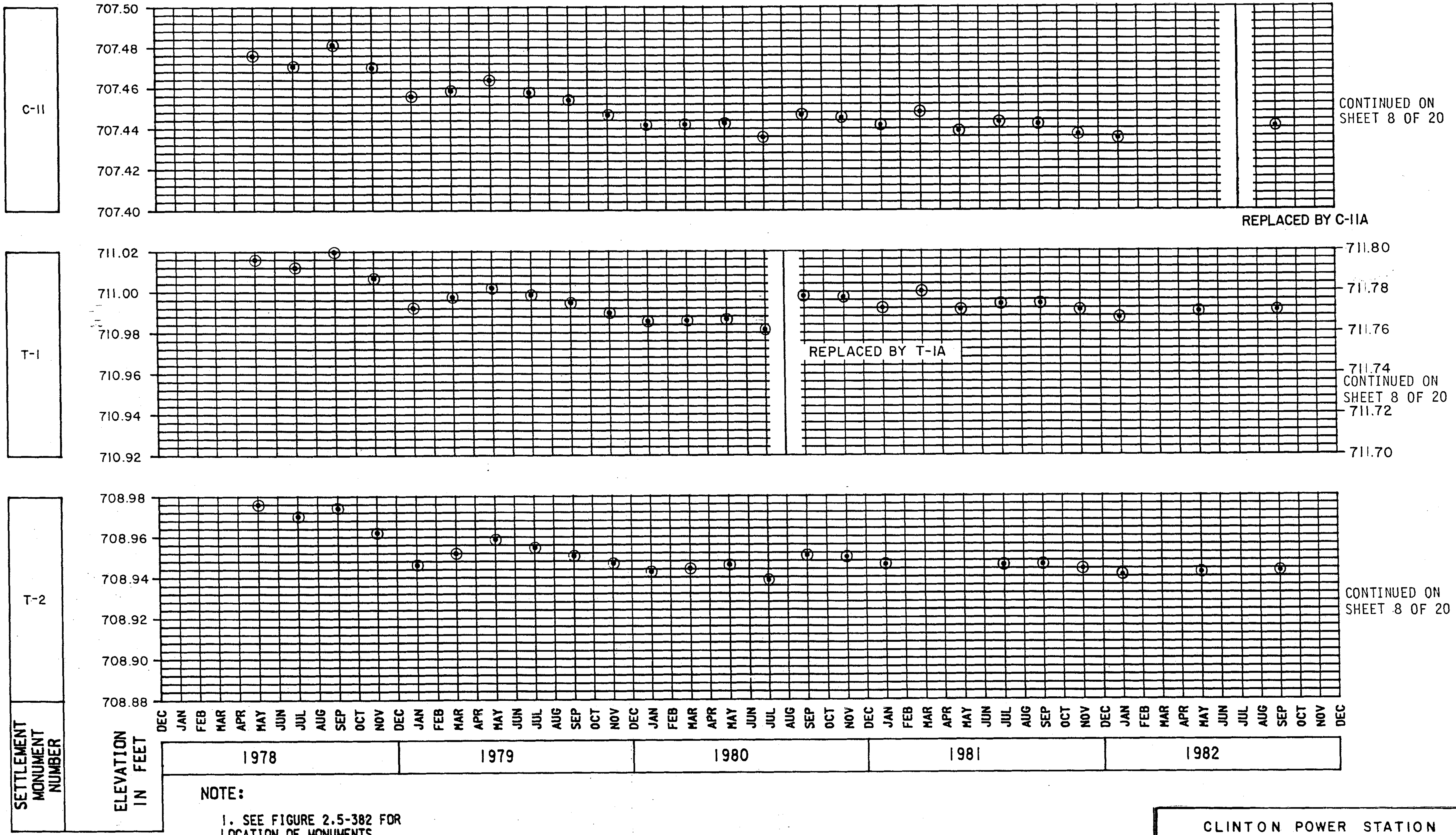
NOTE:
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 6 OF 20)



NOTE:

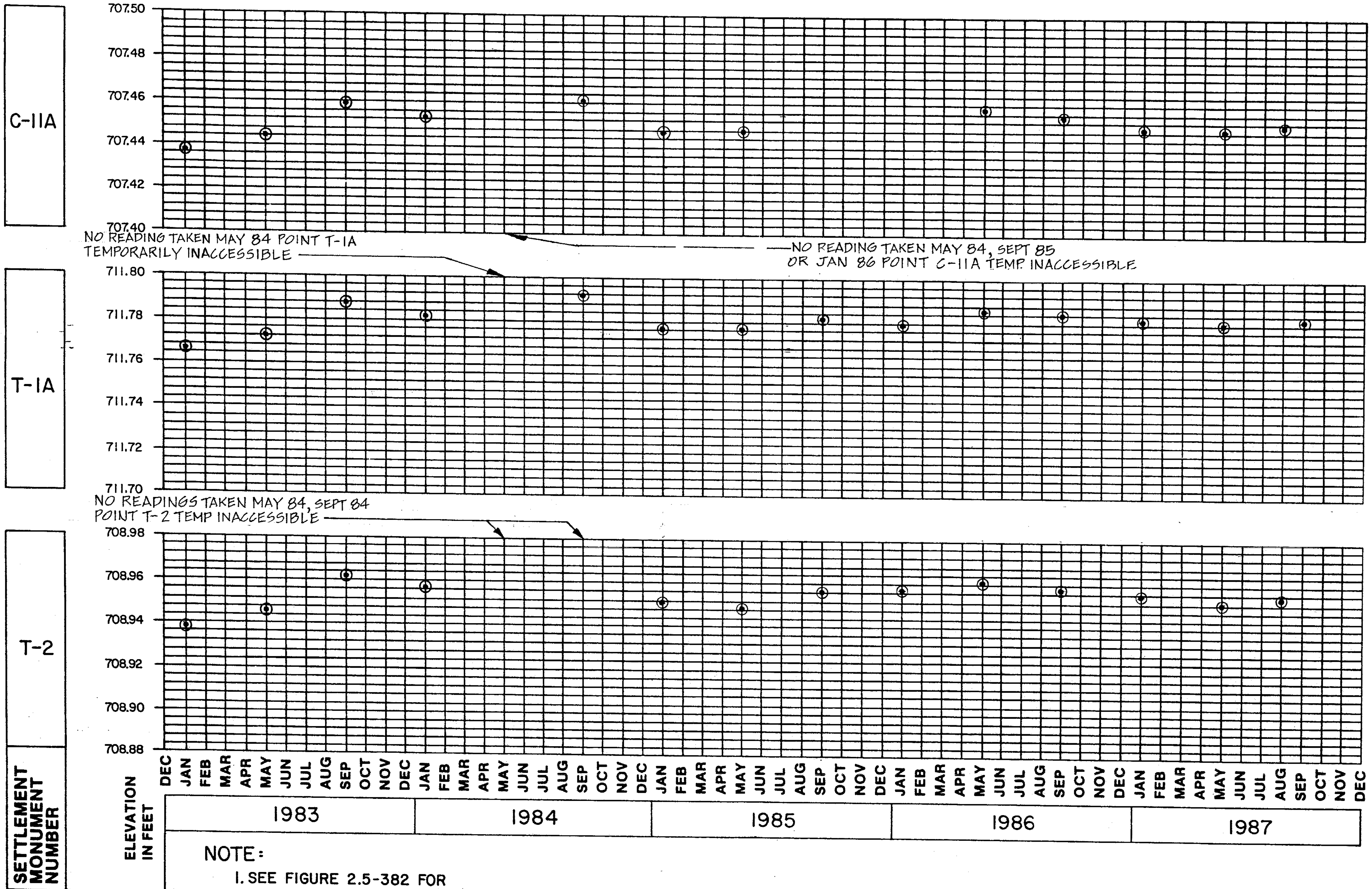
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT SETTLEMENT MEASUREMENTS

(SHEET 7 OF 20)



NOTE:

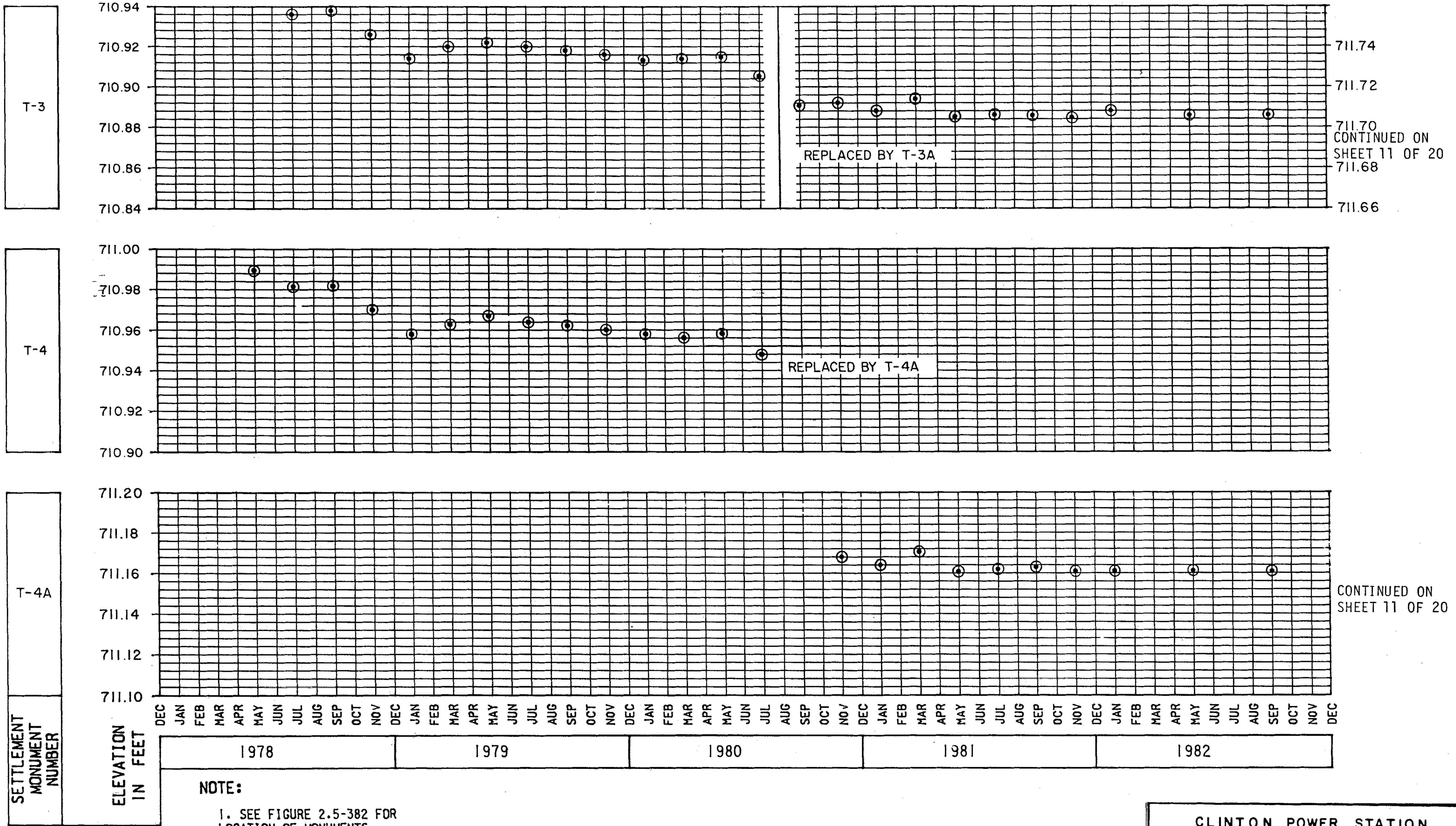
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 8 OF 20)



NOTE:

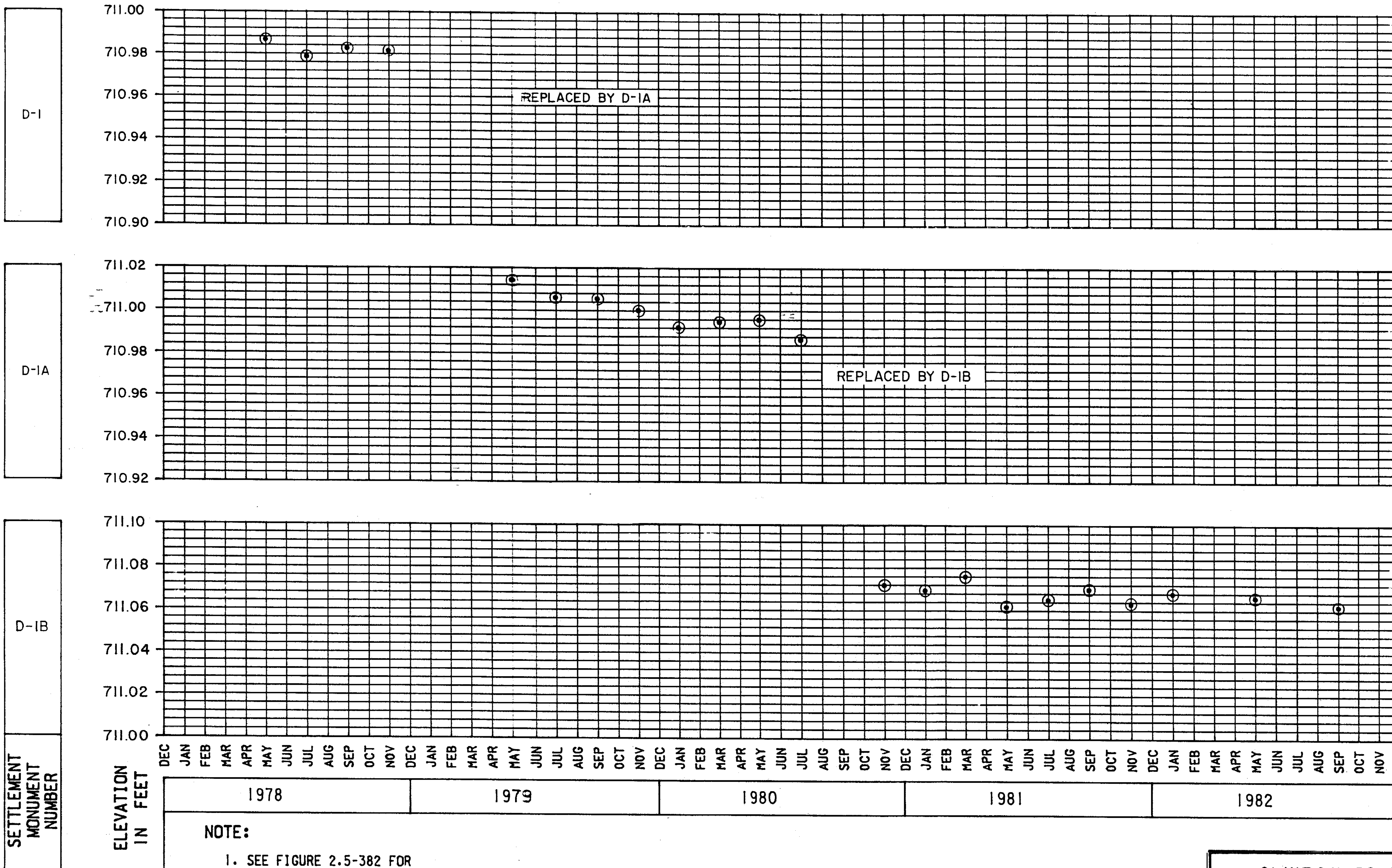
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT SETTLEMENT MEASUREMENTS

(SHEET 9 OF 20)



CONTINUED ON SHEET 11 OF 20

NOTE:

1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

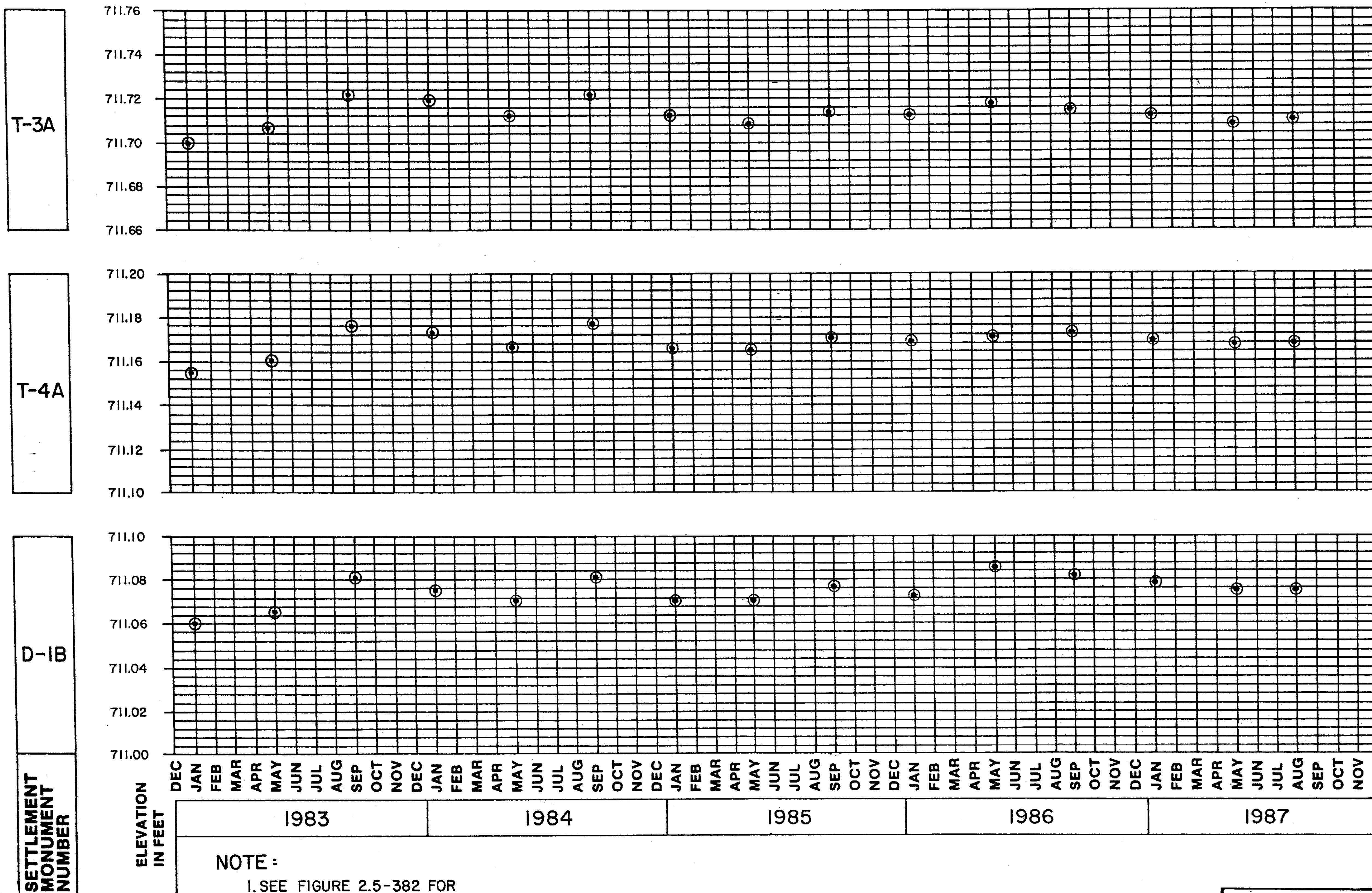
CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT SETTLEMENT MEASUREMENTS

(SHEET 10 OF 20)



NOTE:

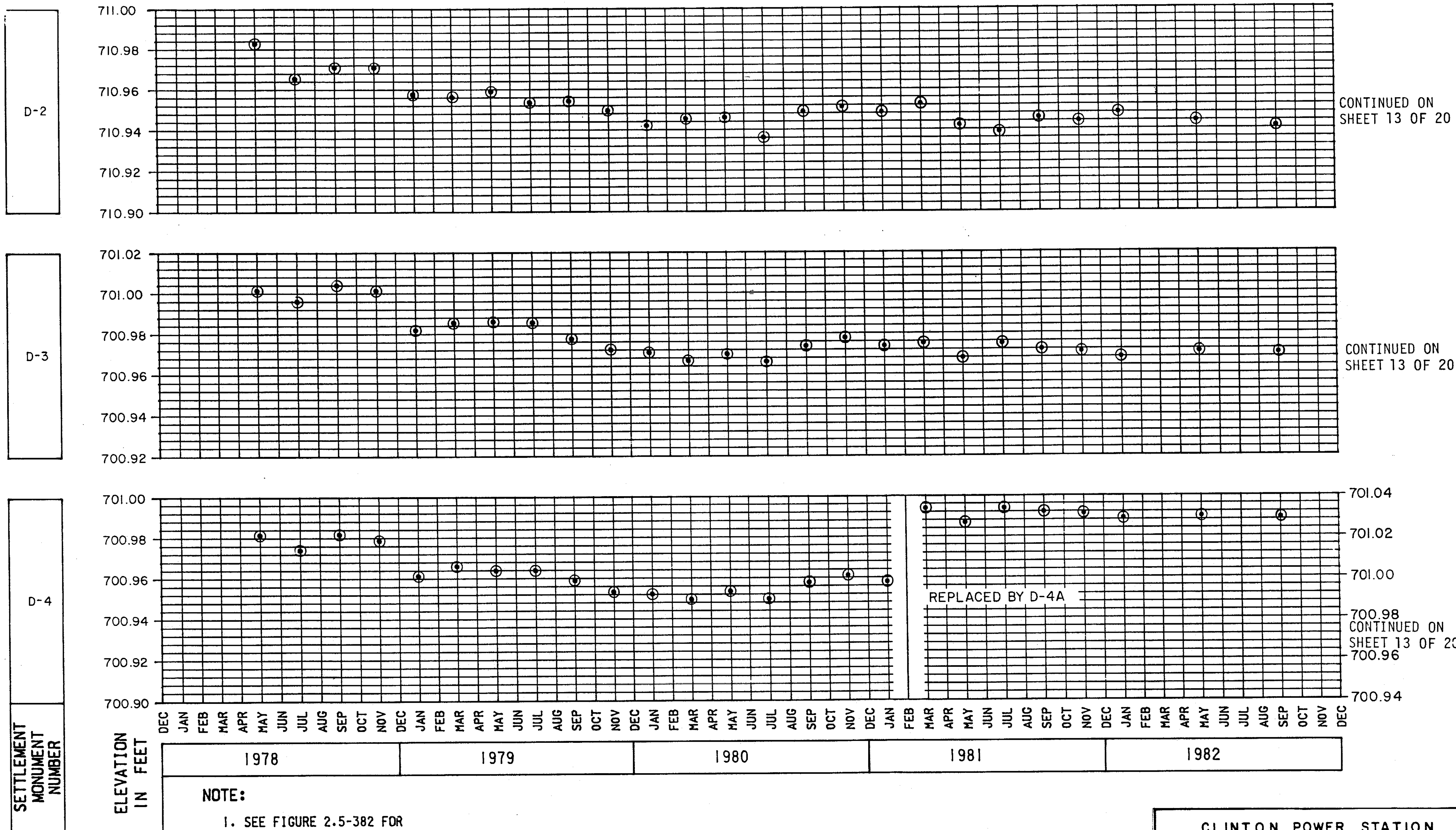
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 11 OF 20)



NOTE:

1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

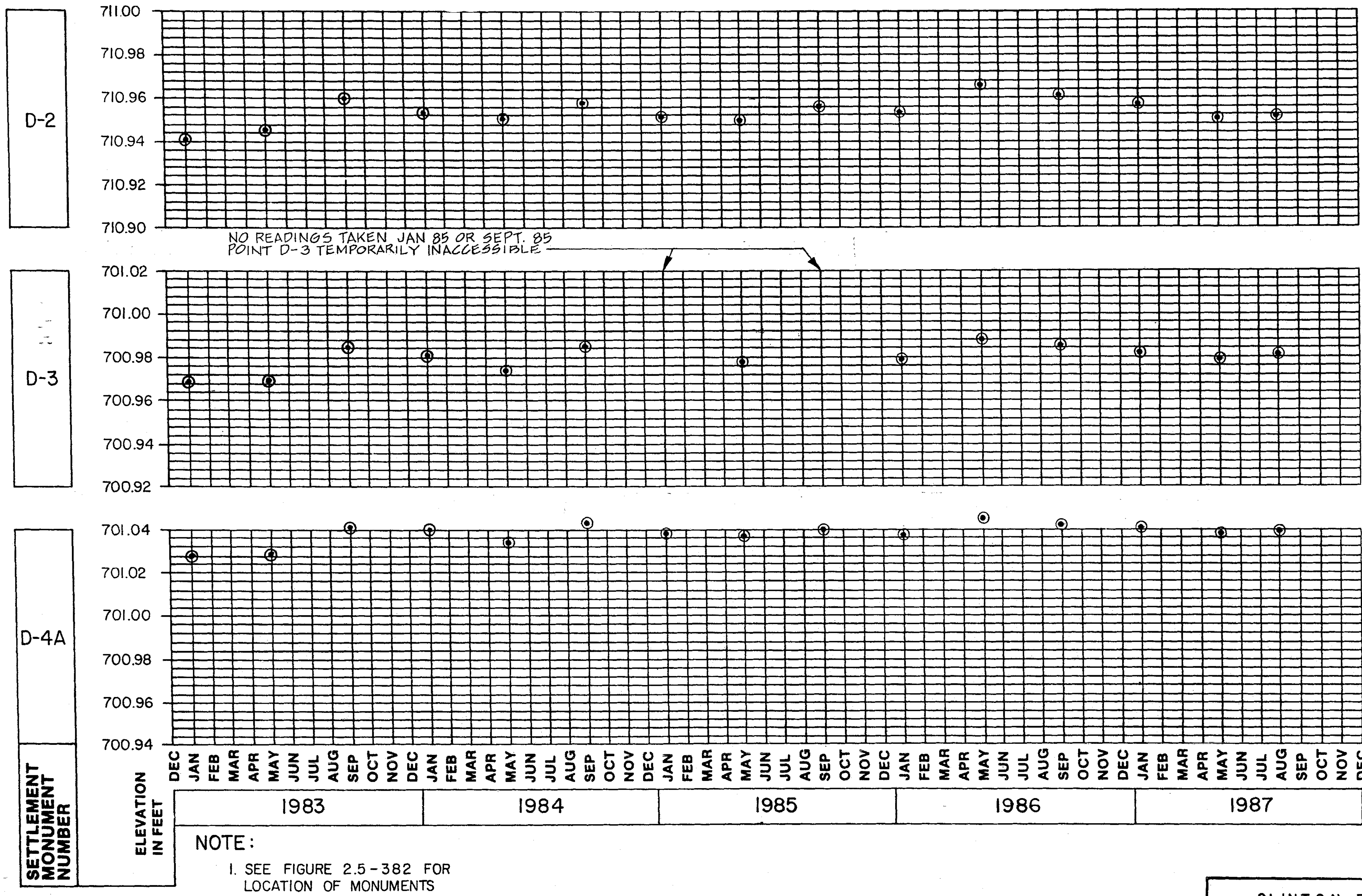
CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT SETTLEMENT MEASUREMENTS

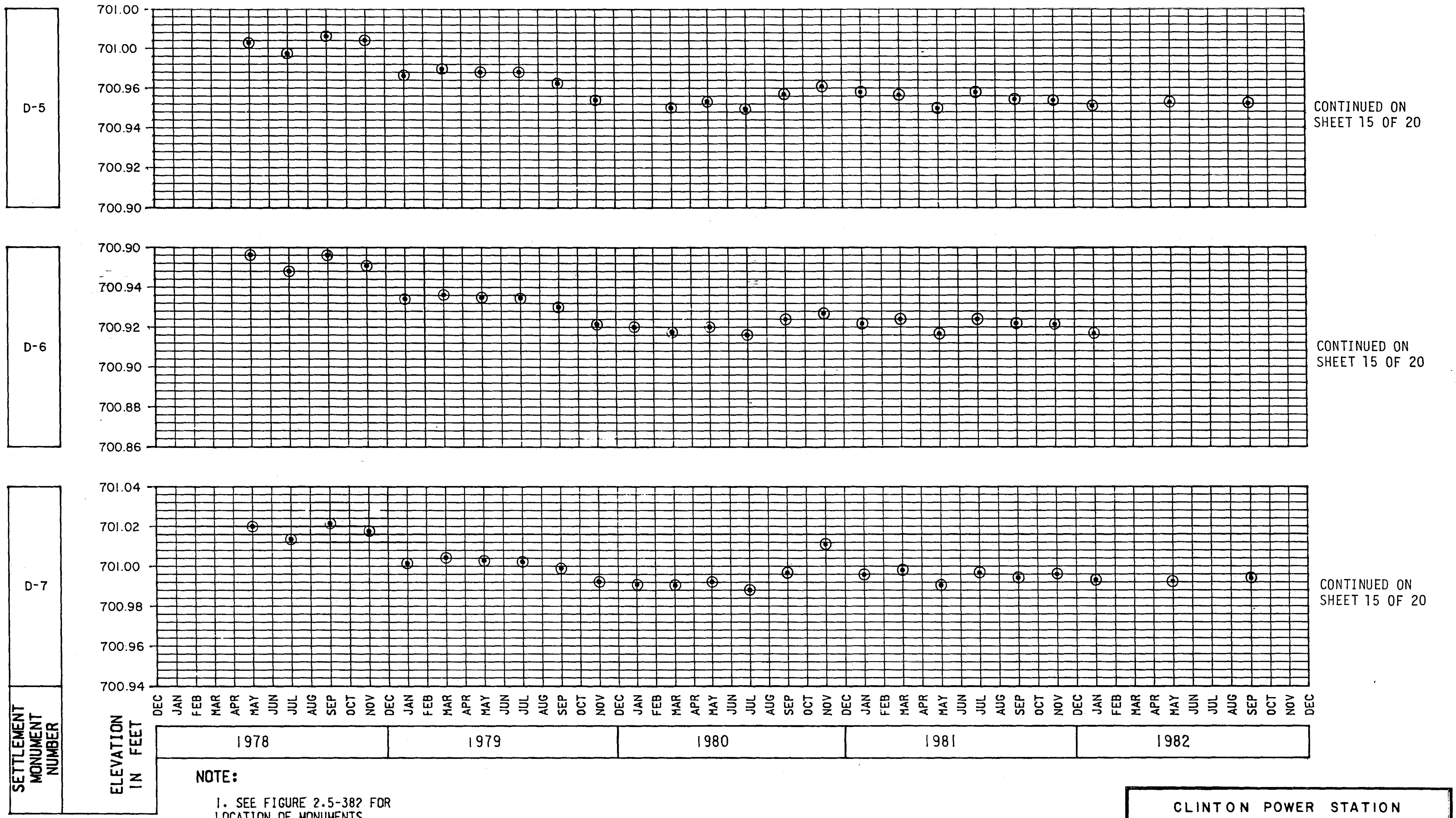
(SHEET 12 OF 20)



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT SETTLEMENT MEASUREMENTS
(SHEET 13 OF 20)



NOTE:

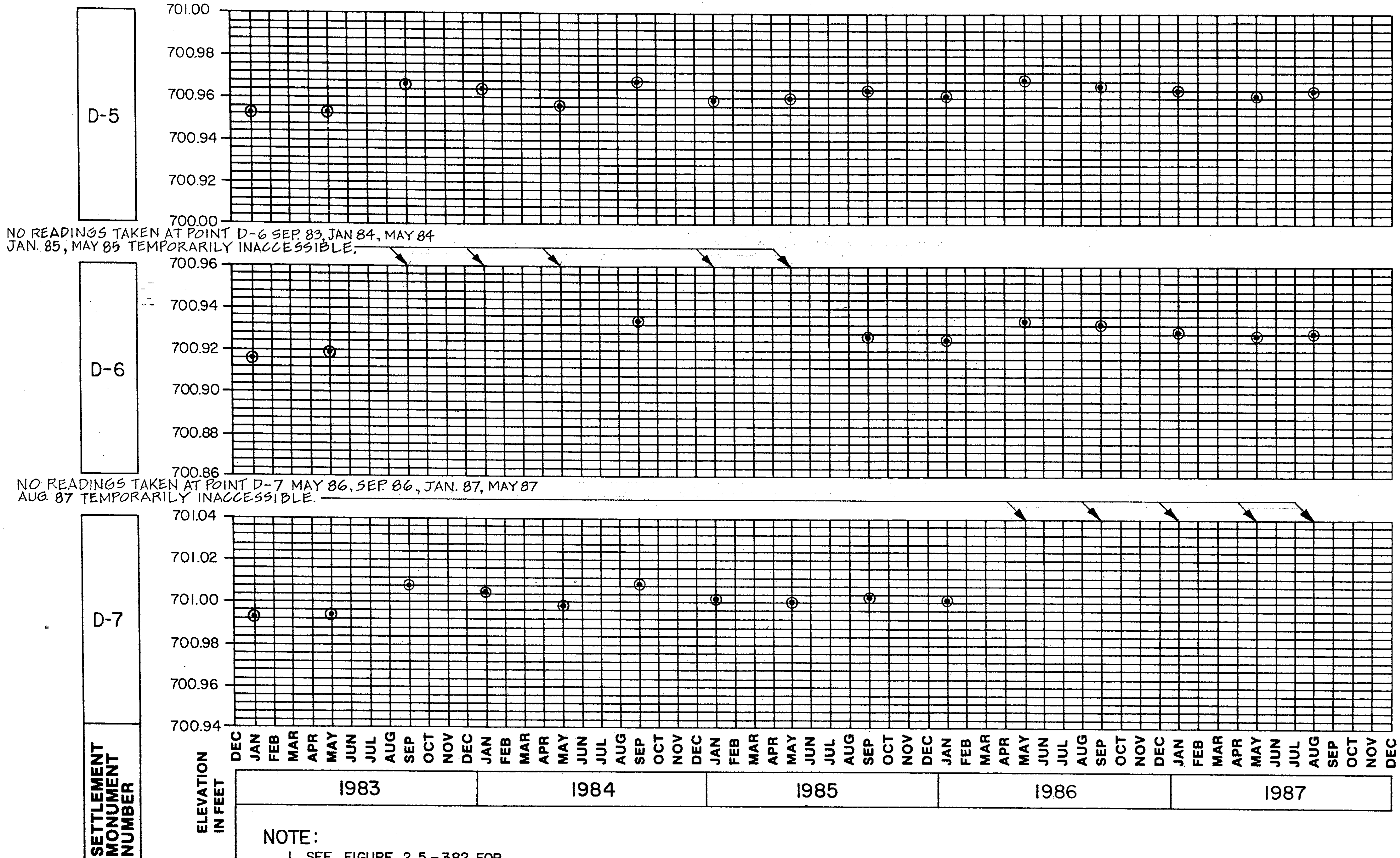
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 14 OF 20)



NOTE:

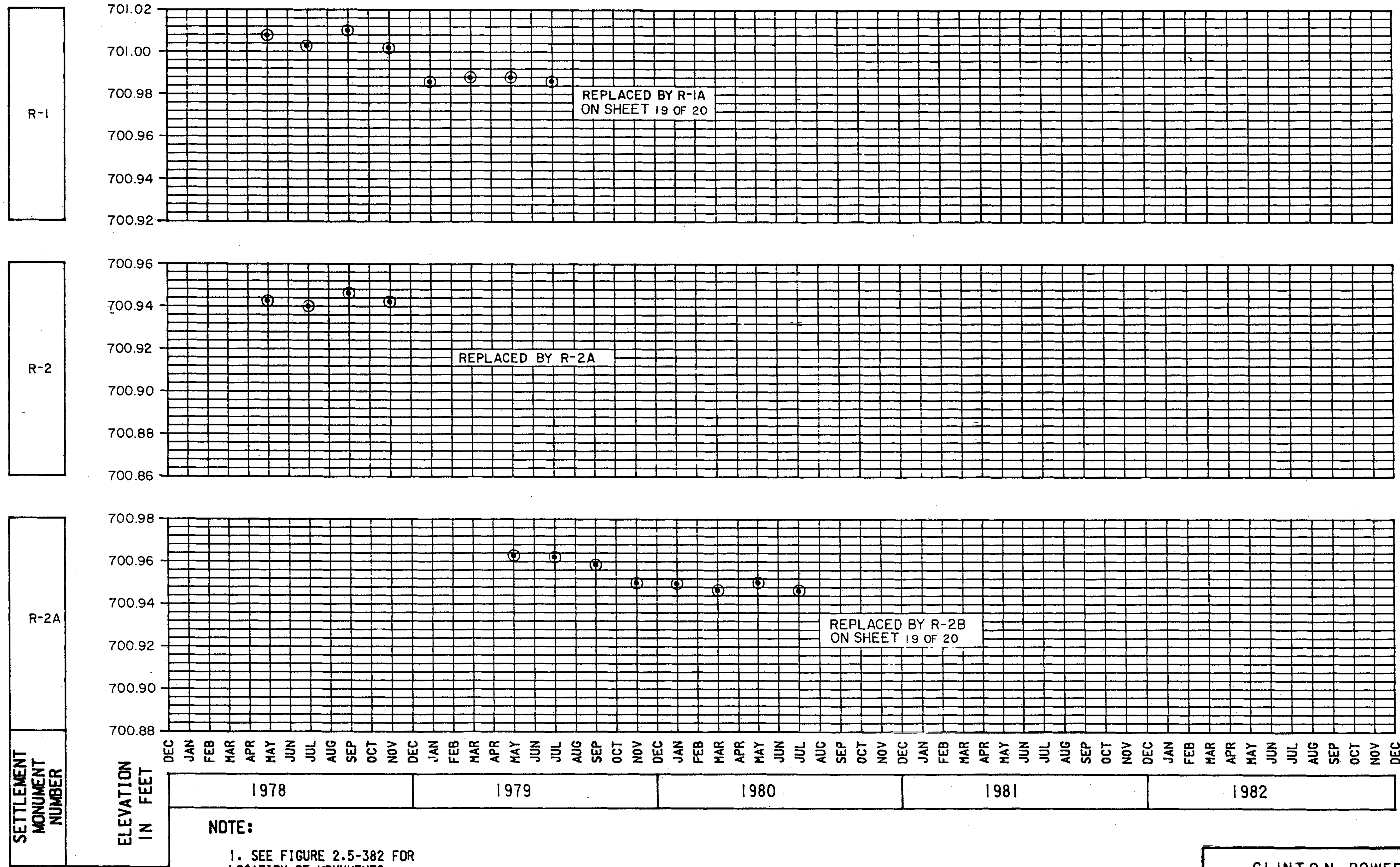
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 15 OF 20)



NOTE:

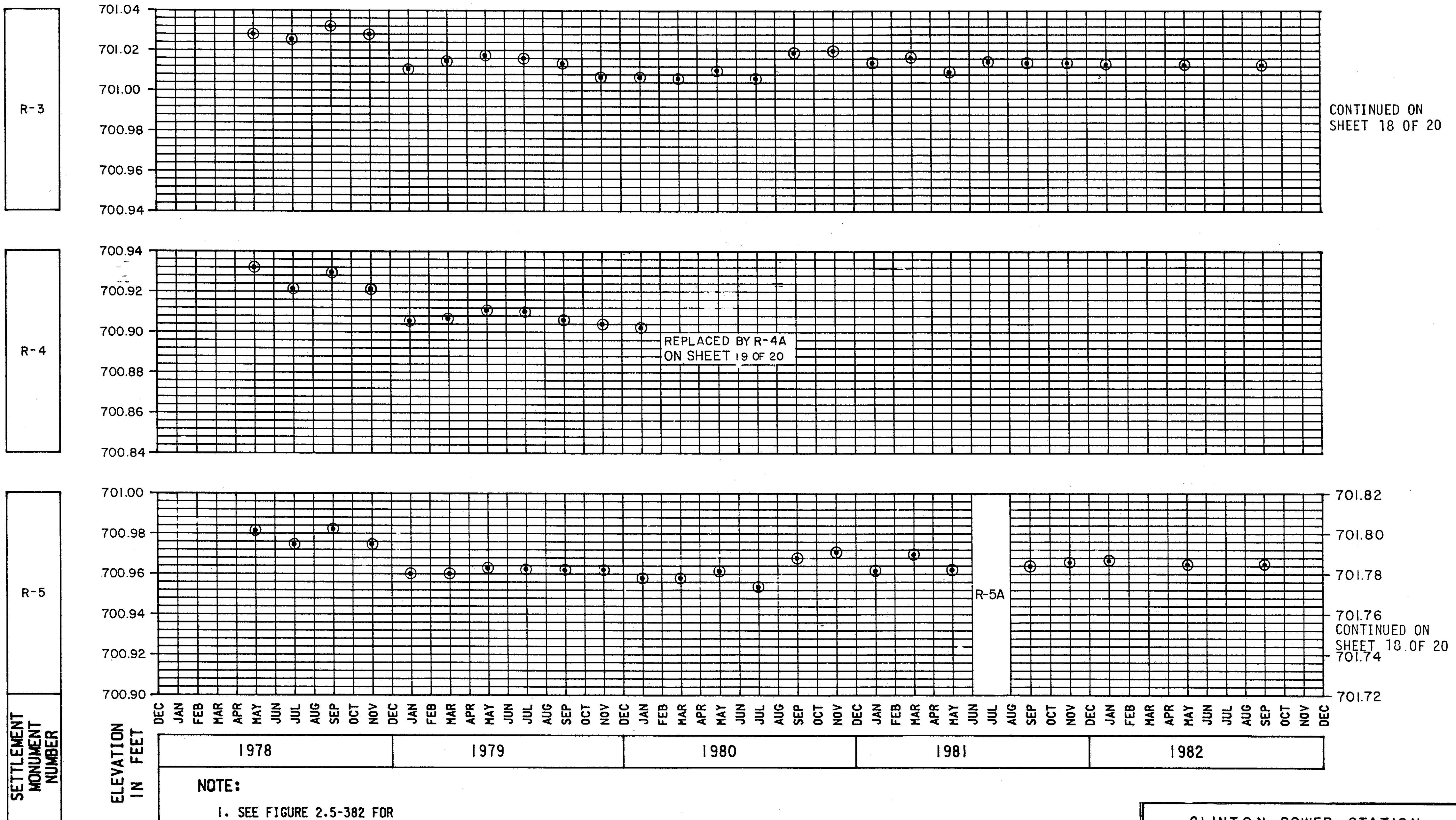
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 16 OF 20)



NOTE:

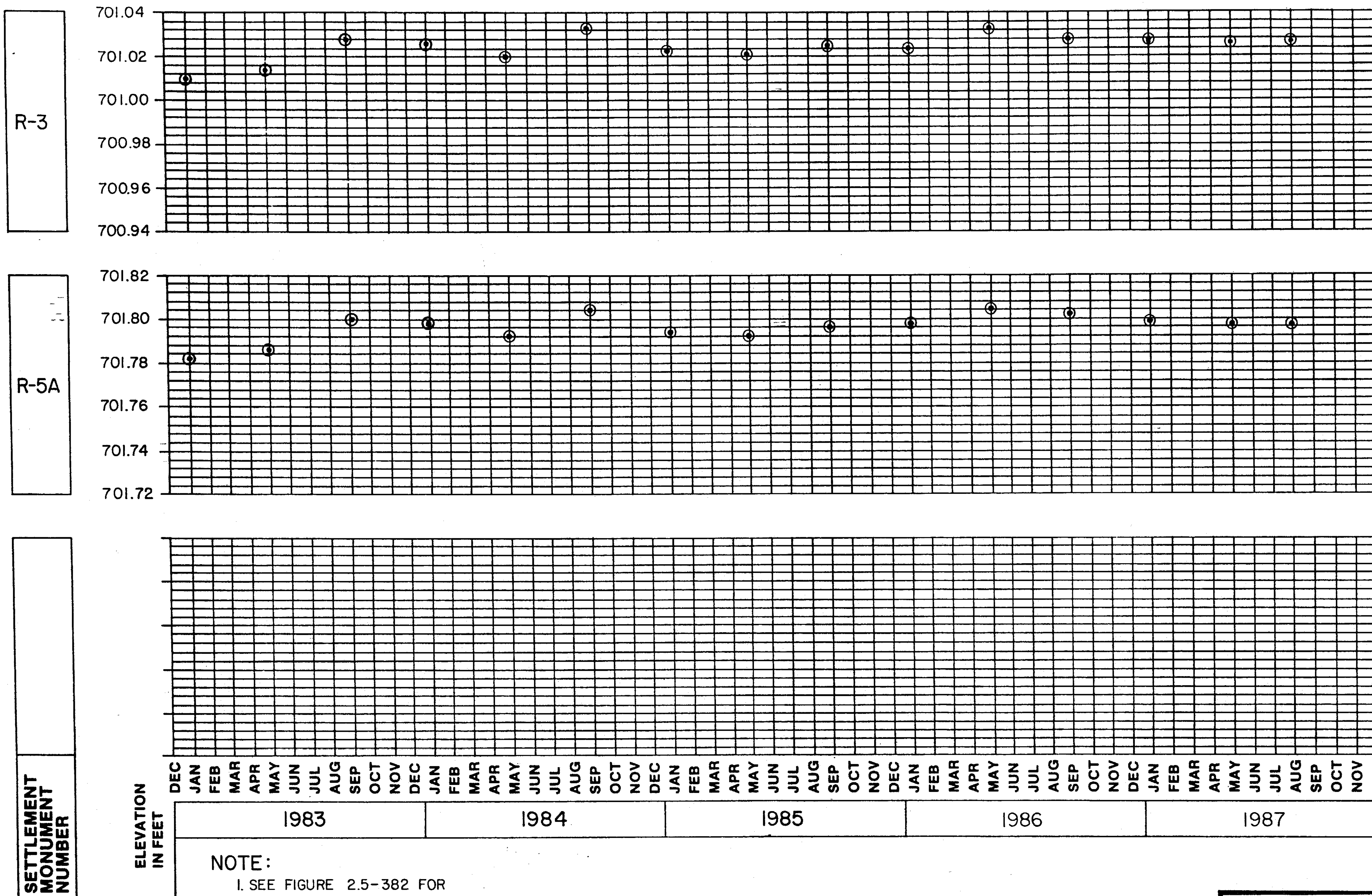
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 17 OF 20)



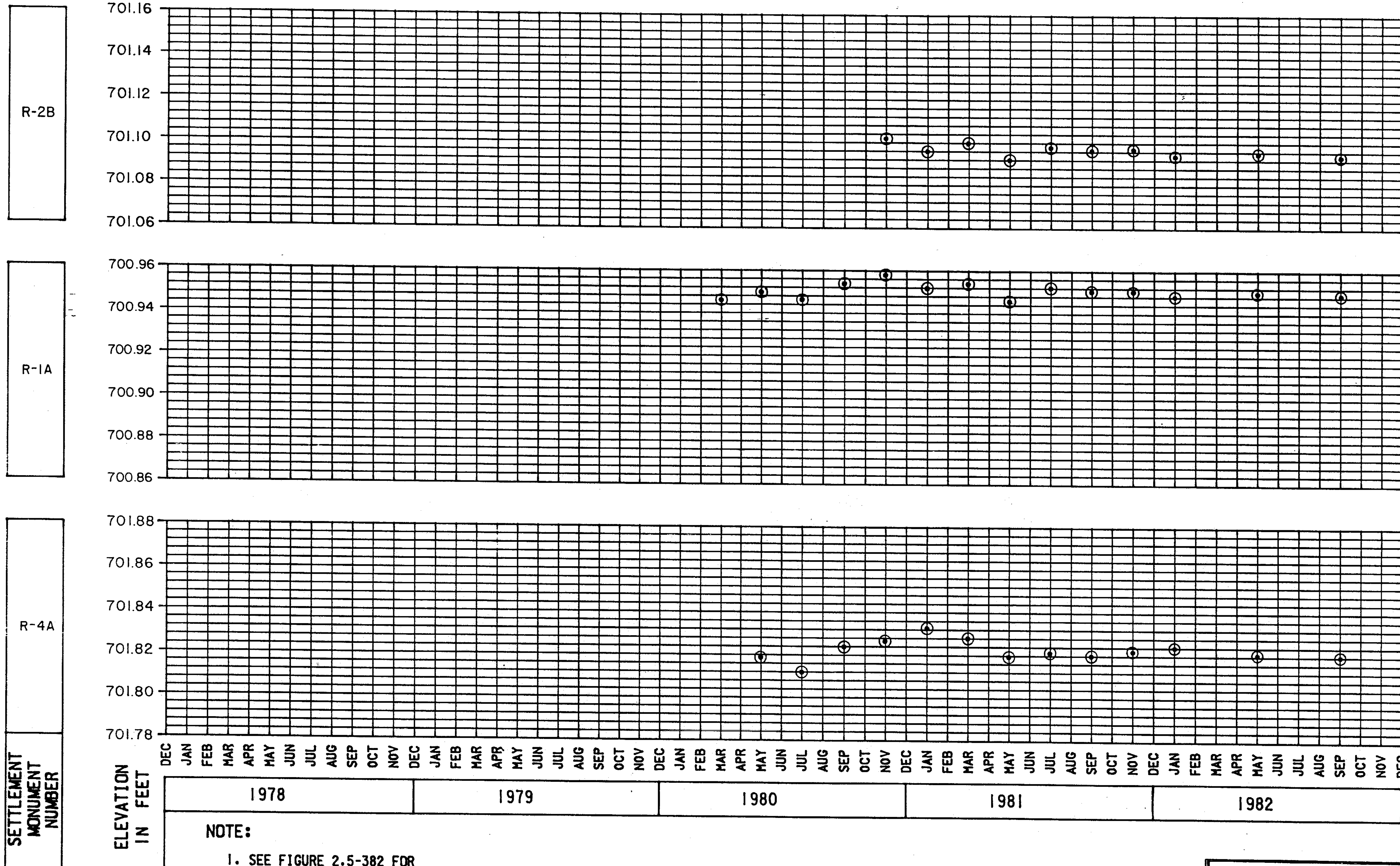
NOTE:
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 18 OF 20)



CONTINUED ON SHEET 20 OF 20

CONTINUED ON SHEET 20 OF 20

CONTINUED ON SHEET 20 OF 20

NOTE:

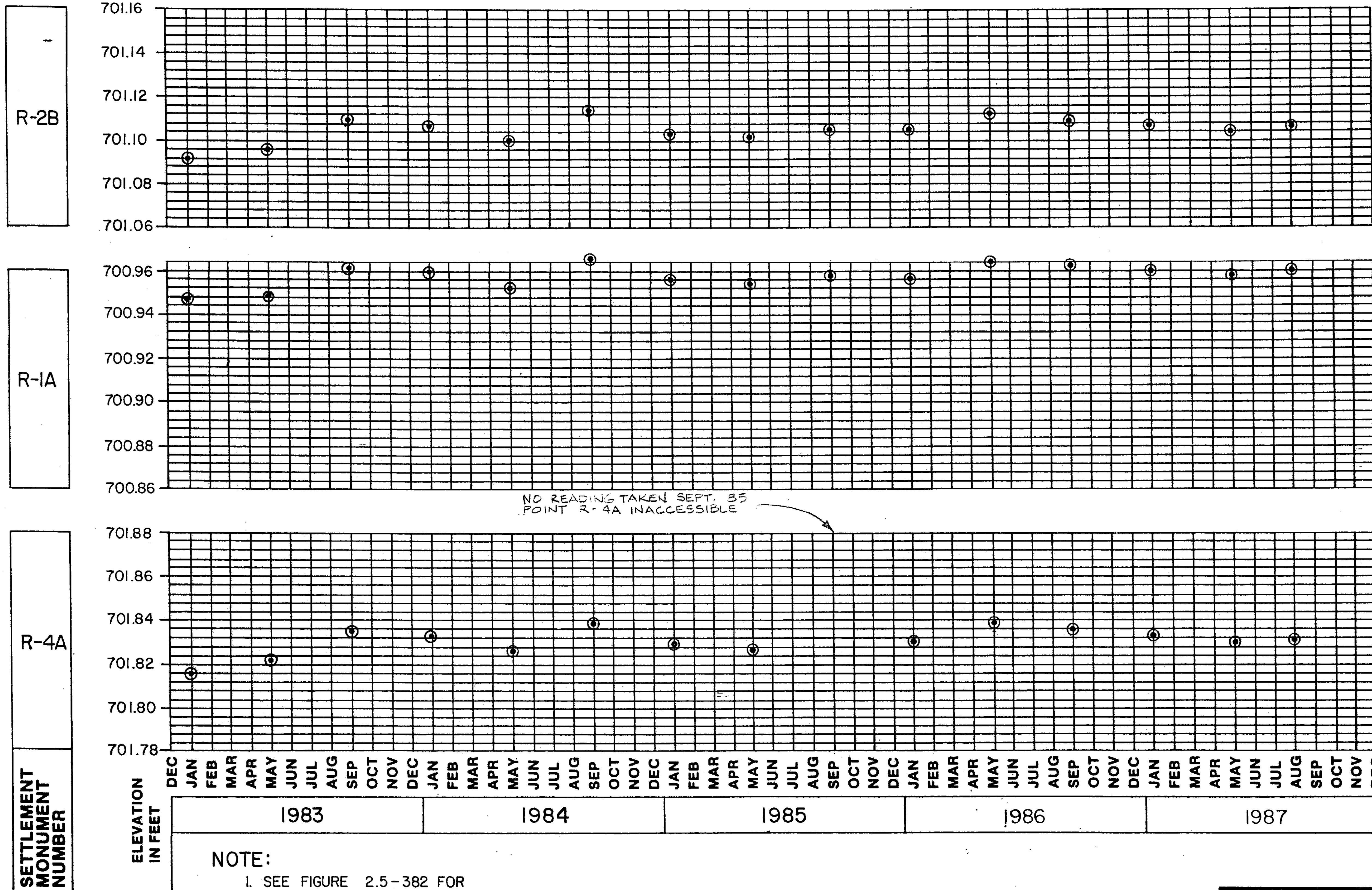
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 19 OF 20)



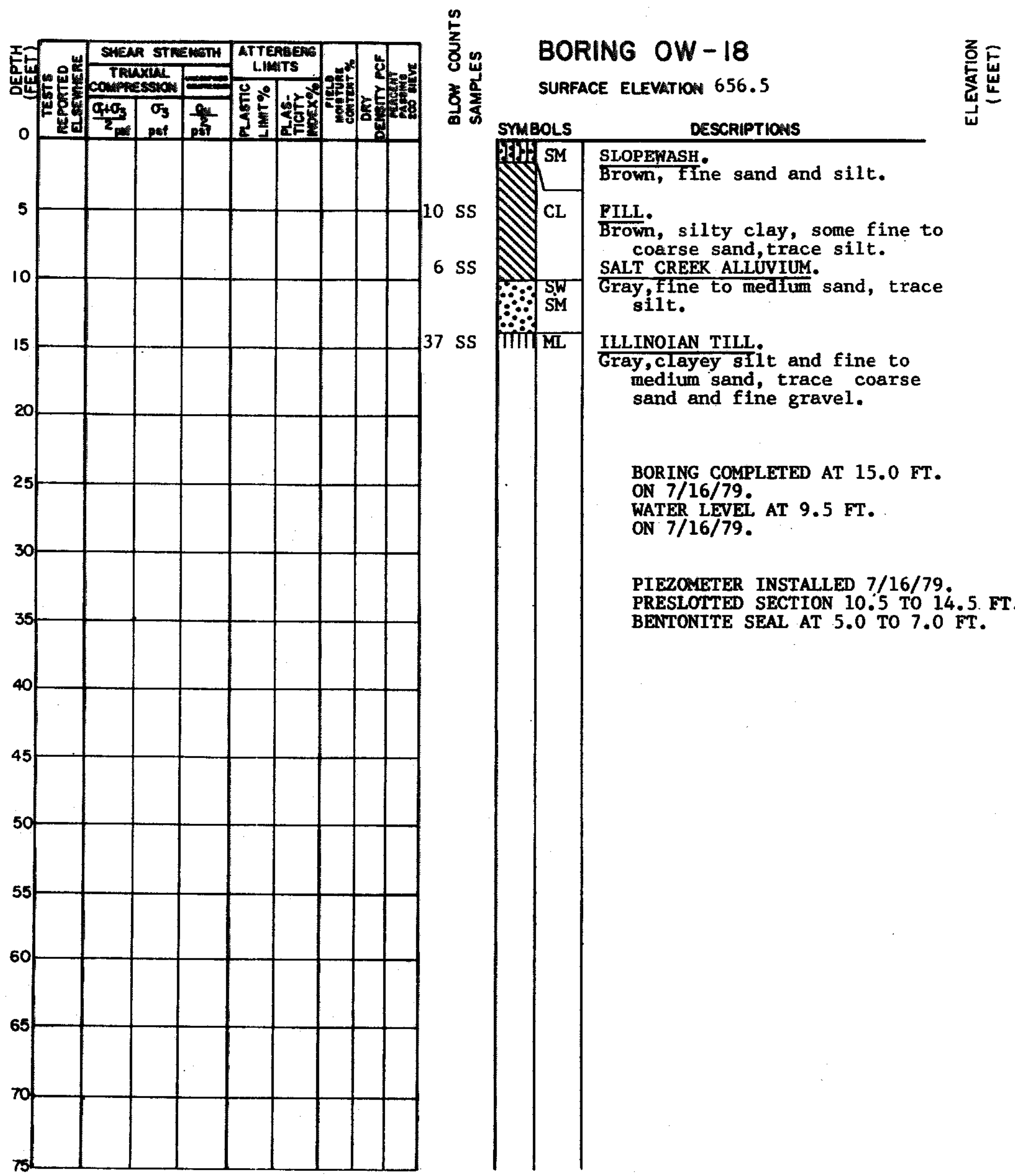
NOTE:
1. SEE FIGURE 2.5-382 FOR LOCATION OF MONUMENTS

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-438

MAIN PLANT
SETTLEMENT MEASUREMENTS

(SHEET 20 OF 20)



LOGGED BY: SARGENT & LUNDY

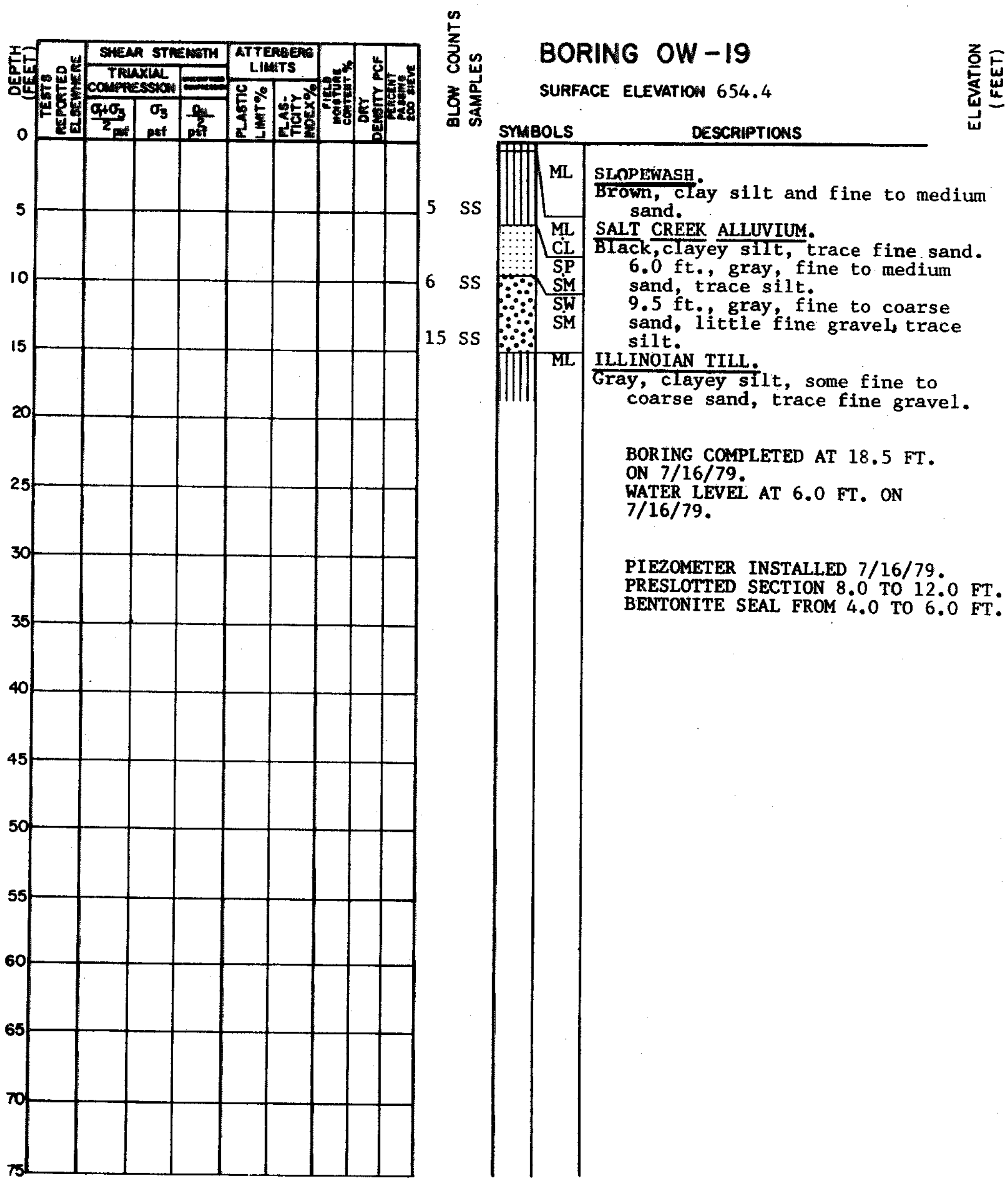
DRILLED BY: RAYMOND INTERNATIONAL

CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-439

LOG OF BORING OW-18



LOGGED BY: SARGENT & LUNDY

DRILLED BY: RAYMOND INTERNATIONAL

CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-440

LOG OF BORING OW-19

BORING OW-20

SURFACE ELEVATION 658.4

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	$\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS SAMPLES	SYMBOLS
0–3											SM
5										16 SS	CL
10										12 SS	
15										17 SS	
20										19 SS	
24	GSD						14.1		0.39	44 SS	ML
25											SP
29										116 SS	SW
34										100/5"	ML

DESCRIPTIONS

SLOPEWASH.
Light brown, fine sand and silt.
FILL.
Brown, silty clay, some fine to coarse sand, trace fine gravel.
3.5 ft., grades to gray.

ILLINOIAN TILL.
Gray, clayey silt and fine to medium sand, trace coarse sand and fine gravel.
24.0 ft., gray, fine to medium sand, trace silt.
24.5 ft., gray, fine to coarse sand, little fine gravel, trace silt.
26.0 ft., gray, clayey silt and fine to medium sand, trace coarse sand and fine gravel.

BORING COMPLETED AT 34.4 FT. ON 7/17/79.
WATER TABLE ENCOUNTERED AT 24.0 FT. ON 7/17/79. ONE HOUR LATER WATER LEVEL AT 2.3 FT.

PIEZOMETER INSTALLED 7/17/79.
PRE-SLOTTED SECTION 22.5 TO 26.5 FT.
BENTONITE SEAL FROM 5.0 TO 10.0 FT.

ELEVATION (FEET)

LOGGED BY: SARGENT & LUNDY
DRILLED BY: RAYMOND INTERNATIONAL
TESTED BY: SOIL TESTING SERVICES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-441

LOG OF BORING OW-20

BORING OW-21

SURFACE ELEVATION 670.0

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
5				4500+*						15	SS
10				4500+*						14	SS
15				3000*						15	SS
20				4500*						13	SS
25				4500+*						11	SS
30				4500+*						28	SS
35				4500+*						101	SS
										144	SS
40										104/4"	SS
45				4500+*						118	SS
50										100/6"	SS
55										100/8"	SS
										124	SS
60											
65											
70											
75											

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	FILL (TYPE A) Gray, silty clay, little fine to medium sand, trace coarse sand and fine gravel.	
ML	ILLINOIAN TILL Gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel. 35.0 feet, grades to clayey silt and fine to medium sand. 35.7 to 36.3 feet, gray, fine to medium sand, trace silt. 36.3 to 36.5 feet, gray, fine sand and silt. 36.5 to 37.2 feet, gray, fine to medium sand, little coarse sand, trace fine gravel and silt. 37.2 to 38.3 feet, gray, fine to coarse sand, trace silt and fine gravel. 38.3 to 38.5 feet, driller notes hard drilling. 38.5 to 38.7 feet, gray fine to medium sand, little silt. 38.7 to 39.0 feet, gray, fine sand and silt. 39.0 feet, dark gray, clayey silt and fine to medium sand, trace coarse sand and fine gravel. 43.5 feet, light gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel. 52.5 to 54.0 feet, gray, fine to coarse sand, trace silt and fine gravel. 54.0 feet, gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel.	641.5

BORING COMPLETED AT 56.5 FEET ON 10/8/79.

WATER LEVEL ENCOUNTERED AT 35.7 FEET ON 10/8/79.

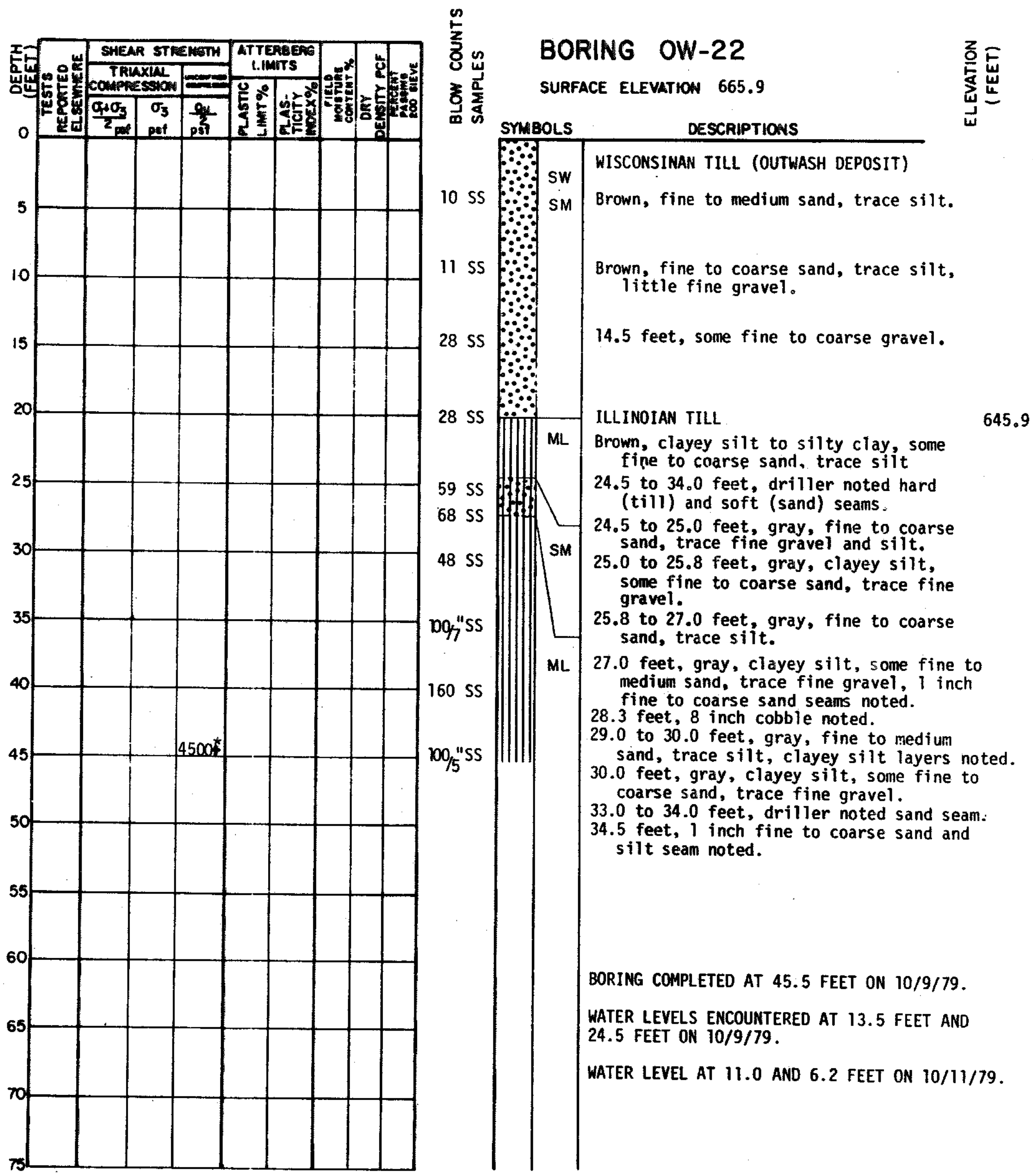
WATER LEVEL AT 6.2 FEET ON 10/11/79.

PIEZOMETER INSTALLED ON 10/8/79. A 2 INCH PVC PIPE WITH A 2 FOOT PRE-SLOTTED SCREEN ATTACHED TO A 7 FOOT PERFORATED LOWER SECTION WITH THE END PLUGGED WAS PLACED AT ELEVATION 615; GRANULAR FILL WAS PLACED FROM ELEVATION 615 TO 665; BENTONITE SEAL FROM ELEVATION 665 TO 657; AND GROUT FROM ELEVATION 667 TO 670.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-442

LOG OF BORING OW-21



TWO PIEZOMETERS (OW-22A AND 22B) WERE INSTALLED IN BORE HOLE ON 10/9/79. OW-22A CONSISTED OF A 2 INCH PVC PIPE WITH A 2 FOOT PRE-SLOTTED SECTION ATTACHED TO A 7 FOOT PERFORATED LOWER SECTION WITH THE END OF THE LOWER SECTION PLUGGED WAS PLACED AT ELEVATION 621.4; GRANULAR FILL WAS PLACED FROM ELEVATION 621.4 TO 642.9; AND A BENTONITE SEAL FROM ELEVATION 642.9 TO 645.9. OW-22B CONSISTED OF A 2 INCH PVC PIPE WITH THE LOWER 7 FEET PERFORATED AND THE LOWER END PLUGGED WAS PLACED AT ELEVATION 645.9; GRANULAR FILL WAS PLACED FROM ELEVATION 645.9 TO 660.4; BENTONITE SEAL FROM ELEVATION 660.4 TO 663.9; AND GROUT FROM ELEVATION 663.9 TO 665.9.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-443

LOG OF BORING OW-22

BORING OW-23

SURFACE ELEVATION 654.5

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1-\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
5				2750*						9	SS
10				2500*						14	SS
15				4000*						10	SS
20										—	SS
25										92	SS
30				4500+*						100/3"	SS
35				4500+*						120/6"	SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	FILL (TYPE A) Brown, silty clay, little fine to medium sand, trace fine gravel and coarse sand. 8.5 feet, grades to brown and gray. 13.5 feet, grades to gray.	
SW · SM	ILLINOIAN TILL Gray, fine to coarse sand and fine gravel, coarse gravel noted, trace silt. 19.5 feet, rock wedged in split spoon. 19.5 to 22.5 feet, driller notes 2 to 6 inch sand seams.	637.5
ML	Dark gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel. 30.2 feet, coarse gravel in split spoon tip.	

BORING COMPLETED AT 35.0 FEET ON 10/10/79.

WATER LEVEL ENCOUNTERED AT 17.0 FEET ON 10/10/79.

WATER LEVEL AT 3.9 FEET AFTER APPROXIMATELY 10 MINUTES

WATER LEVEL AT 1.0 FOOT ON 10/11/79.

PIEZOMETER INSTALLED ON 10/10/79. A 2 INCH PVC PIPE WITH A 2-FOOT PRE-SLOTTED SECTION ATTACHED TO A 7 FOOT PERFORATED LOWER SECTION WITH THE END PLUGGED WAS PLACED AT ELEVATION 620.0; GRANULAR FILL WAS PLACED FROM ELEVATION 620.0 TO 649.5; BENTONITE SEAL FROM ELEVATION 649.5 TO 651.5; AND GROUT FROM ELEVATION 651.5 TO 654.5.

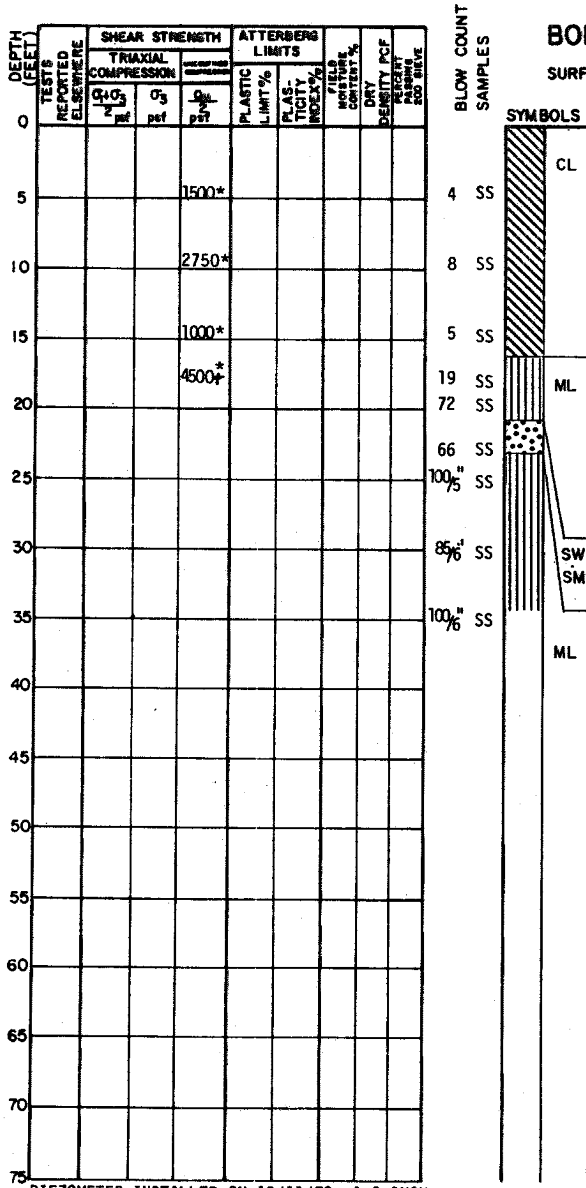
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-444

LOG OF BORING OW-23

BORING OW-24

SURFACE ELEVATION 654.9



DESCRIPTIONS | ELEVATION (FEET)

FILL (TYPE A)

Gray, silty clay, little fine to medium sand, trace coarse sand and fine gravel.

8.5 feet, grades to brown.

13.5 feet, pockets of organics noted in tip of spoon.

ILLINOIAN TILL 643.4

Gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel.

19.5 feet, gravel noted in spoon.

20.5 to 22.0 feet, gray, fine to medium sand, coarse sand seams noted, trace silt.

22.0 to 22.3 feet, gray, silt.

22.3 to 22.9 feet, gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel.

22.9 to 23.1 feet, driller noted sand lense.

24.0 to 24.3 feet, gray, fine to coarse sand, trace silt.

29.0 to 29.3 feet, gray, fine to coarse sand, some fine gravel, trace coarse gravel and silt.

29.3 to 29.4 feet, gray, clayey silt, some fine to coarse sand, trace fine gravel.

29.4 to 29.6 feet, gray, silt.

29.6 to 30.0 feet, gray, clayey silt, some fine to medium sand.

30.0 to 30.1 feet, gray, fine to coarse sand, trace silt and fine gravel.

30.1 feet, gray, clayey silt, some fine to coarse sand, trace fine gravel.

BORING COMPLETED AT 34.5 FEET ON 10/11/79.

WATER LEVEL ENCOUNTERED AT 20.5 FEET. WATER LEVEL AT 2.4 FEET AFTER APPROXIMATELY 30 MINUTES AND AT 3.2 FEET ABOVE GROUND SURFACE AFTER APPROXIMATELY 4.5 HOURS.

PIEZOMETER INSTALLED ON 10/11/79. A 2 INCH PVC PIPE WITH THE LOWER 13.5 FEET PERFORATED AND THE LOWER END PLUGGED WAS PLACED AT ELEVATION 620.9; GRANULAR FILL WAS PLACED FROM ELEVATION 620.9 TO 649.9; BENTONITE SEAL FROM ELEVATION 649.9 TO 651.9; AND GROUT FROM ELEVATION 651.9 TO 654.9.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-445

LOG OF BORING OW-24

BORING RW-1

SURFACE ELEVATION 658.2

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS / SAMPLES
4				4500+*						20 SS
9										10 SS
14										17 SS
19				4000*						15 SS
22										53 SS
24										80 SS
25				4250*						100/9"SS
29				4500+*						167/11"SS
34				4500+*						75/1½ "SS
39				4500+*						100/7"SS
44				4500+*						100/6"SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
SM	SLOPEWASH Brown, fine sand and silt, very loose, dry.	
CL	FILL (TYPE A) Gray, silty clay, some fine to coarse sand, trace fine gravel. 12.5 feet, 4 inch cobble noted. 13.5 feet, grades to brown. 18.5 feet, grades to gray.	656.7
ML	ILLINOIAN TILL Gray, clayey silt and fine to medium sand, trace coarse sand and fine gravel.	636.7
SW SM	Gray, fine to medium sand, little coarse sand, trace silt. 25.0 to 25.4 feet, gray fine to coarse sand, trace silt.	
ML	25.4 feet, 4 inch, silt and fine sand seam. 25.7 feet, 4 inch seam of gray clayey silt and fine to medium sand, trace fine gravel. 26.0 feet, 2 inch seam of gray, fine sand, some silt. 26.2 feet, cobble noted. Gray, clayey silt, some fine to medium sand, trace fine gravel and coarse sand. 34.0 feet, cobble noted.	

BORING COMPLETED AT 44.0 FEET ON 10/1/79.

WATER LEVEL ENCOUNTERED AT 24.0 FEET ON 10/1/79.

WATER LEVEL AT 1.3 FEET ABOVE GROUND SURFACE ON 10/11/79.

PIEZOMETER INSTALLED ON 10/2/79. A 2 INCH PVC PIPE WITH A 4 FOOT WIRE-WOUND SCREENED SECTION ATTACHED 10 FEET ABOVE THE BOTTOM AND THE LOWER END OF THE PIPE PLUGGED WAS PLACED AT ELEVATION 614.7; GRANULAR BACKFILL WAS PLACED FROM ELEVATION 614.7 TO 655.2; BENTONITE SEAL FROM ELEVATION 655.2 TO 657.2; AND GROUT FROM ELEVATION 657.2 TO 658.2.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-446

LOG OF BORING RW-1

BORING RW-2

SURFACE ELEVATION 656.9

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
0											
				1500*							
				3500*						9	SS
5											
				3500*						12	SS
10											
				4500+*						14	SS
15											
				4500+*						18	SS
20											
										14	SS
										156	SS
25											
				4500+*						100	SS
30											
										150/10"	SS
35											
										100/10"	SS
				4500+*							
40											
										100/9"	SS
45											
50											
55											
60											
65											
70											
75											

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
	FILL (TYPE A)	
CL	Gray, silty clay, some fine to coarse sand, trace fine gravel.	
ML	Brown, clayey silt and fine to medium sand, trace coarse sand and fine gravel. 18.0 feet, 2 inches of coarse gravel noted. 18.5 feet, grades to gray. 20.0 feet, driller notes easy drilling.	
	ILLINOIAN TILL	635.4
ML	Light gray, clayey silt and fine to coarse sand, trace fine gravel. 22.3 feet, 3 inch gravel layer noted. 22.5 feet, gray fine to medium sand, trace silt.	
SW	23.3 feet, gray fine sand and silt. 23.7 feet, 1 inch seam, gray, fine to medium sand.	
SM to SM	23.8 feet. gray fine sand and silt. 24.0 feet, gray clayey silt and fine to medium sand, trace coarse sand and fine gravel	
ML	28.5 feet, dark gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel.	

BORING COMPLETED AT 44.8 FEET. ON 10/2/79.
WATER LEVEL ENCOUNTERED AT 22.3 FEET ON 10/2/79.
WATER LEVEL AT 2.4 FEET ABOVE GROUND SURFACE ON 10/11/79.

PIEZOMETER INSTALLED ON 10/2/79. A 2 INCH PVC PIPE WITH A 4 FOOT WIRE-WOUND SCREENED SECTION ATTACHED 1o FEET ABOVE THE BOTTOM AND THE LOWER END OF THE PIPE PLUGGED AT ELEVATION 613.4; GRANULAR BACKFILL WAS PLACED FROM ELEVATION 613.4 TO 653.9; BENTONITE SEAL FROM ELEVATION 653.9 TO 655.9; AND GROUT FROM ELEVATION 655.9 TO 656.9.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-447

LOG OF BORING RW-2

BORING RW-3

SURFACE ELEVATION 655.8

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{Q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
5				2500*						7	SS
10										12	SS
15				2750* 2000*						9	SS
20				4500*+						15	SS
										101	SS
25				4500*+						172	SS
30				4500*+						125	SS
35				4500*+						100/6"	SS
40				4500*+						100/7"	SS
45				4500*+						141	SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
ML CL	Dark gray, clayey silt to silt.	
	8.5 feet, brown, silty clay mixed with dark gray, clayey silt.	
CL	Gray, silty clay, some fine to medium sand, trace coarse sand and fine gravel.	
SC	Brown, clayey fine to medium sand, trace coarse sand.	
ML SM	ILLINOIAN TILL Gray, fine to medium sand and clayey silt.	637.0
ML	19.8 feet, gray, clayey silt, some fine to medium sand, trace coarse sand and fine gravel.	
	21.0 to 21.3 feet, fine to coarse gravel noted by driller.	
SM to SW - SM	21.3 feet, gray, fine sand and silt.	
	22.0 feet, gray, fine to medium sand, little silt.	
	22.5 feet, gray, fine sand and silt.	
	22.7 feet, gray, fine to medium sand and silt, little coarse sand, trace fine gravel.	
	23.9 feet, gray, fine to medium sand, little coarse sand, trace fine gravel and silt.	
	24.5 feet, gray, fine sand and silt.	
ML	24.8 feet, gray, clayey silt, some fine to medium sand, trace fine gravel and coarse sand.	
	32.0 feet, driller noted 6 inch sand seam.	

BORING COMPLETED AT 45.0 FEET ON 10/3/79.
WATER LEVEL ENCOUNTERED AT 21.0 FEET ON 10/3/79.
WATER LEVEL AT 2.8 FEET ABOVE SURFACE ON 10/11/79.

PIEZOMETER INSTALLED ON 10/3/79. A 2 INCH PVC PIPE WITH A 4 FOOT WIRE-WOUND SCREENED SECTION ATTACHED 10 FEET ABOVE THE BOTTOM AND THE LOWER END OF THE PIPE PLUGGED WAS PLACED AT ELEVATION 612.3.; GRANULAR BACKFILL WAS PLACED FROM ELEVATION 612.3 TO 652.8; BENTONITE SEAL FROM ELEVATION 652.8 TO 654.8; AND GROUT FROM ELEVATION 654.8 TO 655.8.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-448

LOG OF BORING RW-3

BORING RW-4

SURFACE ELEVATION 659.9

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
5										15	SS
10				3500*						12	SS
15										13	SS
20				4000 / 4500‡						25	SS
25				4500*+						69	SS
27										180	SS
35										115	SS
40										107/6"	SS
44										100/6"	SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	Gray, silty clay, some fine to medium sand, trace fine gravel and coarse sand.	
	9.8 feet, sandy seam noted.	
	14.0 feet, grades to brown.	
	18.5 feet, grades to gray. ILLINOIAN TILL	640.4
ML	24.5 feet, coarse gravel fragment noted.	
	26.0 feet, driller notes easier drilling.	
	27.0 feet, gray, silt and fine sand.	
SM	27.5 feet, gray, fine to coarse sand, trace fine gravel and silt.	
	28.0 feet, gray, clayey silt and fine to coarse sand, trace fine gravel.	
ML	33.5 feet, gray, clayey silt, some fine to coarse sand, trace fine gravel.	
	36.0 feet, 6 inch sand seam noted by driller.	

BORING COMPLETED AT 44.0 FEET ON 10/4/79.

WATER LEVEL ENCOUNTERED AT 26.0 FEET ON 10/4/79.

WATER LEVEL AT 0.4 FEET ON 10/11/79.

PIEZOMETER INSTALLED ON 10/4/79. A 2 INCH PVC PIPE WITH A 4 FOOT WIRE-WOUND SCREENED SECTION ATTACHED 10 FEET ABOVE THE BOTTOM AND THE LOWER END OF THE PIPE PLUGGED WAS PLACED AT ELEVATION 616.4; GRANULAR BACK-FILL WAS PLACED FROM ELEVATION 616.4 TO 656.9; BENTONITE SEAL FROM ELEVATION 658.9 TO 658.9; AND GROUT FROM ELEVATION 658.9 TO 659.9.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-449

LOG OF BORING RW-4

BORING RW-5

SURFACE ELEVATION 662.8

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
0												CL	FILL (TYPE A)	
5										17	SS		Gray and brown, silty clay, some fine to medium sand, trace coarse sand and fine gravel.	
10				3000 *						11	SS			
15										12	SS		17.0 feet, driller noted easy drilling.	
20				1500*						9	SS			
												ML	ILLINOIAN TILL	641.3
25				4500+*						28	SS		Light gray, clayey silt to silty clay, some fine to coarse sand, trace fine gravel.	
										108	SS	SM	28.0 feet, gray, fine to medium sand, trace silt, driller noted gravel just above sample.	
30				4500+*						110/6"	SS		29.0 to 29.2 feet, gray, silt and fine sand. 29.2 to 30.3 feet, gray, fine to medium sand, trace silt.	
				4500+*						152			30.3 to 30.8 feet, gray, fine to coarse sand trace silt.	
40				4500+*						100/8"	SS	ML	30.8 feet, gray, clayey silt, some fine to coarse sand, trace fine gravel. 33.5 feet, grades to trace coarse sand and fine gravel.	
45				4500+*						100/7"	SS			

BORING COMPLETED AT 44.1 FEET ON 10/5/79.

WATER LEVEL ENCOUNTERED AT 28.0 FEET ON 10/5/79.

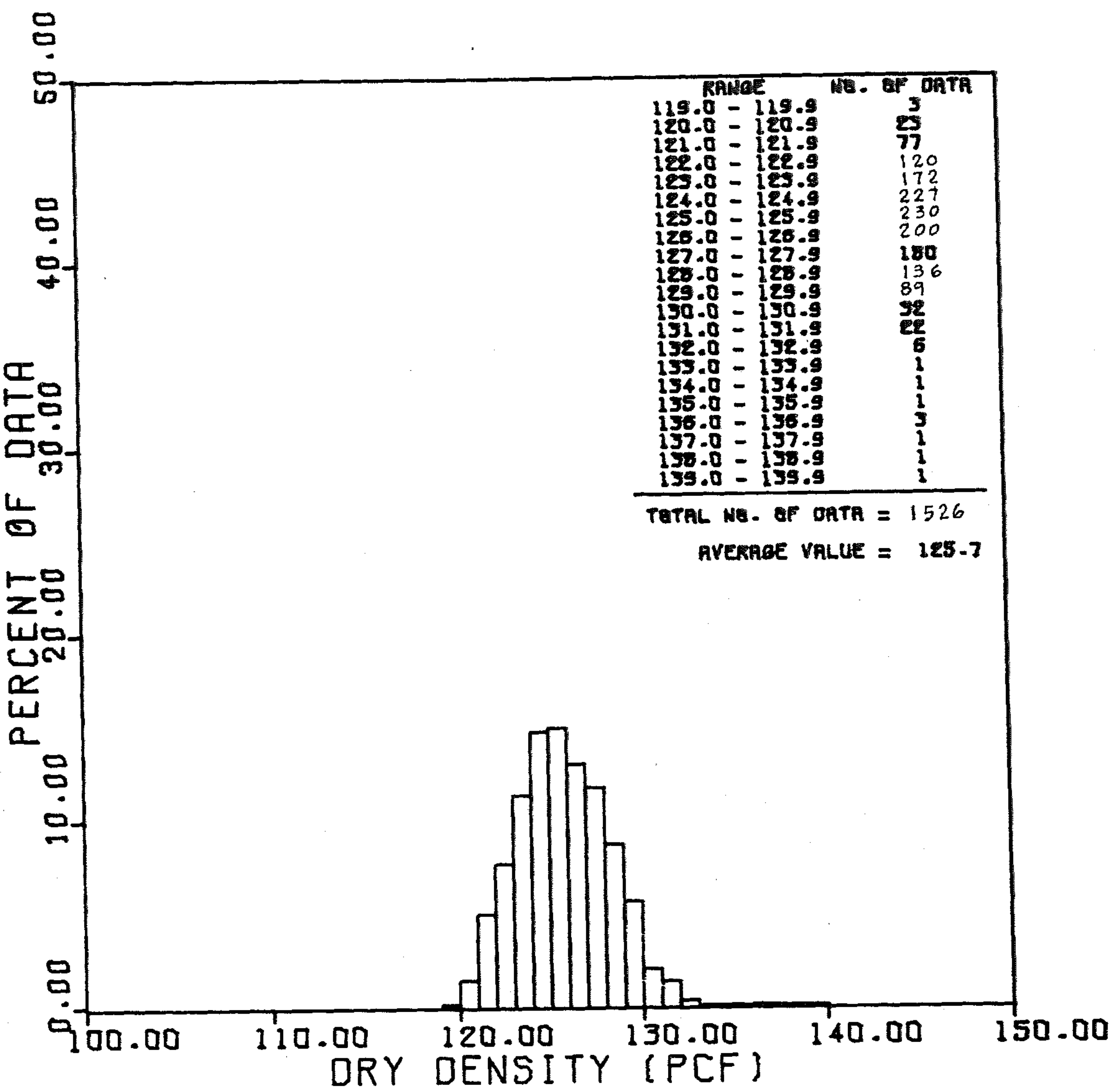
WATER LEVEL AT 3.2 FEET ON 10/11/79.

PIEZOMETER INSTALLED ON 10/5/79. A 2 INCH PVC PIPE WITH A 4 FOOT WIRE-WOUND SCREENED SECTION ATTACHED 10 FEET ABOVE THE BOTTOM AND THE LOWER END OF THE PIPE PLUGGED WAS PLACED AT ELEVATION 619.3; GRANULAR BACK-FILL WAS PLACED FROM ELEVATION 619.3 TO 659.8; BENTONITE SEAL FROM ELEVATION 659.8 TO 661.8; AND GROUT FROM ELEVATION 661.8 TO 662.8.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-450

LOG OF BORING RW-5



RANGE	NO. OF DATA
119.0 - 119.9	3
120.0 - 120.9	23
121.0 - 121.9	77
122.0 - 122.9	120
123.0 - 123.9	172
124.0 - 124.9	227
125.0 - 125.9	230
126.0 - 126.9	200
127.0 - 127.9	180
128.0 - 128.9	136
129.0 - 129.9	89
130.0 - 130.9	32
131.0 - 131.9	22
132.0 - 132.9	6
133.0 - 133.9	1
134.0 - 134.9	1
135.0 - 135.9	1
136.0 - 136.9	3
137.0 - 137.9	1
138.0 - 138.9	1
139.0 - 139.9	1

TOTAL NO. OF DATA = 1526

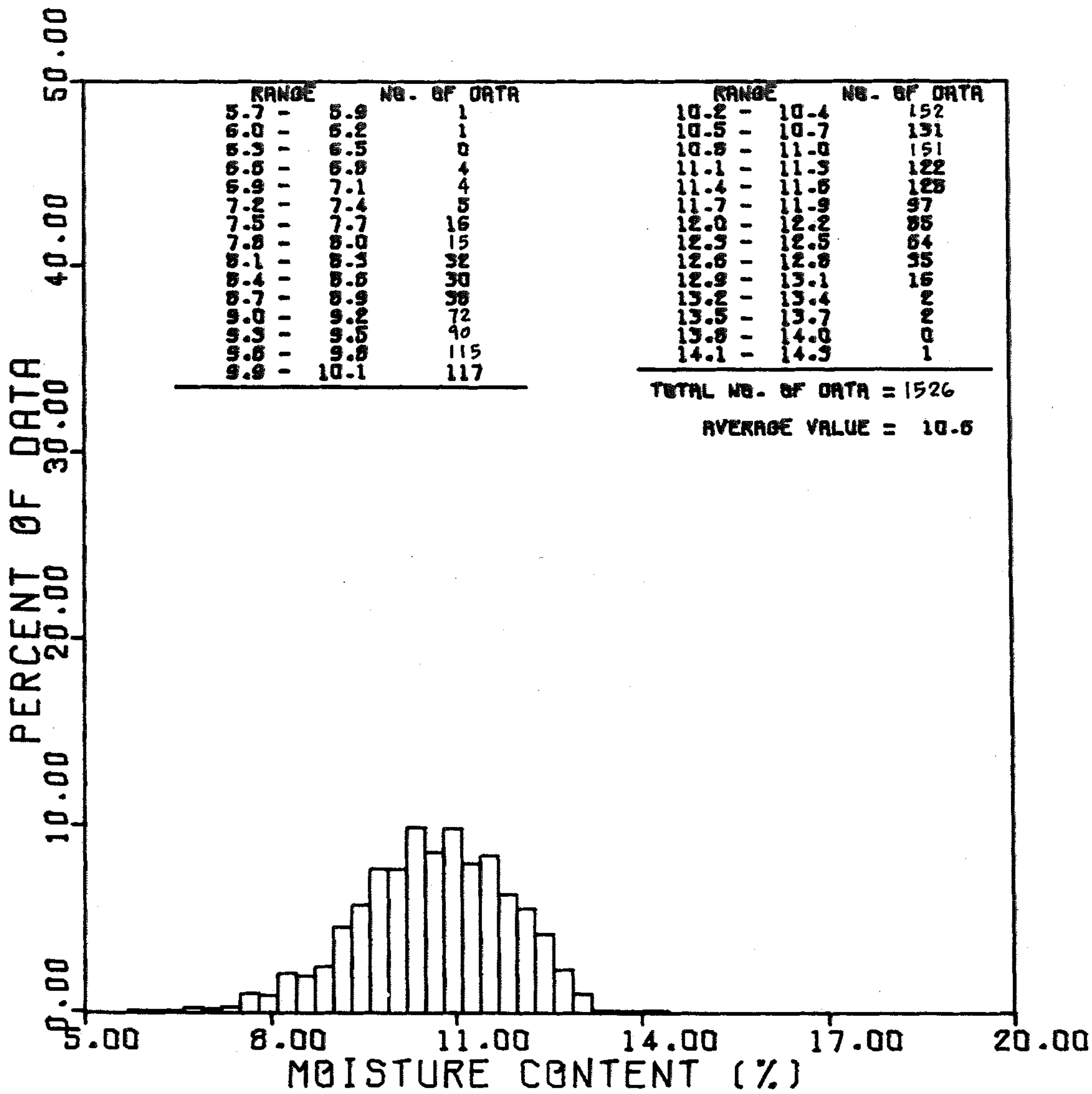
AVERAGE VALUE = 125.7

CLINTON STATION IN-PLACE TEST
SUBMERGED DAM
ELEVATION FROM 645.0 TO 673.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-451

UHS DAM TYPE A COHESIVE FILL
DISTRIBUTION OF DRY DENSITY



RANGE		NO. OF DATA
5.7 -	5.9	1
6.0 -	6.2	1
6.3 -	6.5	0
6.6 -	6.8	4
6.9 -	7.1	4
7.2 -	7.4	5
7.5 -	7.7	16
7.8 -	8.0	15
8.1 -	8.3	32
8.4 -	8.6	30
8.7 -	8.9	38
9.0 -	9.2	72
9.3 -	9.5	90
9.6 -	9.8	115
9.9 -	10.1	117

RANGE		NO. OF DATA
10.2 -	10.4	152
10.5 -	10.7	131
10.8 -	11.0	151
11.1 -	11.3	122
11.4 -	11.6	128
11.7 -	11.9	97
12.0 -	12.2	85
12.3 -	12.5	64
12.6 -	12.8	35
12.9 -	13.1	16
13.2 -	13.4	2
13.5 -	13.7	2
13.8 -	14.0	0
14.1 -	14.3	1

TOTAL NO. OF DATA = 1526

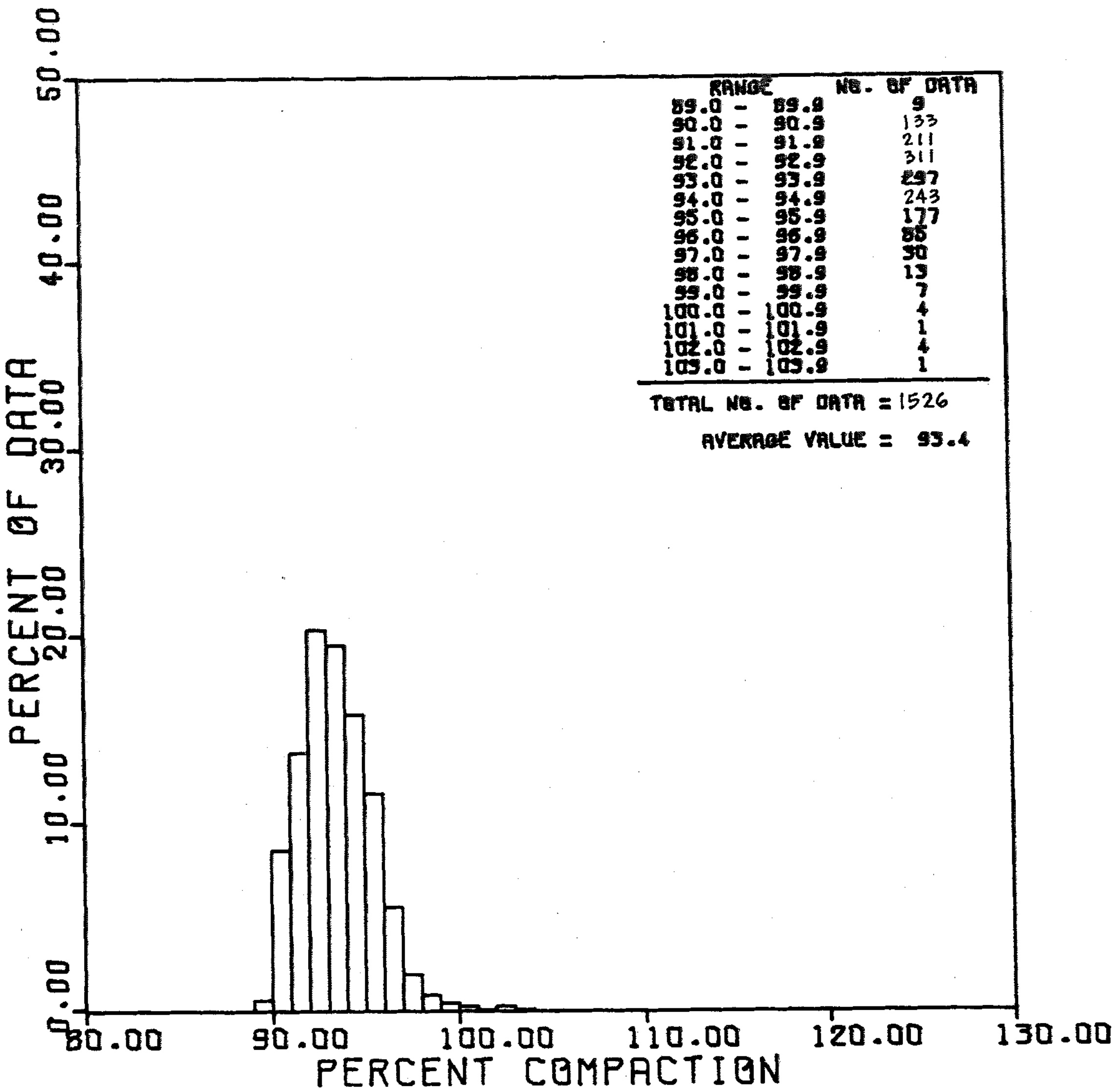
AVERAGE VALUE = 10.6

CLINTON STATION IN-PLACE TEST
SUBMERGED DAM
ELEVATION FROM 645.0 TO 673.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-452

UHS DAM TYPE A COHESIVE FILL
DISTRIBUTION OF MOISTURE CONTENT

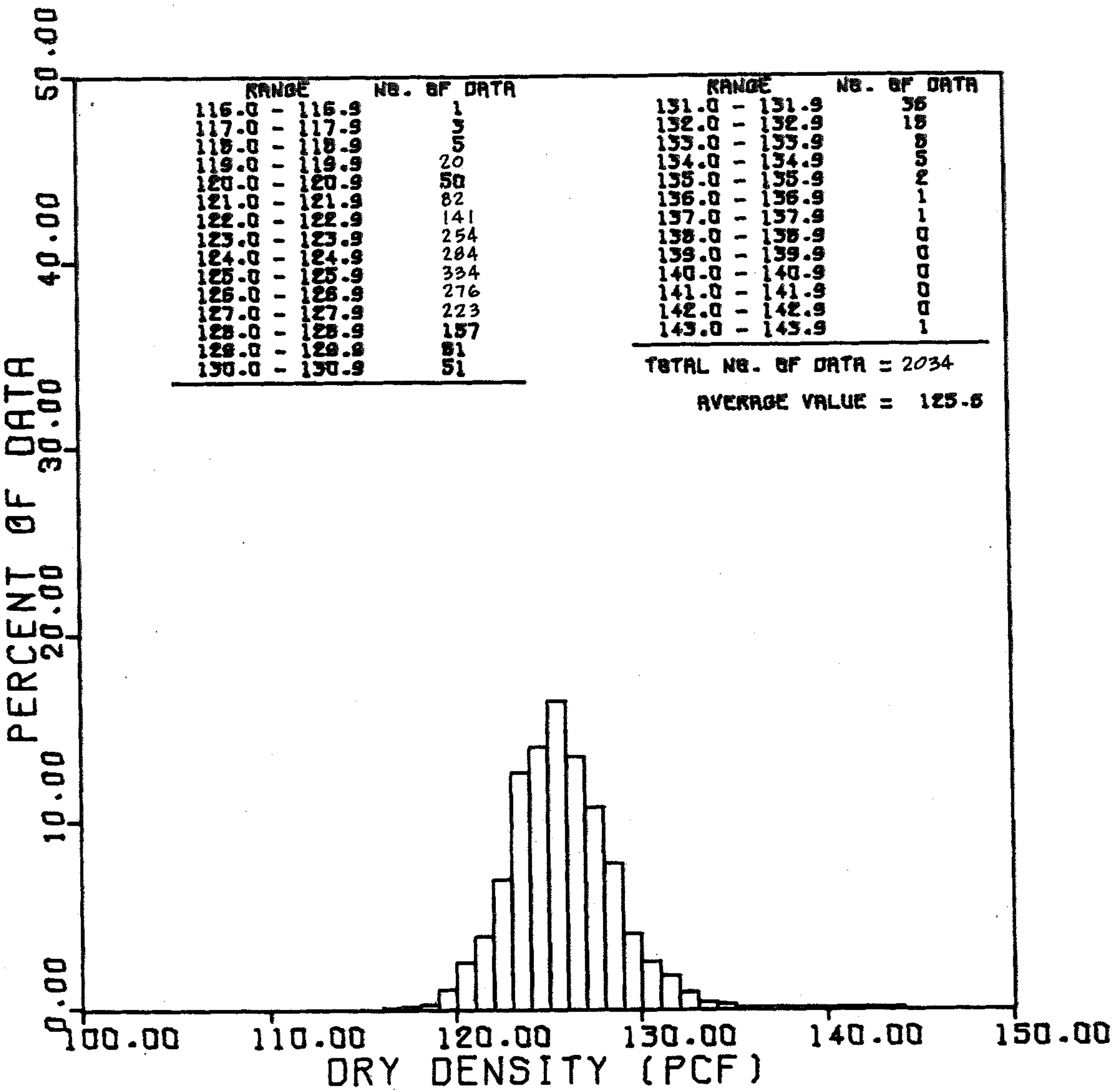


CLINTØN STATIØN IN-PLACE TEST
SUBMERGED DAM
ELEVATIØN FRØM 645.0 TØ 673.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-453

UHS DAM TYPE A COHESIVE FILL
DISTRIBUTION OF PERCENT COMPACTION



RANGE	NO. OF DATA
116.0 - 116.9	1
117.0 - 117.9	3
118.0 - 118.9	5
119.0 - 119.9	20
120.0 - 120.9	50
121.0 - 121.9	82
122.0 - 122.9	141
123.0 - 123.9	254
124.0 - 124.9	284
125.0 - 125.9	334
126.0 - 126.9	276
127.0 - 127.9	223
128.0 - 128.9	157
129.0 - 129.9	81
130.0 - 130.9	51

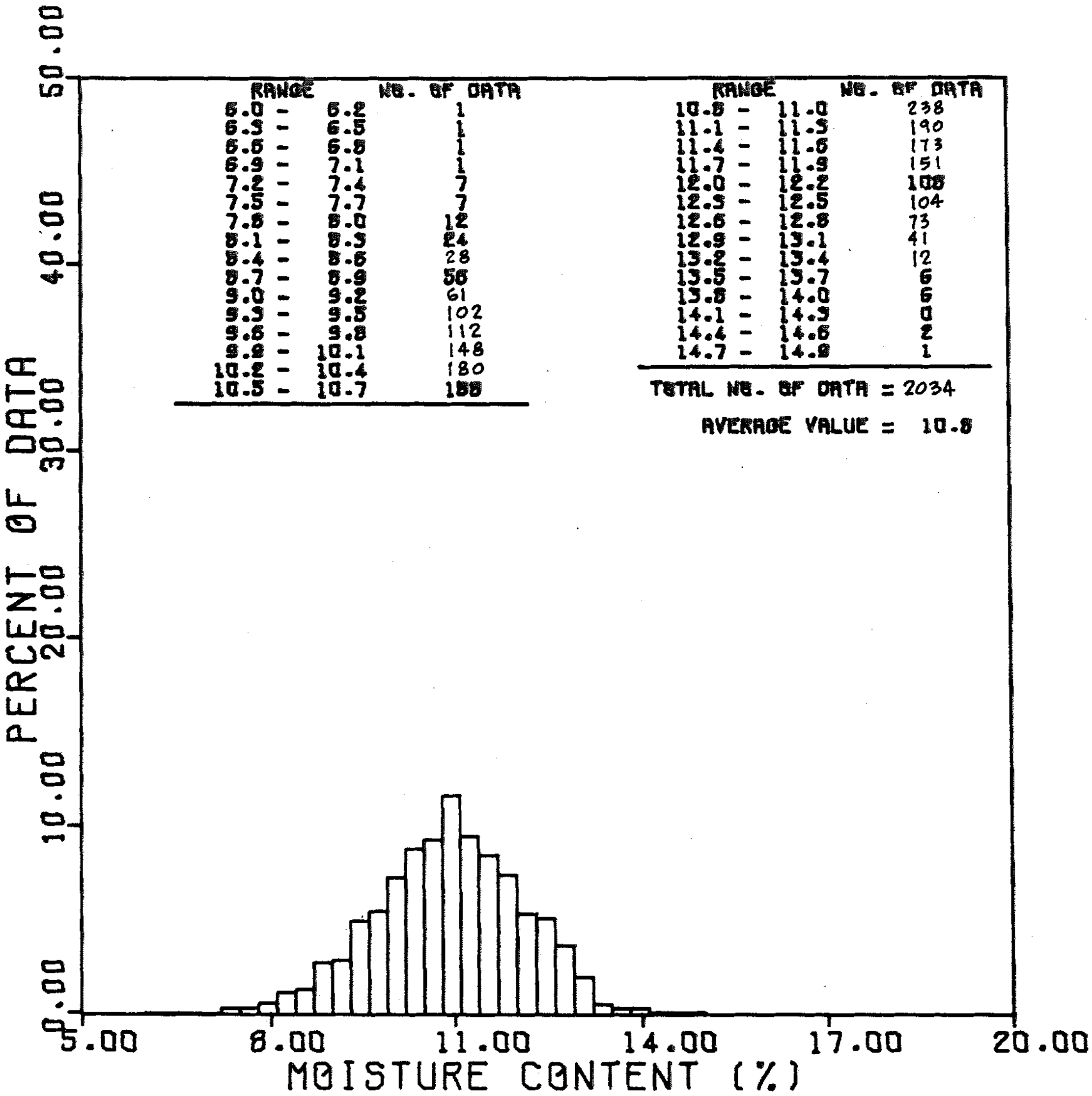
RANGE	NO. OF DATA
131.0 - 131.9	36
132.0 - 132.9	18
133.0 - 133.9	8
134.0 - 134.9	5
135.0 - 135.9	2
136.0 - 136.9	1
137.0 - 137.9	1
138.0 - 138.9	0
139.0 - 139.9	0
140.0 - 140.9	0
141.0 - 141.9	0
142.0 - 142.9	0
143.0 - 143.9	1

CLINTON STATION IN-PLACE TEST
BAFFLE DIKE
ELEVATION FROM 649.0 TO 699.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-454

UHS BAFFLE DIKE TYPE A COHESIVE
FILL DISTRIBUTION OF DRY DENSITY



RANGE	NO. OF DATA
6.0 - 6.2	1
6.3 - 6.5	1
6.6 - 6.8	1
6.9 - 7.1	1
7.2 - 7.4	7
7.5 - 7.7	7
7.8 - 8.0	12
8.1 - 8.3	24
8.4 - 8.6	28
8.7 - 8.9	56
9.0 - 9.2	61
9.3 - 9.5	102
9.6 - 9.8	112
9.9 - 10.1	148
10.2 - 10.4	180
10.5 - 10.7	188

RANGE	NO. OF DATA
10.8 - 11.0	238
11.1 - 11.3	190
11.4 - 11.6	173
11.7 - 11.9	151
12.0 - 12.2	108
12.3 - 12.5	104
12.6 - 12.8	73
12.9 - 13.1	41
13.2 - 13.4	12
13.5 - 13.7	6
13.8 - 14.0	6
14.1 - 14.3	0
14.4 - 14.6	2
14.7 - 14.9	1

TOTAL NO. OF DATA = 2034

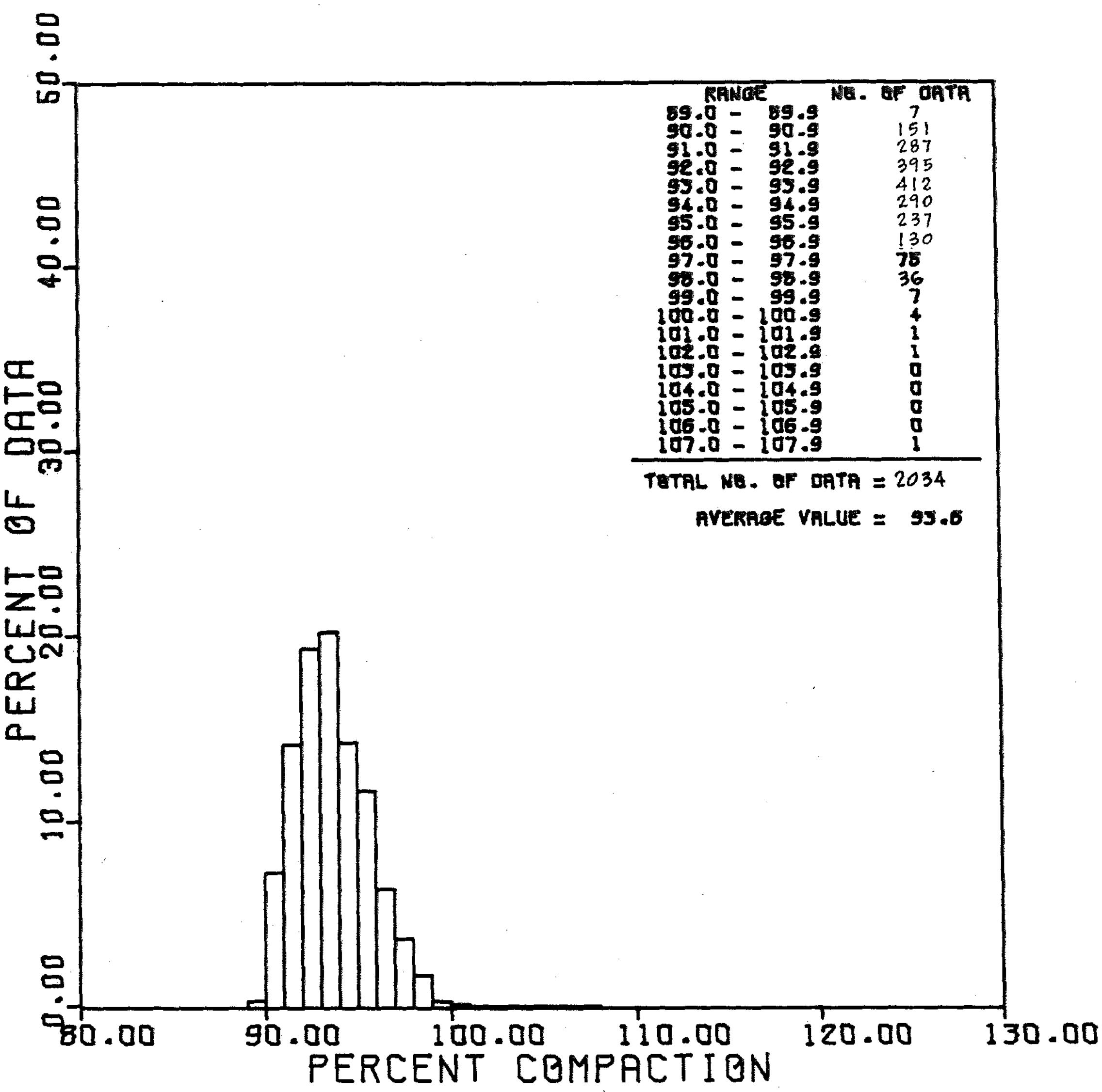
AVERAGE VALUE = 10.8

CLINTON STATION IN-PLACE TEST
BAFFLE DIKE
ELEVATION FROM 649.0 TO 699.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-455

UHS BAFFLE DIKE TYPE A
COHESIVE FILL DISTRIBUTION
OF MOISTURE CONTENT

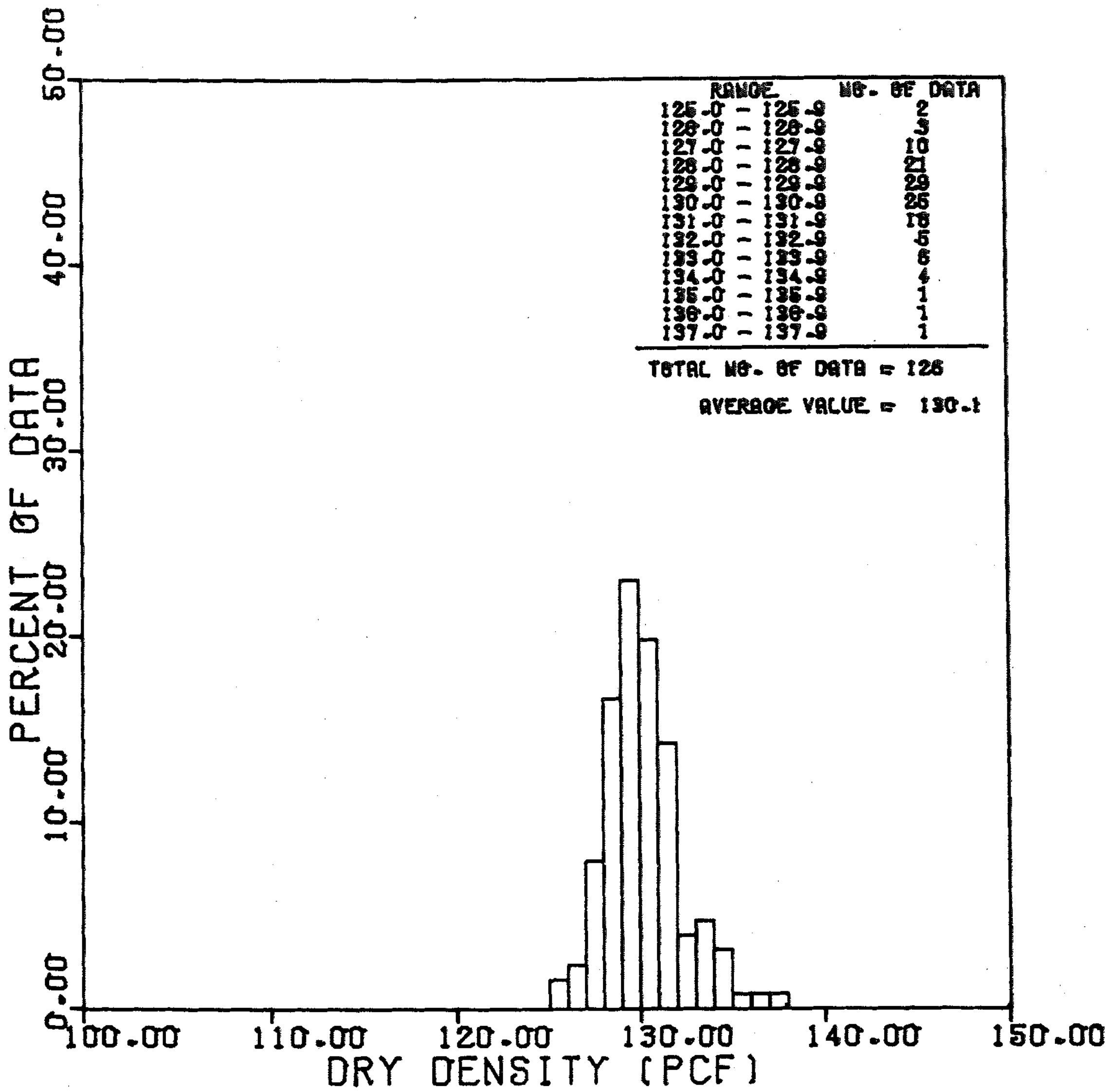


CLINTON STATION IN-PLACE TEST
BAFFLE DIKE
ELEVATION FROM 649.0 TO 699.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-456

UHS BAFFLE DIKE TYPE A
COHESIVE FILL DISTRIBUTION
OF PERCENT COMPACTION

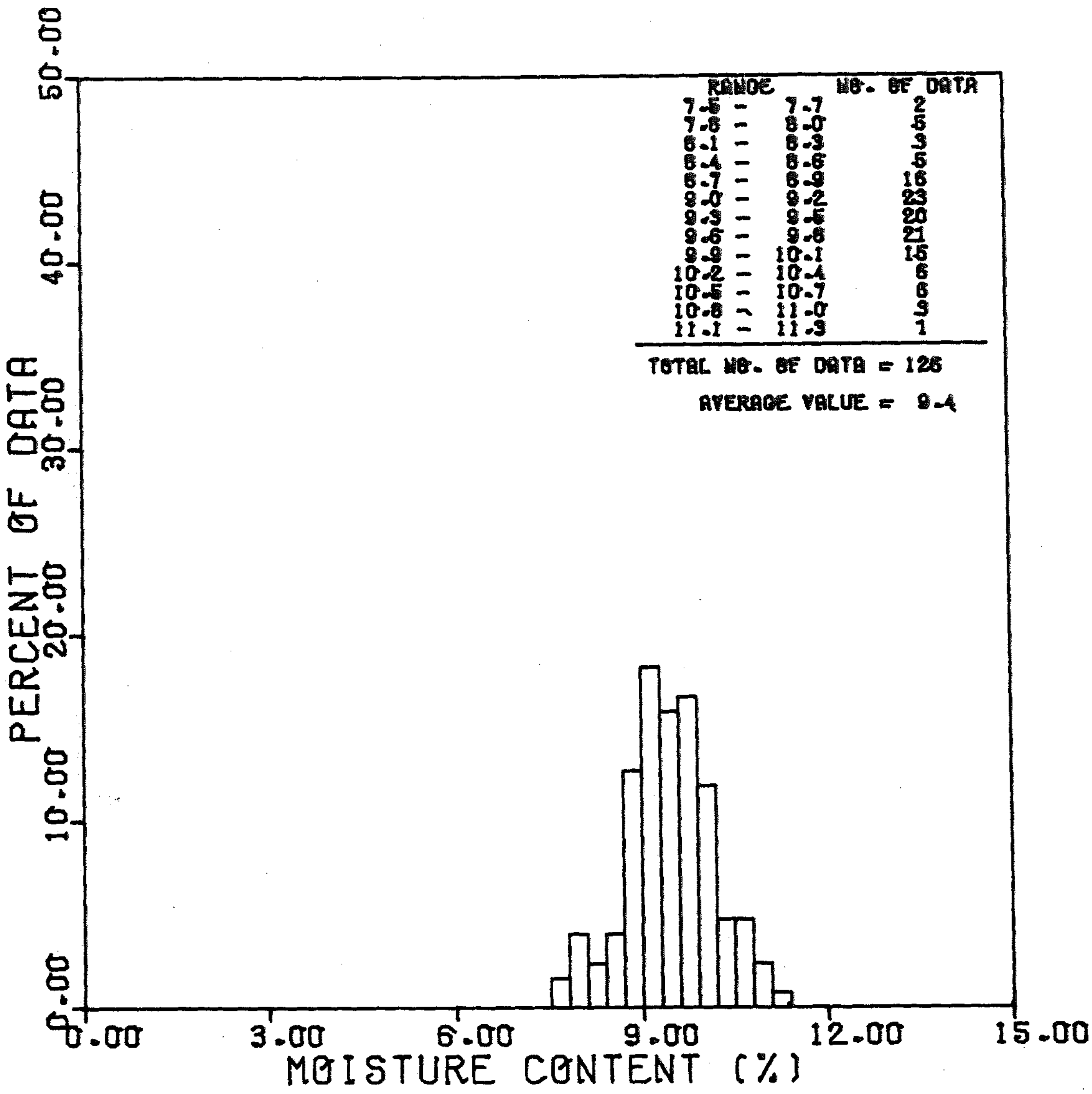


CLINTON STATION IN-PLACE TEST
BAFFLE DIKE - SOIL CEMENT
ELEVATION FROM 673.0 TO 676.99

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

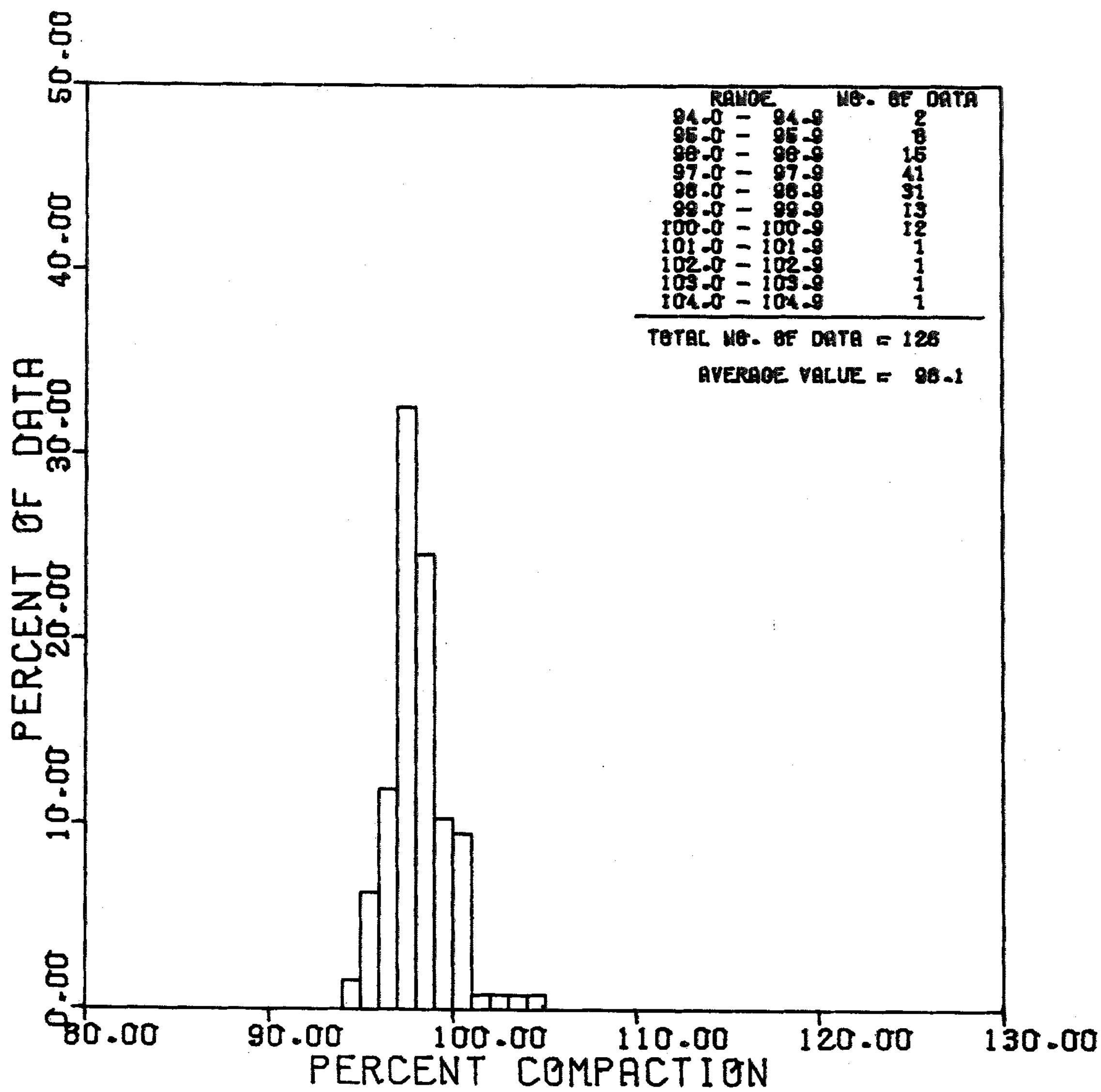
FIGURE 2.5-457

UHS BAFFLE DIKE SOIL CEMENT
SLOPE PROTECTION DISTRIBUTION
OF DRY DENSITY



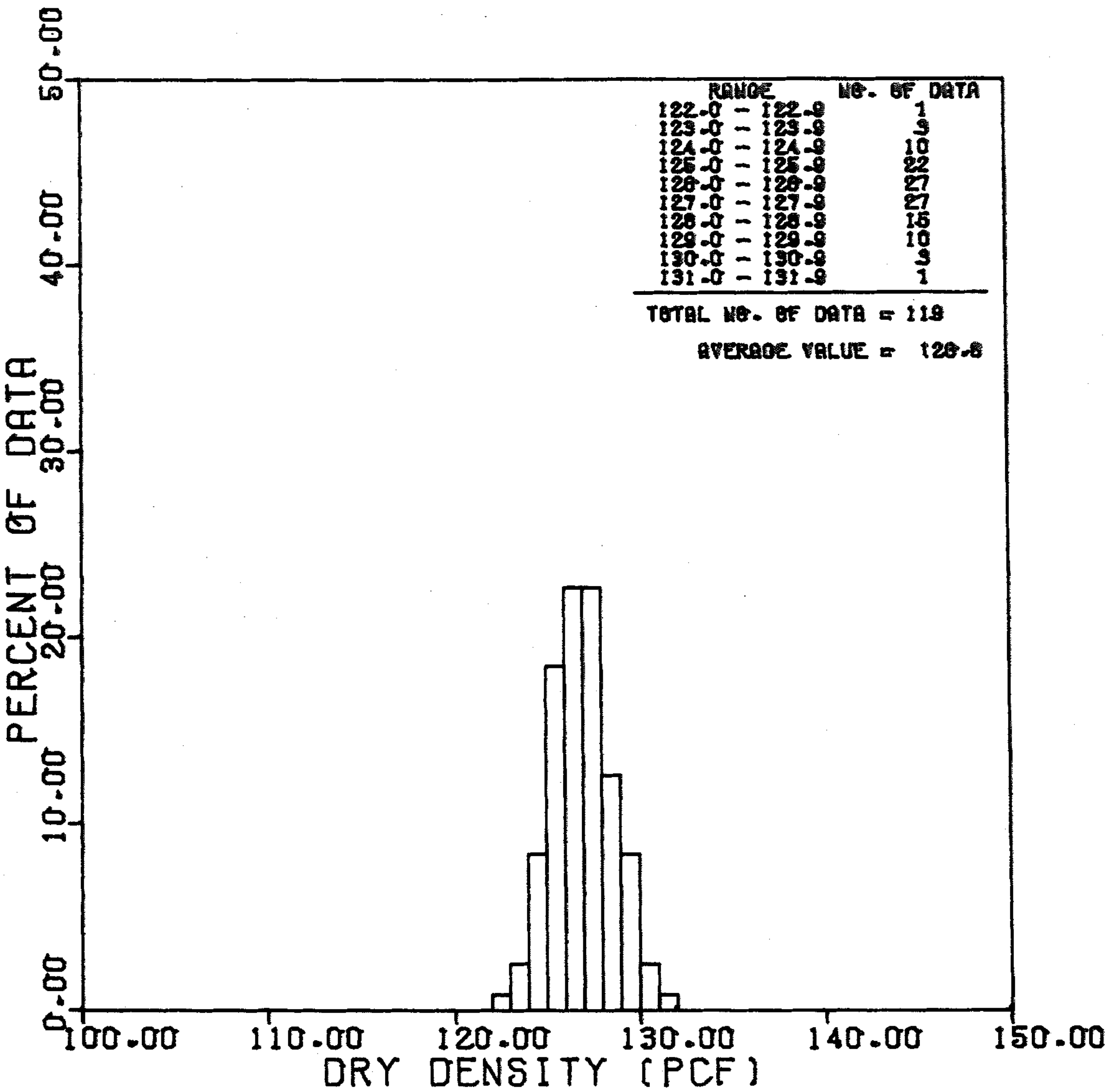
CLINTON STATION IN-PLACE TEST
BAFFLE DIKE - SOIL CEMENT
ELEVATION FROM 673.0 TO 676.99

CLINTON POWER STATION UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-458 UHS BAFFLE DIKE SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF MOISTURE CONTENT



CLINTØN STATIØN IN-PLACE TEST
BAFFLE DIKE - SØIL CEMENT
ELEVATIØN FRØM 673.0 TØ 676.99

CLINTON POWER STATION UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-459 UHS BAFFLE DIKE SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF PERCENT COMPACTION



CLINTON STATION IN-PLACE TEST
SOUTH DAM USDSCR-SOIL CEMENT
ELEVATION FROM 649.0 TO 697.99

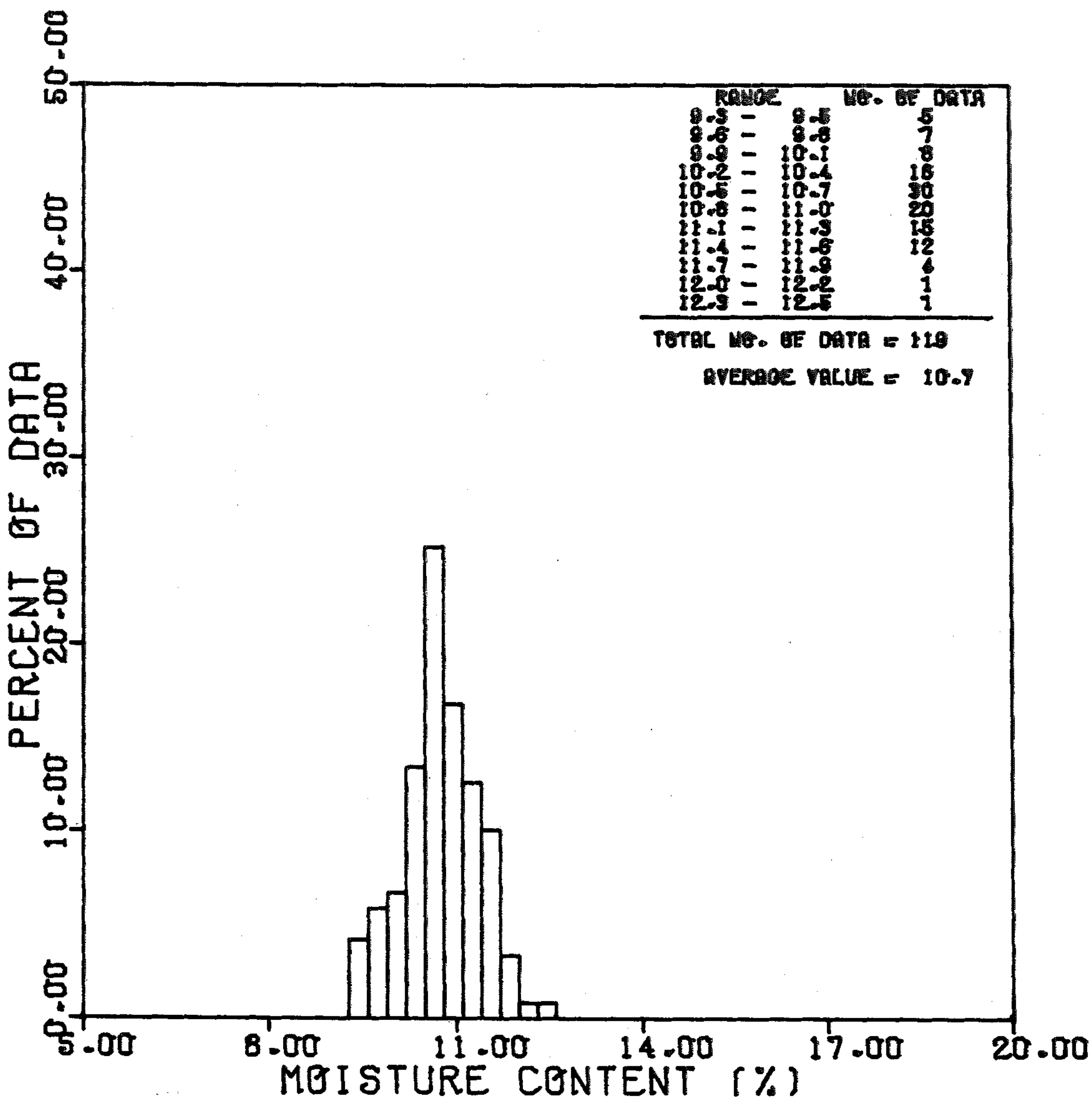
NOTE:

ONLY TESTS FOR THE UPSTREAM FACE,
CREST AND DOWNSTREAM SLOPE ARE
INCLUDED IN THIS ANALYSIS.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-460

UHS DAM SOIL CEMENT SLOPE
PROTECTION DISTRIBUTION
OF DRY DENSITY



CLINTON STATION IN-PLACE TEST
SOUTH DAM USDSCR-SOIL CEMENT
ELEVATION FROM 649.0 TO 697.99

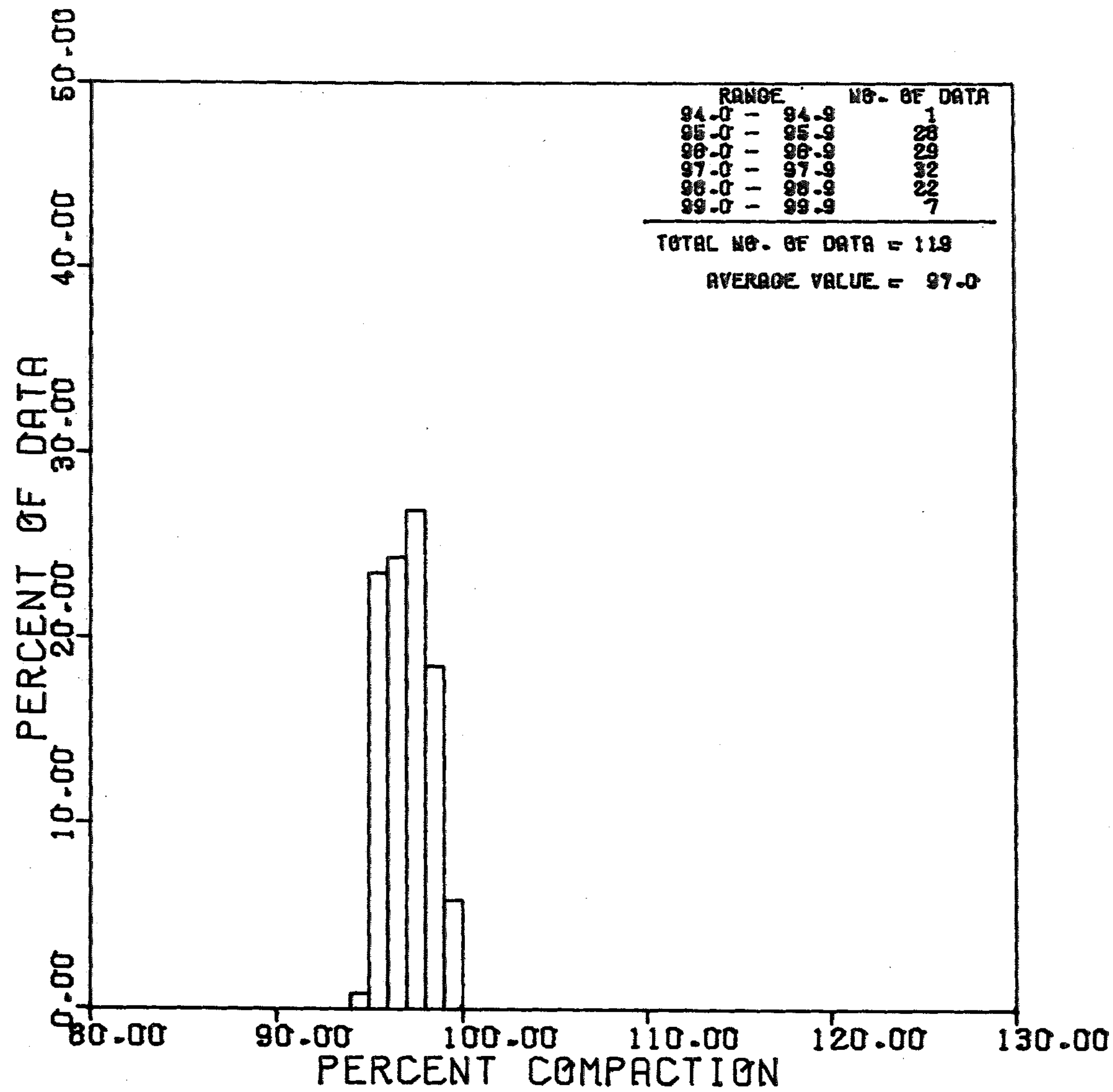
NOTE:

ONLY TESTS FOR THE UPSTREAM FACE, CREST AND DOWNSTREAM SLOPE ARE INCLUDED IN THIS ANALYSIS.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-461

UHS DAM SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF MOISTURE CONTENT

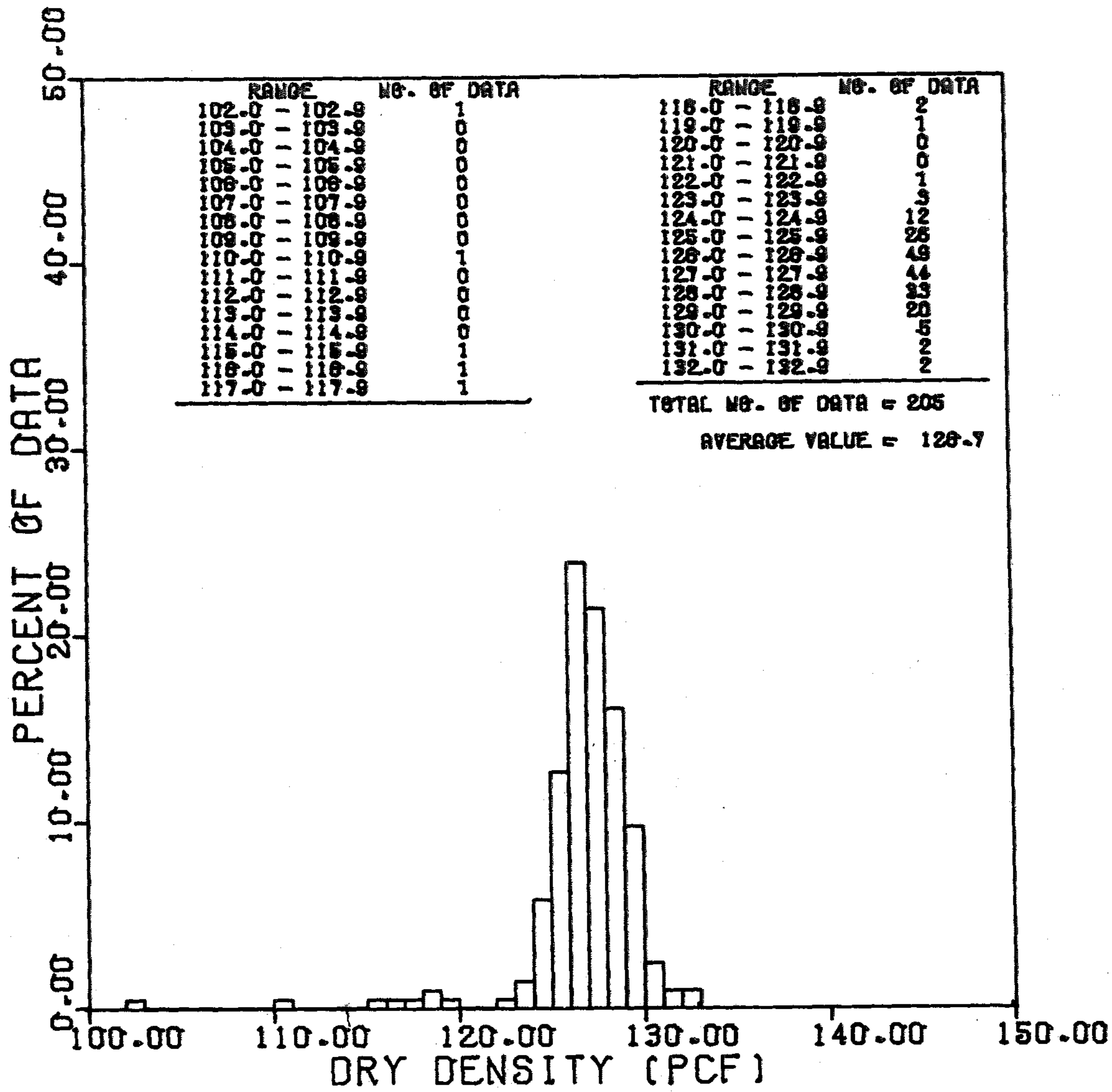


CLINTON STATION IN-PLACE TEST
SOUTH DAM USDSCR-SOIL CEMENT
ELEVATION FROM 649.0 TO 697.99

NOTE:

ONLY TESTS FOR THE UPSTREAM FACE, CREST AND DOWNSTREAM SLOPE ARE INCLUDED IN THIS ANALYSIS.

CLINTON POWER STATION UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-462 UHS DAM SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF PERCENT COMPACTION



CLINTON STATION IN-PLACE TEST
SOUTH DAM - SOIL CEMENT
ELEVATION FROM 649.0 TO 697.99

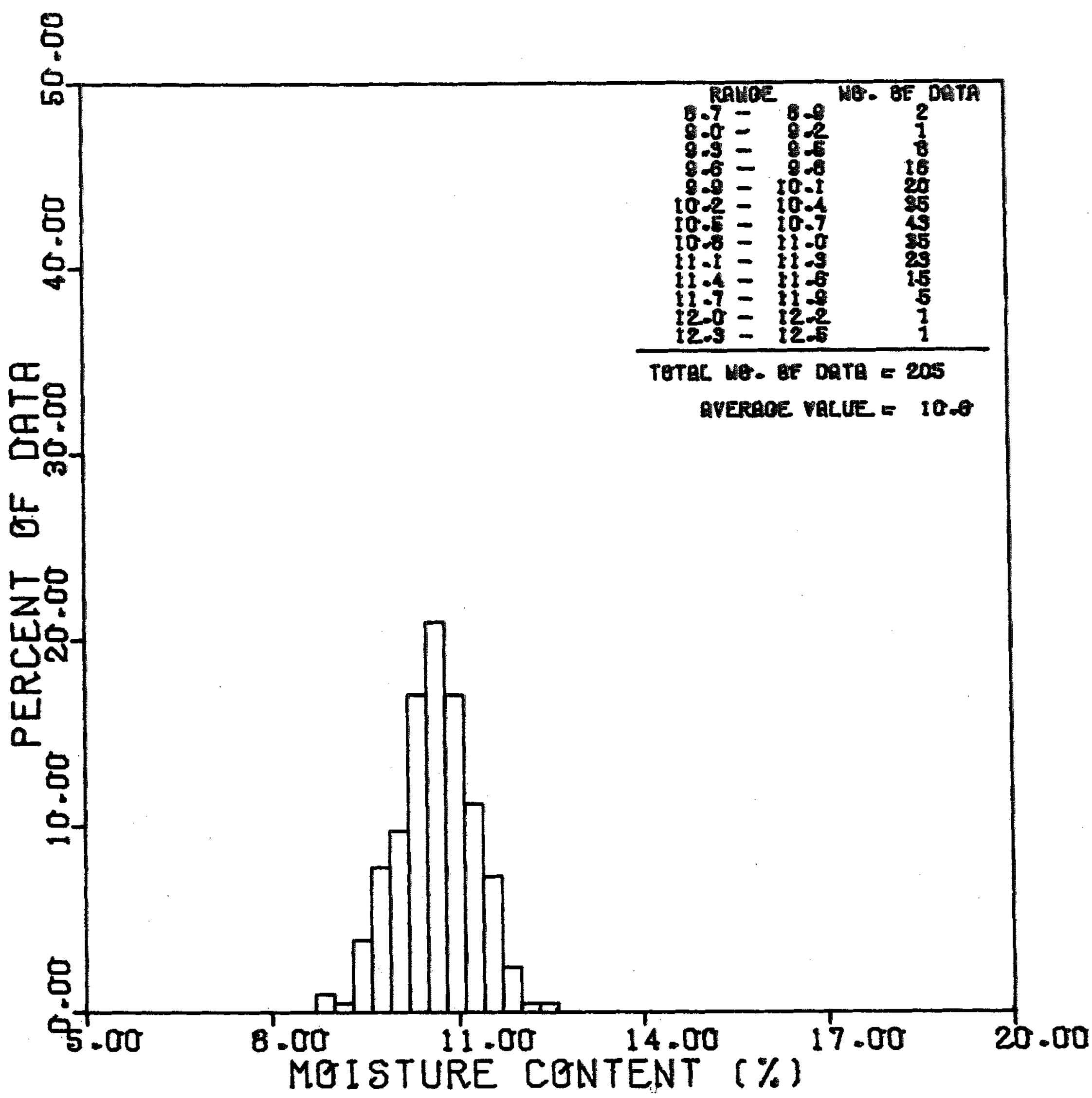
NOTE:

TESTS FOR ALL AREAS, INCLUDING THE ABUTMENTS AND DOWNSTREAM FLAT AREA, ARE INCLUDED IN THIS ANALYSIS.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-463

UHS DAM SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF DRY DENSITY



CLINTON STATION IN-PLACE TEST
SOUTH DAM - SOIL CEMENT
ELEVATION FROM 649.0 TO 697.99

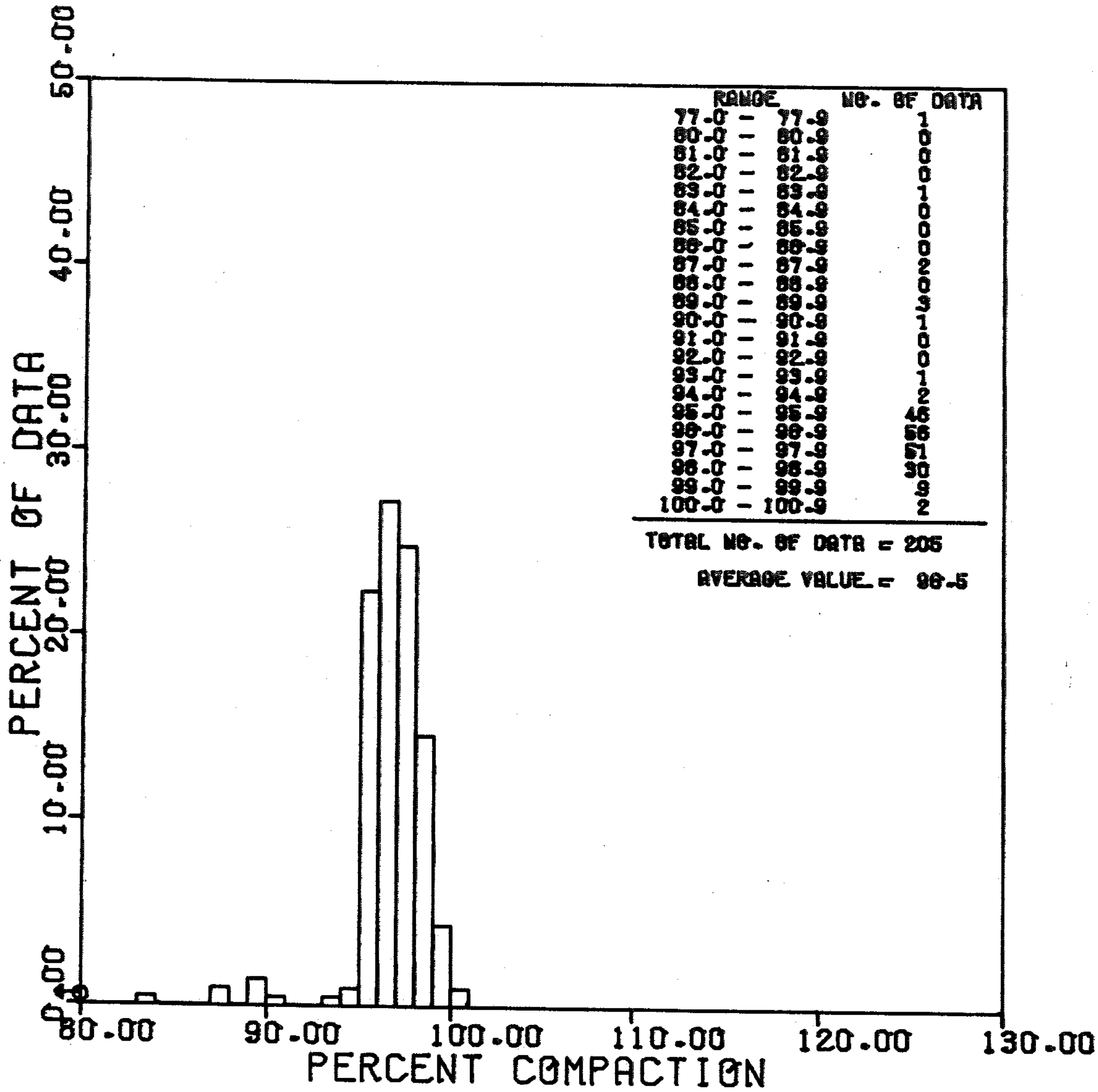
NOTE:

TESTS FOR ALL AREAS, INCLUDING THE ABUTMENTS AND DOWNSTREAM FLAT AREA, ARE INCLUDED IN THIS ANALYSIS.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-464

UHS DAM SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF MOISTURE CONTENT

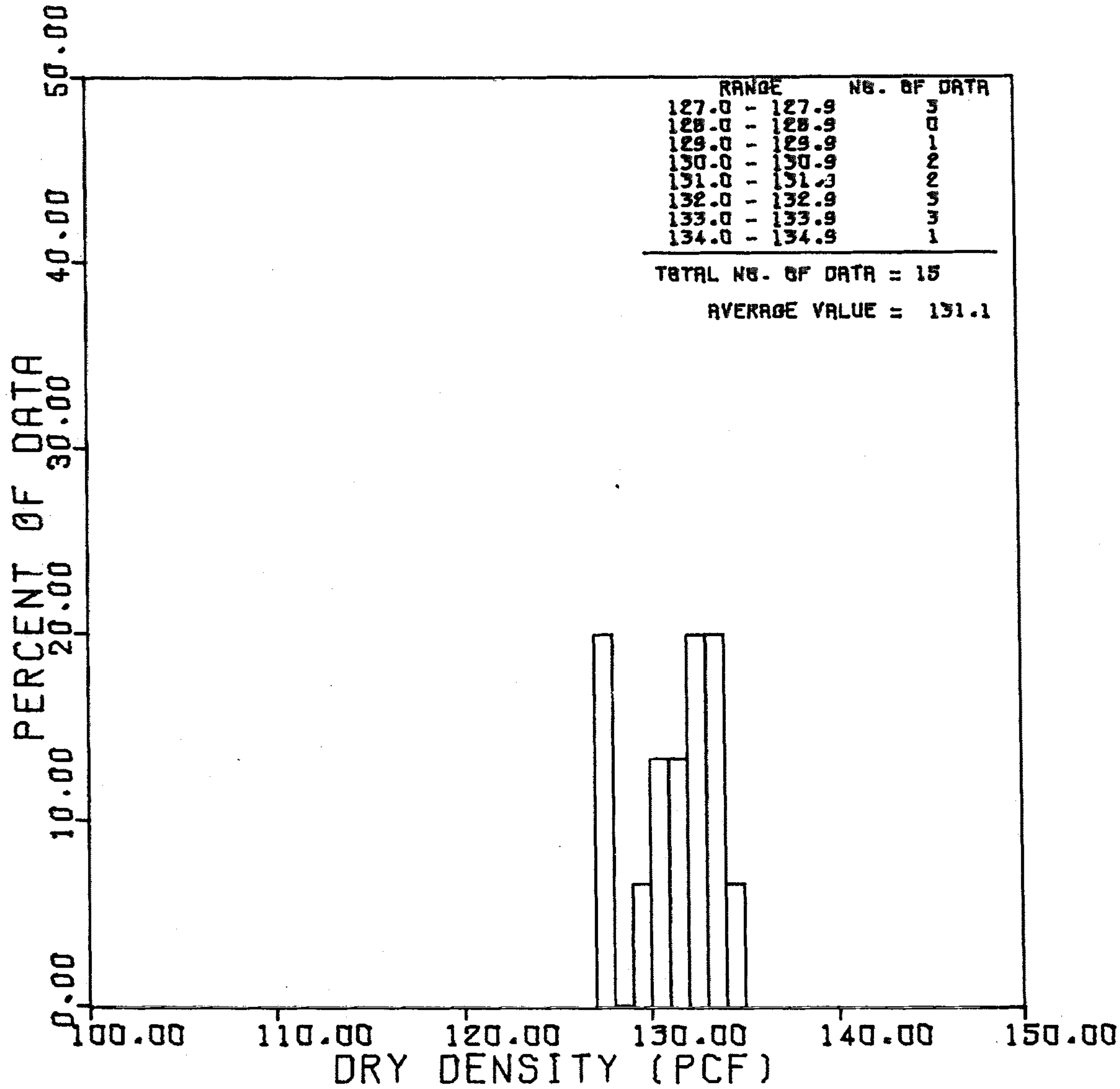


CLINTON STATION IN-PLACE TEST
SOUTH DAM - SOIL CEMENT
ELEVATION FROM 649.0 TO 697.99

NOTE:

Tests for all areas, including the abutments and the downstream flat area are included in this analysis.

CLINTON POWER STATION UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-465 UHS DAM SOIL CEMENT SLOPE PROTECTION DISTRIBUTION OF PERCENT COMPACTION

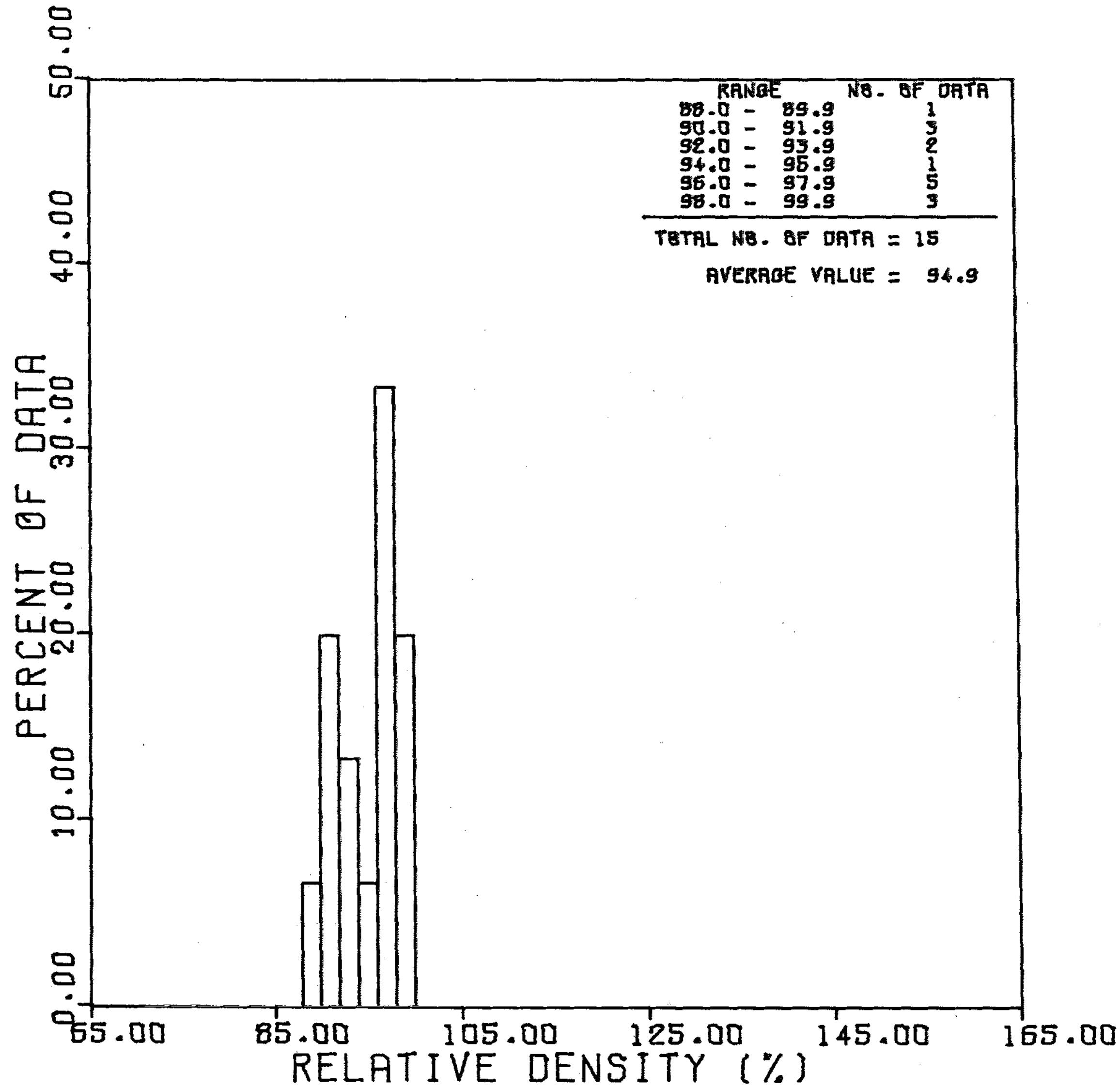


CLINTON POWER STATION
ALL DATA
OUTLET - P & R SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-466

SSWS OUTLET STRUCTURE
GRANULAR FILL - DISTRIBUTION OF
DRY DENSITY

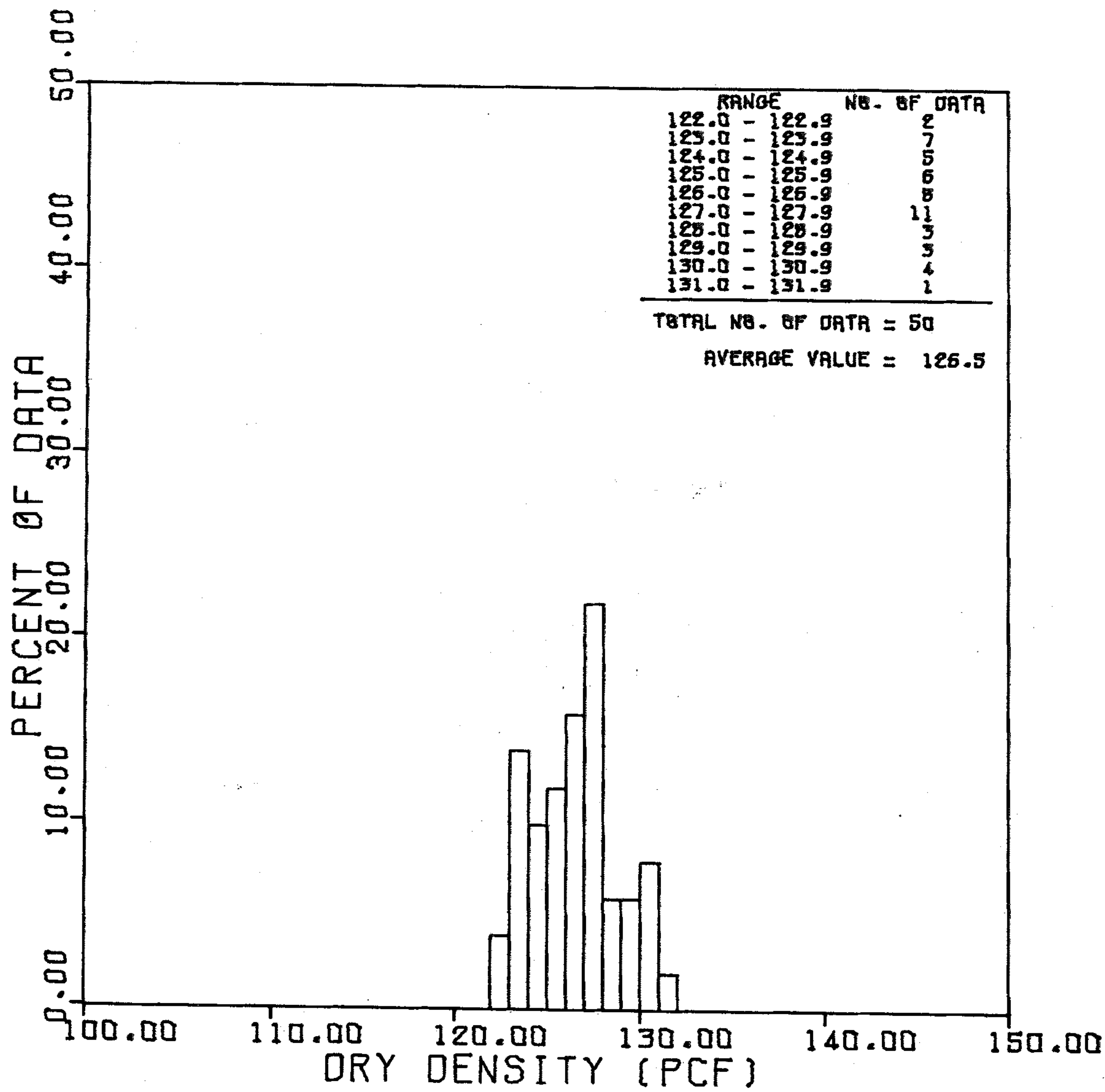


CLINTØN PØWER STATIØN
ALL DATA
ØUTLET - P & R SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-467

SSWS OUTLET STRUCTURE
GRANULAR FILL - DISTRIBUTION OF
RELATIVE DENSITY

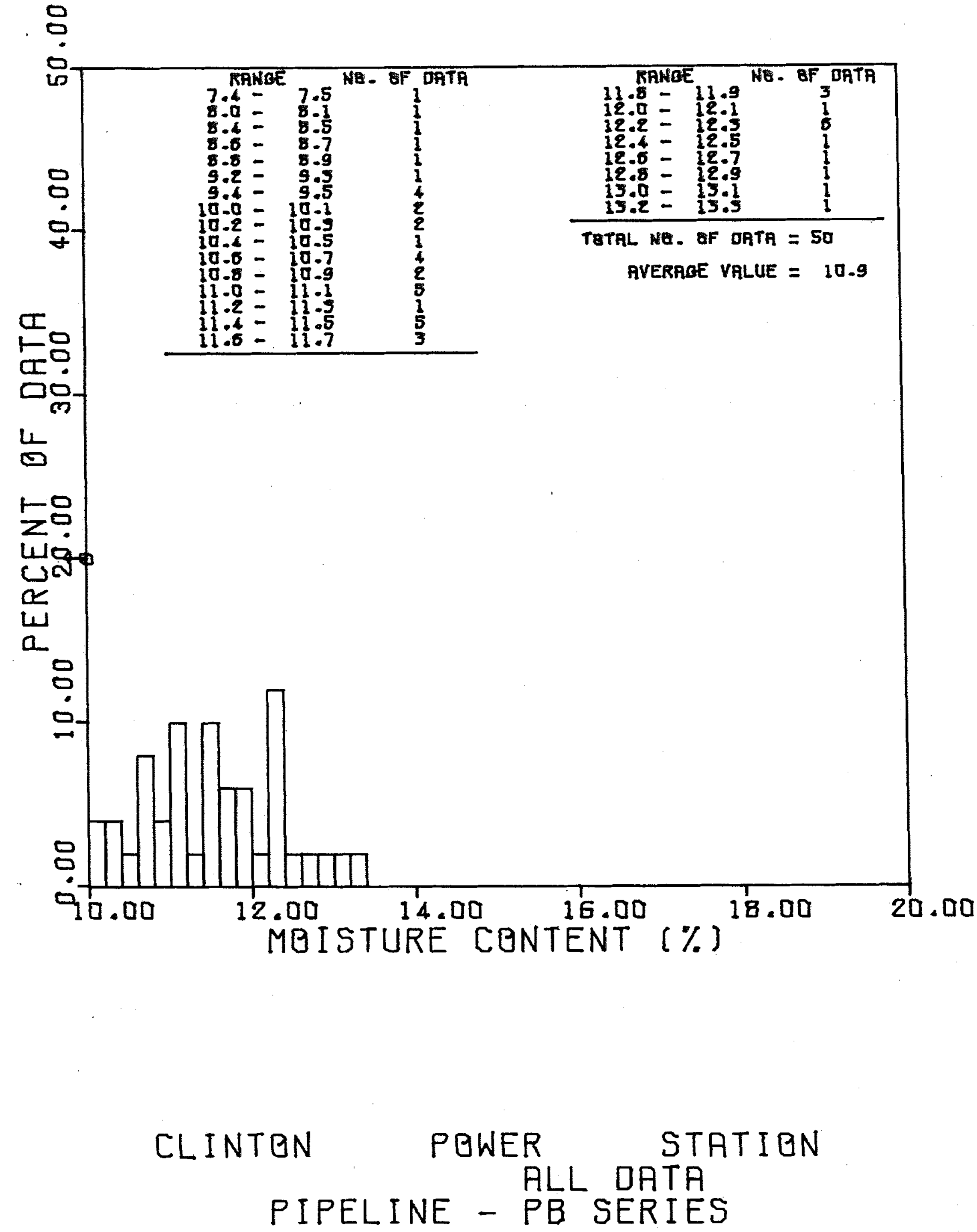


CLINTON POWER STATION
ALL DATA
PIPELINE - PB SERIES

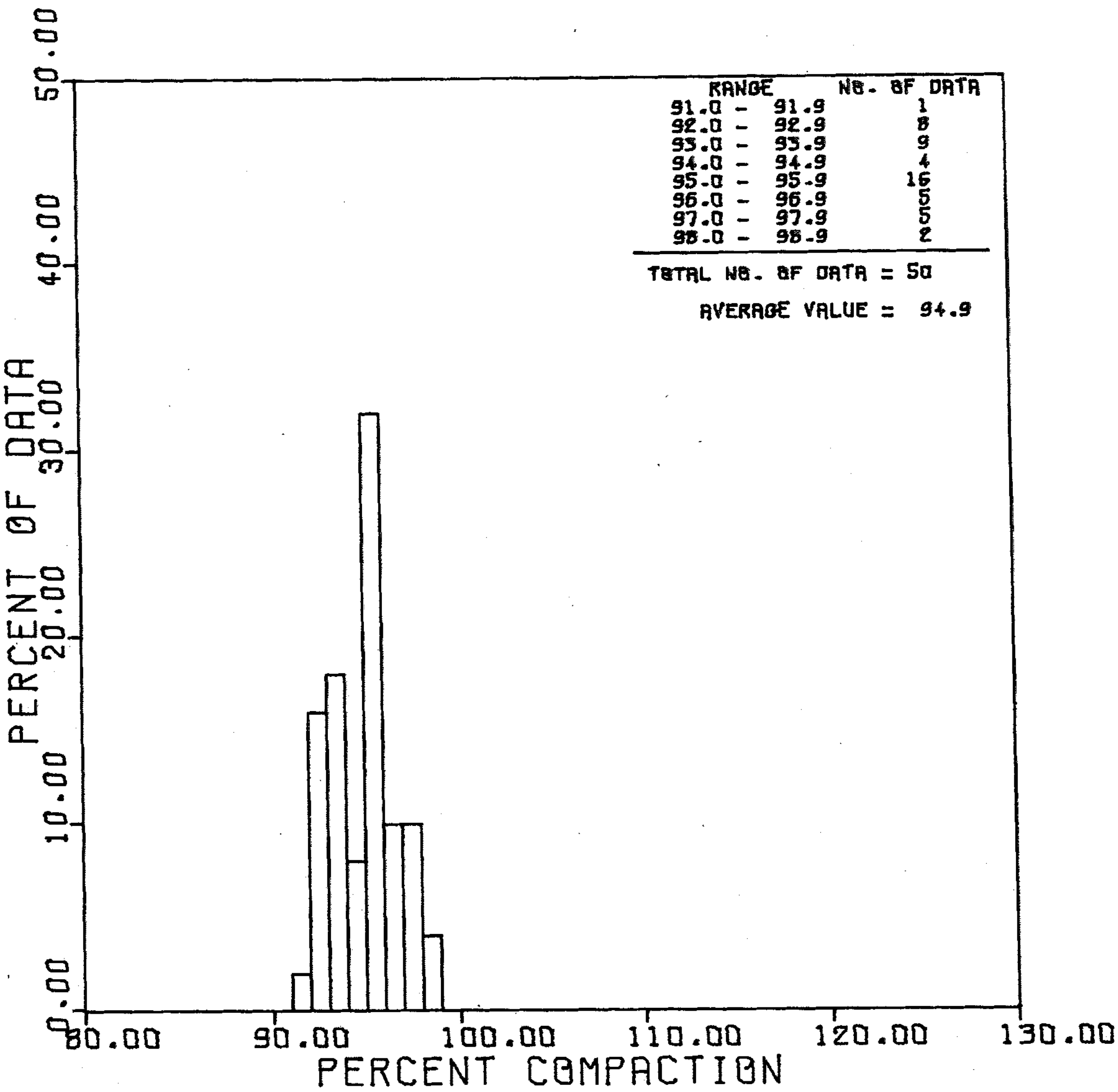
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-468

SSWS OUTLET STRUCTURE
COHESIVE BACKFILL - DISTRIBUTION OF DRY DENSITY



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-469
SSWS OUTLET STRUCTURE COHESIVE BACKFILL - DISTRIBUTION OF MOISTURE CONTENT

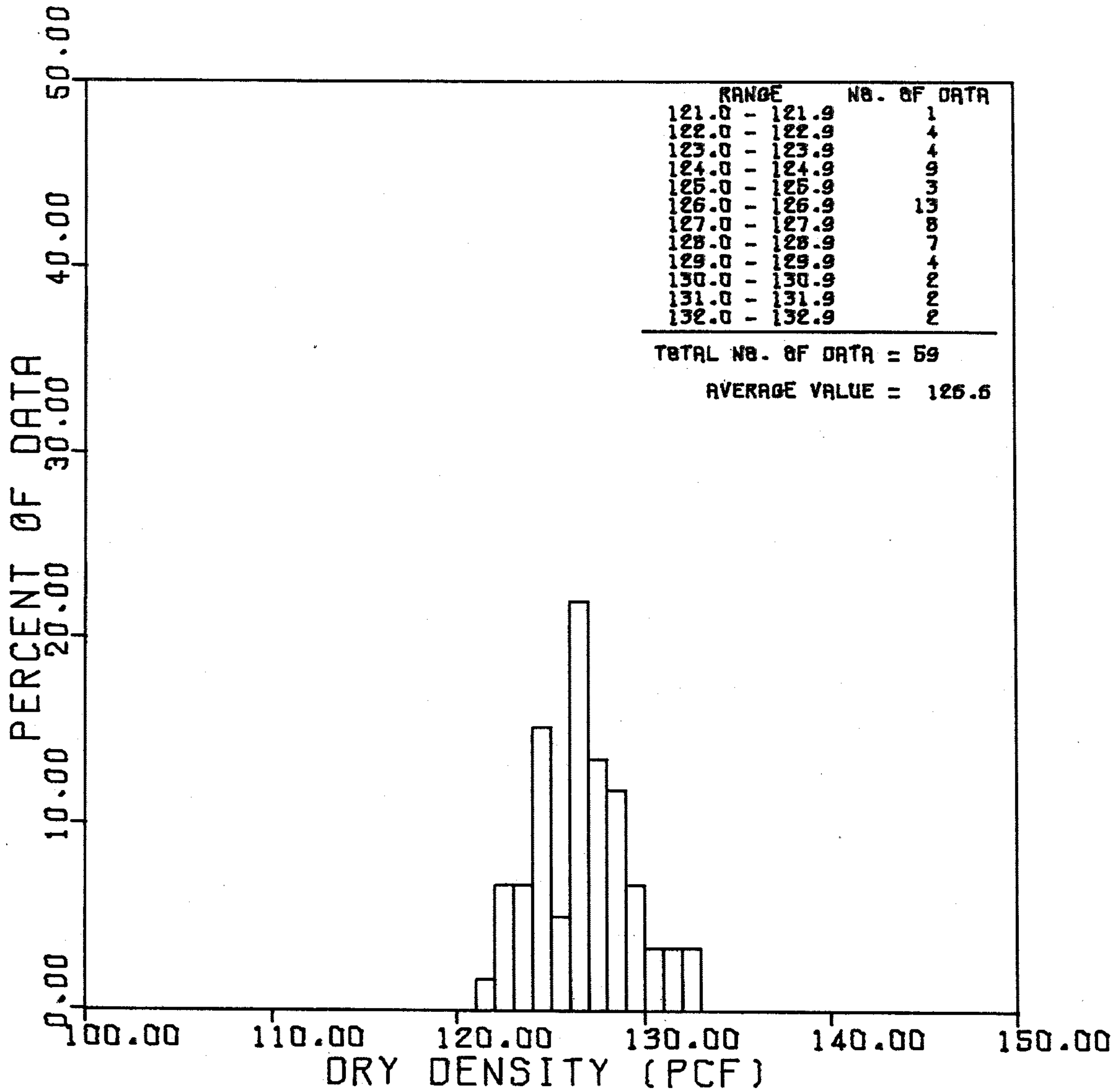


CLINTON POWER STATION
ALL DATA
PIPELINE - PB SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-470

SSWS OUTLET STRUCTURE
COHESIVE BACKFILL - DISTRIBUTION OF
PERCENT COMPACTION

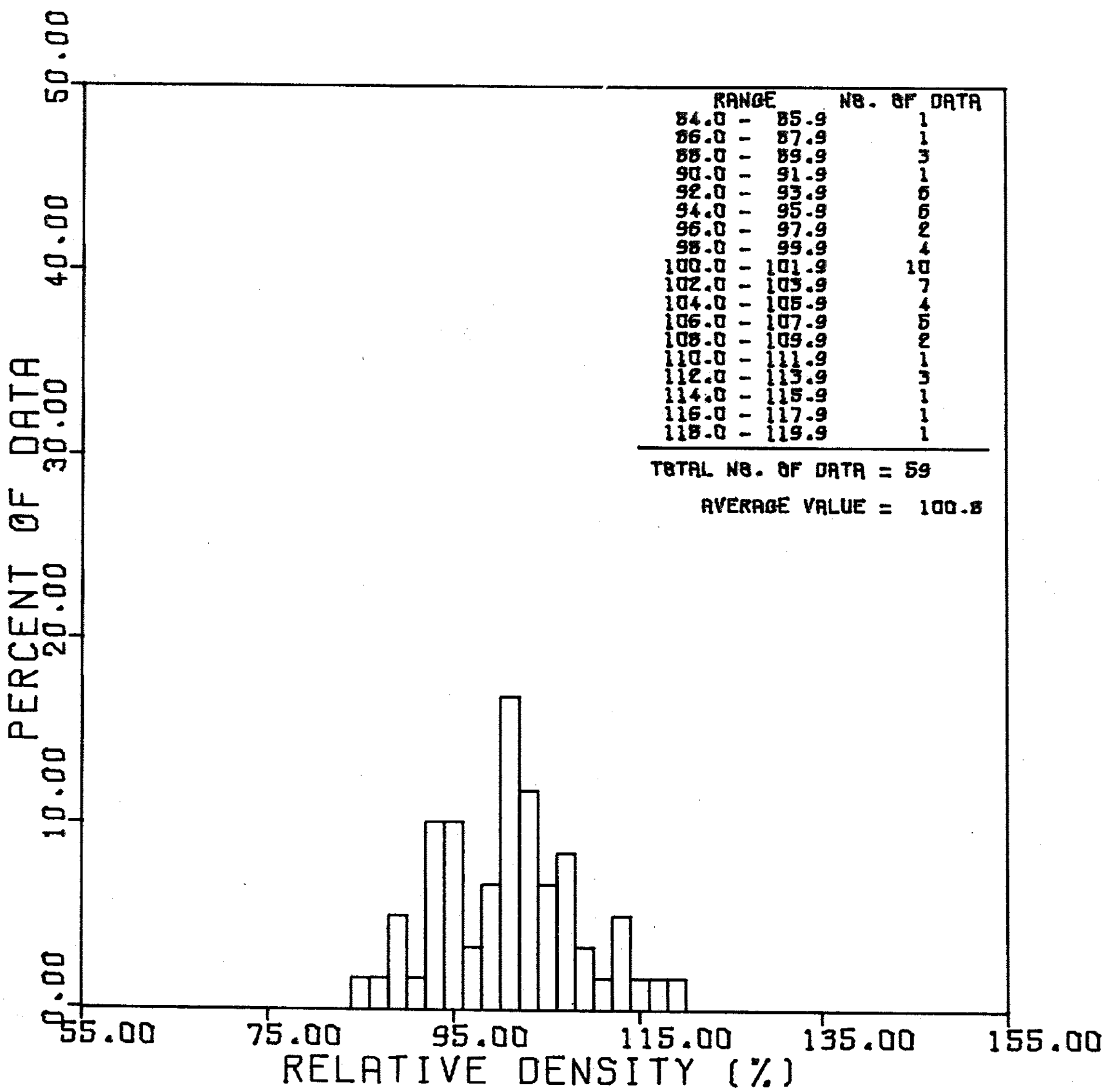


CLINTON POWER STATION
ALL DATA
PIPELINE - P SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

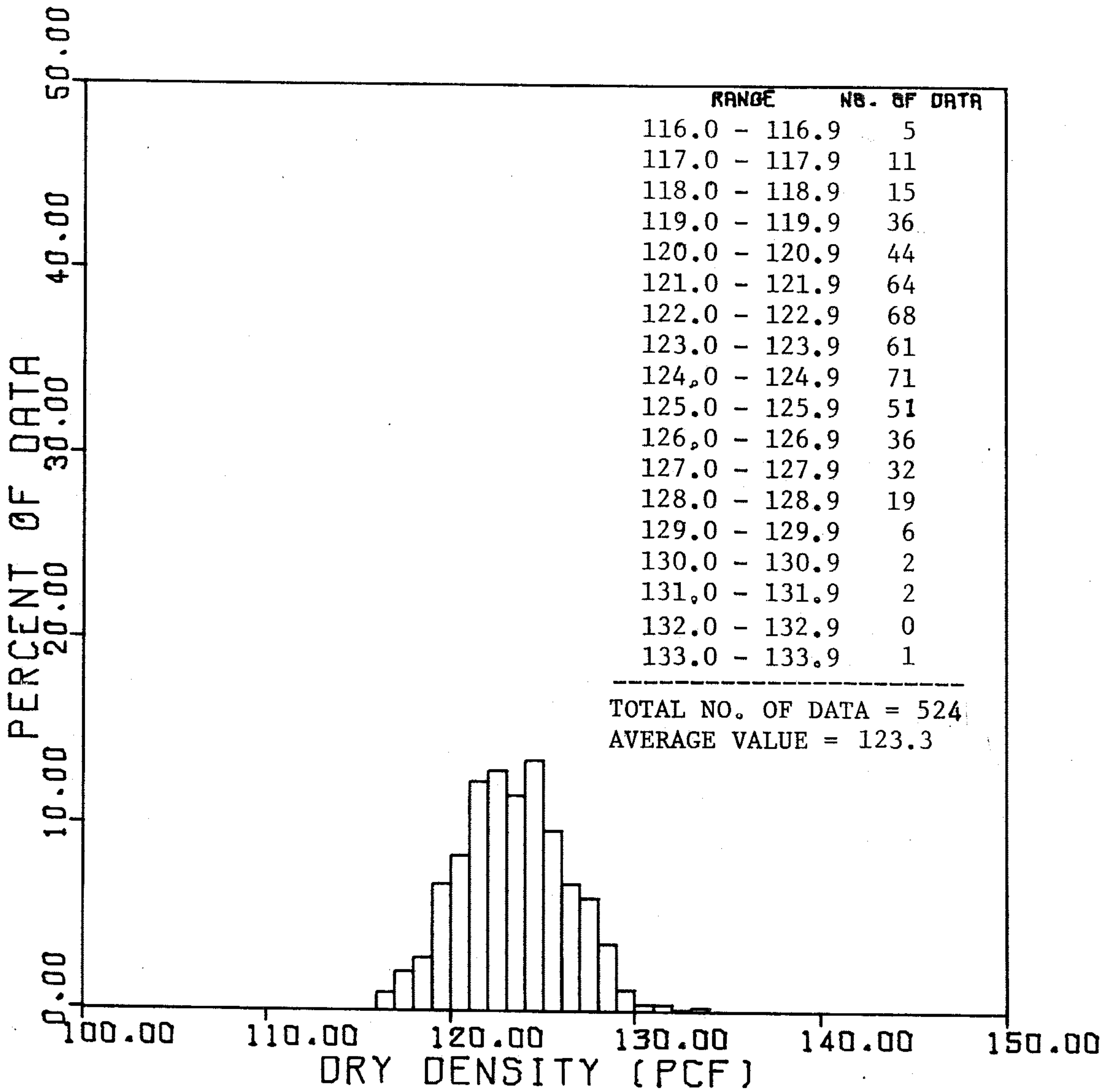
FIGURE 2.5-471

SSWS PIPELINE GRANULAR FILL
DISTRIBUTION OF DRY DENSITY



CLINTON POWER STATION
ALL DATA
PIPELINE - P SERIES

CLINTON POWER STATION UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-472 SSWS PIPELINE GRANULAR FILL - DISTRIBUTION OF RELATIVE DENSITY

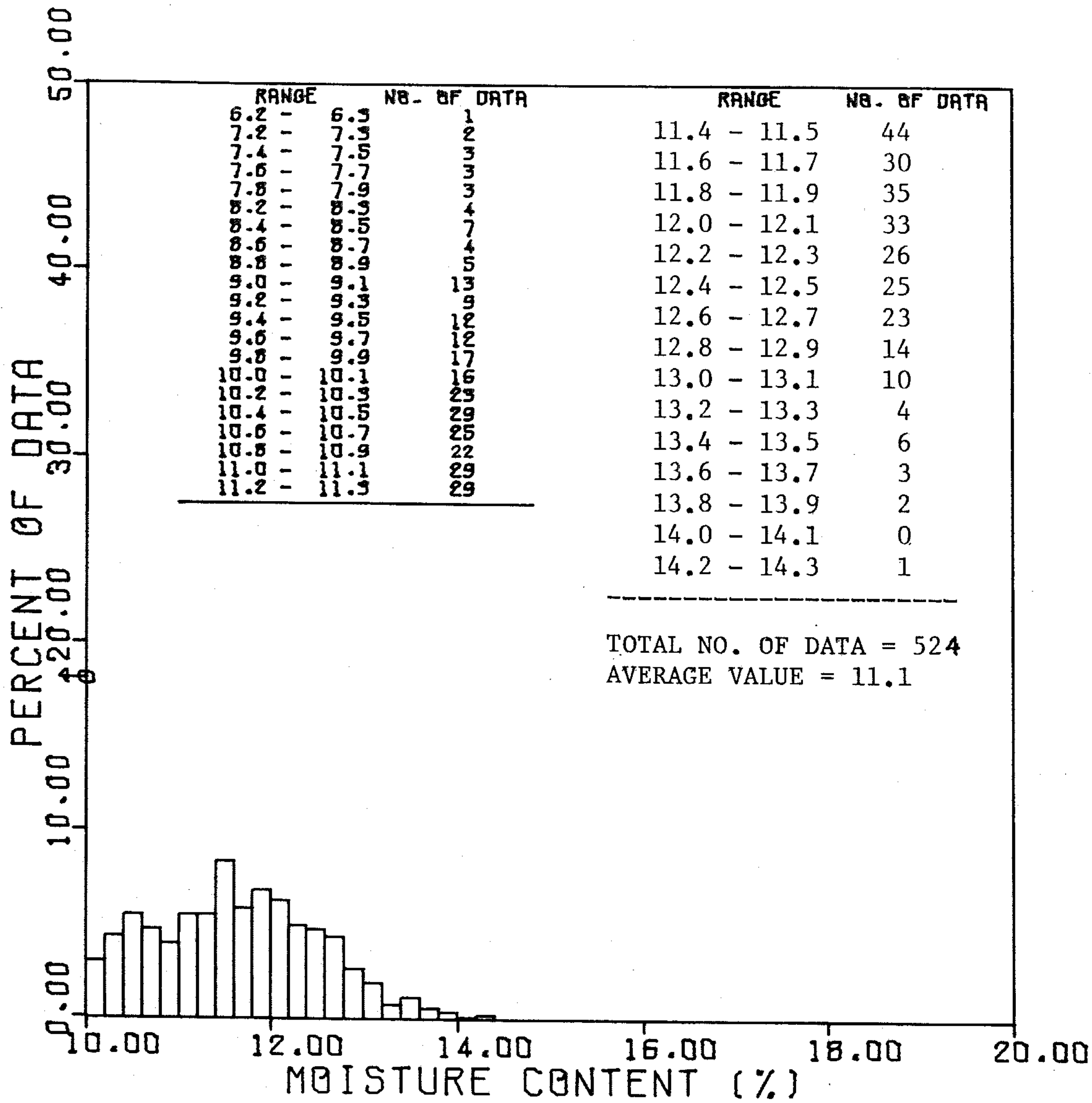


CLINTØN POWER STATIØN
ALL DATA
PIPELINE - PB SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-473

SSWS PIPELINE COHESIVE FILL -
DISTRIBUTION OF DRY DENSITY



RANGE	NO. OF DATA
6.2 - 6.3	1
7.2 - 7.3	2
7.4 - 7.5	3
7.6 - 7.7	3
7.8 - 7.9	3
8.2 - 8.3	4
8.4 - 8.5	7
8.6 - 8.7	4
8.8 - 8.9	5
9.0 - 9.1	13
9.2 - 9.3	9
9.4 - 9.5	12
9.6 - 9.7	12
9.8 - 9.9	17
10.0 - 10.1	16
10.2 - 10.3	23
10.4 - 10.5	29
10.6 - 10.7	25
10.8 - 10.9	22
11.0 - 11.1	29
11.2 - 11.3	29

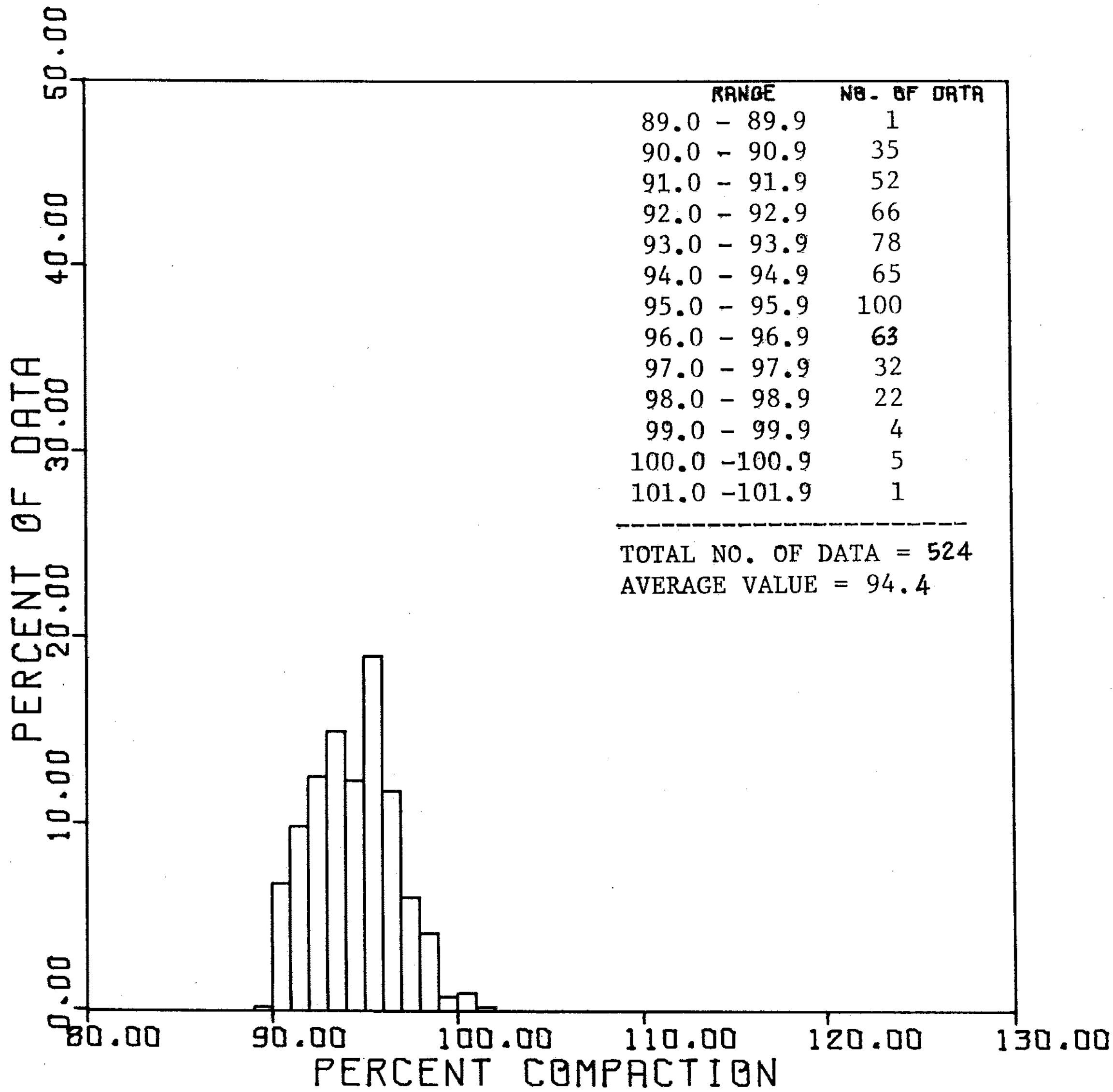
RANGE	NO. OF DATA
11.4 - 11.5	44
11.6 - 11.7	30
11.8 - 11.9	35
12.0 - 12.1	33
12.2 - 12.3	26
12.4 - 12.5	25
12.6 - 12.7	23
12.8 - 12.9	14
13.0 - 13.1	10
13.2 - 13.3	4
13.4 - 13.5	6
13.6 - 13.7	3
13.8 - 13.9	2
14.0 - 14.1	0
14.2 - 14.3	1

TOTAL NO. OF DATA = 524
AVERAGE VALUE = 11.1

CLINTON POWER STATION
ALL DATA
PIPELINE - PB SERIES

FIGURE 2.5-474

SSWS PIPELINE COHESIVE FILL -
DISTRIBUTION OF MOISTURE CONTENT

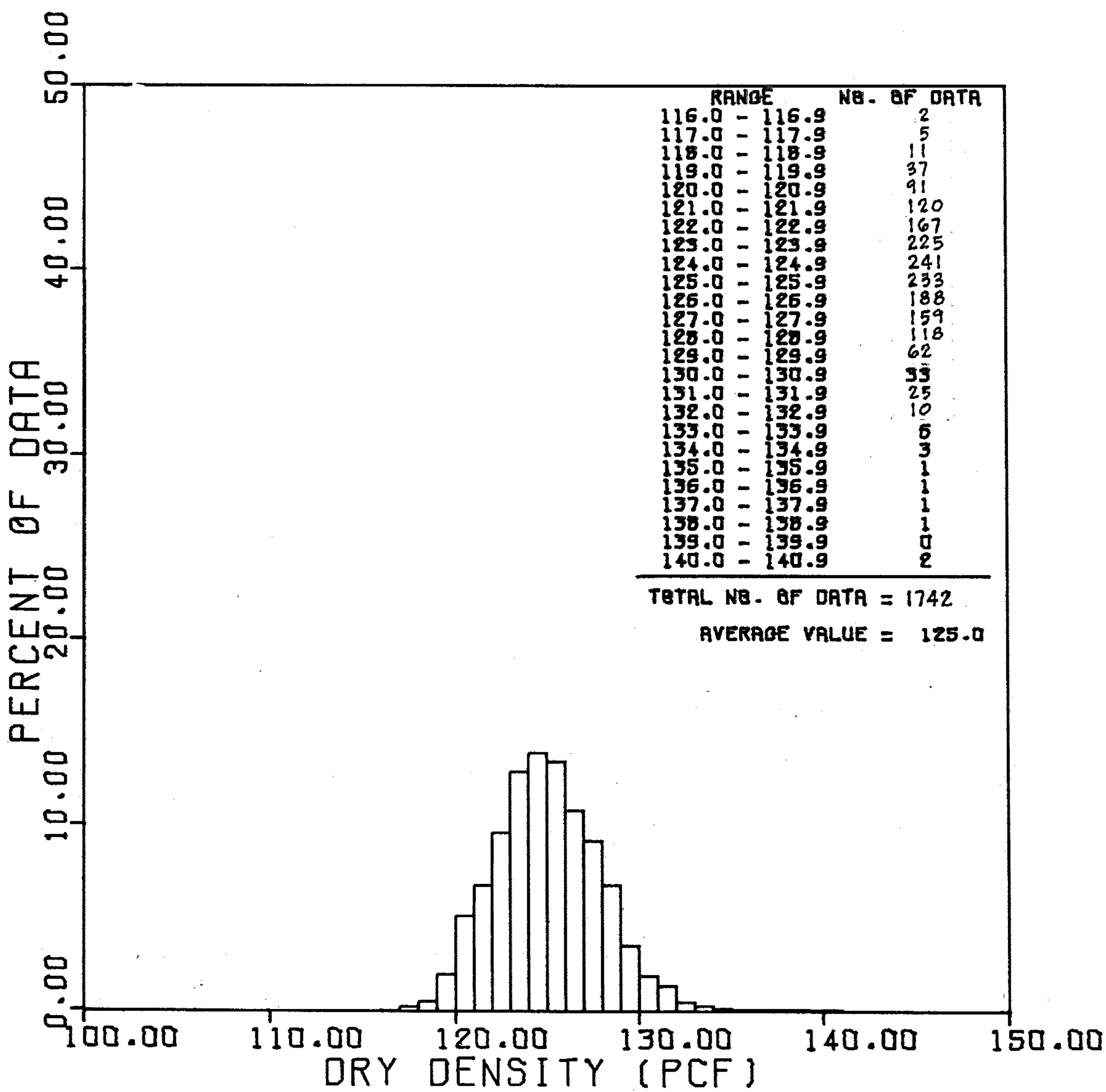


CLINTON POWER STATION
ALL DATA
PIPELINE - PB SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

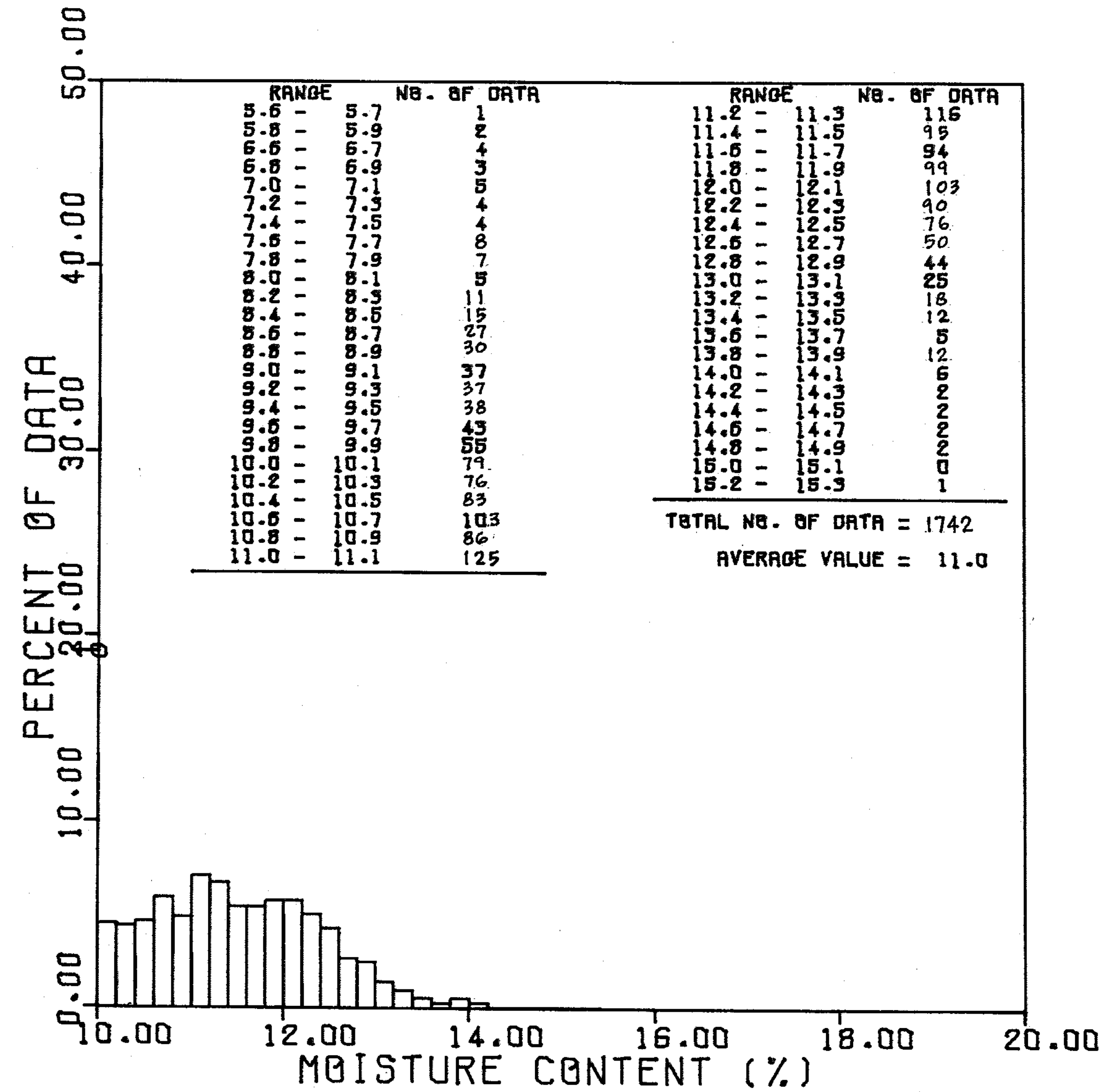
FIGURE 2.5-475

SSWS PIPELINE COHESIVE FILL -
DISTRIBUTION OF PERCENT COMPACTION



CLINTON POWER STATION
ALL DATA
SCREEN HOUSE

CLINTON POWER STATION UPDATED SAFETY ANALYSIS REPORT
FIGURE 2.5-476 SCREEN HOUSE COHESIVE BACKFILL - DISTRIBUTION OF DRY DENSITY

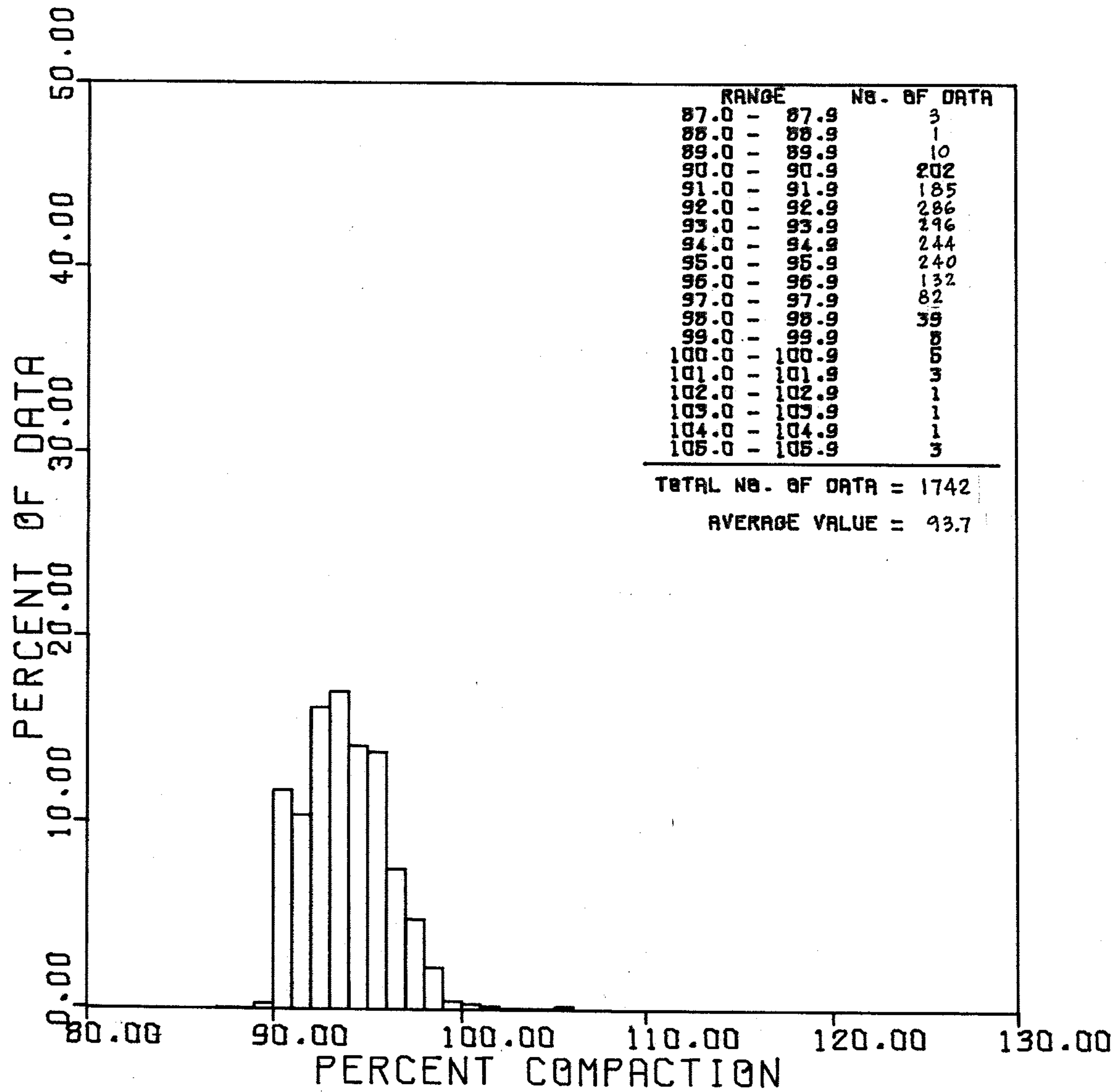


CLINTON POWER STATION
ALL DATA
SCREEN HOUSE

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-477

SCREEN HOUSE COHESIVE BACKFILL - DISTRIBUTION OF MOISTURE CONTENT

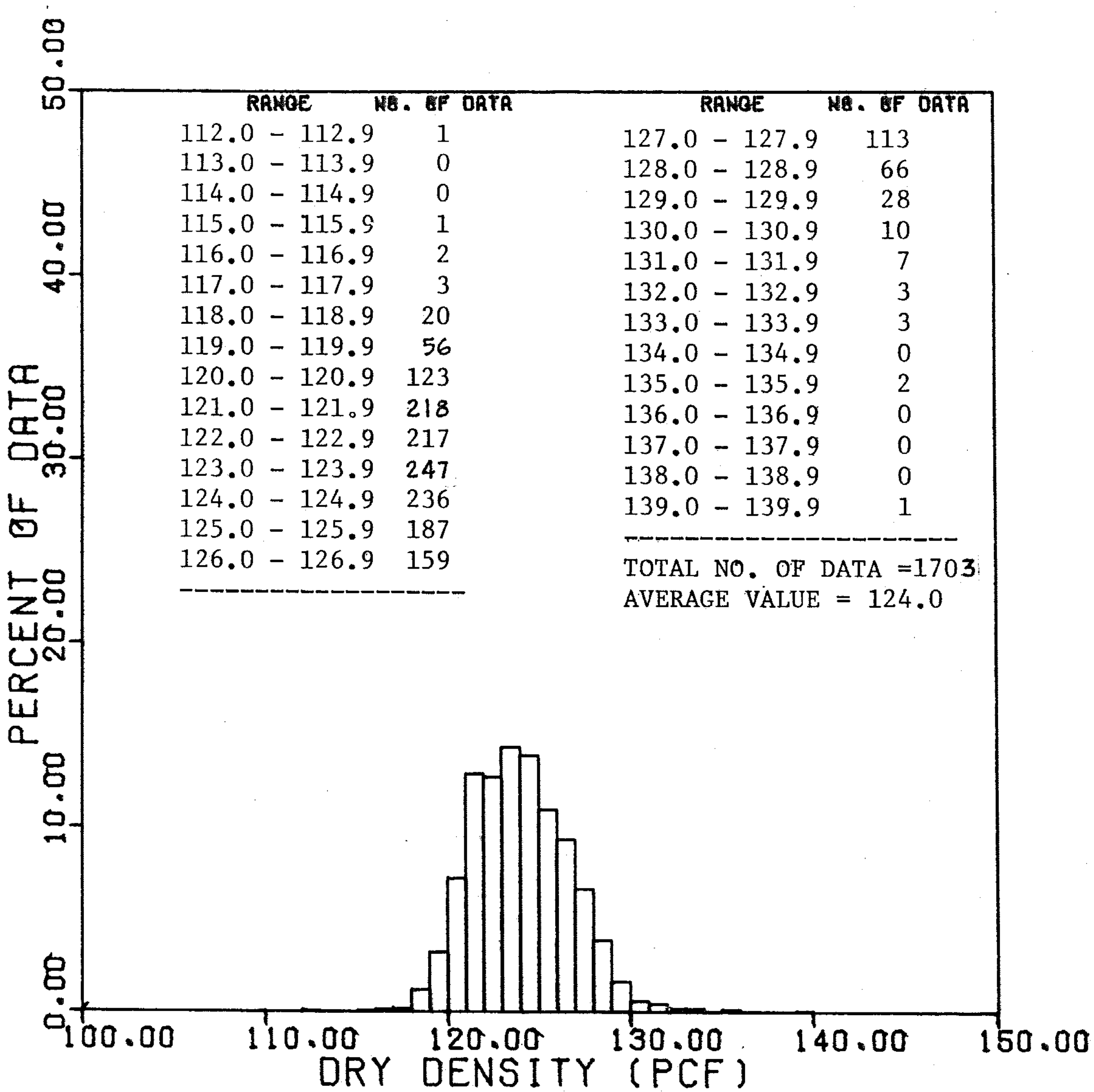


CLINTON POWER STATION
ALL DATA
SCREEN HOUSE

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-478

SCREEN HOUSE COHESIVE BACKFILL - DISTRIBUTION OF PERCENT COMPACTION



RANGE	NO. OF DATA
112.0 - 112.9	1
113.0 - 113.9	0
114.0 - 114.9	0
115.0 - 115.9	1
116.0 - 116.9	2
117.0 - 117.9	3
118.0 - 118.9	20
119.0 - 119.9	56
120.0 - 120.9	123
121.0 - 121.9	218
122.0 - 122.9	217
123.0 - 123.9	247
124.0 - 124.9	236
125.0 - 125.9	187
126.0 - 126.9	159

RANGE	NO. OF DATA
127.0 - 127.9	113
128.0 - 128.9	66
129.0 - 129.9	28
130.0 - 130.9	10
131.0 - 131.9	7
132.0 - 132.9	3
133.0 - 133.9	3
134.0 - 134.9	0
135.0 - 135.9	2
136.0 - 136.9	0
137.0 - 137.9	0
138.0 - 138.9	0
139.0 - 139.9	1

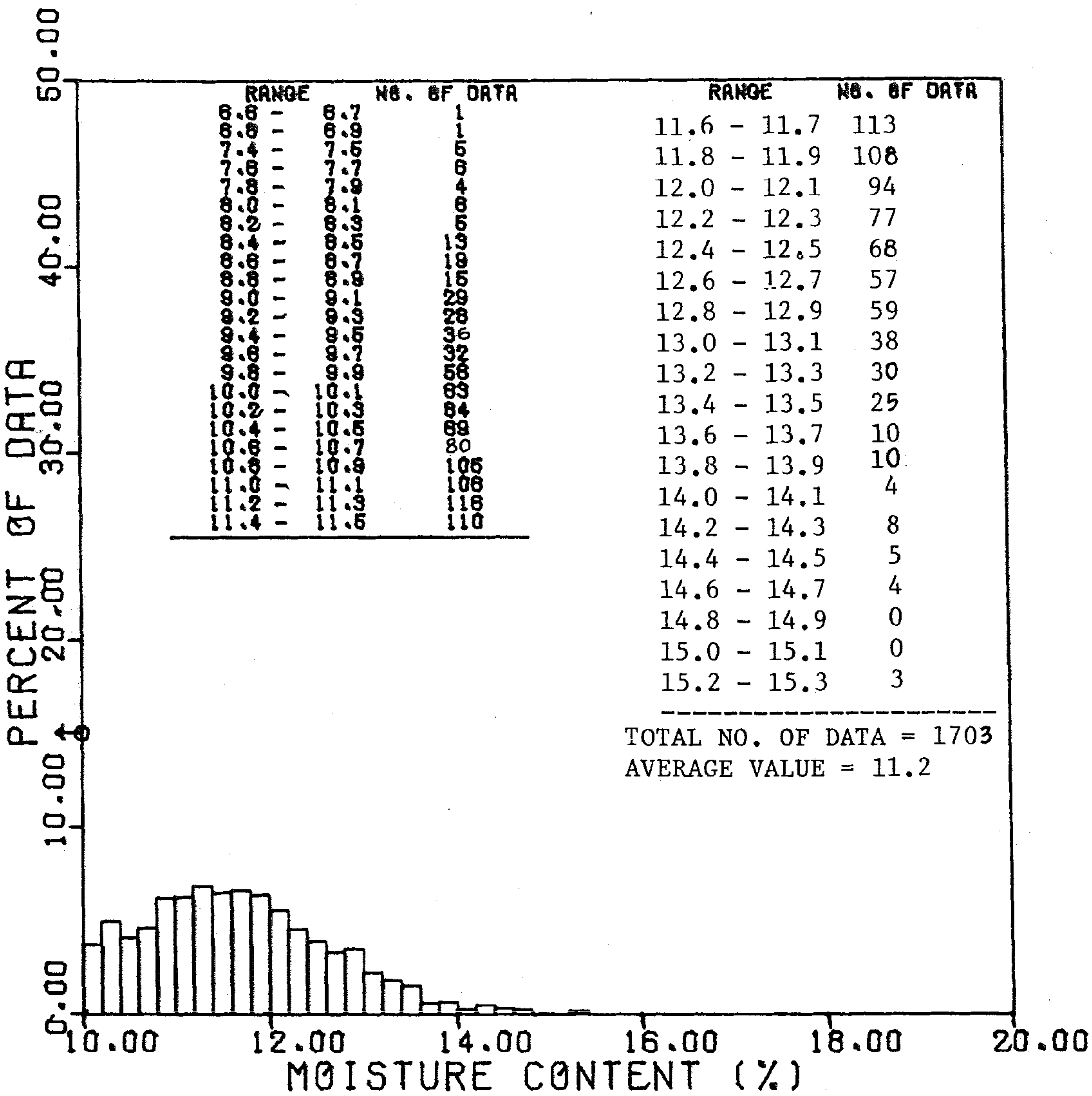
TOTAL NO. OF DATA =1703
AVERAGE VALUE = 124.0

CLINTON POWER STATION
ALL DATA
POWER - PBT SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-479

MAIN PLANT COHESIVE BACKFILL -
DISTRIBUTION OF DRY DENSITY

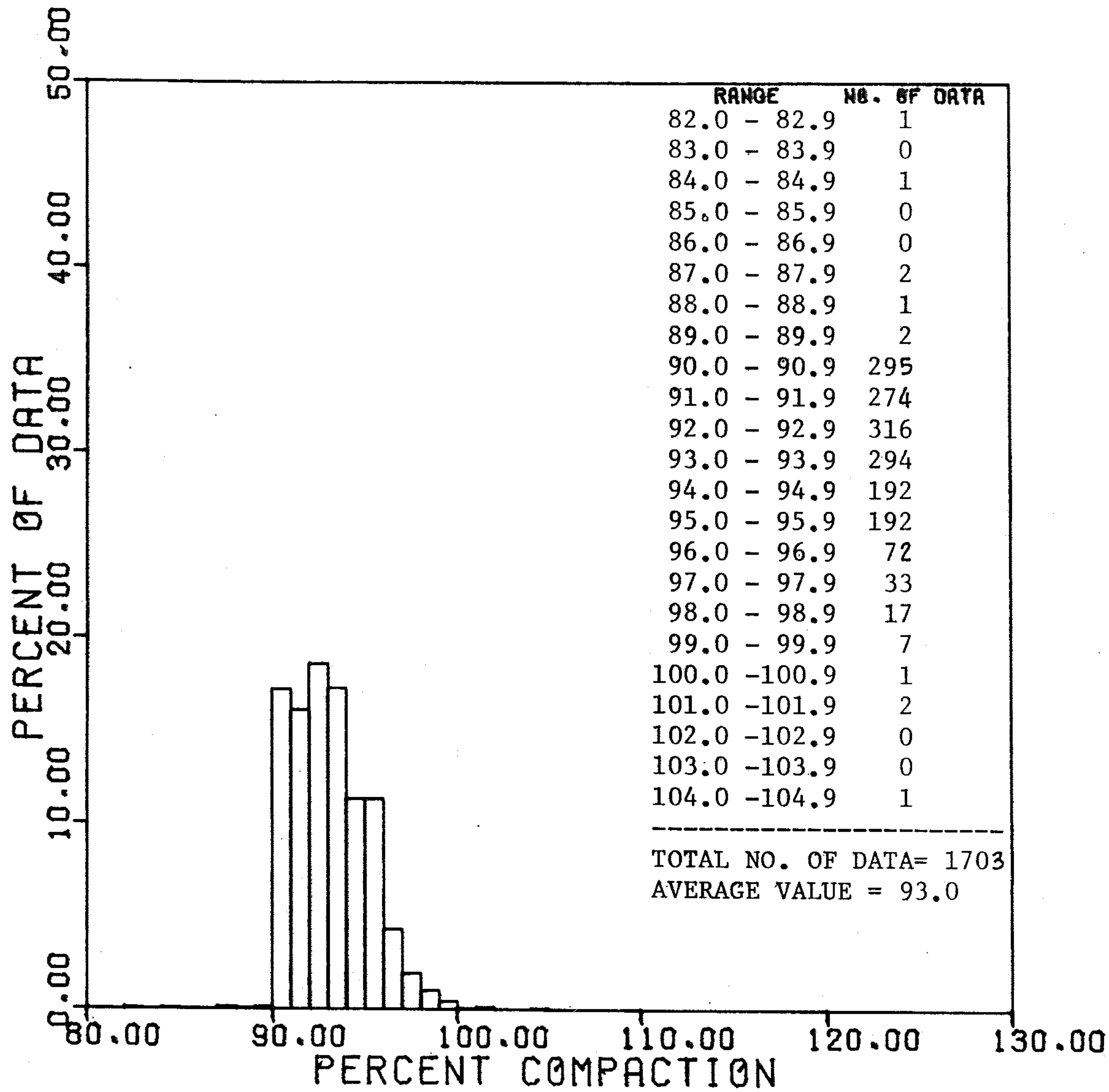


CLINTON POWER STATION
ALL DATA
POWER - PBT SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-480

MAIN PLANT COHESIVE BACKFILL - DISTRIBUTION OF MOISTURE CONTENT

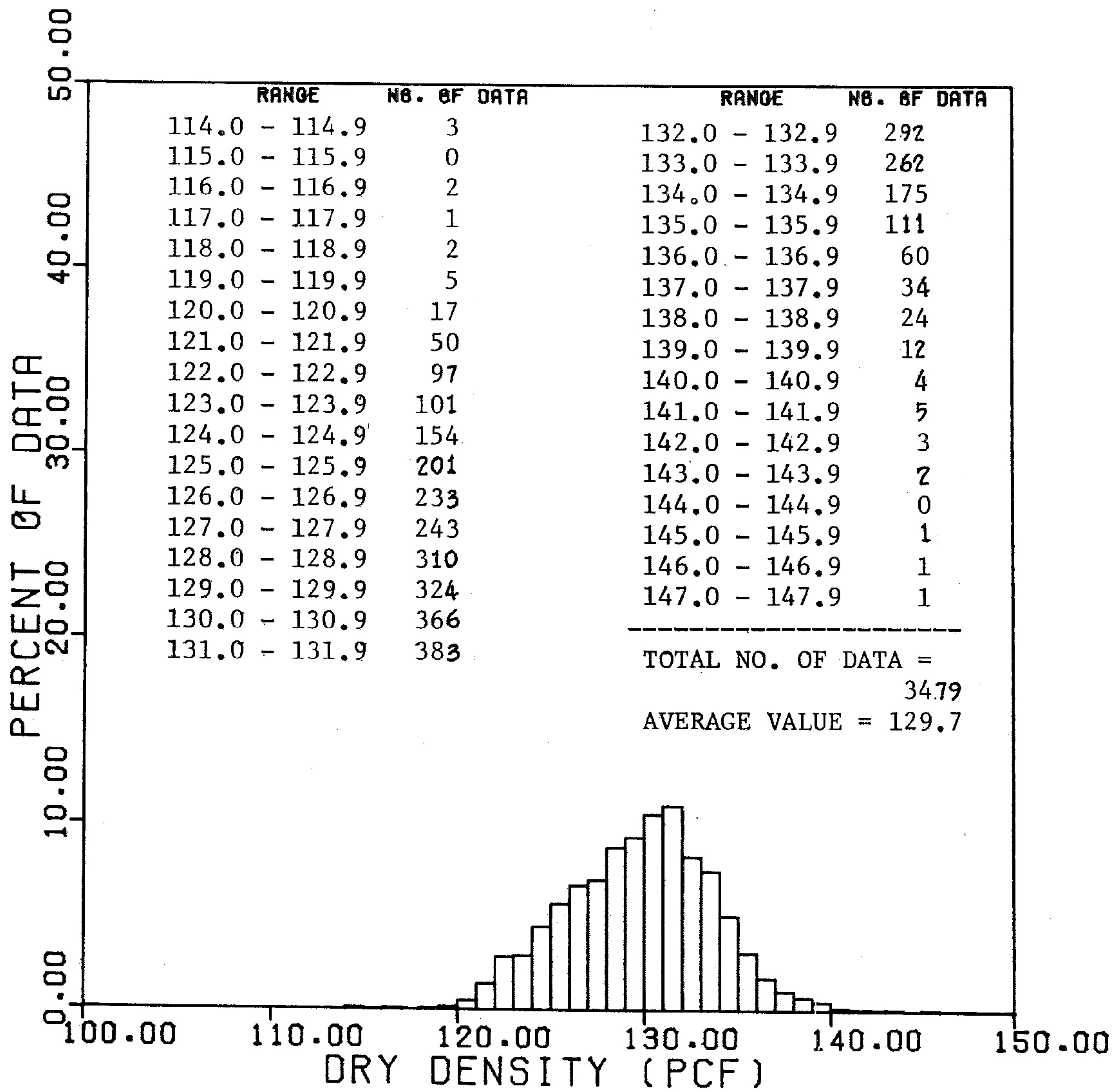


CLINTØN POWER STATIØN
ALL DATA
PØWER - PBT SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-481

MAIN PLANT COHESIVE BACKFILL - DISTRIBUTION OF PERCENT COMPACTION



RANGE	NO. OF DATA	RANGE	NO. OF DATA
114.0 - 114.9	3	132.0 - 132.9	292
115.0 - 115.9	0	133.0 - 133.9	262
116.0 - 116.9	2	134.0 - 134.9	175
117.0 - 117.9	1	135.0 - 135.9	111
118.0 - 118.9	2	136.0 - 136.9	60
119.0 - 119.9	5	137.0 - 137.9	34
120.0 - 120.9	17	138.0 - 138.9	24
121.0 - 121.9	50	139.0 - 139.9	12
122.0 - 122.9	97	140.0 - 140.9	4
123.0 - 123.9	101	141.0 - 141.9	5
124.0 - 124.9	154	142.0 - 142.9	3
125.0 - 125.9	201	143.0 - 143.9	2
126.0 - 126.9	233	144.0 - 144.9	0
127.0 - 127.9	243	145.0 - 145.9	1
128.0 - 128.9	310	146.0 - 146.9	1
129.0 - 129.9	324	147.0 - 147.9	1
130.0 - 130.9	366		
131.0 - 131.9	383		

TOTAL NO. OF DATA = 3479

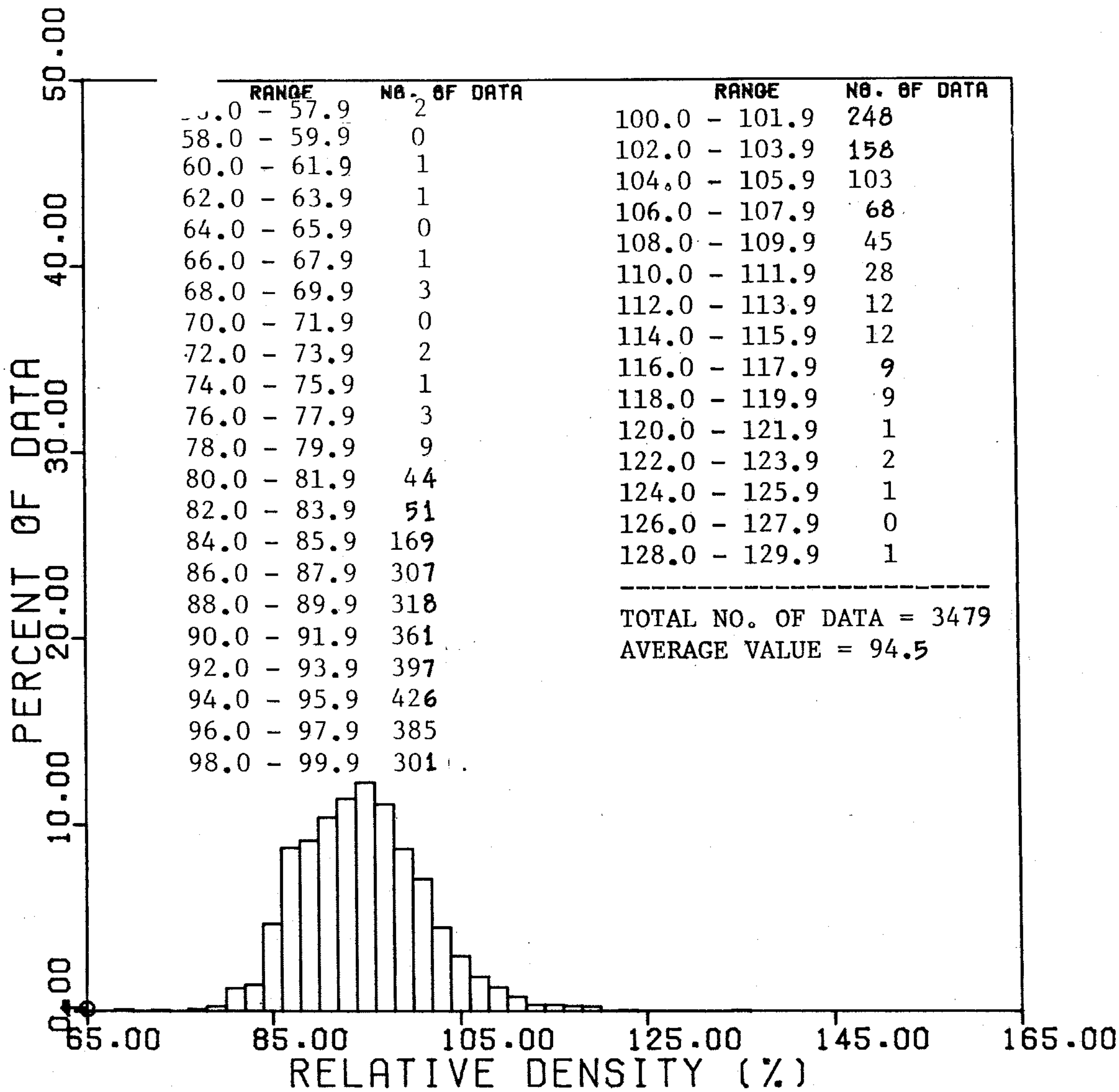
AVERAGE VALUE = 129.7

CLINTON POWER STATION
ALL DATA
POWER-P SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-482

MAIN PLANT GRANULAR BACKFILL - DISTRIBUTION OF DRY DENSITY



RANGE	NO. OF DATA	RANGE	NO. OF DATA
[illegible].0 - 57.9	2	100.0 - 101.9	248
58.0 - 59.9	0	102.0 - 103.9	158
60.0 - 61.9	1	104.0 - 105.9	103
62.0 - 63.9	1	106.0 - 107.9	68
64.0 - 65.9	0	108.0 - 109.9	45
66.0 - 67.9	1	110.0 - 111.9	28
68.0 - 69.9	3	112.0 - 113.9	12
70.0 - 71.9	0	114.0 - 115.9	12
72.0 - 73.9	2	116.0 - 117.9	9
74.0 - 75.9	1	118.0 - 119.9	9
76.0 - 77.9	3	120.0 - 121.9	1
78.0 - 79.9	9	122.0 - 123.9	2
80.0 - 81.9	44	124.0 - 125.9	1
82.0 - 83.9	51	126.0 - 127.9	0
84.0 - 85.9	169	128.0 - 129.9	1
86.0 - 87.9	307		
88.0 - 89.9	318		
90.0 - 91.9	361		
92.0 - 93.9	397		
94.0 - 95.9	426		
96.0 - 97.9	385		
98.0 - 99.9	301		

TOTAL NO. OF DATA = 3479
AVERAGE VALUE = 94.5

CLINTON POWER STATION
ALL DATA
POWER-P SERIES

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

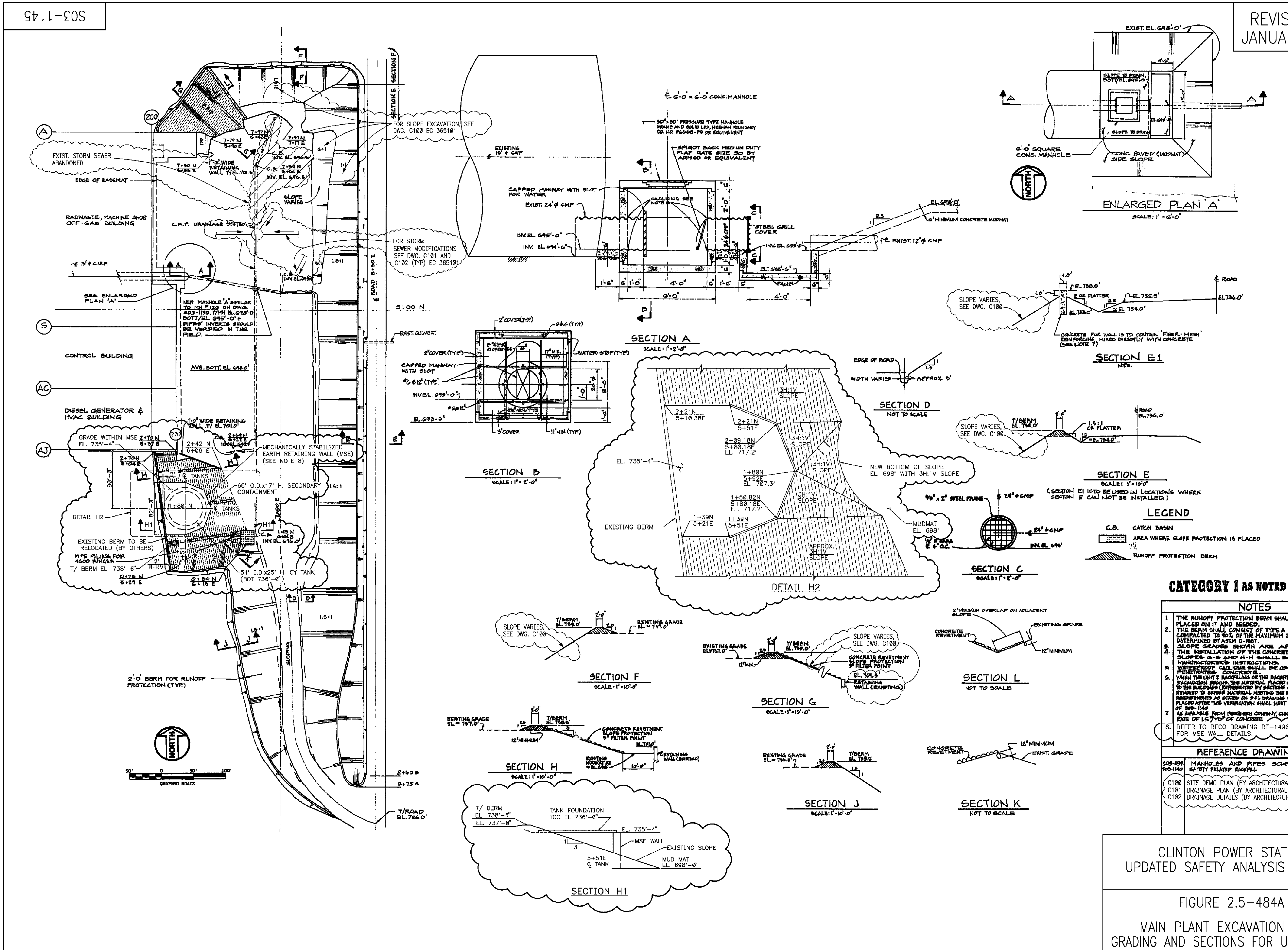
FIGURE 2.5-483

MAIN PLANT GRANULAR BACKFILL -
DISTRIBUTION OF RELATIVE DENSITY

FIGURE 2.5-484
HAS BEEN DELETED

S03-1145

REVISION 15
JANUARY 2013



CATEGORY I AS NOTED

NOTES

1. THE RUNOFF PROTECTION BERM SHALL HAVE 4" OF TOPSOIL PLACED ON IT AND SEEDED.
2. THE BERM SHALL CONSIST OF TYPE A COHESIVE MATERIAL COMPACTED TO 90% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557.
3. SLOPE GRADES SHOWN ARE APPROXIMATE.
4. THE INSTALLATION OF THE CONCRETE REVETMENT ON SLOPES G-G AND H-H SHALL BE PER MANUFACTURER'S INSTRUCTIONS.
5. WATERPROOF CAULKING SHALL BE USED WHERE CMP PENETRATES CONCRETE.
6. WHEN THE UNIT 2 BACKFILLING OR THE BACKFILLING OF THE UNIT 2 EXCAVATION BEGINS, THE MATERIAL PLACED ON THE SLOPES ADJACENT TO THE BUILDINGS (REPRESENTED BY SECTIONS G-G AND H-H) SHALL BE REMOVED TO EXPOSE MATERIAL MEETING THE FILL PLACEMENT REQUIREMENTS AS STATED ON S&L DRAWING S03-1140. ALL BACKFILL PLACED AFTER THIS VERIFICATION SHALL MEET THE REQUIREMENTS OF S03-1140
7. AS AVAILABLE FROM FIBERMESH COMPANY, CHICKAMAUGA, GA. RATE OF 1.5#/YD³ OF CONCRETE
8. REFER TO RECO DRAWING RE-14963, SHEETS 1-5 FOR MSE WALL DETAILS.

REFERENCE DRAWINGS

S03-1192	MANHOLES AND PIPES SCHEDULE.
S03-1140	SAFETY RELATED BACKFILL
C100	SITE DEMO PLAN (BY ARCHITECTURAL EXPRESSIONS, LLP)
C101	DRAINAGE PLAN (BY ARCHITECTURAL EXPRESSIONS, LLP)
C102	DRAINAGE DETAILS (BY ARCHITECTURAL EXPRESSIONS, LLP)

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-484A

MAIN PLANT EXCAVATION FINAL GRADING AND SECTIONS FOR UNIT 2 AREA

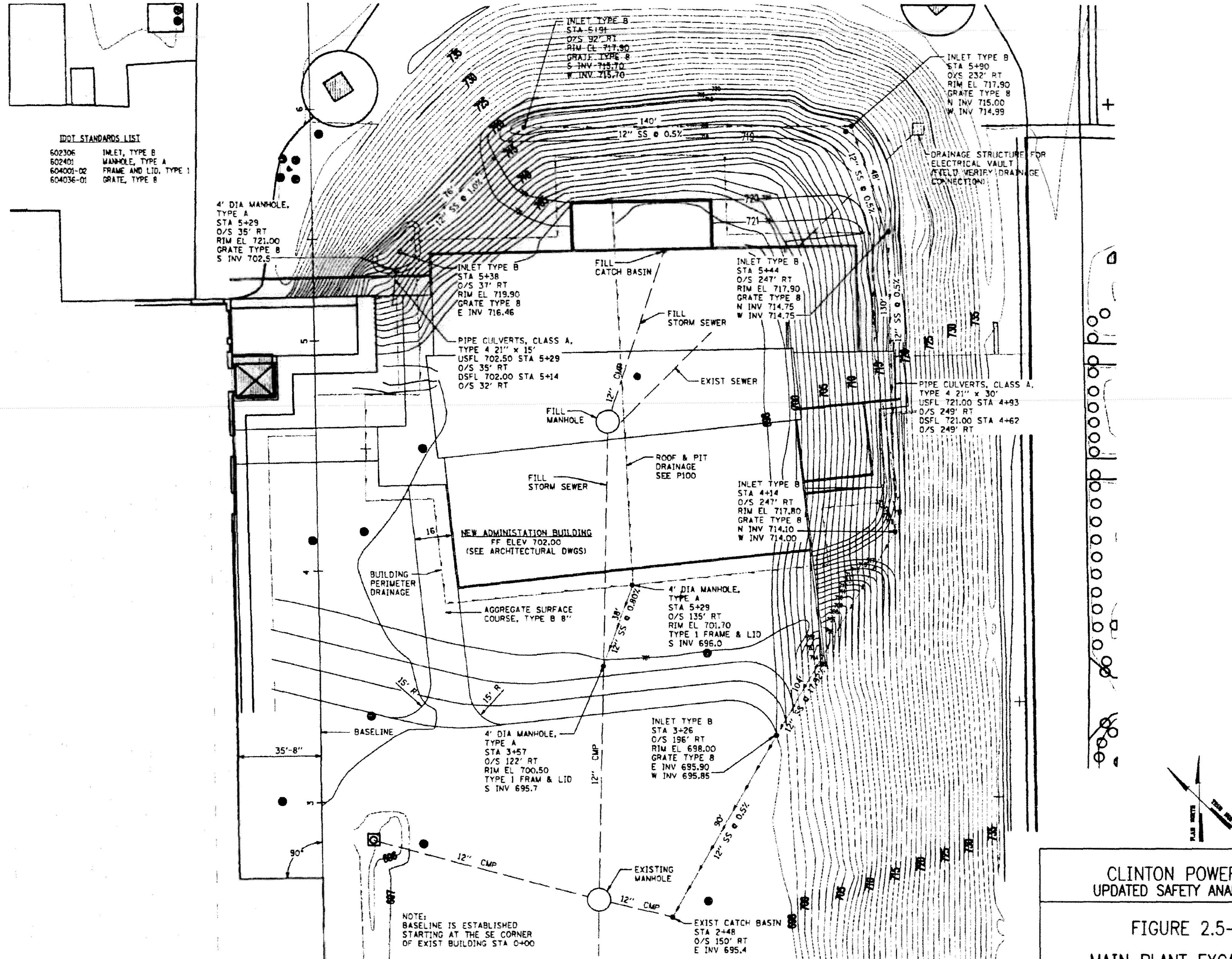


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FIGURE 2.5-484B

MAIN PLANT EXCAVATION FINAL GRADING AND SECTIONS FOR UNIT 2 AREA

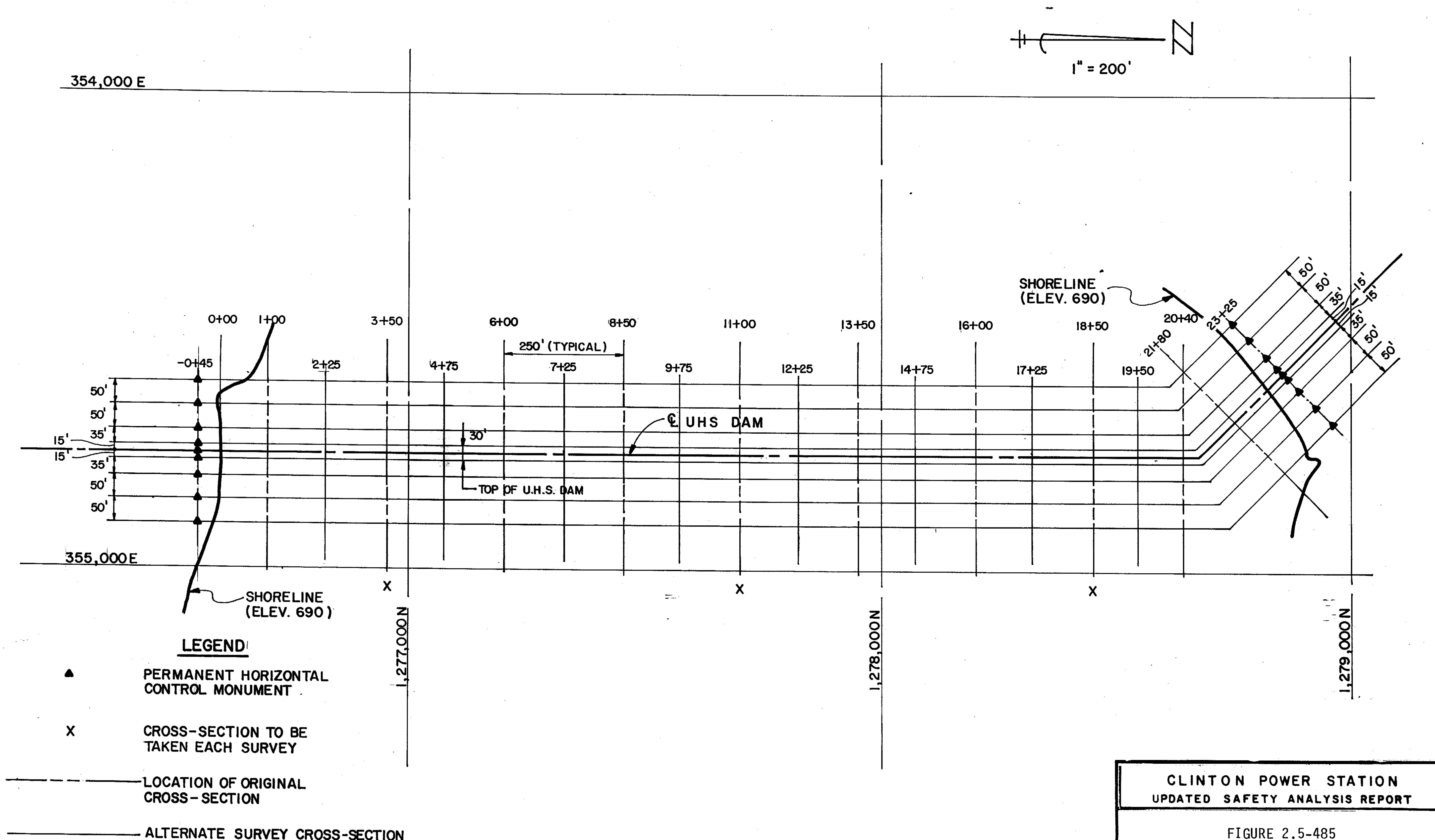

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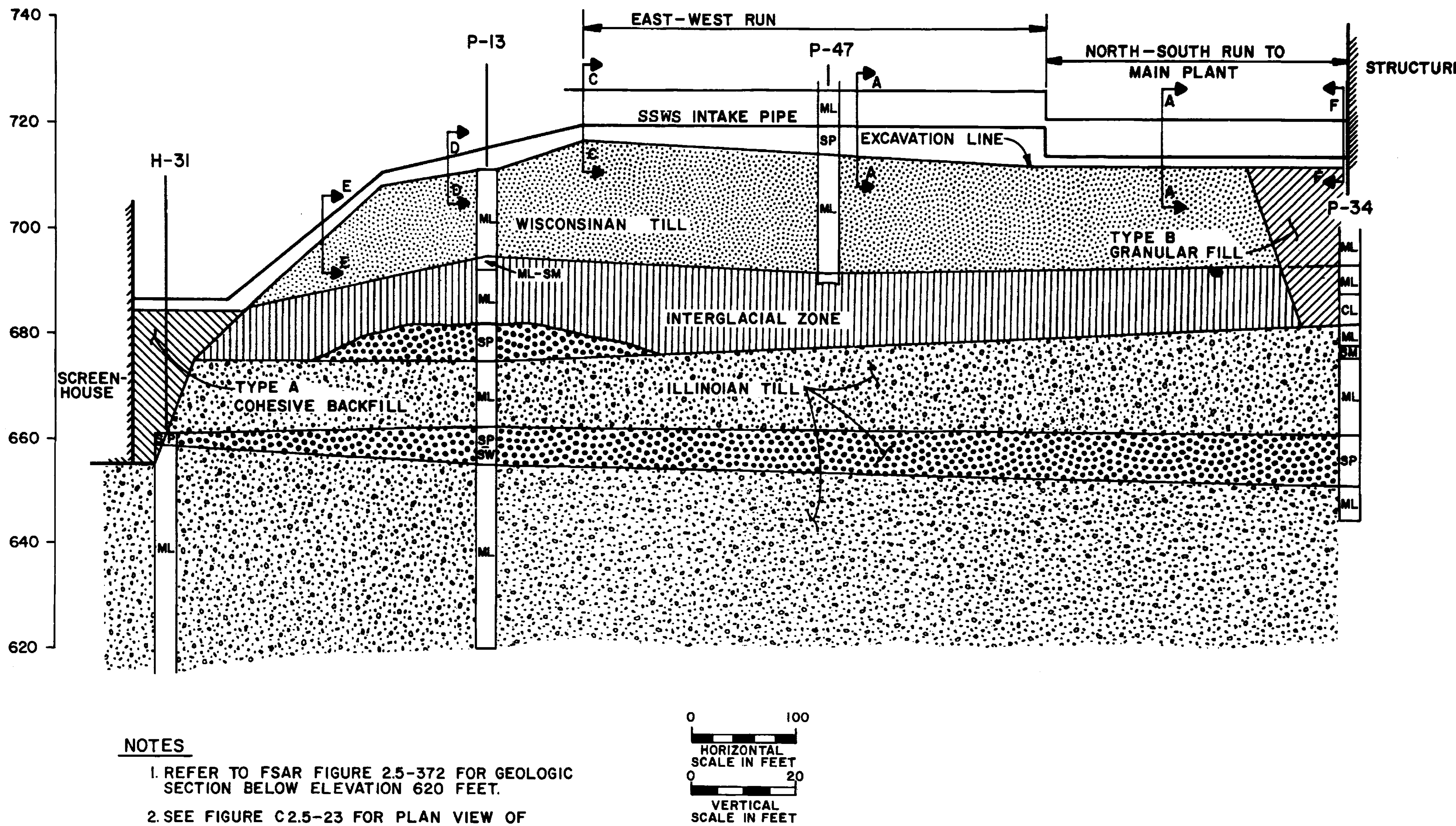
FIGURE 2.5-485

SCHEME FOR CPS-UHS SUBMERGED DAM MONITORING SYSTEM

REVISION 9
JANUARY 2001



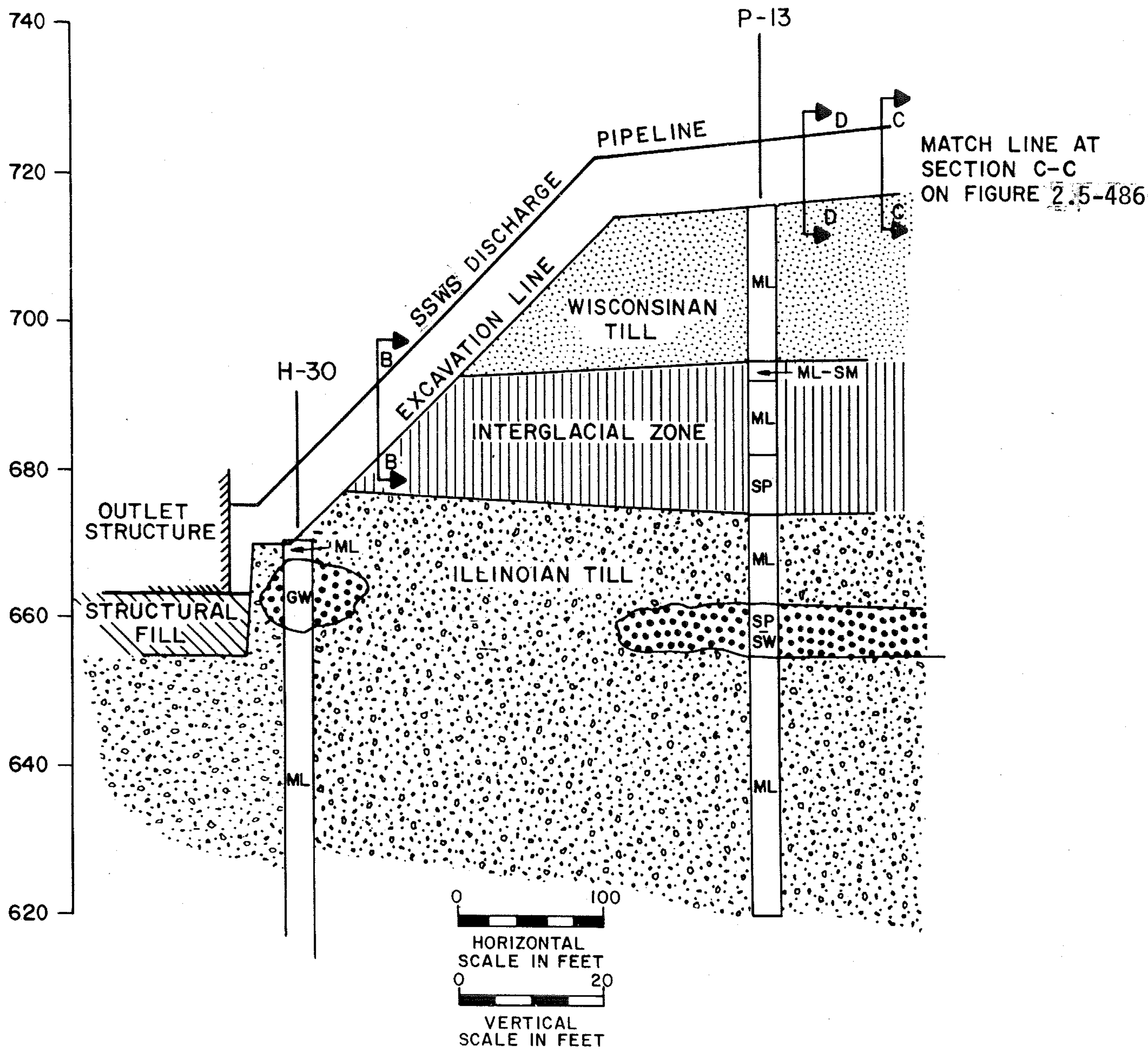
NOTES

1. REFER TO FSAR FIGURE 2.5-372 FOR GEOLOGIC SECTION BELOW ELEVATION 620 FEET.
2. SEE FIGURE C2.5-23 FOR PLAN VIEW OF ECCS PIPELINE EXCAVATION.
3. SECTIONS SHOWN ON FIGURE 2.5-488.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-486

GEOLOGIC PROFILE ALONG SSWS PIPELINE - SCREENHOUSE TO MAIN PLANT



SEE NOTES ON FIGURE 2.5-486
FOR REFERENCE FIGURES.

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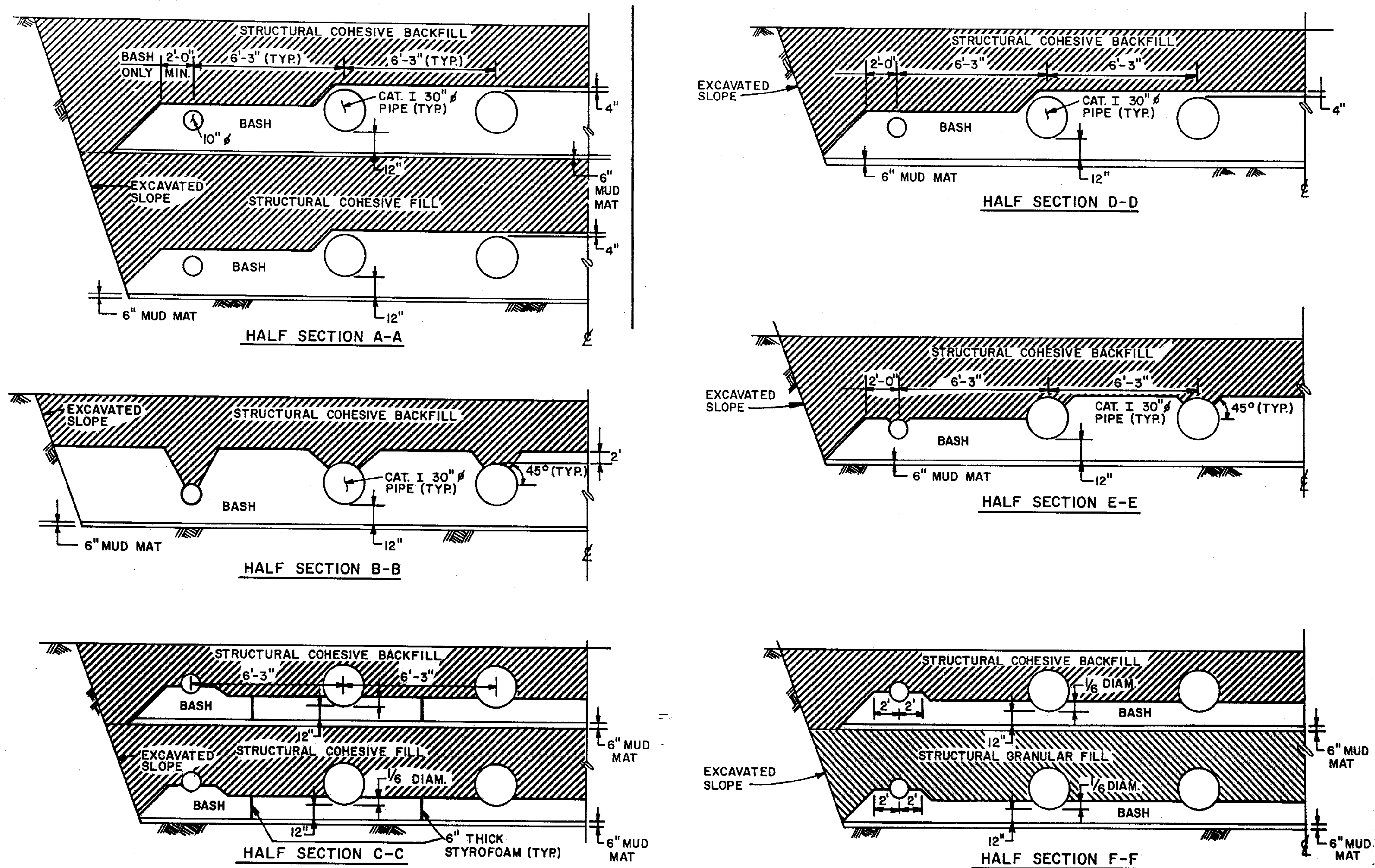
FIGURE 2.5-487

GEOLOGIC PROFILE ALONG SSWS
PIPELINE - OUTLET STRUCTURE
TO MAIN PLANT



NOTES:

1. SECTIONS GIVEN ARE HALF SECTIONS AND ARE SYMMETRICAL ABOUT THE CENTERLINE.
2. SECTION C-C IS TYPICAL FOR ALL BEND LOCATIONS ALONG PIPELINE.
3. SECTION F-F IS FOR AREA IMMEDIATELY ADJACENT TO MAIN PLANT STRUCTURE ONLY.
4. LOCATION OF SECTIONS SHOWN ON FIGURES 2.5-486 AND 2.5-487.

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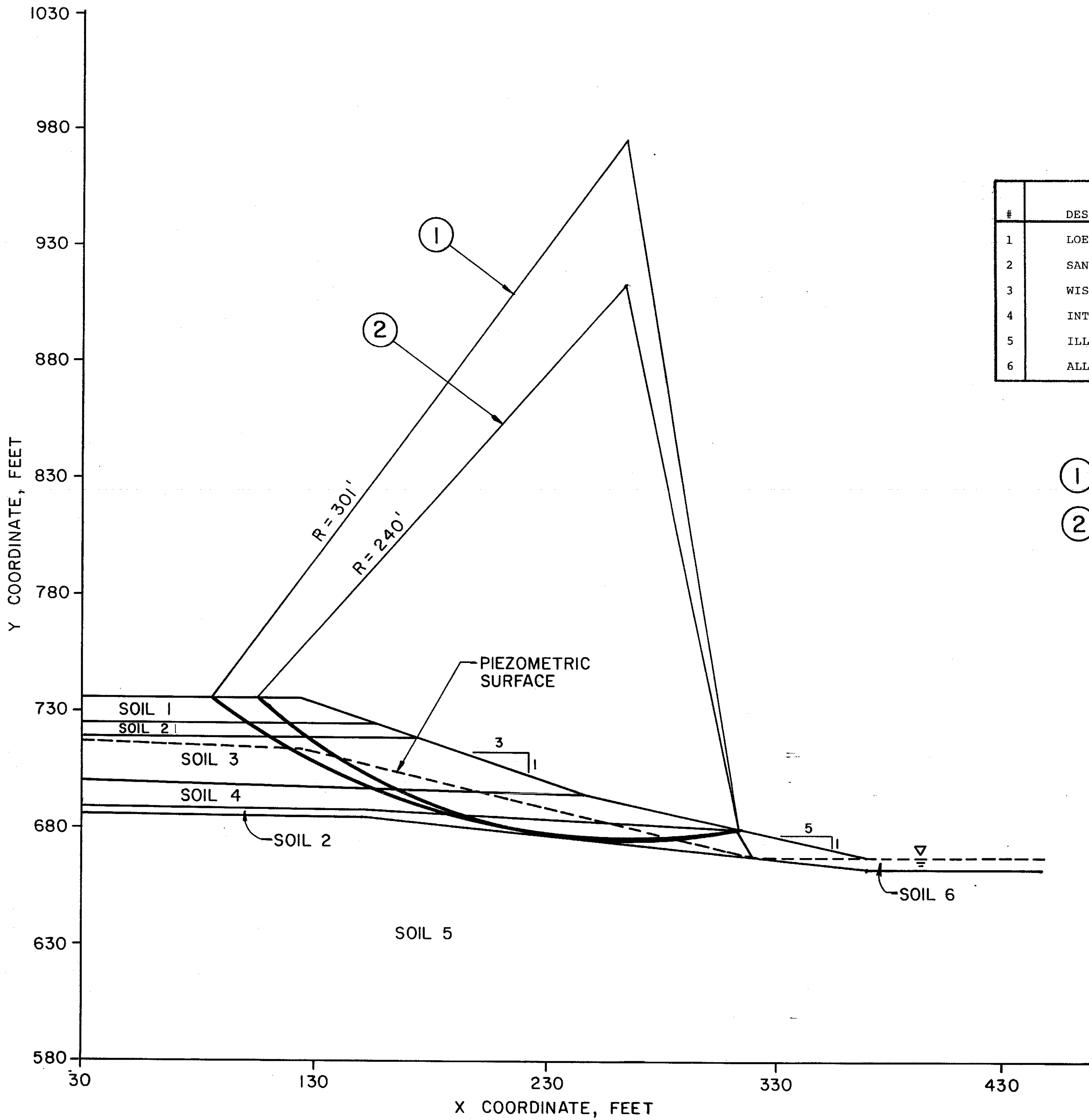
FIGURE 2.5-488

TYPICAL CROSS SECTIONS
SSWS PIPELINE



#	DESCRIPTION	SOIL DATA		
		γ'(PCF)	C'(PSF)	ø
1	LOESS	120.0	0	20
2	SAND	125.0	0	38
3	WISCONSIN TILL	137.0	600	30
4	INTERGLACIAL	131.0	600	30
5	ILLINOIAN TILL	150.0	0	47
6	ALLUVIUM	120.0	120	38

1 F.S : 1.21 (PSEUDO)

2 F.S : 2.42 (STATIC)

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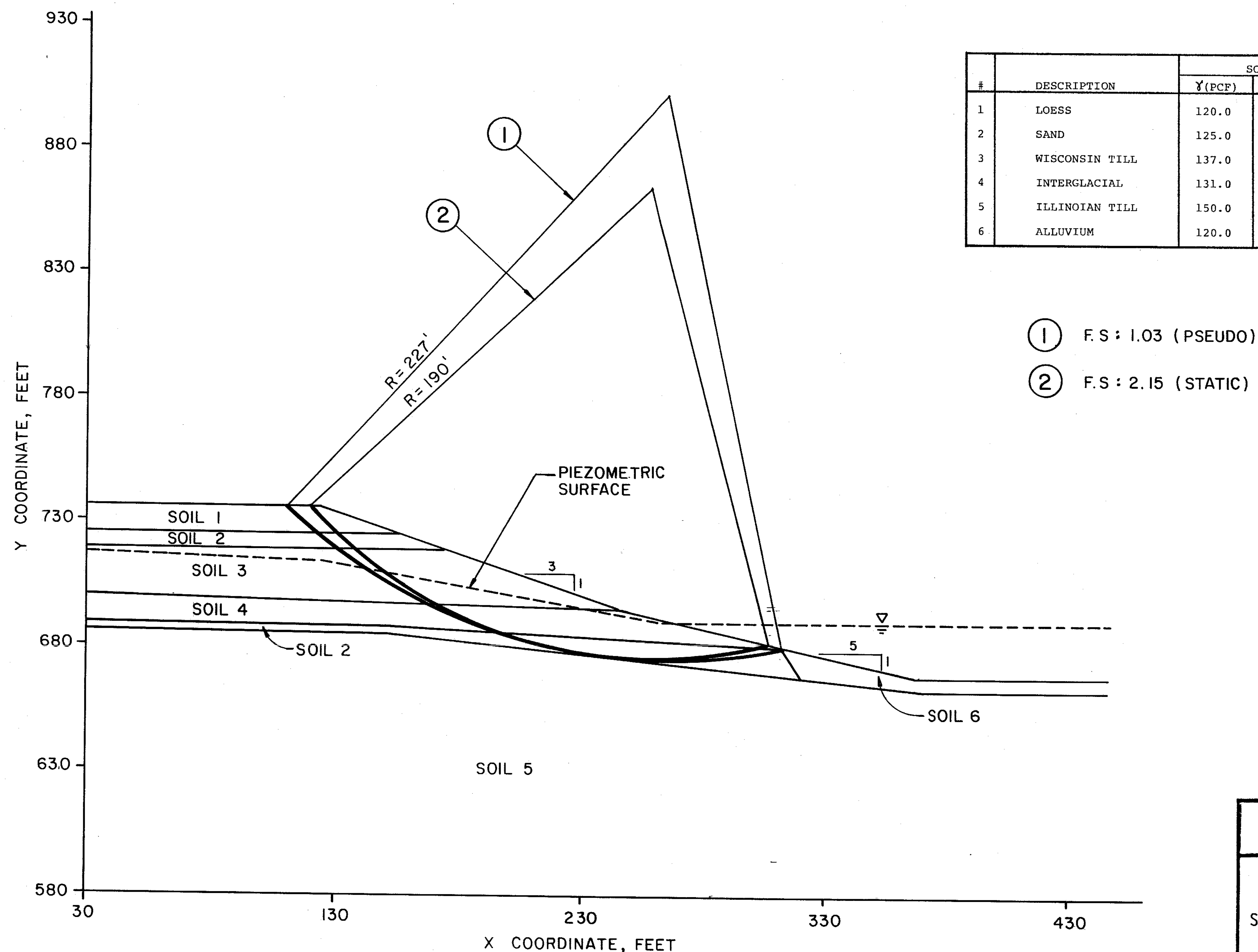
FIGURE 2.5-489

STABILITY ANALYSIS - END OF CONSTRUCTION CONDITION - SECTION Y-Y, ULTIMATE HEAT SINK

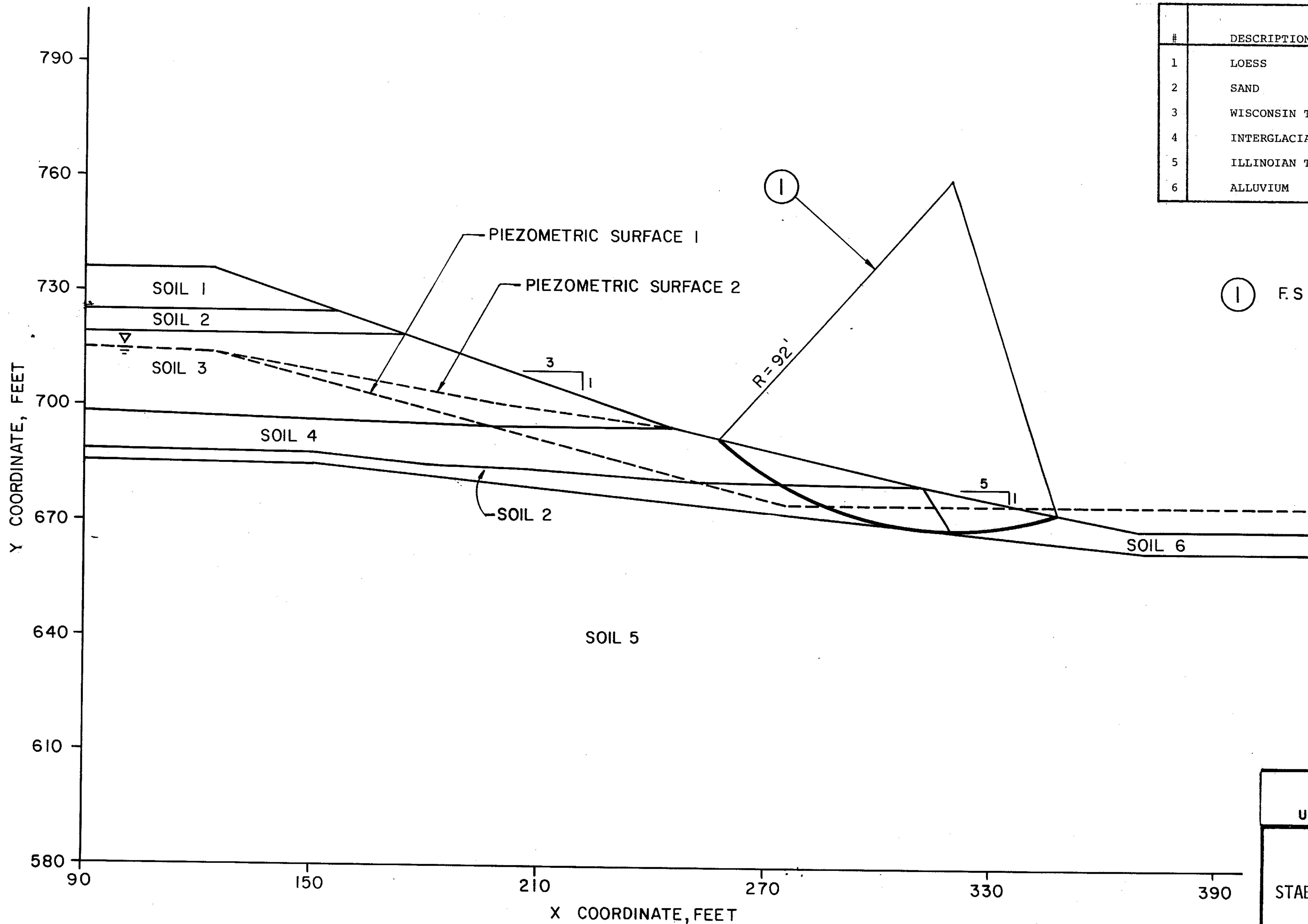


#	DESCRIPTION	SOIL DATA		
		γ(PCF)	C' (PSF)	ø
1	LOESS	120.0	0	20
2	SAND	125.0	0	38
3	WISCONSIN TILL	137.0	600	30
4	INTERGLACIAL	131.0	600	30
5	ILLINOIAN TILL	150.0	0	47
6	ALLUVIUM	120.0	120	38

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-490

STABILITY ANALYSIS - FULL COOLING LAKE CONDITION - SECTION Y-Y, ULTIMATE HEAT SINK



#	DESCRIPTION	SOIL DATA γ (PCF)	C' (PSF)	Ø
1	LOESS	120.0	0	20
2	SAND	125.0	0	38
3	WISCONSIN TILL	137.0	600	30
4	INTERGLACIAL	131.0	600	30
5	ILLINOIAN TILL	150.0	0	47
6	ALLUVIUM	120.0	120	38

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE 2.5-491

STABILITY ANALYSIS - EMPTY COOLING LAKE CONDITION - SECTION Y-Y, ULTIMATE HEAT SINK

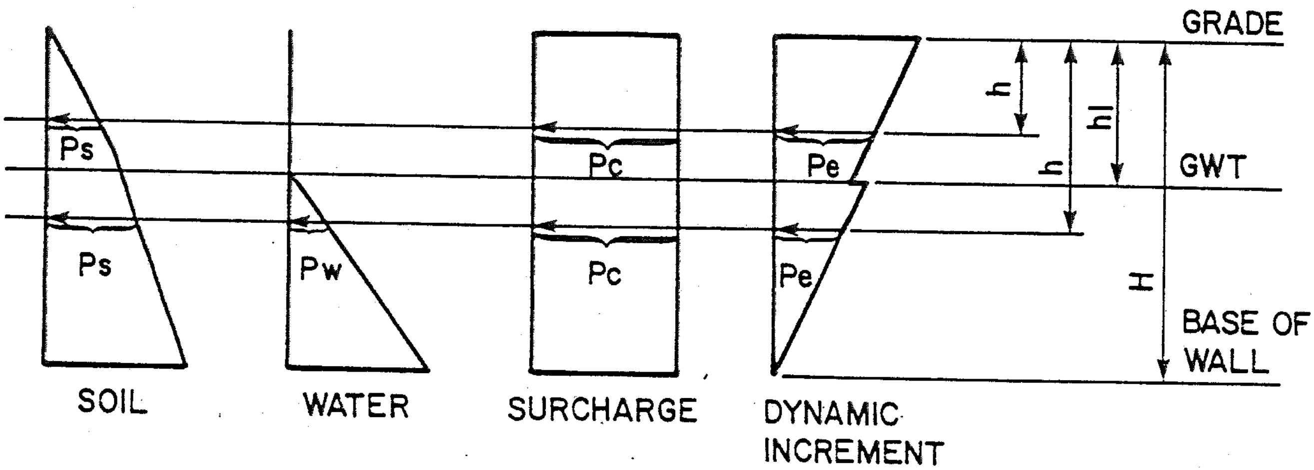


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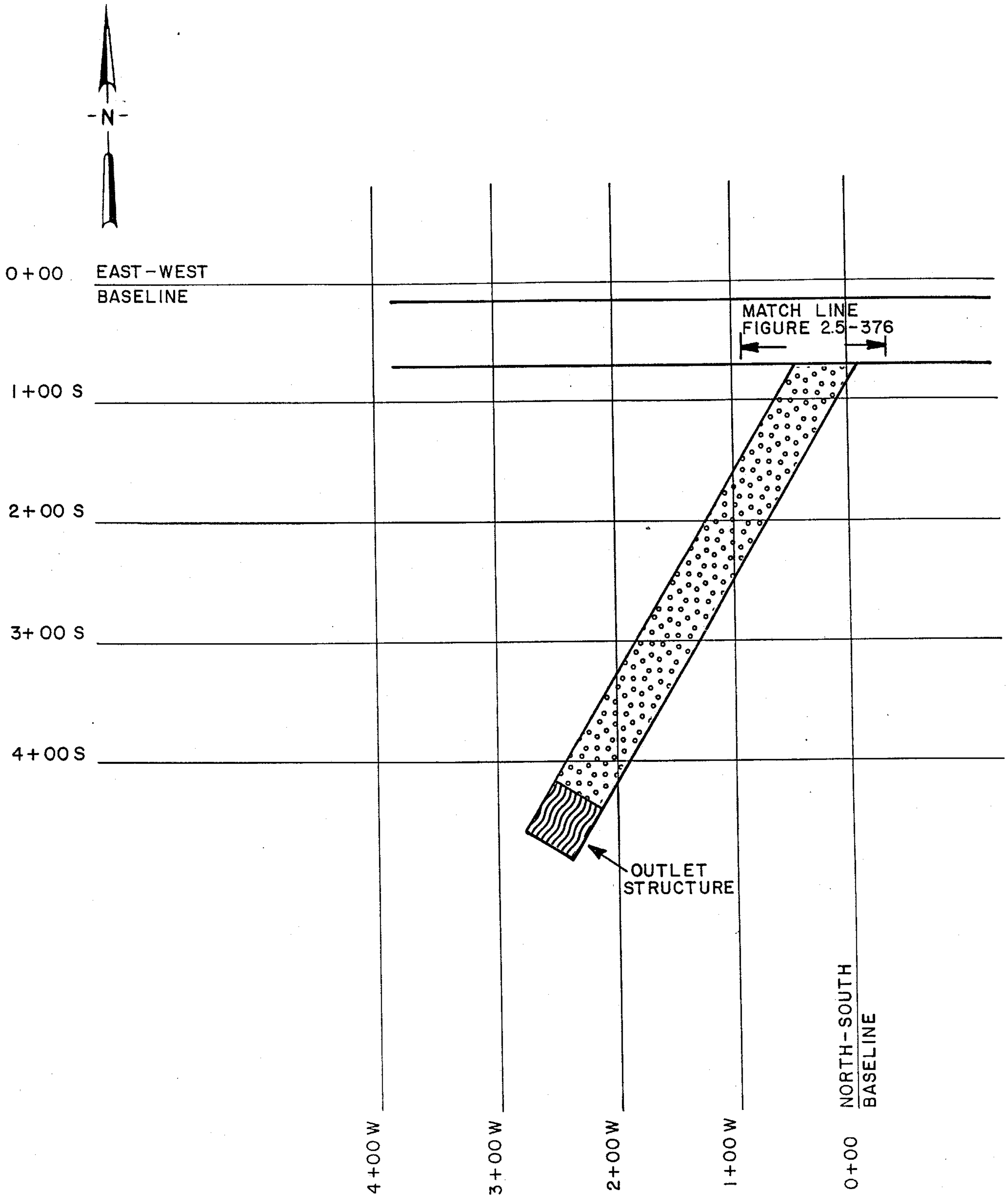
Figure 2.5-492
(Q & R 241.7)

LATERAL SOIL PRESSURES

Figures 2.5-493 through 2.5-495
Deleted



NOTE

SEE FIGURE 2.5-376 FOR KEY.

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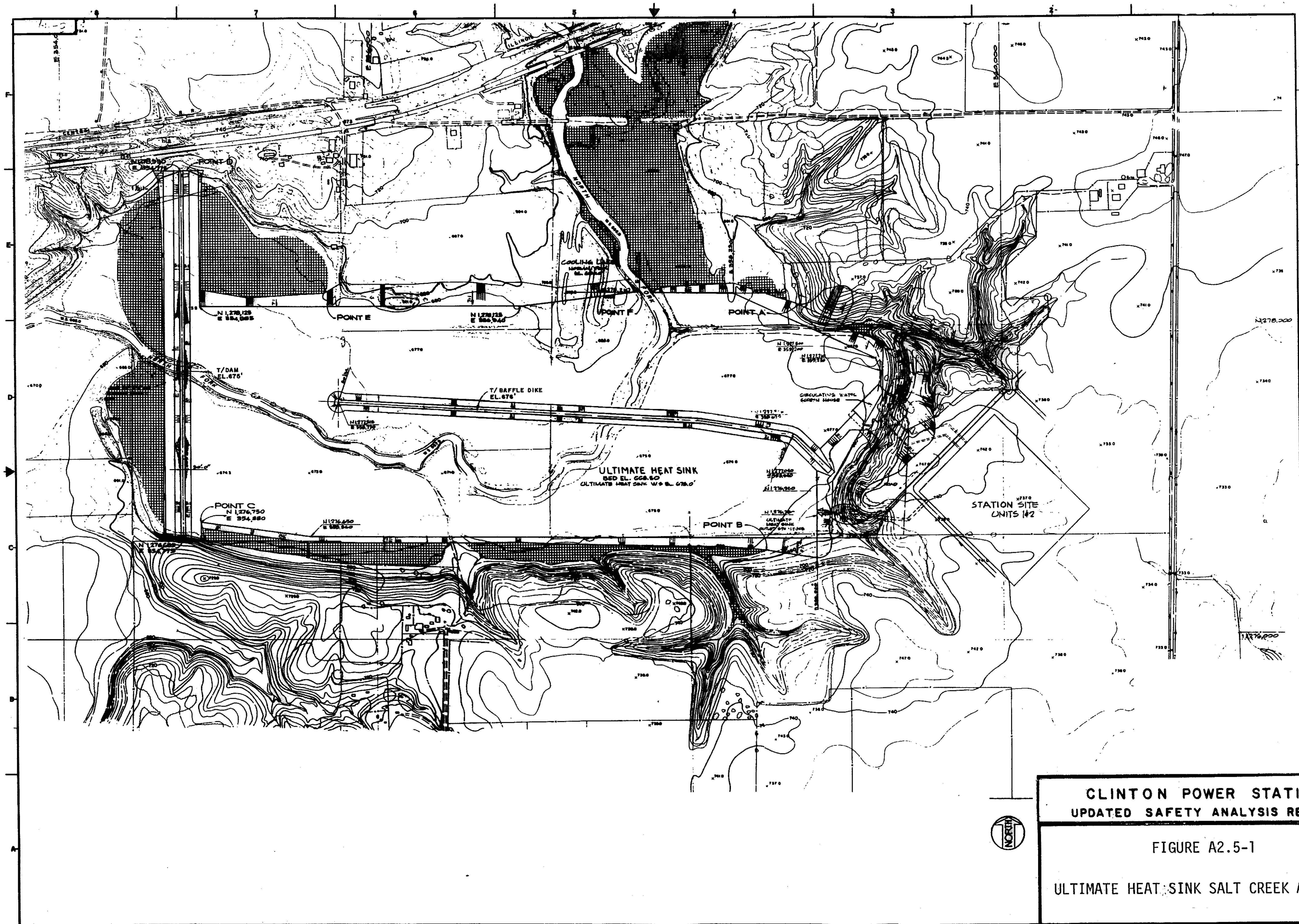
Figure 2.5-496
(Q & R 241.8)
FLY ASH MIXTURE AS FILL AND BACKFILL FOR THE SSWS DISCHARGE PIPELINE



CLINTON POWER STATION
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FIGURE A2.5-1

ULTIMATE HEAT SINK SALT CREEK ALLUVIUM

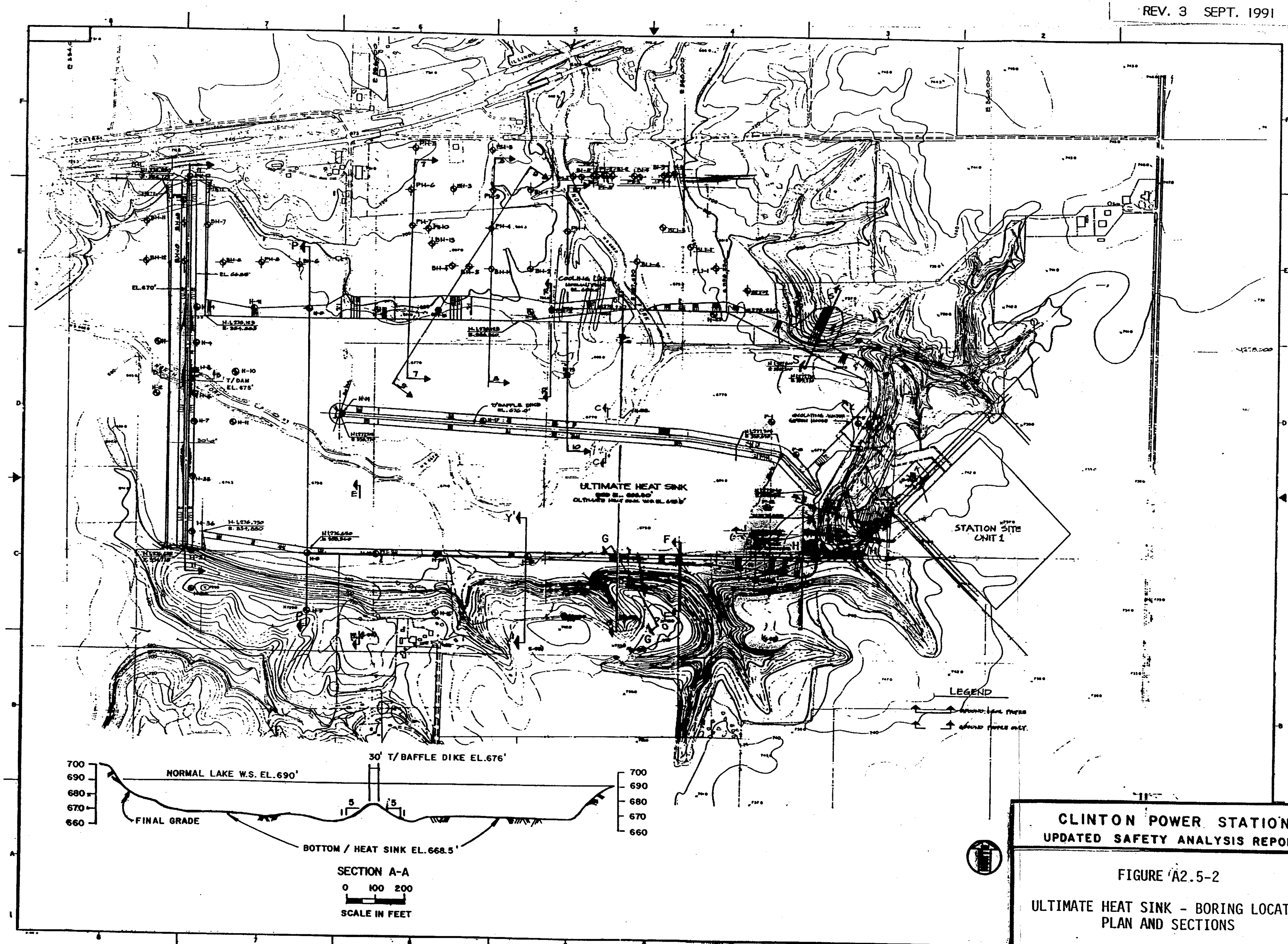

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FIGURE A2.5-2

ULTIMATE HEAT SINK - BORING LOCATION PLAN AND SECTIONS

BORING BH-1

SURFACE ELEVATION 690.3 ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS SAMPLES
0–5				1500*			19.4			6 SS
							20.5			44 SS
5–10	MA						13.0		29.8	17 SS
										30 SS
10–15										27 SS
							10.0	127		
	MA						7.3	137	56.5	100/5" SS
15–20							8.0	131		52 SS
										94 SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
	TOP OF OUTWASH	
SM	Brown, sandy silt, some fine gravel -large boulder noticed at 4.0'	
	-some thin sand seams	
	-mottled	
	TOP OF ILLINOIAN TILL	676.3
ML	Gray, silt, some fine sand, trace fine gravel	
	Gray, silt, trace fine to coarse sand, trace fine gravel	

Boring completed at 20. feet on 4-1-75

Water level not recorded.

DEPTH scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-3

LOG OF BORING BH-1

BORING BH-2

SURFACE ELEVATION 689.9 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BLOW COUNTS	SAMPLES
11	SS
11	SS
4	SS
20	SS
35	SS
27	SS
23	SS
24	SS
25	SS
37	SS
38	SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	Orange-brown to light brown, silty clay, some organics, trace fine sand.	
SM	Medium brown, silty fine to medium sand, some coarse sand, trace fine gravel	
SW-SM	TOP OF OUTWASH Medium brown, silty, fine to coarse sand, trace fine gravel.	679.9
CL-ML	TOP OF ILLINOIAN TILL Mottled orange-brown, fine sandy clayey silt, trace medium to coarse sand, trace fine gravel.	668.9
ML	Medium gray, fine sandy silt, trace organics.	
CL-ML	Medium gray, fine sandy clayey silt, trace medium to coarse sand, trace gravel seams .1 feet thick of silty fine sand.	
ML	Medium gray, fine sandy clayey silt, trace medium to coarse sand, trace fine gravel.	

Boring completed at 27.5 feet on 3-26-75.
Water level at 17. feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-4

LOG OF BORING BH-2

BORING BH-3

SURFACE ELEVATION 700.6 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{Q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0–5				2000*	19.2	28.7	24.2		
				1100*			28.4	94	
5–10	MA			3000*			17.0		37.3
10–15	MA						30.5		15.6
				2200*	13.3	10.7	14.5	123	
15–20	MA			6370			11.6	127	61.3
							14.5		
20–25				1700*			14.1	128	
							10.2		
30	MA						17.6		25.3
30–35							22.9		
40–45							19.3		
45	SA								9.7
45–50							20.6		
55				11930			7.8	139	

BLOW COUNTS / SAMPLES: 8 SS, 11 SS, 11 SS, 4 SS, 4 SS, 19 SS, 100 SS, 163 SS, 37 SS, 129 SS, 117 SS, 192 SS, 96 SS, 98 SS, 67 SS, 41 SS, 54 SS, 68 SS, 91 SS, 162 SS, 206 SS, 173 SS

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	Mottled brown to light brown, fine sandy clay, some silt.	
	TOP OF OUTWASH	693.1
SM	Reddish brown, silty fine sand, some medium sand.	
SM - GP	-some medium to coarse sand, trace fine gravel. -some fine to coarse gravel.	
CL	Medium dark brown, fine sandy clay, some silt, trace medium to coarse sand, trace gravel.	
SW SM	Medium dark brown, silty fine to coarse sand, trace fine gravel.	
SP SM	Medium dark brown, silty fine to medium sand.	
ML	Medium dark brown, fine sandy silt, some clay, trace medium to coarse sand, trace fine gravel.	
SM	Medium dark brown silty fine to coarse sand, trace fine gravel.	
ML	Medium dark brown, fine sandy silt, some clay, trace medium to coarse sand.	
SM	Medium dark brown, silty fine to coarse sand, trace fine gravel.	
SP	Medium dark brown, fine sand, some silt, trace medium to coarse sand.	
SP	Medium brown, fine to medium sand.	
	Medium brown, fine to medium sand, trace coarse sand.	
	Reddish brown, fine to medium sand, some silt, trace coarse sand.	
	TOP OF ILLINOIAN TILL	652.1
ML	Medium gray, fine sandy silt, some clay, trace fine gravel.	

Boring completed at 55.0 feet on 4-2-75.

Water level at 11. feet.

CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-5

LOG OF BORING BH-3

BORING BH-4

SURFACE ELEVATION 694.0 Ft.

Tests Reported Elsewhere	Shear Strength – Triaxial Compression $\frac{\sigma_1+\sigma_3}{2}$ psf	Triaxial Compression σ_3 psf	Unconfined Compression $\frac{q_u}{2}$ psf	Atterberg Limits – Plastic Limit %	Atterberg Limits – Plasticity Index %	Field Moisture Content %	Dry Density PCF	Percent Passing 200 Sieve	Blow Counts / Samples	Symbols	Descriptions	Elevation (Feet)
									11 SS	CL	Medium brown, silty clay, some fine sand.	
			1600*			22.0	105					
			1300*	18.8	26.1	25.1	102		10 SS		Mottled light brown to medium dark brown, clayey silt, some fine to medium sand.	
MA						16.3		16.0	4 SS		TOP OF OUTWASH	
										SW • SM	Reddish brown, silty, fine to medium sand, some coarse sand, trace fine gravel.	686.5
SA						19.3		12.8	2 SS			
									1/18"SS			
SA						27.8		14.9	1/18"SS		TOP OF ILLINOIAN TILL	677.0
									19 SS	ML CL	Medium brown, silt, some clay, trace medium to coarse sand, trace fine gravel.	
						14.5						
			4690	13.3	6.1	12.1	128		56 SS			
									137 SS			
						11.5						
			9360			9.8	143		94 SS			
									70 SS	ML	Medium gray, silt, some clay, some medium to coarse sand, trace fine gravel.	

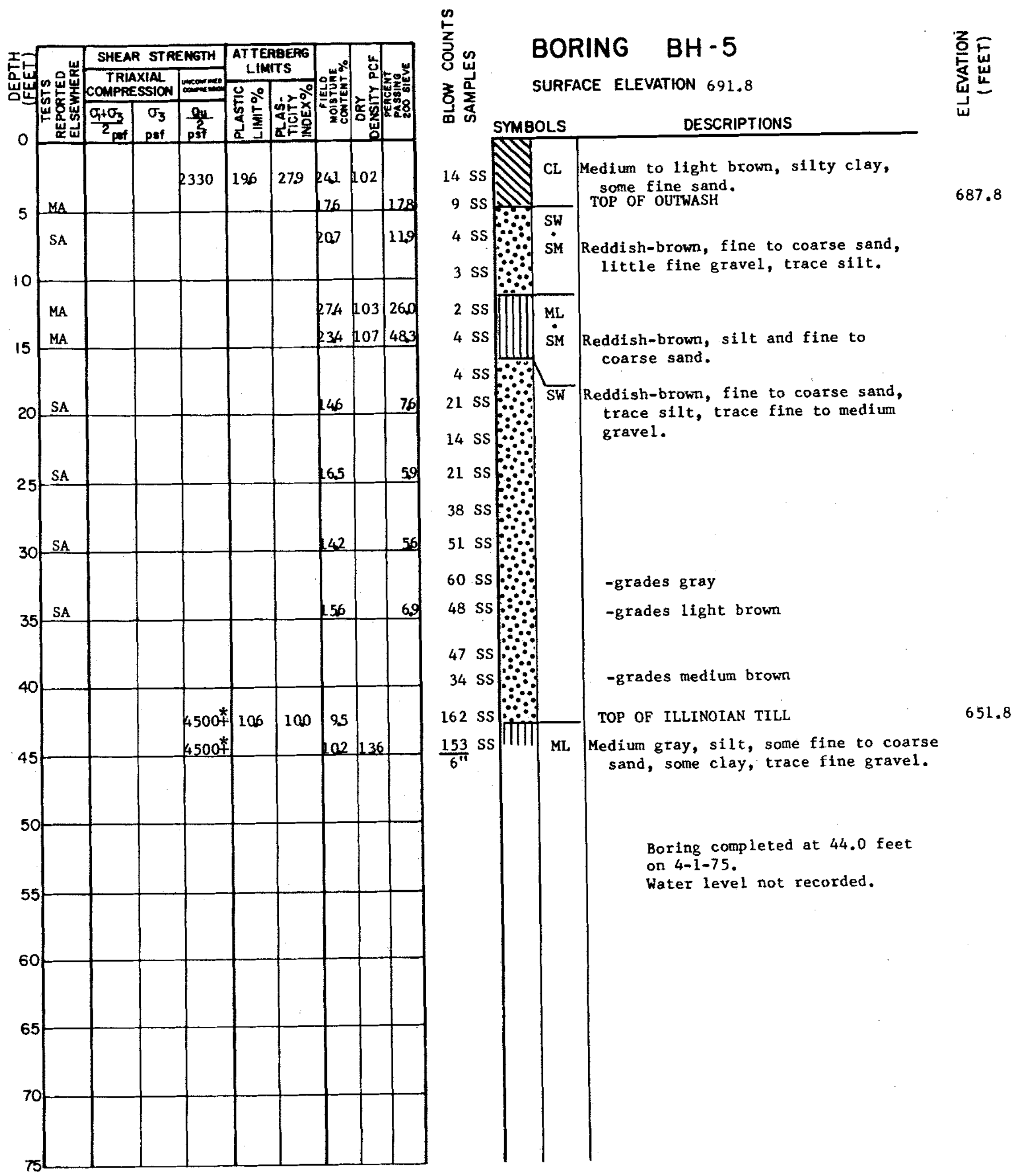
DEPTH (FEET): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

Boring completed at 27.5 feet on 3-3-75.
Water level not recorded.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-6

LOG OF BORING BH-4



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-7

LOG OF BORING BH-5

BORING BH-6

SURFACE ELEVATION 685.0 Ft.

Tests Reported Elsewhere	Triaxial Compression $\frac{\sigma_1+\sigma_3}{2}$ psf	Triaxial Compression σ_3 psf	Unconfined Compression $\frac{q_u}{2}$ psf	Atterberg Limits: Plastic Limit %	Atterberg Limits: Plasticity Index %	Field Moisture Content %	Dry Density PCF	Percent Passing 200 Sieve	Blow Counts	Samples
									5	SS
			1000*	20.5	15.1	28.7	100		4	SS
			660			23.5	105		9	SS
			1410	15.7	30.7	31.6	98		7	SS
			300*			35.7			3	SS
SA						23.8		29.6	8	SS
									28	SS
			4790			9.0	139		41	SS
						8.8			53	SS
						9.3	137		116	SS

DEPTH (FEET): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

Symbols	Descriptions	Elevation (Feet)
CL	TOP OF SALT CREEK ALLUVIUM Grayish brown to brown mottled, silty clay, trace fine sand.	
	Light grayish brown mottled, silty clay.	
GC · GM	TOP OF OUTWASH Gray, clayey gravel, some silt.	671.0
ML	TOP OF ILLINOIAN TILL Gray, silt, trace fine to coarse sand, trace fine gravel.	669.0

Boring completed at 25. feet on 4-1-75.
Water level at 6.5 feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-8

LOG OF BORING BH-6

BORING BH-7

SURFACE ELEVATION 681.8 Ft.

Depth (feet)	Tests reported elsewhere	Shear strength, triaxial compression: $\frac{\sigma_1+\sigma_3}{2}$ psf	Shear strength, triaxial compression: σ_3 psf	Shear strength, unconfined compression: $\frac{q_u}{2}$ psf	Atterberg limits: plastic limit %	Atterberg limits: plasticity index %	Field moisture content %	Dry density pcf	Percent passing 200 sieve	Blow counts	Samples
										13	SS
5				1800*			23.3	104		15	SS
					15.7	30.7				6	SS
				700*			31.3			3	SS
										17	SS
15	SA						12.9		8.3	15	SS
										43	SS
20							8.7			105	SS
										129	SS

Symbols	Descriptions	Elevation (feet)
CL	TOP OF SALT CREEK ALLUVIUM Black, silty clay - topsoil.	
CL	Mottled dark to light brown, silty clay, trace fine sand.	
GW • GM	TOP OF OUTWASH Mottled brownish orange to medium gray, silty, fine to coarse gravel and fine to coarse sand. Medium brown, fine to coarse gravel, trace fine to coarse sand, some silt.	669.8
ML	TOP OF ILLINOIAN TILL Medium gray, silt, some fine to coarse sand, trace fine gravel.	663.3

Boring completed at 22.5 feet on 4-2-75.
Water level at 7. feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-9

LOG OF BORING BH-7

BORING BH-8

SURFACE ELEVATION 681.7 Ft.

Tests Reported Elsewhere	Shear Strength – Triaxial Compression $\frac{\sigma_1+\sigma_3}{2}$ psf	Shear Strength – Triaxial Compression σ_3 psf	Shear Strength – Unconfined Compression $\frac{q_u}{2}$ psf	Atterberg Limits – Plastic Limit %	Atterberg Limits – Plasticity Index %	Field Moisture Content %	Dry Density PCF	Percent Passing 200 Sieve	Blow Counts / Samples
									8 SS
			500*	17.6	22.8	27.4	106		3 SS
				15.2	9.5	28.1			2 SS
									4 SS
MA						12.6		9.7	19 SS
									30 SS
									23 SS
			4000*			11.4	141		33 SS
						10.6	136		123 SS
						11.8	137		100/2" SS

DEPTH (FEET): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	TOP OF SALT CREEK ALLUVIUM Mottled grayish black to brown, silty clay, trace fine sand.	
ML	Brown, silt, trace fine sand.	
	TOP OF OUTWASH	673.7
SP	Brown, fine sand, some silt.	
SM	Brown, fine to coarse sand, some gravel, trace silt.	
GP	Brown, fine to medium gravel.	
	TOP OF ILLINOIAN TILL	663.7
ML	Gray silt, trace fine to coarse sand, trace fine gravel.	

Boring completed at 25. feet on 3-31-75.
Water level at 3. feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-10

LOG OF BORING BH-8

BORING BH-9

SURFACE ELEVATION 682.1 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	TRIAXIAL COMPRESSION σ_3 psf	UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT%	PLASTICITY INDEX%	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
0										5	SS
5				1000*			23.5			5	SS
										2	SS
10	MA						23.9		64.4	2	SS
										2	SS
15	SA						10.4		96	21	SS
										49	SS
20					10.5	9.3	11.0	142		52	SS
							10.0			154	SS
25							13.3	132		133	SS
30											
35											
40											
45											
50											
55											
60											
65											
70											
75											

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL ML	TOP OF SALT CREEK ALLUVIUM Blackish-to-brownish gray, silty clay, trace organics.	
ML	Brown, silt, some fine sand, trace clay.	
GP	TOP OF OUTWASH Brownish gray, fine to coarse gravel, some fine to coarse sand.	668.1
ML	TOP OF ILLINOIAN TILL Gray, clayey silt, trace fine to coarse sand, trace fine gravel.	665.6

Boring completed at 25. feet on 3-31-75.
Water level at 4. feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-11

LOG OF BORING BH-9

BORING BH-10

SURFACE ELEVATION 680.9 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{Q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT%	ATTERBERG LIMITS: PLASTICITY INDEX%	FIELD MOISTURE CONTENT%	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
0											
										9	SS
					16.5	23.3	25.4	106			
5										3	SS
										2	SS
							24.7			2	SS
10											
	SA						22.6		34.9	4	SS
15										16	SS
							10.6	134		32	SS
20										34	SS
							11.3	138		70	SS
25											
30											
35											
40											
45											
50											
55											
60											
65											
70											
75											

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
	TOP OF SALT CREEK ALLUVIUM	
CL	Blackish-to-brownish gray, silty clay, trace fine sand.	
ML	Gray, silt, some fine sand.	
SM	Gray, silty fine sand.	
	TOP OF ILLINOIAN TILL	666.9
ML	Gray, sandy silt, some fine gravel.	

Boring completed at 22.5 feet on 3-31-75.

Water level at 3.5 feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-12

LOG OF BORING BH-10

BORING BH-11

SURFACE ELEVATION 685.5 Ft.

BLOW COUNTS / SAMPLES	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
7 SS									
6 SS					14.4	19.2	19.2	115	
4 SS							22.5		
4 SS									
4 SS					15.2	17.6	26.6		
4 SS				500*			22.6	114	
22 SS							14.3		
43 SS									
99 SS									
57 SS									
119 SS									

DEPTH (FEET): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
	TOP OF SALT CREEK ALLUVIUM	
CL	Grayish brown to brown, silty clay, trace fine sand, trace organics.	
CL-ML	Brown, silty clay, some fine to medium sand, trace fine to medium gravel.	
	TOP OF OUTWASH	670.5
SP SM	Gray, fine to coarse sand, little silt, trace fine to medium gravel.	
	TOP OF ILLINOIAN TILL	668.5
ML	Gray, clayey silt, trace fine to coarse sand, trace fine gravel.	

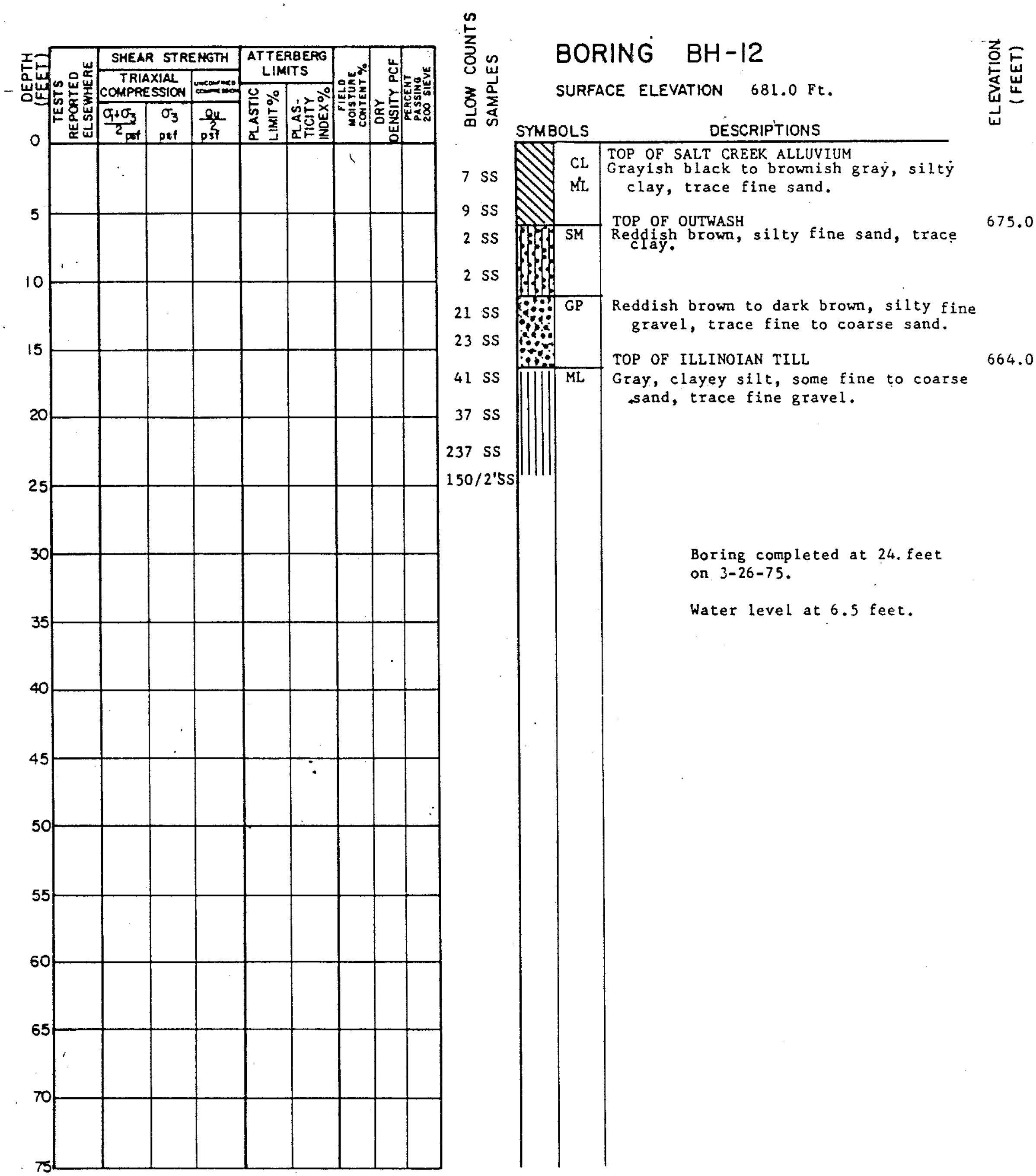
Boring completed at 27.5 feet on 3-26-75.

Water level not recorded.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-13

LOG OF BORING BH-11



CLINTON POWER STATION
FINAL SAFETY ANALYSIS REPORT

FIGURE A2.5-14

LOG OF BORING BH-12

BORING BH-13

SURFACE ELEVATION 695.3 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{Q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
0				2000*						10	SS	CL-ML	Mottled medium brown to dark brown, silty clay, trace fine sand.	
5					18.5	25.4	25.9	101		13	SS			
													TOP OF OUTWASH	689.3
										9	SS	SP	Reddish-brown, medium sand, trace silt, some medium to coarse sand.	
10	MA						16.2		13.4	7	SS			
										39	SS	SW	Medium brown, fine to coarse sand, some fine gravel, trace silt.	
15	SA						4.6		10.4	53	SS			
										34	SS			
20				4500*			12.0			63	SS			
				4500*			11.6	133		116	SS	ML	Medium brown, silt, some clay, little fine to coarse sand, trace fine gravel.	
25							18.6			31	SS	SW	Medium brown, fine to coarse sand, trace fine gravel, trace silt.	
	SA						14.4		9.2	80	SS			
30							30.9			142	SS	ML	Laminated brown to gray, silt, trace fine sand.	
										127	SS	SM	Medium brown, silty fine to coarse sand.	
35							17.9			91	SS	ML	Laminated black to gray, silt, trace fine sand.	
													TOP OF ILLINOIAN TILL	659.3
				8250			10.0	141		115	SS	ML	Medium gray, silt, some clay, some fine to coarse sand, trace gravel.	
40										133	SS			
45														
50														
55														
60														
65														
70														
75														

Boring completed at 40. feet on 4-3-75.

Water level not recorded.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-15

LOG OF BORING BH-13

BORING BH-14

SURFACE ELEVATION 694.1 Ft.

TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES
			2300*			26.0	101		10	SS
				17.1	20.2	24.2			8	SS
MA						18.0		18.9	7	SS
									14	SS
SA						5.6		10.4	64	SS
						4.5			77	SS
									47	SS
									48	SS
SA						8.2		10.8	25	SS
									18	SS
						17.4			57	SS
						28.6			23	SS
						13.8			28	SS
			6480			10.3	135		75	SS
						8.3			168	SS

DEPTH (FEET): 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
CL	Mottled medium to dark brown, silty clay, trace fine sand, trace organics.	
	TOP OF OUTWASH	688.1
SM	Reddish-brown, silty, fine to coarse sand, trace fine to medium gravel.	
SW	Medium brown, fine to coarse sand, some fine to medium gravel, trace silt.	
GP	Medium brown, fine to medium gravel, some fine to coarse sand, trace silt.	
SP	Medium gray, fine to coarse sand, some fine gravel.	
ML	Mottled medium to dark gray, silt.	
	TOP OF ILLINOIAN TILL	665.1
ML	Medium gray, silt, some fine to coarse sand, trace fine gravel.	

Boring completed at 37.5 feet on 4-4-75.
Water level at 22.0 feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-16

LOG OF BORING BH-14

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BORING PH-1

SURFACE ELEVATION 689.2 Ft.

BLOW COUNTS / SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
AG	CL-ML	Brown mottled, silty clay.	
		Brown, silty clay, trace fine gravel.	
		TOP OF OUTWASH	680.2
BG	SP-SM	Brown, silty fine to coarse sand, trace fine gravel.	
	CL-ML	Gray, silty clay, trace fine gravel.	
	ML	Grayish brown, silt, trace organics.	
		TOP OF ILLINOIAN TILL	666.7
	ML	Gray, silt, some fine to coarse sand, some fine gravel.	

Boring completed at 25. feet on 3-25-75.

Water level not recorded.

CLINTON POWER STATION
FINAL SAFETY ANALYSIS REPORT

FIGURE A2.5-17

LOG OF BORING PH-1

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{Qu}{2}$ psi	ATTERBERG LIMITS PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BORING PH-2

SURFACE ELEVATION 687.7 Ft.

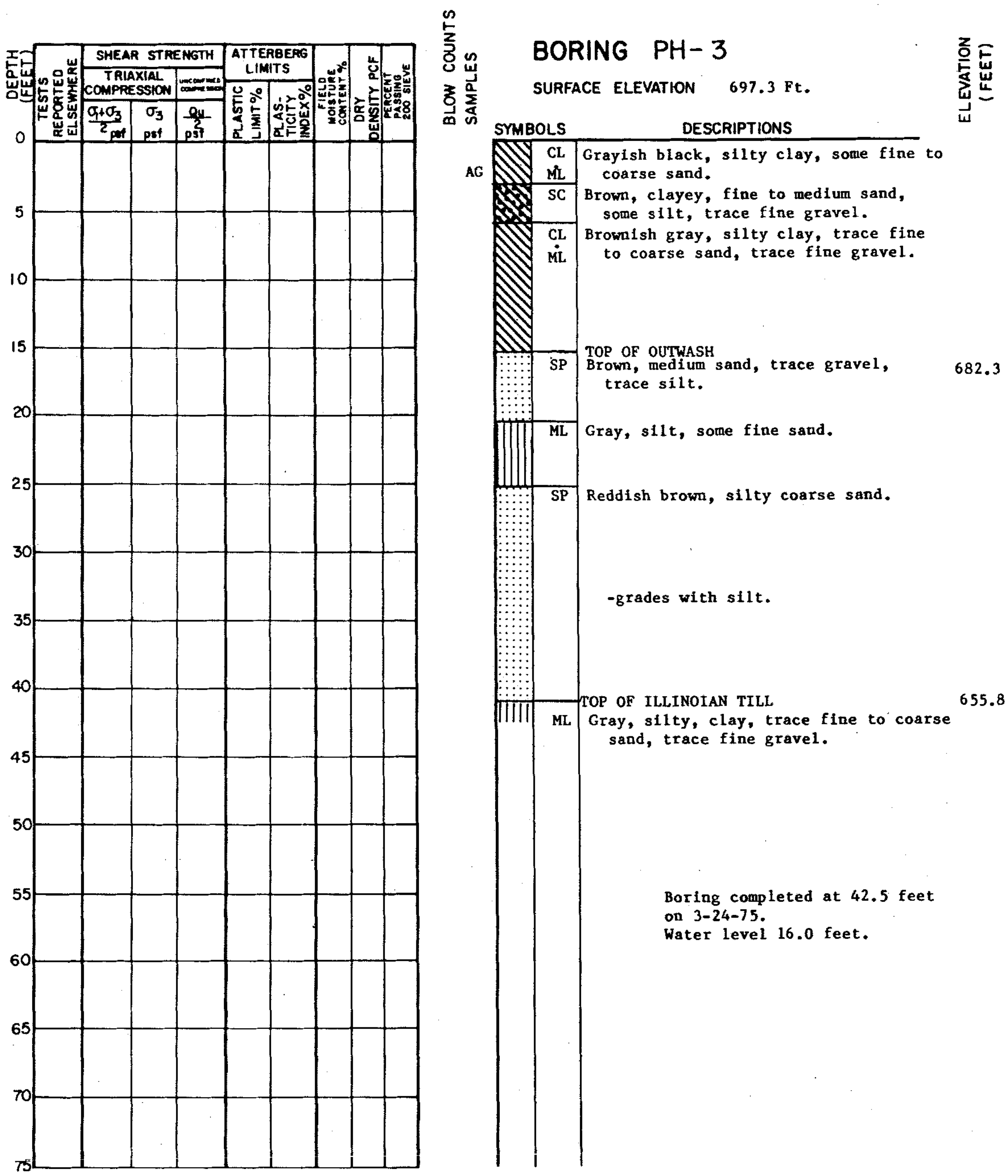
BLOW COUNTS SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
AG	CL • ML	Brown mottled, silty clay.	
		TOP OF OUTWASH	683.2
	SC • SM	Brown, clayey, fine to coarse sand, some silt, little fine gravel.	
BG	SP • SM	Brown, silty, fine to coarse sand, some fine gravel.	
	ML	Gray, silt, some fine to medium sand, trace fine gravel.	
	ML	Gray, silt, trace organics.	
		TOP OF ILLINOIAN TILL	664.2
	ML	Gray, clayey, silt, trace fine to coarse sand, trace fine gravel.	

Boring completed at 35. feet on 3-25-75.
Water level at 16.5 feet.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-18

LOG OF BORING PH-2



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-19

LOG OF BORING PH-3

BORING PH-4

SURFACE ELEVATION 694.5 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT%	ATTERBERG LIMITS: PLASTICITY INDEX%	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BLOW COUNTS / SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
AG	CL • ML	Orange-brown, mottled, silty, clay.	
	SP • SM	TOP OF OUTWASH Brown, silty fine to coarse sand, trace fine gravel.	689.5
	SW	-silt and gravel grade out.	
	ML	TOP OF ILLINOIAN TILL Gray, silt, trace clay, trace fine to coarse sand, trace gravel.	677.5

Boring completed at 25. feet on 3-24-75.
Water level not recorded.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-20

LOG OF BORING PH-4

BORING PH-5

SURFACE ELEVATION 722.6 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
0										AG	CL · ML	TOP OF WISCONSINAN TILL Medium brown, silty clay, some fine sand.	
5											ML · CL	Mottled brown to orange brown, clayey silt, some fine sand, trace fine gravel.	
20												-grades dark brown.	
27											ML	TOP OF INTERGLACIAL ZONE Mottled green-to-blueish gray, clayey silt, some fine sand.	695.6
31											ML	TOP OF ILLINOIAN TILL Medium gray, clayey silt, some fine sand, trace fine gravel.	691.6

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

Boring completed at 37. feet on 3-25-75.

Water level at 35.5 feet.

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UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-21

LOG OF BORING PH-5

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BORING PH-6

SURFACE ELEVATION 713.0 Ft.

BLOW COUNTS / SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
AG	CL	Dark brown to brown, silty clay, trace organics.	
		TOP OF OUTWASH	707.0
	SM	Medium brown, silty fine sand.	
	SW-SM	Medium brown, silty, fine to coarse sand, some fine gravel.	
	ML-CL	Mottled orange brown to gray, clayey silt, some fine sand.	
		-trace fine gravel.	
		TOP OF ILLINOIAN TILL	688.0
	ML	Medium gray, clayey silt, some fine sand, trace fine gravel.	

Boring completed at 42. feet on 3-25-75.

Water level at 26. feet.

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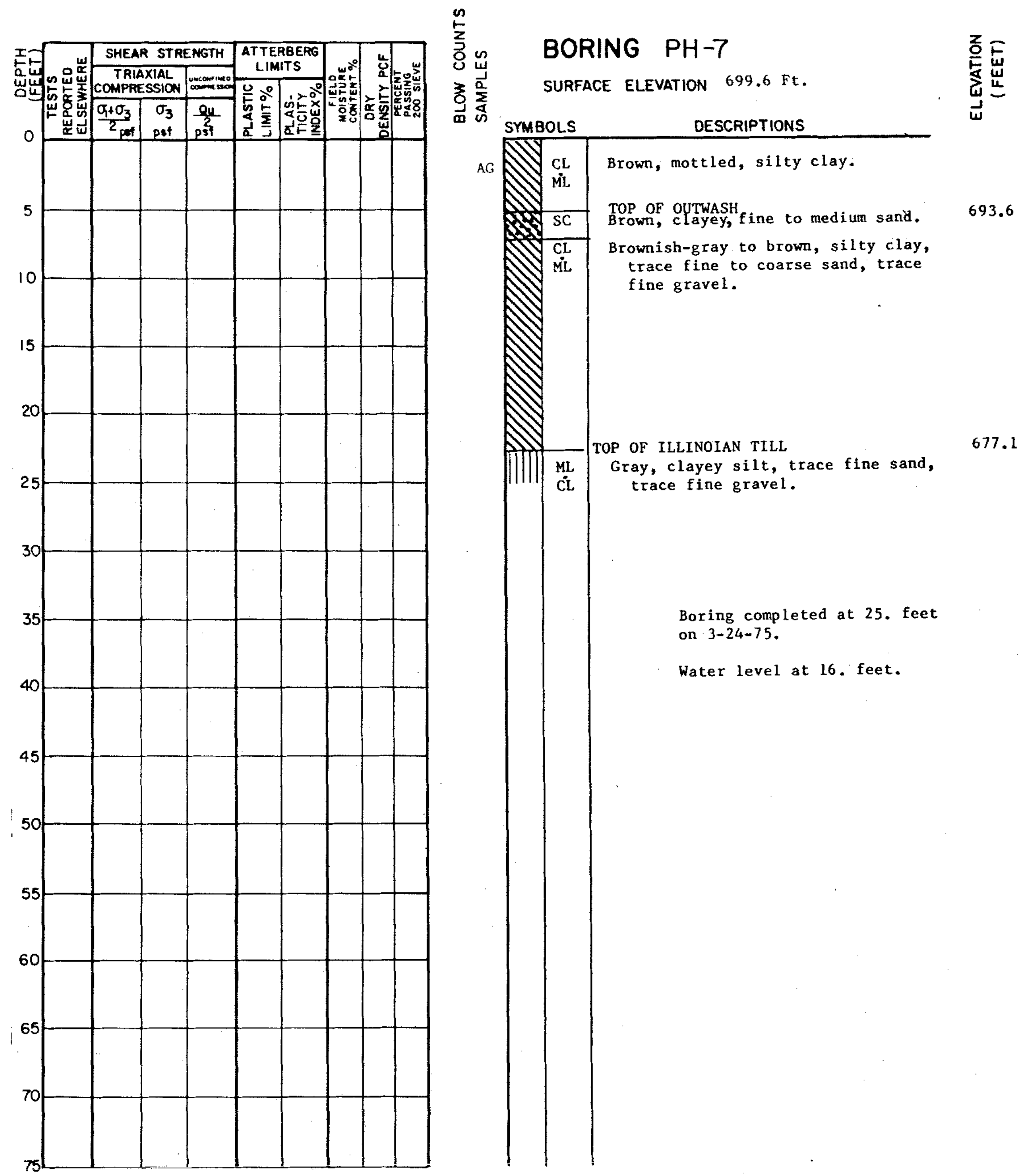
FIGURE A2.5-22

LOG OF BORING PH-6



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UPDATED SAFETY ANALYSIS REPORT

FIGURE A2.5-23

LOG OF BORING PH-7

BORING PH-8

SURFACE ELEVATION 682.3 Ft.

DEPTH (FEET)	SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
0			TOP OF SALT CREEK ALLUVIUM	
	AG	ML-CL	Blackish gray, clayey silt, trace fine sand.	
			TOP OF OUTWASH	675.3
		SC-SM	Brown, silty fine sand, some clay.	
			-sand grades more coarse.	
15		ML-CL	Gray, clayey silt, trace fine to coarse sand, trace fine gravel.	
		ML	Gray silt, trace organics.	
			TOP OF ILLINOIAN TILL	666.3
20		ML	Gray, clayey silt, trace fine to coarse sand, trace fine gravel.	

Boring completed at 20. feet on 3-25-75.
Water level at 8. feet.

Column headings: DEPTH (FEET); TESTS REPORTED ELSEWHERE; SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf, σ_3 psf; UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf; ATTERBERG LIMITS: PLASTIC LIMIT %, PLASTICITY INDEX %; FIELD MOISTURE CONTENT %; DRY DENSITY PCF; PERCENT PASSING 200 SIEVE; BLOW COUNTS; SAMPLES. Depth scale 0–75 ft; no test values recorded.

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FIGURE A2.5-24

LOG OF BORING PH-8

BORING PH-9

SURFACE ELEVATION 691.0 Ft.

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT%	ATTERBERG LIMITS: PLASTICITY INDEX%	FIELD MOISTURE CONTENT%	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BLOW COUNTS SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
AG	ML	Dark brownish-black, clayey silt.	
	ML	TOP OF OUTWASH Medium dark brown, silt, some fine to coarse sand.	687.0
	GM SM	-grades with fine to medium gravel silt grades out.	
BG	SM	-gravel grades out.	
	ML	TOP OF ILLINOIAN TILL Medium gray, silt, some fine to coarse sand, trace fine to medium gravel.	677.0

Boring completed at 18.5 feet on 4-2-75.

Water level 8. feet.

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FIGURE A2.5-25

LOG OF BORING PH-9

BORING PH-10

SURFACE ELEVATION 697.5

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{q_u}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE
0									
5									
10									
15									
20									
25									
30									
35									
40									
45									
50									
55									
60									
65									
70									
75									

BLOW COUNTS / SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
AG	ML • CL	TOP OF SALT CREEK ALLUVIUM Light to medium brown, silty clay, trace medium to coarse sand, trace fine gravel.	
	ML	TOP OF OUTWASH Light, orangish-brown, silt, some clay, trace fine to medium gravel, some fine to medium sand.	885.5
BG	SW	Medium brown, fine to coarse sand, some fine gravel, trace silt.	
	SP • SM	Medium brown, silty, fine to medium sand.	
	ML	TOP OF ILLINOIAN TILL Medium gray, silt, trace medium to coarse sand, trace fine to medium gravel.	651.5

Boring completed at 50.0 feet on 4-8-75.
Water level at 15.0 feet.

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FIGURE A2.5-26

LOG OF BORING PH-10

BORING PH-11

SURFACE ELEVATION 679.2

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT%	ATTERBERG LIMITS: PLASTICITY INDEX%	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
0												TOP OF SALT CREEK ALLUVIUM	
										AG	CL • ML	Dark brown, silty clay, trace fine to medium sand, trace fine gravel.	
15												TOP OF OUTWASH	664.2
											SP • SM	Grayish brown, silty, fine sand. -grades to gray.	
												TOP OF ILLINOIAN TILL	657.2
											ML	Gray, silt, trace fine gravel, some fine to medium sand.	

Depth scale: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75

Boring completed at 24.5 feet on 4-11-75.
Water level at 18.0 feet.

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FIGURE A2.5-27

LOG OF BORING PH-11

BORING PH-12

SURFACE ELEVATION 690.3

DEPTH (FEET)	TESTS REPORTED ELSEWHERE	SHEAR STRENGTH: TRIAXIAL COMPRESSION $\frac{\sigma_1+\sigma_3}{2}$ psf	σ_3 psf	UNCONFINED COMPRESSION $\frac{Qu}{2}$ psf	ATTERBERG LIMITS: PLASTIC LIMIT%	PLASTICITY INDEX%	FIELD MOISTURE CONTENT %	DRY DENSITY PCF	PERCENT PASSING 200 SIEVE	BLOW COUNTS	SAMPLES	SYMBOLS	DESCRIPTIONS	ELEVATION (FEET)
0													TOP OF SALT CREEK ALLUVIUM	
											AG	CL-ML	Dark brown silty clay, trace fine to coarse sand, trace fine gravel.	
10													TOP OF OUTWASH	680.3
												GM	Brown, silty, fine to medium gravel, some fine to medium sand.	
													TOP OF ILLINOIAN TILL	678.3
												ML-CL	Gray, clayey silt, trace fine to medium gravel, some fine to medium sand.	

Boring completed at 19.5 feet on 4-11-75.
Water level not recorded.

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FIGURE A2.5-28

LOG OF BORING PH-12

Key to Boring Logs

Samples

23	Indicates Standard Penetration Test Value
SS	Indicates Sample Obtained Using a Standard Split Spoon
ST	Indicates Shelby Tube Sample Obtained Using a 3.0 inch diameter Shelby Tube
PR	Indicates Sample Obtained Using a Pitcher Sampler (3.0 inch outer diameter)
CR	Indicates Sample Obtained with 4.0 inch outer diameter Core Sampler
OB	Indicates Sample Obtained Using an Osterberg Sampler (3.0 inch sample diameter)
AG	Indicates Auger Boring; No Standard Penetration Values or Samples Obtained Unless Specially Noted
BG	Indicates Bag Sample Obtained
HR	Indicates Sample Obtained with High Recovery Barrel

Test Data

Qu/2	Indicates ½ Unconfined Compressive Strength (Equal to Shear Strength) in P.S.F.
0.50	Value with no Asterisk is Obtained From RIMAC Test
0.50*	Value with Asterisk is Obtained from Pocket Penetrometer

Test Reported Elsewhere

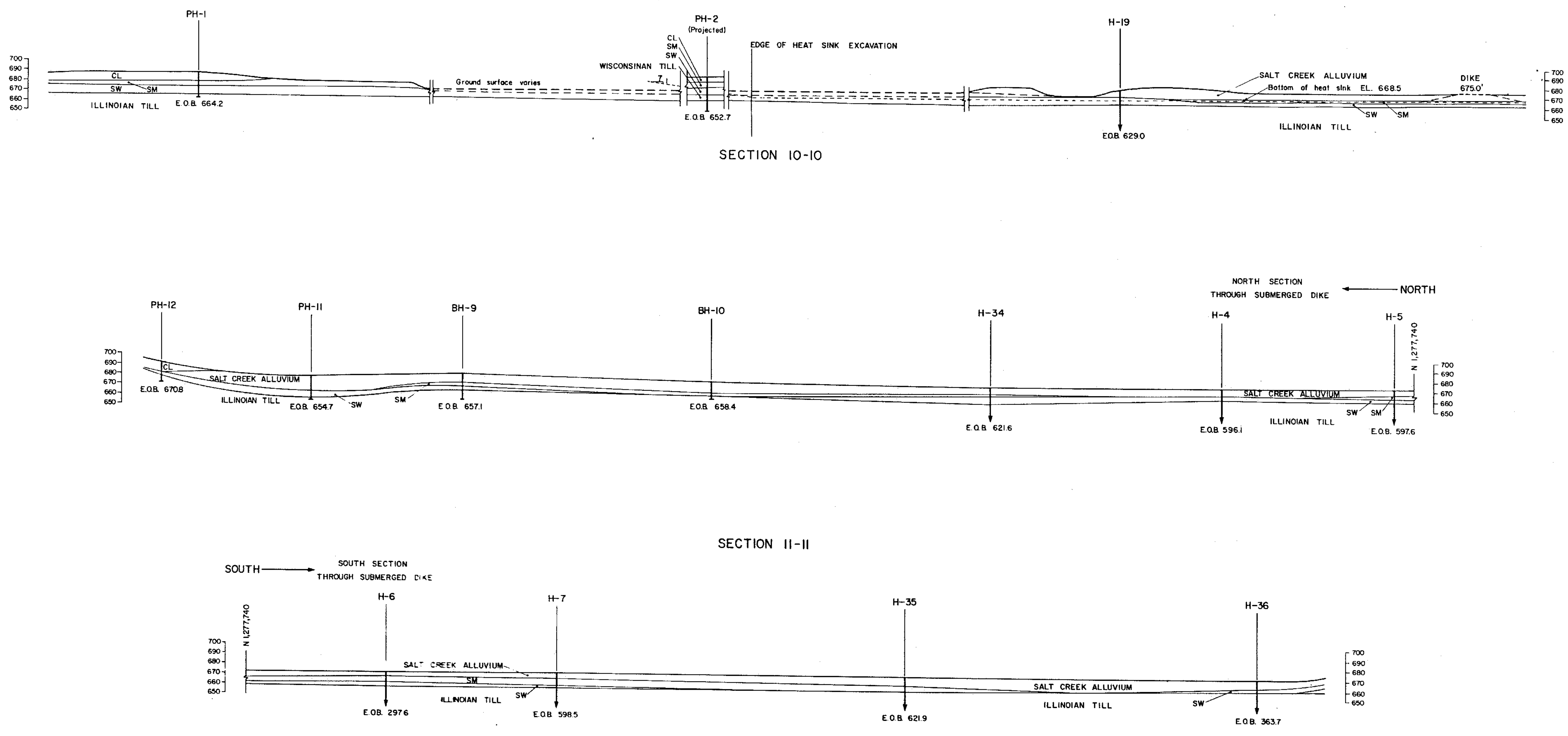
C	Consolidation Test
COMP	Bulk Compaction Test
MA	Mechanical Particle Size Analysis (Sieve and Hydrometer)
PERM	Laboratory Permeability Test
SA	Sieve Analysis
TX/CU/PP	Consolidate-Undrained Triaxial Compression Test with Pore Pressure Measurement
TX/UU/R	Unconsolidated-Undrained Triaxial Compression Test on Remolded Samples
DR	Relative Density Test
UC/R	Remolded Samples

All Elevations Refer to Feet Above Mean Sea Level (MSL)

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

Figure A2.5-29

KEY TO BORING LOGS



NOTES

1. Section 10-10: no slide postulated due to quarry beyond the excavated slope.
2. Section 11-11: Salt Creek alluvium excavated due to construction of submerged dike.

All elevations refer to feet above MSL.

CLINTON POWER STATION
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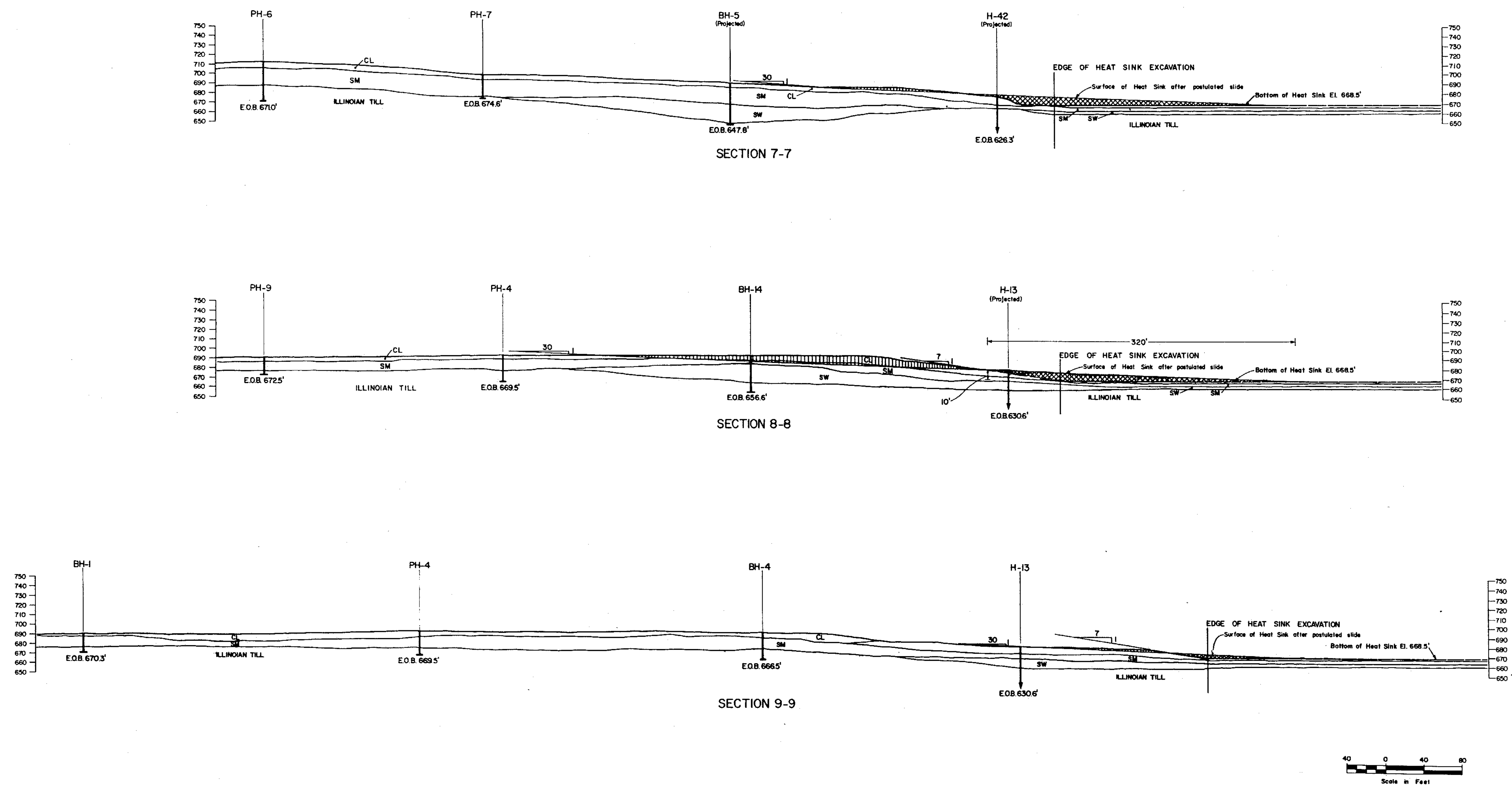
FIGURE A2.5-30

SECTIONS 10-10 AND 11-11



All elevations refer to feet above MSL.

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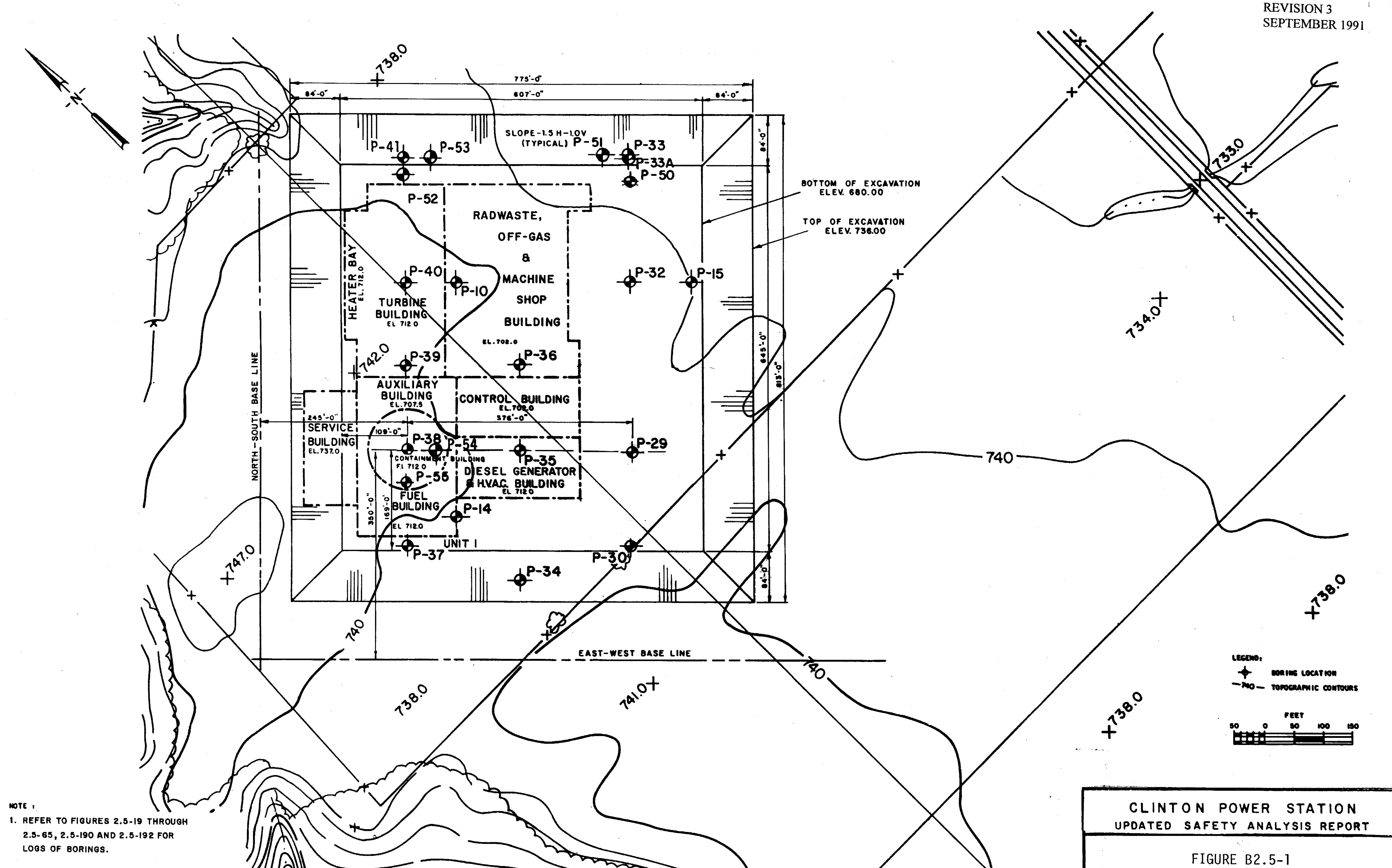
FIGURE A2.5-31

SECTIONS 7-7, 8-8 AND 9-9



NOTE :
1. REFER TO FIGURES 2.5-19 THROUGH 2.5-65, 2.5-190 AND 2.5-192 FOR LOGS OF BORINGS.

CLINTON POWER STATION
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FIGURE B2.5-1

FOUNDATION EXCAVATION PLAN

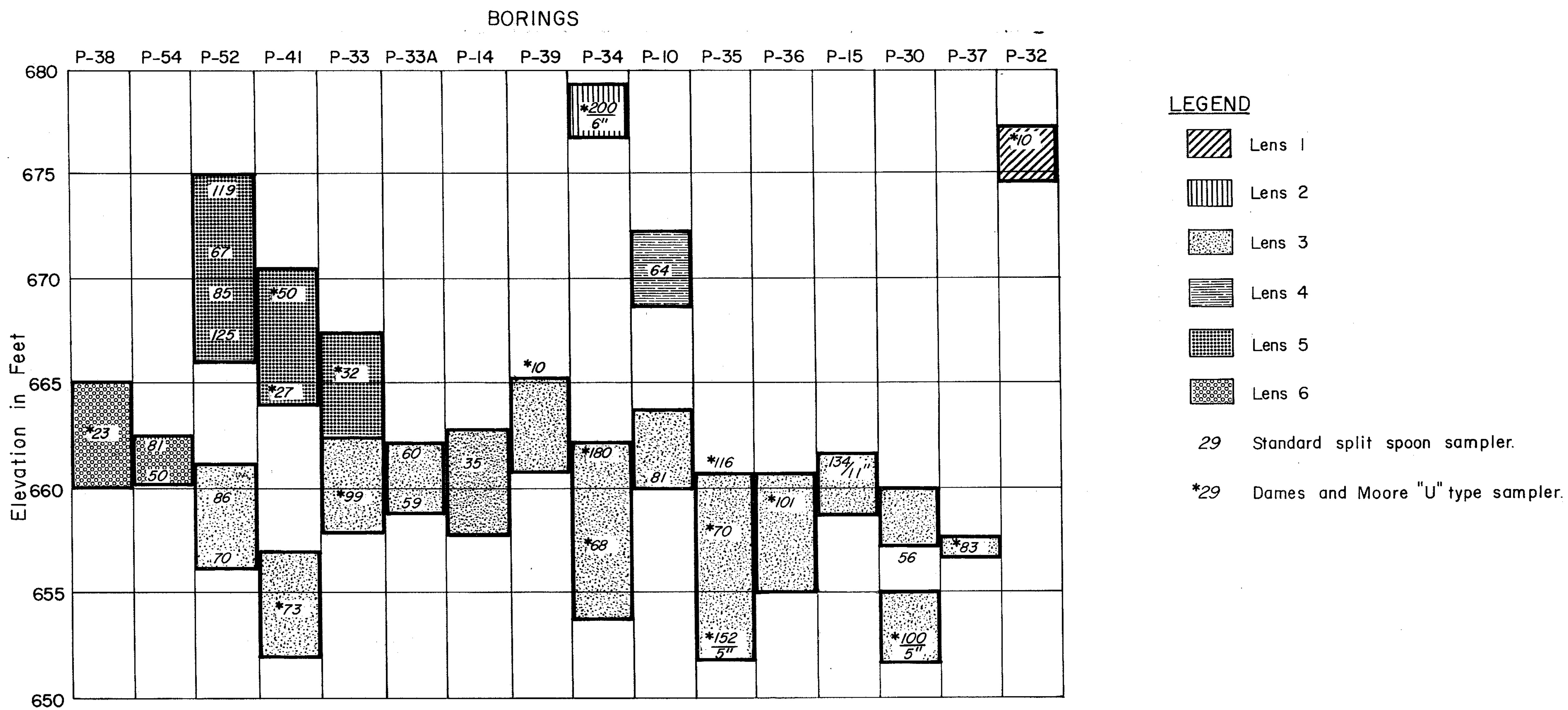

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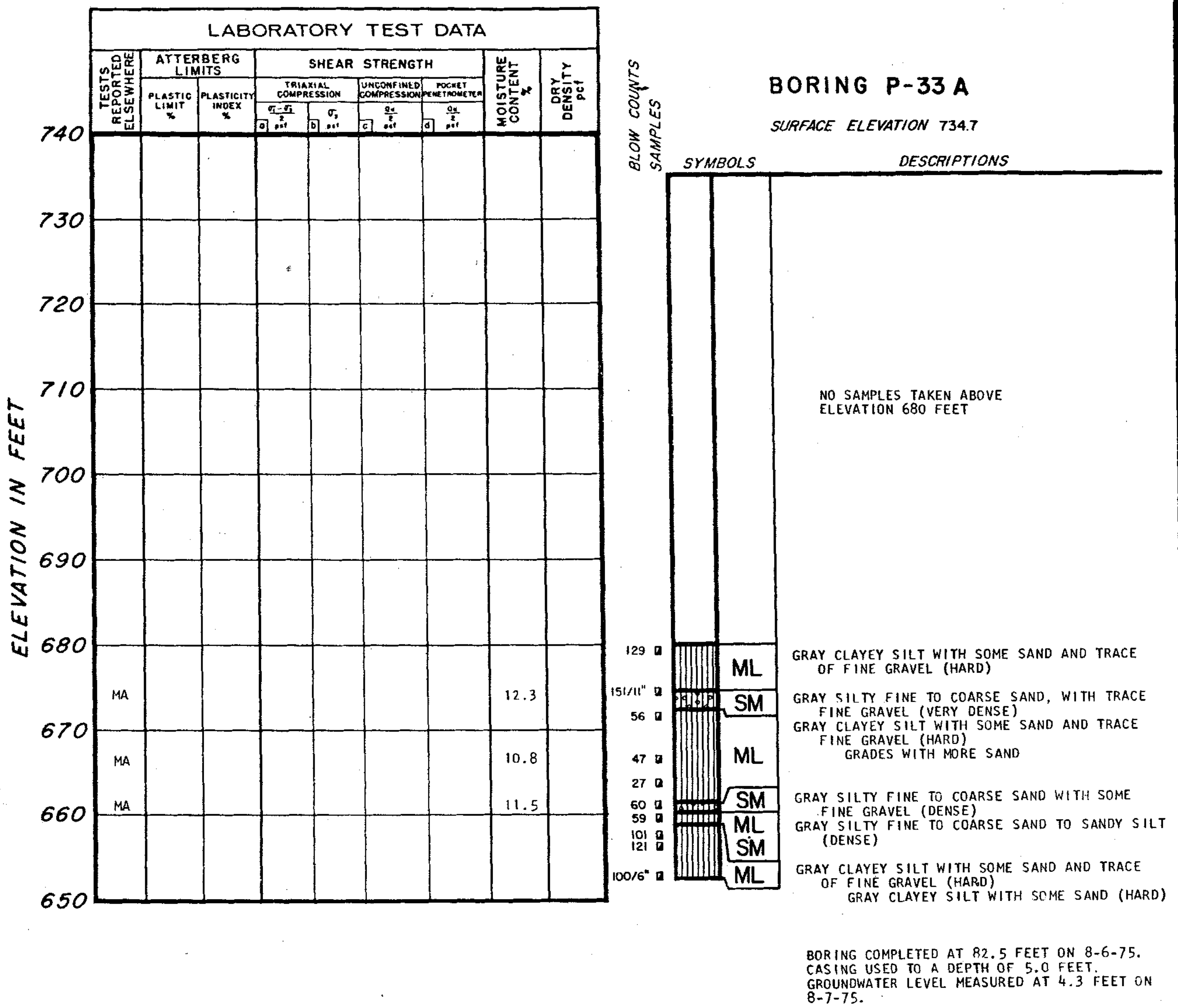
FIGURE B2.5-2

SUMMARY OF BORING LOGS



NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

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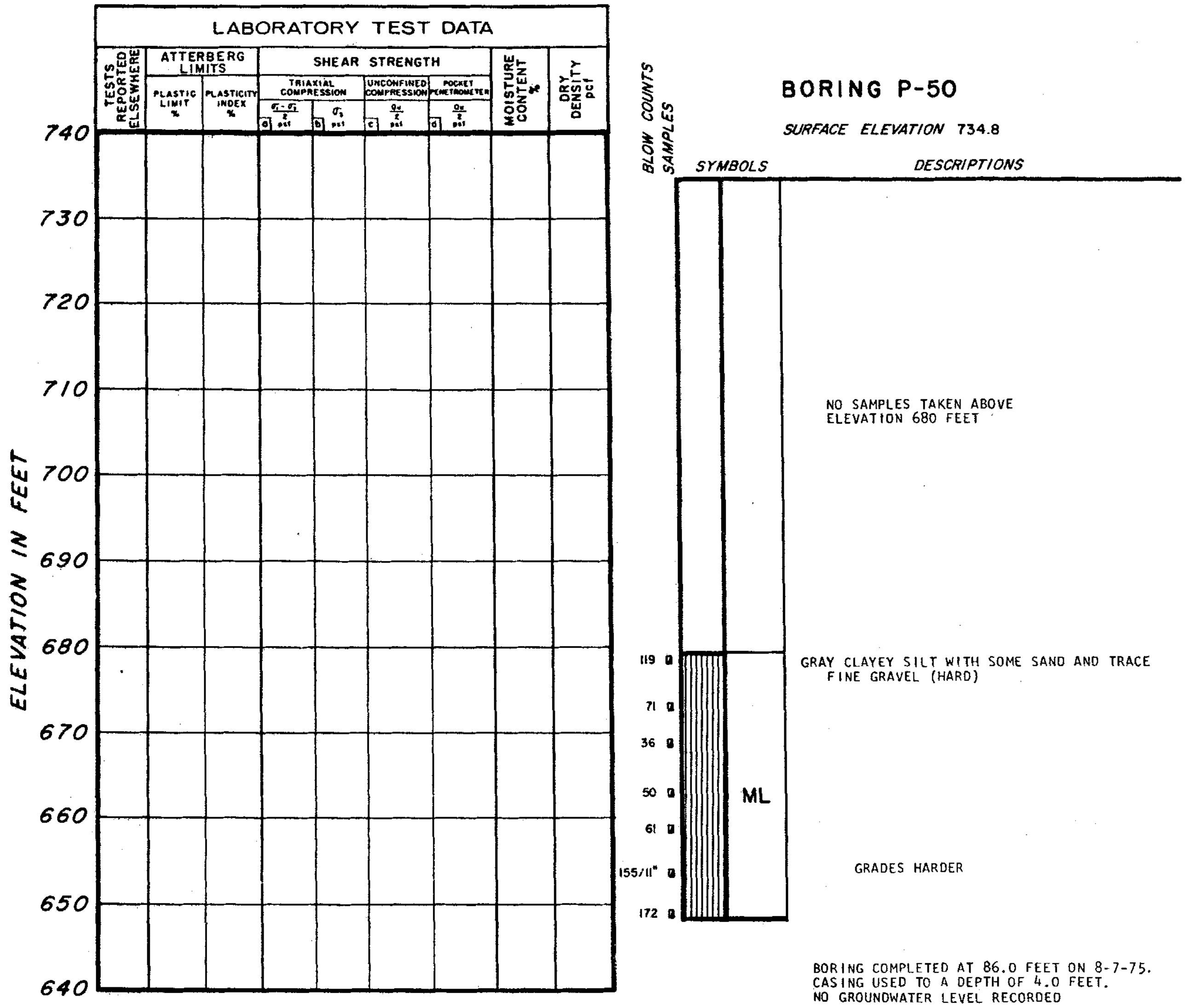
FIGURE B2.5-3

LOG OF BORING P-33A



NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

CLINTON POWER STATION

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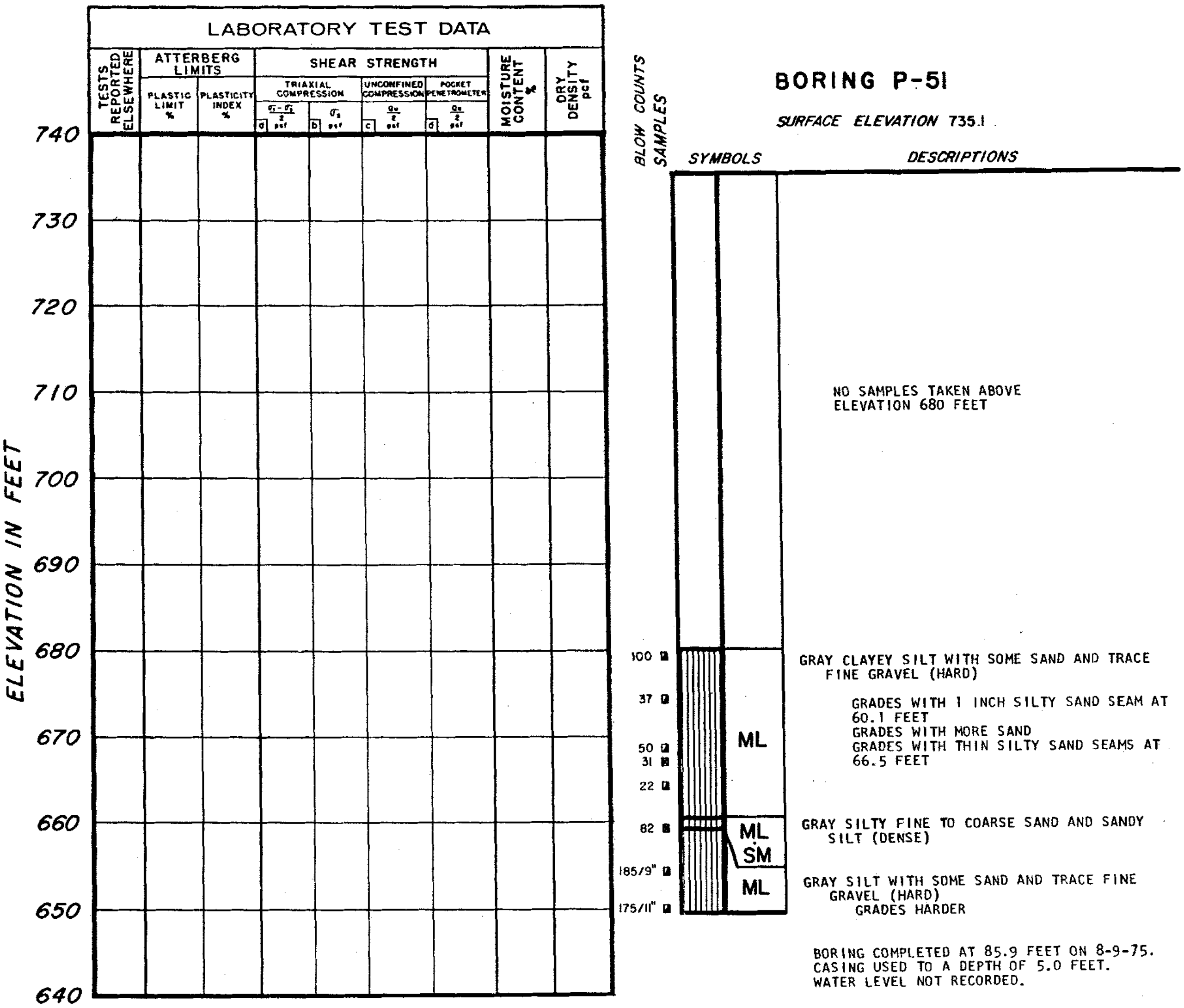
FIGURE B2.5-4

LOG OF BORING P-50



NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

CLINTON POWER STATION

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FIGURE B2.5-5

LOG OF BORING P-51

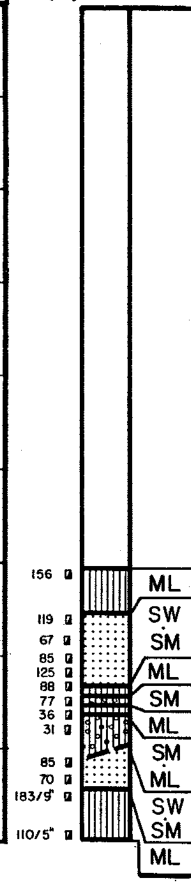
LABORATORY TEST DATA

ELEVATION IN FEET	TESTS REPORTED ELSEWHERE	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	SHEAR STRENGTH: TRIAXIAL COMPRESSION (a) $\frac{\sigma_1-\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION (b) σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION (c) $\frac{Q_u}{2}$ psf	SHEAR STRENGTH: POCKET PENETROMETER (d) $\frac{Q_u}{2}$ psf	MOISTURE CONTENT %	DRY DENSITY pcf
740									
730									
720									
710									
700									
690									
680	SA SA								
670	SA SA SA MA SA MA							17.5 11.1 10.6	
660	SA SA								
650									

BORING P-52

SURFACE ELEVATION 739.8

BLOW COUNTS / *SAMPLES* / *SYMBOLS* / *DESCRIPTIONS*



NO SAMPLES TAKEN ABOVE ELEVATION 680 FEET

GRAY CLAYEY SILT WITH SOME SAND AND TRACE OF FINE GRAVEL (HARD)

GRAY SILTY FINE TO COARSE SAND WITH TRACE FINE GRAVEL (DENSE)
- GRADES WITH 2 INCH SILT SEAM AT 65.3 FEET
- GRADES WITH LESS SILT
- GRADES WITH MORE SILT
- GRADES WITH LESS SILT
- 1 INCH SILT SEAM AT 70.9 FEET
- GRADES WITH MORE FINE TO MEDIUM SAND AND LESS SILT

GRAY FINE TO COARSE SANDY SILT WITH TRACE FINE GRAVEL (DENSE)

GRAY SILTY FINE TO COARSE SAND WITH FINE GRAVEL (DENSE)

GRAY CLAYEY SILT, WITH SOME SAND AND TRACE FINE GRAVEL (HARD)

GRAY SILTY FINE TO COARSE SAND WITH TRACE FINE GRAVEL (DENSE)

GRAY SILTY FINE TO COARSE SAND WITH TRACE FINE GRAVEL (DENSE)

GRAY CLAYEY SILT WITH SOME SAND AND TRACE FINE GRAVEL (HARD)

BORING COMPLETED AT 88.9 FEET ON 8-7-75.
CASING USED TO A DEPTH OF 5.0 FEET.
GROUNDWATER LEVEL NOT RECORDED.

NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

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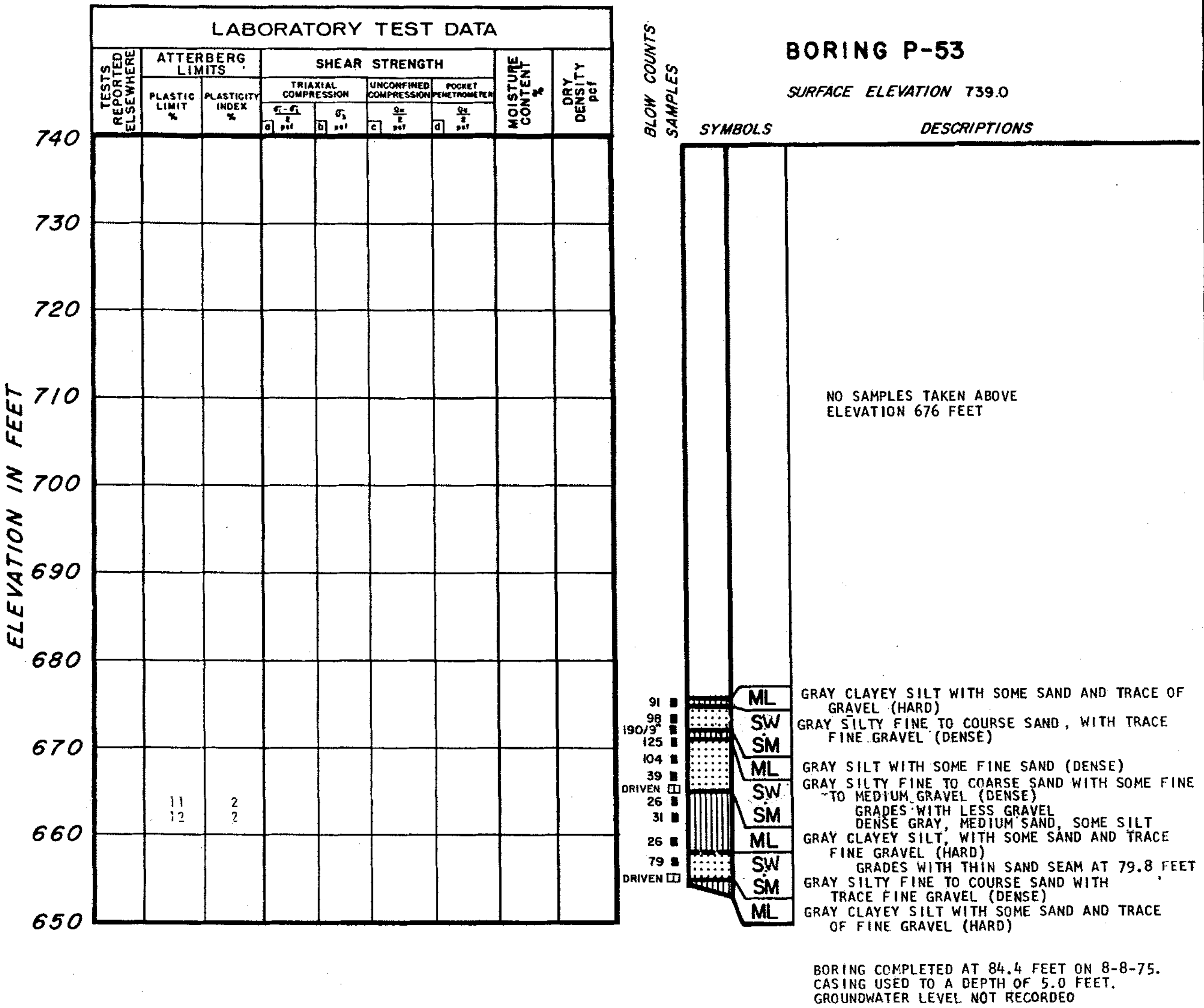
FIGURE B2.5-6

LOG OF BORING P-52



NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

CLINTON POWER STATION

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FIGURE B2.5-7

LOG OF BORING P-53

LABORATORY TEST DATA

ELEVATION IN FEET	TESTS REPORTED ELSEWHERE	ATTERBERG LIMITS: PLASTIC LIMIT %	ATTERBERG LIMITS: PLASTICITY INDEX %	SHEAR STRENGTH: TRIAXIAL COMPRESSION a $\frac{\sigma_1-\sigma_3}{2}$ psf	SHEAR STRENGTH: TRIAXIAL COMPRESSION b σ_3 psf	SHEAR STRENGTH: UNCONFINED COMPRESSION c $\frac{Q_u}{2}$ psf	SHEAR STRENGTH: POCKET PENETROMETER d $\frac{Q_u}{2}$ psf	MOISTURE CONTENT %	DRY DENSITY pcf
740									
730									
720									
710									
700									
690									
680									
670									
	MA SA.							10.3	
660									
	SA							11.4	
650									

BORING P-54

SURFACE ELEVATION 738.6

BLOW COUNTS	SAMPLES	SYMBOLS	DESCRIPTIONS
			NO SAMPLES TAKEN ABOVE ELEVATION 678 FEET
22	■	ML	GRAY CLAYEY SILT WITH SOME SAND AND TRACE FINE GRAVEL (HARD)
16	■		GRADES WITH SILT LENSES
		ML	GRAY FINE SANDY SILT (DENSE)
24	■	ML	GRAY SILT WITH SOME SAND AND TRACE FINE GRAVEL (HARD)
81	■		
50	■	SM	GRAY SILTY FINE TO COARSE SAND WITH SOME FINE GRAVEL (DENSE)
51	■		GRADES WITH LESS GRAVEL
		ML	GRAY FINE TO COARSE SANDY SILT WITH TRACE FINE GRAVEL (DENSE)
100/5"	■	ML	GRAY CLAYEY SILT WITH SOME SAND AND TRACE FINE GRAVEL (HARD)
100/5"	■		

BORING COMPLETED AT 86.0 FEET ON 8-7-75.
CASING USED TO A DEPTH OF 5.0 FEET.
WATER LEVEL NOT RECORDED.

NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

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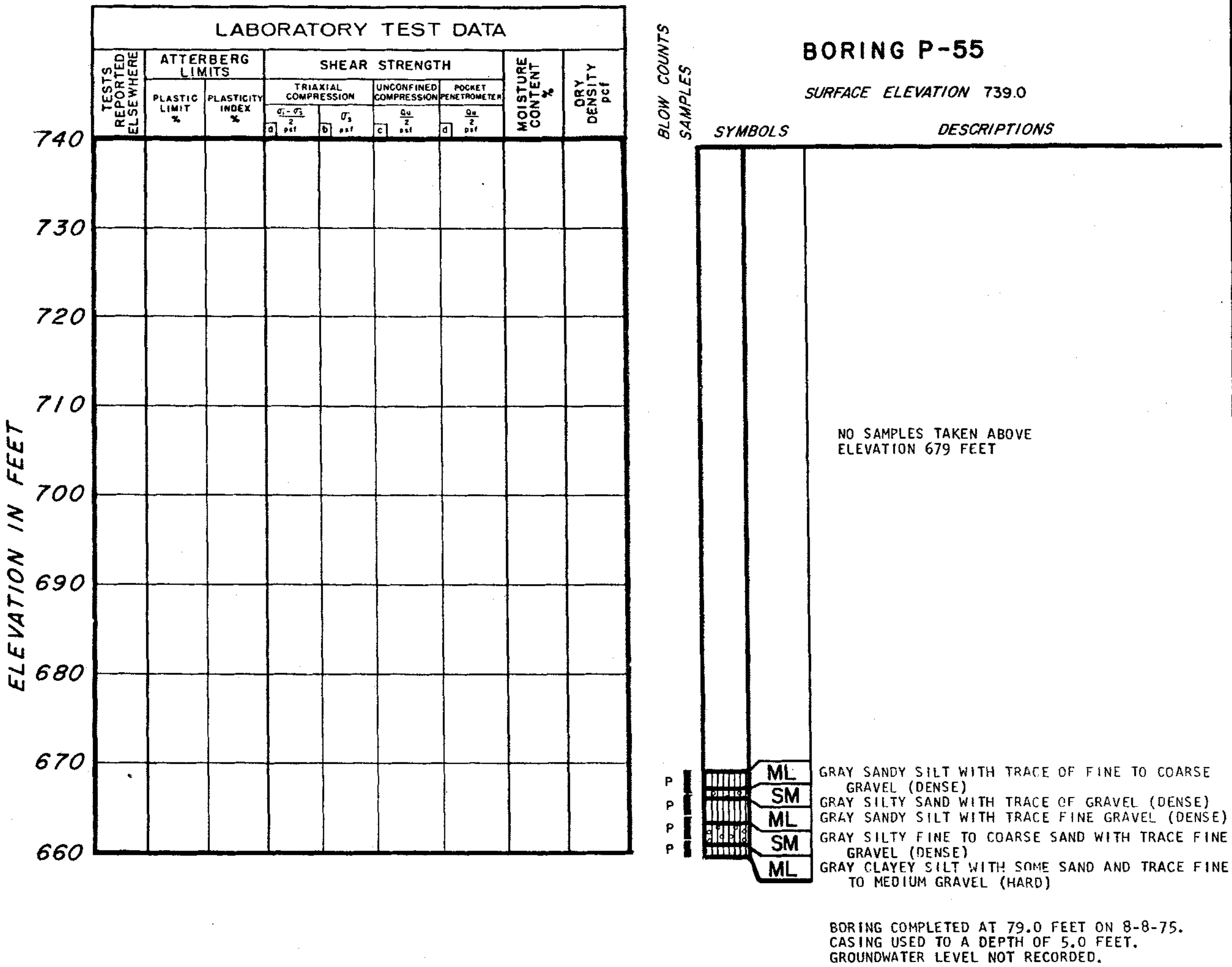
FIGURE B2.5-8

LOG OF BORING P-54



NOTE:

SEE FIGURE 2.5-298 AND FIGURE 2.5-355 FOR EXPLANATION OF SYMBOLS USED ON BORING LOGS.

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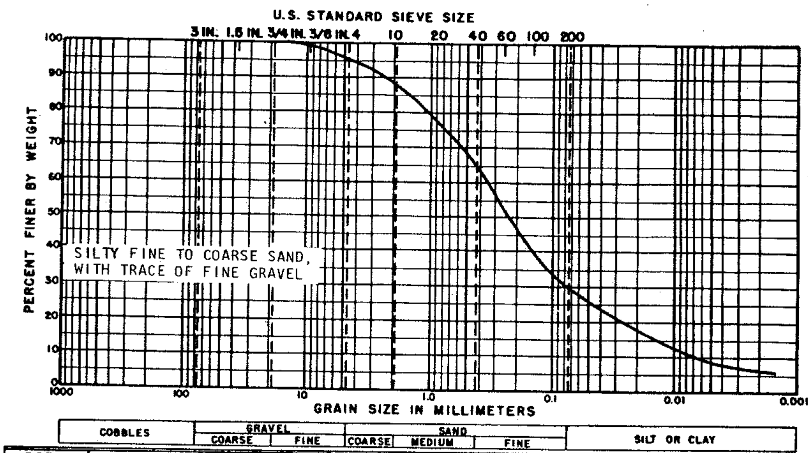
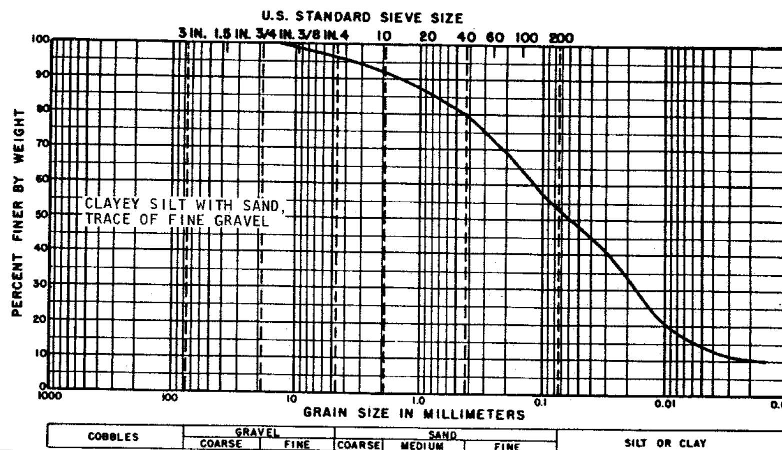
FIGURE B2.5-9

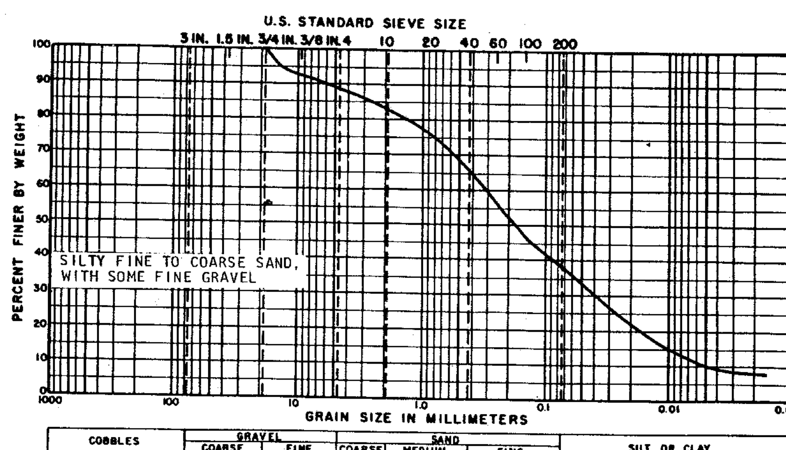
LOG OF BORING P-55



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-33A	60.0'-60.9'	SM	12.3				



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-33A	67.5'-69.0'	ML	10.8				

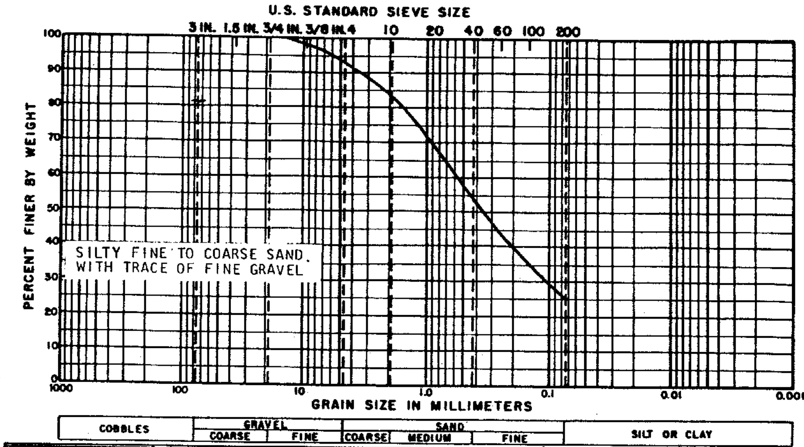


BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-33A	72.5'-74.0'	SM	11.5				

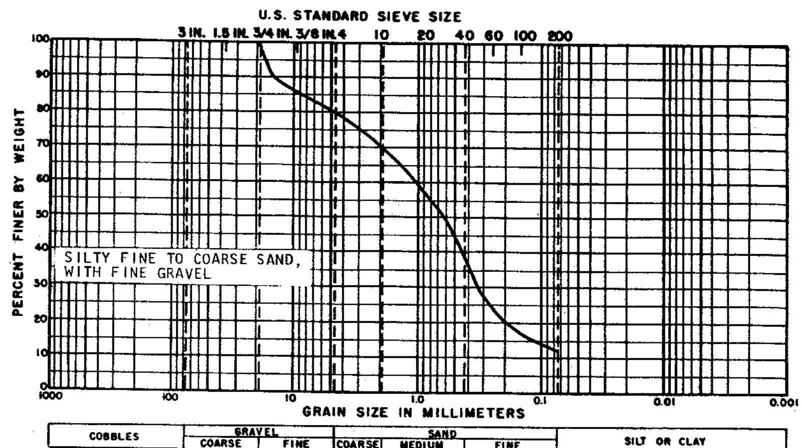
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE B2.5-10

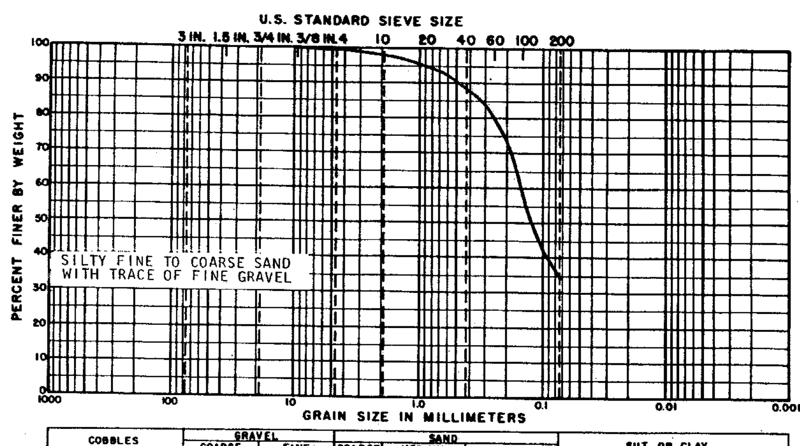
PARTICLE SIZE ANALYSES (BORING P-33A)



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI
P-52	65.0'-66.5'	SM				



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI
P-52	66.5'-68.0'	SM				

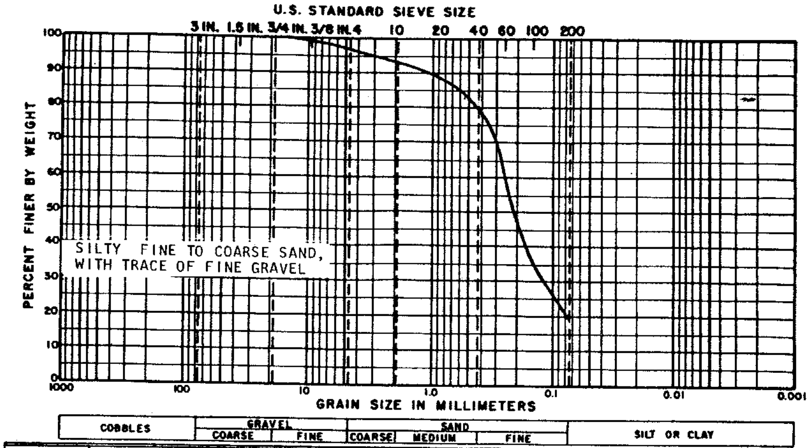


BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI
P-52	68.0'-69.5'	SM				

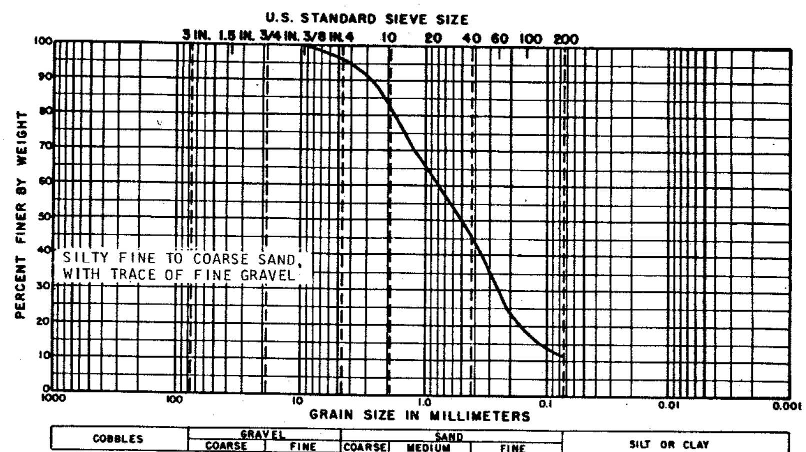
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE B2.5-11

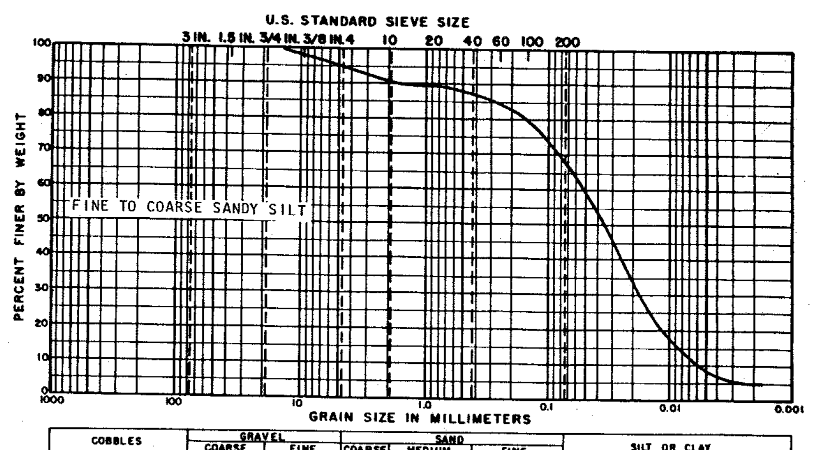
PARTICLE SIZE ANALYSES (BORING P-52)



BORING	DEPTH		CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	69.5'-71.0'		SM					



BORING	DEPTH		CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	71.0'-72.5'		SW-SM					

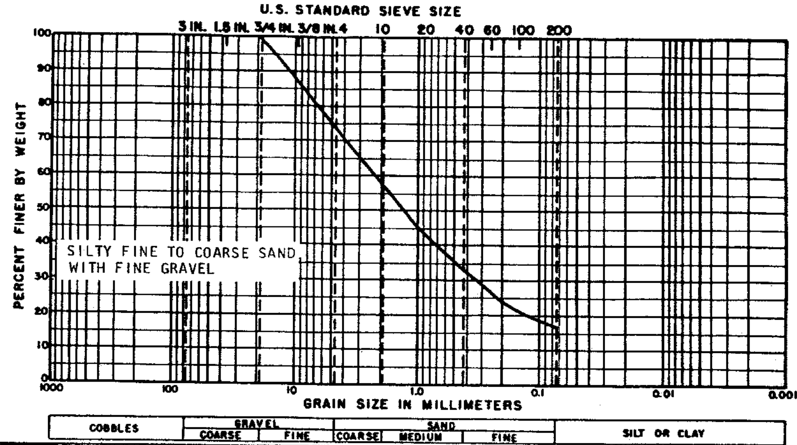


BORING	DEPTH		CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	72.5'-74.0'		ML	17.6				

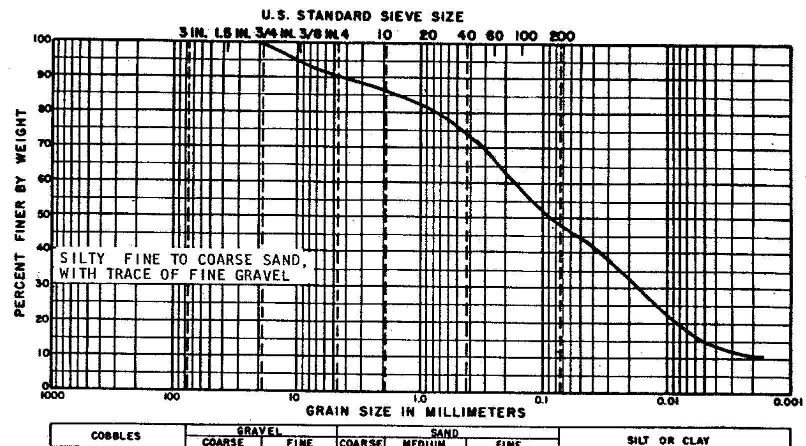
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE B2.5-12

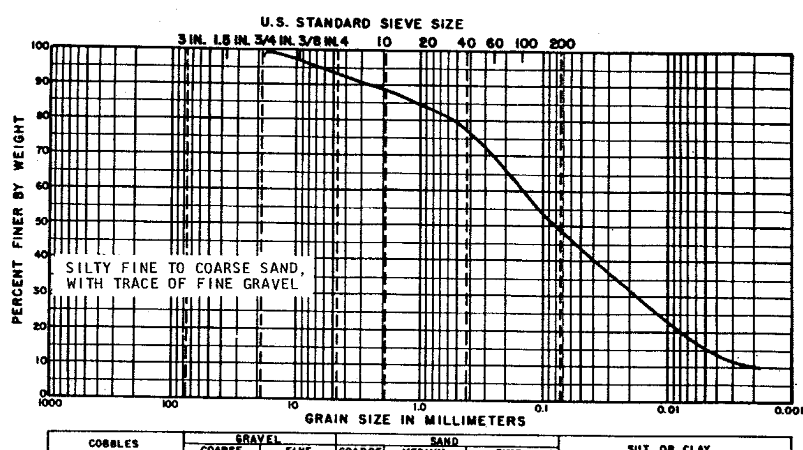
PARTICLE SIZE ANALYSES (BORING P-52)



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	72.5'-74.0'	SM					



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	75.5'-77.0'	SM	11.1				

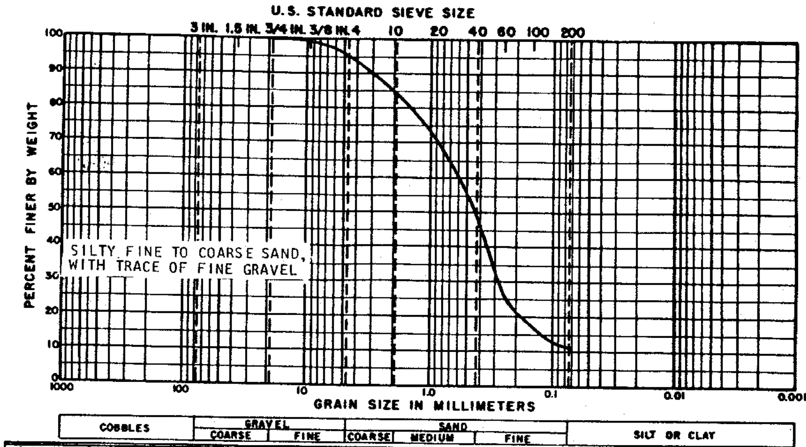


BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	75.5'-77.0'	SM	10.6				

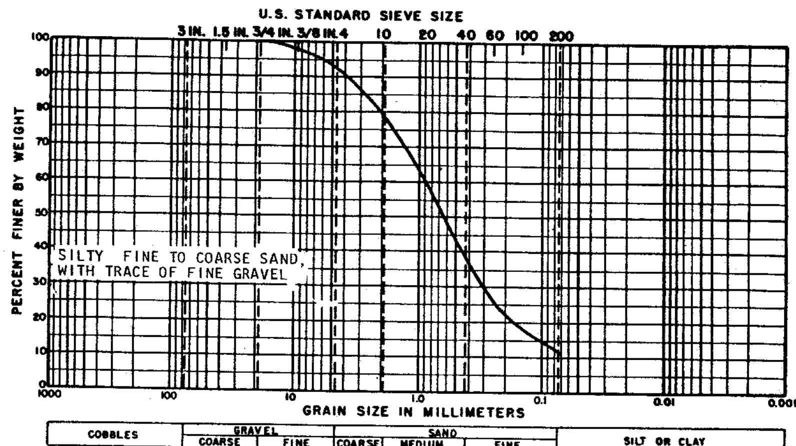
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE B2.5-13

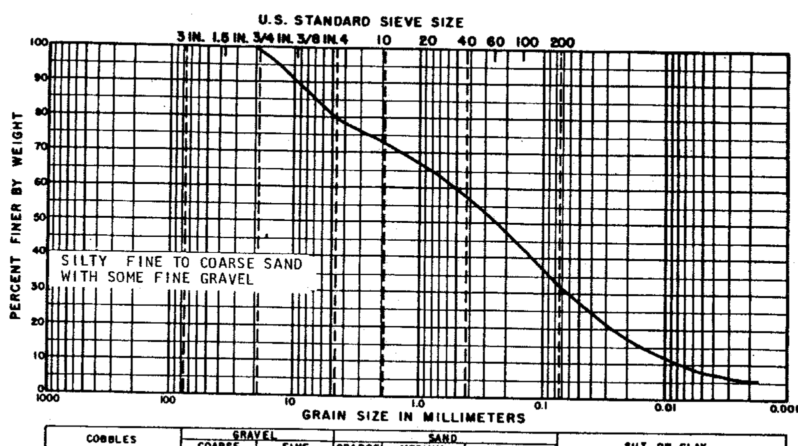
PARTICLE SIZE ANALYSES (BORING P-52)



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	80.0'-81.5	SM-SW					



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-52	81.5'-83.0'	SM-SW					



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-54	76.0'	SM	10.3				

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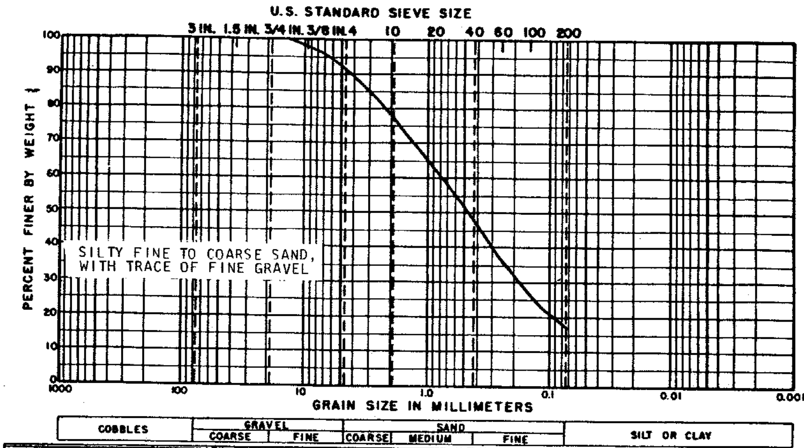
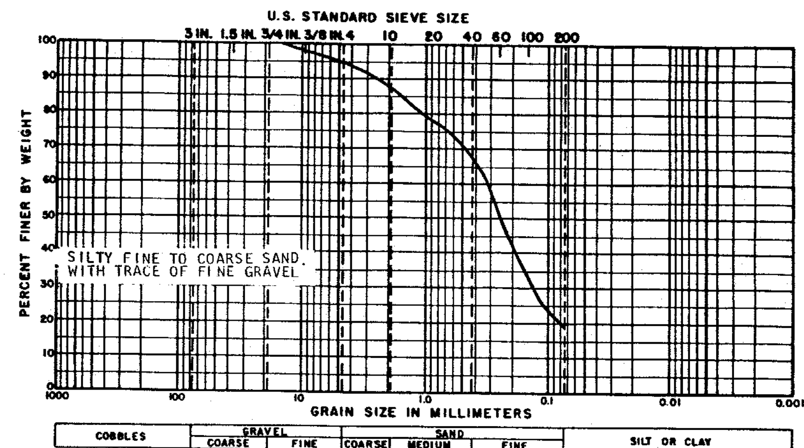
FIGURE B2.5-14

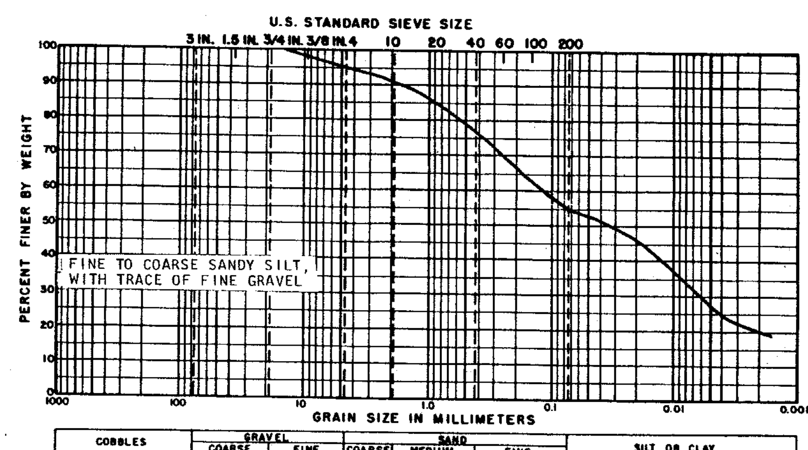
PARTICLE SIZE ANALYSES
(BORINGS P-52 AND P-54)



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-54	76.5	SM					



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-54	76.5'-78.0'	SM					



BORING	DEPTH	CLASSIFICATION	NAT. WC	LL	PL	PI	
P-54	78.0'-79.5'	ML	11.4				

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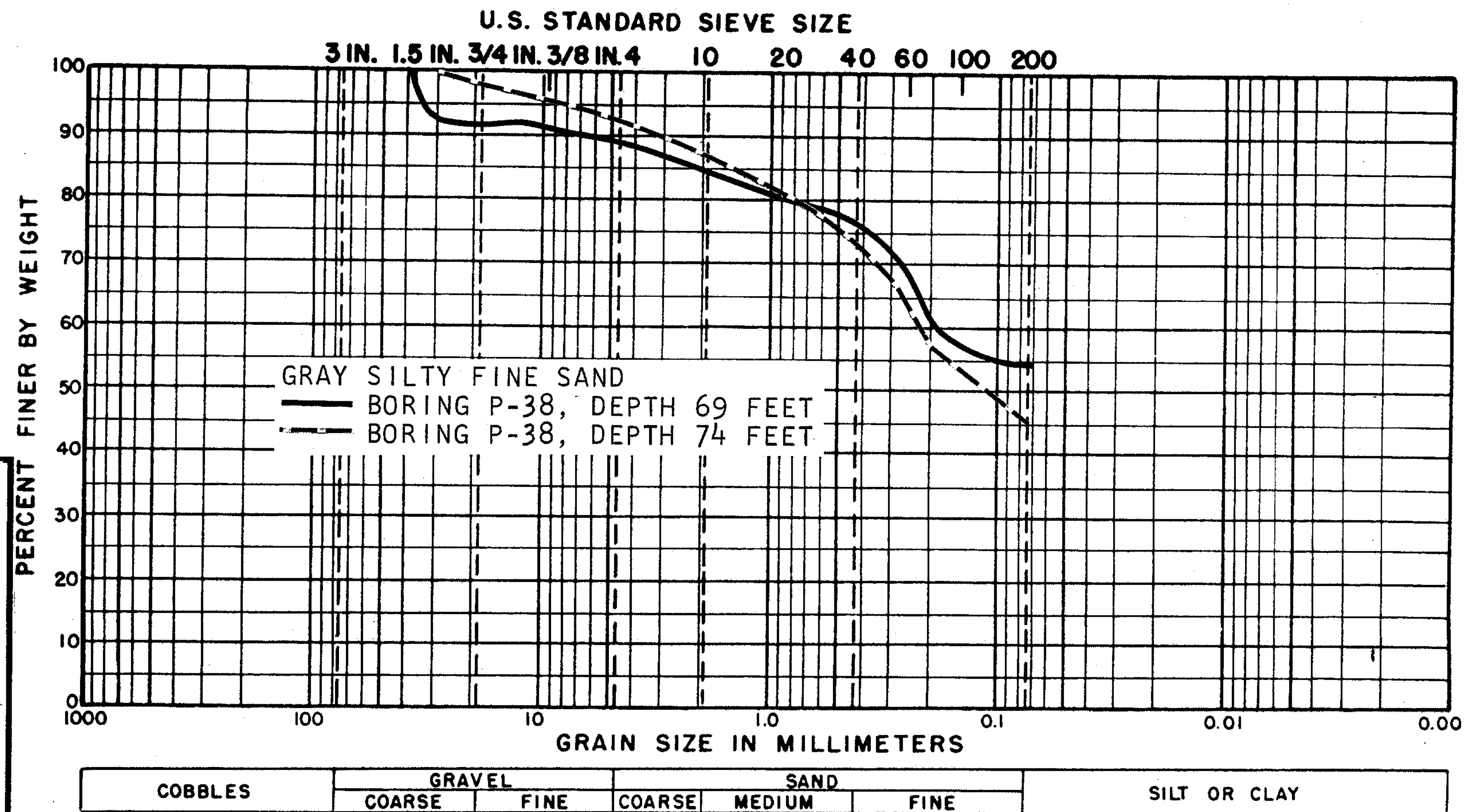
FIGURE B2.5-15

PARTICLE SIZE ANALYSES (BORING P-54)



CLINTON POWER STATION

UPDATED SAFETY ANALYSIS REPORT

FIGURE B2.5-16

PARTICLE SIZE ANALYSES (BORING P-38)

Site Stratigraphic Column

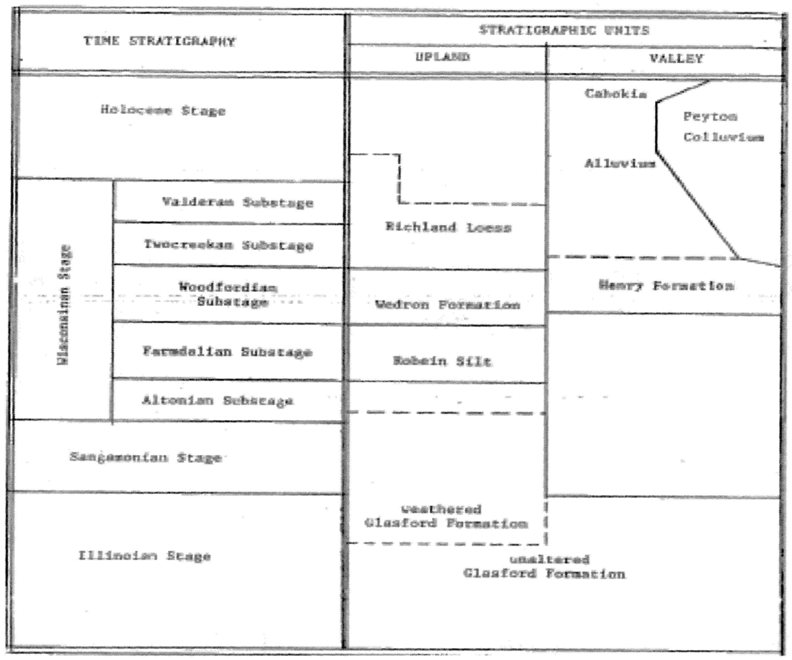


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Figure C2.5-1
Page 1 of 2

SITE STRATIGRAGHIC COLUMN

Site Stratigraphic Column

Stratigraphic Description		
Stratigraphic Unit	Approximate Thickness	General Description
Cahokia Alluvium	0-35 feet	Alluvium: Poorly sorted silt, clay, and silty sand with lenses of sand and gravel. (CL to SM)
Peyton Colluvium	0-10 feet	Colluvium: Brown clayey silt with minor amounts of gravel. (ML to CL)
Richland Loess	0-10 feet	Loess: Brown clayey silt, trace fine sand. (ML to CL)
Henry Formation	0-33 feet	Glacial outwash: Yellow-brown fine to coarse sand and gravel, with pockets of gray-brown silt, sandy silt, and silty clay. A lag gravel is often present at the base. (SM, SW, SP, SM-SW, SP-SW)
Wedron Formation	20-55 feet	Till: Brown silty clay to clayey silt, some interspersed fine to coarse sand, trace fine to coarse gravel, with pockets of brown fine sand, sometimes silty, trace fine gravel. Grades to gray clayey silt, some fine to coarse sand, trace fine gravel with pockets of fine to coarse gray sand, trace fine gravel. (ML to CL)
Robein Silt	0-2 feet	Loess (deposited in water): Dark brown organic silt, trace clay, trace fine sand. Locally consists of peat. (ML to CL)
Weathered Glasford Formation	10-15 feet	Till: Gray silt grading to clayey silt, trace fine sand. Grades to gray-green silty clay or clayey silt, some fine to coarse sand, trace fine to coarse gravel. More sand and gravel with depth. Slightly to highly calcareous. (ML to CL)
Unaltered Glasford Formation	90-140+ feet	Till: Dark gray clayey silt, some interspersed fine to coarse sand, highly calcareous, trace fine to coarse gravel with pockets of gray sand, fine to coarse. (ML-CL to SM)

Notes

1. Vertical scale does not represent either relative thickness or stratigraphic units or relative duration of time interval.
2. Excavations for the Clinton Power Station did not extend below the unaltered Glasford Formation.
3. Illinoian-age till of the Glasford Formation was subjected to a significant period of weathering during the Sangamonian Stage and Altonian Substage.
4. Deposits of Cahokia Alluvium and Henry Formation were not differentiated; reported approximate thicknesses of each unit represents a combined thickness for both deposits.
5. The Holocene Stage is represented by a significant period of weathering and development of agricultural soil profiles.
6. The Cahokia Alluvium and Henry Formation were mapped as a single unit. The Cahokia Alluvium is Holocene and, quite possibly, in part Valderan/Twocreekan in age; the Henry Formation is Woodfordian (probably early) in age. The Wedron Formation is probably early Woodfordian.
7. Locally, the Peyton Colluvium rests directly on the Glasford Formation.

Comparison of Terminology Used For The FSAR and PSAR

<table>
<tr><th colspan="2" rowspan="2">Time Stratigraphy</th><th colspan="3">Stratigraphic Units</th></tr>
<tr><th colspan="2">FSAR</th><th>PSAR</th></tr>
<tr><td colspan="2">Holocene Stage</td><td>Cahokia Alluvium</td><td>Peyton Colluvium</td><td>Salt Creek Alluvium or Flood Plain Alluvium and Recent Channel Deposits</td></tr>
<tr><td rowspan="5">Wisconsinan Stage</td><td>Valderan Substage</td><td rowspan="2">Richland Loess</td><td></td><td rowspan="2">Loess</td></tr>
<tr><td>Twocreekan Substage</td><td rowspan="2">Henry Formation</td></tr>
<tr><td>Woodfordian Substage</td><td>Wedron Formation</td><td rowspan="2">Wisconsinan Till or Wisconsinan Glacial Till</td></tr>
<tr><td>Farmdalian Substage</td><td colspan="2">Robein Silt</td></tr>
<tr><td>Altonian Substage</td><td colspan="2" rowspan="3">Weathered Glasford Formation</td><td rowspan="3">Interglacial Zone or Sangamon Interglacial Zone or Sangamon Soil Interval</td></tr>
<tr><td colspan="2">Sangamonian Stage</td></tr>
<tr><td colspan="2" rowspan="2">Illinoian Stage</td></tr>
<tr><td colspan="2">Unaltered Glasford Formation</td><td>Illinoian Till or Illinoian Glacial Till</td></tr>
</table>

Notes

1. The Cahokia Alluvium, Peyton Colluvium, and Henry Formation consist of alluvial and outwash deposits and are confined to the valley of the North Fork of Salt Creek.
2. Vertical scale does not represent either relative thickness of stratigraphic units or relative duration of time interval.

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Figure C2.5-2

COMPARISON OF TERMINOLOGY USED FOR THE FSAR AND PSAR

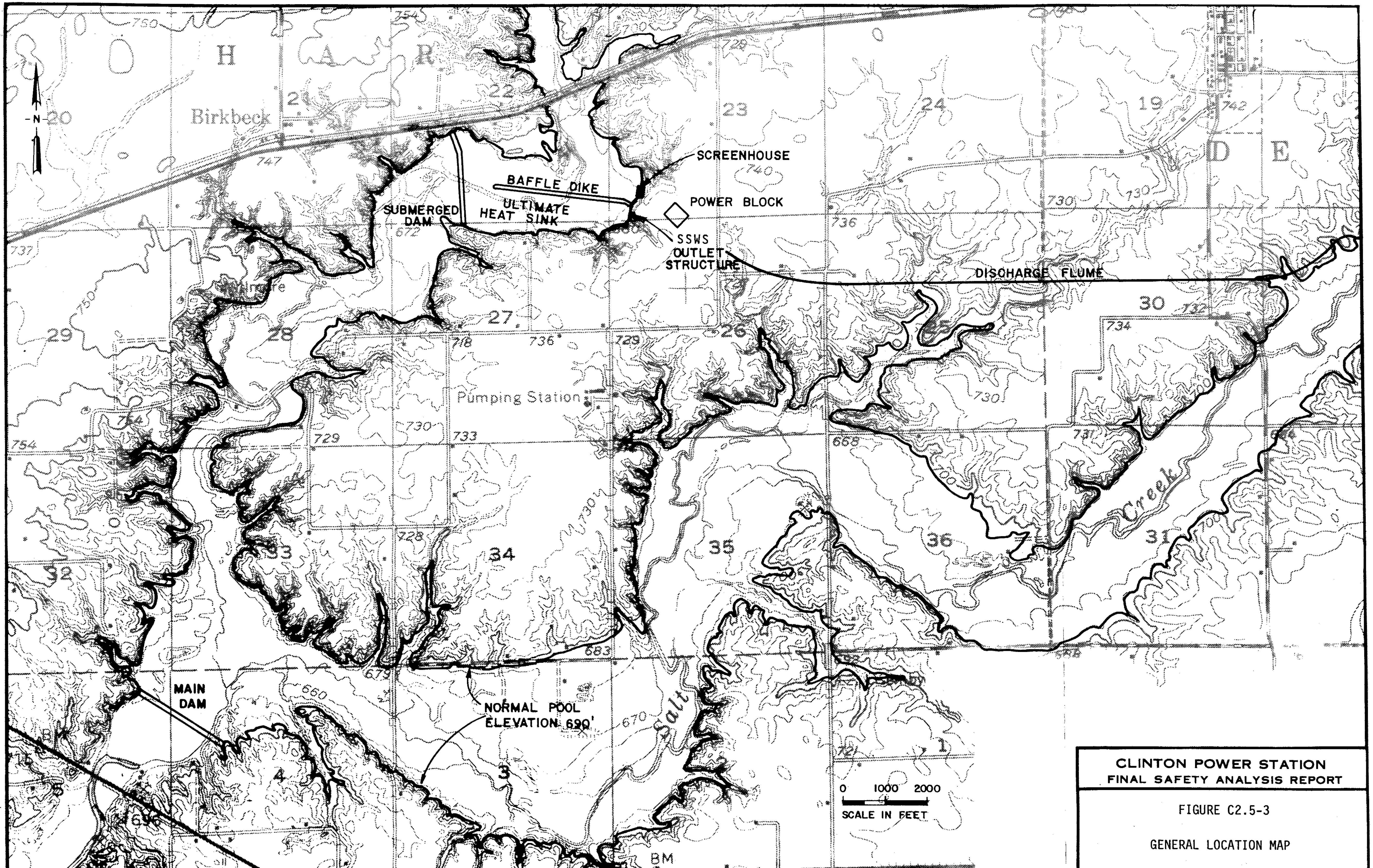

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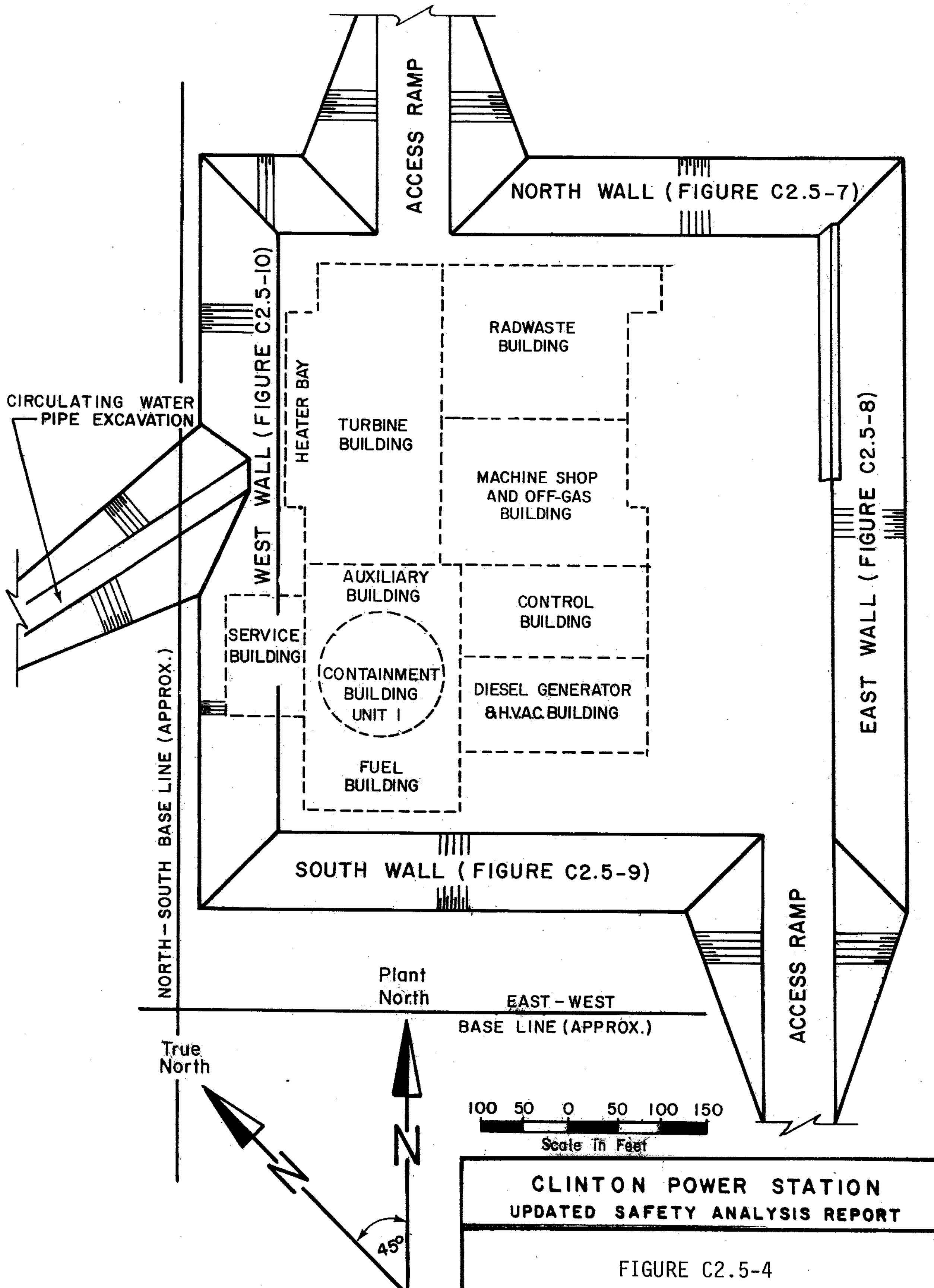
FIGURE C2.5-3

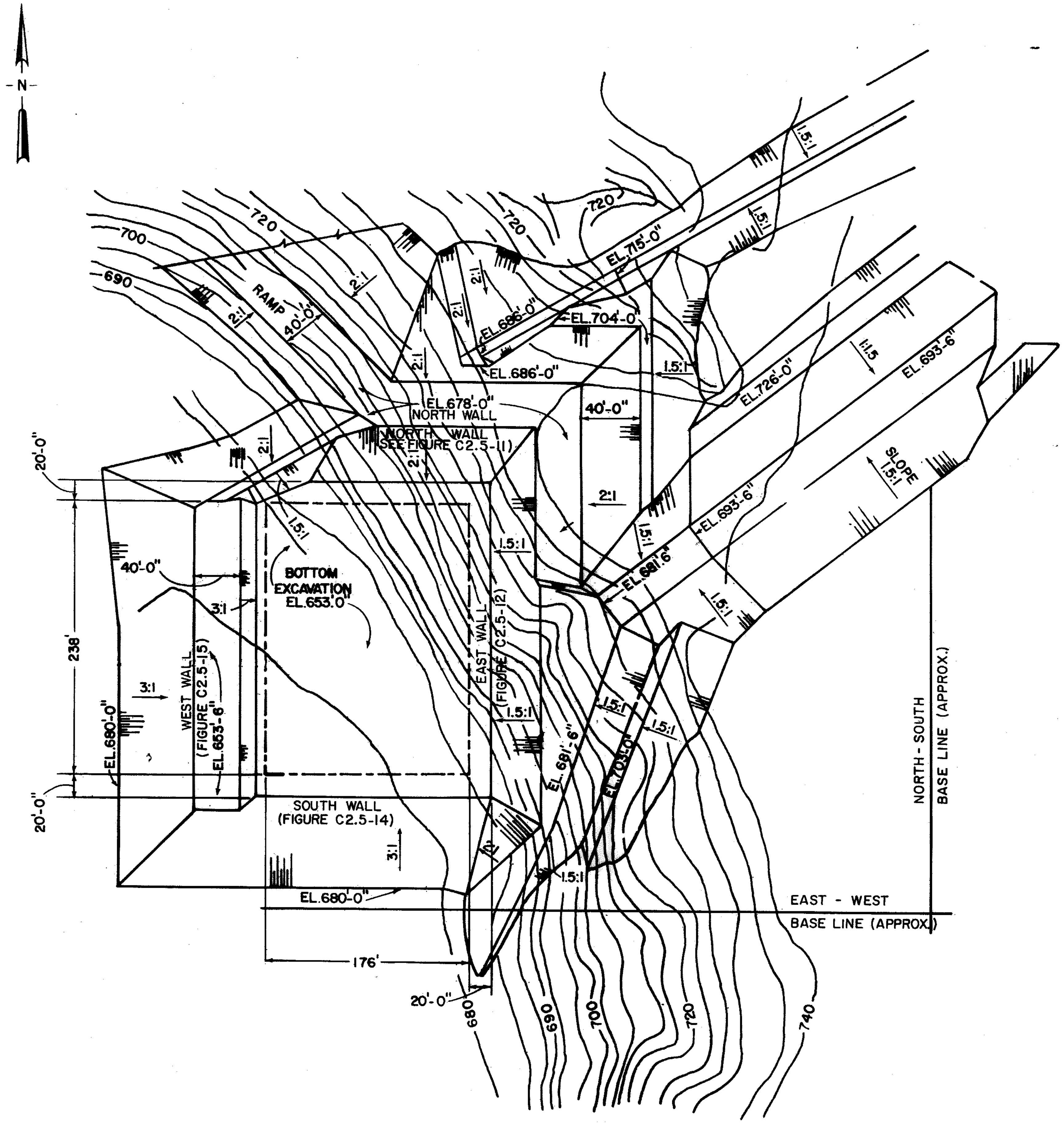
GENERAL LOCATION MAP



CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-4

EXCAVATION PLAN OF THE POWER BLOCK AND LOCATIONS OF GEOLOGIC SECTIONS



NOTE

See Figures C2.5-11, C2.5-12, C2.5-14 and C2.5-15 for geologic sections.

0 100 200

Scale in Feet

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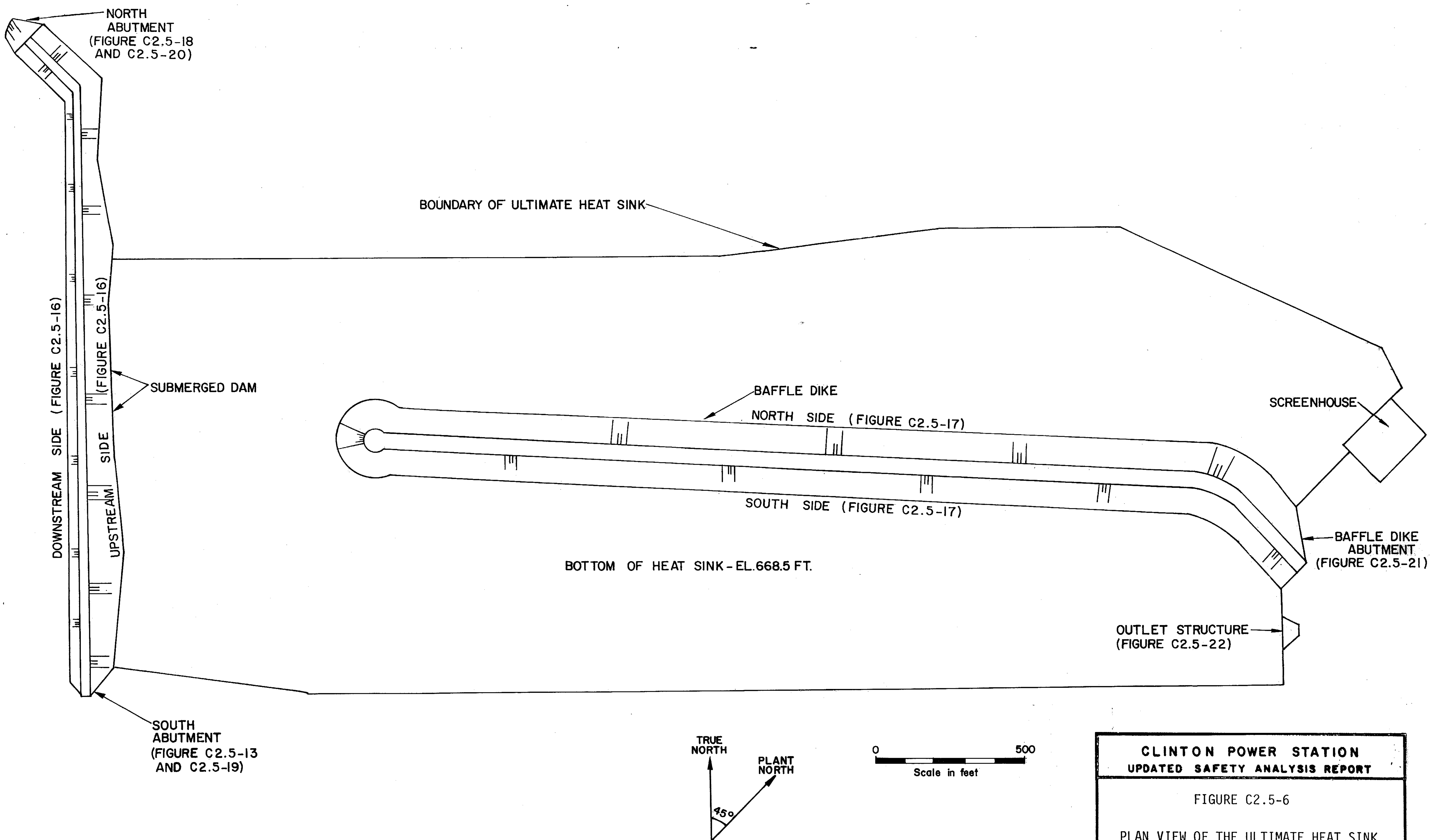
FIGURE C2.5-5

EXCAVATION PLAN FOR THE CIRCULATING WATER SCREEN HOUSE



CLINTON POWER STATION
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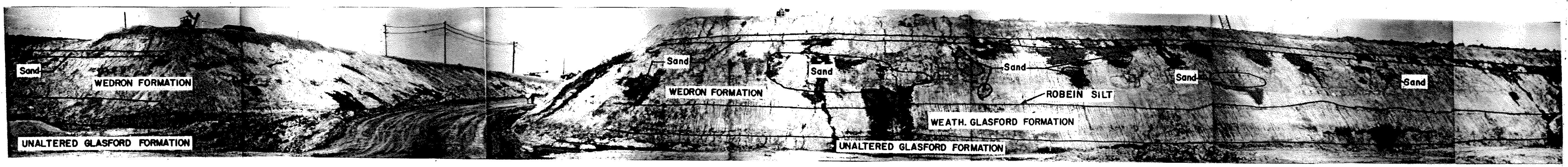
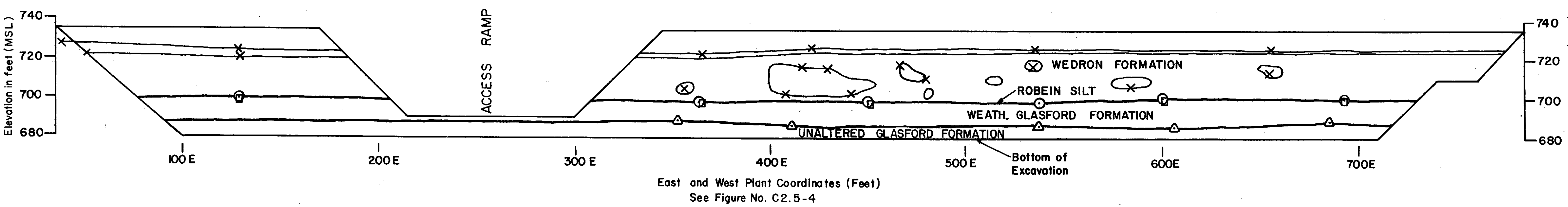
FIGURE C2.5-6

PLAN VIEW OF THE ULTIMATE HEAT SINK



NORTH WALL



LEGEND

STRATIGRAPHIC CONTACTS

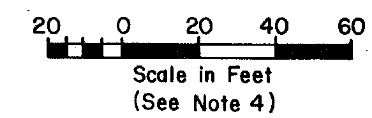
- Contacts between formations
- Outline of sand deposit

REFERENCE POINTS

- ⊙ Wedron Fm./Robein Silt contact
- ⊡ Robein Silt/Weath. Glasford Fm. contact
- △ Weath. Glasford Fm./Unalt. Glasford Fm. contact
- × Sand location

NOTES

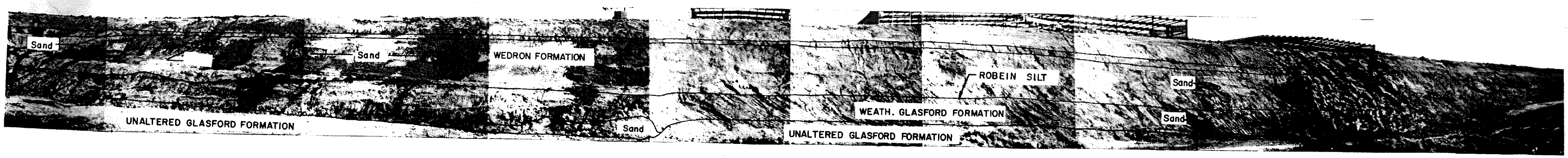
1. Location of this figure is shown in Figure C2.5-4, see also Figure No. C2.5-3.
2. Descriptions and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. Due to radial photography from center of excavation, photo mosaic is not to scale.
5. Contacts between stratigraphic units and limits of sand deposits are approximated between control points.
6. The Robein Silt is a generally 2 to 4 foot thick layer of organic silt between the tills of the Wedron and Glasford Formations.



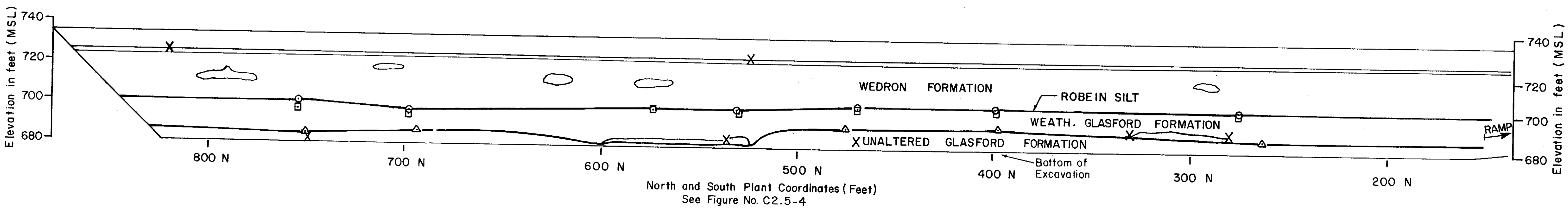
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-7

GEOLOGIC SECTION AND PHOTO MOSAIC OF THE NORTH WALL OF THE POWER BLOCK EXCAVATION



EAST WALL



LEGEND

STRATIGRAPHIC CONTACTS

- Contacts between formations
- Outline of sand deposit

REFERENCE POINTS

- ⊙ Wedron Fm./Robein Silt. contact
- ⊡ Robein Silt/ Weath. Glasford Fm contact.
- △ Weath. Glasford Fm./Unalt. Glasford Fm. contact.
- X Sand location

NOTES

1. Location of this figure is shown in Figure C2.5-4, see also Figure No. C2.5-3.
2. Descriptions and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. Due to radial photography from center of excavation, photo mosaic is not to scale.
5. Contacts between stratigraphic units and limits of sand deposits are approximated between control points.
6. The Robein Silt is a generally 2 to 4 foot thick layer of organic silt between the tills of the Wedron and Glasford Formations.

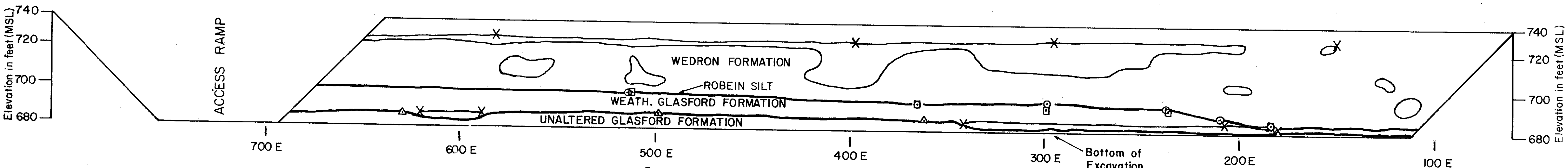
20 0 20 40 60
Scale in Feet
(See Note 4)

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-8

GEOLOGIC SECTION AND PHOTO MOSAIC OF THE EAST WALL OF THE POWER BLOCK EXCAVATION

SOUTH WALL



LEGEND

STRATIGRAPHIC CONTACTS

Contacts between formations

Outline of sand deposit

REFERENCE POINTS

⊙ Wedron Fm./Robein Silt contact

⊡ Robein Silt/Weath. Glasford Fm. contact

Δ Weath. Glasford Fm./Unalt. Glasford Fm. contact

× Sand location

NOTES

1. Location of excavation shown in Figure C2.5-4, see also Figure No. C2.5-3.
2. Descriptions and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. Due to radial photography from center of excavation, photo mosaic is not to scale.
5. Contacts between stratigraphic units and outlines of sand deposits are approximated between control points.
6. The Robein Silt is a generally 2 to 4 foot thick layer of organic silt between the tills of the Wedron and Glasford Formations.

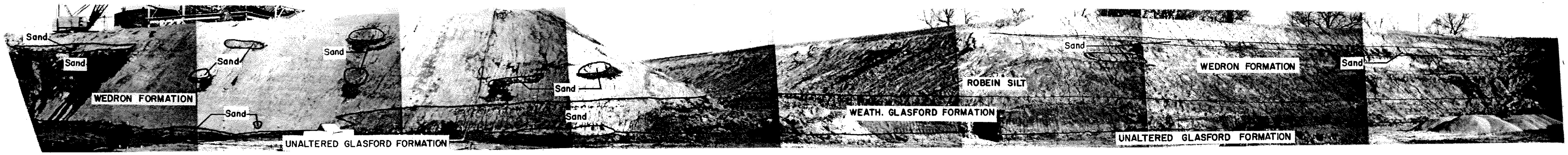
20 0 20 40 60

Scale in Feet
(See Note 4)

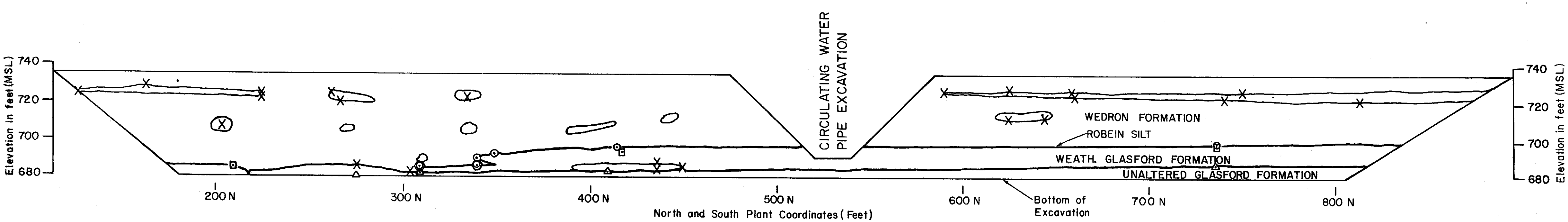
CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-9

GEOLOGIC SECTION AND PHOTO MOSAIC OF THE SOUTH WALL OF THE POWER BLOCK EXCAVATION



WEST WALL



LEGEND

STRATIGRAPHIC CONTACTS

- Contacts between formations
- Outline of sand deposit

REFERENCE POINTS

- ⊙ Wedron Fm./Robein Silt contact
- ⊡ Robein Silt/Weath. Glasford Fm. contact,
- ⊙ Wedron Fm./Weath. Glasford Fm. contact.
- △ Weath. Glasford Fm./Unalt. Glasford Fm. contact.

NOTES

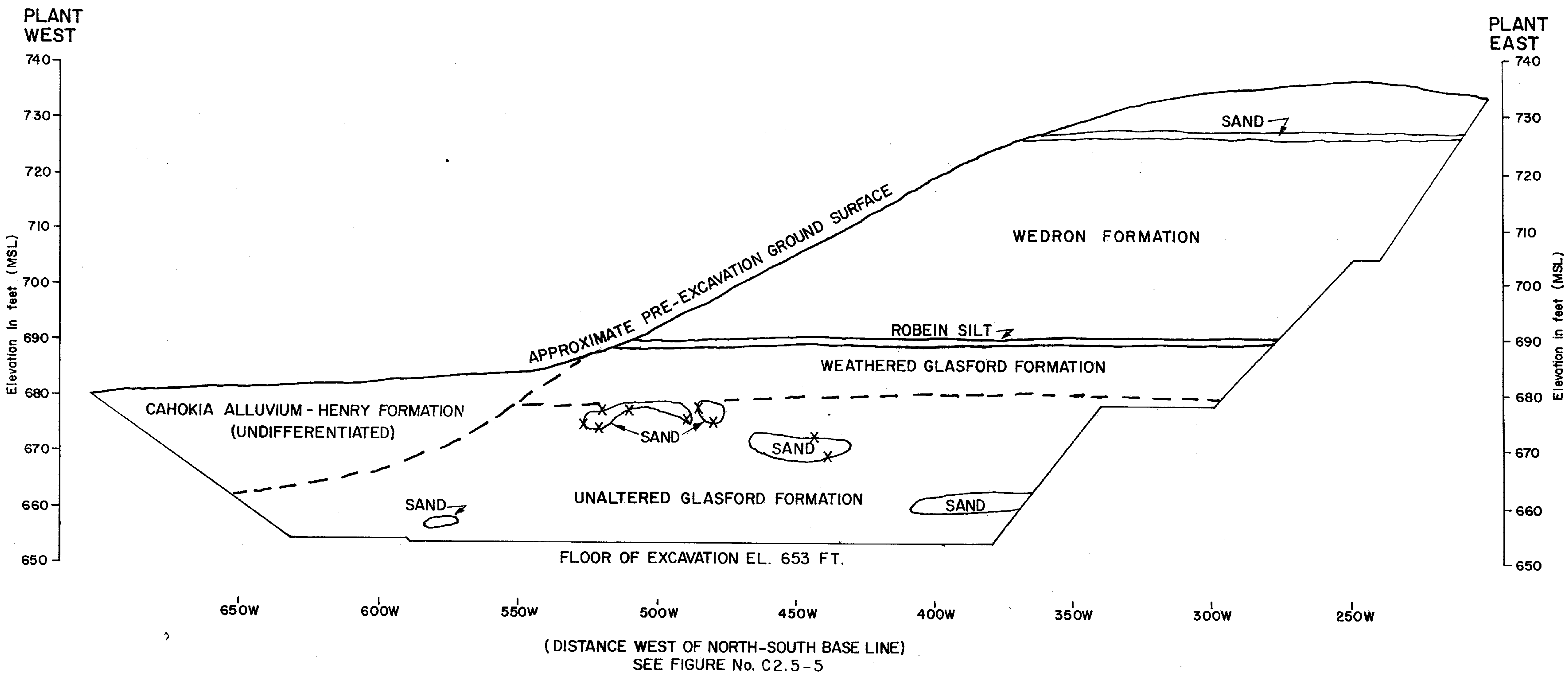
1. Location of excavation shown in Figure C2.5-4, see also Figure No. C2.5-3.
2. Descriptions and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. Due to radial photography from center of excavation, photo mosaic is not to scale.
5. Contacts between stratigraphic units and outlines of sand deposits are approximated between control points.
6. The Robein Silt is a generally 2 to 4 foot thick layer of organic silt between tills of the Wedron and Glasford Formations.
7. The Robein Silt has been locally removed by erosion between approximately 220N to 300N.

20 0 20 40 60
Scale in Feet
(See Note 4)

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-10

GEOLOGIC SECTION AND PHOTO MOSAIC OF THE WEST WALL OF THE POWER BLOCK EXCAVATION



LEGEND

- ——— Contact between stratigraphic units.
- — — Inferred contact between stratigraphic units.
- ——— Contact between sand or silt deposits.
- X Survey point

NOTES

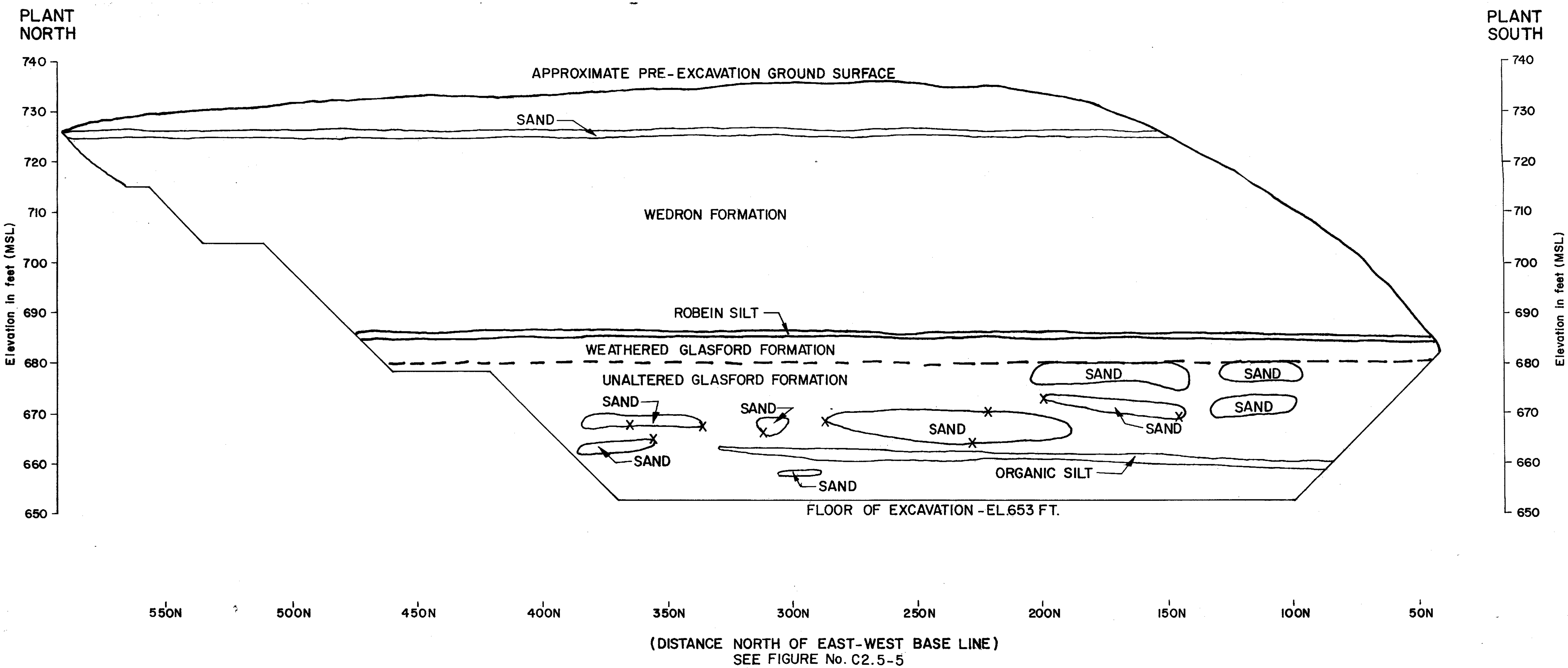
1. Location of this geologic section is shown in Figure C2.5-5, see also Figure No. C2.5-3.
2. Description and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. Some ramps and cuts in the excavation have been omitted for clarity
5. View is to plant north.

0 50
Scale in Feet
Vertical Exaggeration = 2X

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-11

GEOLOGIC SECTION OF THE NORTH WALL OF THE SCREEN HOUSE EXCAVATION



LEGEND

- Contact between stratigraphic units
- Inferred contact between stratigraphic unit.
- Contact between sand or silt deposits.
- X Survey point

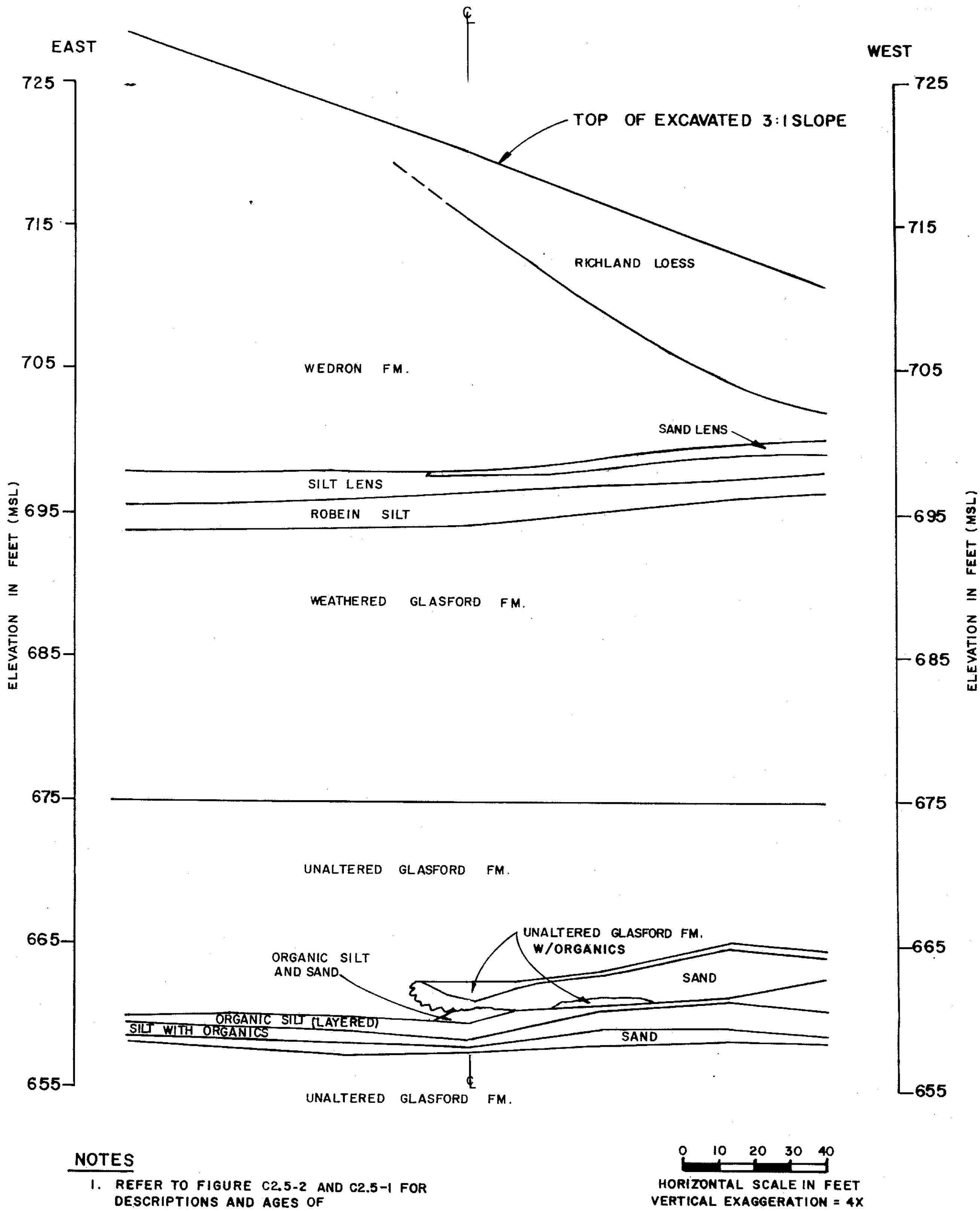
NOTES

1. Location of this geologic section is shown in Figure C2.5-5, see also Figure No. C2.5-3.
2. Description and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. Some ramps and cuts in the excavation have been omitted for clarity.
5. View is to plant east.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-12

GEOLOGIC SECTION OF THE EAST WALL OF THE SCREEN HOUSE EXCAVATION



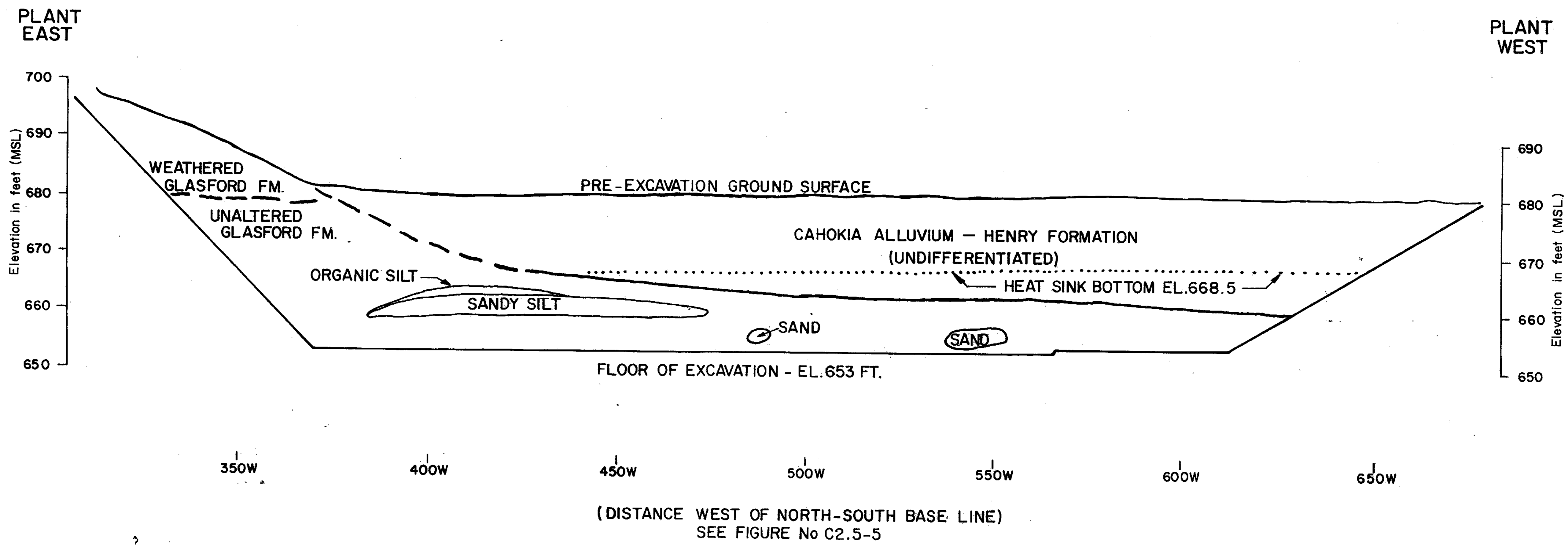
NOTES

1. REFER TO FIGURE C2.5-2 AND C2.5-1 FOR DESCRIPTIONS AND AGES OF STRATIGRAPHIC UNITS.
2. REFER TO FIGURES C2.5-3, C2.5-6 AND C2.5-19 FOR LOCATION OF GEOLOGIC SECTION.

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-13

GEOLOGIC SECTION OF THE SOUTH ABUTMENT OF THE ULTIMATE HEAT SINK DAM EXCAVATION



LEGEND

- Contact between stratigraphic units.
- Inferred contact between stratigraphic units.
- Contact between sand or silt deposits.

NOTES

1. Location of this geologic section is shown in Figure C2.5-5, see also Figure No. C2.5-3.
2. Desription and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. View is to plant south.

0 50
Scale in feet
Vertical Exaggeration = 1.5X

CLINTON POWER STATION
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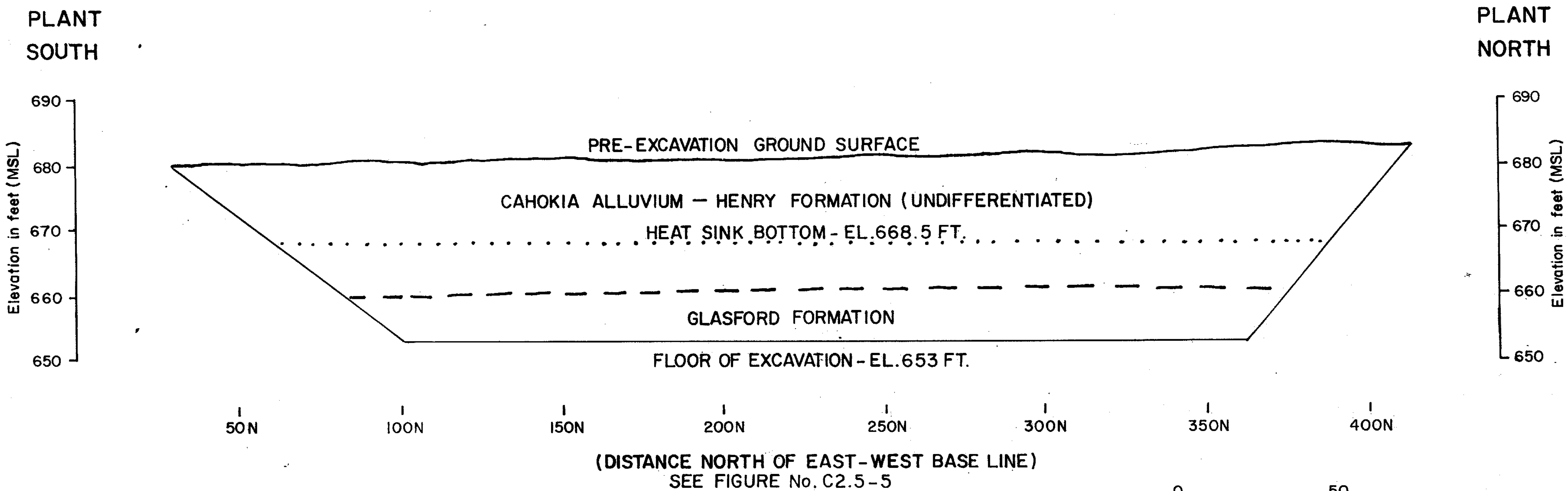
FIGURE C2.5-14

GEOLOGIC SECTION OF THE SOUTH WALL OF THE SCREEN HOUSE EXCAVATION



LEGEND

—— —— Inferred contact between stratigraphic units.

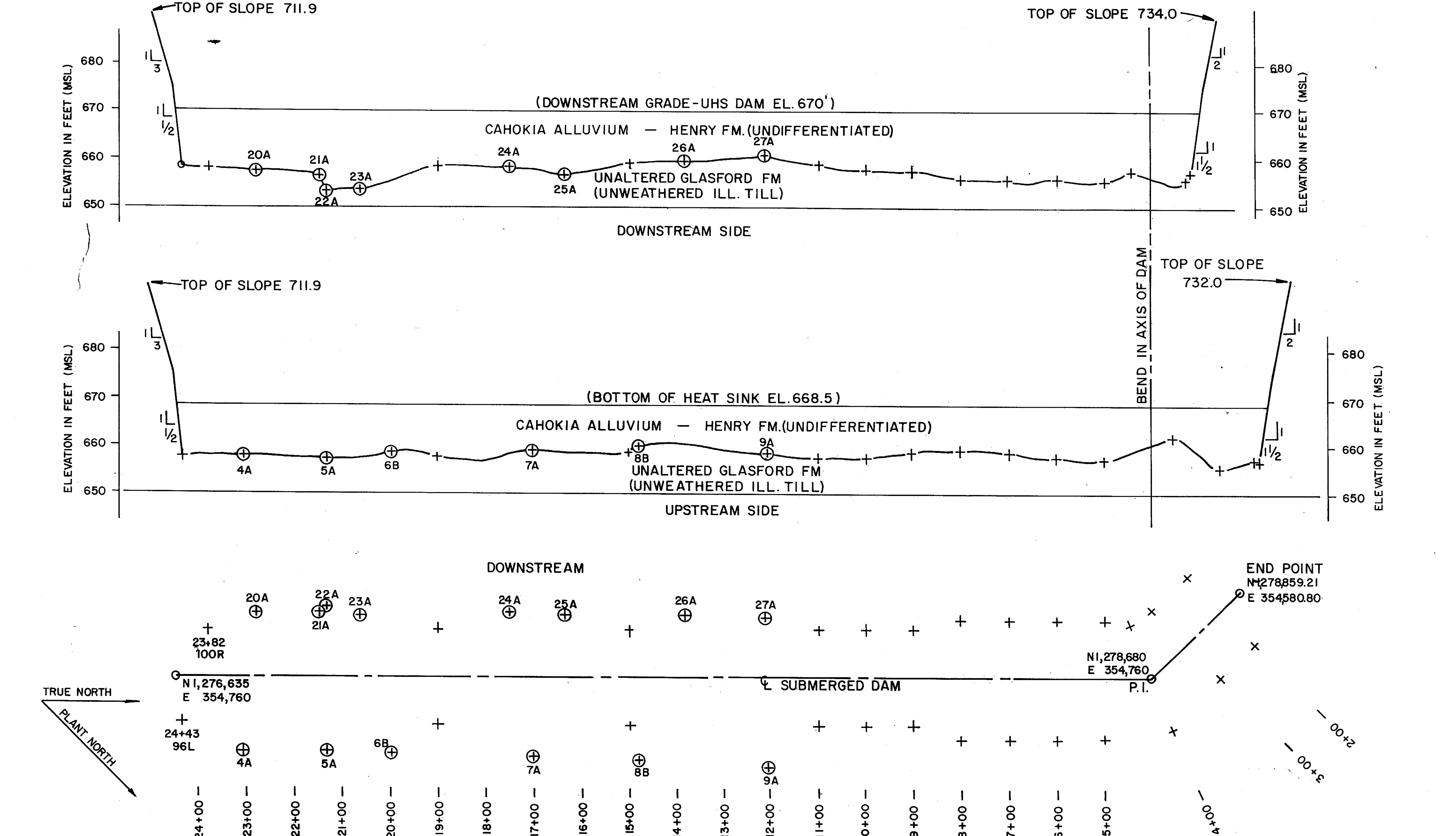
NOTES

1. Location of this geologic section is shown in Figure C2.5-5, see also Figure No. C2.5-3.
2. Descrption and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in geologic section are approximations.
4. View is to plant west

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-15

GEOLOGIC SECTION OF THE WEST WALL OF THE SCREEN HOUSE EXCAVATION



LEGEND

- \+ POINTS TAKEN FROM SUBGRADE PROFILES
- ⊕ POINTS FROM GEOLOGIC MAPPING
- —+—⊕— SUBGRADE EXCAVATION LINE
- 2+00 STATIONING ALONG CENTER LINE OF DAM

NOTES

1. Descriptions and ages of stratigraphic units are presented in Figure C2.5-1.
2. See Figure Nos. C2.5-3 and C2.5-6 for location.

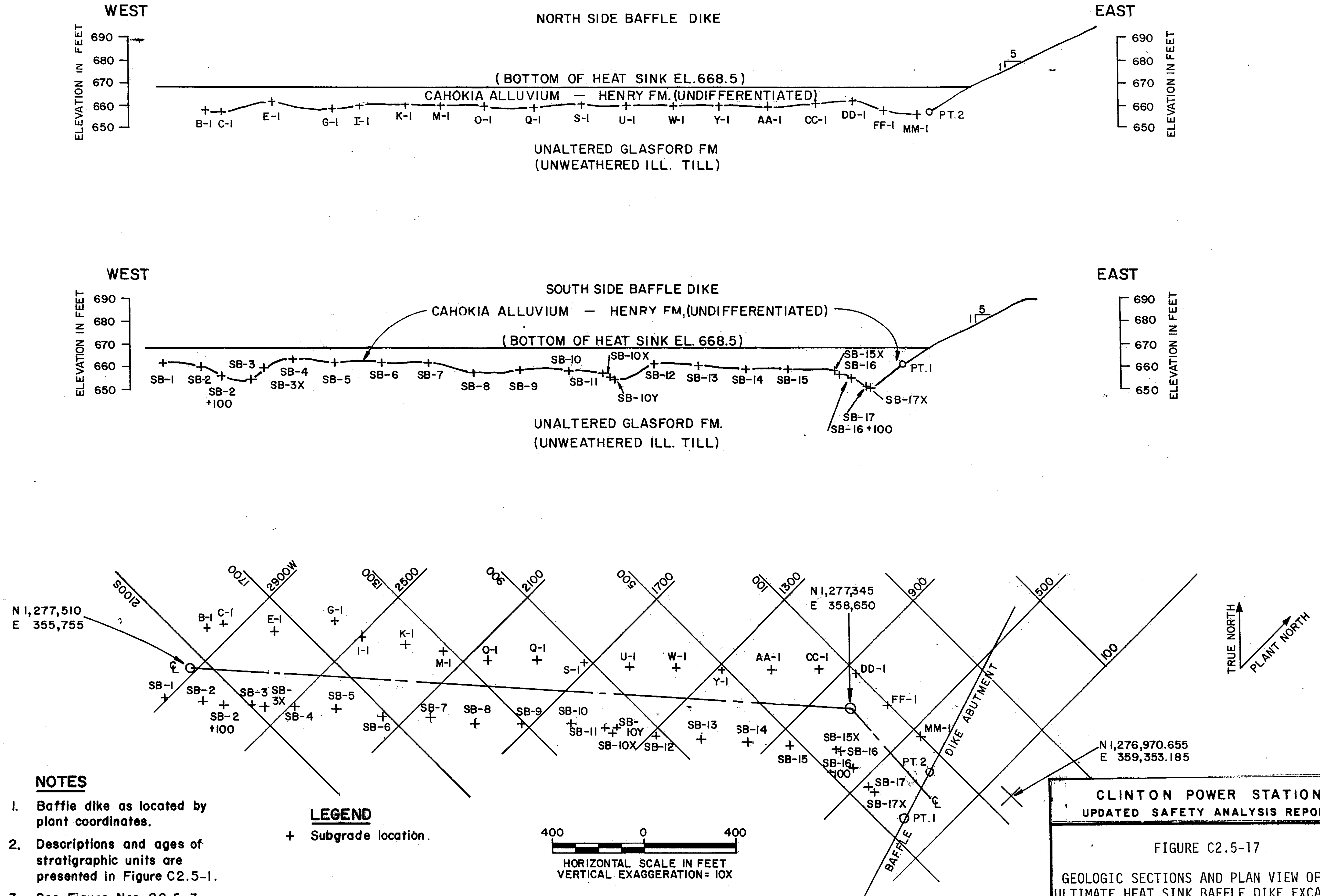
200 0 200

HORIZONTAL SCALE IN FEET
VERTICAL EXAGGERATION = 10X

CLINTON POWER STATION
UPDATED SAFETY ANALYSIS REPORT

FIGURE C2.5-16

GEOLOGIC SECTIONS AND PLAN VIEW OF THE ULTIMATE HEAT SINK DAM EXCAVATION



NOTES

1. Baffle dike as located by plant coordinates.
2. Descriptions and ages of stratigraphic units are presented in Figure C2.5-1.
3. See Figure Nos. C2.5-3 and C2.5-6 for locations.
4. 2900W Plant coordinates (feet).

LEGEND

+ Subgrade location.

CLINTON POWER STATION
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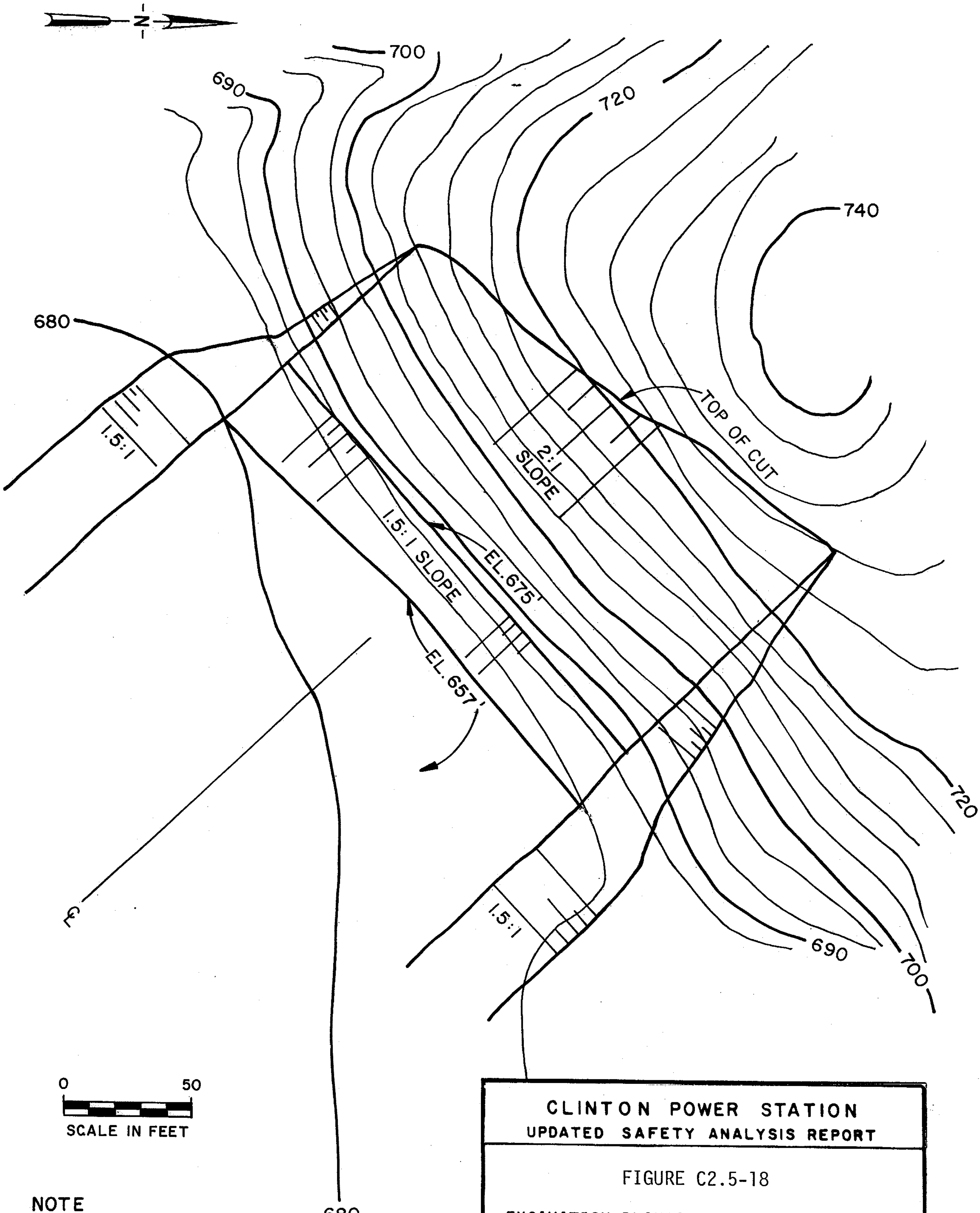
FIGURE C2.5-17

GEOLOGIC SECTIONS AND PLAN VIEW OF THE ULTIMATE HEAT SINK BAFFLE DIKE EXCAVATION



NOTE

See figure numbers C2.5-3 and C2.5-6 for location.

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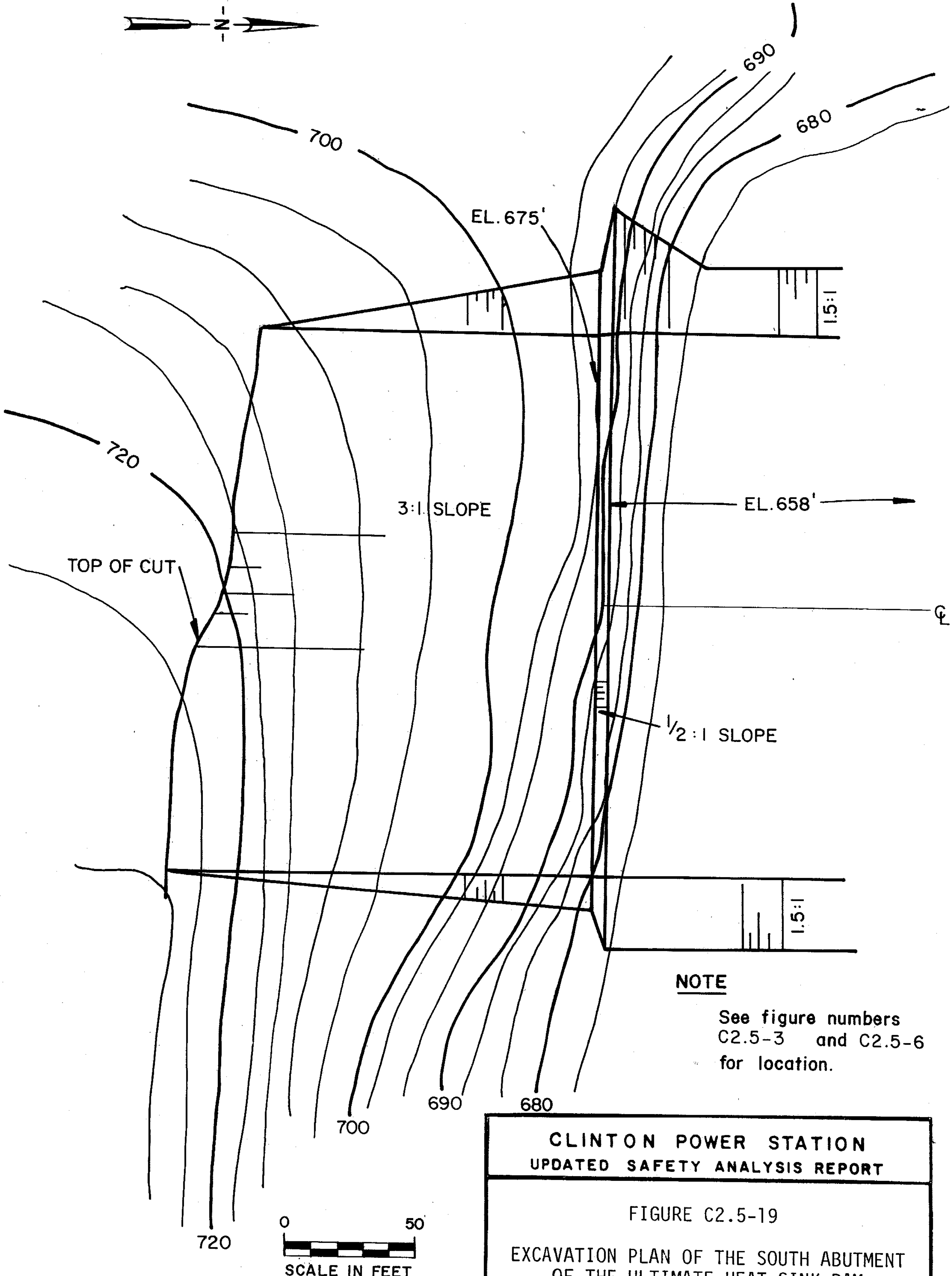
FIGURE C2.5-18

EXCAVATION PLAN OF THE NORTH ABUTMENT OF THE ULTIMATE HEAT SINK DAM



NOTE

See figure numbers C2.5-3 and C2.5-6 for location.

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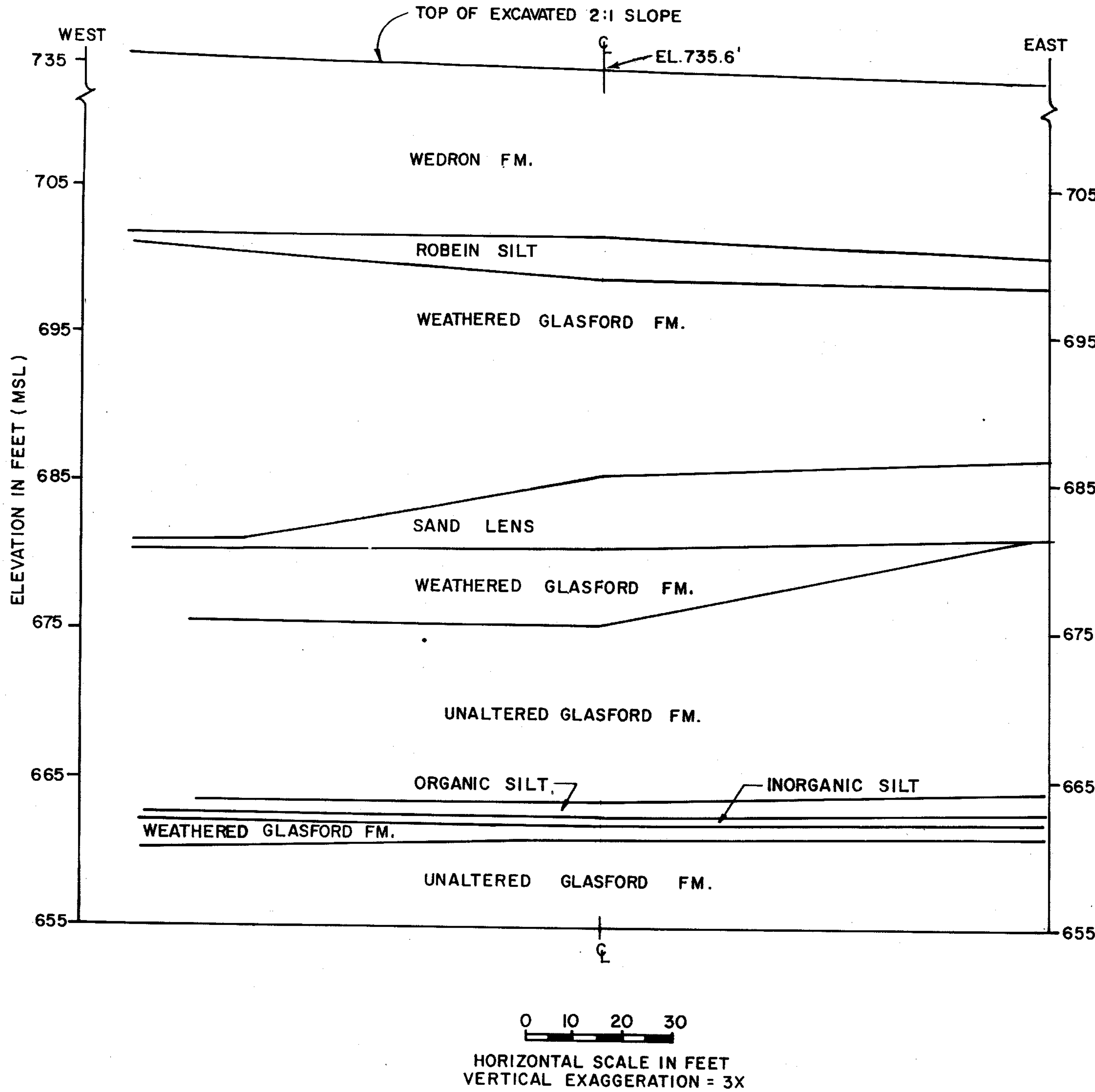
FIGURE C2.5-19

EXCAVATION PLAN OF THE SOUTH ABUTMENT OF THE ULTIMATE HEAT SINK DAM



NOTES

1. REFER TO FIGURE C2.5-1 FOR DESCRIPTIONS AND AGES OF STRATIGRAPHIC UNITS.
2. REFER TO FIGURES C2.5-3, C2.5-6 AND C2.5-18 FOR LOCATION OF GEOLOGIC SECTION.

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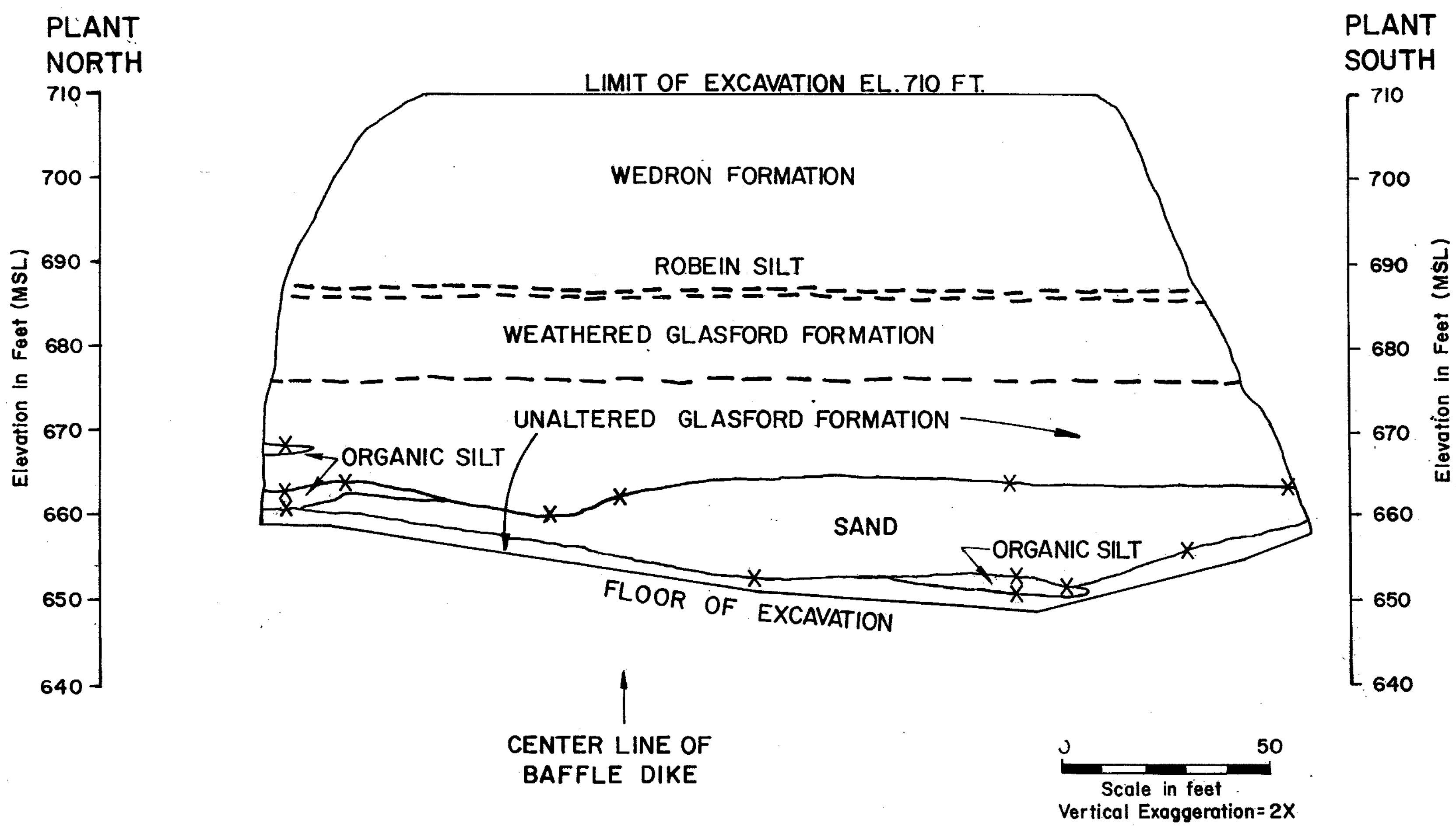
FIGURE C2.5-20

GEOLOGIC SECTION OF THE NORTH ABUTMENT OF THE ULTIMATE HEAT SINK DAM EXCAVATION



LEGEND

- – – – Inferred contact between stratigraphic units.
- ——— Contact between sand or silt units.
- X Survey point

NOTES

1. Location of this geologic section is shown in Figure C2.5-6, see also Figure No. C2.5-3.
2. Description and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in this geologic section are approximations.
4. View is to plant west.

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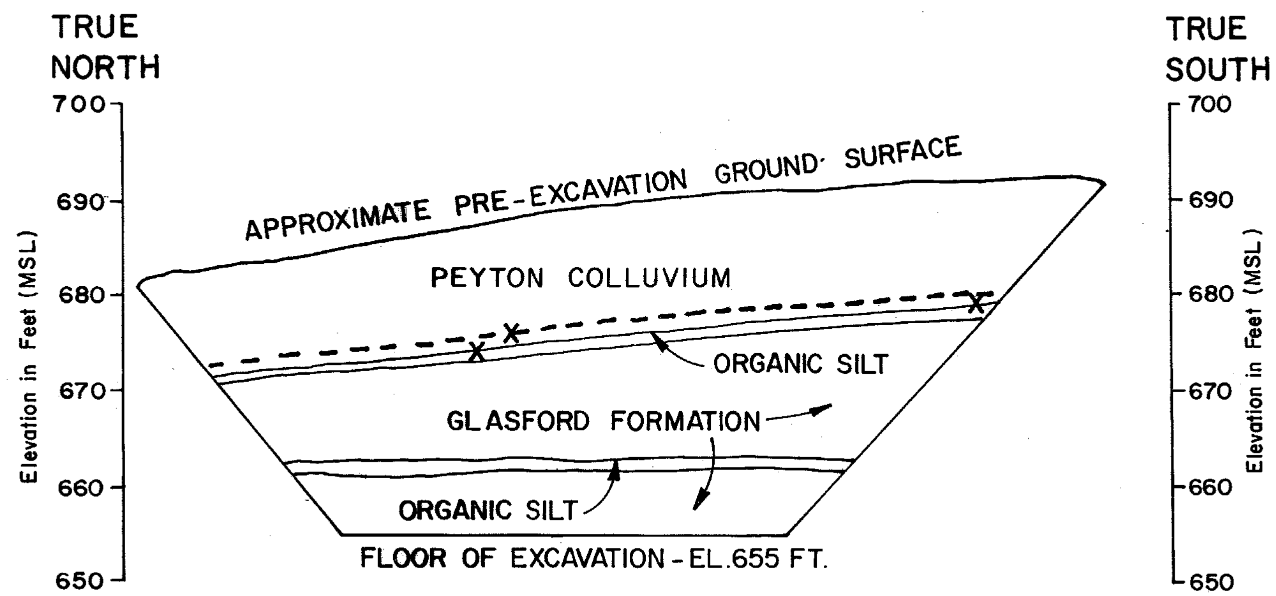
FIGURE C2.5-21

GEOLOGIC SECTION OF THE BAFFLE DIKE ABUTMENT EXCAVATION



0 50
Scale in feet
Vertical Exaggeration = 1.5X

LEGEND

- – – – Inferred contact between stratigraphic units
- —— Contact between silt units
- X Survey point

NOTES

1. Location of this geologic section is shown in Figure C2.5-6, see also Figure No. C2.5-7
2. Description and ages of stratigraphic units are presented in Figure C2.5-1.
3. Limits of excavation and slopes shown in this geologic section are approximations.
4. View is to true east.

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FIGURE C2.5-22

GEOLOGIC SECTION OF THE SSWS OUTLET STRUCTURE EXCAVATION

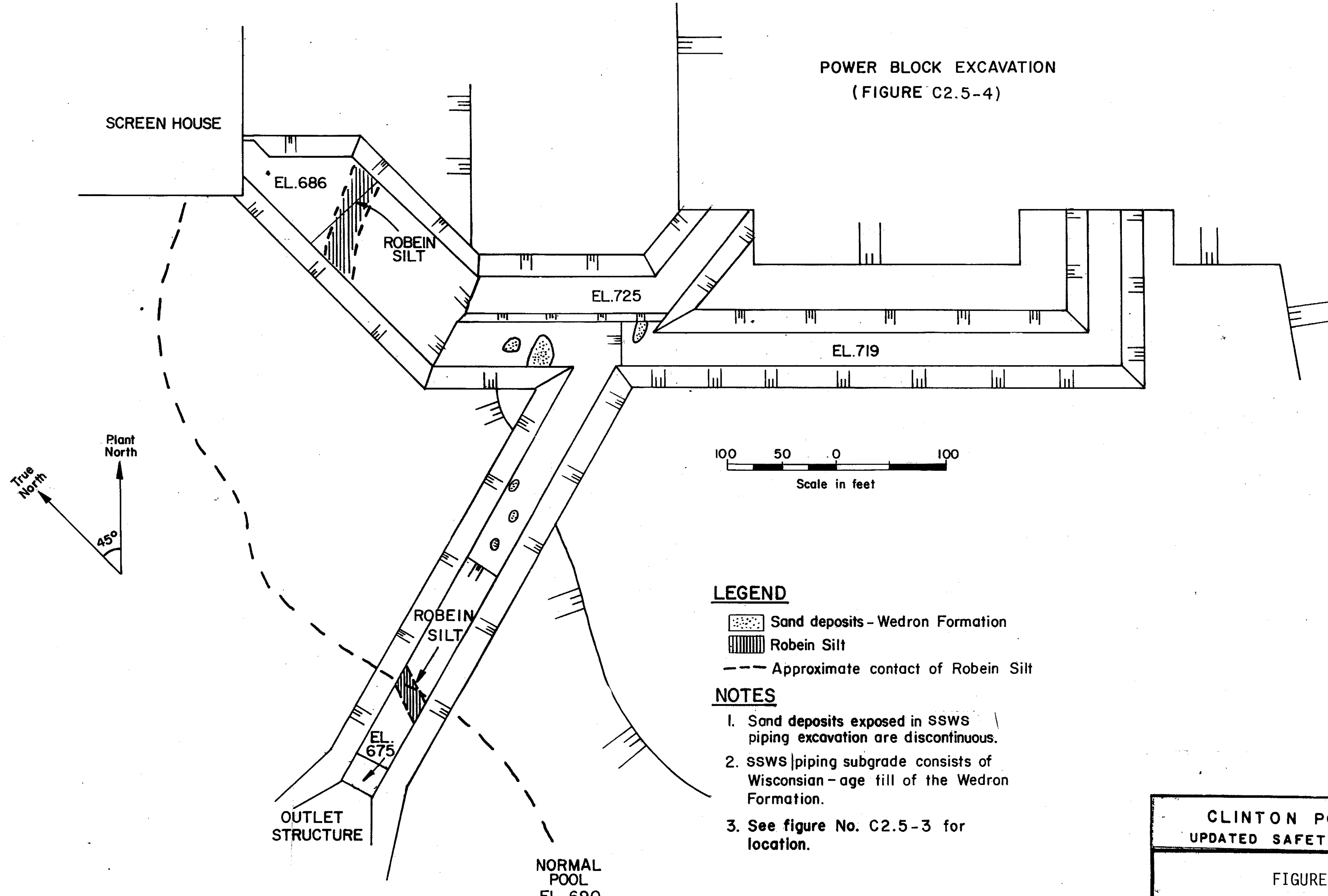

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FIGURE C2.5-23

EXCAVATION PLAN FOR THE SSWS BUILDING