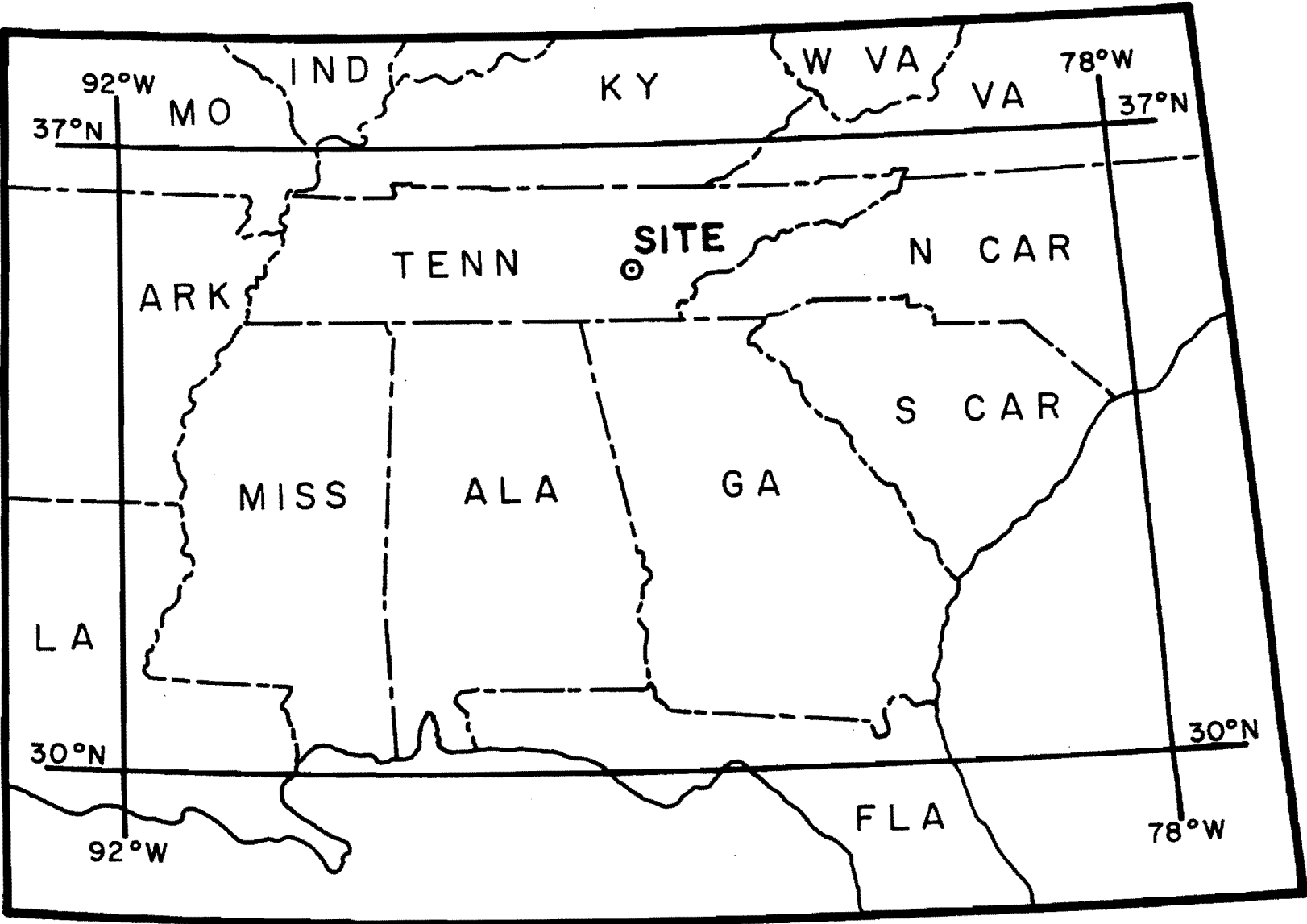




Revised by Amendment 33.

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
INDEX MAP - EARTHQUAKES 6.3 RICHTER OR GREATER LATITUDE 30-37 NORTH LONGITUDE 78-92 WEST
Figure 2.5-181

Figure 2.5-181 Index Map -Earthquakes 6.3 Richter or Greater Latitude 30-37 North Longitude 78-92 West

SEISMIC HISTORY OF THE SOUTHEAST REGION OF THE UNITED STATES

THIS IS A CHRONOLOGICAL LISTING OF ALL EARTHQUAKES HAVING EPICENTERS IN THE RECTANGULAR PORTION OF THE SOUTH-EAST REGION BOUNDED BY THE FOLLOWING GEODETIC COORDINATE LINES --

SOUTHERN BOUNDARY - 30.0 -DEGREE NORTH LATITUDE

NORTHERN BOUNDARY - 37.0 -DEGREE NORTH LATITUDE

EASTERN BOUNDARY - 78.0 -DEGREE WEST LONGITUDE

WESTERN BOUNDARY - 92.0 -DEGREE WEST LONGITUDE

AND HAVING A RICHTER SCALE MAGNITUDE EQUAL TO OR GREATER THAN 6.3

YEAR	DATE	TIME-HR-MIN-SEC	LAT - LONG	LOCALITY AND NOTES	FELT-SQ.MI.	MAG/INT	REFERENCES
1811	DEC 16	8 0 0.0	(36.6 89.6)	NEW MADRID,MO-FELT EXTENSIVELY EASTWARD, PERHAPS THE STRONGEST EVER IN U.S.,LIMITED DAMAGE BECAUSE POP. SPARCE,INTENSITY-XII	2000000		ABCD -5,6
1812	JAN 23	15 0 0.0	(36.6 89.6)	NEW MADRID,MO-SECOND MAIN SHOCK OF SERIES, INTENSITY-XII	2000000		ABCD-5,6
1812	FEB 7	9 45 0.0	(36.6 89.6)	NEW MADRID,MO-THIRD MAIN SHOCK OF SERIES, INTENSITY-XII			ABCD-5,6
1886	SEP 1	2 51 0.0	(32.9 80.0)	FIFTEEN MILES NW OF CHARLESTON,SC-ONE OF STRONGEST EVER TO OCCUR IN U.S.,EXTEN-SIVE DAMAGE,INTEN-SITY X	2000000		ABCD-5,6,8
1886	SEP 1	2 59 0.0	(32.9 80.0)	CHARLESTON,SC-2ND MAIN SHOCK,INT-X	2000000		ABCD-5,6,8
1886	SEP 1	5 5 0.0	(32.9 80.0)	CHARLESTON-AFTERSHOCK			-14
1895	OCT 31	11 8 0.0	(37.0 89.4)	NEAR CHARLESTON,MO-4 ACRES OF GROUND SANK FORMING A LAKE, CONSIDERABLE DAMAGE AT CAIRO,ILL,FELT EXTENSIVELY EASTWARD	1000000	VIII-IX	ACD-6,5
1905	JAN 27	0 0 0.0	(34.0 86.0)	NEAR GADSDEN,ALA	250000	VIII	ACD-6,5
1905	JAN 28	0 0 0.0	(34.0 86.0)	GADSDEN-SECOND SHOCK	250000	VIII	ACD-6,5

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WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

EARTHQUAKE LISTING
6.3 RICHTER OR GREATER
LATITUDE 30-37 NORTH
LONGITUDE 78-92 WEST
SHEET 1 OF 1
Figure 2.5-182

Figure 2.5-182 Earthquakes Listing 6.3 Richter Or Greater Latitude 30-37 Longitude 78-92 West

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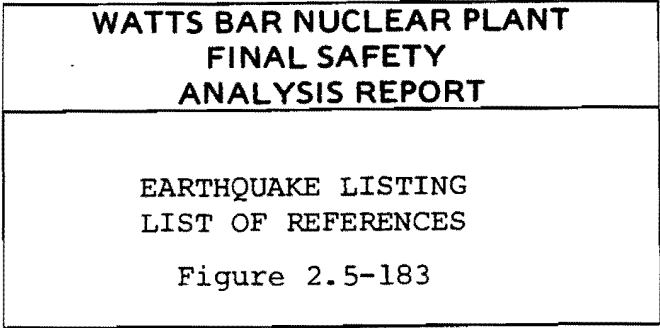


Figure 2.5-183 Earthquake Listing List of References

THE FOLLOWING NOTES APPLY TO VARIOUS SYMBOLS AND CODE LETTERS USED IN THE EARTHQUAKE LIST

- ALL DATES AND TIMES ARE GIVEN IN GREENWICH MEAN TIME.
- FOR THE EVENTS PRIOR TO 1928, ZEROS IN THE SEC, MIN, OR HOUR COLUMNS MEANS THAT THE TIME OF THE EVENT IS NOT ACCURATELY KNOWN.
- PARENTHESIS AROUND THE COORDINATES OF THE EPICENTER INDICATES THE LOCATION OF AN ISOLATED FELT REPORT OR THE APPROXIMATE CENTER OF THE REPORTED FELT AREA AND THAT THE EVENT WAS NOT INSTRUMENTALLY LOCATED.
- IN THE -MAG/INT- COLUMN , THE RICHTER MAGNITUDE OF THE EARTHQUAKE IS GIVEN IN ARABIC NUMBERS WITH A DECIMAL POINT . IF THE MAGNITUDE IS NOT AVAILABLE , THE ESTIMATED INTENSITY, ON THE MODIFIED MERCALLI SCALE , IS GIVEN IN ROMAN NUMERALS. IF NEITHER OF THESE MEASURES OF THE SIZE OF THE EARTHQUAKE ARE AVAILABLE , THIS COLUMN IS LEFT BLANK.
- THE FIRST NUMBERED REFERENCE CITED IN THE REFERENCE LIST CONTAINS THE BEST DESCRIPTION AND MOST COMPLETE DISCUSSION OF THE VARIOUS EFFECTS OF THAT EARTHQUAKE. SOME OF THE EFFECTS AND CHARACTERISTICS ARE SUMMARIZED USING THE LETTER CODES BELOW.
- A- INDICATES THAT THIS EARTHQUAKE WAS FOLLOWED BY AN AFTERSHOCK SEQUENCE , THE INDIVIDUAL EVENTS OF WHICH ARE NOT INCLUDED IN THE LISTING UNLESS THEY ARE IDENTIFIED AS SUCH.
 - B- INDICATES THAT VARIOUS RUMBLINGS, GROANS, AND OTHER EARTH NOISES WERE REPORTED ACCOMPANYING THE EARTHQUAKE.
 - C- INDICATES THAT VISIBLE TOPOGRAPHIC CHANGES OCCURRED AS A RESULT OF THE EARTHQUAKE.
 - D- INDICATES DAMAGE OR CHANGES TO STRUCTURES SUCH AS CHIMNEYS THROWN DOWN , CONCRETE OR PLASTER CRACKED , MOVEMENT OF FURNITURE OR FIXTURES , ETC.
 - F- INDICATES A SHARPLY FELT LOCAL SHOCK.

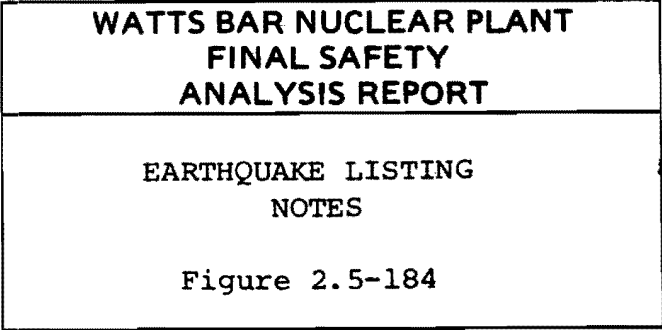
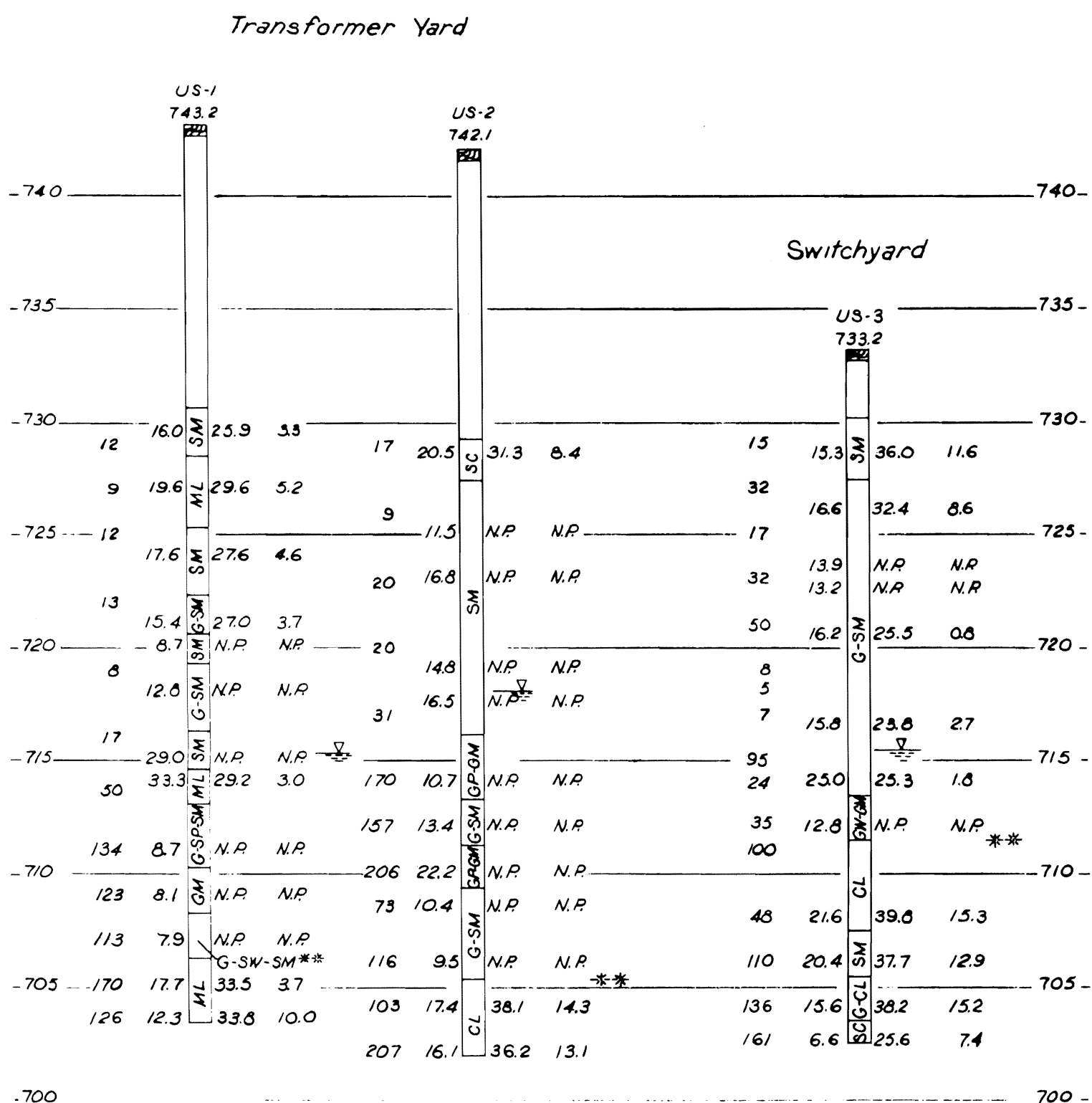


Figure 2.5-184 Earthquake Listing Notes

Figure 2.5-185 Yard Soil Borings Location Plan

Figure 2.5-185a Yard Soil Borings Location Plan



Symbols

Watertable

 Topsoil

LEGEND

Hole No.	Elev.
1	100.00
2	100.00
3	100.00
4	100.00
5	100.00
6	100.00
7	100.00
8	100.00
9	100.00
10	100.00
11	100.00
12	100.00
13	100.00
14	100.00
15	100.00
16	100.00
17	100.00
18	100.00
19	100.00
20	100.00
21	100.00
22	100.00
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87	100.00
88	100.00
89	100.00
90	100.00
91	100.00
92	100.00
93	100.00
94	100.00
95	100.00
96	100.00
97	100.00
98	100.00
99	100.00
100	100.00

* Blows	Natural	Liquid	Plasticity
	Moisture	Limit	Index
	Content		

Scale 1"=5' Before Reduction

* Blows per foot with a 140lb. hammer
and a 30 inch drop on a 2 inch OD
spitspoon.
** Top of weathered shale

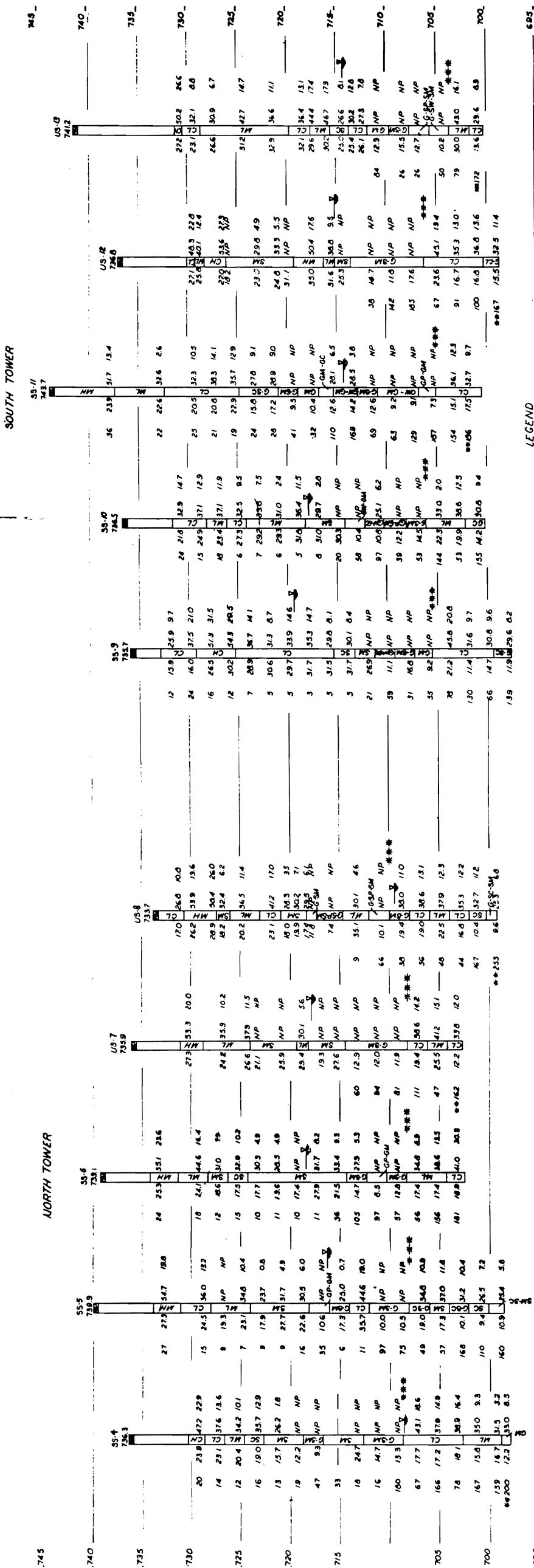
*** Top of weathered shale

**WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT**

**TRANSFORMER YARD & SWITCHYARD
SOIL INVESTIGATION**

Figure 2.5-186

Figure 2.5-186 Transformer Yard & Switchyard Soil Investigation



SYMBOLS

Topsoil

Water table

Blows

Natural Moisture Content

Liquid Limit

Plasticity Index

* Blows per foot with a 140 lb hammer and a 30 inch drop on a 2 inch OD split spoon.

** Blows with less than one foot penetration

*** Top of weathered shale

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

COOLING TOWERS SOIL INVESTIGATION

Figure 2.5-187

Figure 2.5-187 Cooling Towers Soil Investigation

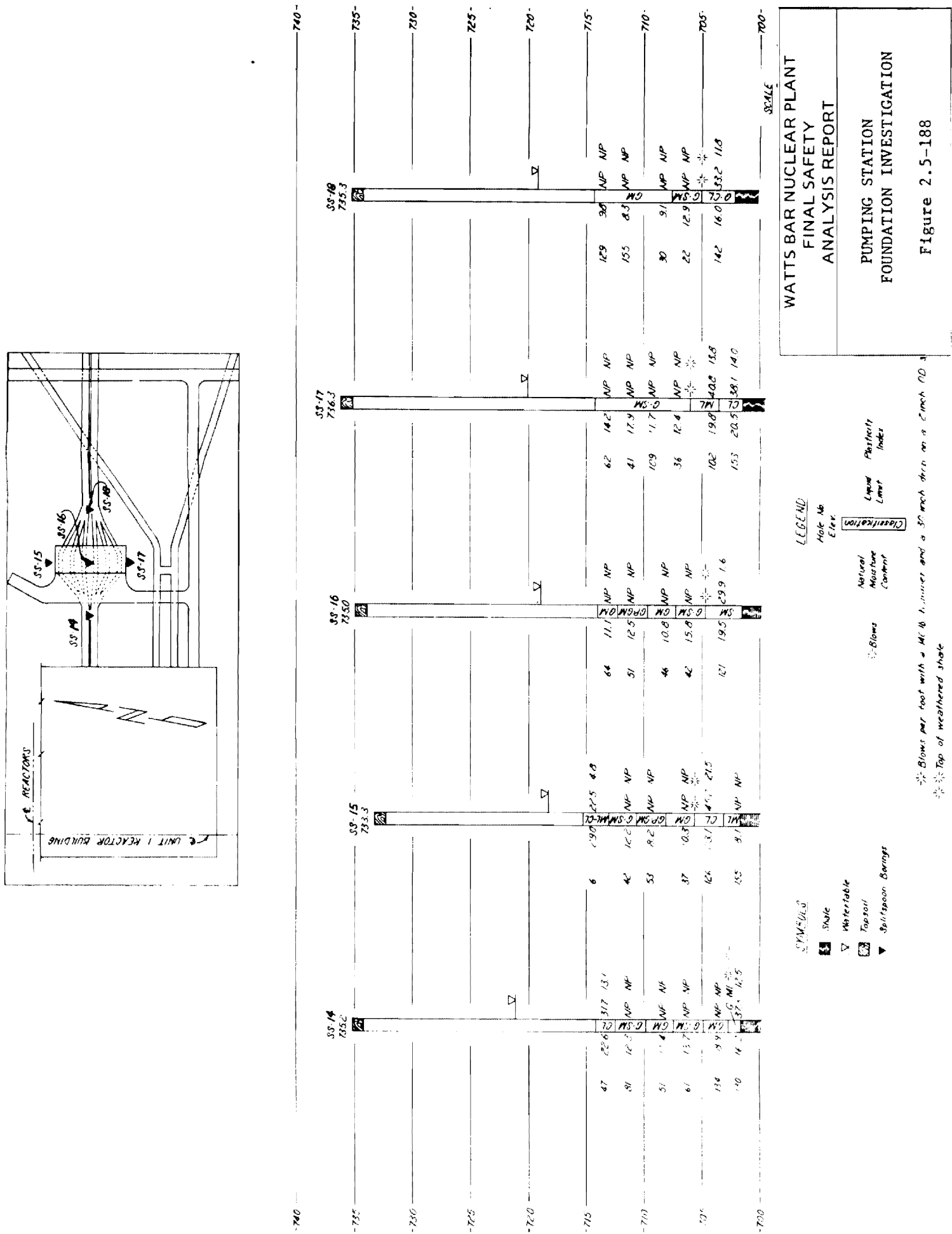


Figure 2.5-188 Pumping Station Foundation Investigation

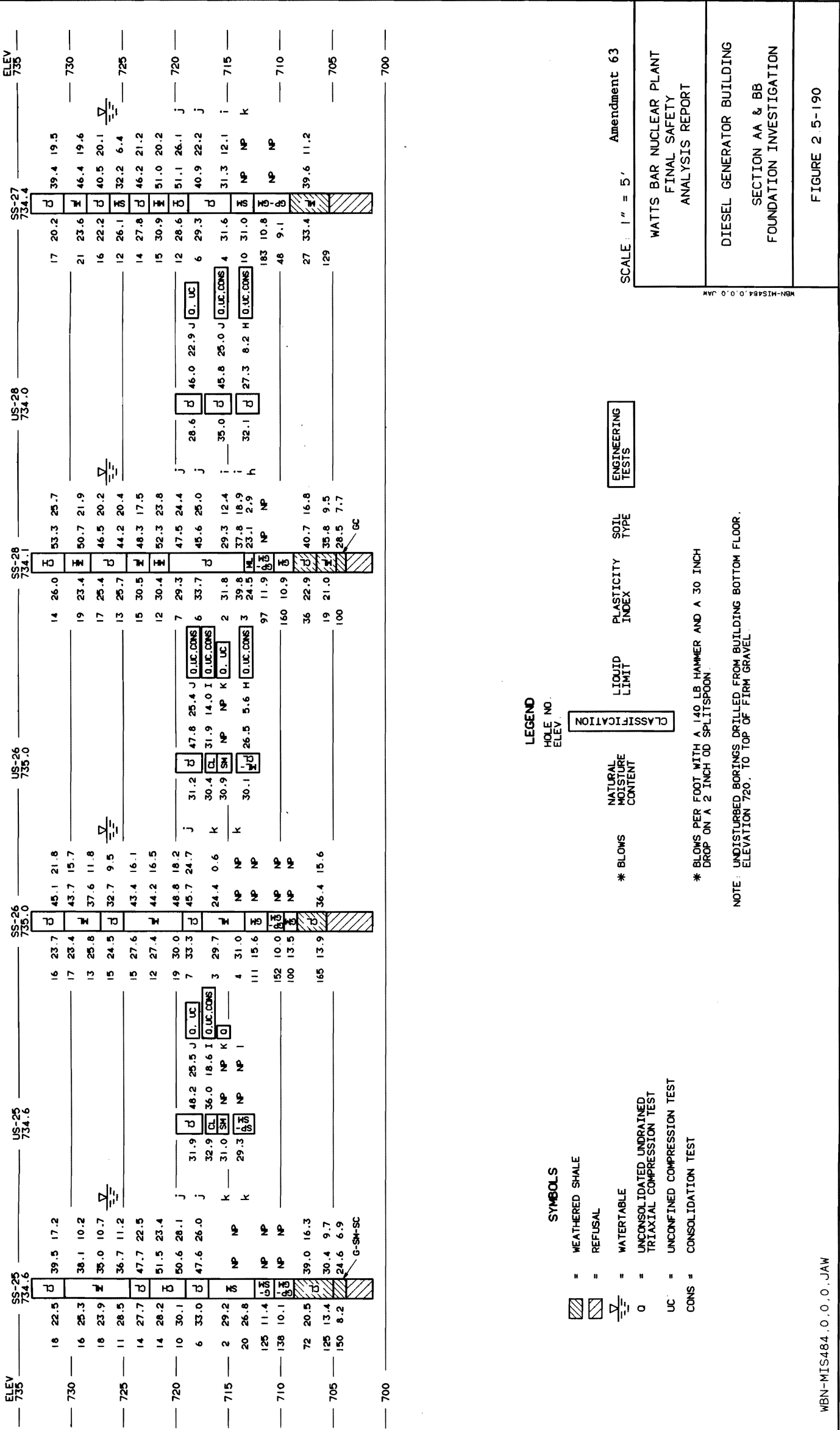


Figure 2.5-190 Diesel Generator Building Sections AA & BB Foundation Investigation

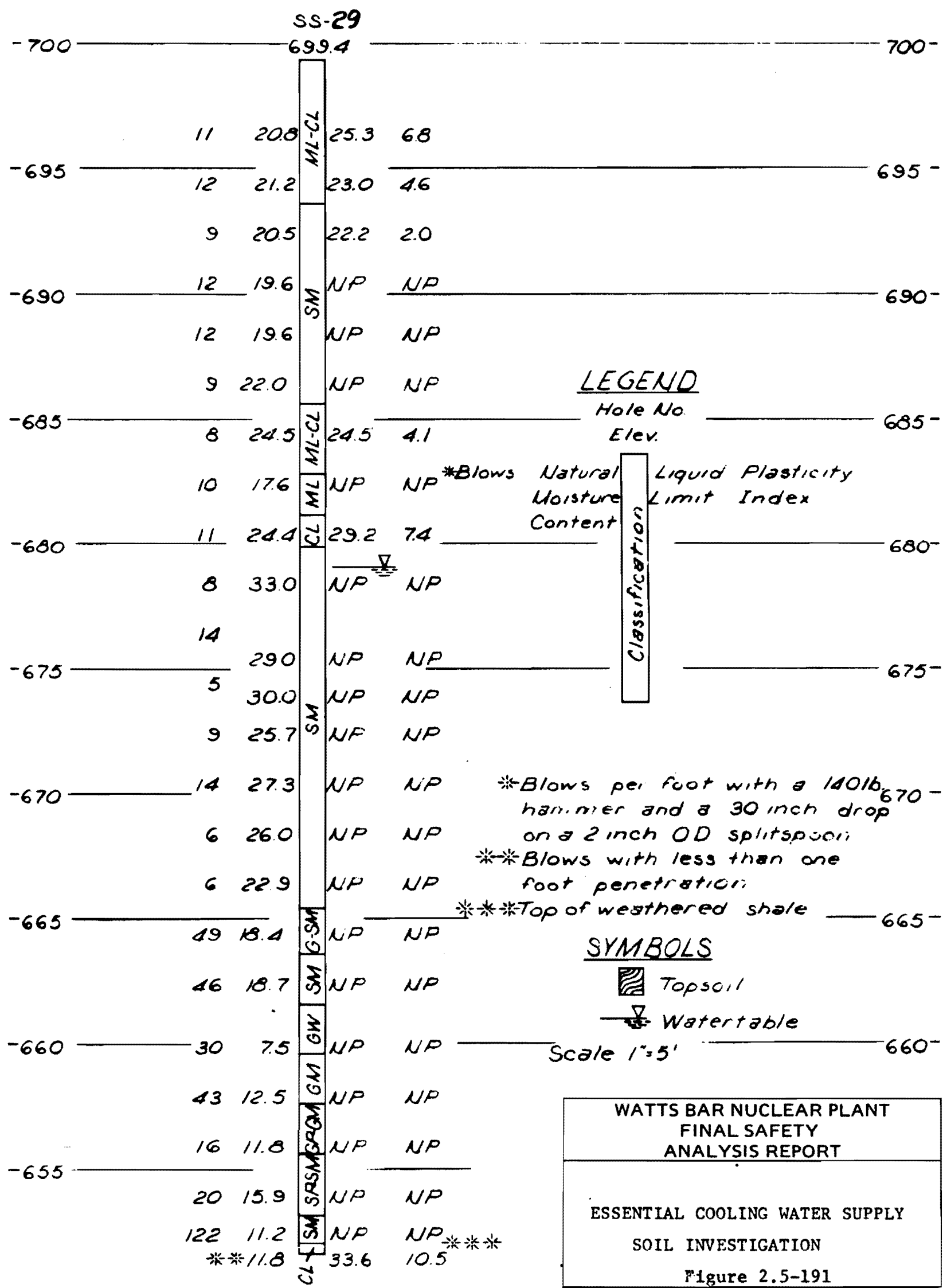
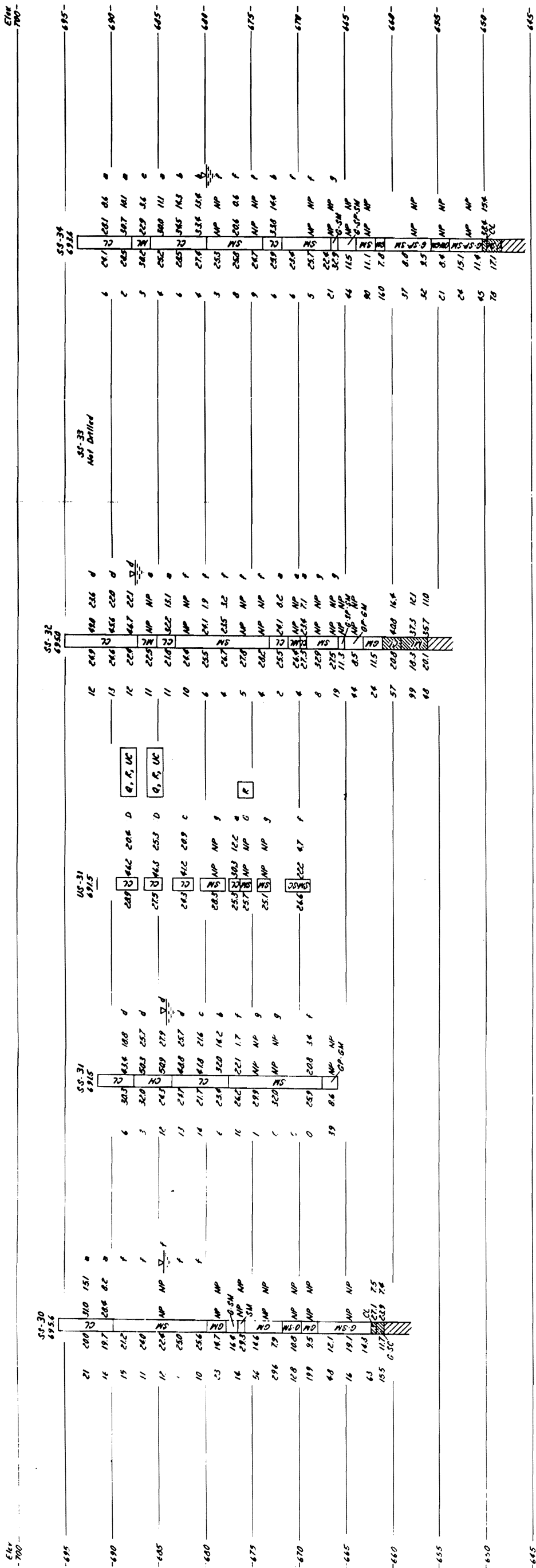


Figure 2.5-191 Essential Cooling Water Supply Soil Investigation



SYMBOLS

- Weathered shale
- Refusal
- Water table
- Unconsolidated undrained triaxial compression test
- Consolidated undrained triaxial compression test
- Unconfined compression test

LEGEND

Hole No. _____

Classifications

- Moisture Content
- Liquid Limit
- Plasticity Index
- Soil Type
- Engineering Tests

Blows per foot with a 140 lb hammer and a 30 inch drop on a 2 inch OD split spoon

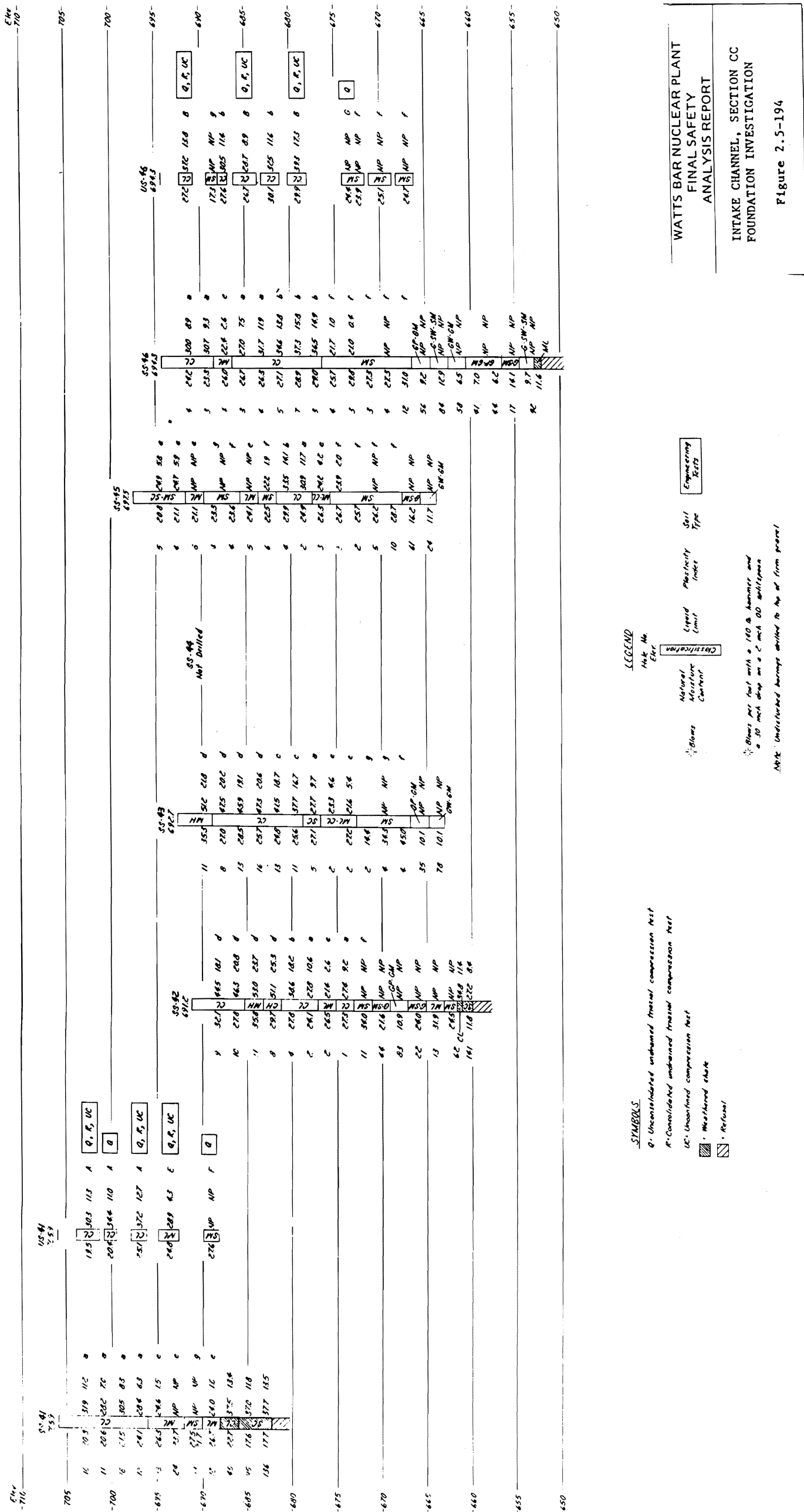
NOTE: Undisturbed sample drilled to top of firm gravel

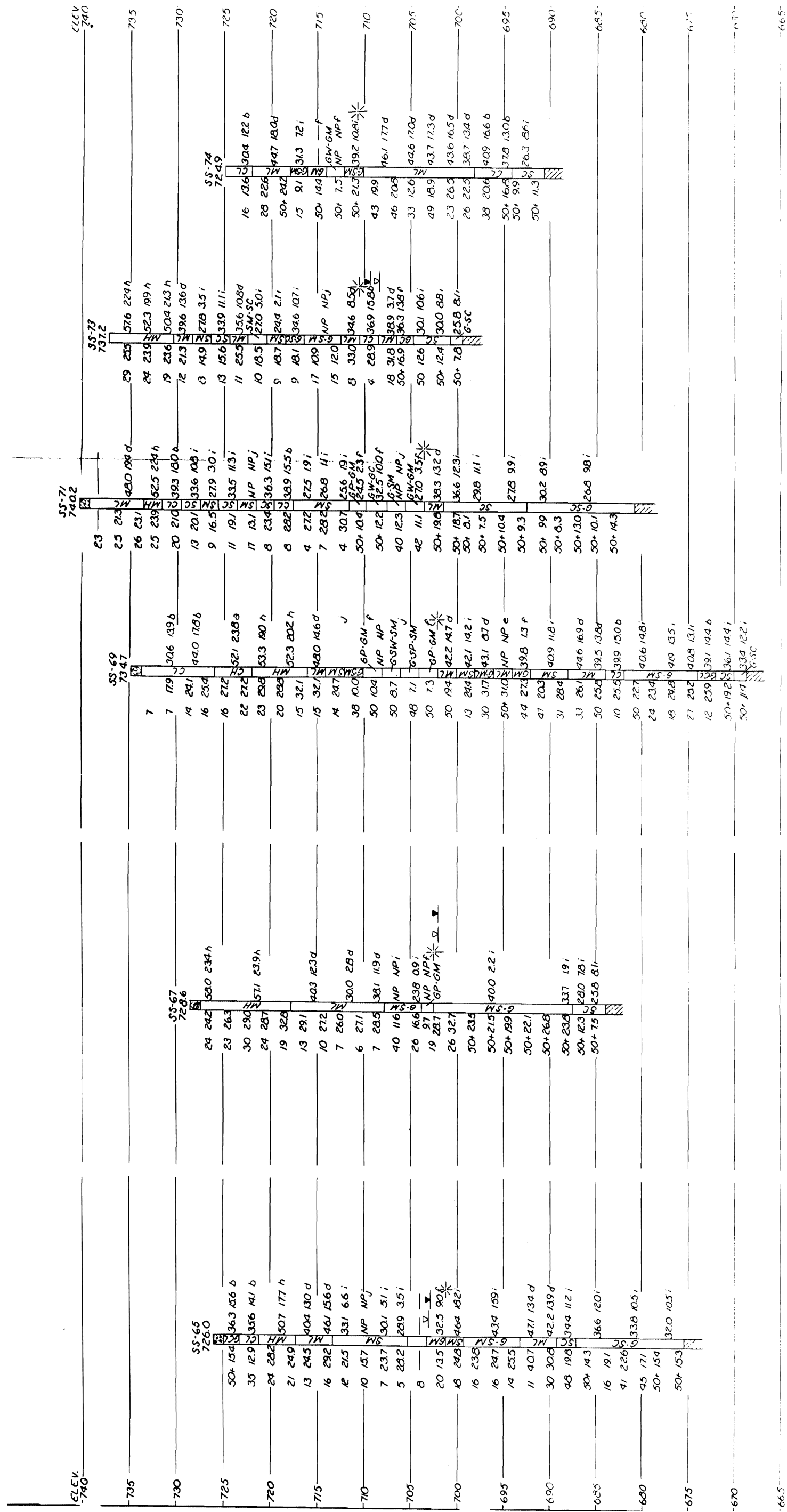
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FINAL SAFETY
ANALYSIS REPORT

INTAKE CHANNEL, SECTION DD
FOUNDATION INVESTIGATION

Figure 2.5-192

Figure 2.5-192 Intake Channel, Section DD Foundation Investigation

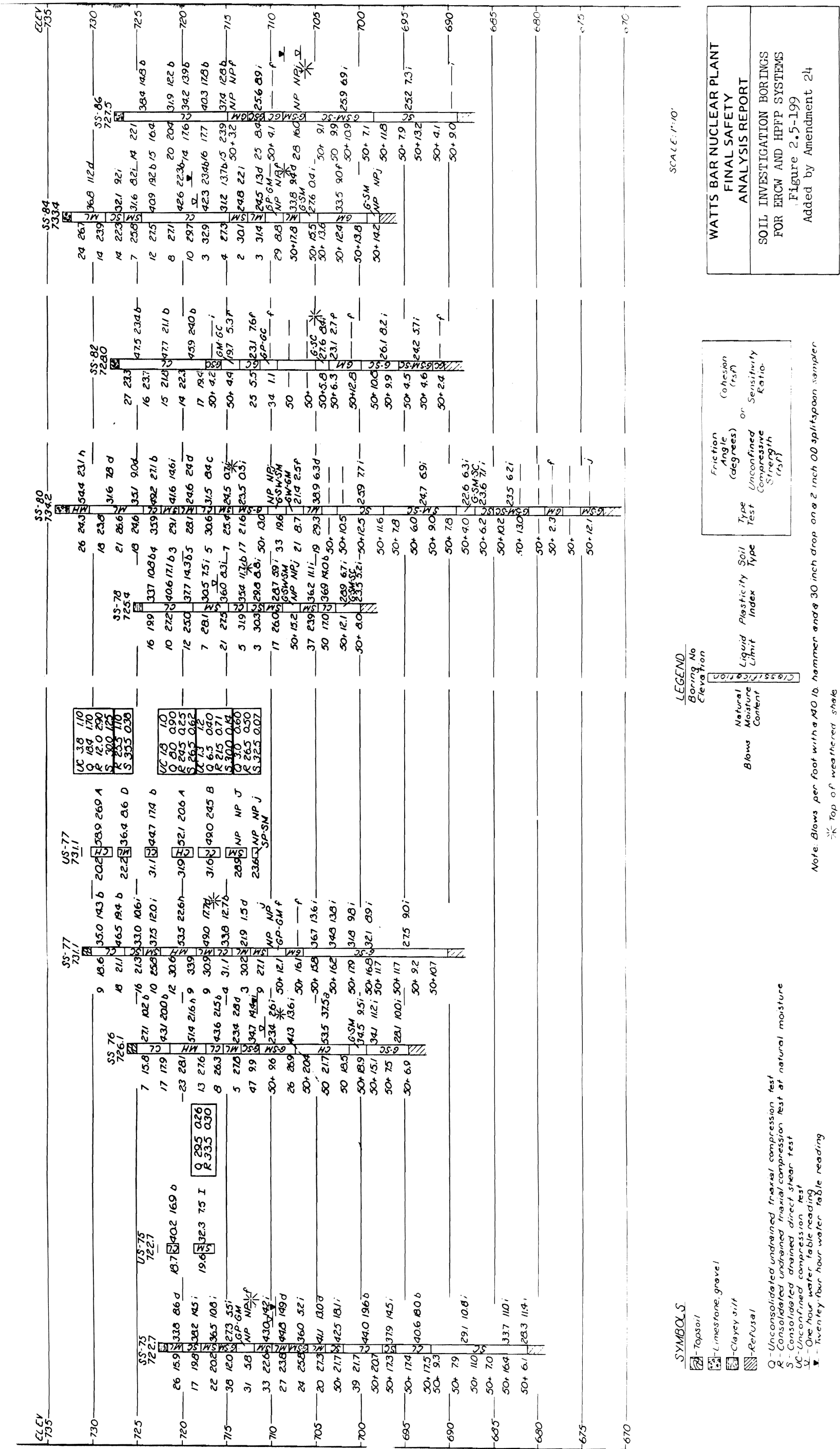




WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL INVESTIGATION BORINGS
FOR ERCW AND HPFP SYSTEMS
Figure 2.5-198
Added by Amendment 24

Figure 2.5-198 Soil Investigation Borings For ERCW & HPFP Systems



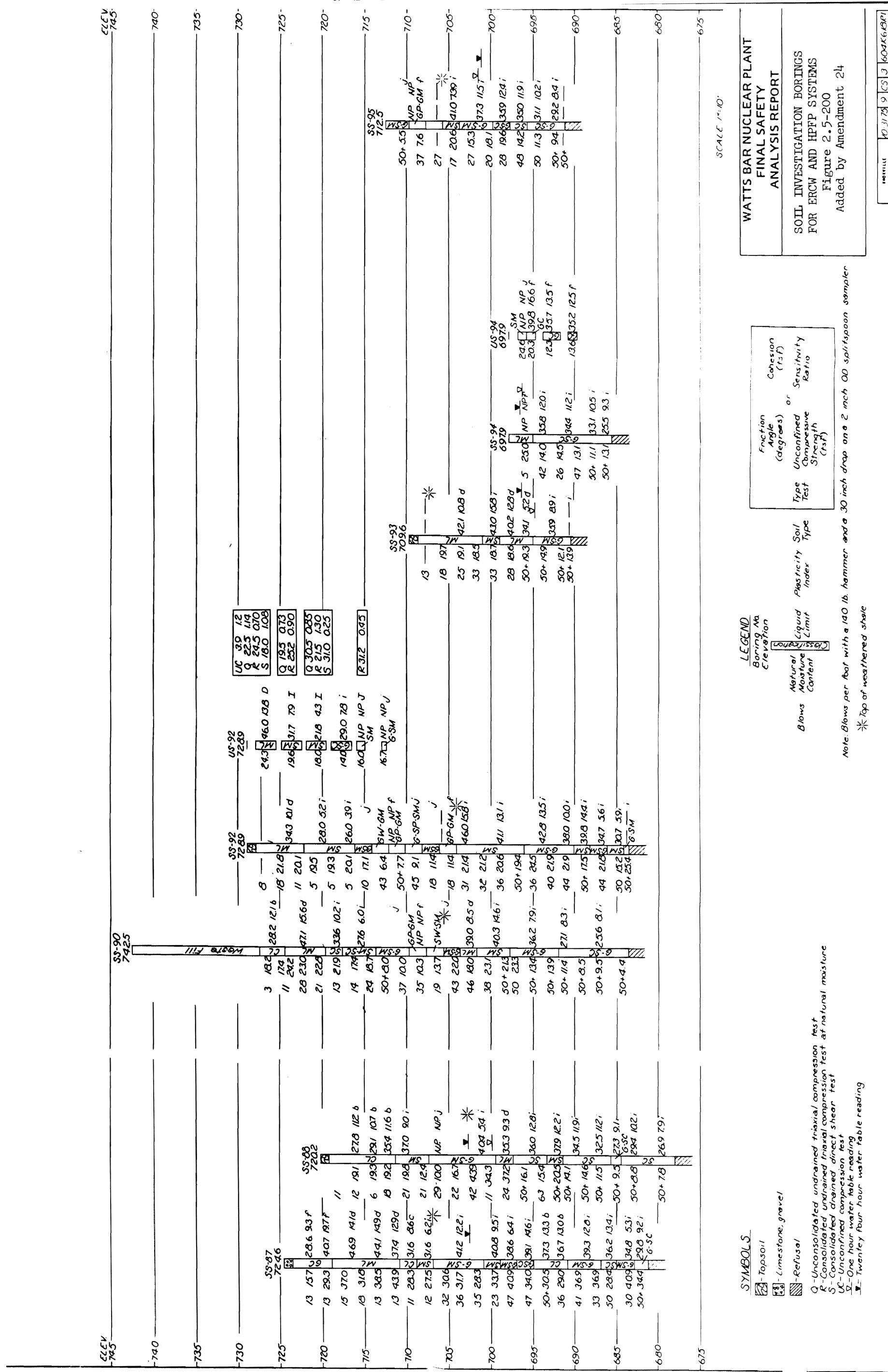
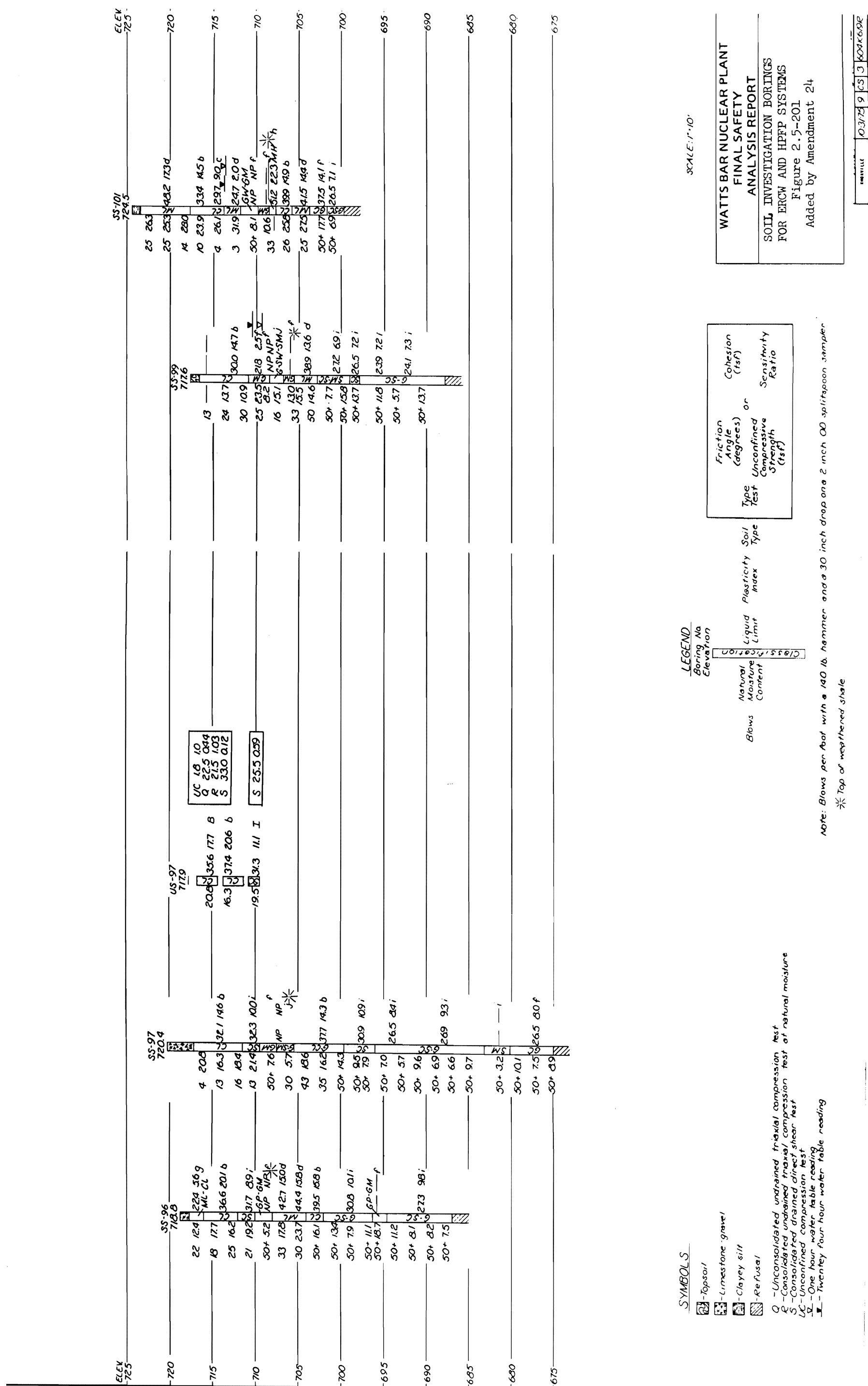
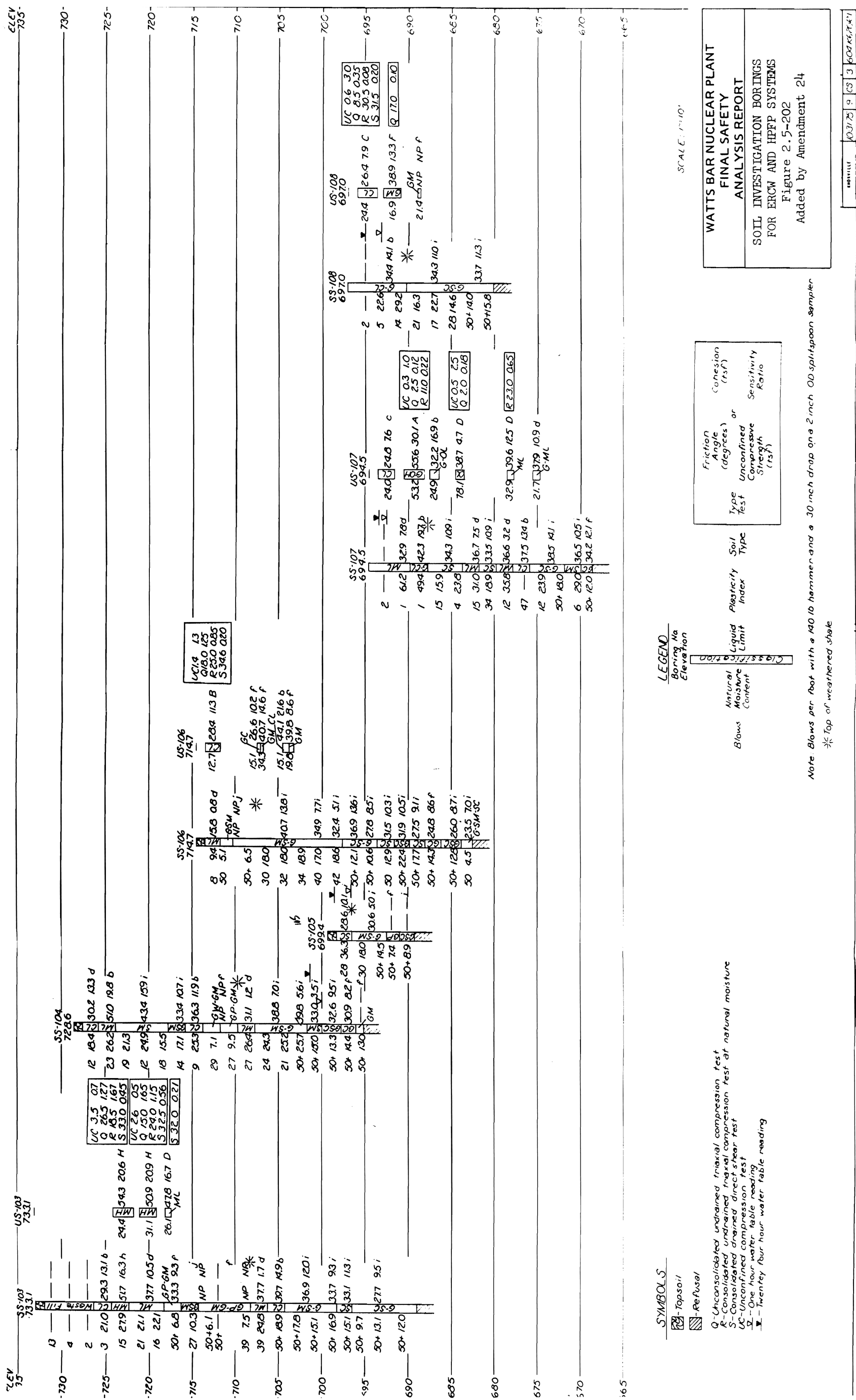
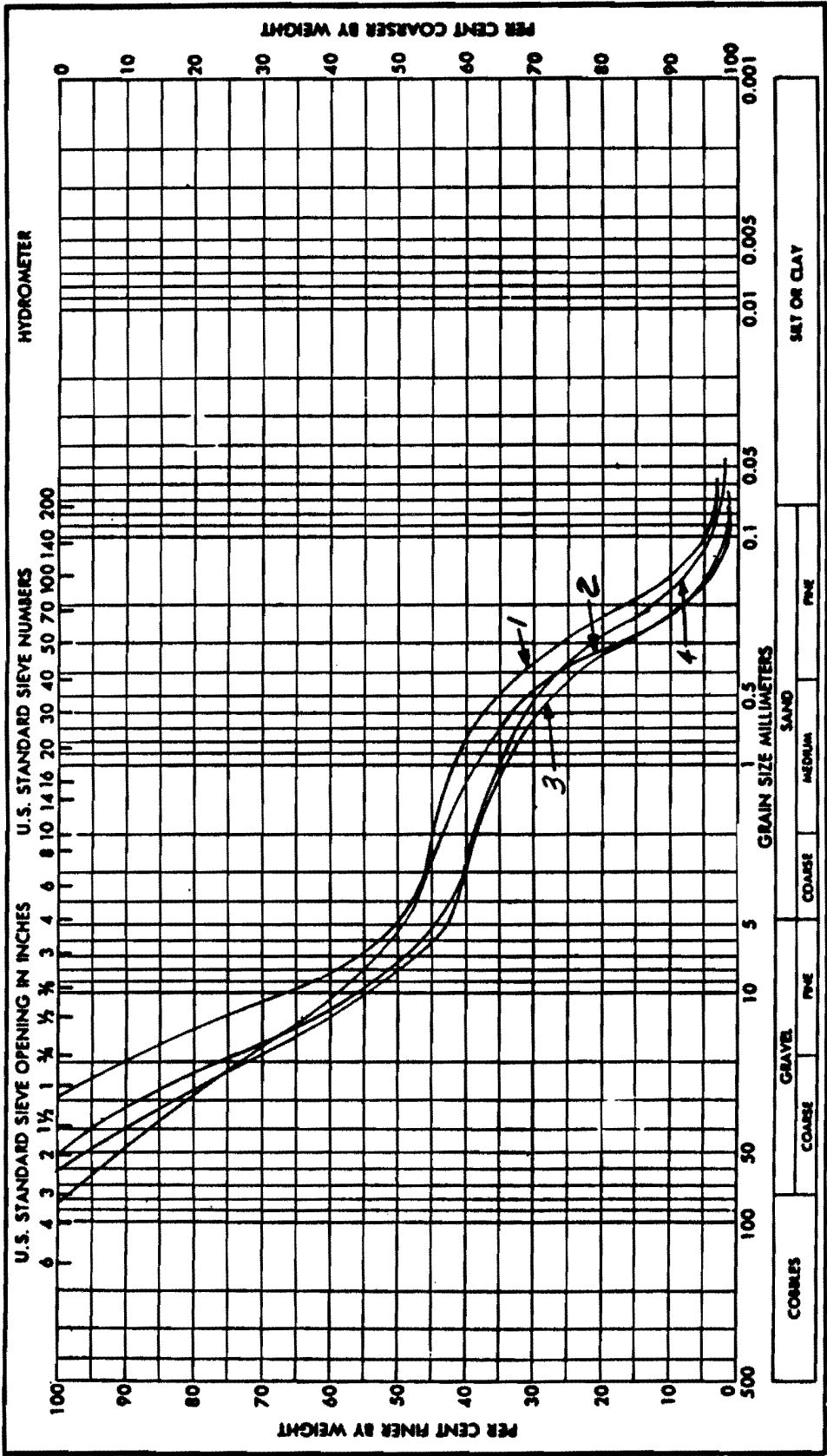


Figure 2.5-200 Soil Investigation Borings For ERCW & HPFP Systems





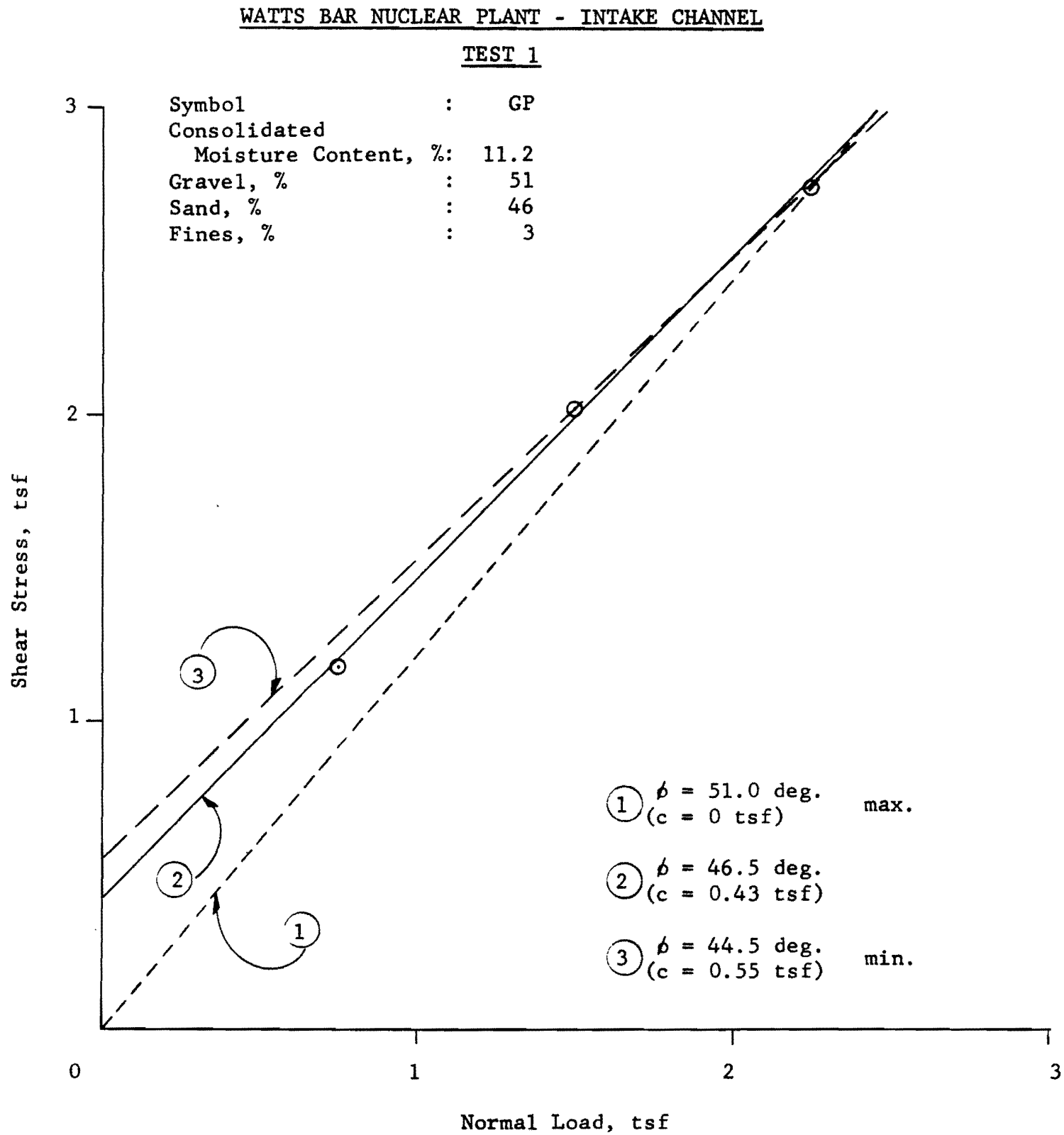


Soil Symbol	GP	Liquid Limit, %	
Moisture Content, %		Plastic Limit, %	
Specific Gravity		Plasticity Index, %	
		Shrinkage Limit, %	

Remarks:

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
INTAKE CHANNEL TRENCH
Figure 2.5-203

Figure 2.5-203 Intake Channel Trench



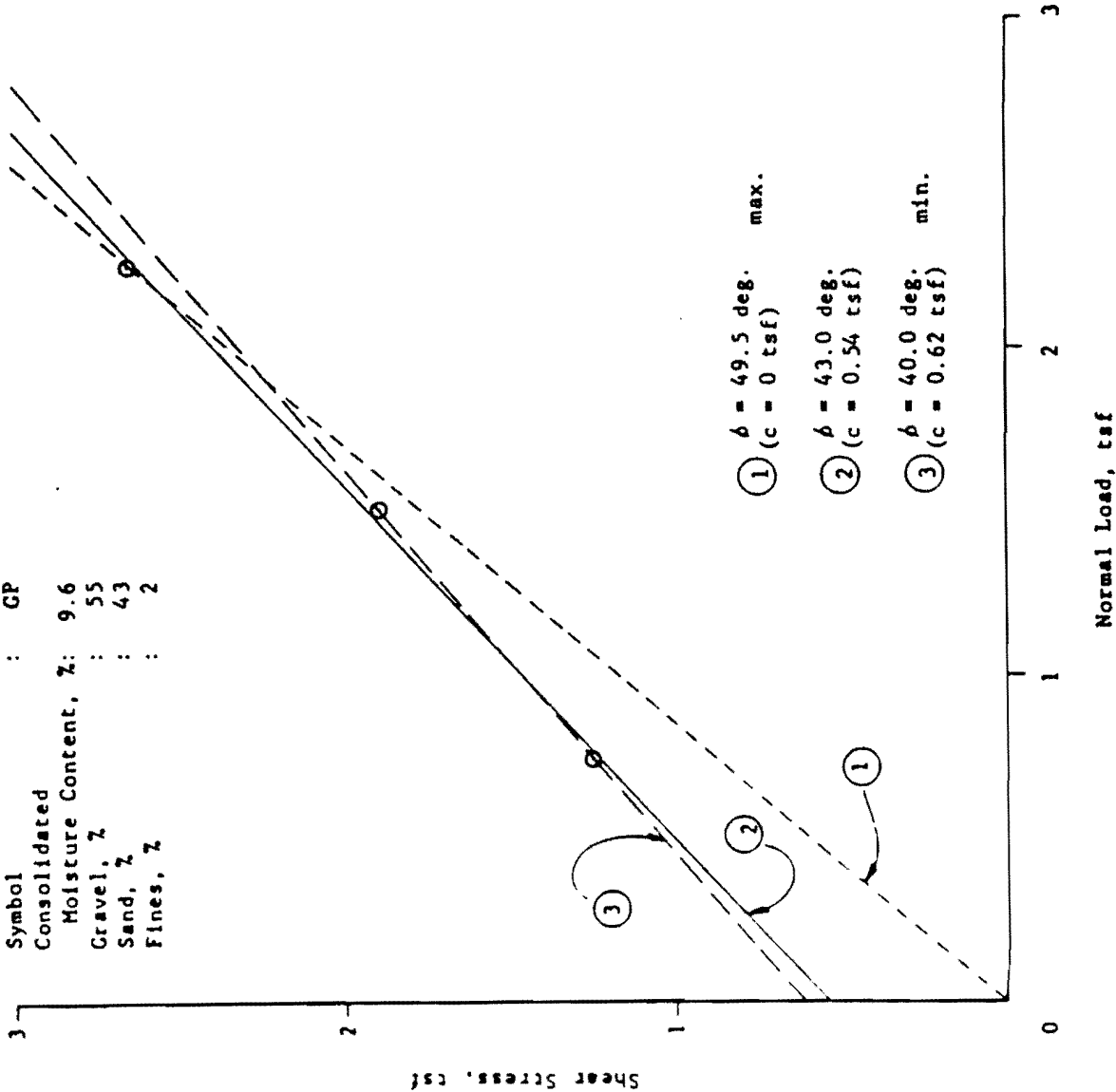
*Under an overburden pressure of 3000 psf.

Figure 2.5-204

Figure 2.5-204 Intake Channel Test 1

Normal Load (tsf)	Consolidated* Deformation (in)	Shear Stress (tsf)	Consolidated* Dry Density (psf)
0.75	0.0987	1.25	126.3
1.50	0.0987	1.89	126.3
2.25	0.0842	2.65	125.5

*Under an overburden pressure of 3000 psf.



Amendment 63

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
INTAKE CHANNEL STRENGTH EVALUATION TEST 2
Figure 2.5-205

Figure 2.5-205 Intake Channel Strength Evaluation Test 2

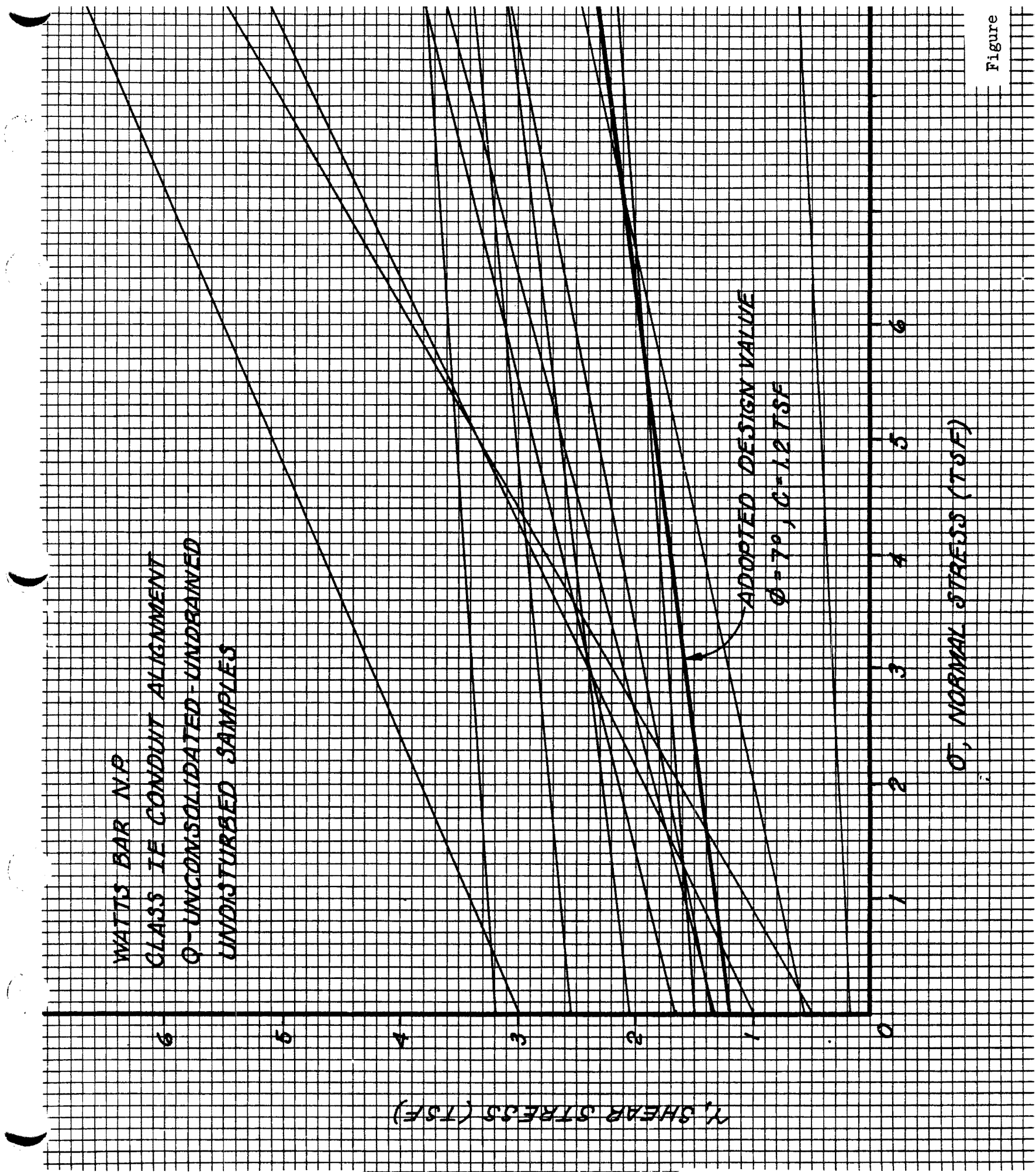


Figure 2.5-206 Class IE Conduit Alignment Q (Unconsolidated, Undrained, Undisturbed) Samples.

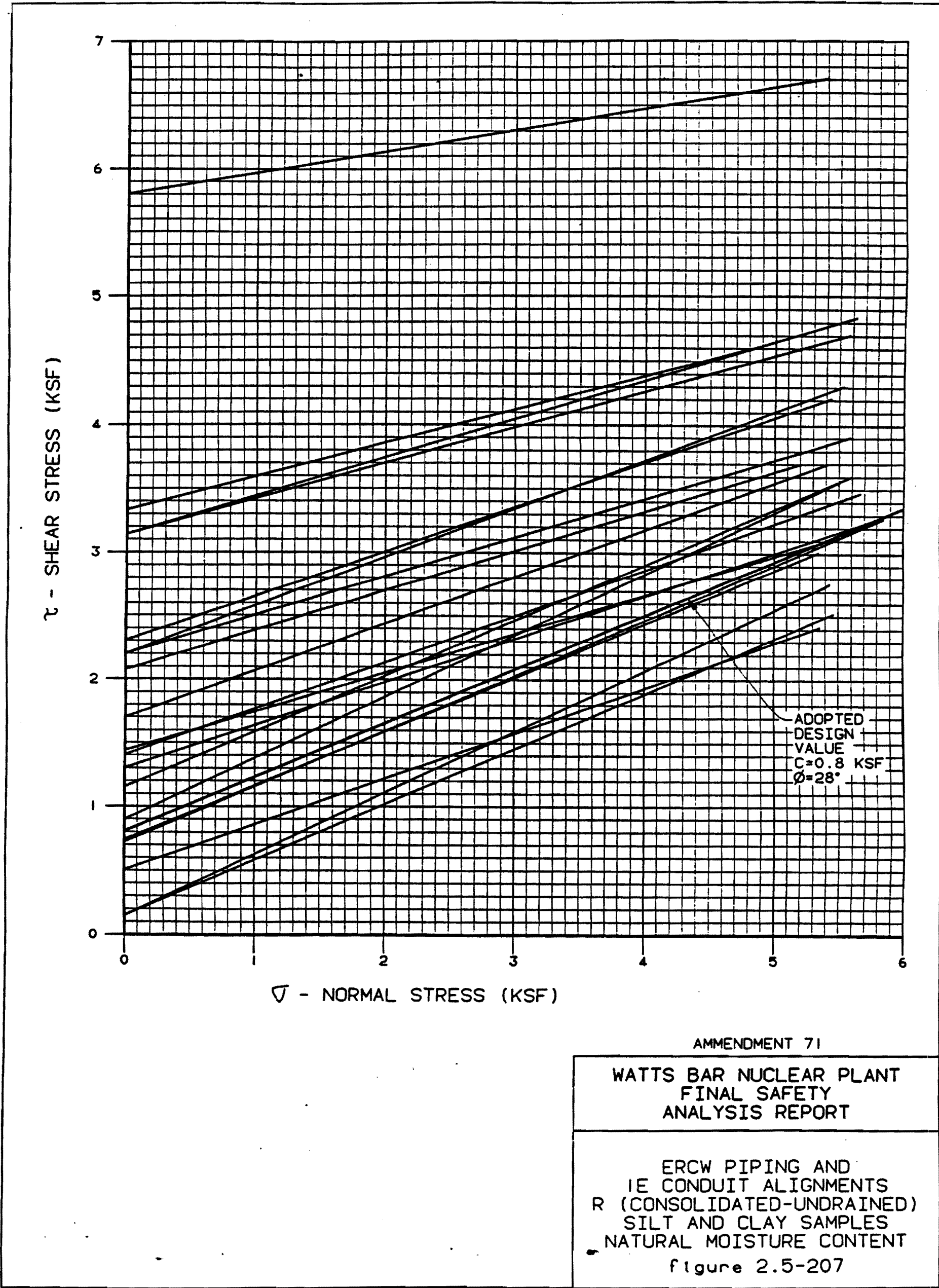


Figure 2.5-207 ERCW Piping and IE Conduit Alignments R (Consolidated - Undrained) Silt and Clay Samples Natural Moisture Content

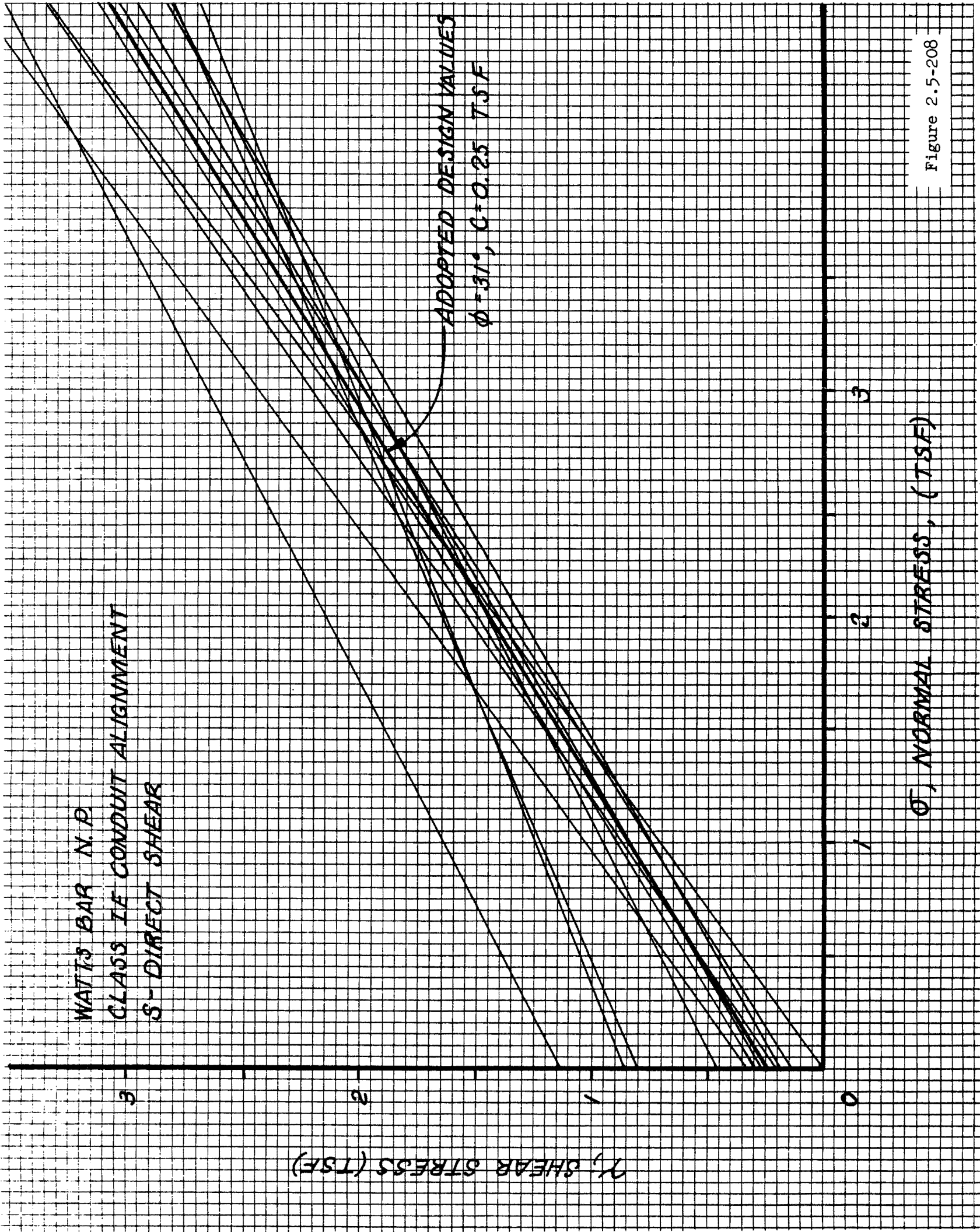
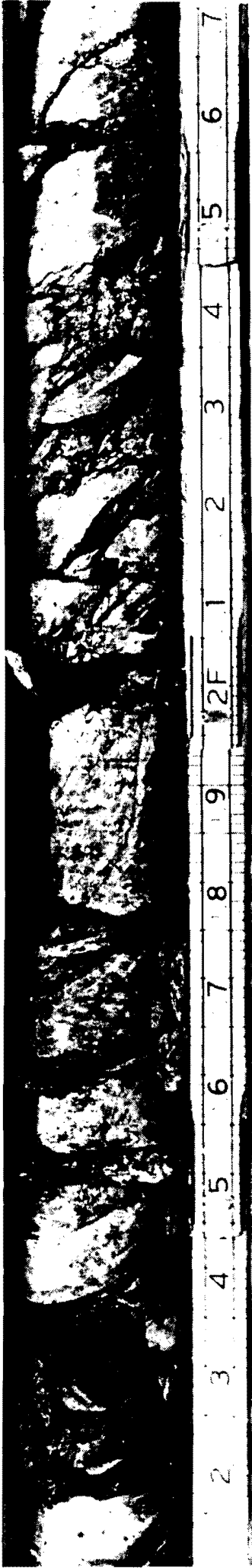
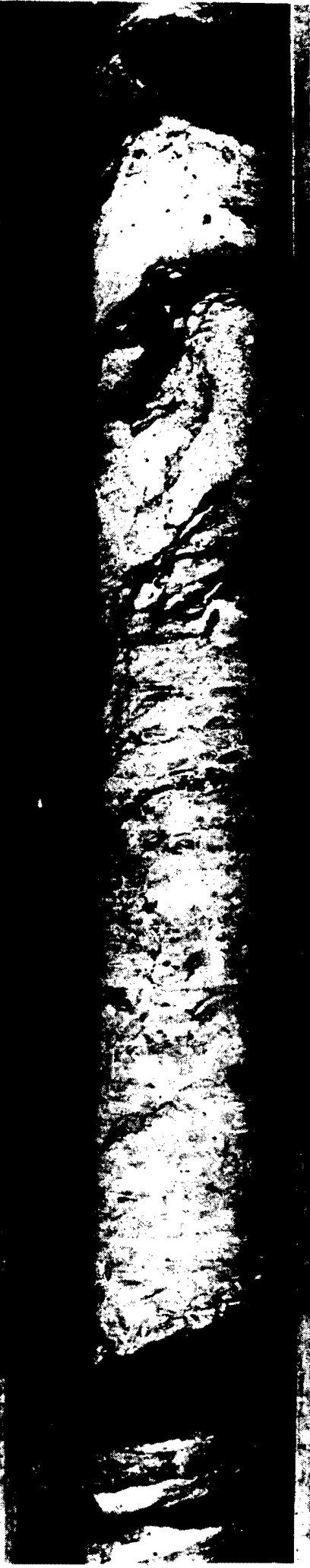
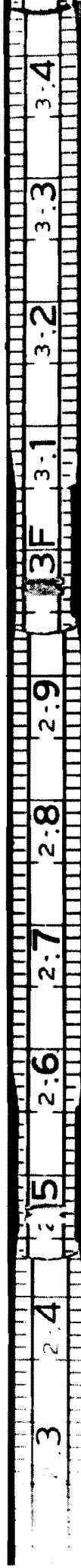


Figure 2.5-208 Class IE Conduit Alignment S-Direct Shear

TYPE 1 – SOFT SHALE



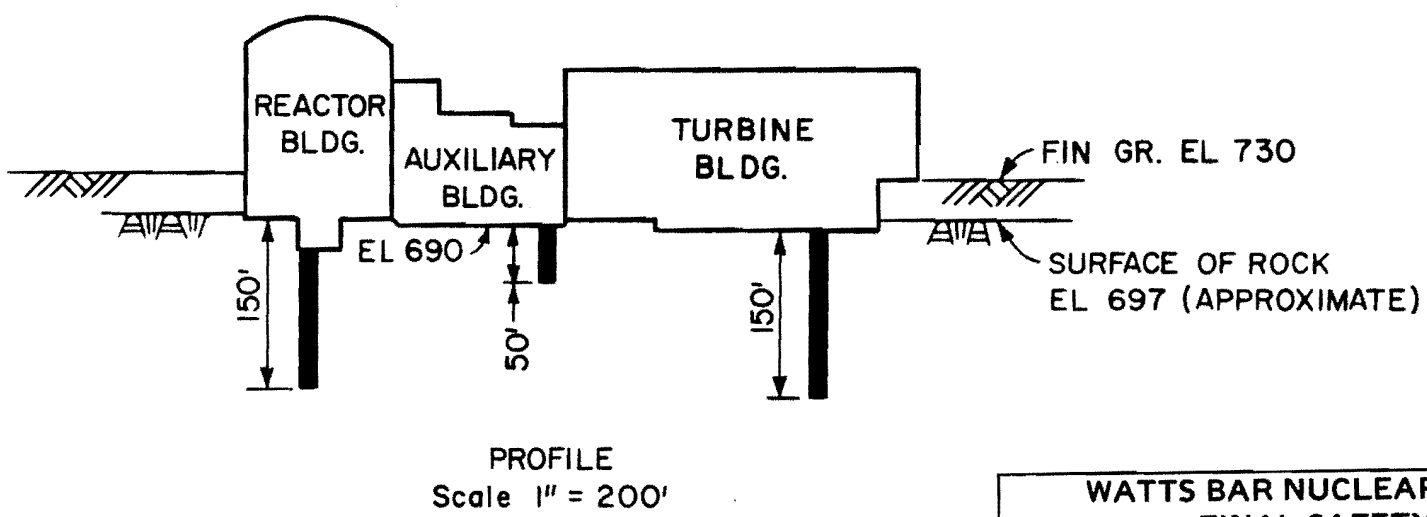
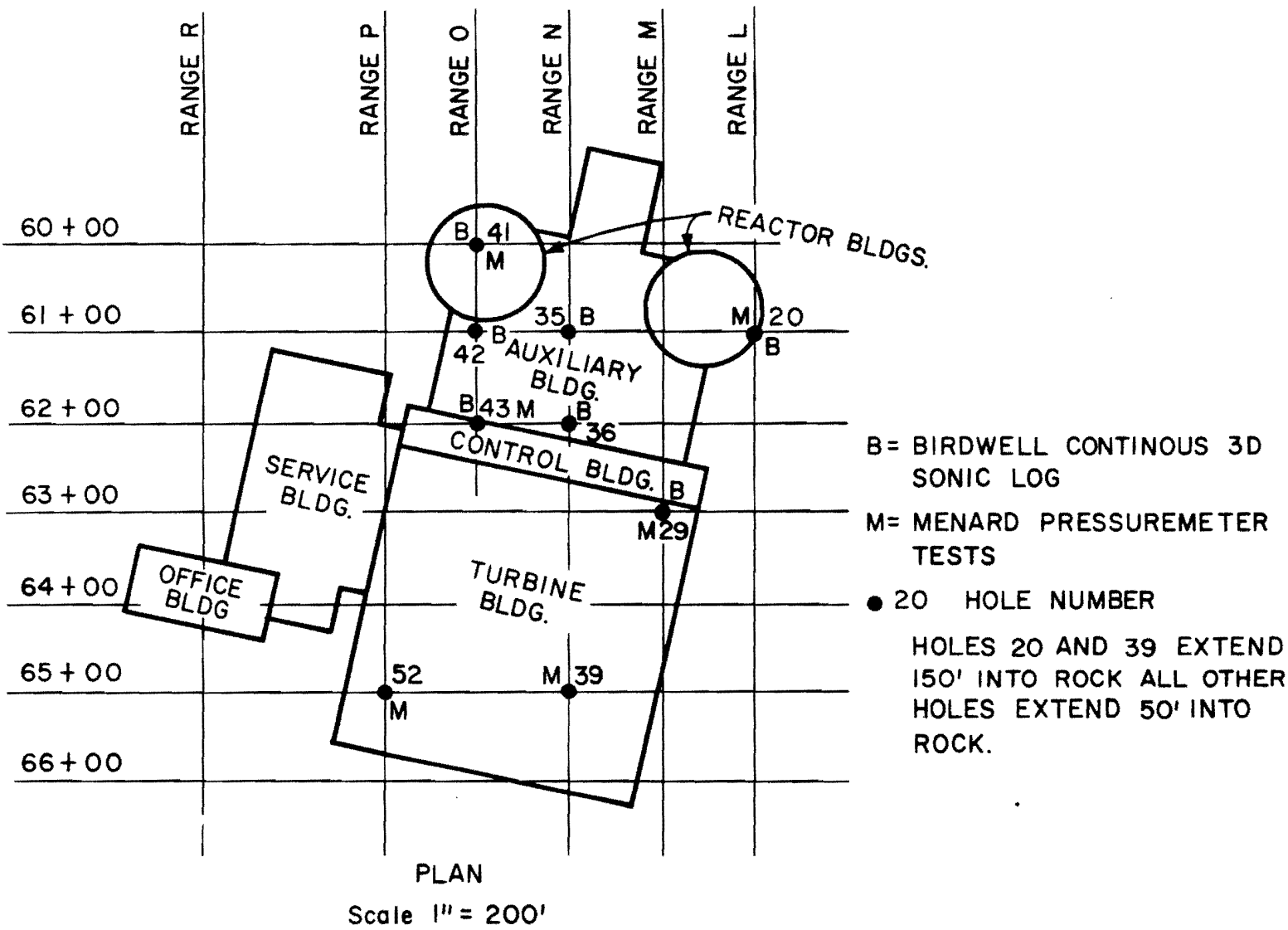
TYPE 2 – HARD SHALE



TYPE 3 – LIMESTONE

Figure 2.5-209

Figure 2.5-209 Type 1-Soft Shale Type 2-Hard Shale -Type 3 Limestone

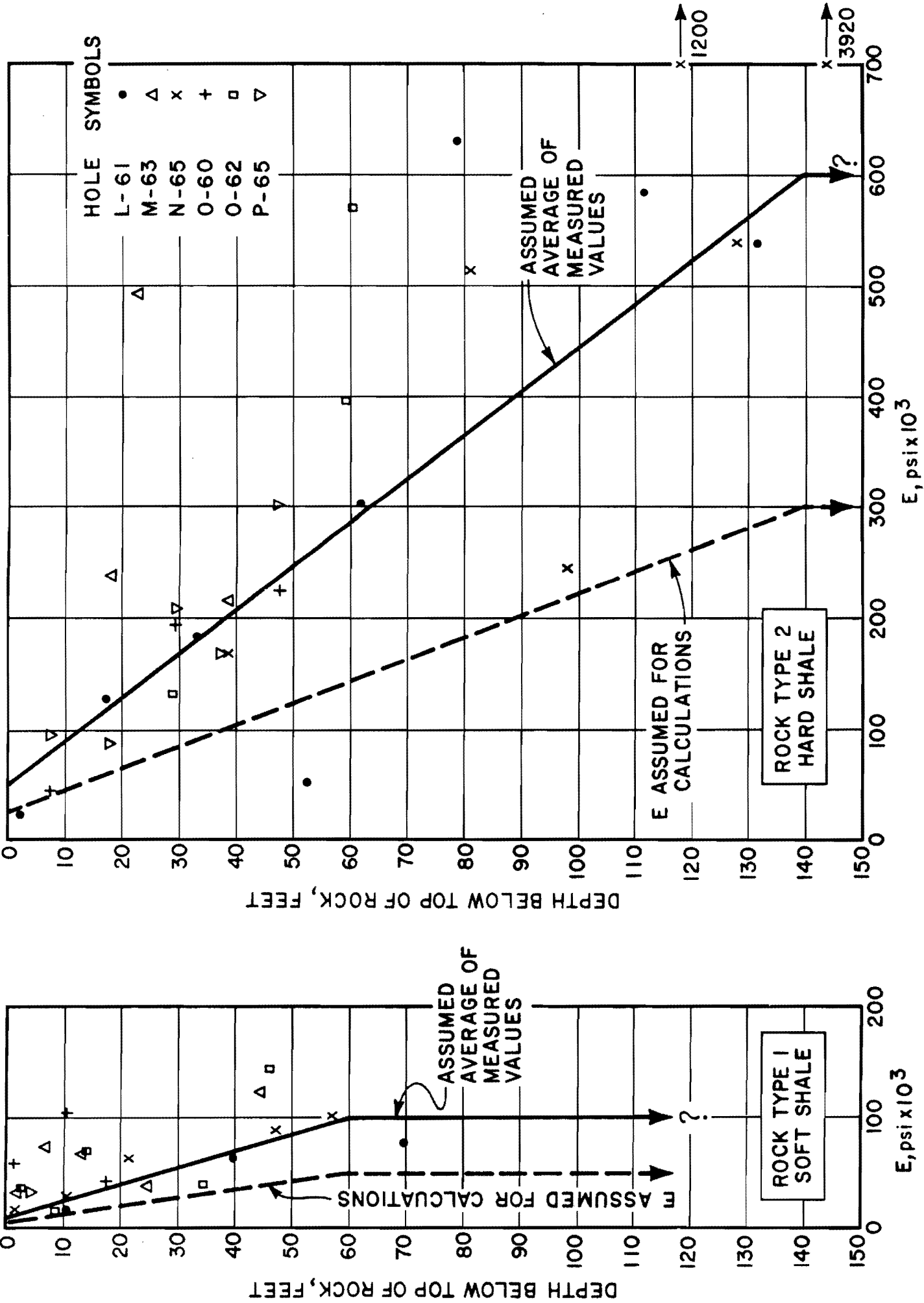


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FINAL SAFETY
ANALYSIS REPORT

LOCATION OF TEST HOLES

Figure 2.5-210

Figure 2.5-210 Location of Test Holes



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

DEFORMATION MODULI FROM MENARD
PRESSUREMETER TESTS

Figure 2.5-211

Figure 2.5-211 Deformation Moduli From Menard Pressuremeter Tests

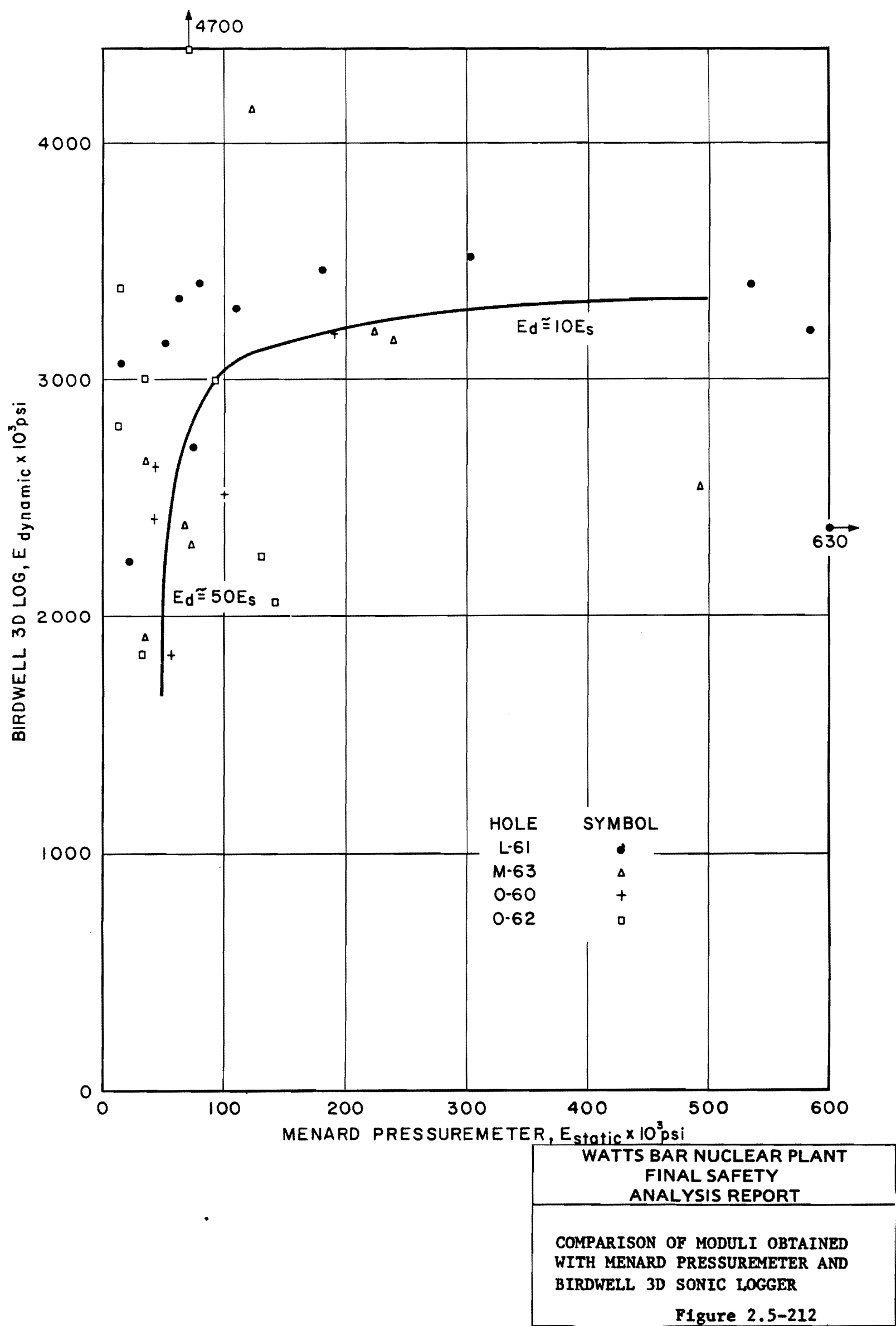
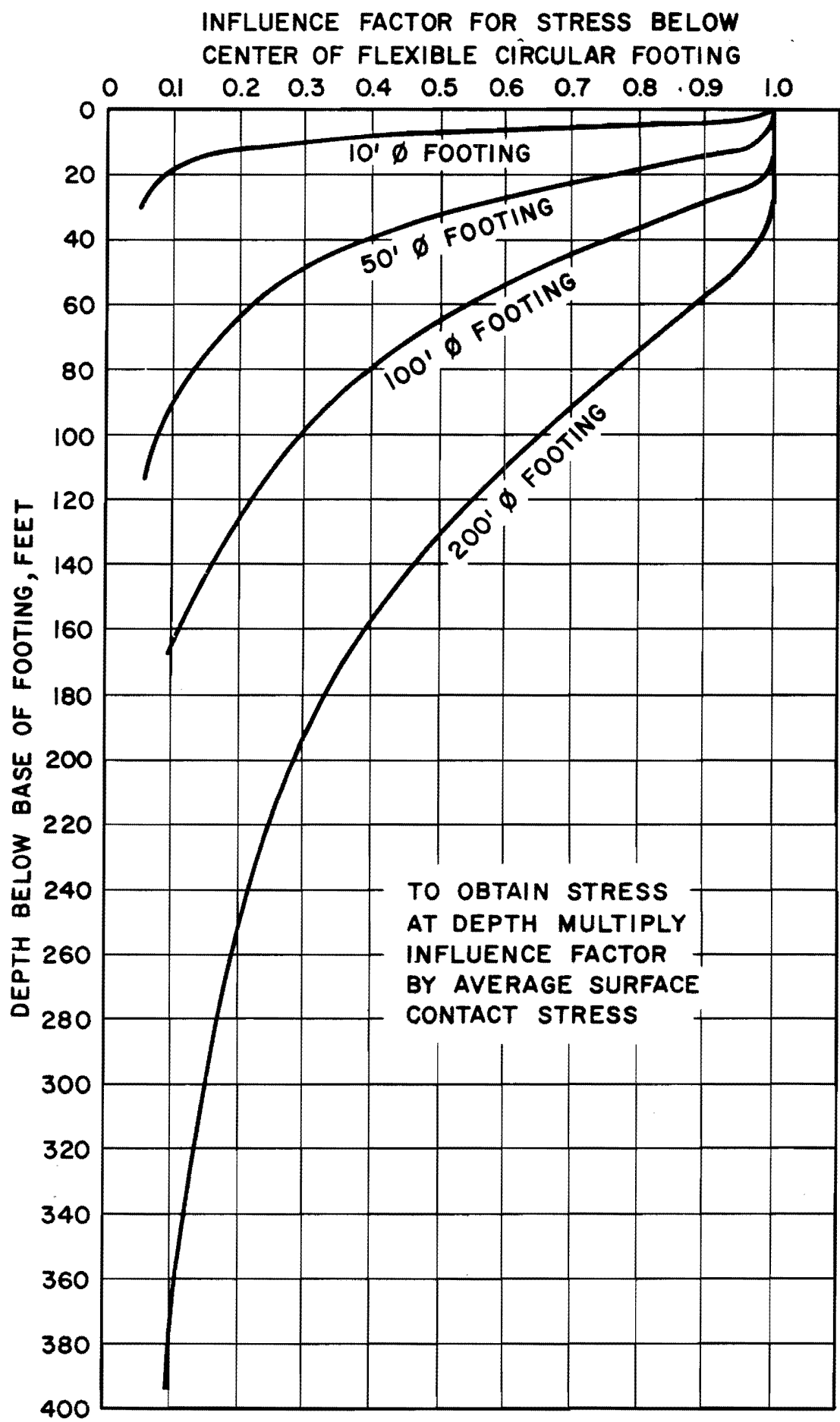


Figure 2.5-212 Comparison of Moduli Obtained With Menard Pressuremeter and Birdwell 3D Sonic Logger



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

INFLUENCE FACTORS FOR DETERMINING
STRESSES BELOW THE CENTER OF FLEX-
IBLE CIRCULAR FOOTING 10, 50, 100,
AND 200 FT. IN DIAMETER

Figure 2.5-213

Figure 2.5-213 Influence Factors For Determining Stresses Below The Center of Flexible Circular Footing 10, 50, 100, and 200 Ft. in Diameter

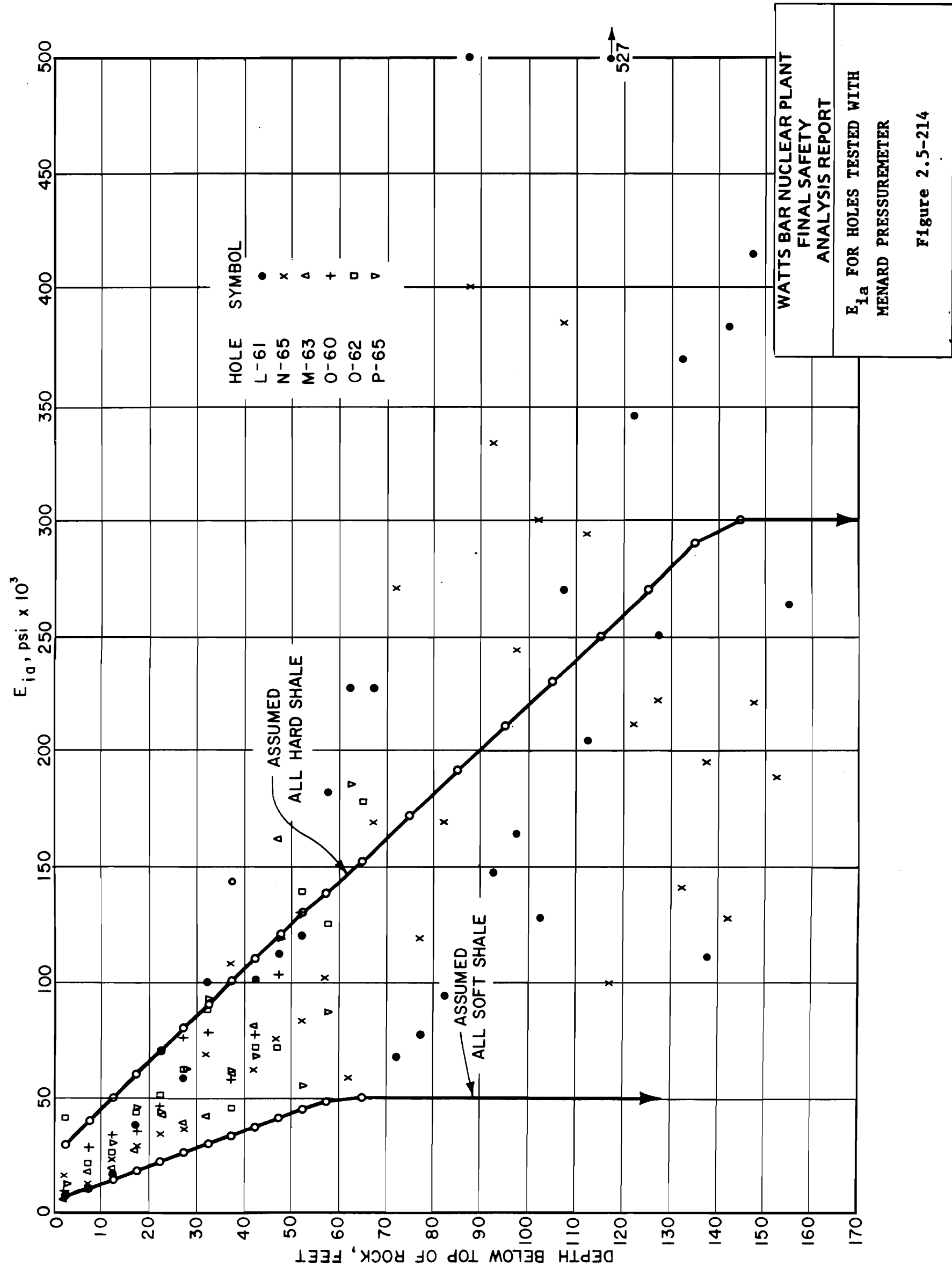


Figure 2.5-214 E_{ia} For Holes Tested With Menard Pressuremeter

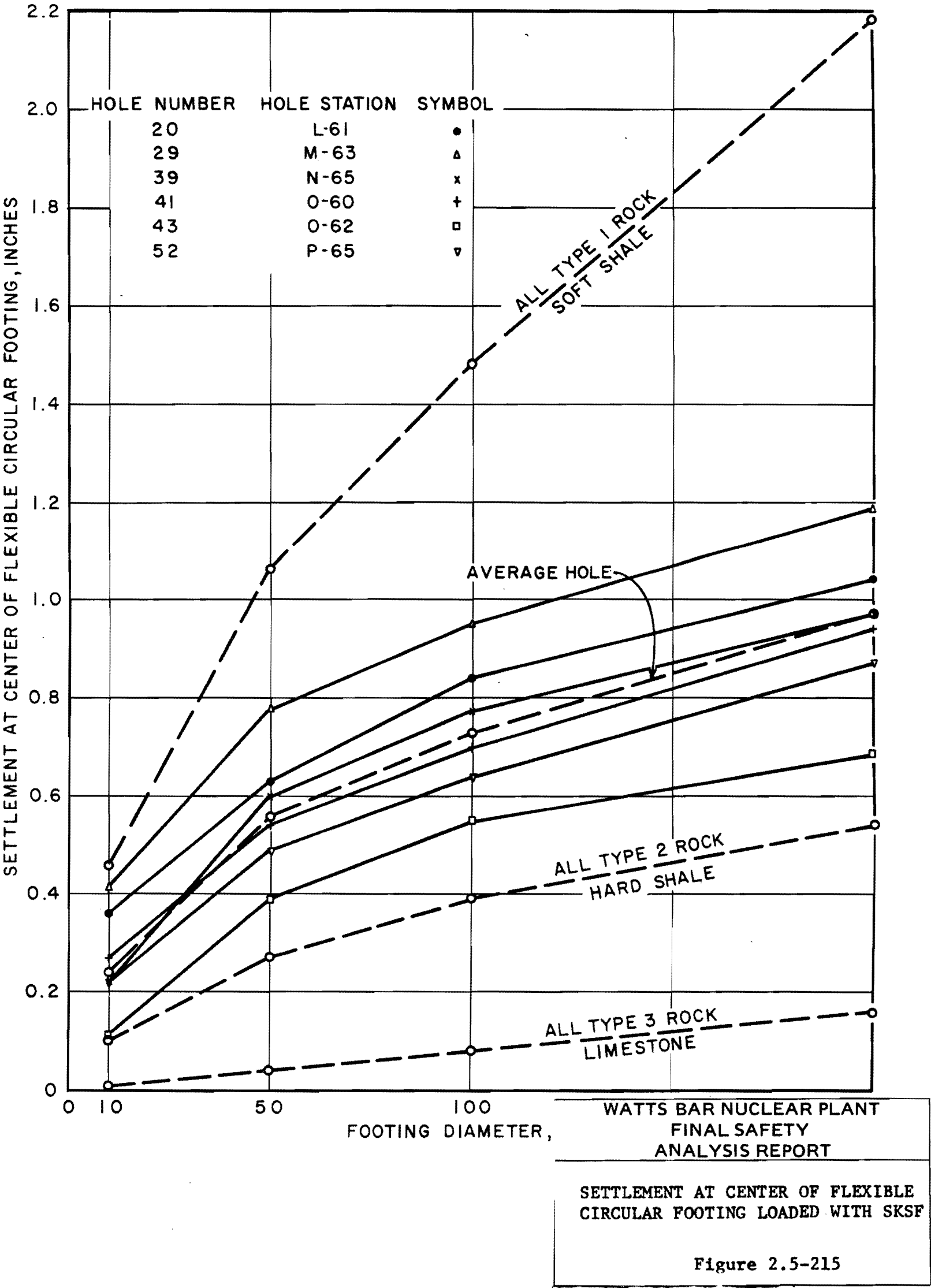
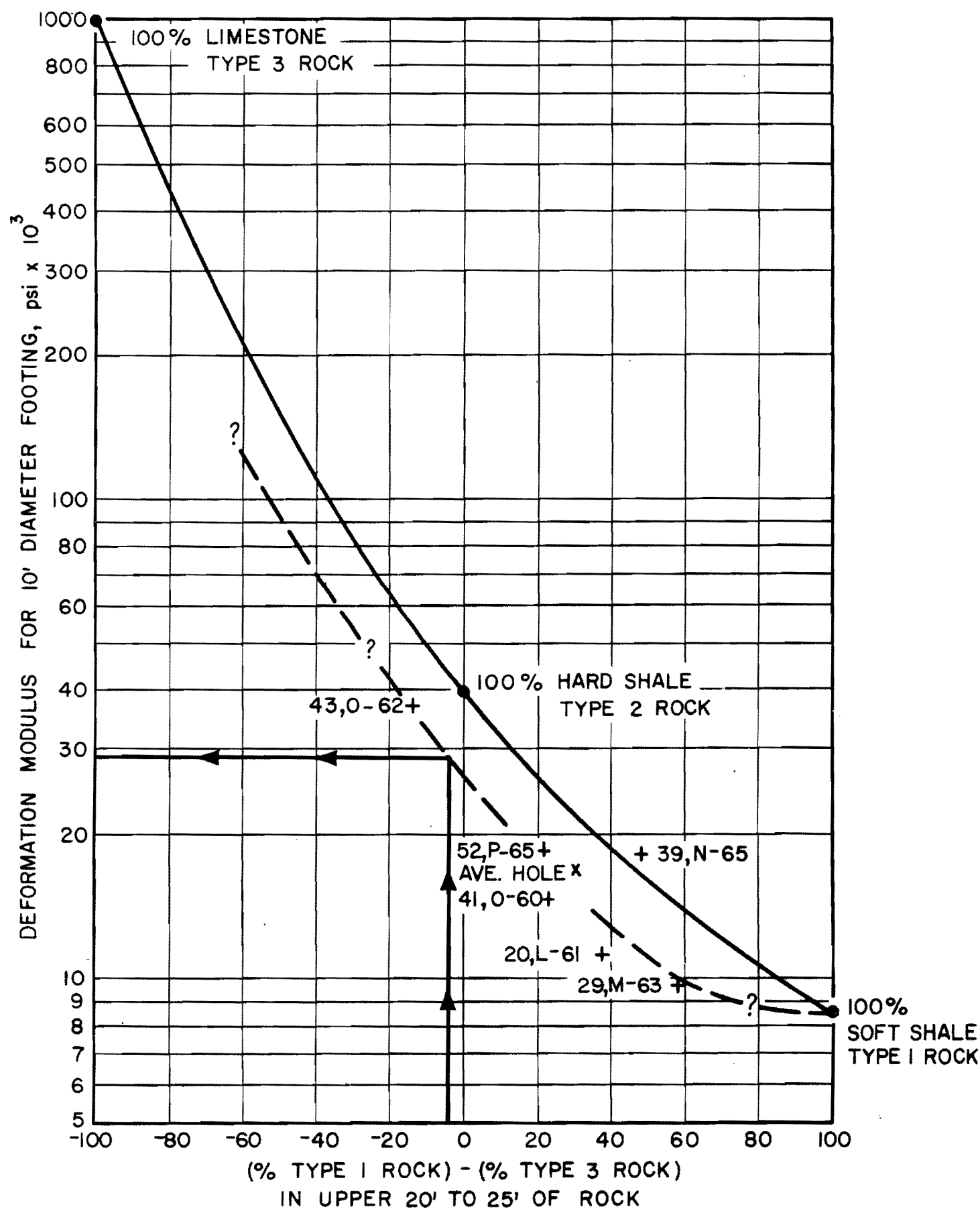


Figure 2.5-215 Settlement at Center of Flexible Circular Footing Loaded With SKSF



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FINAL SAFETY
ANALYSIS REPORT

CORRELATION USED TO ESTIMATE
AVERAGE MODULI FOR HOLES WHERE
DETAILED CALCULATIONS WERE NOT
MADE

Figure 2.5-216

Figure 2.5-216 Correlation Used To Estimate Average Moduli For Holes Where Detailed Calculations Were Not Made.

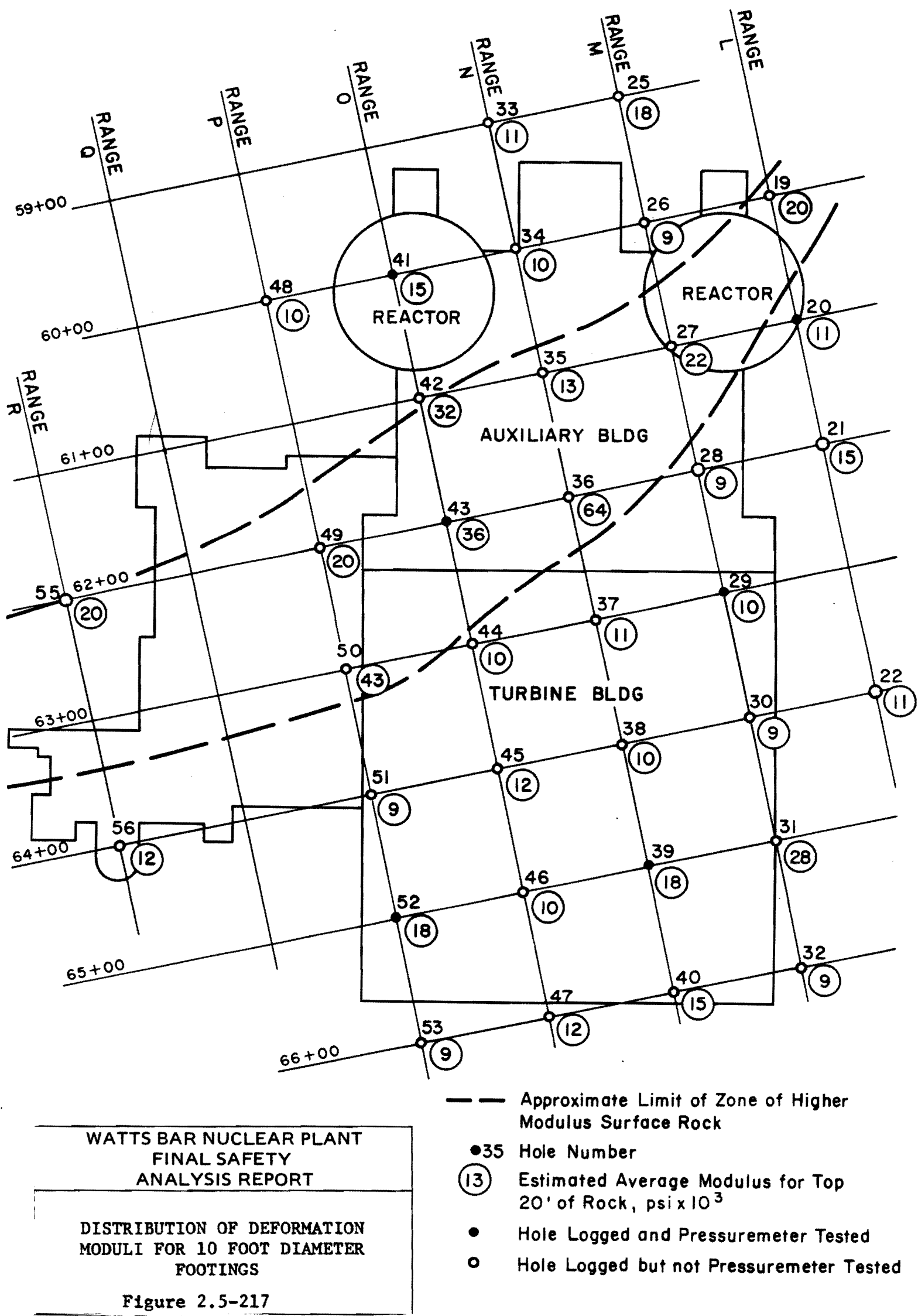
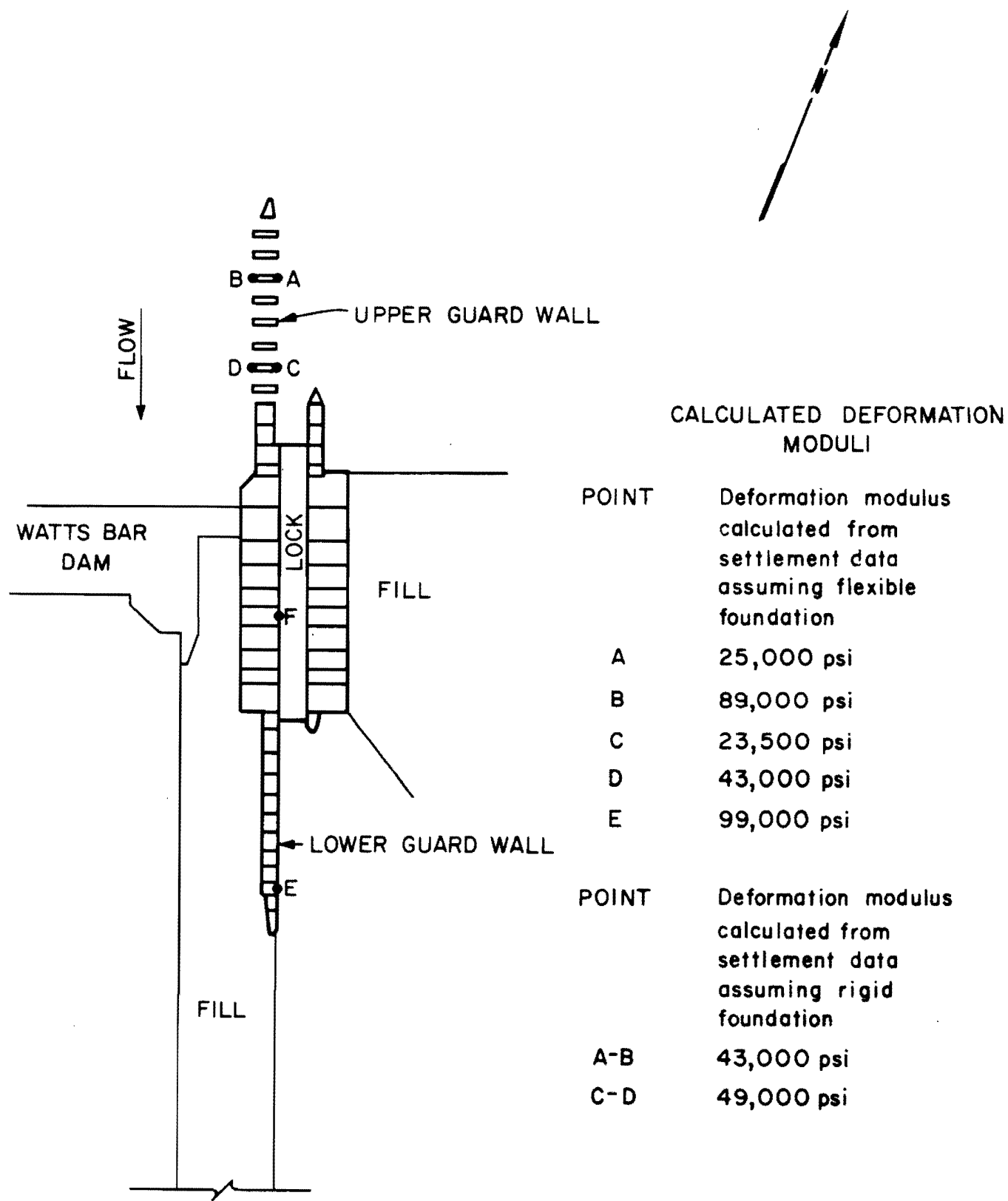


Figure 2.5-217 Distribution of Deformation Moduli For 10 Foot Diameter Footings

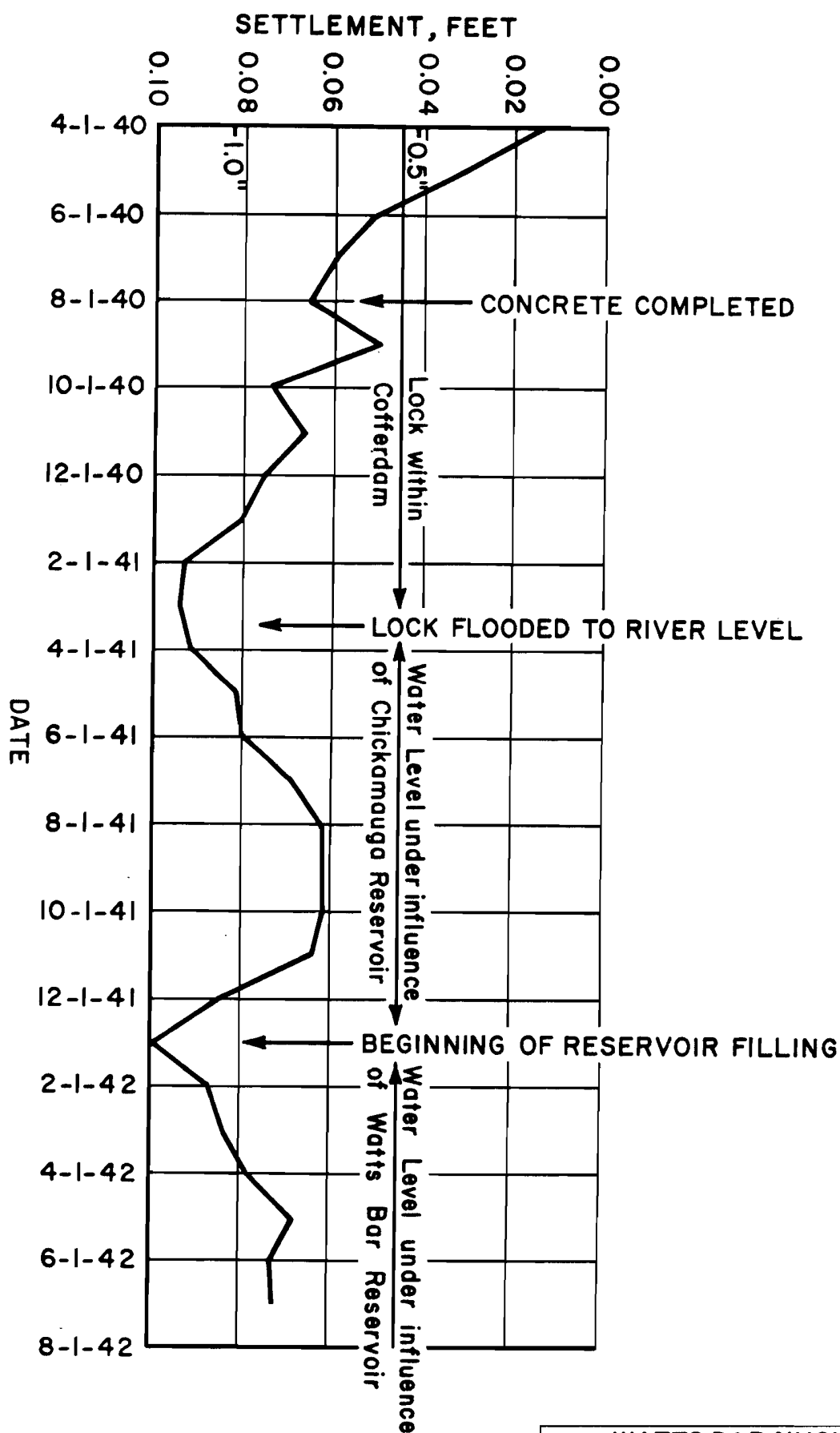


WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SIMPLIFIED PLAN OF LOCK FOUNDATION
SHOWING LOCATION OF MODULUS CALCULATIONS

Figure 2.5-218

Figure 2.5-218 Simplified Plan of Lock foundation Showing Location of Modulus Calculations



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
SETTLEMENT OF FACE OF BLOCK R-10 (Point F, fig. 16)
Figure 2.5-219

Figure 2.5-219 Settlement of Face of Block R-10 (Point F, fig. 16)

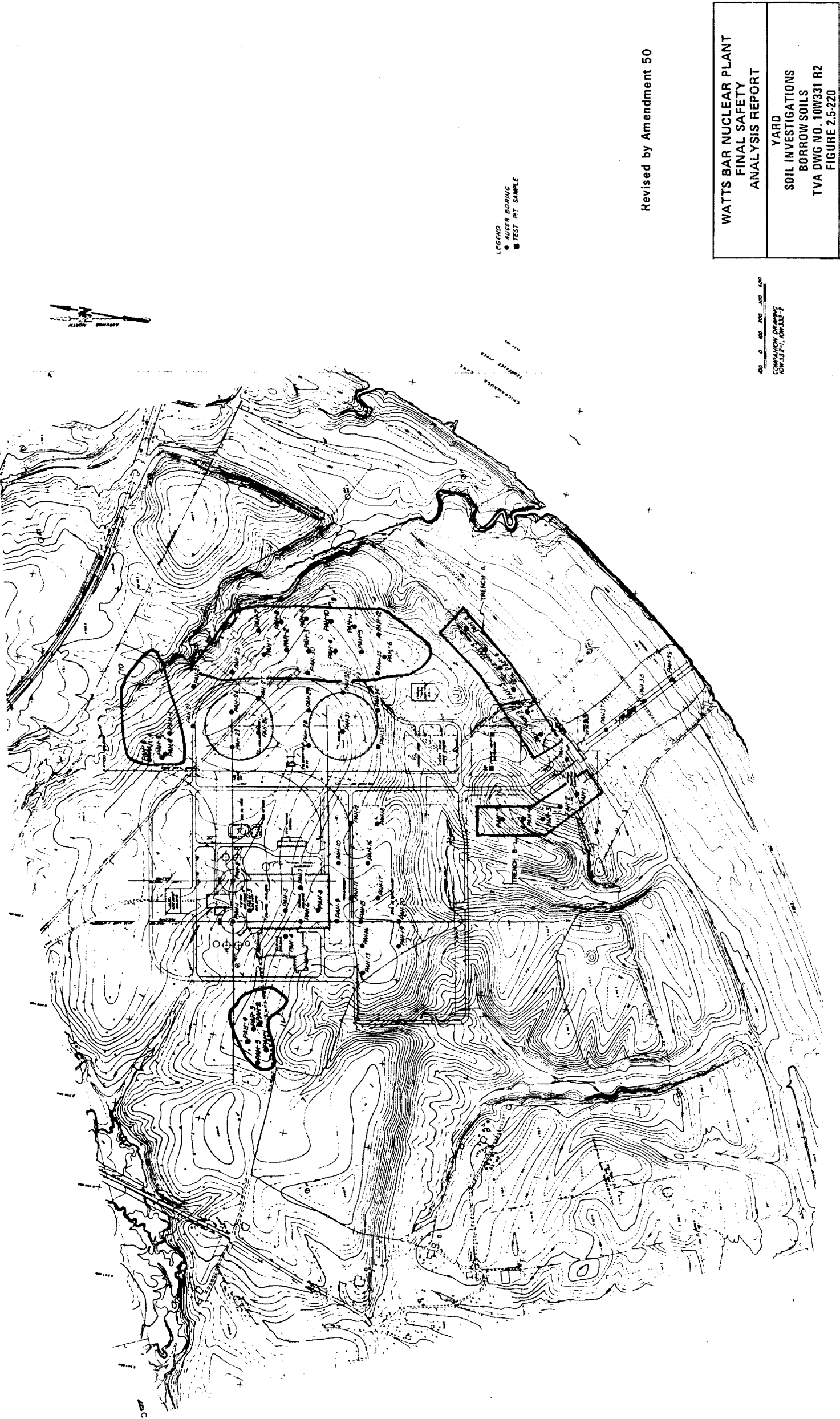


Figure 2.5-220 Yard Soil Investigations Borrow Soils

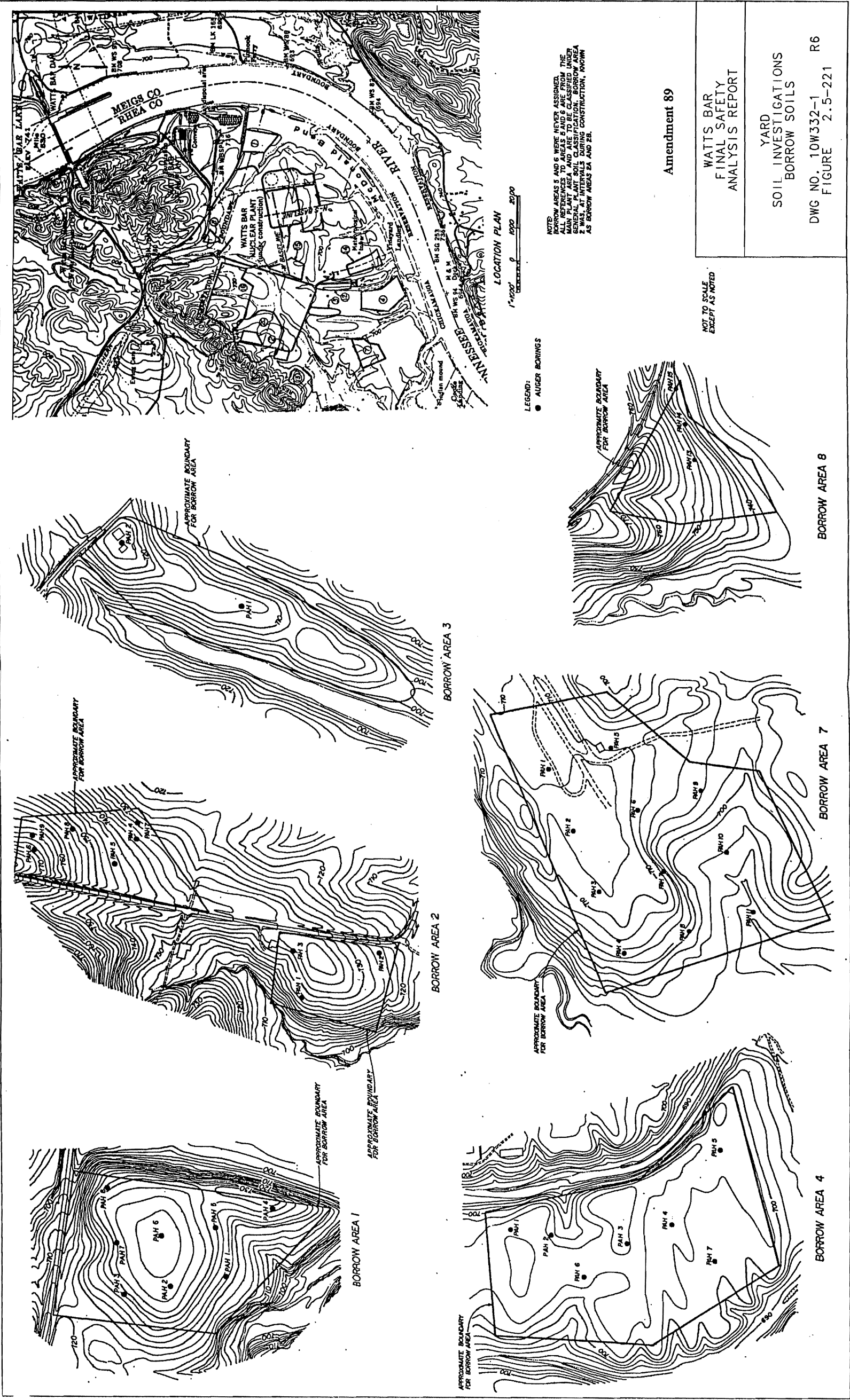
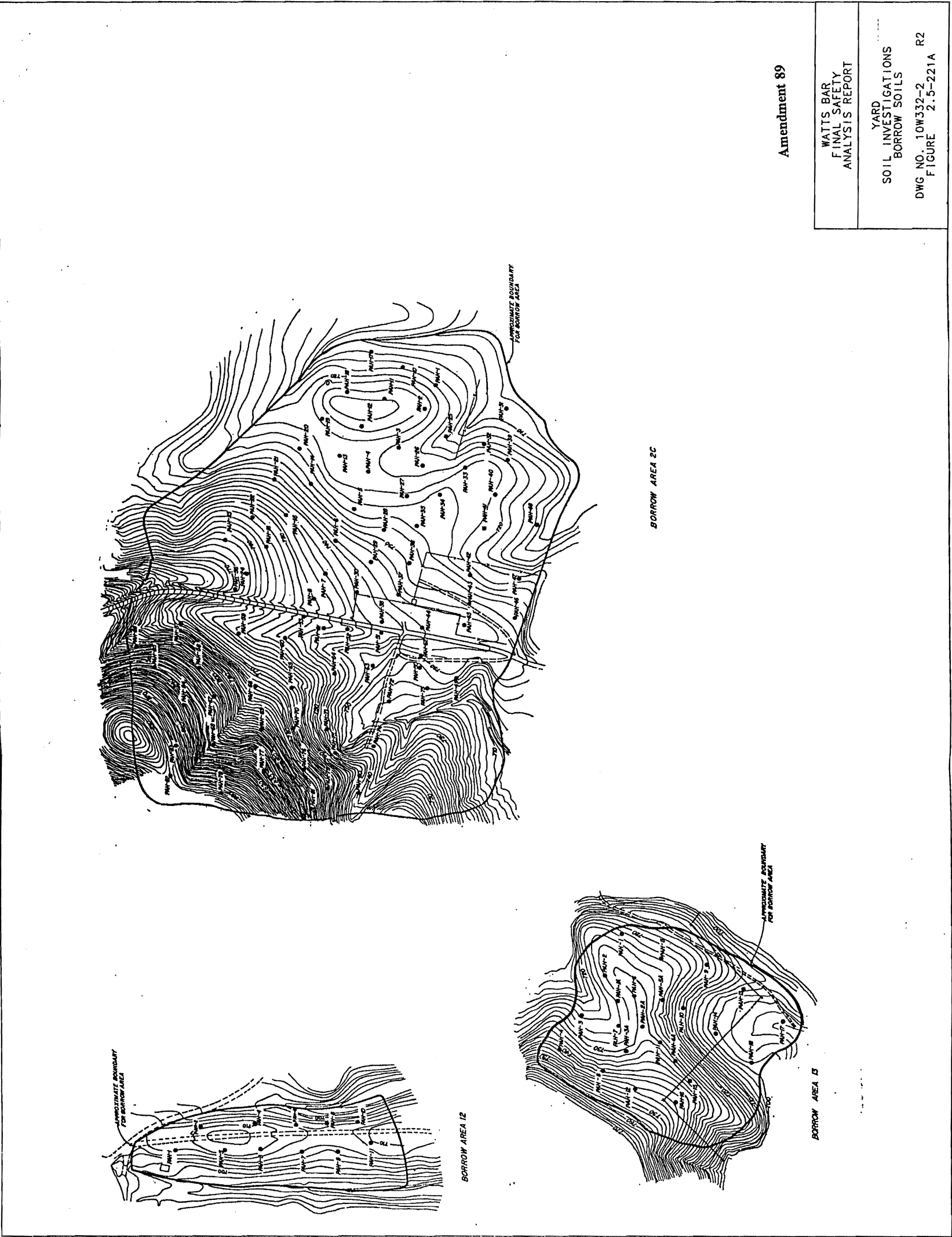


Figure 2.5-221 Yard Soil Investigations Borrow Soils



PROPOSED WATTS BAR YARD
FINAL SAFETY ANALYSIS REPORT
FIGURE 2.5-221A
DWG NO. 10W332-2 R2

Figure 2.5-221a Yard Soil Investigations Borrow Soils

Figure 2.5-222 Borrow Investigation (Actual Figure Located in Oversized Figures File)

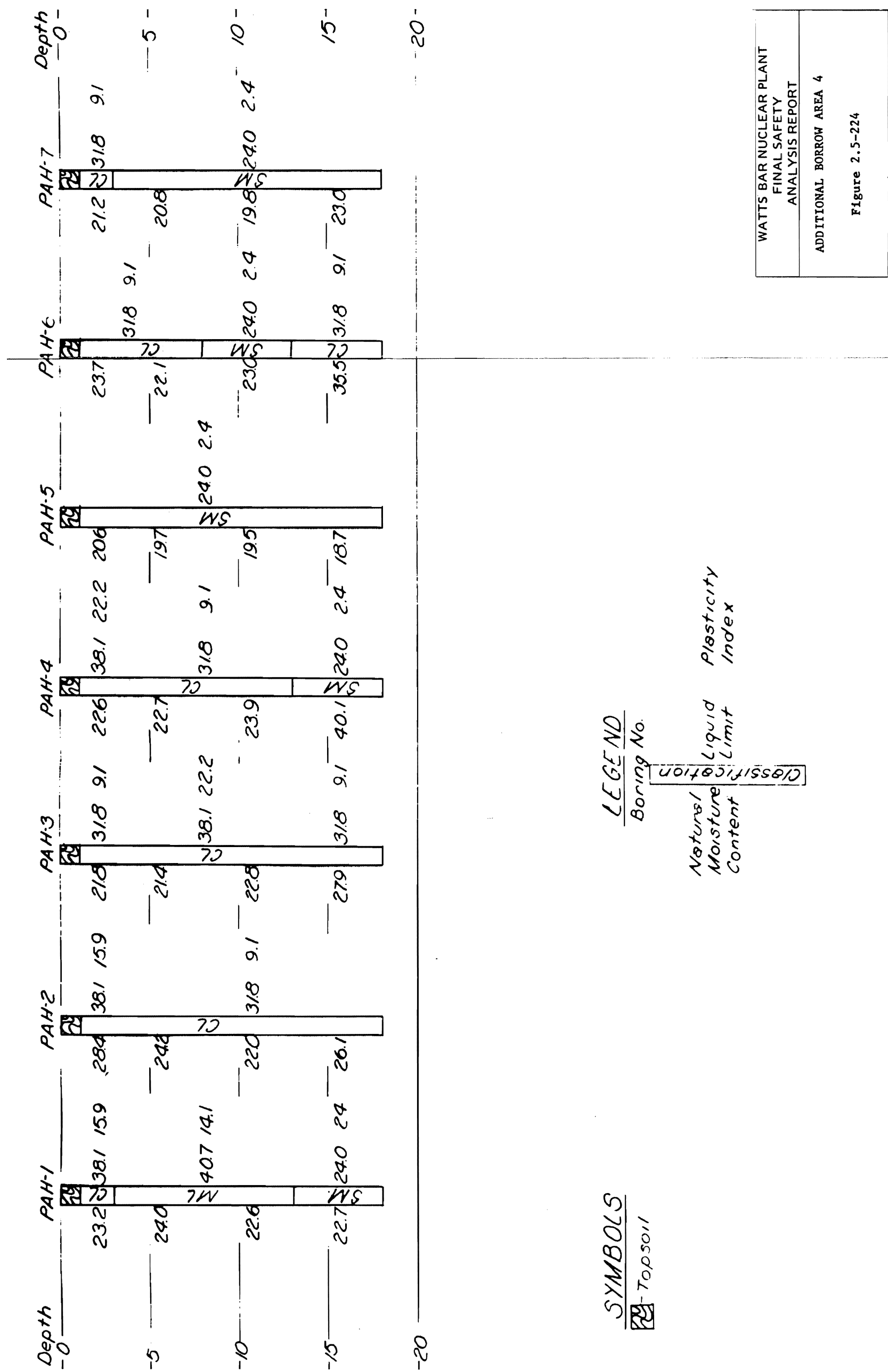
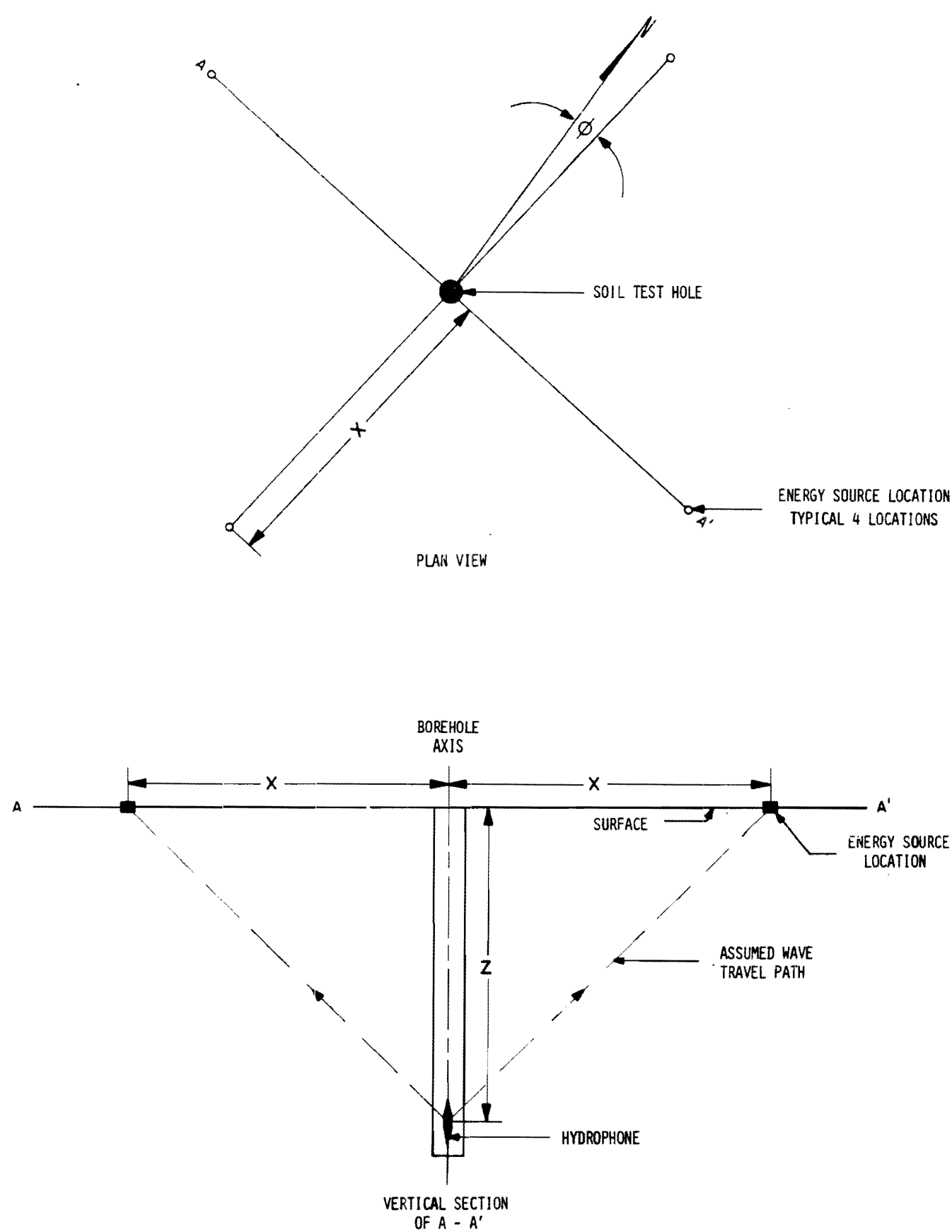


Figure 2.5-224 Additional Borrow Area 4

Figure 2.5-225 Main Plant Excavation & Backfill Category I Structures

Figure 2.5-226 Main Plant Excavation & Backfill Category I Structures

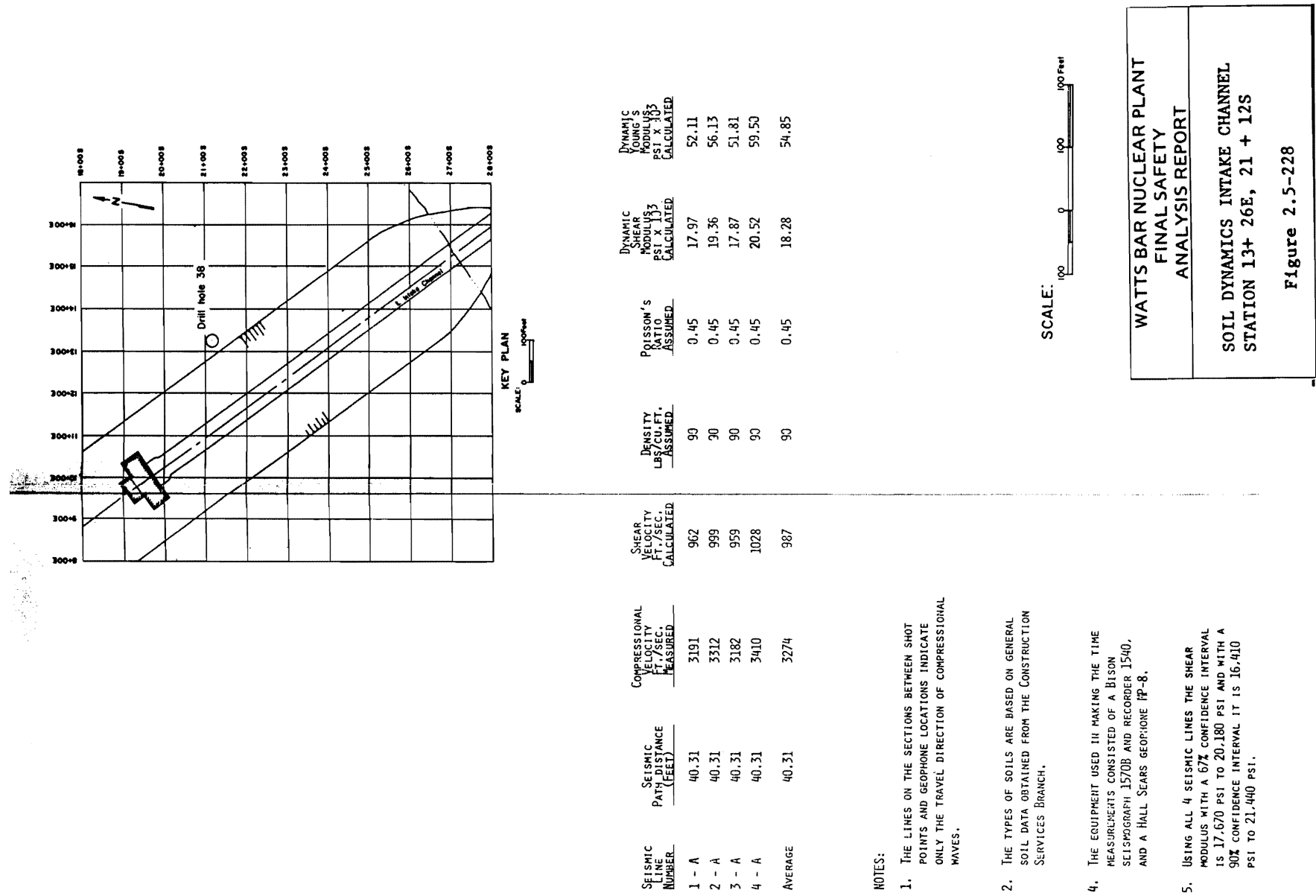
Figure 2.5-226a Excavation and Backfill Category I Structures

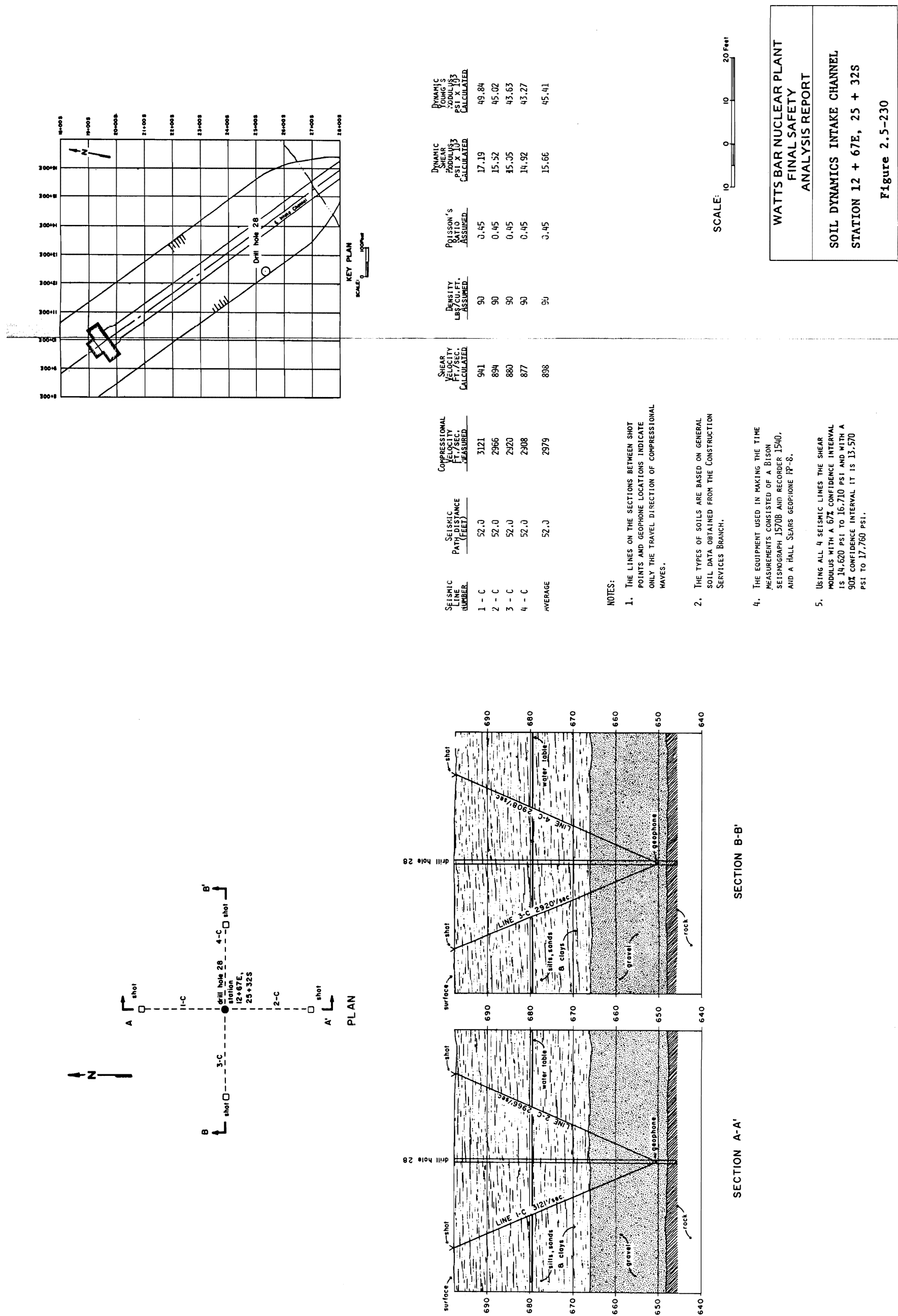


- NOTES:
1. THIS DRAWING SHOWS A TYPICAL PLAN VIEW AND VERTICAL SECTION VIEW FOR ALL IN-SITU SOIL DYNAMIC MEASUREMENTS.
 2. FOR DRILL HOLE LOCATIONS SEE FIGURE 2.5-185
 3. COMPRESSIONAL AND SHEAR WAVES WERE EITHER OBTAINED BY STRIKING A STEEL PLATE WITH A SLEDGEHAMMER OR BY EXPLODING TWO FEET OF PRIMACORD ONE FOOT BELOW GROUND.
 4. FOR EACH BOREHOLE EITHER EXPLOSIVES OR SLEDGEHAMMER WAS USED AS THE ENERGY SOURCE. A SINGLE TYPE OF SOURCE WAS USED FOR EACH HOLE, AS CONDITIONS REQUIRED.
 5. WHERE POSSIBLE, ENERGY SOURCE LOCATIONS ARE PLACED IN A 90° ARRAY AT HORIZONTAL DISTANCE X FROM BOREHOLE AND ORIENTED NORTH, SOUTH, EAST, AND WEST. OTHERWISE, THE WHOLE ARRAY MAY BE ROTATED ABOUT THE BOREHOLE AXIS BY THE ANGLE ϕ ABOVE.

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
TYPICAL IN-SITU SOIL DYNAMICS MEASUREMENT LAYOUT & SECTION Figure 2.5-227

Figure 2.5-227 Typical In-Situ Soil Dynamics Measurements Layout & Section





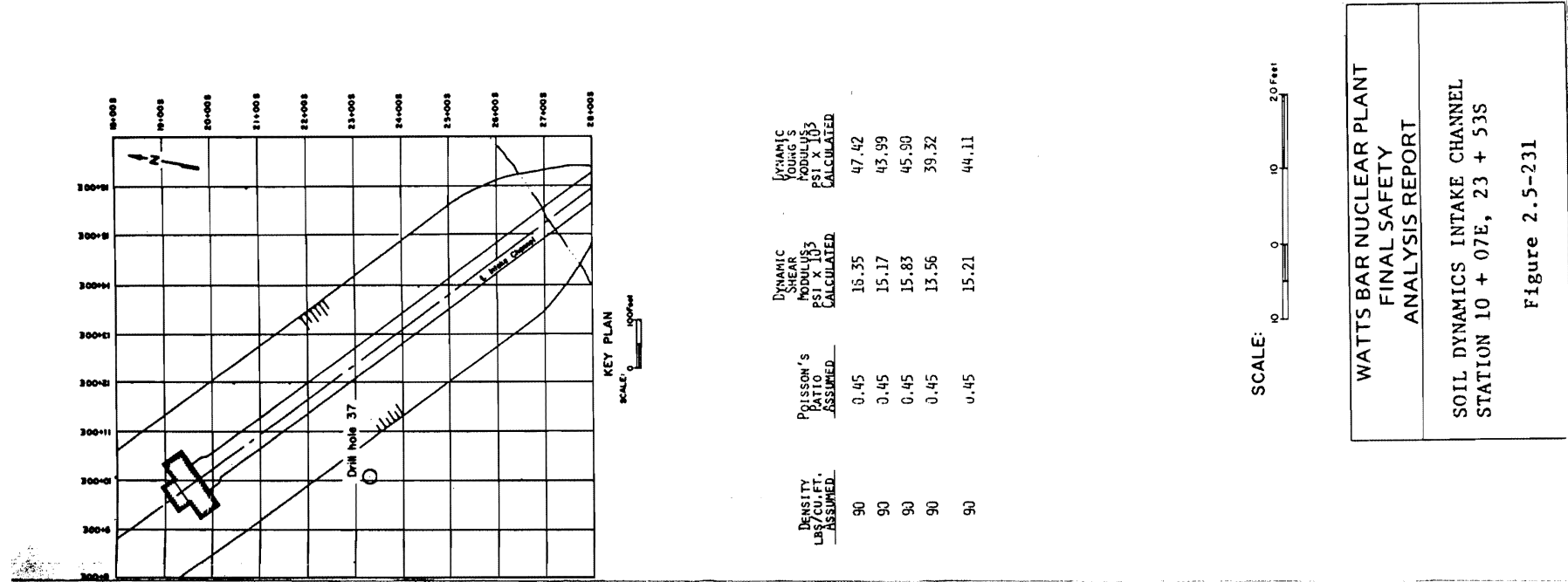
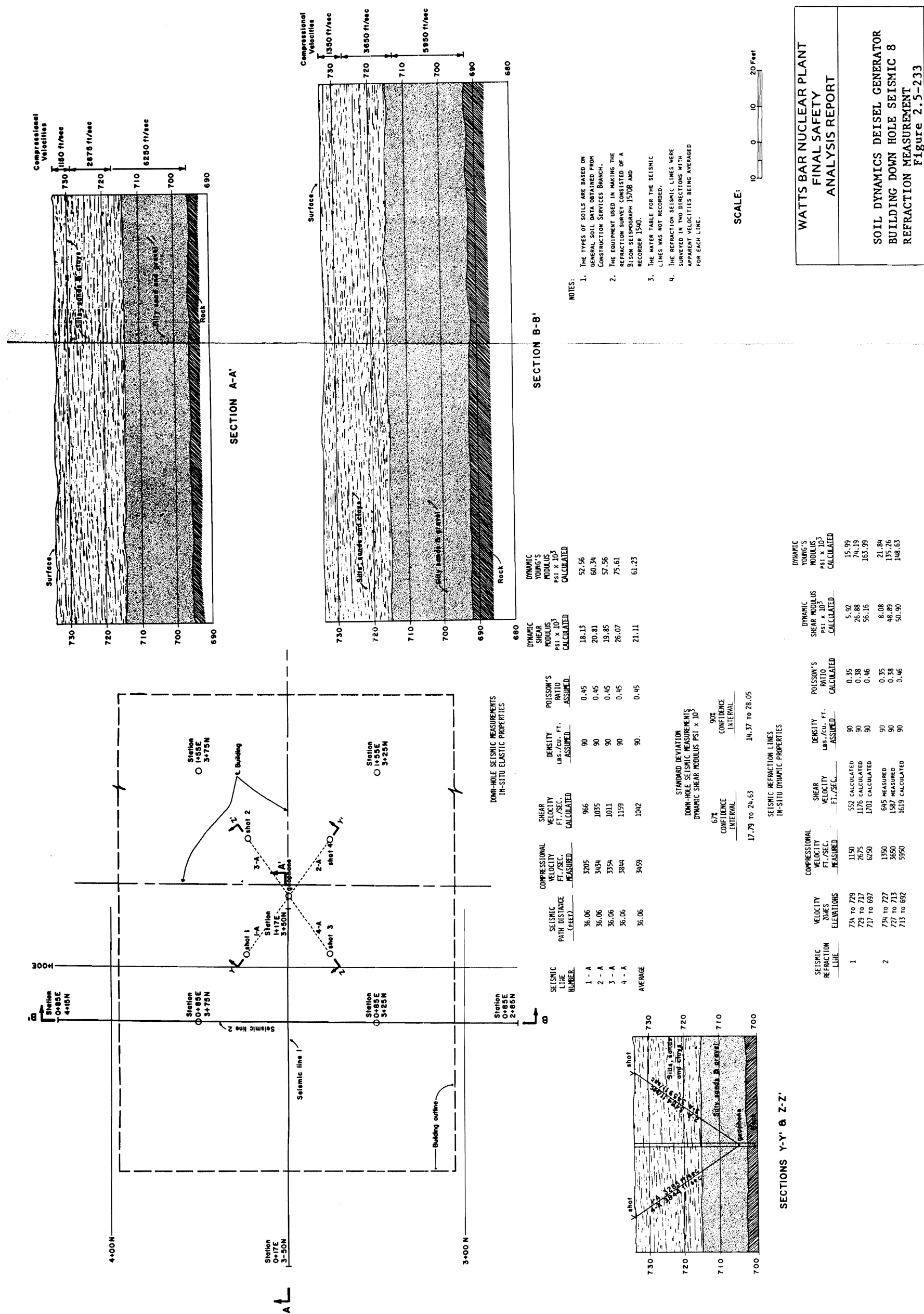
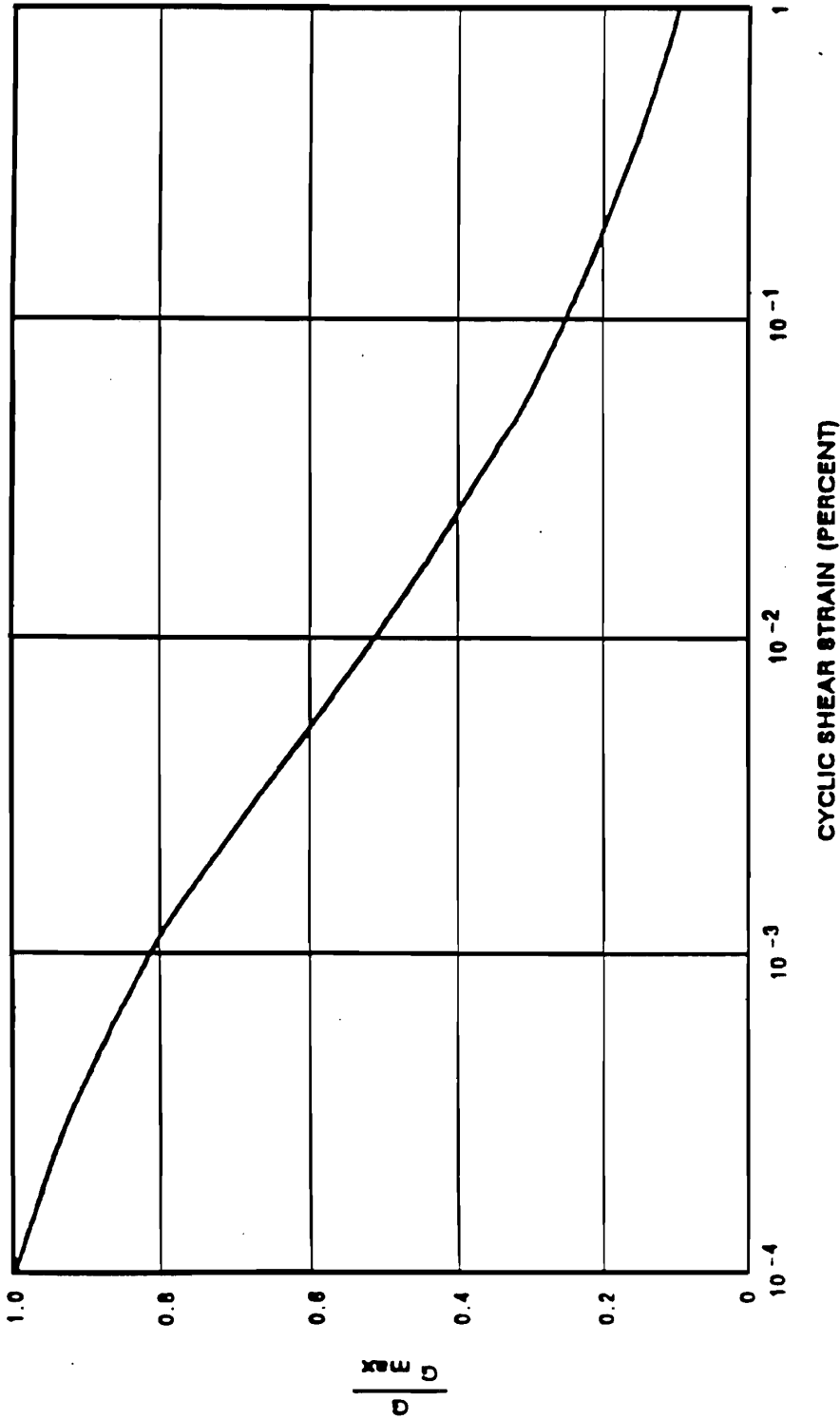


Figure 2.5-231 Soil Dynamics Intake Channel Station 10 + 07E, 23 + 53S

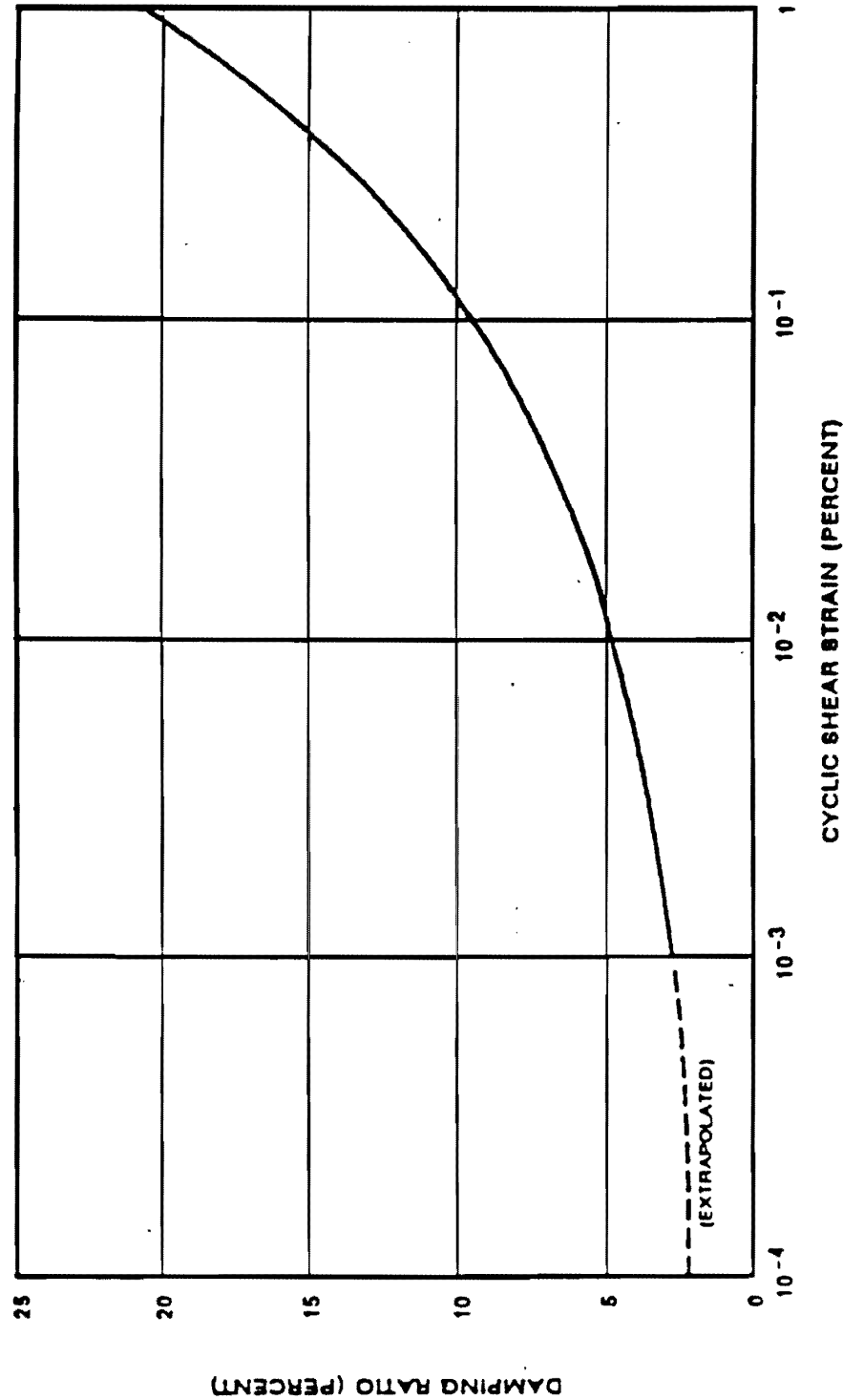




WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
CLASS A BACKFILL SHEAR MODULUS REDUCTION WITH SHEAR STRAIN
Figure 2.5-233a

Amendment 63

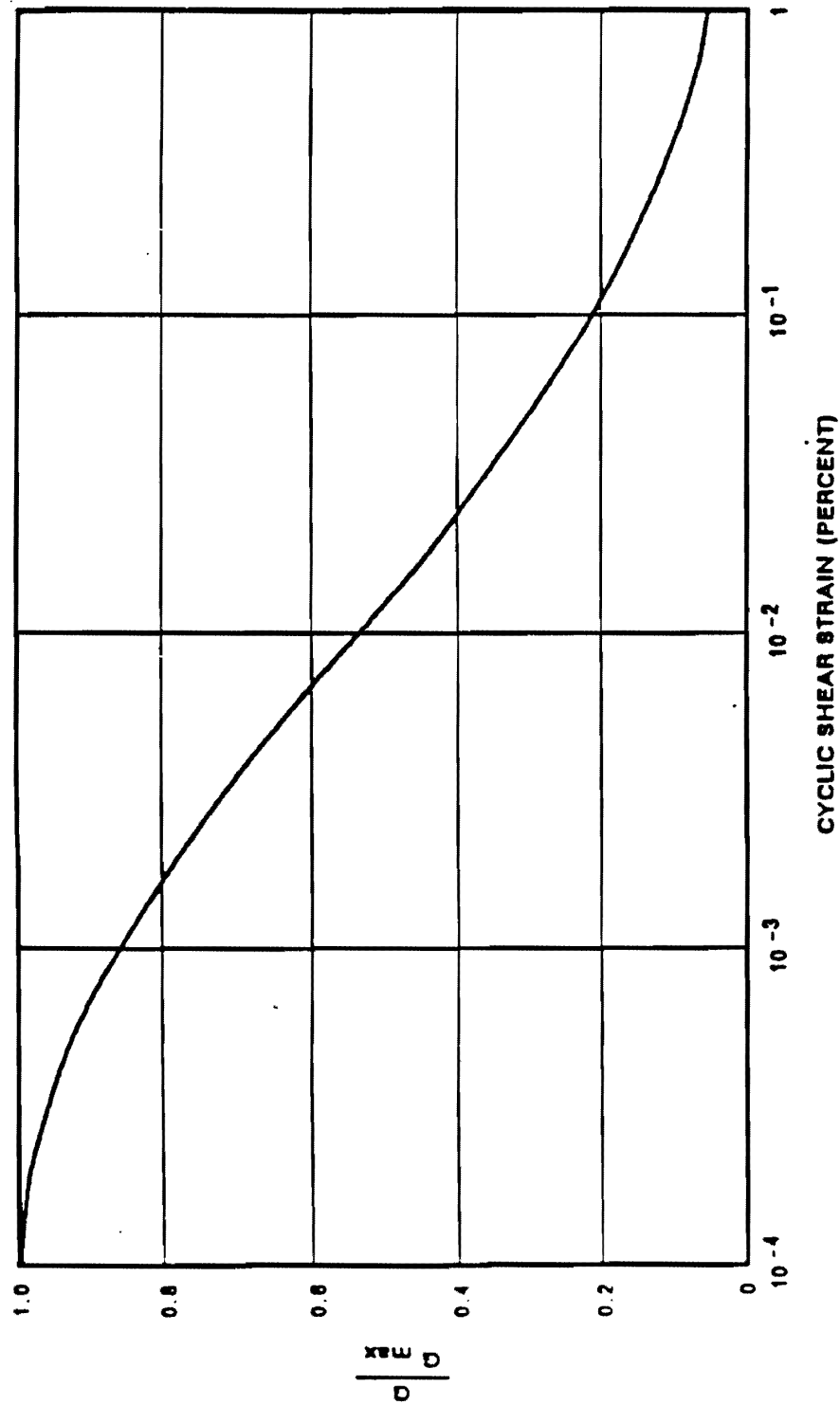
Figure 2.5-233a Class A Backfill -Shear Modulus Reduction with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
CLASS A BACKFILL DAMPING RATIO VARIATION WITH SHEAR STRAIN
Figure 2.5-233B

Amendment 63

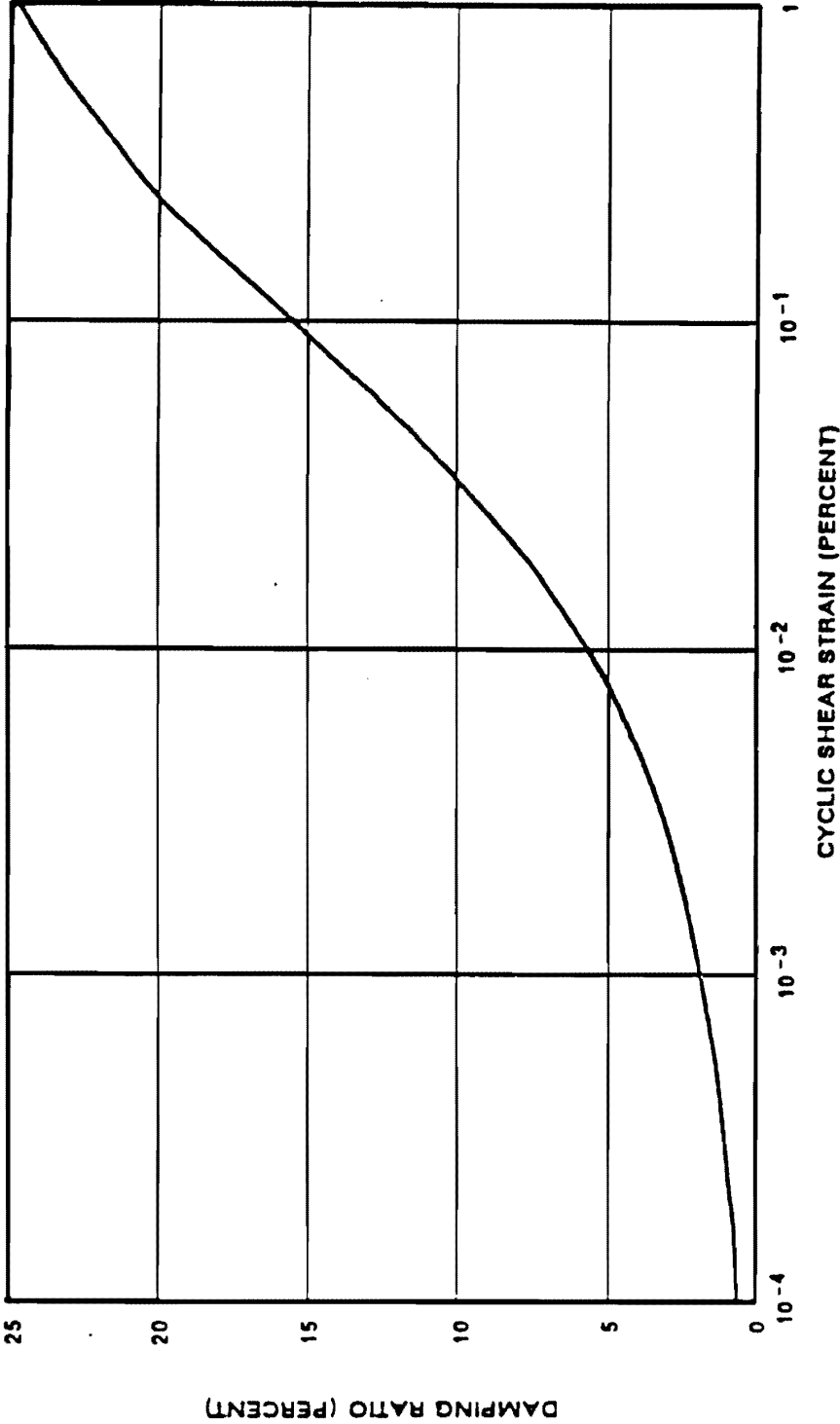
Figure 2.5-233b Class A Backfill -Damping Ratio Variation with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
CRUSHED STONE BACKFILL SHEAR MODULUS REDUCTION WITH SHEAR STRAIN
Figure 2.5-233C

Amendment 63

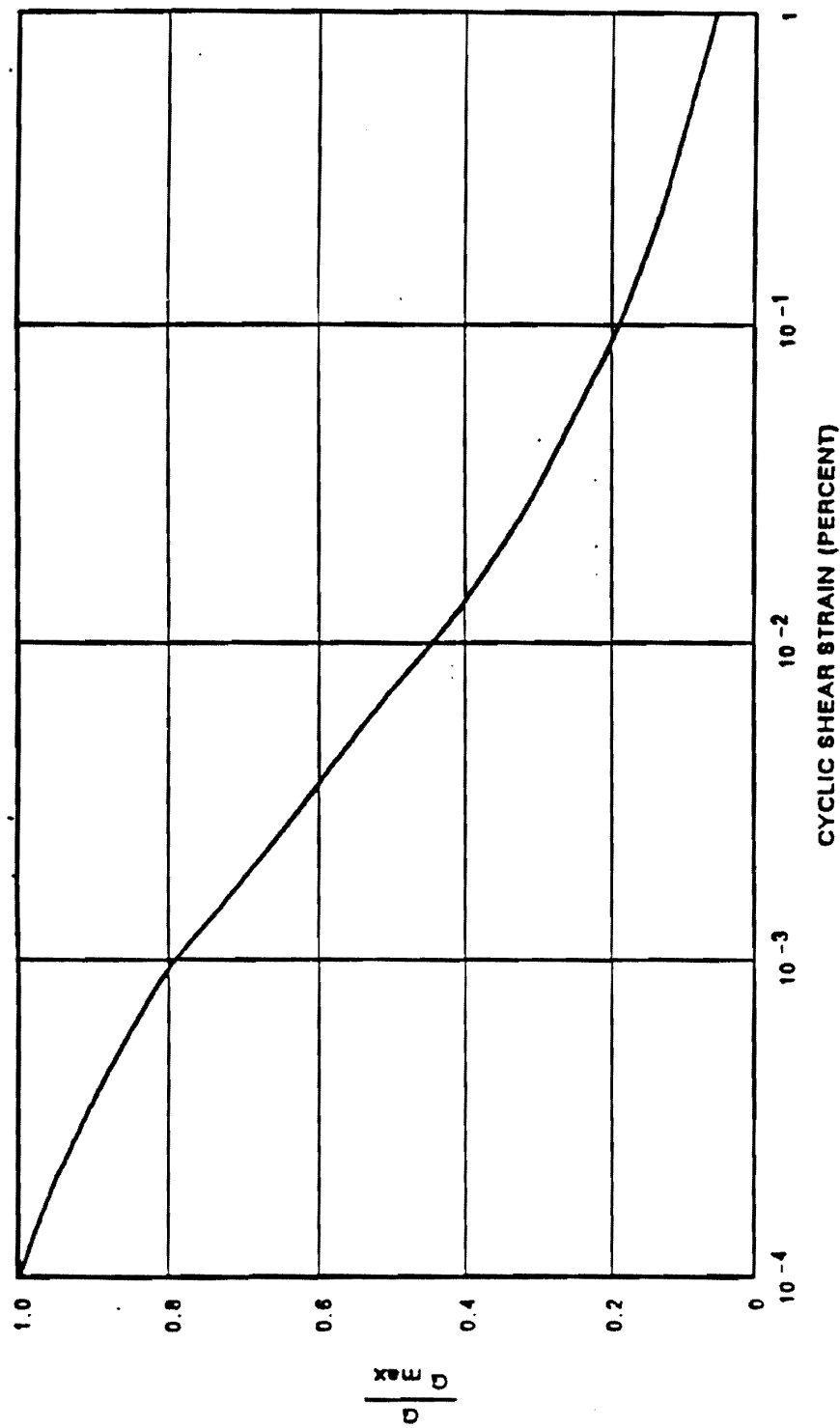
Figure 2.5-233c Crushed Stone Backfill - Shear Modulus Reduction with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
CRUSHED STONE BACKFILL DAMPING RATIO VARIATION WITH SHEAR STRAIN
Figure 2.5-233D

Amendment 63

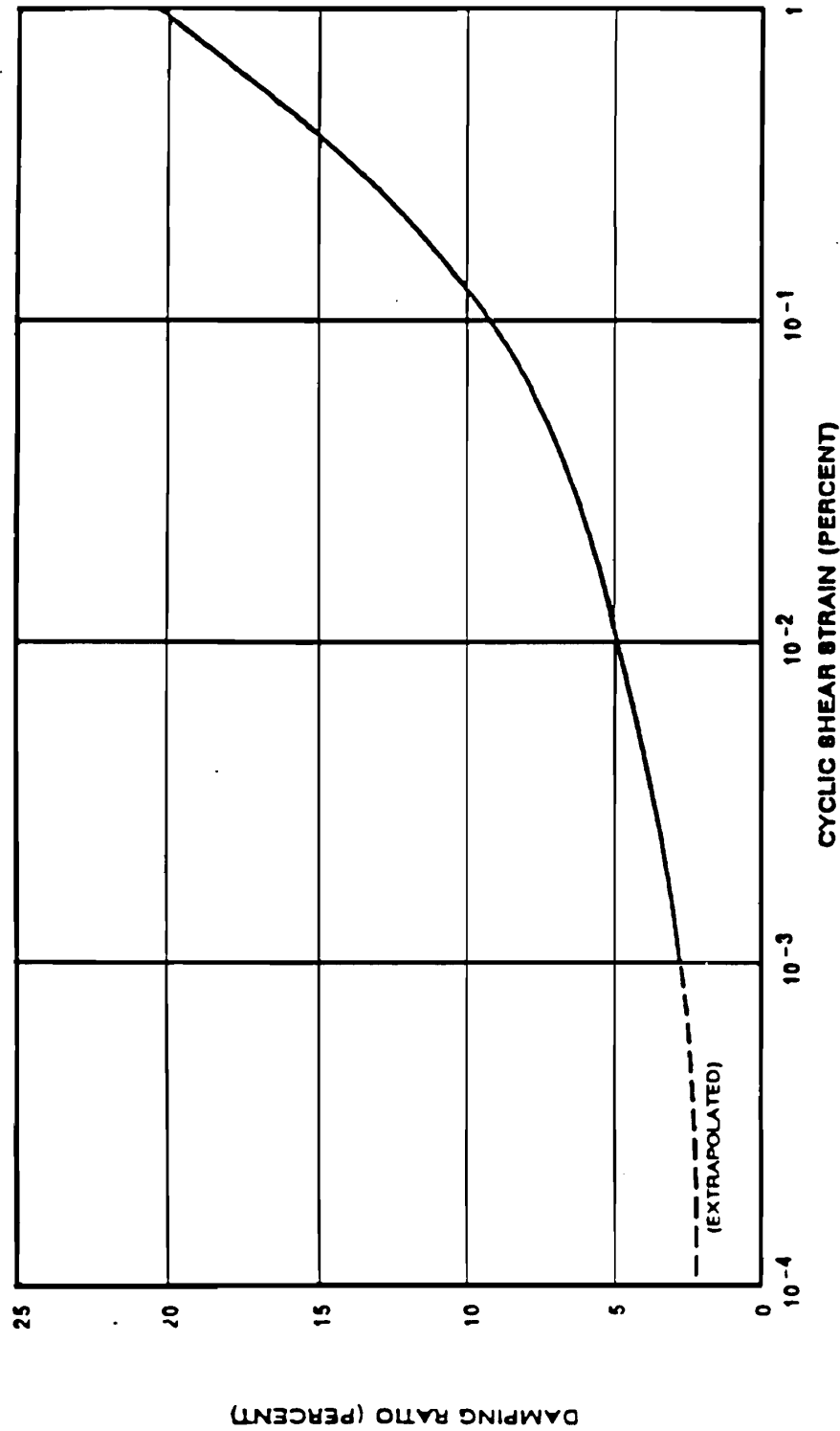
Figure 2.5-233d Crushed Stone Backfill - Damping Ratio Variation with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
IN SITU COHESIVE SOILS SHEAR MODULUS REDUCTION WITH SHEAR STRAIN
Figure 2.5-233B

Amendment 63

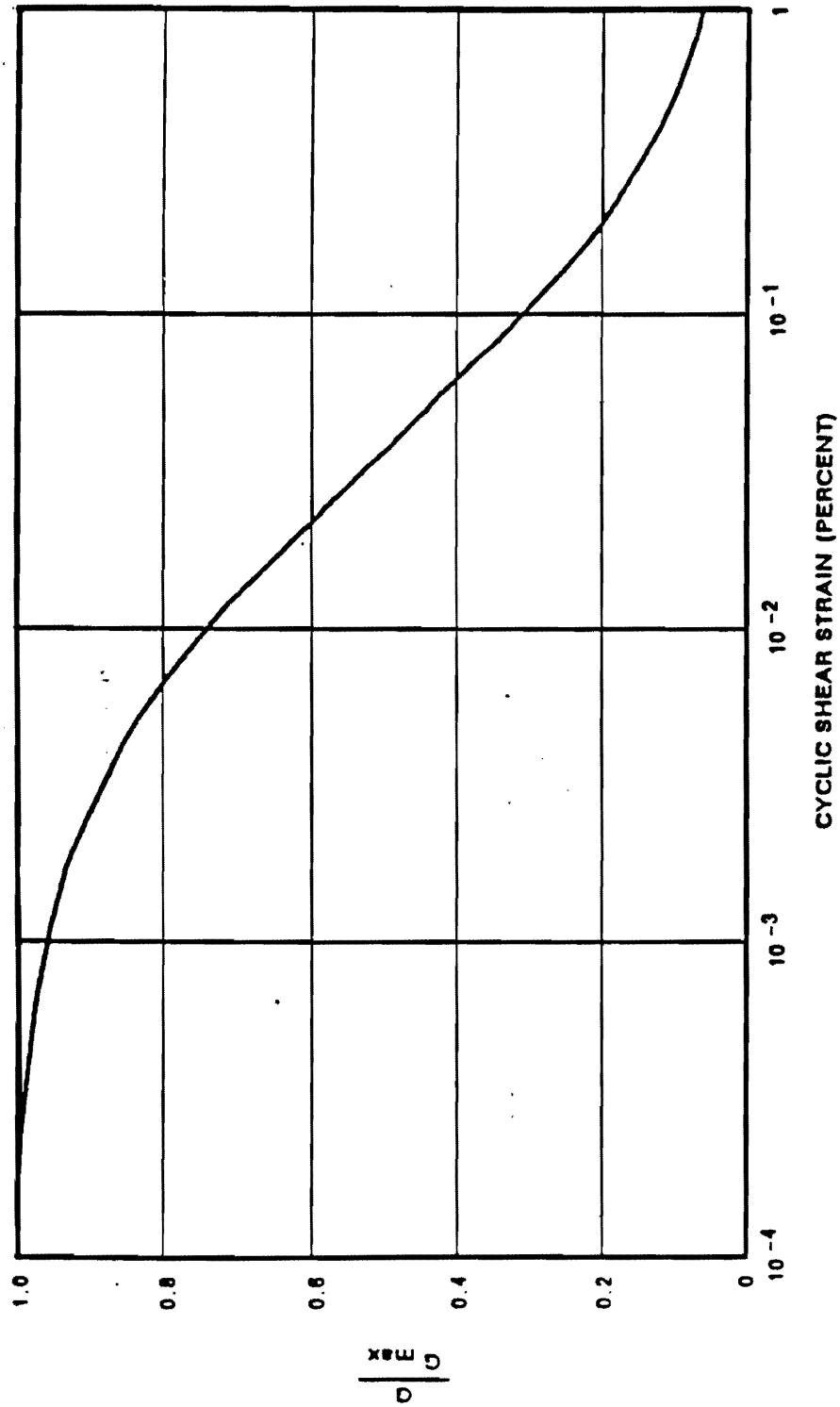
Figure 2.5-233e In Situ Cohesive Soils - Shear Modulus Reduction with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
IN SITU COHESIVE SOILS DAMPING RATIO VARIATION WITH SHEAR STRAIN
Figure 2.5-233F

Amendment 63

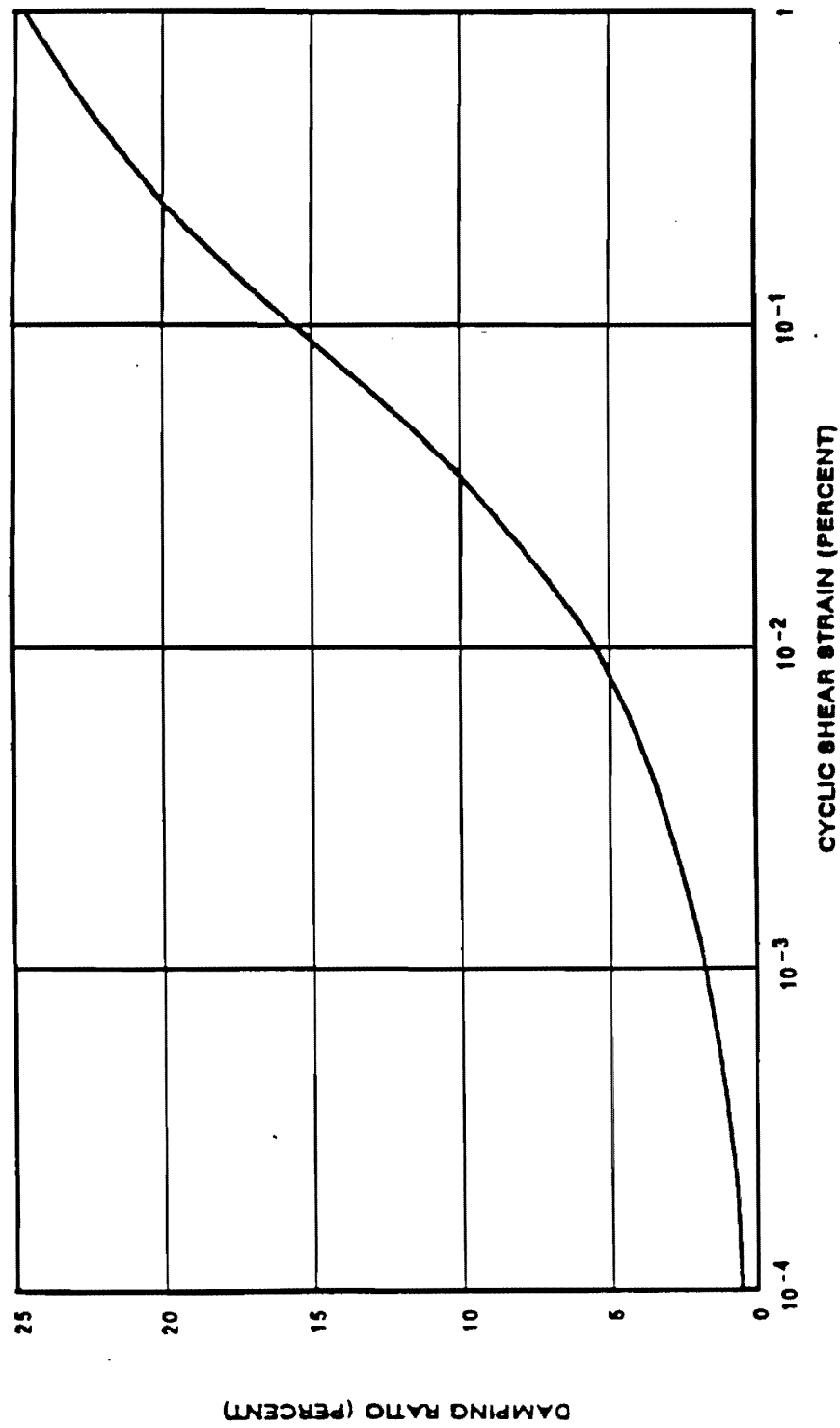
Figure 2.5-233f In Situ Cohesive Soils - Damping Ratio Variation with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
NON-PLASTIC IN SITU SOIL SHEAR MODULUS REDUCTION WITH SHEAR STRAIN
Figure 2.5-233G

Amendment 63

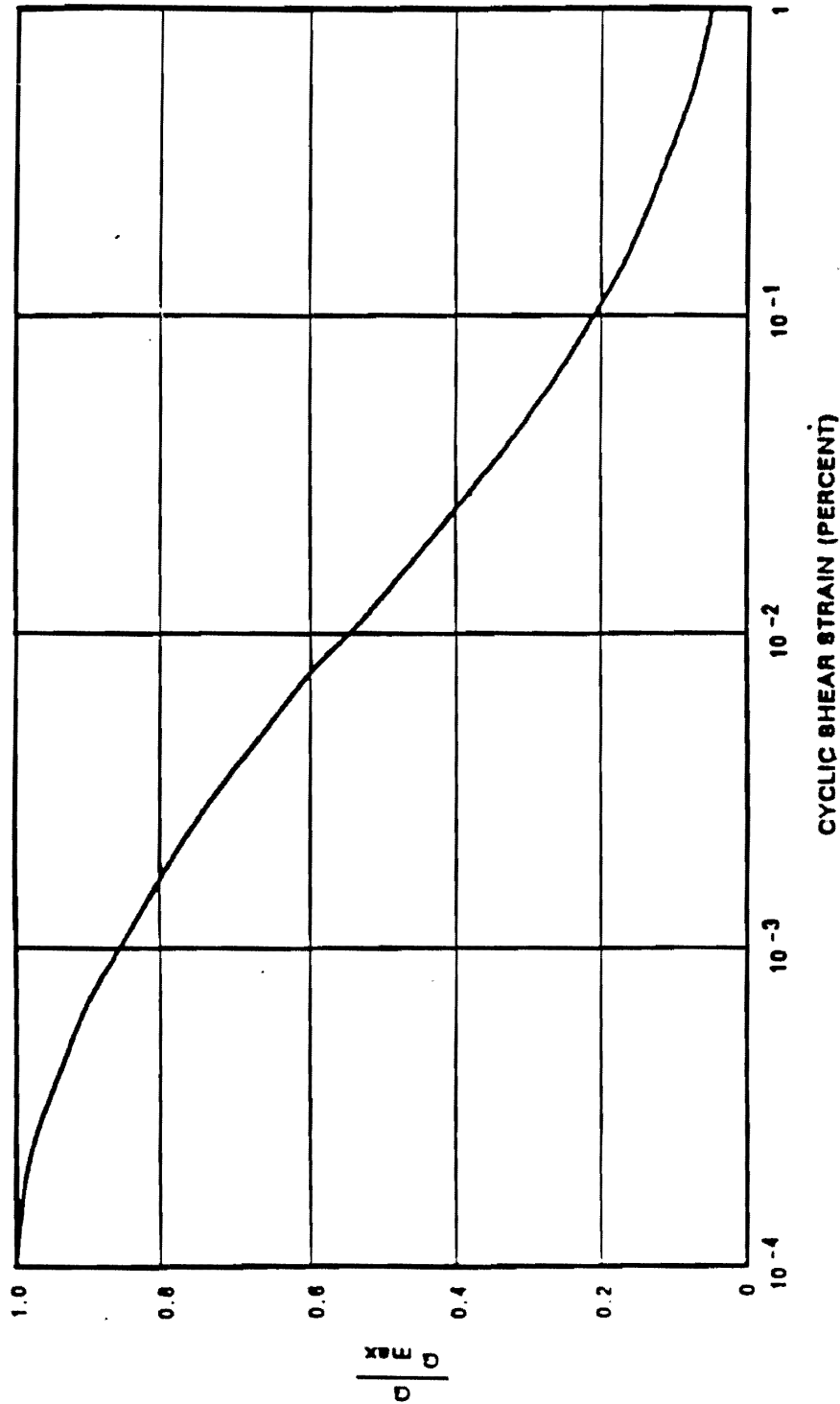
Figure 2.5-233g Non-Plastic In Situ Soil - Shear Modulus Reduction with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
NON-PLASTIC IN SITU SOILS DAMPING RATIO VARIATION WITH SHEAR STRAIN
Figure 2.5-233H

Amendment 63

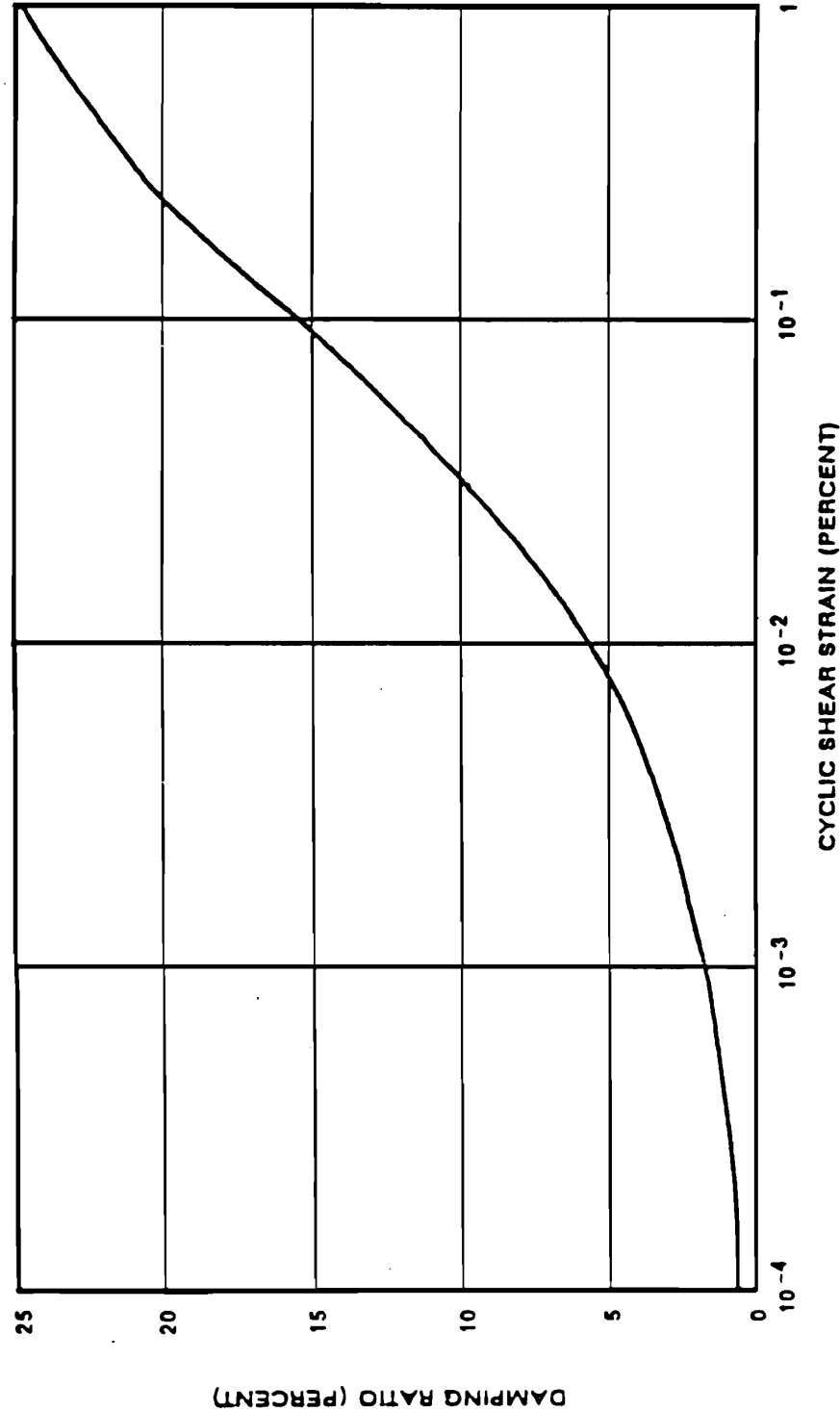
Figure 2.5-233h Non-Plastic In Situ Soils - Damping Ratio Variation with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
BASAL GRAVEL SHEAR MODULUS REDUCTION WITH SHEAR STRAIN
Figure 2.5-233I

Amendment 63

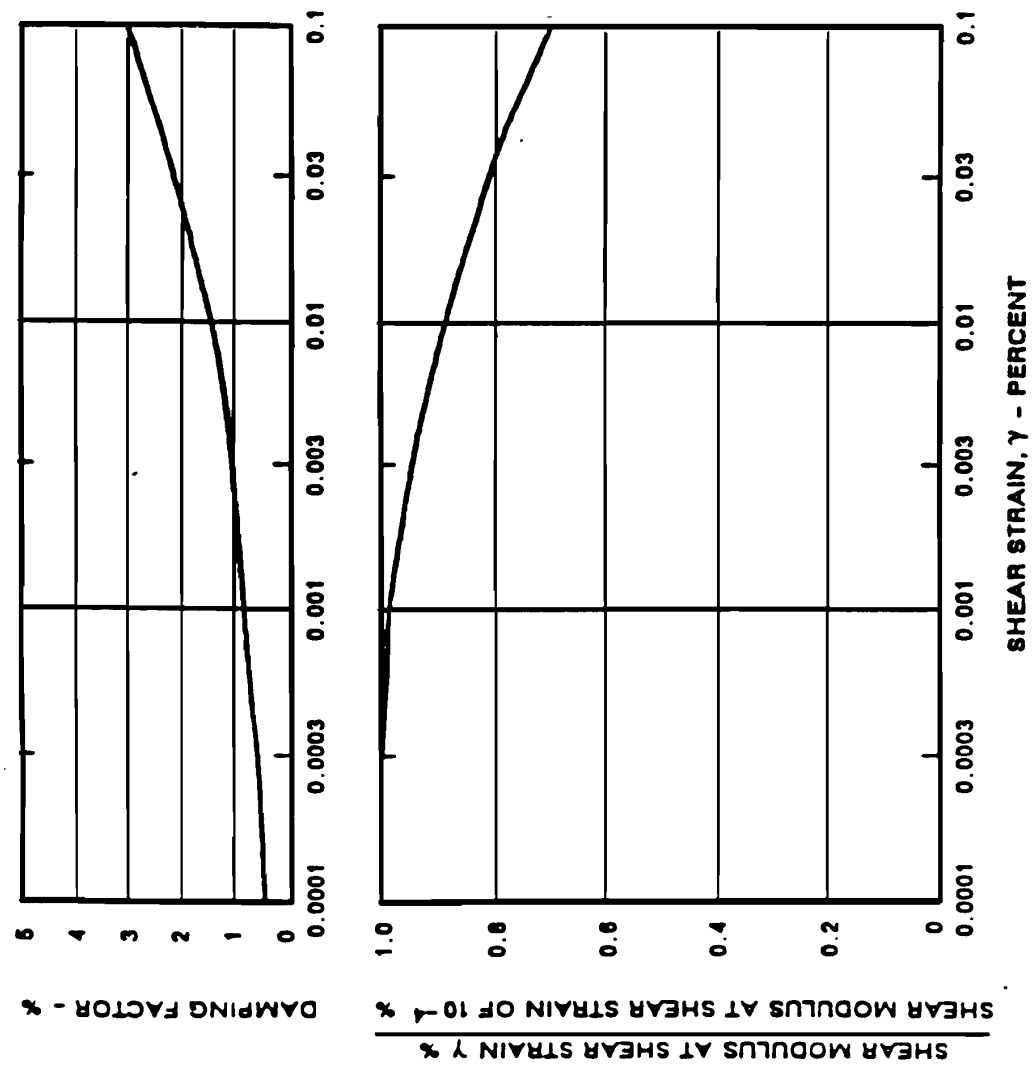
Figure 2.5-233i Basal Gravel - Shear Modulus Reduction with Shear Strain



WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
BASAL GRAVEL
DAMPING RATIO VARIATION WITH SHEAR STRAIN
Figure 2.5-233J

Amendment 63

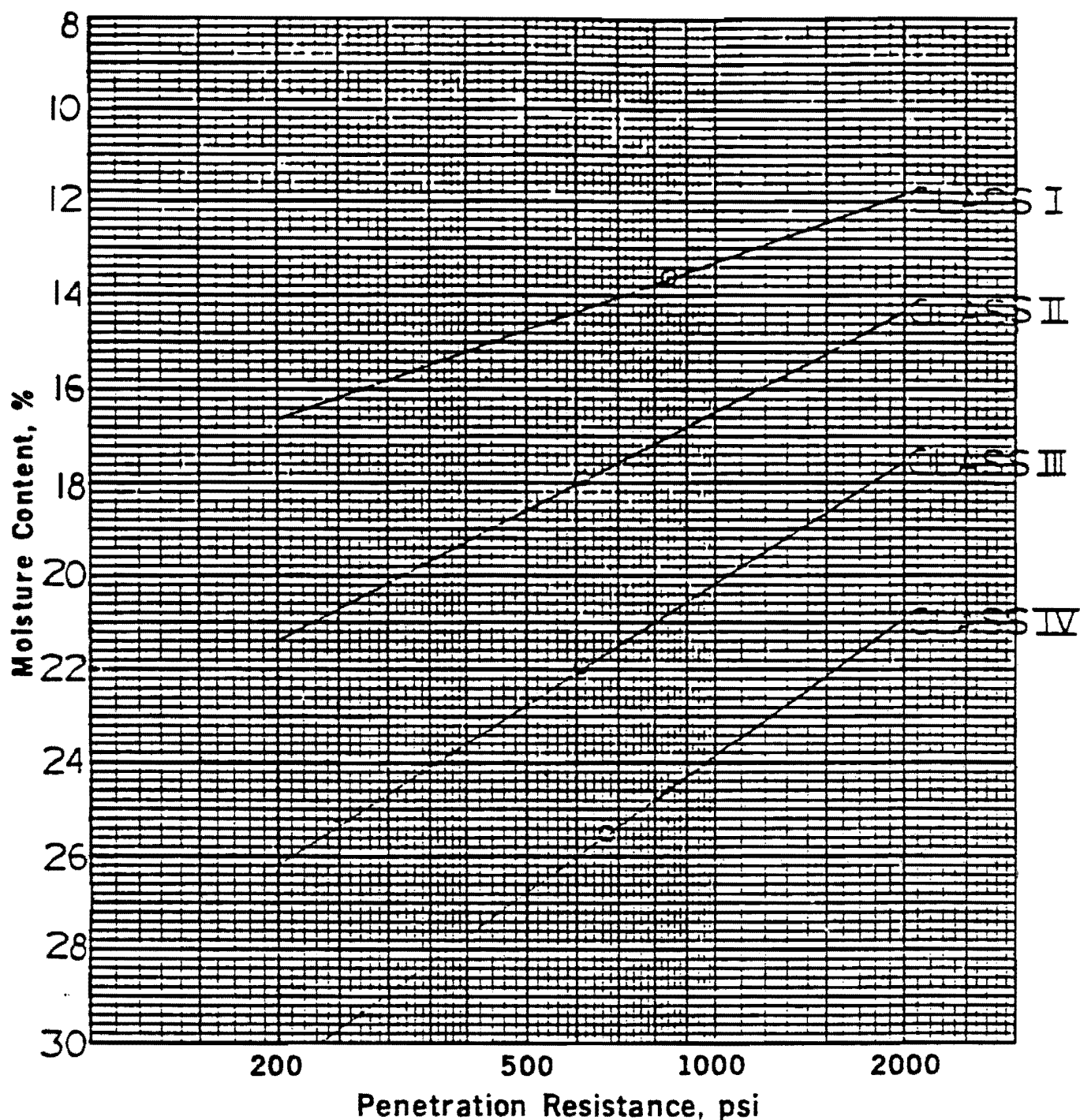
Figure 2.5-233j Basal Gravel - Damping Ratio Variation with Shear Strain



Amendment 63

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
WEATHERED SHALE SHEAR MODULUS AND DAMPING VARIATION WITH SHEAR STRAIN
Figure 2.5-233K

Figure 2.5-233k Weathered Shale - Shear Modulus and Damping Variation with Shear Strain



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-SC	13.6	116.3	850
II-CL	17.9	108.0	615
III-MH	21.8	101.1	615
IV-MH	25.5	94.2	680

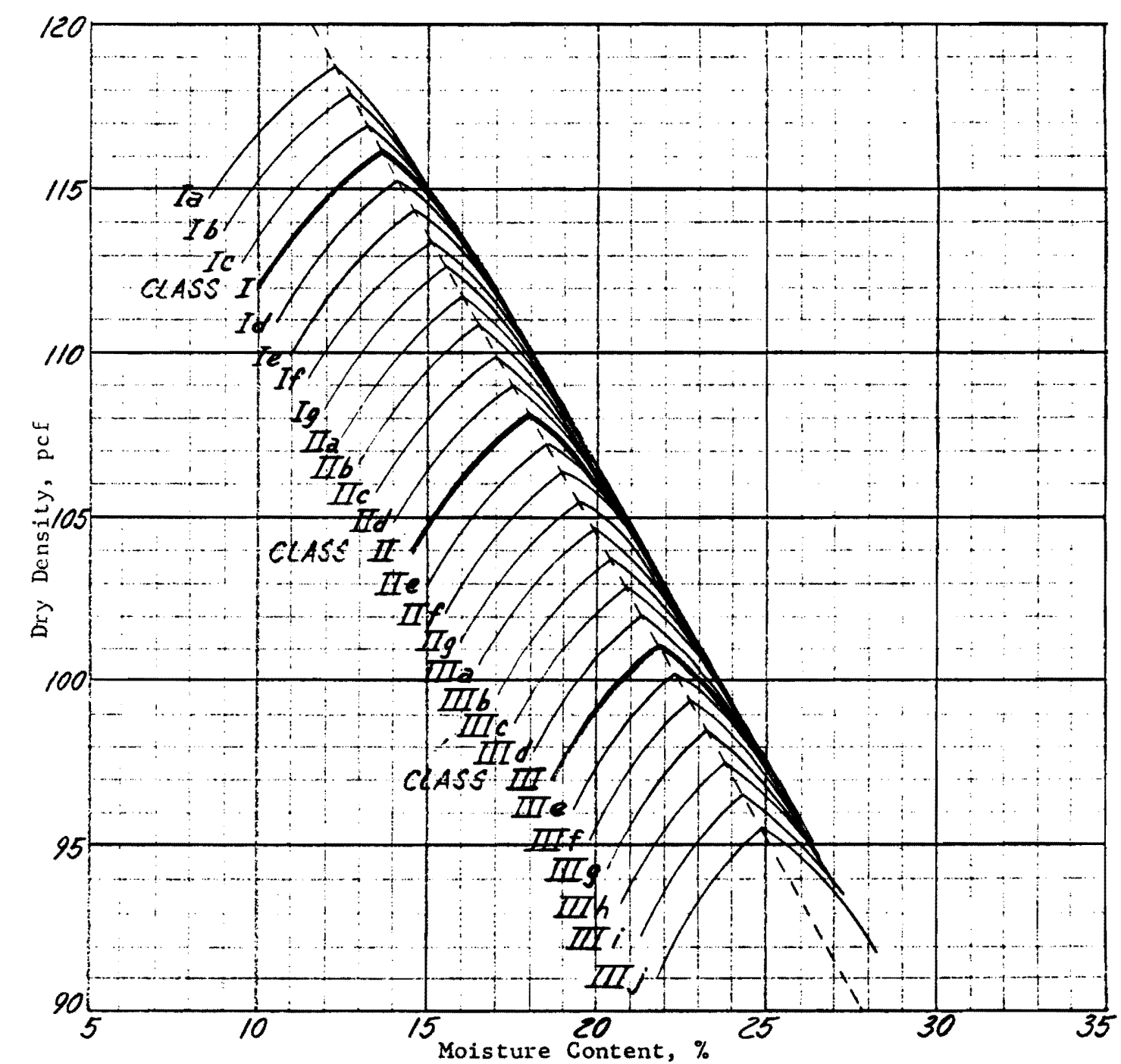
Remarks:
REVISED 12-8-82

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
MAIN PLANT BORROW AREAS MOISTURE-PENETRATION TEST
Figure 2.5-234

Amendment 63

Figure 2.5-234 Main Plant Borrow Areas, Moisture - Penetration Test



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-SC	0	54	25	21	2.71	25.4	7.8	13.6	116.3
II-CL	0	35	29	36	2.73	41.9	18.6	17.9	108.0
III-MH	0	24	30	46	2.76	50.6	22.1	21.8	101.1

Plus No. 4 Specific Gravity, SSD	
Plus No. 4 Absorption, %	
Remarks:	

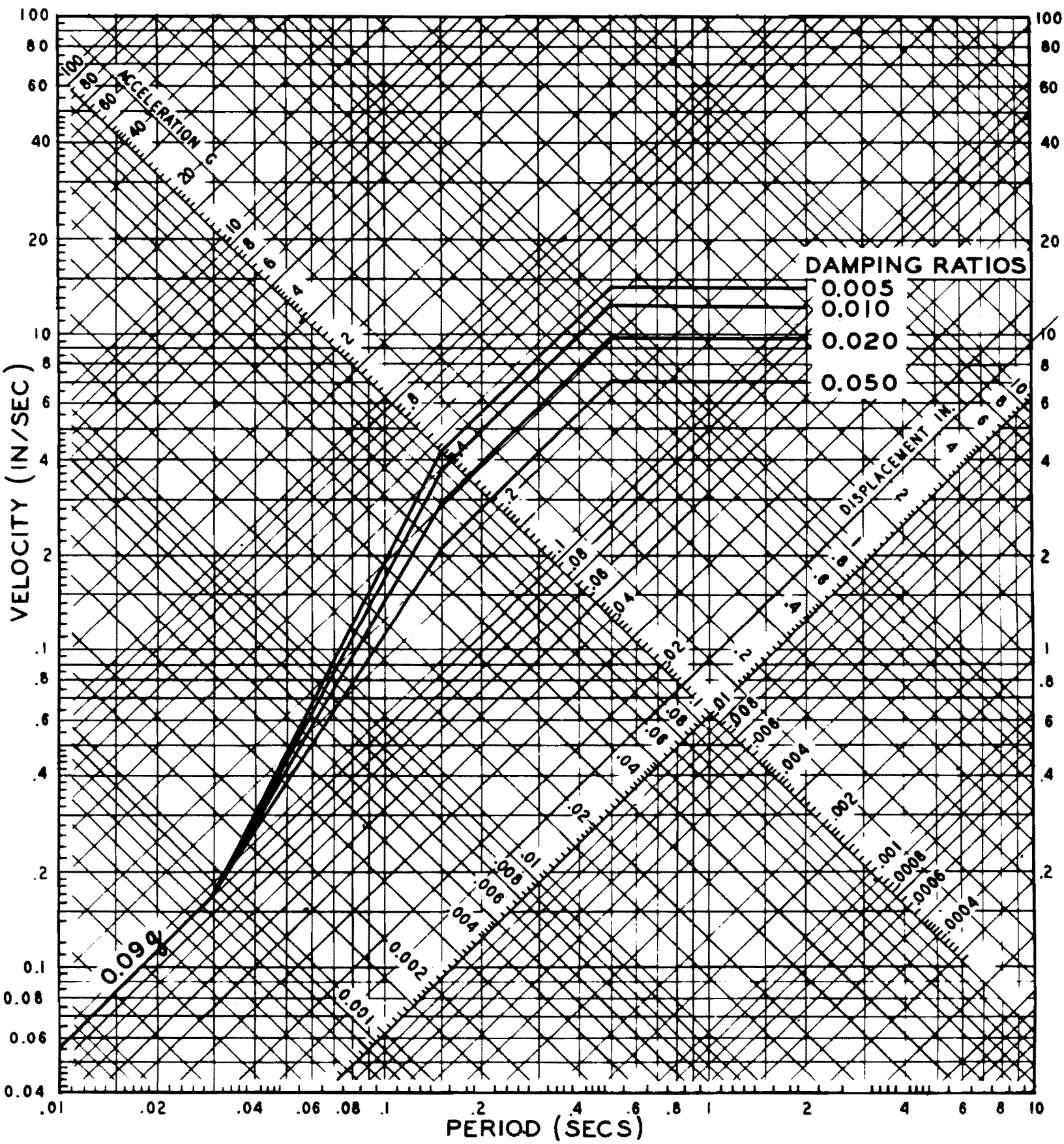
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

COMPACTION TEST
BORROW AREAS (family of curves)
date tested 1-5-73

Figure 2.5-235

Soil Form 14

Figure 2.5-235 Compaction Test Borrow Areas (Family Of Curves)

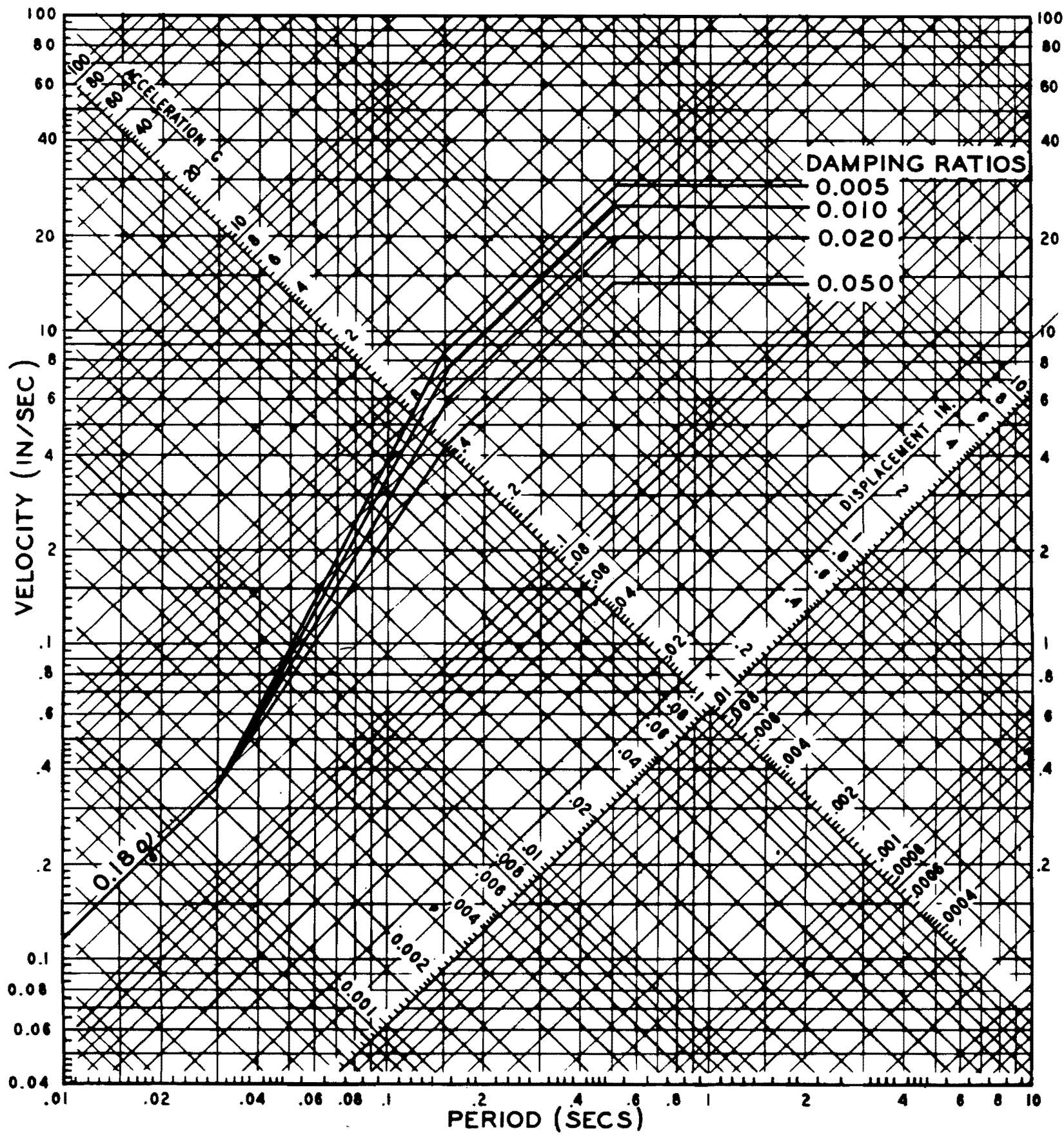


WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

OPERATING BASIS EARTHQUAKE
RESPONSE SPECTRA FOR ROCK SUPPORT
STRUCTURES

Figure 2.5-236a

Figure 2.5-236A Operating Basis Earthquake Response Spectra For Rock Support Structures



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SAFE SHUTDOWN EARTHQUAKE
RESPONSE SPECTRA FOR ROCK SUPPORT
STURCTURES

Figure 2.5-236b

Figure 2.5-236b Safe Shutdown Earthquake Response Spectra For Rock Support Structures

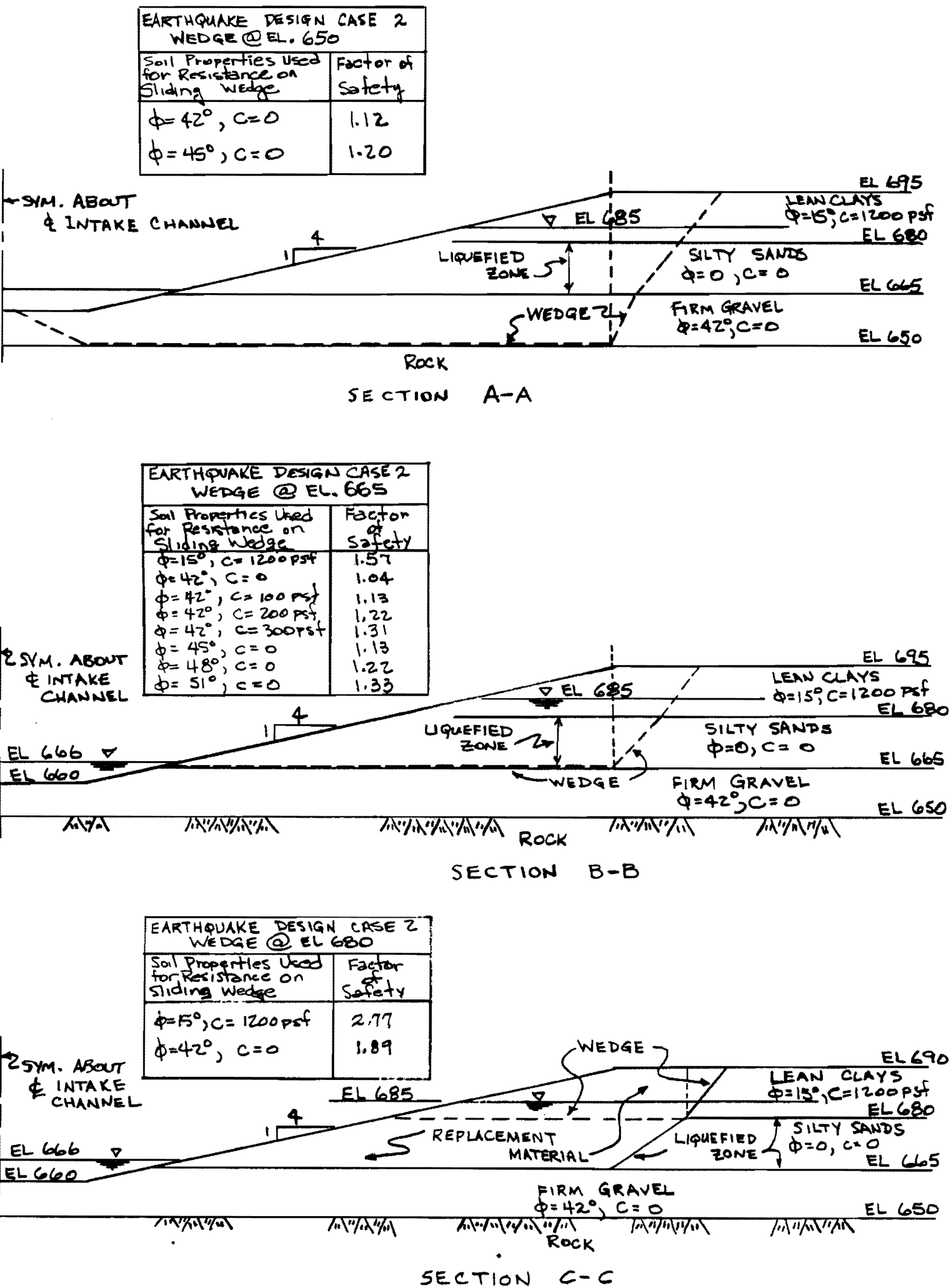
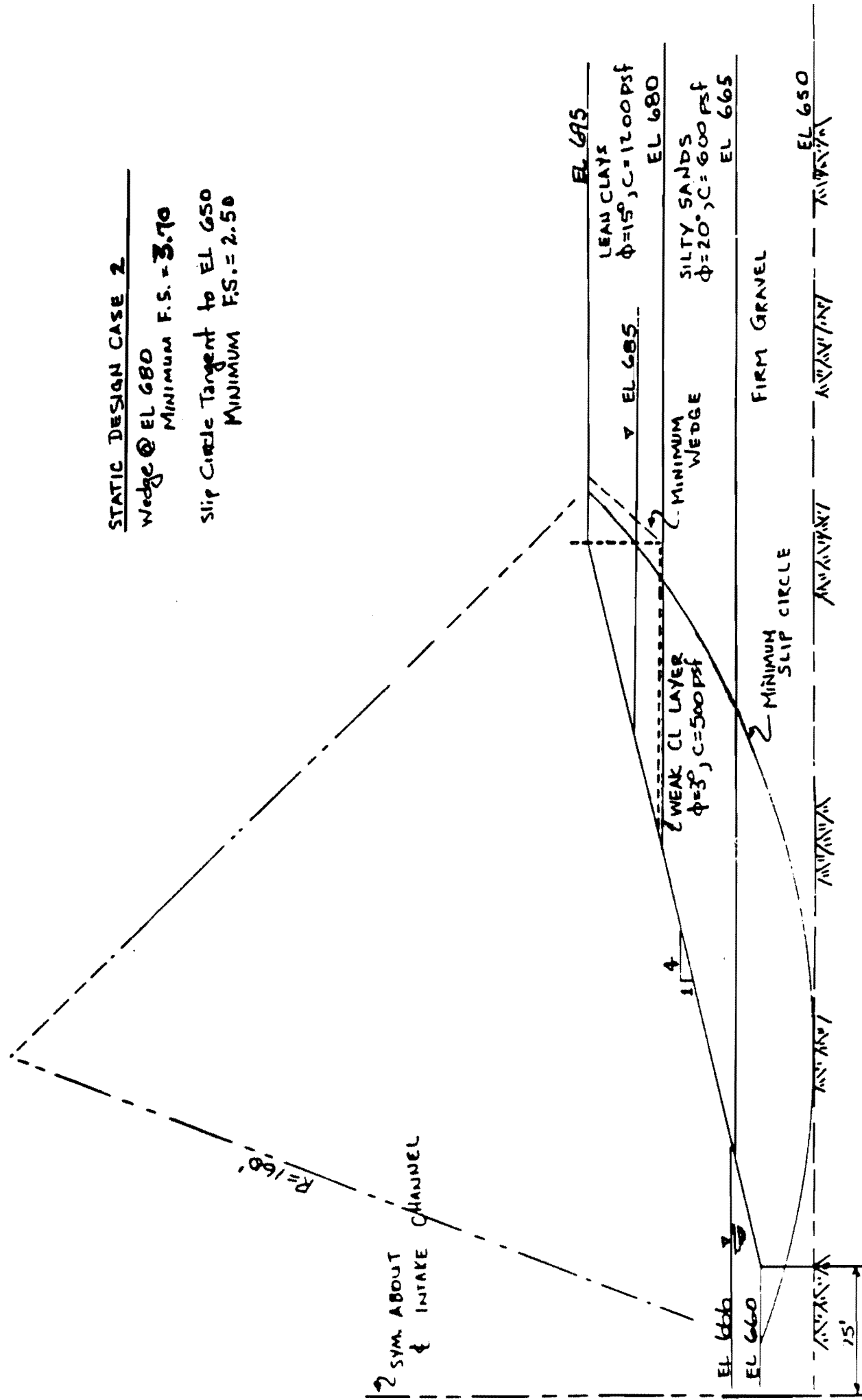


FIGURE 2.5-237
INTAKE CHANNEL
SEISMIC STABILITY ANALYSIS

NOTE:
Soils above firm gravel will be removed
and replaced as compacted fill with
controlled compaction density and
moisture content at least as far back
as the critical wedges shown.
See Figure 2.5-239

Figure 2.5-237 Intake Channel Seismic Stability Analysis



STATIC DESIGN CASE 2
Wedge @ EL 680
MINIMUM F.S. = 3.70
Slip Circle Tangent to EL 650
MINIMUM F.S. = 2.50

Amendment 63

FIGURE 2.5-238

Figure 2.5-238 Static Design Case 2

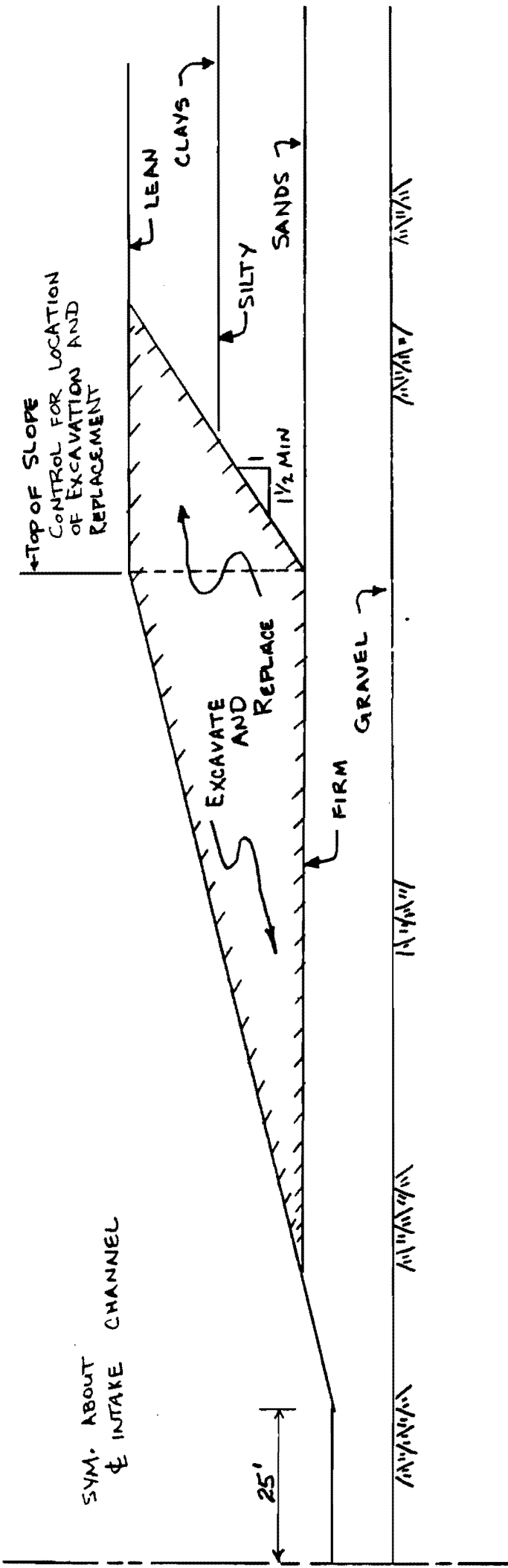
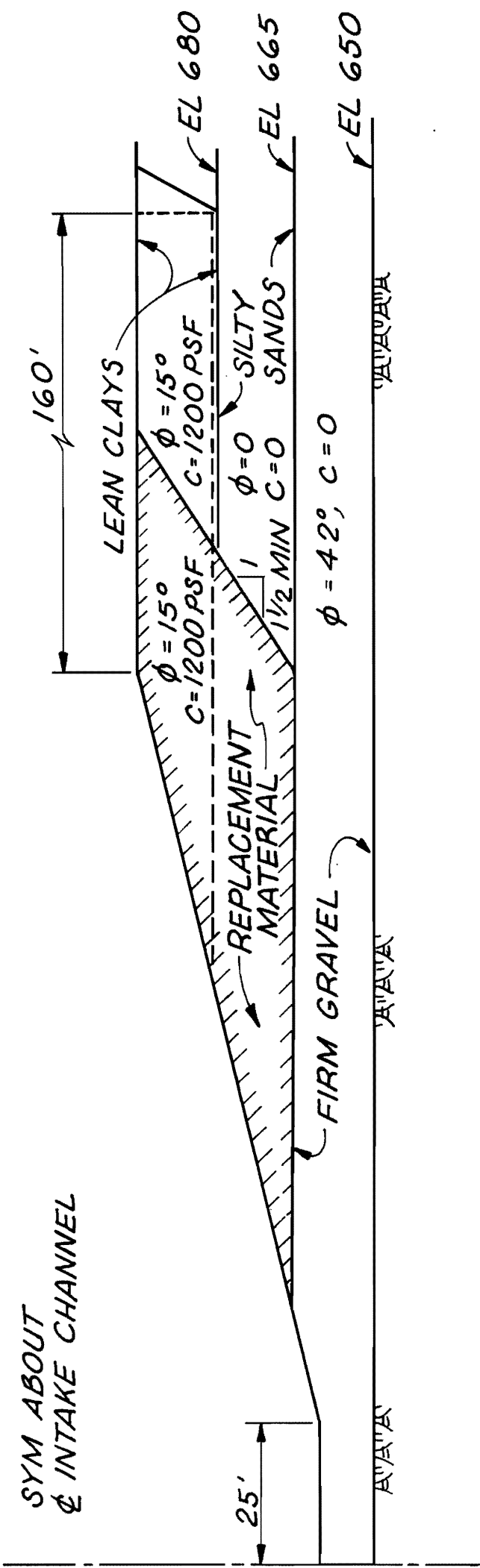


FIGURE 2.5-239
INTAKE CHANNEL - LATERAL
EXCAVATION & REPLACEMENT
ADDED BY AMENDMENT 28

Figure 2.5-239 Intake Channel-Lateral Excavation & Replacement



WEDGE USED TO DETERMINE HORIZONTAL
DISPLACEMENT OF THE INTAKE CHANNEL
BY NEWMARK'S METHOD

FIGURE 2.5-240
ADDED BY AMENDMENT 28

Figure 2.5-240 Wedge Used To Determine Horizontal Displacement of The Intake Channel By Newmark's Method

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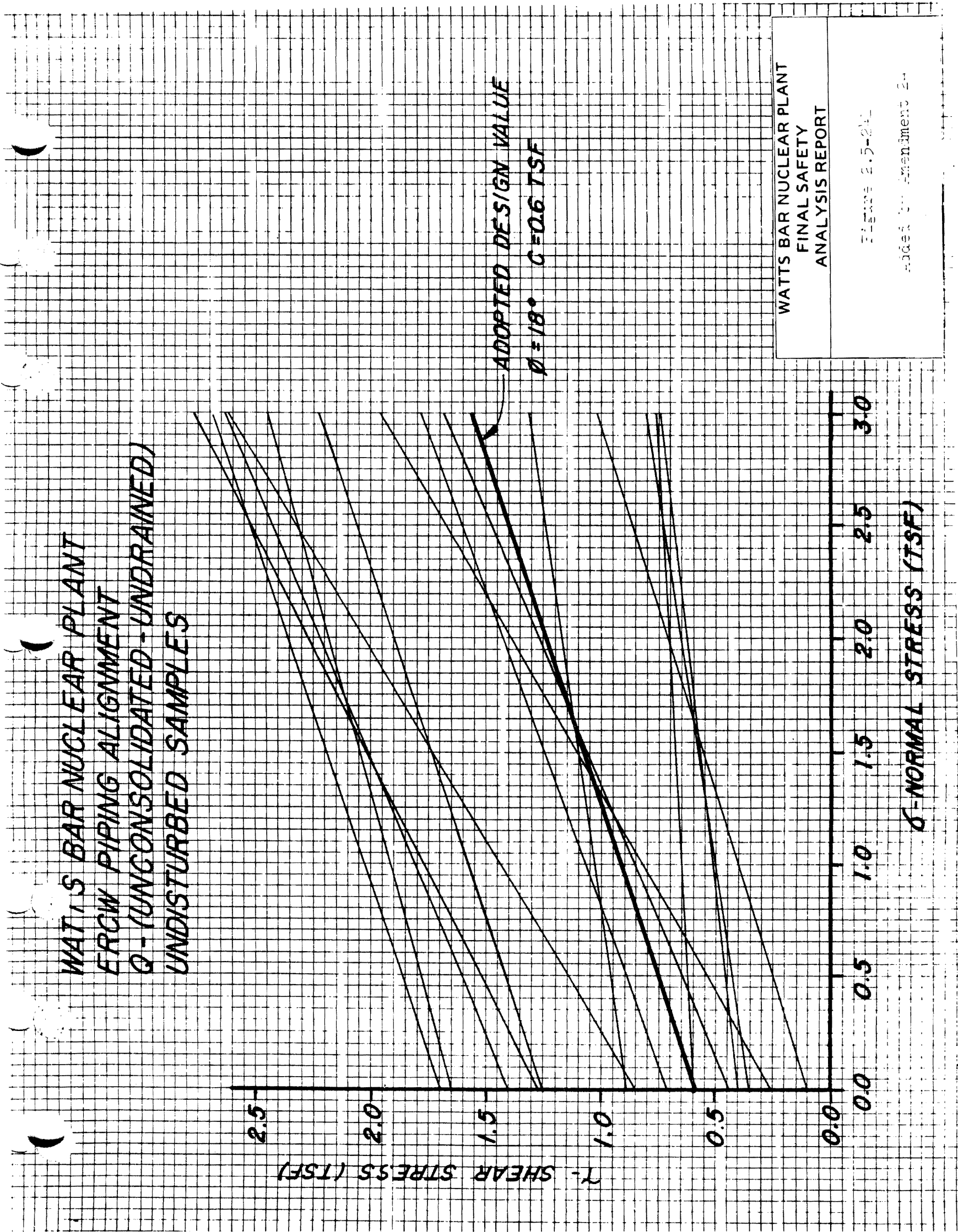


Figure 2.5-241 ERCW Piping Alignment Q (Unconsolidated Undrained - Undisturbed Samples)

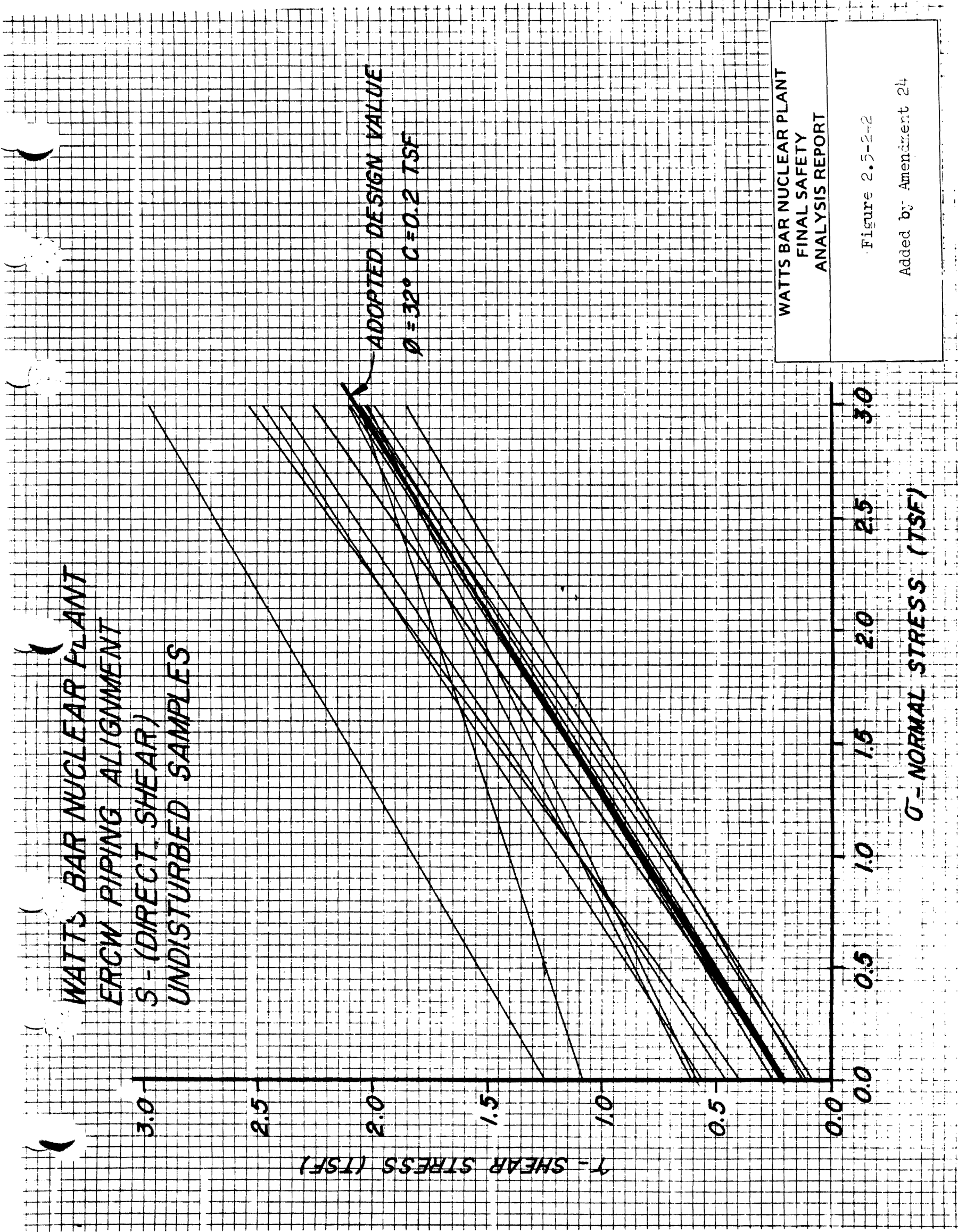


Figure 2.5-242 ERCW Piping Alignment S (Direct Shear) Undisturbed Samples

Figure 2.5-243 Deleted by Amendment 71

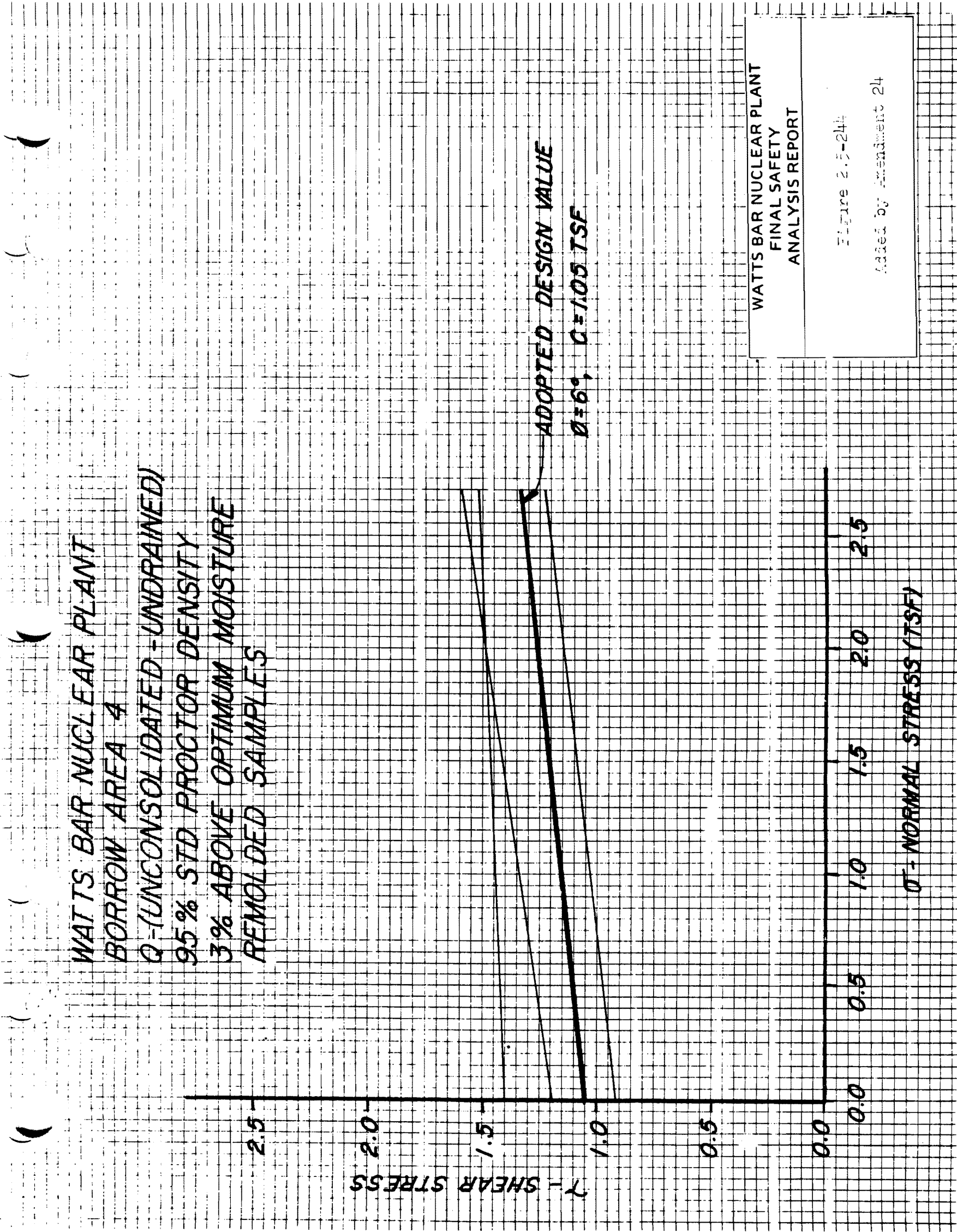


Figure 2.5-244 Borrow Area 4 Q - (Unconsolidated - Undrained) 95% STD Proctor Density 3% Above Optimum Moisture Remolded Samples

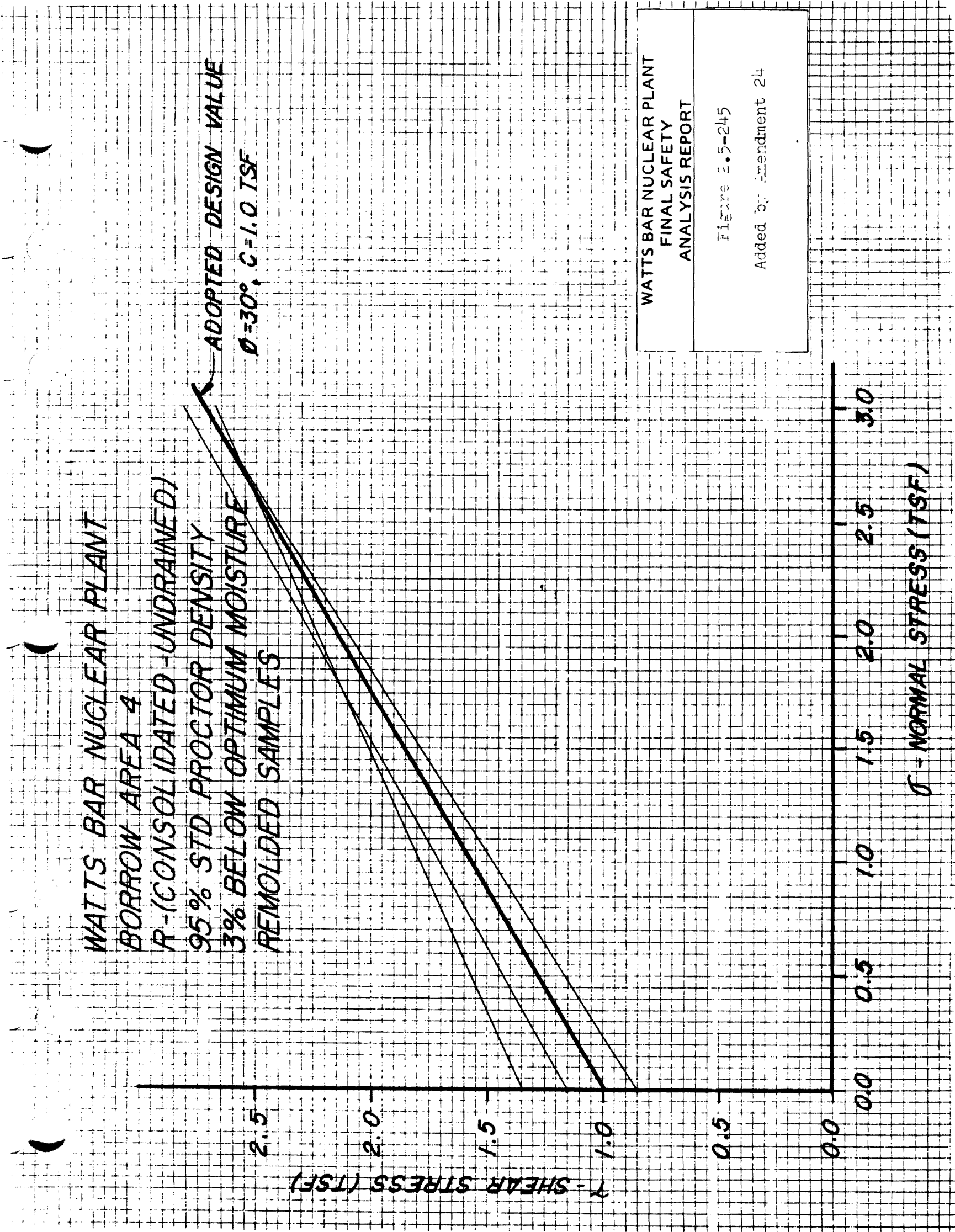


Figure 2.5-245 Watts Bar Nuclear Plant Borrow Area 4R - (Consolidate Undrained) 95% STD Proctor Density 3% Below Optimum Moisture Remolded Samples

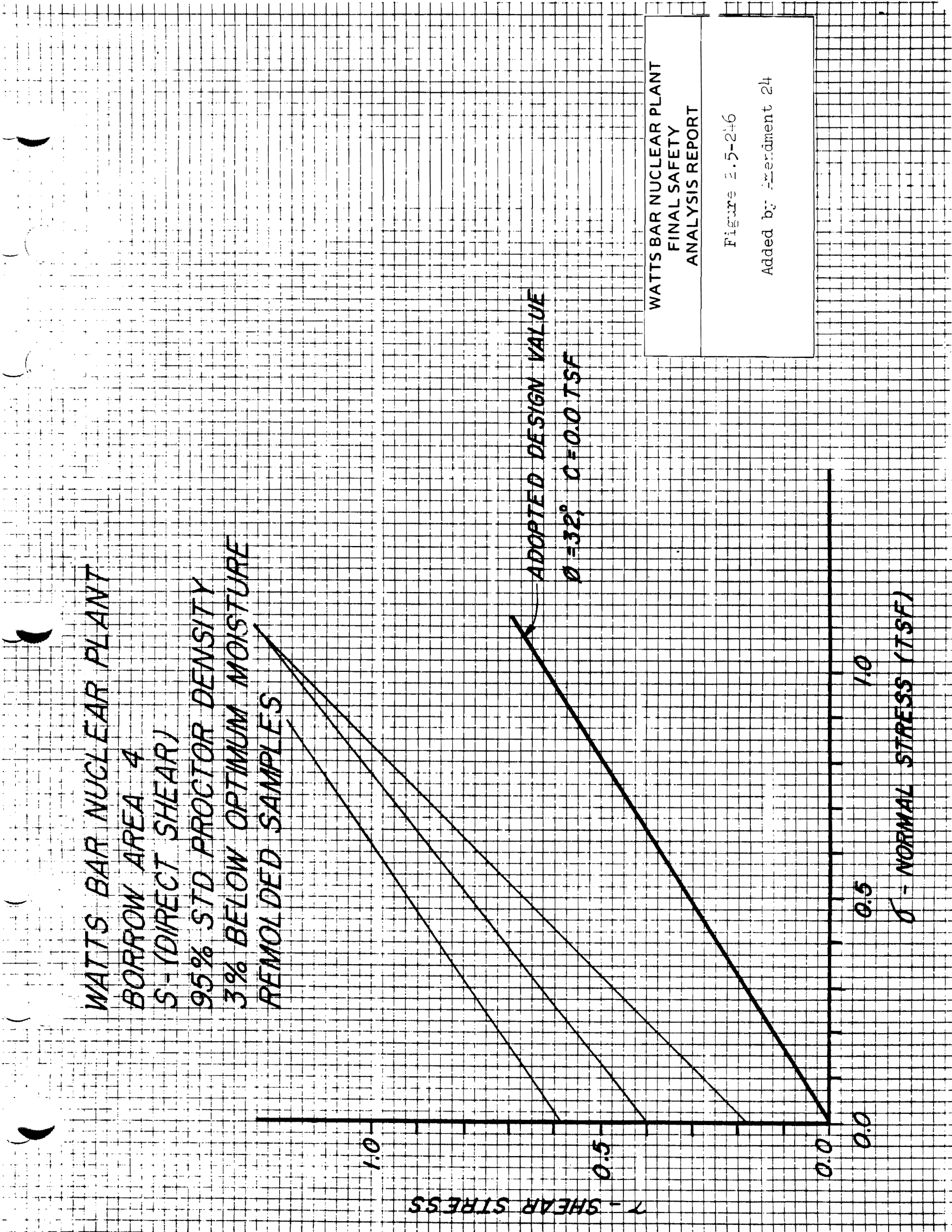


Figure 2.5-246 Borrow Area 4 S - (Direct Shear) 95% STD Proctor Density 3% Below Optimum Moisture Remolded Samples

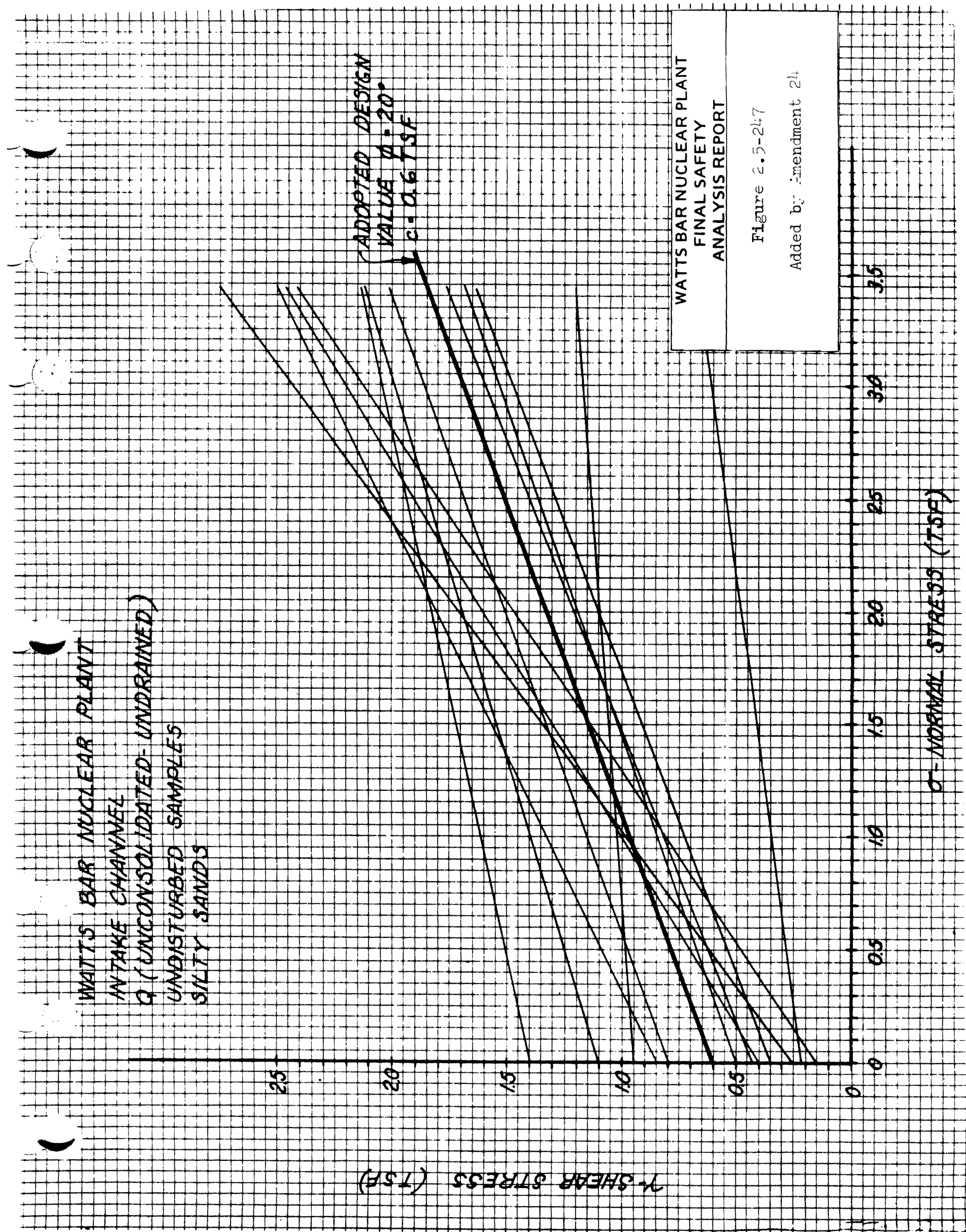


Figure 2.5-247 Intake Channel Q - (Unconsolidated - Undrained - Undisturbed Samples) Silty Sands

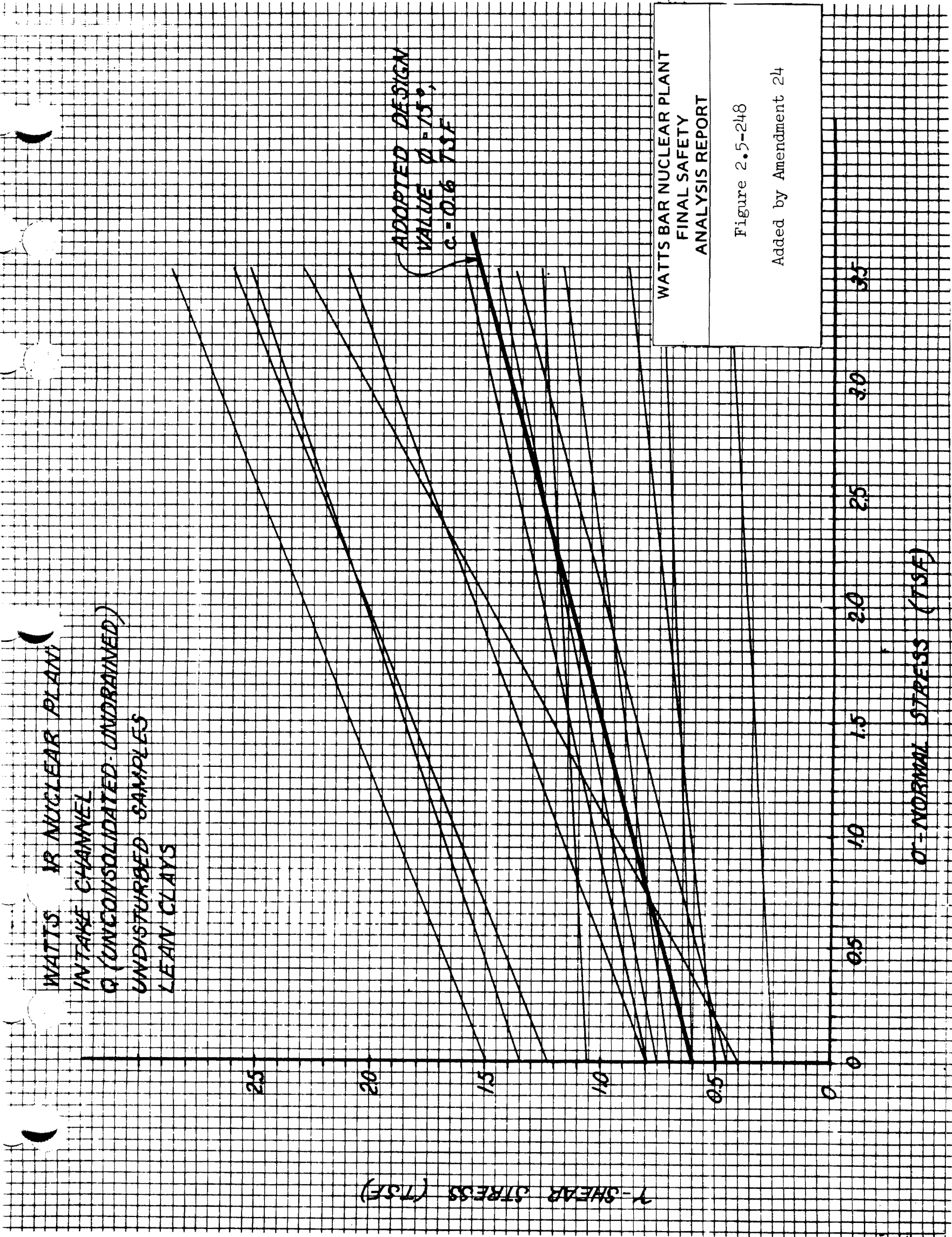


Figure 2.5-248 Intake Channel Q - (Unconsolidated-Undrained) Undisturbed Samples Lean Clays

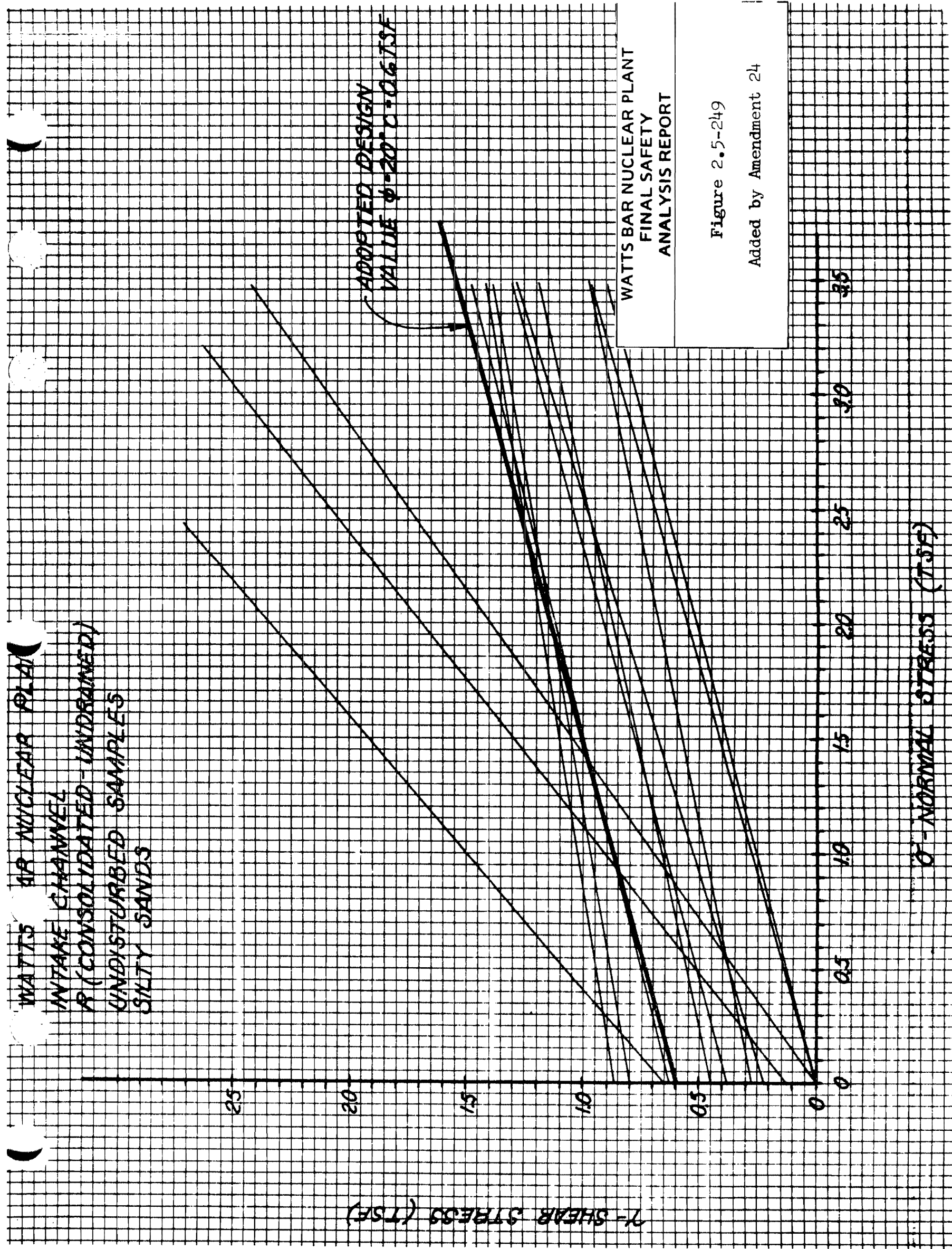


Figure 2.5-249 Intake Channel R - (Consolidated-Undrained) Undisturbed Samples Silty Sands

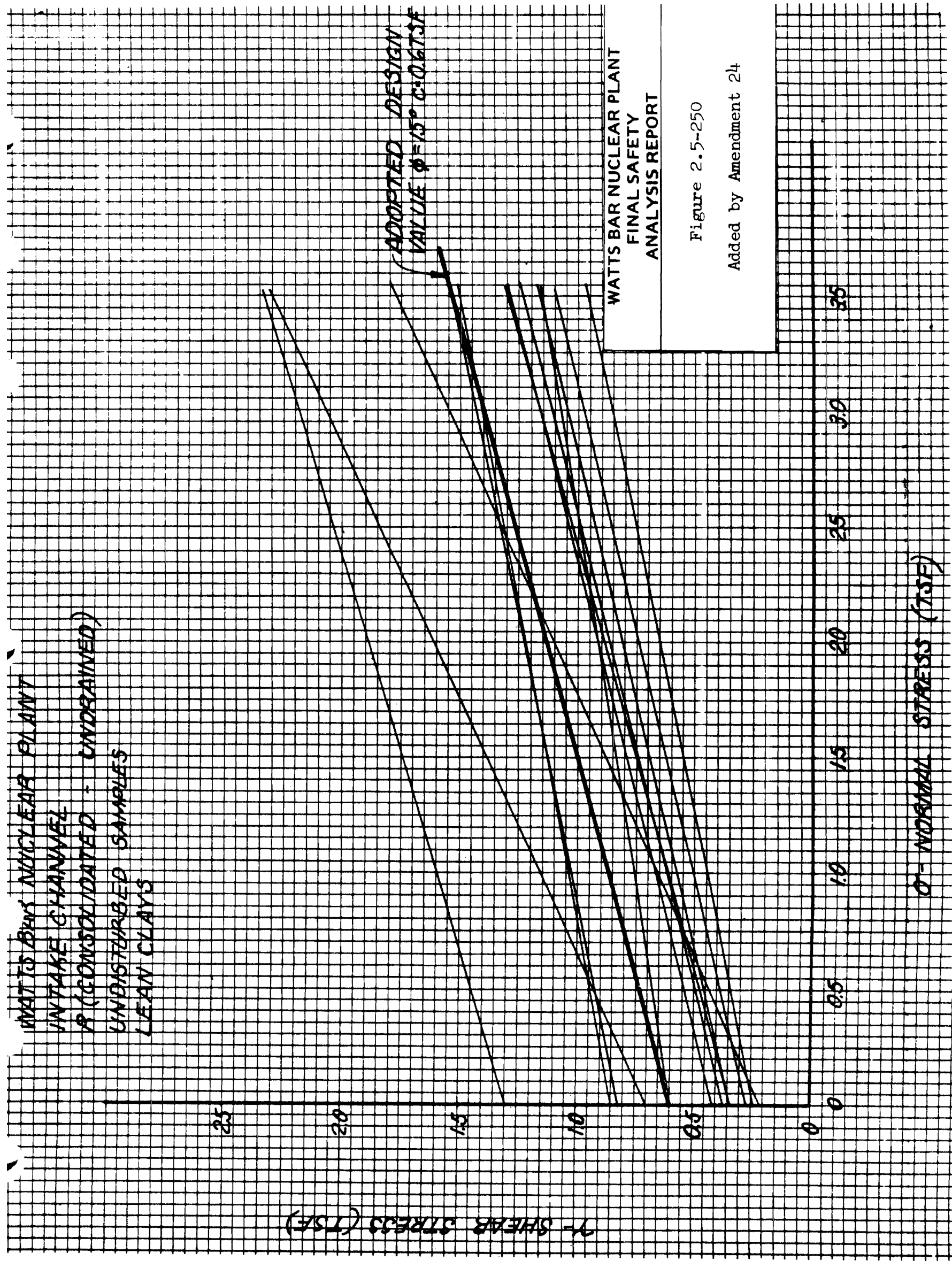


Figure 2.5-250 Intake Channel R - (Consolidated-Undrained) - Undisturbed Samples Lean Clays

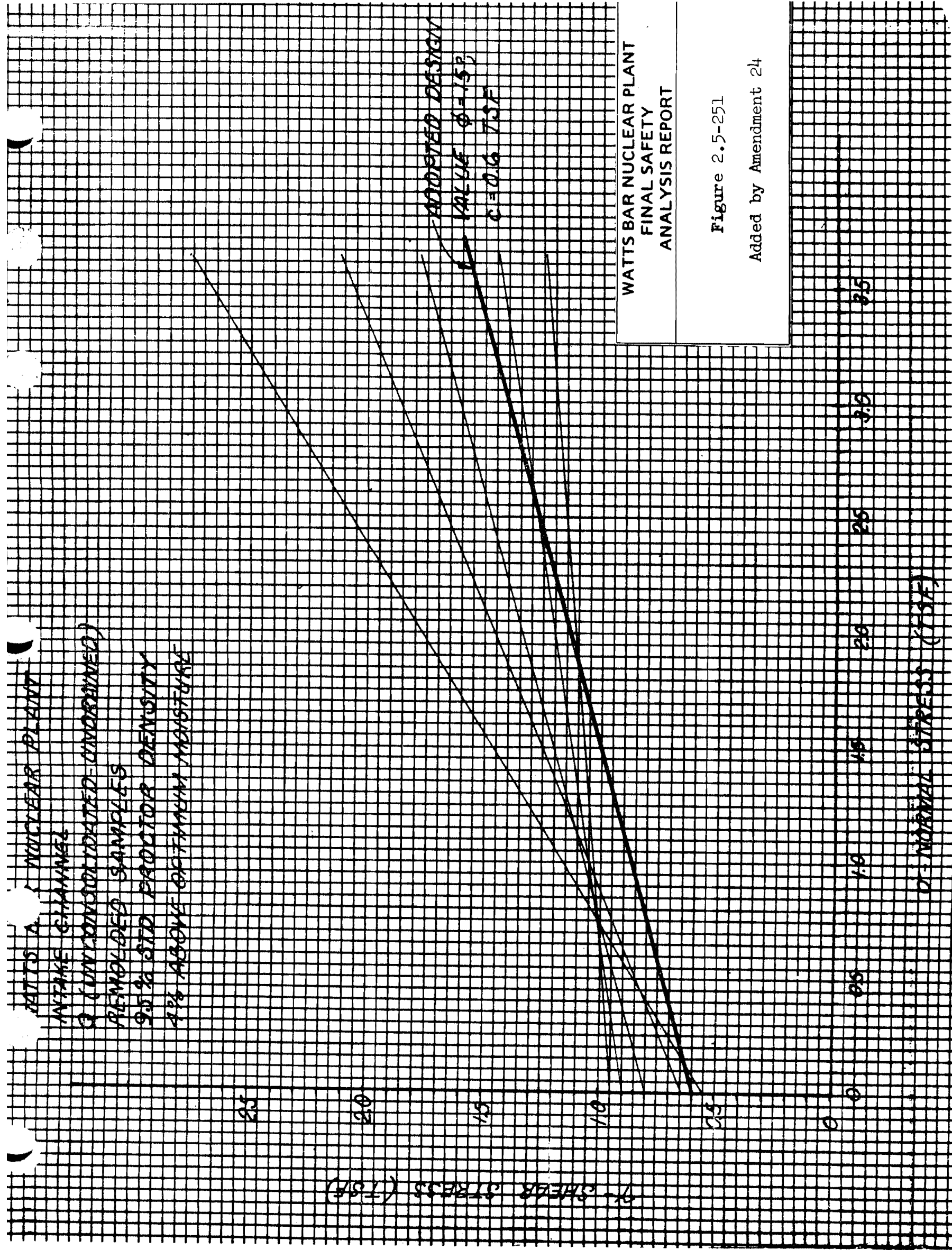


Figure 2.5-251 Intake Channel Q - (Unconsolidated Undrained) Remoled Samples 95% STD Proctor Density 4% Above Optimum Moisture

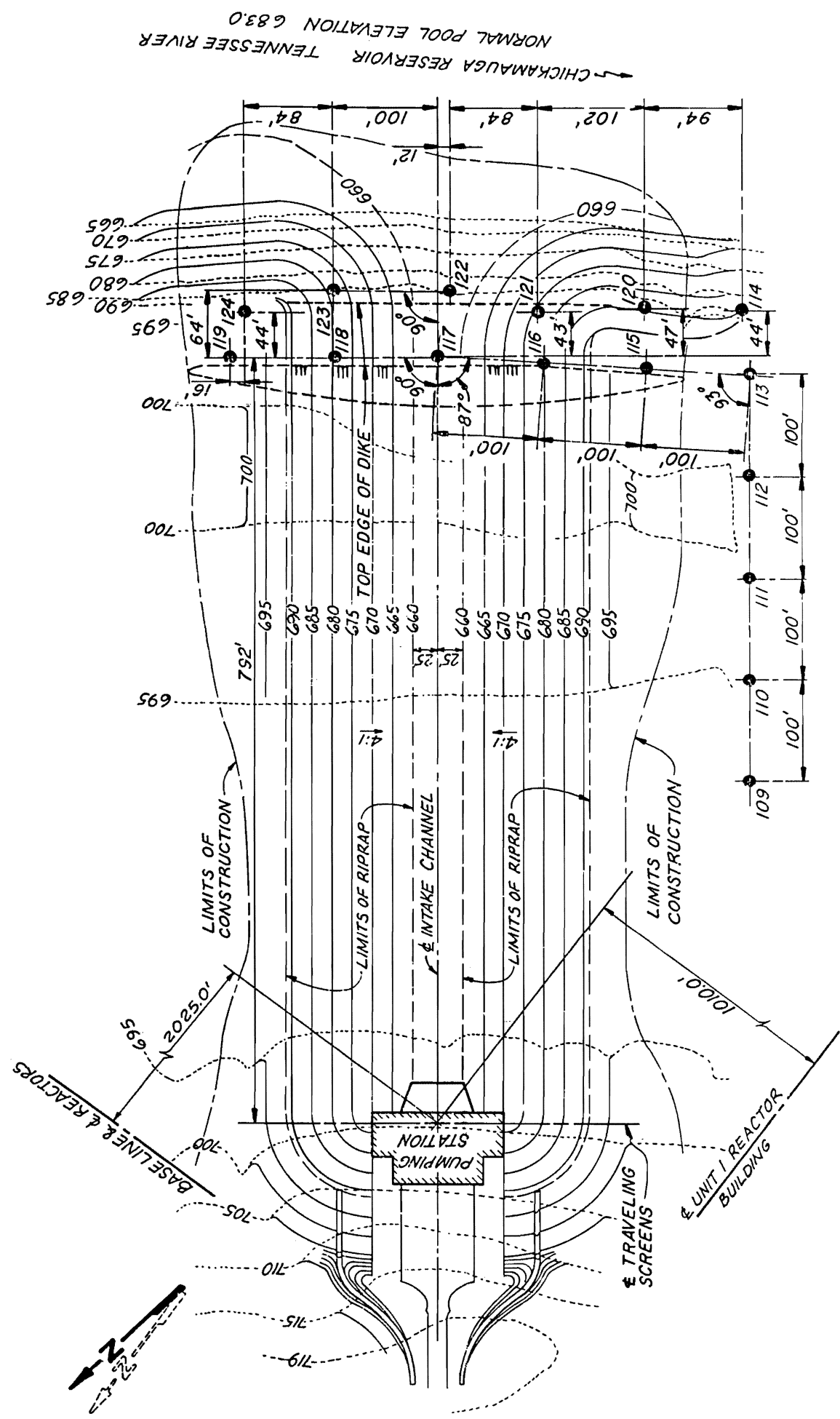


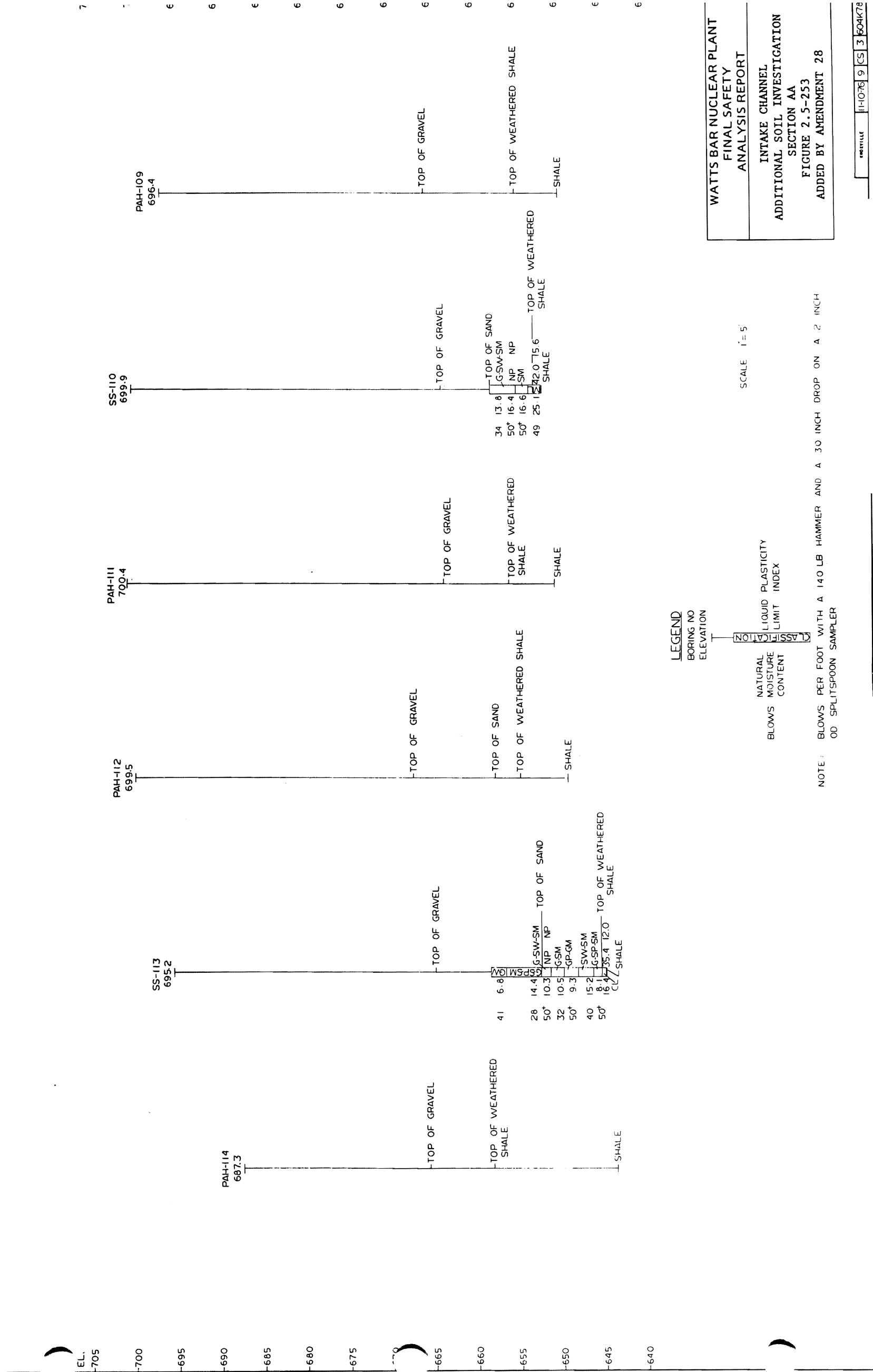
Figure 2.5-252 Site Studies Intake Channel Additional Soils Investigation

Revised by Amendment 44

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SITE STUDIES
INTAKE CHANNEL
ADDITIONAL SOILS
INVESTIGATION
TVA DWG NO. 10B333 R1
FIGURE 2.5-252

LEGEND:
● SOIL BORING



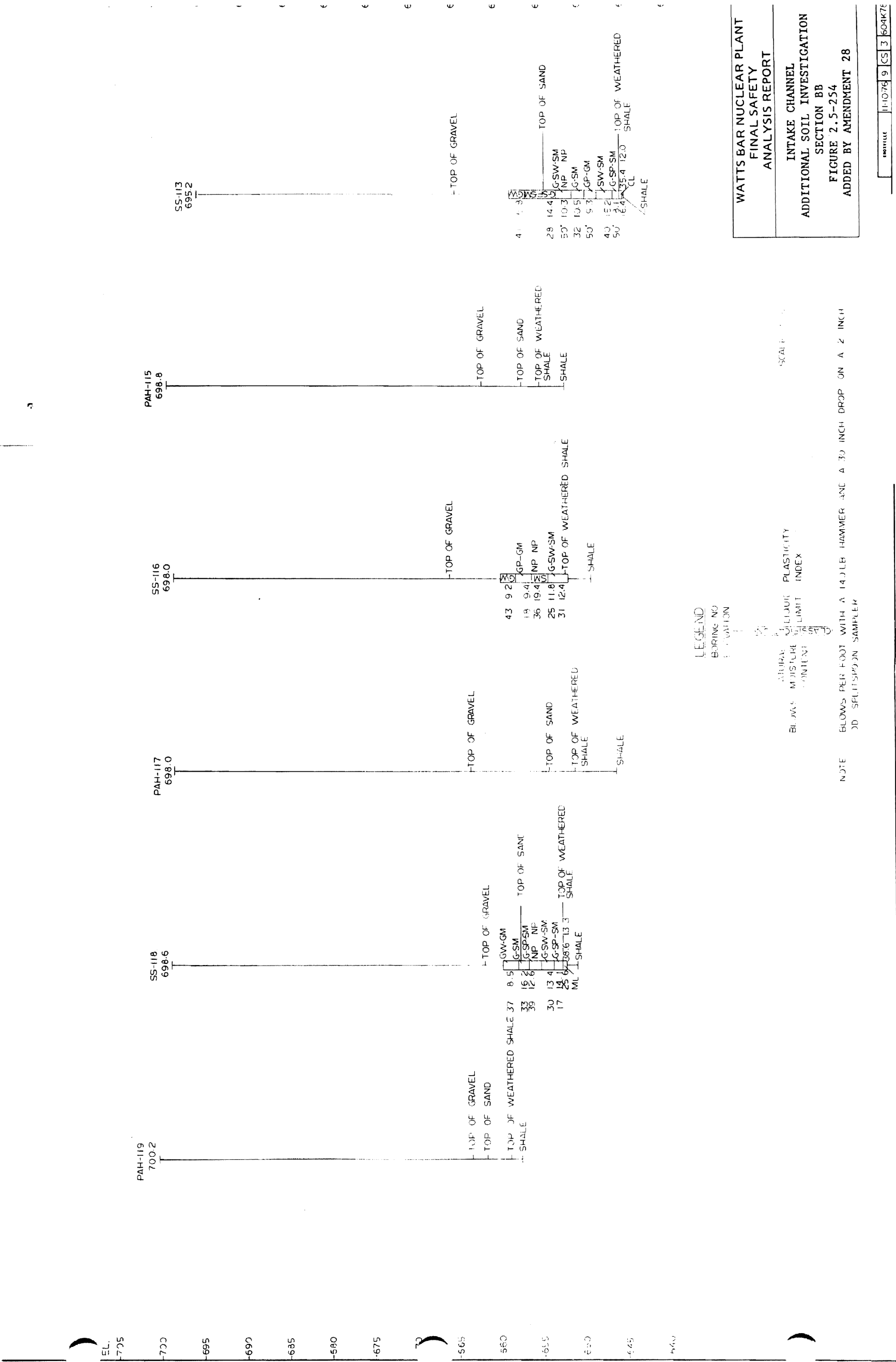


Figure 2.5-254 Intake Channel Additional Soil Investigation Section BB

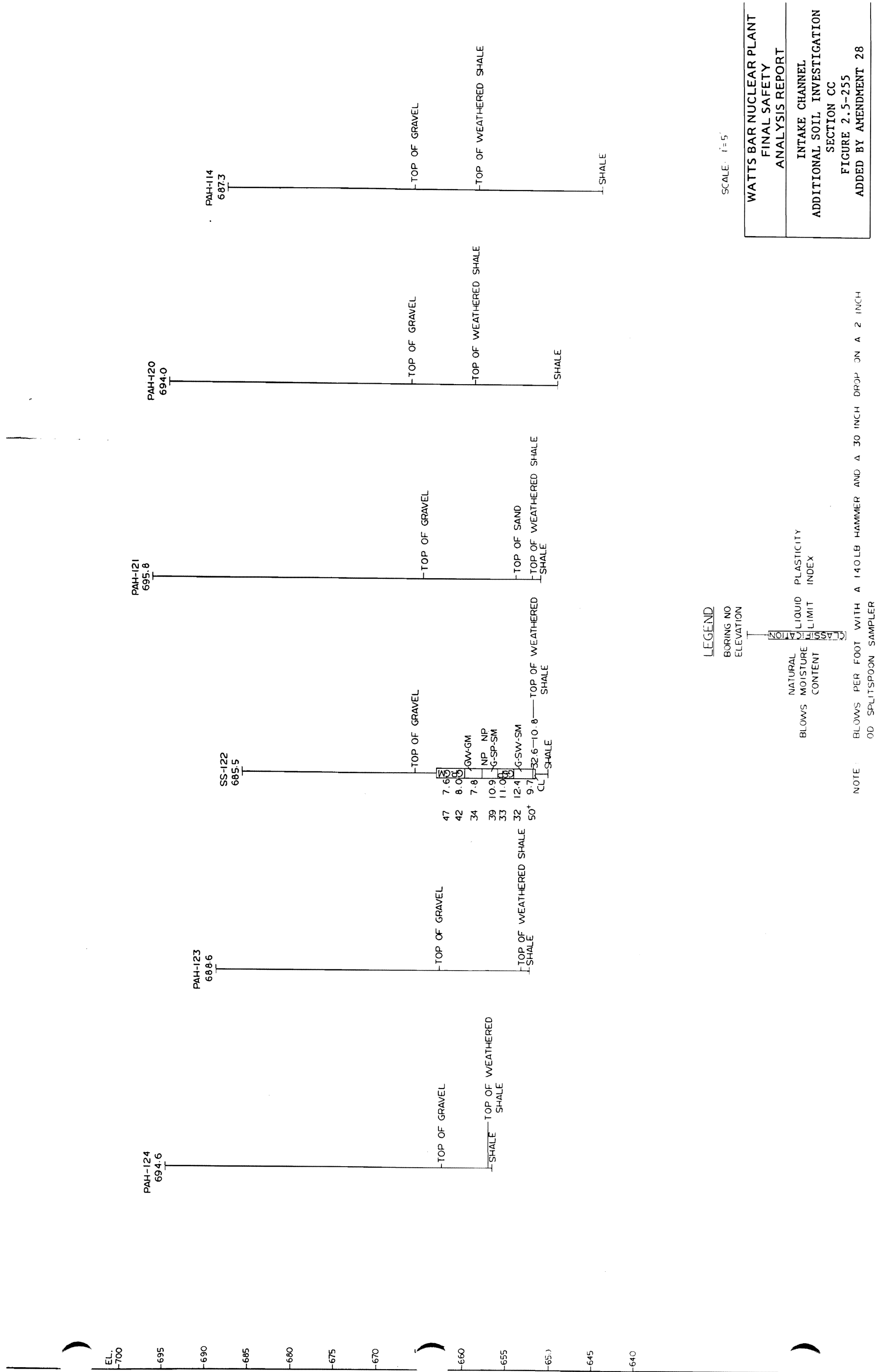
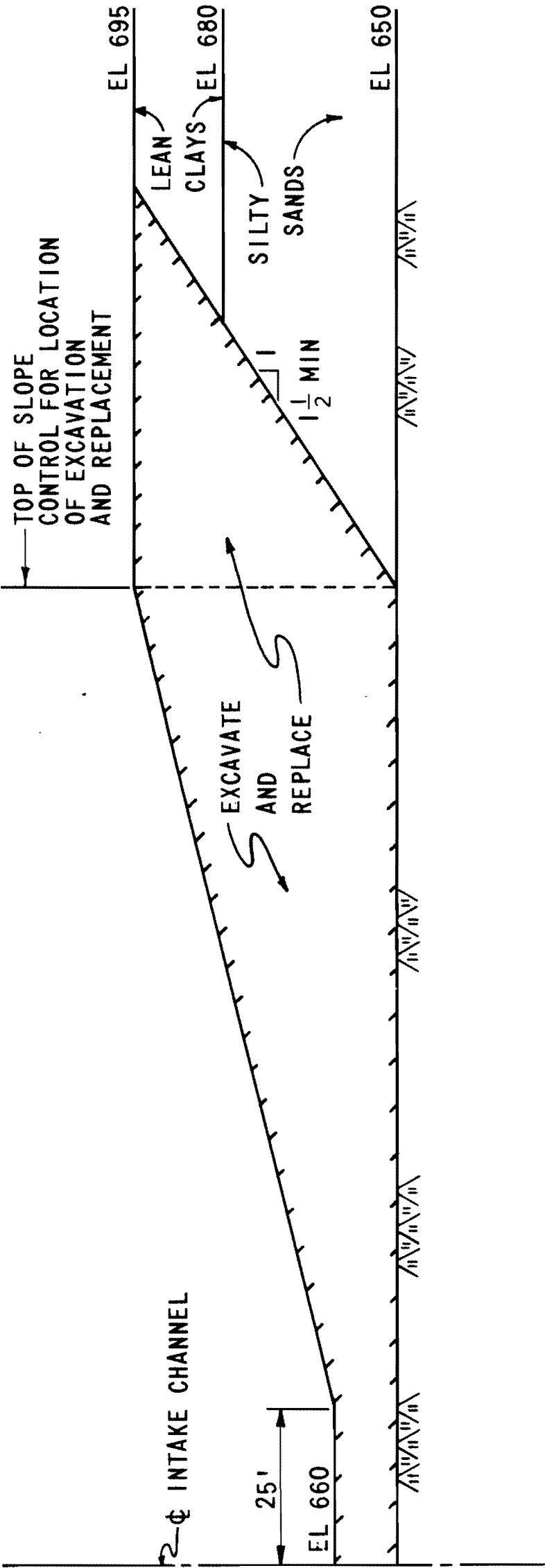


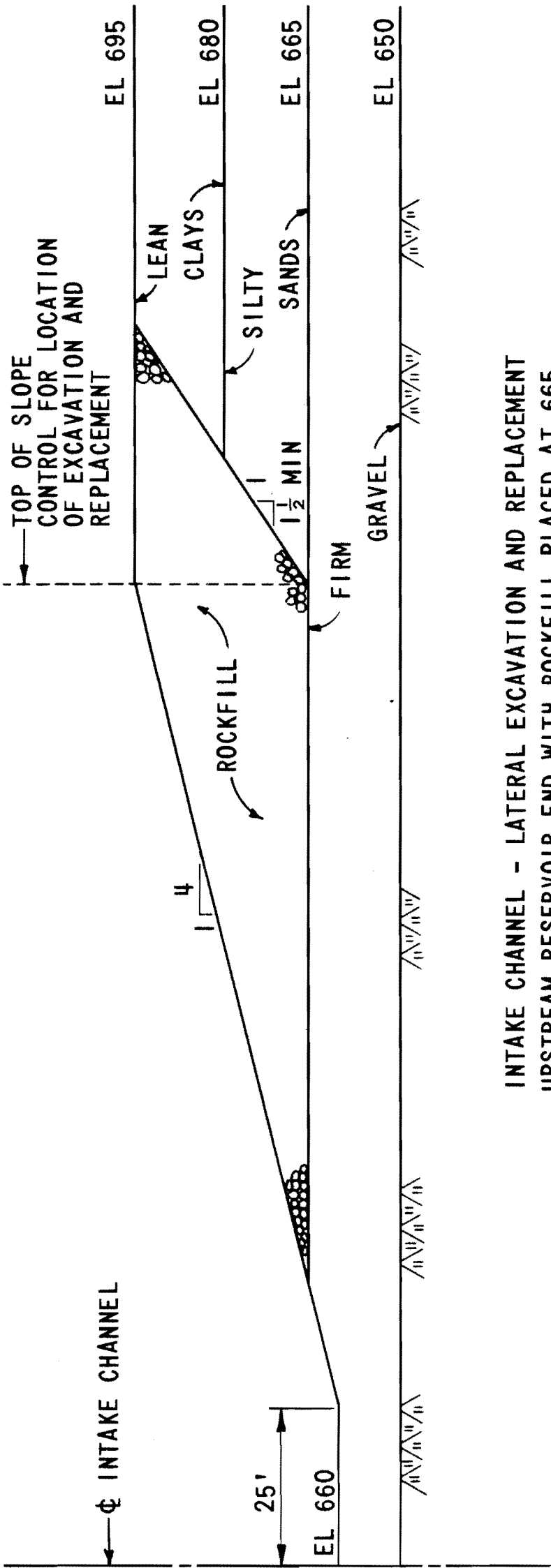
Figure 2.5-255 Intake Channel Additional Soil Investigation Section CC



INTAKE CHANNEL - LATERAL EXCAVATION AND REPLACEMENT
DOWNSTREAM SIDE OF INTAKE CHANNEL WITH BEDROCK AT 650

FIGURE 2.5-257
ADDED BY AMENDMENT 28

Figure 2.5-257 Intake Channel - Lateral Excavation and Replacement Downstream Side of Intake Channel with Bedrock at 650



INTAKE CHANNEL - LATERAL EXCAVATION AND REPLACEMENT
UPSTREAM RESERVOIR END WITH ROCKFILL PLACED AT 665

FIGURE 2.5-258
ADDED BY AMENDMENT 28

Figure 2.5-258 Intake Channel - Lateral Excavation and Replacement Upstream Reservoir End with Rockfill Placed at 665

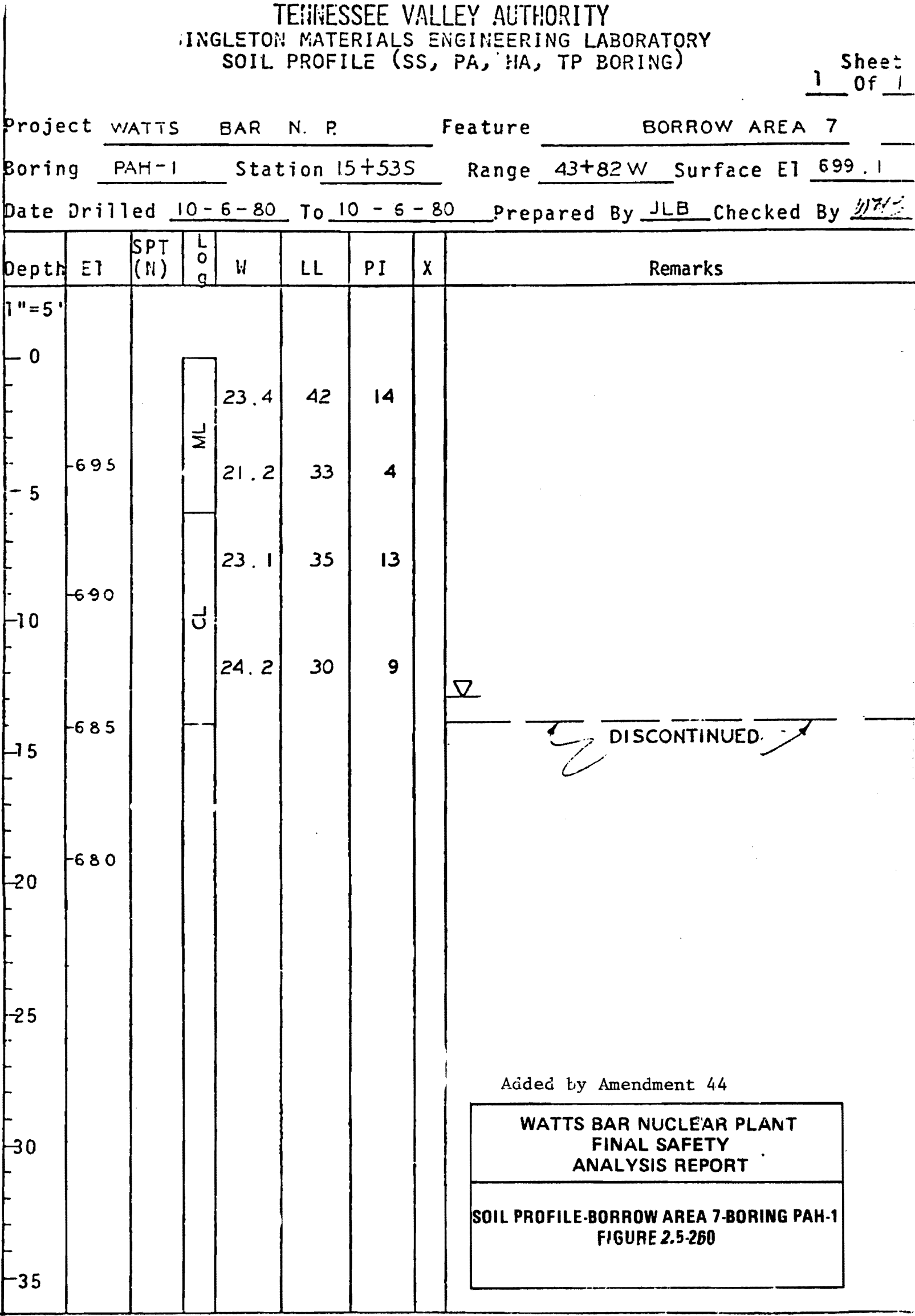


Figure 2.5-260 Soil Profile - Borrow Area 7, Boring PAH-1

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

Shee
 1 of 1

Project WATTS BAR N. P. Feature BORROW AREA 7
 Boring PAH-2 Station 15+92S Range 45+78W Surface El 693.3
 Date Drilled 10-6-80 To 10-6-80 Prepared By JLB Checked By JLB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0			CL-ML	20.4	41	15		
	695							
5			ML	20.8	33	12		
	690							
10				26.3	34	13		
	685							DISCONTINUED
15								
	680							
20								
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-2
 FIGURE 2.5-261

Figure 2.5-261 Soil Profile - Borrow Area 7, Boring PAH-2

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

Sheet
 1 of 1

Project WATTS BAR N. P. Feature BORROW AREA 7
 Boring PAH-3 Station 16+31S Range 47+74W Surface El 695.2
 Date Drilled 10-7-80 To 10-7-80 Prepared By JLB Checked By JLB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0	695		CL-ML	21.9	36	12		
5	690			23.2	32	10		
10	685		CL	25.5	31	10		
				26.2	32	12		
15	680							DISCONTINUED
20								
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-3
 FIGURE 2.5-262

Figure 2.5-262 Soil Profile - Borrow Area 7, Boring PAH-3

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE, (SS, PA, HA, TP BORING)

Sheet
 1 of 1

Project WATTS BAR N. P. Feature BORROW AREA 7
 Boring PAH-4 Station 16+71S Range 49+70 Surface El 695.6
 Date Drilled 10-7-80 To 10-7-80 Prepared By JLB Checked By JLB

Depth	El	SPT (N)	Soil	W	LL	PI	X	Remarks
1"=5'								
0	695		CL-ML	21.7	40	15		
5	690			22.7	38	13		
10	685		ML	27.7	43	13		
15	680		CL	25.1	45	25		
				24.4	44	21		
20	675							DISCONTINUED
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-4
 FIGURE 2.5-263

Figure 2.5-263 Soil Profile - Borrow Area 7, Boring PAH-4

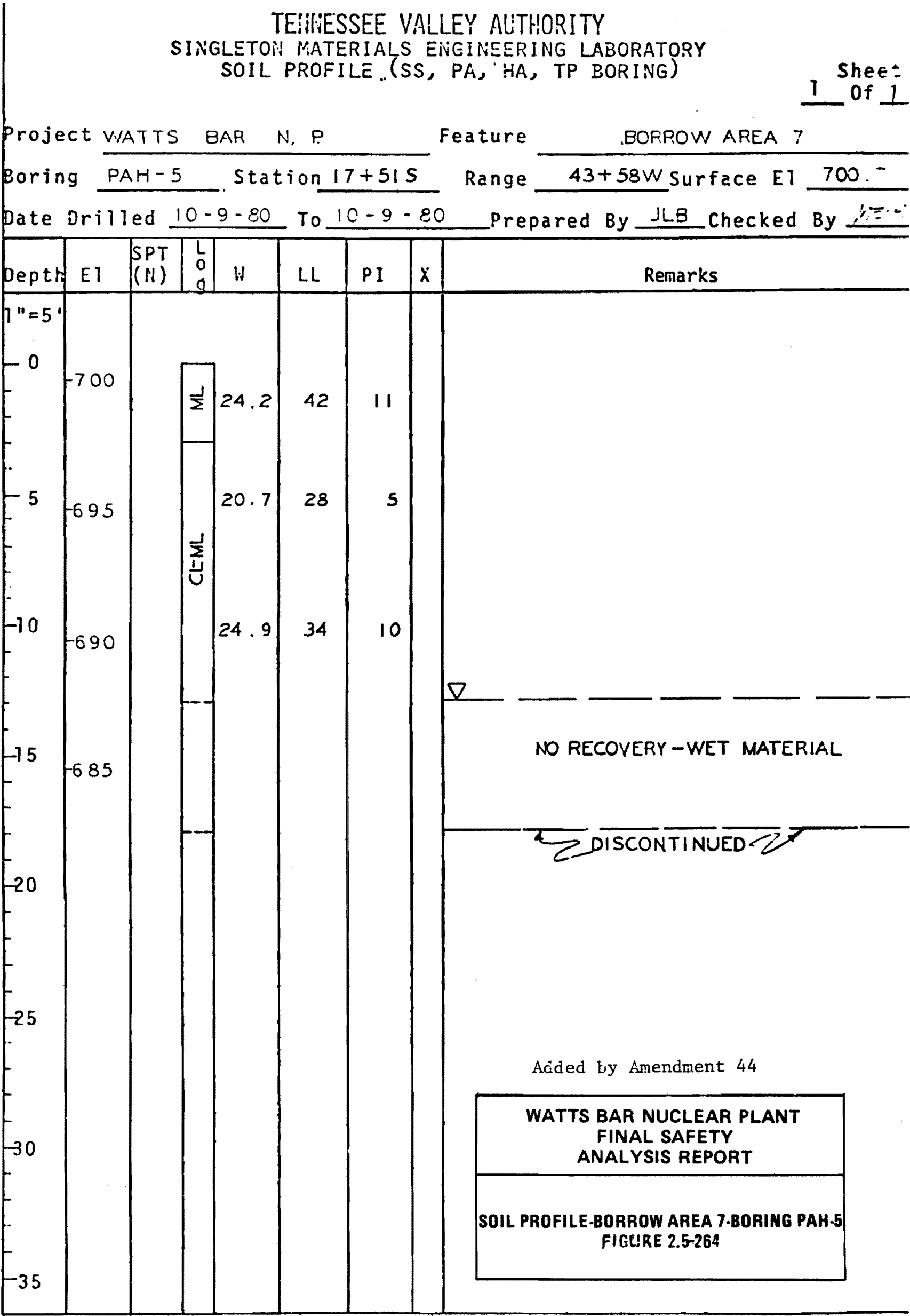


Figure 2.5-264 Soil Profile - Borrow Area 7, Boring PAH-5

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

Sheet
 1 of 1

Project WATTS BAR N. P. Feature BORROW AREA 7
 Boring PAH-6 Station 17+91S Range 45+54W Surface El 693.
 Date Drilled 10-7-80 To 10-7-80 Prepared By JLB Checked By JLB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0			ML	21.1	32	7		
	695							
5			CL	25.6	31	9		
	690							
10			CL-ML	24.1	27	6		
	685							
15								
	680							
20								
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-6
 FIGURE 2.5-265

Figure 2.5-265 Soil Profile - Borrow Area 7, Boring PAH-6

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

Sheet
 1 of 1

Project WATTS BAR N. P. Feature BORROW AREA 7
 Boring PAH-7 Station 18+30S Range 47+50W Surface El 697.1
 Date Drilled 10-7-80 To 10-7-80 Prepared By JLB Checked By JLB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	695		CL-ML	21.9	49	18		
5								
	690			23.1	40	15		
10			CL					
	685			25.7	34	12		
15								NO RECOVERY - WET MATERIAL
	680							DISCONTINUED
20								
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-7
 FIGURE 2.5-266

Figure 2.5-266 Soil Profile - Borrow Area 7, Boring PAH-7

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

Sheet
 1 of 1

Project WATTS BAR N. P Feature BORROW AREA 7
 Boring PAH-8 Station 18+69S Range 49+46W Surface El 697.1
 Date Drilled 10-7-80 To 10-7-80 Prepared By JLB Checked By [Signature]

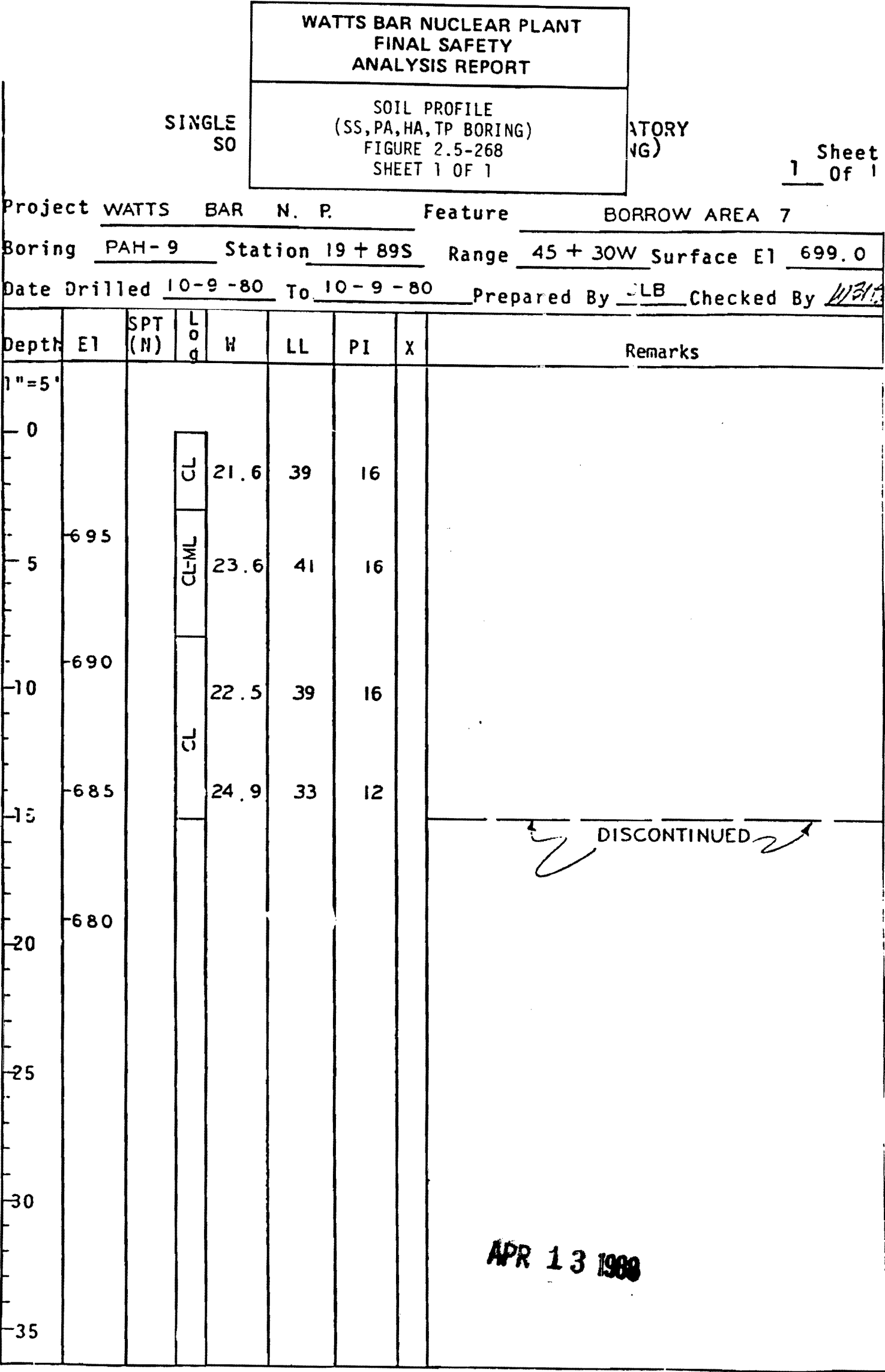
Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	695		CL	22.7	43	18		
5			CL-ML	23.6	38	13		
	690							
10			MH	26.9	53	23		
	685							
15			CL	24.7	42	19		
	680							
20								DISCONTINUED
	675							
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-8
 FIGURE 2.5-267

Figure 2.5-267 Soil Profile - Borrow Area 7, Boring PAH-8



Added by Amendment 62

Figure 2.5-268 Soil Profile - Borrow Area 7, Boring PAH-9 (SS, PA, HA, TP, Boring)

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

Sheet
 1 of 1

Project WATTS BAR N. P. Feature BORROW AREA 7
 Boring PAH-10 Station 20+28S Range 47+26W Surface El 698.2
 Date Drilled 10-9-80 To 10-9-80 Prepared By JLB Checked By [Signature]

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0			CL	25.2	47	22		
	695							
5			CLML	25.1	46	18		
	690							
10			CHMH	26.5	52	23		
	685							
15			CL	25.7	48	23		
	680							DISCONTINUED
20								
	675							
25								
30								
35								

Added by Amendment 44

WATTS BAR NUCLEAR PLANT
 FINAL SAFETY
 ANALYSIS REPORT

SOIL PROFILE-BORROW AREA 7-BORING PAH-10
 FIGURE 2.5-269

Figure 2.5-269 Soil Profile - Borrow Area 7, Boring PAH-10

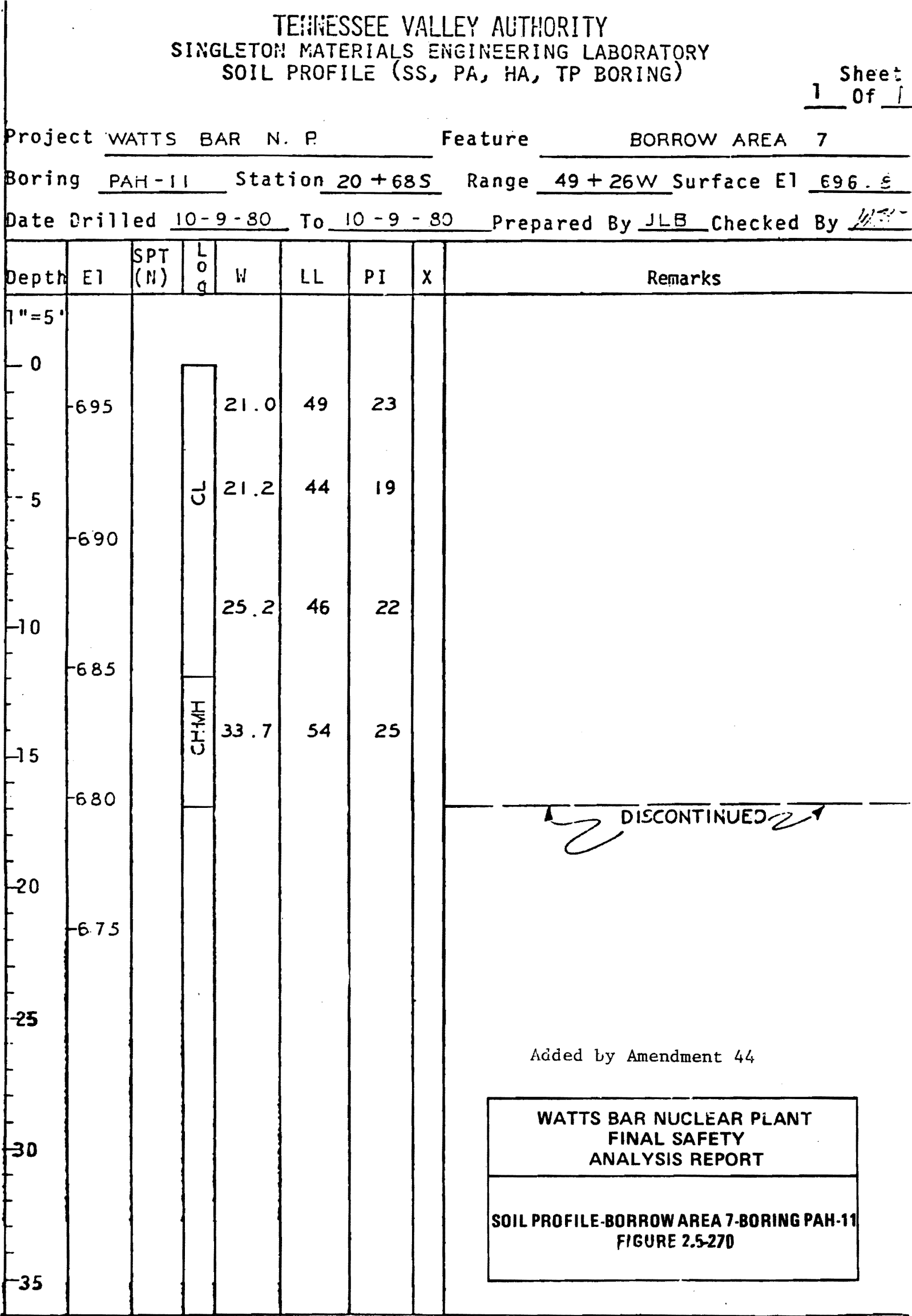
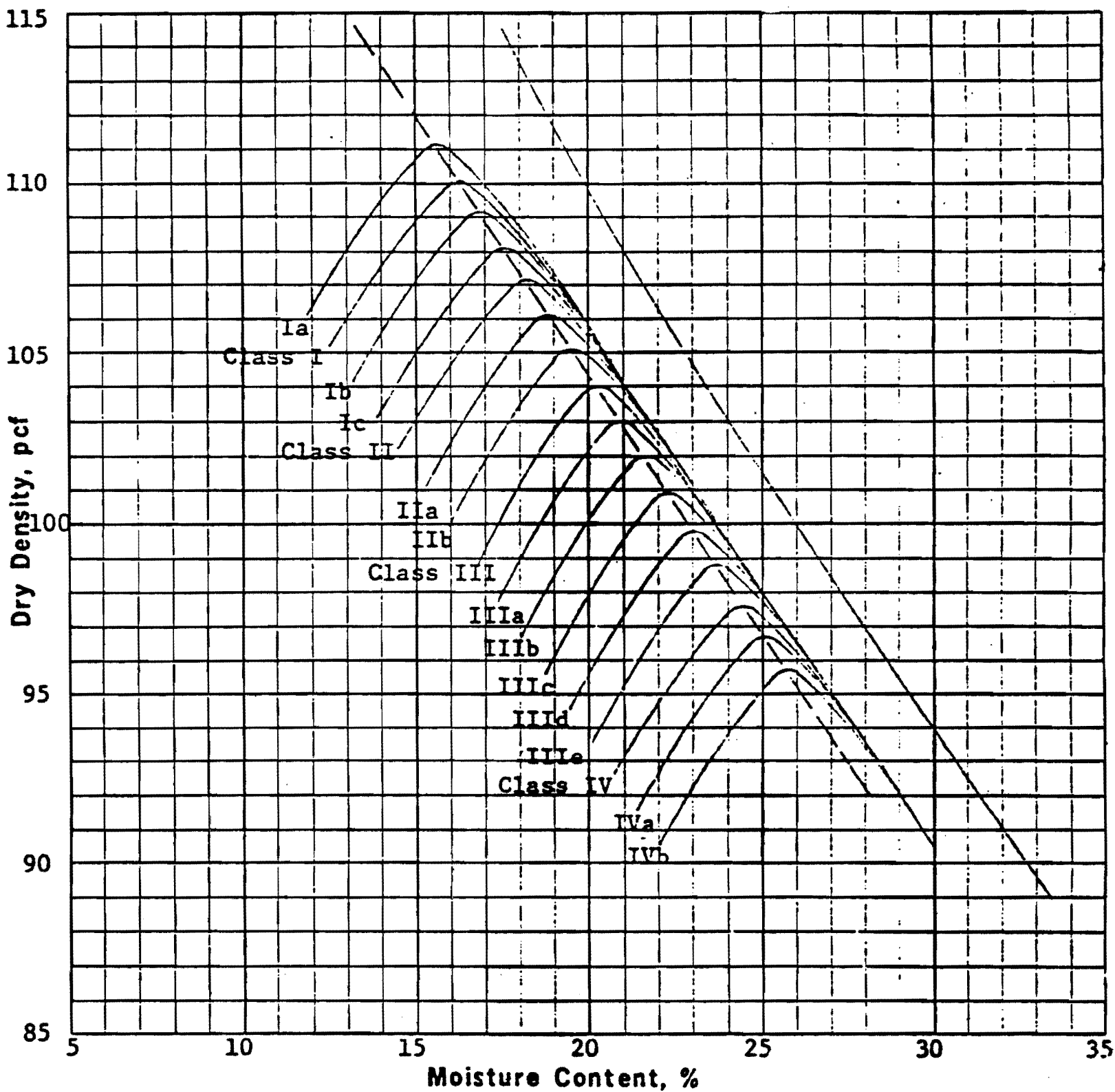


Figure 2.5-270 Soil Profile - Borrow Area 7, Boring PAH-11



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-CL	0	32	39	29	2.75	34	11	16.2	110.1
II-CL	0	34	35	31	2.72	34	12	18.2	107.2
III-CL	0	19	39	42	2.74	43	18	20.2	104.0
IV-CH-MH	0	6	42	52	2.74	54	25	24.4	97.7

Added by Amendment 44

Plus No. 4 Specific Gravity, S S D	
Plus No. 4 Absorption, %	
Remarks:	

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

COMPACTION TEST (FAMILY OF CURVES)
BORROW AREA 7
FIGURE 2.5-271

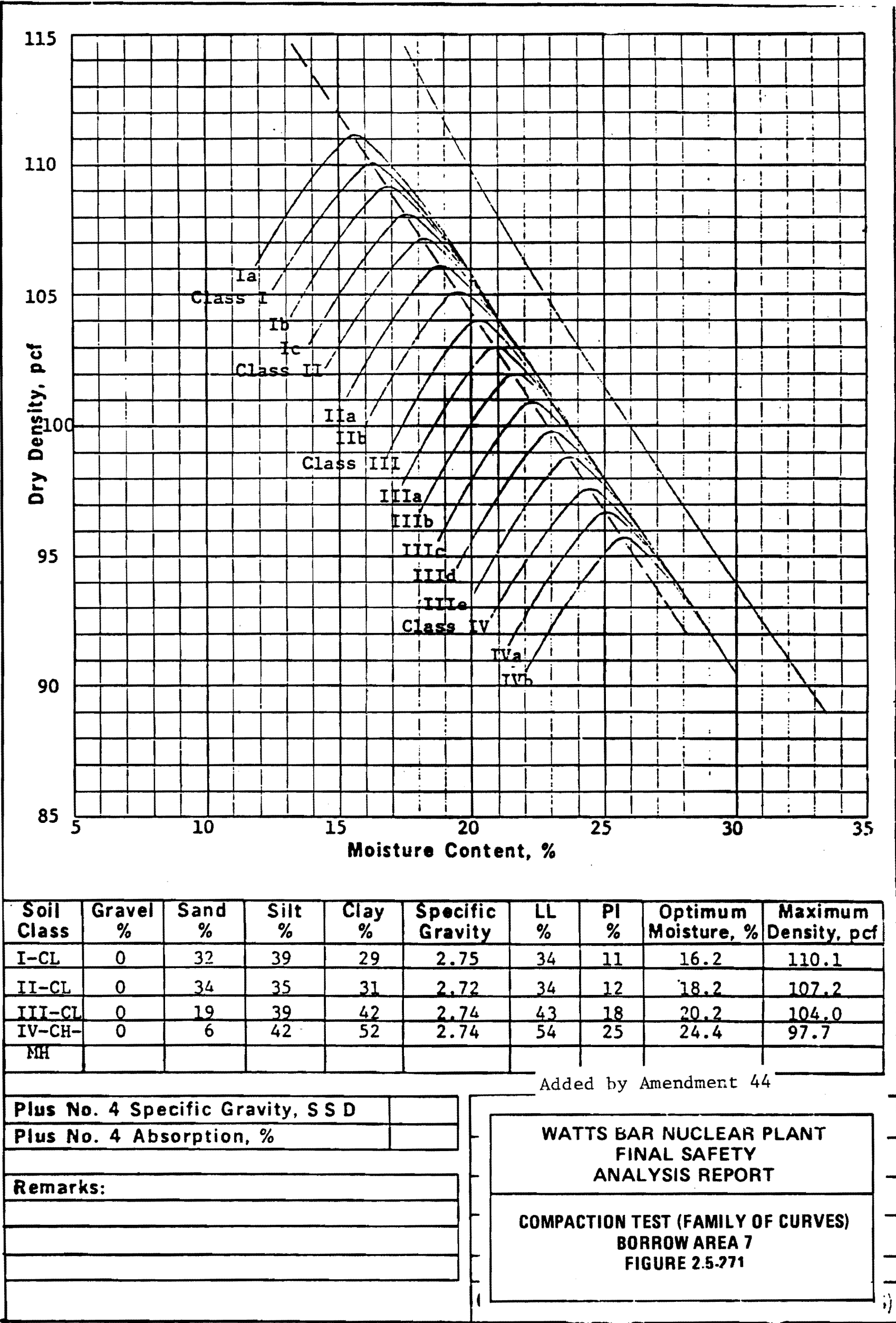
TVA 10201 (CONST-12-76)

Tested by: CHF

Reviewed by: QLE

24

Figure 2.5-271 Compaction Test (Family of Curves) - Borrow Area 7



TVA 10201 (CONST-12-76)

Tested by: CHF

Reviewed by: CLEF

Figure 2.5-272 Moisture - Penetration Test - Borrow Area 7

Figure 2.5-273 Yard Category I ERCW Piping and Conduits Plan

SOIL PROFILE (SS, PA, HA, TP BORING)

SHEET
1 OF 1

PROJECT WATTS BAR N. P. FEATURE 1 E CONDUIT BANKS
BORING SS-171 STATION 760:1 E RANGE 1276.9 S SURFACE E1 721.2
DATE DRILLED 11-25-81 TO 12-1-81 PREPARED BY JLB CHECKED BY HPM

DEPTH	E1	SPT (N)	LOG	W	LL	PI	REMARKS
1"=5'							
0	-720						
							1032 - GRAVEL FILL
5	-715						
10	-710	20	SMSC	24.6	40	14	
		11	SM	26.4	42	15	
		6	SM	26.7			ALLUVIUM
15	-705	9		26.5			
		9	SPSM	24.1	NP	NP	
20	-700	12		30.9			
		50	SM	19.7	37	11	WEATHERED SHALE
		50	ML	23.4	NP	NP	
25	-695						BEDROCK
30							
							Added by Amendment 49
							WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
							SOIL PROFILE (SS, PA, HA, TP BORING) 1E CONDUIT BANKS FIGURE 2.5-274
35							

Figure 2.5-274 Soil Profile (SS, PA, HA, TP, Boring) 1E Conduit Banks

SINGLETON MATERIALS ENGINEERING LABORATORY
SOIL PROFILE (SS, PA, HA, TP BORING)

SHEET
1 OF 1

PROJECT WATTS BAR N. P. FEATURE 1 E CONDUIT BANKS
BORING SS-172 STATION 672.25 E RANGE 1227.75 S SURFACE E1 723.0
DATE DRILLED 12-7-81 TO 12-7-81 PREPARED BY JLB CHECKED BY HDM

DEPTH	E1	SPT (N)	COL G	W	LL	PI	REMARKS
1"=5'							
0							
							1032- GRAVEL FILL
	-725	17		19.4			
					34	15	
5		14		20.9			BACKFILL
		8		23.3	36	16	
	-720		CL				
		15		21.4	41	18	
10		17		19.9	36	13	
	-715	34		19.2	38	15	
15		33	CL-ML	23.5	48	21	ALLUVIUM
		29		20.6	39	17	
	-710						
		15	CL	26.1	40	17	
20		15		23.7	42	18	
	-705	30	GM	13.8	34	9	
25		43		22.0	35	8	
			SM				
		50		22.5	36	10	
	-700						WEATHERED SHALE Added by Amendment 49
		50		21.2	35	11	
30			SM-SC				WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
		50		21.9	36	12	
	-695	41	SM	22.6	36	11	
							SOIL PROFILE (SS, PA, HA, TP BORING) 1D CONDUIT BANKS FIGURE 2.5-275
35							

Figure 2.5-275 Soil Profile (SS, PA, HA, TP, Boring) 1E Conduit Banks

SOIL PROFILE (SS, PA, HA, TP BORING)

SHEET 1 OF 1

PROJECT WATTS BAR N. P. FEATURE IE CONDUIT BANKS

BORING SS-173 STATION 583.3E RANGE 1177.8 S SURFACE E1 728.0

DATE DRILLED 12-2-81 TO 12-3-81 PREPARED BY JLB CHECKED BY HJ

DEPTH	E1	SPT (N)	GOL	W	LL	PI	REMARKS
1"=5'							
0							1032-GRAVEL FILL
5	-725	18	CL	22.3	46	20	
		20	CL-ML	21.9	41	14	
10	-720	16	CL	19.3	40	16	
		23	ML	20.4	39	13	ALLUVIUM
		25		17.8	30	9	
15	-715	37	SC	18.8	33	12	
		28	ML-MH	25.0	49	17	
20	-710	25	SC	20.9	35	13	
		20	SM-SC	20.6	37	12	
		28	SM	24.6	55	20	
25	-705	50	CH-MH	22.9	42	14	
		21		36.6	41	9	
30	-700	40	SM	23.5	48	11	WEATHERED SHALE Added by Amendment 49
		25		25.8	36	10	
		34		24.9	39	13	
35	-695	30	SM-SC	20.5	33	9	

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
(SS, PA, HA, TP BORING)
ID CONDUIT BANKS
FIGURE 2.5-276 (SHEET 1 OF 2)

Figure 2.5-276 Soil Profile (SS, PA, HA, TP, Boring) IE Conduit Banks Sheet 1 of 2

DEPTH	E1	SP1 (N)	LOG	W	LL	PI	REMARKS
1"=5' 35		50+	SMSC	17.6	33	10	WEATHERED SHALE
690		50		18.5	29	7	
40		50+		17.0	30	9	
			SC				BEDROCK
685							
45							
50							
55							
60							
65							
70							
75							
80							

Added by Amendment 49

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
(SS, PA, HA, TP BORING)
ID CONDUIT BANKS
FIGURE 2.5-276 (SHEET 2 OF 2)

Figure 2.5-276 Soil Profile (SS, PA, HA, TP, Boring) ID Conduit Banks Sheet 2 of 2

SINGLETON MATERIALS ENGINEERING LABORATORY
SOIL PROFILE (SS, PA, HA, TP BORING)

SHEET
1 OF 1

PROJECT WATTS BAR N.P. FEATURE IE CONDUIT BANKS
BORING SS-174 STATION 49Q.75E RANGE 1123.75S SURFACE E1 728.0
DATE DRILLED 12-3-81 TO 12-4-81 PREPARED BY JLB CHECKED BY HPM

DEPTH	E1	SPT (N)	LOG	W	LL	PI	REMARKS
1"=5'							
0							
							1032-GRAVEL FILL
	725	40	ML	21.5	43	15	
5		18	CL	19.4	39	18	
		33	ML	21.9	44	15	
	720	47	CL	19.1	40	18	BACKFILL
10		47	ML	25.4	44	15	
		45		21.3	38	12	
	715	40	SC	15.5	32	13	
15		41	CL ML	19.0	39	15	
	710	50+	SM	18.3	NP	NP	ALLUVIUM
20		50+	GC	14.2			
		50+	CL ML	21.3	44	16	
	705	50+					
25		50+					
		50+	ML	21.6	40	13	WEATHERED SHALE
	700	50+	SM	21.6	38	12	Added by Amendment 49
30		50+	SM-SC	18.8	32	8	WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
	695						SOIL PROFILE (SS, PA, HA, TP BORING) ID CONDUIT BANKS FIGURE 2.5-277
- 35							

Figure 2.5-277 Soil Profile (SS, PA, HA, TP, Boring) ID Conduit Banks

TENNESSEE VALLEY AUTHORITY
 SINGLETON MATERIALS ENGINEERING LABORATORY
 SOIL PROFILE (SS, PA, HA, TP BORING)

SHEET
 1 OF 1

PROJECT WATTS BAR N.P. FEATURE 1 E CONDUIT BANKS
 BORING SS - 175 STATION 405.75E RANGE 1072.85 SURFACE E1 728.0
 DATE DRILLED 12-3-81 TO 12-4-81 PREPARED BY JLB CHECKED BY HPA

DEPTH	E1	SPT (N)	LOG	W	LL	PI	REMARKS
1"=5'							
0							
							1032-GRAVEL FILL
5		14	SC	15.9	37	17	
		21	CL-ML	24.5	47	20	
10		19	SC	17.8	37	16	ALLUVIUM
		31	ML	20.8	40	13	
15		38	SC	15.5	32	12	
		22	CH	33.0	54	26	
20		33		25.0	38	10	
		47		23.6	39	12	WEATHERED SHALE
25		42	SM	23.1	43	15	
		30		31.4			
		41		25.7	NP	NP	
30							DISCONTINUED
							Added by Amendment 49
35							WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT SOIL PROFILE (SS, PA, HA, TP BORING) ID CONDUIT BANKS FIGURE 2.5-278

Figure 2.5-278 Soil Profile (SS, PA, HA, TP, Boring) ID Conduit Banks

TENNESSEE VALLEY AUTHORITY
SINGLETON MATERIALS ENGINEERING LABORATORY
SOIL PROFILE (SS, PA, HA, TP BORING)

SHEET
1 OF 1

PROJECT WATTS BAR N.P FEATURE IE CONDUIT BANKS
BORING SS-176 STATION 377.25E RANGE 968.75S SURFACE E1 728.0
DATE DRILLED 12-7-81 TO 12-8-81 PREPARED BY JLB CHECKED BY HFM

DEPTH	E1	SPT (N)	LOG	W	LL	PI	REMARKS
1"=5'							
0							
							1032-GRAVEL FILL
	725	35	SC	15.5	32	12	
		29	SM	11.0	20	1	BACKFILL
5							
		47	SP-SM	5.3			
	720				NP	NP	
		50	SM	11.1			
10							
		50	SM-SC	27.2	26	5	
		50	GP-GM	7.8			ALLUVIUM
	715	50		13.3			
					NP	NP	
15		50	GM	11.5			
		50		13.0			
	710	50	CL-ML	27.5	41	16	
20		47	SM-SC	21.5	39	13	
		50		19.6	36	12	WEATHERED SHALE
	705						
		50	CL-ML	23.8	40	13	
25		50	SM-SC	20.6	36	11	
	700						DISCONTINUED
							Added by Amendment 49
30							
35							

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
(SS, PA, HA, TP BORING)
ID CONDUIT BANKS
FIGURE 2.5-279

Figure 2.5-279 Soil Profile (SS, PA, HA, TP, Boring) ID Conduit Banks

TENNESSEE VALLEY AUTHORITY
SINGLETON MATERIALS ENGINEERING LABORATORY
SOIL PROFILE (SS,PA,HA,TP BORING)

SHEET
1 OF

PROJECT WATTS BAR N.P. FEATURE I.E. CONDUIT BANKS
BORING SS-177 STATION 353.25E RANGE 753.75S SURFACE E1 728.0
DATE DRILLED 12-10-81 TO 12-10-81 PREPARED BY JLB CHECKED BY HPN

DEPTH	E1	SPT (N)	LOG	W	LL	PI	REMARKS
1" = 5'							
0							
							1032-GRAVEL FILL
	725	50+	CL	16.7	34	15	BACKFILL
		50		8.5	NP	NP	
5		20		15.4	24	1	
	720	50+	SM	13.8			
10		50+		14.2			
	715	50+		SP-SM 9.2			
		50+		SW-SM 16.3			ALLUVIUM
15					NP	NP	
		50+	SM	11.2			
	710	50+		SP-SM 11.7			
20		50+	SM	13.1			
	705	50+		12.1 GP-GM			WEATHERED SHALE
		50+		8.2 SM-SC	26	6	
25							BEDROCK
	700						Added by Amendment 50
30							WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
							SOIL PROFILE (SS, PA, HA, TP BORING) ID CONDUIT BANKS FIGURE 2.5-280
35							

Figure 2.5-280 Soil Profile (SS, PA, HA, TP, Boring) ID Conduit Banks

Figure 2.5-281 (Actual Figure Located in Oversized Figures File) (Sheet 1 of 2)

Figure 2.5-281 (Actual Figure Located in Oversized Figures File) (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-282

Added by Amendment 50

Boring SS-49						Boring SS-49A						Prepared by JLB	
Station 1821.9S Range 868.7E						Station 1820.3S Range 871.93E						Checked by HPM	
Surface El 716.9						Surface El 711.7							
Date Drilled 7-7-75 to 7-7-75						Date Drilled 11-16-81 to 11-18-81							
El	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
715	30		23.6	56.0	22.1								
	27	MH	27.2	60.9	25.1								
	30		26.8	53.1	21.4								
710	24	SM	15.4	29.4	5.4	17	CL-ML 21.1		32	8	ROADBED GRAVEL		
	23	SC	20.0	36.2	11.9	14	21.4		30	6			
705	19		21.2	36.0	11.6	9	24.6		29	3			
	18	SM	26.7	34.0	10.2	5	26.5 21.6		28	3			
	13	SM-SC	25.1	28.3	6.5	5	26.5 29.0		NP	NP	ALLUVIUM		
700	14		26.1			6	29.9		23	1			
	12	ML	26.8	28.8	5.3	5	31.8 32.4		NP	NP			
	9		31.9			6	28.3 28.0		22	3			
695	11	ML-CL	29.1	27.4	7.0	5	27.8 28.7		NP	NP			
	6		29.0			6	30.0		NP	NP			
690	4	SM	28.0		NP	17	31.2 21.2		NP	NP			
	31		25.3			50	18.9 SM-SC		37	13	WEATHERED SHALE DISCONTINUED		
685	50		13.7										
	50	SC	14.8	37.5	14.9								
	50		12.7										
680	50		13.5										
	50	GM	13.5										
675													

Figure 2.5-282 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-283
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-131 Station 1755.05 Range 805.0E Surface El 713.9
Date Drilled 6-1-79 To 6-4-79 Prepared By JLB Checked By [Signature]

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								ASPHALT
		25	ML	24.3	48.8	18.4		
	710	25		19.5	39.0	14.7		LEAN CLAY AND SILT FILL
5		21	CL	19.3	35.2	11.5		
	705	18		20.7				
10		10		25.9	37.1	13.3		ALLUVIAL LEAN CLAY AND SILT
		7	ML	22.2	28.5	5.2		
	700	4		28.1	30.8	6.9	▽	
15		5		30.1	25.9	3.3	▽	
		5	SM	29.7				ALLUVIAL SAND
	695	7		26.2				
20		7		24.0	NP	NP		
	690	50	GSM	20.6				ALLUVIAL GRAVEL
25		50	CL	17.2	38.0	14.9		
		50		15.8				
	685	50	SC	15.9	32.7	11.2		WEATHERED SHALE
30		50		14.9				
	680	16		14.1				Added by Amendment 50
35								

Figure 2.5-283 Soil Profile (Sheet 1 of 2)

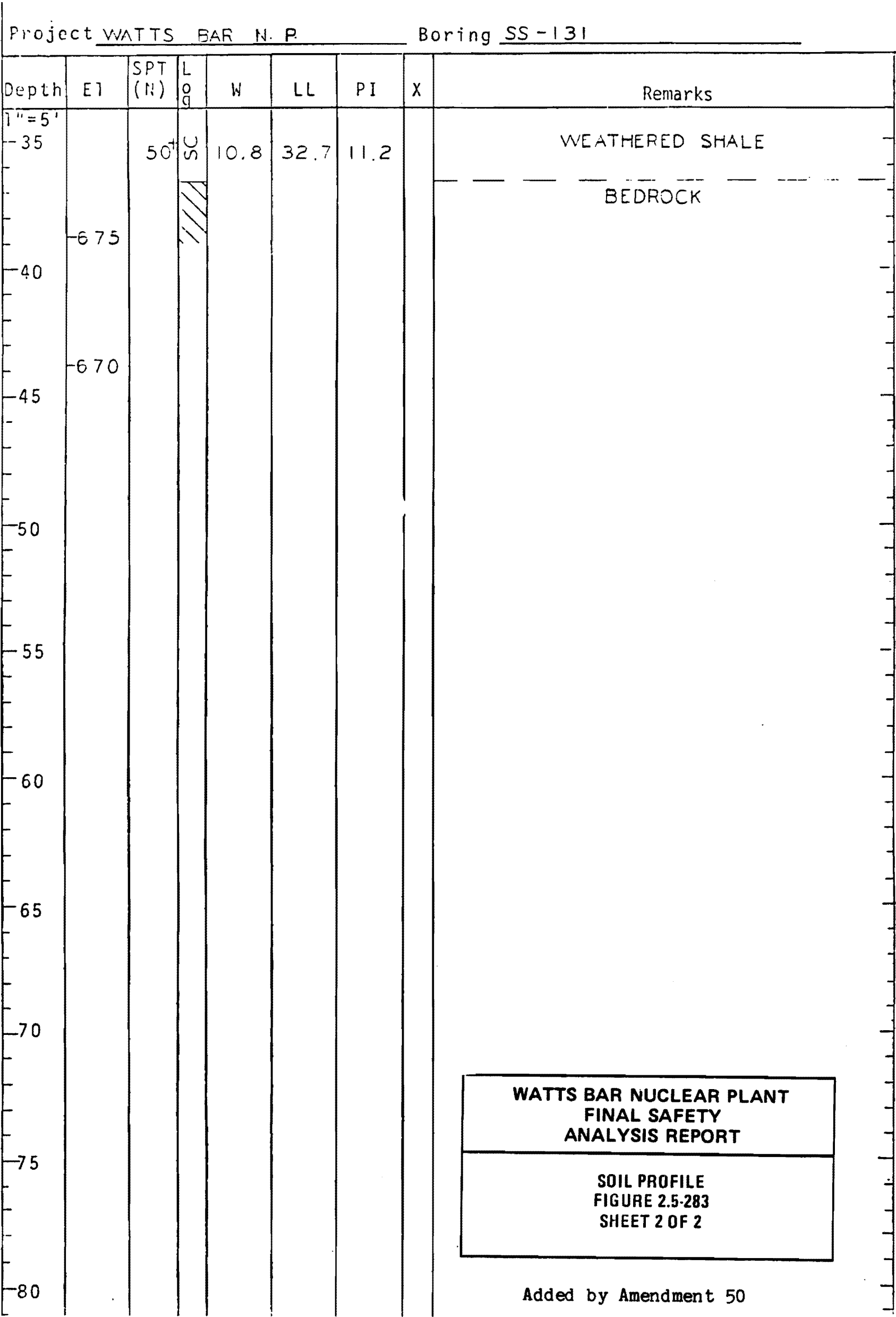


Figure 2.5-283 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

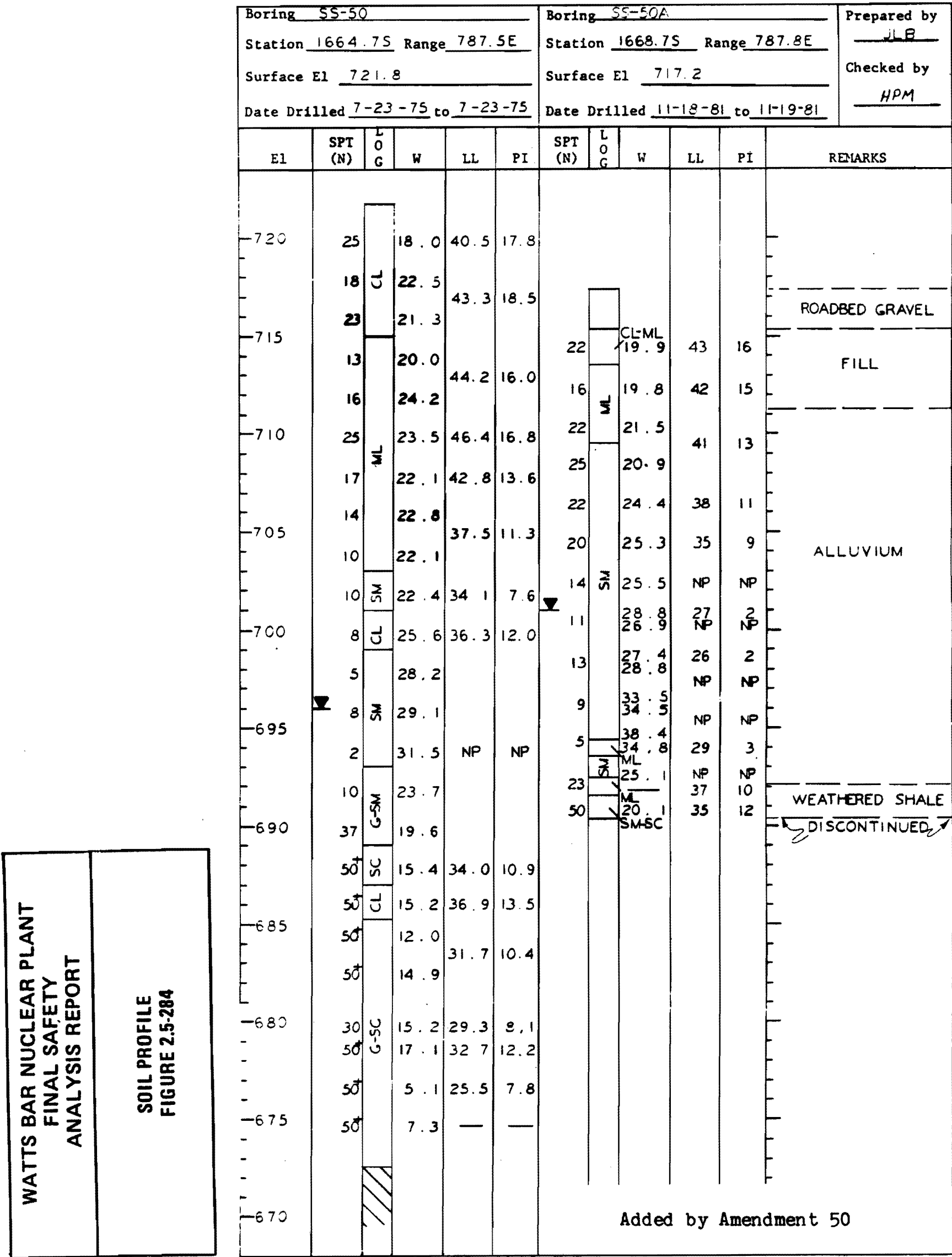


Figure 2.5-284 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-285
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-132 Station 1560.0 S Range E 785.0 E Surface El 719.1
Date Drilled 6-4-79 To 6-5-79 Prepared By JLB Checked By QCL

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		22		19.6				
	715	22		20.3				
5		19		22.3	44.7	17.9		ALLUVIAL SANDY LEAN CLAY
	710	14	CL	21.3				
10		15		21.8				
		13		23.5			▽	
	705	14		23.6	42.0	17.8	▽	
15		13		25.7	43.1	15.2		
		15	ML	23.4	45.8	17.5		ALLUVIAL LEAN SILT
20	700	5	CL	25.9	40.4	16.8		
		50+		—	—	—		NO SAMPLE RECOVERY
	695	18		22.7				LAMINATED RESIDUAL CLAY
25		29	CL	19.3	40.8	16.6		
		50+		20.2				
30	690	50+		16.5	37.1	12.9		WEATHERED SHALE
		50+	SC	15.6				
	685	48		16.6				Added by Amendment 50
35								

Figure 2.5-285 Soil Profile (Sheet 1 of 2)

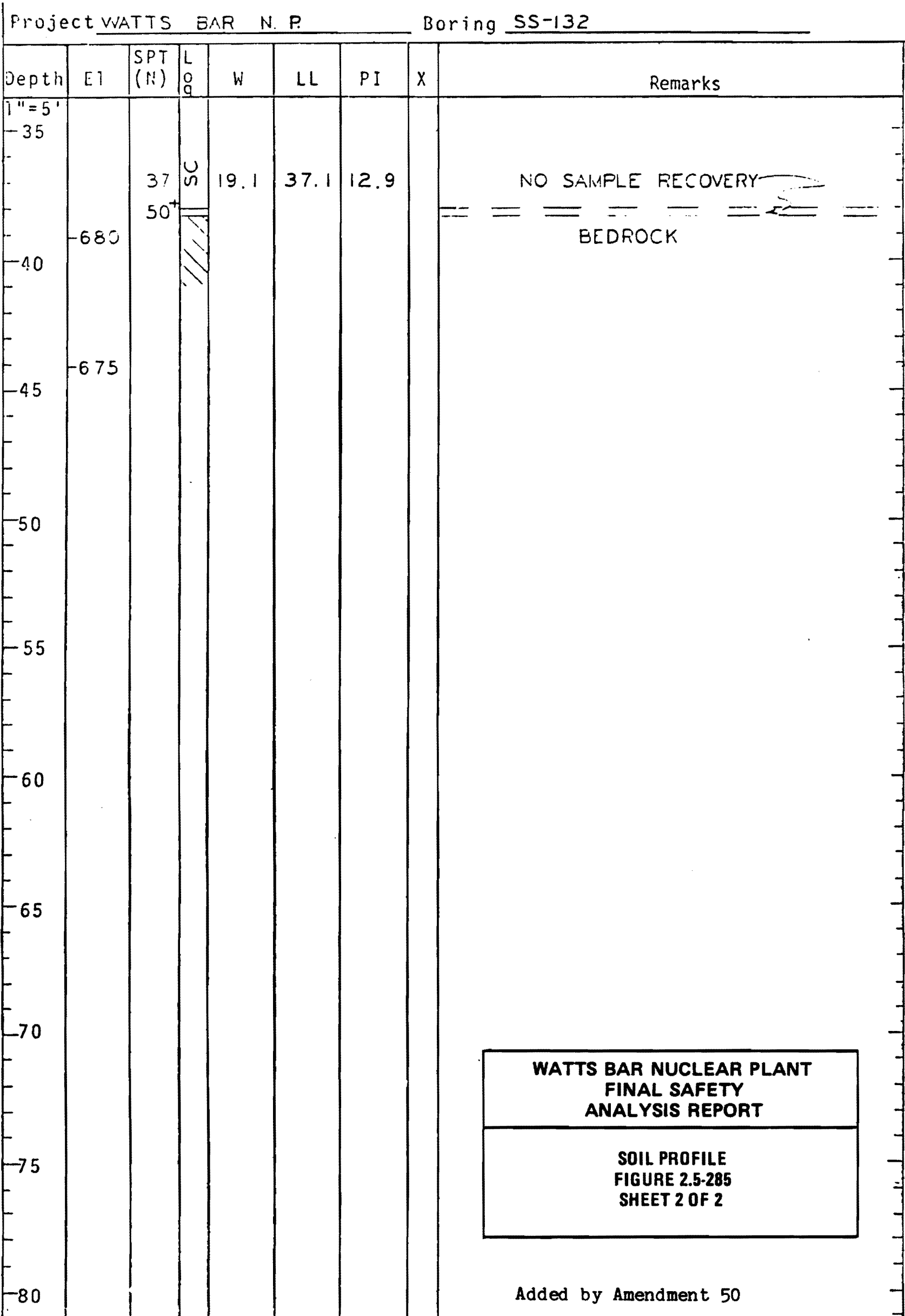


Figure 2.5-285 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-286
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-133 Station 1361.0S Range 785.0E Surface El 725.0
Date Drilled 6-4-79 To 6-4-79 Prepared By JLB Checked By [Signature]

Depth	El	SPT (N)	LOG	W	LL	PI	X	Remarks
1"=5'								
0	725							AUGER
		23		15.7				
5	720	18		16.6	39.9	20.5		
		16		18.9				
		12		19.7	42.6	17.4		LEAN CLAY TO SANDY LEAN CLAY, FILL
10	715	12	CL	22.9				
		11		21.7	43.9	19.2		
15	710	9		22.5			▽	
		2		23.6	37.7	16.3		
		4		32.9	39.1	16.7		
20	705	19	GSM	17.3	NP	NP		ALLUVIAL GRAVEL
		48		20.1	42.8	13.8		
25	700	28	ML	28.3				
		40		24.0	35.1	1.5		WEATHERED SHALE
		50+		20.8				
30	695	50+	SM	18.0	32.3	8.1		
		50		16.1				
35	690	50+	CL	12.7	31.7	11.0		Added by Amendment 50

Figure 2.5-286 Soil Profile (Sheet 1 of 2)

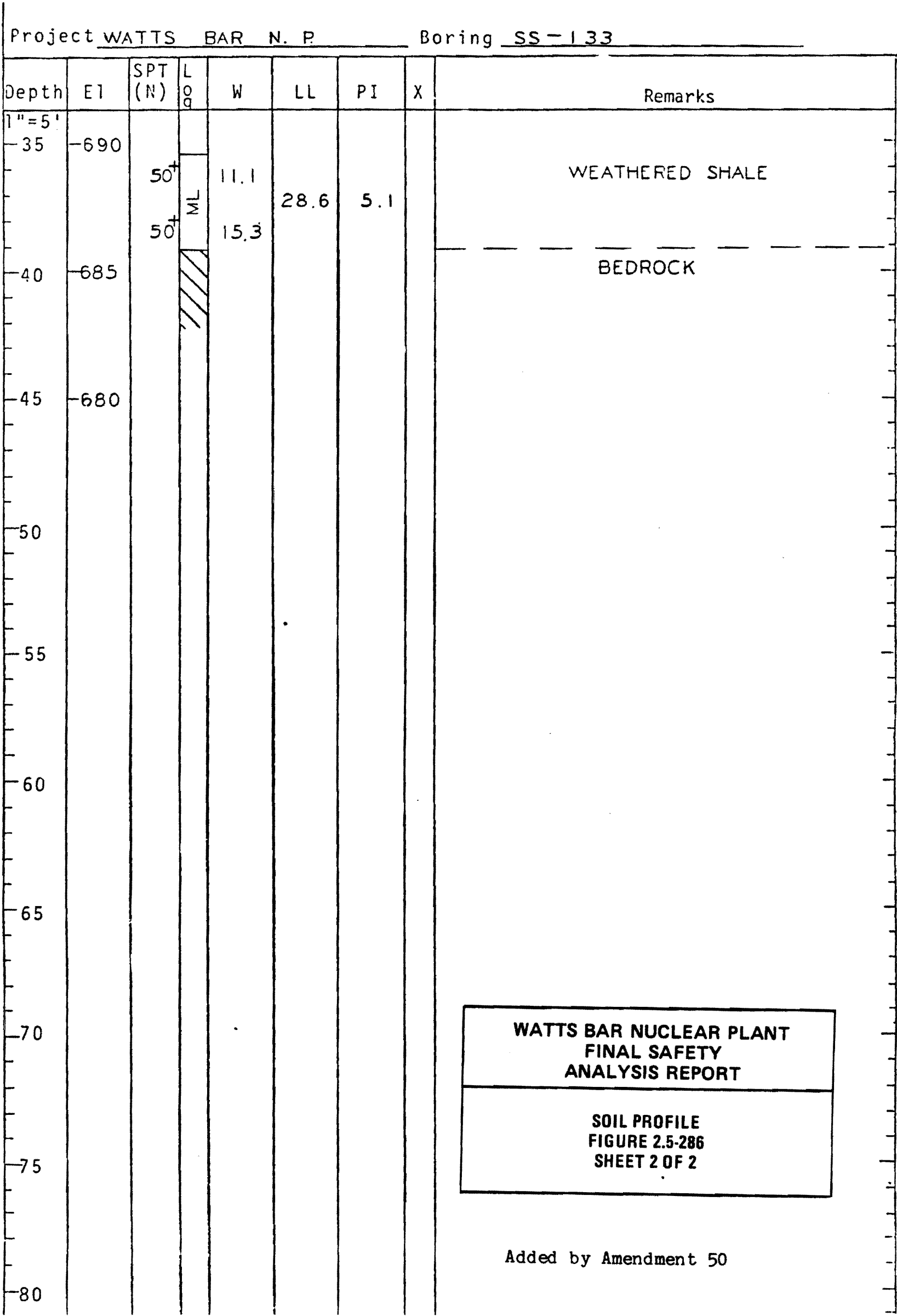


Figure 2.5-286 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-287
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-134 Station 1373.0S Range 900.0 E Surface El 726.5
Date Drilled 6-6-79 To 6-7-79 Prepared By JLB Checked By *gdl*

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	725	10		20.0				
		16		16.9	28.0	8.4		
5		14		18.9				
	720	15	CL	18.7	36.2	17.1		ALLUVIAL SANDY LEAN CLAY
		8		21.7				
10		13		20.9	39.1	19.5		
	715	2		23.8				
		3	SM	29.3			▽ ▽	ALLUVIAL SAND
15		8		27.5	NP	NP		
	710	27	GM	11.4				ALLUVIAL GRAVEL
		50		10.0				
	705	50		18.1				
		50		18.1	39.3	15.2		
25		50	CL	16.5				
	700	50		16.6				WEATHERED SHALE
		50		20.4	36.7	13.5		
30		42	SC	16.2				
	695							Added by Amendment 50
35								

Figure 2.5-287 Soil Profile (Sheet 1 of 2)

Project WATTS BAR N.P Boring SS-134

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
-35		50+	CL	15.2	35.6	13.3		
	-690	50+		15.8	37.2	13.4		WEATHERED SHALE
-40		50+	SC	14.7	35.6	12.1		
	-685	50+		15.1				
-45		50+	CL	18.7	33.4	11.4		
	-680	50+		—	—	—		NO SAMPLE RECOVERY
								BEDROCK
-50								
-55								
-60								
-65								
-70								
-75								
-80								

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-287
SHEET 2 OF 2

Added by Amendment 50

Figure 2.5-287 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-288

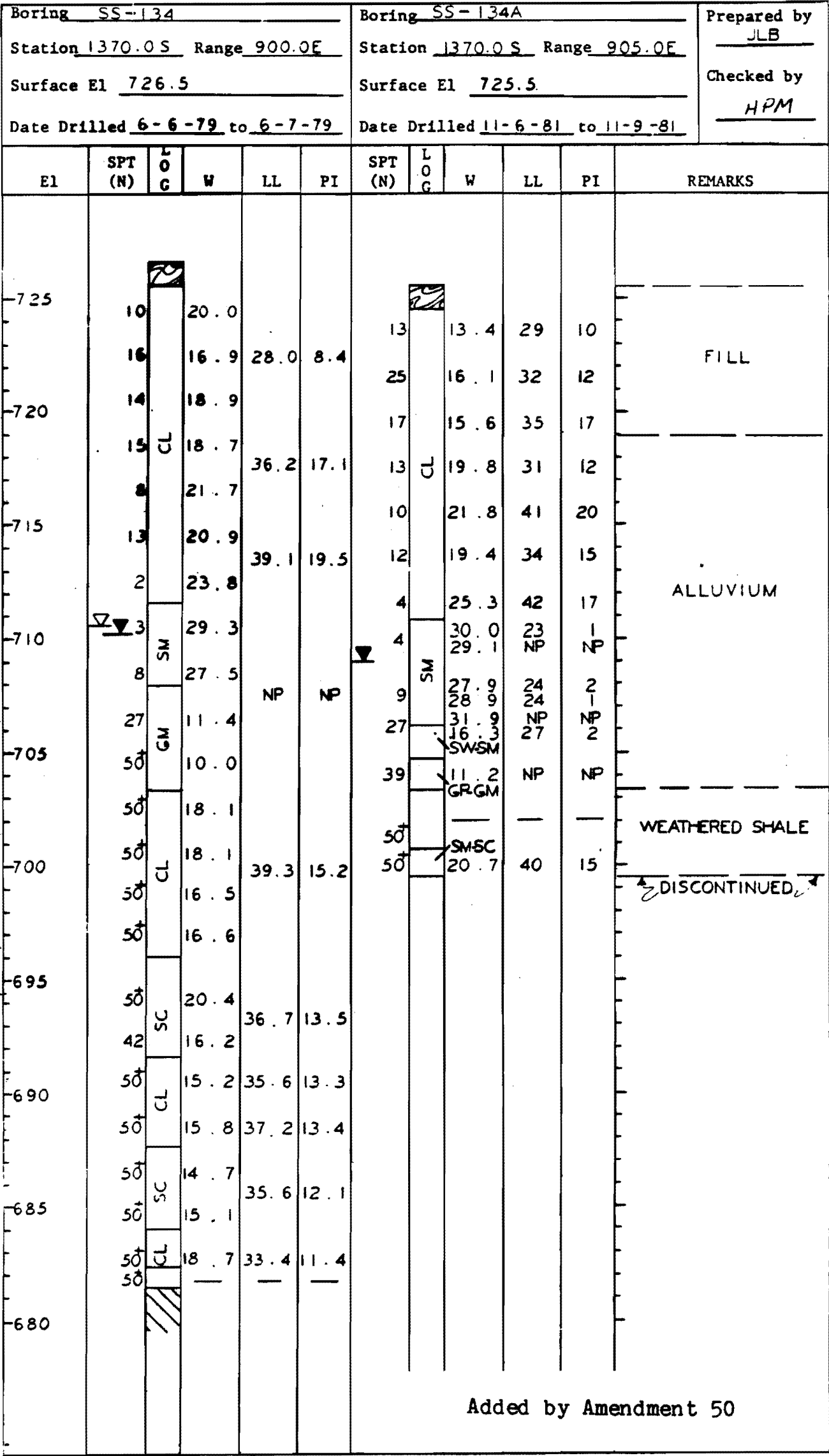


Figure 2.5-288 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-289
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-135 Station 1370.0S Range 1000.0 E Surface El 726.9
Date Drilled 5-30-79 To 6-1-79 Prepared By JLB Checked By CBG

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	725	7	CL	—	30.9	12.2		SANDY LEAN CLAY FILL
		13	CL	19.4	32.7	9.7		
5		13		19.3	37.8	19.6		
	720	21		—	48.0	19.6		ALLUVIAL SANDY SILT
		14	ML	26.7	46.5	16.5		
10		12		26.3	42.2	13.8		
	715	11		23.6	34.1	8.7		ALLUVIAL SAND
		12		20.1	30.0	4.4		
15		8	SM	—				
	710	8		—				LAMINATED RESIDUAL CLAY
20		8			NP	NP		
	705	8		25.3				
		8	CL	—	32.3	11.8		WEATHERED SHALE
25		22	GSM	28.9	44.5	15.8		
	700	26		25.7	43.5	16.7		
		50	SM	20.4	38.9	12.7		Added by Amendment 50
30		48		21.3	38.6	12.4		
	695	43		23.3	37.9	10.5		
35								

Figure 2.5-289 Soil Profile (Sheet 1 of 2)

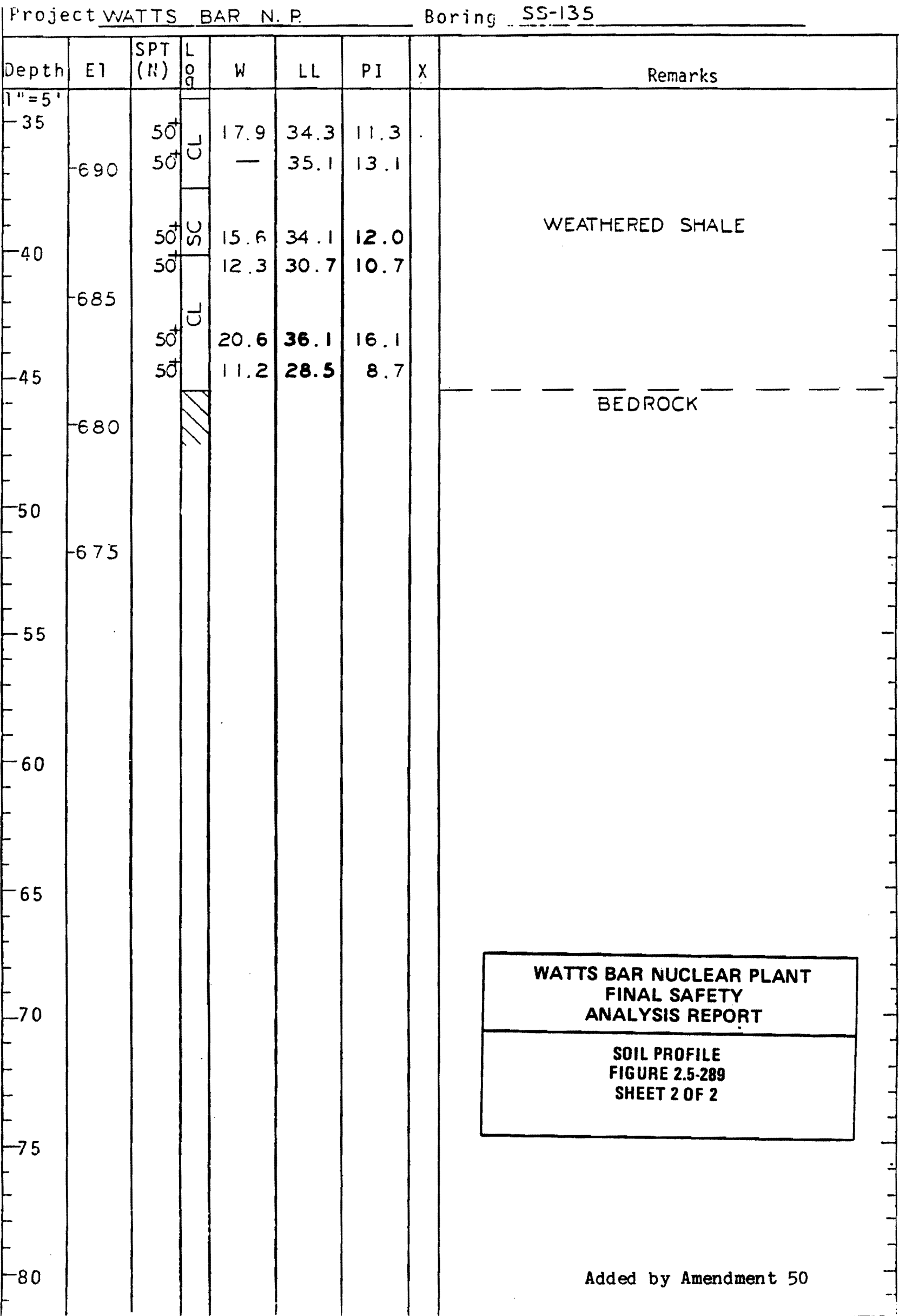


Figure 2.5-289 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

Boring <u>SS-135</u>						Boring <u>SS-135A</u>						Prepared By <u>JLB</u>	
Station <u>1373.0 S</u> Range <u>1000.0 E</u>						Station <u>1363.3 S</u> Range <u>1004.5 E</u>						Checked By <u>HPM</u>	
Surface Elev <u>726.9</u>						Surface Elev <u>726.5</u>							
Date Drilled <u>5-30-79</u> To <u>6-1-79</u>						Date Drilled <u>11-9-81</u> To <u>11-10-81</u>							
E1	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
725	7	CL	—	30.9	12.2	19	CL	16.1	28	7	FILL		
	13	CL	19.4	32.7	9.7	20	CL	16.6	33	13			
	13	CL	19.3	37.8	19.6	21	CEML	19.8	40	15			
720	21	—	—	48.0	19.6	19	ML	24.7	41	13			
	14	ML	26.7	46.5	16.5	19	ML	26.7	41	12			
715	12	—	26.3	42.2	13.8	13	—	24.3	31	3	ALLUVIUM		
	11	—	23.6	34.1	8.7	7	—	22.8	—	—			
	12	—	20.1	30.0	4.4	7	SM	24.3	NP	NP			
710	8	SM	—	—	—	5	—	34.2	—	—			
	8	—	—	NP	NP	8	—	27.0	22	1			
	8	—	25.3	—	—	8	ML	32.1	27	2			
705	8	—	—	—	—	7	SM	32.1	39	2			
	8	—	—	—	—	50	GM	16.7	NP	NP			
	22	CL	28.9	44.5	15.8	36	GM	30.1	46	14			
700	26	—	25.7	43.5	16.7								DISCONTINUED
	50	SM	20.4	38.9	12.7						WEATHERED SHALE		
	48	—	21.3	38.6	12.4								
695	43	—	23.3	37.9	10.5								
	50	CL	17.9	34.3	11.3								
690	50	—	—	35.1	13.1								
	50	SC	15.6	34.1	12.0								
	50	—	12.3	30.7	10.7								
685	50	CL	20.6	36.1	16.1								
	50	—	11.2	28.5	8.7								
680													
Added by Amendment 50													

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-290

Figure 2.5-290 Soil Profile

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-291

Boring SS-65						Boring SS-65B						Prepared by JLB	
Station 1374.8S Range 1097.5E						Station 1362.3S Range 1091.0E						Checked by HPM	
Surface El 726.0						Surface El 727.2							
Date Drilled 7-25-75 to 7-25-75						Date Drilled 11-13-81 to 11-13-81							
El	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
725	50	CL	15.4	36.3	15.6	11	SC	14.1	28	8	FILL		
	35	CL	12.9	35.6	14.1	20	CL	12.5	32	14			
720	24	MH	28.2			25	MH	28.3	55	8	ALLUVIUM		
	21	MH	24.9	50.7	17.7	18	MH	28.9	51	15			
	13	ML	24.5	40.4	13.0	12	ML	29.1	42	12			
715	16	ML	29.2	46.1	15.6	14	ML	26.7	35	6			
	12		21.5	33.1	6.6	9		25.7	29	2			
710	10	SM	15.7	NP	NP	6		27.5	25	1			
	7	SM	23.7	30.1	5.1	3	SM	33.1	NP	NP			
	5		28.2	28.9	3.5	5		32.9	NP	NP			
705	8					7		32.5	25	1			
	20	GM	13.5	32.5	9.0	37		27.1	26	2			
700	18	SM	24.8	46.4	18.2			30.8	25	1			
	16		23.8					32.7	NP	NP			
	16	G-SM	24.7	43.4	15.9			21.9	44	14	WEATHERED SHALE DISCONTINUED		
695	14		25.5										
	11	ML	40.7	47.1	13.4								
690	30	SC	19.8	34.4	11.2								
	50		14.3										
685	16		19.1	36.6	12.0								
	41	G-SC	22.6										
680	45		17.1	33.8	10.5								
	50		15.4										
				32.0	10.5								
	50		15.3										
675													
Added by Amendment 50													

Figure 2.5-291 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-292
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-136 Station 1373.7 S Range 1215.0 E Surface El 726.9
Date Drilled 6-22-79 To 6-22-79 Prepared By JLB Checked By goc

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								TOPSOIL
	725	19	CL	19.2	38.8	20.3		LEAN CLAY FILL
		6		22.5	49.7	24.2		
5								
	720	14	MH	25.8	51.1	20.4		
		17		26.5	40.7	11.4		ALLUVIAL SANDY SILT
10								
	715	14	ML	25.8				
		11		23.7	32.8	5.7		
		9		25.0				
15								
	710	5		26.3				ALLUVIAL SAND
		8	SM	28.5	NP	NP		
20								
	705	12		21.9				ALLUVIAL GRAVEL
		50+		15.1				
			GRGM					
		50+		19.1	41.7	16.7		
25								
	700	50+	ML-CL	17.2				
		34	CL	20.3	37.2	13.4		WEATHERED SHALE
30								
	695	31		21.6	36.3	11.7		
		50+	SM	16.9				
		50+		17.4	34.0	7.0		
35								Added by Amendment 50

Figure 2.5-292 Soil Profile (Sheet 1 of 2)

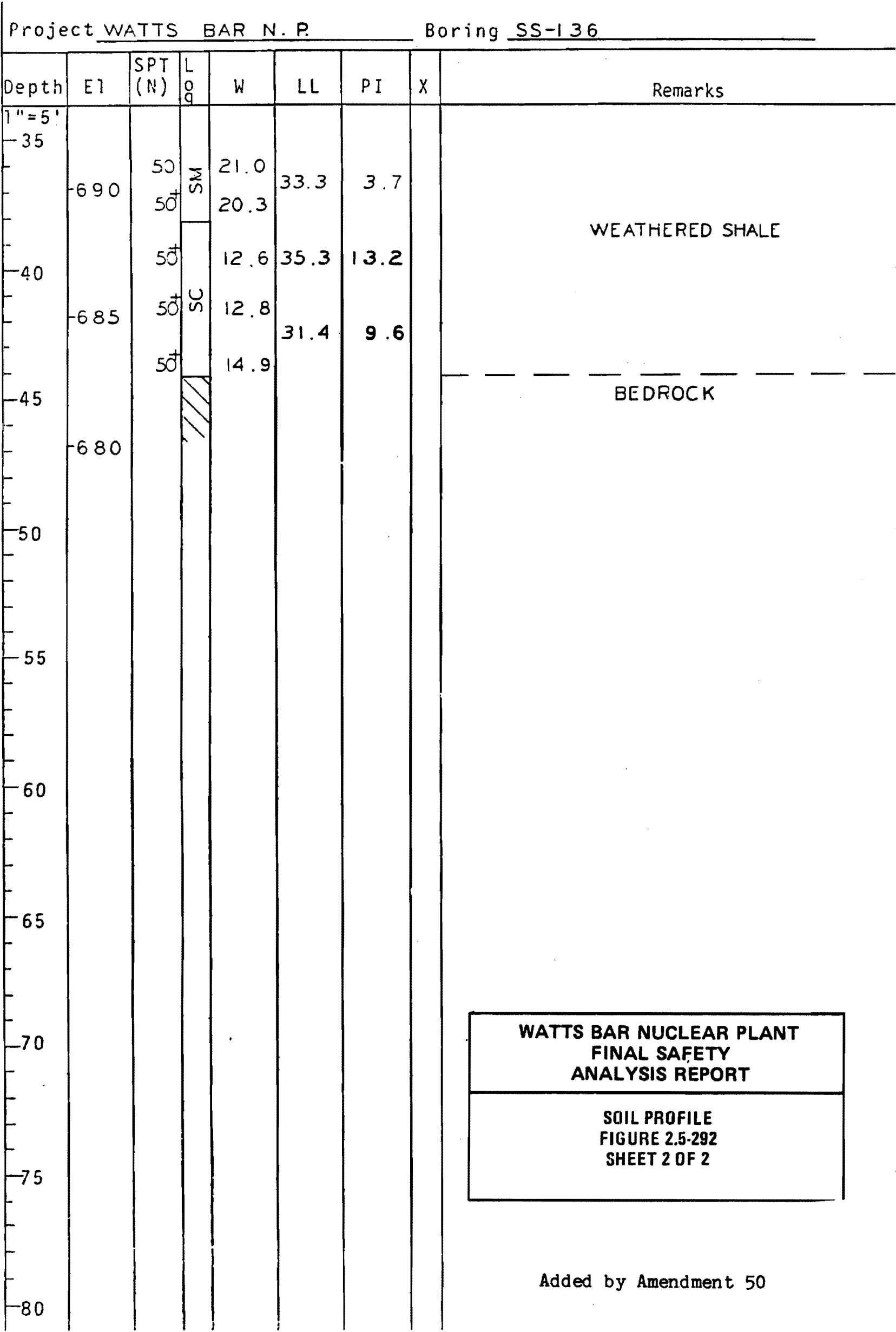


Figure 2.5-292 Soil Profile (Sheet 2 of 2

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-293
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-137 Station 1375.0 S Range 1300.0 E Surface El 726.9
Date Drilled 6-7-79 To 6-8-79 Prepared By JLB Checked By JCB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								TOPSOIL
	725	20	ML	19.0	35.2	10.9		
		7		21.2				
5								ALLUVIAL SANDY LEAN CLAY OR SILT
	720	11	CL	21.0	42.0	17.1		
		16		26.5				
10								ALLUVIAL SANDY SILT
	715	11	ML	24.2	35.6	9.6		
		9	SM	20.7	25.9	1.8		ALLUVIAL SAND
15								
	710	7	ML	25.0	31.7	5.6		ALLUVIAL LEAN CLAY OR SILT
		8		25.3				
20								ALLUVIAL GRAVEL
	705	3	CL	33.9	34.7	10.7		
		32	GM	9.6	NP	NP		
		41		21.1				
25								WEATHERED SHALE
	700	50+	ML	22.8	42.6	14.9		
		39		23.0	40.8	16.5		
30								
	695	50+	CL	20.4				
		50+		16.9	36.5	13.0		
								BEDROCK
35								

Added by Amendment 50

Figure 2.5-293 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-294
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-138 Station 1373.0 S Range 1400.0 E Surface El 727.2
Date Drilled 6-8-79 To 6-11-79 Prepared By JLB Checked By [Signature]

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								TOPSOIL
	725	18	CL	15.7	34.3	16.9		
		23		28.5	55.0	24.1		ALLUVIAL LEAN CLAY TO FAT SILT
5		15	MH	27.5				
	720	13		30.1	48.0	19.7		
		10	ML	25.6	40.2	14.5		ALLUVIAL SANDY SILT
10		9		22.3	31.6	7.8		
	715	6	SM	23.4	28.1	2.5		ALLUVIAL SAND
15		7		24.5				
	710	7	ML	28.4	32.7	5.9		
		5	ML-CL	29.6	27.0	5.1		ALLUVIAL SANDY SILT OR SANDY LEAN CLAY
20		13	SM	15.0	26.4	2.3		ALLUVIAL SAND
	705	16		26.8				
25		43	G-SM	26.7				
	700	32		29.3	NP	NP		WEATHERED SHALE
30		50+	SM	20.4				
	695	50+		14.6				
		50+	SC	20.5	34.9	12.0		Added by Amendment 50
35								

Figure 2.5-294 Soil Profile (Sheet 1 of 2)

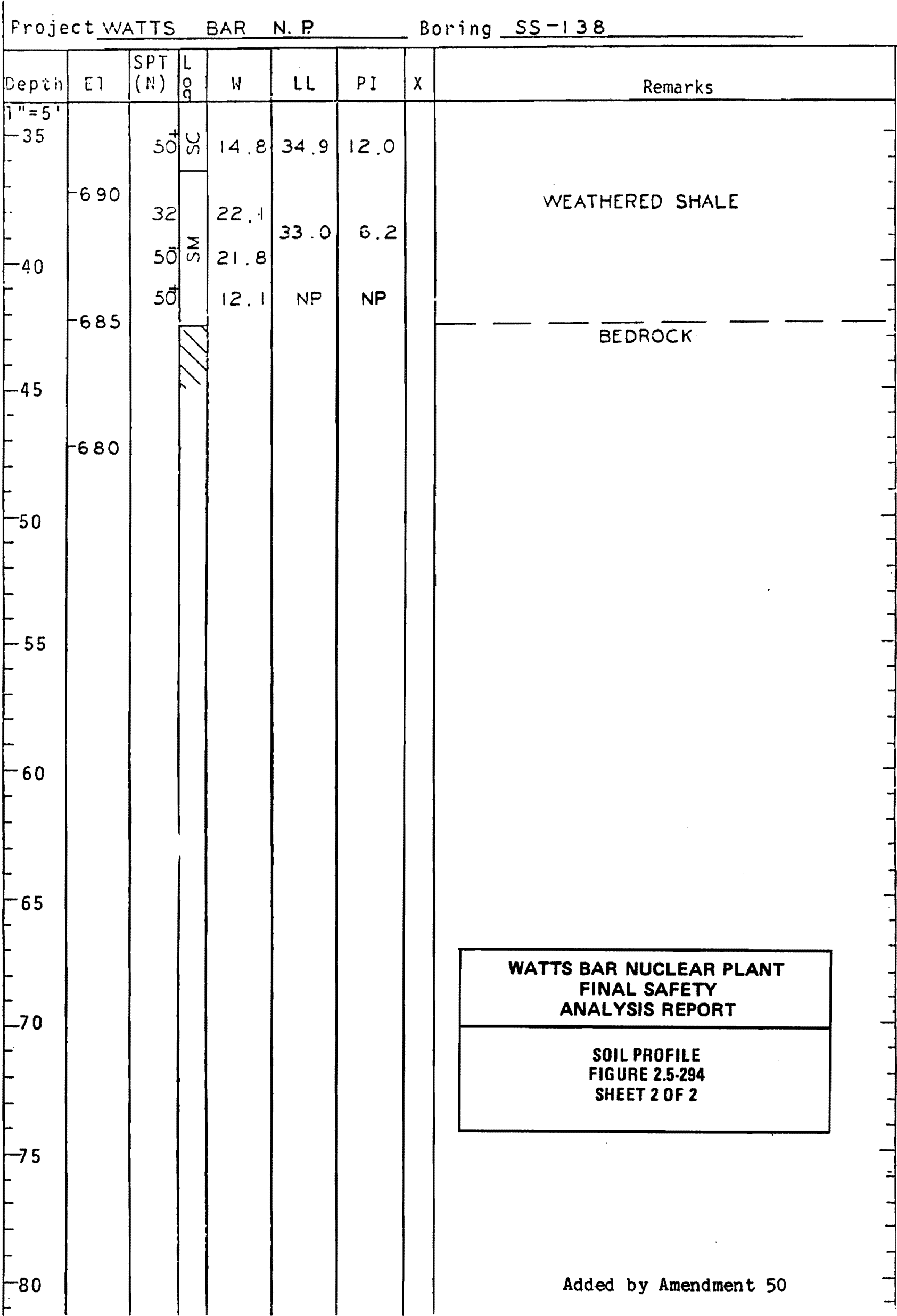


Figure 2.5-294 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-295

Boring <u>SS-138</u>						Boring <u>SS-138A</u>						Prepared by <u>JLB</u>	
Station <u>1373.0S</u> Range <u>1400.0E</u>						Station <u>1368.8S</u> Range <u>1406.5E</u>						Checked by <u>HPM</u>	
Surface El <u>727.2</u>						Surface El <u>726.7</u>							
Date Drilled <u>6-8-79</u> to <u>6-11-79</u>						Date Drilled <u>11-12-81</u> to <u>11-12-81</u>							
El	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
725	18	CL	15.7	34.3	16.9	50	GC	6.7	35	18	FILL		
	23	MT	28.5	55.0	24.1								
	15		27.5			32	ME-MT	27.3	50	19			
720						19		30.9	48	18	ALLUVIUM		
	13		30.1	48.0	19.7								
	10	ML	25.6	40.2	14.5	16	ML	27.1	39	13			
715	9		22.3	31.6	7.8	12		25.1	33	6			
	6		23.4			8		25.1	29	3			
	7	SM	24.5	28.1	2.5	8		22.1	NP	NP			
710													
	7	ML	28.4	32.7	5.9	12	SM	27.1	29	1			
	5	ML-CL	29.6	27.0	5.1	4		35.6	23	2			
		SM	15.0	26.4	2.3	9		27.8	22	1			
705	13							29.1	NP	NP			
	16		26.8			22	GM	10.6	NP	NP			
	43	G-SM	26.7			50+	SM	25.8	36	2	WEATHERED SHALE		
700	32		29.3	NP	NP						DISCONTINUED		
	50+		20.4										
	50+	SM	14.6										
695	50+		20.5										
	50+	SC	14.8	34.9	12.0								
690	32		22.1										
	50+	SM	21.8	33.0	6.2								
685	50+		12.1	NP	NP								
680													
Added by Amendment 50													

Figure 2.5-295 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-296
SHEET 1 OF 2

Project WATTS BAR N.P Feature ERCW ALIGNMENT
Boring SS-139 Station 1375.0 S Range 1500.0E Surface El 727.5
Date Drilled 6-11-79 To 6-12-79 Prepared By JLB Checked By CCY

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0			CL	15.8	34.7	17.3		TOPSOIL
	725	16	CL	14.4				SANDY LEAN CLAY FILL
5		11		22.0	50.1	25.0		ALLUVIAL LEAN TO FAT CLAY
	720	9	CL-CH	25.9				
10		10		26.4	47.2	17.7		ALLUVIAL SANDY SILT
	715	15	ML	23.8	36.9	11.0		
15		13		19.2				
	710	9		15.5	NP	NP		ALLUVIAL SANDY SILT AND SILTY SAND
20		8	SM	18.2				
	705	9		32.8	31.0	3.9		
25		7	ML	22.1	NP	NP		ALLUVIAL GRAVEL
	700	14	SM	7.5				
30		50+	GM	17.0	36.7	14.6		WEATHERED SHALE
	695	49	CL	18.9	33.1	11.5		
35		50+		13.7				
		50+	SC	16.0	32.9	12.6		
		50+		11.8				Added by Amendment 50

Figure 2.5-296 Soil Profile (Sheet 1 of 2)

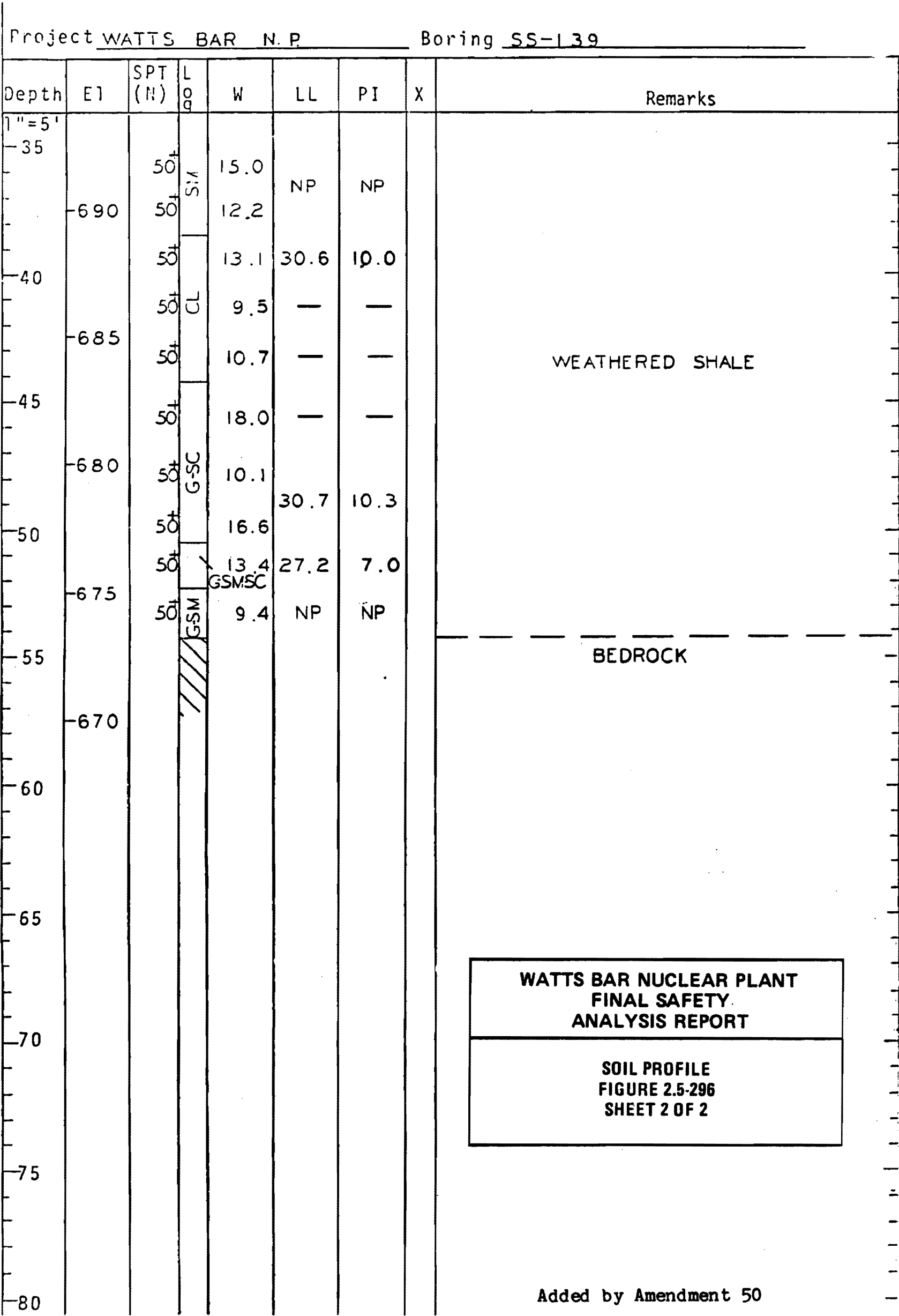


Figure 2.5-296 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-297
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-140 Station 1334.2S Range 1560.8 E Surface El 726.7
Date Drilled 6-11-79 To 6-11-79 Prepared By JLB Checked By OC2

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	725	21		12.7	35.0	17.4		
		8	CL	13.9	—	—		
5		9		20.0	43.1	19.0		
	720	16	CHMH	27.4	60.9	30.0		ALLUVIAL SILT AND CLAY
10		11		22.0	36.5	7.4		
	715	8		24.3				
		7	ML	24.6	34.1	6.2		
15		12		25.0				
	710	3		17.4	NP	NP		
20		4	SM	38.7				ALLUVIAL SAND
	705	29	CL	17.4	43.1	18.4		LAMINATED RESIDUUM
		44	MECL	18.3	44.2	18.7		
25		40	ML	21.9	35.2	6.1		WEATHERED SHALE
	700	50	CL	16.8	36.9	14.0		
30		41	SM	22.3	37.4	7.4		
	695	50	CL-ML	20.0	36.3	13.2		
		50	MECL	18.7	35.4	10.8		
35								Added by Amendment 50

Figure 2.5-297 Soil Profile (Sheet 1 of 2)

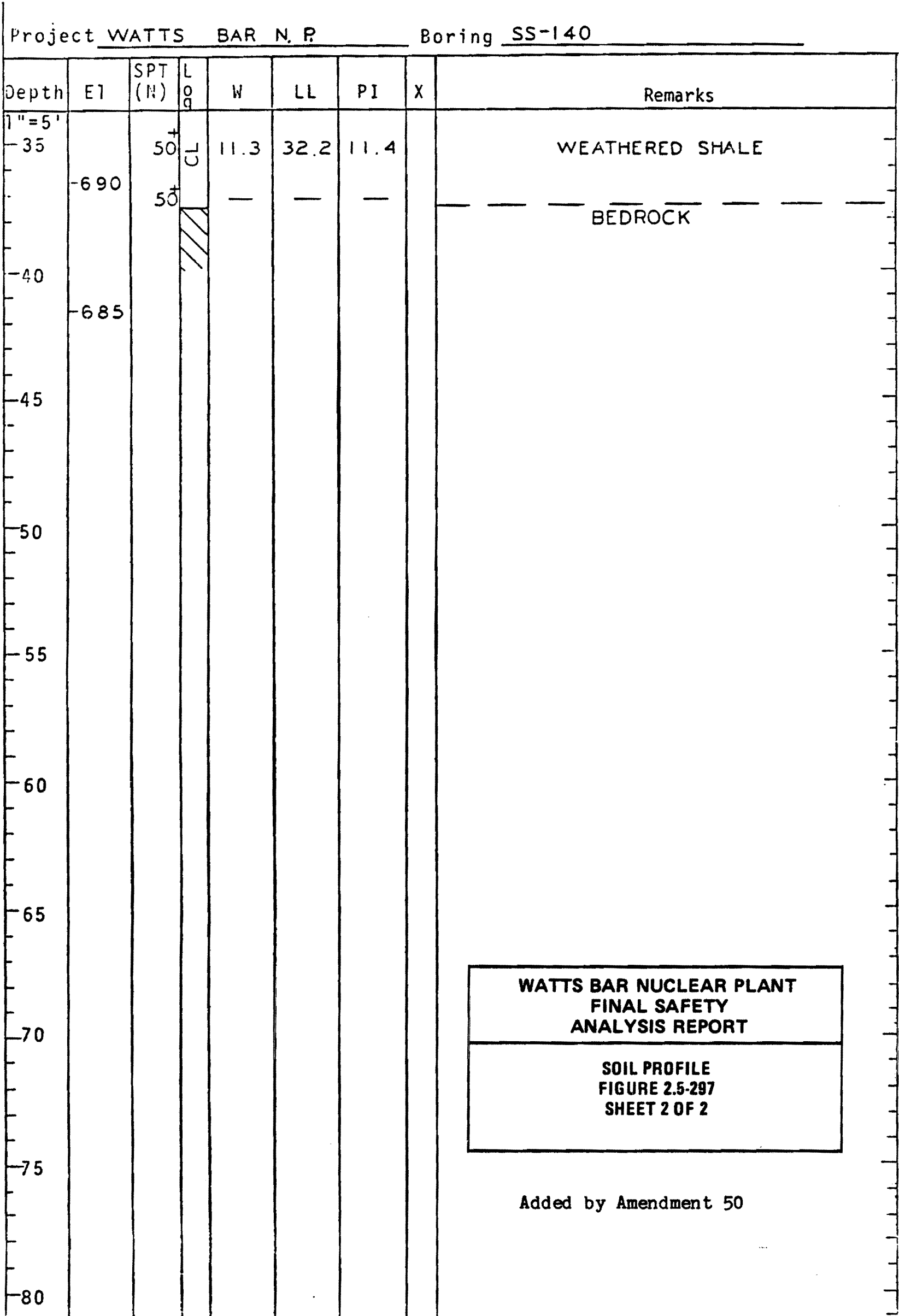


Figure 2.5-297 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-298
SHEET 1 OF 2

Project WATTS BAR N. P Feature ERCW ALIGNMENT
Boring SS-141 Station 1187.5 S Range 1707.5 E Surface El 724.6
Date Drilled 6-11-79 To 6-12-79 Prepared By JLB Checked By CCQ

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		16	CL	14.6	29.7	13.8		
	-720	14	CL	15.7	32.1	15.7		ALLUVIAL CLAY
5		16	GCL	9.9	35.1	18.6		
		16		11.8	34.5	18.0		
-10	-715	9	CL	19.3	36.2	16.6		
		1		24.7				
	-710	18	SPSM	19.0	27.4	5.9		ALLUVIAL SAND
-15		14	CL	23.7	27.6	7.2		ALLUVIAL CLAY
		23	GSM	8.5	NP	NP		ALLUVIAL GRAVELLY SAND
-20	-705	17		7.8				
		31	CL	16.6	37.4	14.5		LAMINATED RESIDUUM
-25	-700	10		22.6				
		21	ML	20.7	36.7	6.8		
		50+	CL	14.2	34.7	11.8		
-30	-695	50+		12.2	33.2	11.8		WEATHERED SHALE
		50+	ML	17.2	36.9	11.7		
		50+		8.7	28.0	5.4		
-35	-690							Added by Amendment 50

Figure 2.5-298 Soil Profile (Sheet 1 of 2)

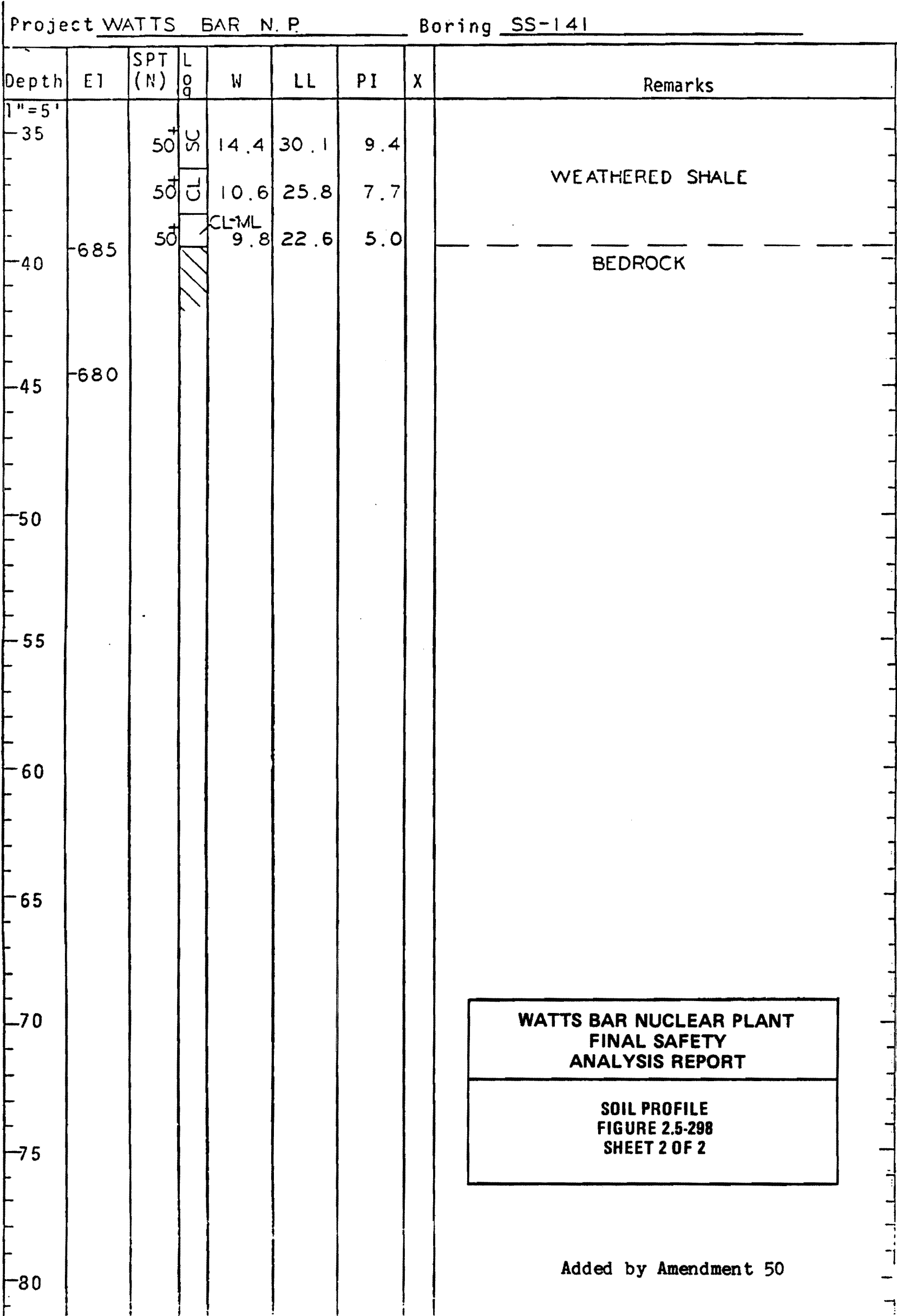


Figure 2.5-298 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-299
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-142 Station 1012.5 S Range 1882.5 E Surface El 721.8
Date Drilled 6-12-79 To 6-13-79 Prepared By JLB Checked By gcl

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	-720	13	CL	14.1	33.9	19.0		
		24		13.9	31.7	14.2		
5		18	GCL	14.0	36.1	17.9		
	-715	11	CL	14.8	37.9	19.2	▽	
10		12	ML-CL	20.1	38.7	13.5		
	-710	15		22.4				ALLUVIAL CLAY
		11		—	38.4	15.0		
15		12		23.3				
	-705	10	CL	21.9	36.7	16.4		
20		16		17.0				
	-700	9		24.1	41.3	17.6		
		4		26.2	42.0	20.2		
25		11	GCL	19.0	48.4	26.6		
	-695	33	CL	15.1	35.4	13.7		LAMINATED RESIDUUM
30		24	ML-CL	17.9	35.8	12.3		
	-690	50	CL	13.0	35.6	15.7		
		49	ML-CL	15.7	34.4	10.0		WEATHERED SHALE
35								Added by Amendment 50

Figure 2.5-299 Soil Profile (Sheet 1 of 2)

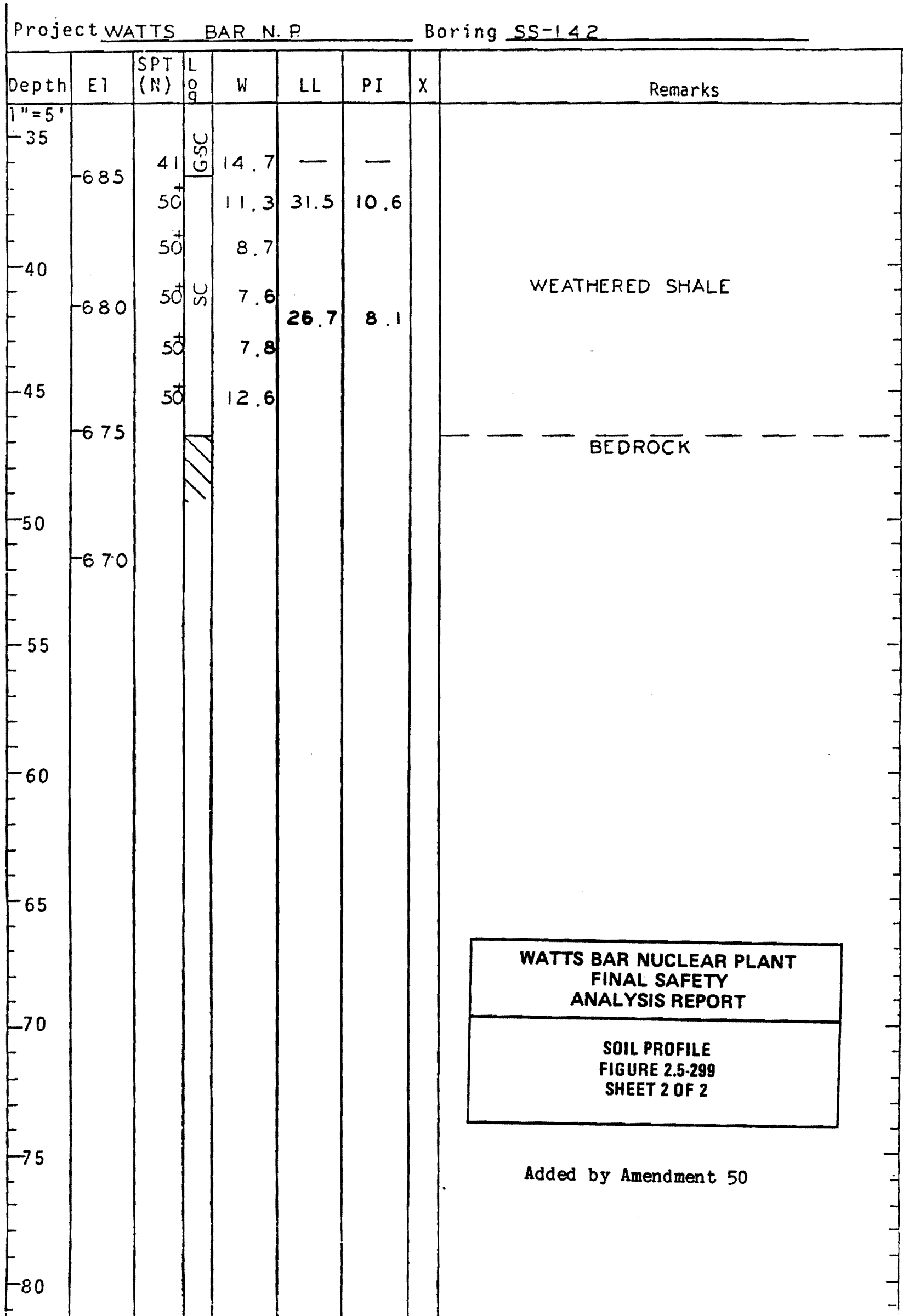


Figure 2.5-299 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-300
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-143 Station 965.0 S Range 1923.2 E Surface El 723.1
Date Drilled 6-14-79 To 6-14-79 Prepared By JLB Checked By JCS

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		10		16.3	31.9	16.8		
-720		24		16.4	30.5	12.7		
5		13	U	15.9	35.3	17.0		
		10		20.9	35.4	16.1		
-715		9		19.4				
		9		22.4	37.4	13.6		
-710		9	ML-CL	22.9	38.9	13.3		ALLUVIAL CLAY
		9		22.7	36.2	11.5		
-705		6		21.8	39.3	18.2		
20		7		25.0				
		3	CL	29.0	42.2	22.4		
-700		4		25.6				
25		4		29.0	35.2	16.2		
		7						NO SAMPLE RECOVERY
-695		9	GSPSM	13.5	NP	NP		ALLUVIAL GRAVELLY SAND
30		2	U	—	31.2	15.5		ALLUVIAL CLAY
-690		17		11.4	—	—		Added by Amendment 50
35								

Figure 2.5-300 Soil Profile (Sheet 1 of 2)

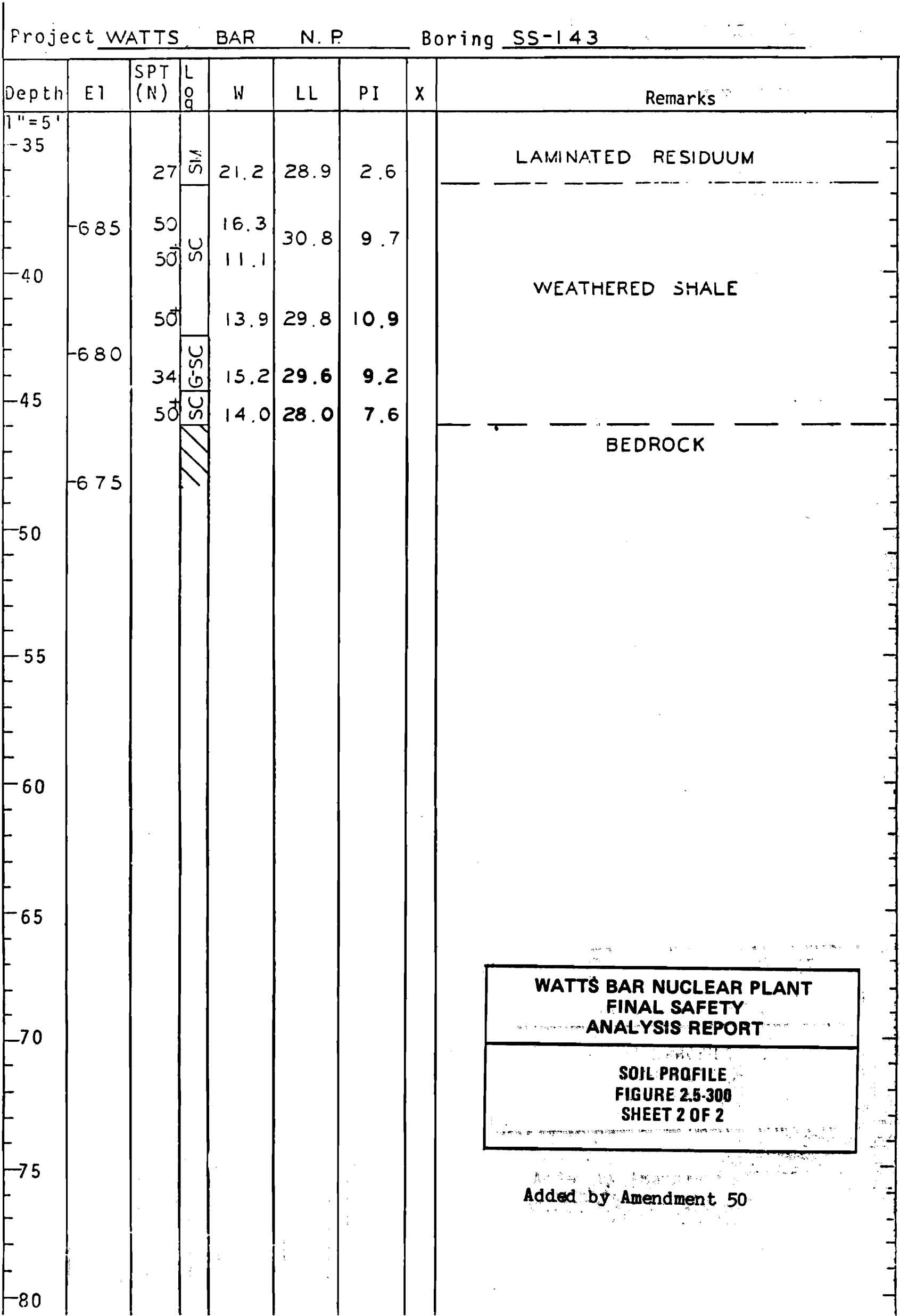


Figure 2.5-300 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

ISSUED
JUN 25 1987

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-301

Boring <u>SS-143</u>						Boring <u>SS-143A</u>						Prepared by <u>JLB</u>	
Station <u>969.0S</u> Range <u>1923.2E</u>						Station <u>975.0S</u> Range <u>1930.0E</u>						Checked by <u>HPM</u>	
Surface El <u>723.1</u>						Surface El <u>723.0</u>							
Date Drilled <u>6-14-79</u> to <u>6-14-79</u>						Date Drilled <u>11-19-81</u> to <u>11-20-81</u>							
El	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
720	13		16.3	31.9	16.8	12	SC	15.0	33	16	FILL		
	24		16.4	30.5	12.7	20		13.3	31	13			
	13	CL	15.9	35.3	17.0	13	CL	19.6	35	16			
715	10		20.9			12	CL-M	21.8	33	10			
	9		19.4	35.4	16.1	9	SC	22.4	29	10	ALLUVIUM		
	9		22.4	37.4	13.6	4		36.5	41	20			
710	9	MECL	22.9	38.9	13.3	2	ML	21.6	39	11			
	9		22.7	36.2	11.5	8	CL	37.2	36	19			
705	6		21.8			1		29.1	38	18			
	7		25.0	39.3	18.2	0	SC	41.4	39	20			
	3	CL	29.0	42.2	22.4	3	SMSC	21.2	21	5			
700	4		25.6			4	CL	24.9	25	8			
	4		29.0	35.2	16.2	8	SC	43.1	37	11			
695	7					16		33.8	34	12			
	9	G-SPSM	13.5	NP	NP	31	SM	25.9	NP	NP	WEATHERED SHALE		
	2			31.2	15.5						DISCONTINUED		
690	17	CL	11.4										
	27	SM	21.2	28.9	2.6								
685	50		16.3	30.8	9.7								
	50	SC	11.1										
	50		13.9	29.8	10.9								
680	34	G-SC	15.2	29.6	9.2								
	50	SC	14.0	28.0	7.6								
675													

Added by Amendment 50

Figure 2.5-301 Soil Profile

SOIL PROFILE (SS, PA, HA, TP BORING)

Project WATTS BAR N.P.

Feature ERCW ALIGNMENT

Boring SS-144

Station 865.15

Range 1923.2 E

Surface El 729.0

Date Drilled 6-13-79

To 6-14-79

Prepared By JLB

Checked By *SC*

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
			CL	17.2	41.8	25.8		
-725		16		14.0	39.0	20.5		
5				20.8				
		19	ML-CL	20.2	36.6	12.8		
-720		20		17.4				
10		22		19.9				
		18		18.9	37.7	14.8		
-715		20	CL	20.2			▽ ▼	
15		20		25.3	41.8	25.8		
		15		24.7	43.5	16.7		
-710		19	ML-CL	20.9				
20		8		24.4	42.6	16.7		
		5	CL	27.0	38.0	15.8		
-705		3		21.1	50.6	24.6		
25		14	CL-CH	22.6				
		17	ML	18.3	39.8	14.9		
-700		37	MECL	26.4	35.1	11.5		
30		16	SM-SC					
-695								
35								

Figure 2.5-302 Soil Profile (Sheet 1 of 2)

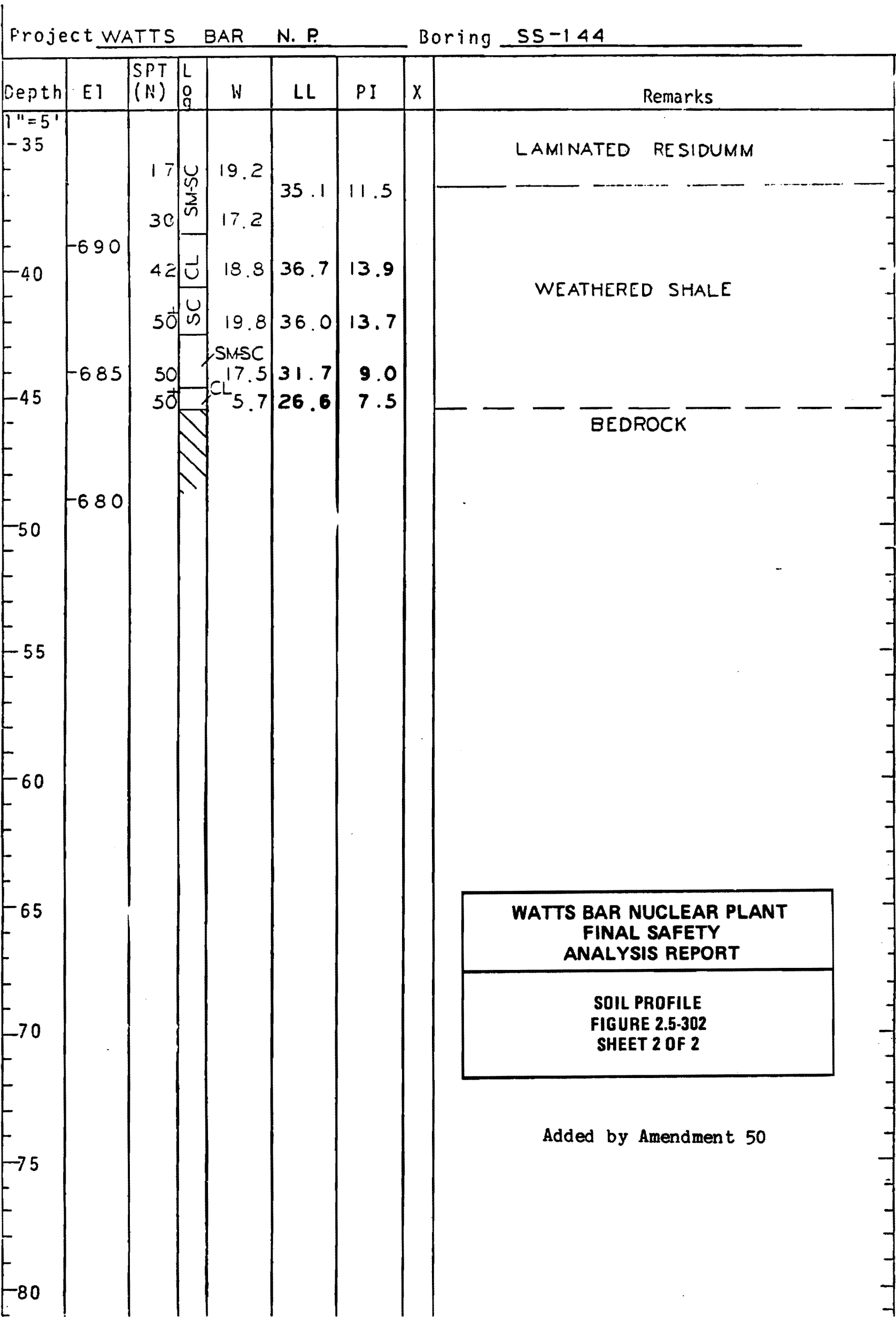


Figure 2.5-302 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-303
SHEET 1 OF 2

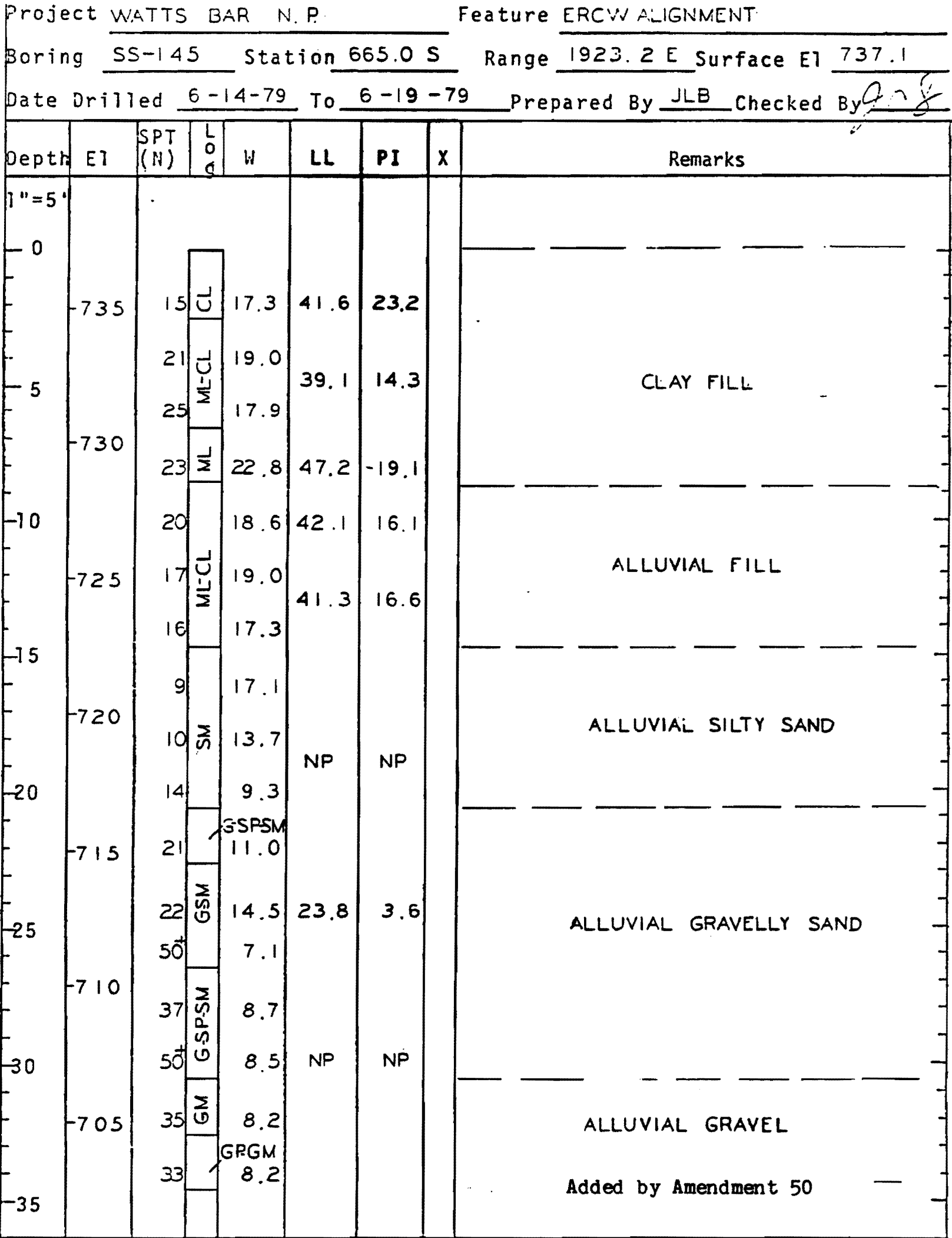


Figure 2.5-303 Soil Profile (Sheet 1 of 2)

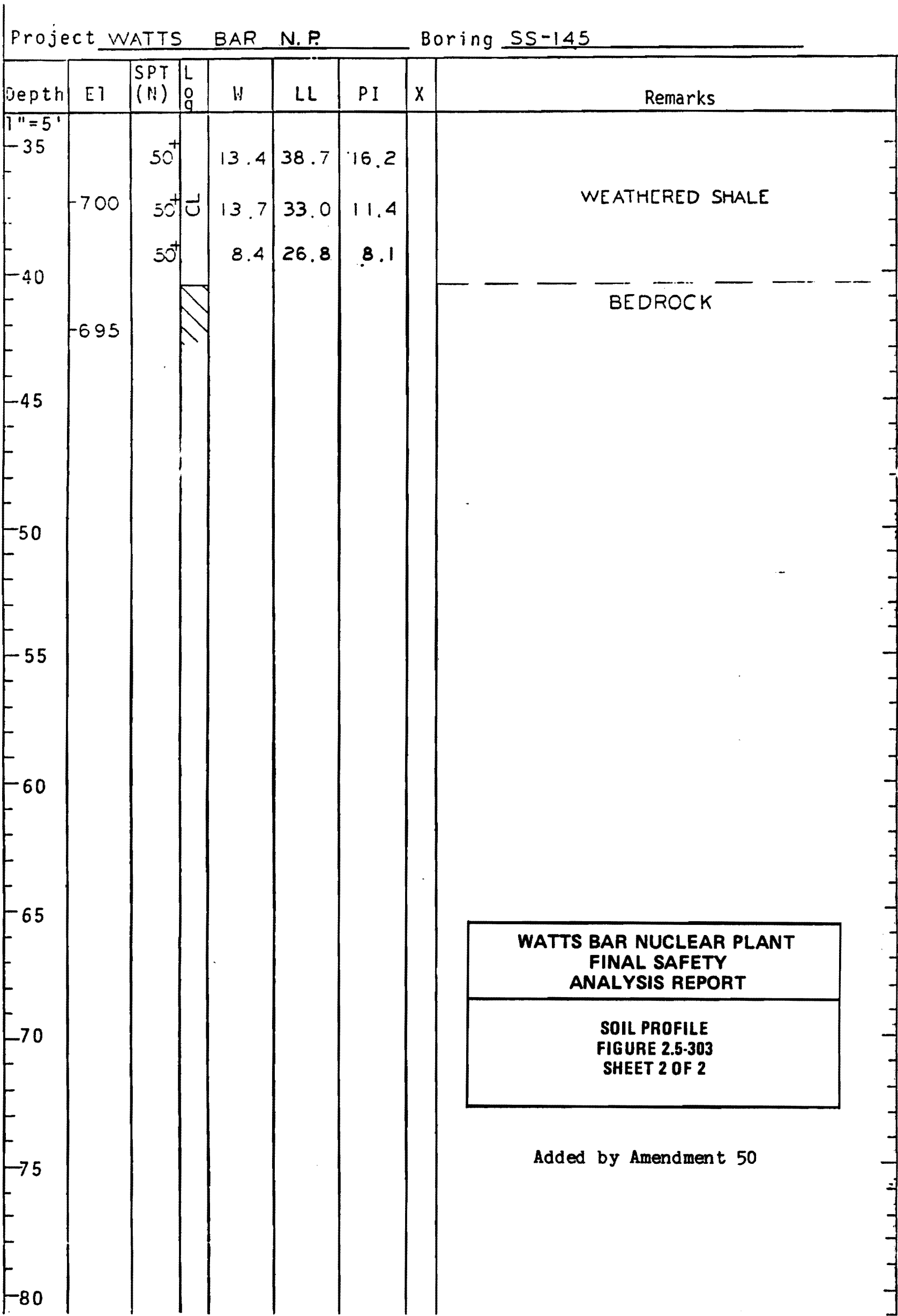


Figure 2.5-303 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-304
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-146 Station 565.0 S Range 1923.2 E Surface El 741.4
Date Drilled 6-19-79 To 6-20-79 Prepared By JLB Checked By gce

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	740	17		10.0	29.3	12.8		
		20		13.9	29.6	11.1		
5			CL					CLAY FILL
	735	11		12.6	30.7	12.0		
		13		13.5	36.0	19.2		
10			CL-ML					
	730	14		14.2	47.7	21.2		
		22	ML	13.4	44.9	14.9		ALLUVIAL SILT & CLAY
		21		10.2				
15			CL-ML		39.2	13.7		
	725	20		11.1				
		13	SMSC	12.3	28.4	6.3		SILTY CLAYEY SAND
20			GSM					
	720	16		12.8				
		10	SM	11.2				ALLUVIAL GRAVELLY SAND
		16	GSM	7.1				
25								
	715	10		16.4	NP	NP		
		10	SM	16.5				ALLUVIAL SAND
30								
	710	14		8.4				
		39	GP	3.2				ALLUVIAL GRAVEL
		13	GSM	14.6	21.6	1.9		ALLUVIAL GRAVELLY SAND
35								Added by Amendment 50

Figure 2.5-304 Soil Profile (Sheet 1 of 2)

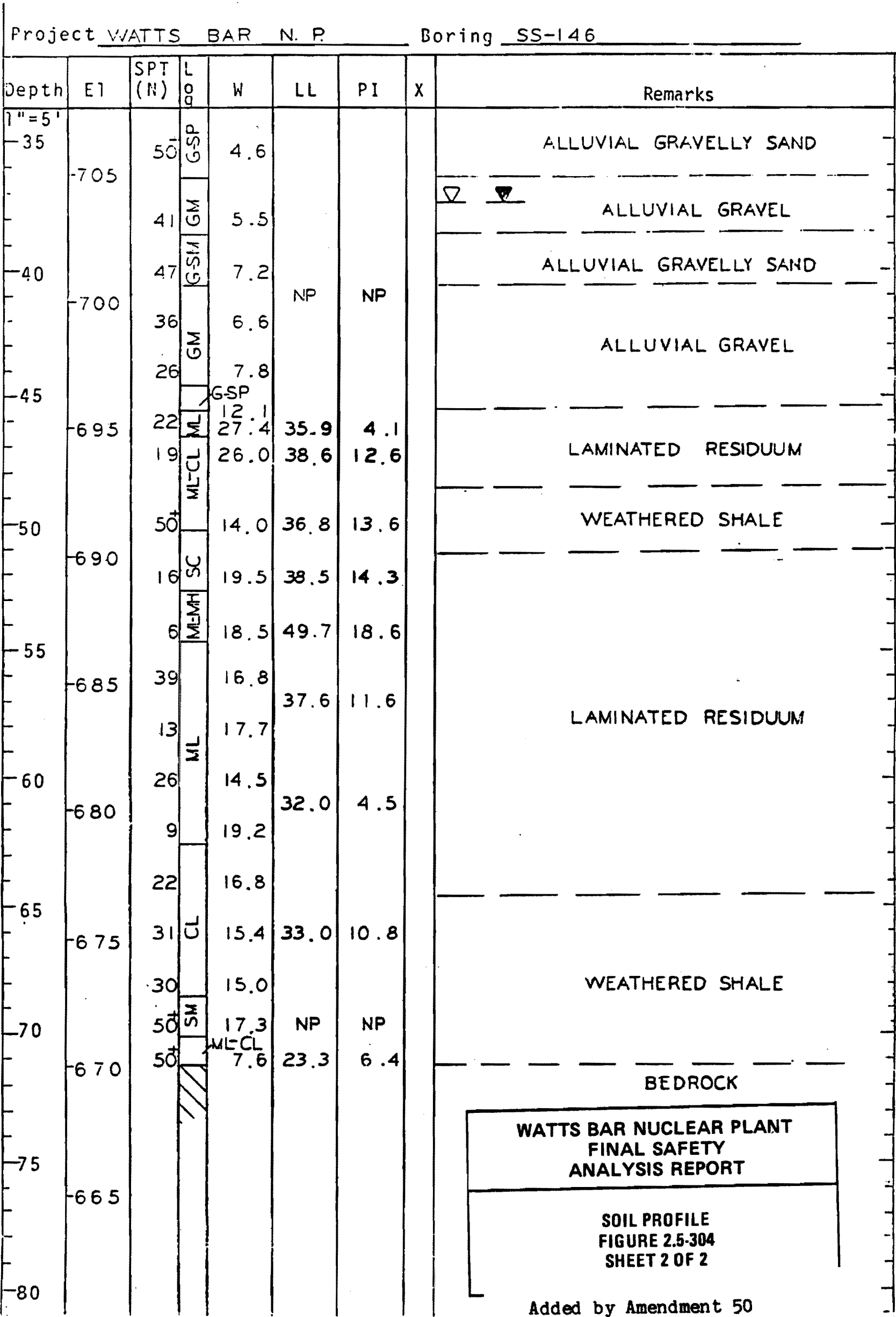


Figure 2.5-304 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-305
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT

Boring SS-147 Station 464.1S Range 1866.4 E Surface El 741.7

Date Drilled 6-20-79 To 6-21-79 Prepared By JLB Checked By gcl

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
	740	16		15.2				
		22	CL	16.3	30.4	12.0		CLAY FILL
5		16		17.1				
	735	38	CL	14.3	34.1	17.6		
10		31	CH	24.0	51.3	24.5		
	730	20		20.4	43.1	17.4		ALLUVIAL CLAY
		25	CL-ML	20.5	39.7	15.1		
15		15		17.4	—	—		
	725	10		14.4				
		11	SM	15.9				ALLUVIAL SAND
20		11		14.0	NP	NP		
	720	12	GSM	17.4				ALLUVIAL GRAVELLY SAND
25		14	SM	11.0				ALLUVIAL SAND
	715	15	GMGC	12.2	24.6	4.8		
		28	GSPSM	5.8	NP	NP		ALLUVIAL GRAVEL
30		40	GSMSC	11.7	23.4	4.3		
	710	50	GSPSM	7.6	NP	NP		Added by Amendment 50
35								

Figure 2.5-305 Soil Profile (Sheet 1 of 2)

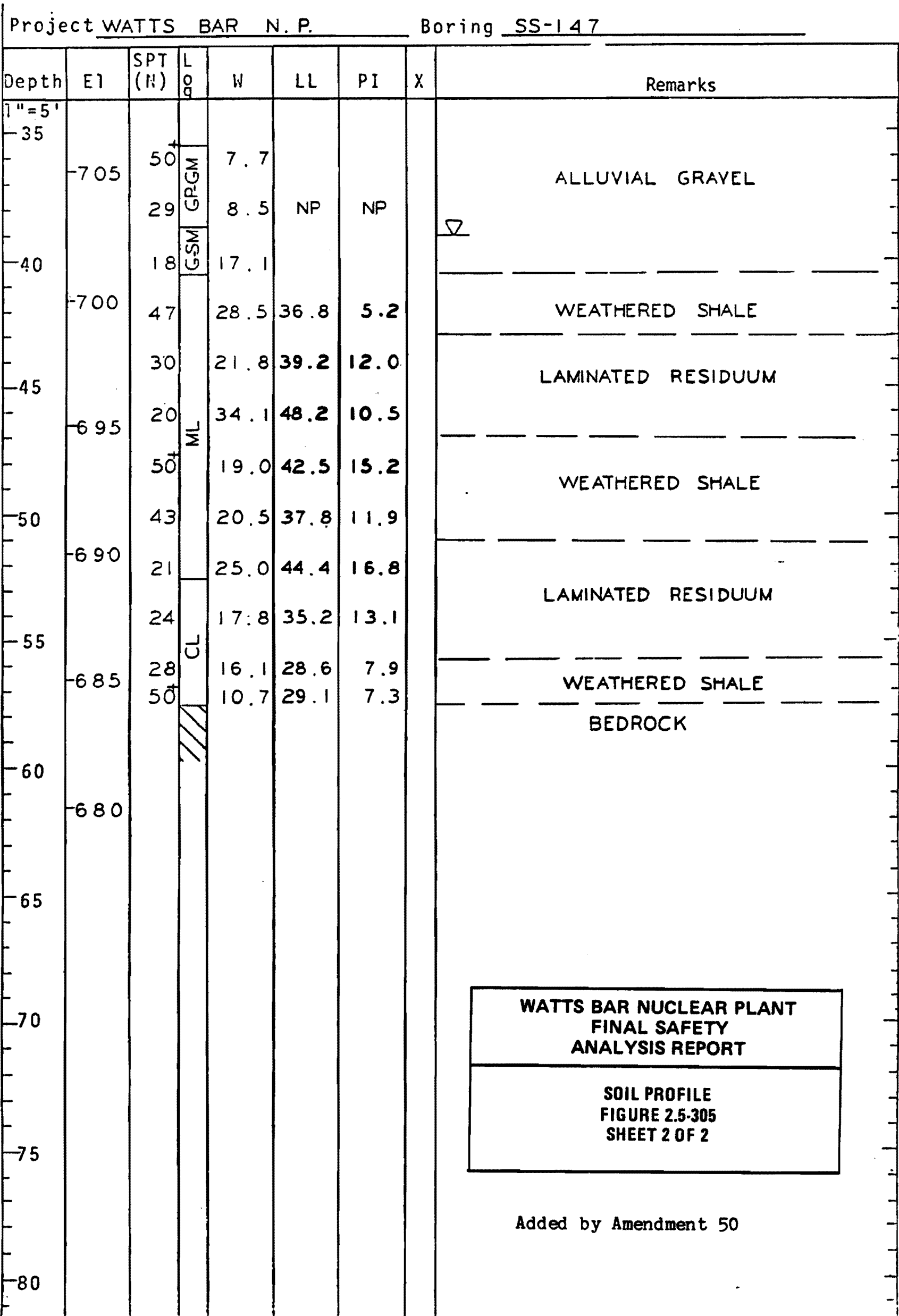


Figure 2.5-305 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-306
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT

Boring SS-148A Station 265.0 S Range 1923.0 E Surface El 715.4

Date Drilled 6-19-79 To 6-19-79 Prepared By JLB Checked By JCB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0	715		79					
		10		12.3	27.2	10.9		
		16		15.3				
5	710	17		15.3	33.7	16.5		ALLUVIAL CLAY
		25	U	15.8	28.3	10.4		
10	705	19		12.5	29.4	14.3		
		30		11.9	30.2	12.7		
		50		16.6	31.4	13.4		
15	700							DISCONTINUED
20								
25								
30								
35								Added by Amendment 50

Figure 2.5-306 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-307
SHEET 1 OF 2

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-148B Station 259.0S Range 1865.5 E Surface El 736.6
Date Drilled 6-19-79 To 6-21-79 Prepared By JLB Checked By QCE

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0	-735							
5	-730							NO SAMPLING ALLUVIAL CLAY
10	-725							
15	-720	38	GSM	8.2				ALLUVIAL GRAVELLY SAND
		26		11.2	NP	NP		
20	-715	23	GWGM	7.0				ALLUVIAL GRAVEL
		25		20.3	44.8	16.1		LAMINATED RESIDUUM
25	-710	50 ⁺	ML	17.1	45.9	18.9		
		50 ⁺		19.4	36.3	10.2		WEATHERED SHALE
		50 ⁺		19.4				
30	-705	37		20.1	38.8	11.2		
		46	CL-ML	17.6	40.9	15.2		Added by Amendment 50
		41	CL	14.8	34.9	12.3		
35								

Figure 2.5-307 Soil Profile (Sheet 1 of 2)

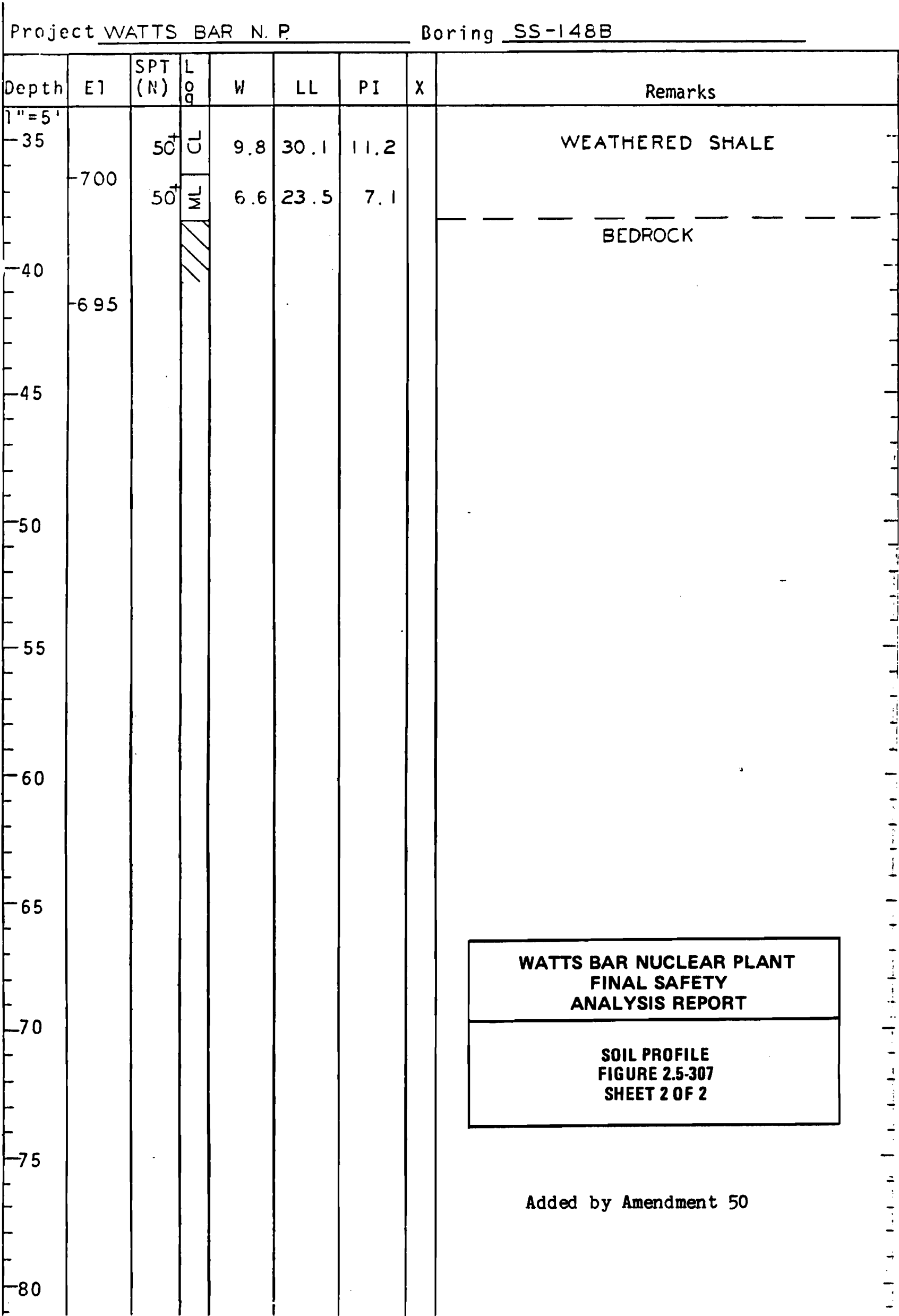
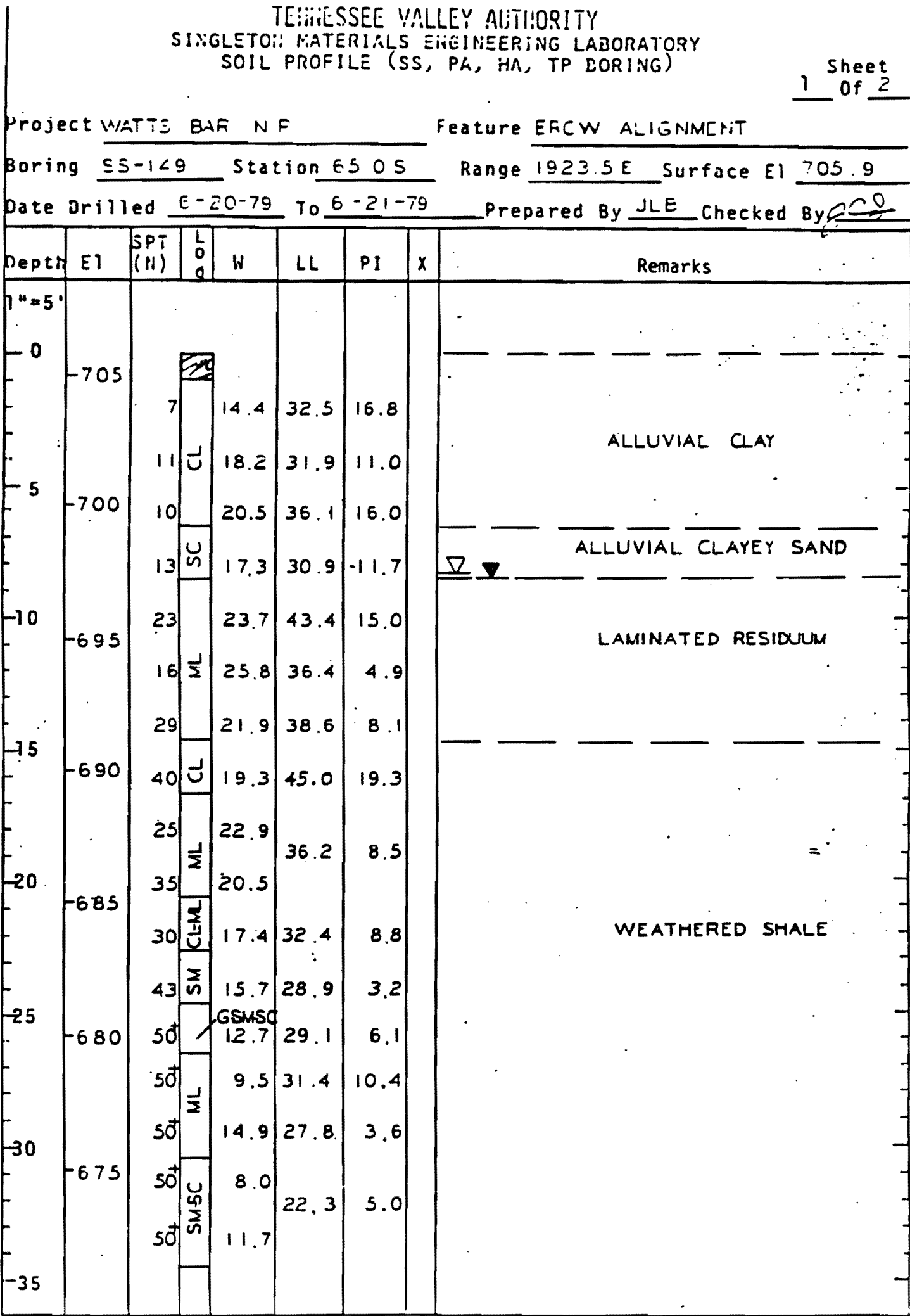


Figure 2.5-307 Soil Profile (Sheet 2 of 2)



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE

Figure 2.5-308
SHEET 1 OF 2

Amendment 63

Figure 2.5-308 Soil Profile (Sheet 1 of 2)

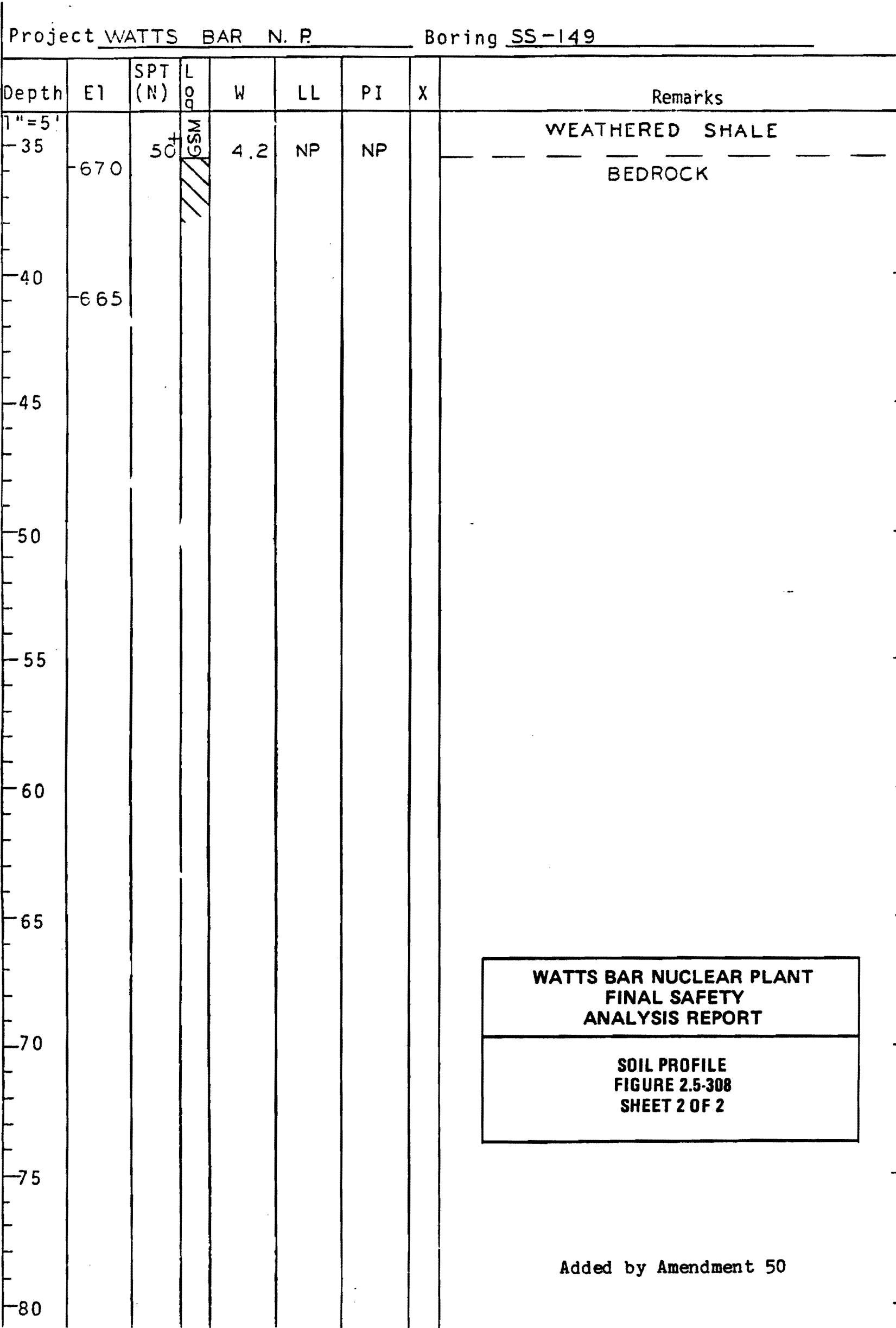


Figure 2.5-308 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-309
SHEET 1 OF 1

Project WATTS BAR N. P. Feature ERCW ALIGNMENT

Boring SS-150 Station 135.0 N Range 1923.2 E Surface El 709.1

Date Drilled 6-22-79 To 6-22-79 Prepared By JLB Checked By 

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
		22		14.8	27.3	8.9		
	705	13	CL	17.5				ALLUVIAL CLAY
5		16		17.8	33.0	13.7		
		50		20.7				
	700	50	ML	17.3	30.5	4.5		
10								
		34		14.9	33.2	11.4		
								WEATHERED SHALE
	695	50	CL	16.2	37.2	13.5		
15		50		12.8	29.4	9.0		
		50		6.3				
					23.7	6.7		
	690	50	SMSC	8.3				
20								BEDROCK
	685							
25								
30								
								Added by Amendment 50
35								

Figure 2.5-309 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-310
SHEET 1 OF 1

Project WATTS BAR N.P Feature ERCW ALIGNMENT
Boring SS-151 Station 285.8 ~~N~~ Range 1824.9 E Surface El 717.5
Date Drilled 6-25-79 To 6-25-79 Prepared By JLB Checked By gco

Depth	El	SPT (N)	LOG	W	LL	PJ	X	Remarks
1"=5'								
0								
	715	15	CL	16.1	36.3	16.3		ALLUVIAL CLAY & SILT
		10		17.4	30.3	11.0		
5		40	ML	11.5	NP	NP		
	710	50+	GSPSM	5.6	—	—		ALLUVIAL GRAVELLY SAND
10		50		4.9	NP	NP		
	705	23	CL-ML	13.9	41.2	16.3		LAMINATED RESIDUUM
		21	CL	19.0	39.2	15.4	▽	
15		25		19.9			▽	
	700	32	SM	18.7	36.8	10.9		WEATHERED SHALE
20		50		16.4	37.3	15.0		
		50+	CL	6.9	28.1	9.5		
	695	50+		7.0	25.1	7.3		NO SAMPLE RECOVERY
25		50+						
	690	50+		6.9				WEATHERED SHALE
		50+	SC	7.0	24.5	7.8		
30		50+		5.7				
	685	50+	GML	3.9	—	—		
35								BEDROCK

Added by Amendment 50

Figure 2.5-310 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-311
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-152 Station 465.1N Range 1693.1E Surface El 719.6
Date Drilled 6-25-79 To 6-25-79 Prepared By JLB Checked By ACQ

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
		23		12.6	32.3	14.9		
		21	CL	17.8	27.9	10.6		ALLUVIAL CLAY
5	715	19		17.5	34.8	18.7		
		22		15.6	30.1	11.1		
10	710	50+	GSM	4.6	NP	NP		
		23	GSPSM	13.9				ALLUVIAL GRAVELLY SAND
		24	ML	24.6	37.1	10.4		
15	705	19	ML-CL	22.4	41.3	16.0		LAMINATED RESIDUUM
		27		26.2	40.8	17.0		
20	700	50+		15.3	32.7	11.8		
		50+	CL	14.5				WEATHERED SHALE
		50+		9.4	26.0	9.3		
25	695	50+	ML-CL	5.9	24.0	6.7		BEDROCK
30	690							
35								Added by Amendment 50

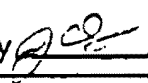
Figure 2.5-311 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-313
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT

Boring SS-154 Station 633.5 N Range 1444.4E Surface El 719.7

Date Drilled 6-26-79 To 6-26-79 Prepared By JLB Checked By 

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
		25		14.8	31.6	13.7		
	715	25	CL	13.2	27.6	10.7		ALLUVIAL CLAY
5		23		14.1	23.0	9.2		
		20		13.1				
	710	50 ⁺	GSM	8.8	NP	NP		ALLUVIAL GRAVELLY SAND
10		29	GSPSM	10.2				
	705	20		17.4	38.2	15.6		LAMINATED RESIDUUM
15		27		17.6				
		50 ⁺	CL	9.6				
20	700	50 ⁺		8.0	29.4	10.8		
		50 ⁺		6.1				
		50 ⁺		5.5				WEATHERED SHALE
25	695	50 ⁺	SC		26.0	8.5		
		50 ⁺		5.3				
		50 ⁺	CL	8.7	24.0	7.5		
30	690	50 ⁺	ML-CL	5.4				
		50 ⁺	ML-CL	7.2	23.0	6.9		
								BEDROCK
35	685							Added by Amendment 50

Figure 2.5-313 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-314
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-155 Station 664.1 N Range 1410.0 E Surface El 719.5
Date Drilled 6-26-79 To 6-26-79 Prepared By JLB Checked By [Signature]

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		22		16.3	26.8	10.7		FILL
	715	35	CL	12.9				ALLUVIAL CLAY
5		20		14.9	35.9	20.5		
		21	CL-ML	12.3	19.7	4.7		
10	710	32		17.5				ALLUVIAL GRAVELLY SAND
		23	GSM	12.5	NP	NP		
		36	GSPSM	11.7				
15	705							LAMINATED RESIDUUM
		28		16.0	38.0	16.0		
		50+	CL	5.6				WEATHERED SHALE
20	700	50+		15.5	26.6	8.8		
		50+	ML-CL	6.5	23.7	6.3		DISCONTINUED
25	695							
30								
35								Added by Amendment 50

Figure 2.5-314 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-315
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-156 Station 664.8 N Range 1210 0 E Surface El 720.4
Date Drilled 6-26-79 To 6-26-79 Prepared By JLB Checked By RCJ

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0	720							
		14	CL	13.0	30.8	14.3		
		10		17.7	32.4	15.0		
5	715	16	ML	29.1	37.2	2.9		ALLUVIAL SILT & CLAY
		15	M-CL	14.7	22.4	6.4		
10	710	13	ML	18.0	15.9	1.3		
		29	GSM	13.2				ALLUVIAL GRAVELLY SAND
		22	GSPSM	8.1	NP	NP		
15	705	34	M-CL	20.3	33.2	10.6		
		41		15.0	30.3	6.5		WEATHERED SHALE
20	7.00	50	SC	13.7	32.6	11.2		
		50		6.9				BEDROCK
25	6 95							
30								
35								Added by Amendment 50

Figure 2.5-315 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-316
SHEET 1 OF 1

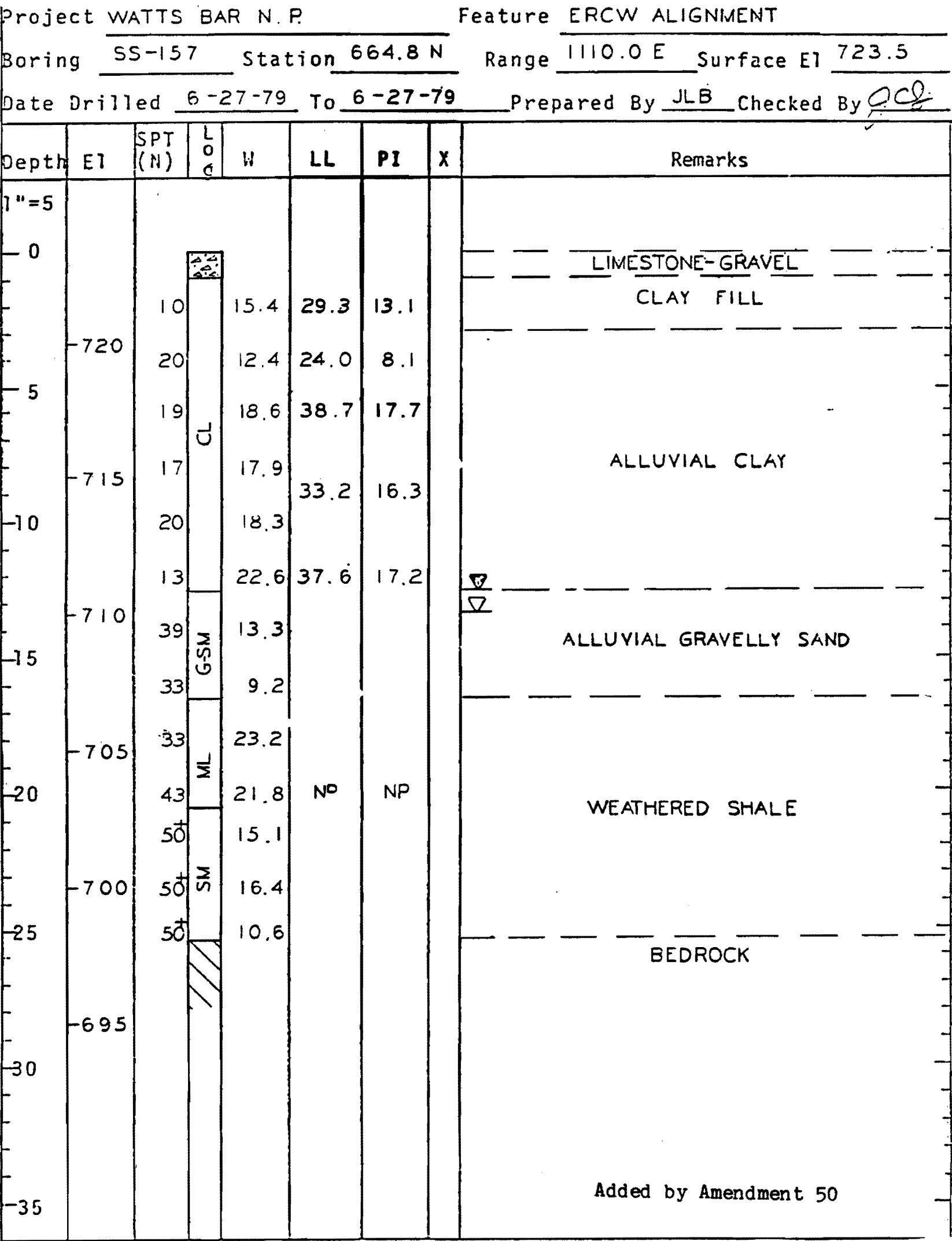


Figure 2.5-316 Soil Profile (Sheet 1 of 1)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-317
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT

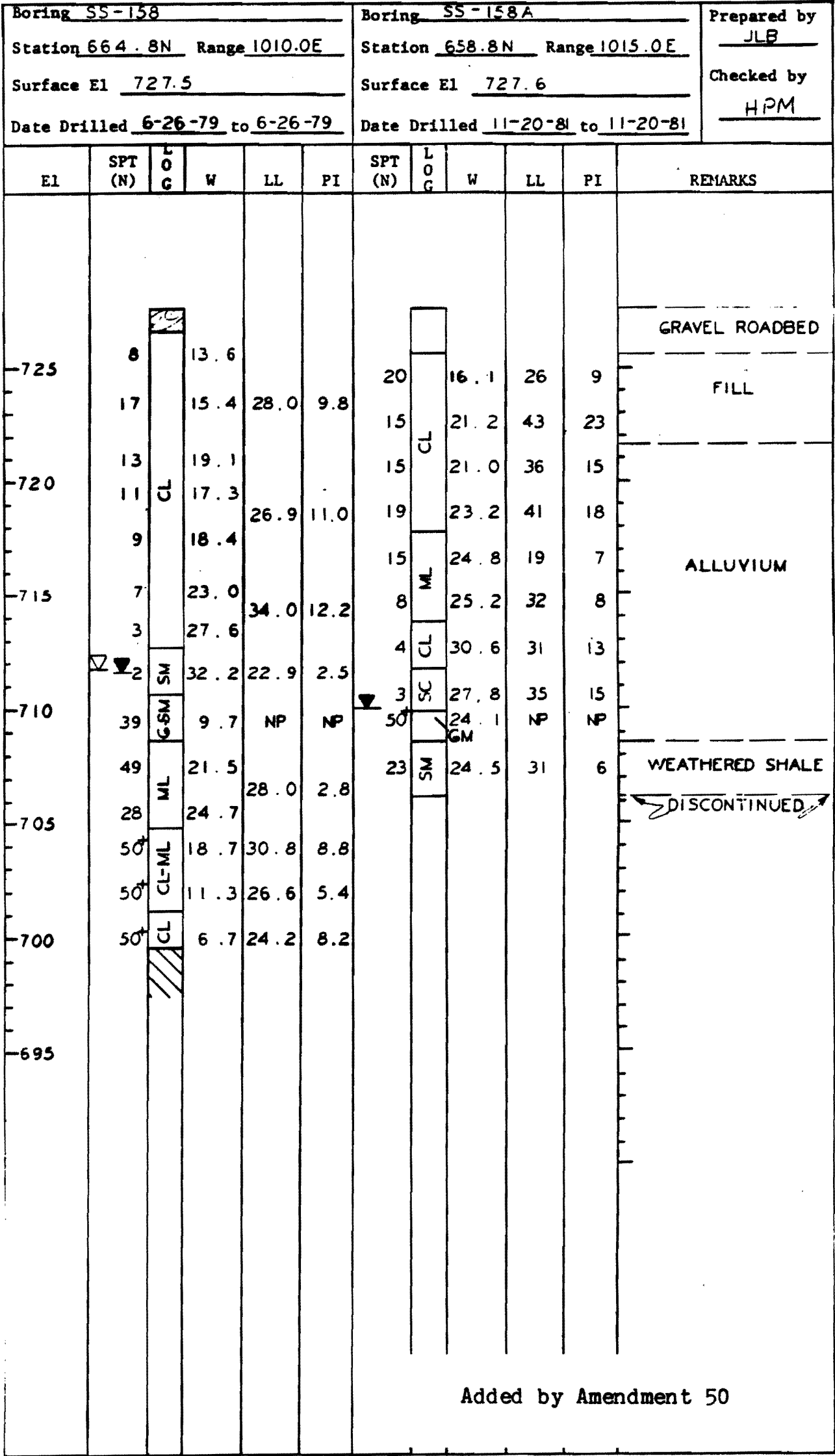
Boring SS-158 Station 664.8 N Range 1010.0 E Surface El 727.5

Date Drilled 6-26-79 To 6-27-79 Prepared By JLB Checked By *pcg*

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		8		13.6				
	725							CLAY FILL
		17		15.4	28.0	9.8		
5								
		13		19.1				
	720							
		11	CL	17.3	26.9	11.0		ALLUVIAL CLAY
10								
		9		18.4				
	715							
		7		23.0	34.0	12.2		
		3		27.6				
15								
		2	SM	32.2	22.9	2.5		ALLUVIAL SAND
	710							
		39	GSM	9.7	NP	NP		ALLUVIAL GRAVELLY SAND
20								
		49		21.5				
			ML		28.0	2.8		
	705							WEATHERED SHALE
		28		24.7				
		50+		18.7	30.8	8.8		
			CL-ML					
25								
		50		11.3	26.6	5.4		
			CL					
	700							
		50+		6.7	24.2	8.2		
								BEDROCK
30								
	695							Added by Amendment 50
35								

Figure 2.5-317 Soil Profile

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-318

Figure 2.5-318 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-319
SHEET 1 OF 1

Added by Amendment 50

Project WATTS BAR N. P. Feature ERCW ALIGNMENT

Boring SS-159 Station 640.0 N Range 810.0 E Surface El 731.7

Date Drilled 6-27-79 To 6-27-79 Prepared By JLB Checked By JCL

Depth	El	SPT (N)	Log	W	LL	PJ	X	Remarks
1"=5								
0								
	730	11		16.4	31.2	11.8		
		21	CL	25.6				
5		17		26.6				
	725	18	ML	23.8	39.5	13.2		ALLUVIAL CLAY
		14		25.6				
10		11	CL	25.8	32.8	13.4		
	720	6	CL-ML	29.4	26.8	4.2		
15		5	CL	27.1	34.6	16.1	▽	
	715	3		25.6	29.3	13.3		
20		20	GSM	13.7	NP	NP		ALLUVIAL GRAVEL
	710	50+	GM	9.9				
		43	CL	20.2	38.7	16.4		
25		43	CL-ML	28.4	36.1	12.6		
	705	41		21.3	39.4	15.7		WEATHERED SHALE
		50+		18.4	37.0	14.3		
30		43	CL	9.7				
	700				31.4	11.9		
		50+		10.6				
35								DISCONTINUED

Figure 2.5-319 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-320
SHEET 1 OF 1

Project WATTS BAR N.P. Feature ERCW ALIGNMENT
Boring SS-160 Station 566.0 N Range 740.0 E Surface El 732.9
Date Drilled 6-27-79 To 6-27-79 Prepared By JLB Checked By goc

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		13		21.5	35.8	17.9		CLAY FILL
-730		21	CL	22.8	39.2	16.1		ALLUVIAL CLAY
5		21		21.4				
-725		15		14.7	30.2	6.0		
10		13		24.0	30.0	6.0		
		15	SM	22.5	NP	NP		ALLUVIAL SAND
-720		7		23.8	24.2	1.7		
15		12		25.8	27.0	3.0		
		5	SMSC	30.2	32.1	8.5		
-715		21		22.0	26.2	2.2		ALLUVIAL GRAVEL
20		5	GM	24.3				
-710		50+	GRGM	9.6	NP	NP		
25		39	SMSC	16.8	29.5	7.5		
-705		29	CL	21.1	38.7	16.3		WEATHERED SHALE
30		50+	ML	16.9	30.6	6.7		
		50+	CL-ML	15.1	23.7	15.9		
-700		50+		10.1				
35								DISCONTINUED Added by Amendment 50

Figure 2.5-320 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-321
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-161 Station 488.0N Range 670.0 E Surface El 732.4
Date Drilled 6-28-79 To 6-28-79 Prepared By JLB Checked By gcl

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	730	20	CH	26.2	57.6	30.0		
		14	ML	21.1	41.2	14.4		
5		9	CL-ML	25.1	43.0	16.5		ALLUVIAL SAND TO CLAY
	725	8	SC	28.2	34.4	11.9		
10		5	CL	25.3	29.7	8.4		
	720	6	SC	25.3	30.8	9.4		
		9		18.4	NP	NP	▽	ALLUVIAL SILT & SAND
15		10	SM	21.5				
	715	3	CL-ML	35.8	36.8	13.2		
20		5	ML	30.9	25.7	2.3		
	710	37	GM	11.1	NP	NP		ALLUVIAL GRAVEL
		19	GSM	12.7				
25		45		21.0				
	705	50+	CL-ML	16.8	41.1	16.6		
		50+		18.6				WEATHERED SHALE
30		25		19.8	38.9	14.3		
	700	50+	CL	22.2	46.1	20.4		
		50+	SC	12.2	29.1	9.6		Added by Amendment 50
35								

Figure 2.5-321 Soil Profile (Sheet 1 of 2)

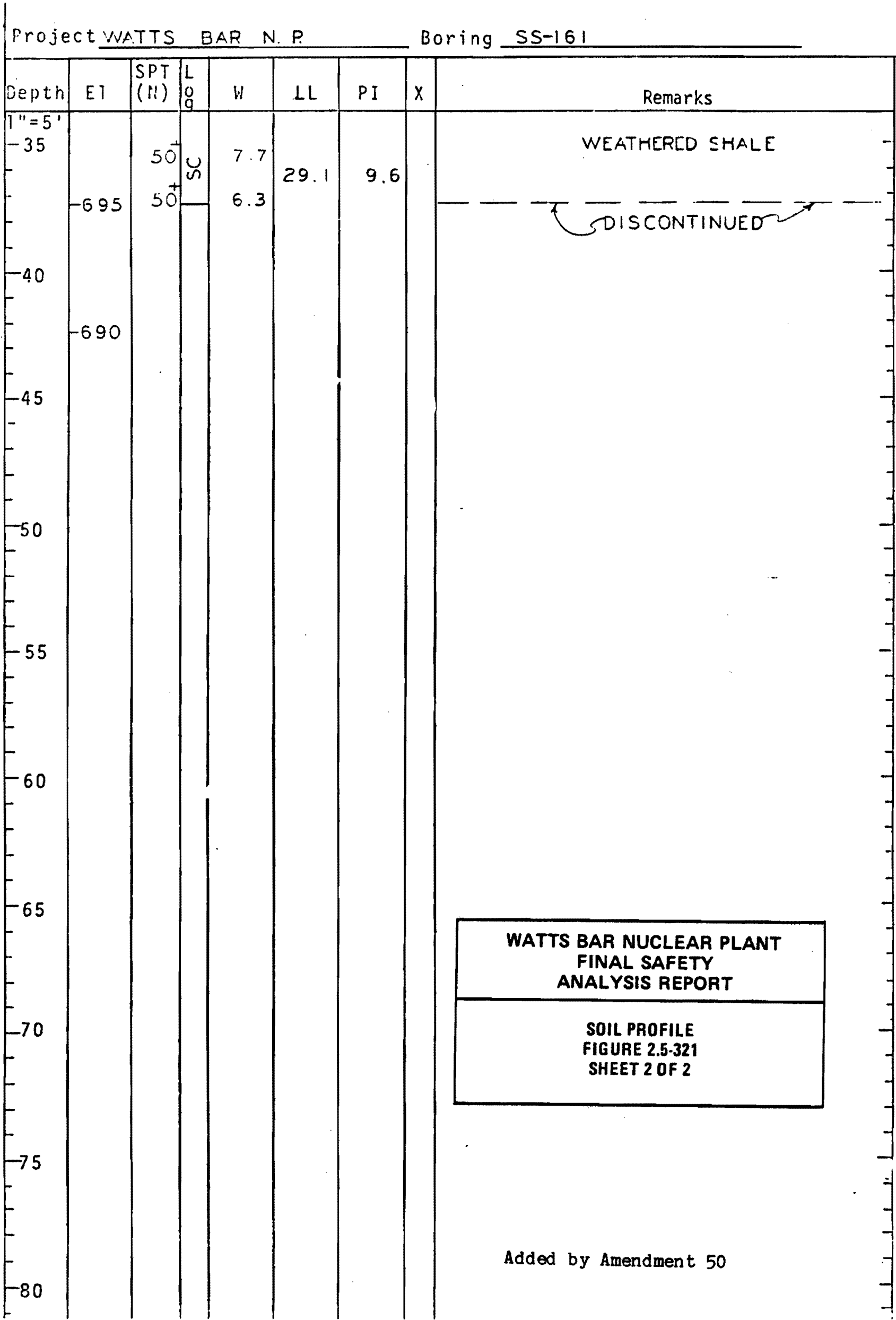


Figure 2.5-321 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-322

Boring SS-161						Boring SS-161A						Prepared by JLB	
Station 488.0 N Range 670.0 E						Station 488.0 N Range 675.0 E						Checked by HPM	
Surface El 732.4						Surface El 732.9							
Date Drilled 6-28-79 to 6-28-79						Date Drilled 11-23-81 to 11-23-91							
El	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
730	20	CH	26.2	57.6	30.0	33	CH	28.4	62	34	ALLUVIUM		
	14	ML	21.1	41.2	14.4	26	SM	19.2	39	12			
	9	CL-ML	25.1	43.0	16.5	13	CL	24.3	36	13			
725	8	SC	28.2	34.4	11.9	12	SM-SC	21.8	32	8			
	5	CL	25.3	30.8	9.4	9	SC	22.4	28	8			
720	6	SC	25.3	29.7	8.4	10	SM	23.8	26	2			
	9	SM	18.4	NP	NP	13	SM	17.8	NP	NP			
	10	SM	21.5			23	SC	14.0	29	9			
715	3	CL-ML	35.8	36.8	13.2	5	ML	35.7	38	12			
	5	ML	30.9	25.7	2.3	5	CL	33.0 32.4	32 27	13 9			
710	37	GM	11.1	NP	NP	50	SM	15.4					
	19	G-SM	12.7			40	GPGM	10.3	NP	NP			
	45		21.0			16	SM	44.2					
705	50	CL-ML	16.8	41.1	16.6						WEATHERED SHALE		
	50		18.6								DISCONTINUED		
700	25		19.8	38.9	14.3								
	50	CL	22.2	46.1	20.4								
	50	SC	7.7	29.1	9.6								
695	50		6.3										
690													
Added by Amendment 50													

Figure 2.5-322 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-323
SHEET 1 OF 1

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-162 Station 488.0 N Range 560.0 E Surface El 733.8
Date Drilled 6-28-79 To 6-28-79 Prepared By JLB Checked By PCB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								LIMESTONE GRAVEL
		13	CL	14.4	37.1	21.4		
	730	17	CH	21.6	67.1	41.7		ALLUVIAL CLAY
5		14		28.4				
	725	20	SM	16.4	31.6	7.1		
10		34		22.7	31.0	6.6		
		27	GSM	20.7	29.1	3.8		ALLUVIAL SAND
	720	36		23.0	31.6	4.9		
15		20	SM	27.7	28.3	1.6		
	715	19		30.2	27.6	3.0		
20		5		34.3				
		11	GSWSM	20.4	NP	NP		
	710	50+	GM	10.9				ALLUVIAL SAND & GRAVEL
25		50+	SM	12.3				
		50+		18.6				
	705	50+	CL-ML		38.6	13.9		WEATHERED SHALE
30		50+		14.3				
		50+	CL	12.0	32.0	10.8		
	700							DISCONTINUED
35								Added by Amendment 50

Figure 2.5-323 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-324
SHEET 1 OF 1

Project WATTS BAR N. P. Feature ERCW ALIGNMENT

Boring SS-163 Station 488.0 N Range 450.0 E Surface El 737.0

Date Drilled 6-28-79 To 6-28-79 Prepared By JLB Checked By *ACD*

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								GRAVEL
	735	19	CL	18.3	31.7	13.3		ALLUVIAL CLAY
		17	GRGM	3.4	NP	NP		ALLUVIAL GRAVEL
5		18	MH	25.2	54.0	20.9		ALLUVIAL CLAY & SILT
	730	10	CE-ML	24.7	40.0	15.3		
		9	CE-ML	27.7				
	725	5	SM	19.7	NP	NP		
		5		27.1				
15		5	SMSC	28.4	30.4	7.1		ALLUVIAL SAND
	720	6		26.9			▽ ▽	
20		3	SM	31.1	27.2	3.3		
	715	4		33.5	29.7	4.7		
		17	GSM	27.3	28.7	3.8		ALLUVIAL GRAVEL
25		50		7.8	NP	NP		
	710	50	GRGM	12.1				
		50		18.5	43.6	16.2		WEATHERED SHALE
30		50	ML	21.2	37.3	9.0		
	705	50		2.7				DISCONTINUED
35								Added by Amendment 50

Figure 2.5-324 Soil Profile

WATTS BAR NUCLEAR PLANT ERCW
SOIL PROFILE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-325

Boring SS-163						Boring SS-163A						Prepared by JLB	
Station 488.0 N Range 450.0E						Station 480.5N Range 441.0E						Checked by HPM	
Surface El 737.0						Surface El 737.5							
Date Drilled 6-28-79 to 6-28-79						Date Drilled 11-24-81 to 11-24-81							
El	SPT (N)	LOG	W	LL	PI	SPT (N)	LOG	W	LL	PI	REMARKS		
735	19	CL	18.3	31.7	13.3						ASPHALT		
		GRAVEL ROADBED											
		CLAY FILL											
730	17	GP-GM	3.4	NP	NP	25	MH	31.9	60	24	ALLUVIUM		
725	18	MH	25.2	54.0	20.9	23	SM-SC	22.6	37	13			ALLUVIUM
720	10	CL-M	24.7	40.0	15.3	23	SC	22.5	33	10	ALLUVIUM		
715	9	SM	27.7	NP	NP	15	SM	18.8	30	9			ALLUVIUM
710	5	SM-SC	19.7	NP	NP	9	SM	25.8	31	6	ALLUVIUM		
705	5	SM	27.1	30.4	7.1	7	SM	28.9	31	7			ALLUVIUM
700	6	CL	26.9	31.1	27.2	11	SPSM	28.2	NP	NP	ALLUVIUM		
695	3	SM	31.1	27.2	3.3	4	SM	36.3	30	3			ALLUVIUM
690	4	SM	33.5	29.7	4.7	5	CL	33.0	31	2	ALLUVIUM		
685	17	G-SM	27.3	28.7	3.8	50	SPSM	16.2	NP	NP			ALLUVIUM
680	50	G-SM	7.8	NP	NP	40	G-SM	16.4	NP	NP	ALLUVIUM		
675	50	GP-GM	12.1	18.5	43.6	50	GP-GM	13.9	40	12			ALLUVIUM
670	50	ML	21.2	37.3	9.0	50	SM	13.2	40	12	ALLUVIUM		
665	50	ML	2.7	—	—								ALLUVIUM
Added by Amendment 50													

Figure 2.5-325 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-326
SHEET 1 OF 2

Added by Amendment 50

Project WATTS BAR N.P. Feature EROV ALIGNMENT

Boring SS-164 Station 488.0 N Range 230.0 E Surface El 741.0

Date Drilled 6-28-79 To 6-29-79 Prepared By JLB Checked By JCB

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
0	740	20	G-CL	6.9	28.3	10.5		BACKFILL
5	735	14	SMSC	16.7	27.0	5.4		ALLUVIAL SAND & GRAVEL
		50+	G-SM	1.7	NP	NP		
10	730	20	CH-M-CL	24.7	48.7	21.3		ALLUVIAL CLAY & SILT
		31	CH-M-CL		52.7	24.5		
15	725	21	SMSC	20.8	38.6	12.7		ALLUVIAL SAND
		15	ML	22.3	39.4	13.1		
		16	ML	25.6				ALLUVIAL CLAY & SILT
20	720	9	CH	26.2	60.3	36.3		
		6	CL-M	28.2	36.0	12.1		
		9	SMSC	27.4	31.5	8.6		
25	715	15	G-SP-SM	16.2	NP	NP		
		20	G-SP-SM	20.9				
30	710	11	SM	26.6	31.1	5.7		ALLUVIAL SAND & GRAVEL
		50+	G-SP-SM	11.0				
		50	G-SP-SM	14.9	NP	NP		
35		26	CL	13.2	46.7	22.7		WEATHERED SHALE

Figure 2.5-326 Soil Profile (Sheet 1 of 2)

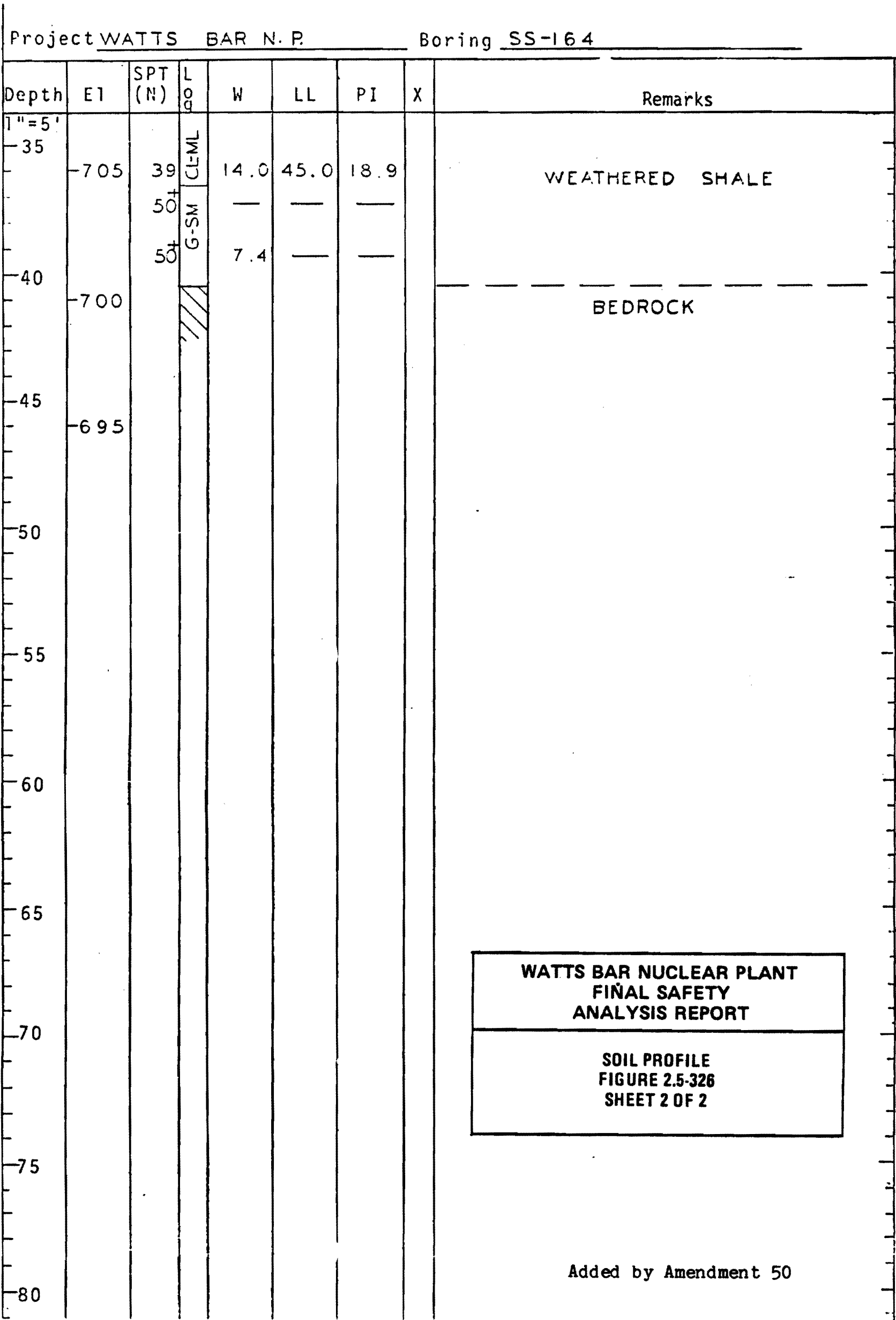


Figure 2.5-326 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-327
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERLW ALIGNMENT
Boring SS-165 Station 488.0 N Range 120.0 E Surface El 740.7
Date Drilled 6-29-79 To 6-29-79 Prepared By JLB Checked By gck

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0	740	50						SANDY SILT
5	735	13	CL	19.8	31.2	13.0		ALLUVIAL CLAY & SILT
		20	CLCH	27.2	50.6	23.6		
10	730	18	ML	20.7	44.7	16.3		
		11	CLML	22.9	35.8	12.2		
		13	ML	28.5	44.5	16.6		ALLUVIAL SAND & SILT
15	725	11	CL	26.7	36.7	14.4		
		12	SM	21.8	34.1	9.2		
20	720	5	ML	31.9	37.4	11.5		
		6	CLML	31.2	39.0	14.2		ALLUVIAL GRAVEL
25	715	3	SMSC	33.3	30.7	8.1		
		2	SMSC	34.4				
		27	GSC	17.7				
30	710	50	GP-GM	10.5				Added by Amendment 50
		47	GP-GM	10.5	NP	NP		
35		34	GWGM	11.6				

Figure 2.5-327 Soil Profile (Sheet 1 of 2)

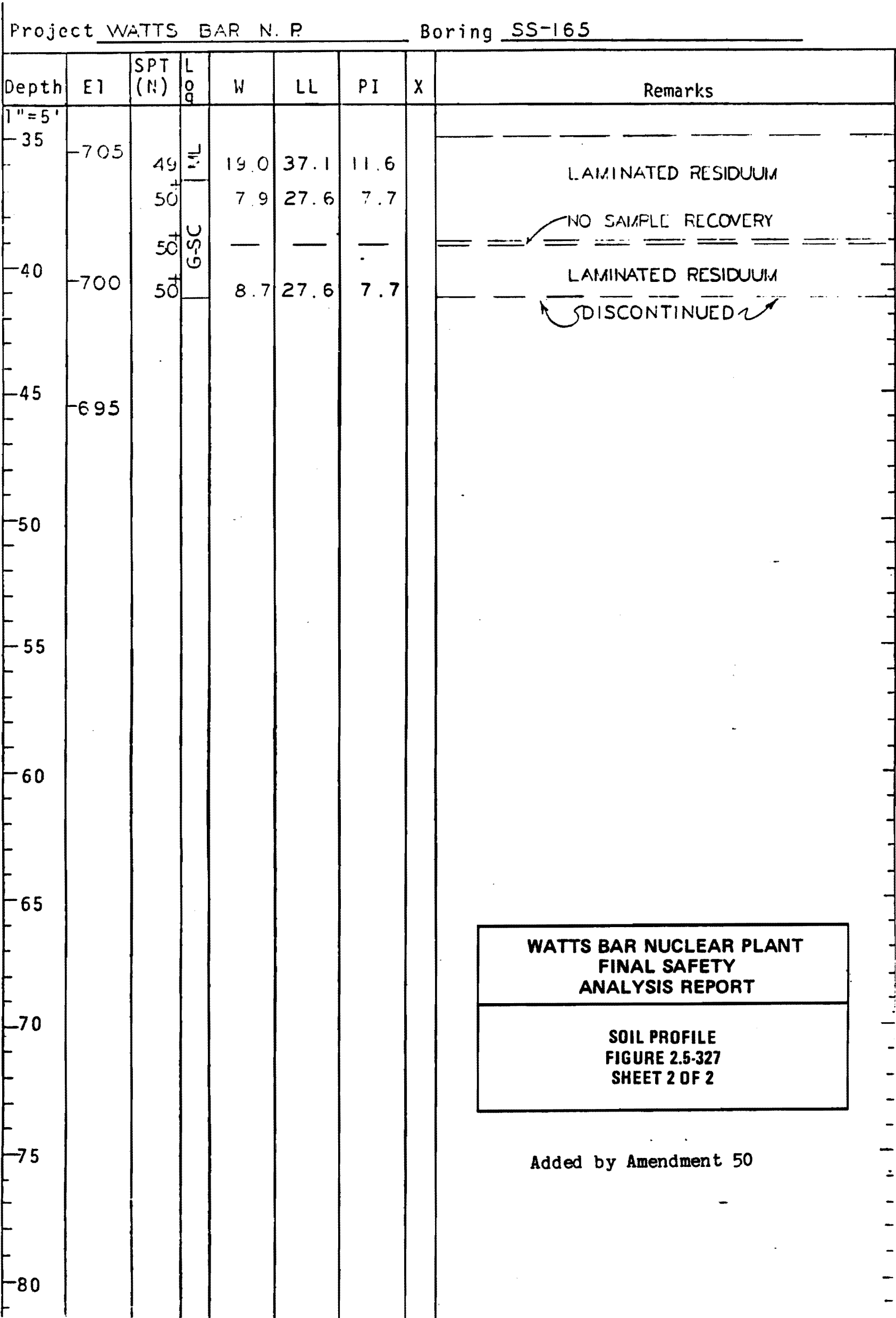


Figure 2.5-327 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-328
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-166 Station 488.0 N Range 10.0 E Surface El 740.5
Date Drilled 6-29-79 To 6-29-79 Prepared By JLB Checked By *gcb*

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0	740	12	CL	20.5	38.5	18.4		FILL
		50+	GSM	3.0	NP	NP		
5	735	24	0.7 GR.GM					
		17	CL-ML	25.1	48.1	21.1		ALLUVIAL SILT & CLAY
10	730	17	CL-ML	24.0				
		21	CL	25.8	39.6	15.9		
		12	ML	24.2	30.0	5.6		
15	725	18	CL-ML	23.4	33.2	10.8		
		16	CL-ML	28.1	40.3	14.6		
20	720	13	ML	29.6	48.8	19.8	▼	ALLUVIAL SAND OR GRAVEL
		11	CL-ML	32.2			▽	
		6	CL-ML	28.4	31.4	9.1		
25	715	5	CL	29.3	36.8	14.3		
		5	SC	27.1	26.7	9.6		WEATHERED SHALE Added by Amendment 50
30	710	50+	GSPSM	12.6	NP	NP		
		50+	GSPSM	10.1				
		50+	CL-ML	15.2	34.1	10.7		
35								

Figure 2.5-328 Soil Profile (Sheet 1 of 2)

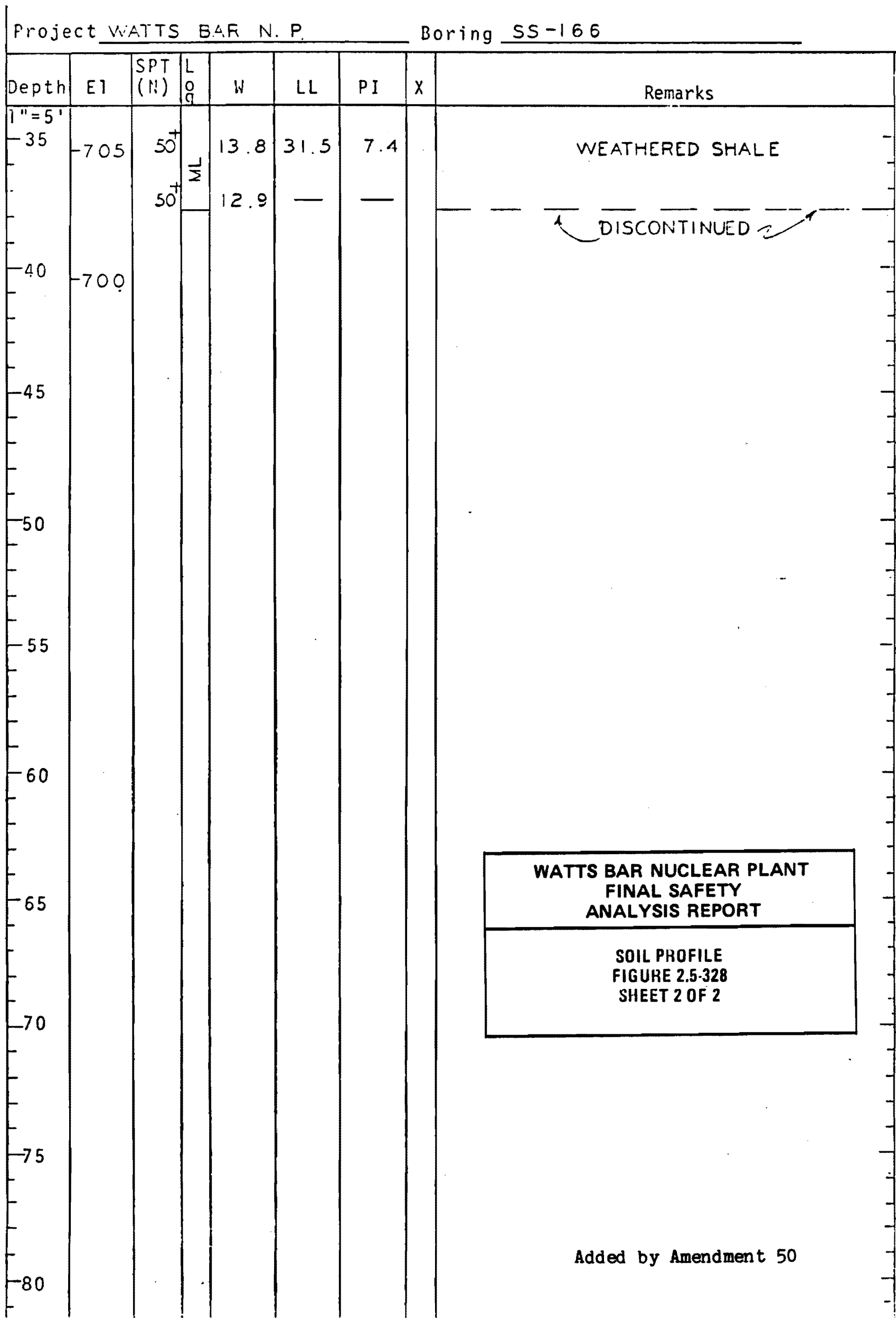


Figure 2.5-328 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-329
SHEET 1 OF 1

Added by Amendment 50

Project WATTS BAR N. P. Feature ERCW ALIGNMENT

Boring SS-167 Station 420.0 N Range 83.3 W Surface El 739.7

Date Drilled 7-2-79 To 7-2-79 Prepared By JLB Checked By *COJ*

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5								
0								
		18	CL-ML	17.0	27.7	6.2		
		12		13.4	29.8	10.4		
5	735		CL					FILL
		13		21.8	43.2	25.0		
		25	GSC	23.7	—	—		
10	730	23	CHMH	25.6				
					51.9	23.4		
		21		22.6				
		16	CL-ML	25.1	43.4	18.5		
15	725							
		14		27.4	46.0	19.4		ALLUVIAL CLAY
		14		27.3				
					46.5	21.6		
20	720	13		28.8				
		10		30.2				
			CL		44.7	19.5		
		6		32.1				
25	715							
		5		31.8	32.7	12.1		
		2		34.1	31.0	15.2		
30	710	50+	GSM	10.1	NP	NP		ALLUVIAL GRAVELLY SAND
		50+		12.8	26.2	4.6		
			CL-ML					
		50+		10.9	30.1	7.2		WEATHERED SHALE
35	705							BEDROCK

Figure 2.5-329 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-330
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-168 Station 319.8 N Range 65.3 W Surface El 739.6
Date Drilled 7-2-79 To 7-3-79 Prepared By JLB Checked By goc

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
		17	CEML	15.5	28.9	6.2		
		11		16.5				CLAY FILL
5	735	12		16.9	27.4	7.0		
		12	CL	17.3				
10	730	8		16.6	29.6	9.5		
		14		20.1	43.6	22.8		
15	725	18	CLCH	25.9	50.7	27.2		
		9		25.6	41.8	20.5		ALLUVIAL CLAY
20	720	11		28.6	43.7	19.5	▽	
		7	CL	31.1				
25	715	2		29.0	36.7	18.6	▽	
		1		28.4	25.5	9.0		
		50+	GRGM	9.5				ALLUVIAL GRAVEL
30	710	50+	GWGM	8.9	NP	NP		
		50+		17.2	36.2	13.7		WEATHERED SHALE
		50+	CL	13.9	34.1	13.1		
35	705							Added by Amendment 50

Figure 2.5-330 Soil Profile (Sheet 1 of 2)

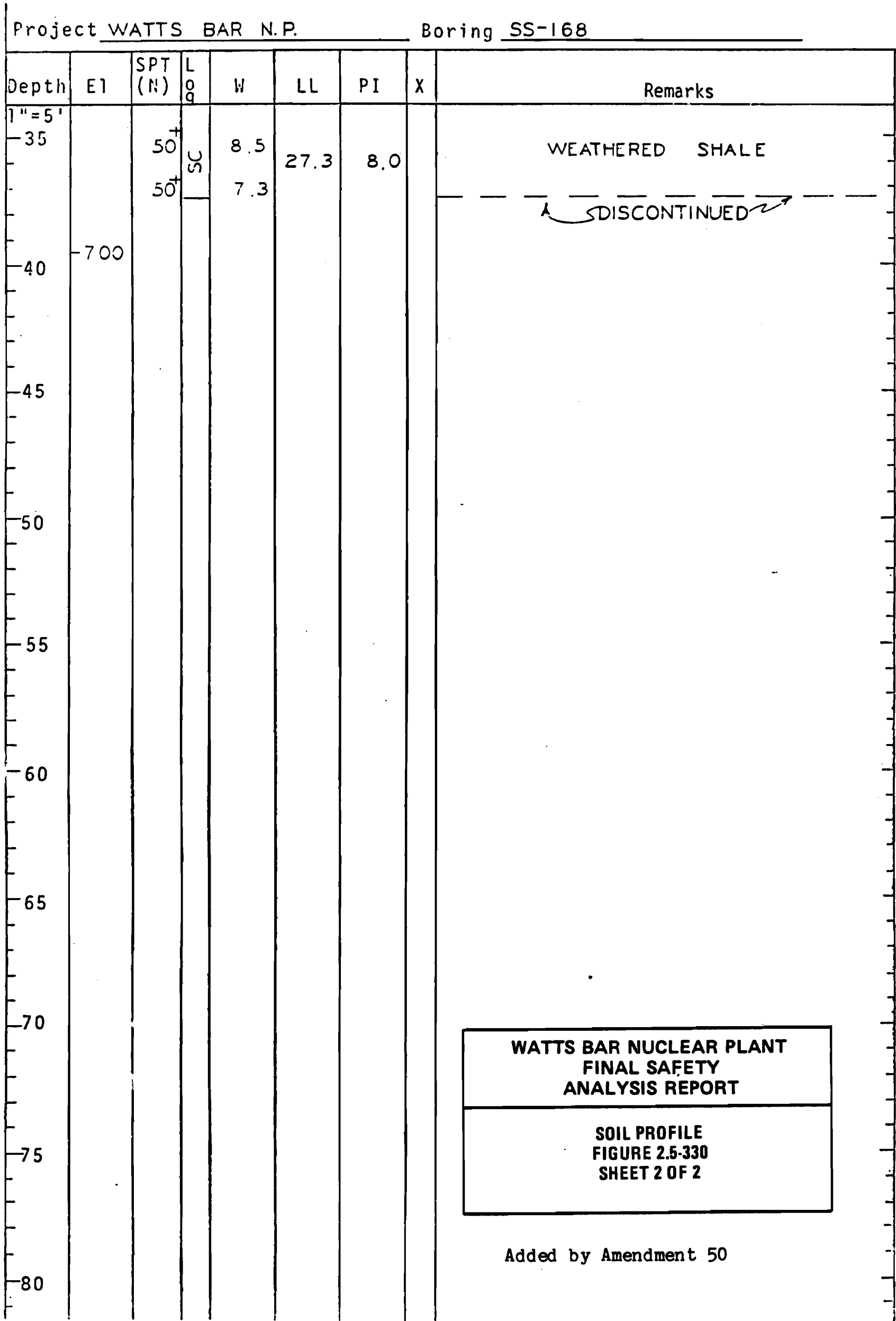


Figure 2.5-330 Soil Profile (Sheet 2 of 2)

Figure 2.5-331 Blank Page

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-332
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-169 Station 320.0 N Range 348.0 E Surface El 741.1
Date Drilled 7-2-79 To 7-2-79 Prepared By JLB Checked By gch

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0	740	17		16.7	31.2	11.8		
		18		14.9				
5	735	16	U	18.4	32.6	13.6		ALLUVIAL CLAY
		13		17.9	33.3	15.3		
10	730	14		16.8				
		19	U	24.5	51.5	29.3		
		15		21.0	44.6	24.7		
15	725	10	U	26.9	43.3	20.1		
		10	MLCL	27.6	42.1	17.3		
20	720	13	ML	32.3	48.4	17.2		
		8	CLML	31.8	43.0	17.0		ALLUVIAL SILT
		6		34.3	41.4	13.7		
25	715	6	ML	32.3				
		5		33.1	40.8	13.7		
30	710	50	GSM	10.4	NP	NP		ALLUVIAL GRAVEL
		50	GRGM	9.7				
		50		14.7	36.8	12.0		WEATHERED SHALE
35			CLML					Added by Amendment 50

Figure 2.5-332 Soil Profile (Sheet 1 of 2)

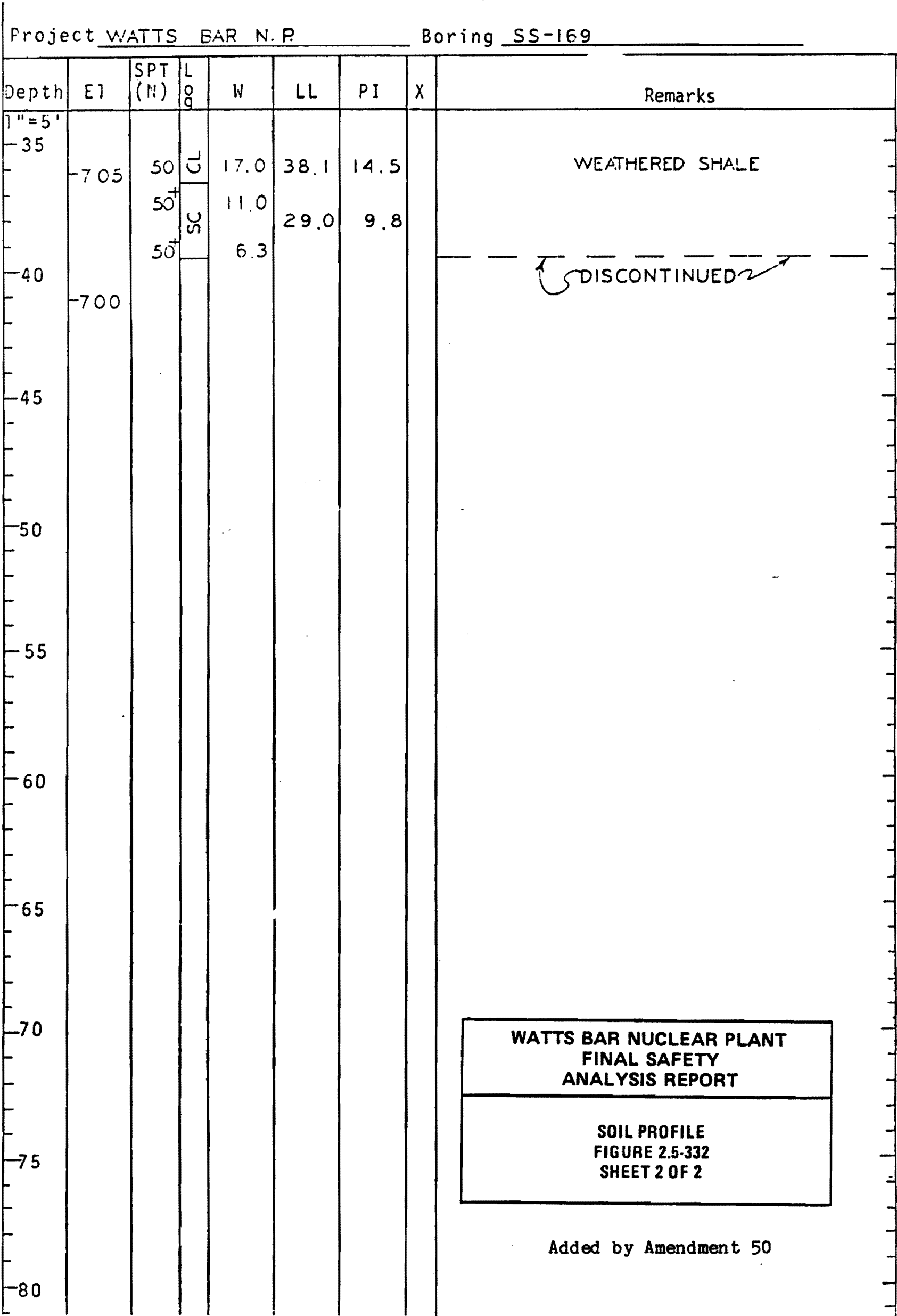


Figure 2.5-332 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-333
SHEET 1 OF 2

Project WATTS BAR N. P. Feature ERCW ALIGNMENT
Boring SS-170 Station 420.0N Range 348.0 E Surface El 741.2
Date Drilled 7-2-79 To 7-2-79 Prepared By JLB Checked By gob

Depth	El	SPT (N)	Log	W	LL	PI	X	Remarks
1"=5'								
0								
	740	18		15.6	30.1	8.5		
		14	CL-ML	16.2				
5					27.8	6.0		
	7.35	15		15.8				
		24	CL	17.6	31.8	12.3		ALLUVIAL CLAY
10								
	730	21	CH	25.2	61.5	34.2		
		13		19.3	44.0	21.2		
		7	CL	23.5	33.4	13.7		
15								
	725	14	ML-CL	25.5	44.5	27.5		
		14		29.5				
20								
	720	12	SM	21.9	32.6	7.4		
		4	GSMSC	29.1			▽	
					34.8	11.5	▽	
		17		23.6				
25								
	715	18	GSWSM	19.2				ALLUVIAL SAND & GRAVEL
		31	GSM	12.1	NP	NP		
30								
	710	50	GSWSM	42.5				
		50	GSM	10.4				
		21	GM	17.8				
35								Added by Amendment 50

Figure 2.5-333 Soil Profile (Sheet 1 of 2)

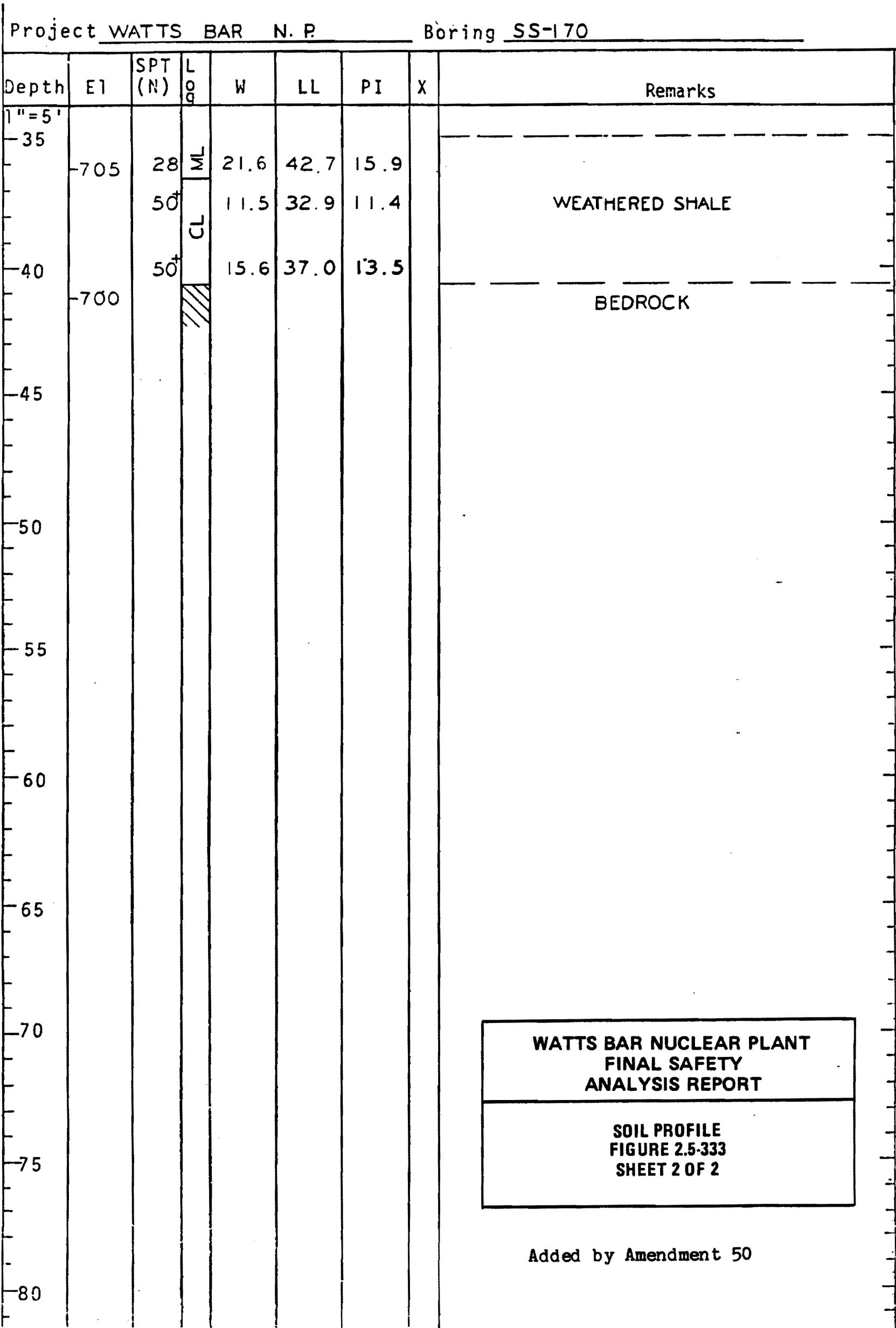


Figure 2.5-333 Soil Profile (Sheet 2of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-334
SHEET 1 OF 2

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG

BORING: SS-1 STATION: 1 RANGE: G SURFACE EL: 741.7

DATE DRILLED: 6-14-82 TO 6-14-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740	26		13.3	29	12	TOPSOIL SI SD,DK BRN,MST,MIC,HOMO,(FL)
		21	U	15.6			CL SI SD, MD-DK BRN, MST, MIC, HOMO (FL)
	735	16		16.1			CL SI SD,DKBRN,MST,MIC,HOMO,(FL)
		50+		18.6			SD CL SI,DKBRN,MST,MIC,HOMO,(FL) 1032 GRAVEL - NO SAMPLE
10	730	24	U	24.7	43	18	SI CL, MD-LT TN, MOTT, MST, HOMO, MIC (ALL.)
		22		22.1			SI SD, MD TN-YEL TN, MOTT, MST, HOMO (ALL.)
15	725	14		24.2			CL SI, MD TN-YEL TN, MOTT, MST, HOMO (ALL.)
		18	U Σ	29.1			CL SD SI, MD TN-YEL TN, MOTT, MST, HOMO (ALL.)
20	720	5	Σ	31.0	30	2	SD CL SI, MD TN, MST, HOMO, MIC, (ALL.)
			Σ				
25	715	10	Σ	25.2	25	3	SI SD, MD TN, V MST, HOMO, MIC, (ALL.)
			Σ				
30	710	50+	U Σ	10.2	NP	NP	GV SD, MD TN-BLK BRN, W, STRAT. (ALL.)
			U Σ				
35							
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-334 Soil Profile (Sheet 1 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-334
SHEET 2 OF 2

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG

BORING: SS-1 STATION: 1 RANGE: G SURFACE EL: 741.7

DATE DRILLED: 6-14-82 TO 6-14-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	705	37	$\Sigma \frac{100}{(N)}$	24.5	38	12	WTH SH, MD TN-BLK GY, MST, LAM-STRAT.
40							BEDROCK (EL. 704.0)
	700						
45							
	695						
50							
	690						
55							
	685						
60							
	680						
65							
	675						
70							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-334 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-335
SHEET 1 OF 2

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG
BORING: SS-2 STATION: 1 RANGE: C SURFACE EL: 741.5
DATE DRILLED: 6-11-82 TO 6-11-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740	34	U	13.4	30	11	TOPSOIL DTY SD, MD-DKBRN, MST, MIC, HOMO (FL)
		20	U	15.9			CL SI SD, MD-DKBRN, MST, MIC, HOMO (FL)
	735	17	U	17.1	31	12	CL SI SD, MD BRN, MST, MIC, HOMO (FL)
		53+	SM	17.6 2.6	NP	NP	CL SD SI, MD BRN, MST, MIC, HOMO (FL) ANG LS GR
10	730	20	U I	24.5	51	20	SD CL SI, MD-LT BRN, MST, MIC, HOMO (ALL.)
		22	Σ I Σ	26.4			SD CL SI, MD BRN-TN, MST, MIC, HOMO (ALL.)
15	725	14	U	23.0	43	14	SD CL SI, MD BRN-TN, MST, MIC, HOMO (ALL.)
		20	Σ	31.5			CL SI, MD BRN-TN-WHT, MST, MIC, HOMO (ALL.)
20	720	6	Σ U	26.3	29	6	DTY SD, MD BRN, W, MIC, HOMO, (ALL.)
25							
30	715	4		12.0	NP	NP	NO RECOVERY
35	710	50+	U I Σ	12.0	NP	NP	GV SD, MD BRN, W, HOMO, (±45% SB RD GV) (ALL.)
			U I Σ				
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-335 Soil Profile (Sheet 1 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-335
SHEET 2 OF 2

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG
BORING: SS-2 STATION: 1 RANGE: C SURFACE EL: 741.5
DATE DRILLED: 6-11-82 TO 6-11-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	705	30	UΣ	26.5	28	20	MD CL, MD BRN-GRN, MST, STRAT- SHLY (RES.)
40							REFUSAL (EL. 704.3)
	700						
45							
	695						
50							
	690						
55							
	685						
60							
	680						
65							
	675						
70							
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-335 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-336
SHEET 2 OF 2

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG
BORING: SS-3 STATION: 6 RANGE: D SURFACE EL: 741.5
DATE DRILLED: 6-8-82 TO 6-9-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	705	20		58.4	43	9	FN SD SI, DK BRN-BLK, MOTT, MST (ALL.)
			Σ 0	22.8	34	8	CL SI, MD BRN-BLK, MOTT, MST, SHLY, (RES.)
40	700						REFUSAL-BEDROCK (EL. 702.8)
45	695						
50	690						
55	685						
60	680						
65	675						
70							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-336 Soil Profile (Sheet 1 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-336
SHEET 2 OF 2

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG

BORING: SS-3 STATION: 6 RANGE: D SURFACE EL: 741.5

DATE DRILLED: 6-8-82 TO 6-9-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	705	20		58.4	43	9	FN SD SI, DK BRN-BLK, MOTT, MST (ALL.)
			Σ 0	22.8	34	8	CL SI, MD BRN-BLK, MOTT, MST, SHLY, (RES.)
40							REFUSAL-BEDROCK (EL. 702.8)
	700						
45							
	695						
50							
	690						
55							
	685						
60							
	680						
65							
	675						
70							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-336 Soil Profile (Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-337
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG
BORING: SS-4 STATION: 9 RANGE: H SURFACE EL: 740.7
DATE DRILLED: 6-15-82 TO 6-16-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740	9	CL	19.2	35	14	TOPSOIL CL SI, MD BRN, MST, HOMO, MIC (FL)
		4		23.0			FN SD CL SI, MD BRN, MST, HOMO, MIC (FL)
	735	4	CL	19.9	32	12	SAME AS ABOVE
		4		29.3			CL SI, DK BRN, V MST, HOMO, MIC (FL)
10	730	50+	SM	11.7	NP	NP	DTY SD, DK GY, VMST, HOMO (PGD) (FL)
			GM	8.5			1032
			CL	21.8		22	CL SD SI, MD TN-YEL TN-GY, MOTT, MST, HOMO (ALL.)
				24.9			CL SI SD, MD TN-YEL TN-GY, MOTT, MST, MIC, HOMO (ALL.)
15	725	16	CL	28.4	39	14	SD CL SI, MD TN-YEL TN-GY, MOTT, MST, MIC, HOMO (ALL.)
20	720	9	CL	30.8	41	21	SI CL, MD TN-GY-BLK, MOTT, MST, HOMO (ALL.)
25							MD CL, MD TN-LT BRN, MOTT, V. MST, HOMO (W/TR MIC) (ALL.)
30	710	50+	CL	9.8	NP	NP	GV SD, (40% SB RD GV) MD BRN, W, HOMO (ALL.)
35							WTH SH, MD GY, D, LAM (RES.)
1' = 5'			* Lab. Classif.				REFUSAL (EL. 705.5)

Added by Amendment 50

Figure 2.5-337 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-338
SHEET 1 OF 1

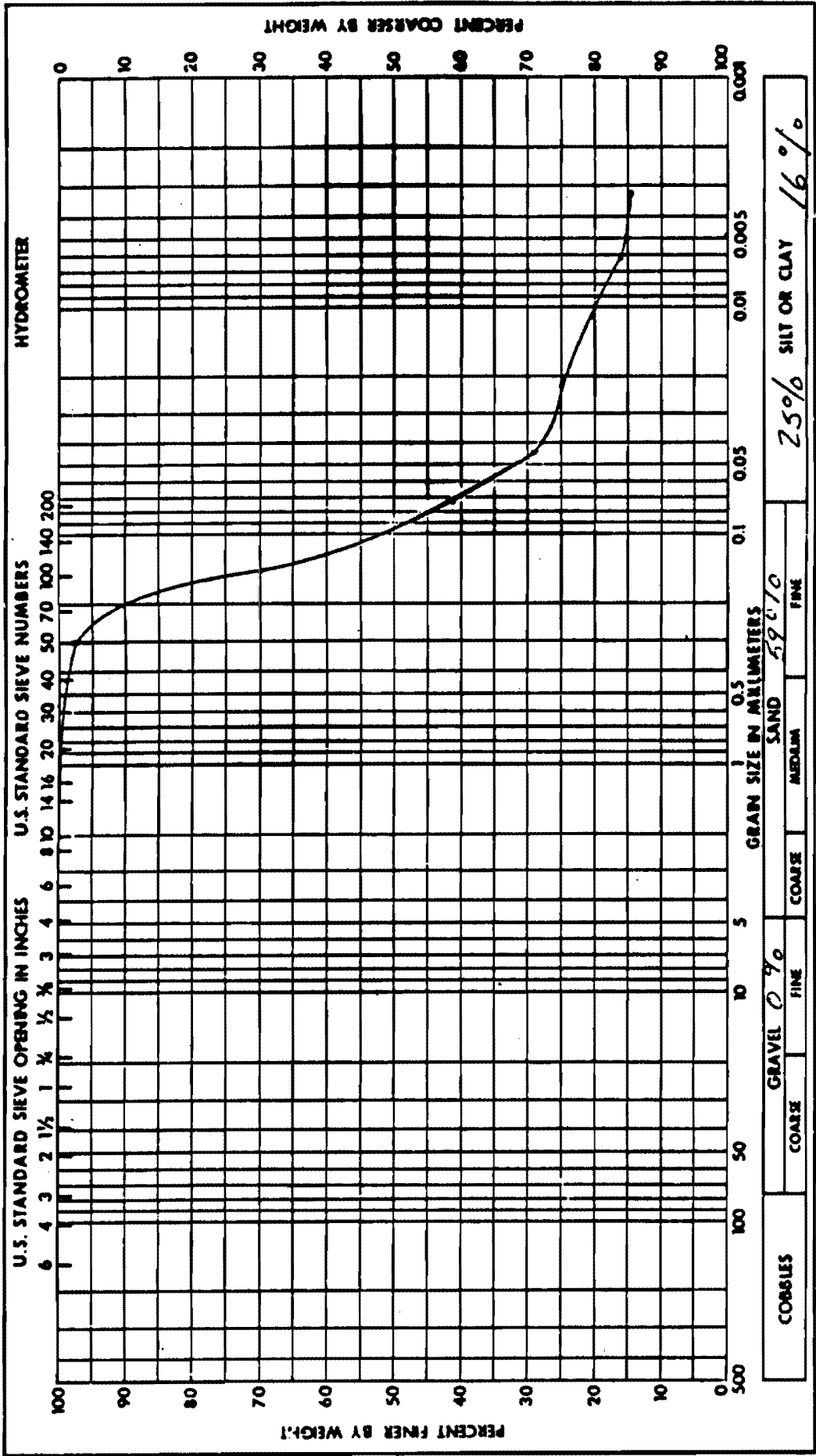
PROJECT: WATTS BAR N.P. FEATURE: VOL REDUC & SOLID SYS BLDG
BORING: SS-5 STATION: 9 RANGE: B SURFACE EL: 737.1
DATE DRILLED: 6-9-82 TO 6-10-82 PREPARED BY: MHD CHECKED BY:

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735	11	CL	17.7	28	11	GRAVELLY ROADBED
		6		21.4			CL SI, DK BRN, MST, HOMO, MIC (W/TR LS GV)(FL)
		50+					CL SI, DK BRN, MST, HOMO, MIC(FL)
10	730	16	CL	22.8	38	19	1032 - NO SAMPLE RECOVERED
		15		19.3			CL SD SI, BRN-GY, MST, STRAT, MIC (ALL.)
		18		25.9			CL SI SD, LT BRN-GY, MST, STRAT (ALL.)
15	725	23	ML	26.8	48	18	CL SI SD, LT BRN-GY, MST (ALL.)
		18		30.0			CL SI SD, MD BRN-CRM, MST, BLKY (ALL.)
							SI CL, MD-LT BRN, MOTT, MST, HOMO (ALL.)
20	720		CL		32	15	
		4		30.7			CL SD SI, MD BRN-TN, W, HOMO, MIC (ALL.)
25	715	50+	CL O O	20.2	NP	NP	GV SD (±40% SB RD GV) MD BRN, W, HOMO (ALL.)
30	710		ML S S		34	10	
		50+		15.9			WTH LS & CL, LT BLU-DK BRN-BLK, MST, LAM (3-IN. THK)(RES.)
35							REFUSAL (EL. 703.8)
1' = 5'							
				</			

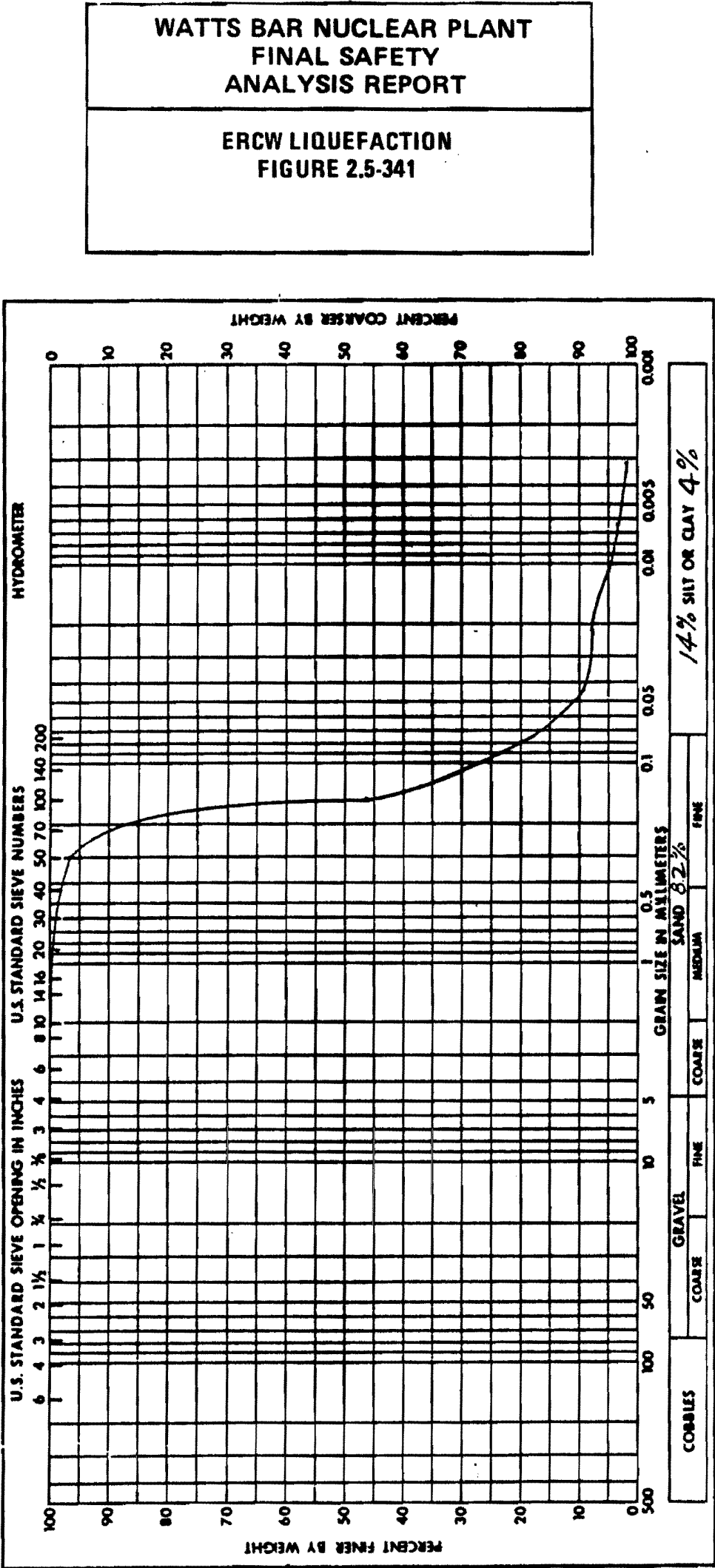
Figure 2.5-338 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
FIGURE 2.5-340



ATTACHMENT 6
CONST-QCP 5.3



Added by Amendment 50

Project	WATTS BAR NP
Feature	ERCW LIQUEFACTION
Boring No.	45-20-1
Sample No.	2
Station	1650.0 S
Range	785.0 E
Date	7-20-79
Elevation	698.9-696.6
GRAIN SIZE ANALYSIS	

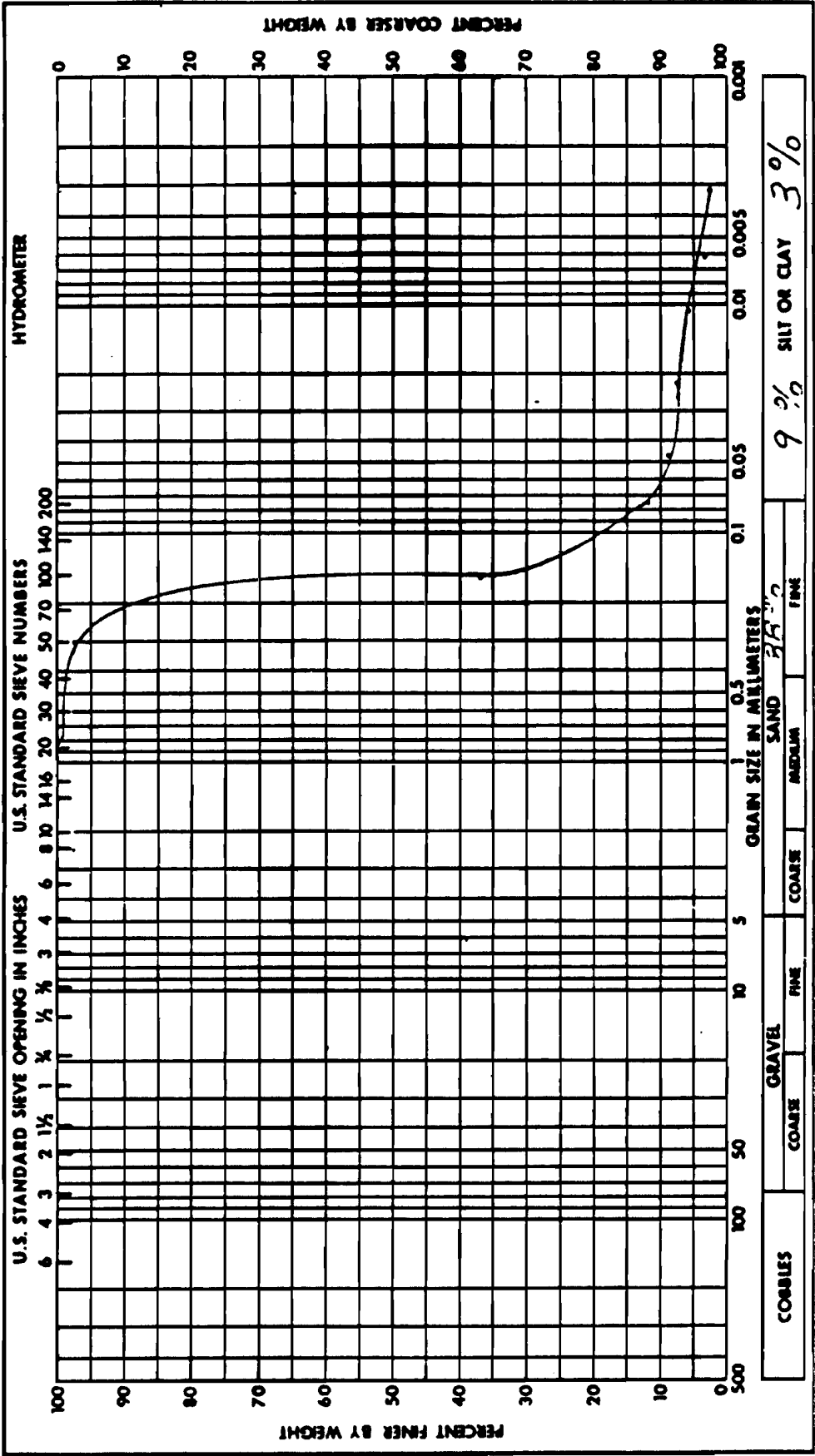
Remarks:

Soil Symbol	SM	Liquid Limit, %	NP
Moisture Content, %	33.0	Plastic Limit, %	NP
Specific Gravity	2.70	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-341 ERCW Liquefaction

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-342



Added by Amendment 50

Project	Watts Bar N.P.		
Feature	Liquefaction		
Boring No.	W5-50-1	Sample No.	3
Station	1650.05	Range	785.0E
Date	7-16-79	Elevation	696.4-695.3
GRAIN SIZE ANALYSIS			

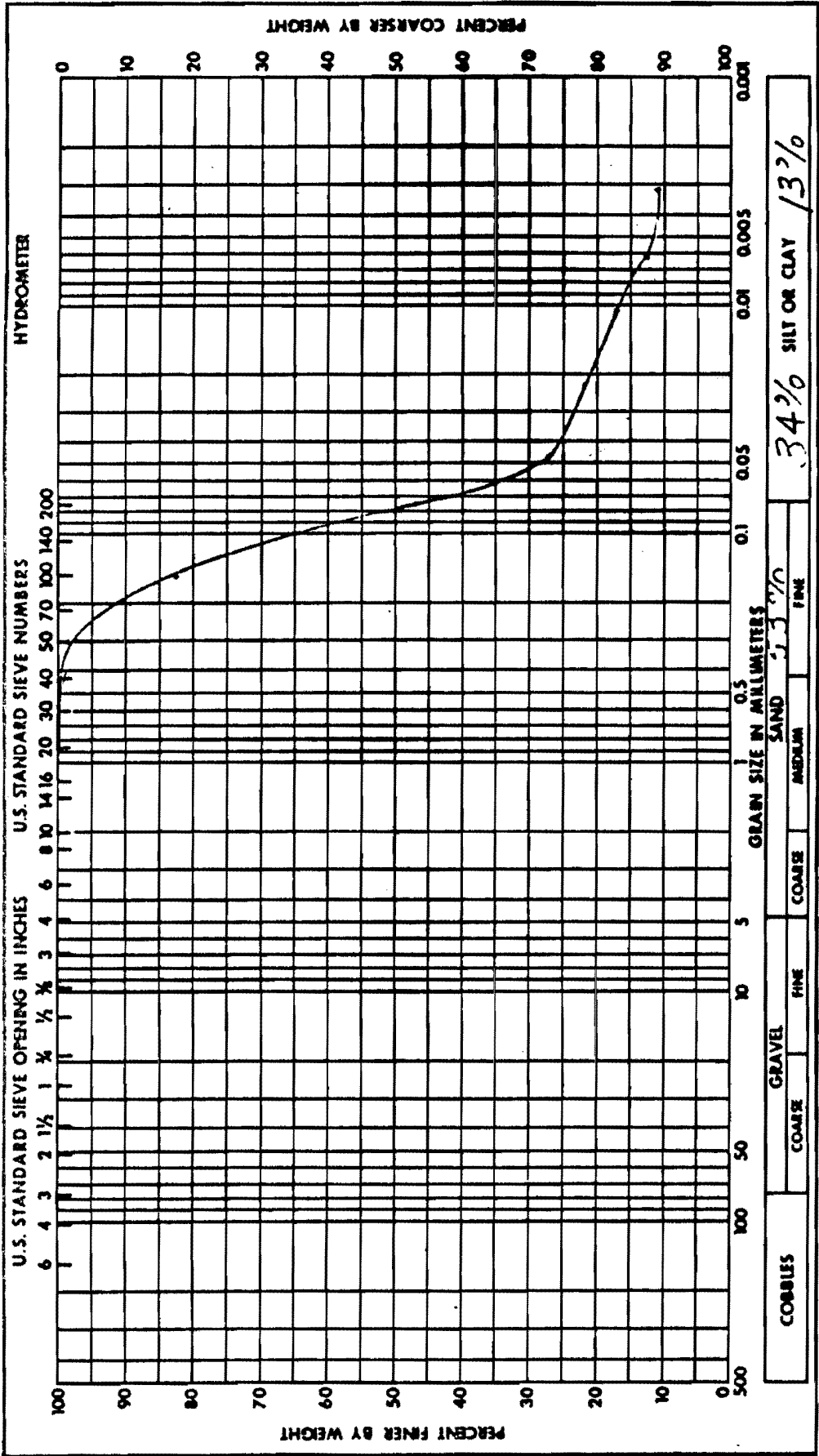
Remarks:

Soil Symbol	5M	Liquid Limit, %	N.P.
Moisture Content, %	28.9	Plastic Limit, %	N.P.
Specific Gravity	2.73	Plasticity Index, %	N.P.
		Shrinkage Limit, %	

Figure 2.5-342 Liquefaction

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-343



Added by Amendment 50

Project	Watts Bar N.p.
Feature	Liquefaction
Boring No.	U5-50-1
Station	1650.0 S
Date	7-16-79
Range	785.0 E
Elevation	695.3-694.5
GRAIN SIZE ANALYSIS	

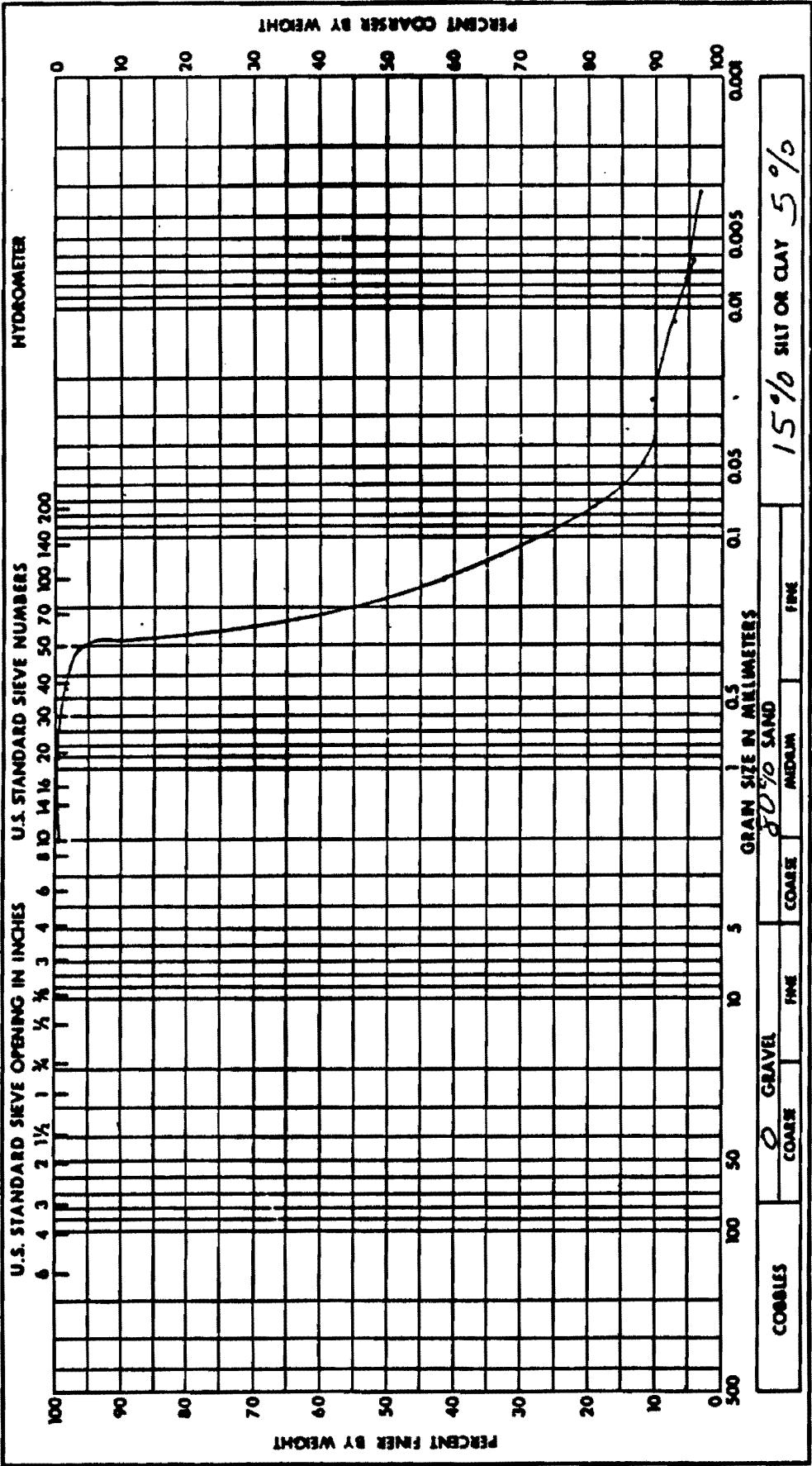
Remarks:

Soil Symbol	SM	Liquid Limit, %	23.1
Moisture Content, %	31.1	Plastic Limit, %	22.1
Specific Gravity	2.70	Plasticity Index, %	1.0
		Shrinkage Limit, %	

Figure 2.5-343 Liquefaction

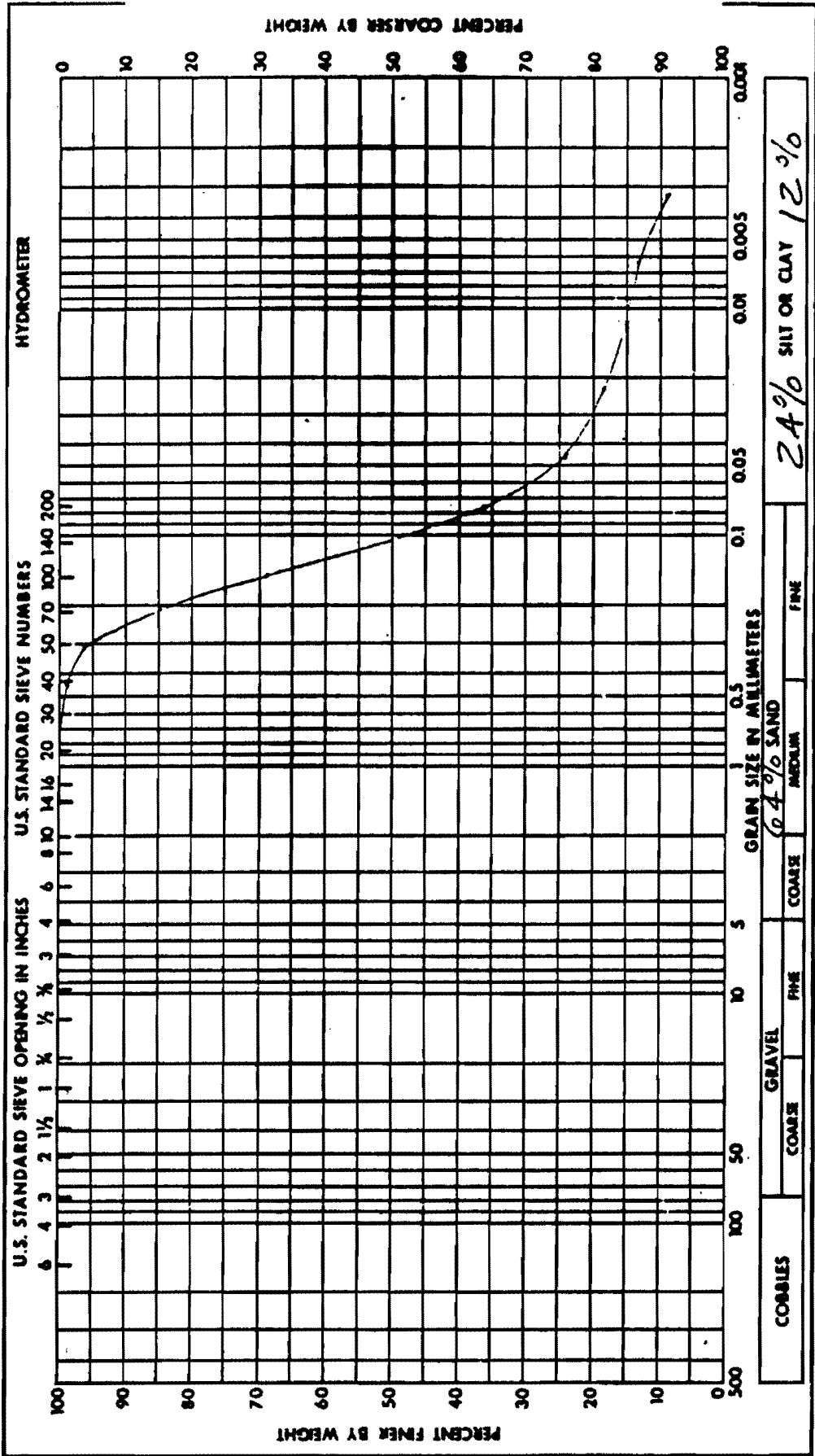
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-344



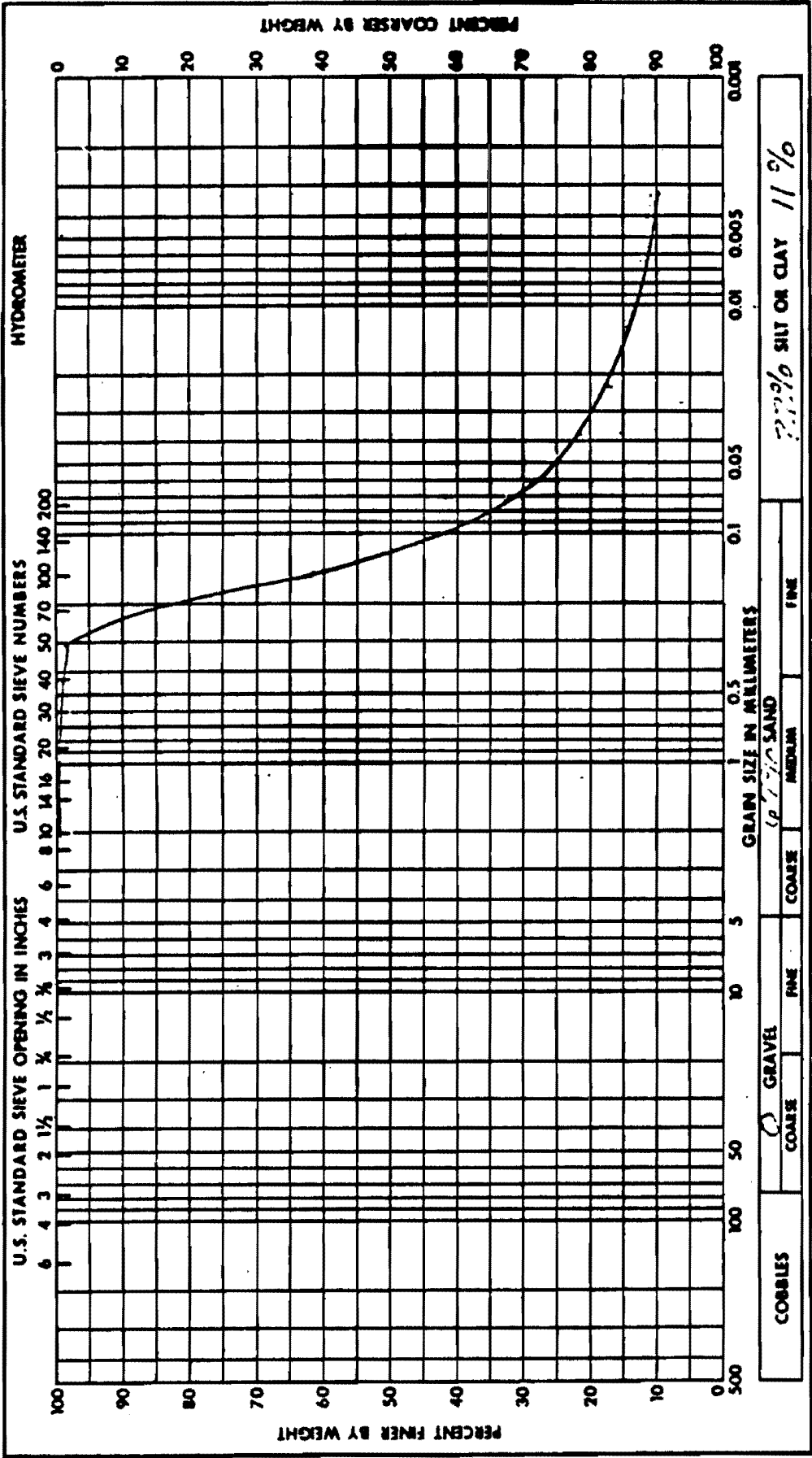
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-345



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-346



Added by Amendment 50

Project Watts Bar N.P.
Feature Liquefaction
Boring No US-50-1A Sample No. 2
Station 1645.05 Range 785.0 E
Date 7-13-79 Elevation 701.6-692.4
GRAIN SIZE ANALYSIS

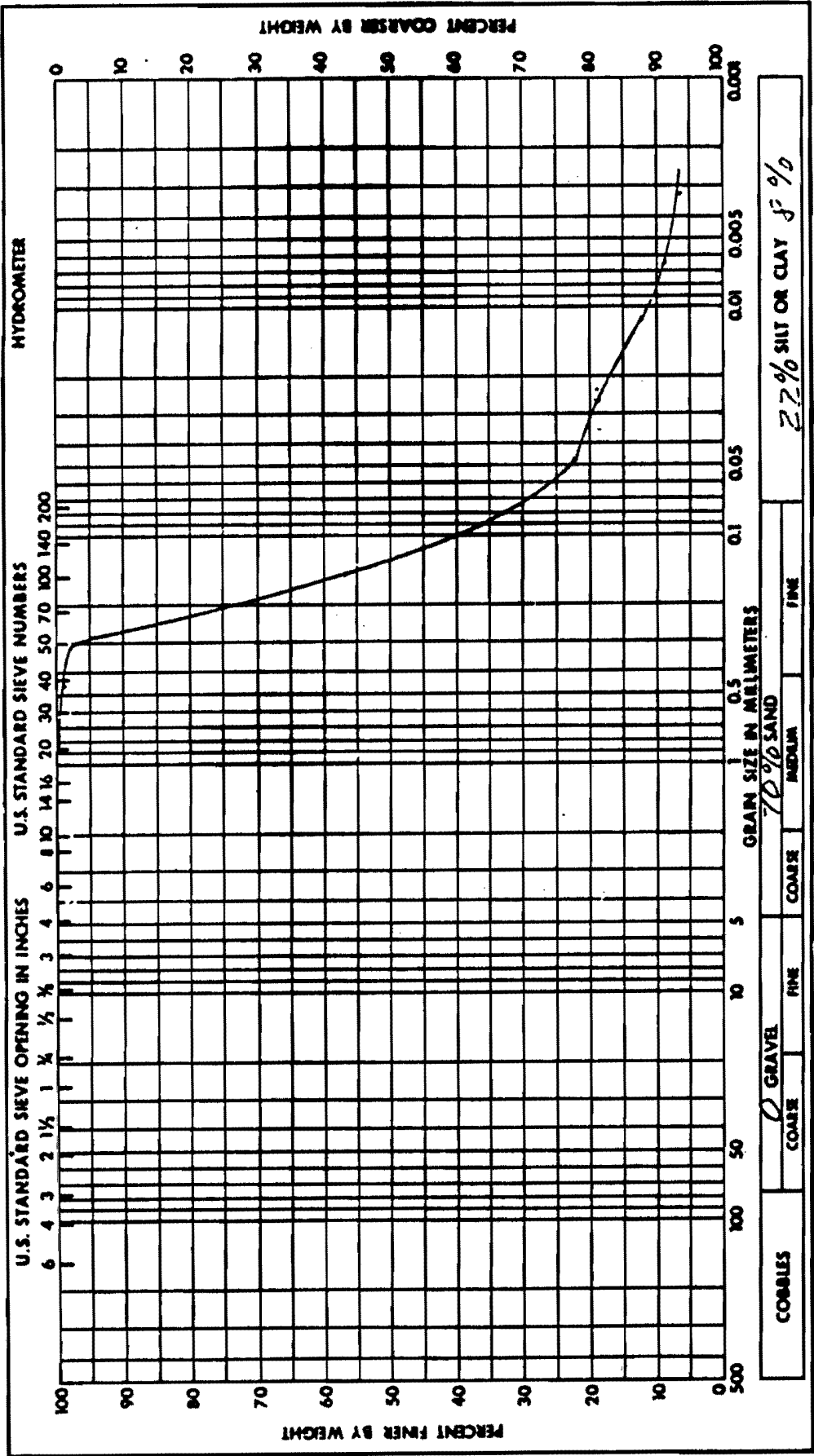
Remarks:

Soil Symbol	SM	Liquid Limit, %	NP
Moisture Content, %	37.8	Plastic Limit, %	NP
Specific Gravity	2.73	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-346 Liquefaction

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-347



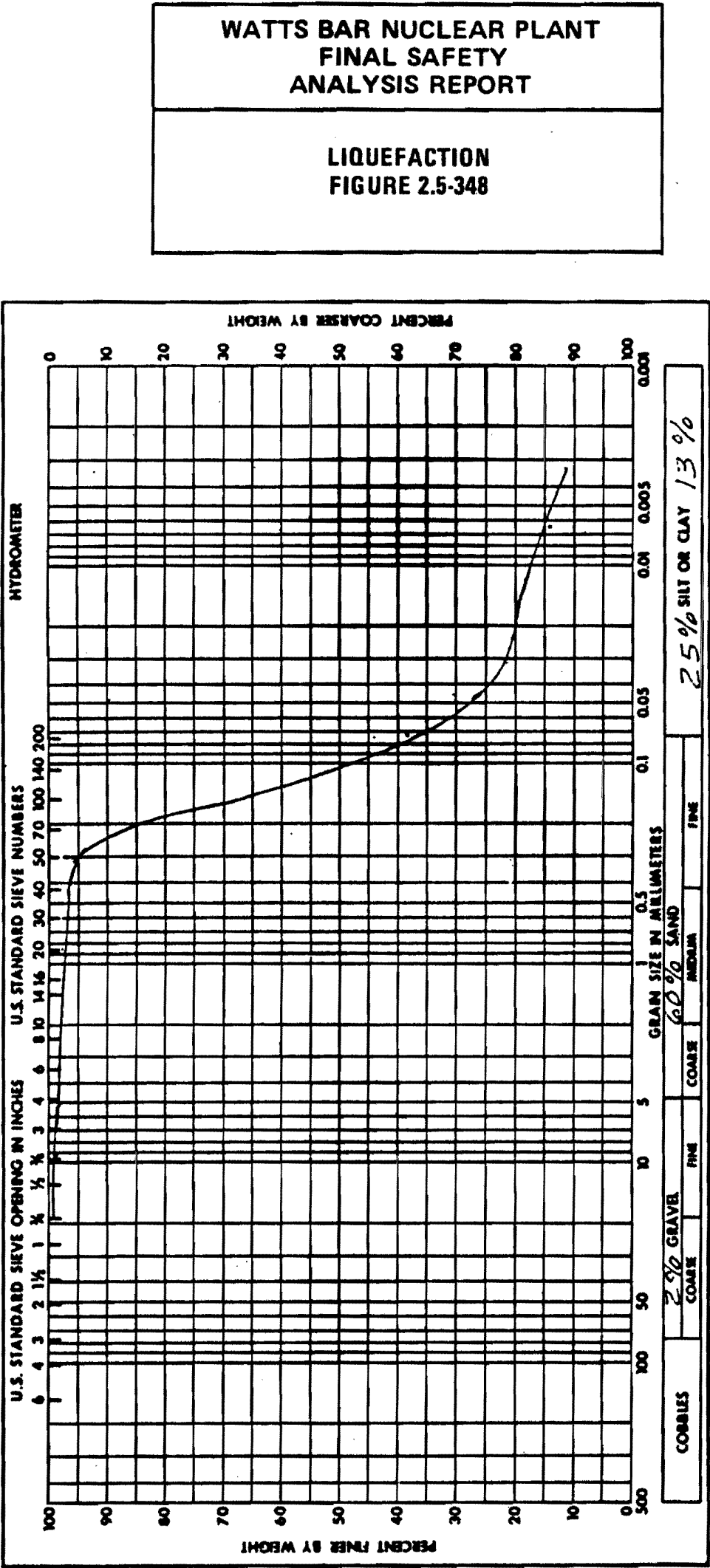
Added by Amendment 50

Project	Watts Bar N.P.
Feature	Liquefaction
Boring No.	15-65-1
Station	1367.0 S
Date	7-13-79
Range	1005.7 E
Elevation	711.9-709.6
GRAIN SIZE ANALYSIS	

Remarks:

Soil Symbol	SM	Liquid Limit, %	NP
Moisture Content, %	22.2	Plastic Limit, %	NP
Specific Gravity	2.70	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-347 Liquefaction



Added by Amendment 50

Project Watts Bar N.P.
Feature Liquefaction
Boring No. 05-65-1 Sample No. 3
Station 13670 S Range 1005.7 E
Date 7-13-79 Elevation 709.4-707.3
GRAIN SIZE ANALYSIS

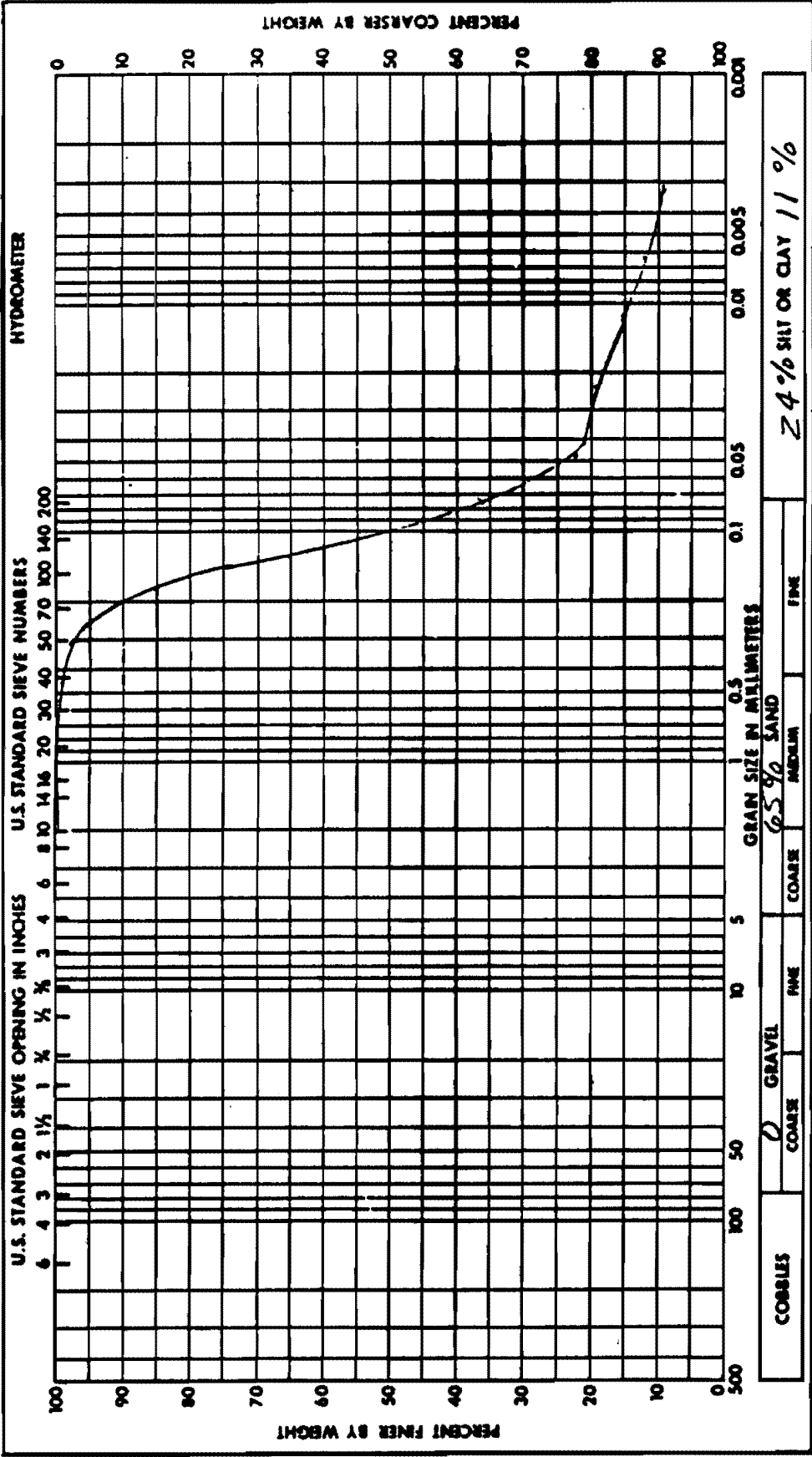
Remarks:

Soil Symbol	SM	Liquid Limit, %	NP
Moisture Content, %	22.7	Plastic Limit, %	NP
Specific Gravity	2.72	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-348 Liquefaction

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-349



Added by Amendment 50

Project	WATTS Bar N.P.
Feature	Liquefaction
Boring No.	115-65-1
Sample No.	3
Station	13670 S
Range	1005.7 E
Date	7-13-79
Elevation	707.2-705.2
GRAIN SIZE ANALYSIS	

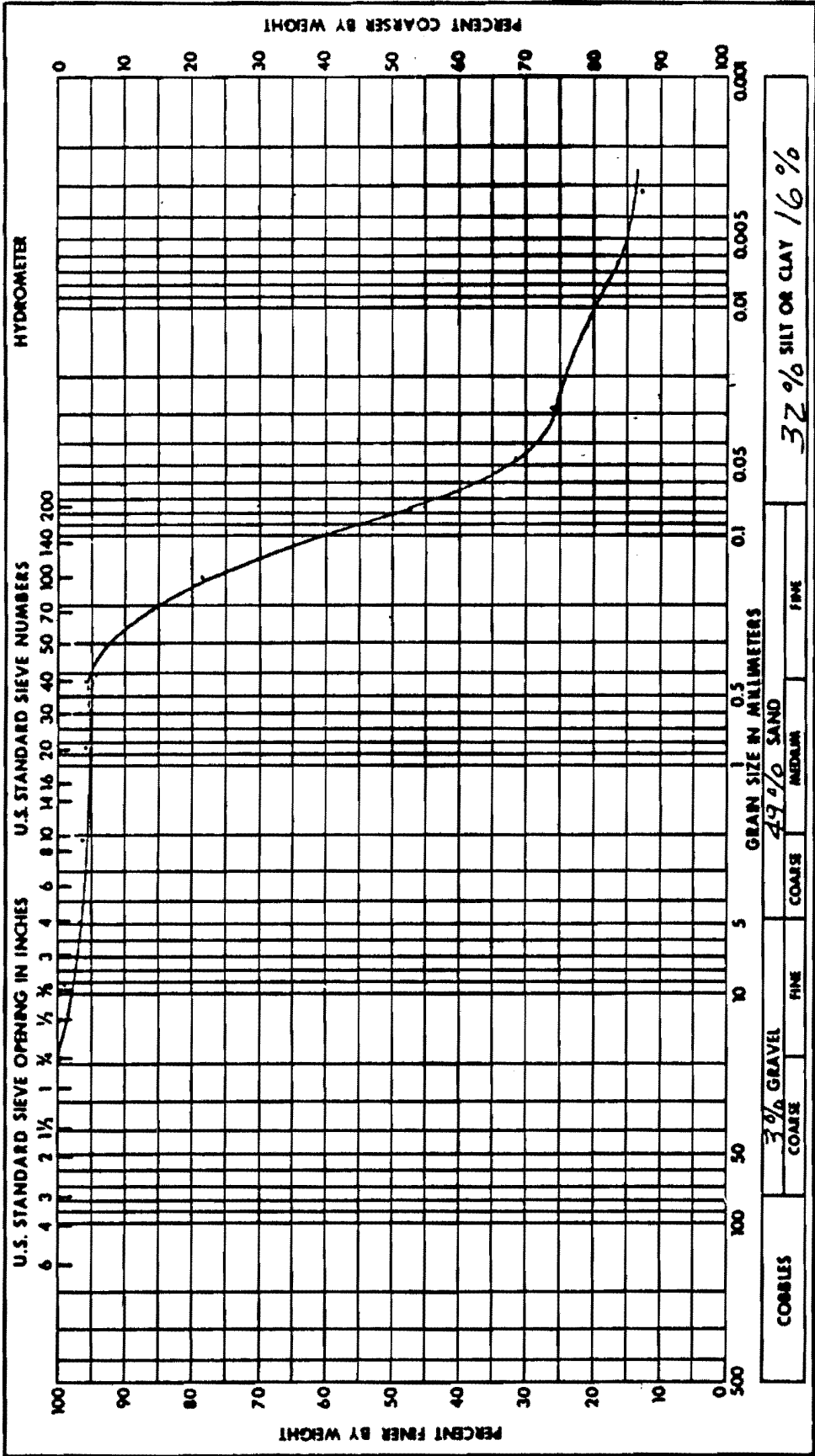
Remarks:

Soil Symbol	SM	Liquid Limit, %	NP
Moisture Content, %	33.4	Plastic Limit, %	NP
Specific Gravity	2.72	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-349 Liquefaction

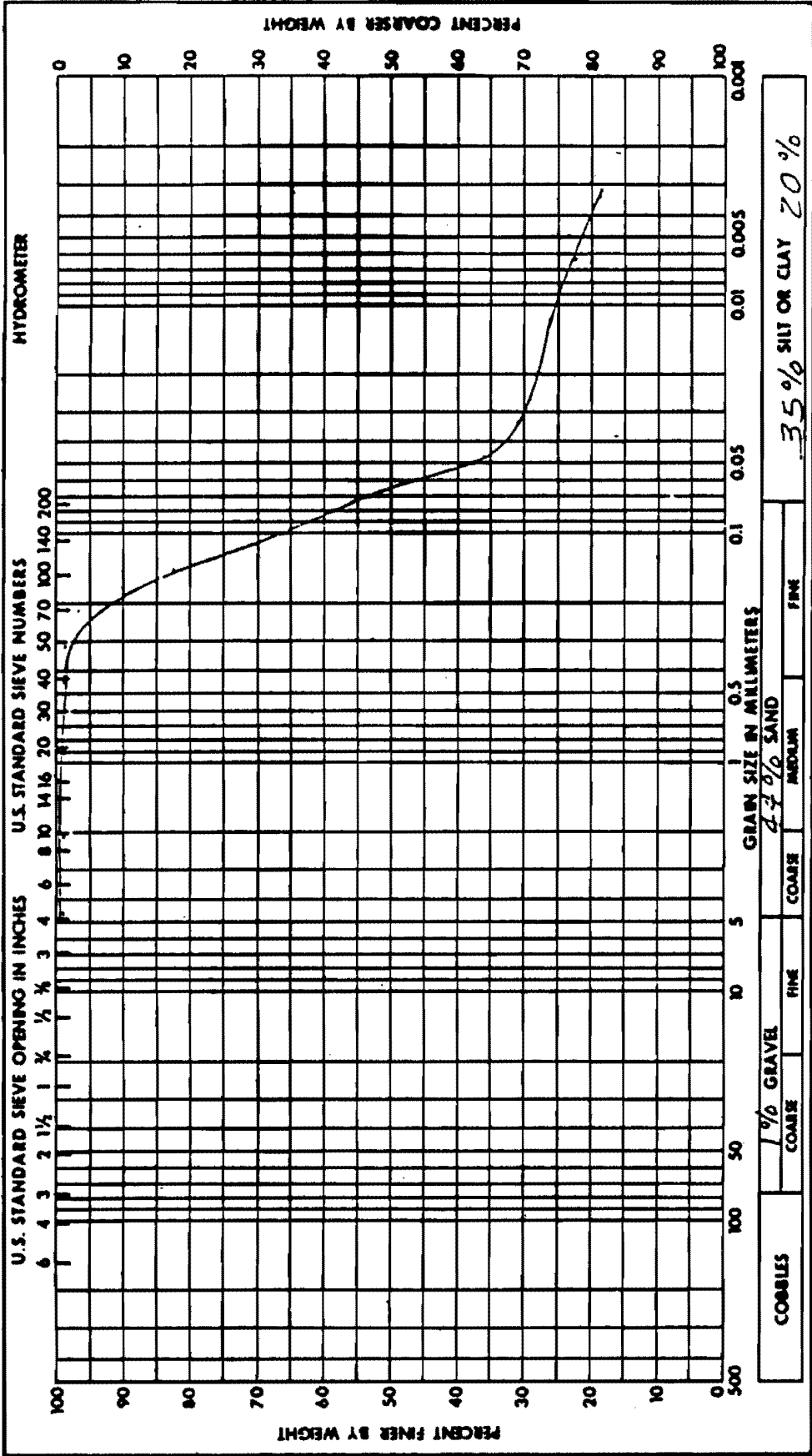
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-350



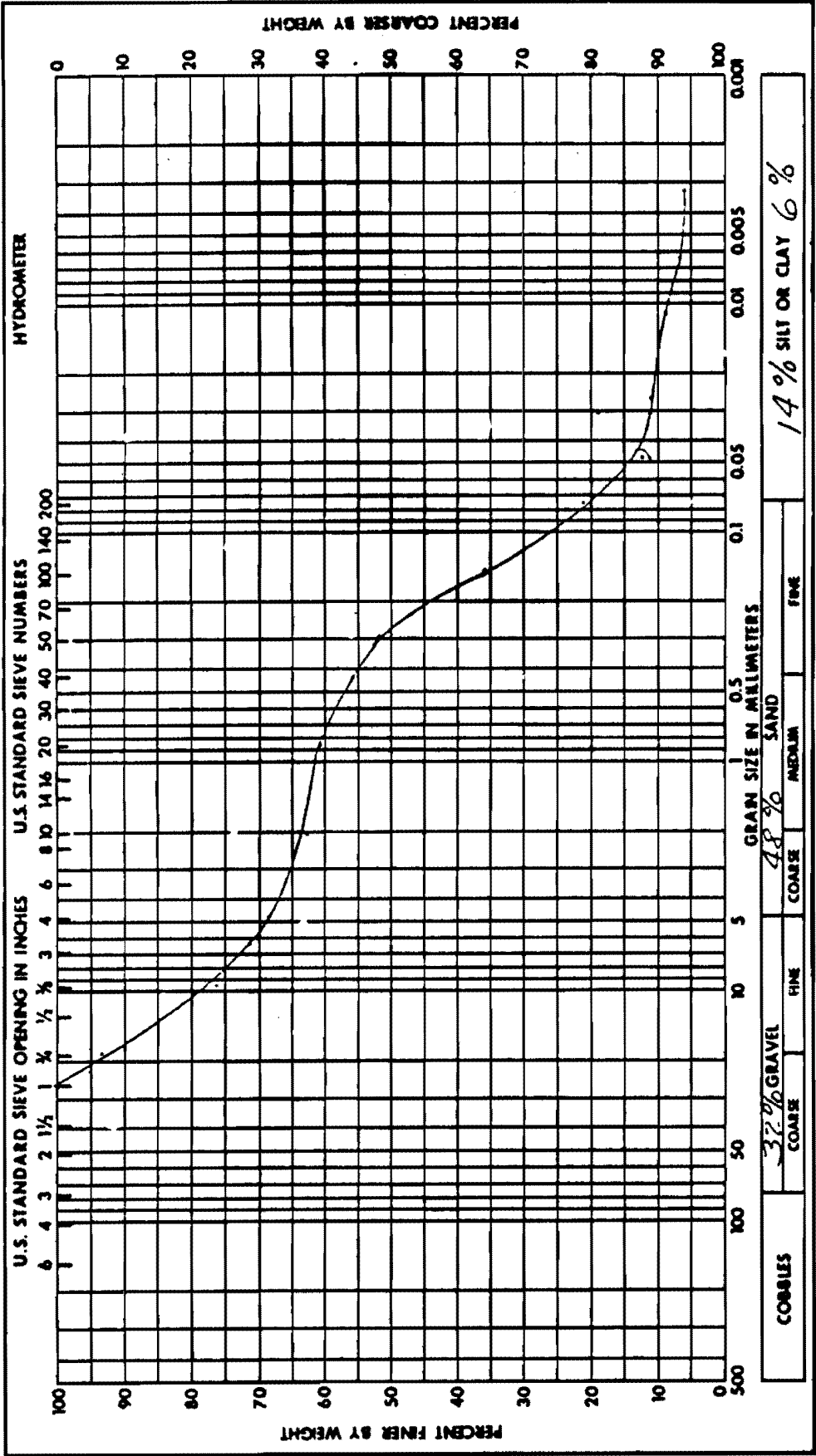
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-351



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION
FIGURE 2.5-352



Added by Amendment 50

Project	Watts Bar N.P.
Feature	Liquefaction
Boring No.	WS-65-1
Station	1367.0 S
Date	7-13-79
	Range 1005.7 E
	Elevation 703.0-701.8
GRAIN SIZE ANALYSIS	

Remarks:

Soil Symbol	G-SM	Liquid Limit, %	NP
Moisture Content, %	16.8	Plastic Limit, %	NP
Specific Gravity	2.70	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-352 Liquefaction

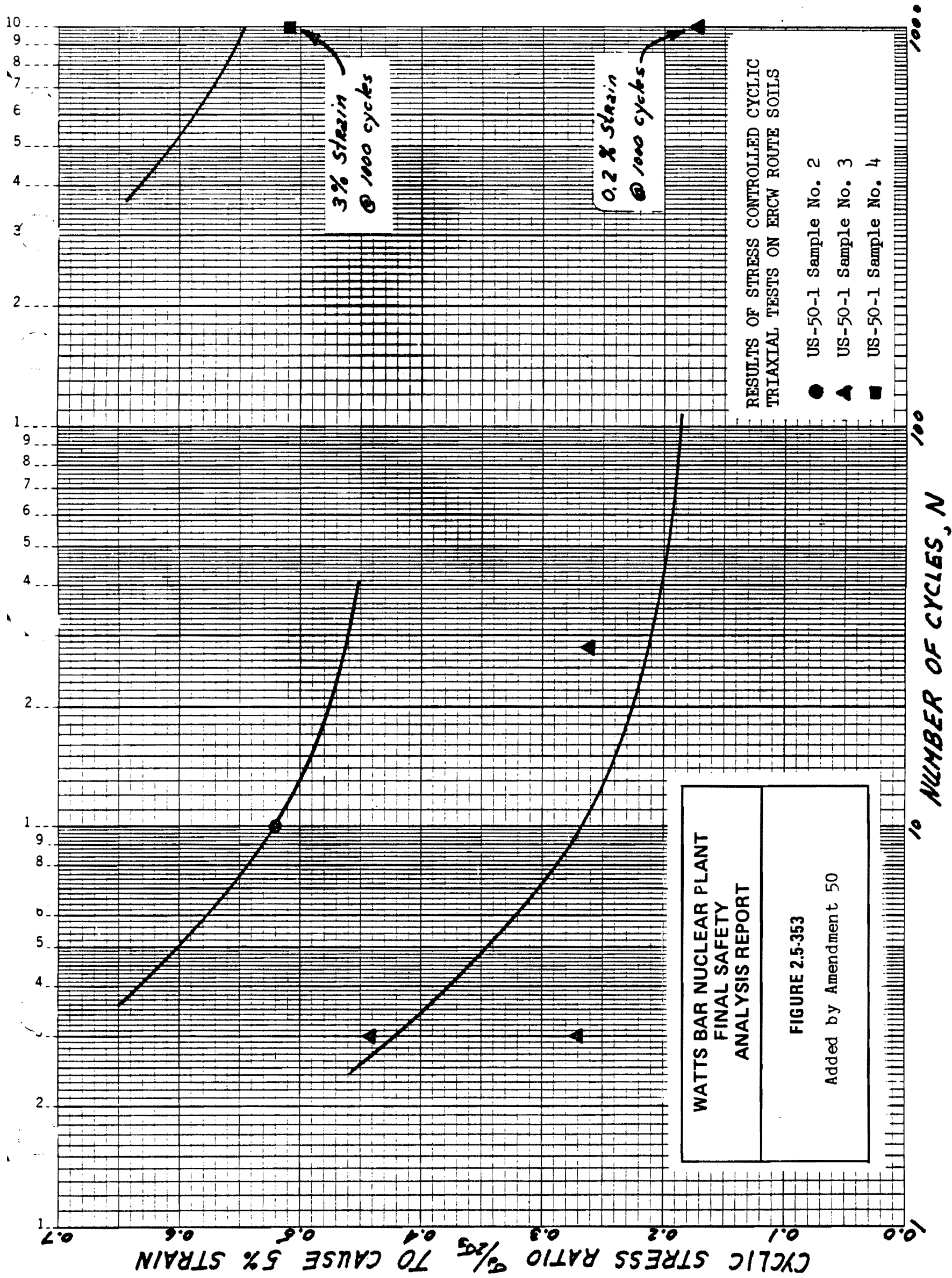
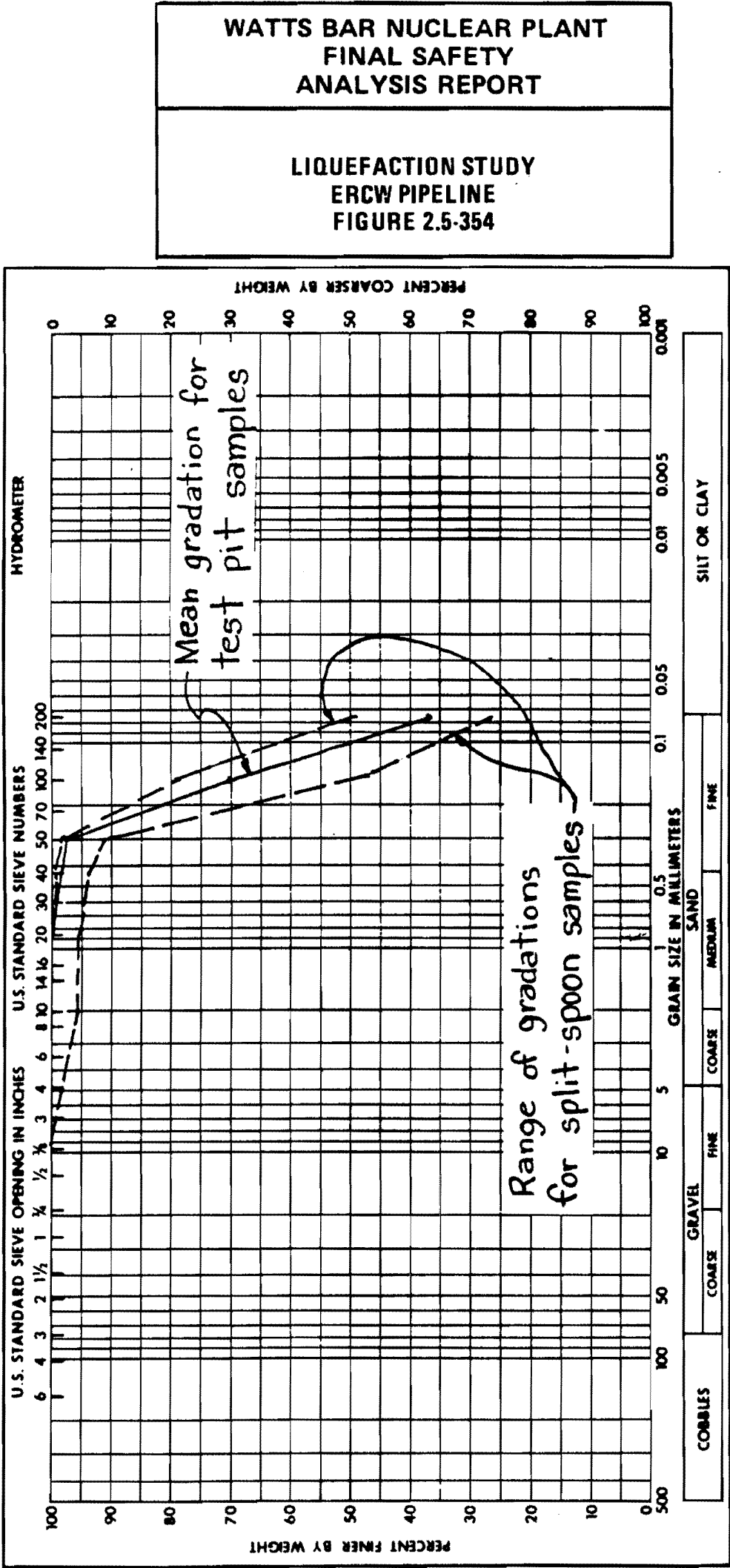


Figure 2.5-353 Results Of Stress Controlled Cyclic Triaxial Tests On ERCW Route Soils



Added by Amendment 50

Project	Watts Bar Nuclear Plant
Liquefaction Study	
Feature	ERCW Pipeline
Figure 1	
GRAIN SIZE ANALYSIS	

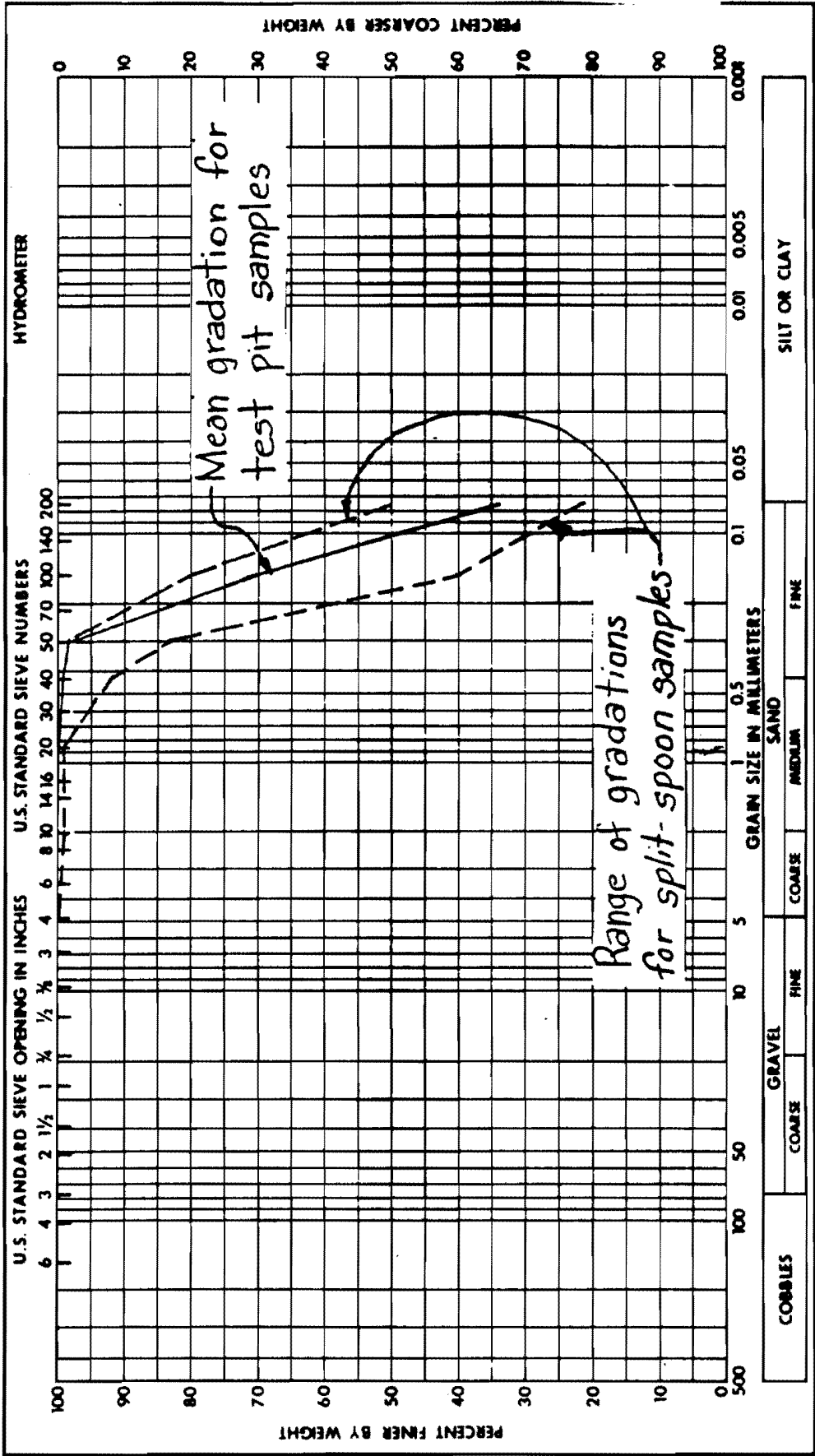
Remarks: Comparison of
Test Pit #1 samples with SW
samples from split-spoon
borings 134, 134A, & 135A

Soil Symbol	Liquid Limit, %	
Moisture Content, %	Plastic Limit, %	
Specific Gravity	Plasticity Index, %	
	Shrinkage Limit, %	

Figure 2.5-354 Liquefaction Study ERCW Pipeline

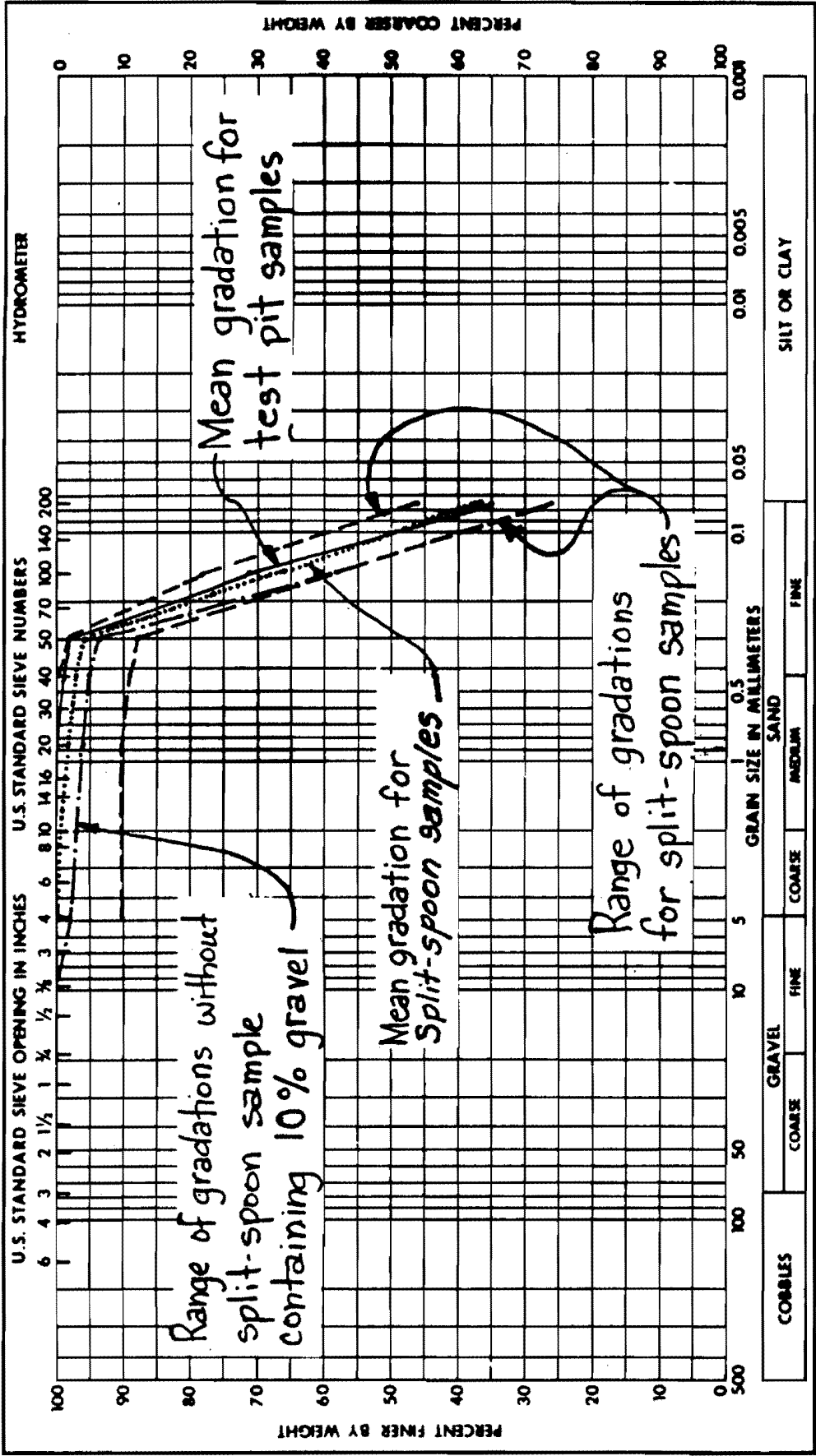
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION STUDY
ERCW PIPELINE
FIGURE 2.5-355



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION STUDY
ERCW PIPELINE
FIGURE 2.5-356



Added by Amendment 50

Project Watts Bar Nuclear Plant
Liquefaction Study
Feature ERCW Pipeline
Figure 3
GRAIN SIZE ANALYSIS

Remarks: Comparison of test pit samples with split-spoon samples from south of the cooling towers

Soil Symbol	Liquid Limit, %	
Moisture Content, %	Plastic Limit, %	
Specific Gravity	Plasticity Index, %	
	Shrinkage Limit, %	

Figure 2.5-356 Liquefaction Study ERCW Pipeline

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

LIQUEFACTION STUDY
ERCW PIPELINE
FIGURE 2.5-357

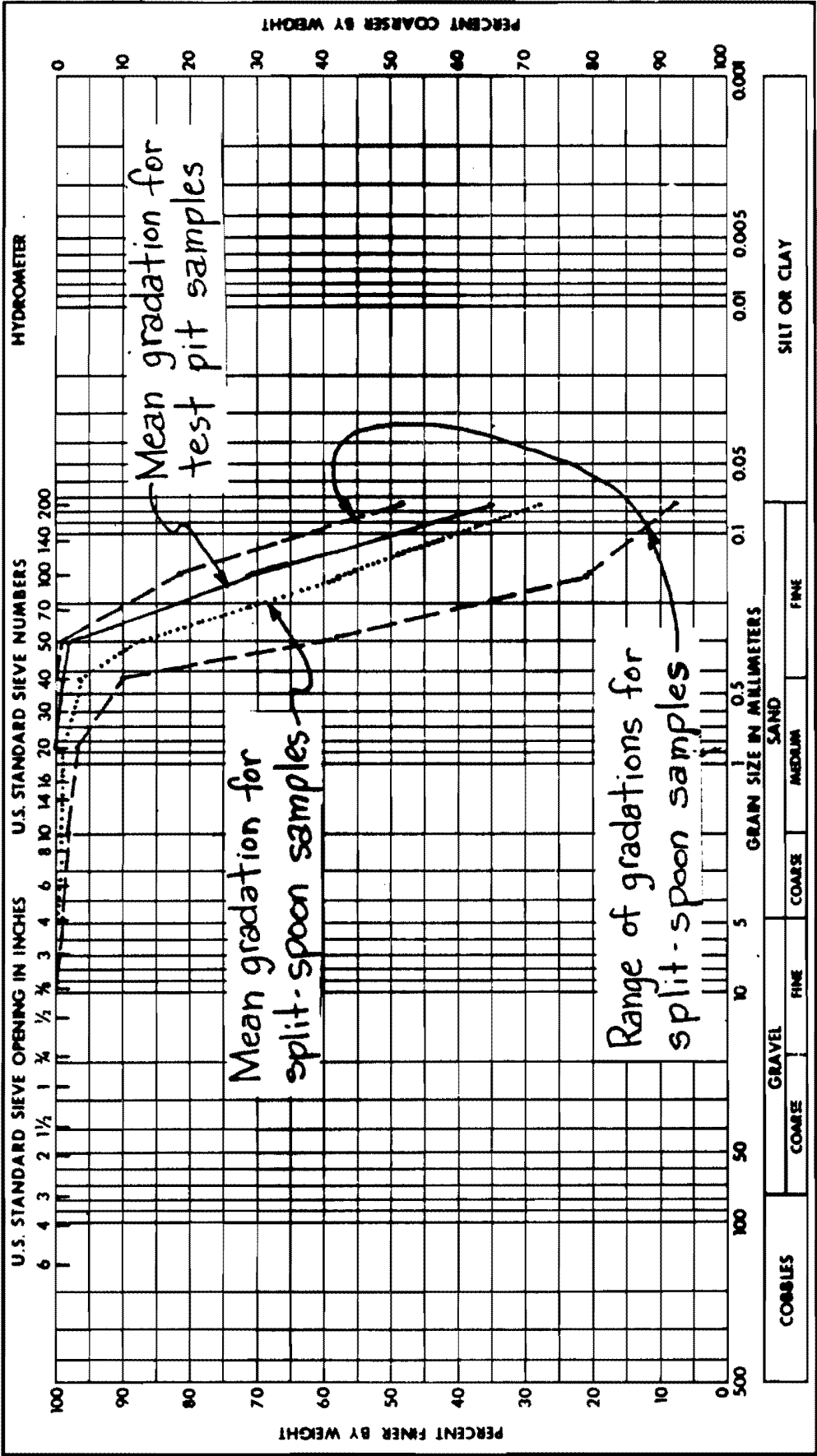
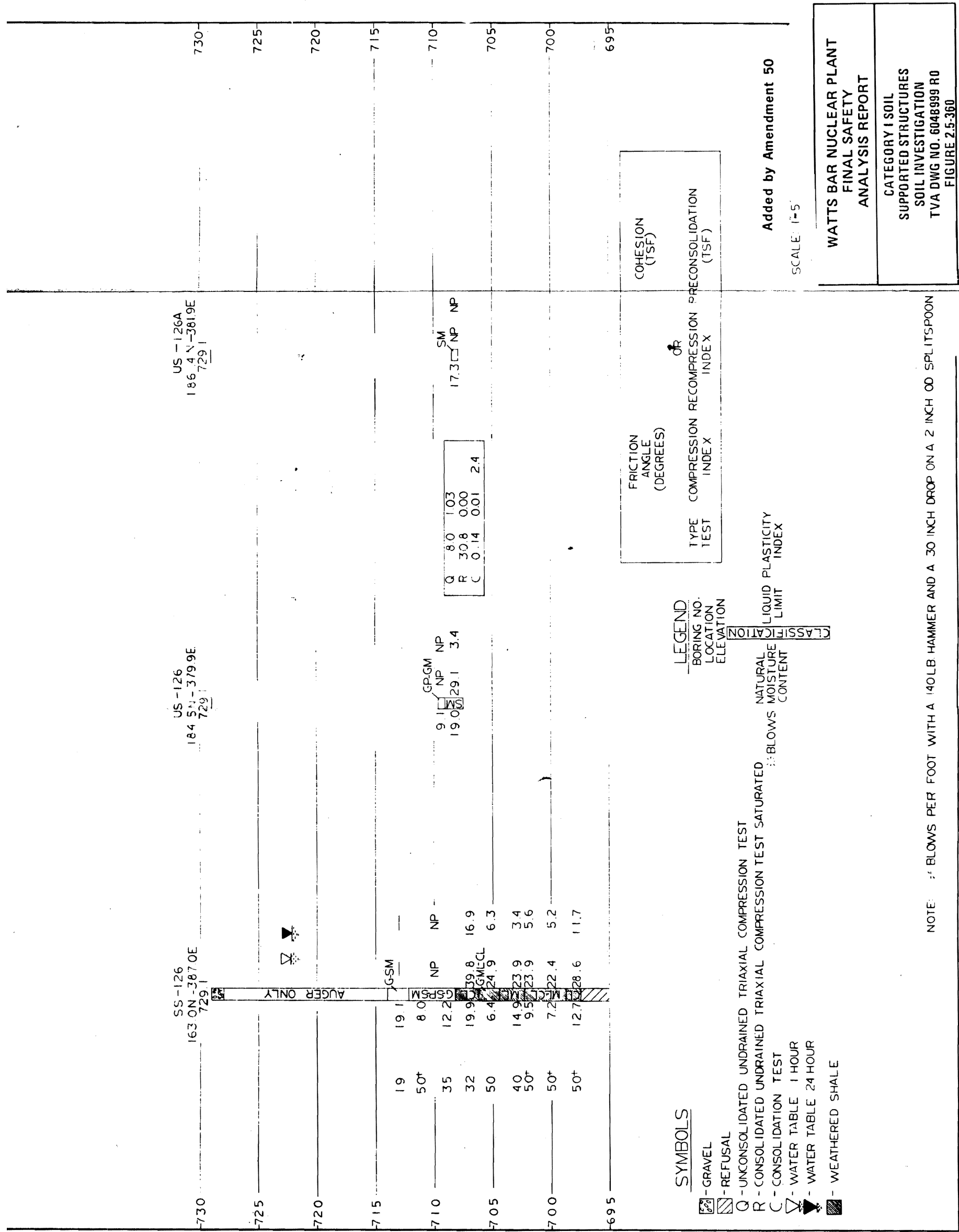


Figure 2.5-358 Additional Soil Investigations Category I Soil Supported Structures



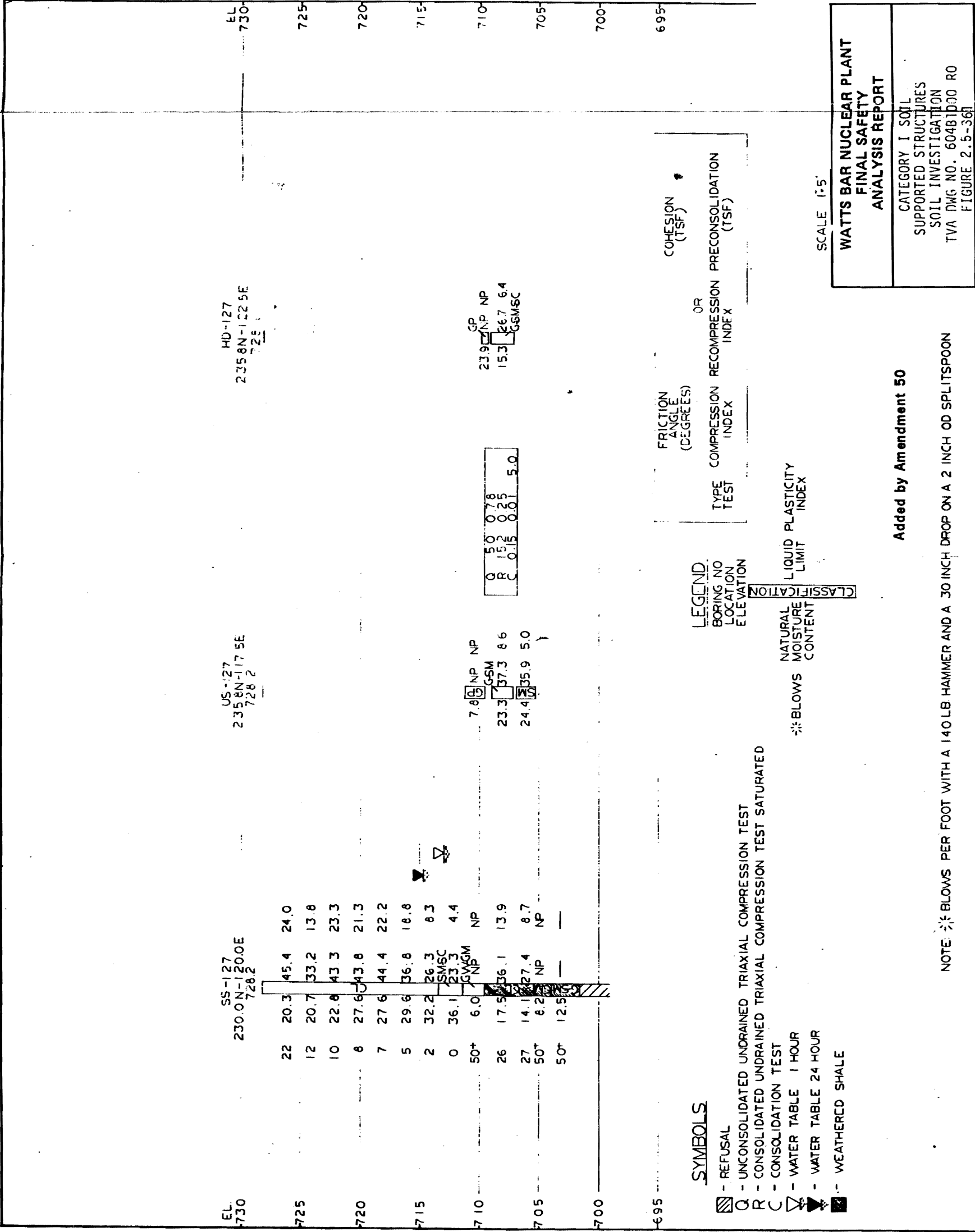


Figure 2.5-361 Category I Soil Supported Structures Soil Investigation

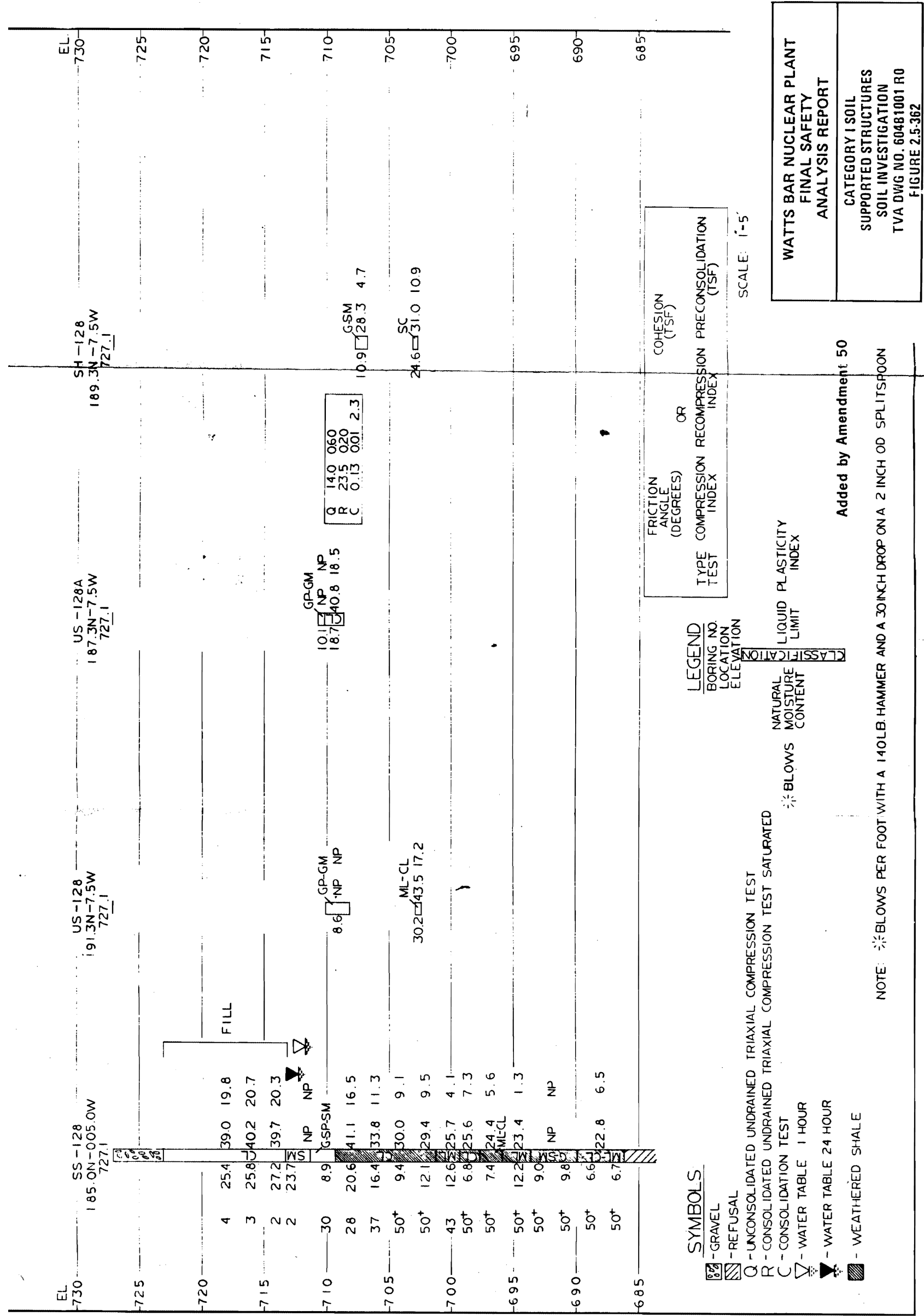
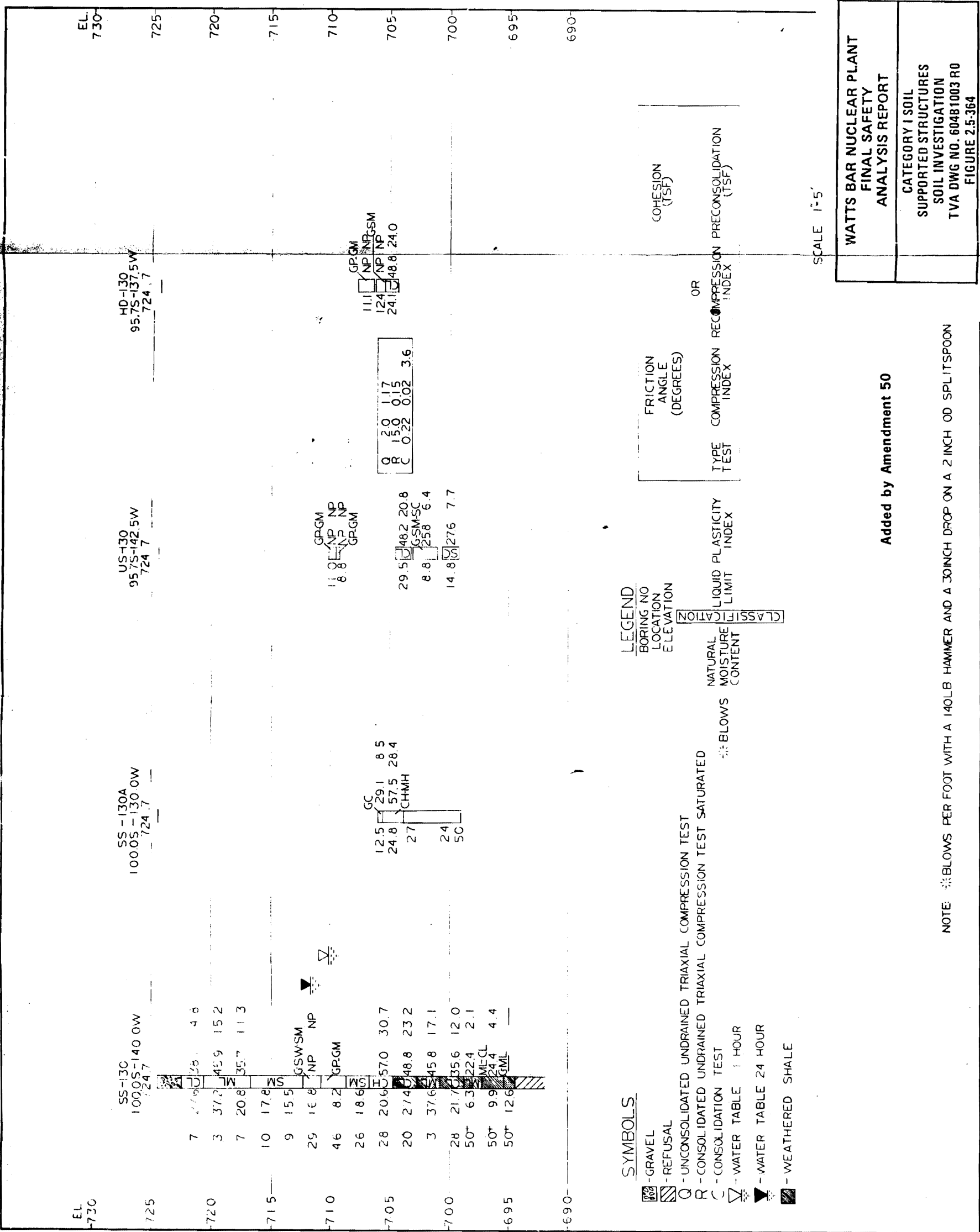


Figure 2.5-362 Category I Soil Supported Structures Soil Investigation



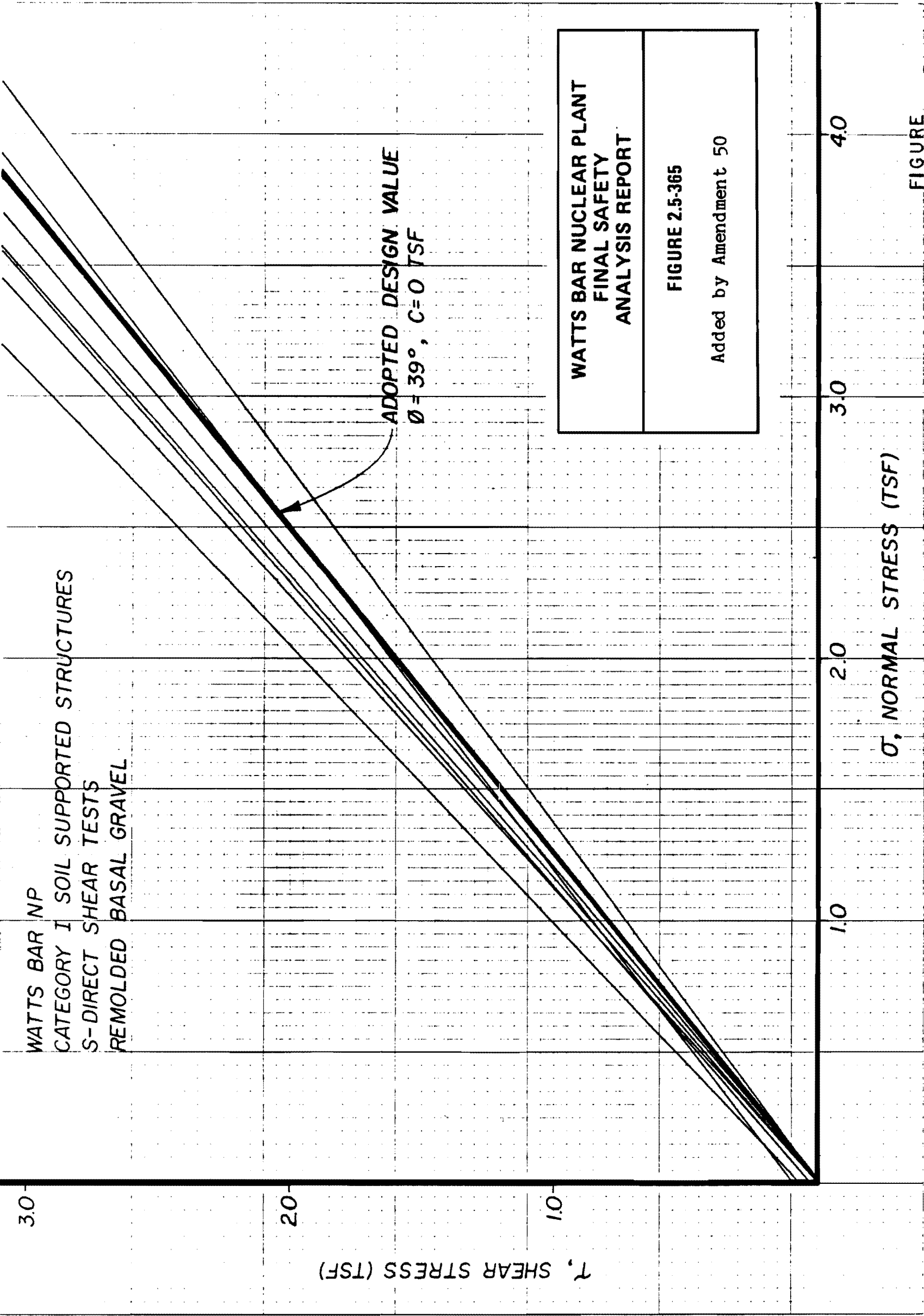
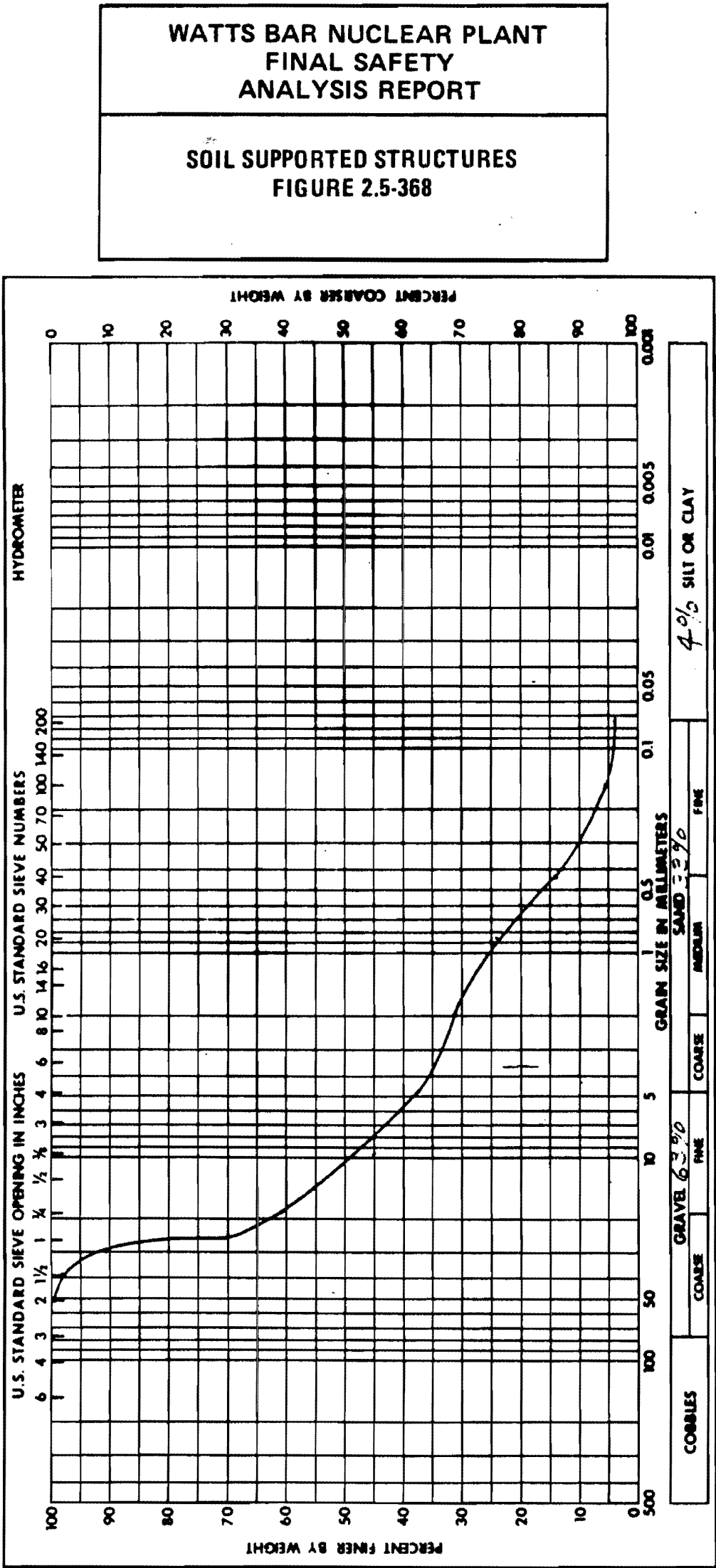


Figure 2.5-365 Category I Supported Structures S-Direct Shear Test Remolded Basal Gravel



Project <i>WATTS BAR NP</i>	
Feature <i>SOIL SUPPORTED STRUCTURES</i>	
Boring No. <i>US-127</i>	Sample No. <i>1</i>
Station <i>235.8 N</i>	Range <i>117.5E</i>
Date <i>8-6-79</i>	Elevation <i>742.709.6</i>
GRAIN SIZE ANALYSIS	

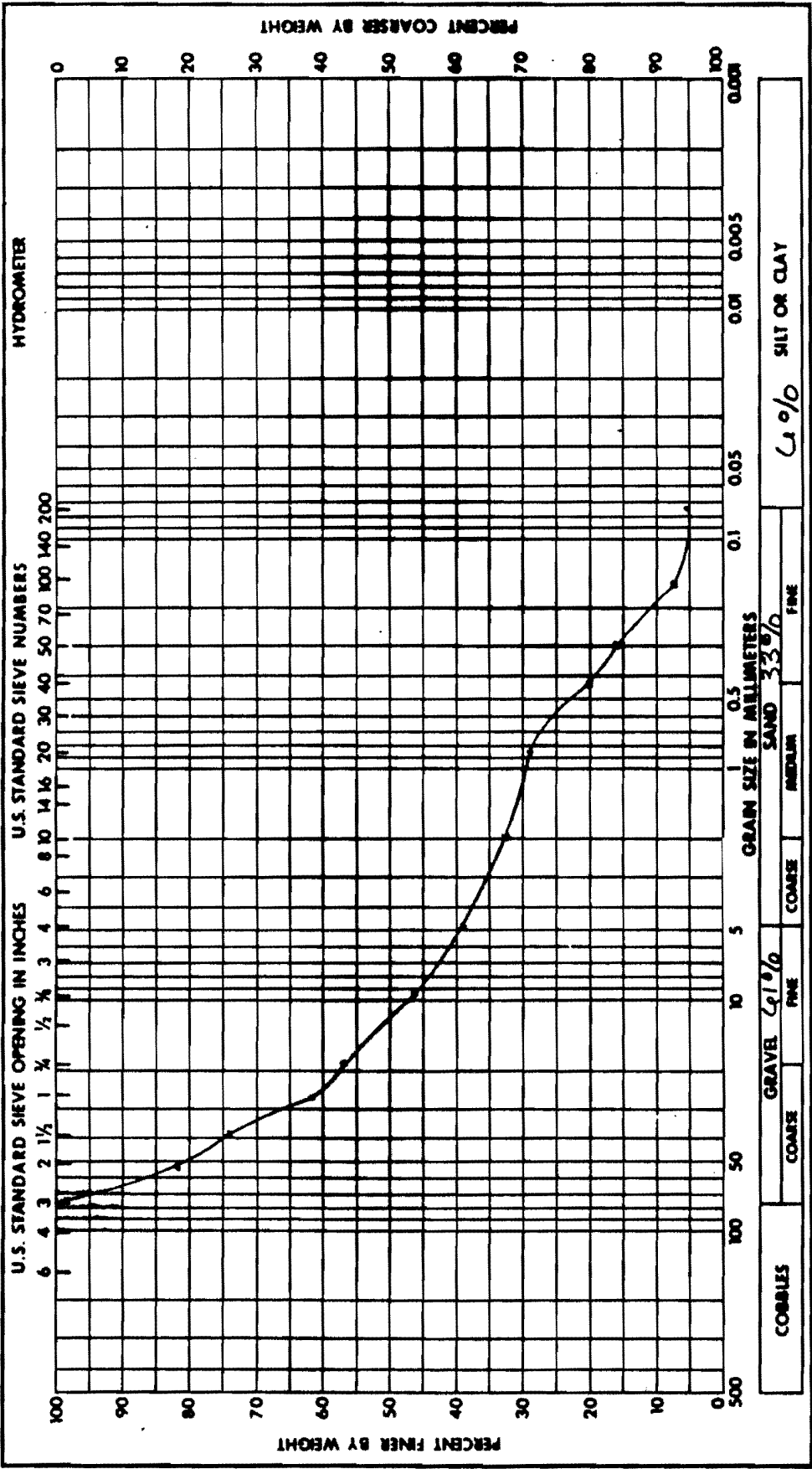
Remarks:	

Soil Symbol	<i>GP</i>	Liquid Limit, %	<i>NP</i>
Moisture Content, %	<i>7.8</i>	Plastic Limit, %	<i>NP</i>
Specific Gravity	<i>2.58</i>	Plasticity Index, %	<i>NP</i>
		Shrinkage Limit, %	

Figure 2.5-368 Soil Supported Structures

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL SUPPORTED STRUCTURES
FIGURE 2.5-369



Added by Amendment 50

Project	WATTS BAR-UP		
FeatureSoil Supported Structures			
Boring No.	US-128	Sample No.	2
Station	191.3 N	Range	7.5 W
Date	8-31-79	Elevation	712.4-708.4
GRAIN SIZE ANALYSIS			

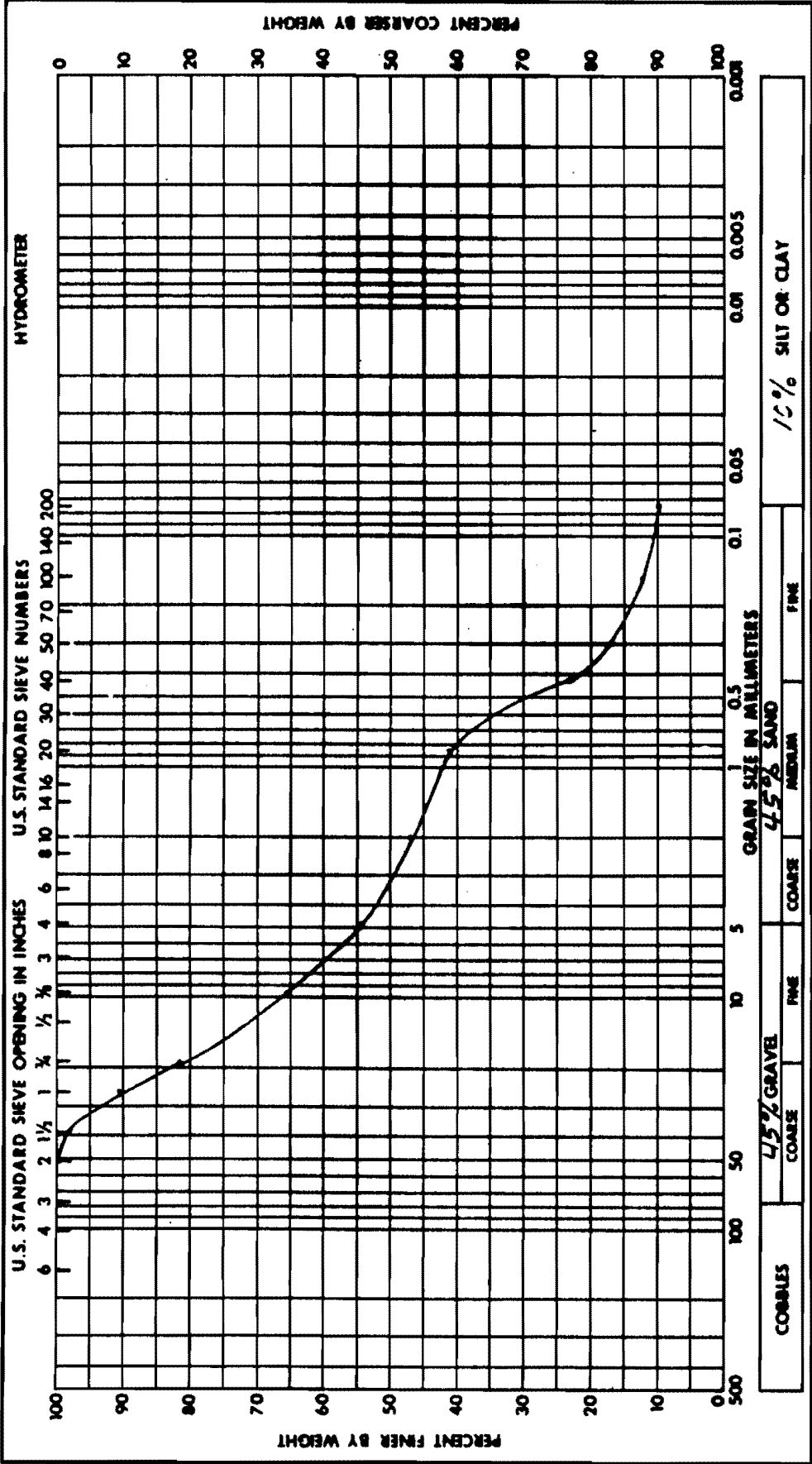
Remarks:

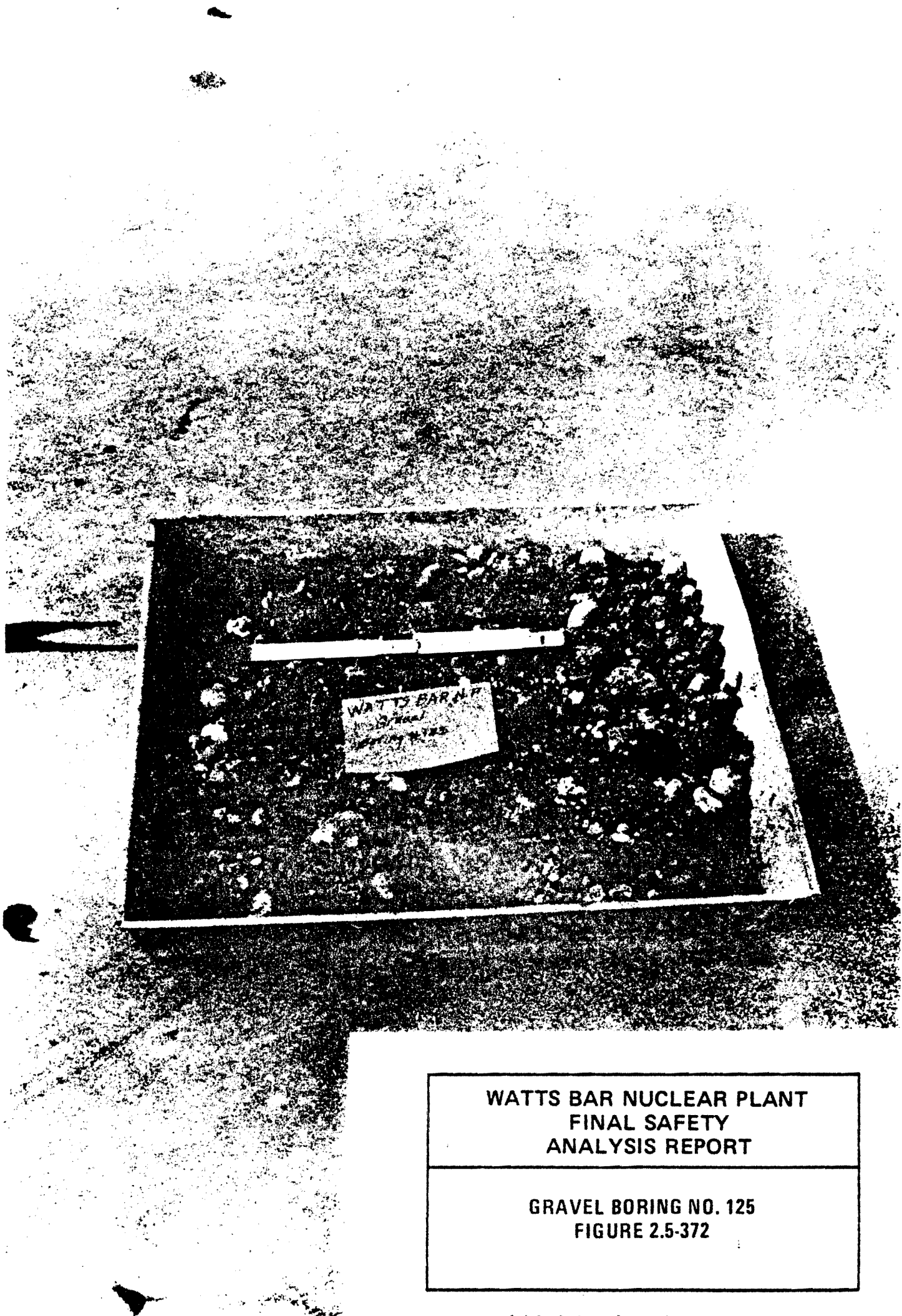
Soil Symbol	GP-GM	Liquid Limit, %	NP
Moisture Content, %	8.6	Plastic Limit, %	NP
Specific Gravity	2.62	Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-369 Soil Supported Structures

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL SUPPORTED STRUCTURES
FIGURE 2.5-370





WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
GRAVEL BORING NO. 125 FIGURE 2.5-372

Added by Amendment 50

Figure 2.5-372 Gravel Boring No. 125



Added by Amendment 50

Figure 2.5-373 Gravel Boring No. 129

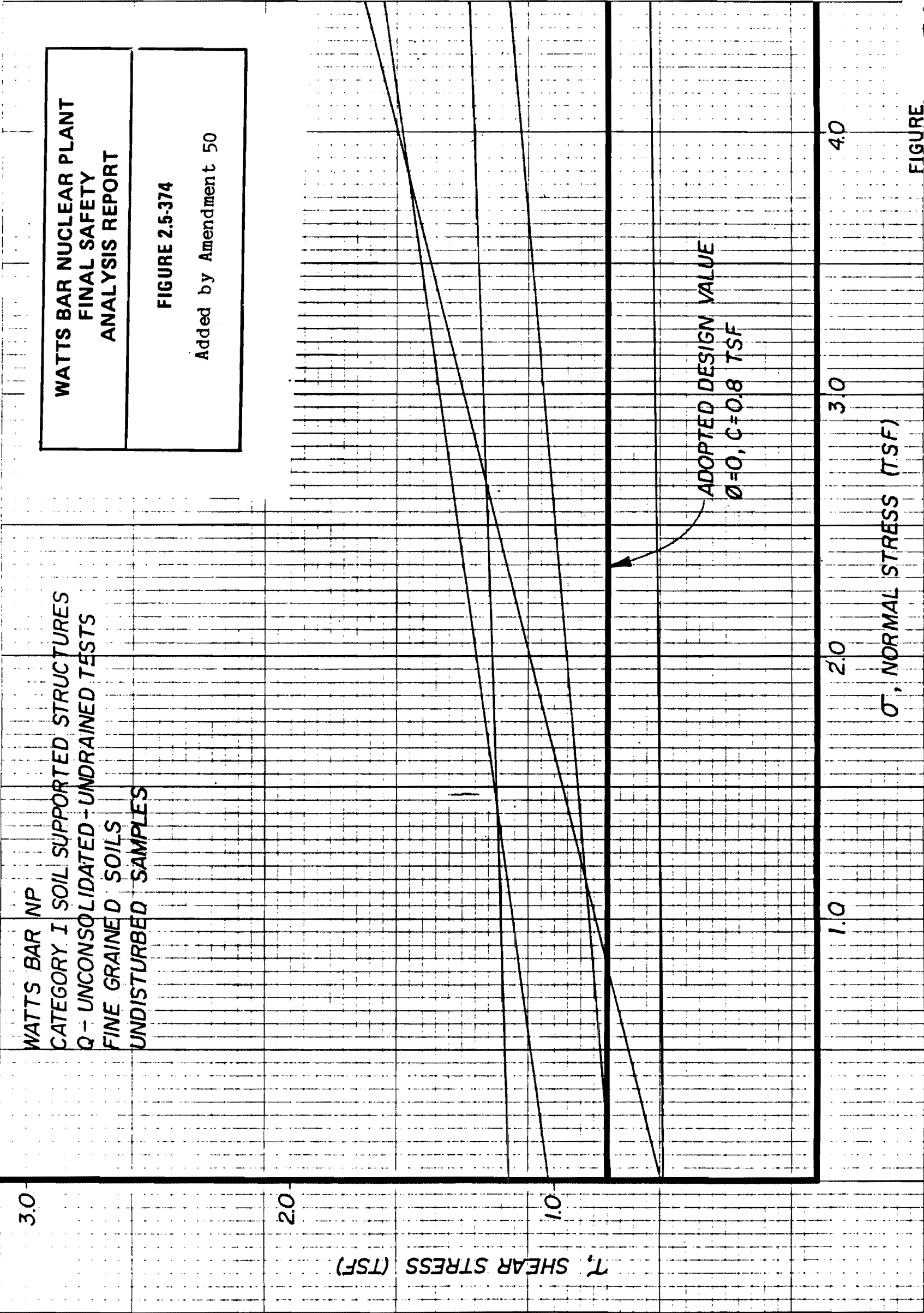


Figure 2.5-374 Watts Bar Nuclear Plant Category I Soil Supported Structures Q - (Unconsolidated - Undrained)
Test Fine Grained Soils (Undisturbed Samples)

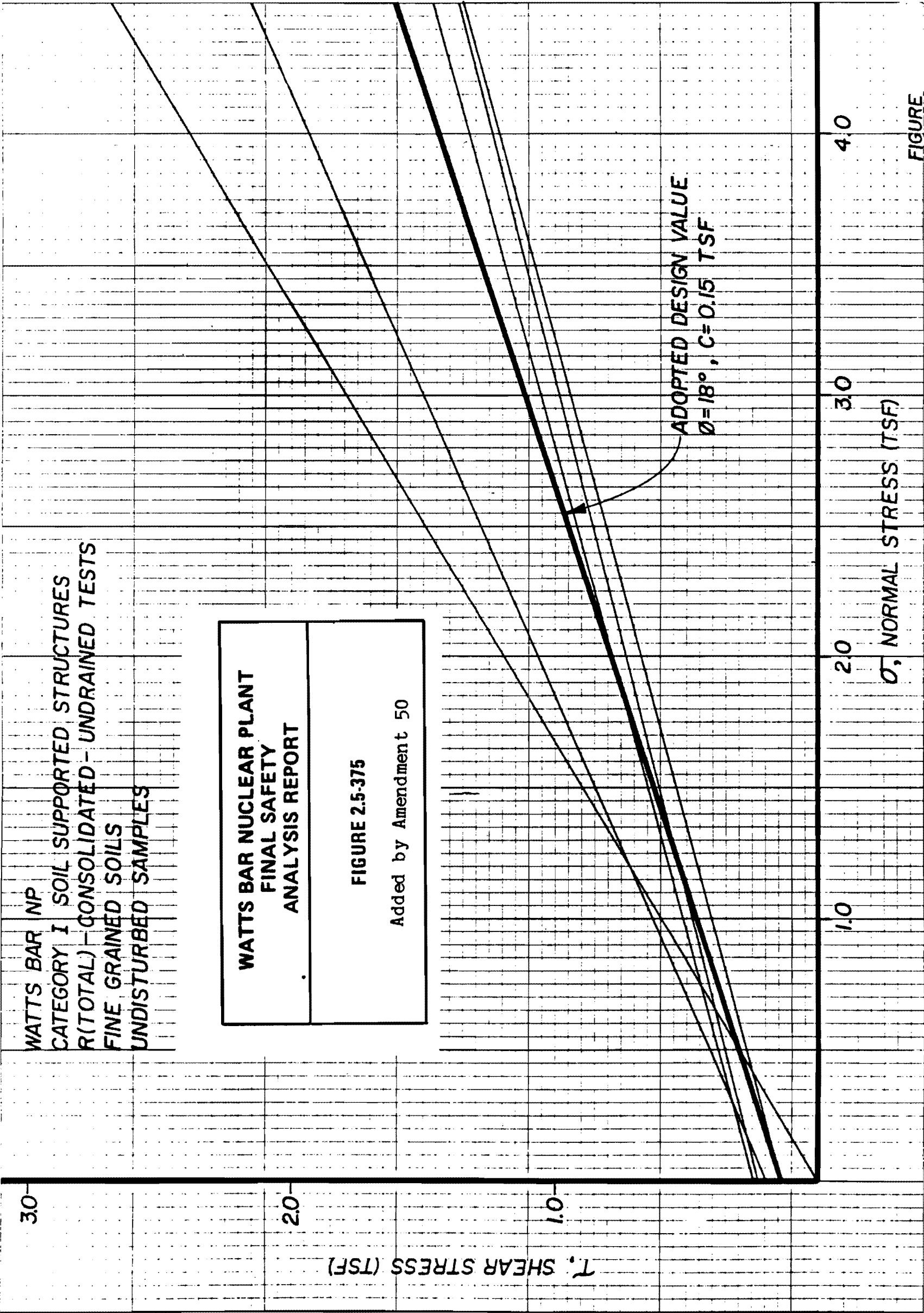


Figure 2.5-375 Watts Bar Nuclear Plant Category I Soil Supported Structures R (Total) - (Consolidated - Undrained)
Test Fine Grained Soils (Undisturbed Samples)

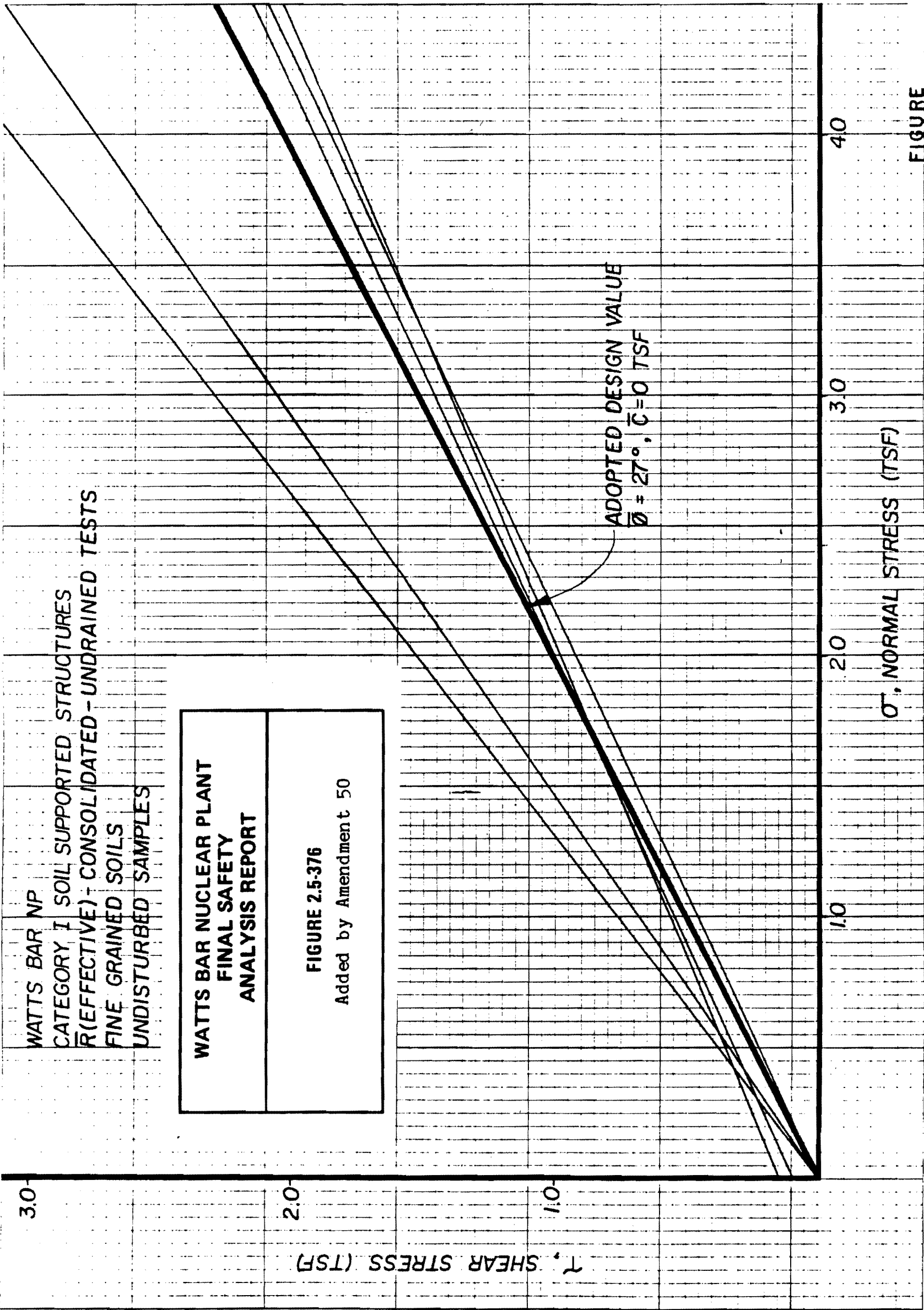


Figure 2.5-376 Watts Bar Nuclear Plant Category I Soil Supported Structure R (Effective) -
(Consolidated -Undrained) Test Fine Grained Soils (Undisturbed Samples)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-377
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW TRENCH A

BORING: PAH-1 STATION: 8+85.2 RANGE: SURFACE EL: 730.2

DATE DRILLED: 5/30/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730						TOPSOIL
			U 0	12.2	29	12	GV CL, BRN, MST, SP FL
5	725		U 0	13.0	29	12	GV CL, BRN, V MST, SP FL
10	720			8.8			(SHALE SHOTROCK) CL GV, GY, MST, SP FL
15	715			7.3			(SHALE SHOTROCK) CL GV, GY, MST, SP FL
20	710		Σ U 0	25.8	29	7	SD SI, R-BRN, MST, MIC, ALL ORIG SOIL
25	705		Σ U 0	16.5	NP	NP	SI SD, R-BRN, V MST, ALL
			U 0	10.6	33	14	SI SD, ±20% GV, R-BRN, W, ALL
							ROU AUGG - GV
30	700			26.3			WEATHERED SHALE
							DISCONTINUED. EL 700.7
35							
1' '=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-377 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-378
SHEET 1 OF 1

Added by Amendment 50

PROJECT: WATTS BAR N.P.
BORING: PAH-2 STATION: 7+00
DATE DRILLED: 5/27/83 TO

FEATURE: ERCW TRENCH A
RANGE: SURFACE EL: 733.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	730		US	11.8	30	13	SD GV, BRN-GY, WOOD, MST, SP FL
10	725		US	10.3	30	13	SD GV, BRN; WOOD, WIRE & PLASTIC DBR, MST, SP FL
15	720		US	12.1	30	13	GV SI CL, BRN, MST, SP FL
20	715		US	20.3	30	13	SI CL, TR GV, BRN, V MST, SP FL
			SC	16.2	30	13	GV CL, BRN, MST, SP FL
25	710		US	22.0	30	13	SI CL, BRN, MST, ALL, ORIG SOIL
30	705		Σ _{US}	32.5	27	5	SD SI, R-BRN, V MST, ALL, MIC
35	700		Σ _{US}	32.3	27	5	SD SI, R BRN, V MST, ALL, MIC
1''=5'							WEATHERED SHALE
							DISCONTINUED FL 697.2

* Lab. Class 18 ft.

Figure 2.5-378 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-379
SHEET 1 OF 1

Added by Amendment 50

PROJECT: WATTS BAR N.P.
BORING: PAH-3 STATION: 5+50
DATE DRILLED: 5/27/83 TO

FEATURE: ERCW TRENCH A
RANGE: SURFACE EL: 728.9
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	725			12.0	30	13	SPOIL FILL
			US				GV CL, BRN-GY, MST, WOOD, SP FL
10	720		CL	15.5	33	14	SI CL, BRN, MST, SP FL
			US				SI CL - FT CL MIX, BRN-GY, V MST, SP FL
15	715		US	18.9	30	13	SI CL, BRN, MST, ALL, ORIG SOIL
20	710		US	20.0	30	13	SI CL, BRN, MST, ALL
25	705		US	18.8	30	13	SI CL, BRN, V MST, ALL
30	700		Σ US US	24.5	29	7	CL SI SD, BRN, W, ALL
35	695		CH	34.9	54	35	FT CL, GY, V MST, MIC, ALL
				17.6			WEATHERED SHALE
35	695						DISCONTINUED. EL 696.5
1''=5'			* Lab. Classif.				

Figure 2.5-379 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-380
SHEET 1 OF 1

Added by Amendment 50

PROJECT: WATTS BAR N.P.
BORING: PAH-4 STATION: 4+00
DATE DRILLED: 5/27/83 TO

FEATURE: ERCW TRENCH A
RANGE: SURFACE EL: 720.5
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720			10.4	25	8	SOD - TOPSOIL
			GV CL SD, GY-R, MST, SP FL				
	715			11.2	25	8	GV CL SD, GY-R, MST, SP FL
10	710						SI SD, GY, V MST, ALL
15	705			20.1	27	11	SI SD CL, BRN, W, ALL
							SD CL, TR GV, BRN, V MST, ALL
20	700			20.5	27	11	SD CL, TR GV, BRN, V MST, ALL
			SI SD, BRN, W, ALL				
25	695		SP-SM	28.3	NP	NP	REFUSAL - SHALE. EL 698.5
30	690						
35							
1''=5'							
*Lab. Classif.							

Figure 2.5-380 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-381
SHEET 1 OF 1

Added by Amendment 50

PROJECT: WATTS BAR N.P.
BORING: PAH-5 STATION: 2+50
DATE DRILLED: 5/31/83 TO

FEATURE: ERCW TRENCH A
RANGE: SURFACE EL: 712.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710			21.1	36	16	TOPSOIL
			U				SI CL, BRN, MST, ALL
10	705		U	23.0	36	16	SI CL, BRN, MST, ALL
			U				SI CL, BRN, MST, ALL
15	700		U	22.9	36	16	SI CL, TR RD GV, BRN, MST, ALL
			U				SI CL, TR RD GV, BRN, V MST, ALL
20	695		U	20.8	36	16	SI CL, DK BRN, V MST, ALL
			U				CL SI, DK BRN, W, ALL
25	690		U	26.2	27	11	WEATHERED SHALE
			U				DISCONTINUED. EL 685.8
30	685			17.9			
35	680						
1''=5'			*Lab. Classif.				

Figure 2.5-381 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-382
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-6 STATION: 1+00
DATE DRILLED: 5/31/83 TO

FEATURE: ERCW TRENCH A
RANGE: SURFACE EL: 707.1
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	705		CU	17.7	33	14	GV CL, BRN, MST, SP FL
10	700		Σ 10 5 5	22.4	29	7	SD CL, TN, MST, ALL (ORIG SOIL)
			Σ 10 5 5	23.7	29	7	SD CL, TN V MST, ALL
15	695		Σ 10 5 5	35.8	27	5	CL SD, TR RD FN GV, TN, W, ALL
	690			17.8			WEATHERED SHALE
20							DISCONTINUED. EL 688.1
	685						
25							
	680						
30							
	675						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-382 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-383
SHEET 1 OF 2

PROJECT: WATTS BAR N.P. FEATURE: ERCW TRENCH B

BORING: PAH-1 STATION: 1+00 ± RANGE: SURFACE EL: 712.0

DATE DRILLED: 5/31/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710		CL	18.4	26	8	SD SI CL, BRN, MST, FL
			CL	14.7	35	13	SI CL, BRN, MST, TR GV, FL
			CL	17.2	35	13	SD CL, BRN, MST, ALL CORIG SOIL
10	705		CL				
15	700		CL	20.6	26	8	SD CL, BRN, MST, ALL
			CL	25.0	26	8	SI CL, BRN, MST, ALL
20	695		CL				
25	690		ΣS	25.1	27	3	ALT STRATA - SI SD & CL SI, TN-BRN, V MST, ALL
			ΣS	30.2	NP	NP	ALT STRATA - SI SD & CL SI, TN-BRN, W, ALL
30	685		ΣS				
35	680		ΣS	26.7	NP	NP	SI SD, GY-TN, V MST, ALL
			ΣS	21.0	NP	NP	SI SD, TN, V MST, ALL
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-383 Soil Profile
(Sheet 1 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-383
SHEET 1 OF 2

PROJECT: WATTS BAR N.P. FEATURE: ERCW TRENCH B

BORING: PAH-1 STATION: 1+00 ± RANGE: SURFACE EL: 712.0

DATE DRILLED: 5/31/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710		CL	18.4	26	8	SD SI CL, BRN, MST, FL
			CL	14.7	35	13	SI CL, BRN, MST, TR GV, FL
10	705		CL	17.2	35	13	SD CL, BRN, MST, ALL (ORIG SOIL)
			CL	20.6	26	8	SD CL, BRN, MST, ALL
15	695		CL	25.0	26	8	SI CL, BRN, MST, ALL
			Σ S	25.1	27	3	ALT STRATA - SI SD & CL SI, TN-BRN, V MST, ALL
20	690		Σ S	30.2	NP	NP	ALT STRATA - SI SD & CL SI, TN-BRN, W, ALL
			Σ S	26.7	NP	NP	SI SD, GY-TN, V MST, ALL
30	680		Σ S	21.0	NP	NP	SI SD, TN, V MST, ALL
35							
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-383 Soil Profile
(Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-384
SHEET 1 OF 2

PROJECT: WATTS BAR N.P. FEATURE: ERCW TRENCH B

BORING: PAH-2 STATION: 2+25 ± RANGE: SURFACE EL: 713

DATE DRILLED: 6/1/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710		CL	19.2	35	13	SI CL, TR GV, BRN, MST, FL
10	705		CL	21.3	35	13	SI CL, BRN, MST, ALL
15	700		CL	24	35	13	SI CL, BRN, MST, ALL
20	695		Σ U S	27.4	31	8	CL SD, BRN, W, ALL
25	690		Σ S	27.5	NP	NP	ALT STRATA - SI SD & CL SI, TN-BRN, V MST, ALL
30	685		Σ S	26.7	NP	NP	ALT STRATA - SI SD & CL SI, TN-BRN, V MST, ALL
35	680		Q S Σ S	17.3	NP	NP	GV SD, BRN-TN, W, ALL
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-384 Soil Profile
(Sheet 1 of 2)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-384
SHEET 2 OF 2

PROJECT: WATTS BAR N.P.
BORING: PAH-2 STATION: 2+25
DATE DRILLED: 6/1/83 TO

FEATURE: ERCW TRENCH B
RANGE: SURFACE EL: 713
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
40	675			12.8			WEATHERED SHALE
							DISCONTINUED. EL 674.0
45	670						
50	665						
55	660						
60	655						
65	650						
70	645						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-384 Soil Profile
(Sheet 2 of 2)

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-385
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-3 STATION: 3+50
DATE DRILLED: 6/1/83 TO

FEATURE: ERCW TRENCH B
RANGE: SURFACE EL: 701.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	700		Σ 010	24.2	31	8	SD SI CL, BRN, MST, ALL
10	695		Σ 0	37.0	28	4	SD SI, BRN, V MST, ALL
15	690		Σ 010	26.4	31	8	SD SI, TN, V MST, ALL
			SM	29.2	28	4	SI SD, R-TN, V MST, ALL
	685			20.3			WEATHERED SHALE _____
20							DISCONTINUED. EL 684.8
25	680						
30	675						
35	670						

1''=5'

*Lab. Classif.

Added by Amendment 50

Figure 2.5-385 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-386
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-4 STATION: 4+75
DATE DRILLED: 6/2/83 TO

FEATURE: ERCW TRENCH B
RANGE: SURFACE EL: 700.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	700						
			U	28.2	26	8	SD SI CL, GY, W, ALL
5	695		Σ	18.0	NP	NP	SD SI, GY, W, ALL
			Σ				
10	690		CL-M	26.7	23	5	SD SI, GY, W, ALL
				24.9			WEATHERED SHALE
							DISCONTINUED. EL 688.9
15	685						
20	680						
25	675						
30	670						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-386 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-387
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-5 STATION: 6+00
DATE DRILLED: 6/2/83 TO

FEATURE: ERCW TRENCH B
RANGE: SURFACE EL: 702.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	700		LO	20.6	26	8	SD SI CL, TN-GY, MST, ALL
10	695		LO	30	26	8	SL SD SI, TN-GY, V MST, ALL
			CL	22.9	30	13	LAM RESD CL, MST
				15.3			WEATHERED SHALE
15	690						DISCONTINUED. EL 691.2
20	685						
25	680						
30	675						
35	670						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-387 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-388
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-1 STATION: 1592.0E RANGE: 190.6S SURFACE EL: 738.8

DATE DRILLED: 06/02/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735			15.3	28	13	TOPSOIL - GV
			└ 0				SI CL, TR GV, TN, MST, FL
			└ Σ				SI CL, R, MST, ALL
10	730			24.0	41	14	
			└ Σ				SI CL, R-BRN, MST, ALL
15	725						-----
							DISCONTINUED. EL 723.8
20	720						
25	715						
30	710						
35	705						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-388 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-389
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-2 STATION: 1618.7E RANGE: 323.5S SURFACE EL: 740.4

DATE DRILLED: 6/2/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						TOPSOIL
			Σ	18.8	43	14	SI CL, GY-TN, MOTT, MST, ALL
5	735		Σ	24.6	41	14	SI CL, R, MST, ALL
10	730		Σ	23.2	41	14	SD CL, R, MST, ALL
15	725						DISCONTINUED. EL 725.4
20	720						
25	715						
30	710						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-389 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-390
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-3 STATION: 1605.2E RANGE: 465.2S SURFACE EL: 742.1

DATE DRILLED: 6/2/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						TOPSOIL
5			Σ	21.4	43	14	SD SI CL, R, MST, ALL
	735						
10			Σ	24.4	41	14	SD SI CL, R, MST, ALL
	730						
15			Σ	18.4	41	14	SD CL, R-BRN, MST, ALL
	725						DISCONTINUED. EL 727.1
20							
	720						
25							
	715						
30							
	710						
35							
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-390 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-391A
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-4 STATION: 1606.0E RANGE: 616.6S SURFACE EL: 743.3

DATE DRILLED: 6/2/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL - MIXED W/GRAVEL
5	740		┐ Σ	20.3	43	14	SD SI, R, MST, ALL
10	735		┐ Σ	23.2	41	14	SD SI CL, R, MST, ALL
15	730		┐ Σ	21.0	41	14	SD SI CL, R, MST, ALL

							DISCONTINUED. EL 728.3
20	725						
25	720						
30	715						
35	710						
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-391a Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-392
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-5 STATION: 1604.9E RANGE: 767.3S SURFACE EL: 737.8

DATE DRILLED: 6/2/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5 10	735		CL	18.5	33	17	TOPSOIL SI CL, BRN, MST, ALL
	730		CL	20.8	33	17	SI CL, BRN, MST, ALL
	725		ML	22.9	43	14	SD CL SI, R, MST, ALL
15							-----
							DISCONTINUED. EL 723.8
20	720						
25	715						
30	710						
35	705						
1''=5'							Added by Amendment 50
			* Lab. Classif.				

Figure 2.5-392 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-393
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-6 STATION: 1576.3E RANGE: 902.2S SURFACE EL: 735.6

DATE DRILLED: 6/2/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	735						TOPSOIL
5			└ 0	15.4	29	14	SI CL, TN-BRN, MST, FL
	730		└ 0	20.4	33	17	(BURIED TOPSOIL) SI TO SI CL, TN-BRN, MST-V MST, ALL
10							
	725		└ Σ	24.0	43	14	SI CL, BRN, MST, ALL
15							
	720						DISCONTINUED. EL 720.6
20							
	715						
25							
	710						
30							
	705						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-393 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-394
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-7 STATION: 1730.2E RANGE: 160.1S SURFACE EL: 735.7

DATE DRILLED: 6/3/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5 10 15	735			16.3	29	14	TOPSOIL
			└ 0				SI CL, BRN, MST, ALL
	730		└ 0				SI CL, GY, MST, ALL
	725		└ 0				SI CL, GY, MST, ALL
			└ Σ	20.4	33	17	SD SI, GY, MST, ALL
15	720			14.6	41	14	DISCONTINUED. EL 720.7
20	715						
25	710						
30	705						
35							
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-394 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-395
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-8 STATION: 1785.7E RANGE: 290.0S SURFACE EL: 737.3

DATE DRILLED: 6/3/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735			20.3	28	13	TOPSOIL
			└ 0				SI CL, TN, MST, ALL
			└ 0				SI CL, BRN, MST, ALL
10	730		└ Σ	18.8	35	17	SI CL, R, MST, ALL
	725			20.5	41	14	
15							DISCONTINUED. 723.3
	720						
20							
	715						
25							
	710						
30							
	705						
35							
1''=5'							Added by Amendment 50
			* Lab. Classif.				

Figure 2.5-395 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-396
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-9 STATION: 1802.0E RANGE: 439.7S SURFACE EL: 740.0

DATE DRILLED: 6/3/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						
5	735		CU	13.6	28	13	SI CL, BRN, MST, ALL
10	730		CU	23.0	43	14	SI CL, R, MST, ALL
			Σ	20.9	41	14	SD SI CL, R, MST, ALL
15	725						DISCONTINUED. EL 726.0
20	720						
25	715						
30	710						
35	705						
1''=5'							
			* Lab. Classif.				Added by Amendment 50

Figure 2.5-396 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-397
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9

BORING: PAH-10 STATION: 1787.1E RANGE: 584.7S SURFACE EL: 744.2

DATE DRILLED: 6/3/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740			13.2	28	13	TOPSOIL
			└ 0				SI CL, TR GV, BRN, MST, FL
			└ 0				SI CL, BRN, MST, ALL (ORIG SOIL)
10	735		└ Σ	22.8	43	14	SI CL, R, MST, ALL
15	730						DISCONTINUED. EL 730.2
20	725						
25	720						
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-397 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-398
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9
BORING: PAH-11 STATION: 1750.5E RANGE: 726.7S SURFACE EL: 740.9
DATE DRILLED: 6/3/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5 10 15	740		CL	16.8	29	14	TOPSOIL SI CL, BRN, MST, ALL
	735		CL	18.1	33	17	SI CL, BRN, MST, ALL
	730		CL	19.8	35	17	SI CL, BRN, V MST, ALL
			Σ	22.3	43	14	SD SI, BRN, V MST, ALL
20	725						DISCONTINUED. EL 725.9
25	720						
30	715						
35	710						

1''=5'

* Lab. Classif.

Added by Amendment 50

Figure 2.5-398 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-399
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P. FEATURE: ERCW BORROW AREA 9
BORING: PAH-12 STATION: 1708.3E RANGE: 866.6S SURFACE EL: 739.1
DATE DRILLED: 6/3/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735			13.7	28	13	TOPSOIL
			CL				SI CL, BRN, MST, ALL
10	730		CL	25.1	35	17	SI CL, BRN, V MST, ALL
15	725		CL	22.4	35	17	SI CL, BRN, V MST, ALL
20	720						DISCONTINUED. EL 725.1
25	715						
30	710						
35	705						
1"=5'		* Lab. Classif.					
							Added by Amendment 50

Figure 2.5-399 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-400
SHEET 1 OF 1

PROJECT: WATTS BAR N. P. FEATURE: BORROW AREA 10
BORING: PAH-1 STATION: 11+23.2E RANGE: 3+68.2N SURFACE EL: 733.8
DATE DRILLED: 6/6/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	730		U I Σ	25.2	41	15	SI CL, R-BRN, MS _i , ALL
10	725		U I Σ	24.0	41	15	SI CL, R-BRN, MST, ALL
15	720		U I Σ	23.9	41	15	SI CL, R-BRN, MST, ALL
20	715						
25	710						
30	705						
35	700						APR 13 1988
1''=5'			* Lab. Classif.				

Revised by Amendment 62

Figure 2.5-400 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-401
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 10

BORING: CH-2 STATION: 9+72.1E RANGE: 4+08.5N SURFACE EL: 737.2

DATE DRILLED: 6/7/83 TO PREPARED BY: MHD CHECKED BY: JA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	735		U I Σ	26.1	41	15	SI CL, R, MST, ALL
10	730		U I Σ	21.5	41	15	SI CL, R, MST, ALL
	725						
15							
	720						
20							
	715						
25							
	710						
30							
	705						
35							
1''=5'							
		* Lab. Classif.					

APR 13 1988

Revised by Amendment 62

Figure 2.5-401 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-402
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 10

BCRING: CH-3 STATION: 9+84.6E RANGE: 4+91.1N SURFACE EL: 734.5

DATE DRILLED: 6/7/83 TO PREPARED BY: MHD CHECKED BY: BAI

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	730			22.7	41	15	SI CL, BRN, MST, ALL
10	725			27.6	45	19	FT CL, BRN, MST, ALL
15	720						
20	715						
25	710						
30	705						
35	700						
1''=5'							

APR 18 1988

* Lab. Classif.

Added by Amendment 62

Figure 2.5-402 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-403
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 11

BORING: PAH-1 STATION: 6+06.9W RANGE: 1+48.4S SURFACE EL: 736.1

DATE DRILLED: 6/6/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735		$\sum$	28.1	44	16	CL SI, R, MST, ALL
10	730		$\sum$	30.4	45	16	CI SI, R, MST, ALL
15	725		$\sum$	28.7	45	16	CL SI, BRN, V MST, ALL
20	720						
25	715						
30	710						
35	705						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-403 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-404
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 11

BORING: PAH-2 STATION: 7+60.1W RANGE: 1+89.0S SURFACE EL: 742.0

DATE DRILLED: 6/6/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						GRAVEL
5			Σ	27.1	44	16	SI CL, R, MST, ALL
10	735		Σ	33.7	45	16	CL SI, R-BRN, MST, ALL
15	730		Σ	27.9	45	16	CL SI, R-BRN, MST, ALL
	725						
20							
	720						
25							
	715						
30							
	710						
35							
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-404 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-405
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 11

BORING: PAH-3 STATION: 6+93.1W RANGE: 1+15.2S SURFACE EL: 741.9

DATE DRILLED: 6/6/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						GRAVEL
5			Σ	23.4	44	16	SI CL, R-BRN, MST, ALL
10	735		Σ	26.7	44	16	SI CL, R-BRN, MST, ALL
15	730		Σ	23.2	44	16	SI CL, BRN, MST, ALL
	725						
20							
	720						
25							
	715						
30							
	710						
35							
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-405 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-406
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 11

BORING: PAH-4 STATION: 7+16.8W RANGE: 0+83.0S SURFACE EL: 741.1

DATE DRILLED: 6/6/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						GRAVEL
5	735		Σ	26.8	44	16	CL SI, R-BRN, MST, ALL
10	730		Σ	27.8	44	16	CL SI, R-BRN, MST, ALL
15	725		Σ	27.0	44	16	CL SI, R-BRN, MST, ALL
20	720						
25	715						
30	710						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-406 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-407
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA 11

BORING: PAH-5 STATION: 8+39.7W RANGE: 1+40.2S SURFACE EL: 738.7

DATE DRILLED: 6/6/83 TO PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735			22.6	45	16	GRAVEL
			└ Σ				SI CL, R-BRN, MST, ALL
			└ Σ				SI CL, R-BRN, MST, ALL
10	730		└ Σ	26.8	49	15	SI CL, R-BRN, MST, ALL
15	725		└ Σ	22.8	45	16	SD SI CL, BRN, MST, ALL
20	720						
25	715						
30	710						
35	705						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-407 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-408
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-1 STATION:
DATE DRILLED: 6/3/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 709.6
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	705		10	25.7	40	17	SI CL, BRN, MST, ALL
10	700		10	27.1	40	17	SI CL, BRN, MST, ALL
15	695		10	26.6	40	17	SI CL, BRN, V MST, ALL
							DISCONTINUED.
20	690						
25	685						
30	680						
35	675						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-408 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-409
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-2 STATION:
DATE DRILLED: 6/3/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 708.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	705		$\frac{1}{\Sigma}$	24.7	40	13	SI CL, R-BRN, MST, ALL
10	700		$\frac{1}{\Sigma}$	27.4	40	13	SI CL, R-BRN, MST, ALL
15	695		$\frac{1}{\Sigma}$	25.6	40	13	SI CL, R-BRN, V MST, ALL
20	690						DISCONTINUED.
25	685						
30	680						
35	675						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-409 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-410
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-3 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 711.5
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710		LO	25.1	40	17	FT CL, R, MST, ALL
10	705		LS	23.7	40	13	FT CL, R, MST, ALL
15	700		LO	25.7	40	17	SI CL, R-BRN, MST, ALL
20	695						DISCONTINUED.
25	690						
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-410 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-411
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-4 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 707.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	705		Σ	23.2	40	13	SI CL, R-BRN, MST, ALL
10	700		Σ	24.1	40	13	SI CL, R-BRN, MST, ALL
15	695		Σ	25.9	40	13	SI CL, BRN, V MST, ALL
							DISCONTINUED.
20	690						
25	685						
30	680						
35	675						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-411 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-412
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-5 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 709.7
PREPARED BY: MHD CHECKED BY: EA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	705		Σ	26.7	40	13	FT CL, R, MST, ALL
10	700		Σ	23.8	40	13	SI CL, R-BRN, MST, ALL
15	695		Σ	25.2	40	13	SI CL, R-BRN, MST, ALL
20	690						DISCONTINUED.
25	685						
30	680						
35	675						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-412 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-413
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-6 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 705.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	705						TOPSOIL
5			┐ └	26.2	40	17	FT CL, BRN, MST, ALL
	700						
			┐ └	26.1	40	17	FT CL, BRN, MST, ALL
10							
	695						
			┐ └	23.7	40	17	SI CL, BRN, MST, ALL
15							
	690						DISCONTINUED.
20							
	685						
25							
	680						
30							
	675						
35							
1''=5'							Added by Amendment 50
			* Lab. Classif.				

Figure 2.5-413 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-414
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-7 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 706.0
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	705		U	25.7	40	17	FT CL, R-BRN, MST, ALL
10	700		Σ	25.8	40	13	SI CL, R-BRN, MST, ALL
15	695		Σ	23.6	40	13	SI CL, BRN, MST, ALL
20	690						DISCONTINUED.
25	685						
30	680						
35	675						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-414 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-415
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-7 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 744.0 est.
PREPARED BY: MHD CHECKED BY: EA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740		┐ U	22.5	42	18	FT CL, R, MST, ALL
			┐ U	24.9	42	18	SI CL, R, MST, ALL
10	735		┐ U	20.1	35	14	CL SI, TN, MST, RESD
15	730		┐ U	22.0	35	14	CL SI, TN, MST, RESD
20	725						DISCONTINUED.
25	720						
30	715						
35	710						Added by Amendment 50
1''=5'			* Lab. Classif.				

Figure 2.5-415 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-416
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-8 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 706.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	705						TOPSOIL
5			Σ	23.7	40	13	FT CL, R, MST, ALL
	700		Σ	23.3	40	13	SI CL, BRN, MST, ALL
10							
	695		U	23.5	40	17	SI CL, BRN, MST, ALL
15							
	690						DISCONTINUED.
20							
	685						
25							
	680						
30							
	675						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-416 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-417
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-9 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 703.7
PREPARED BY: MHD CHECKED BY: PA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	700		U	22.3	40	17	SI CL, R-BRN, MST, ALL
10	695		Σ	25.6	40	13	MD CL, R-BRN, MST, ALL
15	690		Σ	24.6	40	13	SI CL, BRN, V MST, ALL
20	685						DISCONTINUED.
25	680						
30	675						
35	670						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-417 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-418
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-10 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 706.0
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	705		$\sum$	25.7	40	13	FT CL, R-BRN, MST, ALL
10	700		$\sum$ 00	25.1	30	8	SI CL, R-BRN, MST, ALL
15	695		$\sum$ 00	20.2	29	6	SI CL, BRN, MST, ALL
20	690						DISCONTINUED.
25	685						
30	680						
35	675						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-418 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-419
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-11 STATION:
DATE DRILLED: 6/6/83 TO

FEATURE: BORROW AREA 12
RANGE: SURFACE EL: 710.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	710						
5	705		$\frac{1}{\Sigma}$	24.9	40	13	SI CL, R-BRN, MST, ALL
10	700		$\frac{\Sigma U}{\Sigma S}$	21.6	29	6	SD SI CL, R-BRN, MST, ALL
15	695		$\frac{\Sigma U}{\Sigma S}$	19.5	29	6	SI SD, R-BRN, MST, ALL
20	690						DISCONTINUED.
25	685						
30	680						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-419 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-421
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-2 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 728.6
PREPARED BY: MHD CHECKED BY: *MBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL, SPOIL GRAVEL
5	725		CL	27.6	36	13	SI CL, PURP, MST, RESD
10	720		CL	23.9	36	13	SI CL, PURP, MST, RESD
15	715		CL	20.2	36	13	SI CL, PURP, MST, RESD
20	710						DISCONTINUED.
25	705						
30	700						
35	695						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-421 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-422
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-3 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 723.4
PREPARED BY: MHD CHECKED BY: *CRG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		U Σ	14.9	35	11	SI CL, BRN, MST, RESD
10	715		U	31.9	43	20	SI CL, BRN, SAT, RESD
15	710						DISCONTINUED (WET).
20	705						
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-422 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-423
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-4 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 742.1
PREPARED BY: MHD CHECKED BY: *DBE*

[illegible]

Figure 2.5-423 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-424
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-5 STATION:
DATE DRILLED: TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 723.5
PREPARED BY: MHD CHECKED BY: *CRG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	720		Σ	22.2	42	14	CL SI, BRN, MST, RESD
10	715		Σ	23.1	42	14	CL SI, BRN, MST, RESD
15	710		Σ	20.9	42	14	CL SI, BRN, MST, RESD
20	705		Σ	22.1	42	14	CL SI, BRN, MST, RESD
25	700						DISCONTINUED.
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-424 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-425
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-6 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 730.5
PREPARED BY: MHD CHECKED BY: *CBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730						TOPSOIL
5	725		$\sum$	22.3	42	14	CL SI, BRN, MST, RESD
10	720		$\sum$	15.3	42	14	CL SI, BRN, MST, RESD
15	715		$\sum$	17.2	36	13	CL SI, PUR-BRN, MST, RESD
			$\sum$	13.7	36	13	CL SI, PUR-BRN, MST, RESD
20	710						DISCONTINUED.
25	705						
30	700						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-425 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-426
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-7 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 728.8
PREPARED BY: MHD CHECKED BY: *CBF*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	725		$\frac{1}{0} \frac{1}{\Sigma}$	18.1	35	11	CL SI, BRN, MST, RESD
10	720		$\frac{1}{\Sigma}$	19.9	42	14	CL SI, LT BRN, MST, RESD
15	715		$\frac{1}{0}$	21.5	36	13	CL SI, PUR-BRN, MST, RESD
20	710		$\frac{1}{0}$	18.0	36	13	CL SI, PUR-BRN, MST, RESD
25	705						DISCONTINUED.
30	700						
35	695						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-426 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-427
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-8 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 740.1
PREPARED BY: MHD CHECKED BY: *MBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						TOPSOIL
5	735		U	22.6	36	13	CL SI, BRN, MST, RESD
10	730		U	24.8	36	13	CL SI, BRN, MST, RESD
15	725		U	24.2	36	13	CL SI, BRN, MST, RESD
			U Σ	21.5	45	17	CL SI, BRN, V MST, RESD
20	720						DISCONTINUED.
25	715						
30	710						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-427 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-428
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-9 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 714.2
PREPARED BY: MHD CHECKED BY: *CPG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	710		U	18.9	43	20	CL SI, LT BRN, MST, RESD
10	705		U	20.9	43	20	CL SI, LT BRN, MST, RESD
15	700		U Σ	17.7	37	12	CL SI, LT BRN, MST, RESD
20	695		U Σ	18.0	37	12	CL SI, LT BRN, MST, RESD
25	690						DISCONTINUED.
30	685						
35	680						
1''=5'			*Lab. Classif.				Added by Amendment 50

Figure 2.5-428 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-429
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-10 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 713.0
PREPARED BY: MHD CHECKED BY: *BBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							SPOIL FILL
5	710		$\frac{1}{0} \frac{1}{1} \frac{1}{\Sigma}$	21.0	37	12	CL SI, LT BRN, MST, RESD
10	705		$\frac{1}{0} \frac{1}{1} \frac{1}{\Sigma}$	20.8	37	12	CL SI, LT BRN, MST, RESD
15	700		$\frac{1}{0} \frac{1}{1} \frac{1}{\Sigma}$	16.3	37	12	CL SI, LT BRN, MST, RESD
20	695		$\frac{1}{0} \frac{1}{1} \frac{1}{\Sigma}$	18.5	37	12	CL SI, LT BRN, MST, RESD
25	690						DISCONTINUED.
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-429 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-430
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-11 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 730.5
PREPARED BY: MHD CHECKED BY: *CLC*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730						TOPSOIL
5	725		$\frac{1}{0} \frac{1}{\Sigma}$	21.0	35	11	CL SI, BRN, MST, RESD
10	720		$\frac{1}{0} \frac{1}{\Sigma}$	18.4	35	11	CL SI, TR GV, BRN, MST, RESD
15	715		$\frac{1}{0} \frac{1}{\Sigma}$	17.4	35	11	CL SI, BRN, MST, RESD
20	710						DISCONTINUED
25	705						
30	700						
35							
1"=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-430 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-431
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-12 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 745.8
PREPARED BY: MHD CHECKED BY: *CRG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	745						TOPSOIL
5			U ₁ Σ	18.2	35	11	CL SI, BRN, MST, RESD
	740		I _Σ	25.6	52	17	CL SI, BRN, MST, RESD
10			I _Σ	27.4	52	17	CL SI, TR BENT, BRN, MST, RESD
15			I _Σ	29.7	52	17	CL SI, BRN, MST, RESD
20							
	725						
25							
	720						
30							
	715						
35							
1''=5'							

* Lab. Classif.

Added by Amendment 50

Figure 2.5-431 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-432
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-13 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 701.0
PREPARED BY: MHD CHECKED BY: *CBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	700			23.1	44	16	TOPSOIL, SPOIL
			Σ				CL SI, BRN, MST, RESD
	695		Σ				CL SI, BRN, MST, RESD
10			ML	16.4	44	16	SI CL, IR BENT, BRN, MST, RESD
	690						DISCONTINUED.
15							
	685						
20							
	680						
25							
	675						
30							
	670						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-432 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-433
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-14 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 698.9
PREPARED BY: MHD CHECKED BY: *CE*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	695			16.6	35	11	TOPSOIL
			U				CL SI, BRN, MST, RESD
			I				
			Σ				
10	690		U	21.3	40	18	SI CL, TR BENT, BRN, MST, RESD
			O				
15	685		U	22.1	40	18	SI CL, TR BENT, BRN, MST, RESD
			O				
20	680		U	20.4	40	18	SI CL, TR BENT, BRN, MST, RESD
			O				
25	675						DISCONTINUED.
30	670						
35	665						

* Lab. Classif.

Added by Amendment 50

Figure 2.5-433 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-435
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-16 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 745.3
PREPARED BY: MHD CHECKED BY: *DBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	745						TOPSOIL
5			$\frac{1}{0} \frac{1}{\Sigma}$	17.3	35	11	CL SI, BRN, MST, RESD
	740						
			$\frac{1}{0} \frac{1}{\Sigma}$	24.1	35	11	CL SI, BRN, MST, RESD
10							
	735		$\frac{1}{\Sigma}$	27.1	44	16	CL SI, BRN, MST, RESD
15							
	730		$\frac{1}{\Sigma}$	28.6	44	16	CL SI, BRN, MST, RESD
20							
	725						DISCONTINUED.
25							
	720						
30							
	715						
35							
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-435 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-436
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-17 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 693.0
PREPARED BY: MHD CHECKED BY: *elc*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	690		$\frac{1}{\Sigma}$	23.5	44	16	SI CL, BRN, MST, RESD
10	685		$\frac{1}{\Sigma}$	25.7	44	16	SI CL, BRN-GY, MST, RESD
			$\frac{1}{0}$	18.6	40	18	SI CL, BRN-GY, MST, RESD
15	680						DISCONTINUED (GV).
20	675						
25	670						
30	665						
35	660						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-436 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-437
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-18 STATION:
DATE DRILLED: 8/26/83 TO

FEATURE: BORROW AREA 13
RANGE: SURFACE EL: 697.9
PREPARED BY: MHD CHECKED BY: *CRG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	695		$\frac{1}{\Sigma}$	19.7	44	16	CL SI, BRN, MST, RESD
10	690		$\frac{1}{\Sigma}$	26.7	44	16	CL SI, TN, MST, RESD
15	685		$\frac{1}{\Sigma}$	22.3	44	16	CL SI, TN, MST, RESD
20	680		$\frac{1}{\Sigma}$	20.3	44	16	CL SI, TN, MST, RESD
25	675						DISCONTINUED.
30	670						
35	665						
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-437 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-438
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: FAH-1 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 714.2
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710		1 0	18.2	29	12	SI CL, TN-BRN, MST, ALL
			Σ 1 0 0 0	20.5	26	7	CL SD, ±20% FN RD GV, TN, V MST, ALL
10	705						SD GV, ±40% FN RD GV, ALL
			1 0	19.5	29	12	FT SI, GRN-GY, MST, RESD
15	700						WTH GY SHL _____
							DISCONTINUED.
20	695						
25	690						
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-438 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-439
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-2 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 722.1
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	720		U O I Σ	27.5	38	13	SI CL, R, MST, ALL
10	715		U O I Σ	29.6	38	13	SI CL, R-BRN, MST, ALL
15	710		U O S	27.2	34	14	SI CL, R-TN, V MST, ALL
15			U O S	27.9	34	14	CL SI SD, BRN, V MST, ALL
	705						W SI SD
20							DISCONTINUED.
	700						
25							
	695						
30							
	690						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-439 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-440
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-3 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 717.2
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	715		U I Σ	20.6	38	13	SI CL, TN, MST, ALL
	710		U S	24.3	34	14	SI CL, TN, MST, ALL
10			U S	26.1	34	14	SD SI CL, TN, V MST, ALL
	705						W SD SI CL
15							DISCONTINUED.
	700						
20							
	695						
25							
	690						
30							
	685						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-440 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-441
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-4 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 718
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	715			21.1	29	12	TOPSOIL
			J 0				SI CL, TN-BRN, V MST, ALL
10	710						DISCONTINUED.
15	705						
20	700						
25	695						
30	690						
35	685						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-441 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-442
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-5 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 723.1
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	720		11 Σ	19.6	42	16	CL SI, TN, MST, ALL
10	715		0	24.8	42	18	CL SI, TN, MST, ALL
15	710						W CL SI
							DISCONTINUED.
20	705						
25	700						
30	695						
35	690						
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-442 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-443
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-6 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 735.6
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	735						TOPSOIL
5			U I Σ	28.4	42	16	FT CL, R, MST, ALL
	730		U	23.3	35	14	SI CL, TN, MST, ALL
10			U	22.7	35	14	SI CL, TN, MST, ALL
15			U	22.9	31	11	CL SI, TN, V MST, ALL
20							
	715						DISCONTINUED.
25							
	710						
30							
	705						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-443 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-445
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-10 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 713.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710			17.4	29	12	TOPSOIL
			U				CL SI, TN, MST, RESD
			U				CL SI, GRN-TN, MST, RESD
10	705			14.3	29	12	
15	700						DISCONTINUED.
20	695						
25	690						
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-445 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-446
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-11 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 723.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		U I Σ	25.3	38	13	SI CL, R-BRN, MST, ALL
10	715		U I Σ	24.3	38	13	CL SI SD, BRN, MST, ALL
15	710						SI CL SD, W
20	705						DISCONTINUED.
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-446 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-447
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-12 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 724.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	720		U I Σ	26.2	38	13	SI CL, R-BRN, MST, ALL
10	715		U I Σ	26.4	38	13	CL SI SD, R-BRN, V MST, ALL
15	710						W CL SI SD
							DISCONTINUED.
20	705						
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-447 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-448
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-13 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 718.7
PREPARED BY: MHD CHECKED BY: *BT*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	715		JO	19.3	34	14	SI CL, BRN, V MST, ALL
10	710						SI CL, W DISCONTINUED.
15	705						
20	700						
25	695						
30	690						
35	685						
1''=5'			*Lab. Classif.				Added by Amendment 50

Figure 2.5-448 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-449
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-14 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 730.0
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730						SPOIL FILL & BURIED TOPSOIL
5	725						
			10	20.3	39	18	SI CL, TN-BRN, MST, ALL
10	720		10	26.5	39	18	FT CL, R-BRN, MST, ALL
15	715		11 1/2	25.9	42	16	SI CL, R-BRN, MST, ALL
20	710						DISCONTINUED.
25	705						
30	700						
35	695						
1' = 5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-449 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-450
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-15 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 739.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	735		$\frac{1}{0} \frac{1}{\Sigma}$	25.0	42	16	FT CL, R, MST, RESD
10	730		$\frac{1}{0}$	23.6	39	18	FT CL, R, MST, RESD
15	725		$\frac{1}{0}$	23.0	42	18	FT SI, TN, MST, RESD
20	720		$\frac{1}{0}$	22.8	39	18	FT SI, TN, MST, RESD
25	715						DISCONTINUED.
30	710						
35	705						
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-450 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-451
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-16 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 749.8
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	745		$\frac{I}{U} \frac{I}{\Sigma}$	30.5	64	31	FT SI, DK R, MST, RESD
10	740		$\frac{I}{U}$	27.1	39	16	FT SI, DK R, MST, RESD
15	735		$\frac{I}{U}$	27.6	39	16	FT SI, DK R, MST, RESD
20	730		$\frac{I}{U}$	25.0	39	16	FT SI, DK R, MST, RESD
25	725						DISCONTINUED.
30	720						
35	715						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-451 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-452
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-17 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 713.7
PREPARED BY: MHD CHECKED BY: *BA*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL - V MST
5	710		└ Σ	17.1	NP	NP	SD SI, LT TN, V MST, ALL
							DISCONTINUED.
10	705						
15	700						
20	695						
25	690						
30	685						
35	680						
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-452 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-453
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-18 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 722.9
PREPARED BY: MHD CHECKED BY: PA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		UΣ	25.7	38	13	SD SI CL, R-BRN, MST, ALL
10	715		UΣ	26.8	38	13	CL SD SI, R-BRN, V MST, ALL
15	710						
20	705						DISCONTINUED.
25	700						
30	695						
35	690						
1''=5'			*Lab. Classif.				Added by Amendment 50

Figure 2.5-453 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-454
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-19 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 721.8
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		LO	21.8	34	14	SI CL, R-TN, MST, ALL
10	715		LO	25.6	34	14	SI CL, R-TN, V MST, ALL
15	710						W CL SD
20	705						DISCONTINUED.
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-454 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-455
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-20 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 722.5
PREPARED BY: MHD CHECKED BY: *BA*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		LO	18.6	34	14	CL SI, BRN, MST, ALL
10	715		LO	23.2	34	14	SI CL, BRN, V MST, ALL
15	710						DISCONTINUED.
20	705						
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-455 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-456
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-21 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 733.2
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	730		┐ 0	23.3	39	18	SI CL, R-BRN, MST, ALL
10	725		┐ 0	28.5	33	13	CL SI, DK R, MST, RESD
15	720		┐┐ 01Σ	26.2	42	16	SI CL, TN-BRN, MST, RESD
20	715						DISCONTINUED.
25	710						
30	705						
35	700						
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-456 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-457
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-22 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 747.8
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	745		II U Σ	32.6	64	31	FT SI, DK R, MST, RESD
10	740		U	31.2	39	16	FT SI, DK R, MST, RESD
15	735		U	26.9	39	16	FT SI, DK R, MST, RESD
20	730		U	24.3	39	16	FT SI, DK R, MST, RESD
25	725						DISCONTINUED.
30	720						
35	715						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-457 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-458
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-23 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 759.9
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	755		U Σ	22.8	42	16	SI CL, R, MST, ALL
10	750		U Σ	27.5	42	16	FT CL, R, MST, ALL
15	745		U Σ	29.4	42	16	FT CL, R, MST, ALL
20	740		U	23.2	39	16	FT SI, DK R, MST, RESD
25	735						DISCONTINUED.
30	730						
35	725						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-458 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-459
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-24 STATION:
DATE DRILLED: 6/7/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 757.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	755		CL	24.3	42	18	FT SI, R-BRN, MST, ALL
10	750		CL	28.4	42	18	FT SI, R-BRN, MST, ALL
15	745		CL	29.2	35	14	SI CL, R, V MST, ALL
20	740		CL	28.7	39	18	CL SI, GY-TN, MST, RESD
25	735						DISCONTINUED.
30	730						
35	725						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-459 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-460
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-25 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 714.2
PREPARED BY: MHD CHECKED BY: *BA*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710			26.2	18	1	TOPSOIL
			$\frac{1}{\Sigma}$				SD SI, GY, W, ALL

							DISCONTINUED.
10	705						
15	700						
20	695						
25	690						
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-460 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-461
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-26 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 716.0
PREPARED BY: MHD CHECKED BY: *PA*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	715			18.8	29	12	TOPSOIL
			U				SI SD CL, BRN, V MST, ALL
	710						W GY-IN SI SD
10							DISCONTINUED.
	705						
15							
	700						
20							
	695						
25							
	690						
30							
	685						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-461 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-462
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-27 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 720.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	720						TOPSOIL
5			10	19.9	29	12	SI CL, BRN, V MST, ALL
	715		11				
10			11	23.2	38	13	SI CL, BRN, V MST, ALL
	710						W SD CL
15							DISCONTINUED.
	705						
20							
	700						
25							
	695						
30							
	690						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-462 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-463
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-28 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 727.0
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	725						TOPSOIL
5			┌ 0	20.5	39	18	SI CL, TN-BRN, MST, ALL
	720						
10			┌ 0	20.9	35	14	SI CL, TN-BRN, MST, ALL
	715						
			┌ 0	25.0	35	14	CL SI, TN, V MST, ALL
15							W CL SI
	710						DISCONTINUED.
20							
	705						
25							
	700						
30							
	695						
35							
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-463 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-464
SHEET 1 OF 1

SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-29 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 733.1
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	730		0	21.4	42	18	SI CL, TN, MST, ALL
			0	28.3	39	18	FT CL, TN, MST, RESD
10	725		0	30.0	42	18	FT SI, TN, MST, RESD
15	720		0	25.9	42	18	FT SI, TN, MST, RESD
20	715						DISCONTINUED.
25	710						
30	705						
35	700						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-464 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-465
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-30 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 740.5
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	740						TOPSOIL
5	735		10	20.9	39	18	SI CL, TN, MST, ALL
10	730		10	19.1	39	18	CL SI, TN, MST, RESD
15	725		10	22.6	35	14	SI CL, TN, MST, RESD
20	720		10	21.5	42	18	SI CL, TN, MST, RESD
25	715						DISCONTINUED.
30	710						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-465 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-466
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-31 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 743.0 est.
PREPARED BY: MHD CHECKED BY: *BP*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740			22.2	42	16	SI CL, R, MST, ALL
10	735			21.7	42	16	SI CL, R, MST, ALL
15	730			21.2	39	18	SI CL, BRN, MST, RESD
20	725			20.1	43	20	SI CL, BRN, MST, RESD
25	720						DISCONTINUED.
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-466 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-467
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-32 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 713.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	710		J U	20.6	29	12	CL SI, TN, V MST, ALL
10	705						W CL SI
							DISCONTINUED.
15	700						
20	695						
25	690						
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-467 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-468
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-33 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 721.1
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	720						TOPSOIL
5			U I Σ	23.5	38	13	SI CL, R-BRN, MST, ALL
	715		U I Σ	26.1	38	13	SD SI CL, R, MST, ALL
10			U	27.6	34	14	SD CL SI, TN, V MST, ALL
	710						
15							W SD ST
	705						DISCONTINUED.
20							
	700						
25							
	695						
30							
	690						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-468 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-469
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-34 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 722.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	720		U I Σ	23.1	38	13	SI CL, R-BRN, MST, ALL
10	715		U I Σ	26.0	38	13	SI CL, R-BRN, MST, ALL
15	710		U	27.3	34	14	SI CL, R-TN, V MST, ALL
							W ST CL
20	705						DISCONTINUED.
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-469 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-470
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-35 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 724.6
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	720		$\frac{1}{0} \frac{1}{\Sigma}$	19.9	38	13	SI CL, BRN, MST, ALL
10	715		$\frac{1}{0} \frac{1}{\Sigma}$	26.1	38	13	SI CL, BRN-TN, MST, ALL
			$\frac{1}{0}$	26.3	34	14	SI CL, TN, V MST, ALL
15	710						W CL SD
							DISCONTINUED.
20	705						
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-470 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-471
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-36 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 728.2
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	725		CL	20.2	35	14	SI CL, TN-BRN, MST, ALL
10	720		CL	22.0	42	18	CL SI, R-BRN, MST, RESD
15	715		CL	21.5	42	18	CL SI, R-BRN, MST, RESD
20	710		CL	21.7	35	14	CL SD SI, TN, MST, RESD
25	705						DISCONTINUED.
30	700						
35	695						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-471 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-472
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-37 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 733.3
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	730		CL	21.0	35	14	SI CL, TN, MST, ALL
10	725		CL	23.0	42	18	SI CL, TN, MST, ALL
15	720		CL	23.7	39	18	CL SI, TN, MST, RESD
20	715						DISCONTINUED.
25	710						
30	705						
35	700						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-472 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-473
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-38 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 738.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							GV DBR & TOPSOIL
5	735		U I Σ	22.1	42	16	SI CL, TN, MST, ALL
10	730		U	21.9	42	18	CL SI, TN, MST, RESD
15	725		U	23.0	42	18	CL SI, TN, MST, RESD
20	720						DISCONTINUED.
25	715						
30	710						
35	705						
1''=5'		* Lab. Classif.					Added by Amendment 50

Figure 2.5-473 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-474
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-39 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 716.5
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	715						TOPSOIL
5			11 01Σ	20.7	38	13	SD SI CL, R-BRN, V MST, ALL
	710						
10			11 01Σ	19.2	38	13	SD SI CL, TR GV, R-BRN, V MST, ALL
	705						
15							W CL SD
	700						DISCONTINUED.
20							
	695						
25							
	690						
30							
	685						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-474 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-475
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-40 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 721.1
PREPARED BY: MHD CHECKED BY:BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720			24.6	38	13	TOPSOIL
			$\frac{1}{0} \frac{1}{\Sigma}$				SI CL, R-BRN, MST, ALL
	715		$\frac{1}{0} \frac{1}{\Sigma}$				SI CL, R-BRN, MST, ALL
10				24.8	38	13	SI CL, R-BRN, MST, ALL
	710						W ST CL
							DISCONTINUED.
15							
	705						
20							
	700						
25							
	695						
30							
	690						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-475 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-476
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-41 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 720.6
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	720						TOPSOIL
5			U1Σ	25.4	38	13	SI CL, R-BRN, MST, ALL
	715		U1Σ	27.4	38	13	SI CL, R-BRN, V MST, ALL
10							W ST CL
	710						DISCONTINUED.
15							
	705						
20							
	700						
25							
	695						
30							
	690						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-476 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-477
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-42 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 723.0
PREPARED BY: MHD CHECKED BY: EA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		01Σ	22.3	42	16	SI CL, BRN, MST, ALL
10	715		0	19.7	42	18	CL SI, R-TN, MST, ALL
15	710		0	24.7	42	18	CL SI, TN, V MST, ALL
							W CL SI
20	705						DISCONTINUED.
25	700						
30	695						
35	690						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-477 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-478
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-43 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 730.6
PREPARED BY: MHD CHECKED BY: PA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730						
5	725		01Σ	21.8	42	16	SI CL, R-BRN, MST, ALL
10	720		01Σ	21.4	42	16	CL SI, TN-BRN, MST, RESD
15	715		0	20.0	33	13	CL SI, DK R, MST, RESD
20	710						DISCONTINUED.
25	705						
30	700						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-478 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-479
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-44 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 736.1
PREPARED BY: MHD CHECKED BY: PA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	735						ROADBED GRAVEL
5			U	18.3	39	18	SI CL, TN-BRN, MST, ALL
	730		U1Σ	26.5	42	16	SI CL, R, MST, ALL
10			U	23.6	42	18	CL SI, TN, MST, ALL
	725						
15			U1Σ	22.8	42	16	CL SI, TN, MST, ALL
	720						
20							SD & GV
	715						DISCONTINUED.
25							
	710						
30							
	705						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-479 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-480
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-45 STATION:
DATE DRILLED: 6/8/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 736.4
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	735						GRAVEL - SPOILED SOILS
5			LOG	23.4	42	18	SI CL, R, MST, ALL
	730		LOG				
10			LOG	21.4	42	18	CL SI, R, MST, ALL
	725		LOG				
15			LOG	24.1	42	18	CL SI, TN, MST, RESD
	720		LOG				
20				22.7	42	18	CL SI, TN, MST, RESD
	715						DISCONTINUED.
25							
	710						
30							
	705						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-480 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-481
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-46 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 729.0 est
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	725		U	22.5	33	13	SI CL, BRN, MST, ALL
10	720		U	23.2	42	18	CL SI, R-BRN, MST, ALL
15	715		U	25.0	42	18	CL SI, R-BRN, MST, ALL
20	710		U	24.0	42	18	CL SI, R-BRN, MST, ALL
25	705						DISCONTINUED.
30	700						
35	695						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-481 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-482
SHEET 1 OF 1

SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-47 STATION:
DATE DRILLED: 6/10/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 721.0 est.
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720			21.2	38	13	TOPSOIL
	U Σ		SI CL, R-BRN, MST, ALL				
	715		U	28.0	29	12	SI CL, R-BRN, MST, ALL
	710						W SI CL (NO SAMPLE)
15	705					DISCONTINUED.	
20	700						
25	695						
30	690						
35							Added by Amendment 50
1''=5'							

Figure 2.5-482 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-483
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-48 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 713.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	710			19.4	29	12	TOPSOIL
			J 0				SI CL, BRN-TN, MST, ALL
							SD SI CL, TN, W
10	705						DISCONTINUED.
15	700						
20	695						
25	690						
30	685						
35	680						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-483 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-484
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-49 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 729.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	725		CL	19.6	43	20	SI CL, BRN, MST, ALL
10	720		CL	23.4	33	13	SI CL, DK BRN-TN, MST, ALL
15	715		CL	22.9	42	16	SI CL, R, MST, ALL
20	710		CL	22.7	42	18	CL SI, TN-BRN, MST, ALL
25	705						W CL SI
30	700						DISCONTINUED.
35	695						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-484 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-485
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-50 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 730.0
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730						
5	725		LO	18.4	43	20	SI CL, TR FN GV, TN-BRN, MST, ALL
10	720		LO	18.6	39	18	CL SI, TN, MST, RESD
15	715		LO	19.2	35	14	CL SI, TN, V MST, RESD
							W SI
20	710						DISCONTINUED.
25	705						
30	700						
35	695						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-485 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-486
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-51 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 739.8
PREPARED BY: MHD CHECKED BY: *RA*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							ROADFILL
5	735		$\frac{1}{0}$	21.3	39	18	SI CL, R-BRN, MST, ALL
10	730		$\frac{1}{0} \frac{1}{\Sigma}$	22.9	42	16	SI CL, R, MST, ALL
15	725		$\frac{1}{0} \frac{1}{\Sigma}$	24.2	42	16	SI CL, R, MST, ALL
20	720						DISCONTINUED.
25	715						
30	710						
35	705						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-486 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-487
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-52 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 743.7
PREPARED BY: MHD CHECKED BY: BA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							RANDOM ROADFILL
5	740		U I Σ	23.1	42	16	SI CL, R-BRN, MST, ALL
10	735		U I Σ	22.7	42	16	SI CL, R-BRN, MST, ALL
15	730		U	21.9	39	18	SI CL, R-BRN, MST, ALL
20	725						DISCONTINUED.
25	720						
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-487 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-488
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-53 STATION:
DATE DRILLED: 6/9/83 TO

FEATURE: BORROW AREA 2C
RANGE: SURFACE EL: 750.6
PREPARED BY: MHD CHECKED BY: PJA

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	750						RANDOM ROADFILL
5	745		U I Σ	23.5	42	16	SI CL, R-BRN, MST, ALL
10	740		U I Σ	23.6	42	16	SI CL, R, MST, ALL
15	735		U I Σ	37.1	42	16	SI CL, R V MST, ALL
20	730						W ST CL
							DISCONTINUED.
25	725						
30	720						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-488 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-489
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-56 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 769.0 est
PREPARED BY: MHD CHECKED BY: *BBE*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							CUT SURFACE; SP FL
5	765		┐ └┐ 0	23.2	44	19	FT CL, BRN, MST, RESD
10	760		┐ └┐ 01Σ	24.2	42	16	FT CL, BRN, MST, RESD
15	755		┐ └┐ 0	26.7	48	21	FT CL, BRN, MST, RESD
20	750						
25	745						
30	740						
35	735						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-489 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-490
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-57 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 774.1
PREPARED BY: MHD CHECKED BY: *CBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	770		U	11.5	33	11	CUT SURFACE CL SI, BRN, MST, RESD
10	765		U	20.4	44	19	CL SI, BRN, MST, RESD
15	760		U Σ	20.6	40	14	CL SI, BRN, MST, RESD
20	755		U Σ	24.9	36	12	CL SI, BRN, V MST, RESD
25	750						DISCONTINUED.
30	745						
35	740						
1' '=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-490 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-491
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-58 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 798.0
PREPARED BY: MHD CHECKED BY: *QZ*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							CUT SURFACE
5	795		$\frac{I}{O} \frac{I}{\Sigma}$	26.6	53	24	CL SI, BRN, MST, RESD
10	790		$\frac{I}{O} \frac{I}{\Sigma}$	21.3	36	12	CL SI, BRN, MST, RESD
15	785		$\frac{I}{O} \frac{I}{\Sigma}$	26.3	40	14	CL SI, BRN, MST, RESD
20	780		$\frac{I}{O}$	22.6	39	17	CL SI, TN-BRN, MST, RESD
25	775						
30	770						
35	765						
1' = 5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-491 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-492
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-59 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 755.0
PREPARED BY: MHD CHECKED BY: *CRF*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	755						
			CL	12.7	33	11	SI CL, BRN, MST, RESD
5	750		CL	21.4	45	22	SI CL, BRN, MST, RESD
10	745		CL	18.8	48	21	SI CL, TN, TR LS GV, MST, RESD
15	740		CL	22.2	42	16	CL SI, GRN-TN, MST, RESD
20	735						DISCONTINUED.
25	730						
30	725						
35	720						Added by Amendment 50
1''=5'			* Lab. Classif.				

Figure 2.5-492 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-493
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-60 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 748.2
PREPARED BY: MHD CHECKED BY: *DBL*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							(PREVIOUSLY CUT SURFACE)
5	745		$\frac{1}{0}$	17.5	44	20	SI CL, TN, MST, TERRACE ALL
	740		$\frac{1}{\Sigma}$	16.1	37	11	GV SI, DK BRN, MST, TERRACE ALL
10							
	735		$\frac{\Sigma 0}{0}$	17.9	35	11	SI CL, BRN, TR GV
15							
	730		$\frac{1}{0} \frac{1}{\Sigma}$	20.1	40	14	CL SI, R-BRN, MST, RESD
20							DISCONTINUED.
	725						
25							
	720						
30							
	715						
35							
1''=5'							Added by Amendment 50

* Lab. Classif.

Figure 2.5-493 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-494
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-61 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 745.0 est
PREPARED BY: MHD CHECKED BY: *MLG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	745						CUT SURFACE
5	740		$\Sigma \frac{U}{O}$	15.5	35	11	GV CL, DK BRN, MST, TERRACE ALL
10	735		$\frac{U}{O} \Sigma$	20.3	40	14	GV CL, DK BRN, MST, TERRACE ALL
15	730						DISCONTINUED.
20	725						
25	720						
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-494 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-495
SHEET 1 OF 1

Added by Amendment 50

PROJECT: WATTS BAR N.P.
BORING: PAH-62 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 731.0 es
PREPARED BY: MHD CHECKED BY: *DE*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	730		$\frac{I}{U} \frac{I}{\Sigma}$	23.1	53	24	CUT SURFACE SI CL, BRN, MST, RESD
	725		$\frac{I}{U} \frac{I}{\Sigma}$	23.3	53	24	CL SI, BRN, MST, RESD
			$\frac{I}{U} \frac{I}{\Sigma}$	22.2	53	24	CL SI, BRN, MST, RESD
10	720						REFUSAL. BEDROCK.
15	715						
20	710						
25	705						
30	700						
35							
1''=5'		*Lab. Classif.					

Figure 2.5-495 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-496
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-63 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 730.8
PREPARED BY: MHD CHECKED BY: *DEK*

DEPTH ft.	EL	SPT (CN)	* LOG	W	LL	PI	FIELD DESCRIPTION
	730		$\Sigma \begin{smallmatrix} 10 \\ 00 \end{smallmatrix}$	16.4	35	11	CUT SURFACE CL SI, BRN, MST, RESD
5	725		$\Sigma \begin{smallmatrix} 11 \\ 01 \end{smallmatrix}$	24.6	53	24	FT CL, LT BRN, MST, RESD
10	720		$\Sigma \begin{smallmatrix} 1 \\ 1 \end{smallmatrix}$	18.0	37	11	CL SI, R-BRN, MST, RESD
15	715		$\Sigma \begin{smallmatrix} 1 \\ 1 \end{smallmatrix}$	16.7	37	11	CL SI, R-BRN, MST, RESD
20	710						DISCONTINUED.
25	705						
30	700						
35							Added by Amendment 50
1''=5'			* Lab. Classif.				

Figure 2.5-496 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-497
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-64 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 744.1
PREPARED BY: MHD CHECKED BY: *MBP*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	740		Σ	19.0	37	11	SI CL, BRN, D, RESD
10	735		Σ	23.6	37	11	SI CL, BRN, MST, RESD
15	730		Σ	23.3	37	11	SI CL, BRN, MST, RESD
							V MST W/SH & W/BENTANITE
							DISCONTINUED.
20	725						
25	720						
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-497 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-498
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-65 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 766.0
PREPARED BY: MHD CHECKED BY: *MBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	765		$\frac{1}{0} \frac{1}{1} \frac{1}{\Sigma}$	14.3	40	14	SI CL, R-BRN, MST, RESD
10	760		$\frac{1}{\Sigma}$	19.8	67	29	SI CL, R-BRN, MST, RESD
15	755		$\frac{1}{0} \frac{1}{1} \frac{1}{\Sigma}$	15.8	40	14	SI CL, R-BRN, MST, RESD, TR GV
20	750		$\frac{1}{0}$	15.7	44	19	SI CL, TR GV, R-BRN, MST, RESD
25	745						DISCONTINUED.
30	740						
35	735						
1' '=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-498 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-499
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-66 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 776.9
PREPARED BY: MHD CHECKED BY: *WBE*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							CUT SURFACE
5	775		U O Σ	13.6	40	14	SI CL, R-BRN, MST, RESD
	770		U O Σ	19.1	40	14	SI CL, R-BRN, MST, RESD
10							
	765		U O Σ	16.1	37	12	CL SI, TR GV, BRN, MST, RESD
15							
	760		U O Σ	17.5	37	12	CL SI, TR GV, BRN, MST, RESD
20							DISCONTINUED.
	755						
25							
	750						
30							
	745						
35							
1' = 5'							

* Lab. Classif.

Added by Amendment 50

Figure 2.5-499 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-500
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-67 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 815.0
PREPARED BY: MHD CHECKED BY: *MBE*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	815						
			I Σ	29.2	67	29	FT CL, R, MST, RESD
5	810						
			I Σ	32.7	67	29	FT CL, R, MST, RESD
10	805						
			U O	24.7	44	20	CL SI, TN, MST, RESD
15	800						
			U O	22.1	44	20	CL SI, TN, MST, RESD
20	795						DISCONTINUED.
25	790						
30	785						
35	780						Added by Amendment 50
1''=5'		* Lab. Classif.					

Figure 2.5-500 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-501
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-68 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 824.0
PREPARED BY: MHD CHECKED BY: *WLG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	820		┐ └	12.9	35	15	CUT SURFACE CL SI, TN, MST, RESD
10	815		┐┐ └└	19.5	53	24	CL SI, YEL-TN, MST, RESD
15	810		┐ └	20.6	39	17	CL SI, TN, MST, RESD
20	805		┐┐ └└	14.5	36	12	CL SI, TN, MST, RESD
25	800						DISCONTINUED.
30	795						
35	790						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-501 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-502
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-69 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 802.2
PREPARED BY: MHD CHECKED BY: *[Signature]*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	800		$\begin{matrix} \text{J} \\ \text{U} \end{matrix}$	11.2	35	15	CUT SURFACE SI CL, R-BRN, D, RESD
5			$\begin{matrix} \text{J} \\ \text{U} \end{matrix}$	21.3	44	19	SI CL, TR GV, D, RESD
	795						
10			$\begin{matrix} \text{I} & \text{I} \\ \text{U} & \Sigma \end{matrix}$	20.1	53	24	CL SI, MST, RESD
	790						
15			$\begin{matrix} \text{J} & \text{J} \\ \text{U} & \Sigma \end{matrix}$	18.3	36	12	CL SI, MST, RESD
	785						
20							DISCONTINUED.
	780						
25							
	775						
30							
	770						
35							
1''=5'							
		* Lab. Classif.					Added by Amendment 50

Figure 2.5-502 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-503
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-70 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 772.0
PREPARED BY: MHD CHECKED BY: JBL

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	770		U	17.3	33	11	CUT SURFACE SI CL, R-BRN, MST, RESD
10	765		UI UΣ	24.7	53	24	SI CL, R-BRN, MST, RESD
15	760		U	24.8	44	20	SI CL, R-BRN-WHT, MST, RESD
20	755		U	24.4	44	20	SI CL, R-BRN-WHT, MST, RESD
25	750						DISCONTINUED.
30	745						
35	740						
1' = 5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-503 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-504
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-71 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 742.0
PREPARED BY: MHD CHECKED BY: *MB*

DEPTH ft.	EL	SPT (CN)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740		U	8.9	33	11	CUT SURFACE CL SI, BRN, D, RESD
10	735		U	13.4	35	15	CL SI, BRN, MST, RESD
15	730		U Σ	17.2	37	12	CL SI, BRN, MST, RESD
20	725		U	20.3	45	22	SI CL, BRN, MST, RESD
25	720						DISCONTINUED.
30	715						
35	710						
1' '=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-504 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-505
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-72 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 725.8
PREPARED BY: MHD CHECKED BY: *[Signature]*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	725			15.8	39	17	FL SP
	U		CL SI, BRN, MST, RESD				
	U		CL SI, LT BRN-BRN, MST, RESD				
	U		CL SI, BRN, MST,				
10	720						
15	715			26.4	45	22	
	U						
	U						
	U						
20	710						
25	705						
	U						
	U						
	U						
30	700						
35	695						
	U						
	U						
	U						
1''=5'							

Figure 2.5-505 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-506
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-73 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 721.0
PREPARED BY: MHD CHECKED BY: *MB*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	720		U I Σ	23.0	40	14	CUT SURFACE CL SI, BRN, MST, RESD
	715		M L	19.0	22	2	CL SI, GY, V MST, RESD
			U Σ	18.7	22	2	SI CL, BRN, MST, RESD
10			U I Σ	17.4	37	12	SI CL, DK BRN, MST, RESD
	710						DISCONTINUED.
15							
	705						
20							
	700						
25							
	695						
30							
	690						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-506 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-507
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-74 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 736.5
PREPARED BY: MHD CHECKED BY: *[Signature]*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	735		I O I Σ	34.4	53	24	CUT SURFACE CL SI, TN, V MST, RESD
5	730		U	39.6	48	21	CL SI, TN, V MST, RESD
10	725		U	40.4	48	21	CL SI, TN, V MST, RESD
15	720		U Σ	26.8	22	2	SI CL, (BENT), GRN-TN, V MST, RESD
20							DISCONTINUED.
25	715						
30	710						
35	705						

1''=5'

*Lab. Classif.

Added by Amendment 50

Figure 2.5-507 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-508
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-75 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORKUW AREA EXT 2C
RANGE: SURFACE EL: 742.3
PREPARED BY: MHD CHECKED BY: J.S.B.

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740		U	8.7	34	13	CUT SURFACE SL CI, TN, D, RESD
10	735		U I Σ	14.5	37	12	CL SI, TN, MST, RESD
15	730		U I Σ	24.2	37	12	CL SI, TN, MST, RESD
20	725		U I Σ	24.3	42	16	
25	720						DISCONTINUED.
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-508 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-509
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-76 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 787.0
PREPARED BY: MHD CHECKED BY: *lbg*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	785		J U	16.6	34	13	CUT SURFACE SI CL, TR GV, D, RESD
5							
	780		J U J Σ	16.2	36	12	CL SI, MST, RESD
10							
	775		J U	17.8	30	11	CL SI, MST, BRN, RESD
15							
	770		J U	16.8	30	11	CL SI, MST, BRN, RESD
20							DISCONTINUED.
	765						
25							
	760						
30							
	755						
35							
1' = 5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-509 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-510
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-77 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 836.0
PREPARED BY: MHD CHECKED BY: *MBG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	835		U	20.1	34	13	CUT SURFACE SI CL, TN, MST, RESD
10	830		U	16.9	33	12	SI CL, PK-TN, MST, RESD
15	825		U Σ	12.1	36	12	SI CL, TN, MST, RESD, TR GV
20	820		U Σ	14.6	36	12	SI CL, TN, MST, RESD
25	815						DISCONTINUED.
30	810						
35	805						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-510 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-511
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-78 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 882.3
PREPARED BY: MHD CHECKED BY: *CB*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	880		US	12.4	40	16	CUT SURFACE CL SI, TN, MST, RESD
10	875		US	10.3	40	16	CL SI, TN, MST, RESD
15	870		UIS	9.9	36	12	CL SI, TN, TR GV, MST, RESD
20	865		UIS	8.6	36	12	CL SI, TN, TR GV, MST, RESD
25	860						DISCONTINUED.
30	855						
35	850						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-511 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-512
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-79 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 777.0
PREPARED BY: MHD CHECKED BY: *CEG*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
							TOPSOIL
5	775		CL	15.5	33	12	CL SI, BRN, MST, RESD
10	770		CL	14.6	34	12	CL SI, TR GV, BRN, MST, RESD
15	765		CL	16.5	34	12	CL SI, TR GV, R-BRN, MST, RESD
20	760		CL	16.7	34	12	CL SI, BRN, MST, RESD
25	755						DISCONTINUED.
30	750						
35	745						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-512 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-513
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-80 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 744.0
PREPARED BY: MHD CHECKED BY: *CRB*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	740		U	13.8	34	13	CUT SURFACE CL SI, TN, MST, RESD
10	735		U	22.6	39	17	CL SI, TN, MST, RESD
15	730		U	21.9	44	20	CL SI, TN, MST, RESD
20	725		U	21.4	44	20	CL SI, TN, MST, RESD
25	720						DISCONTINUED.
30	715						
35	710						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-513 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-514
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-81 STATION:
DATE DRILLED: 8/24/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 802.0
PREPARED BY: MHD CHECKED BY: *PBG*

DEPTH ft.	EL	SPT (CN)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	800		CL	7.8	33	12	CUT SURFACE CL SI, TR GV, TN, MST, RESD
	795		CL	11.1	30	11	CL SI, TR GV, TN, MST, RESD
10			CL	14.2	30	11	CL SI, TR LS GV, R-BRN, MST, RESD
	790		CL	12.3	30	11	CL SI, TR LS GV, R-BRN, MST, RESD
15							
	785						DISCONTINUED.
20							
	780						
25							
	775						
30							
	770						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-514 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-515
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-82 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 884.0
PREPARED BY: MHD CHECKED BY: *IBj*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	880		U S	11.4	40	16	CUT SURFACE CL SI, D, RESD
			U S	11.6	40	16	CL SI, D, RESD
10	875		U S	12.8	40	16	CL SI, TR GV, D, RESD
15	870		U S	12.4	40	16	CL SI, D, RESD
20	865	DISCONTINUED.					
25	860						
30	855						
35	850						
1''=5'	* Lab. Classif.		Added by Amendment 50				

Figure 2.5-515 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-516
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA EXT 2C

BORING: PAH-83 STATION: RANGE: SURFACE EL: 872.0

DATE DRILLED: TO 8/25/83 PREPARED BY: MHD CHECKED BY: *UB*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	870		LO	16.7	35	15	CUT SURFACE CL SI, R-BRN, D, RESD
5			ΣS	10.1	22	1	CL SI, TR GV, TN, MST, RESD
	865						
10			LO	10.2	33	12	CL SI, TR GV, BRN, MST, RESD
	860						
15			LO	8.1	30	11	CL SI, GV, BRN
	855						
20							DISCONTINUED.
	850						
25							
	845						
30							
	840						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-516 Soil Profile

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

**SOIL PROFILE
FIGURE 2.5-517
SHEET 1 OF 1**

PROJECT: WATTS BAR N.P.
BORING: PAH-84 STATION:
DATE DRILLED: TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 846.0
33 PREPARED BY: MHD CHECKED BY: *MB*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
	845		U ¹ Σ	20.3	36	12	CUT SURFACE CL SI, BRN, MST, RESD
5	840		U	21.4	33	11	CL SI, R-BRN, MST, RESD
			U	22.5	34	12	SI CL, BRN, MST, RESD
10	835		U	21.0	44	19	SI CL, BRN, MST, RESD
15	830		U	19.7	34	12	SI CL, R-BRN, MST, RESD
20	825						DISCONTINUED.
25							
30	820						
	815						
35							
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-517 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-518
SHEET 1 OF 1

PROJECT: WATTS BAR N.P. FEATURE: BORROW AREA EXT 2C
BORING: PAH-85 STATION: RANGE: SURFACE EL: 834.0
DATE DRILLED: TO 8/25/83 PREPARED BY: M... CHECKED BY: *036*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	830		$\frac{1}{0}$	18.8	34	13	CUT SURFACE CL SI, TN, MST, RESD
10	825		$\frac{1}{0} \mid \frac{1}{\Sigma}$	12.3	36	12	CL SI, TN, MST, RESD
15	820		$\frac{1}{0} \mid \frac{1}{\Sigma}$	13.0	36	12	CL SI, TN, MST, RESD
20	815		$\frac{1}{0}$	13.4	33	12	CL SI, YEL-TN, MST, RESD
25	810						DISCONTINUED.
30	805						
35	800						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-518 Soil Profile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SOIL PROFILE
FIGURE 2.5-519
SHEET 1 OF 1

PROJECT: WATTS BAR N.P.
BORING: PAH-86 STATION:
DATE DRILLED: 8/25/83 TO

FEATURE: BORROW AREA EXT 2C
RANGE: SURFACE EL: 802.0
PREPARED BY: MHD CHECKED BY: *llg*

DEPTH ft.	EL	SPT (N)	* LOG	W	LL	PI	FIELD DESCRIPTION
5	800		U Σ	13.6	34	13	CUT SURFACE CL SI, TN, MST, RESD
10	795		U Σ	18.5	36	12	CL SI, TN, MST, RESD
15	790		U Σ	18.7	36	12	CL SI, TN, MST, RESD
20	785		U Σ	16.4	36	12	CL SI, TN, MST, RESD
25	780						DISCONTINUED.
30	775						
35	770						
1''=5'			* Lab. Classif.				Added by Amendment 50

Figure 2.5-519 Soil Profile

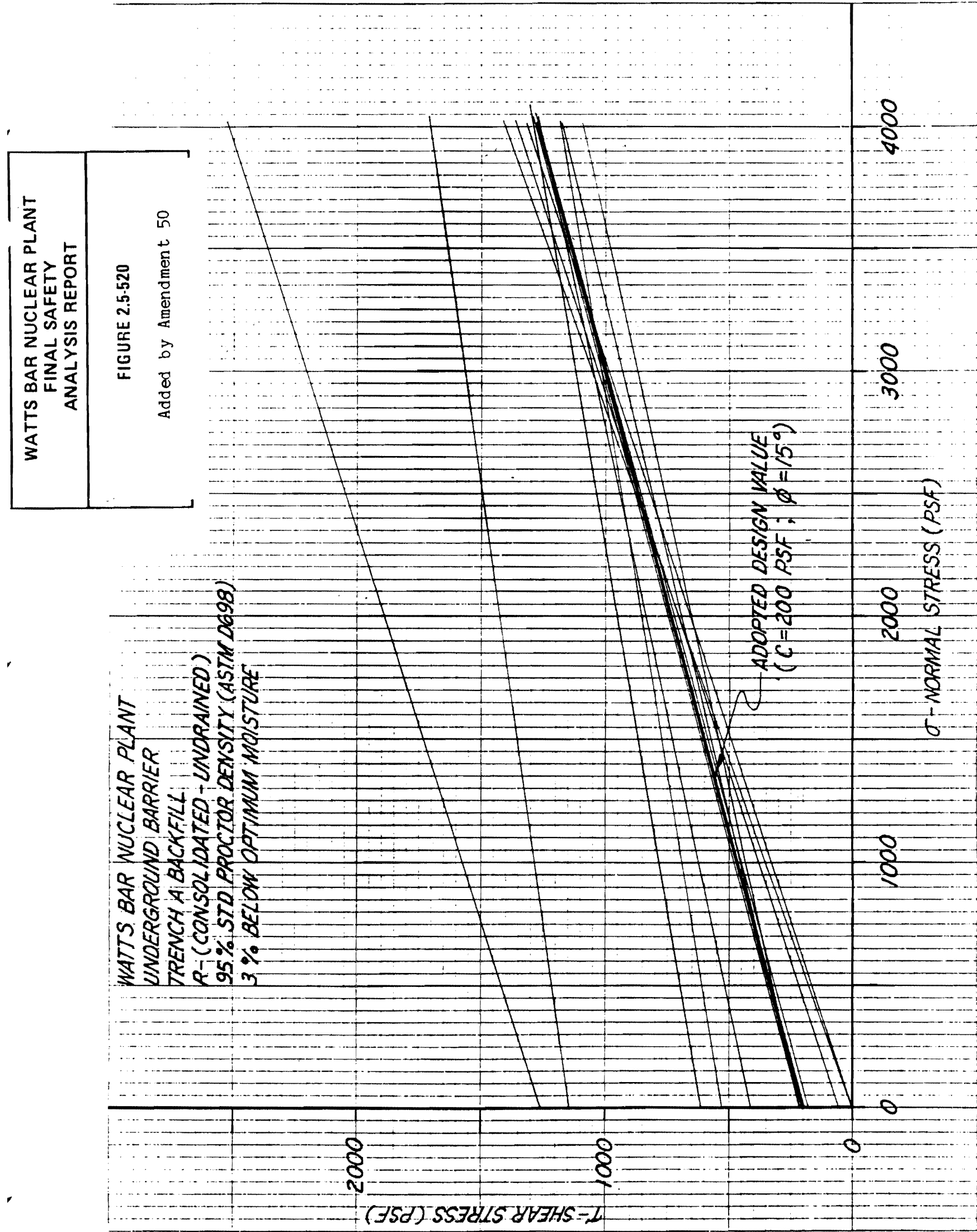


Figure 2.5-520 Watts Bar Nuclear Plant Underground Barrier Trench A Backfill R - (Consolidated - Undrained) 95% STD Proctor Density (ASTM D698) 3% Below Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

FIGURE 2.5-521

Added by Amendment 50

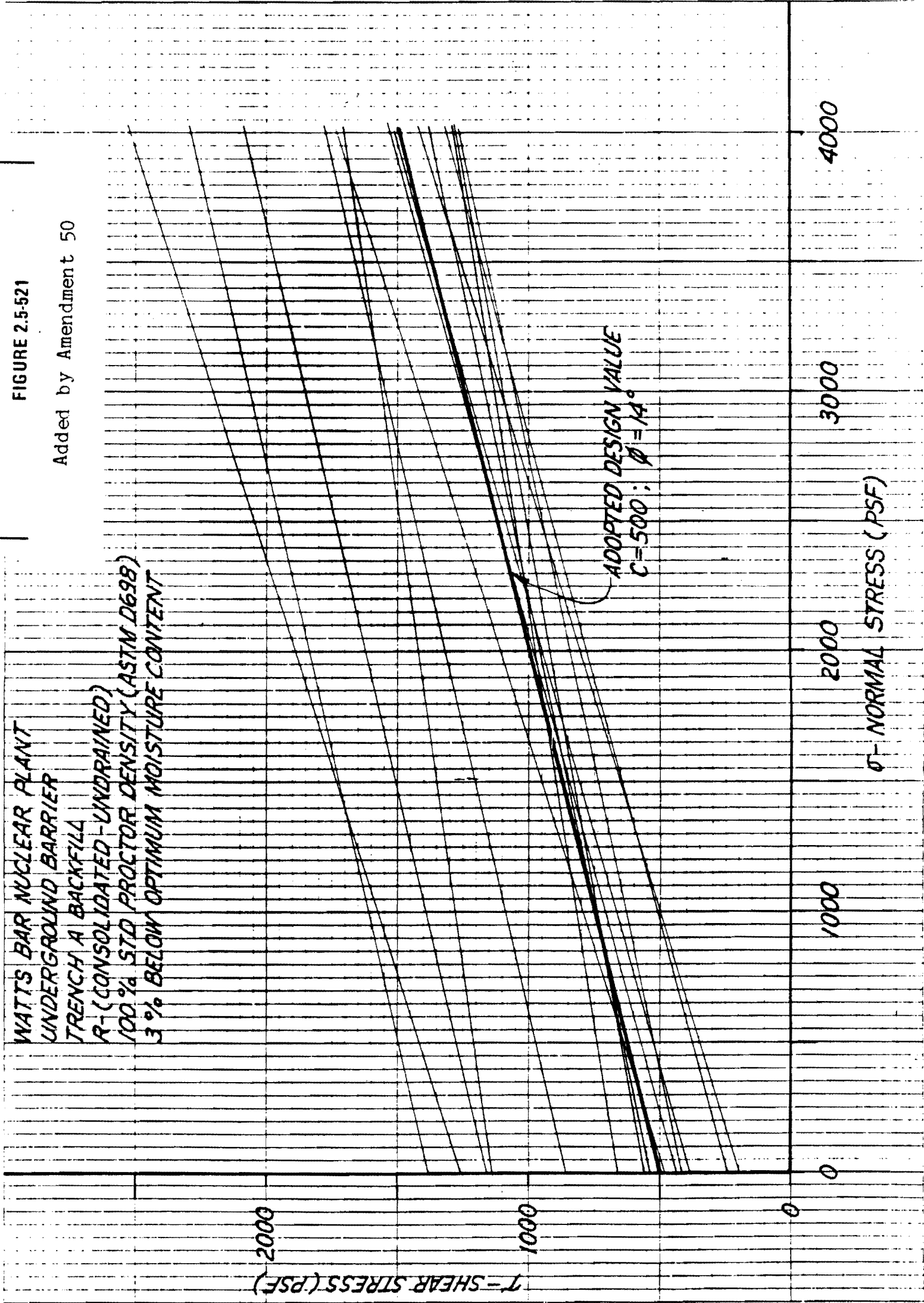


Figure 2.5-521 Watts Bar Nuclear Plant Underground Barrier Trench A Backfill R (Consolidated -Undrained) 100% STD Proctor Density (ASTM D698) 3% Below Optimum Moisture Content

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

FIGURE 2.5-522

Added by Amendment 50

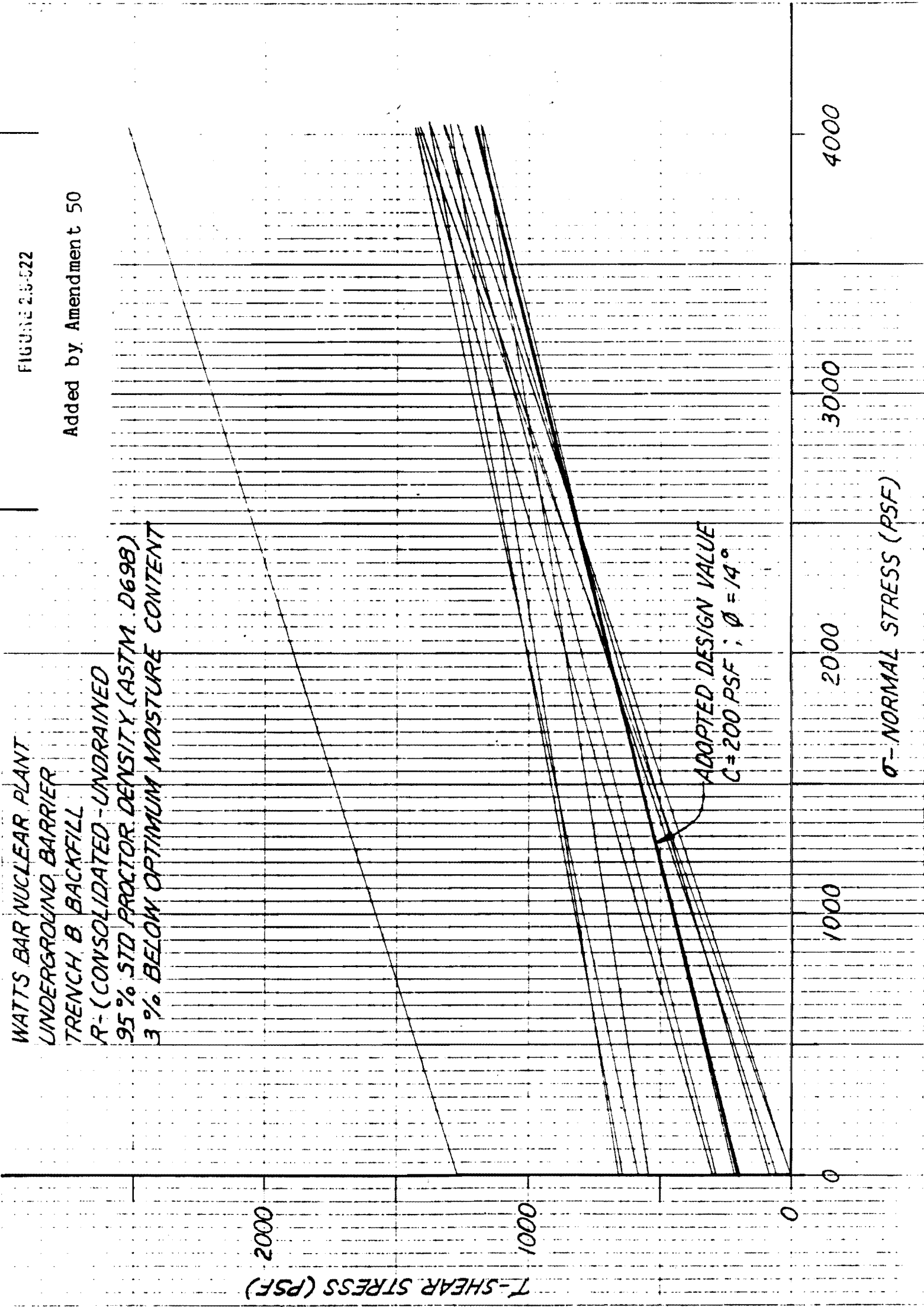
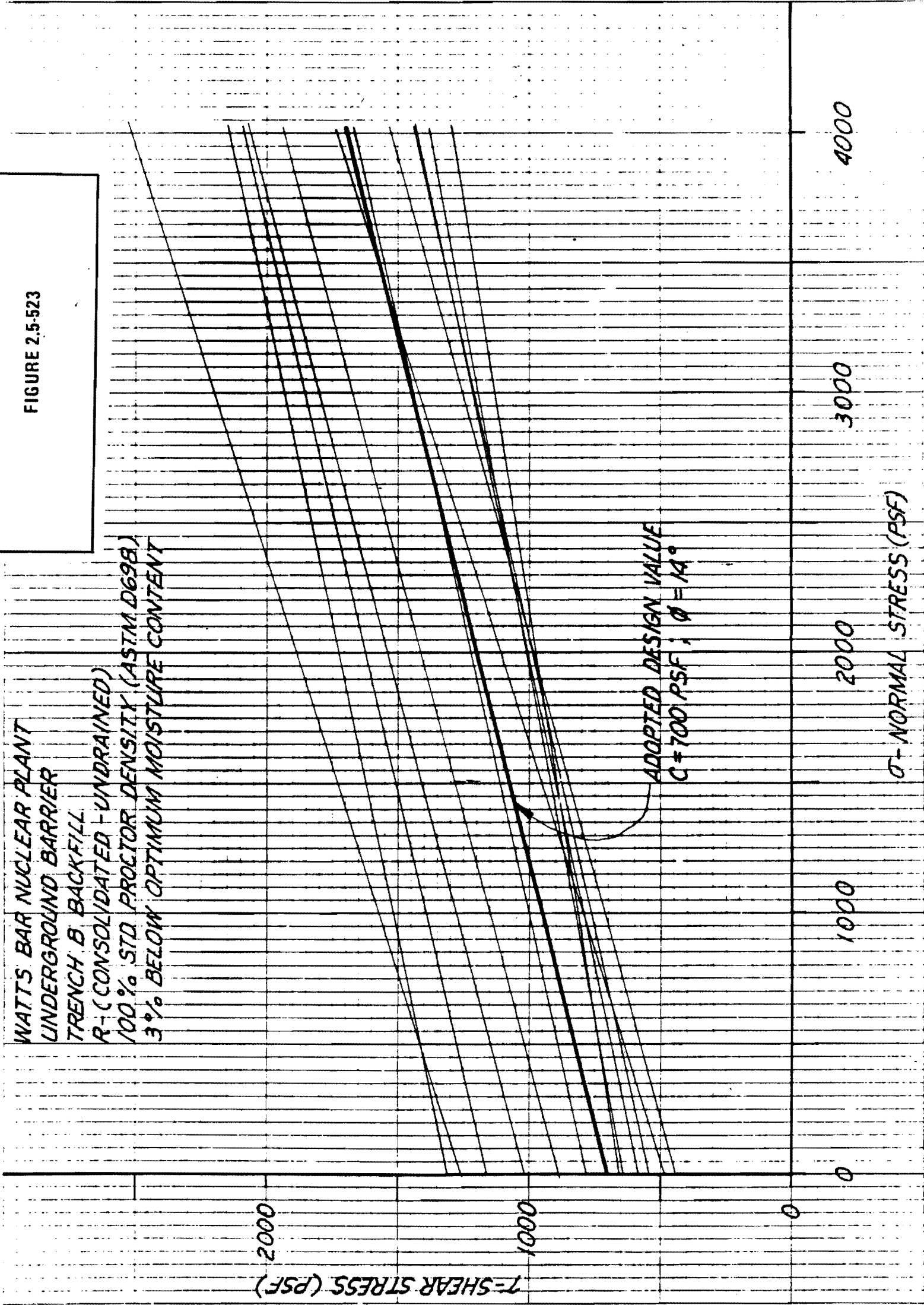


Figure 2.5-522 Watts Bar Nuclear Plant Underground Barrier Trench B Backfill R (Consolidated - Undrained) 95% STD Proctor Density (ASTM D698) 3% Below Optimum Moisture Content

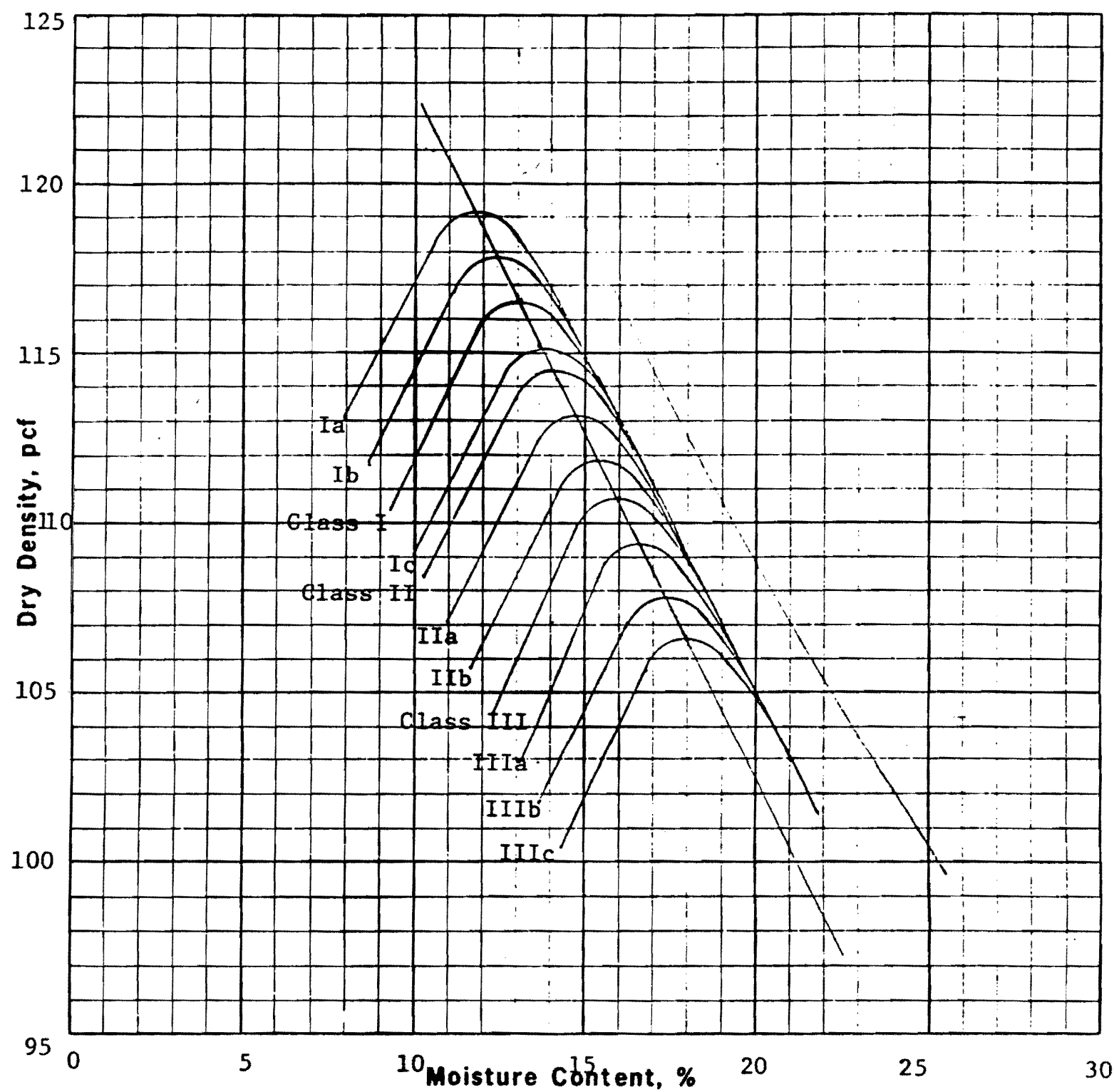
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

FIGURE 2.5-523



Added by Amendment 50

Figure 2.5-523 Watts Bar Nuclear Plant Underground Barrier Trench B Backfill R (Consolidated -Undrained) 100% STD Proctor Density (ASTM D698) 3% Below Optimum Moisture Content



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-SM-SC	0	70	15	15	2.66	24	5	13.1	116.6
II-SC	0	51	24	25	2.69	28	11	14.1	114.4
III-CL	0	40	29	31	2.69	34	15	15.9	110.8

Plus No. 4 Specific Gravity, S S D	---
Plus No. 4 Absorption, %	--

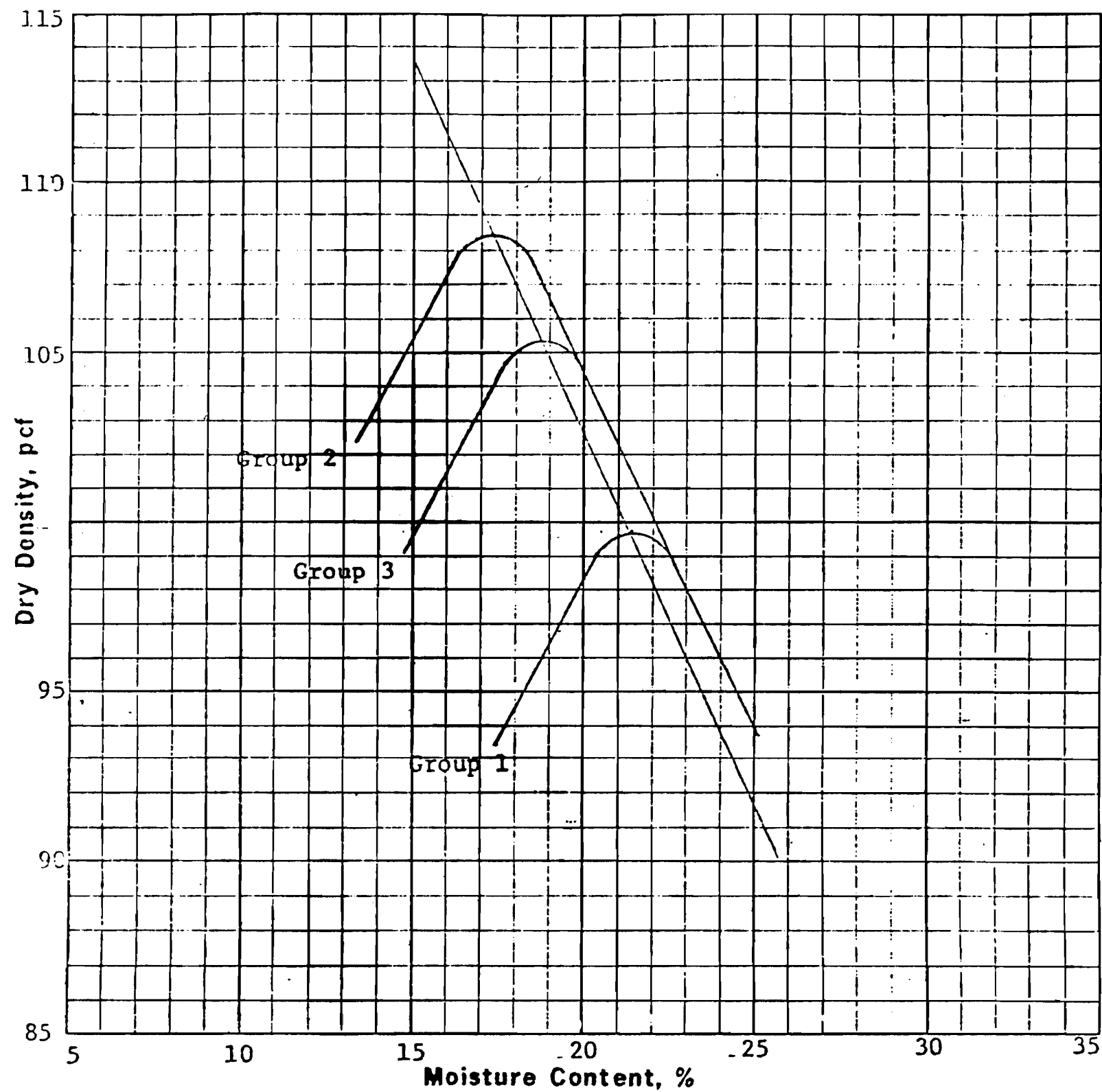
Remarks:

Added by Amendment 50

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
TRENCH A, BORROW
FIGURE 2.5-524

Figure 2.5-524 ERCW Liquefaction Trench A Borrow



Soil Group	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
1-ML	0	16	44	.40	2.73	47	18	21.4	99.7
2-SM	0	54	31	15	2.72	26	1	17.3	108.4
3-ML	0	43	35	22	2.73	34	8	18.8	105.3

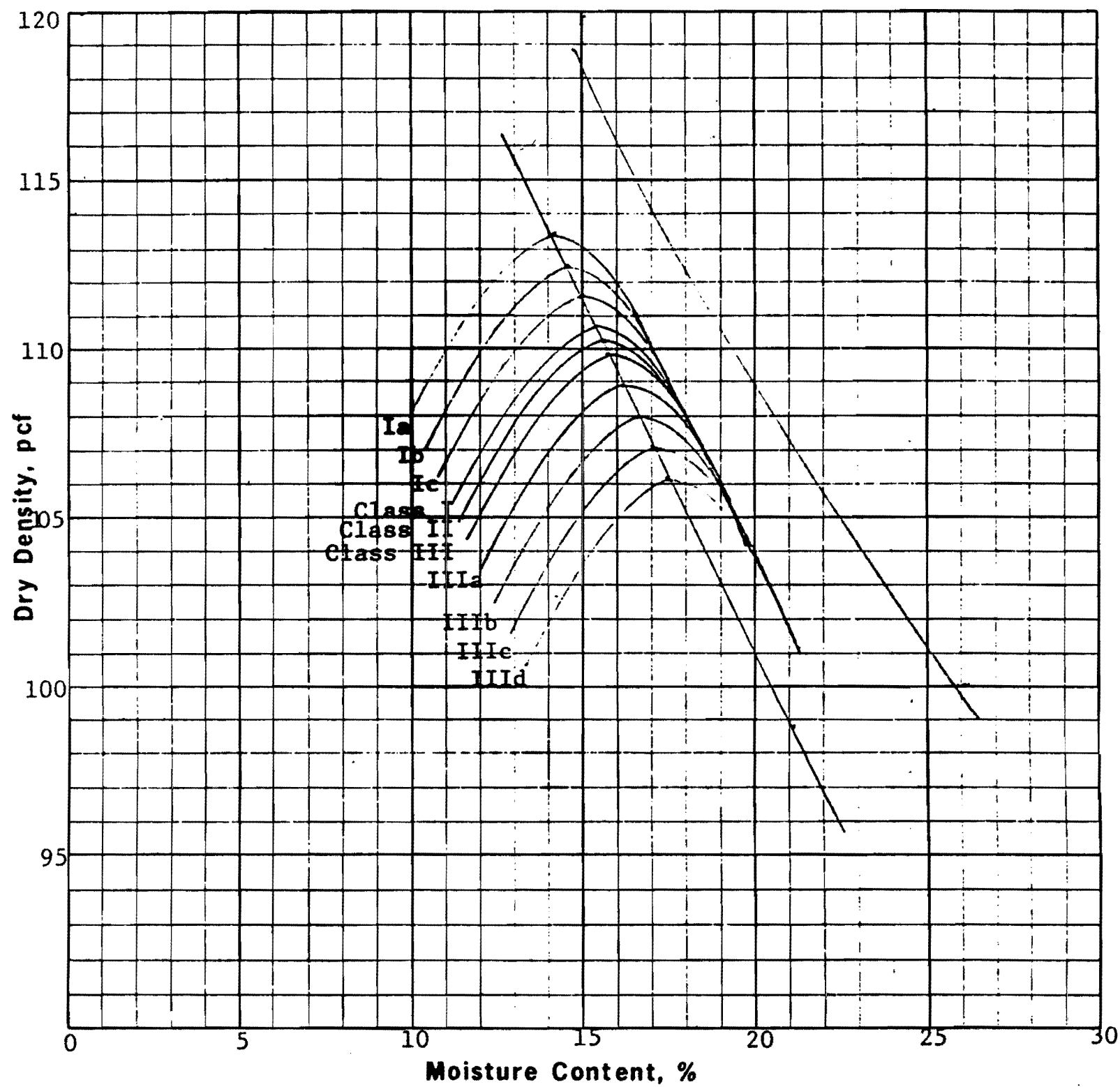
Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

Remarks:
Group 1 Silty sand fraction, upper
Group 2 Sand fraction, lower
Group 3 Composite, stockpile

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION, TRENCH A
SUPPLEMENTAL BORROW
FIGURE 2.5-525
Added by Amendment 50

Figure 2.5-525 ERCW Liquefaction Trench A Supplemental Borrow



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-SM	0	66	22	12	2.65	NP	NP	15.3	110.7
II-SM-SC	0	55	24	21	2.67	28	6	15.6	110.3
III-CL	0	43	28	29	2.69	30	11	15.8	109.8

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

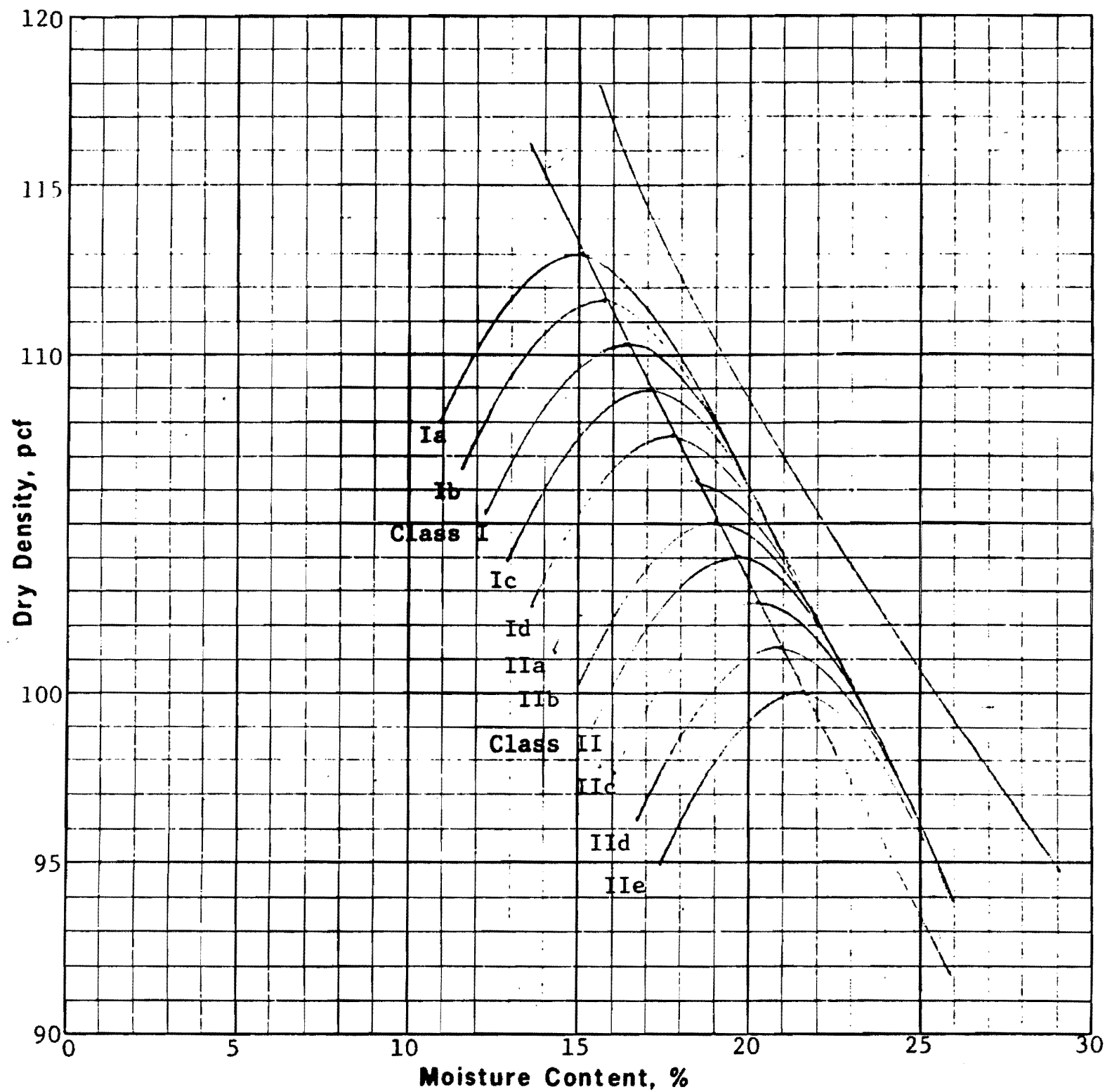
Remarks:

Added by Amendment 50

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
TRENCH B
FIGURE 2.5-526

Figure 2.5-526 ERCW Liquefaction Trench B



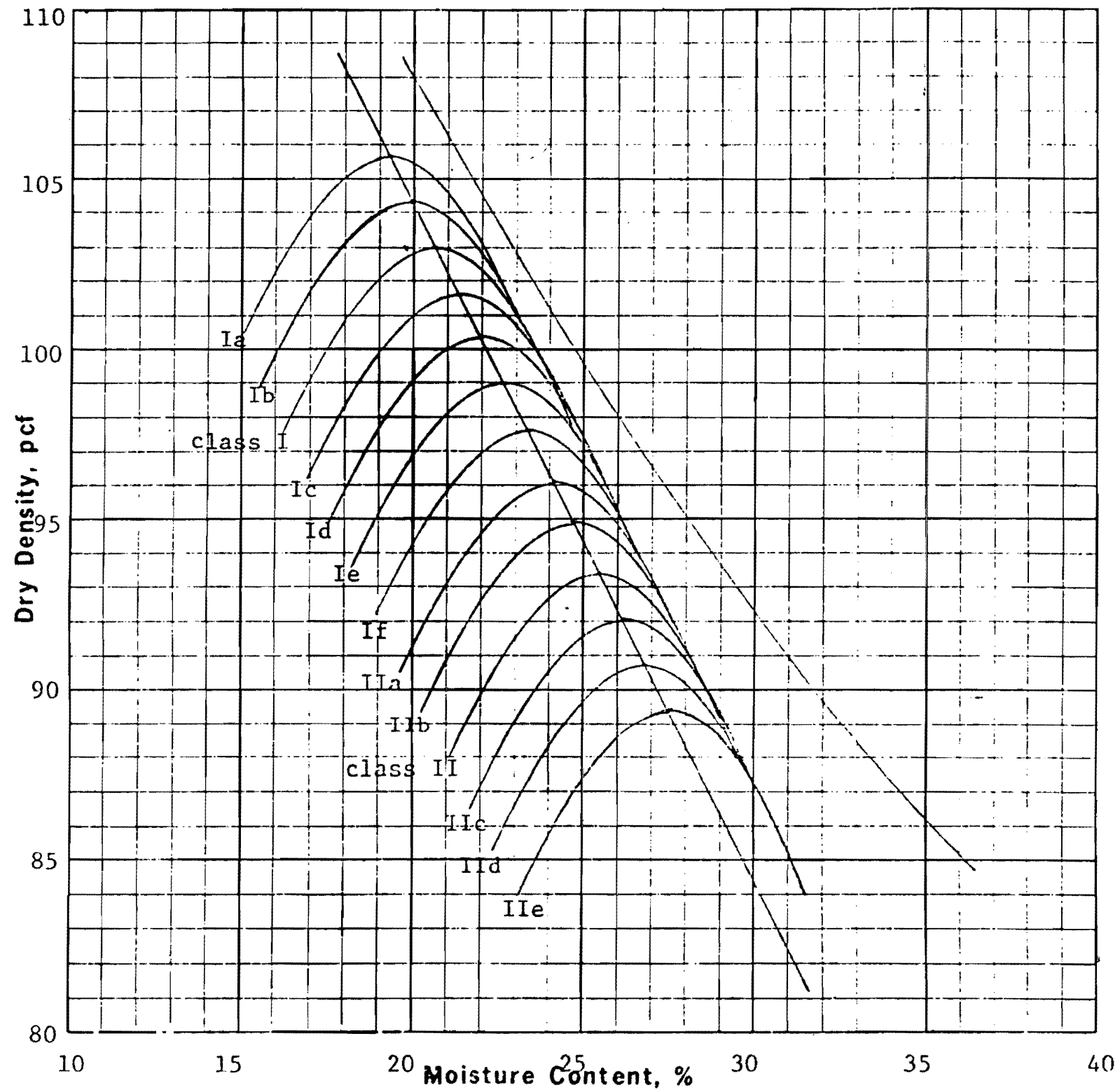
Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-CL	0	24	40	.36	2.66	31	16	16.4	110.3
II-CL-ML	0	32	27	41	2.70	40	15	19.6	104.0

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--
Remarks:	
Added by Amendment 50	

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 9
FIGURE 2.5-527

Figure 2.5-527 ERCW Liquefaction Borrow Area 9



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-CL	0	33	31	36	2.65	39	16	20.6	103.0
II-CL-NL	0	19	33	48	2.65	45	19	25.4	93.3

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

Remarks:

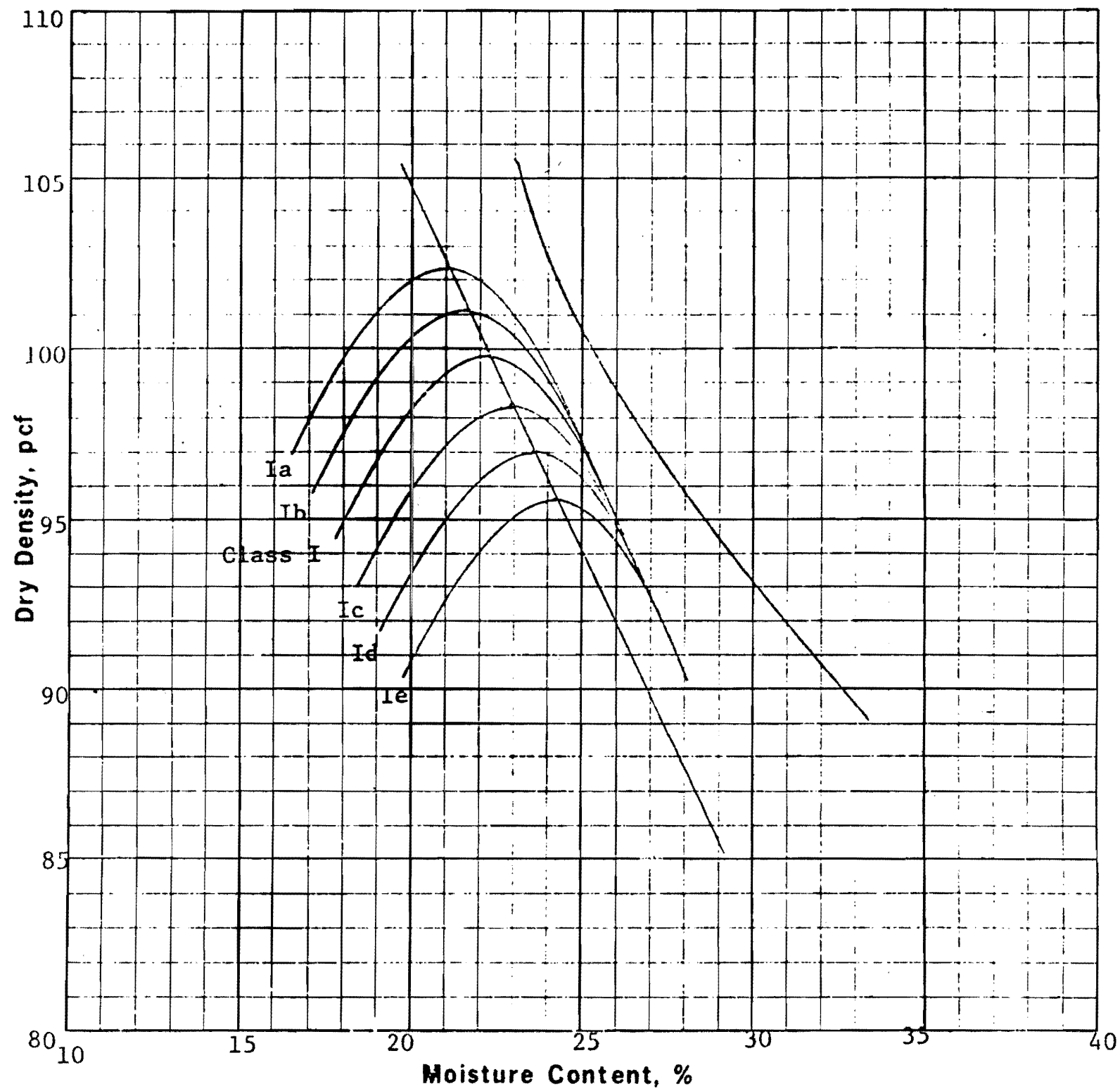
Added by Amendment 50

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 10
FIGURE 2.5-528

FIG. 10001 (CONST. 6-77)

Figure 2.5-528 ERCW Liquefaction Borrow Area 10



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-ML	0	21	35	44	2.71	44	15	22.2	99.8

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

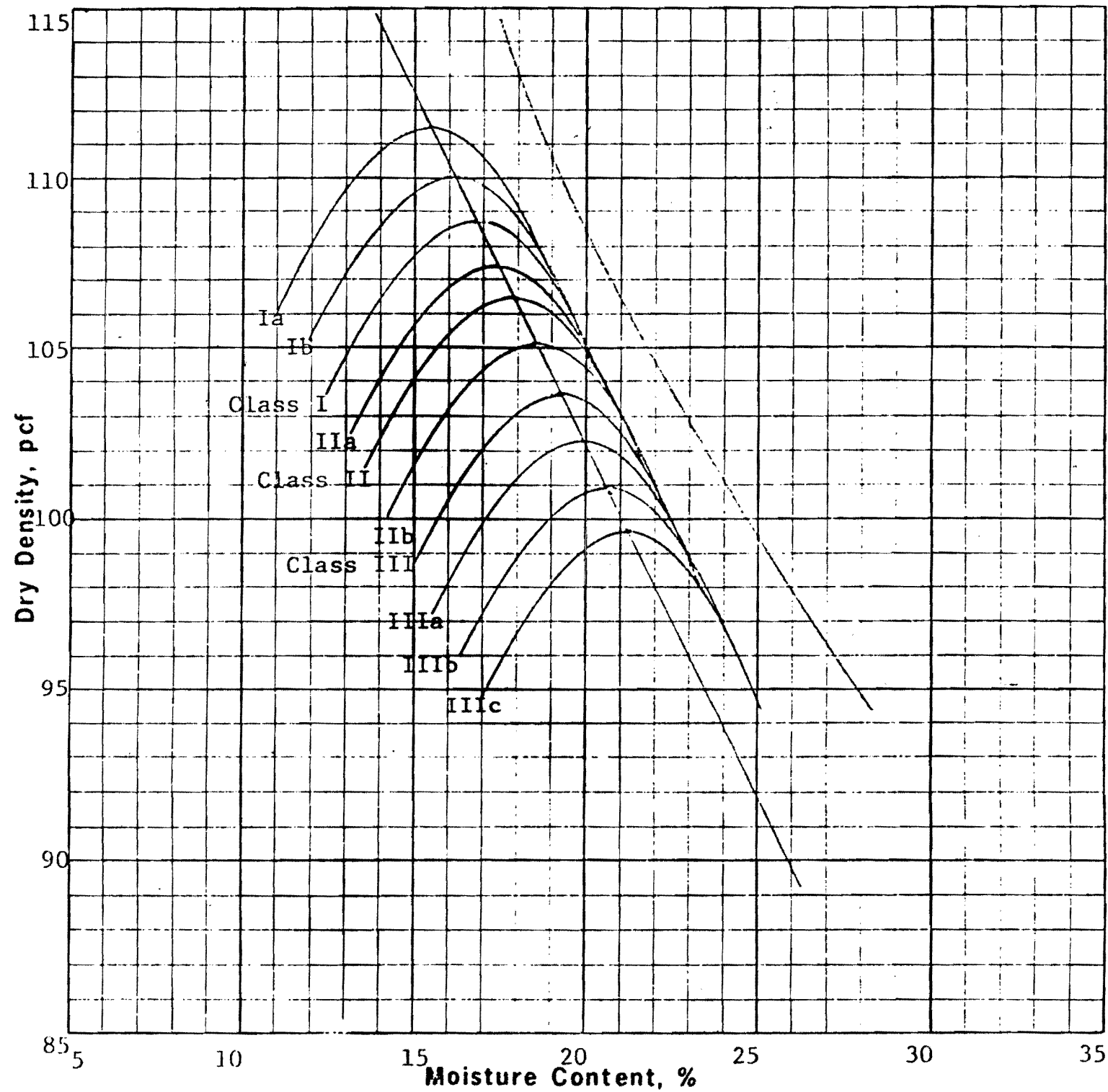
Remarks:

Added by Amendment 50

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 11
FIGURE 2.5-529

Figure 2.5-529 ERCW Liquefaction Borrow Area 11



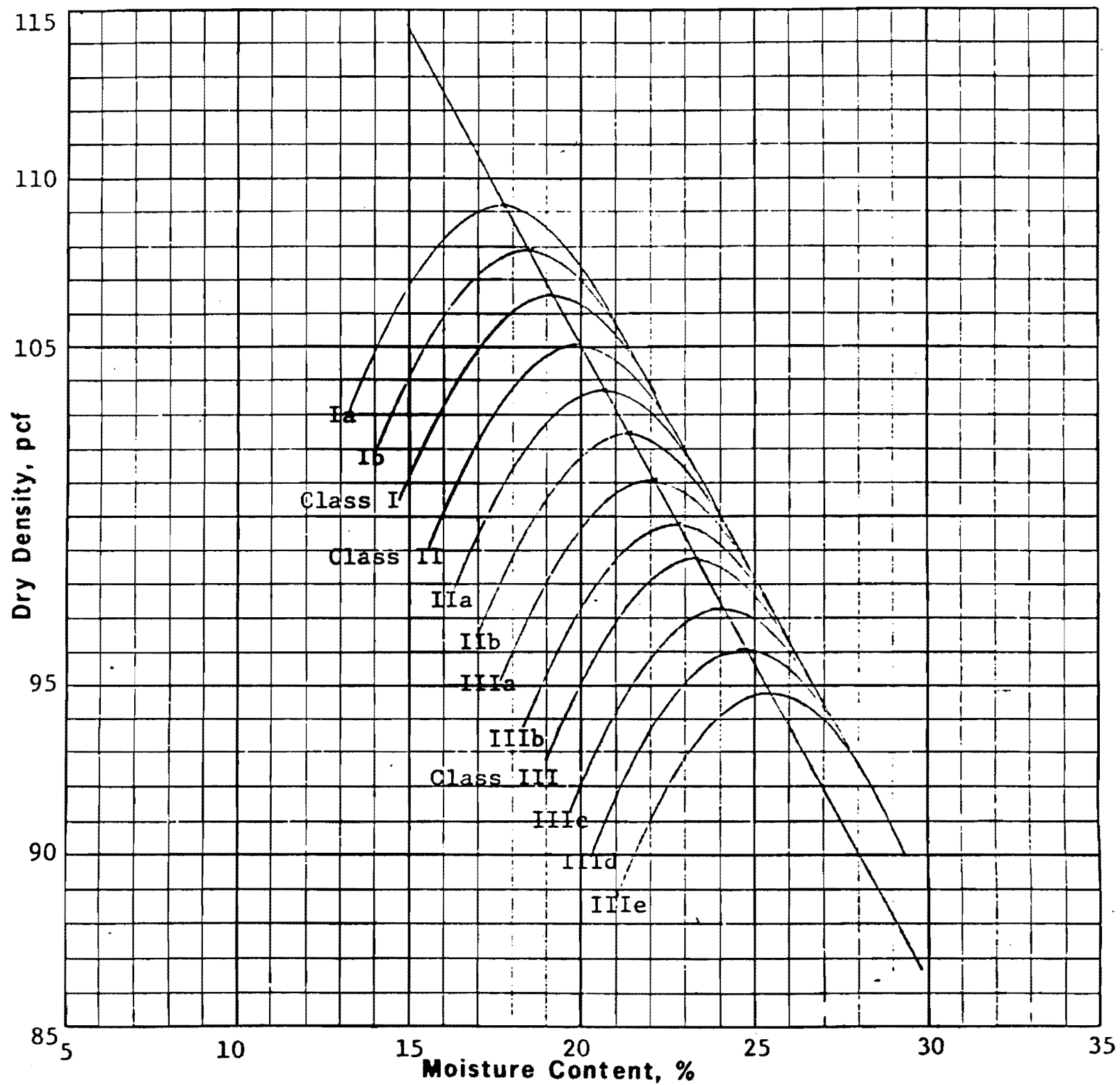
Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-SM	0	50	26	.24	2.69	32	7	16.8	108.8
II-CL-ML	0	22	39	39	2.70	40	15	17.8	106.5
III-CL-ML	0	22	40	38	2.66	42	16	19.2	103.7

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--
Remarks:	
Added by Amendment 50	

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 12
FIGURE 2.5-530

Figure 2.5-530 ERCW Liquefaction Borrow Area 12



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-ML	0	24	42	34	2.71	37	11	19.2	106.6
II-ML	0	23	39	38	2.73	41	14	20.0	105.1
III-MH	0	12	41	47	2.74	52	17	23.3	98.8

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

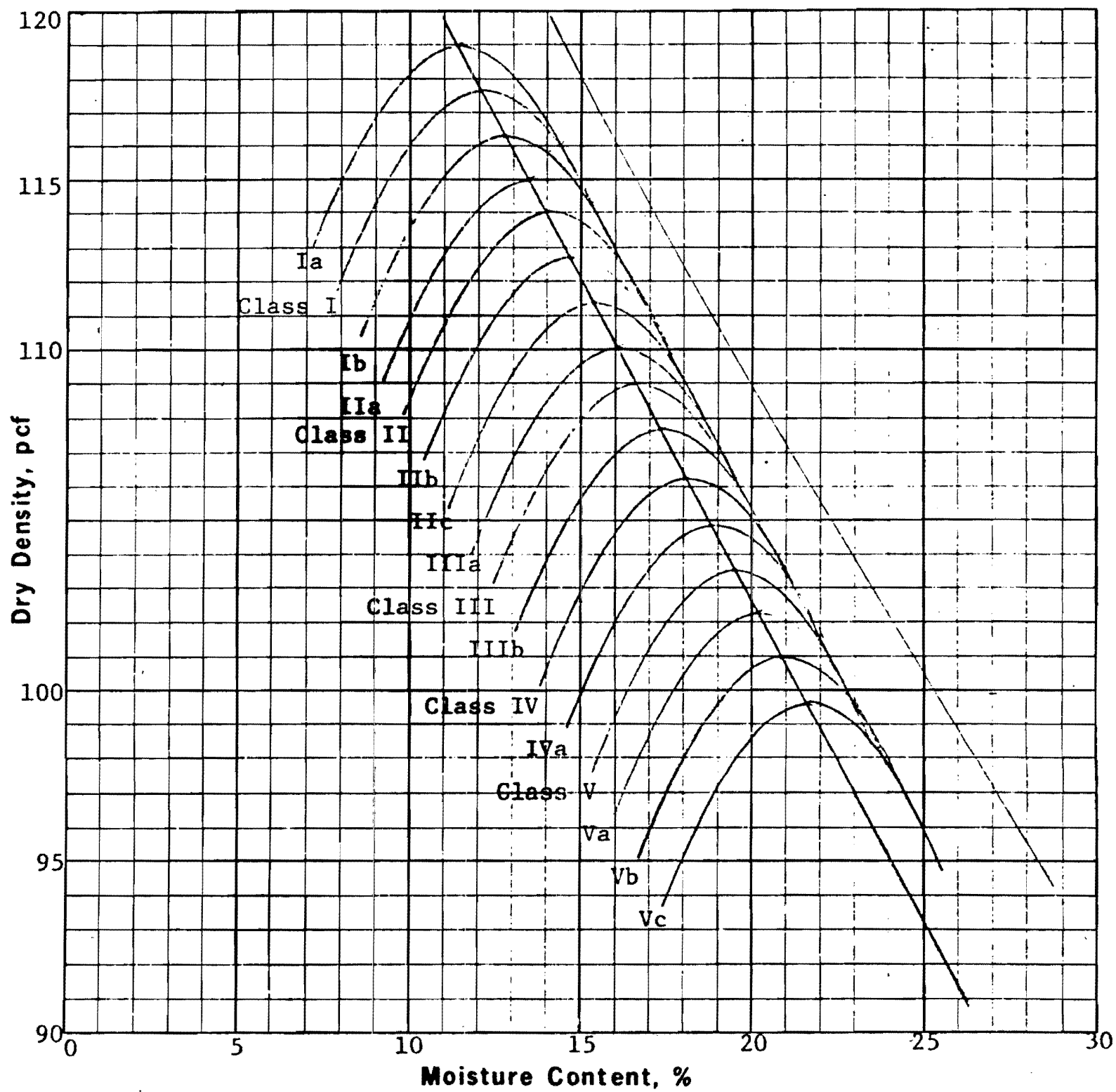
Remarks:

Added by Amendment 50

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 13
FIGURE 2.5-531

Figure 2.5-531 ERCW Liquefaction Borrow Area 13



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
I-ML	0	48	40	12	2.63	NP	NP	12.1	117.7
II-SM-SC	0	65	16	19	2.68	25	6	13.9	114.0
III-CL	0	48	23	29	2.67	36	14	16.6	109.0
IV-CL	0	30	34	36	2.68	41	17	18.1	106.2
V-CL-ML	0	23	39	38	2.70	44	17	19.5	103.5

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

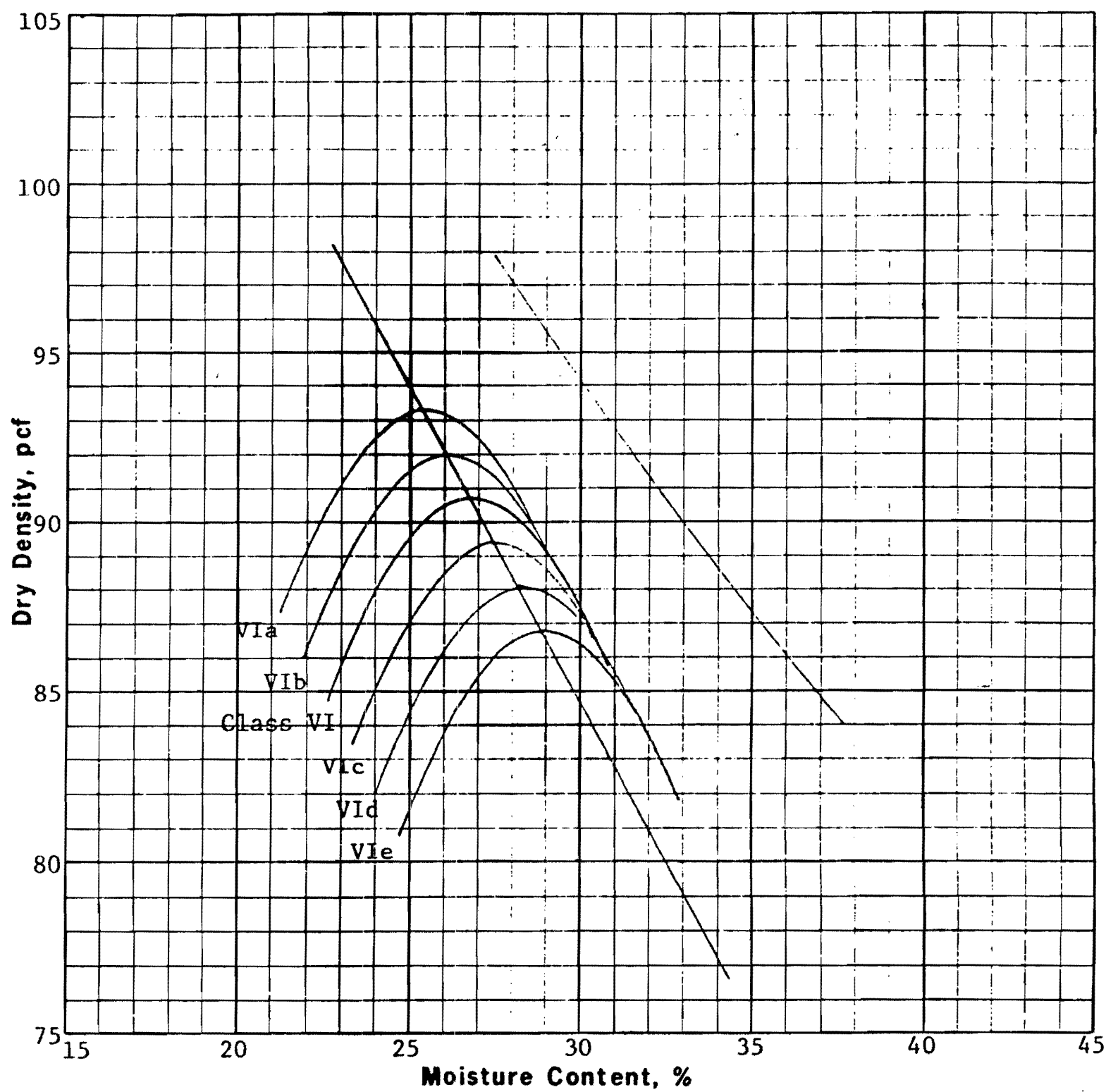
Remarks:

Added by Amendment 50

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 2C
FIGURE 2.5-532

Figure 2.5-532 ERCW Liquefaction Borrow Area 2C



Soil Class	Gravel %	Sand %	Silt %	Clay %	Specific Gravity	LL %	PI %	Optimum Moisture, %	Maximum Density, pcf
VI-MH	0	5	40	. 55	2.74	62	27	26.8	90.8

Plus No. 4 Specific Gravity, S S D	--
Plus No. 4 Absorption, %	--

Remarks:

Added by Amendment 50

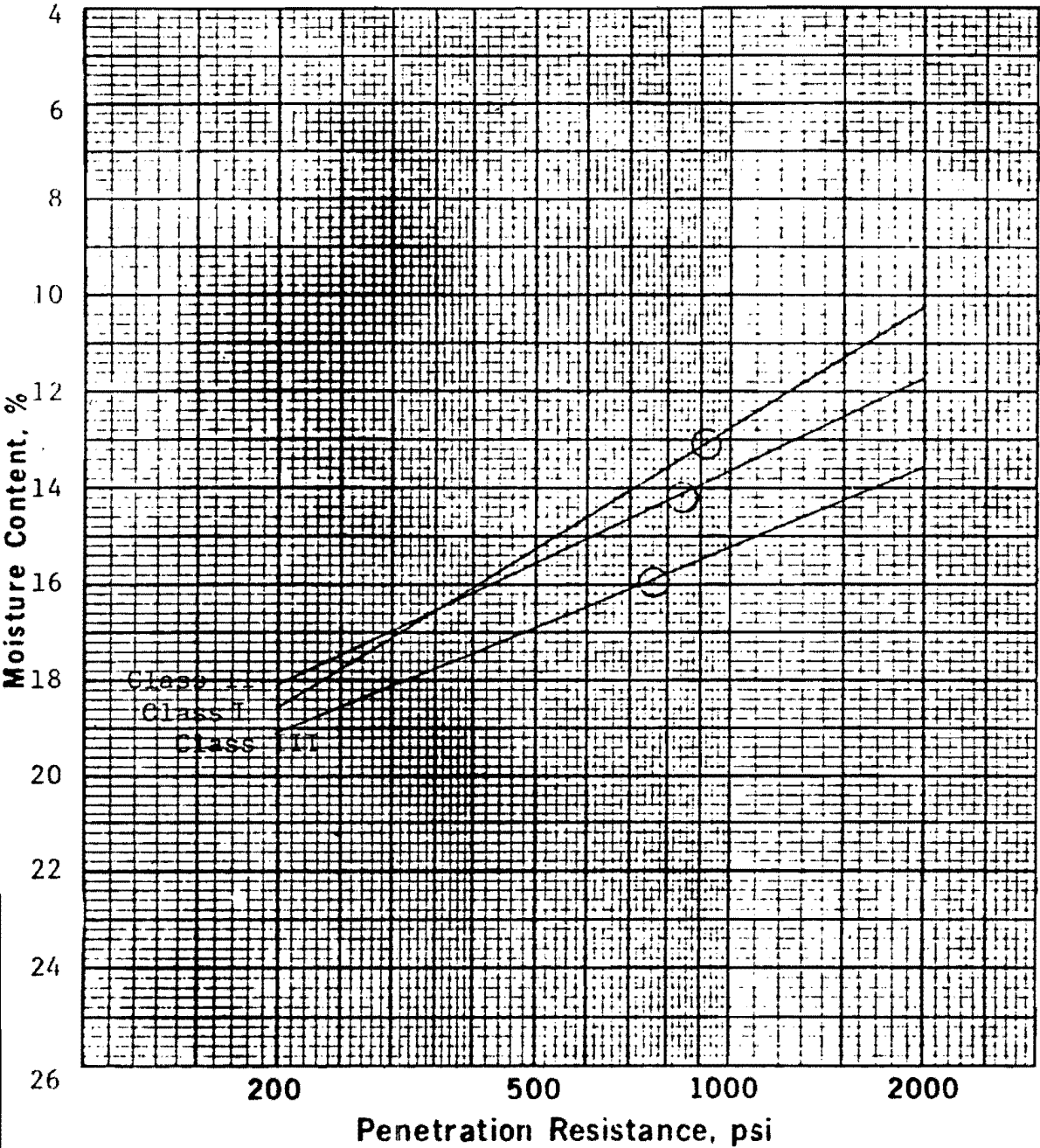
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 2C
FIGURE 2.5-533

Figure 2.5-533 ERCW Liquefaction Borrow Area 2C

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
TRENCH A
FIGURE 2.5-534



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-SM-SC	13.1	116.6	910
II-SC	14.1	114.4	840
III-CL	15.9	110.8	760

Remarks:

○ Denotes Optimum Moisture

Project Watts Bar Nuclear Plant

ERCW Liquefaction

Feature Trench A

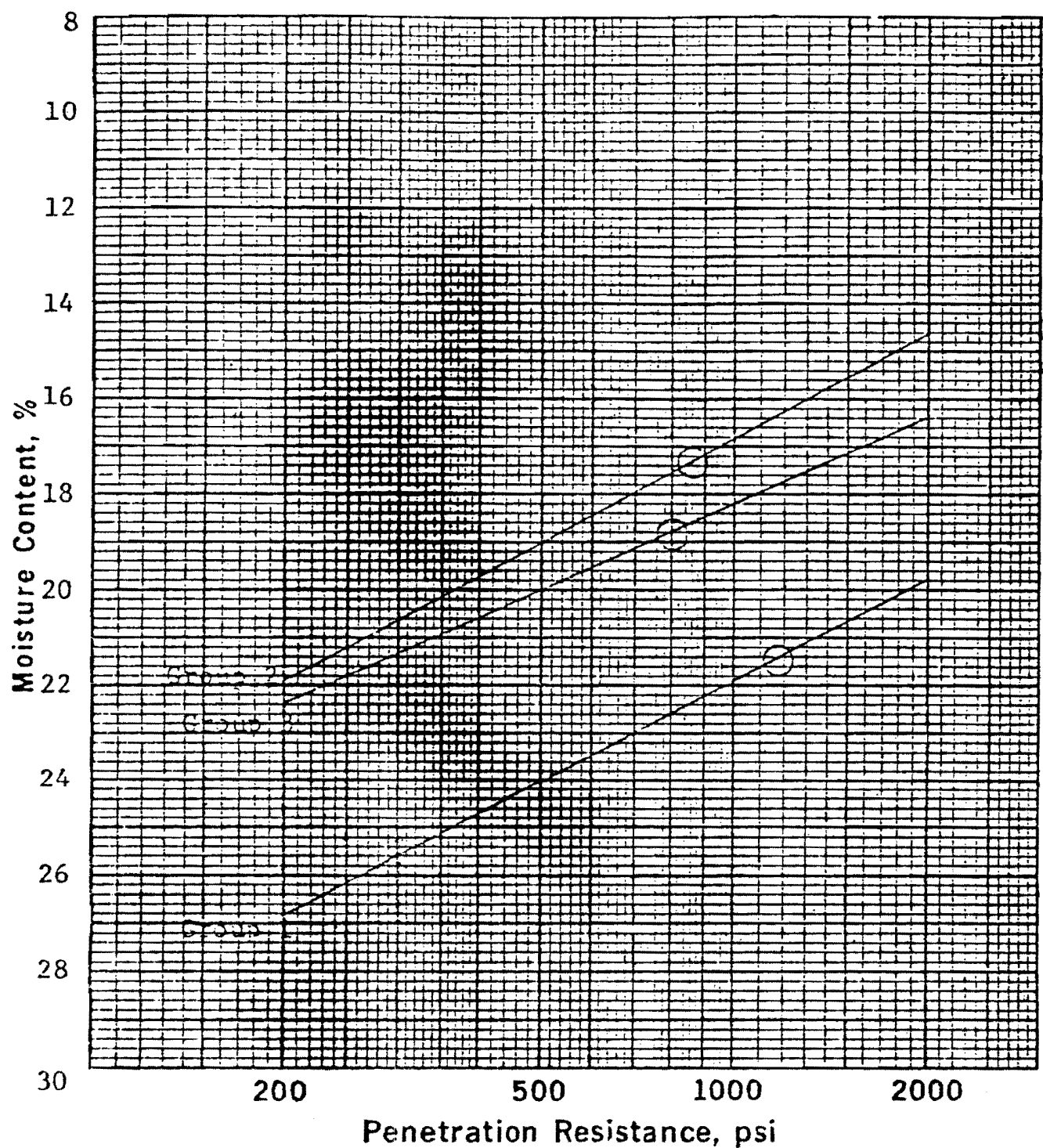
ASTM Designation D 698A

Date Tested 6-6-83

MOISTURE - PENETRATION TEST

Added by Amendment 50

Figure 2.5-534 ERCW Liquefaction Trench A



Soil Group	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
1-ML	21.4	99.7	1180
2-SM	17.3	108.4	860
3-ML	18.8	105.3	800

Added by Amendment 50

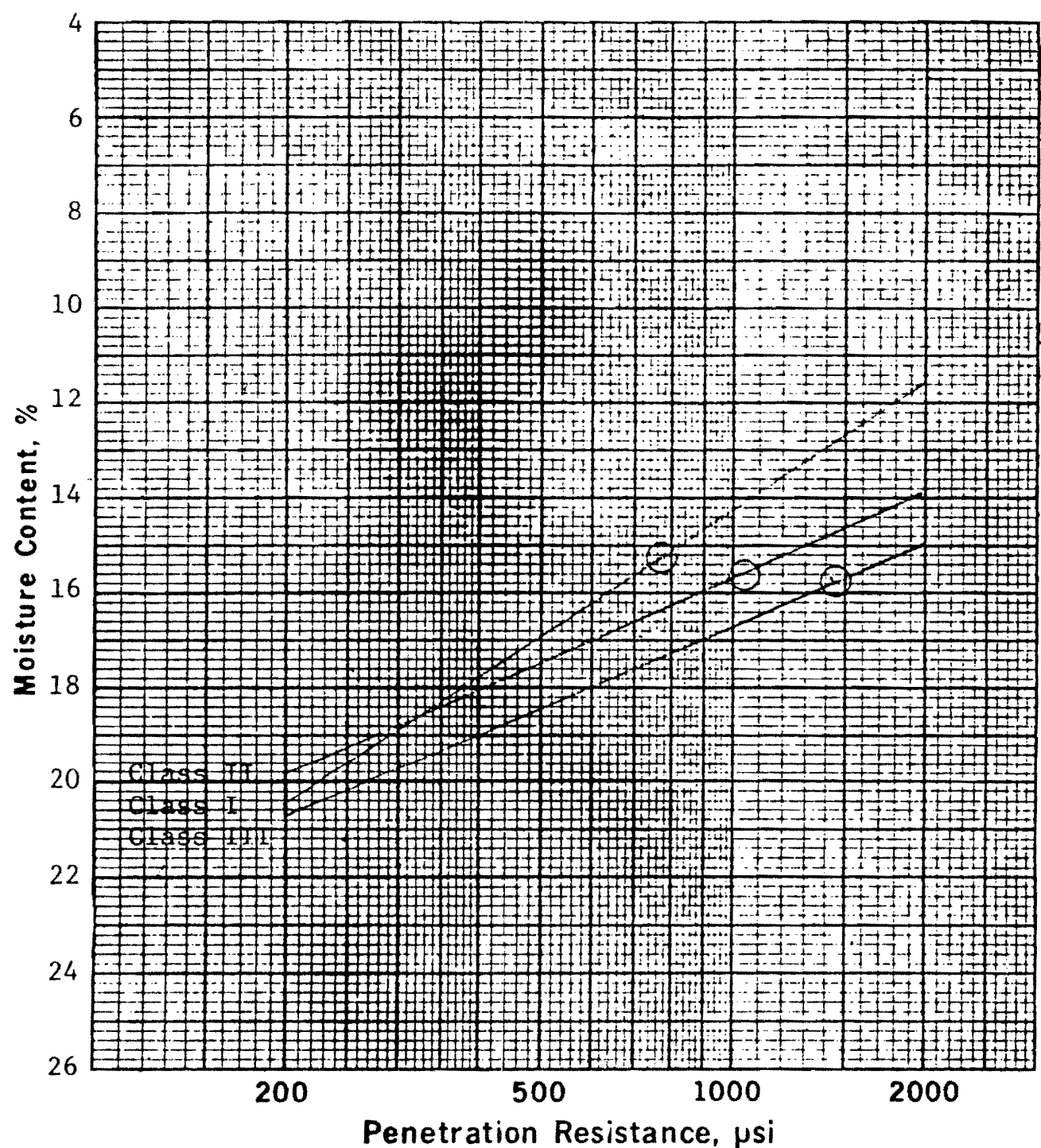
Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION, TRENCH A
SUPPLEMENTAL BORROW
FIGURE 2.5-535

Figure 2.5-535 ERCW Liquefaction Trench A Supplemental Borrow



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-SM	15.3	110.7	770
II-SM-SC	15.6	110.3	1025
III-CL	15.8	109.8	1425

Remarks:

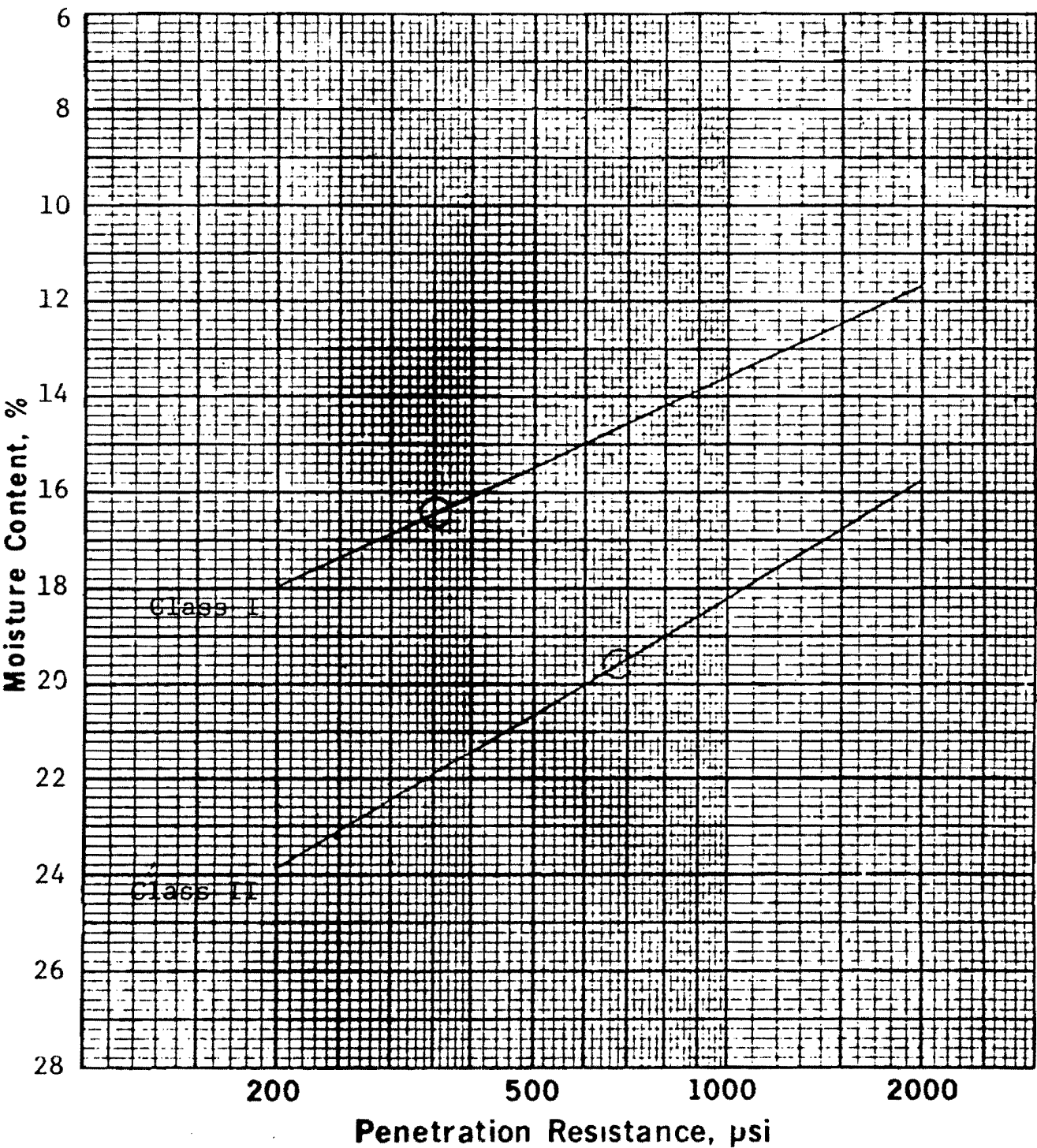
Added by Amendment 50

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
TRENCH B
FIGURE 2.5-536

Figure 2.5-536 ERCW Liquefaction Trench B



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-CL	16.4	110.3	350
II-CL-ML	19.6	104.0	680

Added by Amendment 50

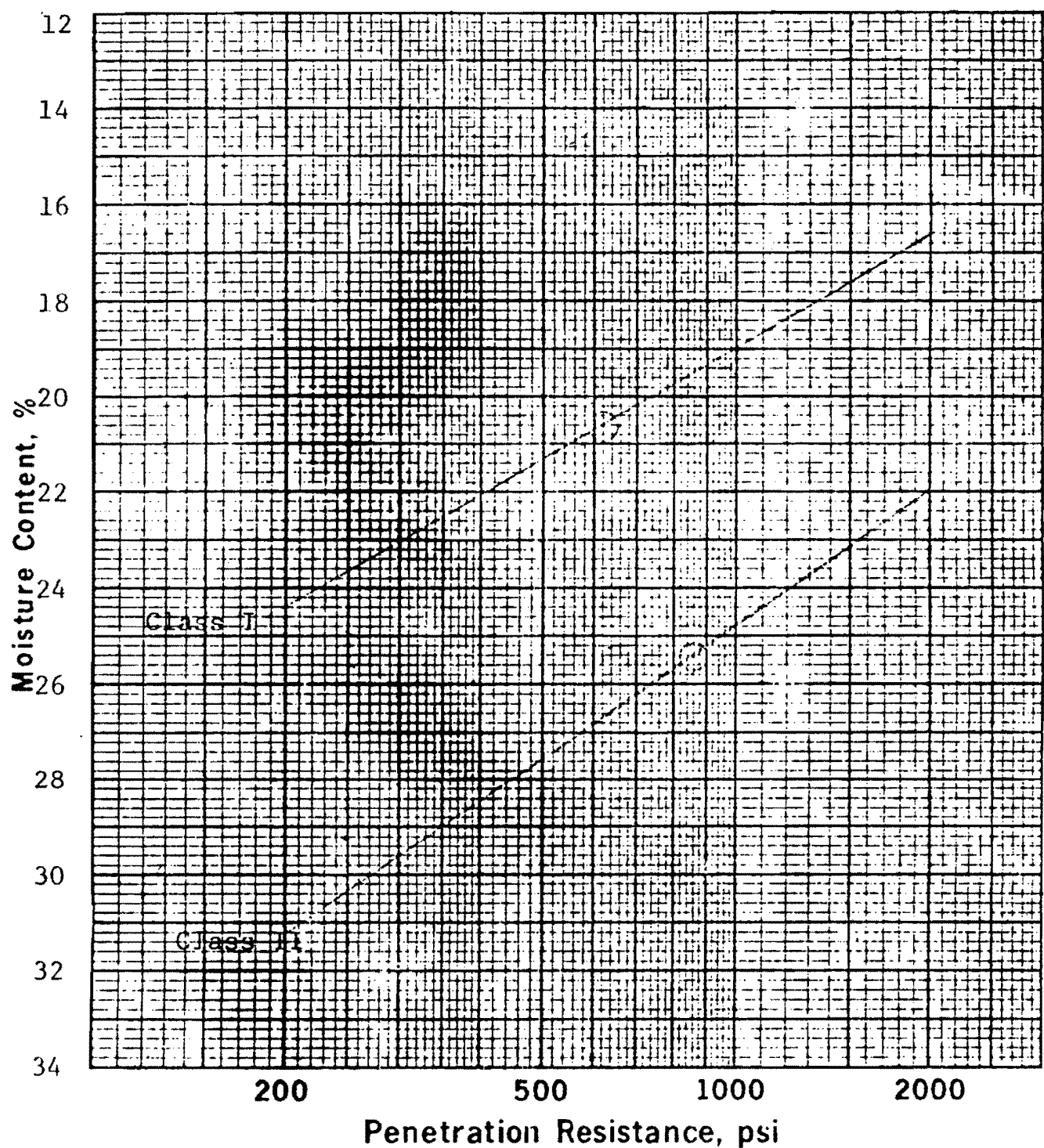
Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 9
FIGURE 2.5-537

Figure 2.5-537 ERCW Liquefaction Borrow Area 9



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-CL	20.6	103.0	620
II-CL-ML	25.4	93.3	860

Added by Amendment 50

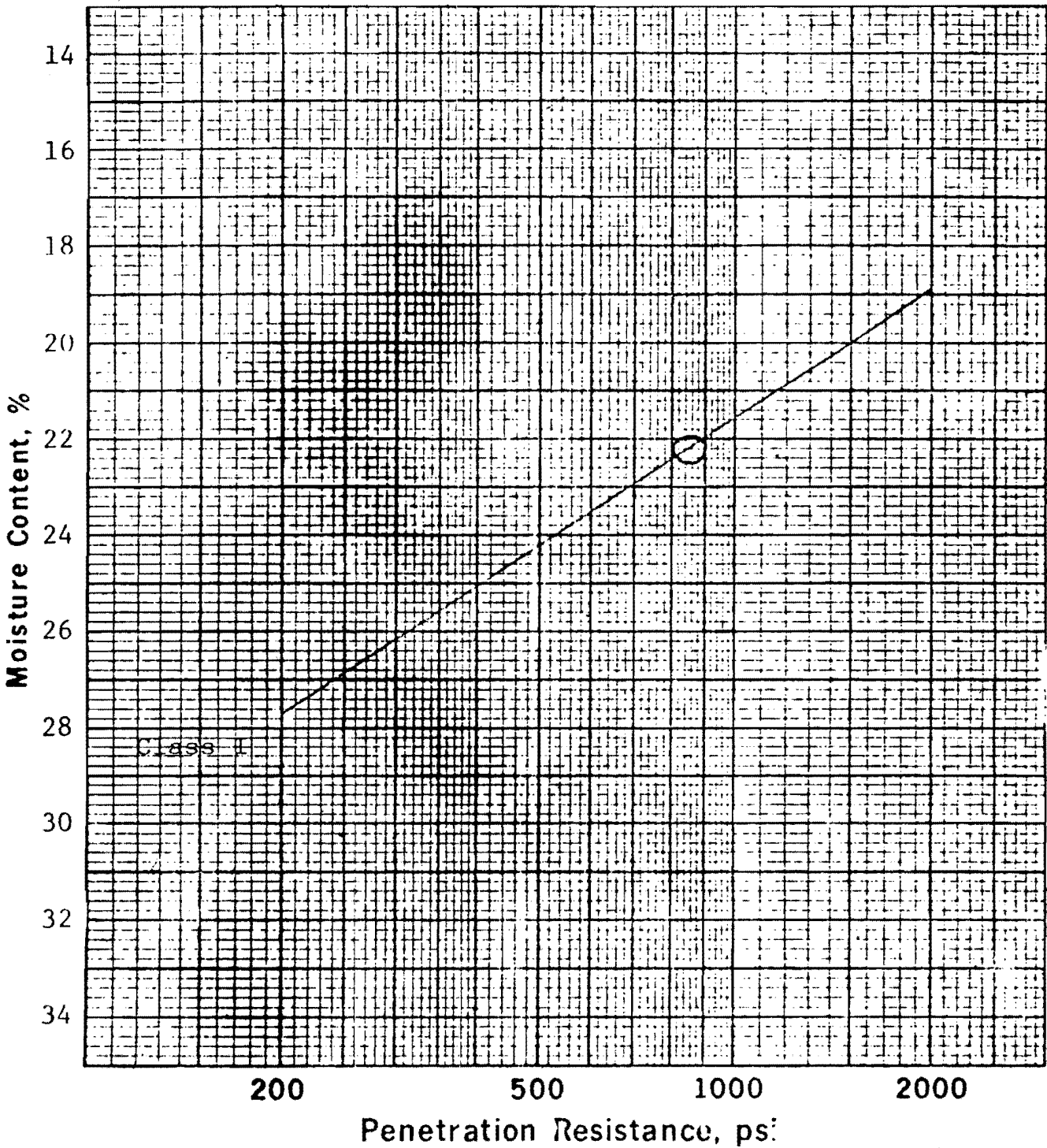
Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 10
FIGURE 2.5-538

Figure 2.5-538 ERCW Liquefaction Borrow Area 10



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-ML	22.2	99.8	850

Added by Amendment 50

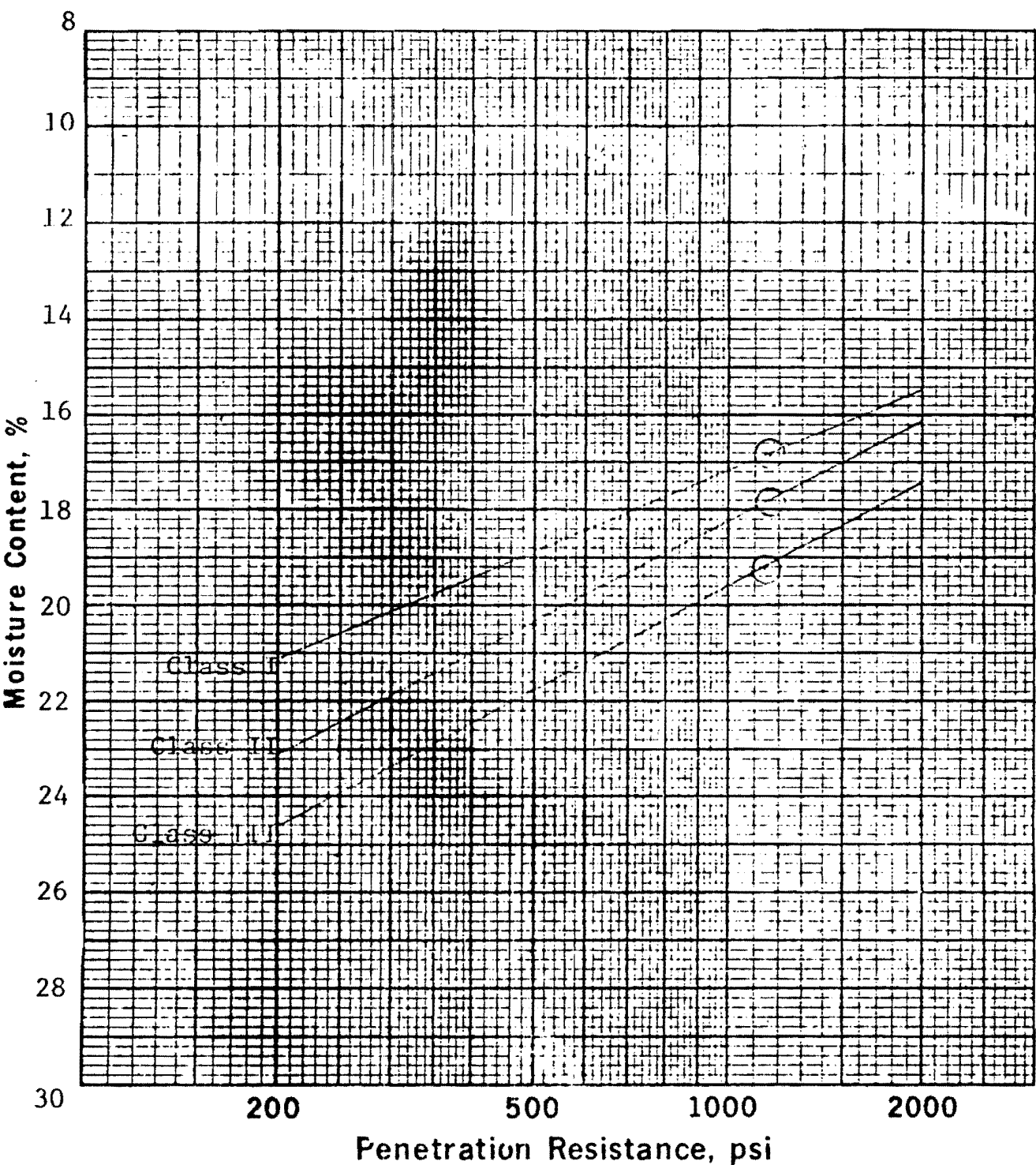
Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 11
FIGURE 2.5-539

Figure 2.5-539 ERCW Liquefaction Borrow Area 11



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-ML	16.8	108.8	1165
CL-II-ML	17.8	106.5	1150
CL-III-ML	19.2	103.7	1145

Added by Amendment 50

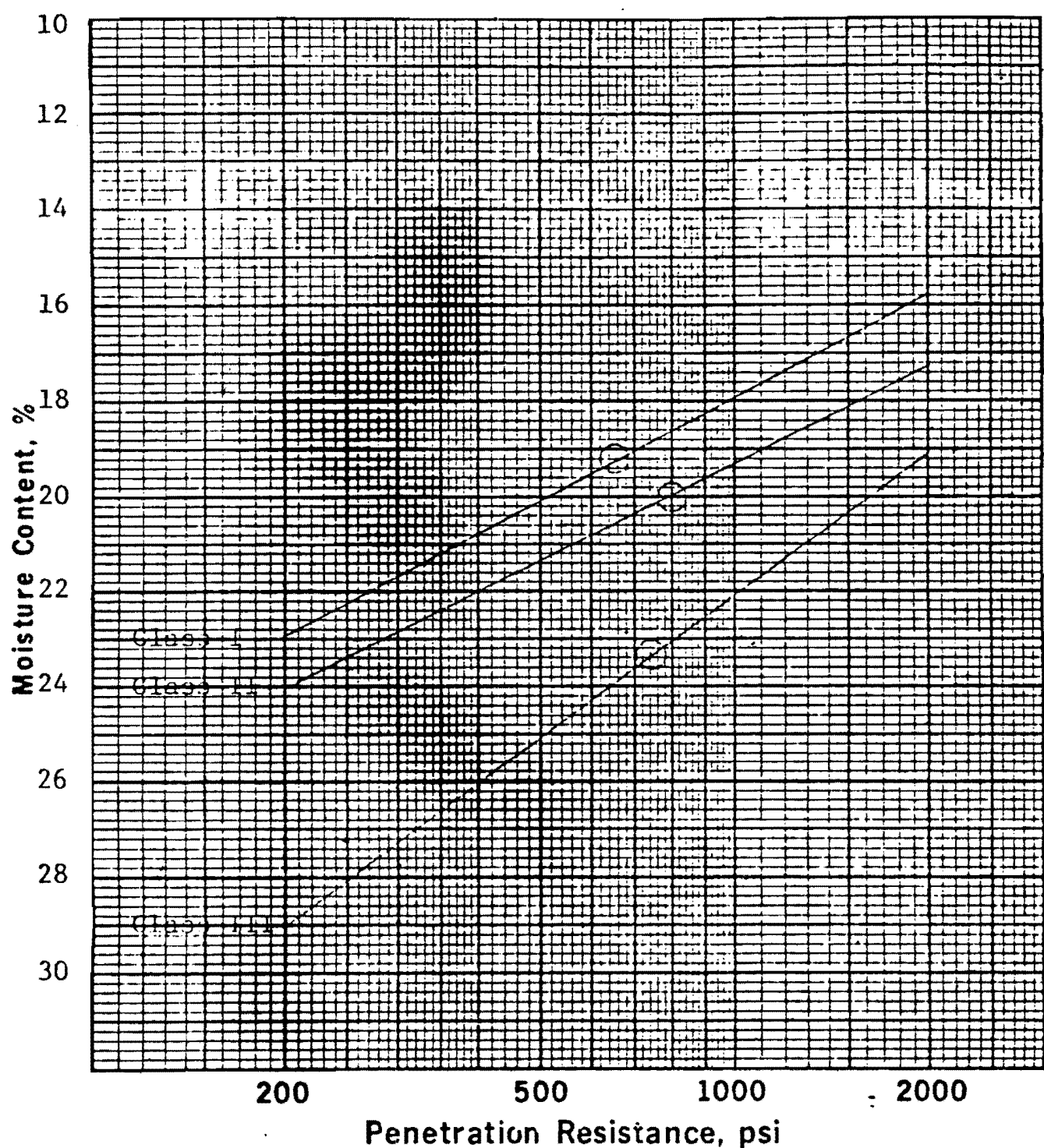
Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 12
FIGURE 2.5-540

Figure 2.5-540 ERCW Liquefaction Borrow Area 12



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-ML	19.2	106.6	650
II-ML	20.0	105.1	800
III-MH	23.3	98.8	740

Added by Amendment 50

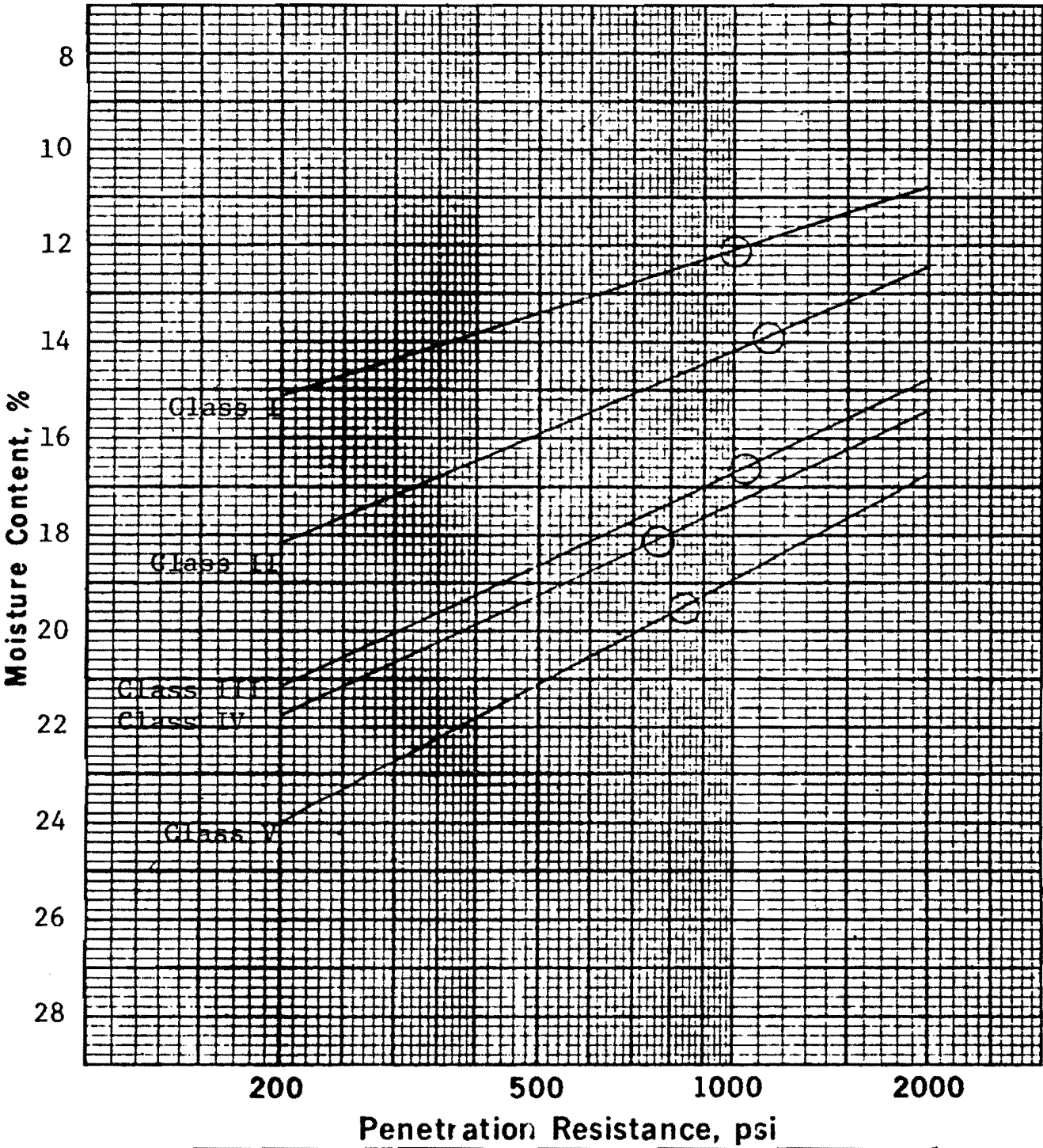
Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 13
FIGURE 2.5-541

Figure 2.5-541 ERCW Liquefaction Borrow Area 13



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
I-ML	12.1	117.7	1000
II-SM-SC	13.9	114.0	1125
III-CL	16.6	109.0	1050
IV-CL	18.1	106.2	760
V-CL-ML	19.5	103.5	840

Remarks:

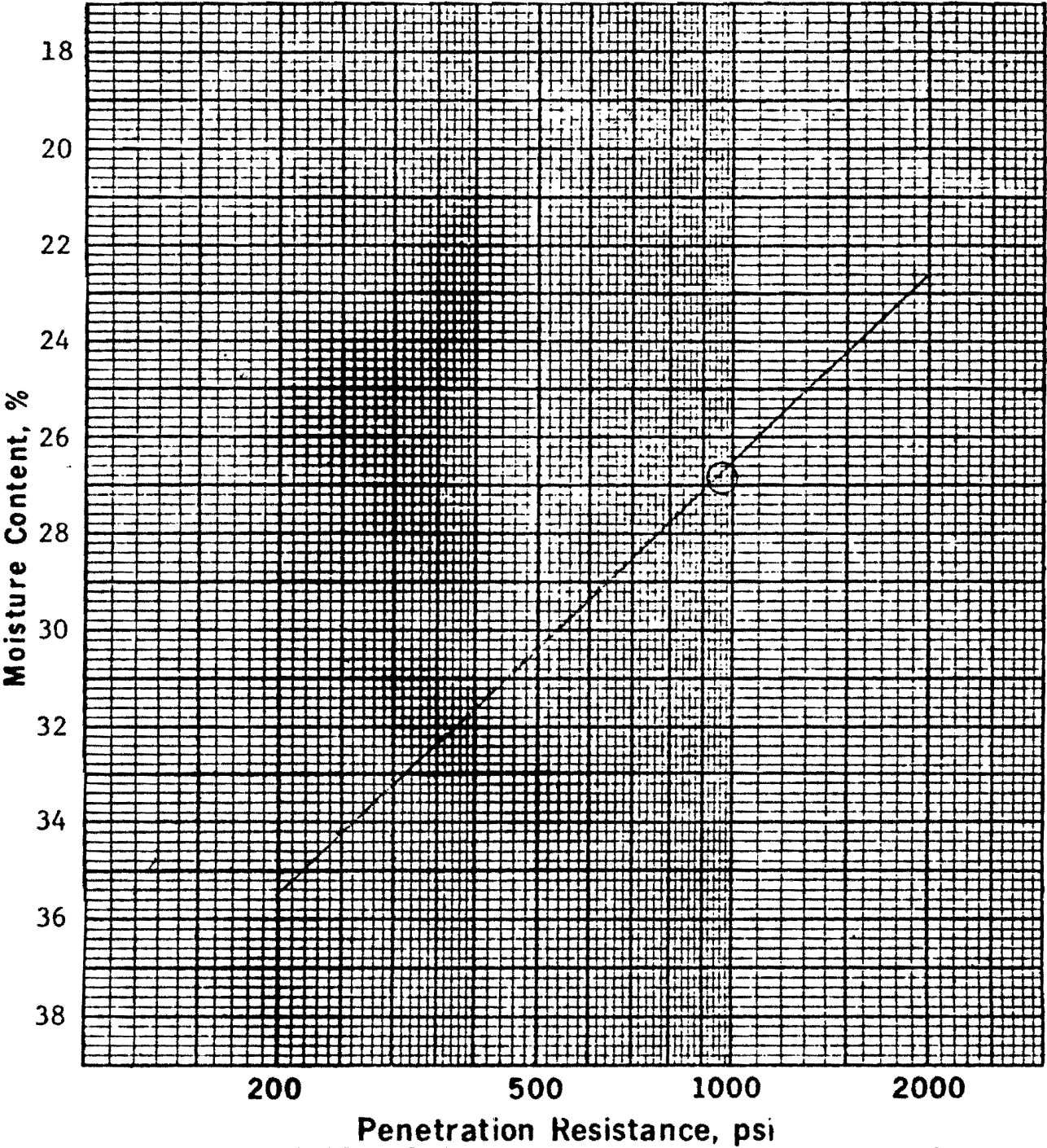
○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 2C
FIGURE 2.5-542

Added by Amendment 50

Figure 2.5-542 ERCW Liquefaction Borrow Area 2C



Soil Class	Optimum Moisture, %	Maximum Density, pcf	Penetration Resistance, psi
VI-MH	26.8	90.8	950

Added by Amendment 50

Remarks:

○ Denotes Optimum Moisture

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

ERCW LIQUEFACTION
BORROW AREA 2C
FIGURE 2.5-543

Figure 2.5-543 ERCW Liquefaction Borrow Area 2C

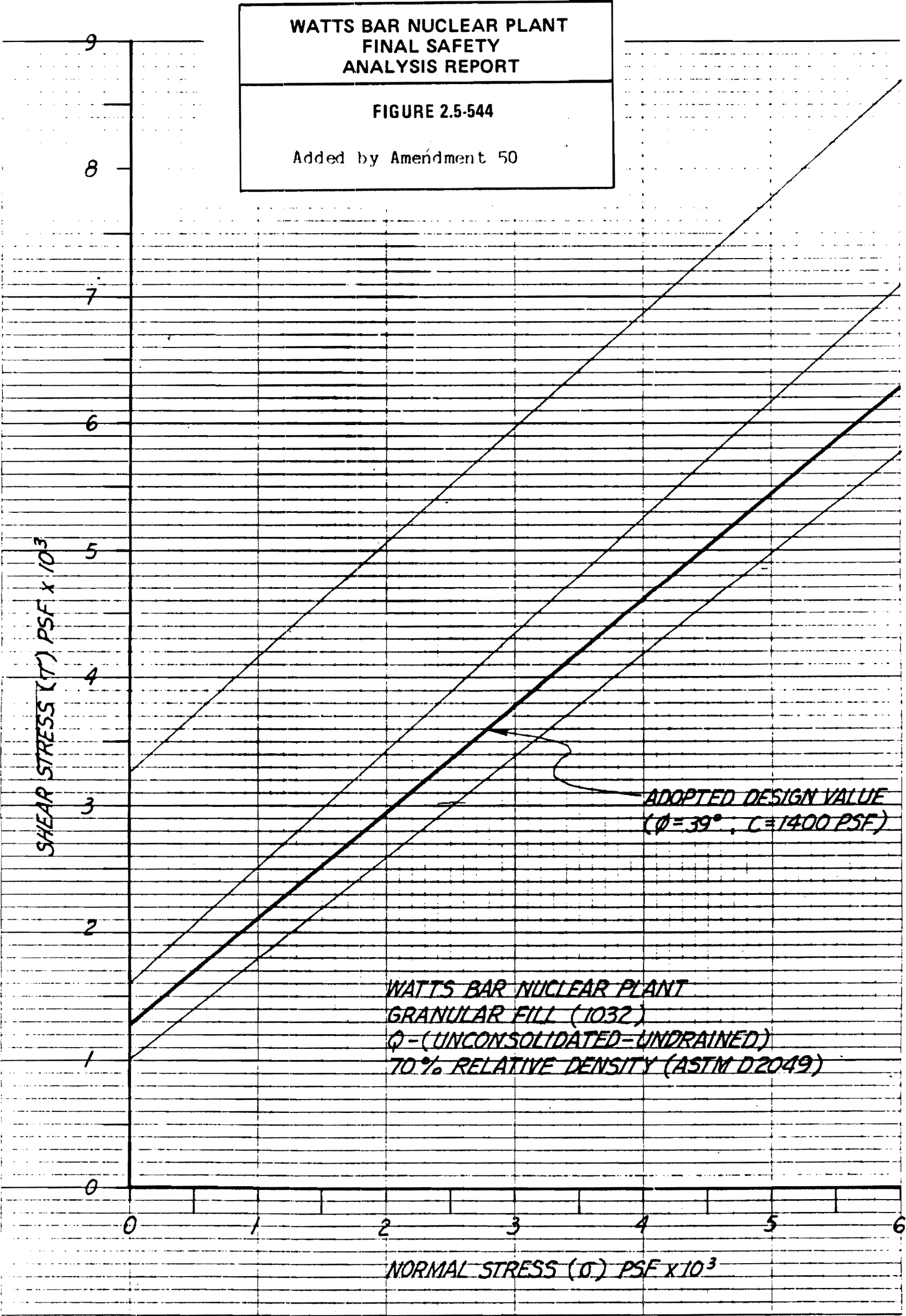


Figure 2.5-544 Watts Bar Nuclear Plant Granular Fill (1032) Q-(Unconsolidated-Undrained) 70% Relative Density (ASTM D2049)

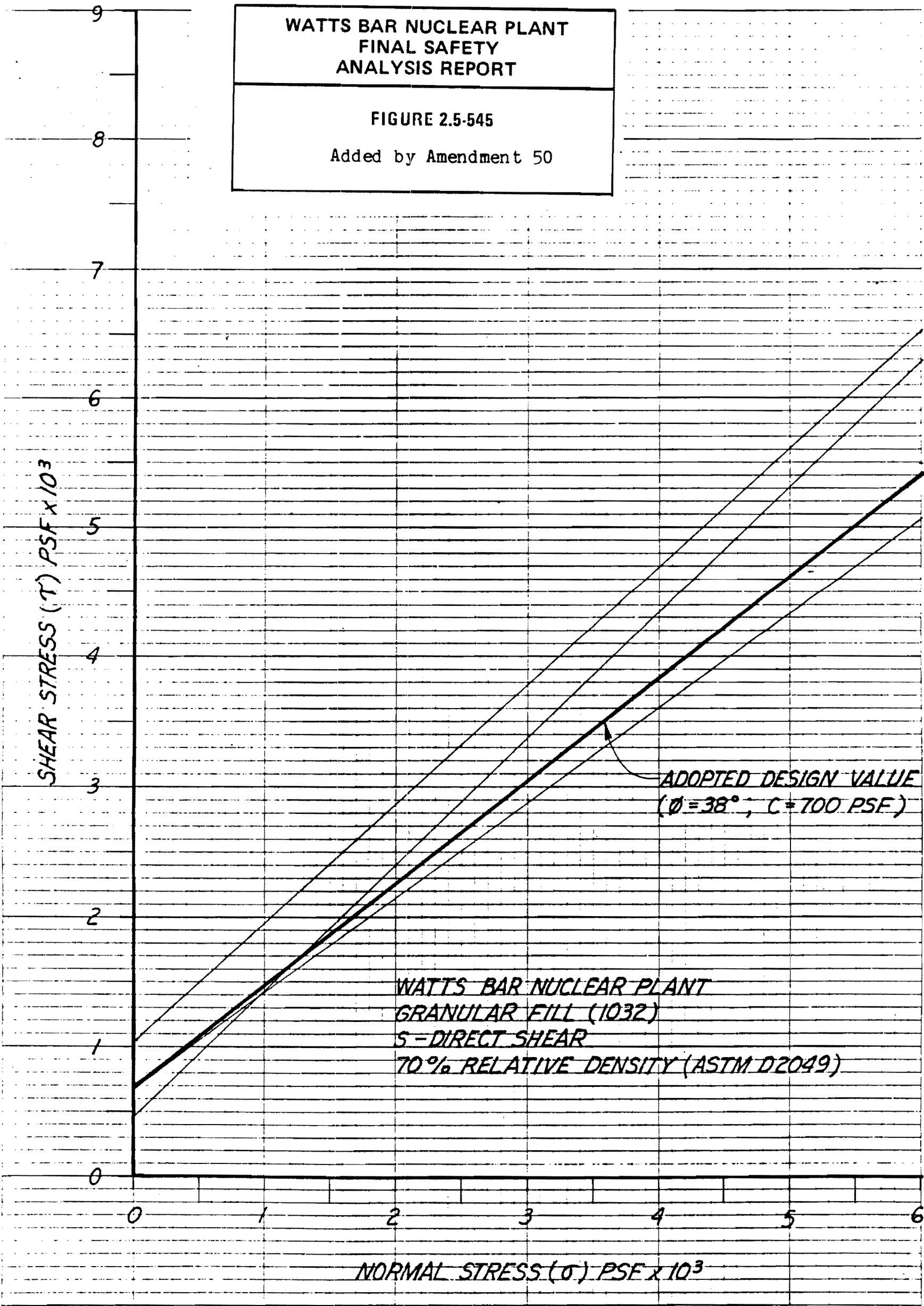


Figure 2.5-545 Watts Bar Nuclear Plant Granular Fill (1032) S-Direct Shear 70% Relative Density (ASTM 02049)

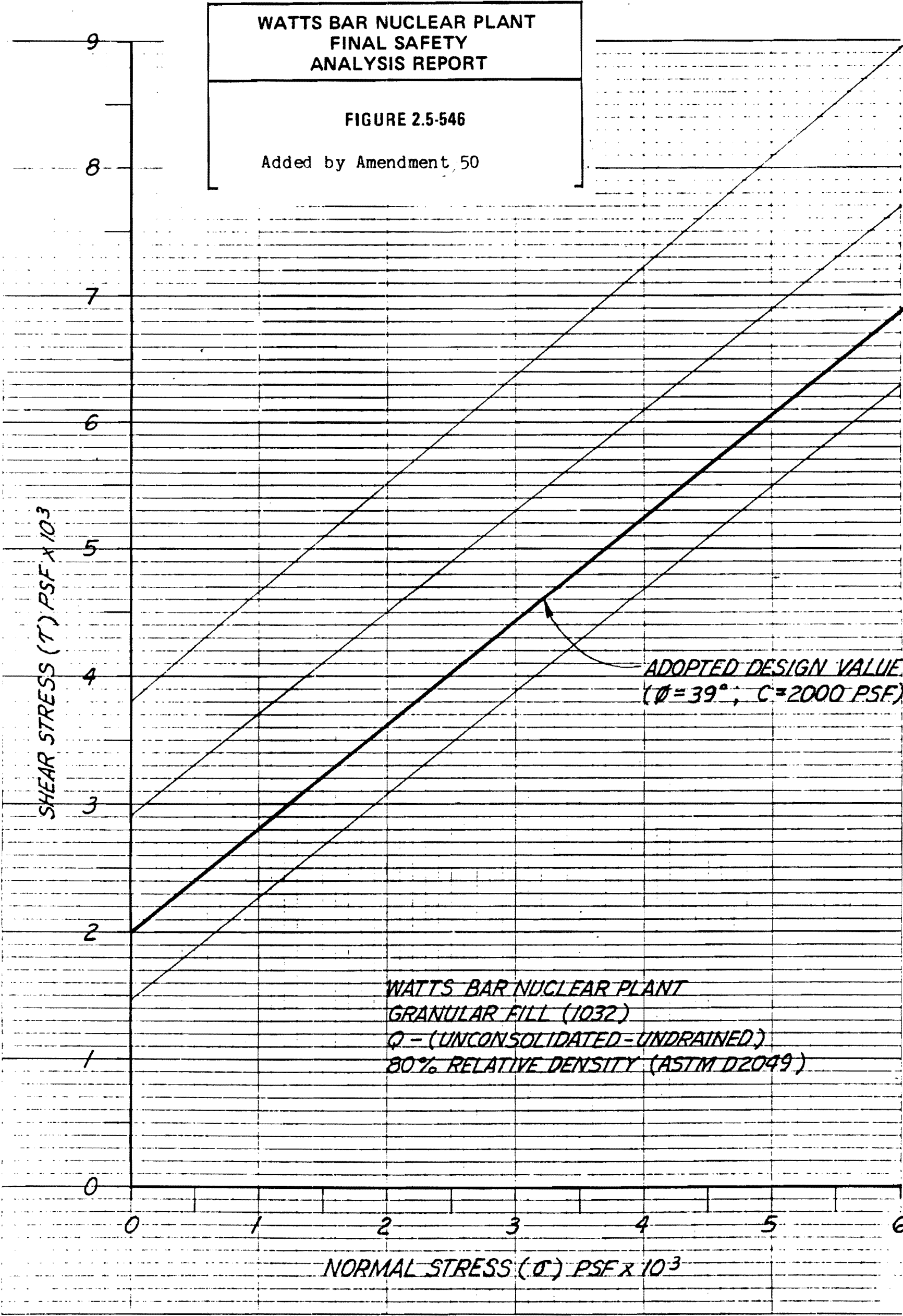


Figure 2.5-546 Watts Bar Nuclear Plant Granular Fill (1032) Q- (Unconsolidated - Undrained) 80% Relative Density (ASTM D2049)

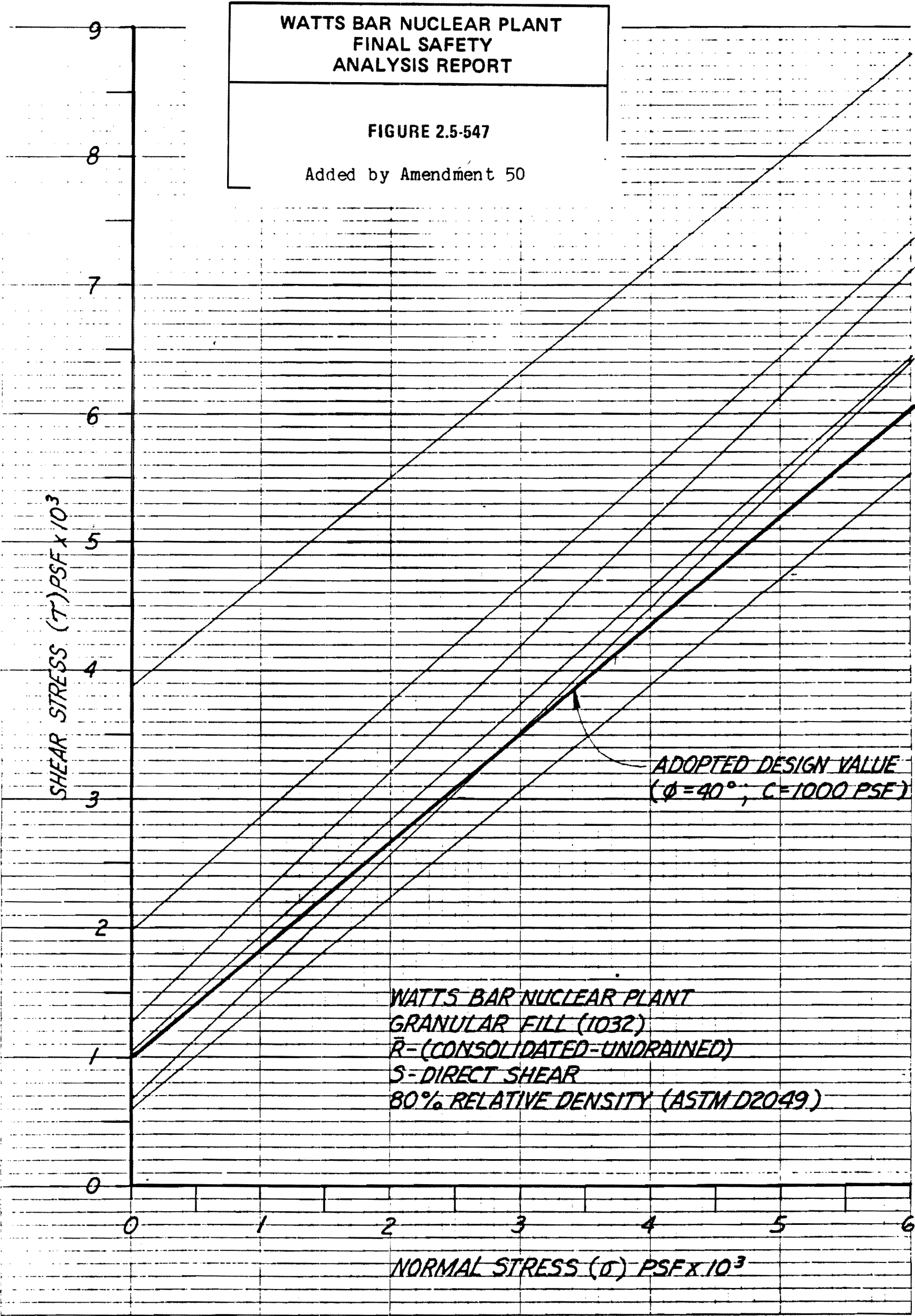


Figure 2.5-547 Watts Bar Nuclear Plant Granular Fill (1032) R- (Consolidated-Undrained) S-Direct: Shear 80% Relative Density (ASTM D2049)

Figure 2.5-549 ERCW Pipeline Section A-A (Actual Figure Located in Oversized Figures File) (Sheet 1 of 4)

Figure 2.5-549 ERCW Pipeline Section A-A (Actual Figure Located in Oversized Figures File) (Sheet 2 of 4)

Figure 2.5-549 ERCW Pipeline Section A-A (Actual Figure Located in Oversized Figures File) (Sheet 3 of 4)

Figure 2.5-549 ERCW Pipeline Section A-A (Actual Figure Located in Oversized Figures File) (Sheet 4 of 4)

Figure 2.5-550 ERCU Pipeline Section B-B (Actual Figure Located in Oversized Figures File)

Figure 2.5-551 ERCU Pipeline Section C-C (Actual Figure Located in Oversized Figures File)

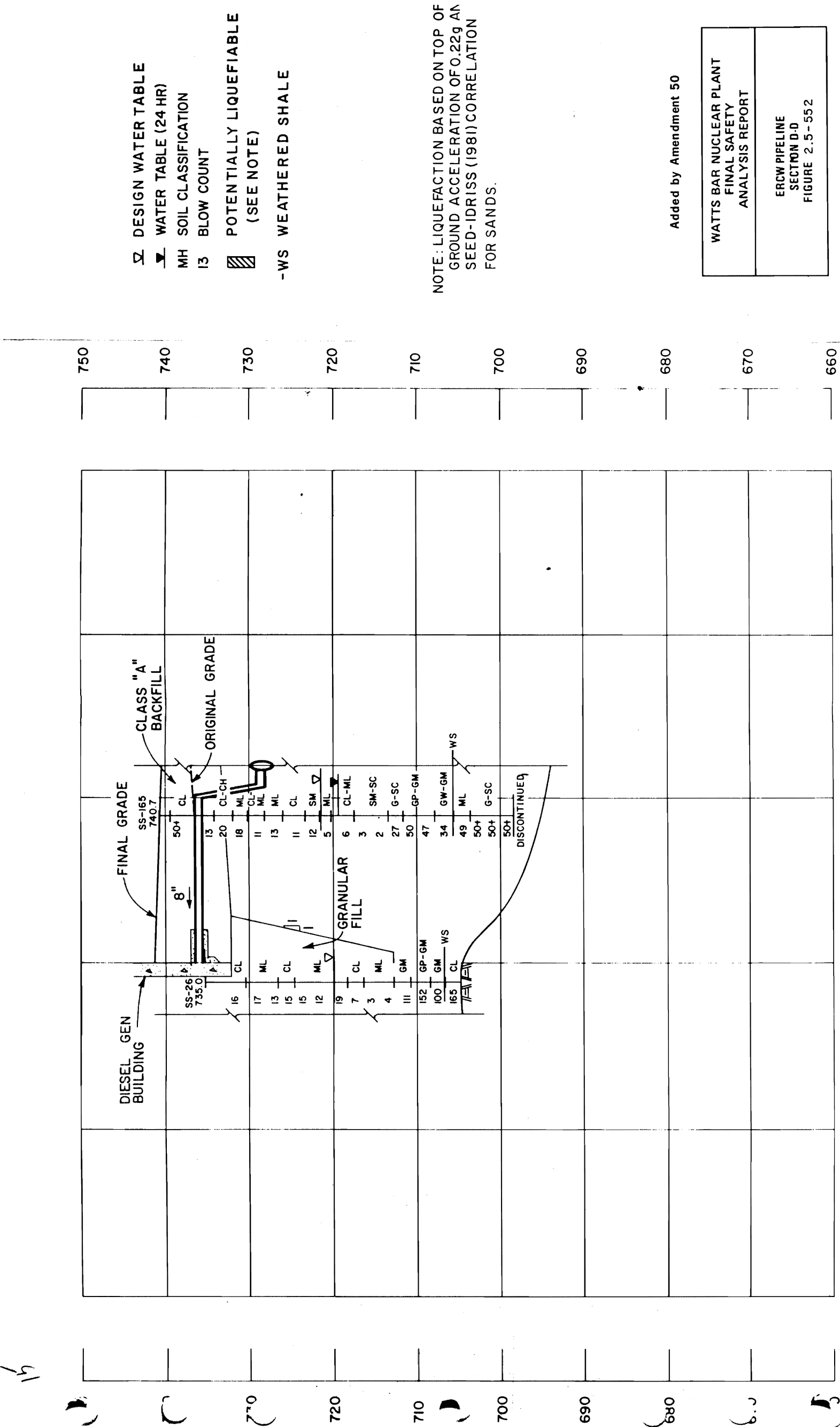


Figure 2.5-552 ERCW Pipeline Section D-D



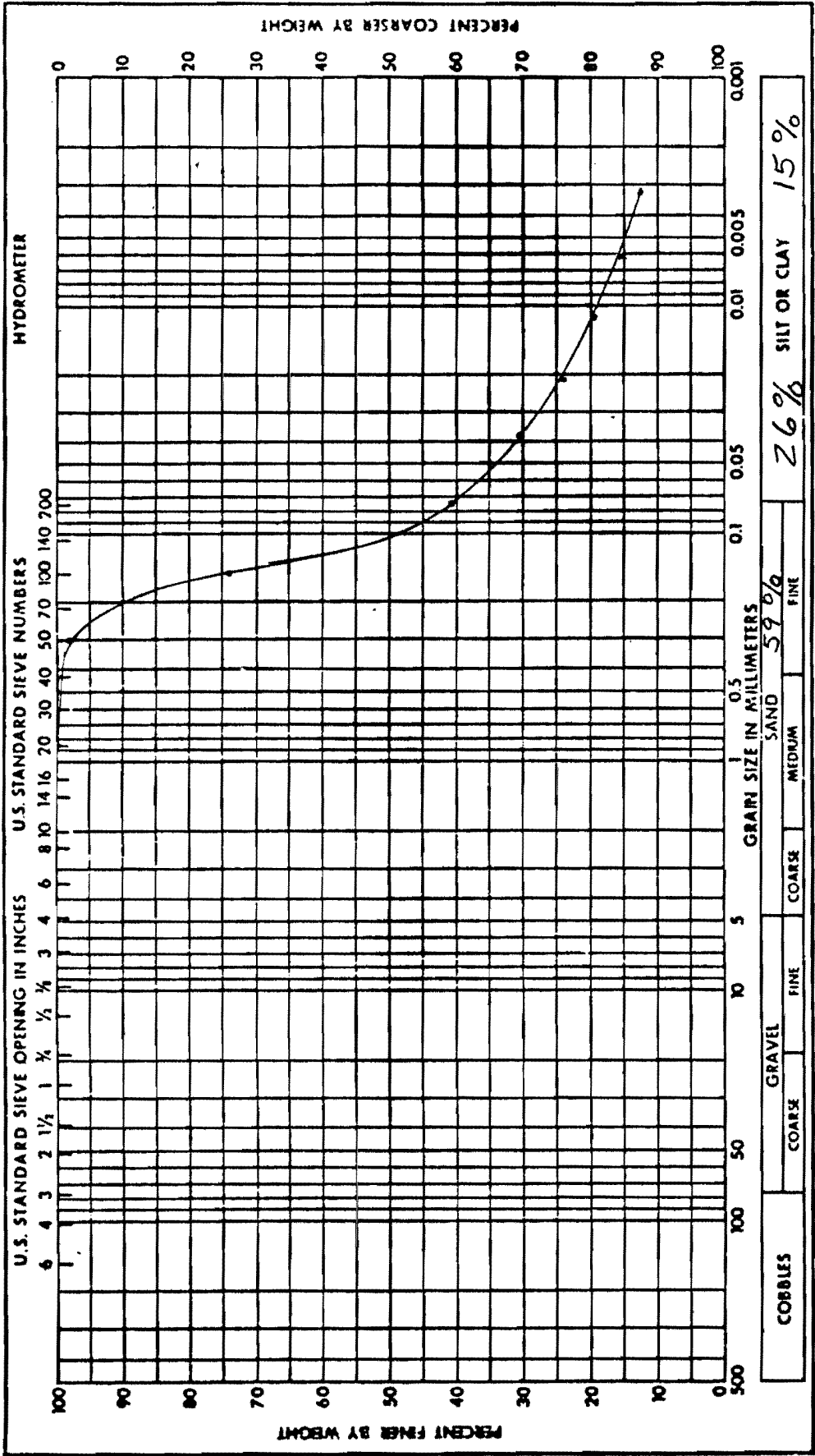
Figure 2.5-554 Category I Electrical Conduits Section F-F (Actual Figure Located in Oversized Figures File)(Sheet 1 of 2)

Figure 2.5-555 Category I Electrical Conduits Section G-G (Actual Figure Located in Oversized Figures File)

Figure 2.5-556 Category I Electrical Conduits Section H-H (Actual Figure Located in Oversized Figures File)

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT

CLASS IE CONDUIT
FIGURE 2.5-557



Added by Amendment 50

Project <i>WATTS BAR N.P.</i>	
Feature <i>CLASS I F CONDUIT</i>	
Boring No. <i>SS-50</i>	Sample No. <i>6 P. 9</i>
Station	Offset
Date <i>10-1-75</i>	Elevation
GRAIN SIZE ANALYSIS	

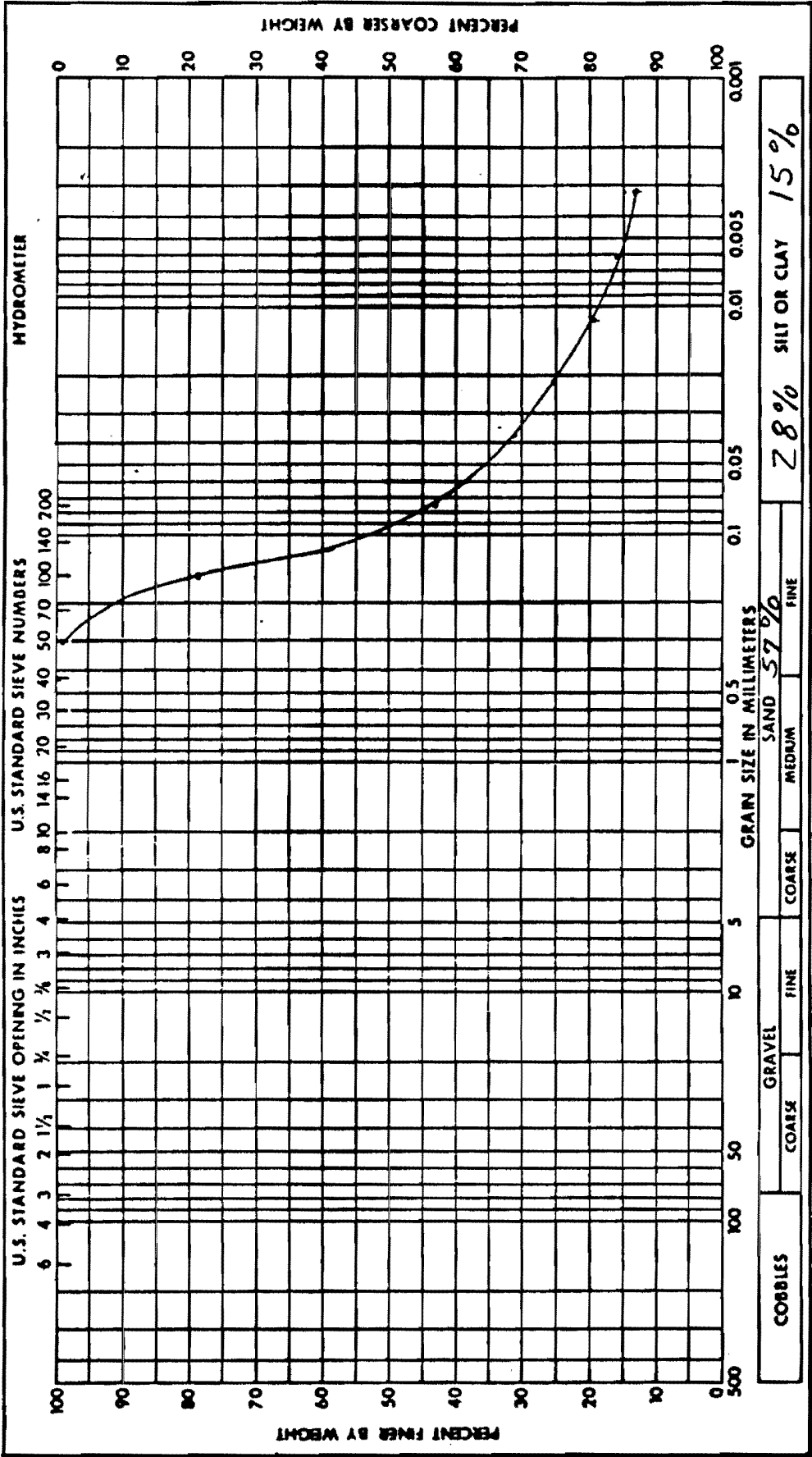
Remarks:
$N = 5$
$\omega = 28.2$

Soil Symbol	<i>SM</i>	Liquid Limit, %	<i>NP</i>
Moisture Content, %		Plastic Limit, %	<i>NP</i>
Specific Gravity		Plasticity Index, %	<i>NP</i>
		Shrinkage Limit, %	

Figure 2.5-557 Class IE Conduit

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

CLASS IE CONDUIT
FIGURE 2.5-558



Added by Amendment 50

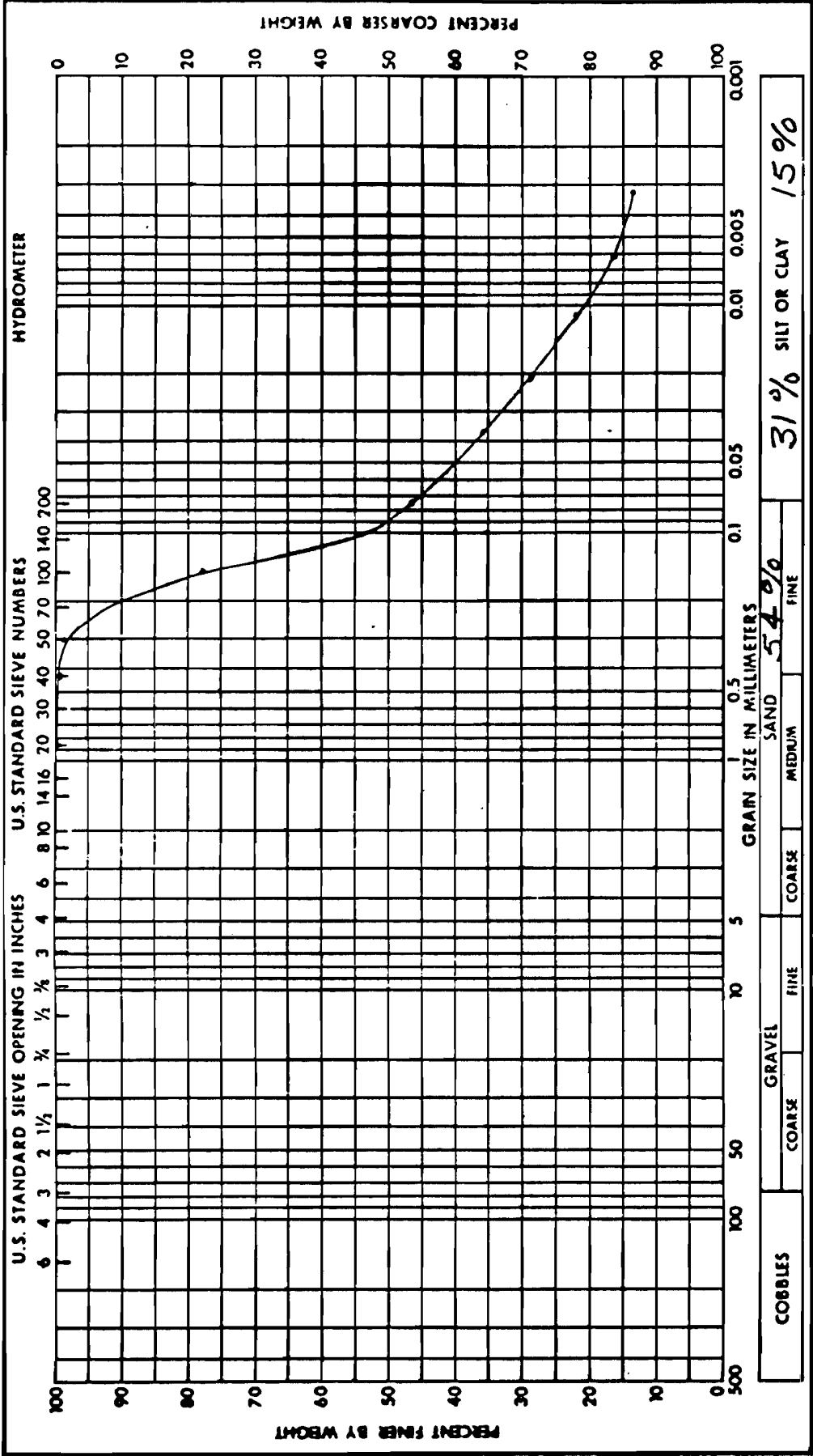
Soil Symbol	SM	Liquid Limit, %	NP
Moisture Content, %		Plastic Limit, %	NP
Specific Gravity		Plasticity Index, %	NP
		Shrinkage Limit, %	

Remarks:
N = 8
w = 29.1

Figure 2.5-558 Class IE Conduit

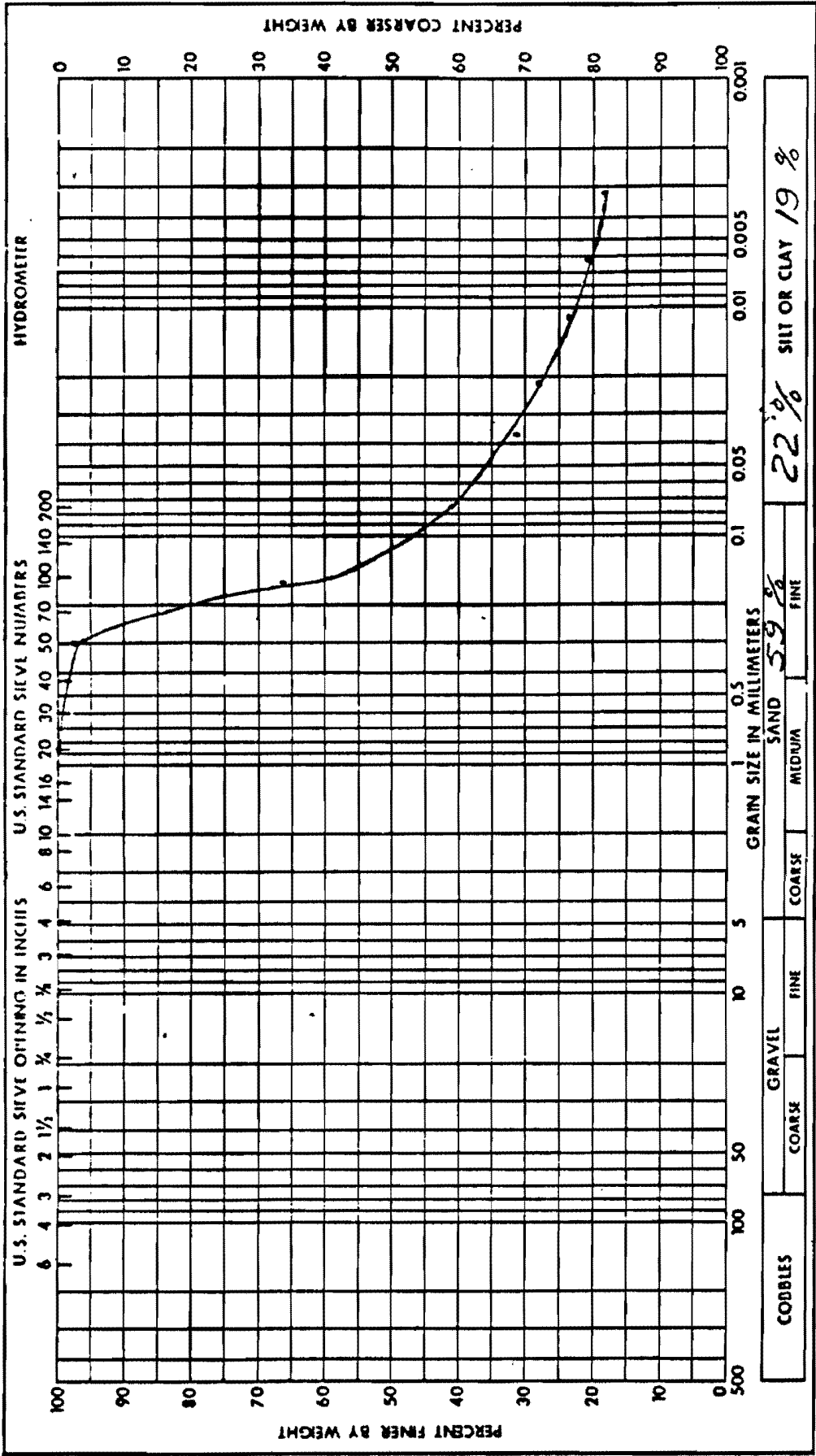
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

CLASS IE CONDUIT
FIGURE 2.5-559



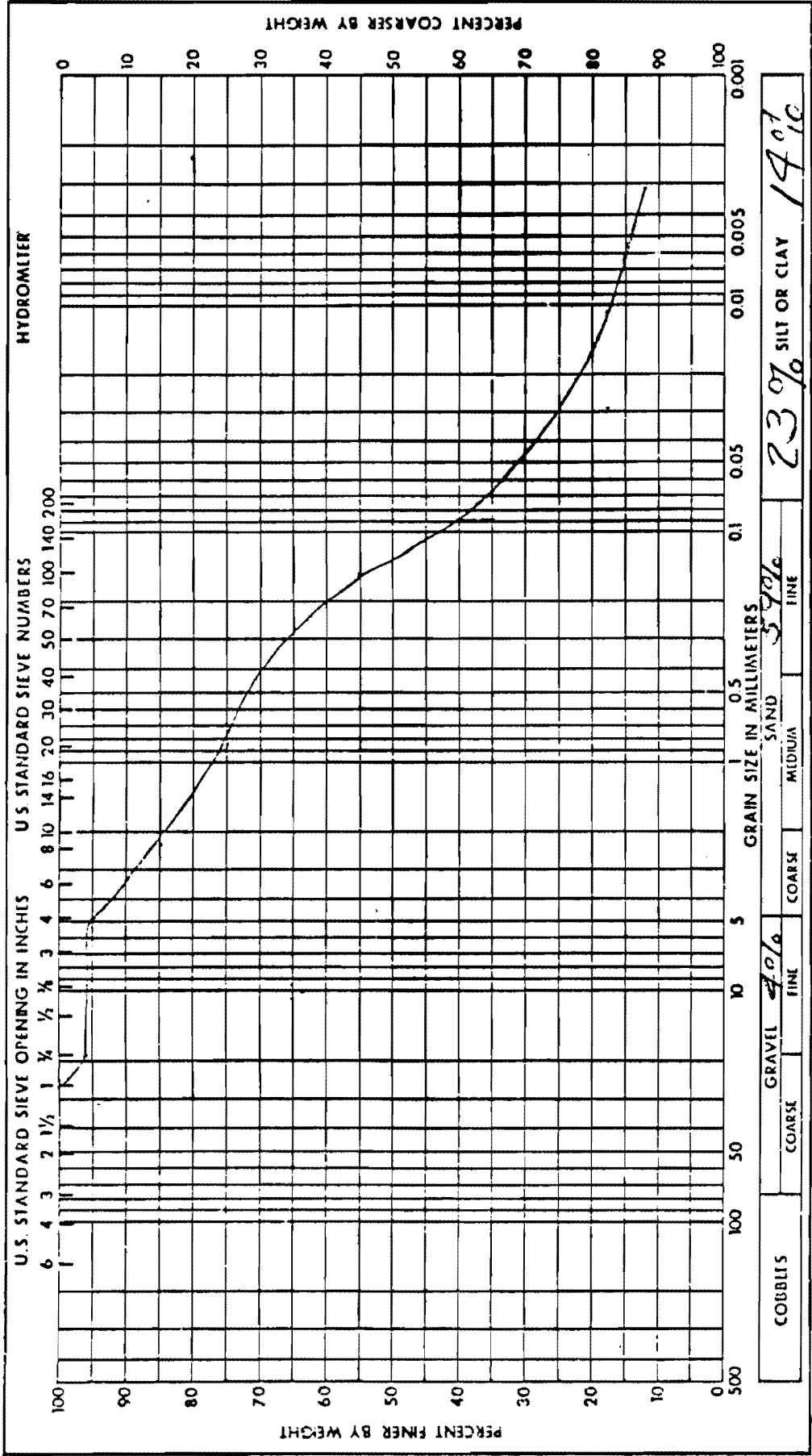
WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

IE CONDUIT
FIGURE 2.5-560



WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

IE CONDUIT
FIGURE 2.5-561



Added by Amendment 50

Project	Watts Bar N.P.		
Feature	IE CONDUIT		
Boring No.	GS-66	Sample No.	104
Station		Offset	
Date	1-16-76	Elevation	
GRAIN SIZE ANALYSIS			

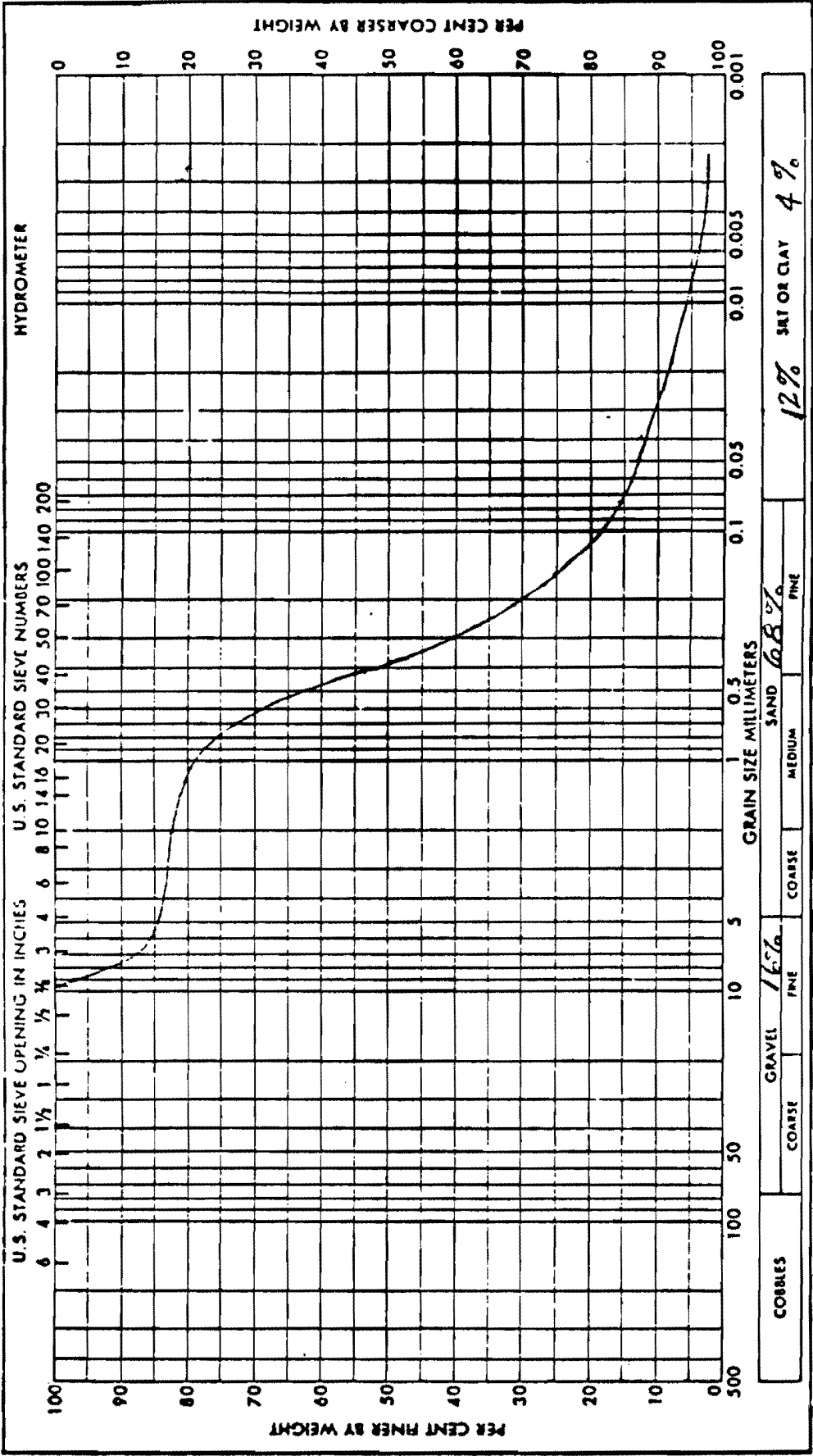
Remarks:	
N=1%	
w=16.9	

Soil Symbol	SA	Liquid Limit, %	NP
Moisture Content, %		Plastic Limit, %	NP
Specific Gravity		Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-561 Class IE Conduit

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

FIGURE 2.5-562



Added by Amendment 50

Project	WATTS BAR NP
Feature	
Boring No.	SS-66
Station	0.000
Date	8-1-75
Engineer	
GRAIN SIZE ANALYSIS	

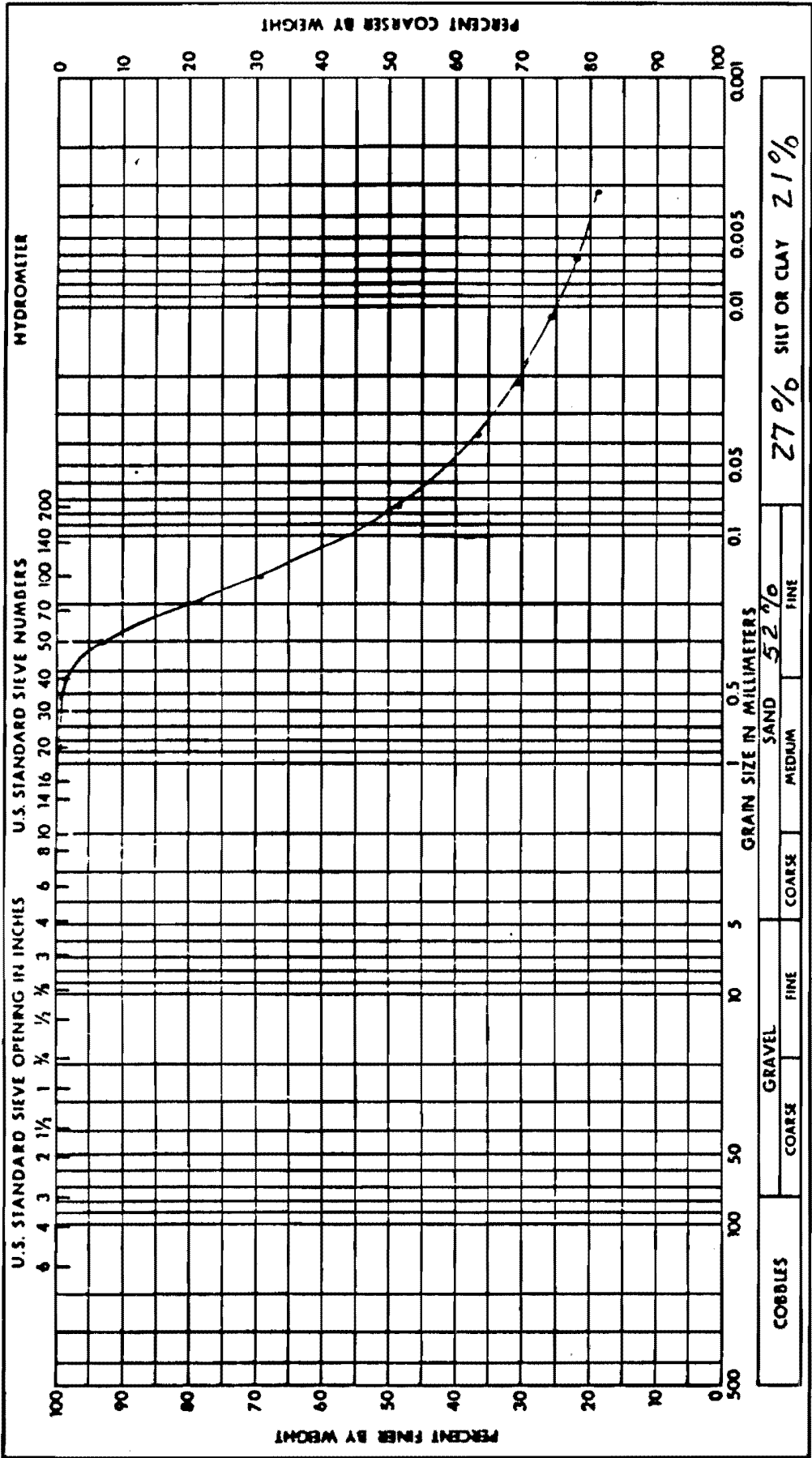
Remarks:
N = 8
w = 14.1

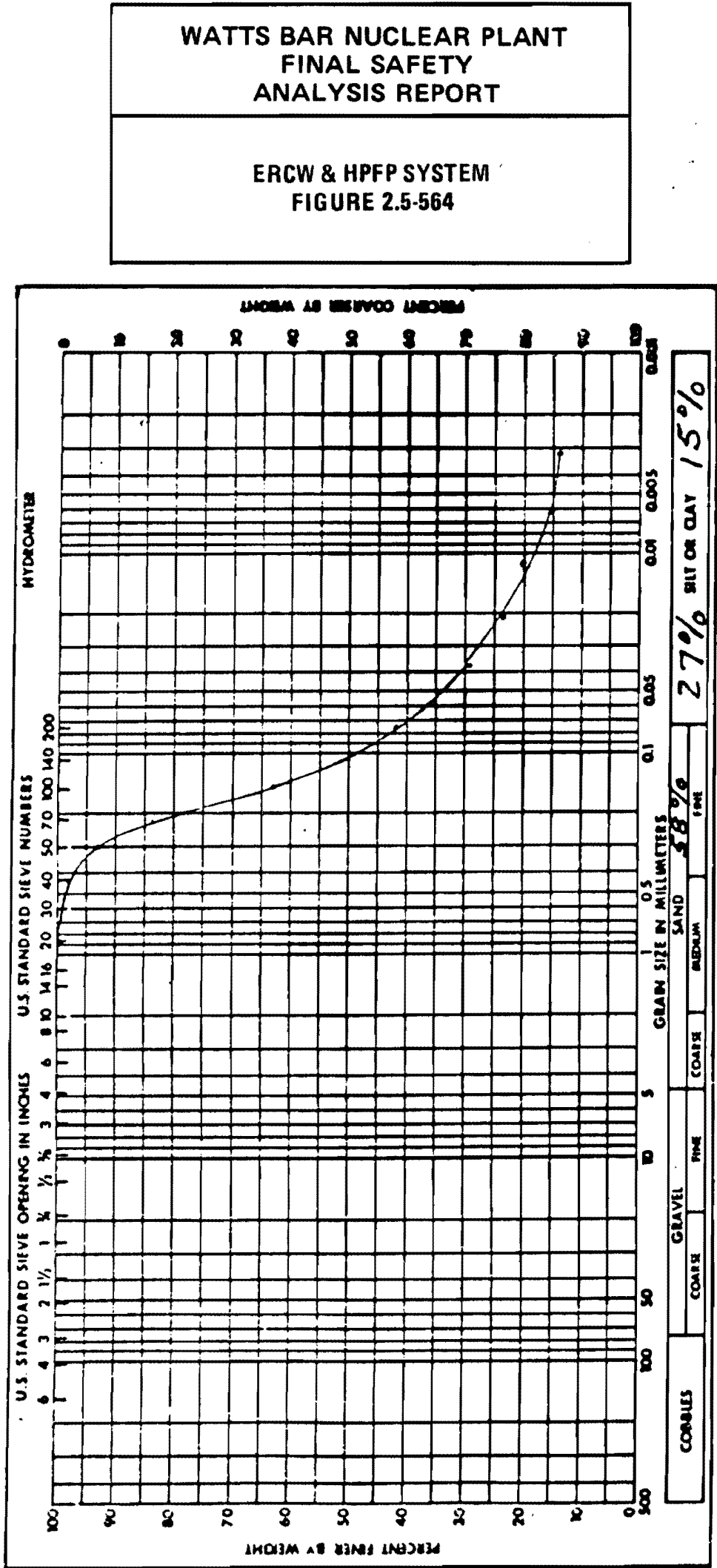
Soil Symbol	1-5M	Liquid Limit, %	NP
Moisture Content, %		Plastic Limit, %	NP
Specific Gravity		Plasticity Index, %	NP
		Shrinkage Limit, %	

Figure 2.5-562 Class IE Conduit

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

CLASS IE CONDUIT
FIGURE 2.5-563





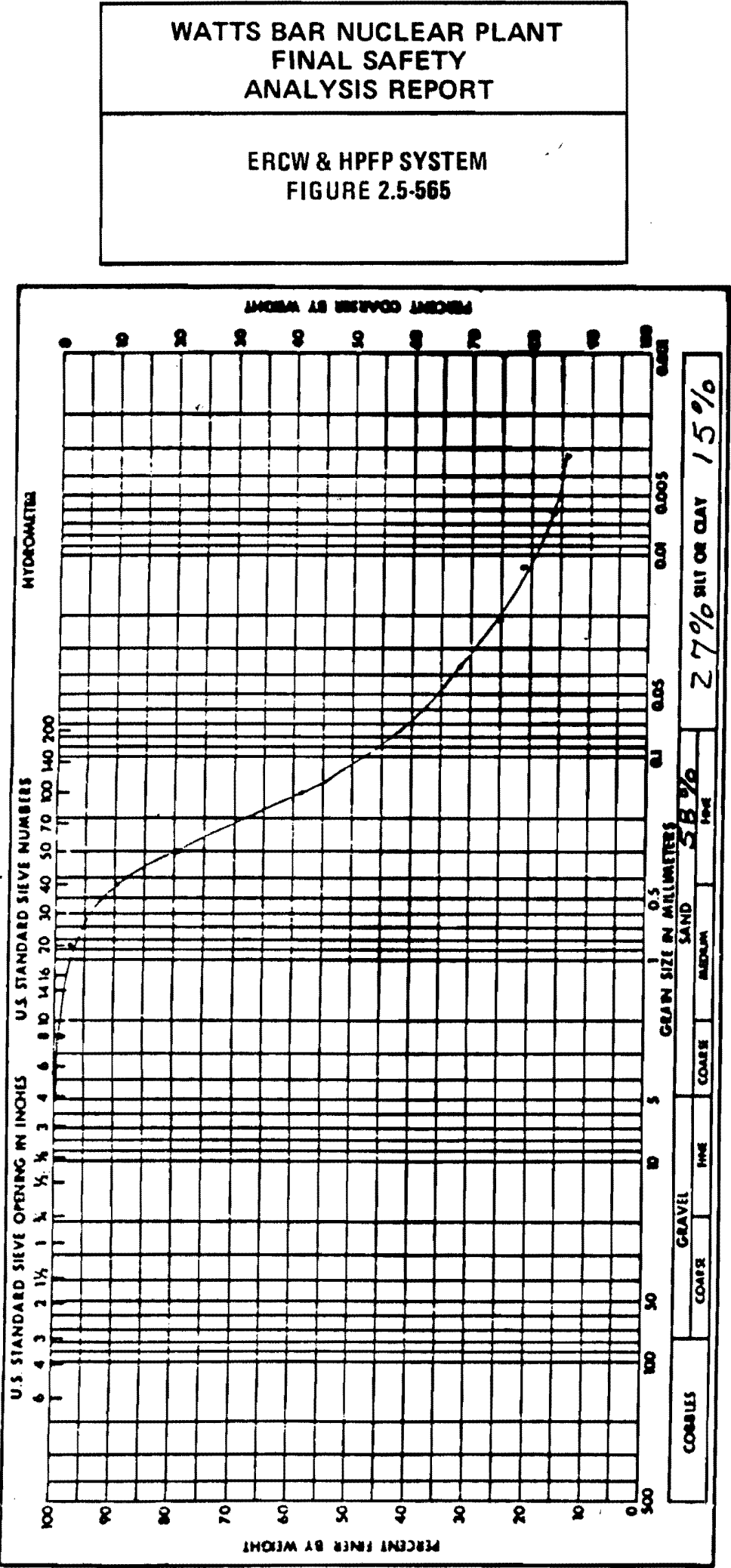
Added by Amendment 50

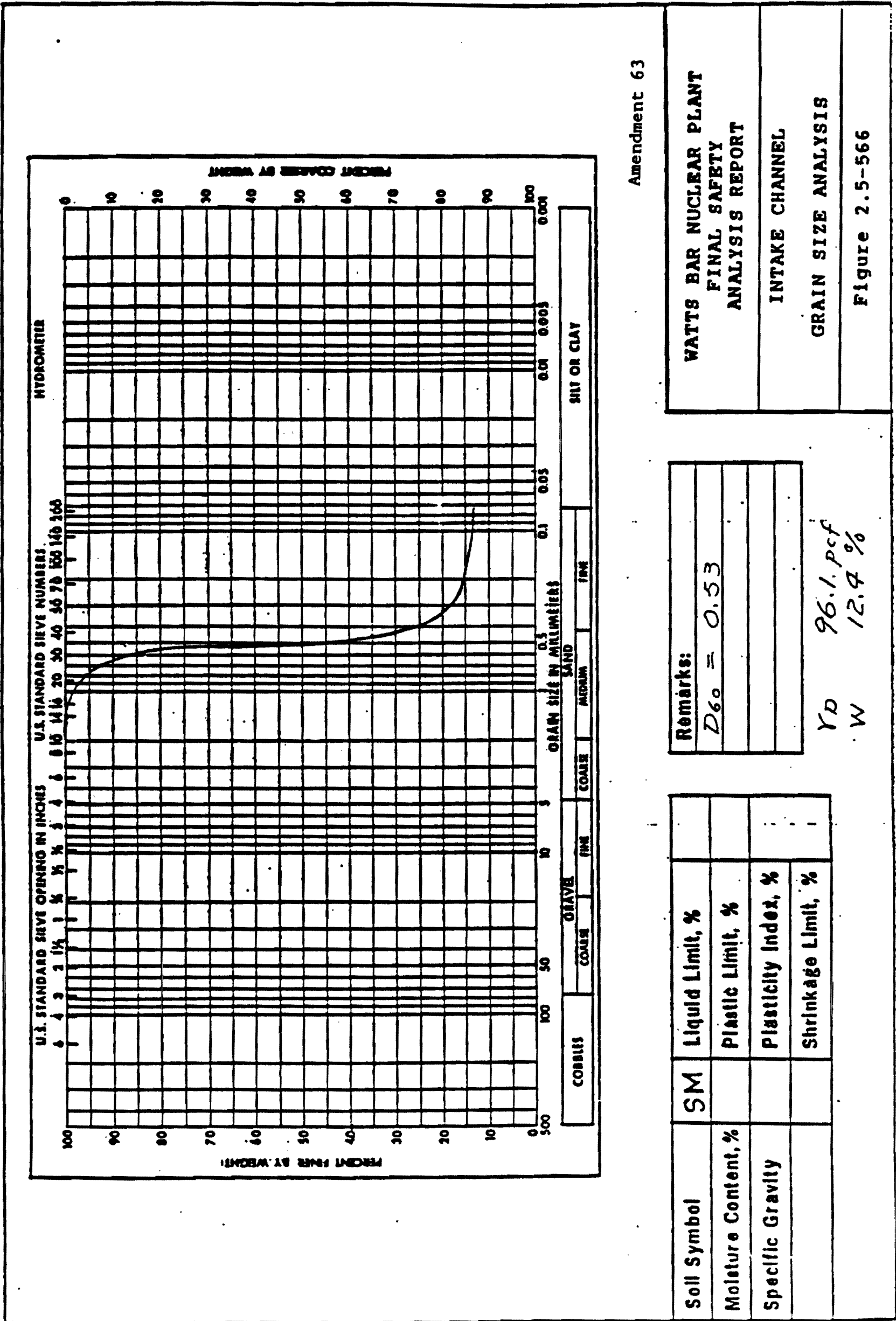
Project	WATTS BAR N.P.
Feature	ERCW & HPFP SYSTEM
Boring No.	SS-92
Sample No.	3A, 4A
Station	Offset
Date	11-26-75
Elevation	719.720.5
GRAIN SIZE ANALYSIS	

Remarks:
N=5

Soil Symbol	SM	Liquid Limit, %	28.0
Moisture Content, %		Plastic Limit, %	22.8
Specific Gravity		Plasticity Index, %	5.2
		Shrinkage Limit, %	

Figure 2.5-564 ERCU & HPFP System





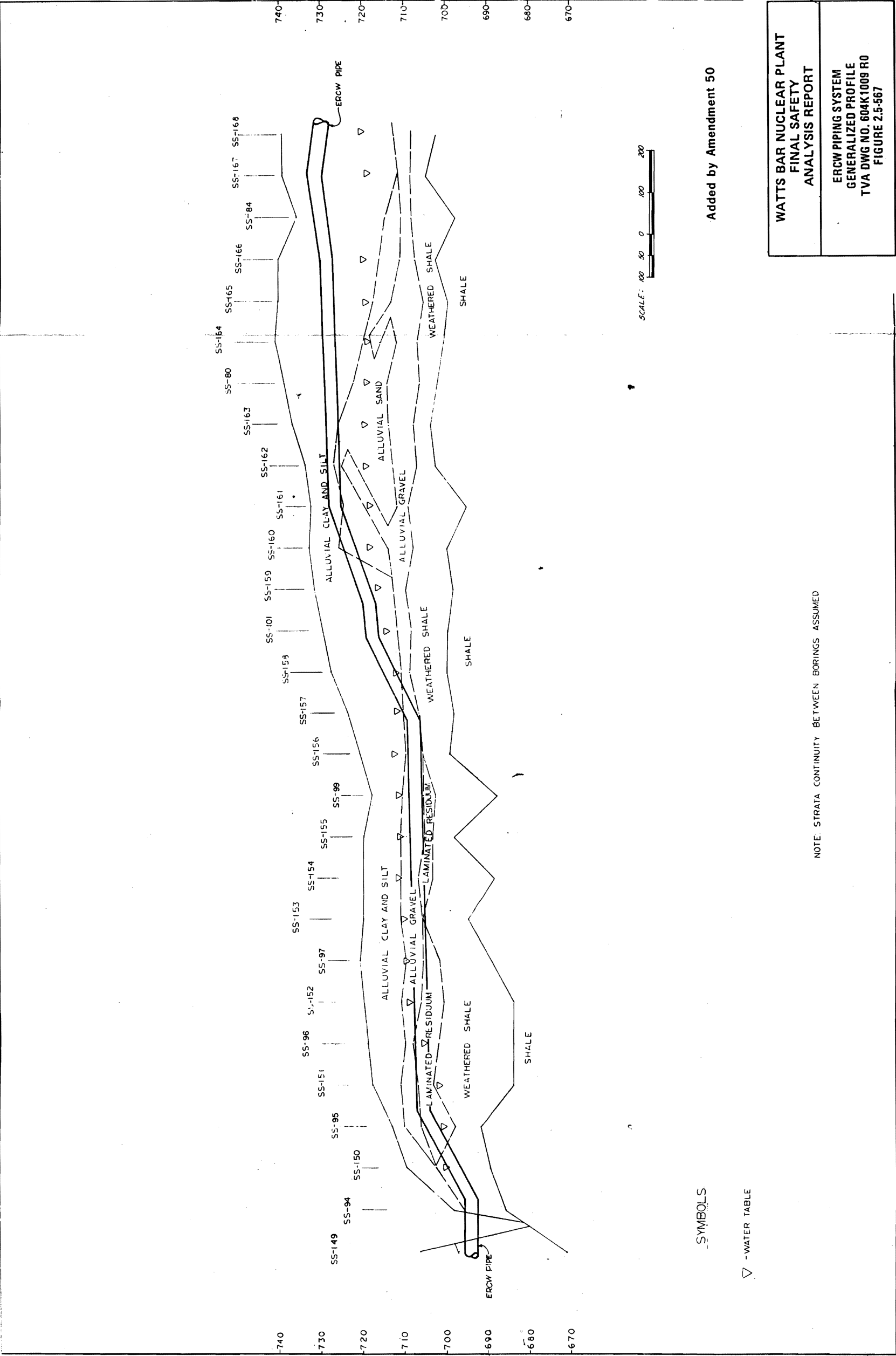


Figure 2.5-567 ERCW Piping System - Generalized Profile TVA DWG NO. 604K1009 RO

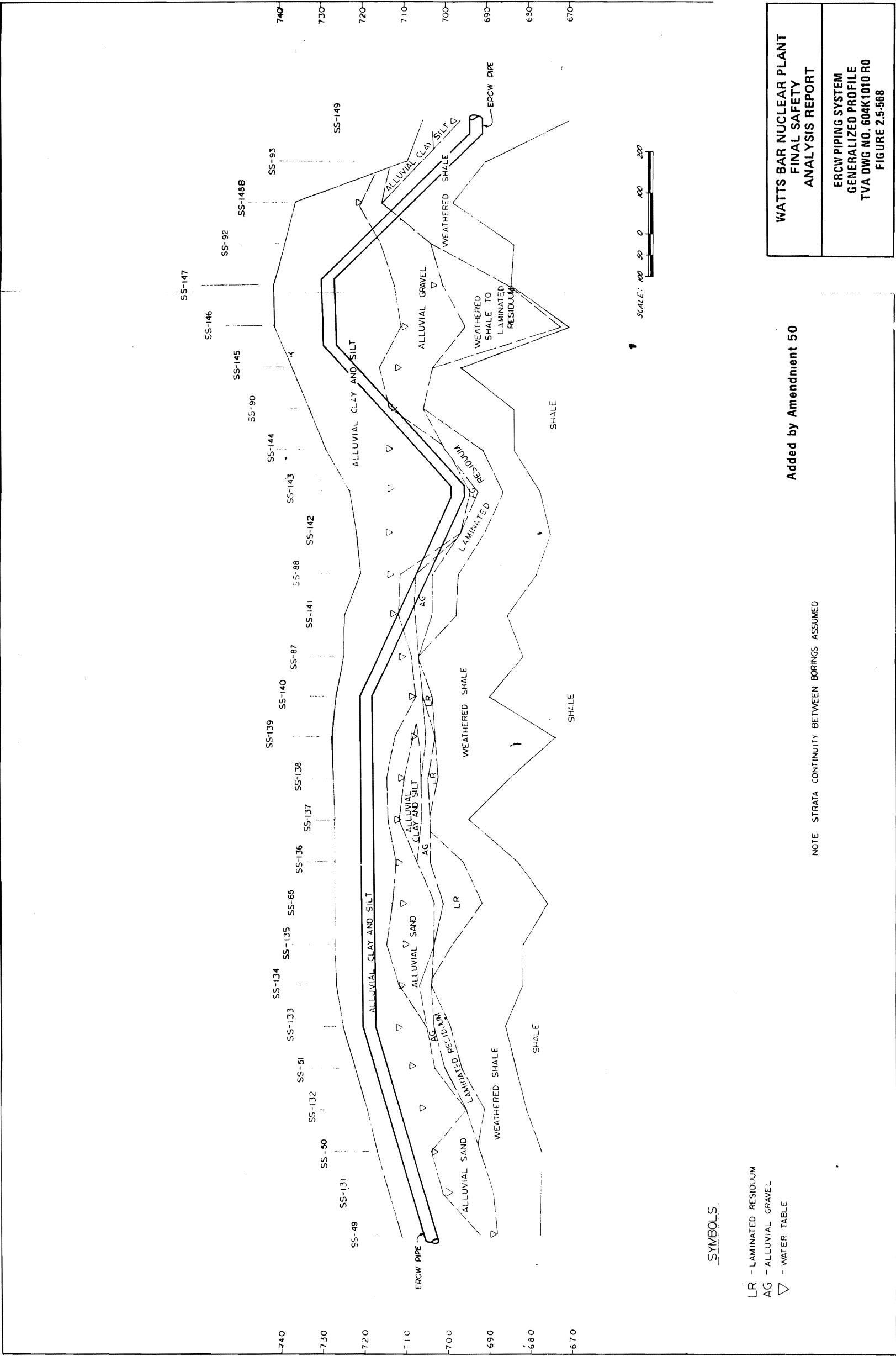
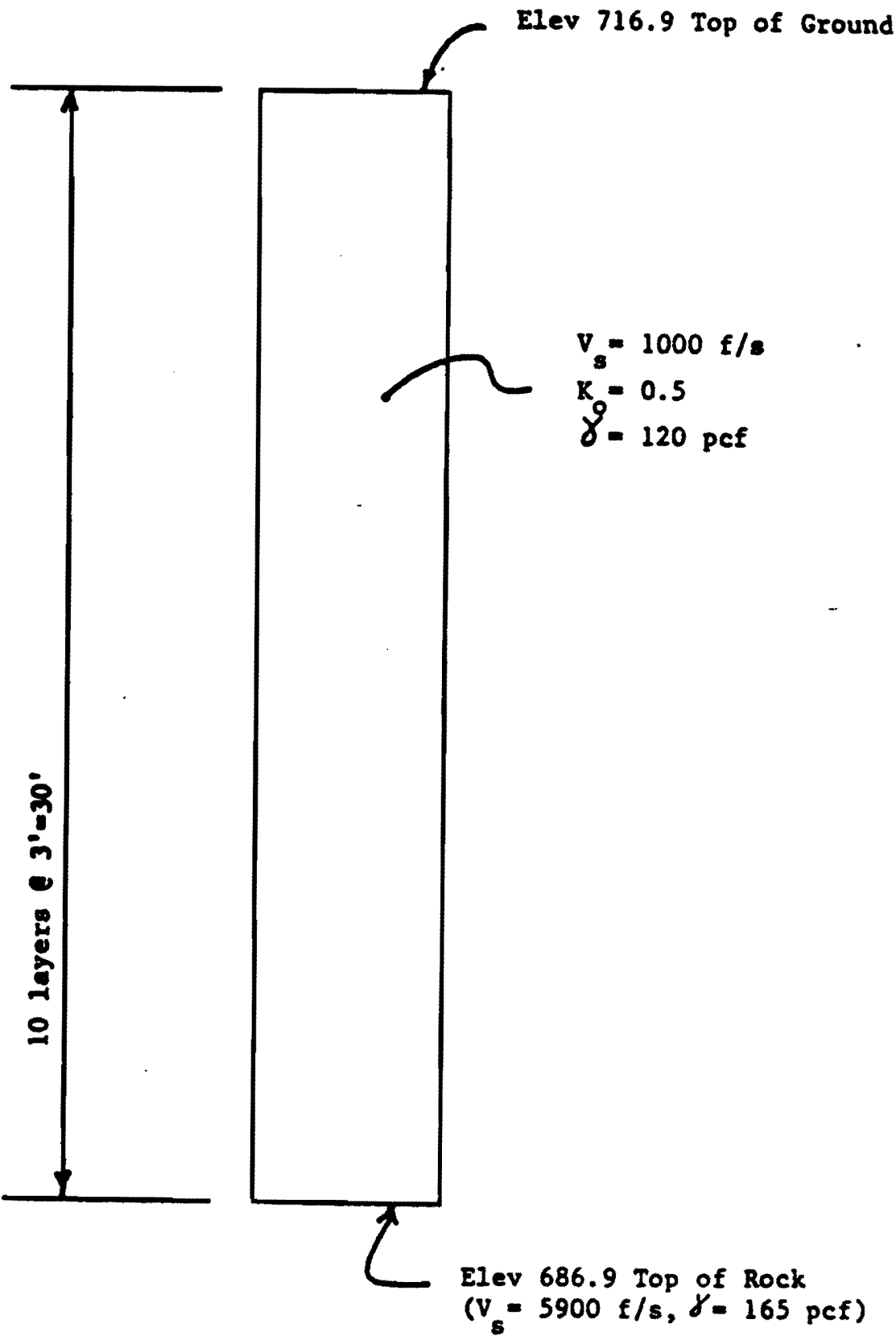


Figure 2.5-568 ERCW Piping System - Generalized Profile TVA DWG NO. 604K1010 RO

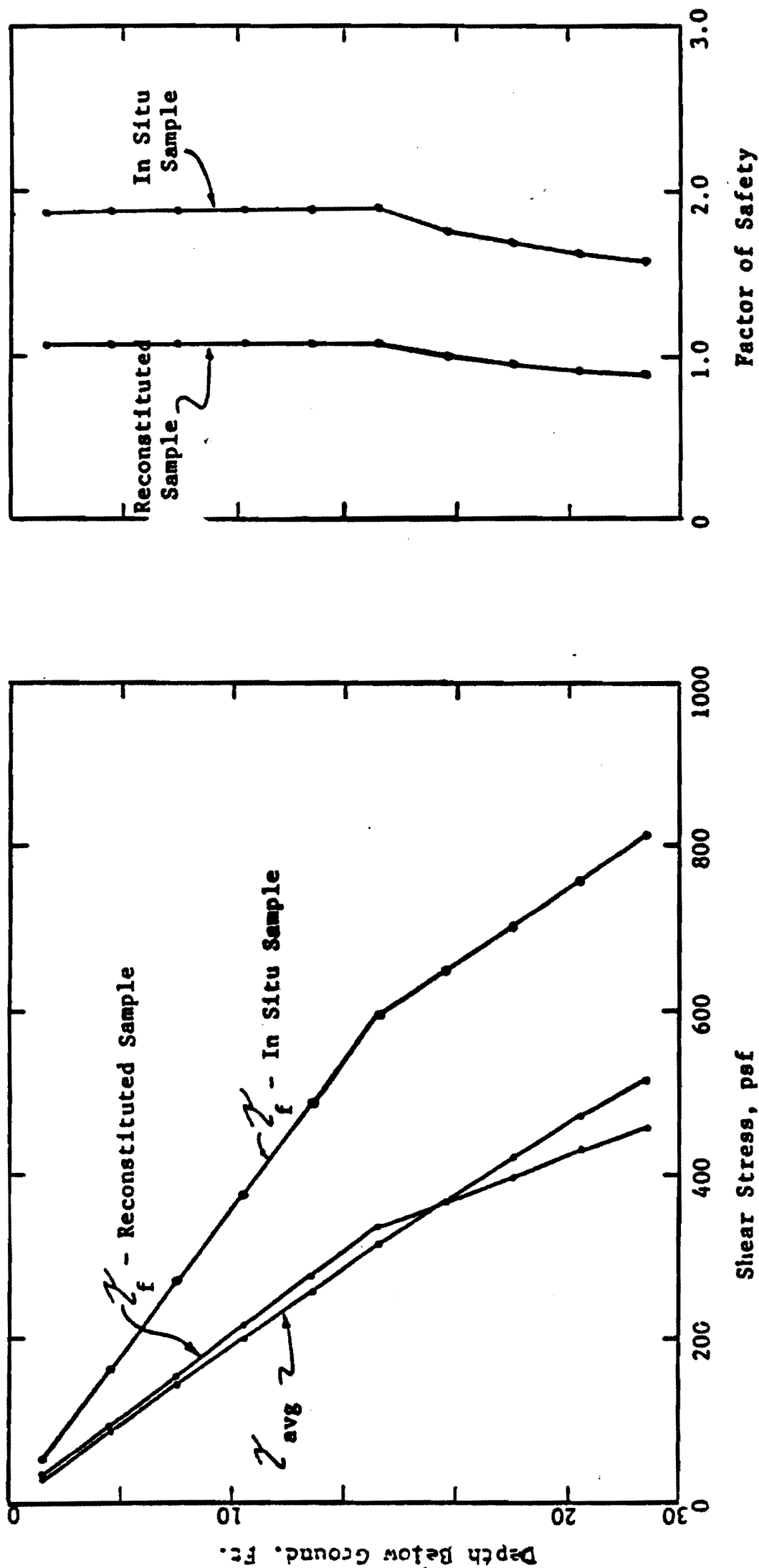


One-Dimensional Soil Profile Used for Liquefaction Evaluation

Added by Amendment 50

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
FIGURE 2.5-569

Figure 2.5-569 One-Dimensional Soil Profile Used for Liquefaction Evaluation



Comparison of Induced Shear Stress (τ_{avg}) and Shear Stress Required to cause 5% strain (τ_f) and Resulting Factors of Safety with Depth Below Ground Surface.

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
FIGURE 2.5-570

Added by Amendment 50

Figure 2.5-570 Comparison of Induced Shear Stress and Shear Stress Required to Cause 5% Strain and Resulting Factors Of Safety With Depth Below Ground Surface

Figure 2.5-571 ERCW Pipeline Section A-A
(Actual Figure Located in Oversized Figures File)(Sheet 1 of 4)

Figure 2.5-571 ERCW Pipeline Section A-A
(Actual Figure Located in Oversized Figures File)(Sheet 2 of 4)

Figure 2.5-571 ERCW Pipeline Section A-A
(Actual Figure Located in Oversized Figures File)(Sheet 3 of 4)

Figure 2.5-571 ERCW Pipeline Section A-A
(Actual Figure Located in Oversized Figures File)(Sheet 4 of 4)

Figure 2.5-572 ERCW Pipeline Section B-B

Figure 2.5-573 (Actual Figure Located in Oversized Figures File)

Figure 2.5-576 Category I Electrical Conduits Section F-F
(Actual Figure Located in Oversized Figures File)(Sheet 1 of 2)

Figure 2.5-576 Category I Electrical Conduits Section F-F
(Actual Figure Located in Oversized Figures File)(Sheet 2 of 2)

Figure 2.5-577 Category I Electrical Conduits Section G-G
(Actual Figure Located in Oversized Figures File)

Figure 2.5-578 Category I Electrical Conduits Section H-H
(Actual Figure Located in Oversized Figures File)

Figure 2.5-579 Miscellaneous ERCW Piping and IE Conduit Soil Borings
(Actual Figure Located in Oversized Figures File)

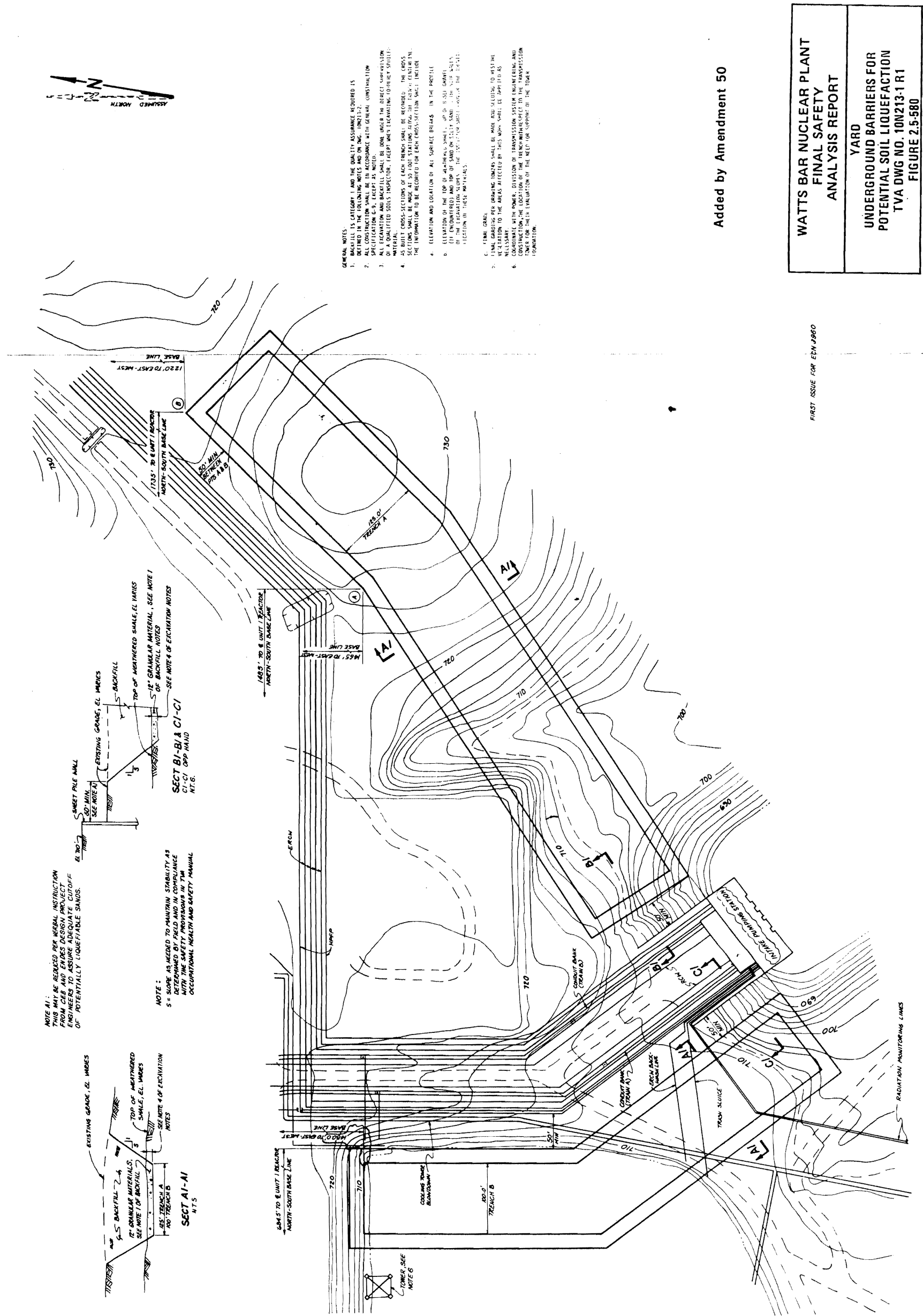


Figure 2.5-580 Yard Underground Barriers for Potential Soil Liquefaction
TVA DWGNO. 10N213-1 R1

Figure 2.5-583 Remedial Treatment for Potential Soil Liquefaction -Stability Analysis Summary
(Actual Figure Located in Oversized Figures File)

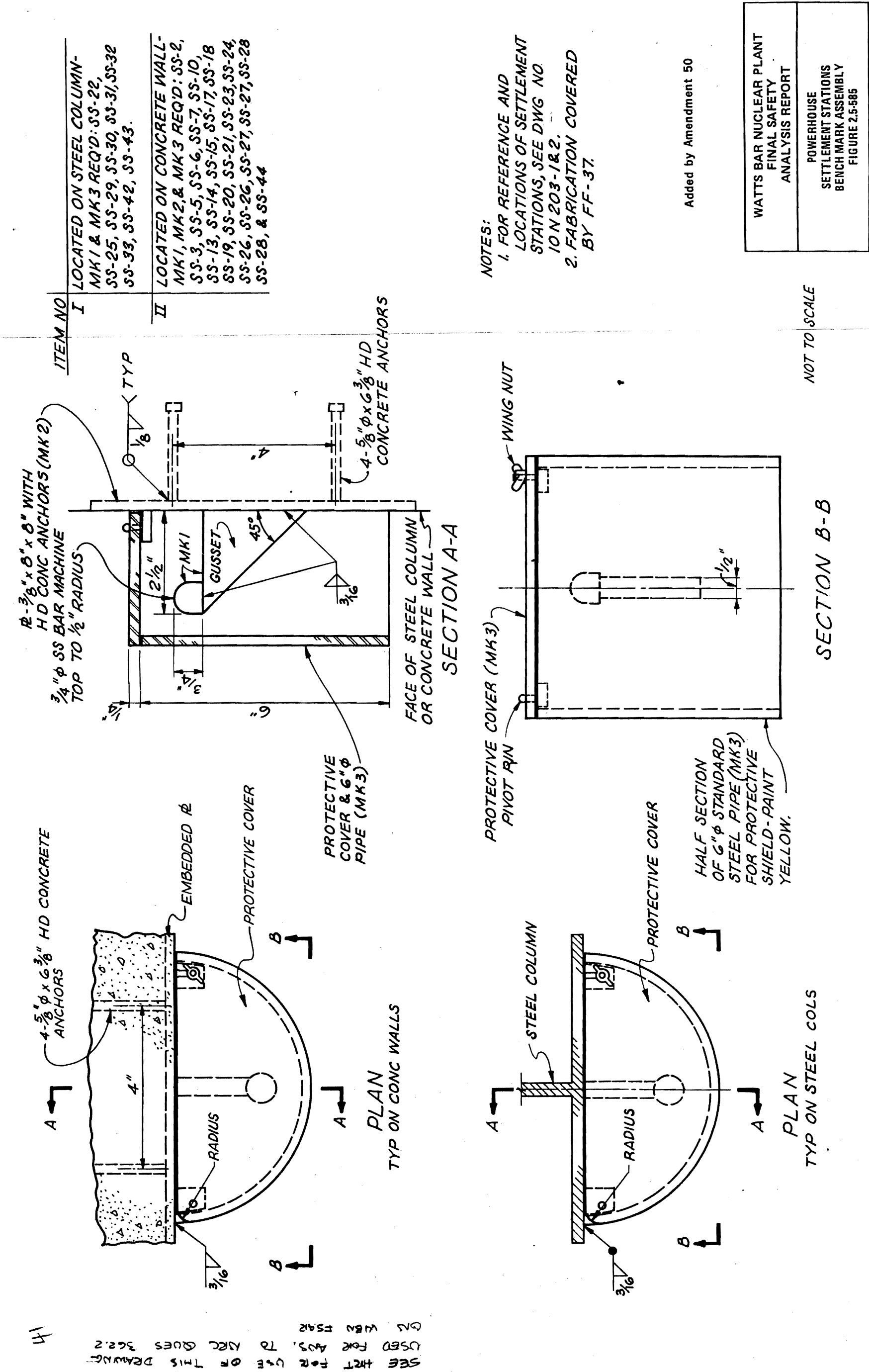
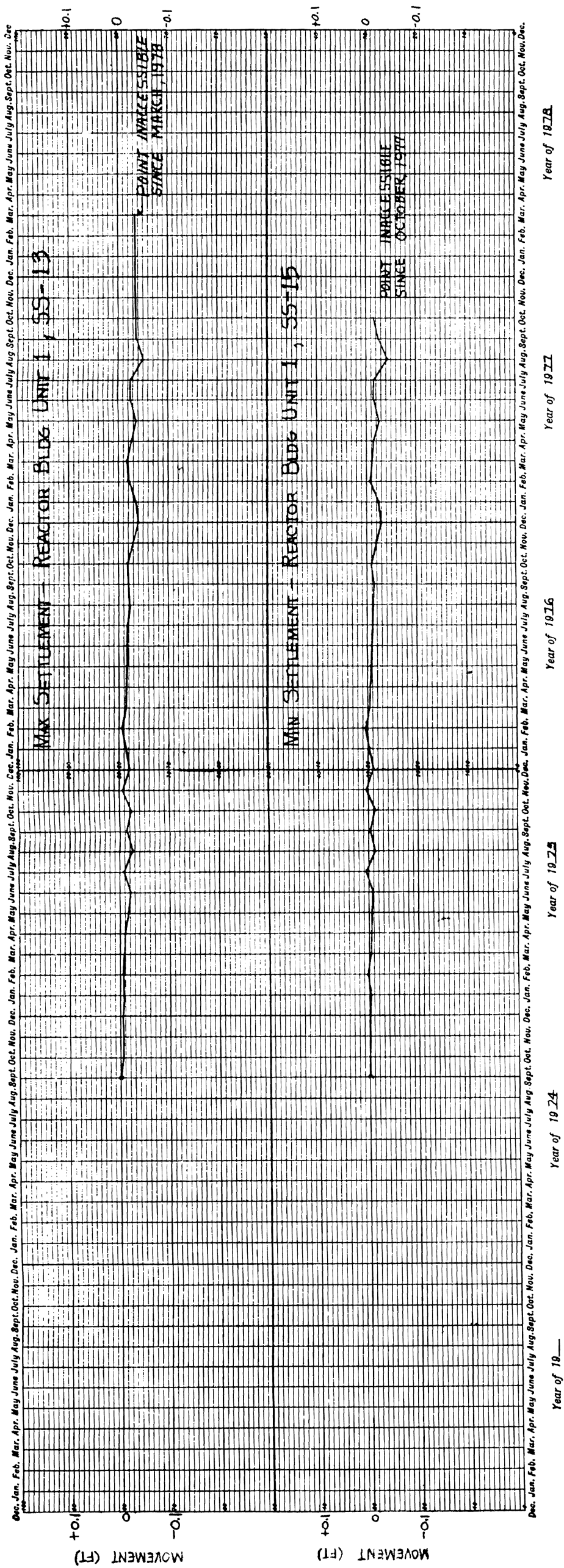


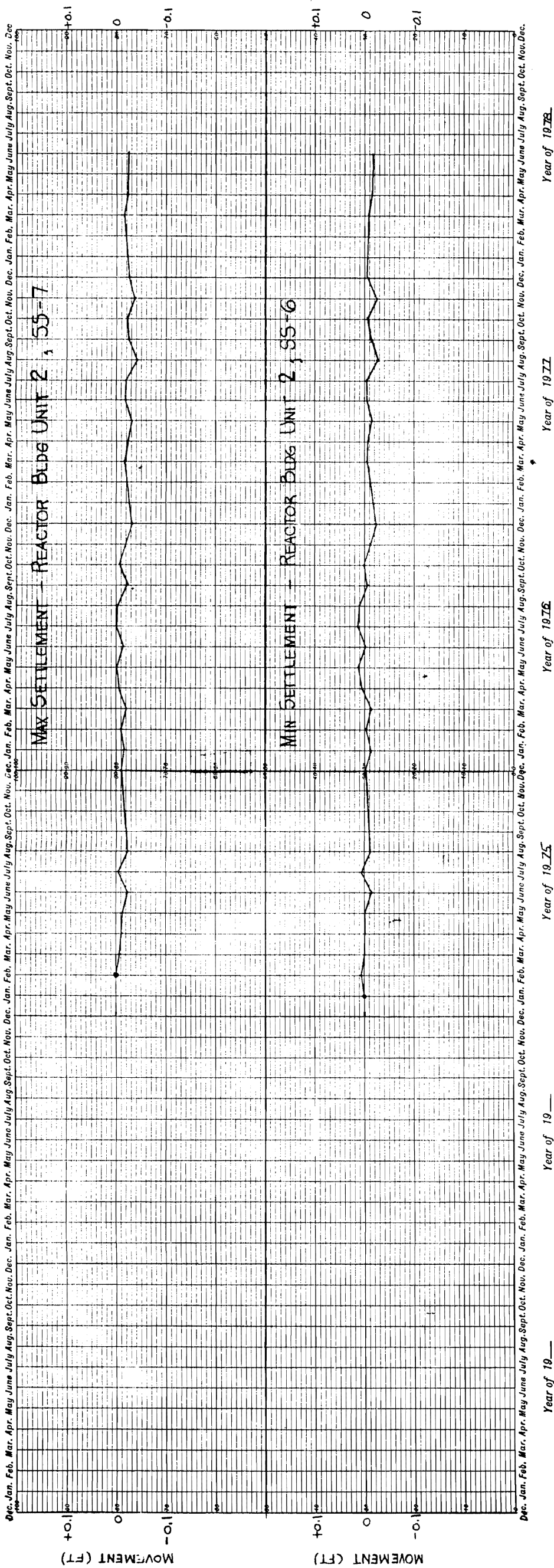
Figure 2.5-585 Powerhouse -Settlement Stations -Bench Mark Assembly



Added by Amendment 50

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
SETTLEMENT VS. TIME FOR UNIT 1 REACTOR BUILDING FIGURE 2.5-586

Figure 2.5-586 Settlement VS. Time For Unit 1 Reactor Building



Added by Amendment 50

WATTS BAR NUCLEAR PLANT FINAL SAFETY ANALYSIS REPORT
SETTLEMENT VS. TIME FOR UNIT 2 REACTOR BUILDING FIGURE 2.5-587

Figure 2.5-587 Settlement Vs. Time For Unit 2 Reactor Building

Figure 2.5-588 Maximum Settlement -Auxiliary Building Settlement Station 10; Minimum
Settlement -Auxiliary Building Settlement Station 20 (1973-1982)
(Actual Figure Located in Oversized Figures File)

Figure 2.5-589 Maximum Settlement - Diesel Generator Building Settlenent Station 1 & Intake Pumping Station Settlement Station 3A;
Minimum Settlement Diesel Generator Building Settlement Station 4 & Intake Pumping Station Settlement Station 4 (1975-1982)
(Actual Figure Located in Oversized Figures File)



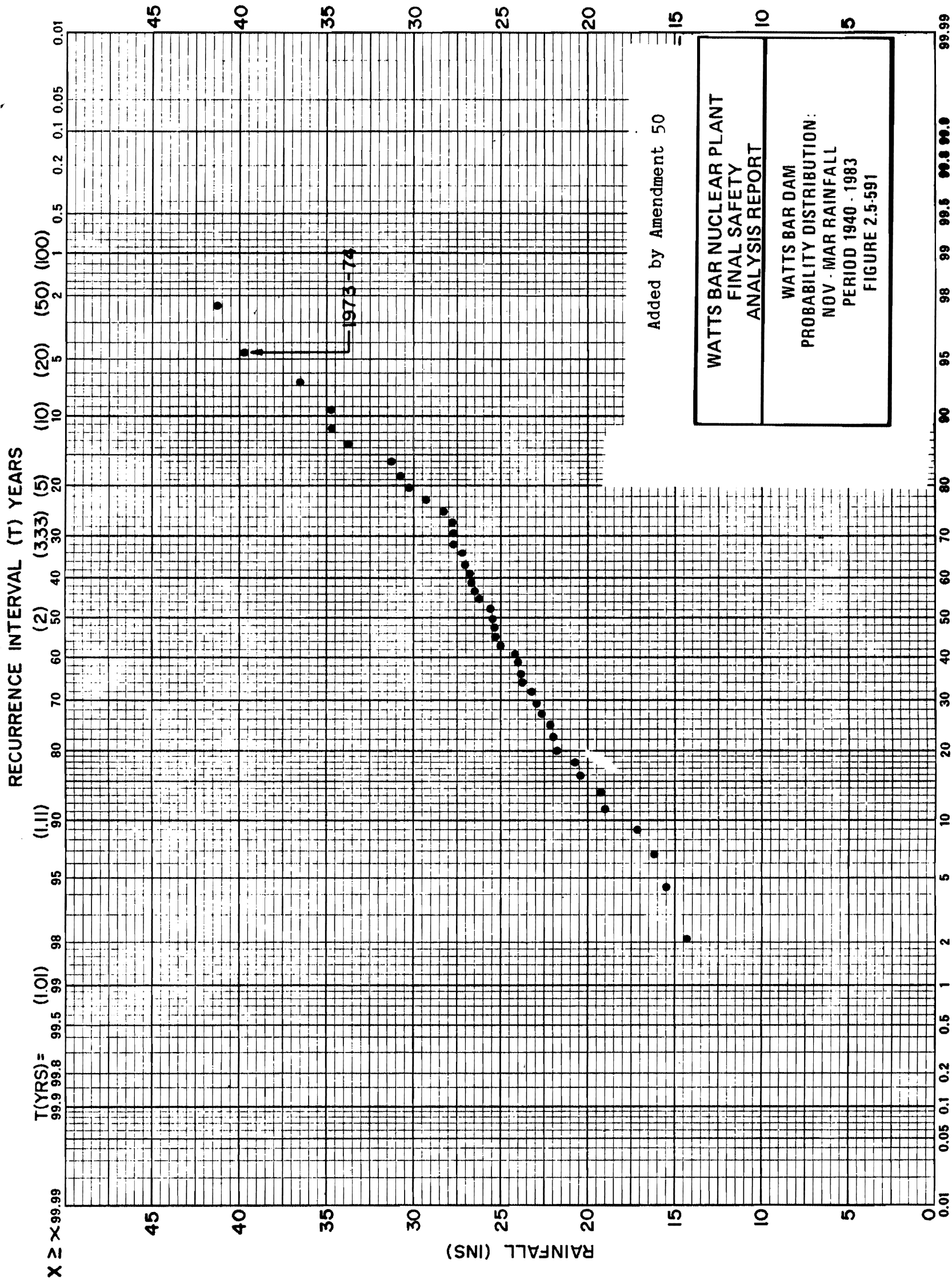


Figure 2.5-591 Watts Bar Dam Probability Distribution: November - March Rainfall Period 1940 - 1983

Figure 2.5-592 Yard ERCW Pipeline EST. 25-YR High Water Table

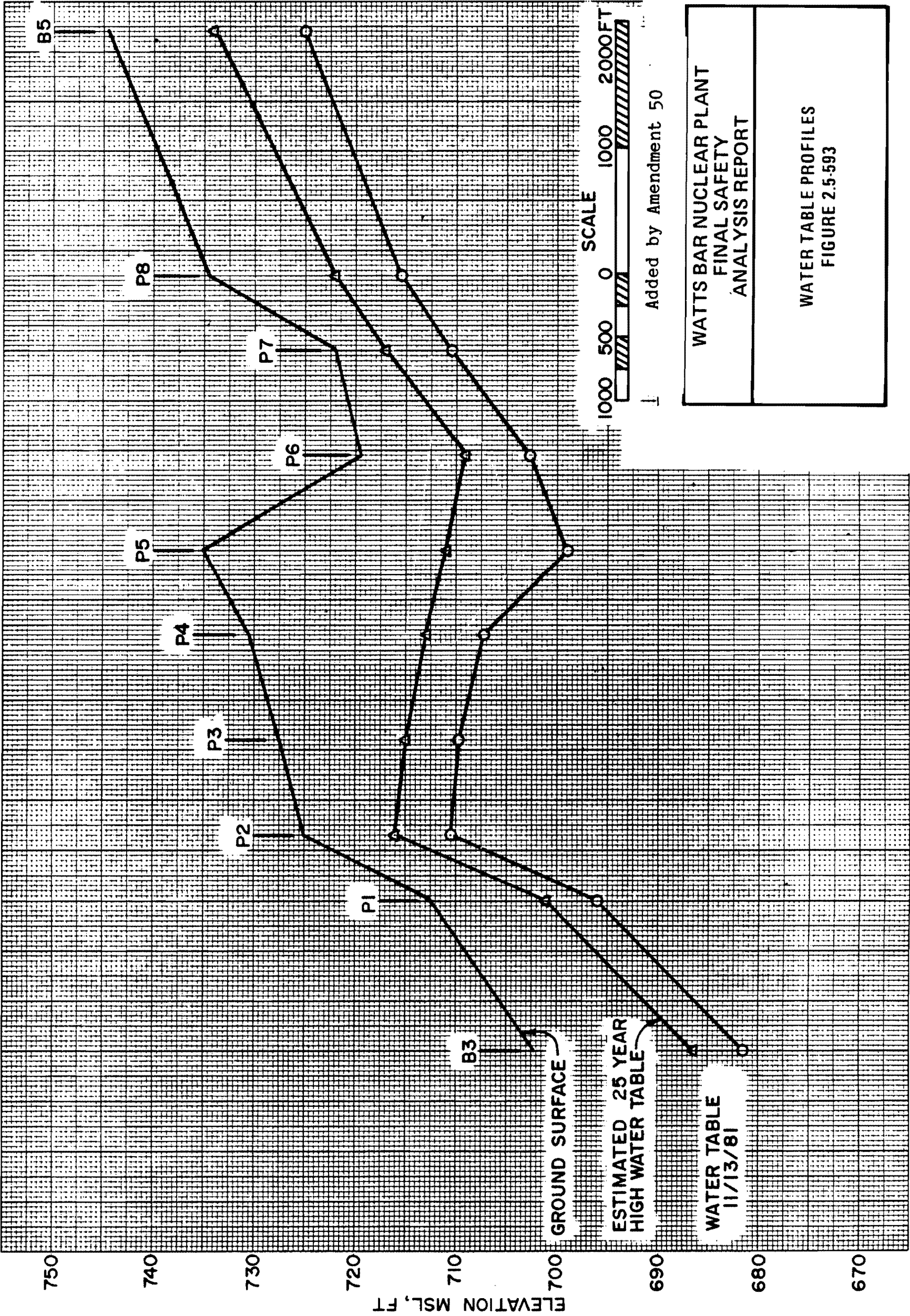


Figure 2.5-593 Water Table Profiles

Figure 2.5-594 Yard Underground Barrier Trench A STA 1 + 78
(Actual Figure Located in Oversized Figures File)

Figure 2.5-595 Yard Underground Barrier Trench A STA 3 + 78
(Actual Figure Located in Oversized Figures File)

Figure 2.5-596 Yard Underground Barrier Trench A STA 5 + 78
(Actual Figure Located in Oversized Figures File)

Figure 2.5-597 Yard Underground Barrier Trench A STA 7 + 78
(Actual Figure Located in Oversized Figures File)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF EARTHFILL
TEST DATA - DENSITY
FIGURE 2.5-598

WP-2.01 ~~RT~~ *SW*
tent F *R4 11-5-83*

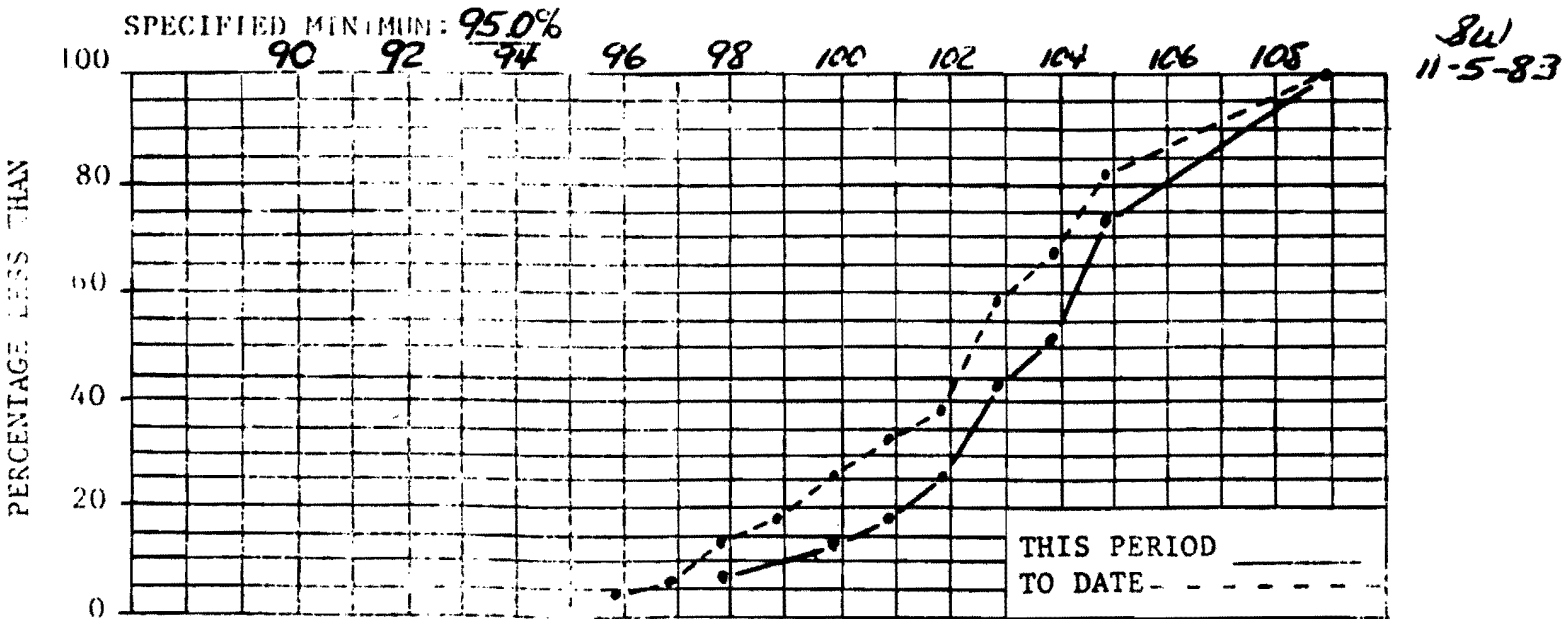
2 of 2

FEATURE: *UNDERGROUND BARRIER - TRENCH A-95% γ_{DMAX} FILL*
DATE: *9-30-83* TO: *10-22-83* TEST NO.: *1351* TO: *1390*
PART: *I* SECTION: *52A (A)* PREPARED BY: *W.S. WOODLEE*

	PLOT THIS CON	PREV CUM F	THIS PERIOD				TO DATE		
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
90.0	91.9								
92.0	92.9								
93.0	93.9								
94.0	94.9								
95.0	95.9	3					3	3	4.5
96.0	96.9	4					1	4	6.0
97.0	97.9	8	II	2	2	7.4	6	10	14.9
98.0	98.9	10					2	12	17.9
99.0	99.9	13	II	2	4	14.8	5	17	25.4
100.0	100.9	14	I	1	5	18.5	2	19	28.4
101.0	101.9	19	II	2	7	25.9	7	26	38.8
102.0	102.9	27	III	5	12	44.4	13	39	58.2
103.0	103.9	31	II	2	14	51.9	6	45	67.2
104.0	104.9	35	III-I	6	20	74.1	10	55	82.1
105.0	108.9	40	III-II	7	27	100.0	12	67	100.0
TOTALS		40	--	--	27	--	--	67	--

SPECIFICATION SOURCE: *DWG #10N213-2 R2*

	PREV	THIS PERIOD	TO DATE
AVG FILL DRY DENSITY, γ_{df} , pcf	105.5	105.8	105.6
AVG MAXIMUM DRY DENSITY, γ_{dL} , pcf	104.0	102.6	103.4
MEAN VARIATION $\gamma_{df} - \gamma_{dL}$, pcf	+1.5	+3.2	+2.2



REMARKS: *THIS IS THE FINAL ANALYSIS FOR TYPE A FILL COMPACTION.*
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH REV *4* OF WBNP-QCP-2.01. *SW*

W. Scott Woodlee *11-5-83*
INSPECTOR Date

ADDED BY AMENDMENT 59

Figure 2.5-598 Summary of Earthfill Test Data - Density

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF EARTHFILL
TEST DATA - MOISTURE CONTENT
FIGURE 2.5-599

BNP-QCP-2.01 #3 SW
Attachment C R4 11-5-83
DP
Sheet 2 of 2

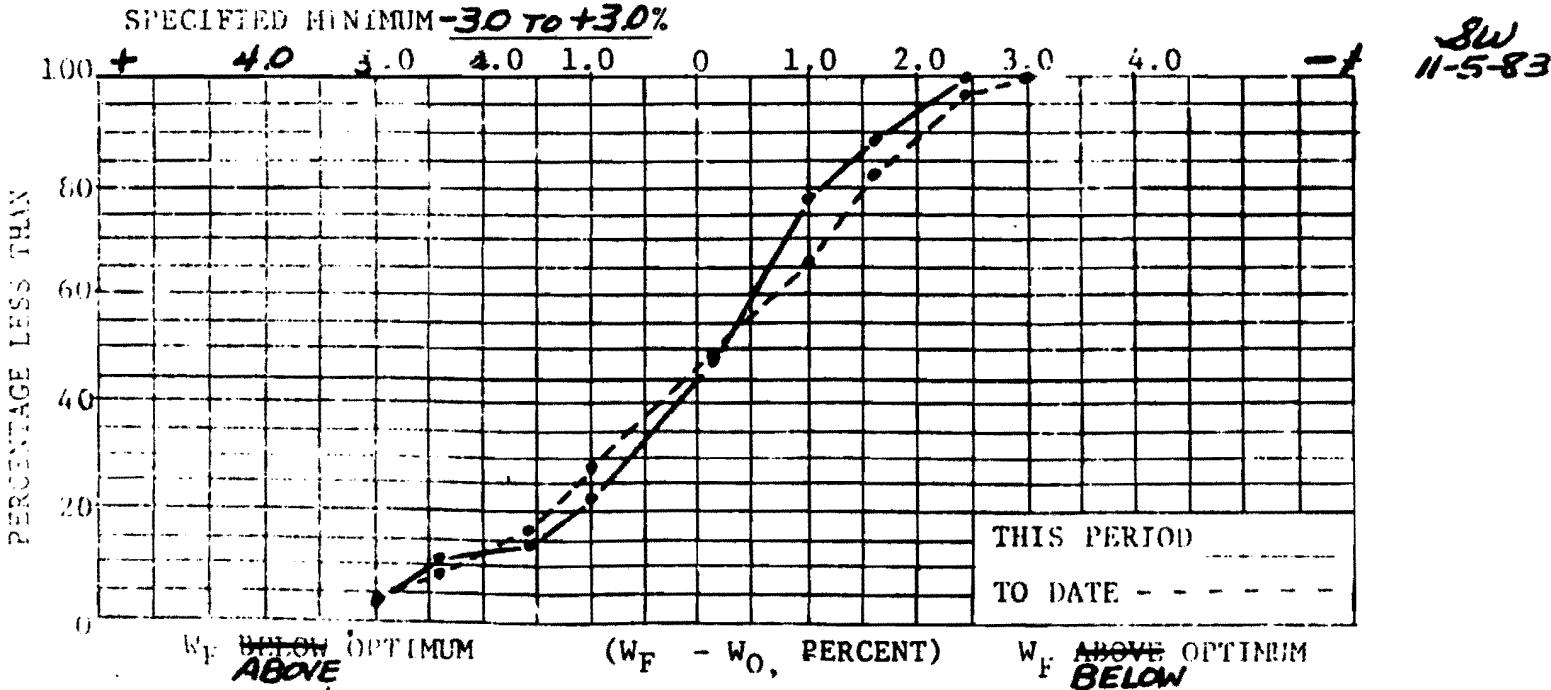
SUM

FEATURE: UNDERGROUND BARRIER - TRENCH A - 95% σ_{DMAX} Fill
DATE: 9-30-83 TO: 10-22-83 TEST NO.: 1351 TO: 1390
PART: I SECTION: 52A (A) PREPARED BY: W.S. WOODLEE

	PLOT THIS COL.	PREV CUM F	THIS PERIOD				TO DATE			
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %	
W _F ABOVE OPT	+4.6	5.2								
	3.9	4.5								
	3.1	3.8								
	2.5	3.0	2	I	1	3.7	3	3	4.5	
	1.8	2.4	3	II	2	11.1	3	6	9.0	
	1.1	1.7	7	I	1	14.8	5	11	16.4	
	0.4	1.0	13	II	2	22.2	8	19	28.4	
	+0.3	-0.3	20	III-IV	7	48.1	14	33	49.3	
	0.4	1.0	23	III-IV	8	77.8	11	44	65.7	
	1.1	1.7	32	III	3	88.9	12	56	83.6	
W _F BELOW OPT	1.8	2.4	38	III	3	100.0	9	65	97.0	
	2.5	3.0	40				2	67	100.0	
	3.1	3.8								
	3.9	4.5								
	-4.6	5.2								
	TOTALS	NA	40	--	--	27	--	67	--	

SPECIFICATION SOURCE: DWG.#10N213-2 R2

	PREV	THIS PERIOD	TO DATE
AVG FILL MOISTURE CONTENT, W _F , %	18.9	19.8	19.3
AVG OPTIMUM MOISTURE CONTENT, W _O , %	19.4	20.0	19.6
MEAN VARIATION (W _F - W _O), %	-0.5	-0.2	-0.3



REMARKS: THIS IS THE FINAL ANALYSIS FOR TYPE A FILL COMPACTION.
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH R 4 OF WBNP-QCP-2.01.

W. Scott Woodlee
Inspector

11-5-83
ADDED BY AMENDMENT 59

Figure 2.5-599 Summary Of Earthfill Test Data -Moisture Content

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF EARTHFILL
TEST DATA - DENSITY
FIGURE 2.5-600

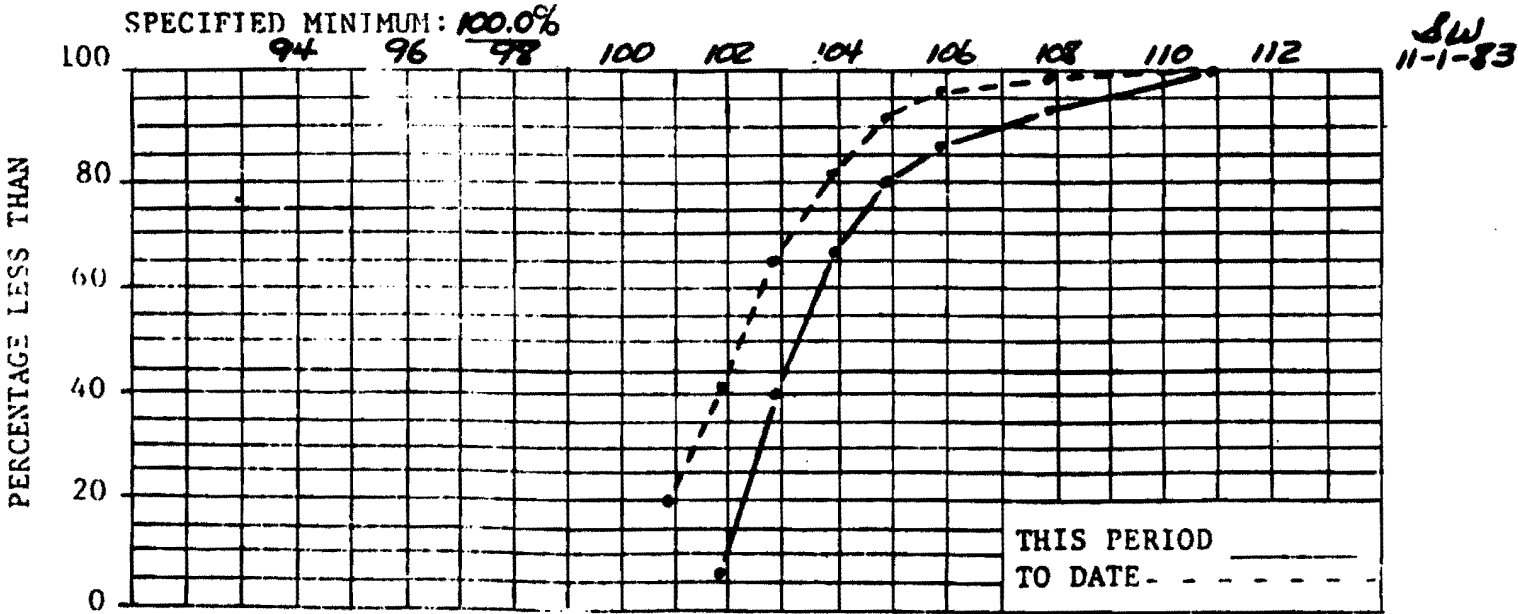
BNP-QCP-2.01 R4 SW
Attachment F R4 11-5-83
OP
Sheet 4 of 4

FEATURE: UNDERGROUND BARRIER - TRENCH A- 100% γ_{max} Fill
DATE: 9-30-83 TO: 10-9-83 TEST NO.: 1347 TO: 1364
PART: I SECTION: 52A (A1) PREPARED BY: W.S. Woodlee

	PLOT THIS COL.	PREV CUM F	THIS PERIOD				TO DATE		
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
95.0	95.9								
96.0	96.9								
97.0	97.9								
98.0	98.9								
99.0	99.9								
100.0	100.9	16					16	16	20.0
101.0	101.9	32	I	1	1	6.7	17	33	41.3
102.0	102.9	46	III	5	6	40.0	19	52	65.0
103.0	103.9	55	III	4	10	66.7	13	65	81.3
104.0	104.9	61	II	2	12	80.0	8	73	91.3
105.0	105.9	64	I	1	13	86.7	4	77	96.3
106.0	106.9								
107.0	107.9	65	I	1	14	93.3	2	79	98.8
108.0	108.9								
109.0	110.9		I	1	15	100.0	1	80	100.0
TOTALS		65	--	--	15	--	--	80	--

SPECIFICATION SOURCE: DWG.*10N213-2 R2

	PREV	THIS PERIOD	TO DATE
AVG FILL DRY DENSITY, γ_{df} , pcf	104.4	105.2	104.6
AVG MAXIMUM DRY DENSITY, γ_{dL} , pcf	102.1	101.2	101.9
MEAN VARIATION $\gamma_{df} - \gamma_{dL}$, pcf	+ 2.3	+ 4.0	+ 2.7



PERCENT COMPACTION ($\gamma_{df} - \gamma_{dL}$) x 100
REMARKS: THIS IS THE FINAL ANALYSIS FOR TYPE A1 FILL COMPACTION. SW
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH REV 4 OF WBNP-QCP-2.01.
W. Scott Woodlee 11-5-83
INSPECTOR Date

ADDED BY AMENDMENT 59

Figure 2.5-600 Summary Of Earthfill Test Data -Density

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF EARTHFILL
TEST DATA - MOISTURE CONTENT
FIGURE 2.5-601

WBNP-QCP-2.01 ~~SW~~ **SW**
Attachment C ~~R4~~ **R4** 11-5-83
LOP
Sheet **4** of 4

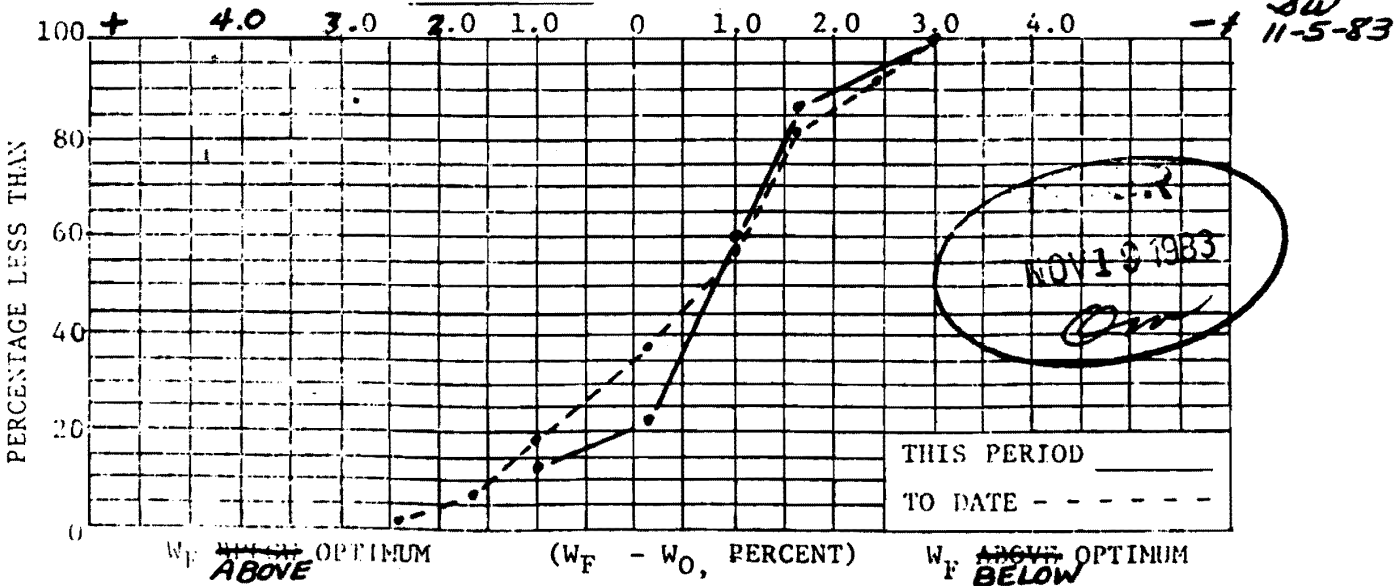
FEATURE: UNDERGROUND BARRIER - TRENCH A - 100% γ_{Dmax} FILL
DATE: 9-30-83 TO: 10-9-83 TEST NO.: 1347 TO: 1364
PART: I SECTION: 52A (A1) PREPARED BY: W.S. WOODLEE

		PLOT THIS COL.	PREV CUM F	THIS PERIOD				TO DATE		
				FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
W _F ABOVE OPT	+4.6	5.2								
	3.9	4.5								
	3.1	3.8								
	2.5	3.0								
	1.8	2.4	1					1	1	1.3
	1.1	1.7	6					5	6	7.5
	0.4	1.0	13	II	2	2	13.3	9	15	18.8
	+0.3	-0.3	25	II	2	4	26.7	14	29	36.3
	0.4	1.0	38	III	5	9	60.0	18	47	58.8
	1.1	1.7	52	III	4	13	86.7	18	65	81.3
W _F BELOW OPT	1.8	2.4	61					9	74	92.5
	2.5	3.0	65	II	2	15	100.0	6	80	100.0
	3.1	3.8								
	3.9	4.5								
	-4.6	5.2								
	TOTALS	NA	65	--	--	15	--	--	80	--

SPECIFICATION SOURCE: DWG.#10N213-2 R2

	PREV	THIS PERIOD	TO DATE
AVG FILL MOISTURE CONTENT, W _F , %	19.7	19.9	19.7
AVG OPTIMUM MOISTURE CONTENT, W _O , %	20.4	20.8	20.5
MEAN VARIATION (W _F - W _O), %	-0.7	-0.9	-0.8

SPECIFIED MINIMUM -3.0 TO +3.0%



REMARKS: THIS IS THE FINAL ANALYSIS FOR TYPE A1 FILL COMPACTION.
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH R 4 OF WBNP-QCP-2.01.

ADDED BY AMENDMENT 59 W. Scott Woodlee 11-5-83
INSPECTOR

Figure 2.5-601 Summary Of Earthfill Test Data -Moisture Content

Figure 2.5-602 Yard Underground Barrier Trench B STA 1 + 100
(Actual Figure Located in Oversized Figures File)

Figure 2.5-603 Yard Underground Barrier Trench B STA 2 + 50
(Actual Figure Located in Oversized Figures File)

Figure 2.5-604 Yard Underground Barrier Trench B STA 3 + 00
(Actual Figure Located in Oversized Figures File)

Figure 2.5-605 Yard Underground Barrier Trench B STA 4 + 50
(Actual Figure Located in Oversized Figures File)

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF FILL TEST
DATA - DENSITY
FIGURE 2.5-606

NP-QCP-2.01 R6
Attachment F
IP

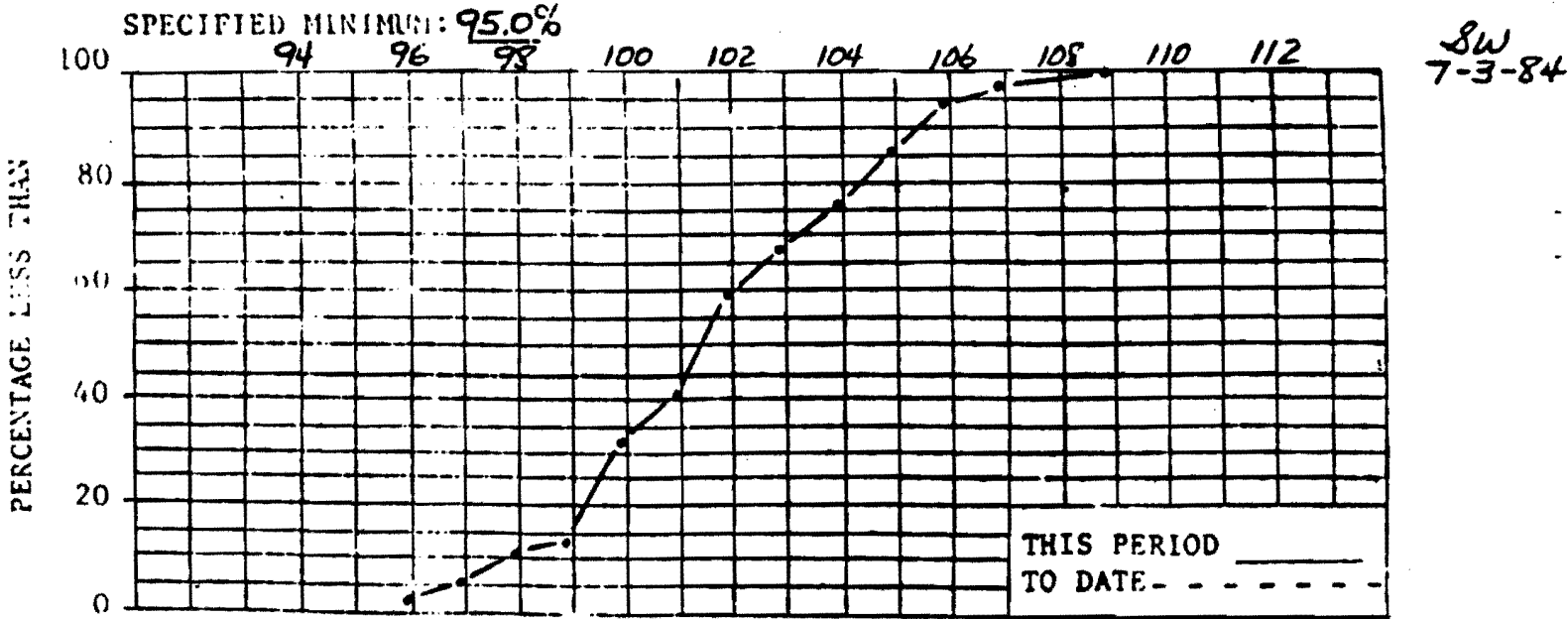
Sheet 1 of

FEATURE: UNDERGROUND BARRIER - TRENCH B-95% γ_{Dmax} FILL
DATE: 11-2-83 TO: 6-28-84 TEST NO.: 1397 TO: 1475
PART: I SECTION: 52B (A) PREPARED BY: W.S. WOODLEE

	PLOT THIS COL	PREV CUM F	THIS PERIOD				TO DATE		
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
95.0	95.9		I	1	1	2.7			
96.0	96.9		I	1	2	5.4			
97.0	97.9		II	2	4	10.8			
98.0	98.9		I	1	5	13.5			
99.0	99.9		III-II	7	12	32.4			
100.0	100.9		III	3	15	40.5			
101.0	101.9		III-II	7	22	59.5			
102.0	102.9	NA	III	3	25	67.6	NA	NA	NA
103.0	103.9		III	3	28	75.7			
104.0	104.9		III	4	32	86.5			
105.0	105.9		III	3	35	94.6			
106.0	106.9		I	1	36	97.3			
107.0	107.9								
108.0	108.9		I	1	37	100.0			
109.0	110.9								
TOTALS			--	--	37	--	--		

SPECIFICATION SOURCE: DWG. #10N213-2 R4

	PREV	THIS PERIOD	TO DATE
AVG FILL DRY DENSITY, γ_{df} , pcf	NA	107.0	107.0
AVG MAXIMUM DRY DENSITY, γ_{dL} , pcf	NA	105.3	105.3
MEAN VARIATION $\gamma_{dL} - \gamma_{df}$, pcf	NA	+1.7	+1.7



REMARKS: FAILED TESTS NOT INCLUDED IN THIS ANALYSIS. SW
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH REV 6 OF WBNP-QCP-2.01.
ADDED BY AMENDMENT 59 W. Scott Woodlee 7-3-84
INSPECTOR Date

Figure 2.5-606 Summary of Fill Test Data -Density

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF EARTHFILL
TEST DATA - MOISTURE CONTENT
FIGURE 2.5-607

WP-QCP-2.01 R6
Attachment C

Sheet 1 of 1

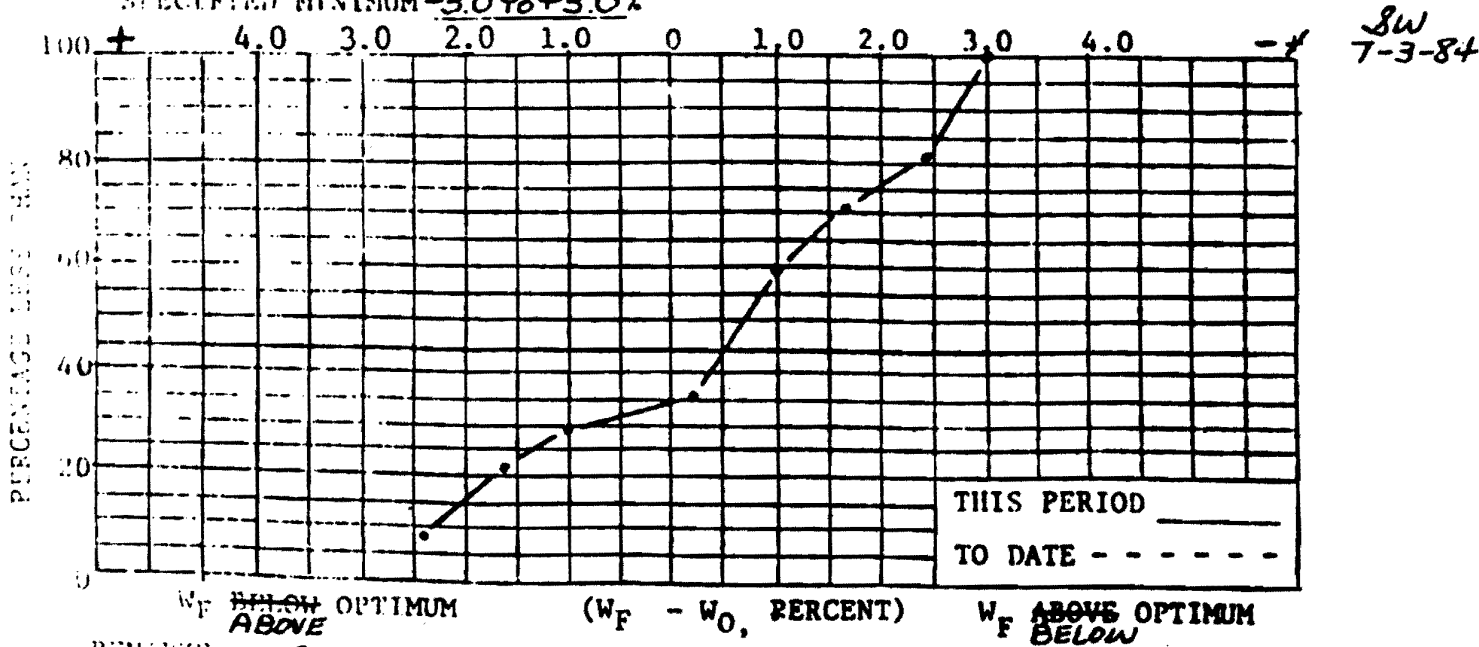
FEATURE: UNDERGROUND BARRIER - TRENCH B - 95% γ_{max} FILL
DATE: 11-2-83 TO: 6-28-84 TEST NO.: 1397 TO: 1475
PART: I SECTION: 52B (A) PREPARED BY: W.S. WOODLEE

	PLOT THIS COL	PREV CUM F	THIS PERIOD				TO DATE		
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
W _F ABOVE OPT	+4.6	5.2							
	3.9	4.5							
	3.1	3.8							
	2.5	3.0							
	1.8	2.4	III	3	3	8.1			
	1.1	1.7	III-	5	8	21.6			
	0.4	1.0	III	3	11	29.7			
	+0.3	-0.3	II	2	13	35.1	NA	NA	NA
	0.4	1.0	III-III	9	22	59.5			
	1.1	1.7	III	4	26	70.3			
W _F BELOW OPT	1.8	2.4	III	4	30	81.1			
	2.5	3.0	III-II	7	37	100.0			
	3.1	3.8							
	3.9	4.5							
	-4.6	5.2							
	TOTALS	NA	--	--	37	--	--	--	--

SPECIFICATION SOURCE: DWG #10N213-Z R4

	PREV	THIS PERIOD	TO DATE
AVG FILL MOISTURE CONTENT, W _F , %	NA	18.4	18.4
AVG OPTIMUM MOISTURE CONTENT, W _O , %	NA	19.0	19.0
MEAN VARIATION (W _F - W _O), %	NA	-0.6	-0.6

SPECIFIED MINIMUM -3.0 to +3.0 %



REMARKS: FAILED TESTS NOT INCLUDED IN THIS ANALYSIS. SW
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH R 6 OF WBNP-QCP-2.01

ADDED BY AMENDMENT 59 W. Scott Woodlee 7-3-84
INSPECTOR

Figure 2.5-607 Summary of Earthfill Test Data - Moisture Content

TENNESSEE VALLEY AUTHORITY
WATTS BAR NUCLEAR PLANT
SUMMARY OF FILL TEST DATA - DENSITY

WBNP-QCP-2.01 R6
Attachment F
LOT

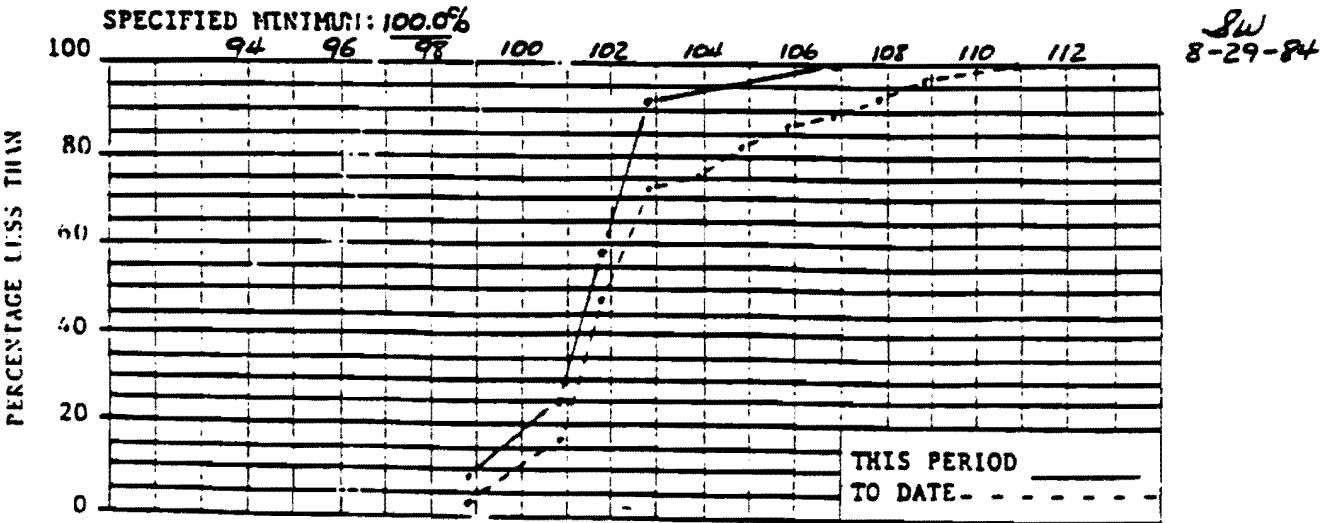
Sheet 2 of 2

FEATURE: UNDERGROUND BARRIER - TRENCH A-100% Lower Full.
DATE: 11-25-83 TO: 5-31-84 TEST NO.: 1408 TO: 1438
PART: I SECTION: 52B (A1) PREPARED BY: N.S. WOODLEE

PERCENT COMPACTION ($\gamma_{df} - \gamma_{dl}$) x 100	PLOT THIS COL	PREV CUM F	THIS PERIOD				TO DATE		
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
	95.0	95.9							
	96.0	96.9							
	97.0	97.9							
	98.0	98.9		1	1	8.3	1	1	3.4
	99.0	99.9							
	100.0	100.9	2	2	3	25.0	4	5	17.2
	101.0	101.9	7	4	7	58.3	9	14	48.3
	102.0	102.9	10	4	11	91.7	7	21	72.4
	103.0	103.9	11				1	22	75.9
	104.0	104.9	13				2	24	82.8
	105.0	105.9	14				1	25	86.2
	106.0	106.9	1	1	12	100.0	1	26	89.7
	107.0	107.9	15				1	27	93.1
	108.0	108.9	16				1	28	96.6
	109.0	110.9	17				1	29	100.0
	TOTALS	17	--	--	12	--	--	29	--

SPECIFICATION SOURCE: DWG #10N213-2 R4

	PREV	THIS PERIOD	TO DATE
AVG FILL DRY DENSITY, γ_{df} , pcf	104.7	105.6	105.1
AVG MAXIMUM DRY DENSITY, γ_{dl} , pcf	101.0	103.6	102.1
MEAN VARIATION $\gamma_{df} - \gamma_{dl}$, pcf	+3.7	+2.0	+3.0



REMARKS: ANALYSIS ISSUED TO REFLECT CHANGE DUE TO MISTAKE ON SAND CONE
INSPECTED/CHECKED/VERIFIED IN ACCORDANCE WITH REV 6 OF WBNP-QCP-2.01. TEST #1426.
W. Scott Woodlee 8-29-84 KCP #5804
INSPECTOR DATE

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF FILL TEST DATA
DENSITY

Figure 2.5-608

Amendment 63

Figure 2.5-608 Summary of Earthfill Test Data -Density

WATTS BAR NUCLEAR PLANT
FINAL SAFETY
ANALYSIS REPORT

SUMMARY OF GRANULAR
FILL TEST DATA - RELATIVE
DENSITY
FIGURE 2.5-610

WBNP-QCP-2.06 R4
Attachment F
LOP
Sheet 2 of

Summary o

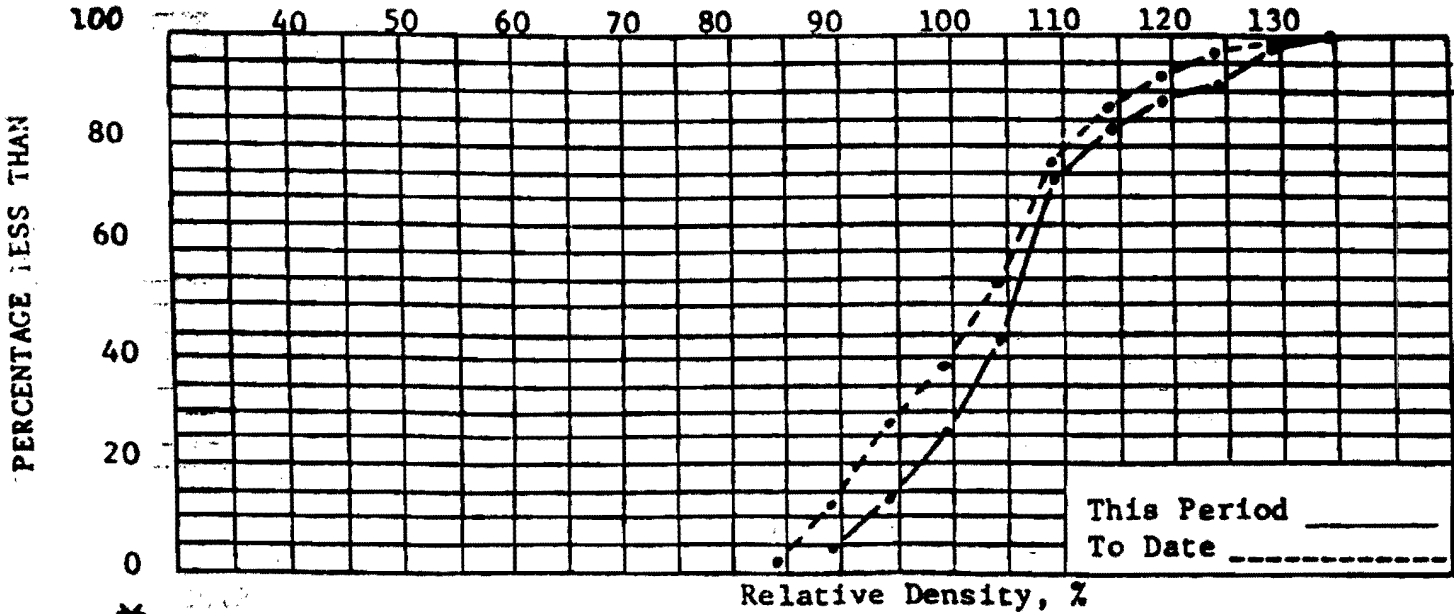
*Feature: UNDERGROUND BARRIER - TRENCH B - 1032 CRUSHED STONE
Period: 4-27-84 to 5-31-84 Test No. 2046 to 2092
Part II Section 29 Prepared by W.S. WOODLEE

RELATIVE DENSITY, %

	PLOT THIS COLUMN	PREV. CUM. F	THIS PERIOD				TO DATE		
			FREQUENCY (F)	F	CUM F	CUM %	F	CUM F	CUM %
60.0	64.9								
65.0	69.9								
70.0	74.9								
75.0	79.9								
80.0	84.9	2					2	2	2.7
85.0	89.9	7	II	2	2	4.7	7	9	12.3
90.0	94.9	14	IIII	4	6	14.0	11	20	27.4
95.0	99.9	17	IIII	5	11	25.6	8	28	38.4
100.0	104.9	21	IIII-III	8	19	44.2	12	40	54.8
105.0	109.9	24	IIII-IIII-III	13	32	74.4	16	56	76.7
110.0	114.9	27	IIII	4	36	83.7	7	63	86.3
115.0	119.9	30	II	2	38	88.4	5	68	93.2
120.0	124.9		III	3	41	95.3	3	71	97.3
125.0	129.9		I	1	42	97.7	1	72	98.6
130.0	134.9		I	1	43	100.0	1	73	100.0
TOTALS		30	--	--	43	--	--	73	--

Specification Source DWG. #10N213-2 R4

	PREV.	THIS PERIOD	TO DATE
Avg. Relative Density	98.5	106.3	103.1
Specified Min. <u>80 MIN. 85 AVG. %</u>			



*Remarks 1032 GRANULAR FILL SUBSTITUTED FOR EARTH FILL IN TRENCH B
Inspected/checked/verified in accordance with R4 of WBNP-QCP-2.06

W. Scott Woodlee 6-11-84
Inspector: Date

ADDED BY AMENDMENT 59

Figure 2.5-610 Summary of Granular Fill Test Data - Relative Density