ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

GEOTECHNICAL EXPLORATION
GYPSUM STACK
WIDOWS CREEK FOSSIL PLANT
STEVENSON, JACKSON COUNTY, ALABAMA

PREPARED FOR

TENNESSEE VALLEY AUTHORITY

PREPARED BY

Stantec Consulting Services Inc.
1409 N. Forbes Rd.
Lexington, Kentucky
40511-2050
859-422-3000

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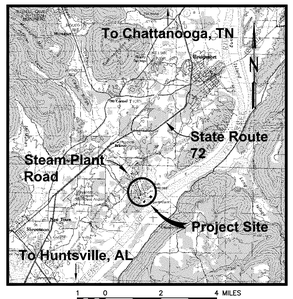

VICINITY MAP

INDEX OF SHEETS

PLOT DATE: 10/23/2009 USER: FLYNN, RENEE
P:\TVA\CAD\GEOTECH\DRAWINGS\GEOTECH\REVIT\FINAL\XXWXXX-INCF-001-COVR.DWG

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R –	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
COVER SHEET

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX-01	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:XX
W_TVA

C.A.D. DRAWING
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NOT FOR CONSTRUCTION

WIDOWS CREEK PIEZOMETER READINGS

Piezometer No.	Installation Date	Surface Elev. (ft)	Piezometer Location Northing	Piezometer Location Easting	Recorded Water Elevation (Feet) 6/9/2004	6/11/2004	6/18/2004	1/22/2009	1/30/2009	2/06/2009	2/09/2009	2/13/2009	2/23/2009	2/27/2009	3/27/2009	4/22/2009	5/26/2009	6/15/2009	7/24/2009	8/24/2009
STN-28	2/10/2009	651.3	1,600,650.1	527,741.0	NR	NR	NR	NR	NR	NR	NR	634.2	633.9	634.0	634.8	634.8	634.7	634.0	633.4	634.3
STN-29	2/10/2009	623.9	1,600,590.1	527,790.4	NR	NR	NR	NR	NR	NR	NR	622.6	622.6	622.9	623.0	622.9	622.7	622.6	622.4	622.5
STN-32	2/8/2009	656.2	1,602,037.1	528,528.5	NR	NR	NR	NR	NR	NR	NR	641.7	642.3	642.4	643.0	643.0	643.0	642.5	642.3	642.3
STN-33	2/9/2009	640.2	1,602,037.0	528,597.9	NR	NR	NR	NR	NR	NR	NR	629.3	629.0	629.1	629.3	629.1	629.1	628.9	628.5	628.6
STN-35	2/7/2009	656.1	1,603,831.0	528,927.7	NR	NR	NR	NR	NR	NR	643.1	642.6	642.1	642.4	643.1	643.6	644.2	642.5	640.8	640.3
STN-36	2/17/2009	631.9	1,603,833.8	529,007.1	NR	NR	NR	NR	NR	NR	NR	NR	633.2	633.1	633.4	633.2	633.2	633.3	632.4	632.6
STN-39	2/6/2009	655.2	1,602,374.5	526,839.7	NR	NR	NR	NR	NR	NR	632.4	632.0	632.0	632.1	631.8	631.8	632.1	631.8	626.4	631.1
STN-42	2/4/2009	659.0	1,601,813.4	527,067.0	NR	NR	NR	NR	NR	NR	640.8	640.5	639.4	639.5	640.5	640.7	640.3	639.1	NR	NR
STN-43	2/22/2009	672.7	1,601,979.2	527,240.0	NR	NR	NR	NR	NR	NR	NR	NR	655.0	655.4	655.3	656.3	655.9	655.4	655.3	656.1
**STN-45 (PZ-2) (upper)	1/13/2009	655.2	1,601,630.7	527,063.0	NR	NR	NR	642.2	641.2	640.2	NR	640.1	NR	640.1	640.1	642.3	642.3	642.3	NA	646.3
**STN-45 (PZ-2) (lower)	1/13/2009	655.2	1,601,630.7	527,063.0	NR	NR	NR	638.2	637.4	637.0	NR	636.8	636.2	636.2	637.4	637.3	637.4	636.1	632.1	621.2
**STN-48 (PZ-1) (upper)	1/12/2009	654.9	1,601,416.1	527,060.8	NR	NR	NR	641.4	640.1	640.3	NR	640.3	640.3	638.4	638.4	642.5	642.5	642.5	NR	NR
**STN-48 (PZ-1) (lower)	1/12/2009	654.9	1,601,416.1	527,060.8	NR	NR	NR	635.6	634.9	634.7	NR	634.2	633.8	633.9	635.5	635.8	635.3	634.0	NR	NR
**STN-49 (PZ-3)	1/20/2009	654.9	1,601,261.9	527,058.2	NR	NR	NR	642.3	641.9	641.2	NR	640.7	639.6	640.2	642.1	642.4	641.9	640.3	NR	NR
STN-50 (PZ-4) (upper)	1/20/2009	654.9	1,601,248.9	527,058.2	NR	NR	NR	642.6	642.0	641.6	NR	640.6	NR	640.4	642.2	642.5	642.1	640.5	636.6	639.9
STN-50 (PZ-4) (lower)	1/20/2009	654.9	1,601,248.9	527,058.2	NR	NR	NR	642.6	642.0	641.6	NR	640.9	NR	639.4	642.3	642.6	642.1	640.6	636.9	627.5
***CPT-10	7/30/2009	630.0	1,601,253.2	526,991.4	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	614.7	NR
***CPT-12	7/30/2009	630.0	1,601,629.8	526,995.7	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	620.7	NR
*PZ-1	6/9/2004	650.4	1,601,485.8	527,048.5	NR	634.2	634.3	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR
*PZ-1S	6/3/2004	630.6	1,601,489.5	527,007.0	629.5	NR	629.5	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

* Existing piezometer information obtained from MACTEC Geotechnical Report dated June 23, 2004.
** Piezometer well damaged during construction of Work Plan 5.
*** Final Locations and elevations to be surveyed by TVA.
(NR) = No Reading
See Sheet 5 for Piezometer Locations

SUMMARY OF LAB DATA (ASTM D 422)

Boring No.	Sample Depth	Percent Gravel (-3" +No.4)	Percent Sand (-No.4 +No.200)	Percent Silt (-No.200 +0.005mm)	Percent Clay (-0.005mm)
STN-28	7.5'-9.0' / 9.0'-10.5'	0.3	6.0	89.8	3.9
STN-32	21.5'-23.0' / 23.0'-24.5'	0.2	18.8	77.7	3.3
STN-32 / STN-33	4.5'-6.0' / 4.0'-5.5'	5.0	22.9	68.4	3.7
STN-38	14.0'-15.5' / 15.5'-17.0'	0.0	5.9	90.4	3.7
STN-38	59.5'-61.0' / 64.5'-66.0'	0.0	12.4	84.5	3.1
STN-45	16.5'-18.0' / 18.0'-19.5'	0.0	12.8	83.1	4.1
STN-45	31.5'-33.0' / 33.0'-34.5'	0.1	13.6	83.2	3.1
STN-45	16.5'-18.0' / 18.0'-19.5'	0.0	13.2	85.7	1.1
STN-49	31.5'-33.0' / 33.0'-34.5'	0.0	13.5	82.6	3.9

SUMMARY OF PERMEABILITY TESTS

Boring No.	Sample Depth	Material No.	Description	Dry Density (p.c.f.)	Moisture Content (%)	Permeability (cm./sec.)	Void Ratio	Specific Gravity
STN-28	39.5'-41.5'	②	Sedimented Gypsum-Fly Ash	82.4	31.2	4.47x10E-5	0.787	2.36
STN-44	22.0'-24.0'	①	Cast Gypsum-Fly Ash	93.0	21.5	3.24x10E-5	0.658	2.47
STN-44	52.0'-54.0'	②	Sedimented Gypsum-Fly Ash	57.0	70.0	2.02x10E-6	1.726	2.49
STN-47	35.0'-37.0'	①	Cast Gypsum-Fly Ash	92.8	33.3	2.68x10E-6	0.668	2.48

TABLE OF BASELINE COORDINATES

STATION	BASELINE	NORTHING	EASTING
115+00.00	Begin Project Baseline	1,600,663.76	527,054.00
148+73.17	End Project Baseline	1,602,379.09	528,496.69
163+69.47	Begin Project Baseline	1,601,913.50	527,078.14
168+40.90	End Project Baseline	1,601,735.54	526,679.75
209+33.14	Begin Project Baseline	1,602,373.83	528,582.21
266+09.30	End Project Baseline	1,601,846.62	526,692.85
310+00.00	Begin Project Baseline	1,601,889.38	526,939.17
322+50.59	End Project Baseline	1,600,663.76	527,054.00

BASELINE CURVE DATA

①
P.I. Sta. = 120+85.85
Northing = 1,600,152.63
Easting = 527,340.30
Δ = 102°17'28"
R = 200.00'
T = 248.27'
L = 357.06'
E = 118.80'
P.C. Sta. = 118+37.58
P.T. Sta. = 121+94.65

②
P.I. Sta. = 137+94.36
Northing = 1,601,378.25
Easting = 528,723.37
Δ = 54°03'06"
R = 375.00'
T = 191.29'
L = 353.77'
E = 45.97'
P.C. Sta. = 136+03.07
P.T. Sta. = 139+56.84

③
P.I. Sta. = 148+21.03
Northing = 1,602,428.70
Easting = 528,620.42
Δ = 106°14'54"
R = 100.00'
T = 133.31'
L = 185.44'
E = 66.64'
P.C. Sta. = 146+87.73
P.T. Sta. = 148+73.17

④
P.I. Sta. = 217+69.27
Northing = 1,603,060.00
Easting = 529,060.00
Δ = 34°50'57"
R = 300.00'
T = 94.16'
L = 182.47'
E = 14.43'
P.C. Sta. = 216+75.11
P.T. Sta. = 218+57.58

⑤
P.I. Sta. = 225+03.42
Northing = 1,603,800.00
Easting = 529,060.00
Δ = 25°31'17"
R = 300.00'
T = 67.94'
L = 133.63'
E = 7.60'
P.C. Sta. = 224+35.49
P.T. Sta. = 225+69.11

⑥
P.I. Sta. = 231+50.01
Northing = 1,604,385.53
Easting = 528,780.46
Δ = 102°09'51"
R = 100.00'
T = 123.85'
L = 178.31'
E = 59.18'
P.C. Sta. = 230+26.16
P.T. Sta. = 232+04.47

⑦
P.I. Sta. = 256+71.65
Northing = 1,607,801.64
Easting = 526,729.91
Δ = 50°05'44"
R = 300.00'
T = 140.20'
L = 262.30'
E = 31.14'
P.C. Sta. = 255+31.45
P.T. Sta. = 257+93.75

⑧
P.I. Sta. = 167+60.53
Northing = 1,601,846.62
Easting = 526,692.85
Δ = 73°25'24"
R = 150.00'
T = 111.85'
L = 192.22'
E = 37.11'
P.C. Sta. = 166+48.67
P.T. Sta. = 168+40.90

⑨
P.I. Sta. = 320+21.38
Northing = 1,600,868.38
Easting = 526,939.60
Δ = 29°13'49"
R = 200.00'
T = 52.15'
L = 102.03'
E = 6.69'
P.C. Sta. = 319+69.23
P.T. Sta. = 320+71.26

NOTES:

1. The top of rock information depicted on the cross sections was obtained from the following sources: Top-of-Rock Contour Map located within the Tennessee Valley Authority Memorandum B65 '85 0307 006 dated March 7, 1985, Widows Creek Steam Plant Forced Oxidation Scrubber Sludge Disposal Area Foundation Explorations Split Spoon Holes dated March 27, 1984, and Stantec's 2009 Geotechnical Exploration.
2. The original groundline shown has been digitized from Drawing No. 10W215-01 R2 dated 3/18/85, titled Forced Oxidation Gypsum Staking – Phase I Dikes, Plan Sheet 1.
3. The Starter Dike, Perimeter Dike, and Divider Dikes have been recreated based on design parameters depicted on construction drawings provided by TVA. The specific Drawing Nos. used to recreate these structures are: 10W215-01 R2, 10W215-02, and 10W215-03.
4. The 2004 groundline depicted on the following drawing was extracted from the electronic Drawing No. 10W235-1, titled Forced Oxidation Gypsum Stacking Phase I and II Baseline Information Existing Conditions & Demolition Plan.
5. The (05-95) groundline depicted on the following drawing was recreated from Drawing No. 10E7416-1, titled Forced Oxidation Stacking Conceptual Plan – Stage 1, Configuration at 10/1/96.
6. The (01-09-09) groundline was created from an updated LiDAR survey performed by Tuck Engineering on 1/9/09 (File Name: Widows Creek 1' Contours NAD27 1-9-2009.dwg provided by TVA) and has been combined with the stilling pond hydrographic survey information obtained from the file wc000109.pro which was provided by TVA on 1/12/09.
7. The baseline depicted on the following drawings was recreated from Drawing No. 10W235-6, titled Forced Oxidation Gypsum Stacking Phase I & II, Grading Plan up to final Elev. 755.
8. The phreatic surfaces shown on the cross sections were obtained from field readings performed by Stantec and/or Mactec personnel as referenced in the piezometer table.

LEGEND

① Silt (Cast Gypsum-Fly Ash), light gray to dark gray, damp to wet, soft to very stiff, (visually classified)
② Silt (Sedimented Gypsum-Fly Ash), light gray to black, moist to wet, stiff to very stiff, (visually classified)
③ Fat Clay, tan to red with gray mottling, moist to wet, soft to very stiff, with chert fragments, (visually classified)
④ Silt (Weak Sedimented Gypsum-Fly Ash) gray to dark gray, wet, very soft to soft, (visually classified)
⑤ Lean Clay, brown to gray, moist, very stiff to stiff, with chert fragments, (visually classified)
⑥ Clay with Silt, brown to gray, moist, stiff, (visually classified)
⑦ Crushed limestone (Kentucky No. #57), (visually classified)
⑧ Alluvial Silt, gray, medium stiff to stiff, with weathered rock fragments, (visually classified)

Casagrande Piezometer
11/23/09 ▽ Water Level 30 minutes after Drilling and Date Recorded
11/23/09 ▼ Water Level and Date Recorded
WH Weight of Hammer
■ Undisturbed Thin-Walled (Shelby) Tube Sample
◁ Standard Penetration Test Interval
N Standard Penetration Test Blow Count (blows/ft.)
N.M.C. Natural Moisture Content (%)
T.O.R.- Top of Rock (Indicates the beginning of rock-like resistance to the advancement of the augers. This may indicate the beginning of weathered bedrock, boulders or rock remnants. An exact determination cannot be made without performing rock coring.)
B.C.- Begin Rock Core
Refusal Auger Refusal using a carbide-tipped tooth auger bit
No Refusal No Refusal Encountered
R.Q.D. Rock Quality Designation(%)
REC. Recovery(%)

GEOTECHNICAL NOTE:

The boring logs and related information shown in this drawing set depict approximate subsurface conditions only at the specific boring locations noted and at the time of drilling. Conditions at other locations may differ from those occurring at the boring locations. Also, the passage of time may result in a change in the subsurface conditions at the boring locations. Any correlations shown between borings are generally based on straight line interpolation. Actual conditions between borings are unknown and may differ from those shown.

For Supporting Design Calculations see ______________________

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV CD
R -	-	-	-	-	-	-	-	-	-	-	-
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	-	-	-

R 0: ISSUED FOR REVIEW

DISCIPLINE INTERFACE 1 2 3 4

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
—

GYPSUM STACK
GEOTECHNICAL EXPLORATION
BORING LEGEND AND GENERAL NOTES

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

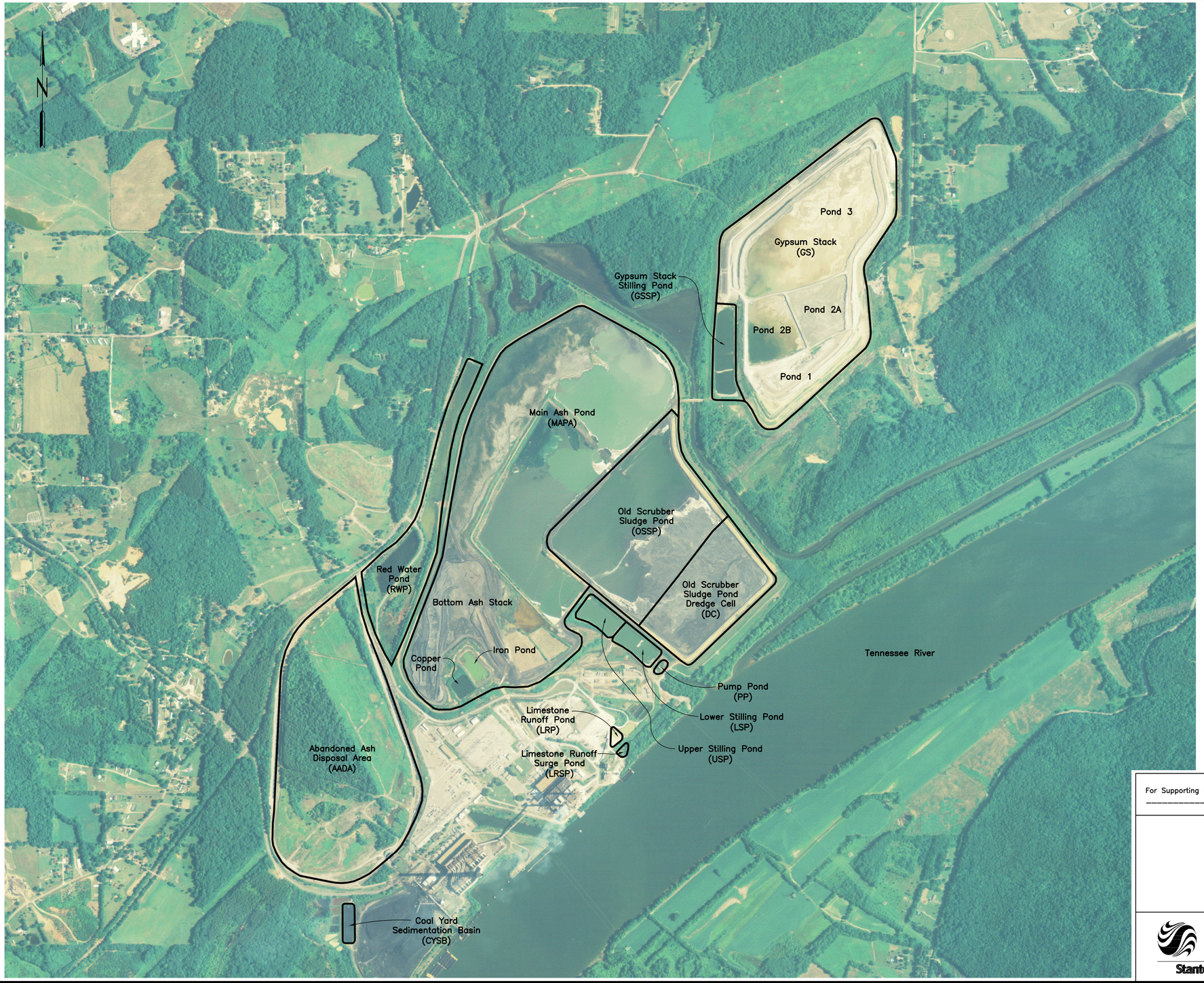
AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-02 | R 0

PLOT DATE: 10/22/2009

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:XX
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY



ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

250 0 500 1000 FEET
GRAPHIC SCALE: 1" = 500'

PLOT DATE: 10/21/2009 USER: FLYNN, RENEE
V:\TVA\CAD\STANDARDS\GEOTECH\DRAWING\GEOTECH\BROAD_EXH\XXWXXX-MCF-101-EP01.DWG

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R –	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE
REV. 1
REV. 2
3
4

SCALE: 1"=500' EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
PROJECT SETTING

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
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WIDOWS CREEK FOSSIL PLANT
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AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX–03	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:XX
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

34 | C | XXWXXX-04

BORING LOCATION TABLE

Boring	Northing	Easting	Elevation (Feet)
***STN-28	1,600,650.1	527,741.0	651.31
***STN-29	1,600,590.1	527,790.4	623.86
***STN-31	1,601,984.7	527,265.3	672.62
***STN-32	1,602,037.1	528,528.5	656.24
***STN-33	1,602,037.0	528,597.9	640.20
***STN-34	1,603,809.7	528,724.1	674.11
***STN-35	1,603,831.0	528,927.7	656.13
***STN-36	1,603,833.8	529,007.1	631.94
***STN-37	1,603,319.9	527,464.9	626.95
***STN-38	1,602,372.3	526,925.2	675.50
***STN-39	1,602,374.5	526,839.7	655.19
***STN-40	1,602,379.2	526,750.0	621.38
***STN-41	1,601,812.5	527,159.8	657.76
***STN-42	1,601,813.4	527,067.0	659.04
***STN-43	1,601,979.2	527,240.0	672.69
***STN-44	1,601,640.7	527,161.8	655.78
***STN-45	1,601,630.6	527,063.0	655.20
***STN-46	1,601,239.7	527,133.1	654.70
***STN-47	1,601,297.4	527,118.9	655.53
***STN-48	1,601,416.0	527,060.8	654.92
***STN-49	1,601,258.4	527,058.8	655.03
***STN-50	1,601,244.1	527,059.0	654.94
***STN-51	1,601,651.7	526,940.3	621.13
***STN-52	1,601,757.5	526,939.5	621.65
***CPT-10	1,601,250.6	526,991.4	629.0
***CPT-11	1,601,253.2	527,098.3	655.0
***CPT-12	1,601,629.8	526,995.7	629.0
***CPT-13	1,601,650.8	527,105.0	655.0
***V-9	1,601,630.2	527,103.0	655.0
***V-10	1,601,235.3	527,092.3	655.0
*TH-1	1,600,610.0	527,279.3	643.43
*TH-2	1,600,584.4	527,243.0	650.48
*TH-3	1,601,322.1	527,292.9	643.55
*TH-4	1,601,303.2	527,810.5	639.89
*TH-5	1,601,646.1	528,409.3	642.09
*TH-6	1,600,568.4	527,615.1	648.88
*TH-7	1,601,553.5	528,589.9	638.64
**SPT-1	1,601,472.4	527,068.5	649.90
**SPT-2	1,602,279.9	527,011.4	661.89
**SPT-3	1,603,928.4	528,728.1	659.79
**SPT-4	1,602,691.0	528,555.7	663.34
**SPT-5	1,603,183.6	527,640.9	660.18
**SPT-6	1,601,092.3	527,910.1	660.50

* Boring drilled in 1991.
** Boring drilled in 2004.
*** Boring drilled in 2009.

NOTES:

1. Topographic mapping was developed from a composite of a LiDAR survey which was originally performed in NAD 83 and later shifted to NAD 27 Datum by Tuck Mapping Solutions, Inc. on January 9, 2009 (post-event) and surveys performed by TVA on October 30, 2006, January 14, 2009 and February 23, 2009.
2. The geotechnical information and data furnished herein are not intended as representation or warranties but are furnished for information only. It shall be distinctly understood that the Owner or Engineer will not be responsible for any deduction, interpretation or conclusion drawn there- from. The information is made available in order that the Contractor may have ready access to the same information available to the Owner and the Engineer and is not part of this contract.
3. See sheet 2 for baseline curve data and table of baseline coordinates.

LEGEND

- STN-47 Soil Boring with Undisturbed (Shelby) Tube Samples and Rock Core
- STN-52 Rock Sounding
- STN-34 Soil Boring with Standard Penetration Tests and/or Undisturbed (Shelby) Tube Samples
- CPT-10 Cone Penetration Test with Piezometer
- V-10 Vane Shear Test Location
- *TH-7 Existing Test Boring, 1991
- **SPT-3 Existing Test Boring, 2004

For Supporting Design Calculations see ____________

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV CD
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE 1 2 3 4

SCALE: 1"=100' EXCEPT AS NOTED

YARD
–

GYPSUM STACK GEOTECHNICAL EXPLORATION BORING LAYOUT

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-04 | R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:100
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/22/2009

INSTRUMENT LOCATION TABLE

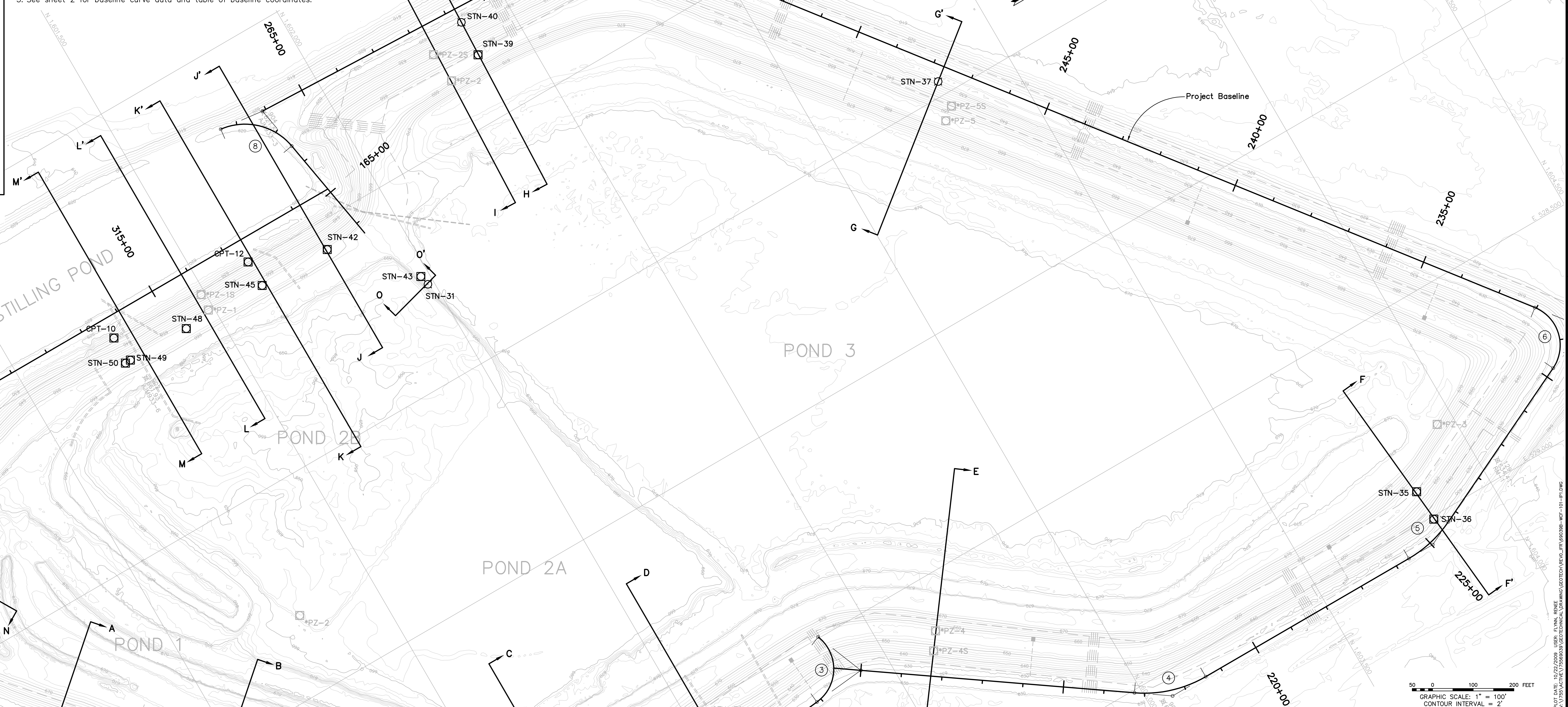
Boring	Northing	Easting	Elevation (Feet)
***STN-28	1,600,650.1	527,741.0	651.31
***STN-29	1,600,590.1	527,790.4	623.86
***STN-31	1,601,984.7	527,265.3	672.62
***STN-32	1,602,037.1	528,528.5	656.24
***STN-33	1,602,037.0	528,597.9	640.20
***STN-35	1,603,831.0	528,927.7	656.13
***STN-36	1,603,833.8	529,007.1	631.94
***STN-37	1,603,319.9	527,464.9	626.95
***STN-39	1,602,374.5	526,839.7	655.19
***STN-40	1,602,379.2	526,750.0	621.38
***STN-42	1,601,813.4	527,067.0	659.04
***STN-43	1,601,979.2	527,240.0	672.69
***STN-45	1,601,630.6	527,063.0	655.20
***STN-48	1,601,416.0	527,060.8	654.92
***STN-49	1,601,258.4	527,058.8	655.03
***STN-50	1,601,244.1	527,059.0	654.94
***CPT-10	1,601,250.6	526,991.4	629.0
***CPT-12	1,601,629.8	526,995.7	629.0
*PZ-1	1,600,610.0	527,279.3	643.43
*PZ-2	1,601,303.2	527,810.5	639.89
*PZ-3	1,601,553.5	528,589.9	638.64
**PZ-1	1,601,485.8	527,048.5	650.42
**PZ-1S	1,601,489.5	527,007.0	630.61
**PZ-2	1,602,286.1	526,862.2	661.06
**PZ-2S	1,602,280.0	526,784.4	634.22
**PZ-3	1,603,957.9	528,810.0	662.51
**PZ-4	1,602,636.3	528,628.8	662.29
**PZ-4S	1,602,607.5	528,669.0	643.41
**PZ-5	1,603,287.8	527,557.8	662.33
**PZ-5S	1,603,317.9	527,533.6	639.38
**PZ-6	1,600,978.5	528,017.3	659.91
**PZ-6S	1,600,886.8	528,098.2	627.71

* Boring drilled in 1991.
** Boring drilled in 2004.
*** Boring drilled in 2009.

NOTES:

1. Topographic mapping was developed from a composite of a LiDAR survey which was originally performed in NAD 83 and later shifted to NAD 27 Datum by Tuck Mapping Solutions, Inc. on January 9, 2009 (post-event) and surveys performed by TVA on October 30, 2006, January 14, 2009 and February 23, 2009.
2. The geotechnical information and data furnished herein are not intended as representation or warranties but are furnished for information only. It shall be distinctly understood that the Owner or Engineer will not be responsible for any deduction, interpretation or conclusion drawn there- from. The information is made available in order that the Contractor may have ready access to the same information available to the Owner and the Engineer and is not part of this contract.
3. See sheet 2 for baseline curve data and table of baseline coordinates.

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



LEGEND

- STN-31 Slope Inclinometer
- STN-32 Piezometer
- *PZ-3 Existing Piezometer, 1991
- **PZ-4 Existing Piezometer, 2004

GRAPHIC SCALE: 1" = 100'
CONTOUR INTERVAL = 2'

For Supporting Design Calculations see ____________

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV CD
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–

R 0: ISSUED FOR REVIEW

DISCIPLINE INTERFACE: 1, 2, 3, 4

SCALE: 1"=100' EXCEPT AS NOTED

YARD
–

GYPSUM STACK GEOTECHNICAL EXPLORATION INSTRUMENTATION PLAN

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-05 | R 0

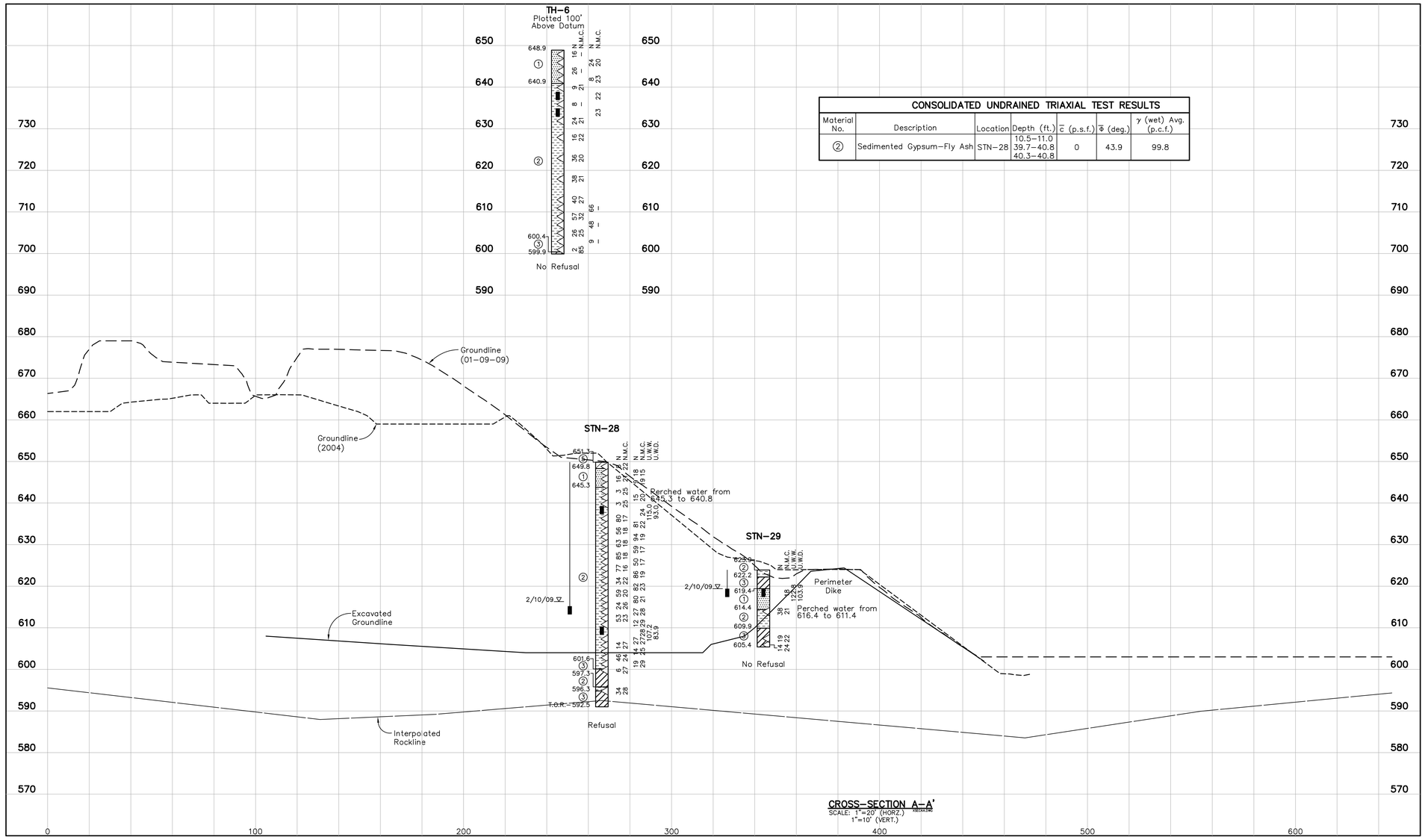
STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:100
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/22/2009

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS						
Material No.	Description	Location	Depth (ft.)	$\bar{c}$ (p.s.f.)	$\bar{\phi}$ (deg.)	γ (wet) Avg. (p.c.f.)
②	Sedimented Gypsum-Fly Ash	STN-28	10.5-11.0 39.7-40.8 40.3-40.8	0	43.9	99.8

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see ———————

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	DISCIPLINE INTERFACE
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–

ISSUED FOR REVIEW

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION A-A'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

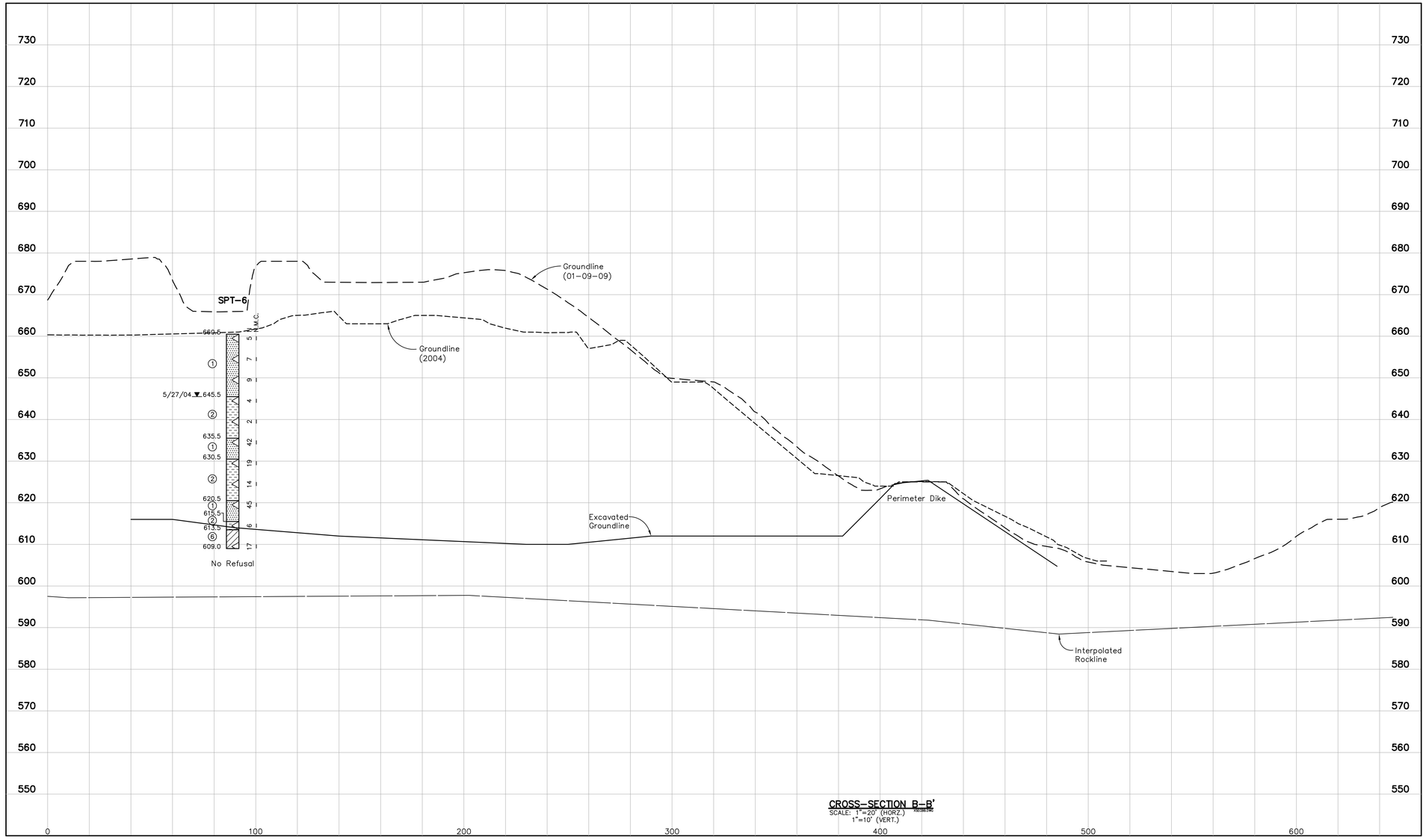
AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-06 | R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CROSS-SECTION B-B'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV. CLOUD
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–
	ISSUED FOR REVIEW										

DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION B-B'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
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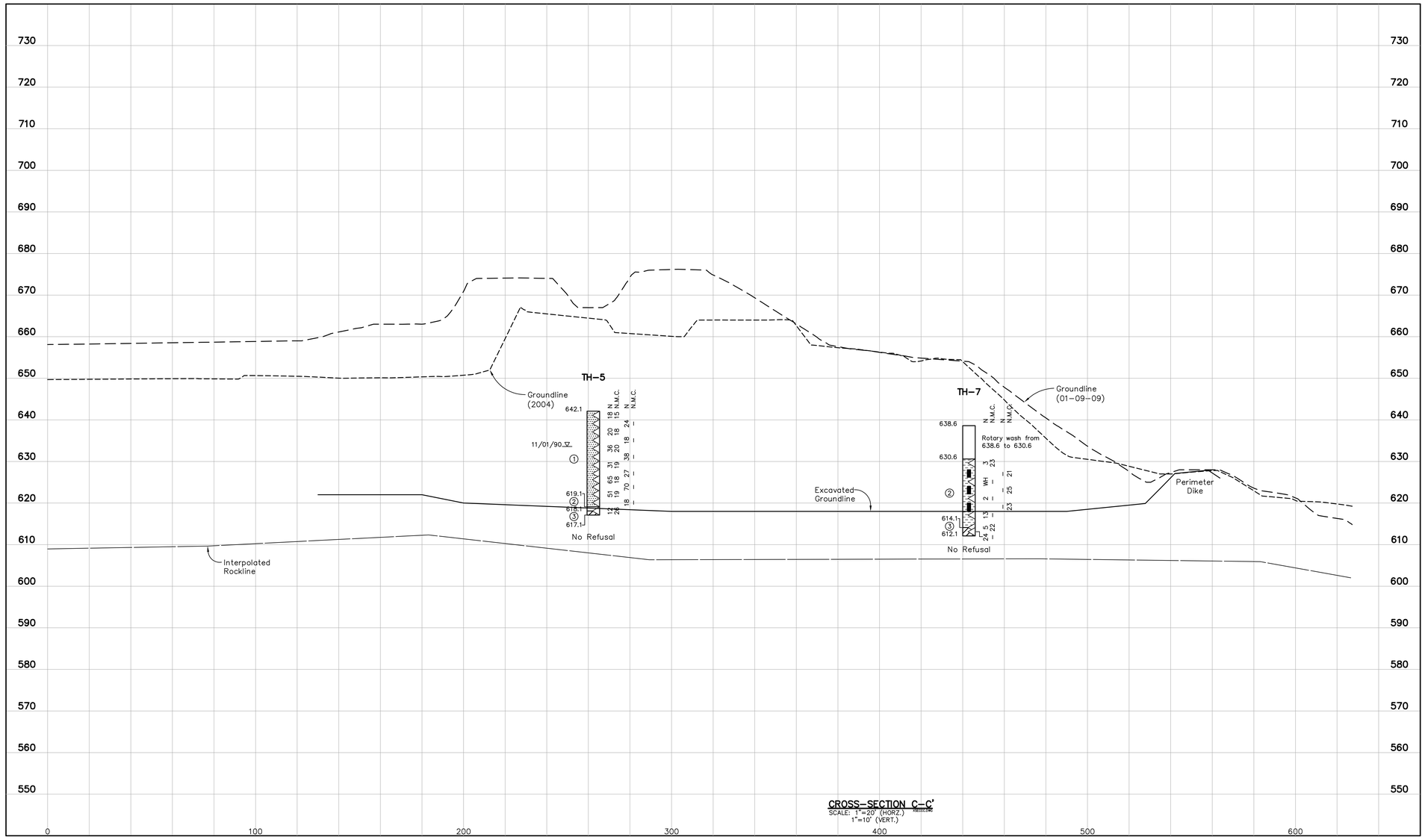
AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX-07	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY



CROSS-SECTION C-C'
SCALE: 1"=20' (HOR.)
1"=10' (VERT.)

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R –	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–
ISSUED FOR REVIEW										

DISCIPLINE INTERFACE
REV. SCALE
1
2
3
4

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION C-C'

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX-08	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

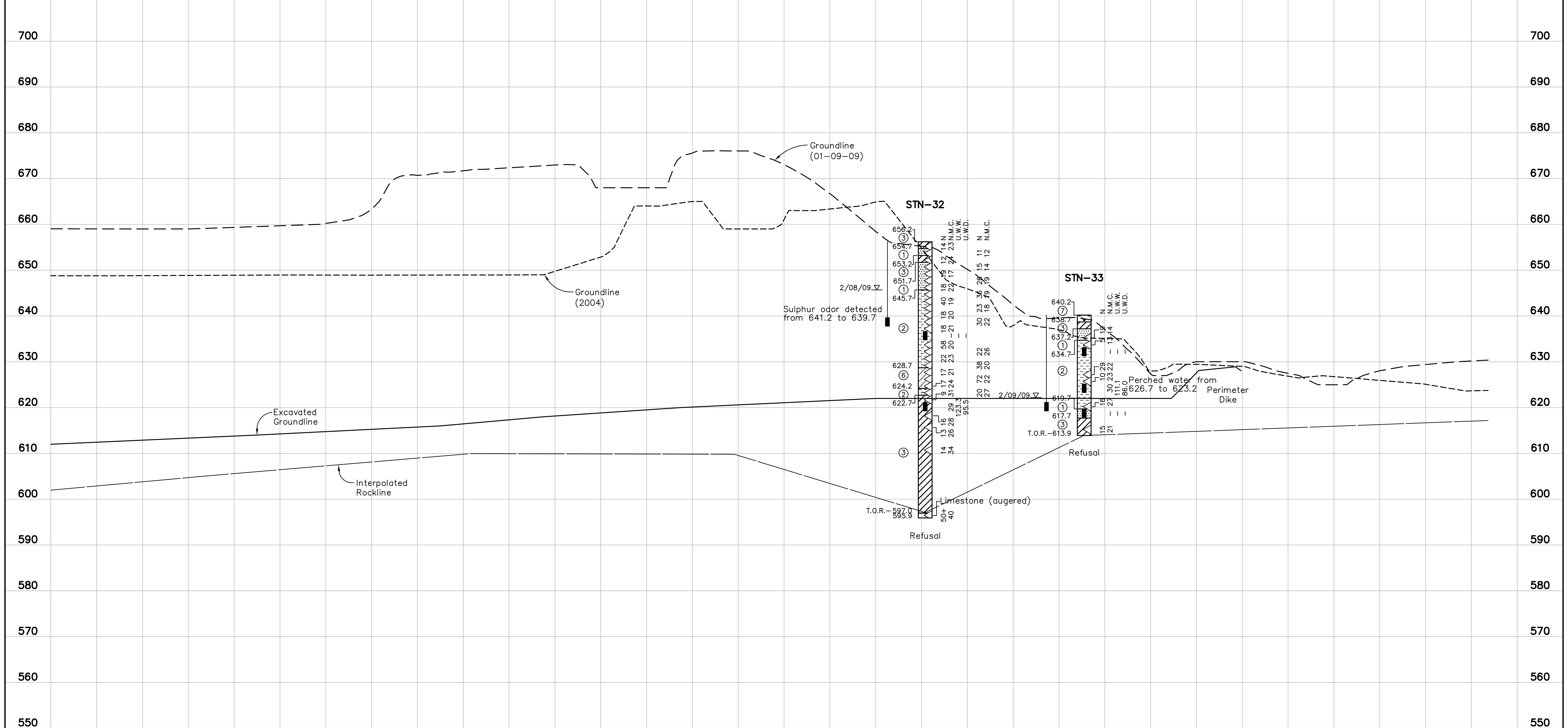
PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/21/2009 USER: FLYNN, RENEE
X:\17253\ACTIVE\172569539\GEOTECHNICAL\DRAWINGS\GEOTECH\REVD_JFR\69639B-WCF-303-X03.DWG

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS						
Material No.	Description	Location	Depth (ft.)	$\bar{c}$ (p.s.f.)	$\bar{\Phi}$ (deg.)	γ (wet) Avg. (p.c.f.)
②	Sedimented Gypsum–Fly Ash	STN–33	15.2–15.7 15.8–16.3 16.3–16.8	0	40.6	112.9
③	Fat Clay	STN–32	35.0–35.5 35.6–36.1 36.2–36.7	0.19	24.7	123.3



CROSS–SECTION D–D'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R 0	10/22/09 ISSUED FOR REVIEW	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION D–D'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX–09 | R 0

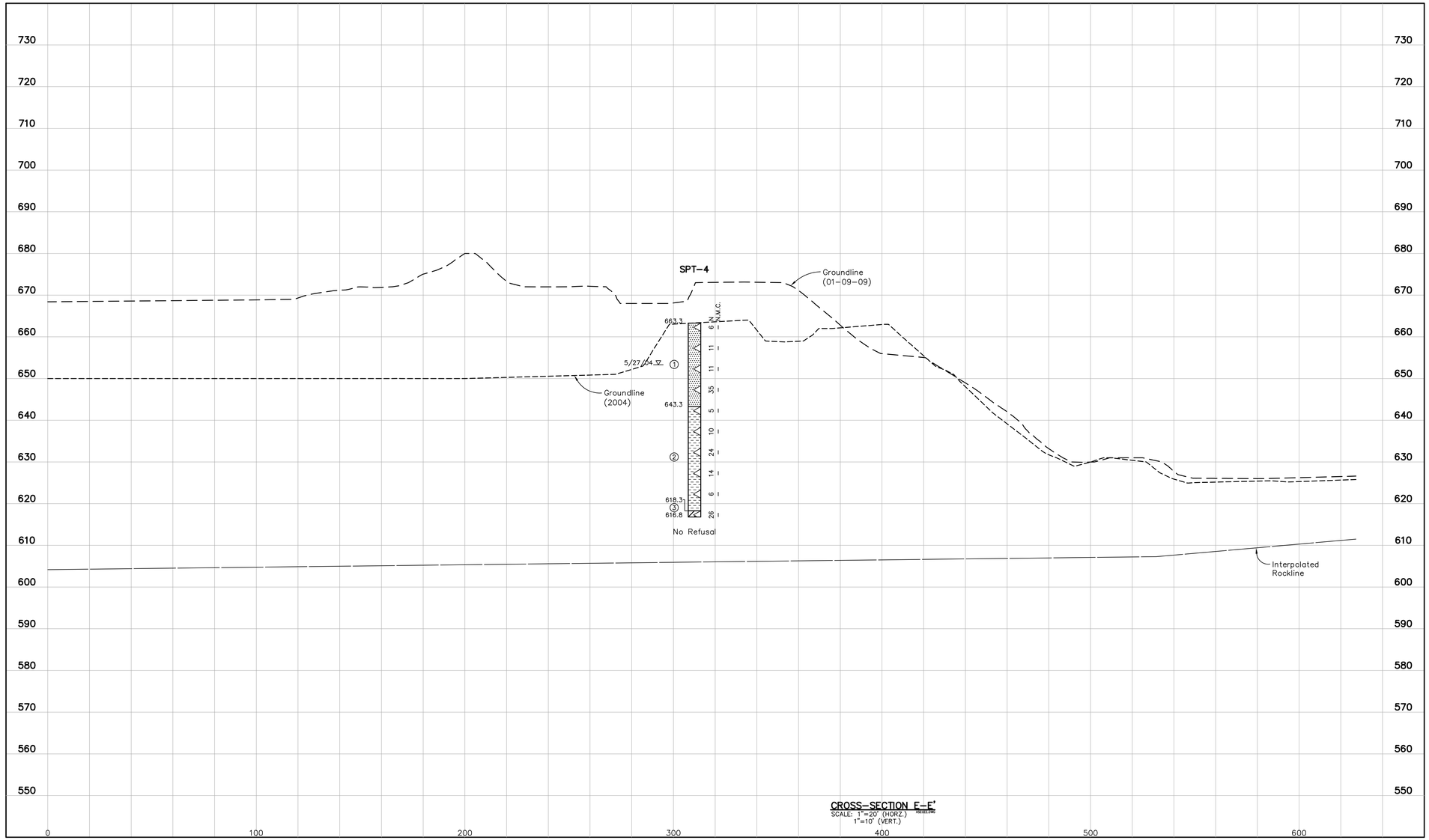
STANTEC 0
TASK COMPLETED BY: REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

34 C XXWXXX–09

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CROSS-SECTION E-E'
SCALE: 1"=20' (HOR.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV SY
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE

SCALE: AS SHOWN — EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION E-E'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX-10	R 0

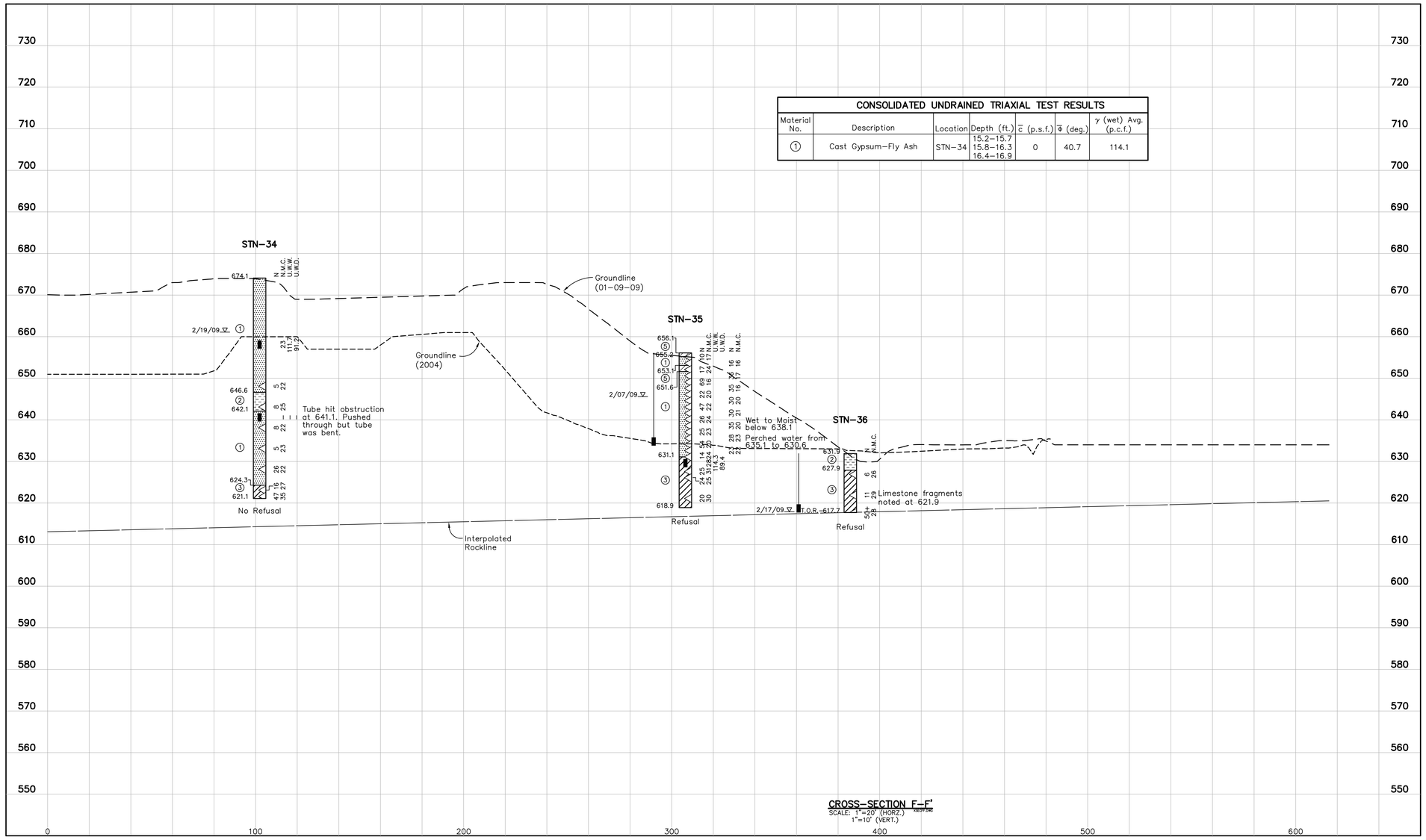
STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS						
Material No.	Description	Location	Depth (ft.)	$\bar{c}$ (p.s.f.)	$\bar{\Phi}$ (deg.)	γ (wet) Avg. (p.c.f.)
①	Cast Gypsum–Fly Ash	STN–34	15.2–15.7 15.8–16.3 16.4–16.9	0	40.7	114.1



CROSS–SECTION F–F'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV. SYM
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–
ISSUED FOR REVIEW											DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION F–F'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

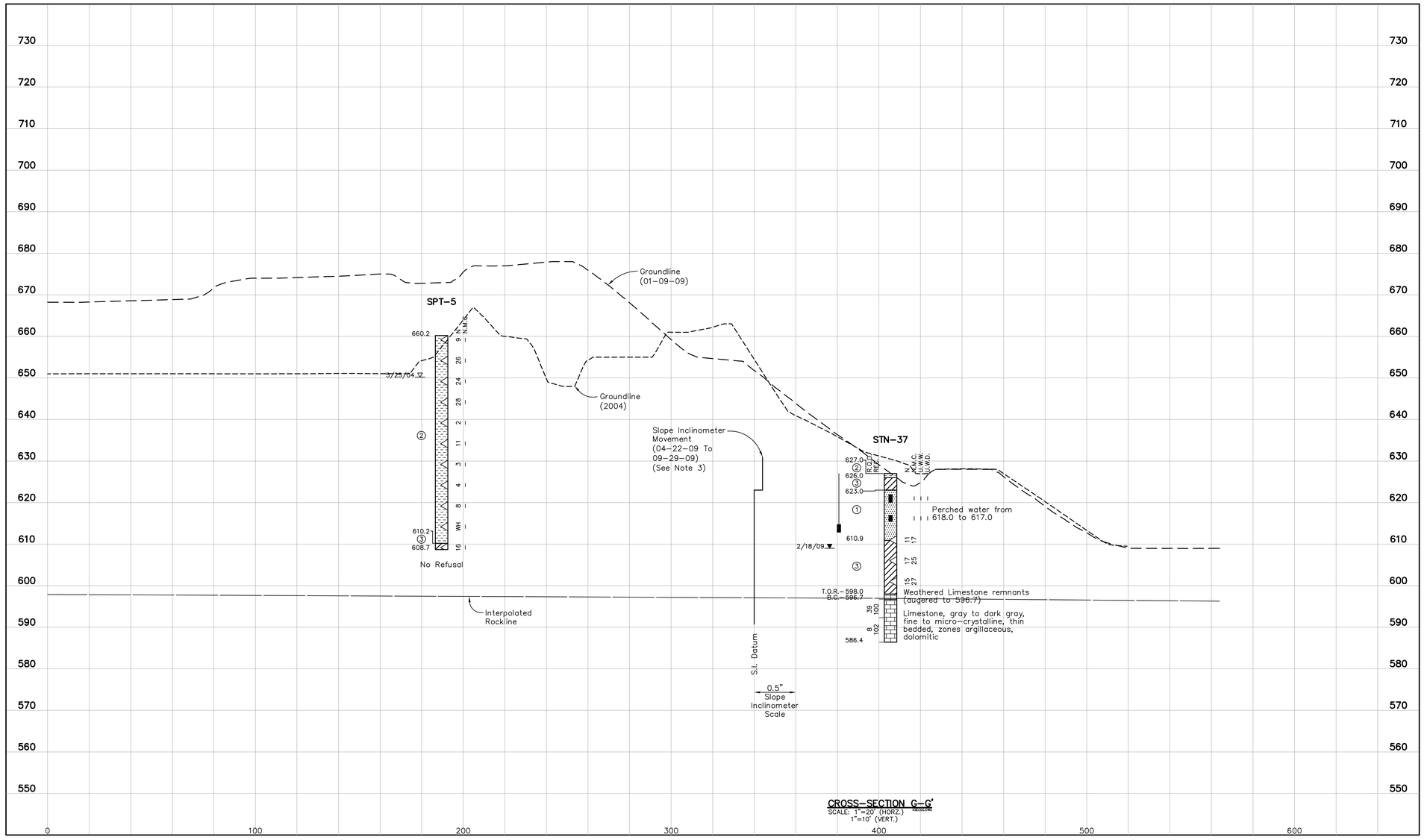
AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX–11	R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CROSS-SECTION G-G'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV. CK'D
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–
	ISSUED FOR REVIEW										

DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION G-G'

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-12 | R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

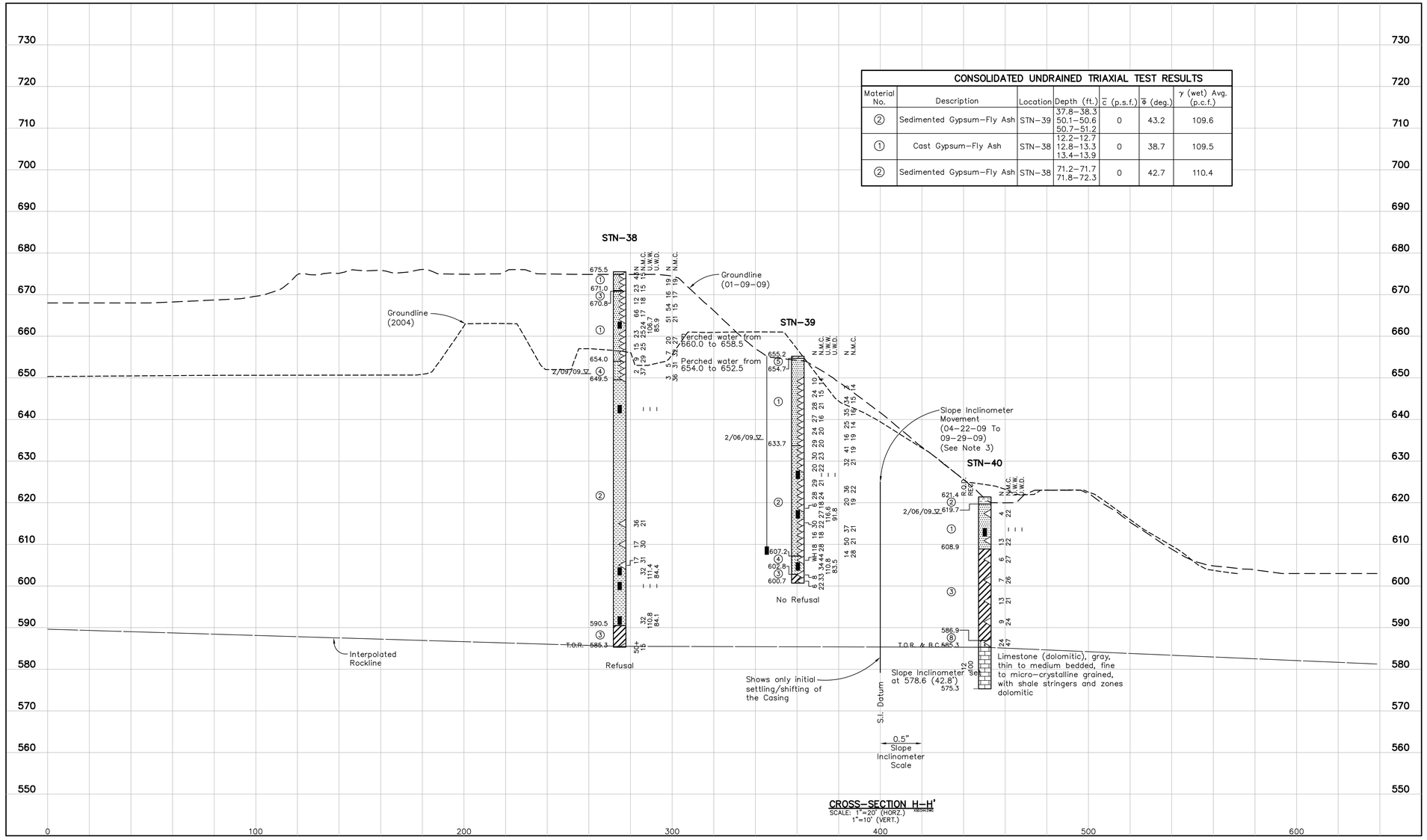
PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/21/2009 USER: FLYNN, BRUCE
N:\W1725A\ACTIVE\172569039\GEOTECHNICAL\DRAWING\GEOTECH\REVD_JFRY\69039B-WCF-X07-X07.DWG

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS						
Material No.	Description	Location	Depth (ft.)	$\bar{c}$ (p.s.f.)	$\bar{\phi}$ (deg.)	γ (wet) Avg. (p.c.f.)
②	Sedimented Gypsum–Fly Ash	STN–39	37.8–38.3 50.1–50.6 50.7–51.2	0	43.2	109.6
①	Cast Gypsum–Fly Ash	STN–38	12.2–12.7 12.8–13.3 13.4–13.9	0	38.7	109.5
②	Sedimented Gypsum–Fly Ash	STN–38	71.2–71.7 71.8–72.3	0	42.7	110.4



CROSS–SECTION H–H'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV CD
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION H–H'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

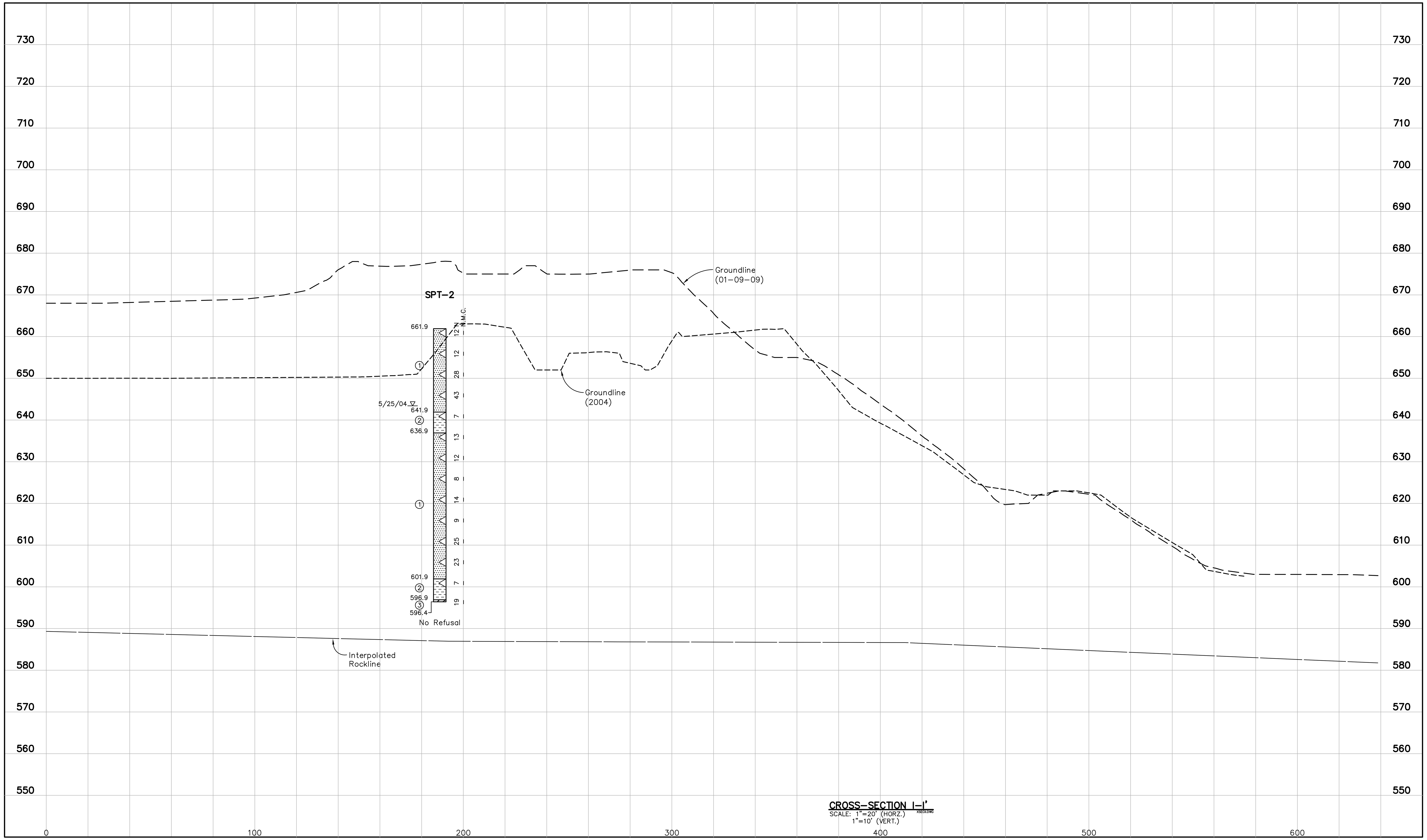
AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX–13	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CROSS-SECTION I-I'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:
1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see ____________

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

ISSUED FOR REVIEW

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION I-I'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-14 | R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS

Material No.	Description	Location	Depth (ft.)	$\bar{c}$ (p.s.f.)	$\bar{\Phi}$ (deg.)	γ (wet) Avg. (p.c.f.)
②	Sedimented Gypsum-Fly Ash	STN-42	32.7-33.2 33.3-33.8 33.9-34.4	0	35.8	120.2
①	Cast Gypsum-Fly Ash	STN-41	22.1-22.6 22.7-23.2 23.3-23.8	0	42.0	114.2
④	Weak Sedimented Gypsum- Fly Ash	STN-42	46.8-47.3	0	41.7	116.6

CROSS-SECTION J-J'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see

R 0 | 10/22/09 | GKA | PJB | RDF | HRA | JSM | JSM | TJ
ISSUED FOR REVIEW

SCALE: AS SHOWN — EXCEPT AS NOTED

YARD

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION J-J'

DESIGNED BY: K. ANDERSON | DRAWN BY: P. BOND | CHECKED BY: R. FULLER | SUPERVISED BY: H. APARICIO | REVIEWED BY: J. MONTGOMERY | APPROVED BY: J. MONTGOMERY | ISSUED BY: T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-15 | R 0

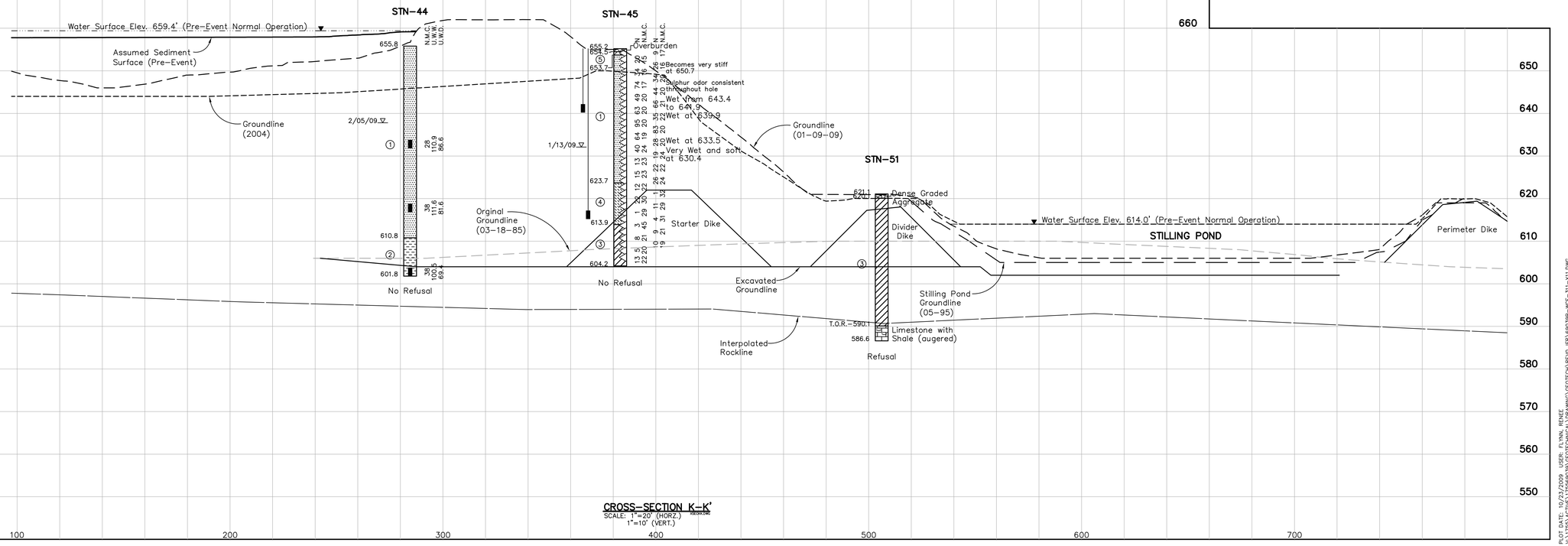
STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

CONSOLIDATED UNDRAINED TRIAXIAL TEST RESULTS						
Material No.	Description	Location	Depth (ft.)	$\bar{c}$ (p.s.f.)	$\bar{\phi}$ (deg.)	γ (wet) Avg. (p.c.f.)
①	Cast Gypsum–Fly Ash	STN–44	37.0–37.5	0	40.3	115.4



CROSS–SECTION K–K'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see _____

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R –	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION K–K'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX–16 | R 0

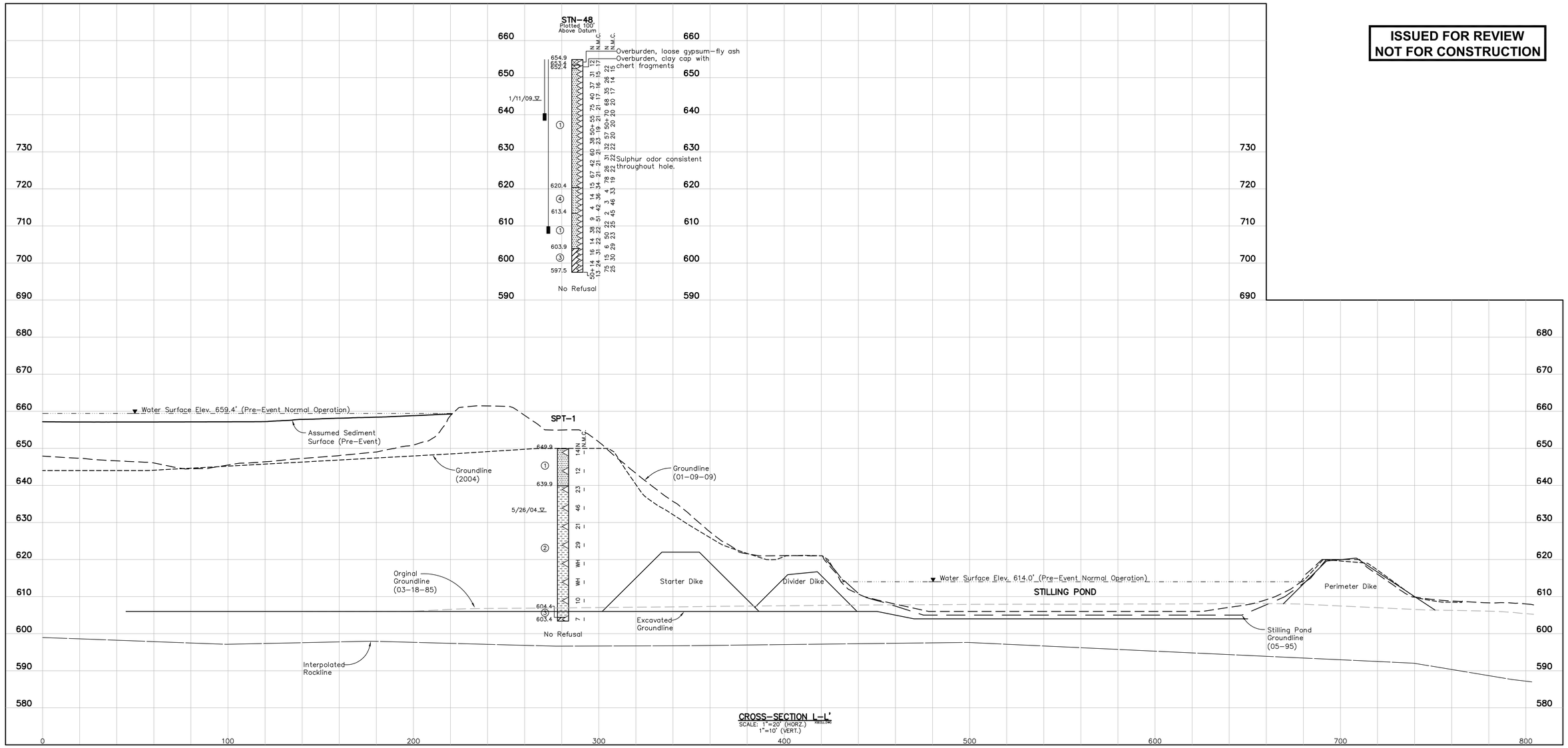
STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/22/2009 - USER: FLYNN, JESSE
K:\TVA\ACTIVE\172569\33\GEOTECHNICAL\DRAWINGS\GEOTECH\VER\0_JFR\690398-WGF-311-X11.DWG

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CROSS-SECTION L-L'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

REV NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R –	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

ISSUED FOR REVIEW

DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION L-L'

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-17 | R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/22/2009 USER: PENN, RENEE
V:\725\ACTIVE\172526939\GEOTECHNICAL\DRAWING\GEOTECH\REVD_JPR\926398-WCF-X12.DWG

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see ____________

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–

ISSUED FOR REVIEW

SCALE: AS SHOWN — EXCEPT AS NOTED

YARD

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION M-M'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

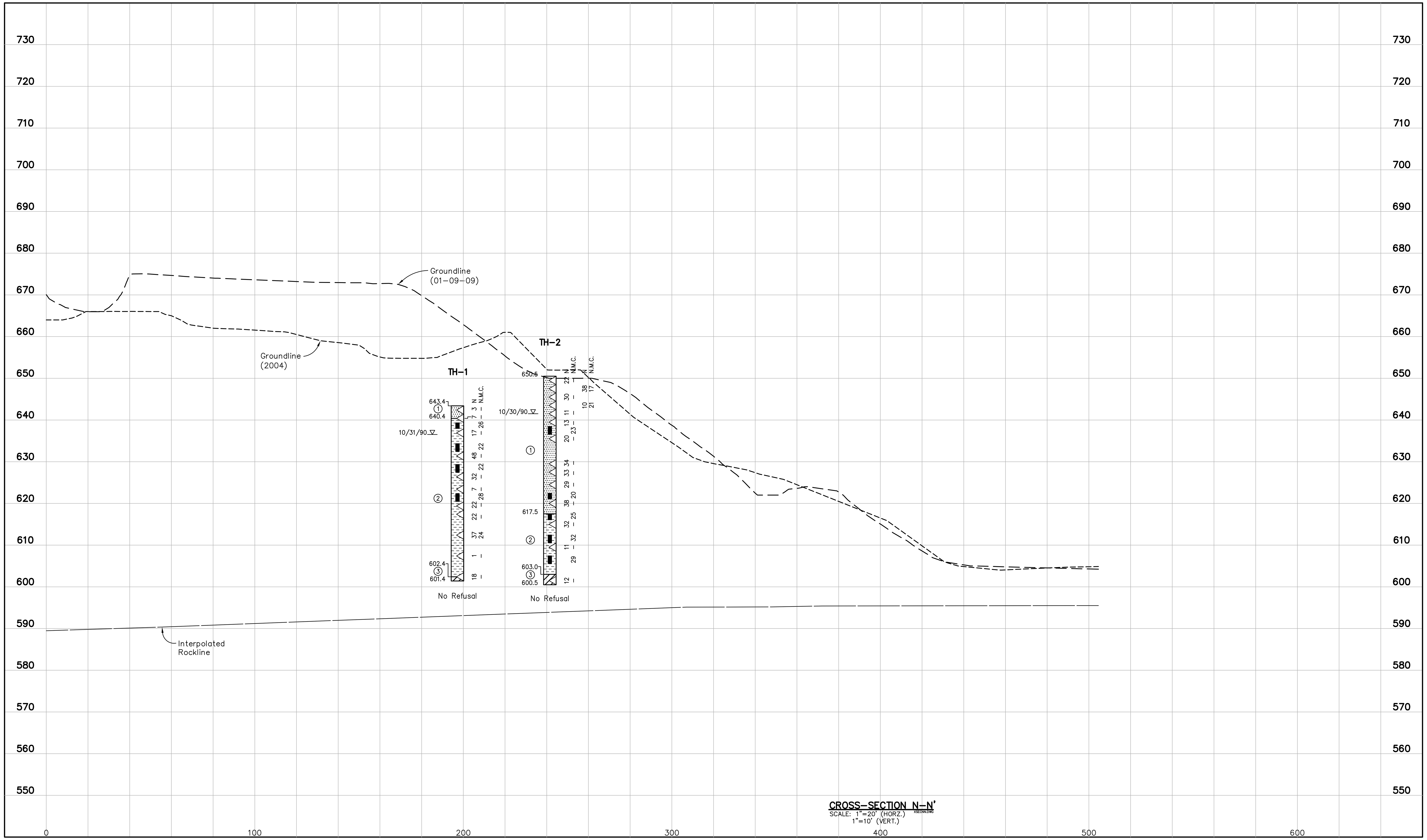
AUTOCAD R 2000 | DATE 10/22/09 | 34 | C | XXWXXX-18 | R 0

STANTEC | 0
TASK COMPLETED BY: | REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



CROSS-SECTION N-N'
SCALE: 1"=20' (HORZ.)
1"=10' (VERT.)

NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
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For Supporting Design Calculations see ______________________

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV CD
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–

R 0: ISSUED FOR REVIEW

DISCIPLINE INTERFACE
1
2
3
4

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION N-N'

DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

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WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

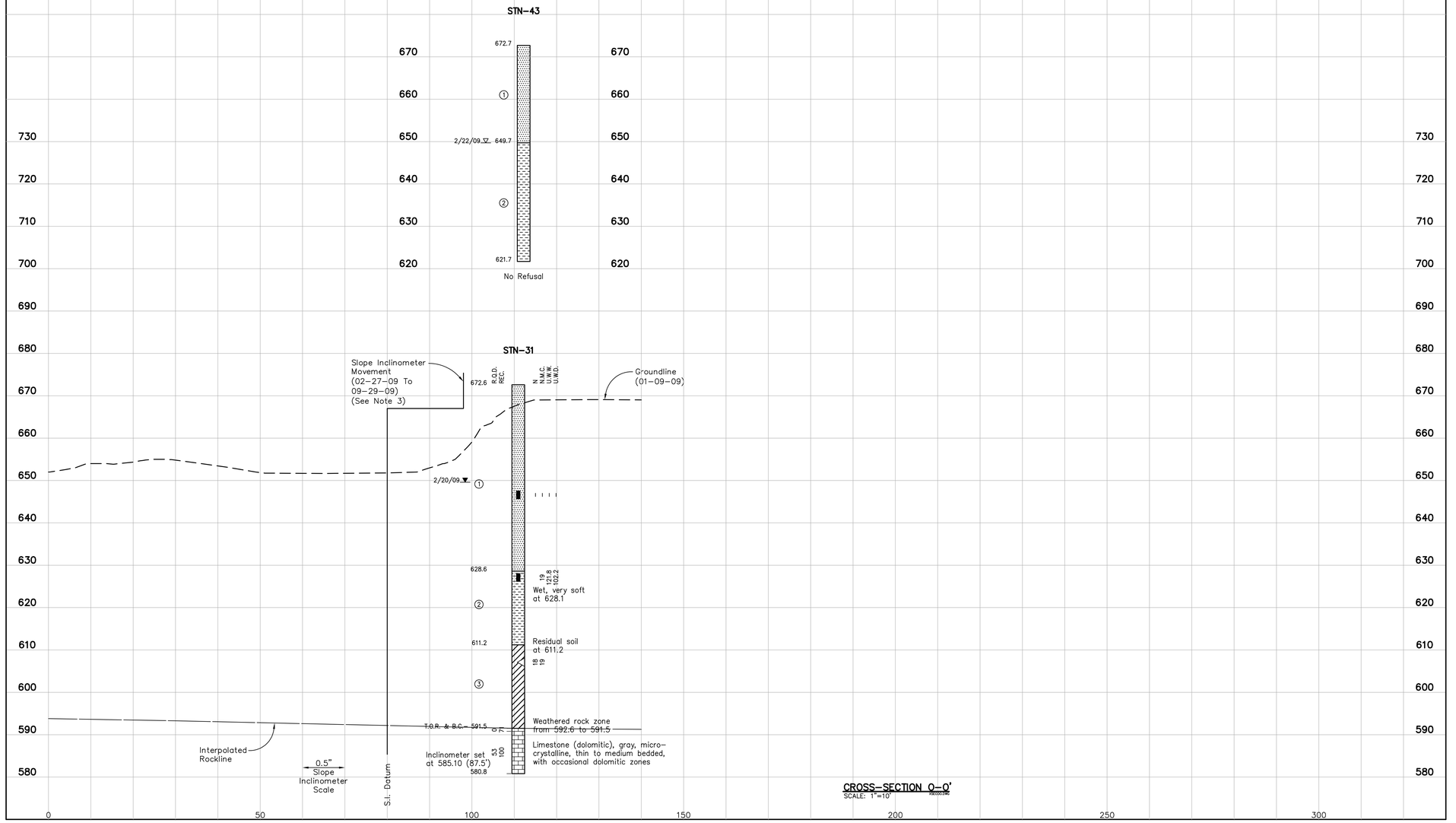
AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX-19	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

ISSUED FOR REVIEW
NOT FOR CONSTRUCTION



NOTES:

1. Refer to Sheet 2 for notes, legend and piezometer reading table.
2. Natural Moisture Content testing of samples containing gypsum flyash material were conducted at 40°C and 200°C. For clarity only the 40°C have been reported on the drawings. The results from 200°C tests can be found in the geotechnical report. Natural Moisture Content testing of samples containing residual clay material were conducted at 110°C, only.
3. The reported Slope Inclinometer movement depicts the maximum displacement observed at the time of the reading. Additional movements may be occurring at other depths within the Slope Inclinometer casing which have not been shown.

For Supporting Design Calculations see ——————————

REV. NO.	DATE	DSGN	DRWN	CHKD	SUPV	RVWD	APPD	ISSD	PROJECT ID	AS CONST	REV. CK'D
R –	–	–	–	–	–	–	–	–	–	–	–
R 0	10/22/09	GKA	PJB	RDF	HRA	JSM	JSM	TJ	–	–	–
ISSUED FOR REVIEW											DISCIPLINE INTERFACE

SCALE: AS SHOWN EXCEPT AS NOTED

YARD
–

GYPSUM STACK
GEOTECHNICAL EXPLORATION
CROSS SECTION O-O'

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DESIGNED BY:	DRAWN BY:	CHECKED BY:	SUPERVISED BY:	REVIEWED BY:	APPROVED BY:	ISSUED BY:
K. ANDERSON	P. BOND	R. FULLER	H. APARICIO	J. MONTGOMERY	J. MONTGOMERY	T. JOHNSON

WIDOWS CREEK FOSSIL PLANT
TENNESSEE VALLEY AUTHORITY
FOSSIL AND HYDRO ENGINEERING

AUTOCAD R 2000	DATE 10/22/09	34	C	XXWXXX-20	R 0

STANTEC	0
TASK COMPLETED BY:	REV NO.

PLOT FACTOR:10
W_TVA

C.A.D. DRAWING
DO NOT ALTER MANUALLY

PLOT DATE: 10/22/2009 USER: FLYNN, RENEE
K:\V1752A\ACTIVE\172569039\GEOTECHNICAL\DRAWING\GEOTECH\REVIO_JFRY\690398-WCF-315-X15.DWG