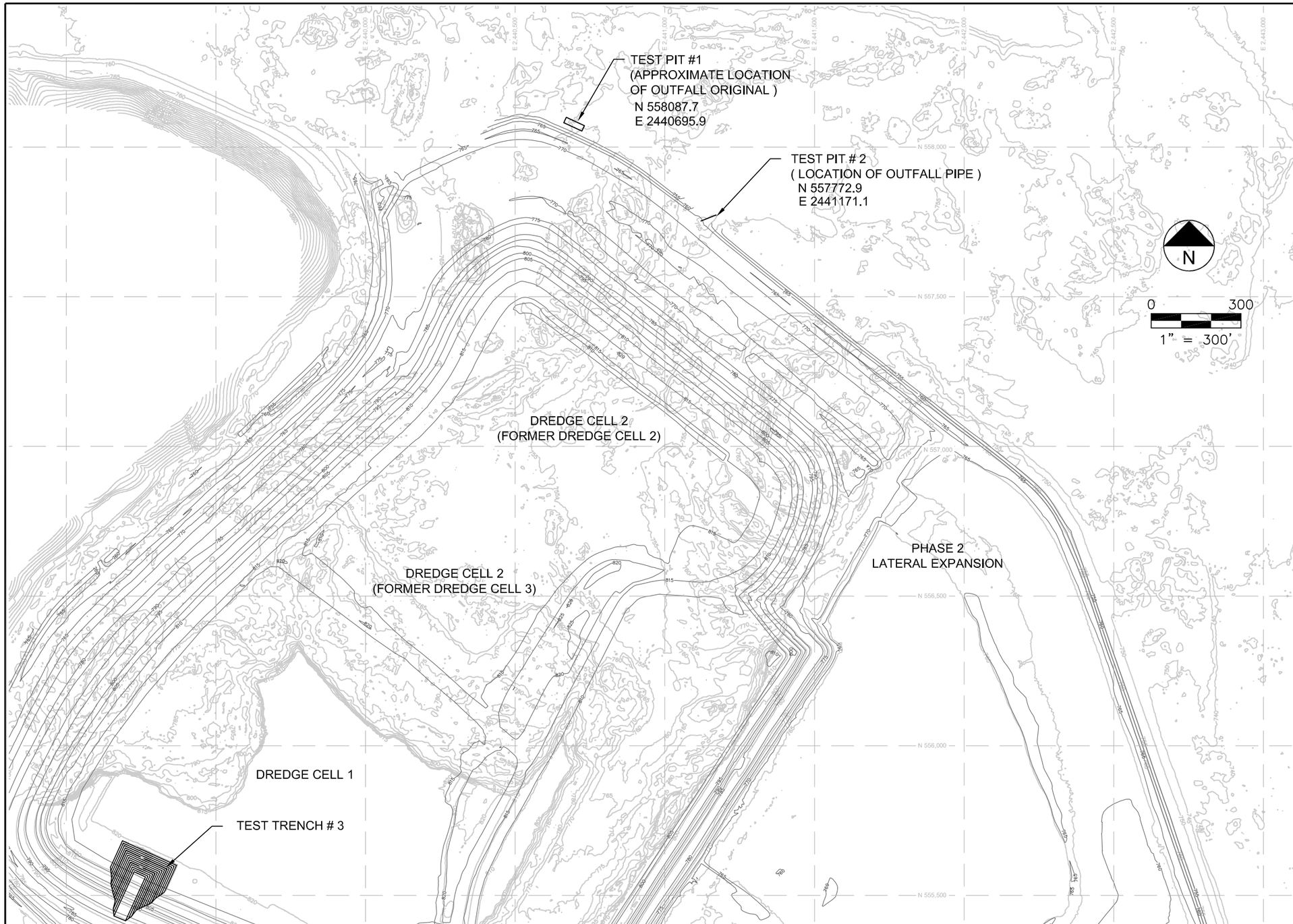

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TEST PITS AND TEST TRENCH LOCATION MAP

ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DTB	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_1	

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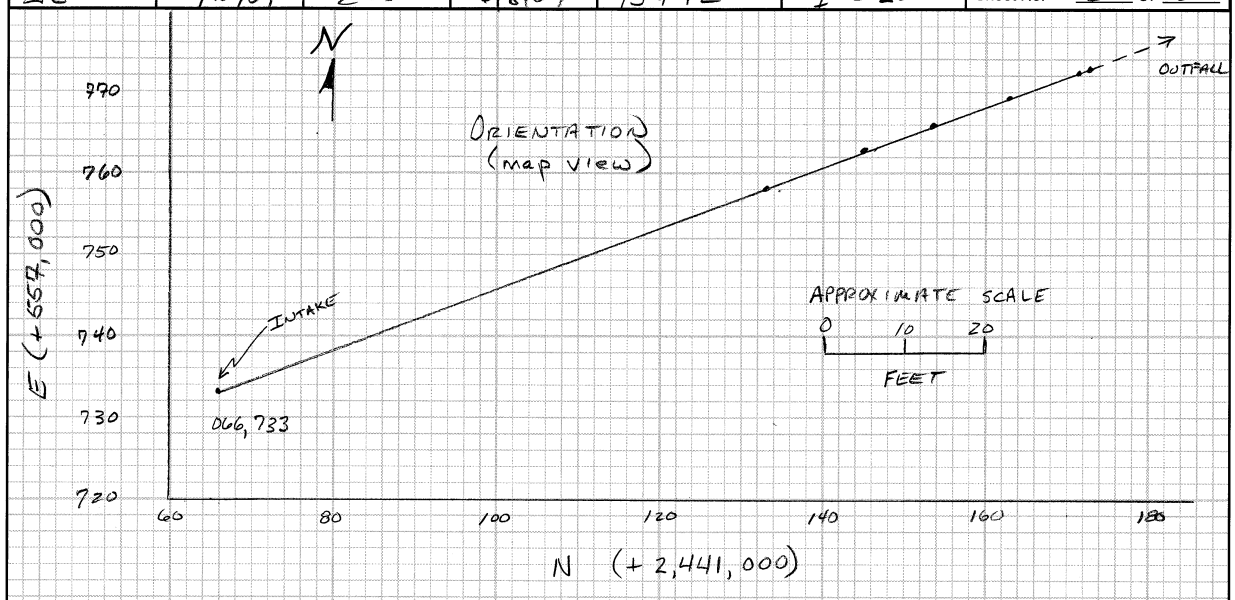
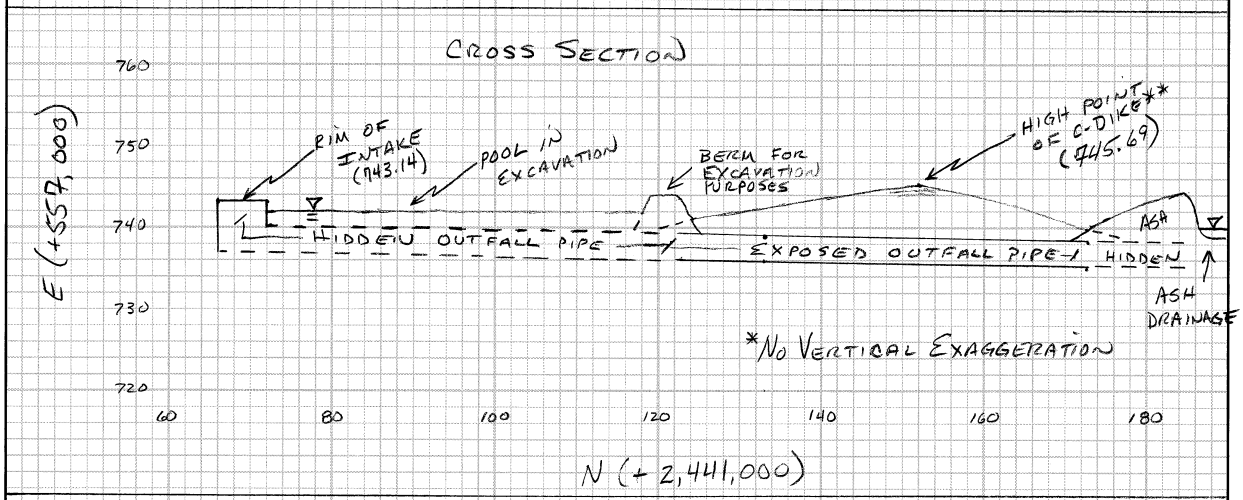
Calculation Sheet

FIGURE 1.3.5_2

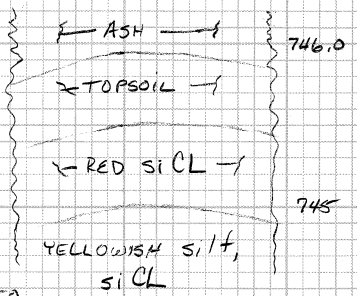
Project	Subject
TVA - KIF - RCA	OUTFALL PIPE CROSS SECTION

Originated By	Date	Checked By	Date	AECOM Job No.	Scale	Sheet No.
JEL	4/10/09	ZED	6/8/09	95742	1" = 20' (APPROX)	1 Of 1





** BERM CAPPED W/ 0.42' OF BROWN "topsoil" OVER 0.5' OF RED SILTY CLAY OVER YELLOWISH SILT/SILTY CLAY. LIKELY DISTURBED DURING EXCAVATION.



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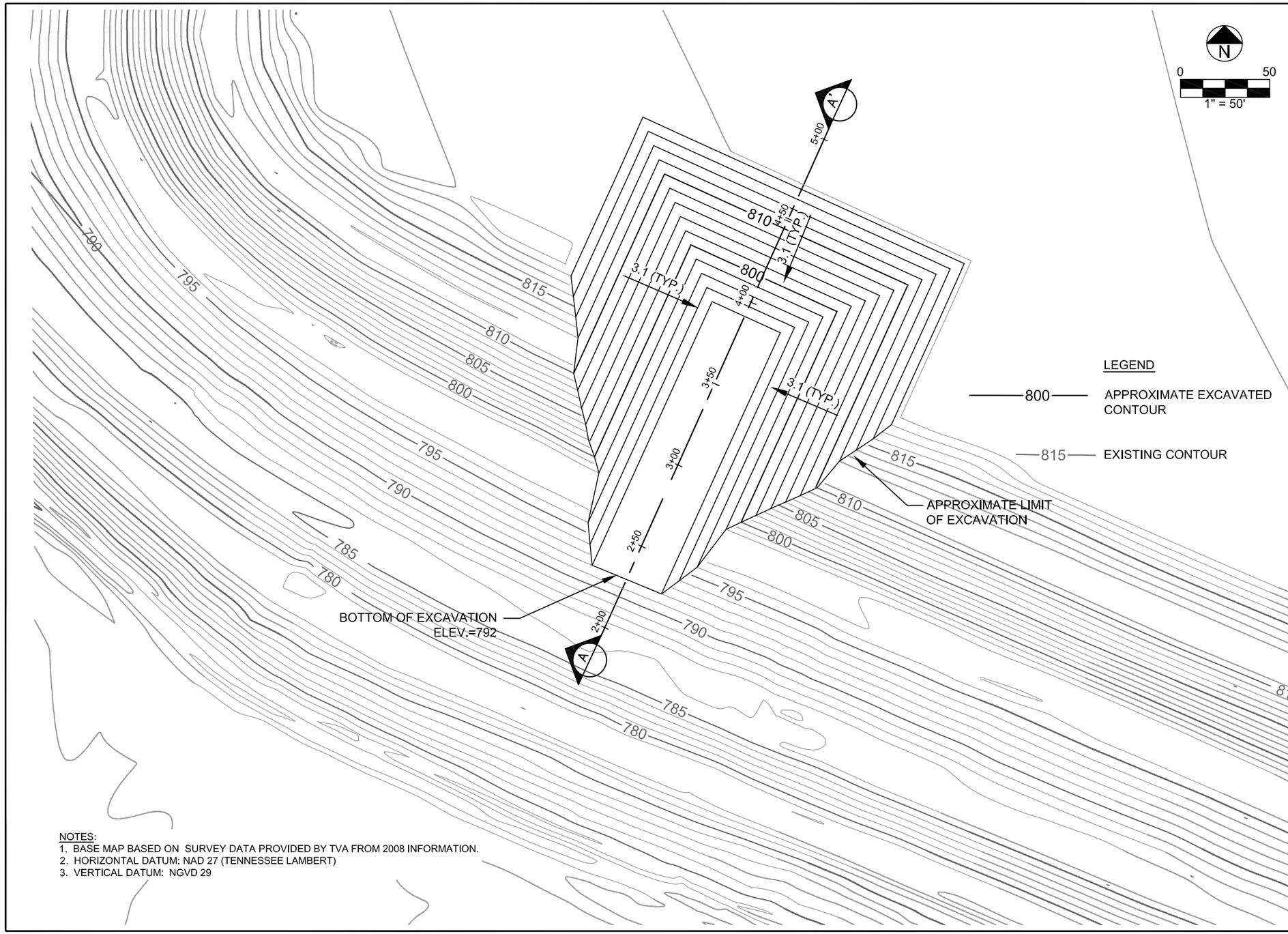

NOTES:
1. BASE MAP BASED ON SURVEY DATA PROVIDED BY TVA FROM 2008 INFORMATION.
2. HORIZONTAL DATUM: NAD 27 (TENNESSEE LAMBERT)
3. VERTICAL DATUM: NGVD 29

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TEST TRENCH NO. 3 EXCAVATION PLAN- SOUTH DIKE

ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DTB	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_3	

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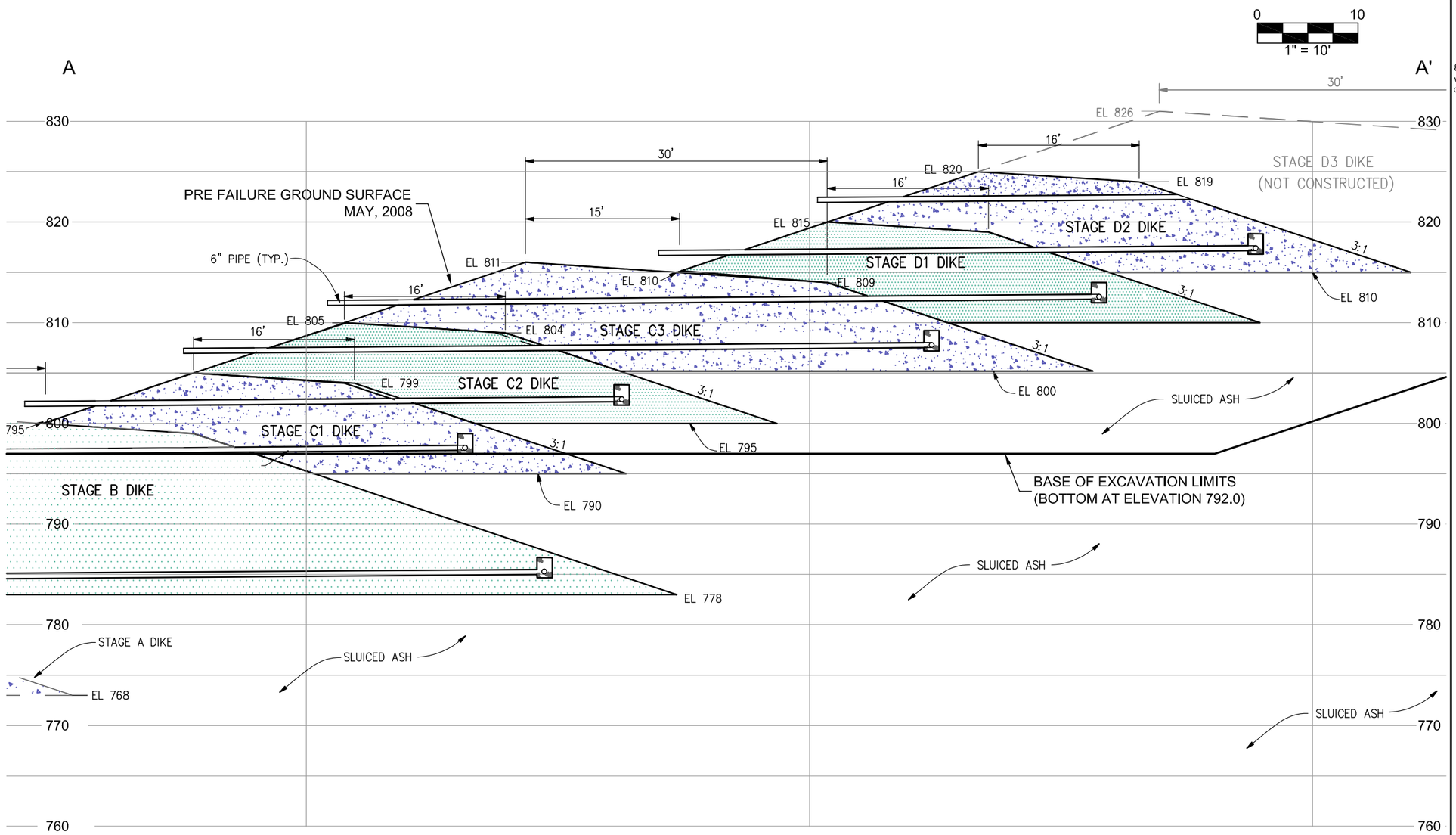

SECTION A-A'
SCALE: 1"=10'

NOTES:
1. MAP BASED ON DATA PROVIDED BY TVA .
2. HORIZONTAL DATUM: NAD 27 (TENNESSEE LAMBERT)
3. VERTICAL DATUM: NGVD 29

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TEST TRENCH NO. 3 EXCAVATION CROSS SECTION A-A'- SOUTH DIKE

ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DTB	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_4	

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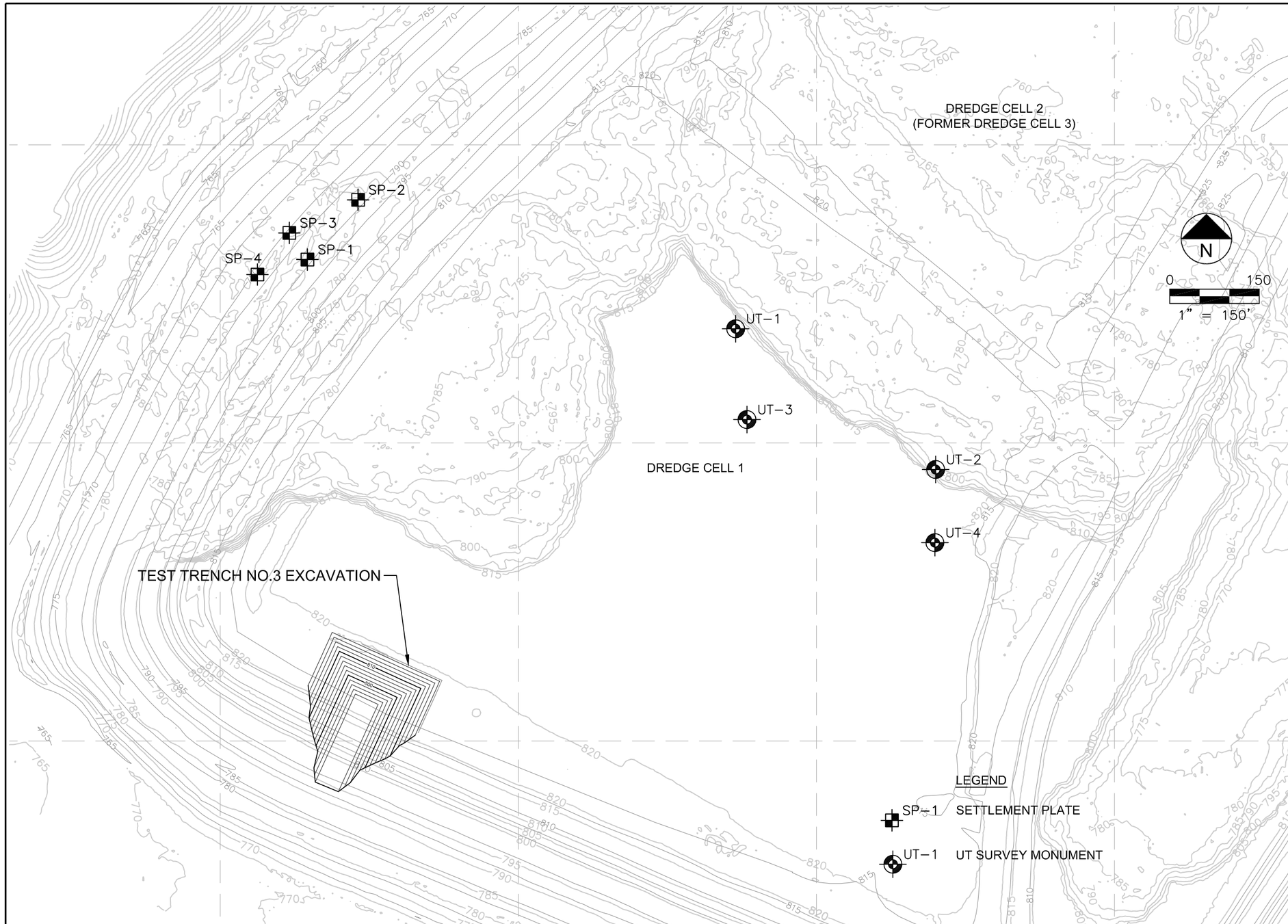

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SETTLEMENT PLATE AND UT SURVEY MONUMENT LOCATION MAP

ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL 3 FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DTB	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_5	

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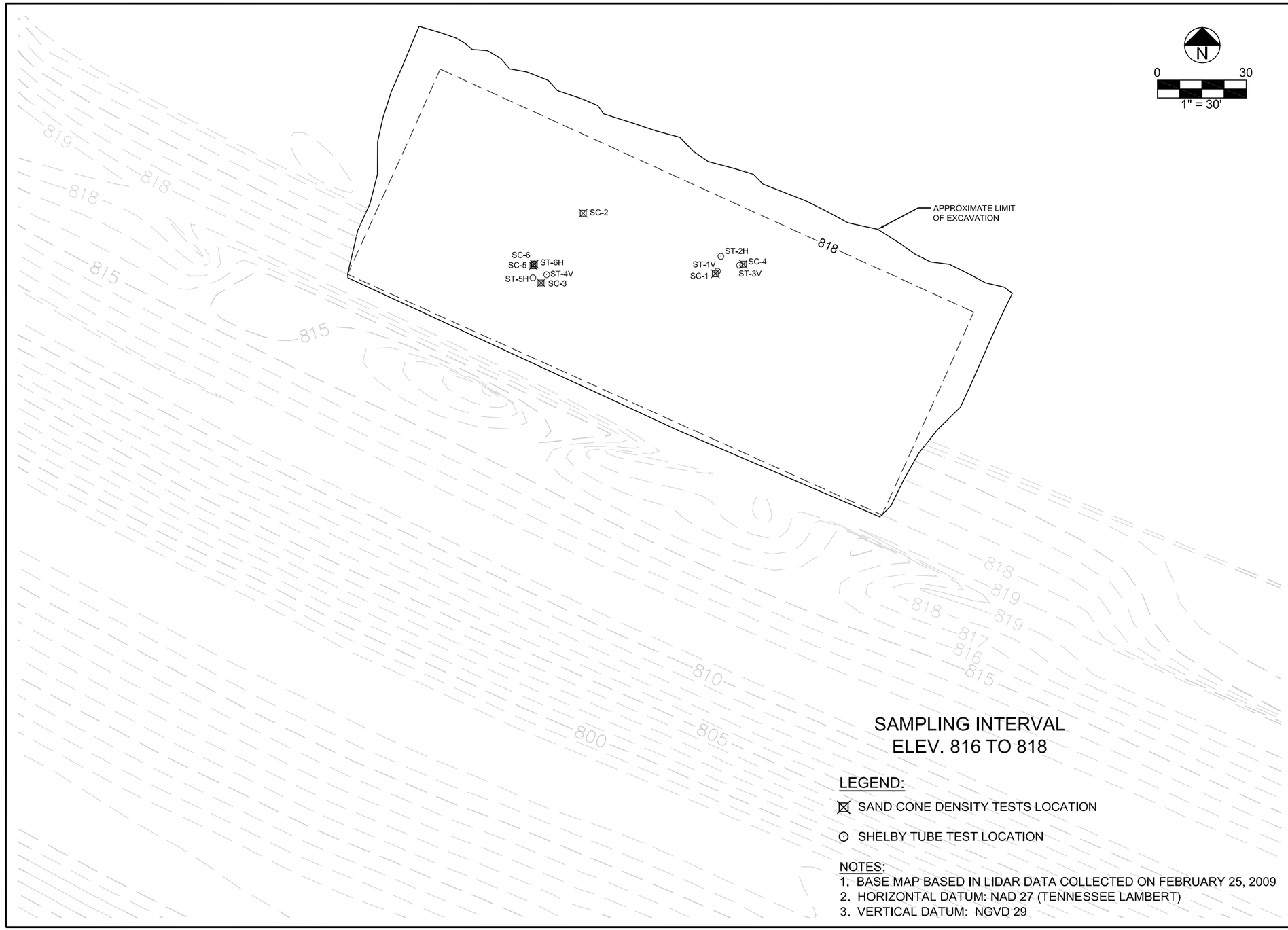

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TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 816 TO 818
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_6	

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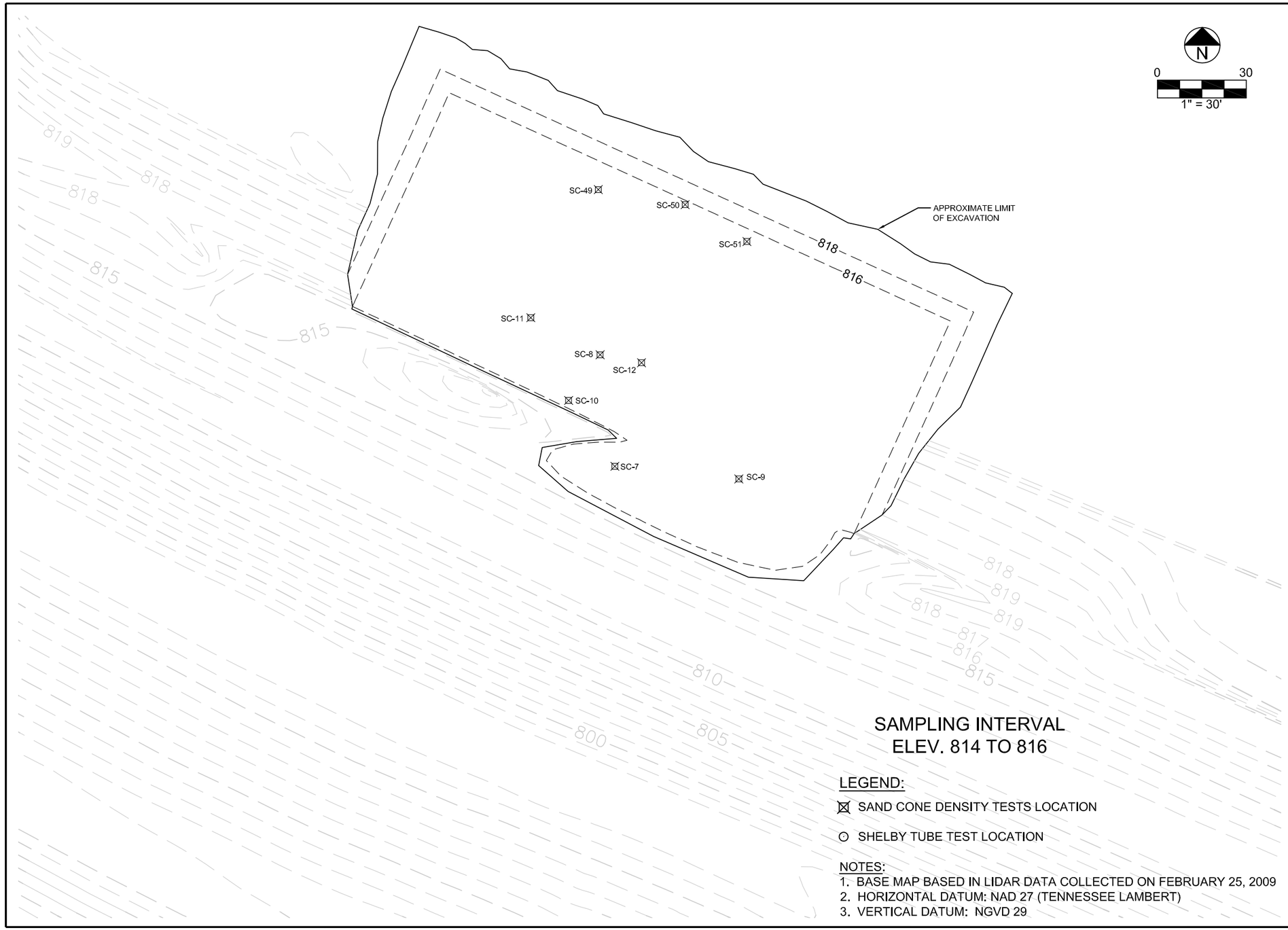

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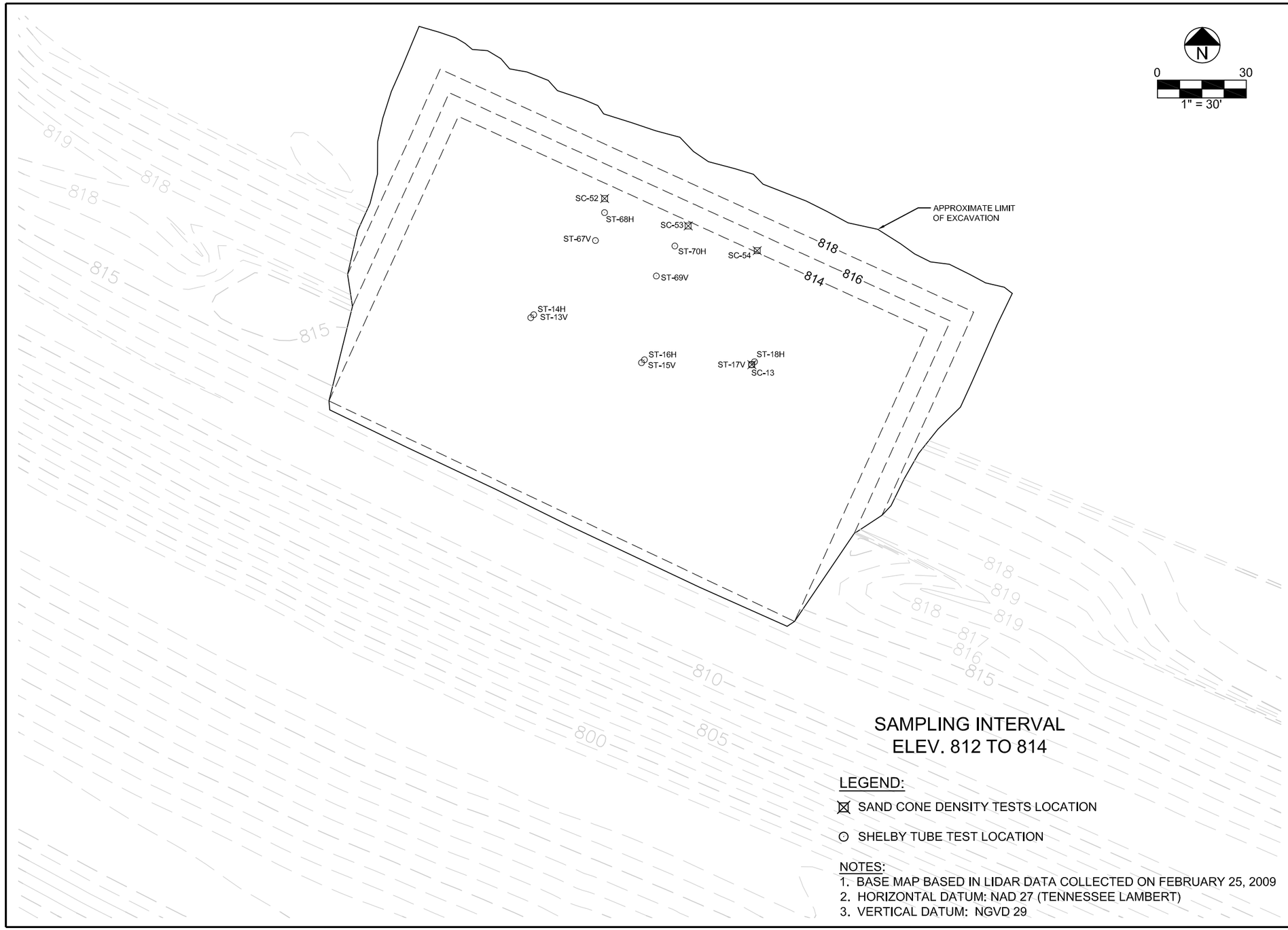
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 814 TO 816
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_7	



SAMPLING INTERVAL
ELEV. 812 TO 814

LEGEND:

⊠ SAND CONE DENSITY TESTS LOCATION

⊙ SHELBY TUBE TEST LOCATION

NOTES:
1. BASE MAP BASED IN LIDAR DATA COLLECTED ON FEBRUARY 25, 2009
2. HORIZONTAL DATUM: NAD 27 (TENNESSEE LAMBERT)
3. VERTICAL DATUM: NGVD 29

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TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 812 TO 814
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_8	

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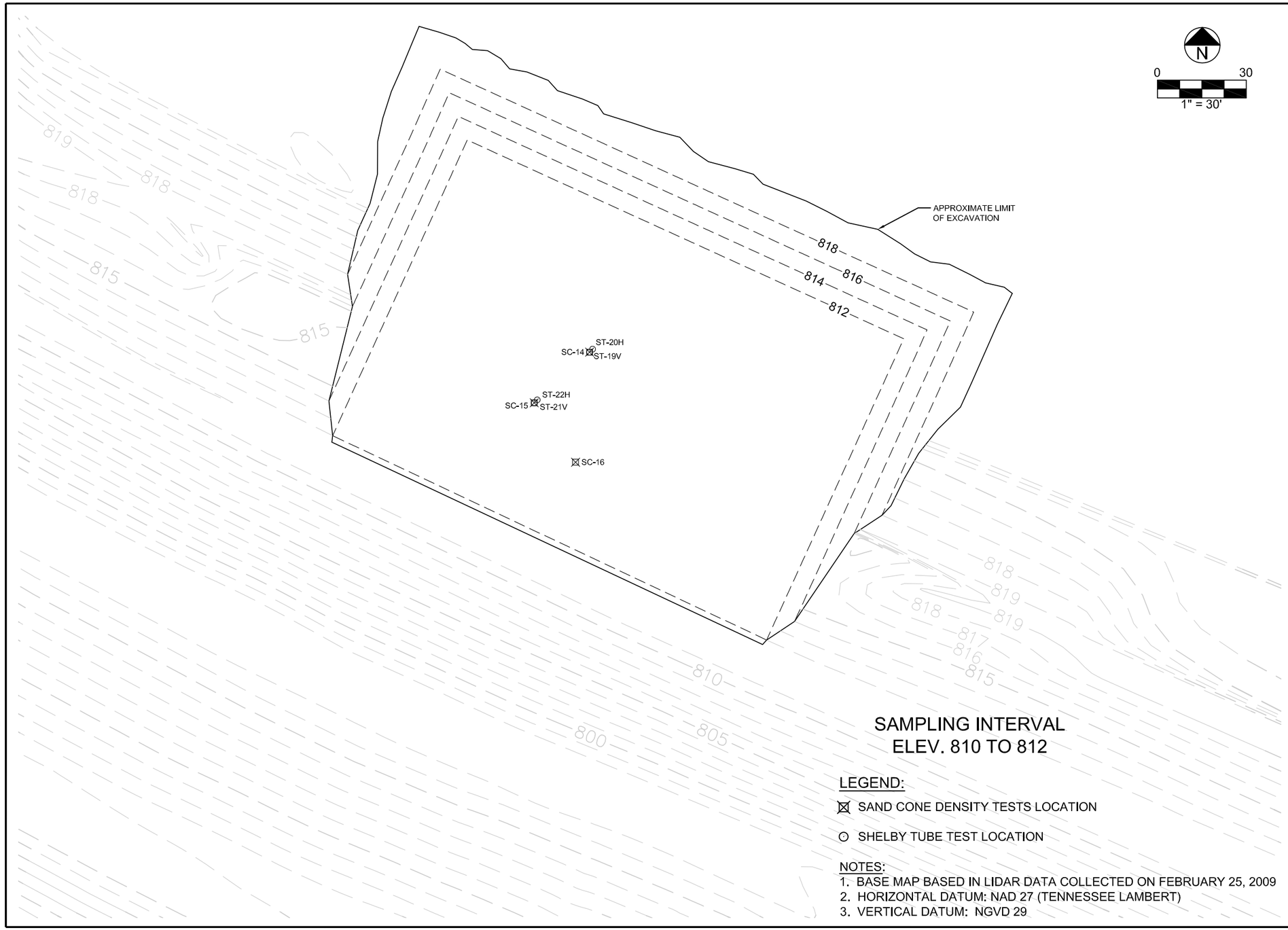

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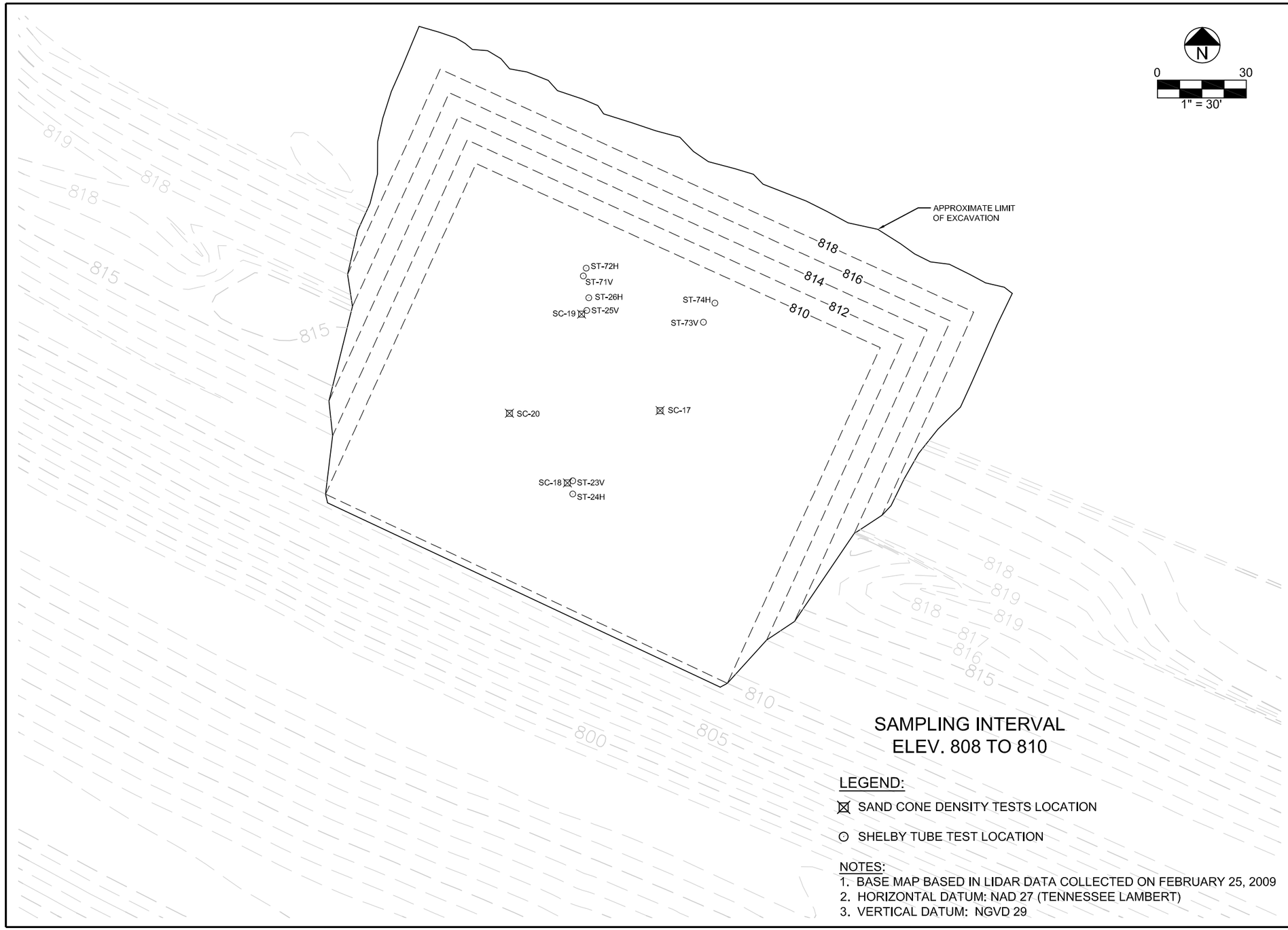
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 810 TO 812
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_9	



SAMPLING INTERVAL
ELEV. 808 TO 810

LEGEND:

⊠ SAND CONE DENSITY TESTS LOCATION

⊙ SHELBY TUBE TEST LOCATION

NOTES:
1. BASE MAP BASED IN LIDAR DATA COLLECTED ON FEBRUARY 25, 2009
2. HORIZONTAL DATUM: NAD 27 (TENNESSEE LAMBERT)
3. VERTICAL DATUM: NGVD 29

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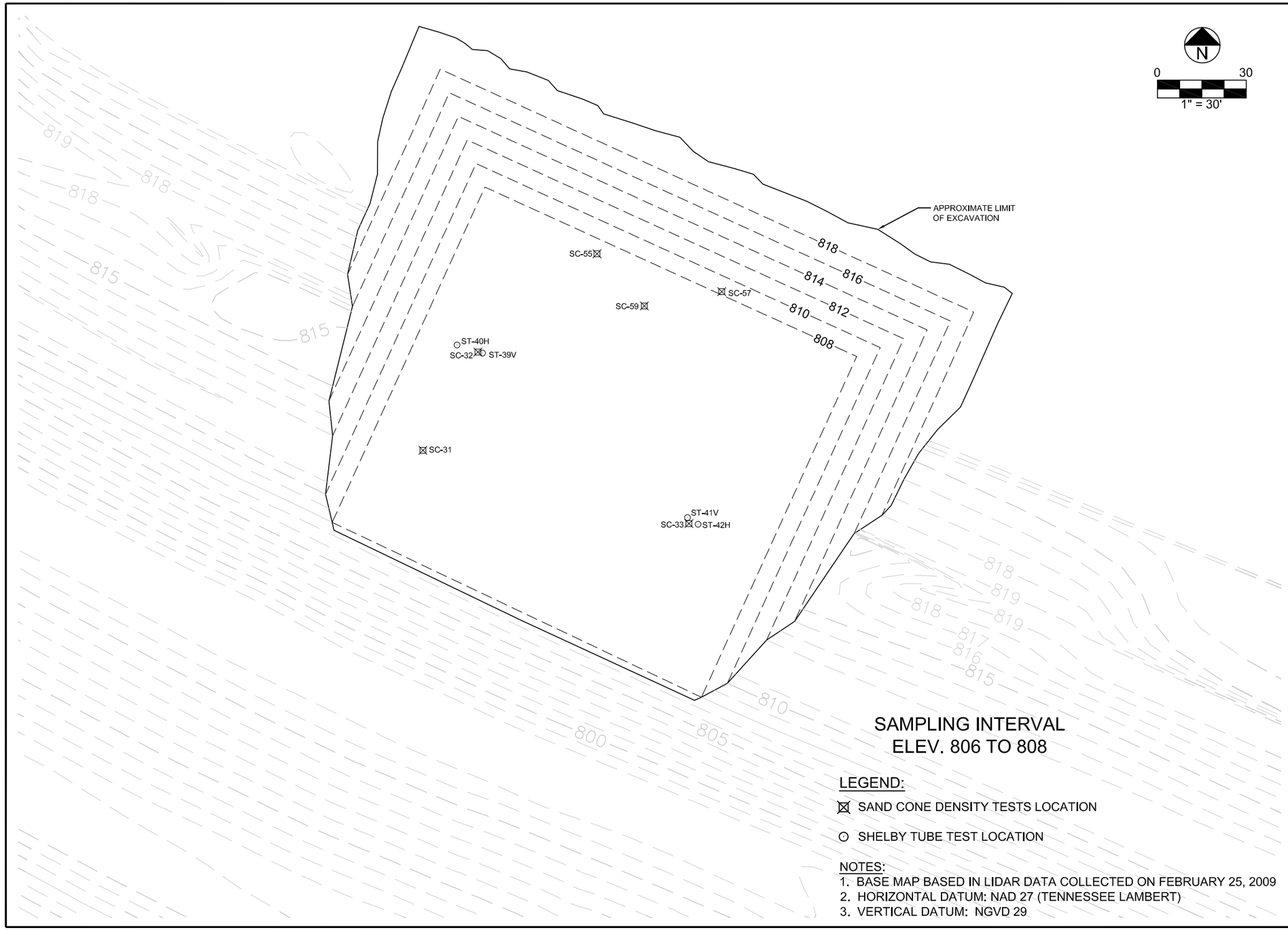
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 808 TO 810
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_10	



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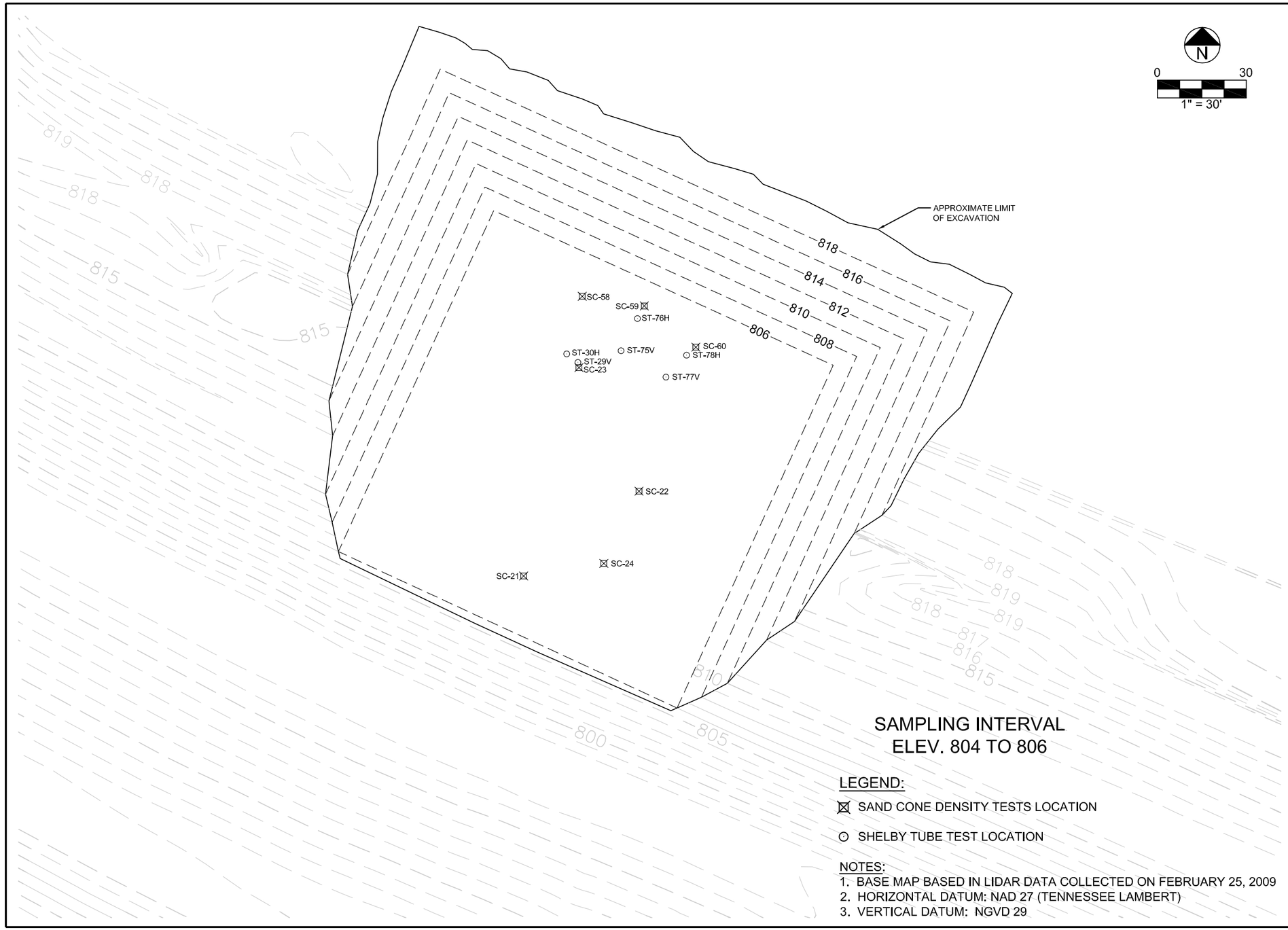
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 806 TO 808
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_11	



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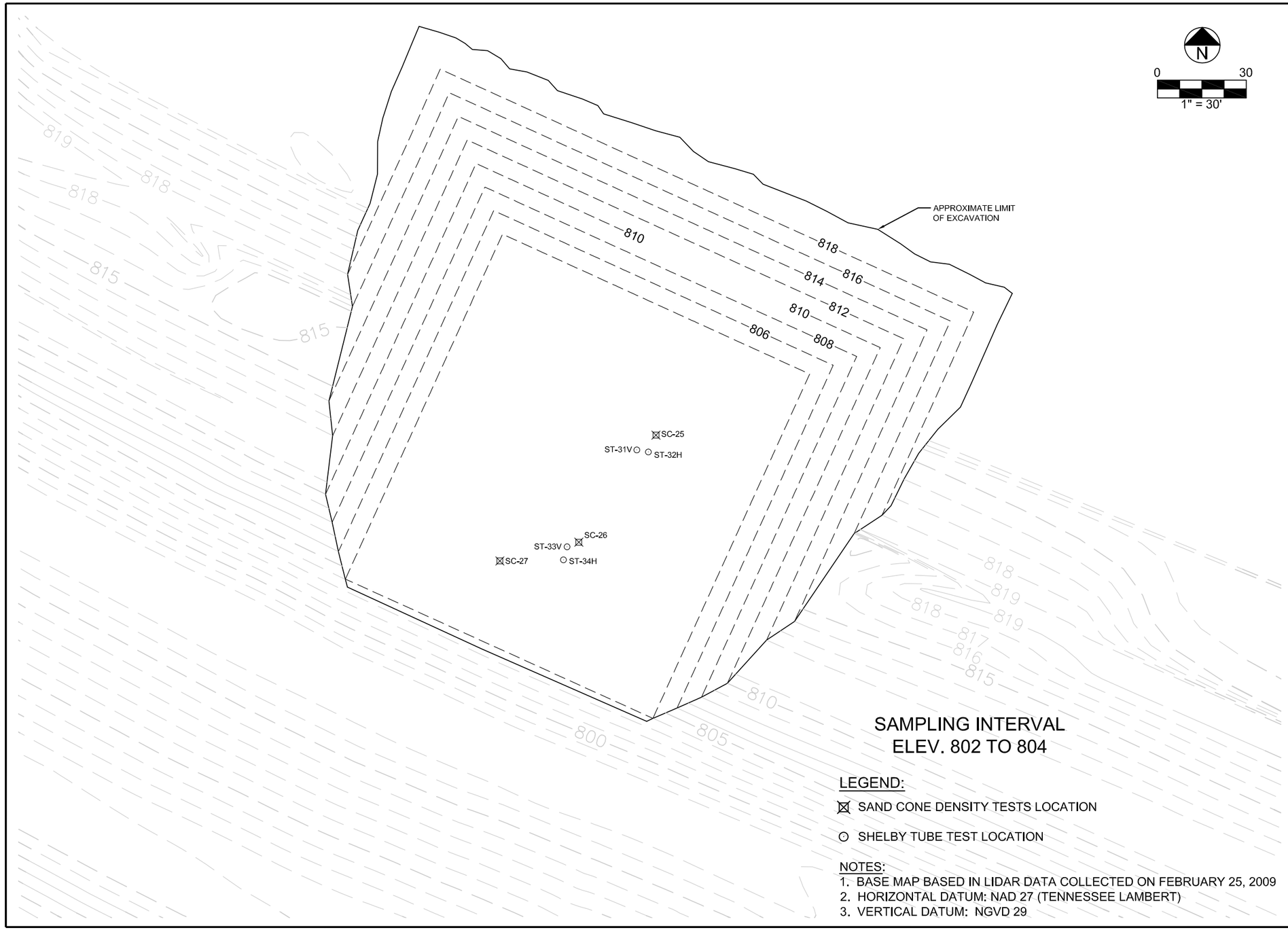
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 804 TO 806
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_12	



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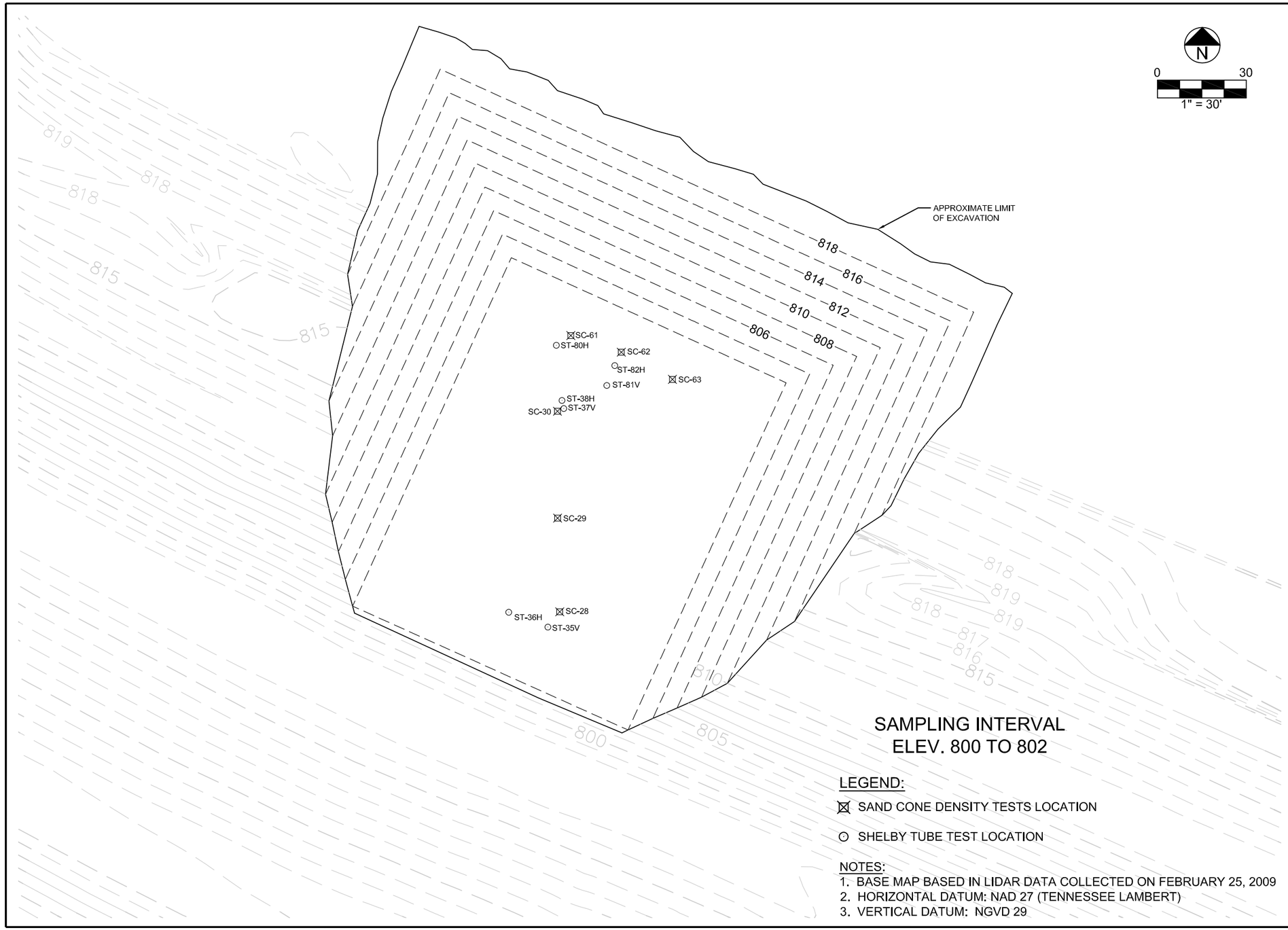
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 802 TO 804
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_13	



SAMPLING INTERVAL
ELEV. 800 TO 802

LEGEND:

⊠ SAND CONE DENSITY TESTS LOCATION

⊙ SHELBY TUBE TEST LOCATION

NOTES:
1. BASE MAP BASED IN LIDAR DATA COLLECTED ON FEBRUARY 25, 2009
2. HORIZONTAL DATUM: NAD 27 (TENNESSEE LAMBERT)
3. VERTICAL DATUM: NGVD 29

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TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 800 TO 802
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_14	

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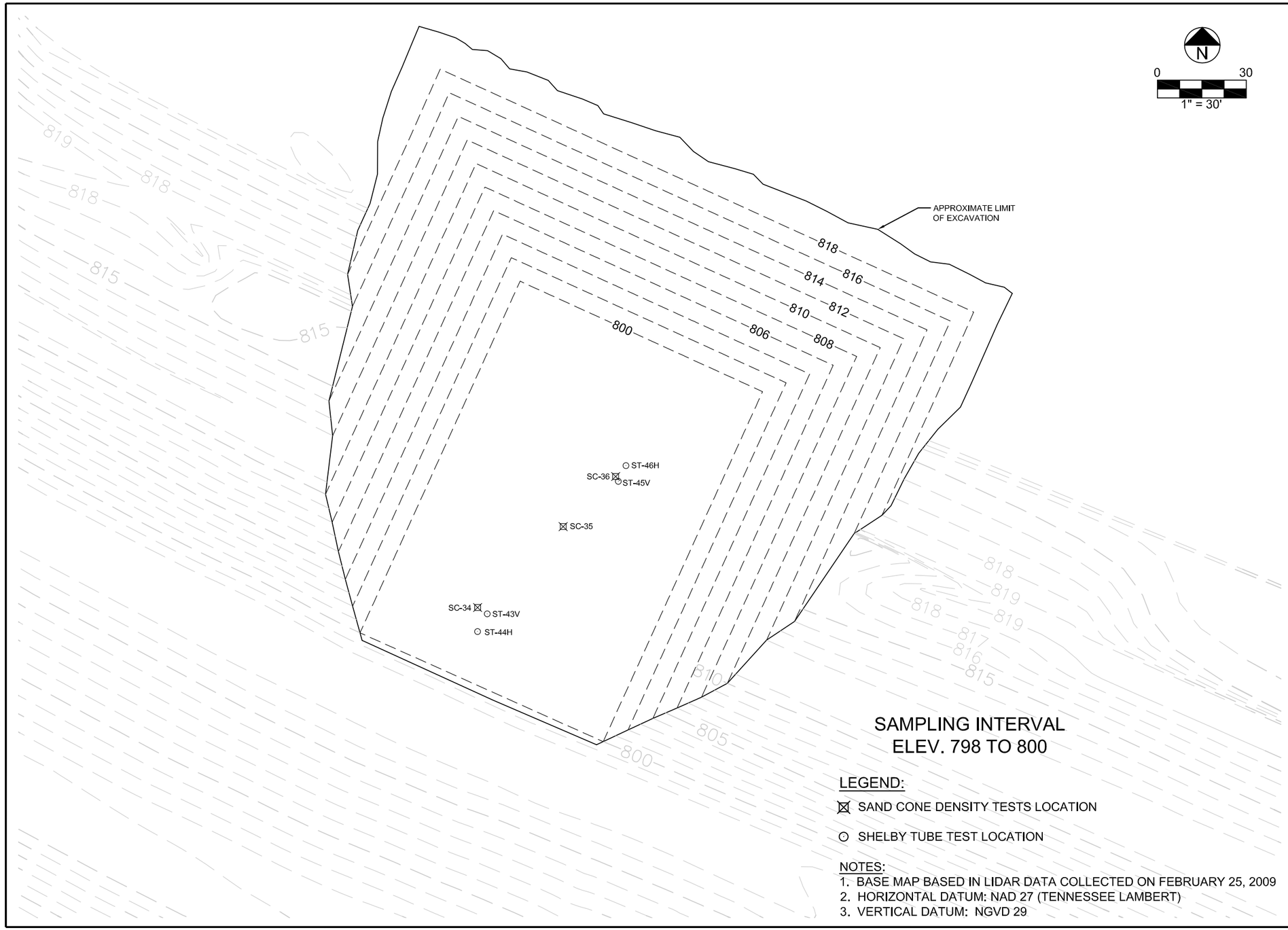

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TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 798 TO 800
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
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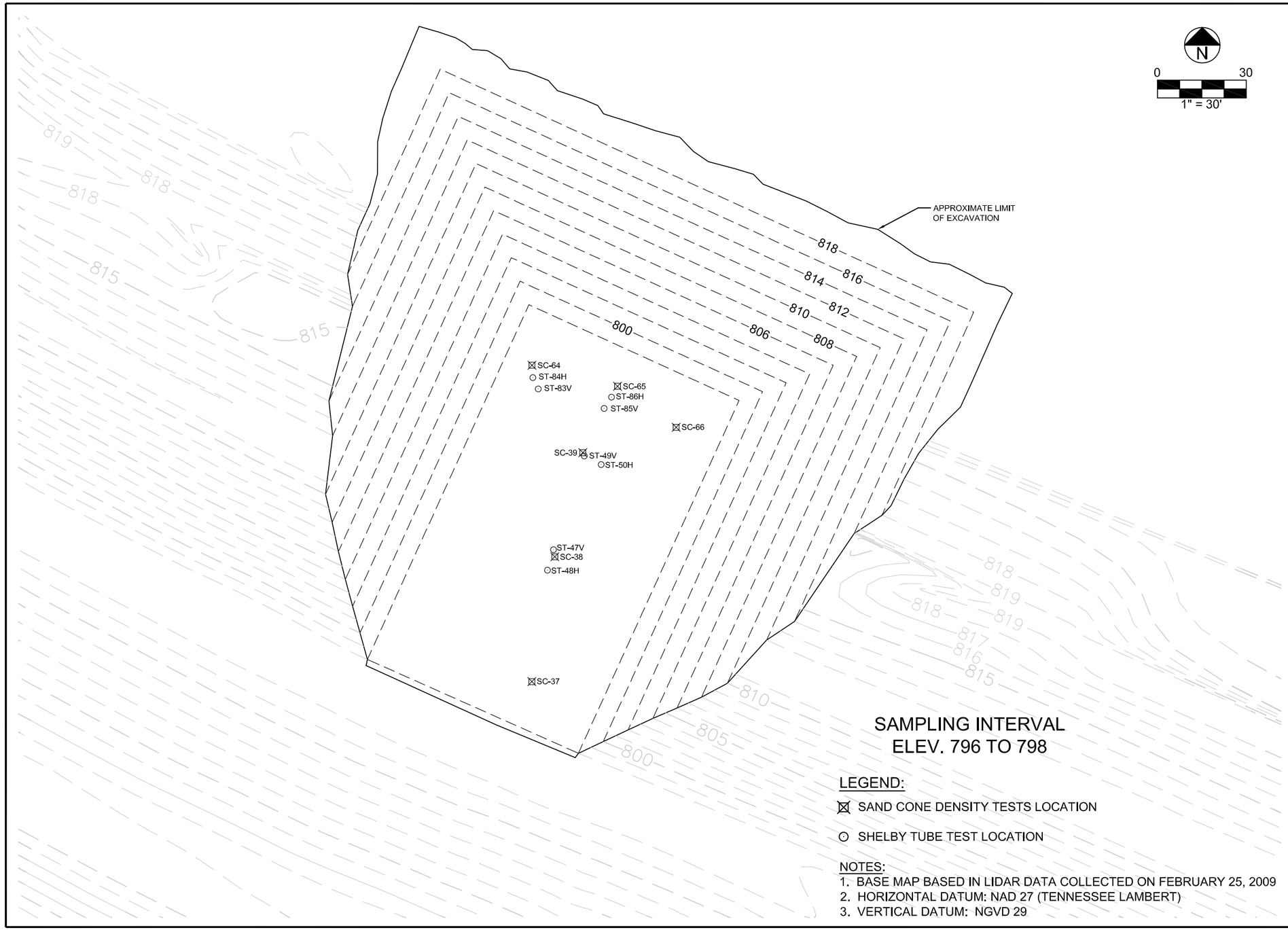

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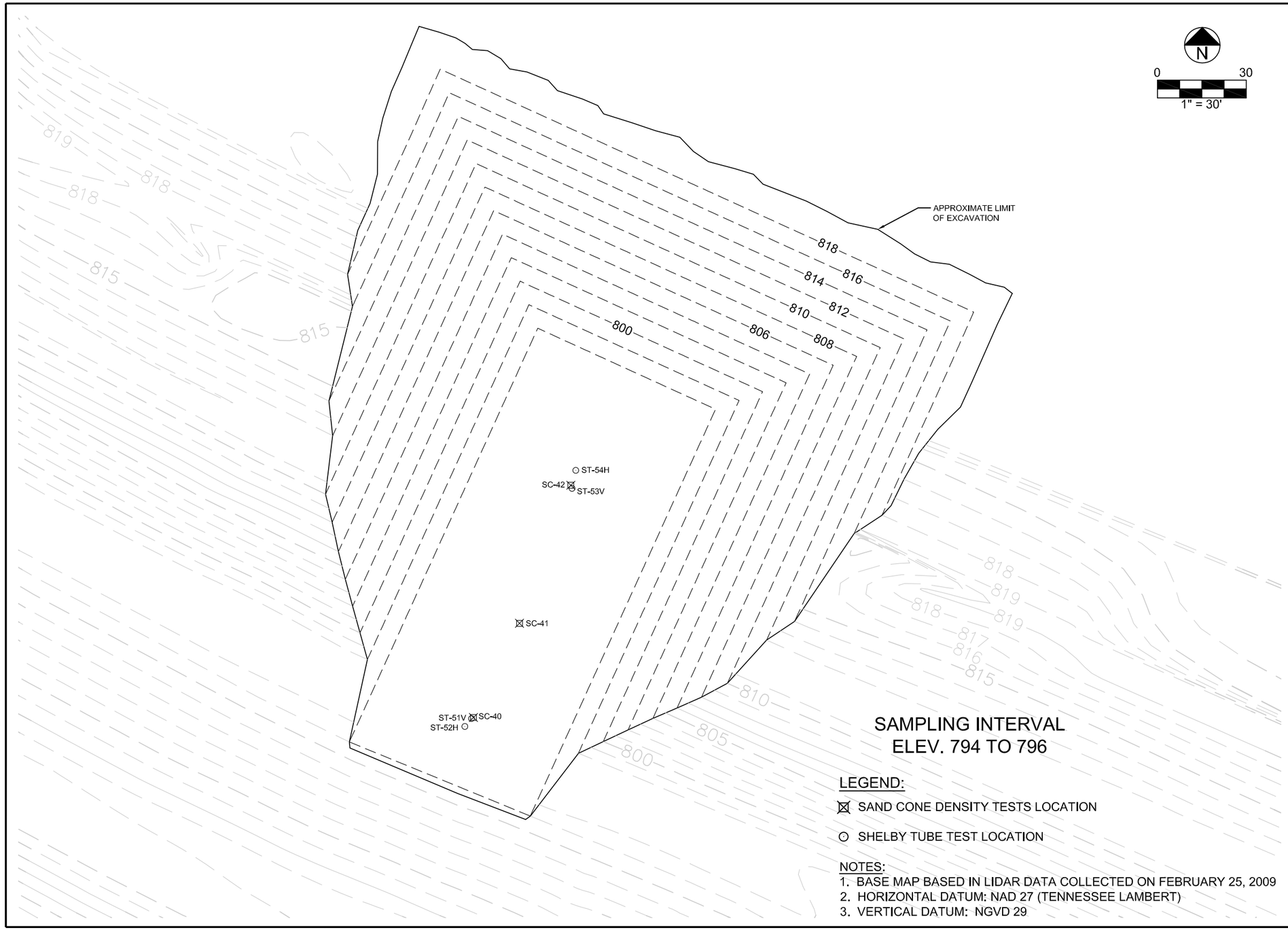
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 796 TO 798
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_16	



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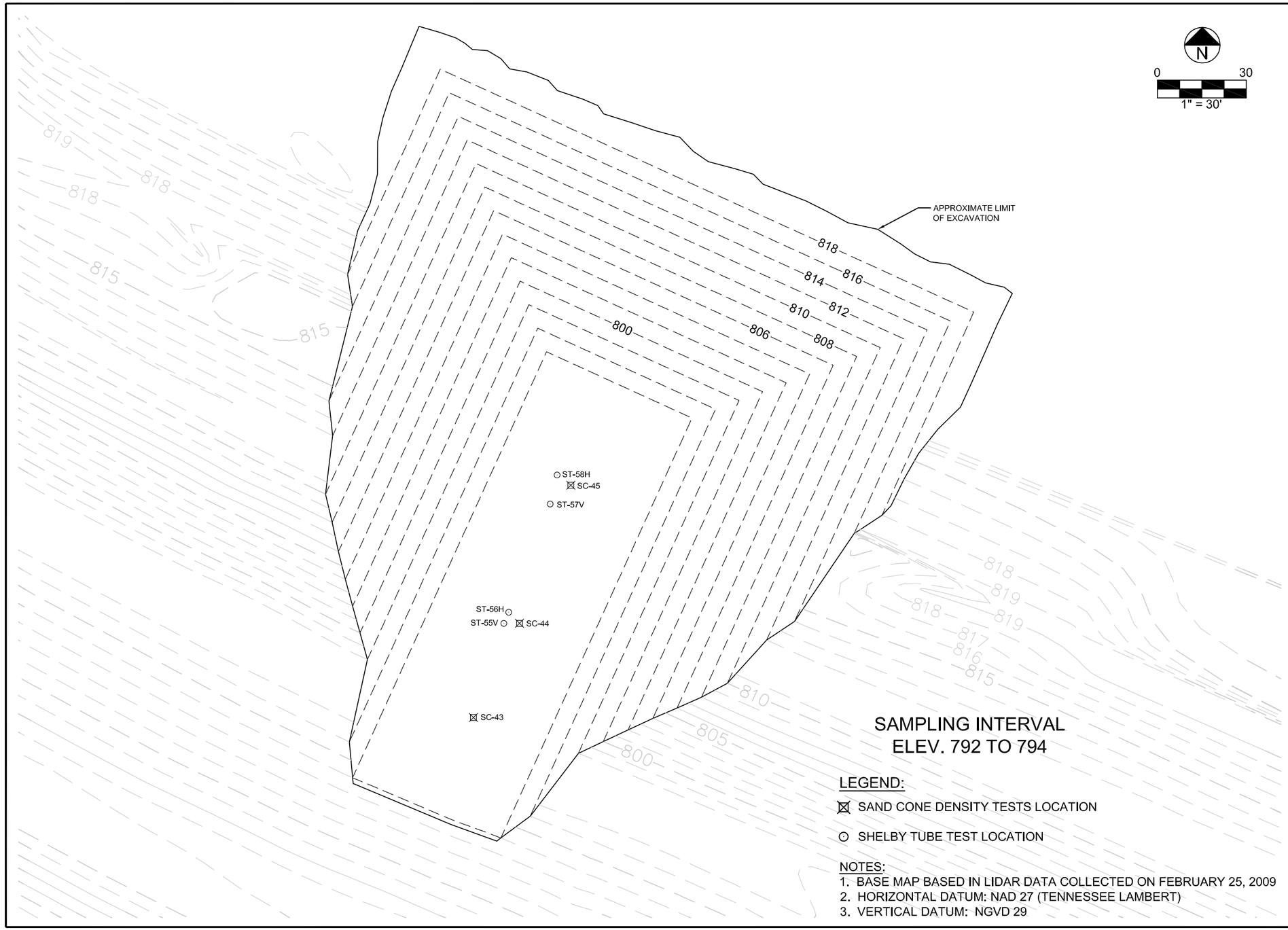
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 794 TO 796
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_17	



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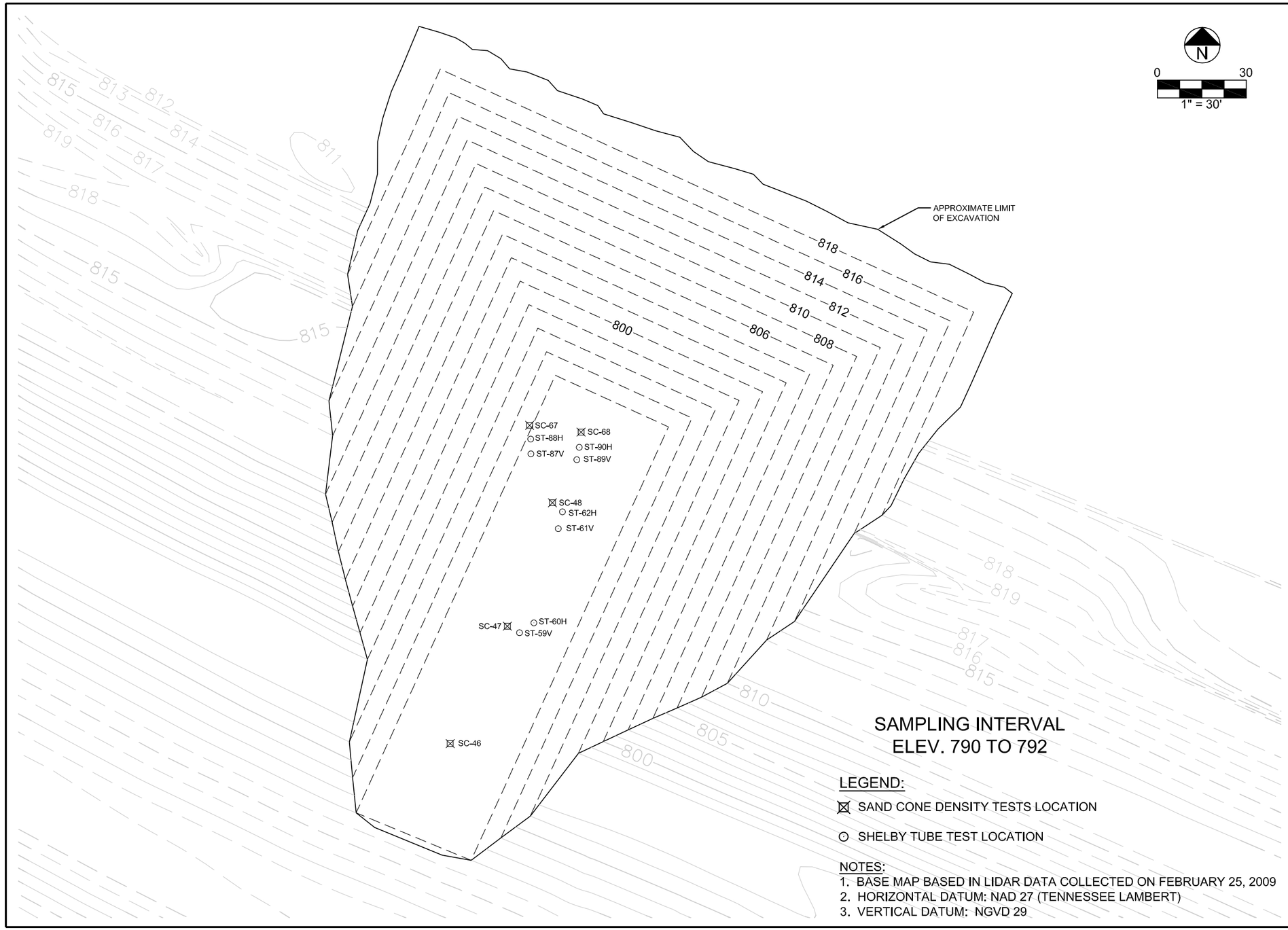
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 792 TO 794
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_18	



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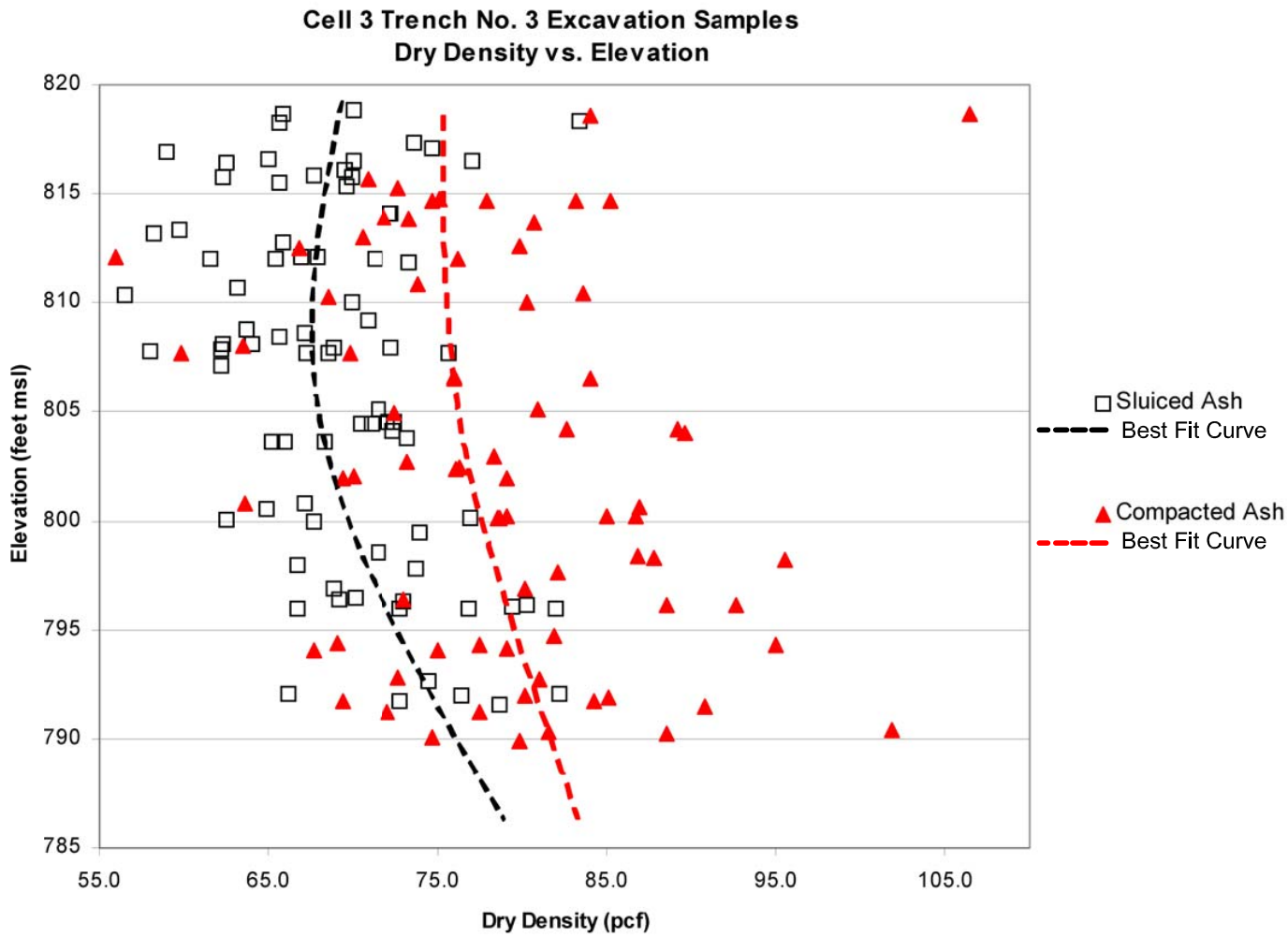
TEST TRENCH No. 3 SAND CONE AND SHELBY TUBE TEST LOCATIONS ELEV 790 TO 792
ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DJD	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_19	



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DENSITY vs ELEVATION

ROOT CAUSE ANALYSIS
TVA KINGSTON DREDGE CELL FAILURE
ON DECEMBER 22, 2008
KINGSTON FOSSIL PLANT
HARRIMAN, TENNESSEE

Drawn :	DTB	6/12/2009
Checked:	LWB	6/12/2009
Approved:	WHW	6/12/2009
PROJECT NUMBER	60095742	
FIGURE NUMBER	1.3.5_20	