PowerSouth Energy Cooperative

Charles R. Lowman Power Plant
Leroy, AL

History of Construction
Scrubber Waste Pond

Issued October 2016

CDG Engineers and Associates, Inc.
1840 East Three Notch St.
Andalusia, AL 36421
| cdge.com

PowerSouth
Energy Cooperative

REPORT
History of Construction
Scrubber Waste Pond
Charles R. Lowman Power Plant

October 2016

CDG
Engineering. Environmental. Answers.

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1.0 SCRUBBER WASTE POND

1.1 Operator Information

Name: Scrubber Waste Pond

Owner/Operator: PowerSouth Energy Cooperative, Inc.
Charles R. Lowman Power Plant
Leroy, AL 36458

State ID: None Assigned

1.2 Location

The Scrubber Waste Pond is located in Section 18, Township 6N, Range 2E in Washington, County Alabama and more specifically on the Western bank of the Tombigbee River. Figures 1 and 2 of this report show the location of the Pond.

1.3 Statement of Purpose

The Scrubber Waste Pond is currently used as a settling pond for CCR wastes containing flue gas desulfurization, and other plant wastes.

1.4 Watershed Identification

The CCR unit lies within the Stave Creek watershed (HUC12 031602030901) as delineated by the U.S. Geologic Survey in the State of Alabama Hydrologic Unit Maps, {published 2013}. The Stave Creek watershed is approximately 23,449 acres.

1.5 Foundation and Embankment Description

The Scrubber Waste Pond was constructed between 1975-1979 in conjunction with Units 2 and 3 of the Charles R. Lowman Power Plant. Based on a review of the available documentation, the Scrubber Waste Impoundment was constructed by excavating below the original ground surface and placing these soils as fill to form the impoundment floor and surrounding embankments. The original ground surface within the impoundment area ranged from ±EL 12' to EL 27'. Plans indicate that the impoundment was excavated to EL 13' and returned to EL 15' with a soil fill described as Type "A" embankment material. Two feet of Type "A" embankment material was also placed on the interior slopes of the embankment.

The Scrubber Waste Pond contains a single exterior embankment located on its western side. Shared, interior embankments are located to the north adjacent to the Process Waste Pond and to the south adjacent to the Unit 2/3 Bottom Ash Pond. The eastern side of the Scrubber Waste Pond does not contain an embankment with an exposed slope; rather it is formed by an excavation below the existing ground surface.

In reviewing previously conducted topographic surveys of the impoundment the crest of the exterior embankments range from approximately EL 43' to EL 44'. Per the available information shown on the Sheets Y31 and 32 of the Tombigbee Generating Plant Unit 2 & 3 (Burns and McDonnel, circa 1975) the embankments were constructed at an inclination of 2(H):1(V) and flatter. The embankments were

constructed at an inclination of 2(H):1(V) and flatter. The height of exterior embankments ranges from approximately 13 to 21 feet. Rip-rap was placed on the face of the embankments.

A toe embankment was constructed along the exterior face of the western embankment in 2015. The toe embankment is approximately 13 feet wide and a maximum of 16 feet in height extending to ±EL 35'. The embankment face was constructed on a ±2.5(H):1(V) inclination or flatter with select, structural fill. The structural fill was placed in thin lifts with individual lifts being moisture conditioned, compacted and tested to ensure a high consistency.

Based on soil boring information, the Scrubber Waste Pond embankments and underlying foundation soils consist of fill, Low Terrace Deposits and Coastal Plain Deposits. Fill thicknesses ranged from approximately 26' to 33'. The fill soils are comprised of silty and clayey, fine to coarse-grained sand with rock fragments. Standard Penetration Tests (SPT) in the fill indicated a high consistency with N-values ranging from 16 to greater than 50 blows per foot (bpf).

The foundation soils underlying the embankments consist of Low Terrace Deposits and Coastal Plain Deposits. Low Terrace Deposits are water-deposited soils typically resulting from meanderings of rivers and streams. The Charles R. Lowman Power Plant is located along the western bank of the Tombigbee River. Therefore, the Terrace Deposits at this site appear to have resulted from meanderings and flooding of the Tombigbee River.

Coastal Plain Deposits are naturally occurring soils that appear to have formed by the gradual deposition of sediment in an ancient marine environment. The Low Terrace and Coastal Plain deposits consisted of silty sand and sandy clay and extended to the boring termination depths ranging from approximately 40 to 60 feet below the existing ground surface. The deposits exhibited a variable consistency with SPT N-values ranging from 2 to 29 bpf.

Additional information and analyses associated with the foundation and embankments is addressed in the Report of Safety Factor Assessment – Coal Combustion Residuals Impoundment Embankments, by CDG Engineers & Associates, Inc. dated October 2016.

1.6 Description of Construction Zones

Based on a review of the available documentation, the Scrubber Waste Pond was constructed by excavating soils from below the original ground surface and placing these soils as fill to form the surrounding embankments. The original ground surface within the pond area ranged from ±EL 12' to EL 27'. Plans indicate that the pond was excavated to EL 13' and backfilled to EL 15' with Type "A" Embankment material. Cross sectional representations of the pond can be found in Figures 4 and 5.

Based on a review of the Tombigbee Generating Plant Unit 2 & 3 plans created by Burns & McDonnel circa 1975, the Scrubber Waste Pond floor and embankment was constructed with native soils which are generally described in Section 1.5 and indicated in Appendix B. There have been no additional studies conducted within the impoundment to determine whether the pond was constructed with a lining system that meets the permeability performance criteria specified in the CCR rule.

Based on our review of the Tombigbee Generating Plant Unit 2 & 3 plans created by Burns & McDonnel circa 1975, knowledge of the local geology, and the subsurface information obtained and presented in Appendix B of this report, CDG recommends that the Scrubber Waste Pond be classified as an unlined impoundment and treated as such in administering the requirements of the CCR Rule.

1.7 Detailed Dimensional Drawings

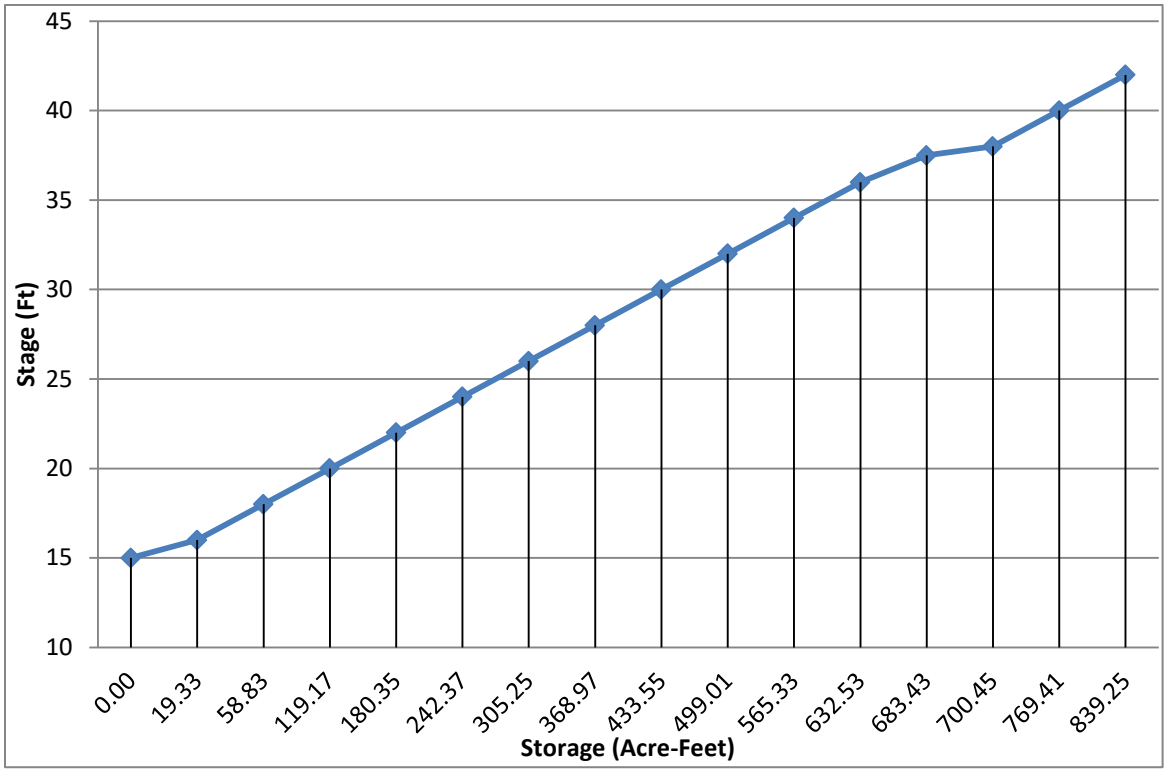
Appendix C - Tombigbee Generating Plant Unit 2 & 3 plans created by Burns & McDonnel circa 1975, contains detailed construction drawings for the Scrubber Waste Pond. Additionally, Appendix A - Figures 3 through 5 contain summary dimensional drawings of the pond including cross-sectional representations of the pond which were developed through the review of the available information, and the subsurface information obtained and presented in Appendix B of this report.

1.8 Existing Instrumentation

The Plant maintains normal pool information using stage boards located adjacent to the Scrubber Waste Pond intake structure. The intake structure is discussed in greater detail in Section 1.10 of this report. The stage board is manually read and.

1.9 CCR Unit Area Capacity Curves

Below is the Stage-Storage Curve for the Scrubber Waste Pond.



1.10 Spillways and Diversion Systems

The Scrubber Waste Intake consists of two suction lift pumps with a normal operating flow of 1395 gpm (3.11 cfs). The pumps are fed by two floating intake hoses that allow for the removal of liquids from the laminar portion of the impounded waters. Ponds are drained by pumping systems and do not have identified gravity spillways.

During high rainfall events, mobile suction lift pumps are utilized at the pond to supplement permanent intake structures to control the flood event and to maintain pool operating levels.

Additional information and analyses associated with the spillway and diversion systems' is addressed in the Scrubber Waste Inflow Design Control Plan, by CDG Engineers & Associates, Inc. dated October 2016.

1.11 Surveillance, Maintenance, and Repair

Plant personnel conduct surveillance, maintenance, and repair items which are identified through the inspection on set intervals.

1.12 Prior Structural Instability

-None noted

2.0 GENERAL REMARKS AND CLOSING

The findings in this report were developed based on documents provided by the Owner and from the limited information obtained through field and laboratory testing programs. If significant changes are made to the use, capacity or geometry of the berms and/or impoundments, CDG should be allowed to review our findings in light of the changes to determine if additional testing and revised conclusions are needed.

This report is intended to meet the requirements of the CFR 40.257.73 (4) for the History of Construction report for the Scrubber Waste Pond.

The conclusions, analyses, and recommendations presented in this report are based upon information provided, currently accepted engineering principles, practices, and existing testing standards in the area where the services were provided. No other warranty, expressed or implied, is made.

Appendix A

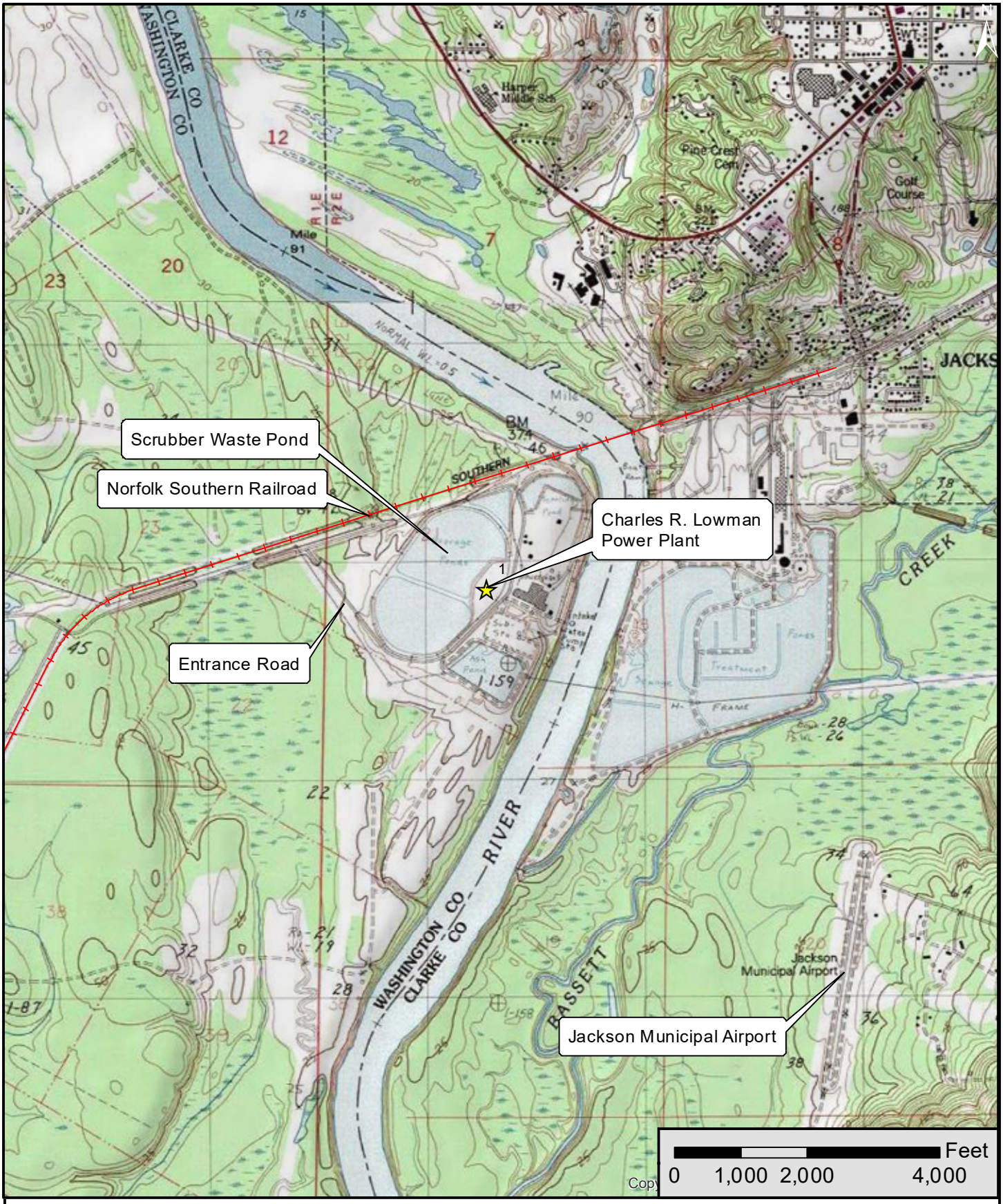


Figure 1 - Scrubber Waste Pond Location Map

Charles R. Lowman Power Plant
PowerSouth Energy Cooperative
Leroy, AL

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Figure 2 - Aerial Map of Impoundments

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Figure 3 - Scrubber Waste Pond
Impoundment Overview

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Sheet No.	Fig.3
Drawn By:	JRA
Checked by:	RDW
Date:	October 2016

SCRUBBER WASTE POND
SECTION U - U'

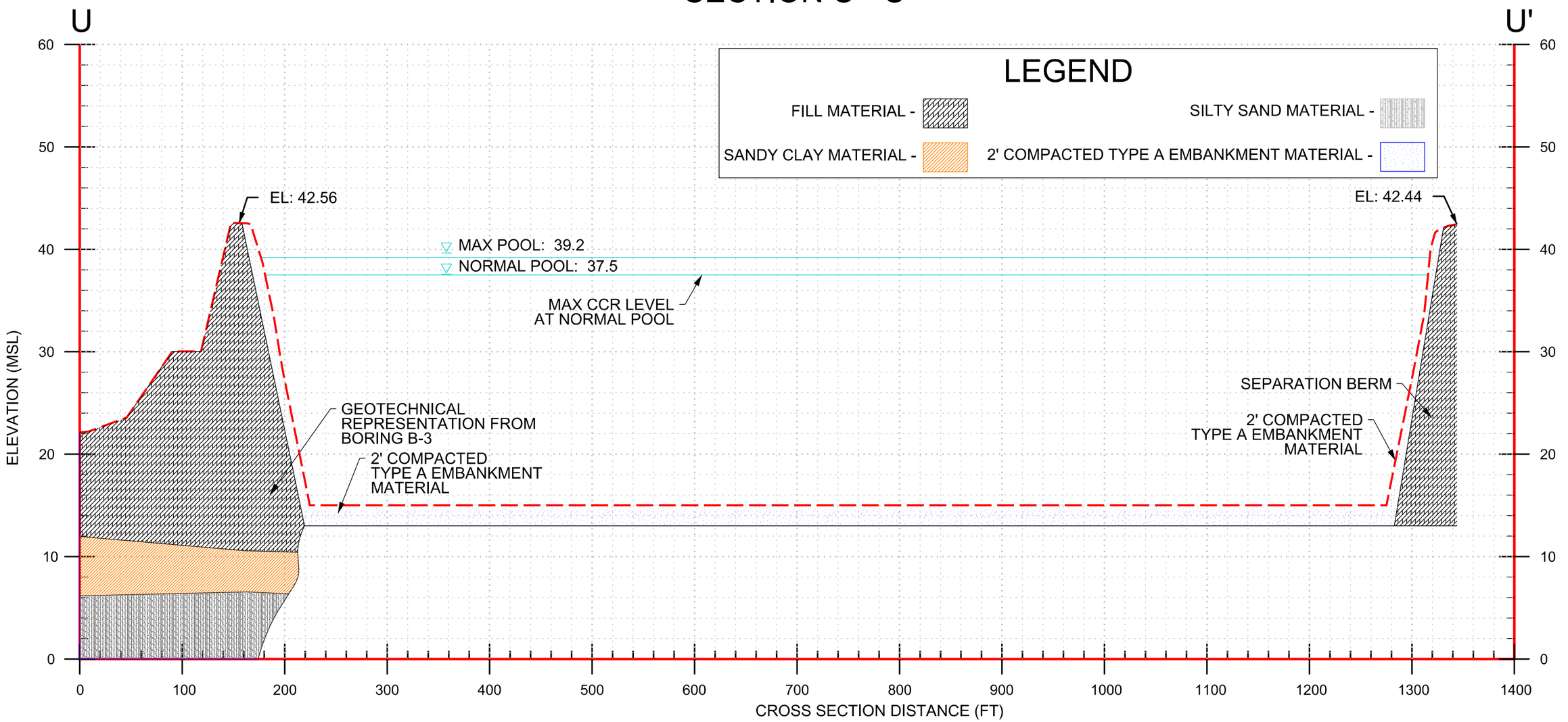

Figure 4 - Scrubber Waste Pond Section U-U'
Charles R. Lowman Power Plant
Leroy, AL

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Fig.4

Scale:	H:1"=100'; V:1"=10'
Drawn By:	JRA
Checked by:	RDW
Date:	October 2016

SCRUBBER WASTE POND
SECTION V - V'

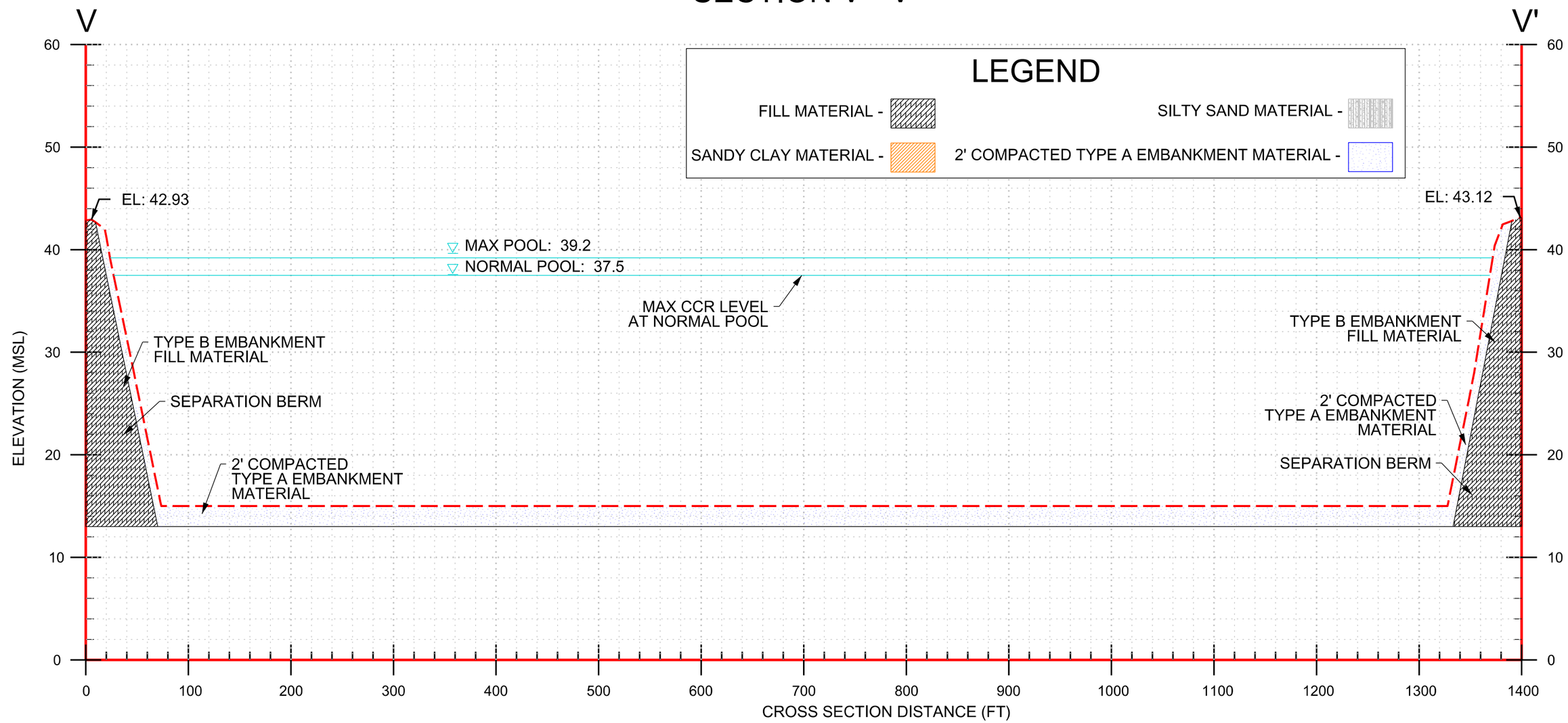

Figure 5 - Scrubber Waste Pond Section V-V'

Charles R. Lowman Power Plant

Leroy, AL

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Fig.5

Scale:	H:1"=100'; V:1"=10'
Drawn By:	JRA
Checked by:	RDW
Date:	October 2016

Appendix B

Boring Logs

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-2
Date Drilled:	July 14, 2009

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
0	44	Crushed aggregate						
		Dense, red, silty fine to medium SAND	SS	19-20-20	40			LL=18, PL=14, PI=4 Fines Content = 33.5% USCS = SC-SM MC = 8.8%
5	39		SS	20-21-22	43			MC = 8.4%
		...very dense, with numerous rock fragments	SS	14-23-30	50+			MC = 10.2%
10	34							▽ Groundwater encountered at +/-11 feet on 8/4/2009.
		Dense, tan, silty coarse SAND with numerous rock fragments	SS	21-18-20	38			▽ Groundwater encountered at 13.5 feet at time of boring MC = 13.3%
15	29							
		Medium dense, reddish tan, silty fine SAND with trace rock fragments	SS	7-10-14	24			LL=23, PL=20, PI=3 Fines Content = 25.5% USCS = SM MC = 14.9%
20	24							
		...dense, with gravel	SS	8-13-20	33			MC = 11.3%
25	19							

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-2
Date Drilled:	July 14, 2009

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
25	19		Dense, reddish tan, silty fine SAND, with gravel (Fill)						
			Medium dense, reddish tan, silty fine to coarse-grained SAND	SS	6-12-8	20			MC = 14.2%
30	14								
			Loose, grey, silty fine SAND	SS	2-3-4	7			LL=NP, PL=NP, PI=NP Fines Content = 20.0% USCS = SM MC = 28.3%
35	9								
			... medium dense, with gravel (Low Terrace Deposits)	SS	6-8-8	16			MC = 23.9%
40	4		Boring Terminated at 40 feet						
45	-1								
50	-6								Piezometer installed at the time of boring.

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-3
Date Drilled:	July 15, 2009

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
0	44		Crushed aggregate						
			Medium dense, red, silty fine to medium SAND, with numerous rock fragments	SS	7-10-15	25			
5	39		... dense	SS	10-18-16	34			
			...reddish tan, with gravel	SS	16-18-18	36			
10	34								
			... very dense, tan, with gravel	SS	24-28-34	50+			
15	29								
			... dense, reddish tan, with trace rock fragments	SS	18-20-29	49			▽ Groundwater encountered at 20 feet at time of boring
20	24								
			...red, with gravel	SS	10-16-22	38			
25	19								

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-3
Date Drilled:	July 15, 2009 Page 2 of 2

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
25	19								
			Dense, red, silty fine to medium SAND, with gravel	SS	11-14-11	25			
30	14		(Fill)						
			Stiff, grey and tan, fine sandy CLAY, with gravel	SS	5-6-6	12			
35	9								
			Medium dense, grey and tan, silty fine SAND (Low Terrace Deposits)	SS	5-6-7	13			
40	4		Boring Terminated at 40 feet						
45	-1								
50	-6								Boring backfilled with grout upon completion.

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-4
Date Drilled:	July 13, 2009 Page 1 of 2

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
0	44		Crushed aggregate						
			Dense, red, silty fine to medium SAND	SS	21-24-26	50			MC = 8.4%
5	39		...very dense, with gravel	SS	15-25-27	50+			MC = 8.5%
			...medium dense	SS	9-12-15	27			MC = 14.2%
10	34								
			...very dense, reddish brown	SS	30-35-40	50+			MC = 7.3%
15	29								
			...dense, orange and tan	SS	12-14-19	33			MC = 14.7% ▽ Groundwater encountered at 20 feet at time of boring
20	24								
			...medium dense, red	SS	10-12-15	27			MC = 21.4%
25	+/-19								

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-4
Date Drilled:	July 13, 2009 Page 2 of 2

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
25	19		Medium dense, red, silty fine to medium SAND, with gravel						
			Medium dense, tan, silty fine SAND, with gravel (Fill)	SS	5-7-7	14			MC = 15.3%
30	14								
				SS	2-3-4	7			No recovery
35	9								
			Loose, brown, silty fine SAND (Low Terrace Deposits)	SS	4-3-4	7			MC = 38.2%
40	4		Boring Terminated at 40 feet						
45	-1								
50	-6								Boring backfilled with grout upon completion.

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-5
Date Drilled:	July 15, 2009

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
0	43		Crushed aggregate						
			Dense, red, silty fine to coarse SAND, with gravel	SS	10-18-20	38			LL=17, PL=16, PI=1 Fines Content = 21.1% USCS = SM MC = 7.2%
5	38		...medium dense	SS	8-12-16	28			MC = 8.3%
			...reddish orange	SS	10-11-12	23			LL=NP, PL=NP, PI=NP Fines Content = 15.3% USCS = SM MC = 8.6%
10	33								
			...same	SS	10-12-16	28			
15	28								
			...same	SS	8-10-14	24			▽ Groundwater encountered at +/-19 feet on 8/4/2009. MC = 13.6%
20	23								
			...dense	SS	15-18-23	41			MC = 15.2%
25	18								

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-5
Date Drilled:	July 15, 2009 Page 2 of 2

Notes: SS = Split Spoon
PPqu = Pocket Penetrometer Unconfined Compressive Strength

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
25	18		Reddish orange, silty fine to medium SAND, with gravel (Fill)						
				SS	6-8-8	16			▽ Groundwater encountered at 30 feet at time of boring
30	13		Stiff, grey, fine sandy CLAY						PPqu = 1.0 tsf
				SS	4-6-6	12			LL=23, PL=21, PI=2 USCS = SM MC = 29.7%
35	8		Medium dense, grey and tan, silty fine SAND						
				SS	4-4-7	11			MC = 28.5%
40	3		...same (Low Terrace Deposits)						
			Boring Terminated at 40 feet						
45	-2								
50	-7								Piezometer installed at the time of boring.

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-6
Date Drilled:	July 15, 2009

Notes: SS = Split Spoon

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
0	43		Crushed aggregate						
			Medium dense, red, silty fine to medium SAND, with trace gravel	SS	10-11-12	23			
5	38			SS	11-14-14	28			
			...red and orange	SS	16-16-14	30			
10	33								▽ Groundwater encountered at 10 feet at time of boring
			... dense, orange with gravel	SS	19-24-26	40			
15	28								
			...medium dense	SS	8-9-10	19			
20	23								
			...same	SS	10-10-12	22			
25	18								

CDG Engineers & associates

Albertville, AL
Tel:(256) 891-3458

Andalusia, AL
Tel:(334) 222-9431

Birmingham, AL
Tel:(205) 733-9431

Hoover, AL
Tel:(205) 463-2600

Defuniak Springs, FL
Tel:(850) 892-0225

Dothan, AL
Tel:(334) 677-9431

BORING LOG

Project Name:	Berm Stability Evaluation - Lowman Power Plant
Project Number:	060921201
Boring Number:	B-6
Date Drilled:	July 15, 2009 Page 2 of 2

Notes: SS = Split Spoon
PPqu = Pocket Penetrometer Unconfined Compressive Strength

Depth (feet)	Approx. Elev. (feet)	Graphic Scale	MATERIAL DESCRIPTION	TYPE	BLOWS/ 6 INCHES	N	CORE REC. (%)	RQD (%)	REMARKS
25	18		Medium dense, orange, silty fine to medium SAND, with gravel (Fill)						
30	13		Stiff, grey, fine sandy CLAY	SS	5-5-7	12			PPqu = 1.25 tsf
35	8		Medium dense, brown, silty fine SAND	SS	6-6-10	16			
40	3		...tan and brown (Low Terrace Deposits)	SS	6-8-10	18			
			Boring Terminated at 40 feet						
45	-2								
50	-7								Boring backfilled with grout upon completion.

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Albertville, AL
Andalusia, AL
Birmingham, AL
Dothan, AL
Huntsville, AL

Boring S-11

Project Name: Lowman Berm Stability Analysis
Project Location: Leroy, Alabama Hammer Type: Automatic
CDG Project Number: 221141100 Method: Mud-Rotary
Date Drilled: 12/8/2011 Approx. Ground Elevation: +/-42 feet

Notes:
+/- 18" of railroad ballast at ground surface.

☒ - Split Spoon Sample ■ - Undisturbed Sample

Depth (ft.)	Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
	40.0		Medium dense, red and black, silty fine to medium SAND with rock fragments	☒	0-0-18 (18)								
5			...dense, red	☒	29-21-24 (45)								
	35.0		...medium dense	☒	18-15-13 (28)								
10			...very dense, red and tan, with numerous rock fragments	☒	28-30-31 (61)								▽ Groundwater at +/-EL32.5 ft. on 12/8/2011.
	30.0												
15			...dense	☒	10-23-23 (46)								
	25.0												
20			... very dense, reddish tan	☒	14-28-30 (58)								
	20.0												
25			... dense, red and tan with numerous rock fragments	☒	14-17-18 (35)								▽ Groundwater at +/-EL17 ft. on 5/1/2012.
	15.0												
			... medium dense, red	☒	8-16-14 (30)								

(Continued Next Page)

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Albertville, AL
Andalusia, AL
Birmingham, AL
Dothan, AL
Huntsville, AL

Boring S-11

Project Name: Lowman Berm Stability Analysis
Project Location: Leroy, Alabama Hammer Type: Automatic
CDG Project Number: 221141100 Method: Mud-Rotary
Date Drilled: 12/8/2011 Approx. Ground Elevation: +/-42 feet

Notes:
+/- 18" of railroad ballast at ground surface.

☒ - Split Spoon Sample ■ - Undisturbed Sample

Depth (ft.)	Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
			Medium dense, red, silty fine to medium SAND with numerous rock fragments (Fill)										
	10.0												
35			Stiff, red and grey CLAY with fine sand		6-9-9 (18)		68	22	46				USCS=CH
	5.0												
40			...grey and tan		6-8-9 (17)								
	0.0												
45			Medium dense, grey and tan, silty fine SAND		10-14-15 (29)								
	-5.0												
50			... same		6-6-12 (18)						24.7		USCS=SM
	-10.0												
55			... tan with rock fragmnets		5-9-10 (19)								
	-15.0												Piezometer Installed.
			... grey and tan (Coastal Plain Deposits)		10-10-11 (21)								

Boring terminated at 60.0 feet.

CDG Engineers & associates

Albertville, AL
Andalusia, AL
Birmingham, AL
Dothan, AL
Huntsville, AL

Boring S-12

Project Name: Lowman Berm Stability Analysis
Project Location: Leroy, Alabama Hammer Type: Automatic
CDG Project Number: 221141100 Method: Mud-Rotary
Date Drilled: 12/5/2011 Approx. Ground Elevation: +/-42.5 feet

Notes:
+/- 18" of railroad ballast at ground surface.

PPqu = Unconfined Compressive Strength.

☒ - Split Spoon Sample ■ - Undisturbed Sample

Depth (ft.)	Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
	40.0		Very dense, red and black, silty fine to medium SAND with rock fragments	☒	34-40-50 (90)		NP	NP	NP		30.2		USCS = SM
5			... red	☒	23-35-35 (70)								
	35.0		... with trace rock fragments	☒	20-31-25 (56)								
10			Very dense, red and tan, fine to medium SAND with trace silt	☒	20-27-30 (57)		NP	NP	NP		8.4		USCS = SP-SM ▽ Groundwater at +/-EL33 ft. on 12/6/2011.
	30.0												
15			...medium dense, reddish tan with trace rock fragments	☒	10-16-20 (36)								
	25.0												
20			Dense, red and grey, clayey fine to medium SAND	☒	11-21-22 (43)								▽ Groundwater at +/-EL23 ft. on 12/13/2011.
	20.0												
25			...medium dense, red	☒	5-11-16 (27)								
			(Fill)										
	15.0												
			Stiff, grey CLAY with trace fine sand	☒	4-5-6 (11)		67	24	43		97.7	1.25	USCS = CH

(Continued Next Page)

Boring S-12

Project Name: Lowman Berm Stability Analysis
Project Location: Leroy, Alabama Hammer Type: Automatic
CDG Project Number: 221141100 Method: Mud-Rotary
Date Drilled: 12/5/2011 Approx. Ground Elevation: +/-42.5 feet

Notes:
+/- 18" of railroad ballast at ground surface.

PPqu = Unconfined Compressive Strength.

☒ - Split Spoon Sample ■ - Undisturbed Sample

Depth (ft.)	Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
			Stiff, grey CLAY with trace fine sand										
	10.0												
35			... medium	☒	3-3-6 (9)							0.5	
	5.0												
40			Loose, grey, silty fine to medium SAND	☒	2-3-3 (6)		NP	NP	NP		29.7		USCS = SM
	0.0												
45			... medium dense, light grey and tan with rock fragments	☒	7-9-10 (19)								
	-5.0												
50			... same	☒	5-6-7 (13)								
	-10.0												
55			Medium dense, light grey and tan, fine to medium SAND with trace silt	☒	9-15-12 (27)		NP	NP	NP		6.8		USCS = SP-SM
	-15.0												Borehole backfilled with grout upon completion.
			... tan (Coastal Plain Deposits)	☒	5-8-6 (14)								

Boring terminated at 60.0 feet.

Boring T-3

Project Name: Lowman CCR Rule Phase I
Project Location: Leroy,AL Hammer Type: Automatic
CDG Project Number: 061521207 Method: Diedrich D-50 Mud Rotary
Date Drilled: 8/10/2016 Approx. Ground Elevation: +/-42.0 feet

Notes:
+/- 18" of railroad ballast at ground surface

☒ - Split Spoon Sample

Depth (ft.)	Approx. Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
	40.0												
5			Medium dense, red, silty fine to medium SAND	X	3-6-14 (20)								
	35.0												
10			...same	X	8-12-11 (23)								
	30.0												
15			Dense, red, silty fine to coarse SAND with rock fragments	X	11-16-15 (31)		NP	NP	NP		10.3		USCS=SP-SM
	25.0												
20			...medium dense	X	11-15-12 (27)								
	20.0												
25			...dense	X	15-17-20 (37)								

(Continued Next Page)

Boring T-3

Project Name: Lowman CCR Rule Phase I
Project Location: Leroy,AL Hammer Type: Automatic
CDG Project Number: 061521207 Method: Diedrich D-50 Mud Rotary
Date Drilled: 8/10/2016 Approx. Ground Elevation: +/-42.0 feet

Notes:
+/- 18" of railroad ballast at ground surface

☒ - Split Spoon Sample

Depth (ft.)	Approx. Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
			...dense *(Continued from previous page)*										
	15.0												
30			...medium dense	☒	10-9-7 (16)								
	10.0												
35			(Fill)	☒	1-1-1 (2)		66	22	44		84.4	<0.25	USCS=CH
			Very soft, gray, plastic CLAY with trace of root fragment										
	5.0												
40			...soft	☒	2-3-4 (7)							0.50	
	0.0		Loose, gray, silty fine SAND										
45			...medium dense	☒	5-4-7 (11)								
	-5.0												
50			...same	☒	6-7-8 (15)								

(Continued Next Page)

Boring T-3

Project Name: Lowman CCR Rule Phase I
Project Location: Leroy,AL Hammer Type: Automatic
CDG Project Number: 061521207 Method: Diedrich D-50 Mud Rotary
Date Drilled: 8/10/2016 Approx. Ground Elevation: +/-42.0 feet

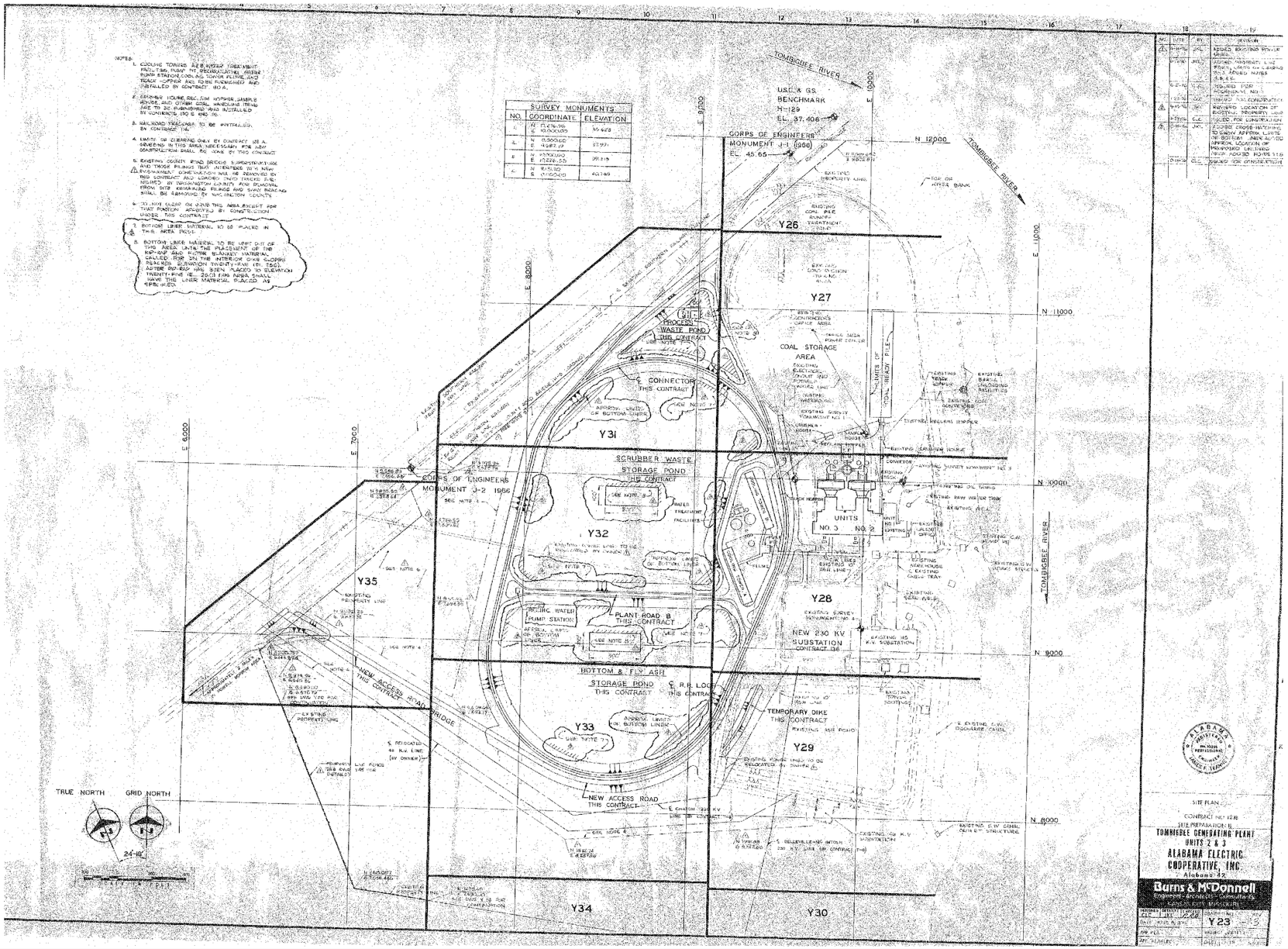
Notes:
+/- 18" of railroad ballast at ground surface

☒ - Split Spoon Sample

Depth (ft.)	Approx. Elev. (ft.)	Graphic Log	Material Description	Type	Blows/6" (N-Value)	Rec. % (RQD)	LL	PL	PI	MC	Fines (%)	PPqu (tsf)	Remarks
			...same *(Continued from previous page)*										
55	-15.0			☒	8-10-12 (22)								
			...same (Coastal Plain Deposits)	☒	8-11-11 (22)								Borehole backfilled with grout upon completion.
60			Boring terminated at 60.0 feet.										
	-20.0												
65	-25.0												
70	-30.0												
75	-35.0												

Appendix C

SHEET SHOWN IS EXCERPT FROM THE TOMBIGBEE GENERATING PLANT UNIT 2&3 PLANS CREATED BY BURNS & MCDONNEL CIRCA 1975.



Appendix C - Plan Copy of TOMBIGBEE GENERATING PLANT UNIT 2&3 PLANS CREATED BY BURNS & MCDONNEL CIRCA 1975.

CDG
Engineering. Environmental. Answers.

1840 E. Three Notch St.
Andalusia, AL 36420
(334) 222-9431
(334) 222-4018 FAX
www.cdge.com

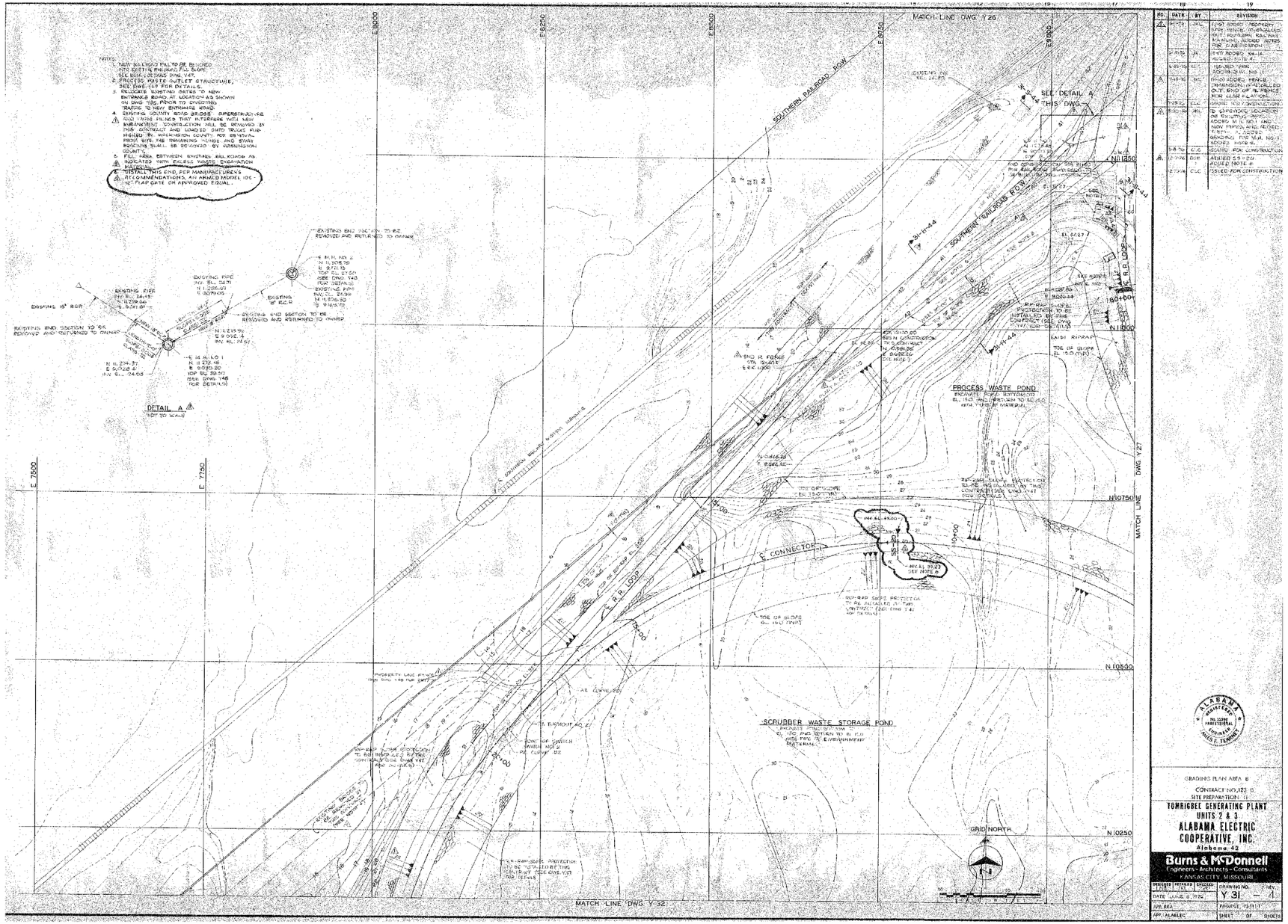
C

NOT TO SCALE

Drawn By: JRA

Checked by: RDW

Date: OCTOBER 2016



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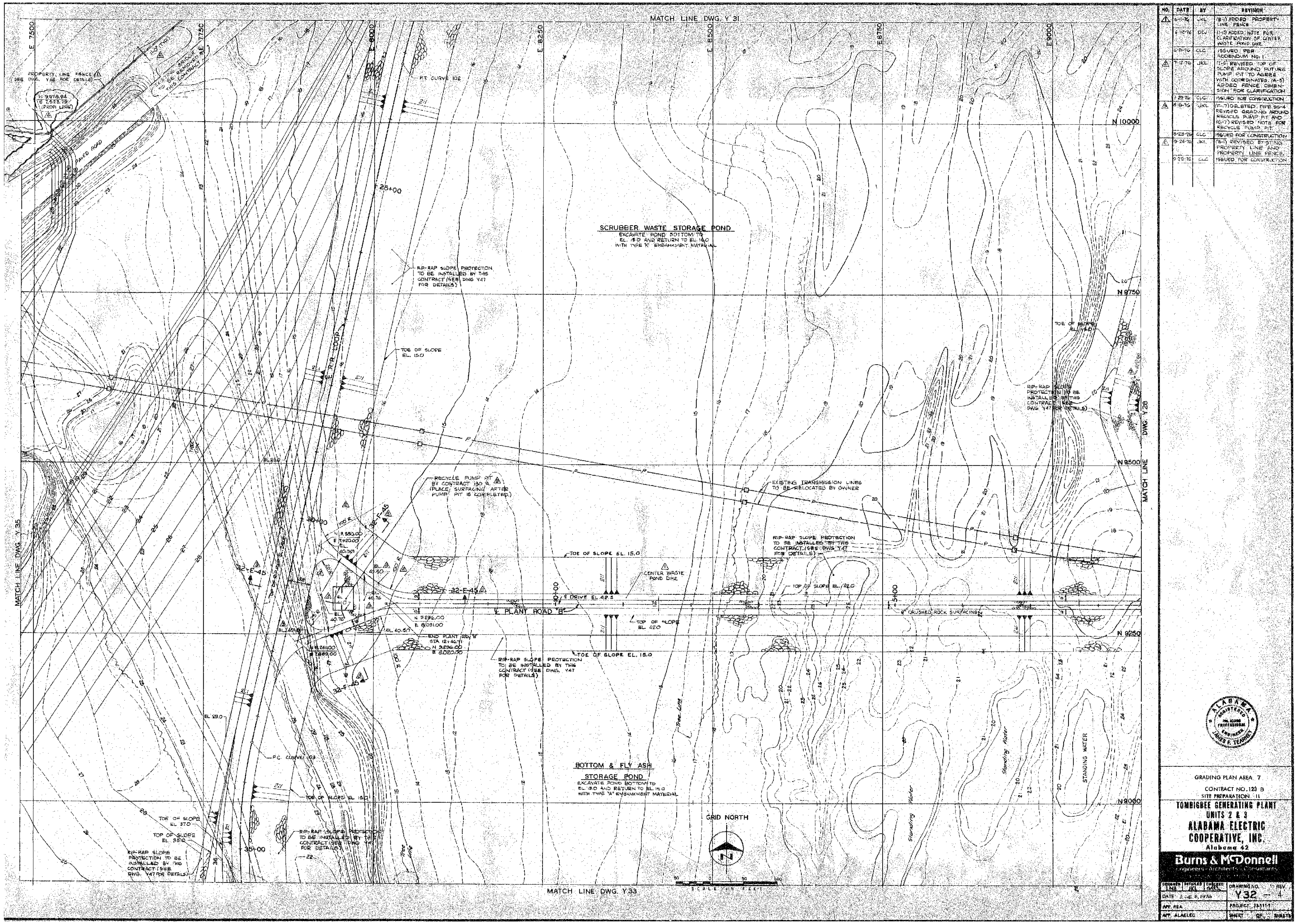

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