Byrum, Shane Revised Drawings for Wastewater Pond and Coal Pond

From: flmills@aep.com
Sent: Monday, May 04, 2009 10:36 AM
To: Byrum, Shane
Cc: jchendricks@aep.com; jhvanhassel@aep.com; drwilliams@aep.com; Charles.Bursich@shawgrp.com; Fuller, Kim
Subject: Turk plant construction application--revised drawings (Part 1)

Shane,

I have attempted to send you revised drawings for the Wastewater Pond and the Coal Area Run-off Pond, however, I have received "delivery failure" notifications due to the size of the e-mail. I have therefore split the revised submittal into two parts, of which this is part one. Please replace the original drawings that were enclosed with the Wastewater Construction Application with the enclosed, revised maps.

I will forward part two of the submittal in a few minutes. Thank you for your attention to these items.

Franklin L. Mills
Senior Environmental Specialist
Water & Ecological Resource Services
American Electric Power

Byrum, Shane

From: flmills@aep.com
Sent: Monday, May 04, 2009 10:43 AM
To: Byrum, Shane
Cc: jchendricks@aep.com; jhvanhassel@aep.com; drwilliams@aep.com; Charles.Bursich@shawgrp.com; Fuller, Kim
Subject: Turk plant construction application--revised drawings (Part 2)

Shane;

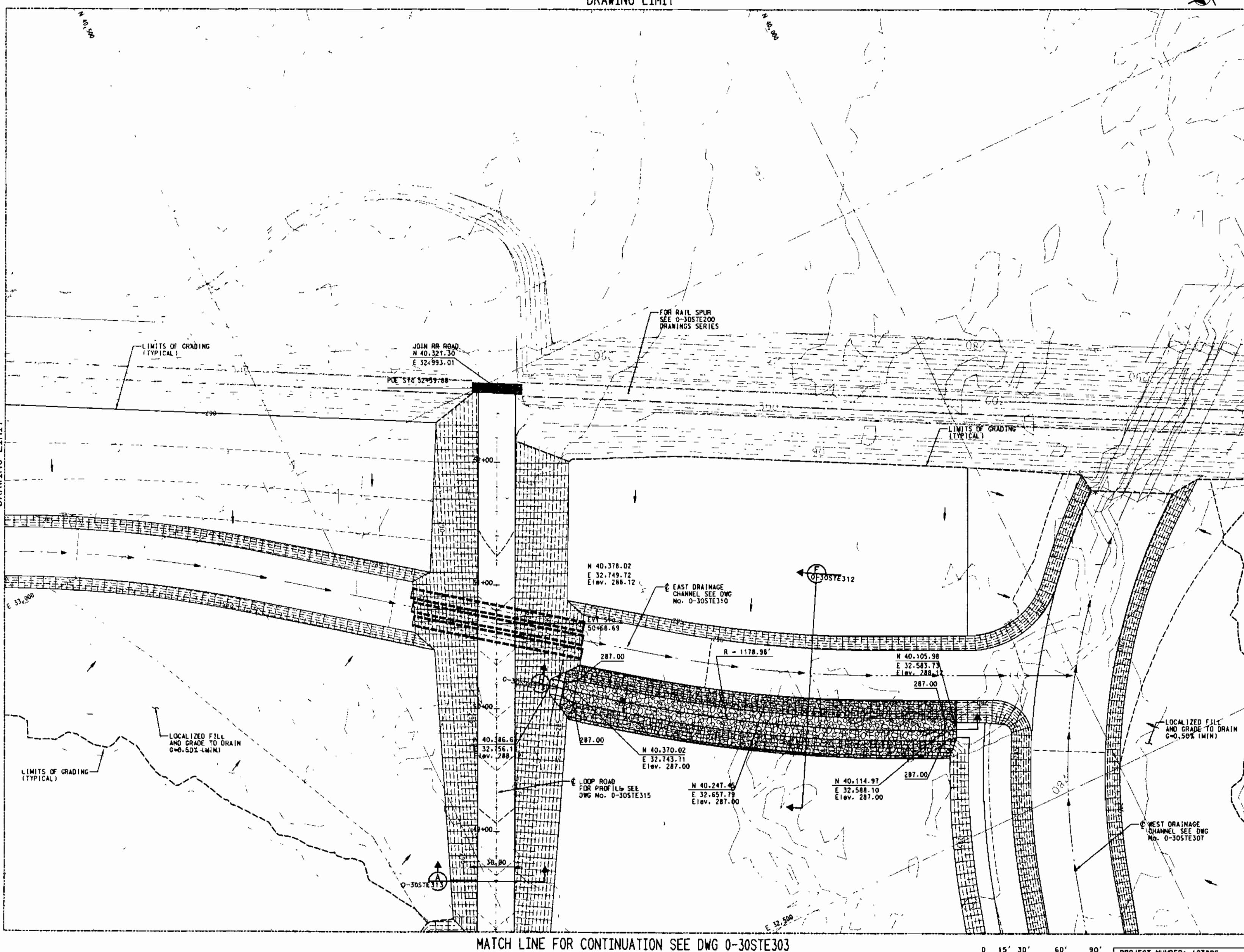
This is part two of the submittal of the revised drawings for the Wastewater Pond and the Coal Area Run-off Pond. Please replace the original drawings (and Table 5.3) that were enclosed with the Wastewater Construction Application with the enclosed, revised maps and table. Thank You.

Franklin L. Mills
Senior Environmental Specialist
Water & Ecological Resource Services
American Electric Power

Table 5.3 Wastewater Pond Dimensions (Revised 5/1/09)

	Wastewater Pond	Process Water Pond	Coal Area Runoff Pond	Landfill Leachate Pond
Length (feet)	1342 (max)	292*	1035 (max)	646
Width (feet)	273	226*	365 (max)	316
Normal Depth (feet)	6	8	0	0
Slope	3:1	3:1	3:1	3:1
Capacity (gallons)	8,700,000	6,300,000	16,300,000	8,900,000
Existing grade NGVD	~280-288	~297-301	~279-288	~279-281
Top elevation NGVD	288.0	297.0	288.0	285.5
Surface elev. NGVD	287.0	295.0	283.0	268.0
Bottom elev. NGVD	281.0	287.0	283.0	268.0
Drawing No.	30STE501 30STE502	30STE081 30STE096	30STE303 30STE305 30STE312	30STE504 30STE505

*Pond dimensions currently being modified (capacity to remain the same)



NOTES:

1. FOR GENERAL NOTES, LEGEND AND SPECIFICATIONS SEE DWG 0-30STE300.

NOTE:
ALL ELEVATIONS SHOWN ARE IN NGVD 1988 DATUM
NGVD 1988 DATUM ELEV. 301.00 = PLANT DATUM ELEV. 101.00
ALL COORDINATES, ELEVATIONS AND DIMENSIONS ARE EXPRESSED IN FEET OR DECIMAL OF A FOOT UNLESS OTHERWISE NOTED

0 15' 30' 60' 90'
SCALE: 1" = 30'

DATE	NO.	DESCRIPTION	APPD.
01/28/09	1	ISSUED FOR CONSTRUCTION GENERAL REVISIONS	
05/08	0	ISSUED FOR CONSTRUCTION	GPH JAH RAC

REVISIONS

SWEPCO

JOHN W. TURK JR. POWER PLANT UNIT 1

FULTON ARKANSAS

COAL HANDLING AREA GRADING PLAN

CIVIL SITE PLANS

DWG. NO. 0-30STE314 REV. 1

CIVIL

PROJECT NUMBER: 123896

Shaw Constructors, Inc

CONFIDENTIAL

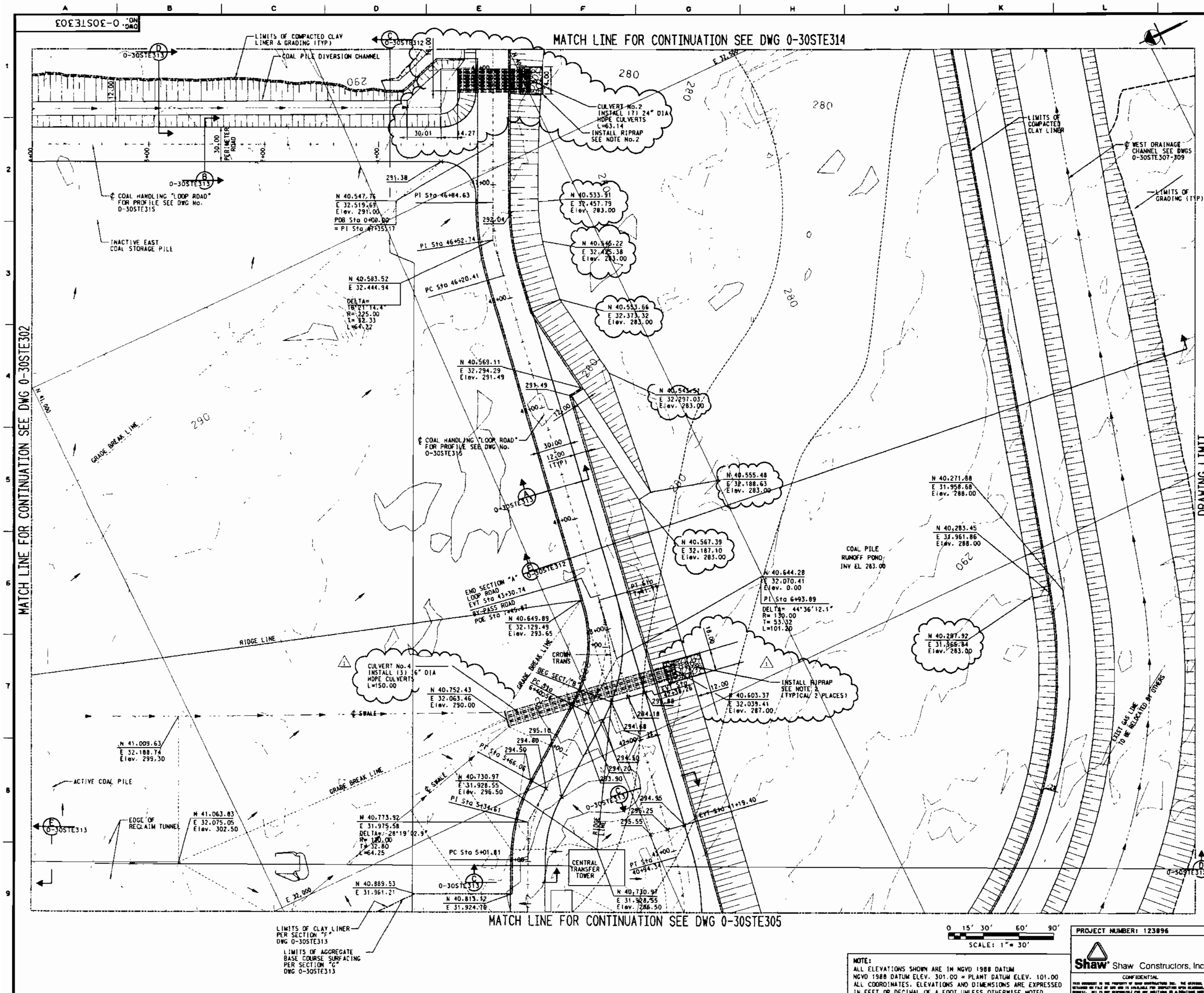
AMERICAN ELECTRIC POWER

AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215

DWG. NO. 0-30STE314

NOTES:

1. FOR GENERAL NOTES, LEGEND AND SPECIFICATIONS SEE DWG 0-30STE300.
2. FOR RIP RAP AT HDPE CULVERT OUTLETS, SEE DETAIL 1 ON DRAWING NO. 0-30STE317.



SCALE: 1" = 30'

NOTE:
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PROJECT NUMBER: 123896

Shaw Constructors, Inc
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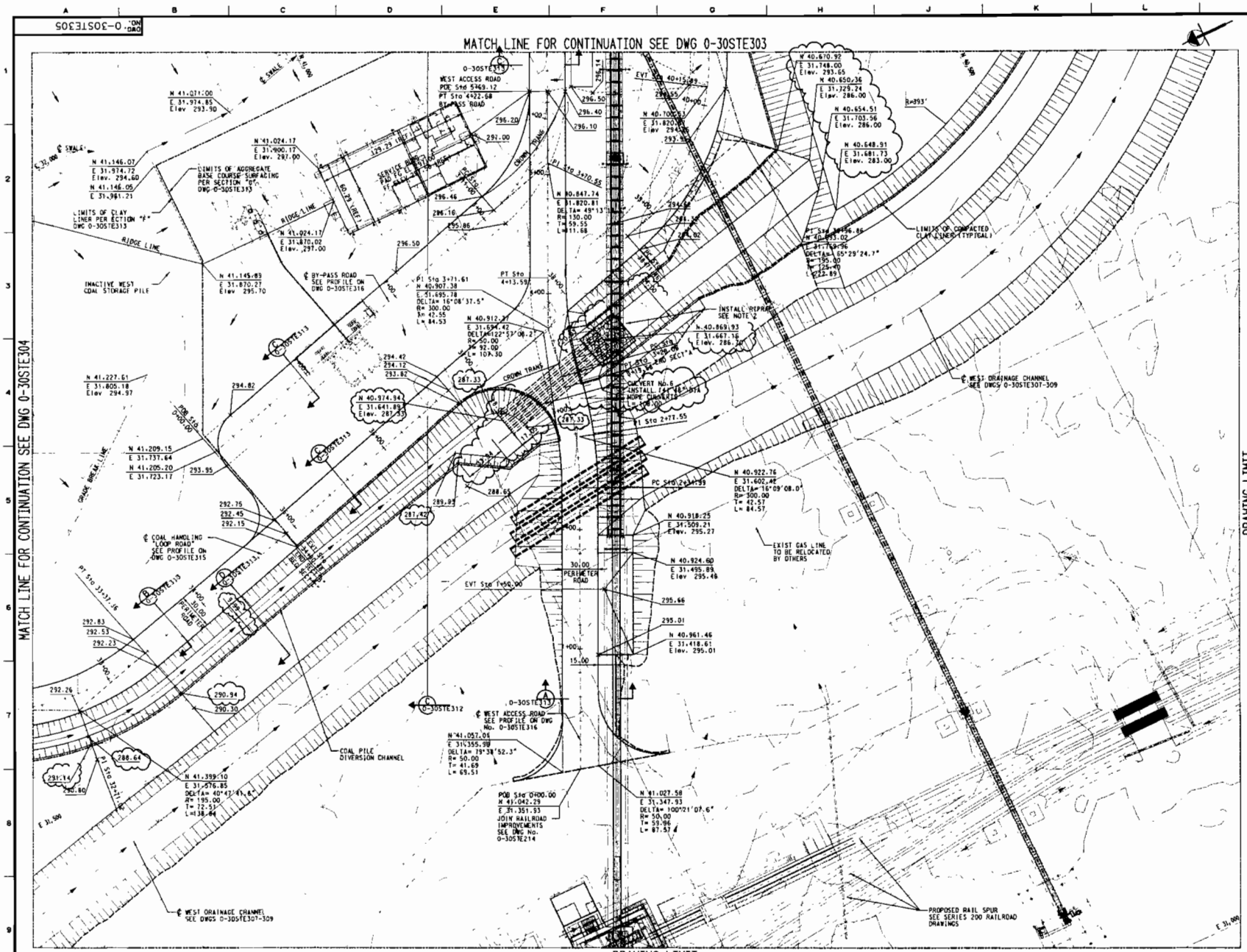
DATE	NO.	DESCRIPTION	APPD.
04/ /14	2	ISSUED FOR CONSTRUCTION GENERAL REVISION	
05/ 05/ 08	1	ISSUED FOR CONSTRUCTION GENERAL REVISION	GPH JAH RAC
11/ 30/ 07	0	ISSUED FOR CONSTRUCTION	ABC JWP RCC

REVISIONS

SWEPCO
JOHN W. TURK JR. POWER PLANT UNIT 1
FULTON ARKANSAS
COAL HANDLING AREA GRADING PLAN
CIVIL SITE PLANS
DWG. NO. 0-30STE303 REV. 2
CIVIL

AMERICAN ELECTRIC POWER
AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215



NOTES:

1. FOR GENERAL NOTES, LEGEND AND SPECIFICATIONS SEE DWG 0-30STE300.
2. FOR RIP RAP AT HDPE CULVERT OUTLETS, SEE DETAIL 1 ON DRAWING NO. 0-30STE317.

NOTE:
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DATE	NO.	DESCRIPTION	APP.
11/30/07	2	ISSUED FOR CONSTRUCTION GENERAL REVISION	GLH
05/05/08	1	ISSUED FOR CONSTRUCTION GENERAL REVISION	GPH JAH RAC
11/30/07	0	ISSUED FOR CONSTRUCTION	AEC JWP RCC

REVISIONS

SWEPCO
JOHN W. TURK JR. POWER PLANT UNIT 1
FULTON ARKANSAS

COAL HANDLING AREA GRADING PLAN

CIVIL SITE PLANS

DWG. NO. 0-30STE305 REV. 2

PROJECT NUMBER: 123896

Shaw Shaw Constructors, Inc

CONFIDENTIAL

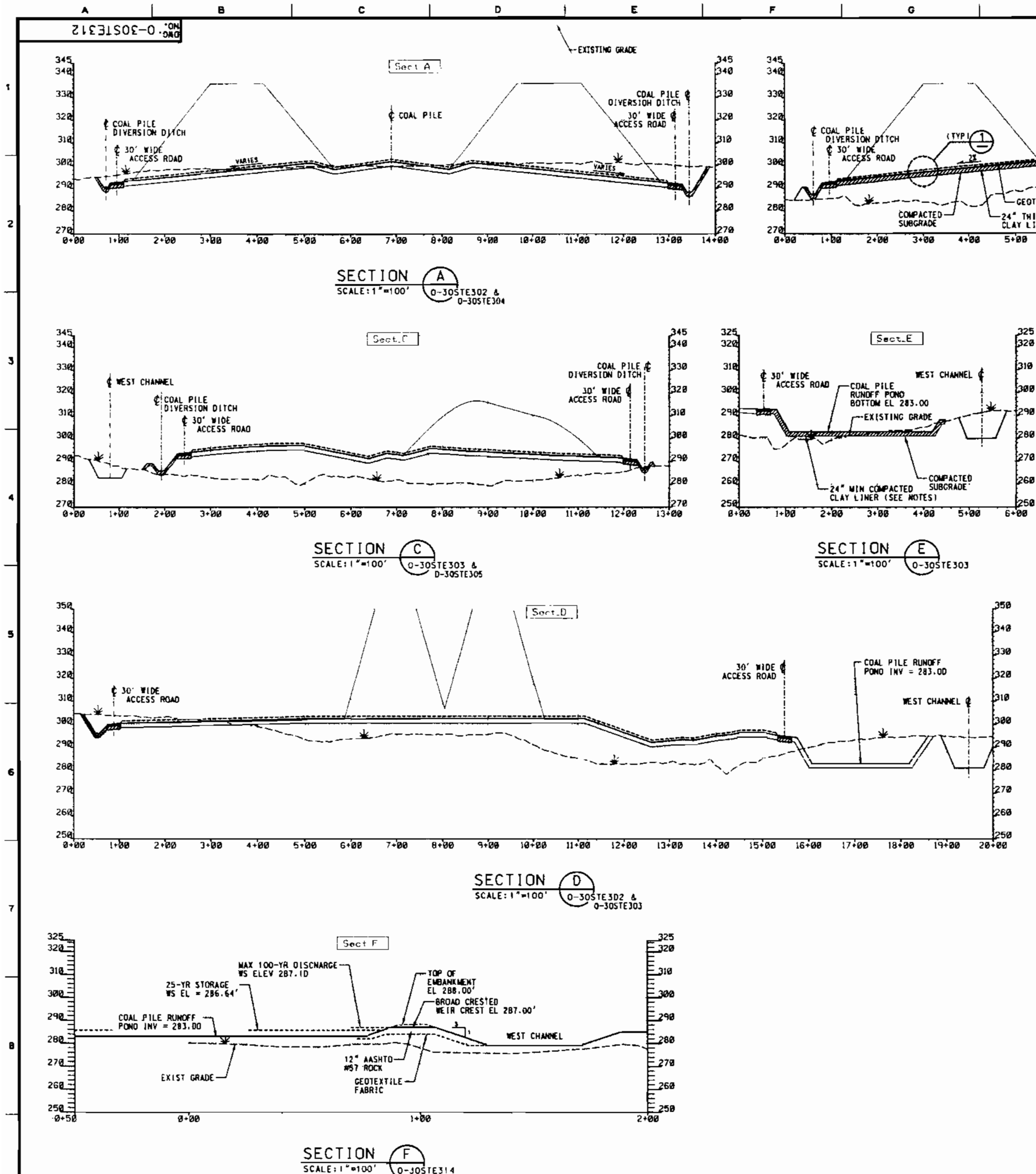
SCALE: CIVIL

APPROVED BY:

AMERICAN ELECTRIC POWER

AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

DWG. NO. 0-30STE312



NOTES:

1. FOR GENERAL NOTES, LEGEND AND SPECIFICATIONS SEE DWG 0-30STE300.

POND LINER CONSTRUCTION NOTES:

1. THE COMPACTED CLAY LINER SHALL BE CONSTRUCTED OF COHESIVE SOILS OBTAINED FROM ON-SITE SOURCES. IN AREAS WHERE THE EXCAVATION FOR THE BOTTOM OF THE POND IS EXPECTED TO OCCUR IN EXISTING CLAY SOILS, CONSTRUCTION OF A SEPARATE LINER MAY NOT BE NECESSARY IF THE CLAY IS FREE FROM CRACKS AND EXHIBITS SUFFICIENT MOISTURE CONTENT AND DENSITY.

2. THE THICKNESS OF EXISTING CLAY SOILS SHALL BE VERIFIED TO A DEPTH OF 3 FEET BELOW THE PLANNED FINAL GRADE OF THE BOTTOM OF THE POND. VERIFICATION SHALL BE PERFORMED AT A MINIMUM OF 5 LOCATIONS (ONE NEAR EACH CORNER PLUS ONE NEAR THE CENTER) BY EXCAVATION OF TEST PITS OR SAMPLING WITH AUGER HOLES.

3. IN AREAS OF EXISTING CLAY DEPOSITS, WHERE THE IN-SITU CLAY IS PLANNED AS THE LINER, EXCAVATION AND PREPARATION OF THE POND TO FINAL GRADE SHALL BE PERFORMED JUST PRIOR TO PLANNED FILLING OF THE POND TO PREVENT DRYING AND CRACKING OF THE CLAY MATERIAL. IF DRY AND/OR CRACKED MATERIAL IS ENCOUNTERED AT FINAL GRADE OF THE POND BOTTOM, ALL UNACCEPTABLE MATERIALS SHALL BE REMOVED, MOISTURE CONDITIONED AND RE-COMPACTED AS DESCRIBED BELOW.

4. IF TESTS OF IN-SITU SOILS INDICATE THAT THESE CRITERIA FOR MINIMUM PERMEABILITY AND SOIL THICKNESS ARE NATURALLY PRESENT, THEN THE SITE MAY BE CONSTRUCTED WITHOUT ADDITIONAL GROUND WATER PROTECTION MEASURES. CONSEQUENTLY, THIS PARTICULAR SITE EXHIBITS FAVORABLE LOW PERMEABILITY CONDITIONS AS INDICATED BY THE PRELIMINARY SUBSURFACE INVESTIGATIONS RECENTLY COMPLETED AT THE SITE AND PERMEABILITY'S ARE EXPECTED TO BE LESS THAN 1 X 10-7 CM/SEC.

5. IF NATIVE SOILS DO NOT EXHIBIT PERMEABILITY'S LESS THAN OR EQUAL TO 1 X 10-7 CM/SEC, THE SITES SHOULD BE CONSIDERED FOR PLACEMENT OF RE-COMPACTED CLAY MATERIAL. IF RE-COMPACTED CLAY IS TO BE USED, THE CLAY SHALL BE DEPOSITED IN LIFTS NOT TO EXCEED EIGHT INCHES THICK AND COMPACTED WITH A SHEEP'S FOOT ROLLER OR EQUIVALENT. THE RE-COMPACTED CLAY WILL BE TESTED TO VERIFY THE MINIMUM ACCEPTABLE PERMEABILITY, DENSITY, AND MOISTURE CONTENT.

6. THE POND AREA MAY BE USED AS A BORROW SITE, PROVIDED THAT A MINIMUM OF 18-INCHES OF EXISTING SOIL ABOVE FINAL GRADE IS LEFT INTACT UNTIL FINAL GRADING AS DESCRIBED IN 3 ABOVE.

7. SOIL SAMPLES SHALL BE COLLECTED, AS NECESSARY, FOR CLASSIFICATION (ASTM D 2487). ACCEPTABLE CLASSIFICATIONS INCLUDE FINE GRAINED CLAY SOILS BY THE UNIFIED SOIL CLASSIFICATION SYSTEM (CL AND CH).

8. CLAY MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO 90 PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D 698) AT - 0.0 TO + 3.0 PERCENT OF OPTIMUM MOISTURE CONTENT.

9. A SHEEPSFOOT ROLLER SHALL BE USED FOR COMPACTION OF THE LINER.

10. COMPACTION TESTS SHALL BE PERFORMED AT A MINIMUM OF ONE TEST PER PLACED LIFT.

11. MOISTURE CONTENT AND DENSITY TESTS SHALL BE PERFORMED AS FOLLOWS:

A.) NUCLEAR DENSITY READINGS SHALL BE TAKEN IN THE DIRECT TRANSMISSION MODE NUCLEAR DENSITY AND MOISTURE CALIBRATION CURVES SHALL BE CHECKED AND ADJUSTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN ASTM D 2922 AND ASTM D 3017. THE NUCLEAR GAUGE CALIBRATION CHECKS SHALL BE MADE AT THE BEGINNING OF EACH JOB AND ON EACH DIFFERENT TYPE OF MATERIAL TO BE PLACED. NUCLEAR DENSITY AND MOISTURE CONTENT GAUGES SHALL ALSO BE STANDARDIZED DAILY IN ACCORDANCE WITH ASTM D 2922 AND ASTM D 3017.

B.) FIELD MOISTURE CONTENT AND DENSITY TEST RESULTS SHALL BE COMPARED TO THE COMPACTION CURVE FOR THE APPROPRIATE MATERIAL TYPE BEING TESTED. IF TEST RESULTS ARE NOT WITHIN THE ACCEPTABLE RANGE FOR MOISTURE CONTENT OR DENSITY AS DESCRIBED ABOVE, AN ADDITIONAL TEST SHALL BE PERFORMED NEAR THE LOCATION OF THE FAILED PARAMETER. IF ALL RE-TESTS PASS, NO ADDITIONAL ACTION SHALL BE TAKEN. IF ANY OF THE RE-TESTS FAIL, THE LIFT OF SOIL SHALL BE REPAIRED OUT TO THE LIMITS DEFINED BY PASSING TESTS FORTHAT PARAMETER AND RE-TESTED.

MOISTURE CONTENT AND DENSITY TESTS OR RE-COMPACTED CLAY LINER

PROPERTY	FREQUENCY PER LIFT	TEST METHOD
NUCLEAR MOISTURE CONTENT	1	ASTM D 3017
STANDARD MOISTURE CONTENT	1	ASTM D 2216
NUCLEAR DENSITY	1	ASTM D 2922
STANDARD DENSITY	1	ASTM D 1556 OR ASTM D 2167

0 50' 100' 200' 300'
SCALE: 1" = 100'

NOTE:
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NGVD 1988 DATUM ELEV. 301.00 = PLANT DATUM ELEV. 101.00
ALL COORDINATES, ELEVATIONS AND DIMENSIONS ARE EXPRESSED IN FEET ON DECIMAL OF A FOOT UNLESS OTHERWISE NOTED

PROJECT NUMBER: 123896

Shaw Constructors, Inc.
CONFIDENTIAL

REVISIONS

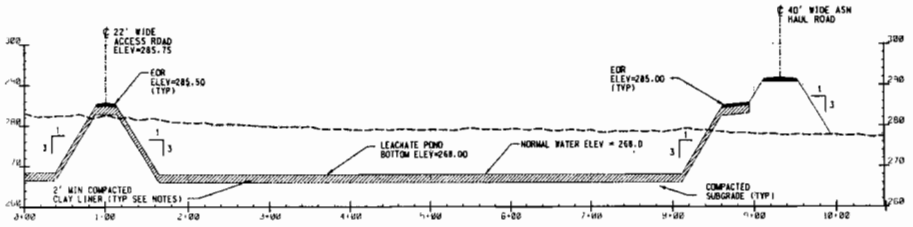
DATE	NO.	DESCRIPTION	APPD.
04/28/09	4	GENERAL REVISIONS	GLH
02/23/09	3	ADD NOTES 4 AND 5	DWH JAH RAC
05/15/08	2	ISSUED FOR CONSTRUCTION GENERAL REVISION	GPH JAH RAC
12/17/07	1	REVISED NOTE	AQC JMP BLH
11/30/07	0	ISSUED FOR CONSTRUCTION	AQC JMP RCC

SWEPCO
JOHN W. TURK JR. POWER PLANT UNIT 1
FULTON ARKANSAS

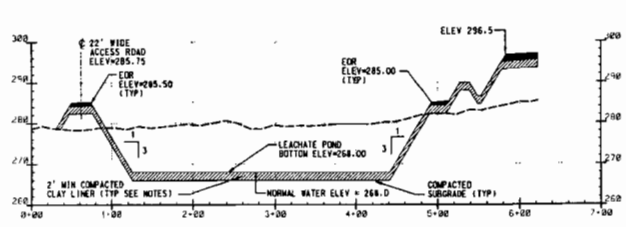
COAL HANDLING AREA
SITE SECTIONS
AND DETAILS
CIVIL SITE PLANS

DWG. NO. 0-30STE312 REV: 4
SCALE: CIVIL

AEP AMERICAN ELECTRIC POWER
AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

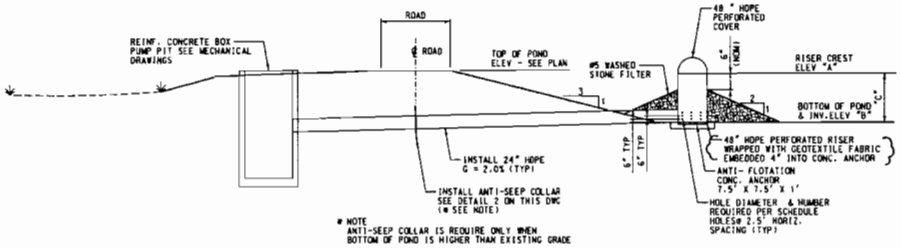


SECTION (A) 0-30STE504
SCALE: 1"=60'



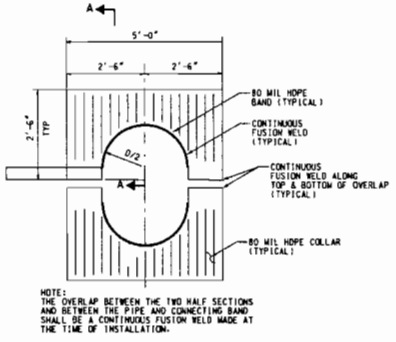
SECTION (B) 0-30STE504
SCALE: 1"=60'

POND SCHEDULE					
FACILITY NAME	RISER CREST EL. ELEV "A"	BOTTOM OF POND ELEV "B"	RISER HEIGHT "C"	HOLE DIA.	No. HOLES REQUIRED
MAKEUP WATER POND	285.50	268.50	16.00	2"	84
WASTE WATER POND	286.00	281.00	6.00	2"	24
COAL RUNOFF POND	287.00	283.00	4.00	2"	120

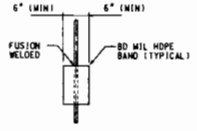


PONDS - RISER DETAIL

DETAIL (1) 0-30STE501 AND 0-30STE504
SCALE: NTS



ANTI-SEEP COLLAR DETAIL



ANTI-SEEP COLLAR ELEVATION
SECTION "A-A"

DETAIL (2) THIS DWG
SCALE:

POND LINER CONSTRUCTION NOTES:

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MOISTURE CONTENT AND DENSITY TESTS ON RE-COMPACTED CLAY LINER		
PROPERTY	FREQUENCY PER LIFT	TEST METHOD
NUCLEAR MOISTURE CONTENT	1	ASTM D 3017
STANDARD MOISTURE CONTENT	1	ASTM D 2216
NUCLEAR DENSITY	1	ASTM D 2922
STANDARD DENSITY	1	ASTM D 1556 OR ASTM D 2167

NO.	DATE	DESCRIPTION	APPD.
2	12/15/09	REVISED WASTE WATER POND	DRN JAH RCC
1	02/23/09	ADD NOTES 4 AND 5	DRN JAH RCC
0	12/04/08	ISSUED FOR CONSTRUCTION	DRN JAH RCC

REVISIONS

SHEPCO

JOHN W. TURK JR. POWER PLANT UNIT 1

FULTON ARKANSAS

SITE LEACHATE COLLECTION POND SECTIONS & NOTES SITE PLAN

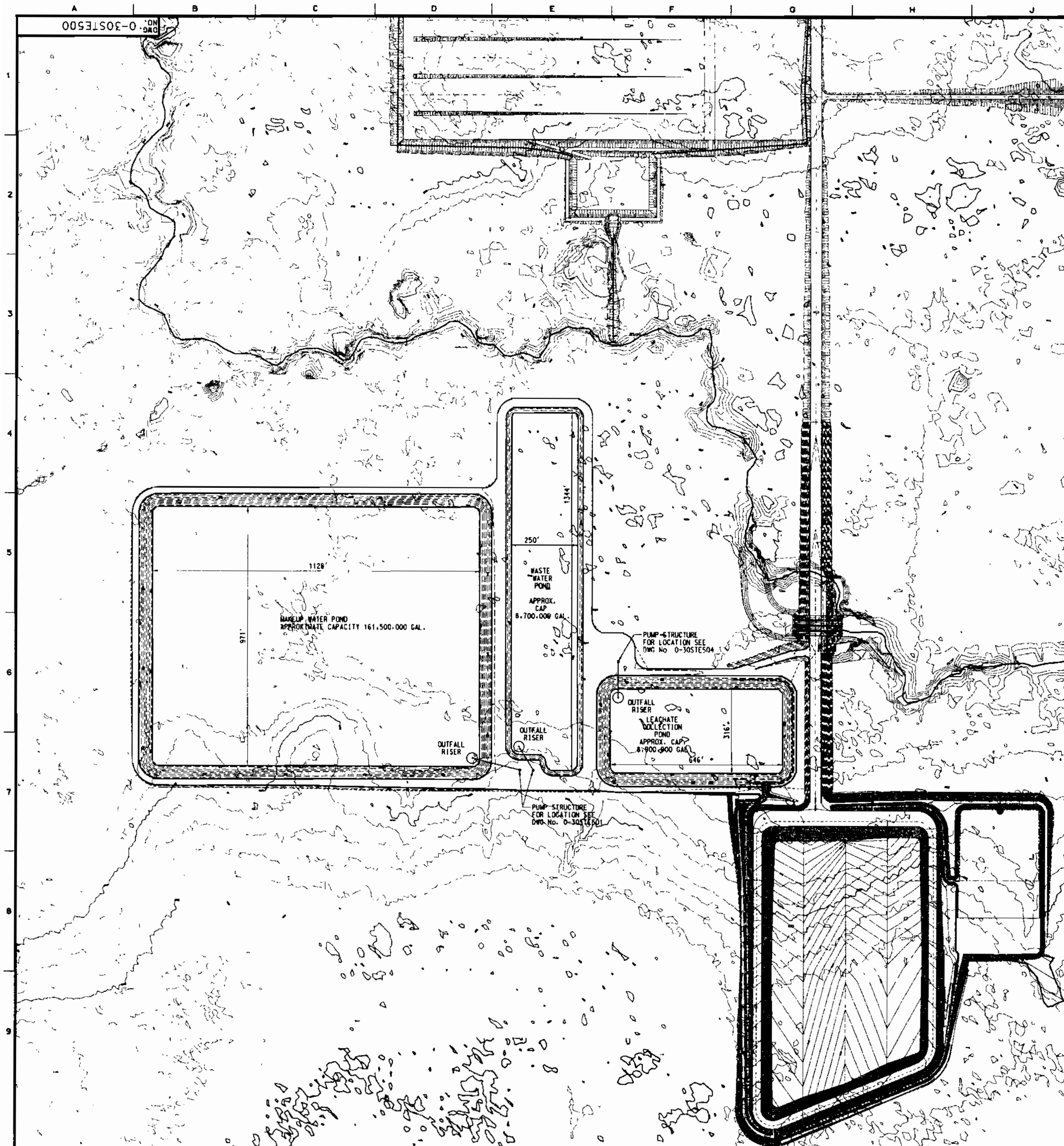
DWG. NO. 0-30STE505 REV. 2

PROJECT NUMBER: 123896

Shaw Shaw Constructors, Inc

AEP AMERICAN ELECTRIC POWER

AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215



INDEX TO DRAWINGS

DWG. NO.	DRAWING TITLE
0-30STE500	MAKEUP & WASTEWATER POND, DWG INDEX & GENERAL NOTES
0-30STE501	MAKEUP & WASTEWATER POND, EXCAVATION & GRADING PLAN
0-30STE502	MAKEUP & WASTEWATER POND, SECTIONS & NOTES
0-30STE503	MAKEUP & WASTEWATER POND, ACCESS ROAD PLAN & SEC'S
0-30STE504	LEACHATE COLLECTION POND, EXCAVATION & GRADING PLAN
0-30STE505	LEACHATE COLLECTION POND, SECTIONS & NOTES

GENERAL NOTES:

1. AERIAL TOPO MAPPING WAS PERFORMED BY M7 VISUAL INTELLIGENCE, IN NOVEMBER 2006. DATA COLLECTED WAS LIDAR GENERATED FIRST AND LAST RETURN DEM'S (5-METER MESH) WITH 2-FOOT CONTOURS.
2. HORIZONTAL AND VERTICAL CONTROL SHALL BE ESTABLISHED BY MONUMENTS INSTALLED ON SITE BY OWNER.
3. ALL ELEVATIONS SHOWN ARE IN NGVD 1988 DATUM
NGVD 1988 DATUM ELEV. 30.00 = PLANT DATUM ELEV.10.00
4. ALL COORDINATES, ELEVATIONS AND DIMENSIONS ARE EXPRESSED IN FEET OR DECIMALS OF A FOOT UNLESS OTHERWISE NOTED.
5. ALL SLOPES SHALL BE THREE (3) HORIZONTAL TO ONE (1) VERTICAL, UNLESS NOTED OTHERWISE.
6. ELEVATIONS SHOWN ON DRAWINGS REPRESENT FINISHED GRADE. ACTUAL GRADING SHALL BE TO SUBGRADE. PERMANENT ROADS TO BE USED DURING CONSTRUCTION WILL BE SURFACED WITH ABC TO THE DEPTH SHOWN, WHILE HOLDING THE TOP OF ABC ELEVATIONS AS PER THE ROAD SECTIONS SHOWN ON DRAWING NUMBER 0-30-STE520.
7. STRIPPING SHALL CONSIST OF EXCAVATION AND REMOVAL TO A STOCKPILE OF THE TOP SIX (6) INCHES OF EXISTING MATERIAL IN ALL WORK AREAS.
8. STOCKPILE LOCATIONS SHALL BE APPROVED BY THE ENGINEER.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DUST CONTROL.
10. EROSION CONTROL REQUIREMENTS SHALL BE PER THE ARKANSAS WATER AND AIR POLLUTION CONTROL ACT, CONSTRUCTION STORM WATER POLLUTION PREVENTION PLAN, THE LATEST REVISION WILL BE MAINTAINED IN THE ON-SITE SHAW CONSTRUCTION MANAGEMENT OFFICE.
11. SEEDING AND MULCHING SHALL TAKE PLACE AT ALL DISTURBED AREAS NOT RECEIVING GRAVEL OR PAVED SURFACING. SEEDING AND MULCHING SHALL BE PER DRAWING 0-30STE032, GENERAL CONSTRUCTION NOTES AND LEGEND, SHEET 2 OF THE CONSTRUCTION STORMWATER POLLUTION PREVENTION PLAN.

SPECIFICATIONS:

123896-S-C-005 EXCAVATION, FILL AND BACKFILL

PROJECT COORDINATE SYSTEM:

THE PROJECT COORDINATE SYSTEM WAS ESTABLISHED PER THE COORDINATES PROVIDED IN THE AIR PERMIT FOR THE CENTER OF THE MAIN BOILER STACK

MAIN BOILER CENTER OF STACK COORDINATE:
NAD27 UTM, ZONE 15 NORTH, METERS
N 3,723,421, E 424,735

MAIN BOILER CENTER OF STACK COORDINATE:
PLANT COORDINATE SYSTEM, FEET
N 40,000, E 30,000

CORRESPONDING COORDINATES FOR
ARKANSAS STATE PLANE COORDINATE SYSTEM, SOUTHERN ZONE
NAD 83 GRID COORDINATES:
GRID: N = 1674975.4406 E = 760980.2566
NAD 83 SURFACE (GROUND) COORDINATES
SURFACE: N = 1675091.2728 E = 761035.6075
CORRESPONDING SCALE FACTOR:
GRID TO GROUND: 1.00007273629

PROJECT VERTICAL DATUM:

VERTICAL DATUM: NGVD 88
ALL ELEVATIONS SHOWN ARE NGVD ELEVATIONS,
TO CONVERT TO PLANT REFERENCE ELEVATIONS
SUBTRACT 200 FEET FROM ELEVATIONS SHOWN.

SCALE: 1" = 150'

DATE	NO.	DESCRIPTION	APPD.
04/27/09	1	REVISED WASTE WATER POND	DWH
12/04/08	0	ISSUED FOR CONSTRUCTION	DWH JAH RCC

REVISIONS

SWEPCO
JOHN W. TURK JR.
POWER PLANT UNIT 1
FULTON ARKANSAS

SITE
MAKEUP & WASTEWATER POND
DWG INDEX & GENERAL NOTES
SITE PLAN

DWG. NO. 0-30STE500 REV: 1

SCALE: CIVIL

DR:
CH:
ENGR:
PROJ ENGR:
DATE:
APPROVED BY

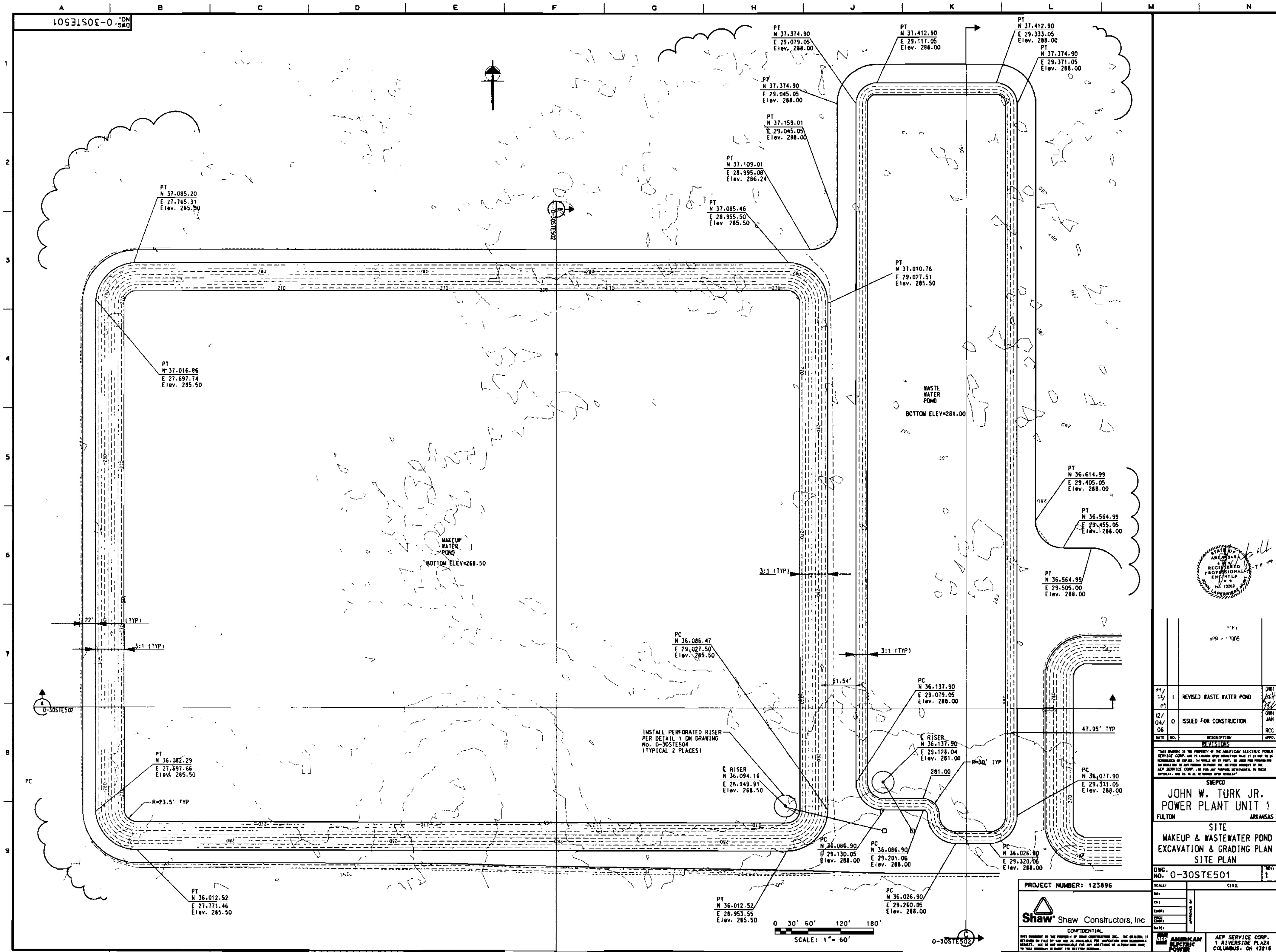
PROJECT NUMBER: 123896

Shaw Constructors, Inc

CONFIDENTIAL

AMERICAN ELECTRIC POWER
AEP SERVICE CORP.
1 RIVERSIDE PLAZA
COLUMBUS, OH 43215

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No 13208


DWG. NO. 0-30STE501
WASTE WATER POND
BOTTOM ELEV=281.00
MAKEUP WATER POND
BOTTOM ELEV=268.50
INSTALL PERFORATED RISER PER DETAIL 1 ON DRAWING No. 0-30STE504 (TYPICAL 2 PLACES)
3:1 (TYP)
22' (TYP)
51.54'
47.95' TYP
R=30' TYP
R=23.5' TYP
0-30STE502
SCALE: 1"= 60'
REVISED WASTE WATER POND
ISSUED FOR CONSTRUCTION
REVISIONS
SWEPCO
JOHN W. TURK JR. POWER PLANT UNIT 1
FULTON ARKANSAS
SITE
MAKEUP & WASTEWATER POND EXCAVATION & GRADING PLAN SITE PLAN
DWG. NO. 0-30STE501
REV. 1
CIVIL
PROJECT NUMBER: 123896
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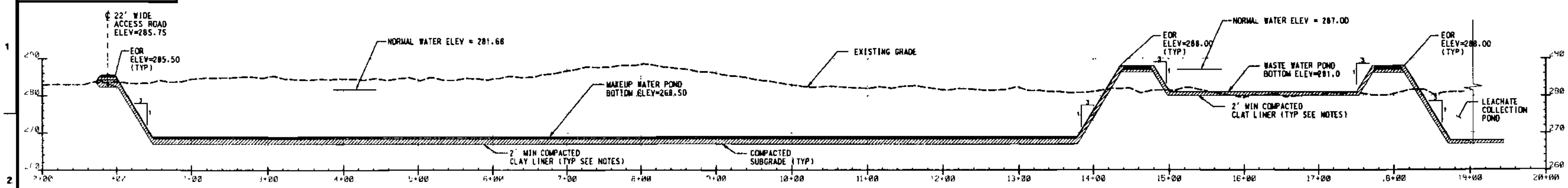
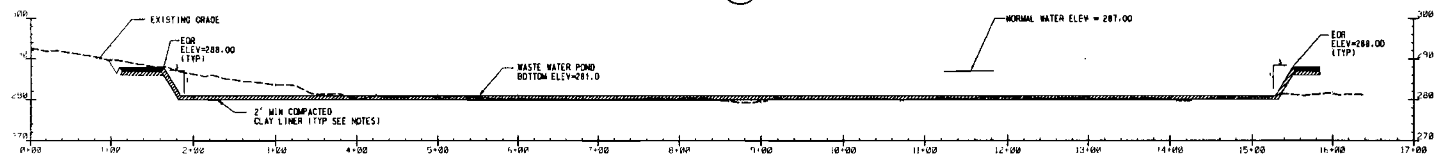
AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215

DWG. NO. 0-30STE502



SECTION (A) 0-30STE501
SCALE: 1"=60'



SECTION (C) 0-30STE501
SCALE: 1"=60'

POND LINER CONSTRUCTION NOTES:

1. THE COMPACTED CLAT LINER SHALL BE CONSTRUCTED OF COHESIVE SOILS OBTAINED FROM ON-SITE SOURCES. IN AREAS WHERE THE EXCAVATION FOR THE BOTTOM OF THE POND IS EXPECTED TO OCCUR IN EXISTING CLAY SOILS, CONSTRUCTION OF A SEPARATE LINER MAY NOT BE NECESSARY IF THE CLAY IS FREE FROM CRACKS AND EXHIBITS SUFFICIENT MOISTURE CONTENT AND DENSITY.

2. THE THICKNESS OF EXISTING CLAY SOILS SHALL BE VERIFIED TO A DEPTH OF 3 FEET BELOW THE PLANNED FINAL GRADE OF THE BOTTOM OF THE POND. VERIFICATION SHALL BE PERFORMED AT A MINIMUM OF 5 LOCATIONS (ONE NEAR EACH CORNER PLUS ONE NEAR THE CENTER) BY EXCAVATION OF TEST PITS OR SAMPLING WITH AUGER HOLES.

3. IN AREAS OF EXISTING CLAY DEPOSITS, WHERE THE IN-SITU CLAY IS PLANNED AS THE LINER, EXCAVATION AND PREPARATION OF THE POND TO FINAL GRADE SHALL BE PERFORMED JUST PRIOR TO PLANNED FILLING OF THE POND TO PREVENT DRYING AND CRACKING OF THE CLAY MATERIAL. IF DRY AND/OR CRACKED MATERIAL IS ENCOUNTERED AT FINAL GRADE OF THE POND BOTTOM, ALL UNACCEPTABLE MATERIALS SHALL BE REMOVED, MOISTURE CONDITIONED AND RE-COMPACTED AS DESCRIBED BELOW.

4. IF TESTS OF IN-SITU SOILS INDICATE THAT THESE CRITERIA FOR MINIMUM PERMEABILITY AND SOIL THICKNESS ARE NATURALLY PRESENT, THEN THE SITE MAY BE CONSTRUCTED WITHOUT ADDITIONAL GROUNDWATER PROTECTION MEASURES. CONSEQUENTLY, THIS PARTICULAR SITE EXHIBITS FAVORABLE LOW PERMEABILITY CONDITIONS AS INDICATED BY THE PRELIMINARY SUBSURFACE INVESTIGATIONS RECENTLY COMPLETED AT THE SITE AND PERMEABILITY'S ARE EXPECTED TO BE LESS THAN 1 X 10-7 CM/SEC.

5. IF NATIVE SOILS DO NOT EXHIBIT PERMEABILITY'S LESS THAN OR EQUAL TO 1 X 10-7 CM/SEC, THE SITES SHOULD BE CONSIDERED FOR PLACEMENT OF RE-COMPACTED CLAY MATERIAL. IF RE-COMPACTED CLAY IS TO BE USED, THE CLAY SHALL BE DEPOSITED IN LIFTS NOT TO EXCEED EIGHT INCHES THICK AND COMPACTED WITH A SHEEP'S FOOT ROLLER OR EQUIVALENT. THE RE-COMPACTED CLAY WILL BE TESTED TO VERIFY THE MINIMUM ACCEPTABLE PERMEABILITY, DENSITY, AND MOISTURE CONTENT.

6. THE POND AREA MAY BE USED AS A BORROW SITE, PROVIDED THAT A MINIMUM OF 18-INCHES OF EXISTING SOIL ABOVE FINAL GRADE IS LEFT INTACT UNTIL FINAL GRADING AS DESCRIBED IN 3 ABOVE.

7. SOIL SAMPLES SHALL BE COLLECTED, AS NECESSARY, FOR CLASSIFICATION (ASTM D 2487). ACCEPTABLE CLASSIFICATIONS INCLUDE FINE GRAINED CLAY SOILS BY THE UNIFIED SOIL CLASSIFICATION SYSTEM (CL AND CH).

8. CLAY MATERIALS SHALL BE PLACED IN 8-INCH MAXIMUM LIFTS AND COMPACTED TO 90 PERCENT OF THE MAXIMUM DRY DENSITY (ASTM D 698) AT - 0.0 TO + 3.0 PERCENT OF OPTIMUM MOISTURE CONTENT.

9. A SHEEPSFOOT ROLLER SHALL BE USED FOR COMPACTION OF THE LINER.

10 COMPACTION TESTS SHALL BE PERFORMED AT A MINIMUM OF ONE TEST PER PLACED LIFT.

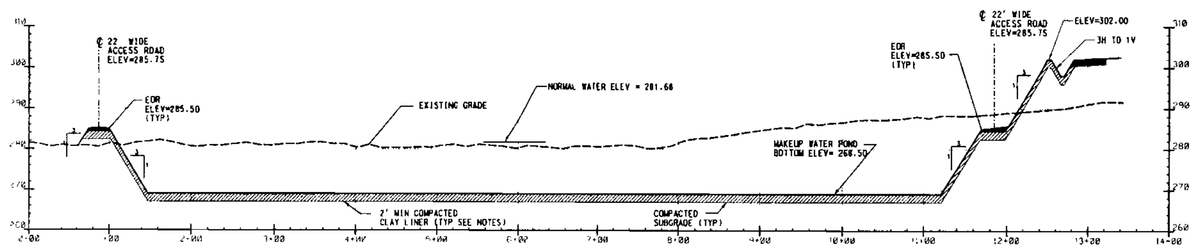
11. MOISTURE CONTENT AND DENSITY TESTS SHALL BE PERFORMED AS FOLLOWS:

A. NUCLEAR DENSITY READINGS SHALL BE TAKEN IN THE DIRECT TRANSMISSION MODE NUCLEAR DENSITY AND MOISTURE CALIBRATION CURVES SHALL BE CHECKED AND ADJUSTED IN ACCORDANCE WITH THE PROCEDURES DESCRIBED IN ASTM D 2922 AND ASTM D 3017. THE NUCLEAR GAUGE CALIBRATION CHECKS SHALL BE MADE AT THE BEGINNING OF EACH JOB AND OR EACH DIFFERENT TYPE OF MATERIAL TO BE PLACED. NUCLEAR DENSITY AND MOISTURE CONTENT GAUGES SHALL ALSO BE STANDARDIZED DAILY IN ACCORDANCE WITH ASTM D 2922 AND ASTM D 3017.

B. FIELD MOISTURE CONTENT AND DENSITY TEST RESULTS SHALL BE COMPARED TO THE COMPACTION CURVE FOR THE APPROPRIATE MATERIAL TYPE BEING TESTED. IF TEST RESULTS ARE NOT WITHIN THE ACCEPTABLE RANGE FOR MOISTURE CONTENT OR DENSITY AS DESCRIBED ABOVE, AN ADDITIONAL TEST SHALL BE PERFORMED NEAR THE LOCATION OF THE FAILED PARAMETER. IF ALL RE-TESTS PASS, NO ADDITIONAL ACTION SHALL BE TAKEN. IF ANY OF THE RE-TESTS FAIL, THE LIFT OF SOIL SHALL BE REPAIRED OUT TO THE LIMITS DEFINED BY PASSING TESTS FORTHAT PARAMETER AND RE-TESTED.

MOISTURE CONTENT AND DENSITY TESTS OR RE-COMPACTED CLAY LINER

PROPERTY	FREQUENCY PER LIFT	TEST METHOD
NUCLEAR MOISTURE CONTENT	1	ASTM D 3017
STANDARD MOISTURE CONTENT	1	ASTM D 2216
NUCLEAR DENSITY	1	ASTM D 2922
STANDARD DENSITY	1	ASTM D 1556 OR ASTM D 2167



SECTION (B) 0-30STE501
SCALE: 1"=60'

PROJECT NUMBER: 123896

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DATE	NO.	DESCRIPTION	APPD.
04/22/09	2	REVISED WASTE WATER POND	DWH
02/23/09	1	ADD NOTES 4 AND 5	DWH JAH RCC
12/04/08	0	ISSUED FOR CONSTRUCTION	DWH JAH RAC

REVISIONS

SWEPCO
JOHN W. TURK JR.
POWER PLANT UNIT 1
FULTON ARKANSAS

SITE
MAKEP & WASTEWATER POND
SECTIONS & NOTES
SITE PLAN

DWG. NO. 0-30STE502 REV. 2

CIVIL

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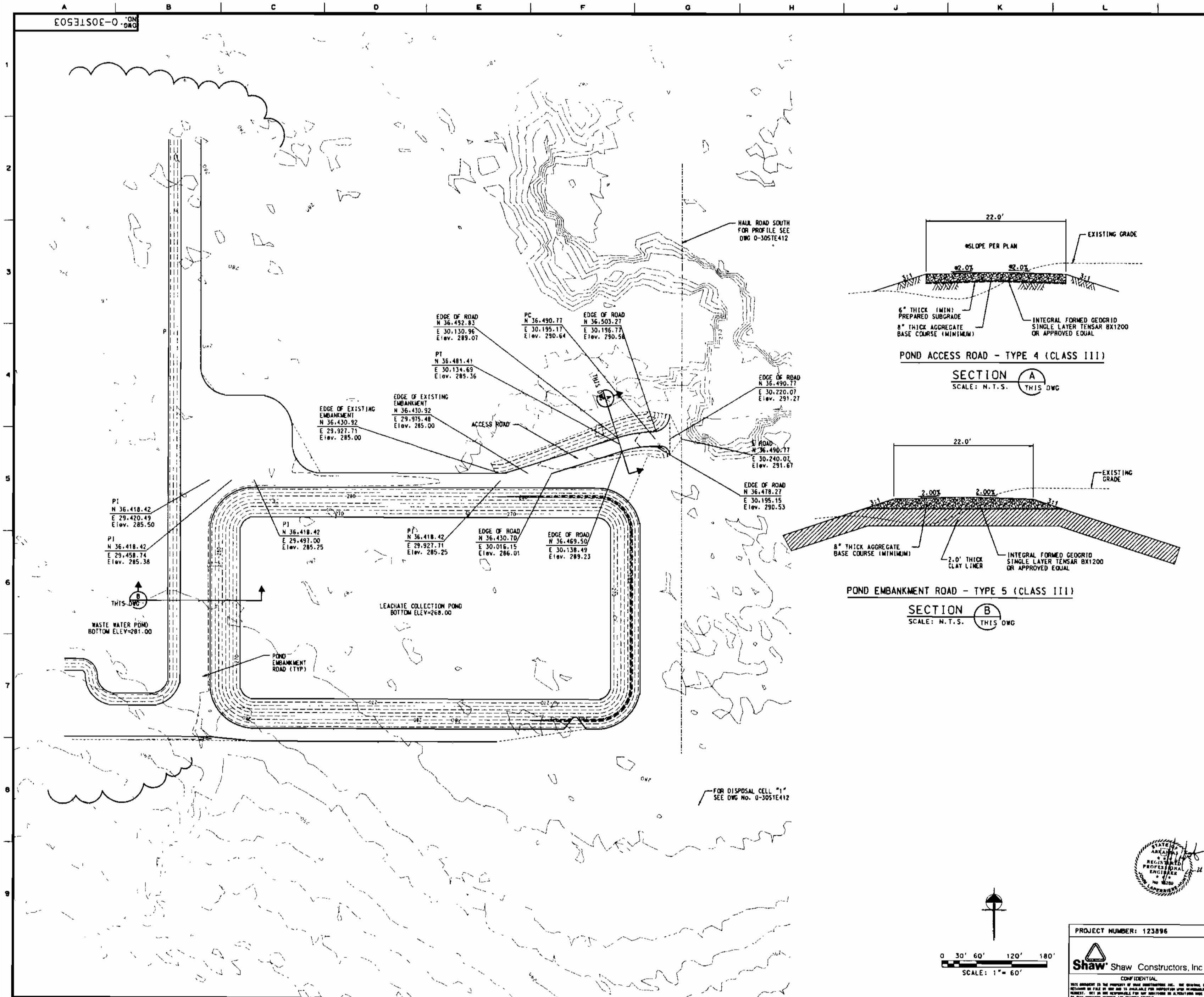

DATE	NO.	DESCRIPTION	APPD.
01/17/09	1	REVISED WASTEWATER POND	DWH
12/04/08	0	ISSUED FOR CONSTRUCTION	DWH JAH RCC

REVISIONS

SWEPCO

JOHN W. TURK JR.
POWER PLANT UNIT 1

FULTON ARKANSAS

SITE
MAKEUP WW & LEACHATE POND
ACCESS RD PLAN & SEC'S
SITE PLAN

DWG. NO. 0-30STE503 REV. 1

CIVIL

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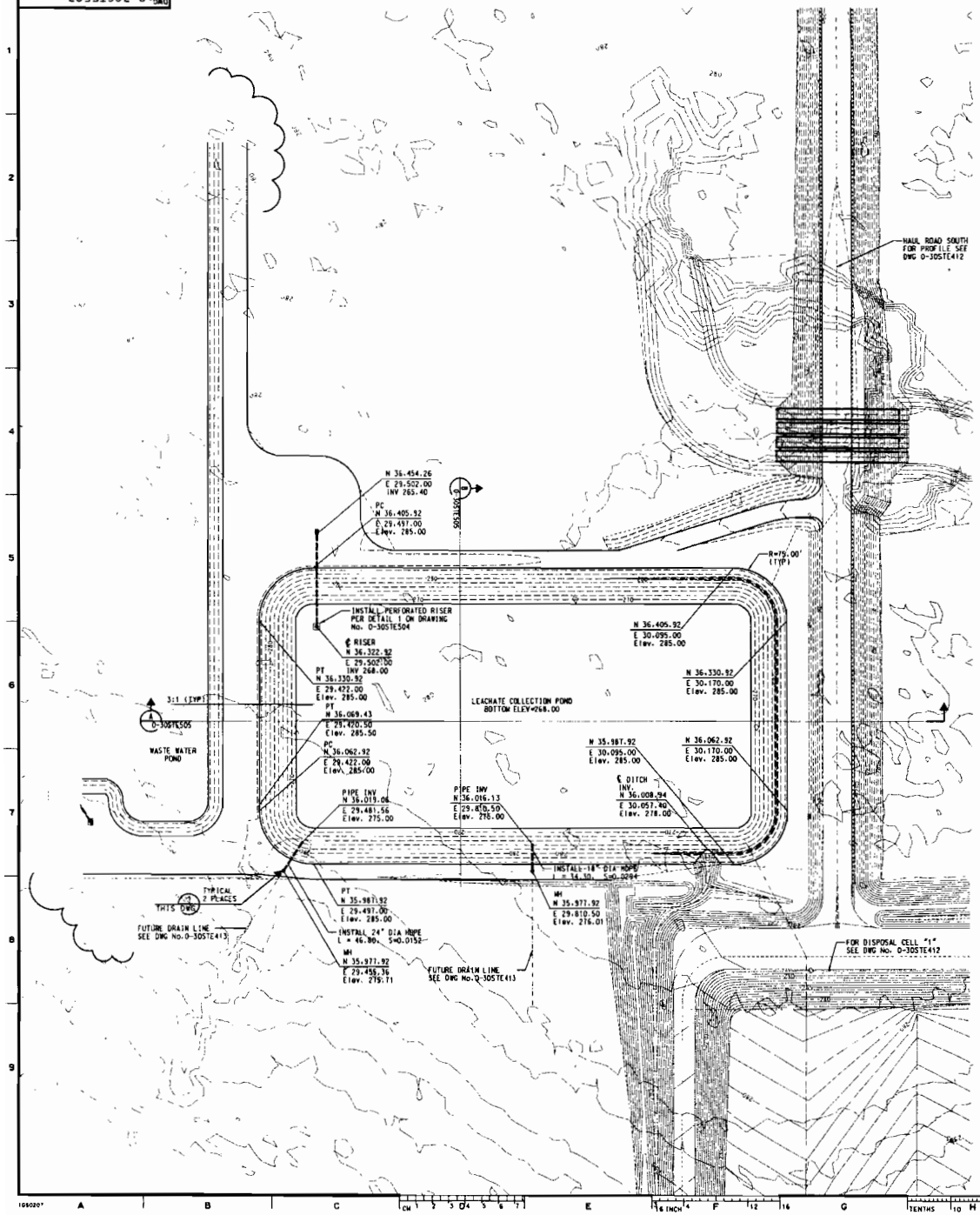

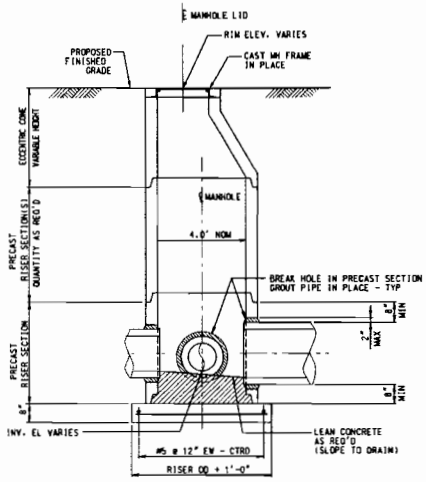

TYPICAL PRECAST MANHOLE

DETAIL 1 THIS DWG
SCALE:NTS

0 30' 60' 120' 180'
SCALE: 1"= 60'

NO.	DATE	DESCRIPTION	APPD
1	09/11/08	REVISED WASTE WATER POND	JWH
0	12/04/08	ISSUED FOR CONSTRUCTION	JWH JAM RCC

REVISIONS

SHEPCO
JOHN W. TURK JR. POWER PLANT UNIT 1
FULTON ARKANSAS

SITE
LEACHATE COLLECTION POND EXCAVATION & GRADING PLAN
SITE PLAN

DWG. NO. 0-30STE504 REV. 1

PROJECT NUMBER: 123096

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