HISTORY OF CONSTRUCTION

CFR 257.73(c)(1)

Bottom Ash Pond

Big Sandy Plant
Louisa, Kentucky

October, 2016

Prepared for: Kentucky Power – Big Sandy Plant

Louisa, Kentucky

Prepared by: American Electric Power Service Corporation

1 Riverside Plaza

Columbus, OH 43215

Document No. GERS-16-067

Table of CONTENTS

Attachments

1.0 OBJECTIVE

This report was prepared by AEP-Geotechnical Engineering Services (GES) section to fulfill requirements of CFR 257.73(c)(1).

2.0 DESCRIPTION OF CCR THE IMPOUNDMENT

The Big Sandy Power Plant is located north of the City of Louisa, Lawrence County, Kentucky. It is owned and operated by Kentucky Power. The facility operates two surface impoundments for storing CCR called the Fly Ash Pond and the Bottom Ash Pond. This report deals with the history of construction for the Bottom Ash Pond.

The Bottom Ash Pond is comprised of diked embankments on the East, West, South sides with the north side abutting the adjoining the hillside. The Bottom Ash Pond is split into north and south cells. The Bottom Ash Pond discharges into the Clearwater Pond (north/south) which discharges into the Reclaim pond where water is pumped to the Fly Ash Pond. The combination of the Bottom Ash Pond, the Clearwater Pond and the Reclaim Pond are commonly refered to as the Bottom Ash Pond complex.

The Big Sandy Power Plant has ceased burning coal and been refueled for natural gas. As such the Bottom Ash pond will continue to remain in service as a wastewater pond.

3.0 SUMMARY OF OWNERSHIP {257.73(C)(1)(I)}

[The name and address of the person(s) owning or operating the CCR unit: the name associated with the CCR unit: and the identification number of the CCR unit if one has been assigned by the state.]

The Big Sandy Power Plant is located at 23000 Highway 23, Lousia, KY 41230 near the City of Louisa, Lawrence County, Kentucky. The Bottom Ash Pond is owned and operated by Kentucky Power. .

4.0 LOCATION OF THE CCR UNIT {257.73 (C)(1)(II)}

[The location of the CCR unit identified on the most recent U.S. Geological Survey (USGS) 7 ½ minute or 15 minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available.]

A location map is included in Attachment A.

5.0 STATEMENT OF PURPOSE {257.73 (C)(1)(III)}

[A statement of the purpose for which the CCR unit is being used.]

The Bottom Ash Pond is a surface impoundment for storing CCR. The Bottom Ash Pond is used for primary settling and storage of bottom ash. The Bottom Ash pond is divided into two cells (north and south. Water from the Bottom Ash Pond discharge through the Clearwater pond and into the Reclaim

Pond where it was pumped back for reuse or pumped to the Fly Ash Pond for discharge through the permitted outfall.

6.0 NAME AND SIZE OF WATERSHED THE CCR UNIT IS LOCATED {257.73 (c)(1)(iv)}

[The name and size in acres of the watershed within which the CCR unit is located.]

The Bottom Ash Pond is located within the Big Sandy Watershed (HUC: 05070204) which is 258,956.8 acres (404.62 square miles). The Bottom Ash Pond is an upground reservoir and occupies approximately 3.5 acres.

7.0 DESCRIPTION OF THE FOUNDATION AND ABUTMENT MATERIALS {257.73(c)(1)(v)}

[A description of the physical and engineering properties of the foundation and abutment materials on which the CCR unit is located.]

The Bottom Ash Pond is partially excavated into the foundation soils. The foundation soils under the embankment consist of various layers of silt, sands and clay.

Material	Unit Weight (pcf)	Cohesion (psf)	Friction Angle (°)
Stiff Sandy Lean Clay	125	144	35
Soft Sandy Lean Clay	125	23	30
Silty Sand	130	0	35
Sand with Silt	130	0	35
Silty Clay With Sand	120	100	25
Embankment Fill	125	30	30
RipRap	140	0	35

Note: Engineering properties of soils determined as part of Periodic Stability Report required on CFR 257.73(e).

8.0 DESCRIPTION OF EACH CONSTRUCTED ZONE OR STAGE OF THE CCR UNIT {257.73 (c)(1)(vi)}

[A statement of the type, size, range, and physical and engineering properties of the materials used in constructing each zone or stage of the CCR unit; and the approximate dates of construction of each successive stage of construction of the CCR unit.]

The Bottom Ash Pond was constructed as part of the Bottom Ash Pond Complex between 1968 and 1971 with the construction of Unit 2. The Bottom Ash Pond Complex includes the Bottom Ash Pond, along with the Clearwater pond and the Reclaim Pond. The Bottom Ash Pond is used to collect and store bottom ash and is formed by perimeter dikes, while the Clearwater Pond and Reclaim Pond are

incised and used for water storage and treatment. The Bottom Ash Pond is divided into two halves to allow management of CCR material during plant operations. The Bottom Ash Pond dike consists cohesive embankment fill with a grouted riprap shell on the interior slope and a grassed slope on the exterior. Riprap is placed on the exterior of the common dike with the Clearwater pond. The grouted riprap was installed as part of maintenance activities in 2010. The engineering properties of these two layers are provided in the table in Section 7.0. A detailed engineering design report is not available; however, engineering construction drawings are included in Attachment B.

9.0 ENGINEERING STRUCTURES AND APPURTENANCES {257.73 (c)(1)(vii)}

[At a scale that details engineering structures and appurtenances relevant to the design, construction, operation, and maintenance of the CCR unit, detailed dimensional drawings of the CCR unit, including a plan view and cross sections of the length and width of the CCR unit, showing all zones, foundation improvements, drainage provisions, spillways, diversion ditches, outlets, instrument locations, and slope protection…]

Water and waste material were discharged into the Bottom Ash Cells from a pipes located on wooden tressle structure located in each cell. The engineering drawings for the wooden trestle structure are included in Attachment B.

The outlet for each cell of the Bottom Ash Pond is a 24-in steel standpipe connected to a 24-in pipe that discharges into the cell of the Clearwater Pond. A metal skimmer structure is located around the drop outlet to control the discharge of solids from the bottom ash pond. An 12-in steel pipe with a slide gate is connected to the 24-in discharge pipe to allow dewatering of the bottom ash cell. Additionally, a 30-in corrugated HDPE plastic pipe is located next to the outfall structure and allows plant personnel to place a pump to assist with dewatering stored bottom ash. CCR material is periodically excavated from the Bottom Ash Pond and hauled to the Fly Ash Pond for disposal. The engineering drawings in Attachment B show a concrete sloping riser as the outfall structures from each Bottom Ash Pond cell. No drawings are available for the existing structures.

There are three piezometers located at the Bottom Ash Pond Complex to monitor phreatic surface levels related to the Bottom Ash Pond. A map with instrumentation locations is provided in Attachment C.

10.0 SUMMARY OF POOL SURFACE ELEVATIONS, AND MAXIMUM DEPTH OF CCR {257.73 (c)(1)(vii)}

[…in addition to the normal operating pool surface elevation and the maximum pool elevation following peak discharge from the inflow design flood, the expected maximum depth of CCR within the CCR surface impoundment.]

The Bottom Ash Pond has a design capacity of approximately 22 acre-ft (~11 acre-ft per cell) based on an operating pool elevation of 576. During the course of the year as the ponds are cleaned, the water level is raised and lowered. Not knowing all operational history the maximum CCR capacity of the bottom ash pond would have been approx. 30 acre-ft based on top of dike.

11.0 FEATURES THAT COULD ADVERSELY AFFECT OPERATION DUE TO MALFUNCTION OR MIS-OPERATION {(257.73 (c)(1)(vii))}

[…and any identificable natural or manmade features that could adversely affect operations of the CCR runit due to malfunction or mis-operation]

In the event of malfunction or mis-operation of any of the pond's appurtenances the ponds operations could be adversely affected. These structures include outlet structure and piping between the Bottom Ash Pond and Clearwater Pond. The malfunction or mis-operation of the adjoining Clearwater and Reclaim Ponds would limit operations of the Bottom Ash Pond but are unlikely to cause structural integrity issues for the Bottom Ash Pond.

12.0 DESCRIPTION OF THE TYPE, PURPOSE AND LOCATION OF EXISTING INSTRUMENTATION {257.73 (c)(1)(viii)}

[A description of the type, purpose, and location of existing instrumentation.]

The Bottom Ash Pond Complex has 3 piezometers located along the perimeter dike. These piezometers are read on a minimum of every 30 days for the purpose of determining the phreatic water level within the dike. A location map is provided in Attachment C.

13.0 AREA – CAPACITY CURVES FOR THE CCR UNIT {257.73 (c)(1)(ix)}

[Area-capacity curves for the CCR unit.]

An area capacity curve for the Bottom Ash Pond was developed using historical and recent information and is included in Attachment D.

14.0 DESCRIPTION OF EACH SPILLWAY AND DIVERSION {257.73 (c)(1)(x)}

[A description of each spillway and diversion design features and capacities and calculations used in their determination.]

Water and waste material were discharged into the Bottom Ash Cells from a pipes located on wooden tressle structure located in each cell. The engineering drawings for the wooden trestle structure are included in Attachment B.

The outlet for each cell of the Bottom Ash Pond is a 24-in steel standpipe connected to a 24-in pipe that discharges into the cell of the Clearwater Pond. A metal skimmer structure is located around the drop outlet to control the discharge of solids from the Bottom Ash Pond. An 12-in steel pipe with a slide gate is connected to the 24-in discharge pipe to allow dewatering of the bottom ash cell. Additionally, a 30-in corrugated HDPE plastic pipe is located next to the outfall structure and allows plant personnel to place a pump to assist with dewatering stored bottom ash. CCR material was periodically excavated from the Bottom Ash Pond and hauled to the Fly Ash Pond for disposal. The engineering drawings in Attachment B show a sloping riser as the outfall structures from each Bottom Ash Pond cell. No drawings are available for the existing structures.

The Bottom Ash Pond is primarily an up ground structure with three of the four sides constructed above ground. Storm water from the north hillside is directed away from the Bottom Ash Pond. Therefore storm water run-on is limited to that which falls directly on the water surface or the top of the dike.

There are no calculations available for the design of the outflow structure for the Bottom Ash Pond.

15.0 SUMMARY CONSTRUCTION SPECIFICATIONS AND PROVISIONS FOR SURVEILLANCE, MAINTENANCE AND REPAIR {257.73 (c)(1)(xi)}

[The construction specifications and provisions for surveillance, maintenance, and repair of the CCR unit.]

Construction of the Bottom Ash Pond was completed in around 1971. No engineering design report or specificationcould be located for the construction of the Bottom Ash Pond. The engineering drawings are provided in Appendix B.

As required by the CCR rules the Bottom Ash Pond is inspected at least every 7 days by a qualified person. Also as a requirement of the CCR rules the impoundment is also inspected annual by a professional engineer. Piezometers are read on a minimum of every 30 days for the purpose of determining the phreatic water level within the dike.

If repairs are found to be necessary during any inspection they will be completed as needed.

16.0 RECORD OR KNOWLEDGE OF STRUCTURAL INSTABILITY {257.73 (c)(1)(xii)}

[Any record or knowledge of the structural instability of the CCR unit.]

Erosion of the interior slope of the bottom ash pond was a problem until the grouted riprap was installed on the interior in 2010.

ATTACHMENT A

LOCATION MAP

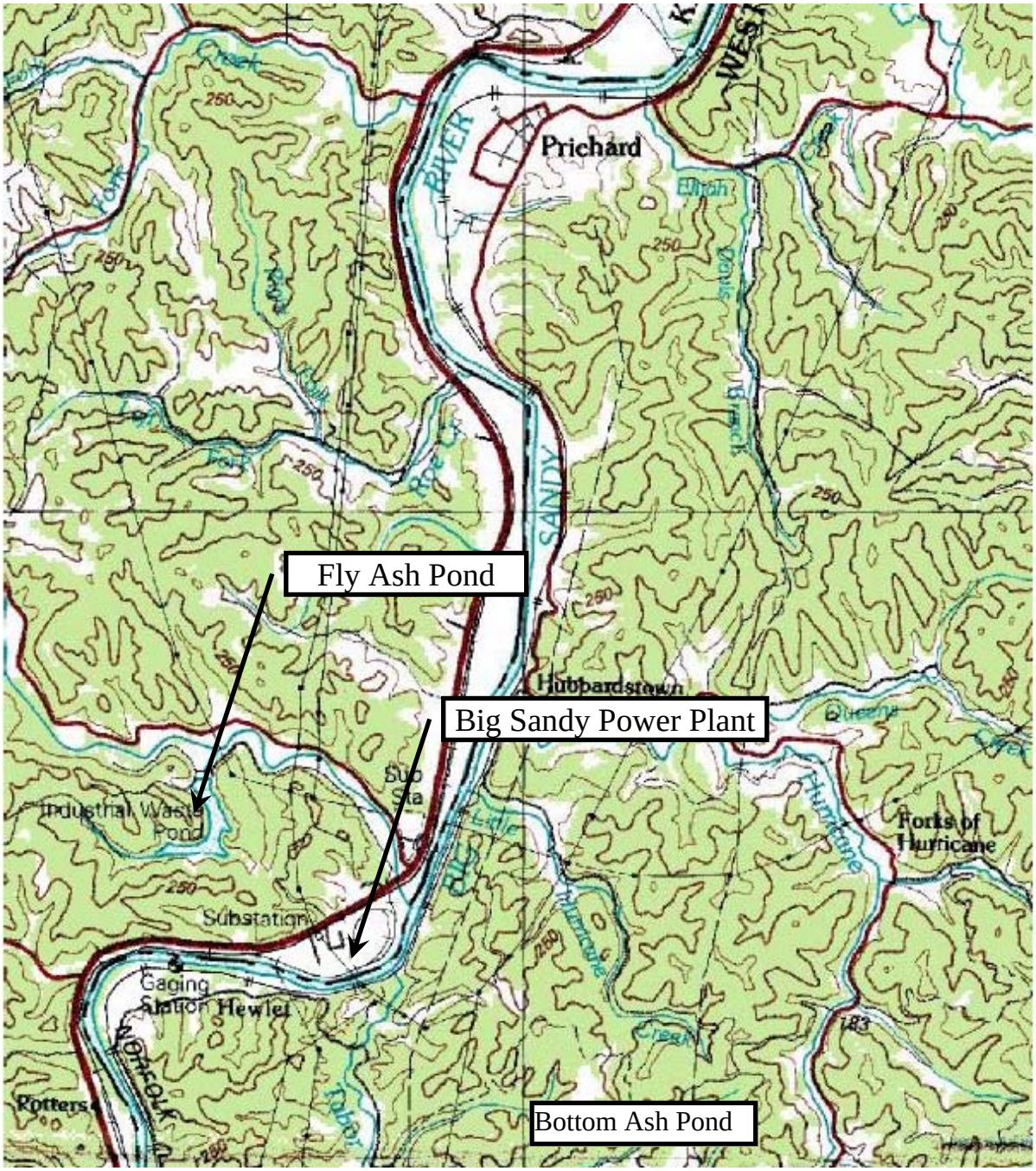


IMAGE DATE: 07/01/1975

N

CHA

Figure 1
Project Location Map

Scale: 1" = 1 mile

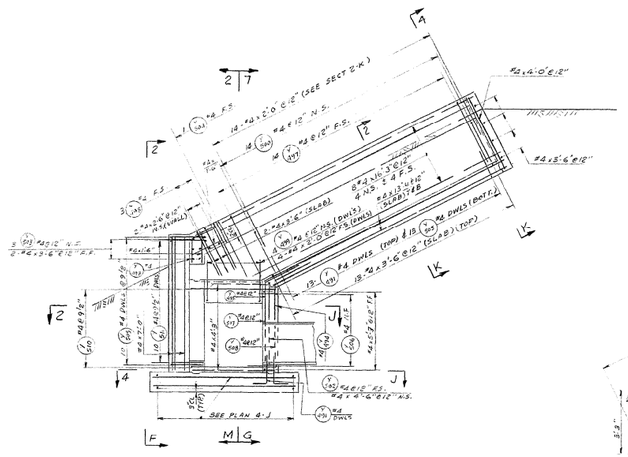
Project No.:
20085.7000.1510

American Electric Power Corp.
Big Sandy Power Plant
Louisa, KY

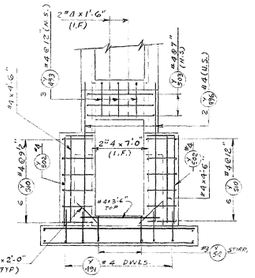
ATTACHMENT B

DESIGN DRAWINGS

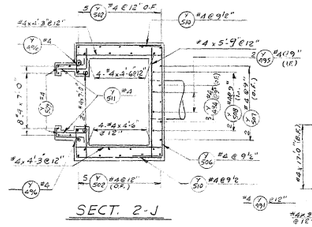
DR. NO. 12-3466



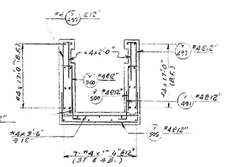
SECT. 4-C AS SHOWN
SECT. 4-C' OPP. HAND



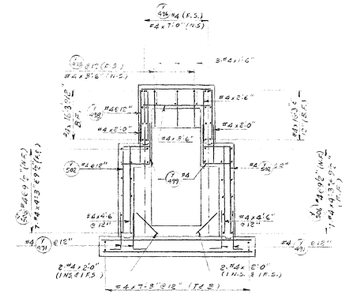
SECT. 2-F
NOTE: CONCRETE LOGS & LOG SUPPORTS NOT SHOWN



SECT. 2-J



SECT. 2-K



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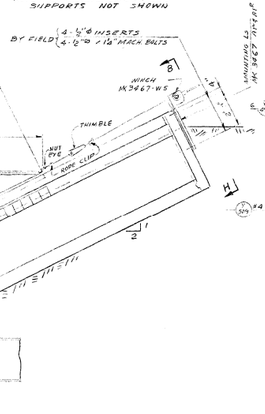
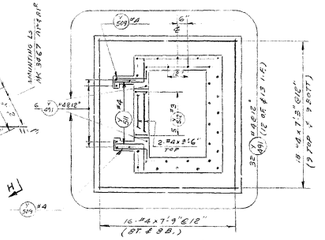
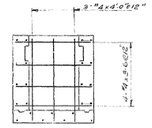


DETAIL OF OVERFLOW STRUCTURE SKIMMERS
SEE DWG 12-3467



SECT. 4-J
FIELD TO BEND DOWELS UNDER PIPE OPENING



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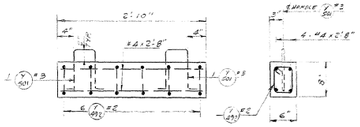
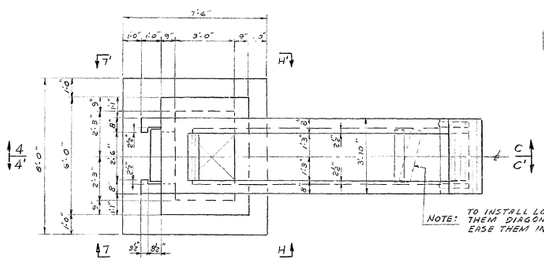
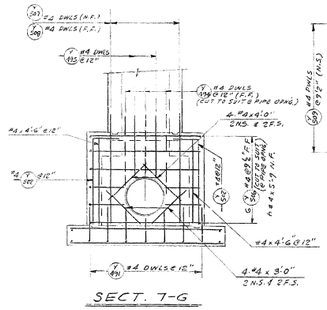


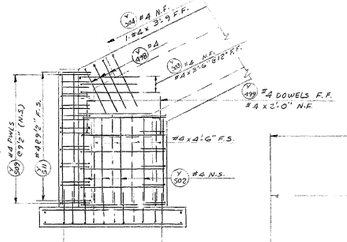
DETAIL "A"
CONCRETE LOGS
(38 REQUIRED)



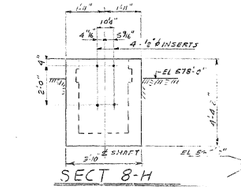
PLAN
(MASONRY)
(2-REQUIRED)
FOR LOCATION OF SHAFT SEE DWG 12-3467



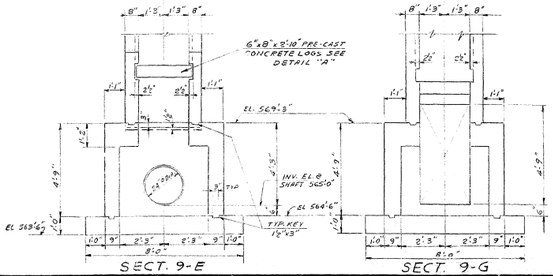
SECT. 7-G



SECT. 7-H AS SHOWN
SECT. 7-H' OPP HAND

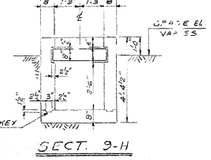


SECT 8-H



SECT. 9-E

SECT. 9-G



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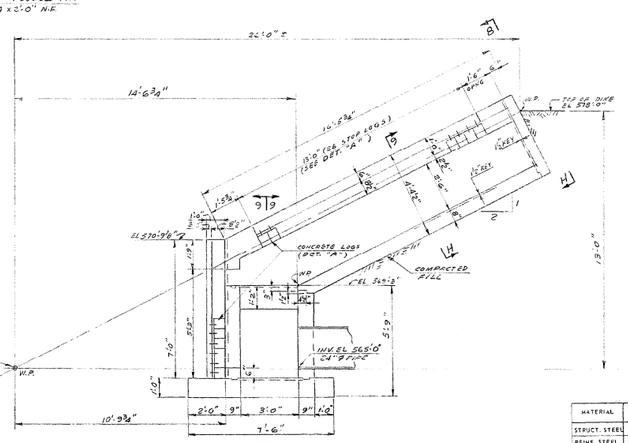

SECT. 9-L
(MASONRY)

NOTE:
ALL MATERIAL SHOWN ON THIS DWG ARE FOR ONE DRAINAGE SHAFT ONLY

GENERAL NOTES

1. ALL CONCRETE MATERIALS AND WORKMANSHIP SHALL CONFORM TO THE A.E.P.S.C. CORP. SPECIFICATIONS NO.[illegible]
2. ALL CONCRETE SURFACES EXPOSED TO VIEW, ARE TO CONFORM WITH OR MORE EXACTLY WITH THE MATERIAL REQUIREMENTS AND FINISHES SPECIFIED IN THE CONCRETE MASONRY AND PLASTERING EQUIPMENT GROUP PUBLISHED BY THE CONCRETE INFORMATION GROUP. [illegible] WILL RESULT IN THE CONCRETE.
3. ALL EXPOSED EDGES SHALL BE CHAMFERED 3/4" UNLESS NOTED.
4. ALL CONCRETE SHALL CONFORM TO THE A.E.P.S.C. CORP.'S SPEC. AND TYPE OF CEMENT WILL BE SPECIFIED ON CONCRETE MIX DESIGN.
5. ALL EXPOSED VERTICAL EDGES OF CONCRETE SURFACES TO HAVE RUBBED FINISH.

CONC 3,000 PSI
SOIL PRESS. = 2,000 PSF

MATERIAL

CONCRETE: 24 CU. YDS TOTAL
(12 CU YDS 9'10 SHAFT)

26'0 STEEL PIPE 10'4 FIELD
5'0 Y INSERTS 8 Y FIELD
1'3 1/4 HACH BOLTS 8 Y FIELD

REFERENCE DRAWINGS

RS 128 REINF SCHED.
12-3462 BOTTOM ASH STORAGE AREA
12-3467 - DRAINAGE SHAFT & SKIMMER

DATE	No.	DESCRIPTION	APPD.

REVISIONS

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KENTUCKY POWER CO.
BIG SANDY PLANT
BIG SANDY, KENTUCKY

BOTTOM ASH STORAGE AREA
DRAINAGE SHAFT
MASONRY & REINFORCING

DR. No. 12-3466

ARCH.	ELEC.	MECH.	STR.

SCALE: 3/4"=1'-0"
DR. J.P.
CH. I.T.
SQ. LDR. M.E.
DATE: 1/20/72

APPROVED: ENGINEERING DIV. [signature] DESIGN DIV. [signature]

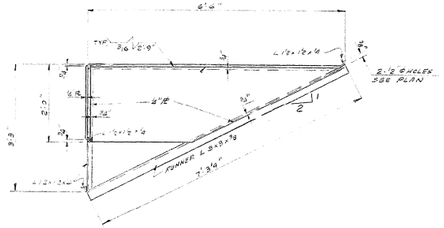
AMERICAN ELECTRIC POWER SERVICE CORP.
2 BROADWAY NEW YORK

MATERIAL	RELEASE DATE
STRUCT. STEEL	—
REINF. STEEL	1/19/72
DECKING	—
GRATING	—
STAIR TREADS	—
HANDRAILING	—

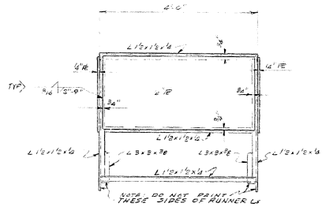
NOTE:
CHECKER IS RESPONSIBLE TO SEE THAT THE ABOVE APPLICABLE MATERIALS HAVE BEEN PROPERLY BROUGHT TO HIS SQUAD LEADERS' ATTENTION.

WHEN THIS DWG. WITH DWGS. 12-3642 & 12-3467

DR. NO. 12-3467



ELEV. 4-C
1/4"=1'-0"



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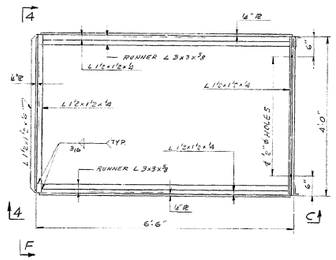
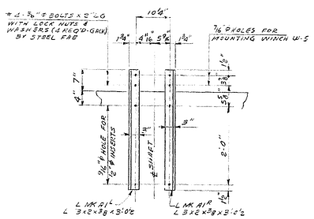
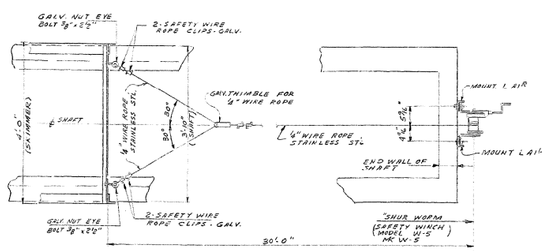


PLAN
SKIMMER MK 3467-S1 (2-REQ'D.)
REF. DWG 12-3466
3/4"=1'-0"



ANGLES FOR MOUNTING WINCH
PAINT (1) SHOP COAT OF BITUMINOUS PAINT
ANGLE MK A1R - 2 REQ'D
ANGLE MK A1L - 2 REQ'D



ARRANGEMENT FOR MOVING SKIMMER
(PLAN)

GENERAL NOTES

DO NOT SCALE THIS DWG

ALL STEEL - A36 ST'L.

MATERIAL

STEEL BY: J.R. MULL STEEL SUPPLY INC
ORDER NO: 10663-P31-3

5/16" "SHUR WORM" SAFETY WINCH MODEL W-S, NUT EYE BOLTS, GALVANIZED STEEL WIRE ROPE, CLIPS & THIMBLE
BY: MASTER MAT'L & EQUIPMENT CO
ORDER NO: 10664-S31-3

REFERENCE DWGS

FOR REFERENCE DWGS SEE DWG 12-3466

MATERIAL	RELEASE DATE
STRUCT. STEEL	7/30/70
REINF. STEEL	—
DECKING	—
GRATING	—
STAIR TREADS	—
HANDRAILING	—
WINCH	7/30/70
MISC. NOTES CLIP, THIMBLE	7/30/70

NOTE: CHECKER IS RESPONSIBLE TO SEE THAT THE ABOVE APPLICABLE MATERIALS TO BE SHOWN ARE BROUGHT TO HIS SOLID LEADERS' ATTENTION.

DATE	NO	DESCRIPTION	APPD.

REVISIONS

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KENTUCKY POWER CO.
BIG SANDY PLANT
BIG SANDY, KENTUCKY

BOTTOM ASH STORAGE AREA
DRAINAGE SHAFT
SKIMMER

DR. NO. 12-3467

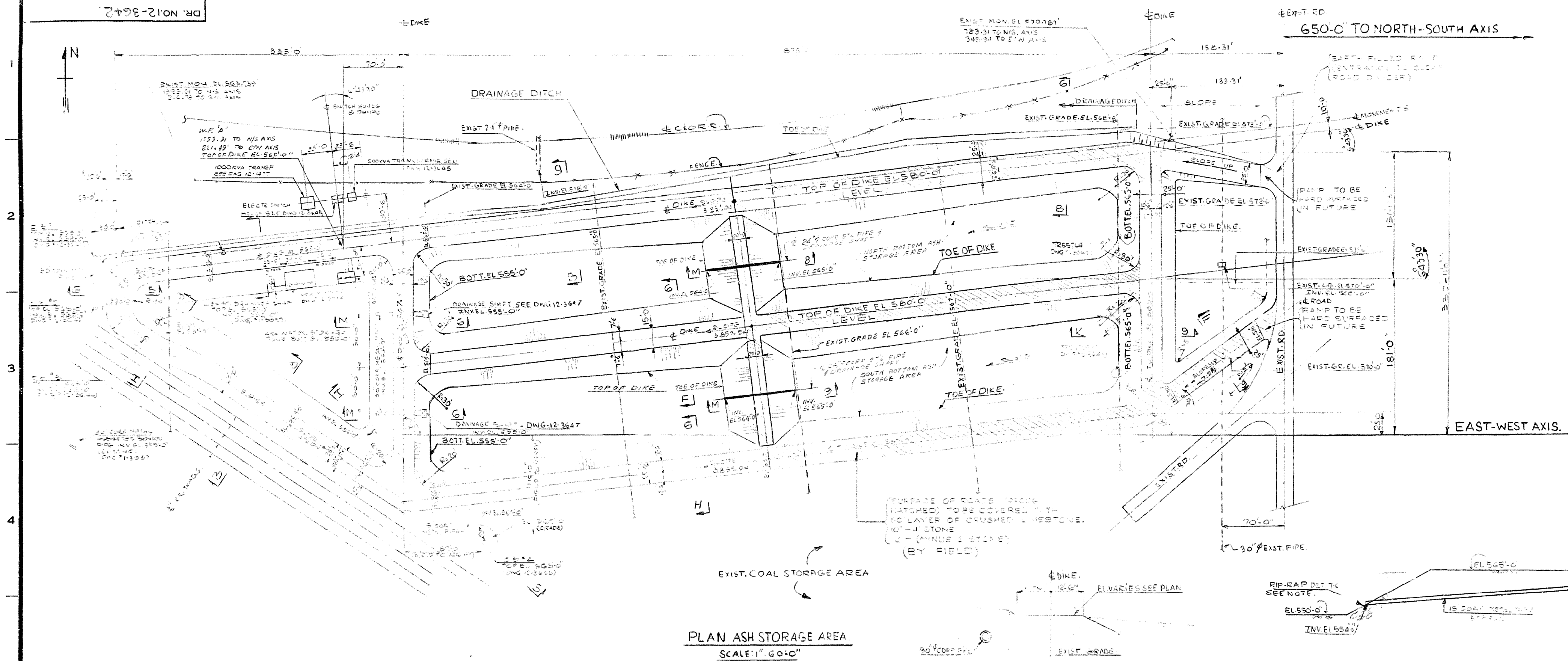
ARCH.	ELEC.	MECH.	STR.
SCALE: AS NOTED	ENGINEERING DIV.		
DR. JP			
CH. T.T			
SO. LDR. M.E	DESIGN DIV.		
DATE: 7/30/70			

APPROVED BY

AMERICAN ELECTRIC POWER SERVICE CORP.
2 BROADWAY NEW YORK

WORK THIS DWG WITH DWGS 12-3462 & 12-3466

DR. NO.12-3642



FIELD NOTE:

COMPACTION

THE AREA IN WHICH THE PIPE IS TO BE PLACED SHALL BE PREPARED BY REMOVING ALL EARTH TO A DEPTH OF AT LEAST 2 FEET BELOW THE INVERT ELEV. OF THE PIPE. A SAND BED SHALL BE PLACED IN 6" LOOSE LAYER, AND COMPACTED WITH TWO COMPLETE COVERAGES OF A DYNAPAC ... OR EQUIVALENT. THIS BED SHALL BE A MINIMUM OF TWO FEET THICK PRIOR TO PLACING THE PIPE. AFTER THE PIPE IS PLACED THE REMAINDER OF THE CUT SHALL BE BACKFILLED WITH SAND AND COMPACTED IN 6" LOOSE LAYERS PROVIDING A MINIMUM OF 2 FEET OF SAND MEASURED ANNULARLY. ALL COMPACTION SHALL BE PERFORMED AS INDICATED FOR THE BED.

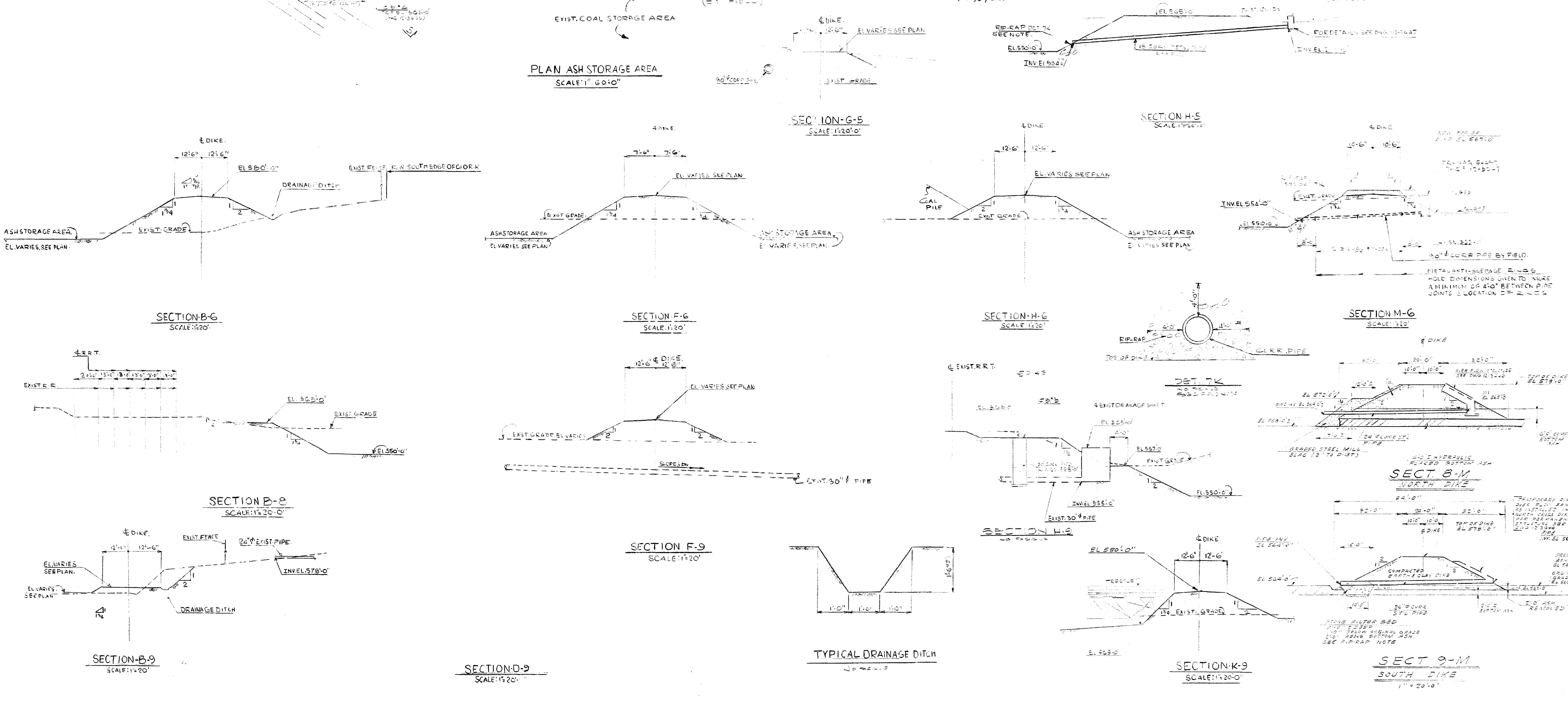
RIPRAP

RIP-RAP SHALL BE PLACED AROUND THE PIPE AS SHOWN. A 8" GRAVEL BLANKET SHALL BE PLACED AS BASE FOR THE RIPRAP. THIS FILTER SHALL BE REASONABLY WELL GRADED WITHIN THE FOLLOWING LIMITS:

SIEVE SIZE	PERCENT PASSING
2"	100
1½"	90-100
¾"	70-90
No. 4	35-60
No. 16	15-35
No. 100	0-15

THE RIPRAP SHALL BE 18" IN THICKNESS AND BE REASONABLY WELL GRADED FROM THE MINIMUM SIZE STONE PERMITTED WEIGHING APPROXIMATELY 50 POUNDS, TO THE MAXIMUM SIZE WEIGHING APPROXIMATELY 500 POUNDS. NEITHER THE BREADTH NOR THICKNESS OF ANY PIECE OF RIP-RAP SHALL BE LESS THAN ONE THIRD OF ITS LENGTH.

THE RIP-RAP SHALL BE PLACED ON THE FILTER MATERIAL IN SUCH A MANNER AS TO PRODUCE A REASONABLY WELL GRADED MASS OF ROCK WITH A MINIMUM PRACTICAL PERCENTAGE OF VOIDS. RIPRAP SHALL BE PLACED TO ITS FULL COURSE THICKNESS IN ONE OPERATION AND IN SUCH A MANNER SO AS TO AVOID DISPLACING THE GRAVEL BLANKET.



GENERAL NOTES

NOTES:

MATERIALS

CORR. PIPE

GASKETS

REFERENCE DRAWINGS

- 1-3004 SITE PLAN
- 1-1486 ASH POND RECIRCULATION PUMPS
- 12-5219 PUMP STRUCTURE
- 1-3037 DRAINAGE SHAFT

REVISIONS

DATE	NO.	DESCRIPTION	APP'D.
4/17/71	6	ADDED 1000 KVA TRANSF. TO PLAN ASH STORAGE AREA	
	5	ADDITION OF ...	
	4	REVISED SECT. 8-M ...	
	3	ADDED 24"Ø CORR. ST'L PIPES REVISED SECT. M-8	
	2	DIKES ADDED	
	1	...	

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KENTUCKY POWER CO.
BIG SANDY PLANT
BIG SANDY, KENTUCKY

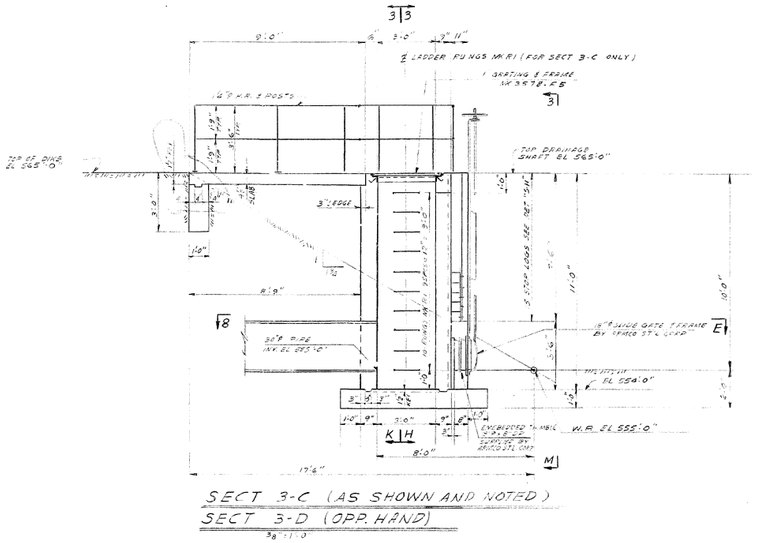
BOTTOM ASH STORAGE AREA

DR. NO. 12-3642-6

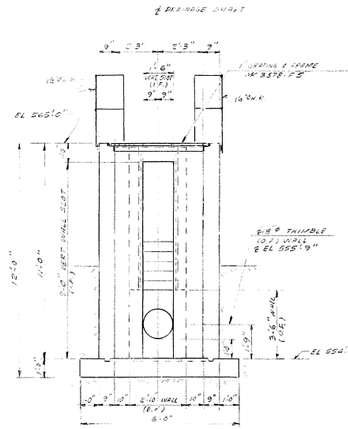
SCALE: 1" = 60'
DR. RBA
CH. F.V.

AMERICAN ELECTRIC POWER SERVICE CORP.
2 BROADWAY NEW YORK

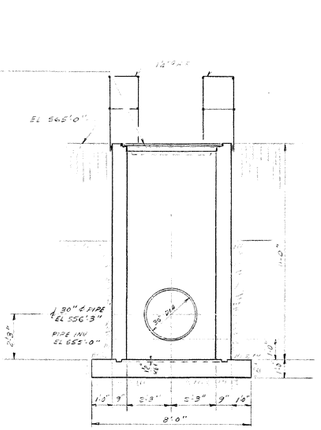
DR. NO. 12-5647



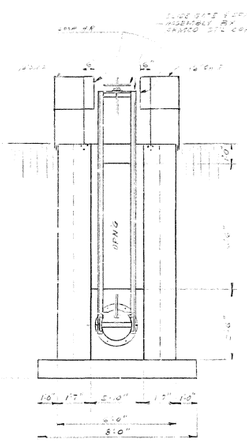
SECT 3-C (AS SHOWN AND NOTED)
SECT 3-D (OPP. HAND)
3/8" = 1'-0"



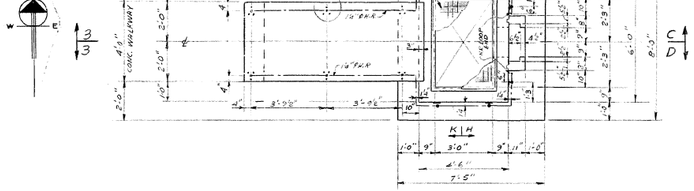
SECT 3-H
3/8" = 1'-0"



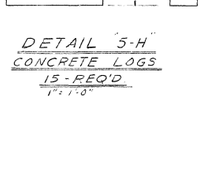
SECT 3-K
3/8" = 1'-0"



ELEV 3-M
3/8" = 1'-0"

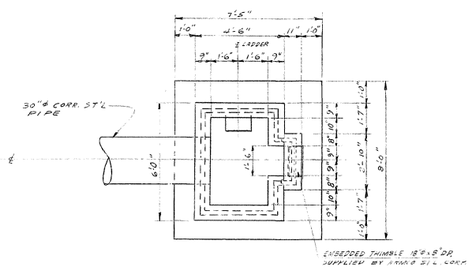


PLAN
BOTTOM ASH DRAINAGE SHAFT (2-REQ'D)
3/8" = 1'-0"
(FOR LOCATION SEE DWG 12-3642 3/C & 4/C)



DETAIL "5-H"
CONCRETE LOGS
15-REQ'D
1" = 1'-0"

DET 5-L
(6-REQ'D)
N.T.S.



SECT 8-E
3/8" = 1'-0"

WORK THIS DWG WITH DWG 12-3648

MATERIAL	RELEASE DATE
STRUCT. STEEL	—
REINF. STEEL	7/23/68
DECKING	—
GRATING	—
STAIR TREADS	—
HANDRAILING	7/26/68
CURBS	7/26/68
OTHER	7/26/68

NOTE
CHECKER IS RESPONSIBLE TO SEE THAT THE ABOVE APPLICABLE MATERIALS TO BE ORDERED ARE BROUGHT TO HIS SQUAD LEADERS' ATTENTION.

GENERAL NOTES

DO NOT SCALE THIS DWG

DESIGN LOAD

LL VEHICLE AXLES ... PSF
H20 TRUCK LOAD ON SLAB

MATERIAL

CONCRETE ... f'c = ... #
REINF. STEEL ... ASTM A ... GR ...
STRUCT. STEEL ... ASTM A ...
PLATES & SHAPES ... ASTM A ...
BOLTS ... ASTM A325 TYP.
T&G PUNGS W.R.P. ... ASTM A ...

REFERENCE DWG

12-3642 BOTTOM ASHPOND AREA
12-3648 ...
12-3641 ...

FOREIGN DWGS

12-5647-1 DRAINAGE SHAFT MASONRY
SLUICE GATE T FRAME BY ERMCO ST'L CORP.

DATE	NO	DESCRIPTION	APPD
7/26/68	1	ADDED SHAFT WALLS 3C & 3D	W.L.

REVISIONS

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KENTUCKY POWER CO
BIG SANDY PLANT
BIG SANDY, KENTUCKY

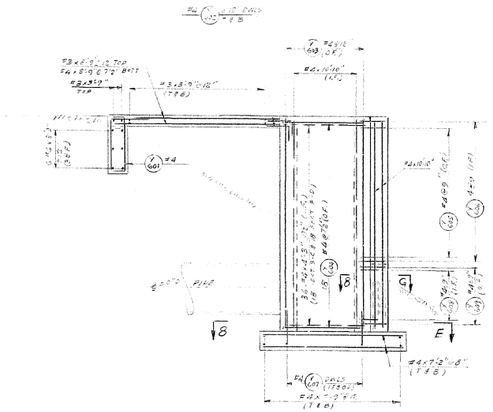
BOTTOM ASH STORAGE AREA
DRAINAGE SHAFT
MASONRY

DR. NO. 12-5647-1

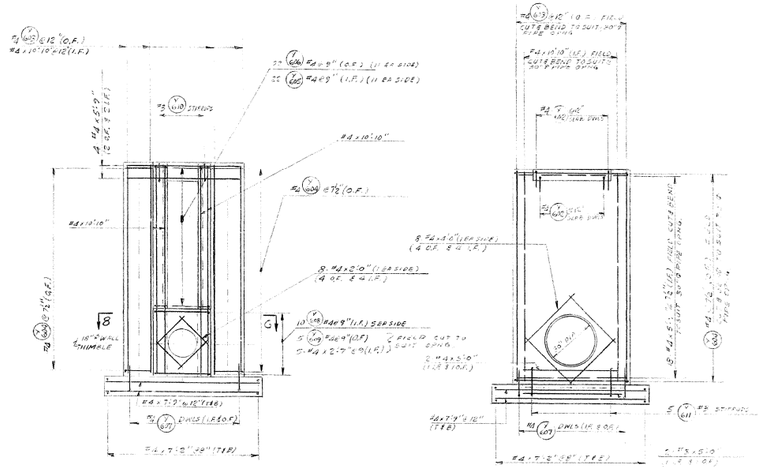
ARCH	ELEC	MECH	E	STR.
SCALE 3/8"=1'-0"		ENGINEERING DIV.		
DR. J.R.				
CH. T.F.				
APP. M.E.		DESIGN DIV.		
DATE 7/26/68				

AMERICAN ELECTRIC POWER SERVICE CORP.
2 BROADWAY NEW YORK

DR. NO. 12-3648

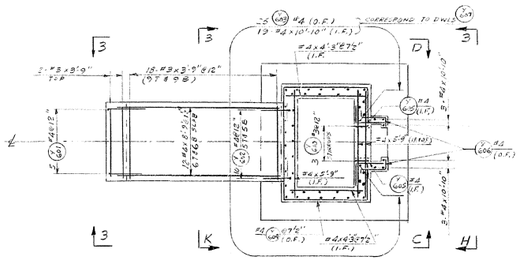


ELEV 3-C (AS SHOWN)
ELEV 3-D (OPP HAND)
3/8"=1'-0"

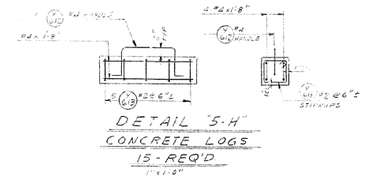


ELEV 3-H
3/8"=1'-0"

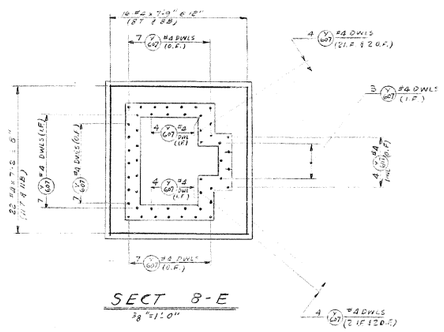
ELEV 3-K
3/8"=1'-0"



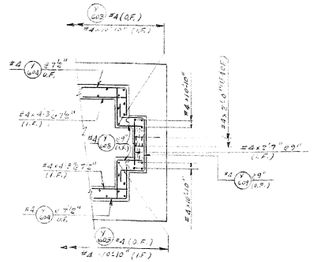
PLAN
3/8"=1'-0"



DETAIL "5-H"
CONCRETE LOGS
15-REQ'D
1"=1'-0"



SECT 8-E
3/8"=1'-0"



SECT 8-G
3/8"=1'-0"

WORK THIS DWG WITH DWG 12-3647

GENERAL NOTES

DO NOT SCALE THIS DWG

FOR GENERAL NOTES & REFERENCE DWGS SEE DWG 12-3647

DATE	NO.	DESCRIPTION	APP'D

REVISIONS

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KENTUCKY POWER CO
BIG SANDY PLANT
BIG SANDY, KENTUCKY

BOTTOM ASH STORAGE AREA

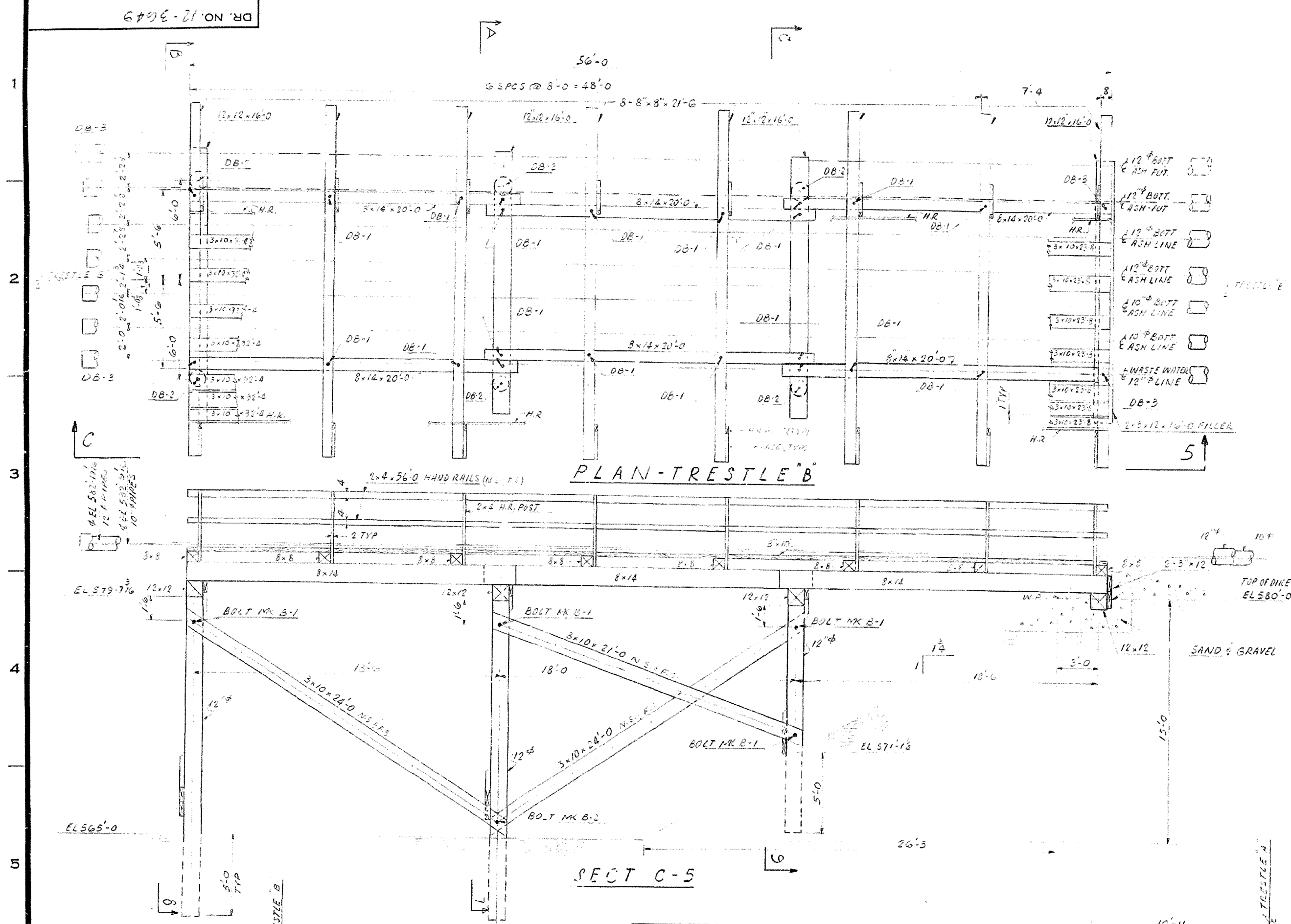
DRAINAGE SHAFT REINFORCING

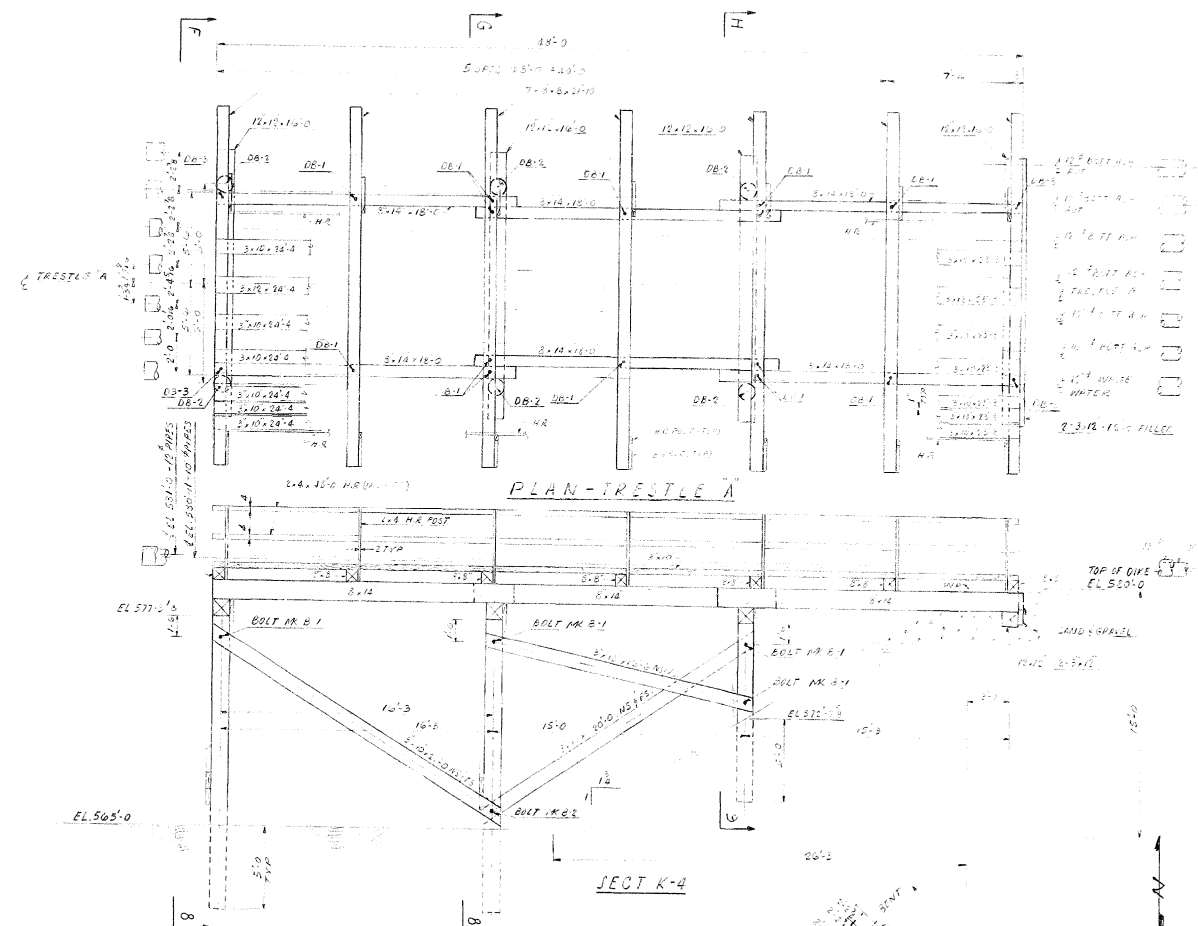
DR. NO. 12-3648

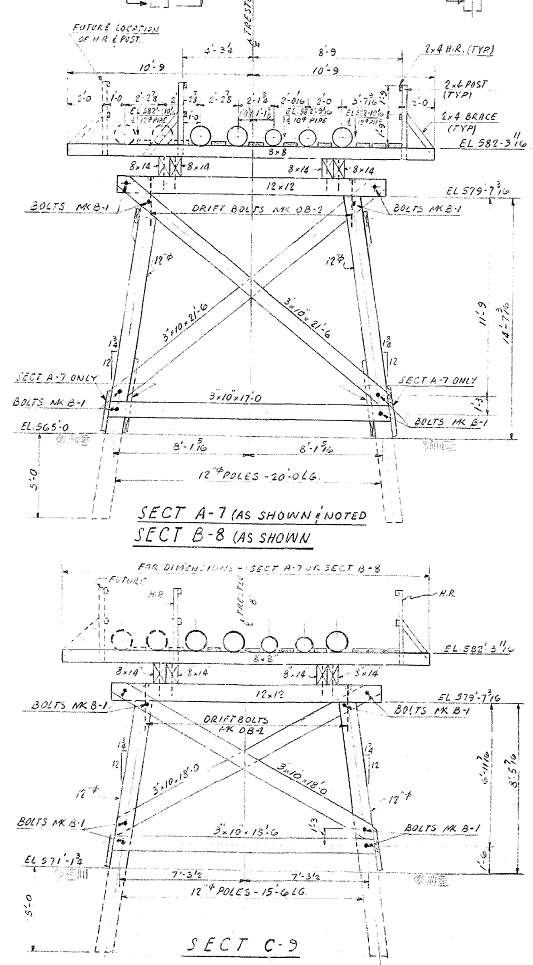
ARCH.	ELEC.	MECH.	STR.
SCALE 3/8"=1'-0"		ENGINEERING DIV.	
DR. J.P.		APPROVED BY	
CH. J.T.			
SO. LDR. M.E.		DESIGN DIV.	
DATE 7/10/63			

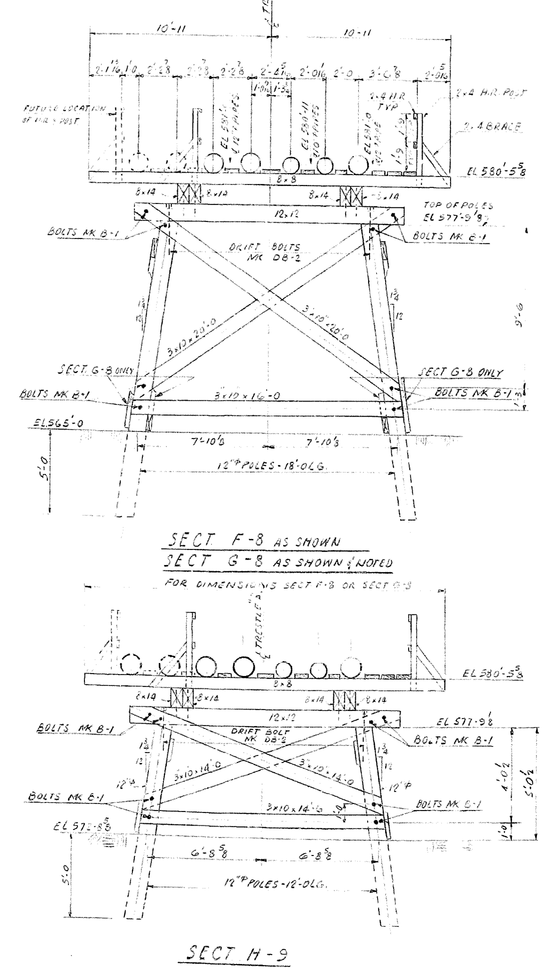
AMERICAN ELECTRIC POWER SERVICE CORP.
2 BROADWAY NEW YORK

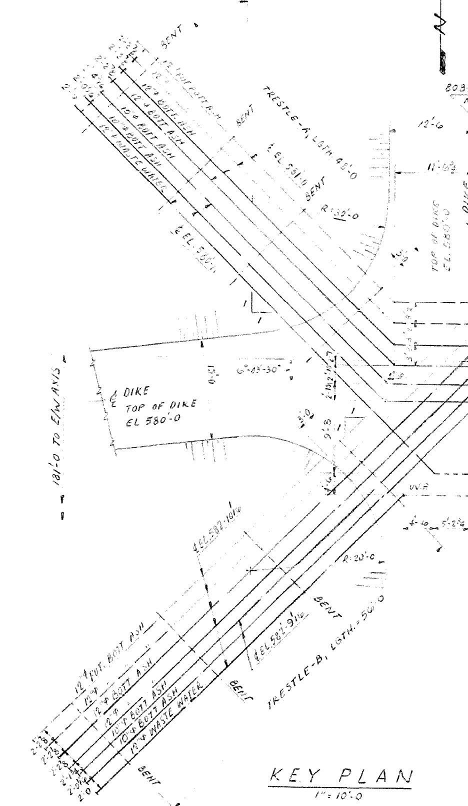
DR. NO. 12-3649











TIMBER SCHEDULE - TRESTLE "B"

QUANTITY	SIZE	LENGTH	TOTAL LGTH	NO. BD-FEET	REMARKS
4	2×4	56'-0	224'-0		RAILING
16	2×4	4'-6	72'-0	235	" POST
16	2×4	3'-6	56'-0		" BRACE
8	8×8	21'-6	172'-0	917	PIPE SUPPORT BEAM
4	12×12	16'-0	64'-0	768	CAP BEAM
6	8×14	20'-0	120'-0	1120	STRINGERS
7	3×10	32'-4	226'-4		FLOOR PLANKING
7	3×10	23'-8	165'-8		BRACING
2	3×10	21'-0	42'-0		do
4	3×10	21'-6	86'-0	1854	do
2	3×10	18'-0	36'-0		do
2	3×10	17'-0	34'-0		do
1	3×10	15'-6	15'-6		BRACING
4	3×10	24'-0	96'-0		
2	3×12	16'-0	32'-0	96	FILLER
				4990	NET TOTAL

BOLT SCHEDULE - TRESTLE "B"

MARK	QUANTITY	SIZE	LENGTH	TYPE	REMARKS
B-1	32	7/8"φ	1'-5	SQ.HD.&SQ.NUT	2-R WASHERS, 2" THREAD
B-2	2	7/8"φ	1'-8	do do	do do
DB-1	20	7/8"φ	1'-8	DRIFT BOLT	WEDGE PT, BUTTON HD.
DB-2	6	7/8"φ	1'-10	do do	do do
DB-3	4	7/8"φ	2'-2	do do	do do

CREOSOTED DISTRIBUTION POLES - TRESTLE "B"

QUANTITY	TYPE	DIA	LENGTH
4	BATTER	12"φ	20'-0
2	BATTER	12"φ	15'-6

TIMBER SCHEDULE - TRESTLE "A"

QUANTITY	SIZE	LENGTH	TOTAL LGTH	NO. BD-FEET	REMARKS
4	2×4	48'-0	192'-0		RAILING
14	2×4	4'-6	63'-0	203	" POST
14	2×4	3'-6	49'-0		" BRACE
7	8×8	21'-10	152'-10	815	PIPE SUPPORT BEAM
4	12×12	16'-0	64'-0	768	CAP BEAM
6	8×14	18'-0	108'-0	1008	STRINGERS
1	3×12	24-4	24-4		FLOOR PLANKING
1	3×12	23'-8	23'-8	240	FLOOR PLANKING
2	3×12	16'-0	32-0		FILLER
2	3"×10"	21'-0	42-0		BRACING
6	3×10	20'-0	120'-0		do
2	3×10	16'-6	33'-0		do
2	3×10	16'-0	32'-0	1430	do
2	3×10	14'-6	29'-0		BRACING
6	3×10	24'-4	146'-0		
6	3×10	23'-8	142'-0		
2	3×10	14-0	28'-0		
				4464	NET-TOTAL

BOLT SCHEDULE - TRESTLE "A"

MARK	QUANTITY	SIZE	LENGTH	TYPE	REMARKS
B-1	32	7/8"φ	1'-5	SQ.HD.&SQ.NUT	2-R WASHERS, 2" THREAD
B-2	2	7/8"φ	1'-8	do do	do do
DB-1	14	7/8"φ	1'-8	DRIFT BOLT	WEDGE PT, BUTTON HD
DB-2	6	7/8"φ	1'-10	do do	do do
DB-3	4	7/8"φ	2'-2	do do	do do

CREOSOTED DISTRIBUTION POLES - TRESTLE "A"

QUANTITY	TYPE	DIA	LENGTH
4	BATTER	12"φ	18'-0
2	"	12"φ	12'-0

GENERAL NOTES

ALL TIMBER TO RECEIVE TWO COATS OF CREOSOTE WHICH IS TO BE FURNISHED BY THE FIELD

ALL TIMBER TO BE DOUGLAS FIR - GRADE I OR BETTER
POLES ARE TO BE SOUTHERN PINE

MATERIAL

ALL MATERIALS: TIMBER, BOLTS ETC. TO BE FURNISHED BY FIELD

REFERENCE DRAWINGS

12-5224 ASH REMOVAL, WASTE WATER & RECIRC WATER PIPING AT BOTT ASH STORAGE AREA UNITS 1 & 2
12-3642 BOTTOM ASH STORAGE AREA

DATE	NO.	DESCRIPTION	APPD

REVISIONS

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KENTUCKY POWER COMPANY
BIG SANDY PLANT
BIG SANDY KENTUCKY

BOTTOM ASH AREA
TRESTLES FOR BOTTOM ASH & WASTE WATER PIPES

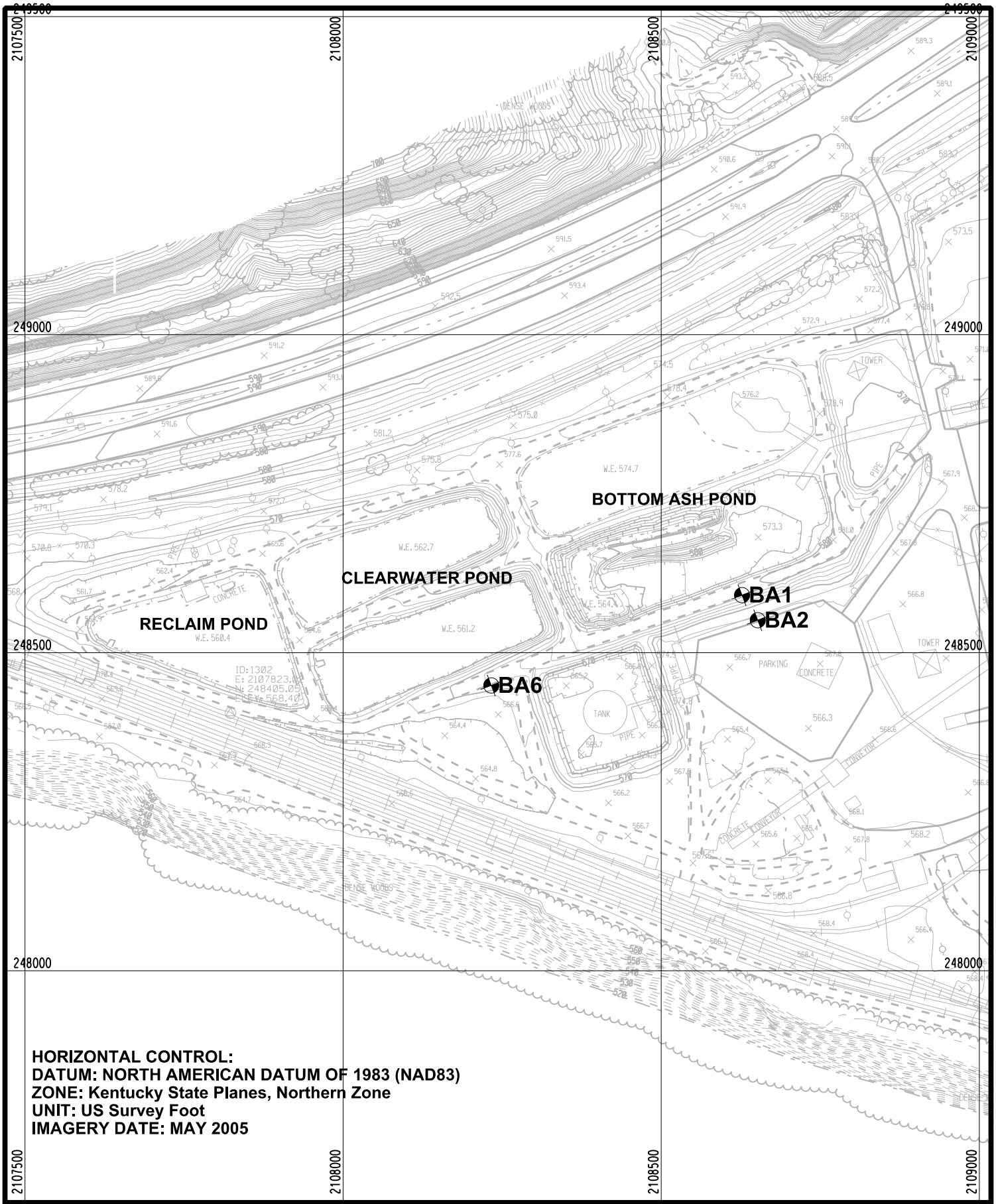
DR. NO. 12-3649

ARCH. ELEC. MECH. STR.
SCALE: AS NOTED
DR. LUCIEN
CH. I.T.
SQ. LDR. M.E.
DATE: 5/29/68
APPROVED BY — ENGINEERING DIV; DESIGN DIV

AMERICAN ELECTRIC POWER SERVICE CORP.
2 BROADWAY NEW YORK

ATTACHMENT C

INSTRUMENTATION LOCATION MAP



HORIZONTAL CONTROL:
DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
ZONE: Kentucky State Planes, Northern Zone
UNIT: US Survey Foot
IMAGERY DATE: MAY 2005

DRN BY:	BIG SANDY POWER STATION	DWG NO: FIGURE 1 REV 1
DATE:	SHEET 1 OF 3	AEP AMERICAN ELECTRIC POWER
SCALE: 1"=200'	BOTTOM ASH COMPLEX	AEP SERVICE CORP. 1 RIVERSIDE PLAZA COLUMBUS, OH 43215

PLOT DATE: 9/2/2016 PLOT TIME: 9:54:56 AM BY: a252086

ATTACHMENT D

Stage-Storage Curve

Big Sandy Bottom Ash Pond
Stage-Storage Curve