VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Tammy Jett, Principal Environmental Specialist, being duly sworn, deposes and says that she has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of her knowledge, information and belief.

Tammy Jett

Tammy Jett, Affiant

Subscribed and sworn to before me by Tammy Jett on this 17th day of April, 2015.

Adele M. Frisch

NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Tom Wiest, Engineer II, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

Tom Wiest, Affiant

Subscribed and sworn to before me by Tom Wiest on this 17TH day of April, 2015.

NOTARY PUBLIC

My Commission Expires: 1/5/2019

VERIFICATION

STATE OF OHIO)
) **SS:**
COUNTY OF HAMILTON)

The undersigned, Nick Sellet, Supt Technical, being duly sworn, deposes and says that he has personal knowledge of the matters set forth in the foregoing data requests, and that the answers contained therein are true and correct to the best of his knowledge, information and belief.

Nick Sellet, ~~Affiant~~

Subscribed and sworn to before me by Nick Sellet on this 17TH day of April, 2015.

NOTARY PUBLIC

ADELE M. FRISCH
Notary Public, State of Ohio
My Commission Expires 01-05-2019

My Commission Expires: 1/5/2019

TABLE OF CONTENTS

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-001

REQUEST:

What is the anticipated number of remaining years of the current usage of East Bend Station generating facility?

RESPONSE:

Based upon current depreciation of the estimated useful life of the East Bend Generating Station, the number of remaining years is approximately 26 years. However, as described in Public Staff-DR-01-010 in Case No. 2014-00201,[1] emerging environmental regulations may impact the life span of East Bend Generating Station.

The Company continues to believe that based upon known emerging environmental regulations, from a reasonable planning perspective, East Bend Generating Station should have a useful asset life of at least 10 years.

PERSON RESPONSIBLE: Nicholas R. Sellet

[1] *In the Matter of: The Application of Duke Energy Kentucky, Inc., For (1) A Certificate of Public Convenience And Necessity Authorizing the Acquisition of the Dayton Power & Light Company's 31% Interest in the East Bend Generating Station; (2) Approval of Duke Energy Kentucky, Inc.'s Assumption of Certain Liabilities in Connection with the Acquisition; (3) Deferral of Costs Incurred as Part of the Acquisition; and (4) All Other Necessary Waivers, Approvals, and Relief,* Case No. 2014-00201.

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-002

REQUEST:

Will all cells planned in construction conform to EPA's recent requirements for a coal combustion residue landfills?

a. If no, please explain the rationale.

b. If no, will Duke take steps to limit potential financial liability for the cells not in compliance with the CCR rule?

RESPONSE:

The proposed landfill partially meets the US EPA's requirements for coal combustion residuals rule (CCR rule).

The proposed design of the liner and cap of the proposed landfill do not meet the CCR rule requirements. Cell 1 of the proposed landfill is not required to meet the liner requirements if construction has commenced on site by October 2015. Duke Energy Kentucky anticipates that these activities will be in progress by the required date if the Kentucky Public Service Commission approves Duke Energy Kentucky's filing on the current, accelerated schedule. The design of the future cells and cap of the proposed landfill will be modified to meet the CCR rule requirements.

Duke Energy Kentucky anticipates that modifications to the groundwater monitoring network and statistical analysis plans for the proposed landfill will be

required. It is possible that additional dust mitigation and storm water controls will be required for the proposed landfill.

Detailed engineering evaluations must be completed in order to make a complete determination of conformation to the CCR rule. Based on Duke Energy Kentucky's interpretation of the CCR rule, the anticipated changes to the landfill design are feasible and minor-to-moderate in scope.

The financial impact of the rule, assuming construction of Cell 1 commences before October, has been included in the Application.

PERSON RESPONSIBLE: Tammy Jett

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-003

REQUEST:

Provide all materials and documentation of alternative sites Duke explored to site the proposed landfill.

a. If no other sites were explored, why not?

RESPONSE:

No other sites were explored in depth, except for the original East Bend Station siting study performed prior to East Bend Station's construction and no documentation of additional sites being explored exists.

Landfill construction requires significant amounts of land and 1-2 years at a minimum to permit. The Company is not aware of any other options that provide sufficient acres of land that are near the East Bend Station and are available for acquisition.

The location for the proposed landfill was selected for the following reasons: 1) being adjacent to the existing plant will minimize operating and transportation costs, 2) being adjacent to the existing plant eliminates landfill truck traffic on public roads, and 3) the existing topography of the proposed location does not require significant cut and fill of soil for construction - this characteristic will allow for lower construction costs when compared to areas with more hills.

PERSON RESPONSIBLE: Thomas E. Wiest

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-004

REQUEST:

Provide maps or other evidence demonstrating whether the proposed site is located in a floodplain.

RESPONSE:

AG-DR-01-004(a) Attachment shows the FEMA floodplain limits (the 100 year floodplain) and its relationship to the limits of waste of the proposed landfill. This graphic shows the 100 year floodplain extending into the limits of waste of the proposed landfill in its southwestern portion.

The aforementioned portion of the proposed landfill that was inside of the 100 year floodplain was filled in to increase the elevation of this portion of the proposed landfill site so that it was not located in the floodplain. This work was completed in accordance with applicable regulations in 2007. See AG-DR-01-004(b) Attachment that was included in the landfill PTI for additional details of this work.

PERSON RESPONSIBLE: Nicholas R. Sellet/Thomas E. Wiest

SCALE IN FEET
0 400 800 1200 1600

LEGEND
LIMITS OF WASTE
FEMA FLOODPLAIN LIMITS

ATTACHMENT 15

WEST SPECIAL WASTE LANDFILL
EAST BEND STATION
BOONE COUNTY, KENTUCKY

Date	No.	Revision Description	Approved

PROJECT NO. 011-09323-005

Drawn By:	EDV	Designed By:	EDV
Approved By:	BJL	Date:	5/19/06
Scale:	1" = 400'		

BBCM

ATTACHMENT 22

Floodplain Permitting

West Special Waste Landfill
East Bend Station
Boone County, Kentucky

Permit submitted to the Commonwealth of Kentucky Natural Resources & Environmental Protection Cabinet, Department for Environmental Protection, Division of Water.

Date of issuance: May 17, 2007 Date of Expiration: May 17, 2008

Boone County

Stream Construction Permit
For construction in or Along a Stream

Permit #16450

Issue to: Duke Energy
139E 4th St. Rm 552-A
Cincinnati OH 45201

Location of Work: East Bend Power Plant
6293 East Bend Road
Union KY 41091

Description of Permitted Work: Placement of fill in the left descending bank of the Ohio River at about stream mile 472.8, with coordinates 38.9171, -34.8639

Work must be done in full compliance with the Conditions of the Kentucky Division of Water Permit that has been issued for this work.

Work must commence before the expiration date noted above or this permit becomes null and void.

ERNIE FLETCHER
GOVERNOR

RECEIVED
MAY 21 2007
BBCM

ENVIRONMENTAL AND PUBLIC PROTECTION CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
14 REILLY ROAD
FRANKFORT, KENTUCKY 40601
www.water.ky.gov

TERESA J. HILL
SECRETARY

STREAM CONSTRUCTION PERMIT

For Construction In Or Along A Stream

Issued to: **Duke Energy**
Address: **139 E 4th St Rm 552-A**
Cincinnati, OH 45201

Permit expires on
May 17, 2008

Permit No. **16450**

In accordance with KRS 151.250 and KRS 151.260, the Environmental and Public Protection Cabinet approves the application dated **March 12, 2007** for **construction of a landfill in the left descending floodplain of Ohio River at about stream mile 472.8 (508.6 miles below Pittsburgh), with coordinates 38.9171, -84.8639, in Boone County**.

There shall be no deviation from the plans and specifications submitted and hereby approved unless the proposed change shall first have been submitted to and approved in writing by the Cabinet. This approval is subject to the attached limitations.

This permit is nontransferable and is not valid unless actual construction of this authorized work is begun prior to the expiration date noted above. Any violation of the Water Resources Act of 1966 as amended is subject to penalties as set forth in KRS 151.990.

If you have any questions regarding this permit, please call (502) 564-3410.

Issued May 17, 2007.

By:
Art Clay, P.E., Manager
Water Resources Branch

AC/KA/kla

pc: Florence Regional Office
Mark Martin – Boone County
Stephen Loskota, PE – BBC&M Engineering, Inc.
File

Stream Construction Permit

Duke Energy KY East Bend
Facility Requirements
Permit Number:16450
Activity ID No.: APE20070002

ACTV2 (fill) construction of a landfill:

Submittal/Action Requirements:

Condition No.	Condition
S-1	Duke Energy must submit final construction report: Due within 90 days after completion of construction Duke Energy must notify in writing that the project has been completed in accordance with the approved plans and specifications. A Final Construction Report Form is enclosed. [401 KAR 4:060 Section 3(2)]

Narrative Requirements:

Condition No.	Condition
T-1	This permit is issued from the standpoint of stream obstruction only and does not constitute certification of any other aspect of the proposed construction. The applicant is liable for any damage resulting from the construction, operation, or maintenance of this project. This permit has been issued under the provisions of KRS Chapter 151.250 and regulations promulgated pursuant thereto. Issuance of this permit does not relieve the permittee from the responsibility of obtaining any other permits or licenses required by this Cabinet and other state, federal and local agencies. [KRS 151.250]
T-2	A copy of this permit must be available at the construction site. [KRS 151.250]
T-3	Any work performed by or for Duke Energy that does not fully conform to the submitted application or drawings and the limitations set forth in this permit, is subject to partial or total removal and enforcement actions pursuant to KRS 151.280 as directed by the Kentucky Department for Environmental Protection. [KRS 151.280]
T-4	Any design changes or amendments to the approved plans must be submitted to the Division of Water and approved in writing prior to implementation. [KRS 151.250]
T-5	Since Boone County participates in the National Flood Insurance Program, a local floodplain permit must be obtained prior to beginning of construction. Upon completion of construction Duke Energy must contact the local permitting agency for final approval of the construction for compliance with the requirements of the local floodplain ordinance. [401 KAR 4:060 Section 1(16)]
T-6	It is the intent of this permit that no fill be placed within the limits of the designated floodway. The floodway limits are determined by the Federal Insurance Administration of the Federal Emergency Management Agency (FEMA), and shown on the Flood Boundary and Floodway Map included in the Flood Insurance Study for Boone County dated 6/4/2007. Copies of the Flood Insurance Study are on file with Mark Martin, the Division of Water, and the Federal Insurance Administration in Atlanta, Georgia. [401 KAR 4:060 Section 4(1)]

Stream Construction Permit
Duke Energy KY East Bend
Facility Requirements
Permit Number:16450
Activity ID No.: APE20070002

ACTV2 (continued):

Narrative Requirements:

Condition No.	Condition
T-7	Duke Energy must use standard silt control practices in such quantity to prevent siltation of Ohio River. [KRS 224.70-110]
T-8	To avoid secondary adverse impacts, all materials used shall be stable and inert, free from pollutants and floatable objects, and shall meet all appropriate engineering standards. (Inert here means materials that are not chemically reactive and that will not rot or decompose, such as soil, rock, broken concrete or similar materials.). [401 KAR 4:060 Section 7]
T-9	Construction other than as authorized by this permit shall require written approval from the Division of Water. [401 KAR 4:060]

COMMONWEALTH OF KENTUCKY
NATURAL RESOURCES & ENVIRONMENTAL PROTECTION CABINET
DEPARTMENT FOR ENVIRNOMENTAL PROTECTION
DIVISION OF WATER

APPLICATION FOR PERMIT TO CONSTRUCT ACROSS OR ALONG A STREAM AND / OR WATER QUALITY CERTIFICATION

Chapter 151 of the Kentucky Revised Statutes requires approval from the Division of Water prior to any construction or other activity in or along a stream that could in any way obstruct flood flows or adversely impact water quality. *If the project involves work in a stream, such as bank stabilization, dredging or relocation, you will also need to obtain a 401 Water Quality Certification (WQC) from the Division of Water.* This completed form will be forwarded to the Water Quality Branch for WQC processing. The project may not start until all necessary approvals are received from the KDOW. For questions concerning the WQC process, contact John Dovak at 502/564-3410.

If the project will disturb more than 1 acre of soil, you will also need to complete the attached Notice of Intent for Storm Water Discharges, and return both forms to the Floodplain management Section of the KDOW. This general permit will require you to create an implement an erosion control plan for the project.

1. **OWNER:** Duke Energy
   Give name of person(s), company, governmental unit, or other owner of proposed project.
   MAILING ADDRESS: 139 East Fourth Street, Room 552-A / 1065 Woodman Drive, Cincinnati, Ohio 45201 / 45432
   TELEPHONE #: (513) 287-2269 **EMAIL:** jim.stieritz@cinergy.com
2. **AGENT:** BBC&M Engineering, Inc. - Stephen J. Loskota, P.E.
   Give name of person(s) submitting application, if other than owner.
   ADDRESS: 6190 Enterprise Ct
   Dublin, OH 43016
   TELEPHONE #: (614) 793-2226 **EMAIL:**
3. **ENGINEER:** Stephen Loskota **P.E. NUMBER:** 24072
   Contact Division of Water if waiver can be granted.
   TELEPHONE #: (614) 793-2226 **EMAIL:** sloskota@bbcm.com
4. **DESCRIPTION OF CONSTRUCTION:** The site is to be developed as a permitted landfill for the disposal of lime
   Describe the type and purpose of construction and describe stream impact
   inerts, pond ash, synthetic gypsum, and flue gas desolphorization waste. No stream impacts are anticipated.
5. **COUNTY:** Boone County **NEAREST COMMUNITY:** Rising Sun, Indiana
6. **USGS QUAD NAME** Rising Sun, Aberdeen **LATITUDE/LONGITUDE:** 38° 52' 30" / 84° 52' 30"
7. **STREAM NAME:** Ohio River **WATERSHED SIZE (in acres):** 121,229,595 acres Ohio River Basin
8. **LINEAR FEET OF STREAM IMPACTED:** None
9. **DIRECTIONS TO SITE:** From Florence - Travel south along Interstate 75 for approximately 4 miles to Exit 178, then turn right and head west along State Route 536 for approximately 12 miles, then turn left and head south on to State Route 338 for approximately 1 miles, then turn left and head east for approximately 500 feet, then turn south into the entrance to the East Bend Generating Station and advance to the security gate.

10. **IS ANY PORTION OF THE REQUESTED PROJECT NOW COMPLETE?** Yes ☒ No If yes, identify the completed portion on the drawings you submit and indicate the date activity was completed. DATE: _____

11. **ESTIMATED BEGIN CONSTRUCTION DATE:** Landfill - Spring 2010, Floodway Filling - Spring 2021

12. **ESTIMATED END CONSTRUCTION DATE:** Floodway Filling - Summer 2021, Landfill - 2040

13. **HAS A PERMIT BEEN RECEIVED FROM THE US ARMY, CORPS of ENGINEERS?** Yes ☒ No If yes, attach a copy of that permit.

14. **THE APPLICANT *MUST* ADDRESS PUBLIC NOTICE:**

(a) **PUBLIC NOTICE HAS BEEN GIVEN FOR THIS PROPOSAL BY THE FOLLOWING MEANS:**

____ **Public notice in newspaper having greatest circulation in area** (provide newspaper clipping or affidavit)

____ **Adjacent property owner(s) affidavits** (Contact Division of Water for requirements.)

(b) X **I REQUEST WAIVER OF PUBLIC NOTICE BECAUSE:**

No Stream Impacts

Contact Division of Water for requirements.

15. **I HAVE CONTACTED THE FOLLOWING CITY OR COUNTY OFFICIALS CONCERNING THIS PROJECT:**

Mark Martin, Bldg Inpsector, P.O. Box 900, Burlington, Kentucky 41005, (859)-334-2218

Give name and title of person(s) contacted and provide copy of any approval city or county may have issued.

16. **LIST OF ATTACHMENTS:** A Vicinity Map, a Location Map on the USGS Quad, a Floodway Map from the Flood Insurance Rate Map showing the area with fill, A cross-section added to the HEC-RAS program with existing and proposed conditions, HEC-RAS output showing the cross section having no impact

List plans, profiles, or other drawings and data submitted. Attach a copy of a 7.5 minute USGS topographic map clearly showing the project location.

17. **I,** Duke Energy **CERTIFY THAT THE OWNER OWNS OR HAS EASEMENT RIGHTS ON ALL PROPERTY ON WHICH THIS PROJECT WILL BE LOCATED OR ON WHICH RELATED CONSTRUCTION WILL OCCUR** (for dams, this includes the area that would be impounded during the design flood).

18. **REMARKS:** _____

I hereby request approval for construction across or along a stream as described in this application and any accompanying documents. To the best of my knowledge, all the information provided is true and correct.

SIGNATURE: Brian L Weigh

Owner or Agent sign here. (If signed by Agent, a Power of Attorney should be attached.)

DATE: 2/28/2007

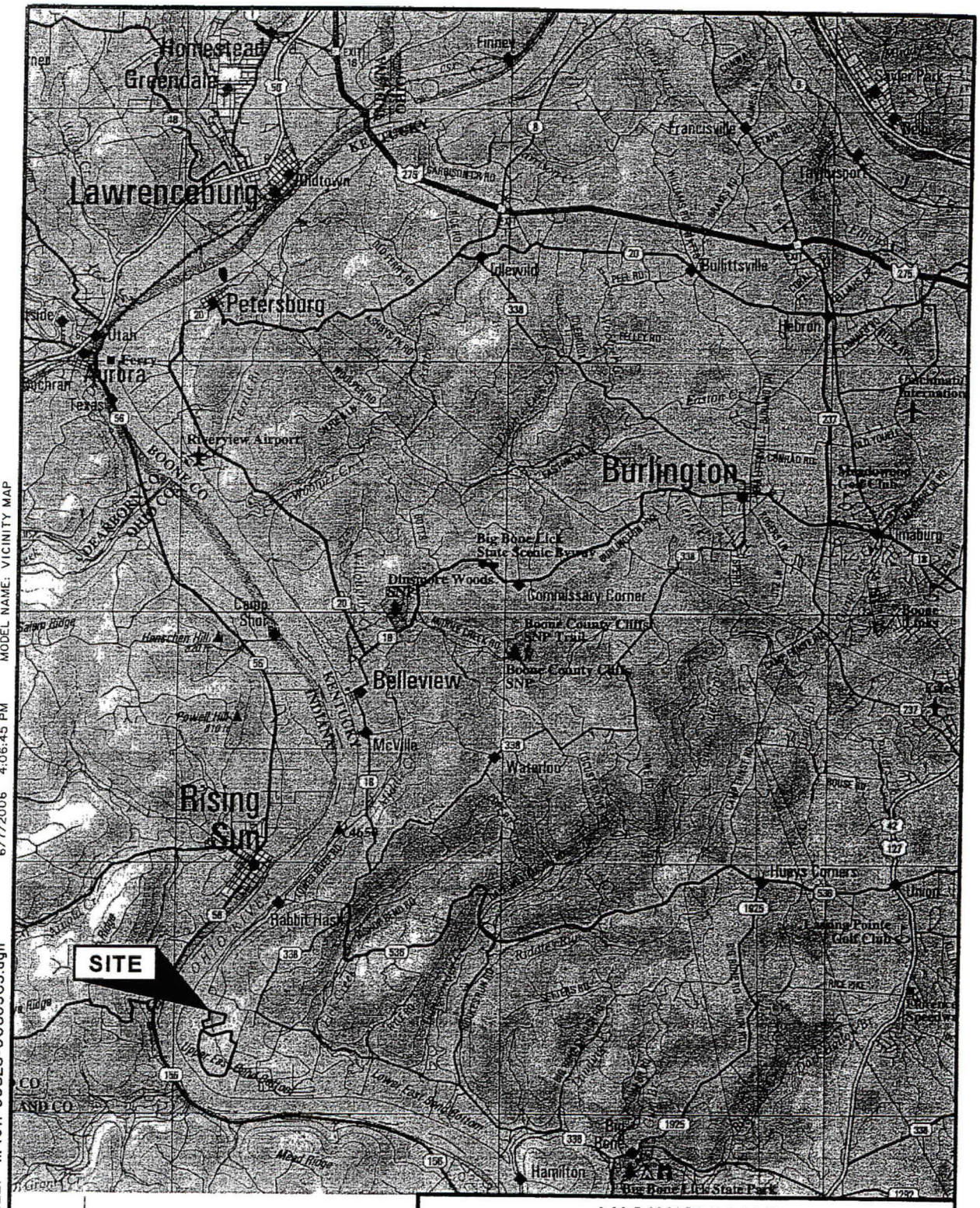
SIGNATURE OF LOCAL FLOODPLAIN COORDINATOR: Mark E Martin

Permit application will be returned to applicant if not properly endorsed by the local floodplain coordinator.

DATE: 4/17/07

SUBMIT APPLICATION AND ATTACHMENTS TO:

Floodplain Management Section
Division of Water
14 Reilly Road
Frankfort, KY 40601



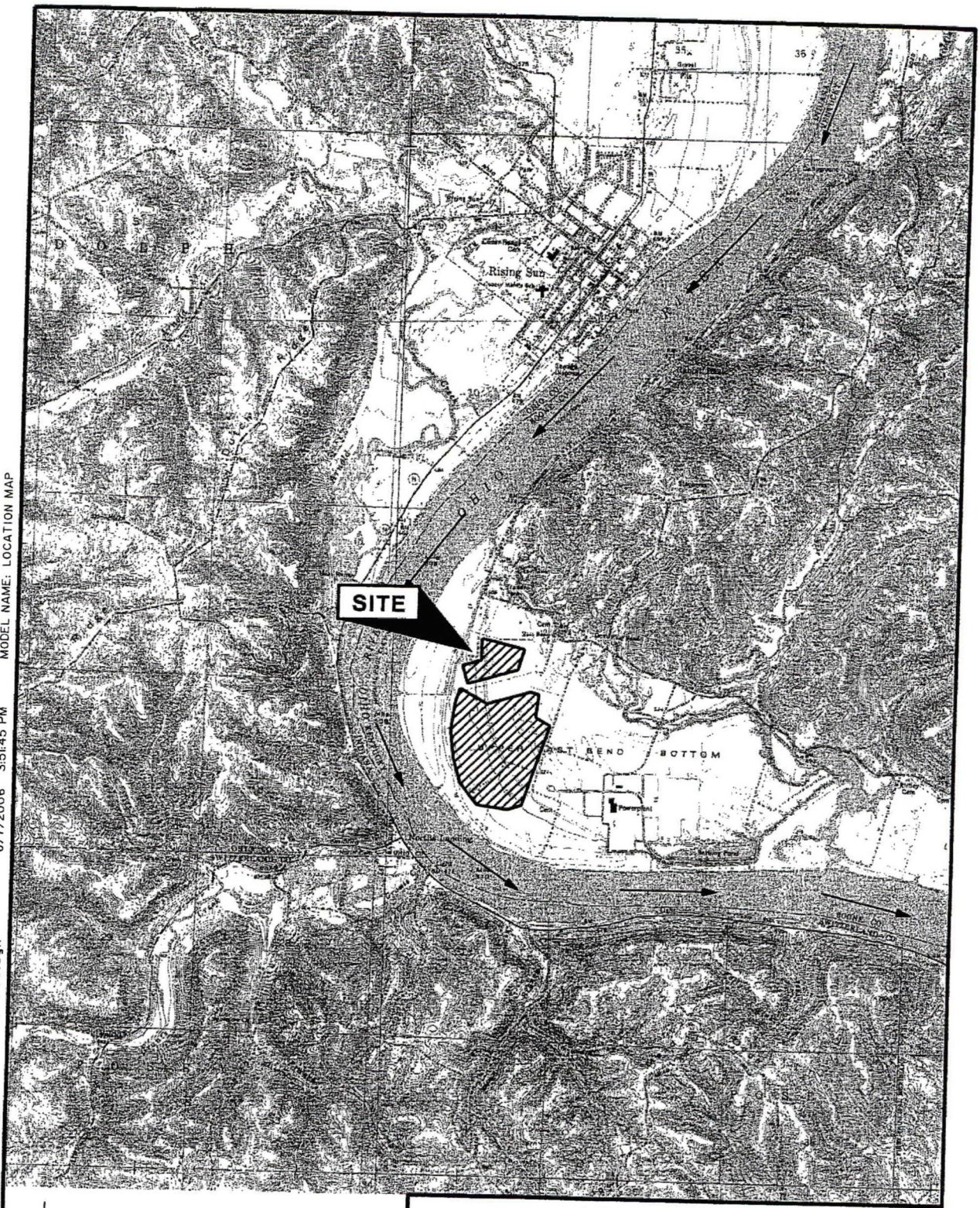
BBC&M DRAWING FILE: ...\011-09323-005USGS.dgn 6/7/2006 4:06:45 PM MODEL NAME: VICINITY MAP

VICINITY MAP

EAST BEND LANDFILL
BOONE COUNTY, KENTUCKY

Project: 011-09323-005	Drawn By: DJH
Drawing Date: 6/2/06	Approved By: DJH
Revision Date:	Scale: 1"=???'

BBCM
Columbus
(614) 793-2226
Cleveland
(216) 901-1000
Cincinnati
(513) 771-8471
Dayton
(937) 424-1011



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SCALE IN FEET
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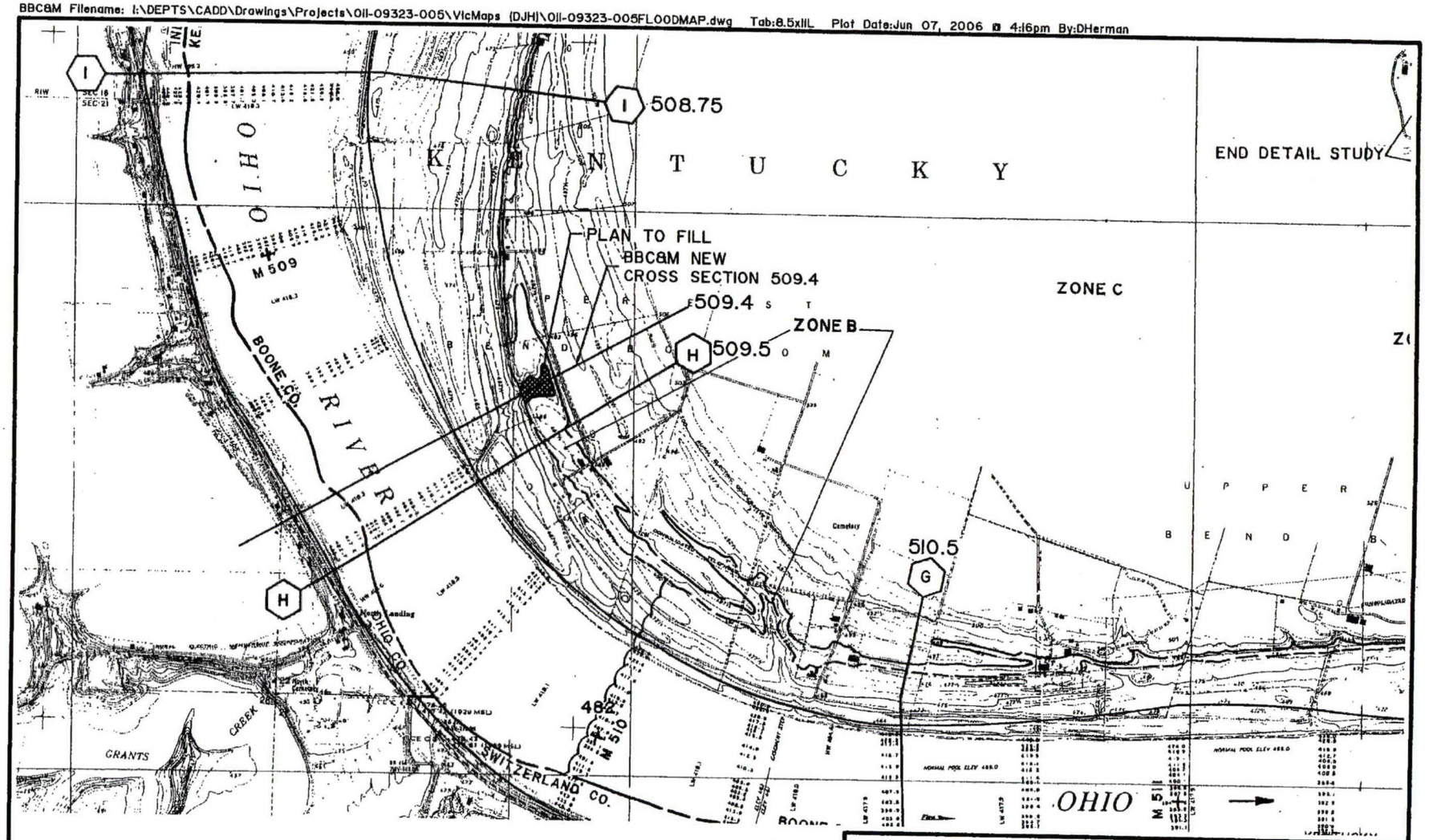
LOCATION MAP

EAST BEND LANDFILL
BOONE COUNTY, KENTUCKY

Project: 011-09323-005	Drawn By: DJH
Drawing Date: 6/2/06	Approved By: DJH
Revision Date:	Scale: 1"=4000'

BBCM
Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

BBC&M Filename: I:\DEPTS\CADD\Drawings\Projects\011-09323-005\VicMaps (DJH)\011-09323-005FLOODMAP.dwg Tab:8.5xIIL Plot Date:Jun 07, 2006 @ 4:16pm By:DHerman

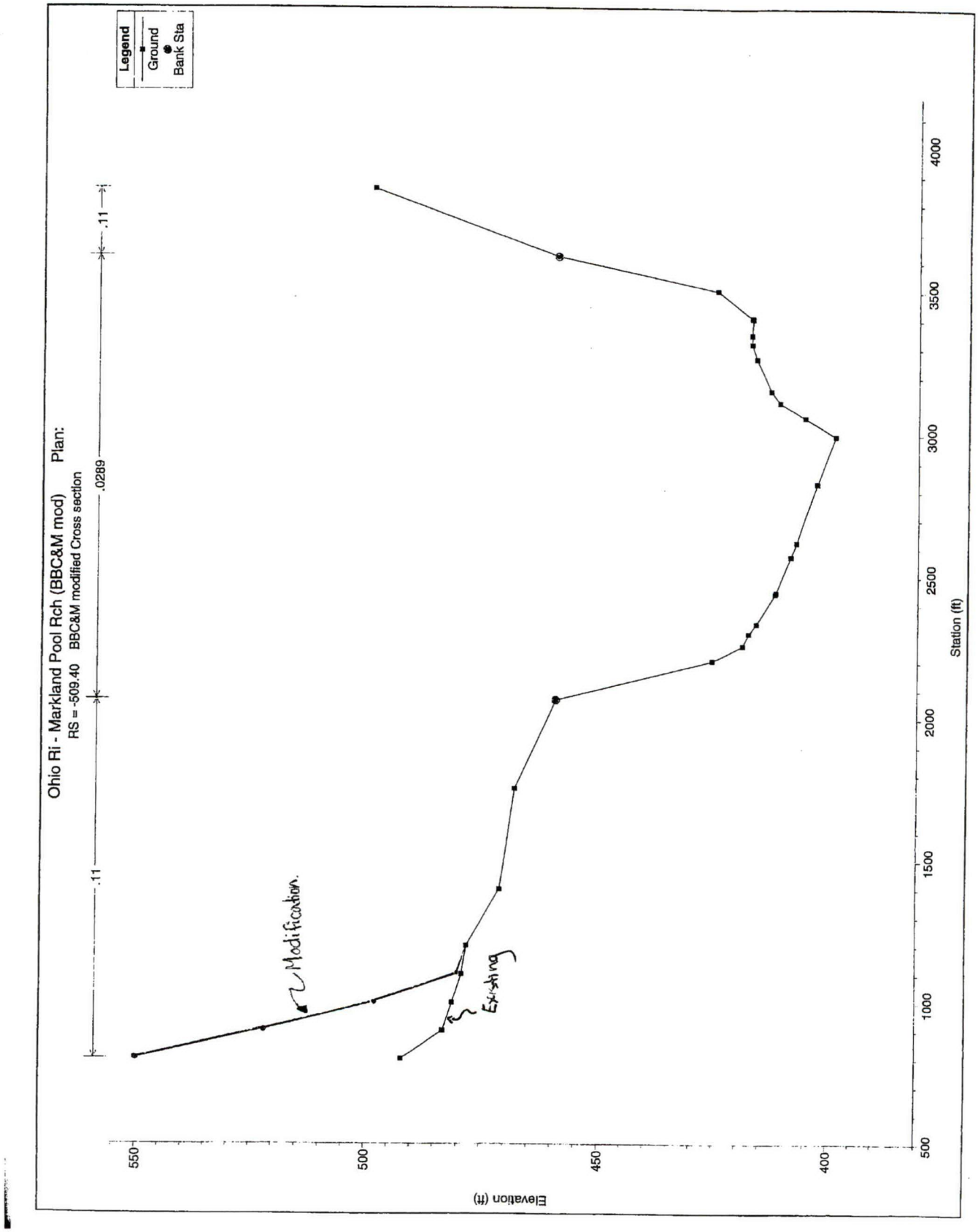


FLOODWAY MAP

EAST BEND LANDFILL
BOONE COUNTY, KENTUCKY

Project: 011-09323-005	Drawn By: DJH
Drawing Date: 9/12/05	Approved By: SJL
Revision Date:	Scale: 1" = 2000'

BBCM
Columbus
(614) 793-2226
Cleveland
(216) 901-1000
Cincinnati
(513) 771-8471
Dayton
(937) 424-1011



OHIO RIVER CROSS SECTION RIVER MILE 509.40

HEC-RAS River: RIVER-1 Reach: Reach-1 Profile: Natural

Reach	River Sta	Profile	Plan	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
				(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Reach-1	-502.00	Natural	BBCM-FW-BM	760000.00	407.78	485.26		485.80	0.000068	5.99	152550.70	4825.33	0.14
Reach-1	-502.00	Natural	BBCM-FW-AM	760000.00	407.78	485.26		485.80	0.000068	5.99	152550.00	4825.33	0.14
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Reach-1	-509.40	Natural	BBCM-FW-AM	760000.00	398.70	482.30		483.11	0.000076	7.29	116985.20	2669.91	0.16
Reach-1	-509.50	Natural	BBCM-FW-BM	760000.00	400.07	482.21		483.07	0.000083	7.48	110786.50	2377.11	0.16
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Reach-1	-510.50	Natural	BBCM-FW-AM	760000.00	398.08	481.78		482.62	0.000087	7.38	111548.40	2455.76	0.16
Reach-1	-510.75	Natural	BBCM-FW-BM	760000.00	393.48	481.52		482.49	0.000083	7.95	104619.40	2048.99	0.16
Reach-1	-510.75	Natural	BBCM-FW-AM	760000.00	393.48	481.52		482.49	0.000083	7.95	104619.40	2048.99	0.16
Reach-1	-512.50	Natural	BBCM-FW-BM	760000.00	407.08	481.12		481.73	0.000061	6.33	151608.70	4703.58	0.14
Reach-1	-512.50	Natural	BBCM-FW-AM	760000.00	407.08	481.12		481.73	0.000061	6.33	151608.70	4703.58	0.14
Reach-1	-513.75	Natural	BBCM-FW-BM	760000.00	410.99	480.69		481.30	0.000066	6.40	147855.70	3941.61	0.14
Reach-1	-513.75	Natural	BBCM-FW-AM	760000.00	410.99	480.69		481.30	0.000066	6.40	147855.70	3941.61	0.14

HEC-RAS OUTPUT TABLE

BCR Recorder A17

PUBLIC NOTICE

Notice is hereby given that the Duke Energy East Bend Station located at 6293 Beaver Road, Rabbit Hash, Kentucky, has filed an application with the Natural Resources and Environmental Protection Cabinet to fill approximately 0.7 acres of the floodplain of the Ohio River. From Florence, the property is located by traveling south along Interstate 75 for approximately 4 miles to Exit 178, then turning right and heading west along State Route 536 for approximately 12 miles, then turning left and heading south onto State Route 338 for approximately 1 mile, then turning left and heading east for approximately 50 feet, then turning south into the entrance to the East Bend Station and advancing to the security gate. Any comments or objections concerning this application should be directed to: Kentucky Division of Water, Water Resources Branch, 14 Reilly Road, Frankfort Office Park, Frankfort, Kentucky 40601. Phone: (502) 564-3410.

COMMISSIONER'S SALE
BOONE CIRCUIT COURT, CASE NO. 06-CI-2330

WACHOVIA BANK OF DELAWARE, NA

PLAINTIFF(S)

VERSUS}

NOTICE OF SALE

OLLIE COOK, DECEASED, ET AL.

DEFENDANT(S)

By virtue of a judgment and order of sale of the Boone Circuit Court rendered MARCH 15, 2007 the above case, I shall proceed to offer for sale at the Justice Center Building in Burlington, Kentucky, to the highest bidder, at public auction on THURSDAY, APRIL 19, 2007 at the hour of 9:00 a.m. or thereabouts, the following described property to-wit:

ADDRESS: 4227 BULLITTSVILLE ROAD, BURLINGTON, KY 41005

LEGAL DESCRIPTION

Group No. 2018

Situated in the City of Burlington, County of Boone and Commonwealth of Kentucky:

Located generally on the west side of the Burlington-Bullittsville Road north of Burlington and beginning at the intersection of the north line of the England farm tract with the centerline of said road; thence along the centerline of said road South 26° 30'East, one hundred fifty (150) feet; thence leaving the road South 63° 30' West, two hundred and five (205) feet; thence parallel to said road North 26° 30' West, 278.1 feet to said north line of said farm tract; thence therewith South 84° 30' East, 241.7 feet to the beginning containing 1.0 acre and subject to legal highways.

Being the same property conveyed to Dorsey Cook and Ollie Cook, husband and wife, by Deed from Robert C. Holyoke and Willa Mae Holyoke, husband and wife, dated January 25, 1962, and recorded January 26, 1962 in Deed Book 152, page 310 of the Boone County Clerk's Office at Burlington, Kentucky. The said Dorsey Cook has since died, and by virtue of the survivorship clause in said deed, the interest of said decedent is now vested in Ollie Cook.

Being the same property conveyed to Ollie Cook and Dorsey Cook, husband and wife, from Robert C. Holyoke and Willa Mae Holyoke, husband and wife, by deed dated January 25, 1962 and recorded January 26, 1962, in Deed Book of the records of the Boone County Clerk's office, Burlington, Kentucky. Ollie Cook and Dorsey Cook are deceased.

TERMS OF SALE: The property shall be sold as a whole. The purchaser may pay all or part of the purchase price in cash, and may pay the balance of the purchase price on a credit of 30 days after date of sale; said credit shall be granted only upon the execution by the purchaser of bond, with surety thereon; and said surety shall be a lending institution authorized and doing business in Kentucky, or a reputable fidelity or surety company, authorized and doing business in Kentucky, and only if said surety be acceptable to the Commissioner of the Boone Circuit Court; and an authorized officer of the surety must be present at the sale or must have given the Commissioner adequate assurance of its intent to be surety prior to or at the sale; and said Bond shall be, and shall remain, a lien on the property sold as additional security for the payment of the full purchase price, and shall have the full force and effect of a Judgment; and said Bond shall bear interest at the rate of Twelve (12%) Percent per annum until paid. The purchaser shall be required to pay the sum of 10% of the bid amount in cash or certified check on the purchase at the time of sale. The successful bidder at the sale shall, at bidder's own expense, carry fire and extended insurance coverage on any improvements from the date of sale until the purchase price is fully paid, with a loss payable clause to the Commissioner of the Boone Circuit Court. Failure of the purchaser to effect such insurance shall not affect the validity of the sale or the purchaser's liability thereunder, but shall entitle, but not require, a lien holder herein, after giving notice to the Commissioner, to effect said insurance and furnish the policy or evidence thereof to the Commissioner, and the premium thereon or the proper portion thereof shall be charged to the purchaser as purchaser's cost. The property shall be sold subject to ad valorem taxes for the year 2007 and all subsequent years thereafter; easements, restrictions and stipulations of record; assessments for public improvements levied against the property, if any; existing zoning ordinances, statutes, laws, or regulations; and any facts which an inspection and accurate survey of the property may disclose. The amount of the liens before the Court in this action total $36,956.83 together with interest, assessments, taxes and costs herein expended. BIDDERS SHALL BE PREPARED TO COMPLY WITH THESE TERMS /s/ MASTER COMMISSIONER, BOONE CIRCUIT COURT 6025 Rogers Lane, Burlington, KY 41005 (859) 334-3916/1 mc/nos/98. WWW.boonecountyky.org (Link to Departments/Agencies to Master Commissioner)

Date of issuance: October 16, 2008 Date of Expiration: October 16, 2009

Boone County

Extension of Original Permit

Stream Construction Permit
For construction in or Along a Stream

Permit #16450

Issue to: Duke Energy
139E 4th St. Rm 552-A
Cincinnati OH 45201

Location of Work: East Bend Power Plant
6293 East Bend Road
Union KY 41091

Description of Permitted Work: Placement of fill in the left descending bank of the Ohio River at about stream mile 472.8, with coordinates 38.9171, -34.8639

Work must be done in full compliance with the Conditions of the Kentucky Division of Water Permit that has been issued for this work.

Work must commence before the expiration date noted above or this permit becomes null and void.

STEVEN L. BESHEAR
GOVERNOR

LEONARD K. PETERS
SECRETARY

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

October 16, 2008

Duke Energy
Duke Energy KY East Bend
139 E 4th Ste. Rm. 552-A
Cincinnati, OH 45201

RE: Stream Construction Permit #16450 **construction of a landfill in the left descending floodplain of Ohio River at about stream mile 472.8, with coordinates 38.9171, -84.8639, in Boone County**.

Dear Duke Energy:

We have received a request on your behalf from BBC&M Engineering, Inc .for an extension of the Stream Construction Permit #16450 for the above-referenced landfill project. Since there are no changes in the original plans or circumstances involved, we are extending the expiration date to October 16, 2009. Please note that all restrictions and requirements on the previous permit are still applicable.

If you have any questions, please call Ms. Kathy Allen at (502) 564-3410.

Sincerely,

E-Signed by Dutta, Ron
VERIFY authenticity with ApproveIt
Ron Dutta

Ron Dutta, P.E., Manager
Water Resources Branch
Division of Water

RD/KA/kla

pc: Florence Regional Office
Mark Martin, Boone County
Scott C. Ross, BBC&M Engineering, Inc. File

GARY W. MOORE
County Judge-Executive

JEFFREY S. EARLYWINE
County Administrator

JIM KEY
Chief Building Official

BUILDING DEPARTMENT
www.BooneCountyKy.org
P.O. Box 960
2950 Washington Street
Burlington, KY 41005
(859) 334-2218
Fax (859) 334-3137

November 9, 2009

Duke Energy Kentucky Inc.
139 E 4th St
Cincinnati, OH 45201

Re: Stream Construction permit #16450 extension: Construction of landfill in the left descending bank of the Ohio River about stream mile 472.8, with coordinates 38.9171, -34.8639

To Whom It May Concern,

We have received your request for extension of your Boone County Stream Construction permit for the above mentioned landfill within the floodplain. Find enclosed a new permit extending the expiration date of permit #16450 to October 16, 2010. All conditions of previous issued Kentucky Division of water permit must be complied with.

If there are any questions or concerns regarding this permit please contact me.

Cordially,

Mark E Martin

Mark E. Martin,
Assistant Chief Building Official

Cc: Scott C. Ross, BBC&M Engineering

BBCM
NOV 12 2009
RECEIVED

Date of issuance: October 16, 2008 Date of Expiration: October 16, 2010

Boone County

2nd Extension of Original Permit

Stream Construction Permit
For construction in or Along a Stream

Permit #16450

Issue to: Duke Energy
139E 4th St. Rm 552-A
Cincinnati OH 45201

Location of Work: East Bend Power Plant
6293 East Bend Road
Union KY 41091

Description of Permitted Work: Placement of fill in the left descending bank of the Ohio River at about stream mile 472.8, with coordinates 38.9171, -34.8639

Work must be done in full compliance with the Conditions of the Kentucky Division of Water Permit that has been issued for this work.

Work must commence before the expiration date noted above or this permit becomes null and void.

STEVEN L. BESHEAR
GOVERNOR

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION
DIVISION OF WATER
200 FAIR OAKS LANE, 4TH FLOOR
FRANKFORT, KENTUCKY 40601
www.kentucky.gov

LEONARD K. PETERS
SECRETARY

October 8, 2009

Duke Energy Kentucky, Inc.
139 E 4th St
Cincinnati, OH 45201

RE: Stream Construction Permit #16450-Extension: **construction of a landfill in the left descending floodplain of Ohio River at about stream mile 472.8, with coordinates 38.9171, -84.8639, in Boone County**. AI: 176

Dear Duke Energy Kentucky, Inc.:

We have received your request for an extension of Stream Construction Permit #16450-Extension. Since there are no changes in the original plans or circumstances involved, we are extending the expiration date to October 6, 2010. Please note that all restrictions and requirements on the previous permit are still applicable.

If you have any questions, please call Ms. Kathy Allen at (502) 564-3410.

Sincerely,

BBCM
OCT 13 2009
RECEIVED

By: Kara Carrigan

Jory Becker, P.E., Manager
Surface Water Permit Branch

JB/KA/kec

pc: Florence Regional Office
Mark Martin – Boone County
Scott C. Ross – BBC&M Engineering, Inc.

CONSTRUCTION CERTIFICATION REPORT

FLOODPLAIN FILLING – WEST SPECIAL WASTE LANDFILL

EAST BEND GENERATING STATION
BOONE COUNTY, KENTUCKY

Prepared For:

Duke Energy, Inc.
East Bend Station
P.O. Box 937
Union, Kentucky 41091

Prepared By:

BBC&M Engineering, Inc.
11699 Chesterdale Road
Cincinnati, Ohio 45246

September 2011

TABLE OF CONTENTS

APPENDIX A – Field Observations and Testing

APPENDIX B – Soils Laboratory Testing

APPENDIX C – Survey Data

APPENDIX D – Archaeological Monitoring

SECTION 1 - PROJECT OVERVIEW

1.1 Introduction

This Certification Report has been prepared to document the construction activities associated with filling of the 100-year floodplain area located within the footprint of the West Special Waste landfill at the East Bend Generating Station in Boone County, Kentucky. The approximate location of the fill and borrow areas are depicted on the Site Map included as Plate 1 of Appendix A. The work was performed in accordance with the applicable parts of Section 2.0 Subgrade Preparation of Attachment 41, Construction Quality Control Plan for the West Special Waste Landfill, East Bend Station, Boone County, Kentucky dated March 2007.

1.2 Project Description

The items of work documented in this Certification Report include the archeological monitoring, and construction observation and testing of fill placement for the 100 year floodplain of the Ohio River. The floodplain fill area is approximately 2.1 acres.

1.3 Project Personnel

The following persons and/or companies were involved in the construction of the work:

Owner	Duke Energy;
Owner Site Representative	Adam Deller, Duke Energy;
General Contractor	Utter Construction;
Contractor's Site Superintendent	Eddie Ooten;
Surveyor	Mark Sendelbach, PS, Duke Energy;
Archaeological Monitoring	Charles Moffat, Commonwealth Cultural Resources Group. Inc.
Certifying Engineer	Dan Furgason, P.E., BBCM Engineering;
QA/QC	BBCM Engineering, Inc.

SECTION 2 – ARCHAEOLOGICAL MONITORING

2.1 Introduction

Archaeological monitoring was performed during construction to visually document the presence or absence of historic and prehistoric artifacts or remains on the site.

2.2 Evaluation

Archaeological monitoring of the subgrade fill area and borrow area was performed by Commonwealth Cultural Resources Group, Inc. (CCRG). The monitoring included a field survey of the borrow and fill areas and a review of previous archaeological surveys in the vicinity of the site. The conclusions section of the CCRG report is as follows: " In summary, no prehistoric or historic artifacts or features were observed by CCRG's archaeological monitor during the mechanical stripping of the borrow area and the fill area at the East Bend Station. It is CCRG's opinion that the project had no effect on any archaeological site and additional investigations at these locations are not recommended." A copy of the CCRG report, dated November 8, 2010 is included in the Appendix of this report.

SECTION 3 - SUBGRADE SOILS

3.1 Introduction

The soils at subgrade consist of naturally deposited in-place material.

3.2 Construction Equipment & Processes

The floodplain fill subgrade elevation was attained by:

1) stripping and stockpiling topsoil from all areas within the construction footprint and borrow locations;
2) excavating fill material from the borrow area to be used as structural fill; and,
3) placing controlled compacted structural fill to achieve the design grade, above the 100-year flood elevation.

The equipment used to compact structural fill was an Ingersoll-Rand SD-1050X smooth drum vibratory roller.

3.3 QA/QC

3.3.1 Laboratory Testing

Laboratory testing of the borrow soils included gradation analysis (ASTM D 422) and standard proctor testing (ASTM D 698) of the soils to be used as structural fill. The results of the laboratory tests are included in Appendix B of this submittal. These soils were used to fill the floodplain to a level consistent with the landfills prepared subgrade. The material was obtained from within the footprint of the borrow area as shown on the Site Map in Appendix A. The fill material generally consisted of a fine to medium sand.

3.3.2 Proof Roll

Proof rolling of the foundation soils prior to placement of structural fill for the floodplain fill was performed on October 22, 2010. Proof rolling was performed for the fill area with the exception of a small area around a tree that could not be removed until November 15, 2010. The proof roll was completed with a fully loaded CAT 627 scrapper. No rutting or pumping of the subgrade was observed. The small remaining area was proofrolled on November 15, 2010 using a loaded CAT K-500 water truck with little to no deflection observed.

3.3.3 KDEP Site Visit

Richard Dawson of KDEP visually inspected and approved the prepared subgrade on October 22, 2010. Mr. Dawson waived approval of the subgrade in the area described above as the "small area around a tree that could not be removed until November 15, 2010".

3.3.4 Field Testing

Field moisture/density testing of the structural fill soils was performed by BBCM. Structural fill was placed in loose lifts not exceeding 8-inches in thickness. A total of 8 lifts of fill were placed with 6 to 20 tests per lift.

The structural fill was compacted to not less than 98% of the maximum dry density as determined by Standard Proctor, at moisture contents between 2% below and 2% above optimum.

The locations of the field tests are depicted on Plates 2 through 7 of Appendix A. The results of the tests are included on Plates 8 to 21 of Appendix A. A summary of the observations made by the BBCM Technician are recorded on the Daily Observation Reports which are included as Plates 22 through 30 in Appendix A.

3.3.5 Surveying

Survey control included obtaining spot elevations at 269 points within the flood plain fill area. The locations and spot elevations are depicted on Plate 1 of Appendix C.

3.4 Deviations from Design

There were no deviations from procedures described in the Construction Quality Control Plan, West Special Waste Landfill, East Bend Station, Boone County, Ohio.

SECTION 4 - CERTIFICATION

This Certification Report has been prepared by BBC&M Engineering, Inc. to document that the construction of flood plain fill at the West Special Waste Landfill at the East Bend Generating Station in Boone County, Kentucky has been performed in accordance with the Design Plans, Project Specifications and the Construction Quality Control Plan submitted to KDEP for the project Permit Application.

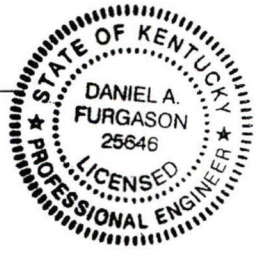
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for such violations.

Daniel A. Furgason

9-22-11

Daniel A. Furgason, P.E.
Senior Project Engineer
BBC&M Engineering, Inc.

Date

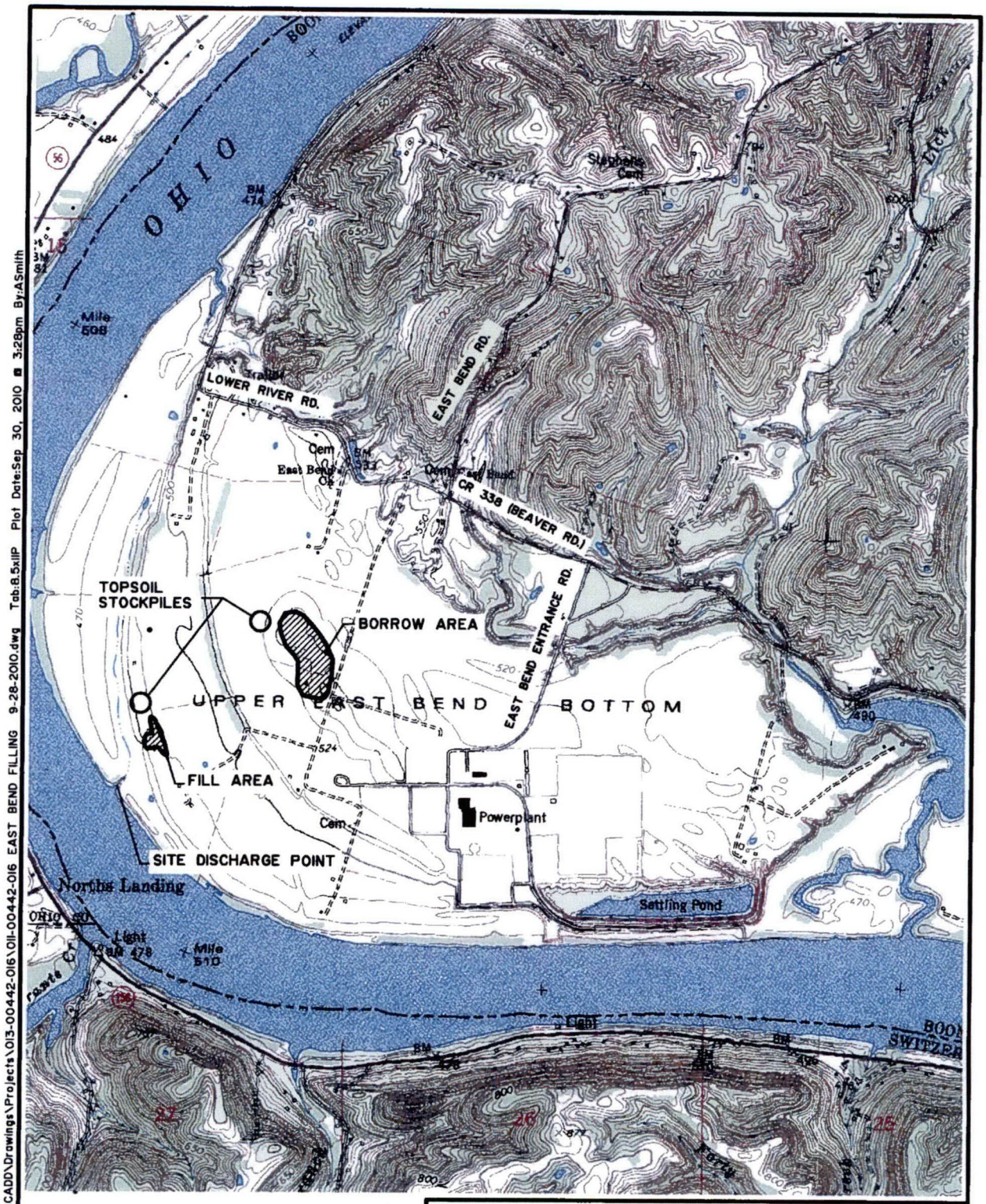


Duke Energy

Date

APPENDIX

A



BBCM Filename: I:\DEPTS\CADD\Drawings\Projects\013-00442-016\011-00442-016 EAST BEND FILLING 9-28-2010.dwg Tab:8.5x11P Plot Date:Sep 30, 2010 @ 3:28pm By:ASmith

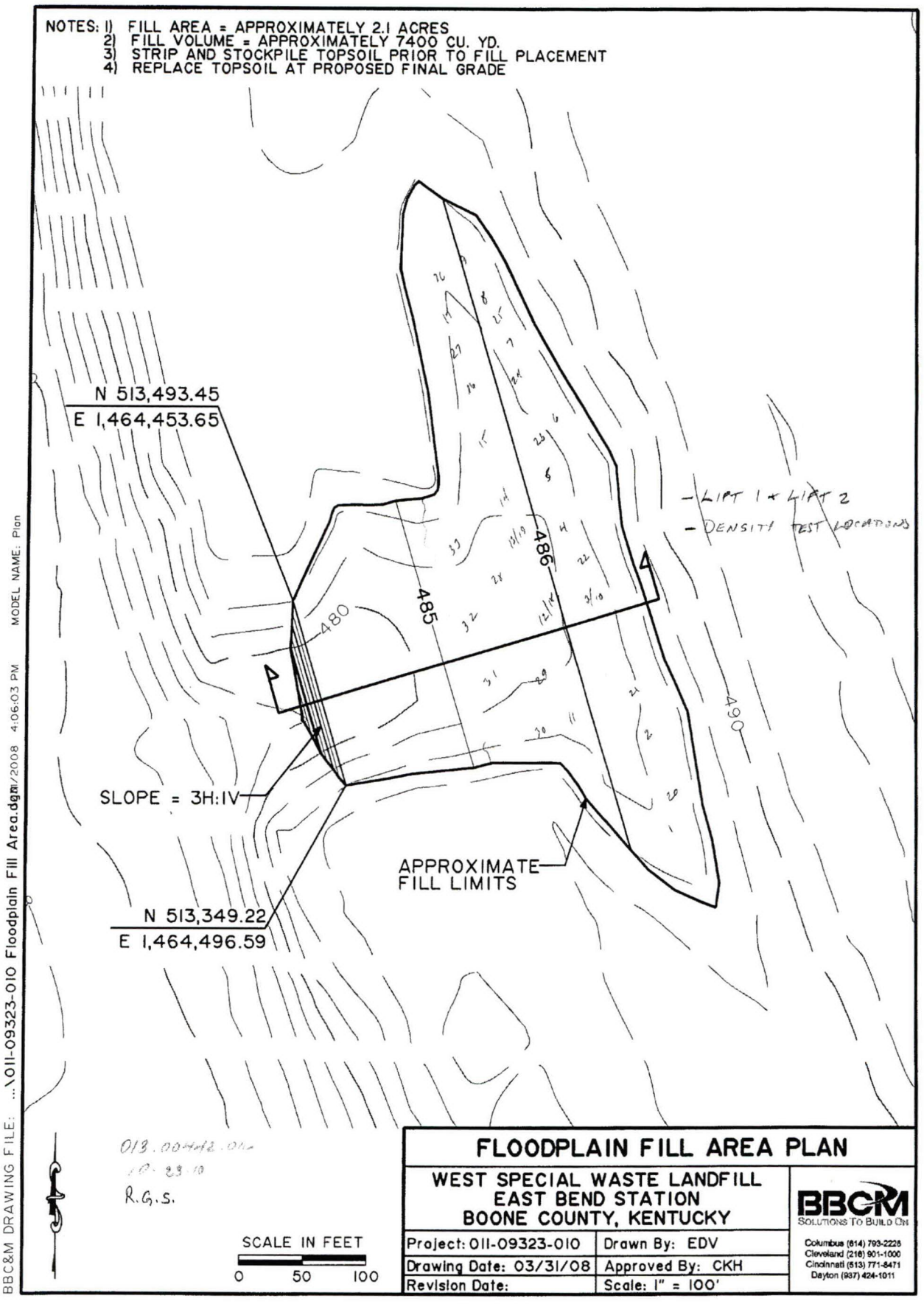
SITE MAP

SUBGRADE PREPARATION FILL
EAST BEND STATION
BOONE COUNTY, KENTUCKY

Project: 011-00442-016	Drawn By: ARW
Drawing Date: 9/28/10	Approved By: AJS
Revision Date: 9/30/10	Scale: 1" = 2000'

BBCM
Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

PLATE



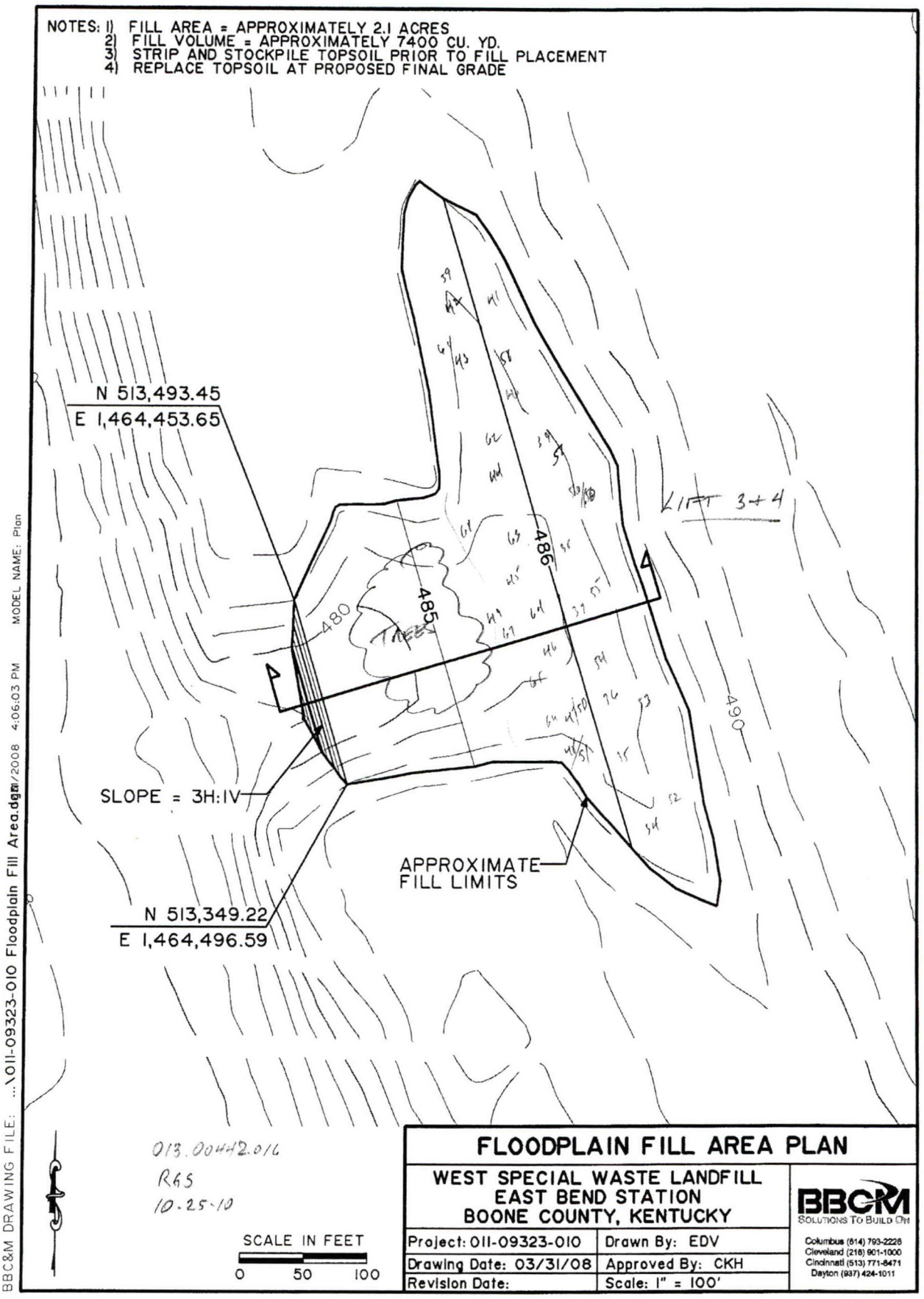
FLOODPLAIN FILL AREA PLAN

WEST SPECIAL WASTE LANDFILL
EAST BEND STATION
BOONE COUNTY, KENTUCKY

Project: 011-09323-010	Drawn By: EDV
Drawing Date: 03/31/08	Approved By: CKH
Revision Date:	Scale: 1" = 100'

BBC&M
Solutions To Build On
Columbus (614) 793-2226
Cleveland (216) 901-1000
Cincinnati (513) 771-8471
Dayton (937) 424-1011

PLATE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2) FILL VOLUME = APPROXIMATELY 7400 CU. YD.
3) STRIP AND STOCKPILE TOPSOIL PRIOR TO FILL PLACEMENT
4) REPLACE TOPSOIL AT PROPOSED FINAL GRADE
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EAST BEND STATION
BOONE COUNTY, KENTUCKY
Project: 011-09323-010
Drawing Date: 03/31/08
Revision Date:
Drawn By: EDV
Approved By: CKH
Scale: 1" = 100'
BBCM
SOLUTIONS TO BUILD ON
Columbus (614) 793-2226
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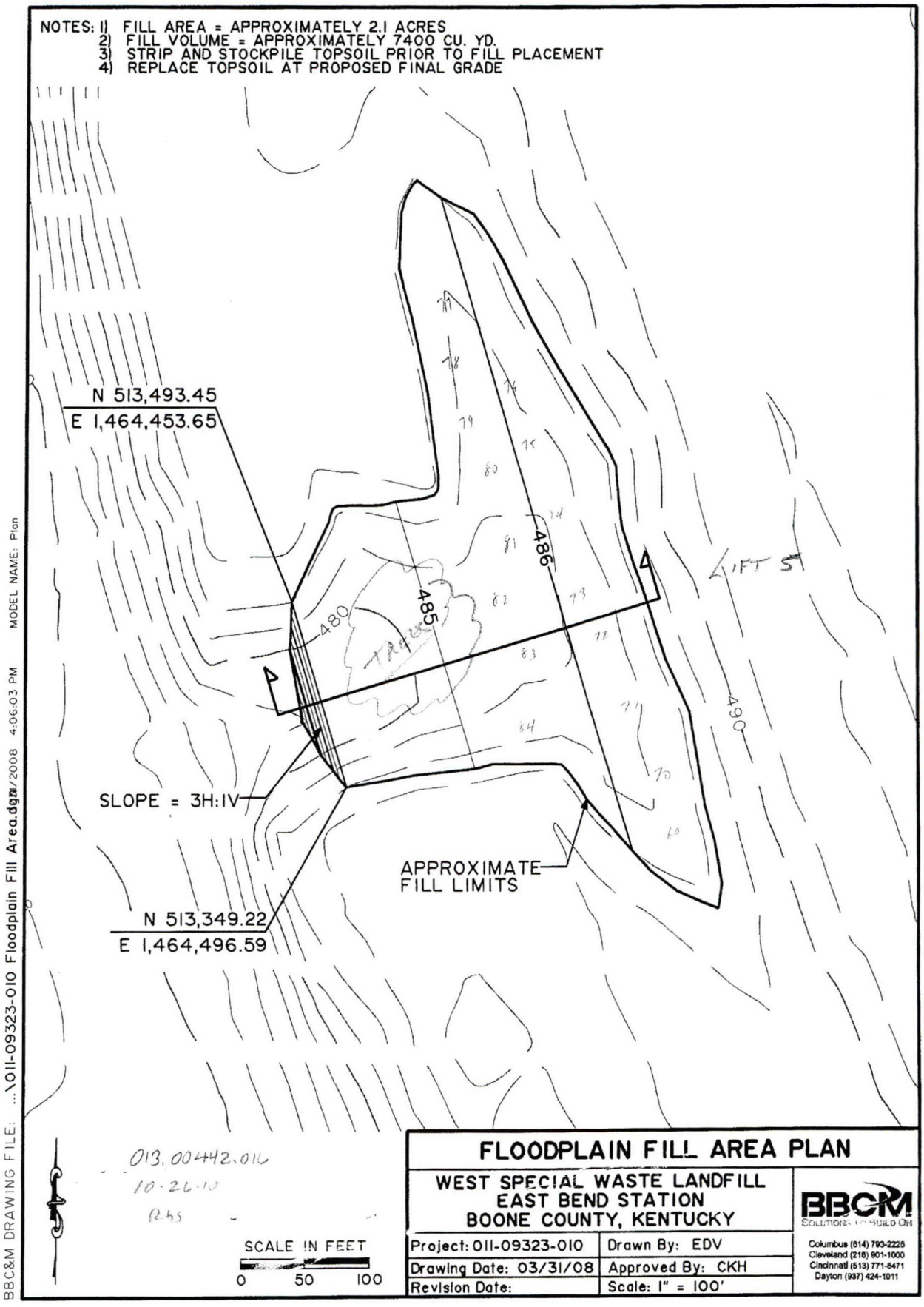
Cincinnati (513) 771-8471
Dayton (937) 424-1011

PLATE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Cincinnati (513) 771-8471
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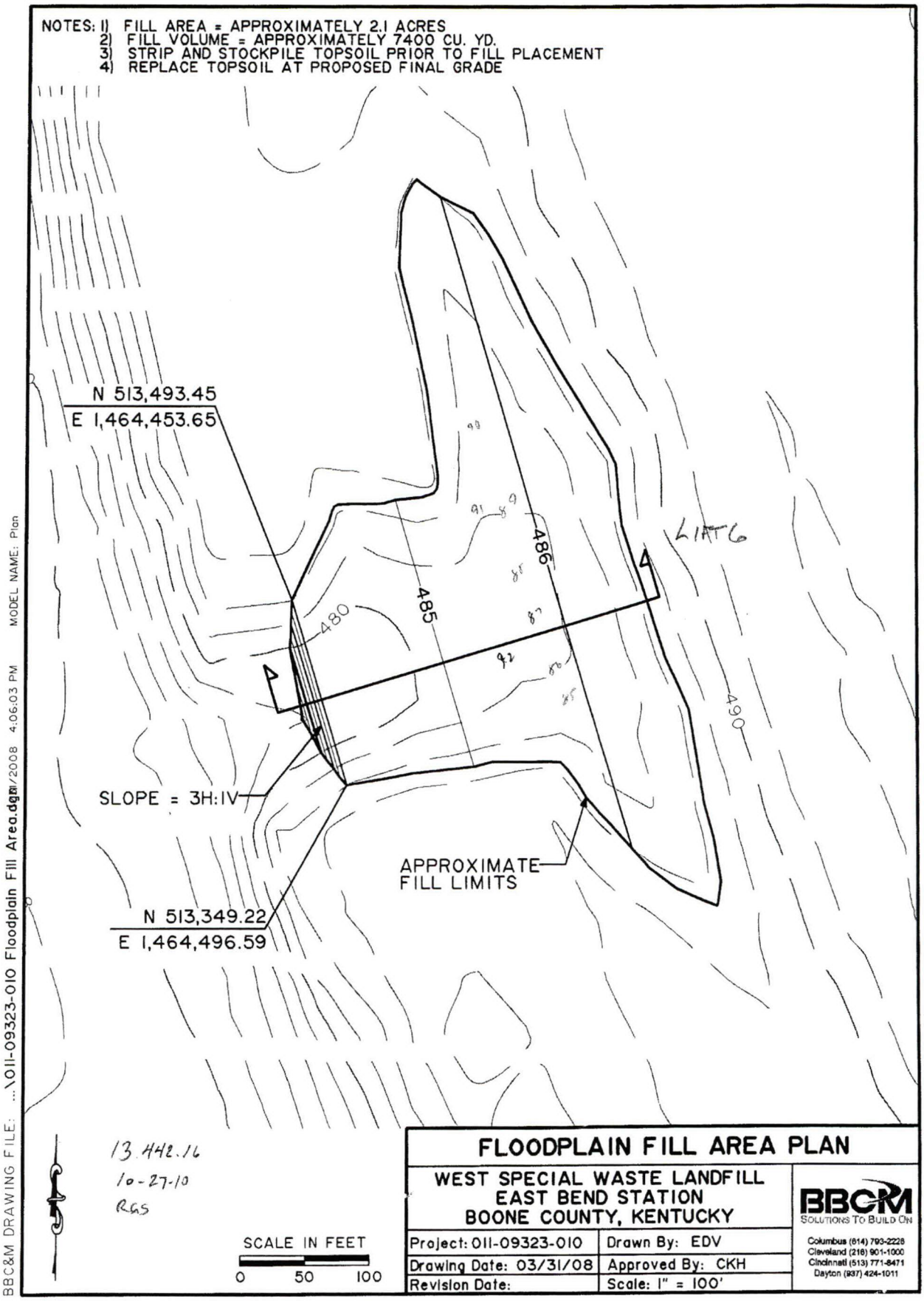
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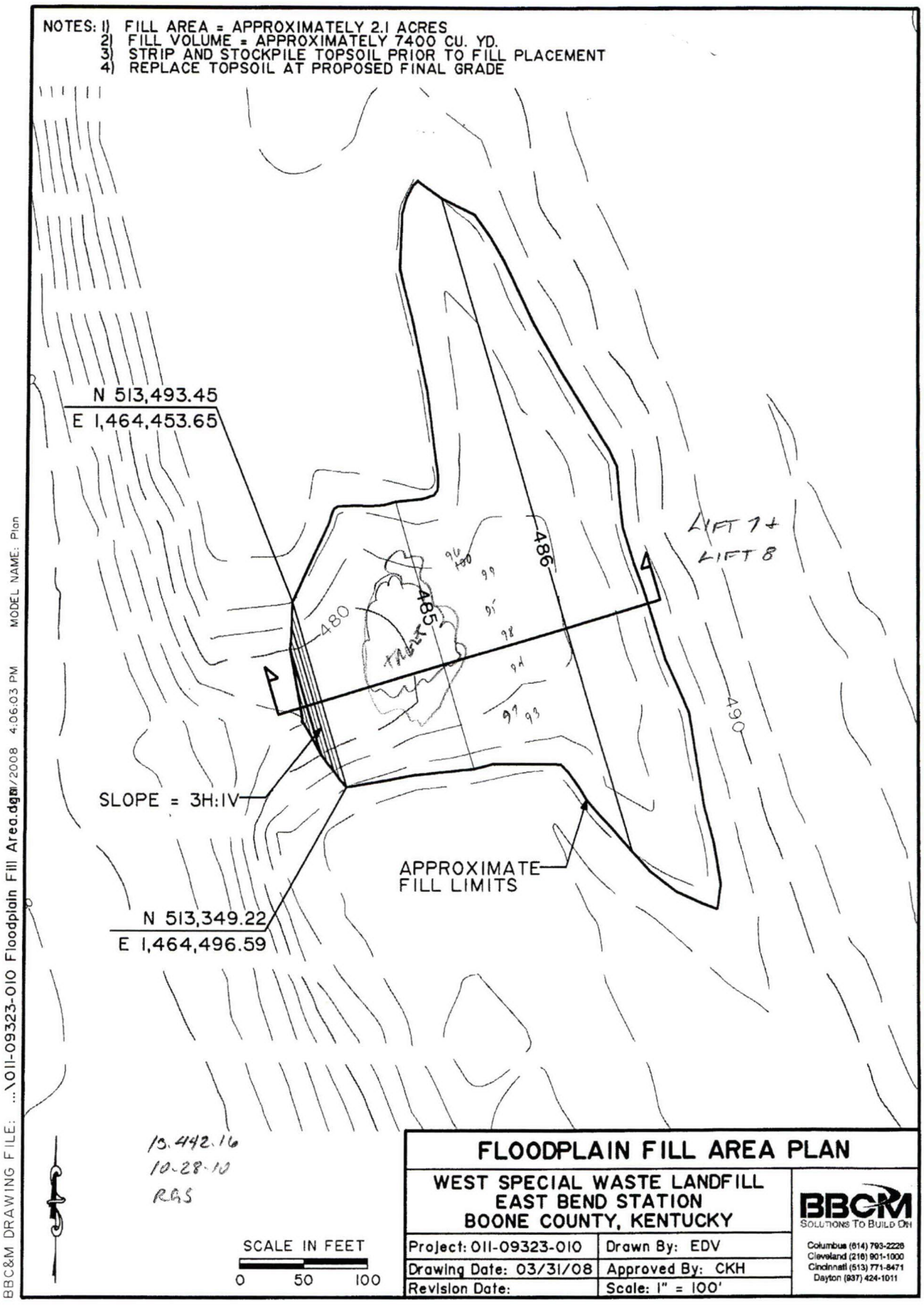
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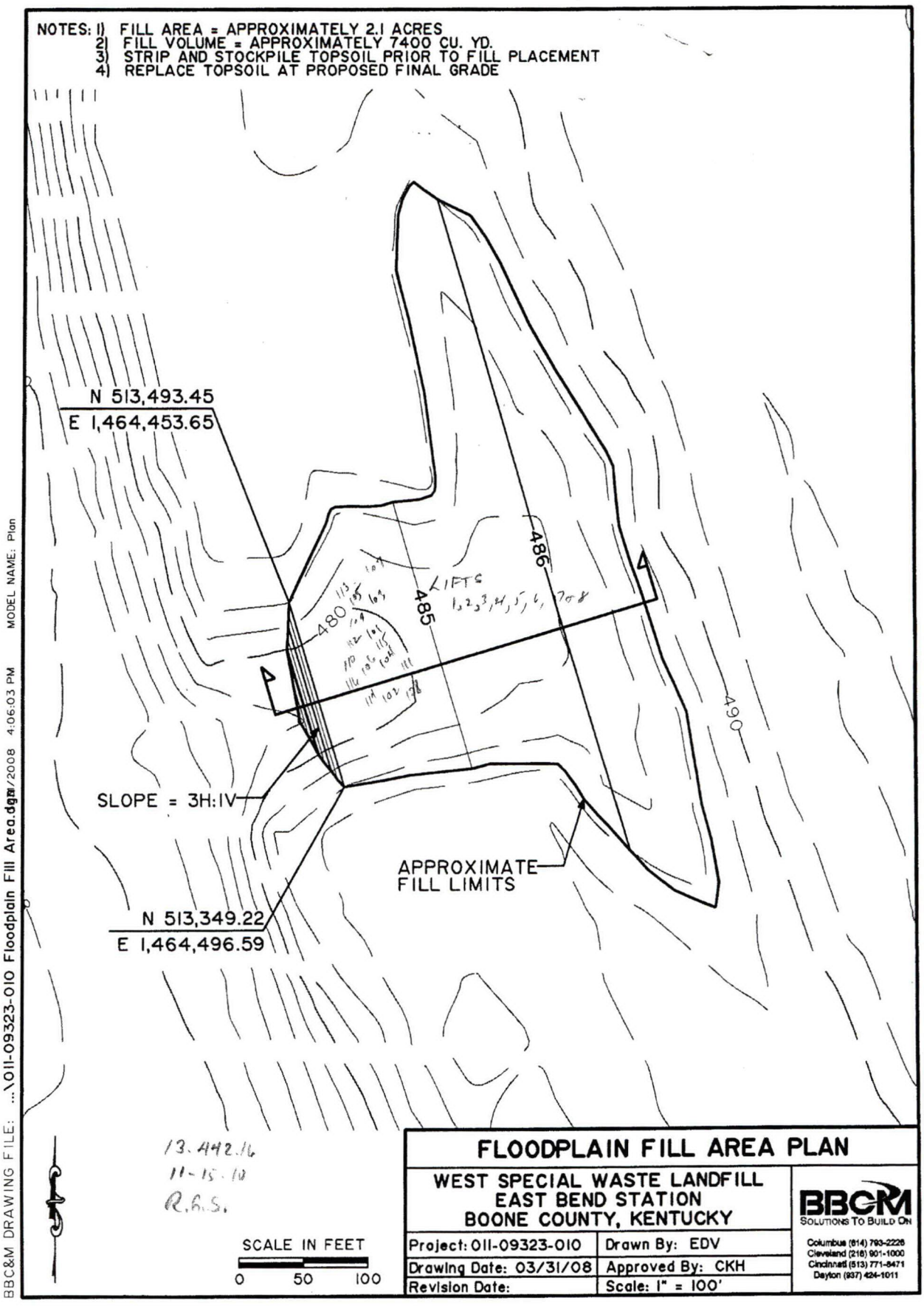
PLATE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R.G.S.
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Cincinnati (513) 771-8471
Dayton (937) 424-1011
BBC&M DRAWING FILE: ...\011-09323-010 Floodplain Fill Area.dgn 4:06:03 PM MODEL NAME: Plan

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	1	2	3	4	5	6	7	8	9	10
DATE OF TEST	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10
LOCATION OF TEST	N513331 E1464746	N513372 E1464740	N513428 E1464716	N513489 E1464691	N513542 E1464672	N513608 E1464668	N513659 E1464642	N513713 E1464620	N513741 E1464603	Retest of Test #3
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LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 2	Bag 2	Bag 3	Bag 3	Bag 2	Bag 2	Bag 3	Bag 2
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FILL - MOISTURE CONTENT - %	14.7	14.8	13.8	15.4	11.7	11.5	15.0	15.5	11.1	15.8
LAB - OPTIMUM MOISTURE - %	16.4	16.4	16.4	16.4	10.1	10.1	16.4	16.4	10.1	16.4
FILL - MOISTURE CONTENT VARIATION - %	-1.7 P	-1.6 P	-2.6 F	-1.0 P	1.6 P	1.4 P	-1.4 P	-0.9 P	1.0 P	-0.6 P
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	101.3	101.3	120.1	120.1	101.3	101.3	120.1	101.3
FILL - PERCENT COMPACTION - %	99.6 P	99.8 P	101.9 P	99.5 P	98.2 P	98.6 P	99.0 P	98.7 P	98.1 P	101.3 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

P = Passing
F = Failing

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	11	12	13	14	15	16	17	18	19	20
DATE OF TEST	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10
LOCATION OF TEST	N513382 E1464689	N5133426 E1464674	N513470 E1464662	N513514 E1464645	N513563 E1464626	N513608 E1464621	N513647 E1464598	Retest of #12	Retest of #13	N513501 E1464748
ELEVATION	Lift 1	Lift 1	Lift 1	Lift 1	Lift 1	Lift 1	Lift 1	Lift 1	Lift 1	Lift 2
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 3	Bag 2	Bag 2	Bag 2	Bag 2	Bag 3	Bag 3	Bag 2
FILL - UNIT DRY WEIGHT - pcf	101.2	97.8	116.7	118.2	101.0	101.9	102.9	118.5	117.8	103.4
FILL - MOISTURE CONTENT - %	15.7	14.6	11.8	10.7	15.1	15.9	15.5	12.0	11.0	14.5
LAB - OPTIMUM MOISTURE - %	16.4	16.4	10.1	10.1	16.4	16.4	16.4	10.1	10.1	16.4
FILL - MOISTURE CONTENT VARIATION - %	-0.7 P	-1.8 P	1.7 P	0.6 P	-1.3 P	-0.5 P	-0.9 P	1.9 P	0.9 P	-1.9 P
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	120.1	120.1	101.3	101.3	101.3	120.1	120.1	101.3
FILL - PERCENT COMPACTION - %	99.9 P	96.5 F	97.2 F	98.4 P	99.7 P	100.6 P	101.6 P	98.7 P	98.1 P	102.1 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

P = Passing
F = Failing

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	21	22	23	24	25	26	27	28	29	30
DATE OF TEST	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10	10/23/10
LOCATION OF TEST	N513411 E1464738	N513514 E1464681	N513584 E1464662	N513629 E1464641	N513680 E1464632	N513752 E1464571	N513668 E1464582	N513552 E1464619	N513446 E1464644	N513409 E1464641
ELEVATION	Lift 2	Lift 2	Lift 2	Lift 2	Lift 2	Lift 2	Lift 2	Lift 2	Lift 2	Lift 2
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 2	Bag 2	Bag 3	Bag 2	Bag 2	Bag 2	Bag 2	Bag 2
FILL - UNIT DRY WEIGHT - pcf	100.6	101.1	100.7	102.9	114.2	101.1	101.4	102.0	100.8	102.5
FILL - MOISTURE CONTENT - %	15.7	15.1	15.4	14.6	11.9	15.4	15.1	14.7	14.4	14.6
LAB - OPTIMUM MOISTURE - %	16.4	16.4	16.4	16.4	10.1	16.4	16.4	16.4	16.4	16.4
FILL - MOISTURE CONTENT VARIATION - %	-0.7 P	-1.3 P	-1.0 P	-1.8 P	1.8 P	-1.0 P	-1.3 P	-1.7 P	-2.0 P	-1.8 P
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	101.3	101.3	120.1	101.3	101.3	101.3	101.3	101.3
FILL - PERCENT COMPACTION - %	99.3 P	99.8 P	99.4 P	101.6 P	98.4 P	99.8 P	100.1 P	100.7 P	99.1 P	101.2 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

P = Passing
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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	31		32		33															
DATE OF TEST	10/23/10		10/23/10		10/23/10															
LOCATION OF TEST	N513436 E1464617		N513477 E1464609		N513541 E1464572															
ELEVATION	Lift 2		Lift 2		Lift 2															
LAB - COMPACTION CURVE NUMBER	Bag 2		Bag 2		Bag 2															
FILL - UNIT DRY WEIGHT - pcf	100.7		101.2		100.4															
FILL - MOISTURE CONTENT - %	15.1		11.6		17.0															
LAB - OPTIMUM MOISTURE - %	16.4		16.4		16.4															
FILL - MOISTURE CONTENT VARIATION - %	-1.3	P	+0.2	P	+0.6	P														
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3		101.3		101.3															
FILL - PERCENT COMPACTION - %	99.4	P	99.9	P	99.1	P														
PERCENT COMPACTION REQUIRED (Standard)	**98**		**98**		**98**															
MOISTURE VARIATION REQUIRED	-2 to +2		-2 to +2		-2 to +2															

Notes:

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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	34	35	36	37	38	39	40	41	42	43
DATE OF TEST	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10
LOCATION OF TEST	N513326 E1464736	N513367 E1464716	N513429 E1464711	N513491 E1464709	N513546 E1464690	N513607 E1464668	N513658 E1464636	N513711 E1464612	N513721 E1464582	N513680 E1464589
ELEVATION	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 2	Bag 2	Bag 3	Bag 3	Bag 3	Bag 2	Bag 2	Bag 2
FILL - UNIT DRY WEIGHT - pcf	100.9	102.3	101.9	101.1	119.0	118.1	118.4	100.2	100.7	100.8
FILL - MOISTURE CONTENT - %	14.7	15.1	14.9	15.4	11.5	11.0	11.2	15.4	15.1	15.0
LAB - OPTIMUM MOISTURE - %	16.4	16.4	16.4	16.4	10.1	10.1	10.1	16.4	16.4	16.4
FILL - MOISTURE CONTENT VARIATION - %	-1.7 P	-1.3 P	-1.5 P	-1.0 P	1.4 P	0.9 P	1.1 P	-1.0 P	-1.3 P	-1.4 P
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	101.3	101.3	120.1	120.1	120.1	101.8	101.3	101.3
FILL - PERCENT COMPACTION - %	99.6 P	101.1 P	100.6 P	99.8 P	99.1 P	98.3 P	98.6 P	98.9 P	99.4 P	99.5 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	44	45	46	47	48	49	50	51	52	53
DATE OF TEST	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10
LOCATION OF TEST	N513605 E1464619	N513509 E1464637	N513462 E1464668	N513422 E1464670	N513583 E1464681	N513478 E1464617	Retest of #47	N513348 E1464752	N513405 E1464748	N513459 E1464693
ELEVATION	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 3	Lift 4	Lift 4	Lift 4
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 3	Bag 3	Bag 3	Bag 3	Bag 3	Bag 2	Bag 2	Bag 2
FILL - UNIT DRY WEIGHT - pcf	101.0	101.4	118.2	116.7	118.2	118.1	118.9	100.3	101.0	100.9
FILL - MOISTURE CONTENT - %	15.5	15.0	11.8	11.2	11.0	11.4	11.0	15.4	14.5	15.8
LAB - OPTIMUM MOISTURE - %	16.4	16.4	10.1	10.1	10.1	10.1	10.1	16.4	16.4	16.4
FILL - MOISTURE CONTENT VARIATION - %	-0.9 P	-1.4 P	1.7 P	1.1 P	0.9 P	1.3 P	0.9 P	-1.0 P	-1.9 P	-0.6 P
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	120.1	120.1	120.1	120.1	120.1	101.3	101.3	101.3
FILL - PERCENT COMPACTION - %	100.0 P	100.0 P	98.0 P	97.0 F	98.0 P	98.0 P	99.0 P	99.0 P	100.0 P	100.0 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2		-2 to +2	-2 to +2

Notes:

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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	54	55	56	57	58	59	60	61	62	63
DATE OF TEST	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10	10/25/10
LOCATION OF TEST	N513506 E1464683	N513576 E1464681	N513628 E1464649	N513680 E1464633	N513754 E1464583	Retest of #55	N513716 E1464563	N513643 E1464578	N513579 E1464611	N513528 E1464616
ELEVATION	Lift 4	Lift 4	Lift 4	Lift 4	Lift 4	Lift 4	Lift 4	Lift 4	Lift 4	Lift 4
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 3	Bag 2	Bag 2	Bag 2	Bag 3	Bag 2	Bag 2	Bag 2
FILL - UNIT DRY WEIGHT - pcf	102.8	103.6	118.2	100.3	99.6	100.8	117.8	102.9	101.8	100.9
FILL - MOISTURE CONTENT - %	15.5	13.3	8.3	15.5	15.1	15.3	11.6	15.8	14.9	15.4
LAB - OPTIMUM MOISTURE - %	16.4	16.4	10.1	16.4	16.4	16.4	10.1	16.4	16.4	16.4
FILL - MOISTURE CONTENT VARIATION - %	-0.9 P	-3.1 F	-1.8 P	-0.9 P	-1.3 P	-1.1 P	1.5 P	-0.6 P	-1.5 P	-1.0 P
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	120.1	101.3	101.3	101.3	120.1	101.3	101.3	101.3
FILL - PERCENT COMPACTION - %	102.0 P	102.0 P	98.0 P	99.0 P	98.0 P	100.0 P	98.0 P	102.0 P	101.0 P	100.0 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	64	65	66	67						
DATE OF TEST	10/25/10	10/25/10	10/25/10	10/25/10						
LOCATION OF TEST	N513454 E1464637	N513418 E1464648	N513477 E1464592	N513542 E1464583						
ELEVATION	Lift 4	Lift 4	Lift 4	Lift 4						
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 3	Bag 3	Bag 3						
FILL - UNIT DRY WEIGHT - pcf	100.4	118.2	118.4	117.9						
FILL - MOISTURE CONTENT - %	14.8	12.0	12.1	11.4						
LAB - OPTIMUM MOISTURE - %	16.4	10.1	10.1	10.1						
FILL - MOISTURE CONTENT VARIATION - %	-1.6 P	1.9 P	2.0 P	1.3 P						
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	120.1	120.1	120.1						
FILL - PERCENT COMPACTION - %	99.0 P	98.0 P	99.0 P	98.0 P						
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**						
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2						

Notes:

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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	68	69	70	71	72	73	74	75	76	77
DATE OF TEST	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10
LOCATION OF TEST	N513513 E1464753	N513353 E1464746	N513416 E1464723	N513467 E1464693	N513521 E1464689	N513576 E1464675	N513609 E1464654	N513664 E1464631	N513689 E1464593	N513682 E1464591
ELEVATION	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5
LAB - COMPACTION CURVE NUMBER	Bag 3	Bag 3	Bag 3	Bag 2	Bag 2	Bag 2	Bag 2	Bag3	Bag 2	Bag 2
FILL - UNIT DRY WEIGHT - pcf	117.7	118.1	117.9	100.9	103.6	102.7	100.0	117.8	103.0	101.8
FILL - MOISTURE CONTENT - %	11.7	11.2	11.0	15.8	15.5	15.2	15.7	10.2	14.6	14.8
LAB - OPTIMUM MOISTURE - %	10.1	10.1	10.1	16.4	16.4	16.4	16.4	10.1	16.4	16.4
FILL - MOISTURE CONTENT VARIATION - %	1.6 P	-1.6 P	1.9 P	-0.6 P	-0.9 P	-1.2 P	-0.7 P	0.1 P	-1.8 P	-1.6 P
LAB - MAX. DRY UNIT WEIGHT - pcf	120.1	120.1	120.1	101.3	101.3	101.3	101.3	120.1	101.3	101.3
FILL - PERCENT COMPACTION - %	98.0 P	98.0 P	98.0 P	99.0 P	102.0 P	101.0 P	99.0 P	98.0 P	102.0 P	101.0 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to -+2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

P = Passing
F = Failing

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	78	79	80	81	82	83				
DATE OF TEST	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10	10/26/10				
LOCATION OF TEST	N513627 E1464590	N513582 E1464612	N513536 E1464622	N513477 E1464630	N513457 E1464641	N513408 E1464638				
ELEVATION	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5	Lift 5				
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 2	Bag 3	Bag 2	Bag 2				
FILL - UNIT DRY WEIGHT - pcf	100.6	101.9	102.8	119.0	102.1	101.5				
FILL - MOISTURE CONTENT - %	15.8	15.5	16.7	11.6	15.7	14.8				
LAB - OPTIMUM MOISTURE - %	16.4	16.4	16.4	10.1	16.4	16.4				
FILL - MOISTURE CONTENT VARIATION - %	-0.6 P	0.9 P	0.3 P	1.5 P	-0.7 P	-1.6 p				
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	101.3	120.1	101.3	101.3				
FILL - PERCENT COMPACTION - %	99.0 P	100.0 P	102.0 P	99.0 P	101.0 P	102.0 p				
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**				
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2				

Notes:

P = Passing
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PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	84	85	86	87	88	89	90	91		
DATE OF TEST	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10	10/27/10		
LOCATION OF TEST	N513402 E1464674	N513447 E1464662	N513491 E1464641	N513435 E1464632	N513586 E1464621	N513640 E1464596	N513552 E1464598	N513478 E1464612		
ELEVATION	Lift 6	Lift 6	Lift 6	Lift 6	Lift 6	Lift 6	Lift 6	Lift 6		
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 4	Bag 4	Bag 4	Bag 2	Bag 2	Bag 4		
FILL - UNIT DRY WEIGHT - pcf	100.3	100.0	111.5	110.7	112.1	100.9	102.6	111.4		
FILL - MOISTURE CONTENT - %	14.8	15.2	14.7	14.4	14.1	15.3	15.6	15.0		
LAB - OPTIMUM MOISTURE - %	16.4	16.4	13.4	13.4	13.4	16.4	16.4	13.4		
FILL - MOISTURE CONTENT VARIATION - %	-1.6 P	-1.2 P	1.3 P	1.0 P	0.7 P	-1.1 P	-0.8 P	1.6 P		
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	112.4	112.4	112.4	101.3	101.3	112.4		
FILL - PERCENT COMPACTION - %	99.0 P	99.0 P	99.0 P	99.0 P	100.0 P	100.0 P	101.0 P	99.0 P		
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**		
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2		

Notes:

P = Passing
F = Failing

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	92	93	94	95	96	97	98	99		
DATE OF TEST	10/28/10	10/28/10	10/28/10	10/28/10	10/28/10	10/28/10	10/28/10	10/28/10		
LOCATION OF TEST	N513406 E1464618	N513447 E1464611	N513502 E1464579	N513553 E1464578	N513421 E1464617	N513467 E1464608	N513511 E1464602	N513526 E1464578		
ELEVATION	Lift 7	Lift 7	Lift 7	Lift 7	Lift 8	Lift 8	Lift 8	Lift 8		
LAB - COMPACTION CURVE NUMBER	Bag 4	Bag 4	Bag 4	Bag 4	Bag 4	Bag 4	Bag 4	Bag 4		
FILL - UNIT DRY WEIGHT - pcf	111.2	111.6	99.4	112.0	117.9	108.6	111.3	111.1		
FILL - MOISTURE CONTENT - %	14.1	13.8	14.8	14.7	11.8	15.5	14.5	13.9		
LAB - OPTIMUM MOISTURE - %	13.4	13.4	16.4	12.4	10.1	16.4	13.4	12.4		
FILL - MOISTURE CONTENT VARIATION - %	0.7 P	0.4 P	-1.6 P	1.3 P	1.7 P	-0.9 P	1.1 P	0.5 P		
LAB - MAX. DRY UNIT WEIGHT - pcf	112.4	112.4	101.3	112.4	120.1	101.3	112.4	112.4		
FILL - PERCENT COMPACTION - %	99.0 P	99.0 P	98.0 P	100.0 P	98.0 P	102.0 P	99.0 P	99.0 P		
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**		
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2		

Notes:

P = Passing
F = Failing

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBCM SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	100	101	102	103	104	105	106	107	108	109
DATE OF TEST	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10
LOCATION OF TEST	N513463 E1464546	N513478 E1464542	N513478 E1464543	N513443 E1464562	N513487 E1464517	N513449 E1464527	N513490 E1464543	N513418 E1464561	N513467 E1464526	N513441 E1464522
ELEVATION	Lift 1	Lift 1	Lift 2	Lift 2	Lift 3	Lift 3	Lift 4	Lift 4	Lift 5	Lift 5
LAB - COMPACTION CURVE NUMBER	Bag 4	Bag 4	Bag 2	Bag 2	Bag 4	Bag 4	Bag 4	Bag 4	Bag 4	Bag 4
FILL - UNIT DRY WEIGHT - pcf	111.5	110.7	101.2	100.4	113.2	110.4	110.9	111.3	110.3	110.8
FILL - MOISTURE CONTENT - %	14.8	14.0	15.6	15.2	12.9	14.2	14.5	14.1	14.0	14.5
LAB - OPTIMUM MOISTURE - %	13.4	13.4	16.4	16.4	13.4	13.4	13.4	13.4	13.4	13.4
FILL - MOISTURE CONTENT VARIATION - %	1.4 P	0.6 P	-0.8 P	-1.2 P	-0.5 P	0.8 P	1.1 P	0.7 P	0.6 P	1.1 P
LAB - MAX. DRY UNIT WEIGHT - pcf	112.4	112.4	101.3	101.3	112.4	112.4	112.4	112.4	112.4	112.4
FILL - PERCENT COMPACTION - %	99.0 P	99.0 P	100.0 P	99.0 P	99.0 P	98.0 P	99.0 P	99.0 P	98.0 P	98.0 P
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**	**98**
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2

Notes:

P = Passing
F = Failing

PLATE

FIELD DENSITY-MOISTURE CONTENT DETERMINATION

BBC&M SOLUTIONS TO BUILD ON

Project Number: 013.00442.016 **PROJECT:** East Bend Flood Plain **BBC&M STAFF:** Rodney Shatto

CLIENT: Duke Energy **CONTRACTOR:** Utter Construction

TEST NUMBER	110	111	112	113	114	115				
DATE OF TEST	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10	11/15/10				
LOCATION OF TEST	N513470 E1464557	N5133467 E1464504	N513508 E1464529	N513423 E1464517	N513465 E1464562	N513445 E1464488				
ELEVATION	Lift 6	Lift 6	Lift 7	Lift 7	Lift 8	Lift 8				
LAB - COMPACTION CURVE NUMBER	Bag 2	Bag 2	Bag 4	Bag 4	Bag 2	Bag 4				
FILL - UNIT DRY WEIGHT - pcf	101.0	99.6	110.6	111.1	101.2	111.1				
FILL - MOISTURE CONTENT - %	15.5	14.7	15.2	14.7	16.1	13.4				
LAB - OPTIMUM MOISTURE - %	16.4	16.4	13.4	13.4	16.4	13.4				
FILL - MOISTURE CONTENT VARIATION - %	-0.9 P	-1.7 P	1.8 P	1.3 P	-0.3 P	1.0 P				
LAB - MAX. DRY UNIT WEIGHT - pcf	101.3	101.3	112.4	112.4	101.3	112.4				
FILL - PERCENT COMPACTION - %	99.0 P	98.0 P	98.0 P	99.0 P	100.0 P	99.0 P				
PERCENT COMPACTION REQUIRED (Standard)	**98**	**98**	**98**	**98**	**98**	**98**				
MOISTURE VARIATION REQUIRED	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2	-2 to +2				

Notes:

P = Passing
F = Failing

PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/19/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 60° **Max:** 65°		**Location:** Rabbit Hash, Kentucky
Weather Conditions:		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☒ or Full-time ☐ basis.

BBCM was requested on site by Adam Deller (Duke) to observe proofroll.

OBSERVATIONS:

The BBCM representative met Adam Deller (Duke) on site at the fill area in the flood plain to perform a proofroll on the subgrade. The fill area in a low bottom area of a corn field was stripped of vegetation exposing the fine brown sand soil. An area of a stand of trees is still not cleared at this time. The proofroll was performed using a fully loaded CAT 627 scraper. There was no pumping or rutting observed in the subgrade at this time.

Adam Deller (Duke) then called to have the KDEP representative, Richard Dawson, scheduled for an official proofroll. The second proofroll was then scheduled for Friday, October 22 at 11:00 a.m.

Utter Construction was then beginning to stockpile the fill soils just east of the fill area at this time.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Adam Deller (Duke) was informed of the observations.

Report Prepared By: Rodney Shatto		
Leave Office: 8:30AM **Arrive at Site:** 10:00 AM **Depart Site:** 11:00 AM **Return to Office:** 12:45 PM		
Field Density Report ☐ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐		
Report Reviewed By: DAF	**Date:** 10/25/10	**Copy Left on Site Yes** ☐ **/ No** ☒

Rev. 8/2010

PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/22/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 35° **Max:** °		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Sunny		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☐ or Full-time ☒ basis.

BBCM was requested on site by Adam Deller (Duke) to observe proofroll with KDEP.

OBSERVATIONS:

The BBCM technician met Adam Deller (Duke), Ron Ehlers (Duke) and Richard Dawson (KDEP) for a proofroll of the fill area located in the flood plain west of the generating station. The proofroll was performed with a fully loaded CAT 627 with no rutting or pumping of the subgrade observed.

After the proofroll, Utter Construction began placing the stockpiled subgrade materials. Prior to the placement of any fill material, the subgrade was watered by the CAT K-500 water truck. The stockpiled materials were excavated from the on-site borrow area and stockpiled area by two CAT 627B scrapers, spread into a maximum 8" thick loose lift by a CAT D6 dozer and compacted by an Ingersoll-Rand SD-1050X smooth drum vibratory roller. All fill materials were watered with a CAT K-500 water truck. A number of moisture content tests were performed indicating moisture ranges between 6% to 8%, and additional watering was recommended. No tests were performed on the first lift on this date. The lift was placed in general accordance with the Attachment 41, Construction Quality Control Plan.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Adam Deller (Duke) was informed of all observations.

Report Prepared By: Rodney Shatto

Leave Office: 8:45 AM **Arrive at Site:** 10:00 AM **Depart Site:** AM **Return to Office:** PM

Field Density Report ☐ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐

Report Reviewed By: DAF	**Date:** 10/26/10	**Copy Left on Site Yes** ☐ **/ No** ☒

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PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/23/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 50° **Max:** 70°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Partly cloudy		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☐ or Full-time ☒ basis.

BBCM was requested on site by Adam Deller (Duke) to perform field density testing.

OBSERVATIONS:

Utter Construction continued the placement of fill material in the flood plain area on this date. The subgrade soils were excavated from the on-site borrow area, transported by two CAT 627B scrapers, spread by a CAT D6 dozer into an 8" thick loose lift, and compacted by an Ingersoll Rand SD 1057X smooth drum vibratory roller. The subgrade soils were watered using a CAT K-500 water truck.

A total of 33 in-place density tests were performed on this date on the subgrade soils. The results of the density tests indicated the fill was compacted 98.1% to 102.1% of the maximum dry density (Spec = > 98%). The moisture content range was -2.0 to +1.9 percentage points of the optimum moisture (Spec = ± 2%).

One density test failed due to low moisture and two density tests failed for low compaction. All failed tests were retested with passing results after additional moisture and additional compaction were performed. All tests met the project specifications and the fill was placed in general accordance with the Attachment 41 of the Construction Quality Control Plan.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Report Prepared By: Rodney Shatto		
Leave Office: 6:30 AM **Arrive at Site:** 7:40 AM **Depart Site:** 1:30 PM **Return to Office:** 3:00 PM		
Field Density Report ☐ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐		
Report Reviewed By: DAF	**Date:** 10/26/10	**Copy Left on Site Yes** ☐ **/ No** ☒

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PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/25/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 50° **Max:** 62°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Cloudy, light rain showers		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☐ or Full-time ☒ basis.

BBCM was requested on site by Adam Deller (Duke) to perform field density testing.

OBSERVATIONS:

Utter Construction continued placement of structural fill in the flood plain area. The structural fill was excavated from the on-site borrow area, transported by two CAT 627B scrapers, spread into a maximum 8" thick loose lift by a CAT D6 dozer, and compacted by an Ingersoll-Rand SD105DX steel drum vibratory roller. A CAT K-500 water truck was used to add water to the fill material.

A total of 35 in-place density tests were performed on this date. The results of the density tests indicated that the structural fill was compacted to 98.1% to 102.3% of the maximum dry density (Spec = > 98%). The moisture content range was -1.9 to +2.0 percentage points of the optimum moisture. All tests met project specifications and the fill was placed in general accordance with Attachment 41 of the Construction Quality Control Plan.

The failing density tests were retested with passing results after additional moisture and compaction were performed.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Adam Deller (Duke) was informed of the density test results.

Report Prepared By: Rodney Shatto

Leave Office: 6:30 AM **Arrive at Site:** 7:30 AM **Depart Site:** 4:15 PM **Return to Office:** 5:30 PM

Field Density Report ☐ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐

Report Reviewed By: DAF	**Date:** 10/26/10	**Copy Left on Site Yes** ☐ **/ No** ☒

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PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/26/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 60° **Max:** 75°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Cloudy/Wind/Rain		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☐ or Full-time ☒ basis.

BBCM was requested on site by Adam Deller (Duke) to perform field density testing.

OBSERVATIONS:

Utter Construction continued the placement of structural fill in the flood plain area. The structural fill was excavated from the on-site borrow area, transported by two CAT 627B scrapers, spread into a maximum 8" thick loose lift by a CAT D6 dozer, and compacted by an Ingersoll-Rand SD105DX steel drum vibratory roller. A CAT K-500 water truck was used for moisture conditioning.

A total of 16 in-place density tests were performed on the structural fill placed on this date. The results of the density tests indicated that the fill was compacted to achieve dry densities of 98% to 102.3% of the maximum dry density (Spec = 98%). The moisture content range was -1.8 to +1.6 percentage points of the optimum moisture. (Spec = ± 2%) All tests met project specifications and the fill was placed in general accordance with Attachment 41 of the Construction Quality Control Plan.

Rain moved into site around 12:00 and at 12:30, earthwork was cancelled by Utter.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Report Prepared By: Rodney Shatto

Leave Office: 6:30 AM **Arrive at Site:** 7:45 AM **Depart Site:** 12:30 PM **Return to Office:** 1:45 PM

Field Density Report ☒ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐

Report Reviewed By:	Date:	Copy Left on Site Yes ☐ / No ☒

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/27/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 45° **Max:** 65°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Sunny		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☐ or Full-time ☒ basis.

BBCM was requested on site by Adam Deller (Duke) to perform field density testing.

OBSERVATIONS:

Utter Construction continued the placement of structural fill in the flood plain area. The structural fill material was excavated from the on-site borrow area, transported by two CAT 627B scrapers, spread into a maximum 8" thick loose lift by a CAT D6 dozer, and compacted by an Ingersoll-Rand SD-1050X steel drum vibratory roller. Moisture conditioning was performed using a CAT K-500 water truck.

The recent rain left many areas of this fill with saturated soils. These areas were worked with the addition of much drier soils in a very thin lift to help dry up this area. This with the sun and wind allowed the earthwork operations to continue on this date.

The entire lift that was placed failed during the compaction process by the observation of pumping soils. The lift was reworked by the D6 dozer and allowed to air out while structural fill materials were stockpiled near the fill area.

A sample of structural fill material had been transported to the BBCM lab on 10-25 when a change in material and/or the mixing of proctors was noticed. The results of the sample (Bag 4) were 112.4 pcf at 13.4% moisture. A total of eight in place density tests were performed on this date. The result of the density tests indicated that the fill was compacted to 98.5% to 101.3% of the maximum dry density (Spec = > 98%). The moisture contents range was -1.6 to +1.3 percentage points of the optimum moisture (Spec = ± 2%). All tests met the project specifications and the fill was placed in general accordance with Attachment 41 of the Construction Quality Control Plan.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Report Prepared By: Rodney Shatto

Leave Office: 4:30 AM **Arrive at Site:** 7:50 AM **Depart Site:** 4:00 PM **Return to Office:** 5:15 PM

Field Density Report ☒ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐

Report Reviewed By: DAF	**Date:** 10/28/10	**Copy Left on Site Yes** ☐ **/ No** ☒

Rev. 8/2010

PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 10/28/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 45° **Max:** 55°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Sunny		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☐ or Full-time ☒ basis.

BBCM was requested on site by Adam Deller (Duke) to perform field density testing.

OBSERVATIONS:

Utter Construction continued the placement of structural fill in the flood plain area. The structural fill material was excavated from the on-site borrow area, transported by two CAT 627B scrapers, spread into a maximum 8" thick loose lift by a CAT D6 dozer, and compacted by an Ingersoll-Rand SD-1050X steel drum vibratory roller. Moisture conditioning was performed using a CAT K-500 water truck.

A total of 8 in-place density tests were performed on this date. The results of the density tests indicated that the structural fill was compacted to achieve dry densities of 98.1% to 102.3% of the maximum dry density (Spec = > 98%). The moisture content range was -1.6 to +1.7 percentage points of the optimum moisture content (Spec = ± 2%). All tests performed on this date met the project specifications and the fill was placed in general accordance with Attachment 41, and the Construction Quality Control Plan.

Utter completed the fill in this area and will not place additional fill until the small grove of trees are removed in mid November. Structural soils will be stockpiled around the fill site in preparation for when the fill procedures resume.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Adam Deller (Duke) was informed of the observations.

Report Prepared By: Rodney Shatto

Leave Office: 6:30 AM **Arrive at Site:** 7:50 AM **Depart Site:** 1:15 PM **Return to Office:** 2:30 PM

Field Density Report ☒ **Footing Excavation Obs.** ☐ **Sketch** ☐ **Other Forms** ☐

Report Reviewed By: DAF	**Date:** 10/28/10	**Copy Left on Site Yes** ☐ **/ No** ☒

Rev. 8/2010

PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 11/15/10	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 50° **Max:** 55°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Partly cloudy		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☒ or Full-time ☐ basis.

BBCM was requested on site by Adam Deller (Duke) to perform field density testing.

OBSERVATIONS:

Utter Construction completed the placement of the structural fill in the flood plain area. Structural fill resumed on this date after the removal of trees and root system. The subgrade was proofrolled with a fully loaded CAT K-5OO water truck with little to no deflection. The structural fill material was stockpiled by the fill area prior to this date. The fill was spread into a max 8" thick loose lift by a CAT D6 dozer and compacted by an Ingersoll-Rand SD 105 DX steel drum vibratory roller. Moisture conditioning was performed by a CAT K-500 water truck.

A total of 16 in-place density tests were performed on the fill placed on this date. The results of the density tests indicated that the fill was compacted to 98.1% to 99.9% of the maximum dry density. The moisture content range was -1.7 to 1.8 percentage points of the optimum moisture. All test met project specifications and the fill was placed in general accordance with Attachment 41 and the Construction Quality Control Plan.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Adam Deller (Duke) was informed of results.

Report Prepared By: Rodney Shatto

Leave Office: 10:45 AM **Arrive at Site:** 12:00 PM **Depart Site:** 4:30 PM **Return to Office:** 5:30 PM

Field Density Report ☒ **Footing Excavation Obs.** ☐ **Sketch** ☒ **Other Forms** ☐

Report Reviewed By:	**Date:**	**Copy Left on Site Yes** ☐ **/ No** ☒

Rev. 8/2010

PLATE

Report #	DAILY OBSERVATION REPORT	BBCM SOLUTIONS TO BUILD ON

Date: 8/17/11	**Job No:** 013.00442.016	**Project:** East Bend Flood Plain
Temperature: Min: 70° **Max:** 75°		**Location:** Rabbit Hash, Kentucky
Weather Conditions: Sunny		**BBCM Manager:** Dan Furgason

Today's observations were performed on a Part-time ☒ or Full-time ☐ basis.

BBCM visited the site to make a final observation of the flood plain fill area.

OBSERVATIONS:

BBCM observed that the erosion cuts were all repaired and the top of the fill area was flat. The repairs were completed prior to BBCM arrival on site.

DEFICIENCIES:

N/A

TECHNICIAN'S ON-SITE CORRESPONDENCE:

Adam Deller (Duke) was informed of results.

Report Prepared By: Jason Haydu

Leave Office: 9:00 AM **Arrive at Site:** 10:00 AM **Depart Site:** 11:00 AM **Return to Office:** 12:00 PM

Field Density Report ☒ **Footing Excavation Obs.** ☐ **Sketch** ☒ **Other Forms** ☐

Report Reviewed By: DAF	**Date:** 8/17/11	**Copy Left on Site Yes** ☐ **/ No** ☒

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APPENDIX

B

BBCM

Job No. 011-09323.011 Date 9/21/11
Project EAST BEND FLOOD PLAIN
Location RABBIT HASH, KENTUCKY

Source of Material TP-1 3.0' - 6.0'
Description of Material Brown fine sand, trace medium sand, some silt, trace clay.

Test Method ASTM D698 Method A

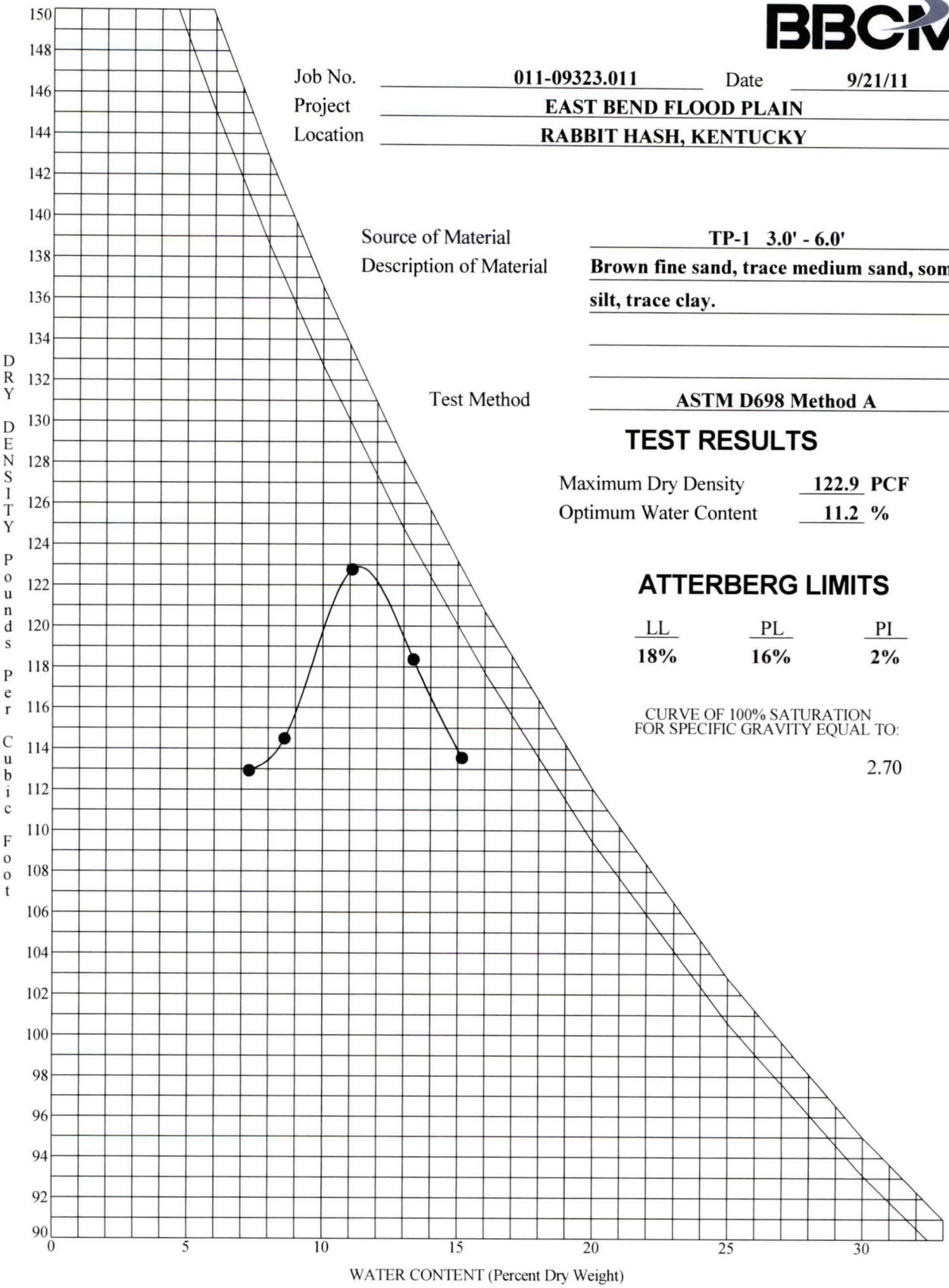
TEST RESULTS

Maximum Dry Density 122.9 PCF
Optimum Water Content 11.2 %

ATTERBERG LIMITS

LL	PL	PI
18%	16%	2%

CURVE OF 100% SATURATION
FOR SPECIFIC GRAVITY EQUAL TO:
2.70



COMP-REG

MOISTURE-DENSITY RELATIONSHIP

PLATE 1

BBCM

Job No. 011-09323.011 Date 9/21/11
Project EAST BEND FLOOD PLAIN
Location RABBIT HASH, KENTUCKY

Source of Material TP-2 6.0' - 10.0'
Description of Material Brown fine sand, trace medium sand, trace silt, trace clay.

Test Method ASTM D698 Method A

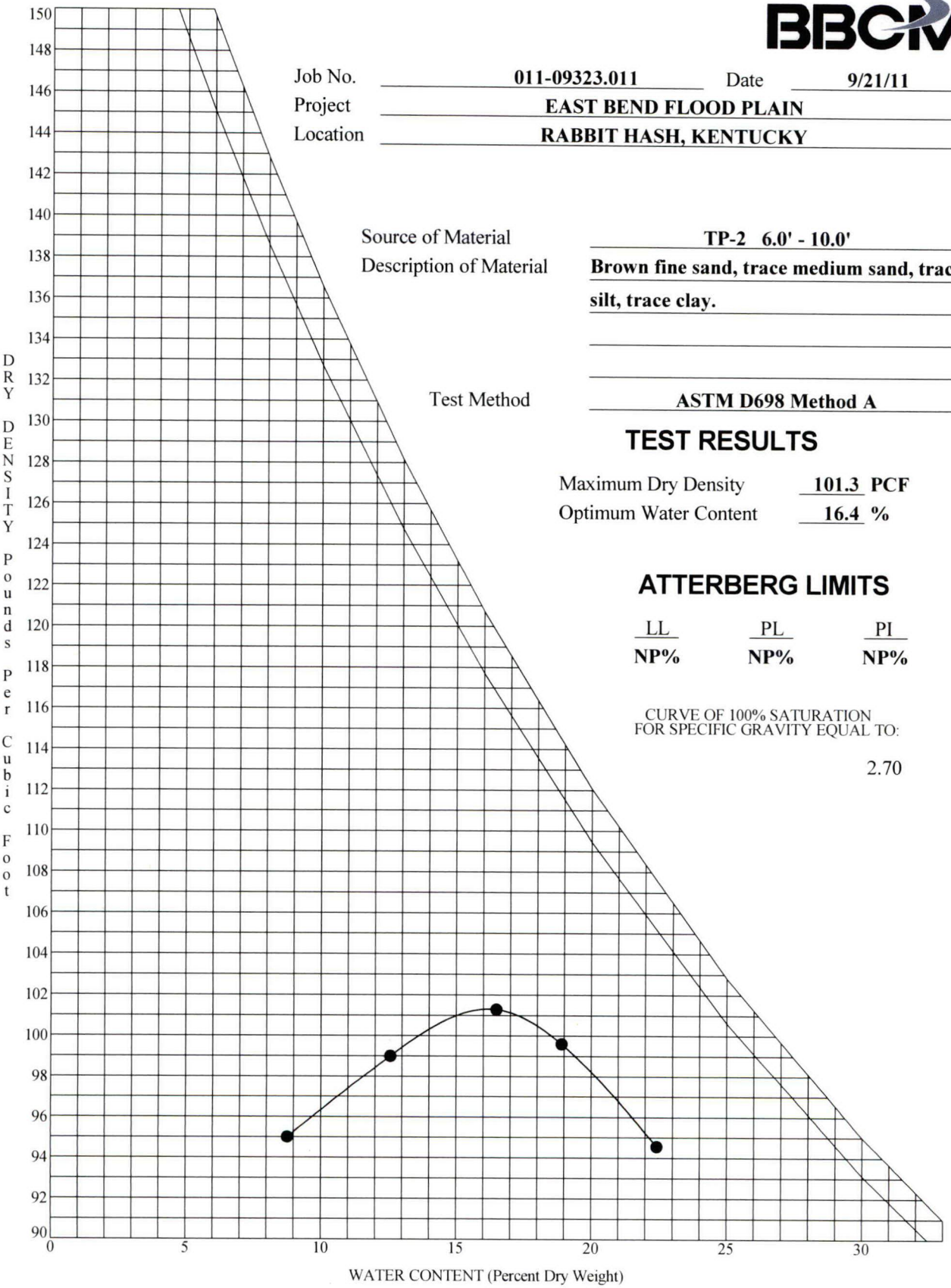
TEST RESULTS

Maximum Dry Density 101.3 PCF
Optimum Water Content 16.4 %

ATTERBERG LIMITS

LL	PL	PI
NP%	NP%	NP%

CURVE OF 100% SATURATION
FOR SPECIFIC GRAVITY EQUAL TO:
2.70



MOISTURE-DENSITY RELATIONSHIP

COMP-REG

PLATE 2

BBCM

Job No. 011-09323.011 Date 9/21/11
Project EAST BEND FLOOD PLAIN
Location RABBIT HASH, KENTUCKY

Source of Material TP-3 0.0' - 3.0'
Description of Material Brown fine sand, trace medium sand, some silt, trace clay, contains hair roots.

Test Method ASTM D698 Method A

TEST RESULTS

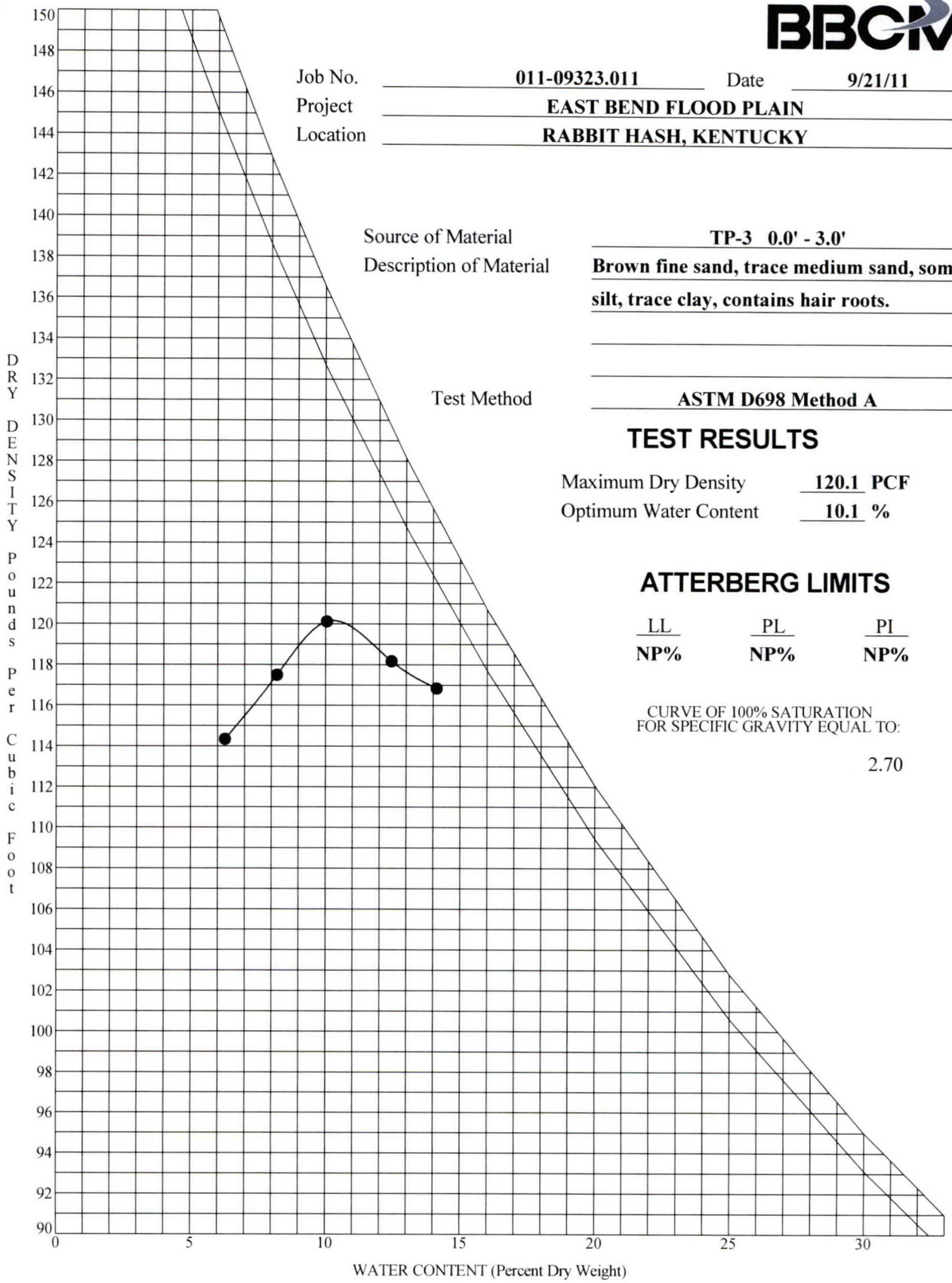
Maximum Dry Density 120.1 PCF
Optimum Water Content 10.1 %

ATTERBERG LIMITS

LL	PL	PI
NP%	NP%	NP%

CURVE OF 100% SATURATION
FOR SPECIFIC GRAVITY EQUAL TO:

2.70



MOISTURE-DENSITY RELATIONSHIP

COMP-REG

PLATE 3

BBCM

Job No. 013.00442.016 Date 9/21/11
Project EAST BEND FLOOD PLAIN
Location RABBIT HASH, KENTUCKY

Source of Material Bag 4 middle borrow area - 6.0'
Description of Material Brown fine to medium sand, trace coarse sand, trace fine to coarse gravel, trace silt.

Test Method ASTM D698 Method A

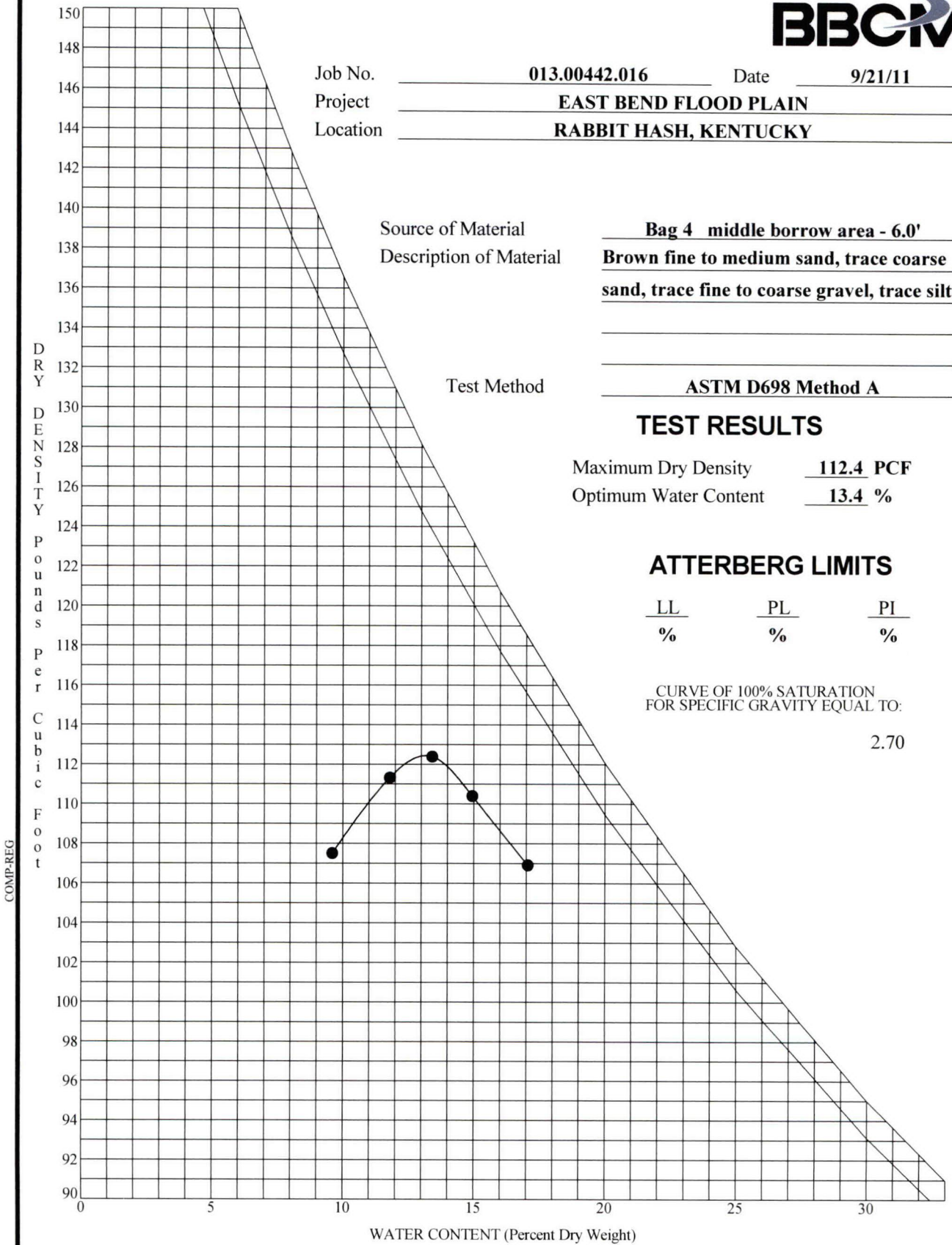
TEST RESULTS

Maximum Dry Density 112.4 PCF
Optimum Water Content 13.4 %

ATTERBERG LIMITS

LL	PL	PI
%	%	%

CURVE OF 100% SATURATION FOR SPECIFIC GRAVITY EQUAL TO:
2.70

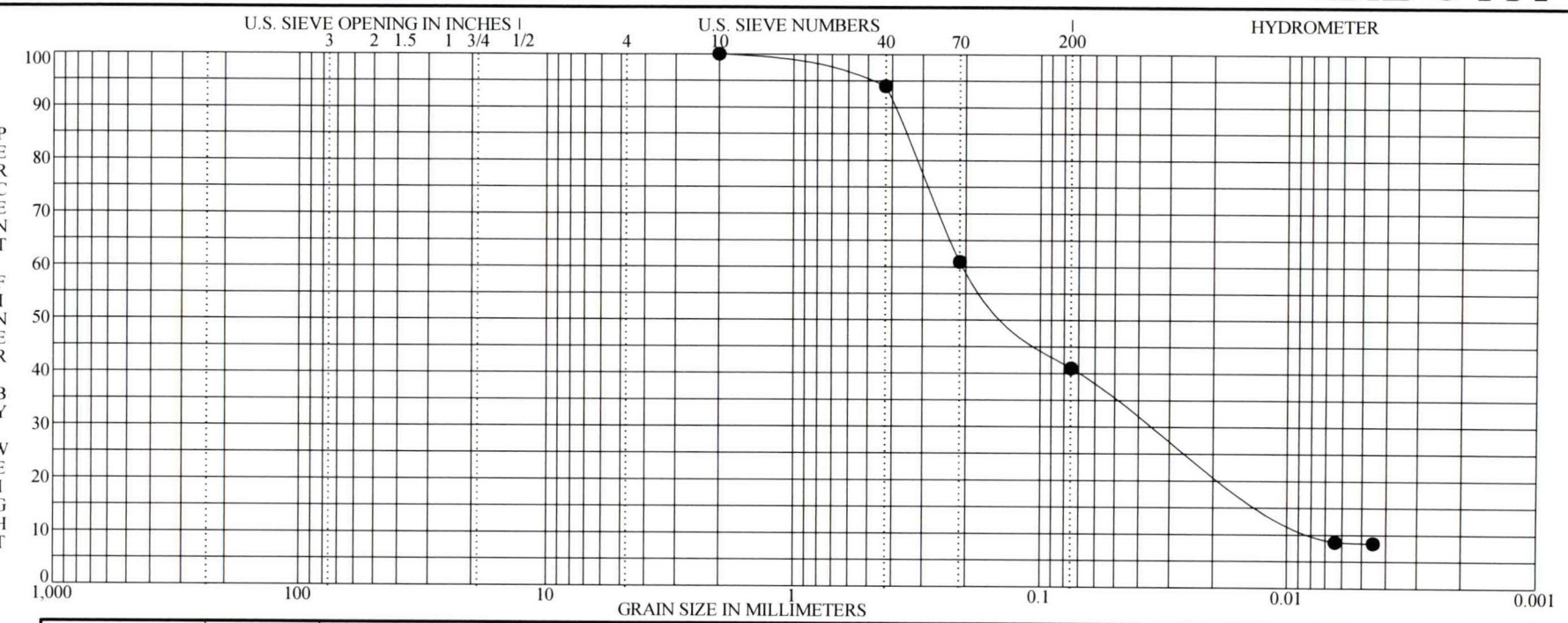


COMP-REG

MOISTURE-DENSITY RELATIONSHIP

PLATE 4

BBCM



BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		coarse	fine	coarse	medium	fine	

	Specimen Identification - Depth	Classification	MC%	LL	PL	PI	opt mc %	max pcf
●	TP-1 3.0' - 6.0'	Brown fine sand, trace medium sand, some silt, trace clay.	12	18	16	2	11.2	122.9
		SILTY SAND SM						

	Specimen Identification - Depth	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay
●	TP-1 3.0' - 6.0'	2.0000	0.5502	0.2013	0.1197	0.0071	0.0	59.0	32.5	8.5

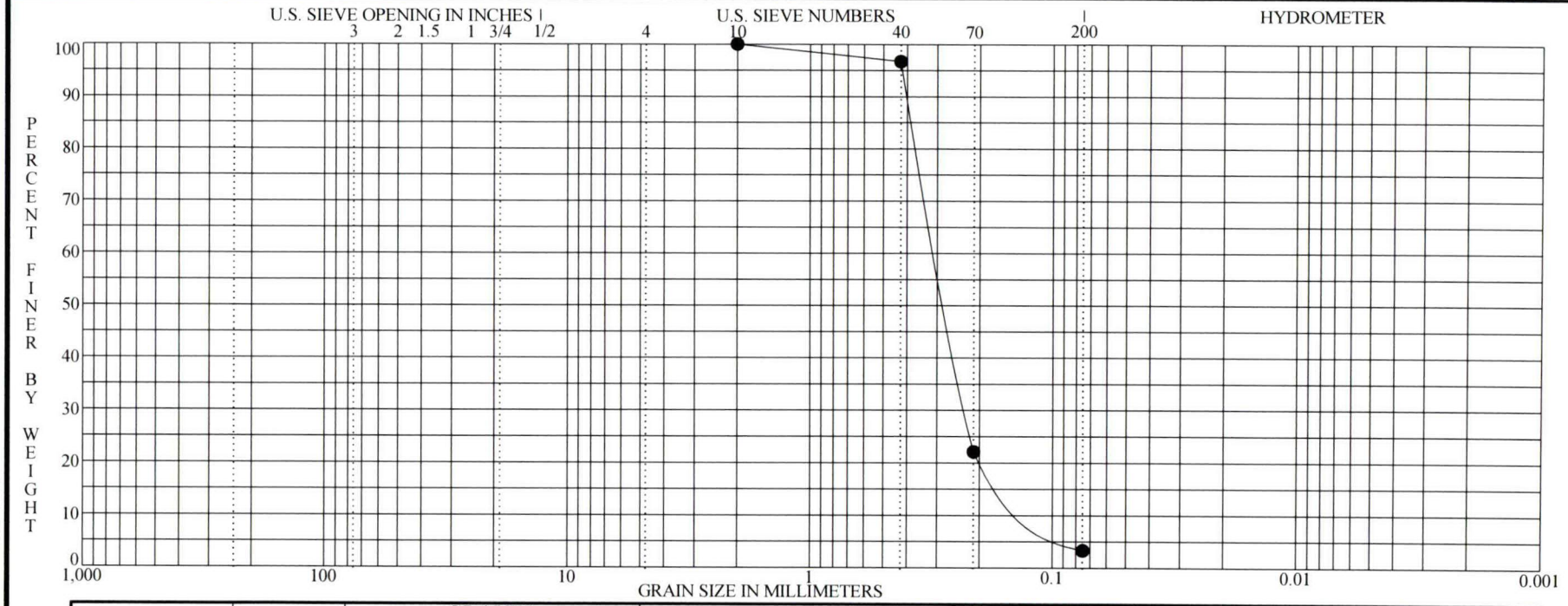
ASTM D422 | **GRADATION CURVE**

PROJECT: EAST BEND FLOOD PLAIN
LOCATION: RABBIT HASH, KENTUCKY
JOB NO.: 011-09323.011 DATE: 9/21/11

GRN-COMP

PLATE 5

BBCM



BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		coarse	fine	coarse	medium	fine	

	Specimen Identification - Depth	Classification	MC%	LL	PL	PI	opt mc %	max pcf
●	TP-2 6.0' - 10.0'	Brown fine sand, trace medium sand, trace silt, trace clay.	11	NP	NP	NP	16.4	101.3
		POORLY GRADED SAND SP						

	Specimen Identification - Depth	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay
●	TP-2 6.0' - 10.0'	2.0000	0.4182	0.3018	0.2750	0.1086	0.0	96.7	3.3	

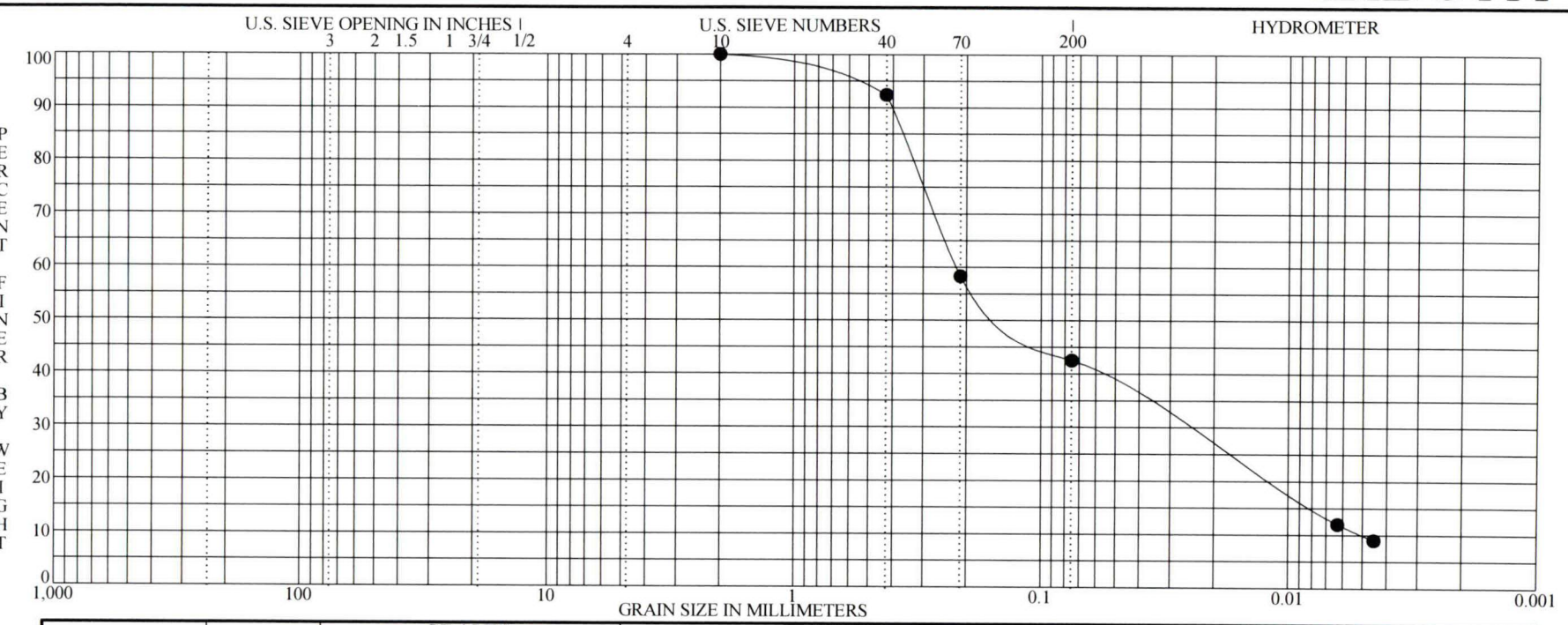
ASTM D422 | **GRADATION CURVE**

PROJECT: EAST BEND FLOOD PLAIN
LOCATION: RABBIT HASH, KENTUCKY
JOB NO.: 011-09323.011 DATE: 9/21/11

GRN-COMP

PLATE 6

BBCM



BOULDERS	COBBLES	GRAVEL		SAND			SILT OR CLAY
		coarse	fine	coarse	medium	fine	

	Specimen Identification - Depth	Classification	MC%	LL	PL	PI	opt mc %	max pcf
●	**TP-3 0.0' - 3.0'**	**Brown fine sand, trace medium sand, some silt, trace clay, contains hair roots.**	**9**	**NP**	**NP**	**NP**	**10.1**	**120.1**
		SILTY SAND SM						

	Specimen Identification - Depth	D100	D95	D60	D50	D10	%Gravel	%Sand	%Silt	%Clay
●	**TP-3 0.0' - 3.0'**	**2.0000**	**0.7225**	**0.2194**	**0.1228**	**0.0050**	**0.0**	**57.5**	**32.6**	**9.9**

ASTM D422 | **GRADATION CURVE**

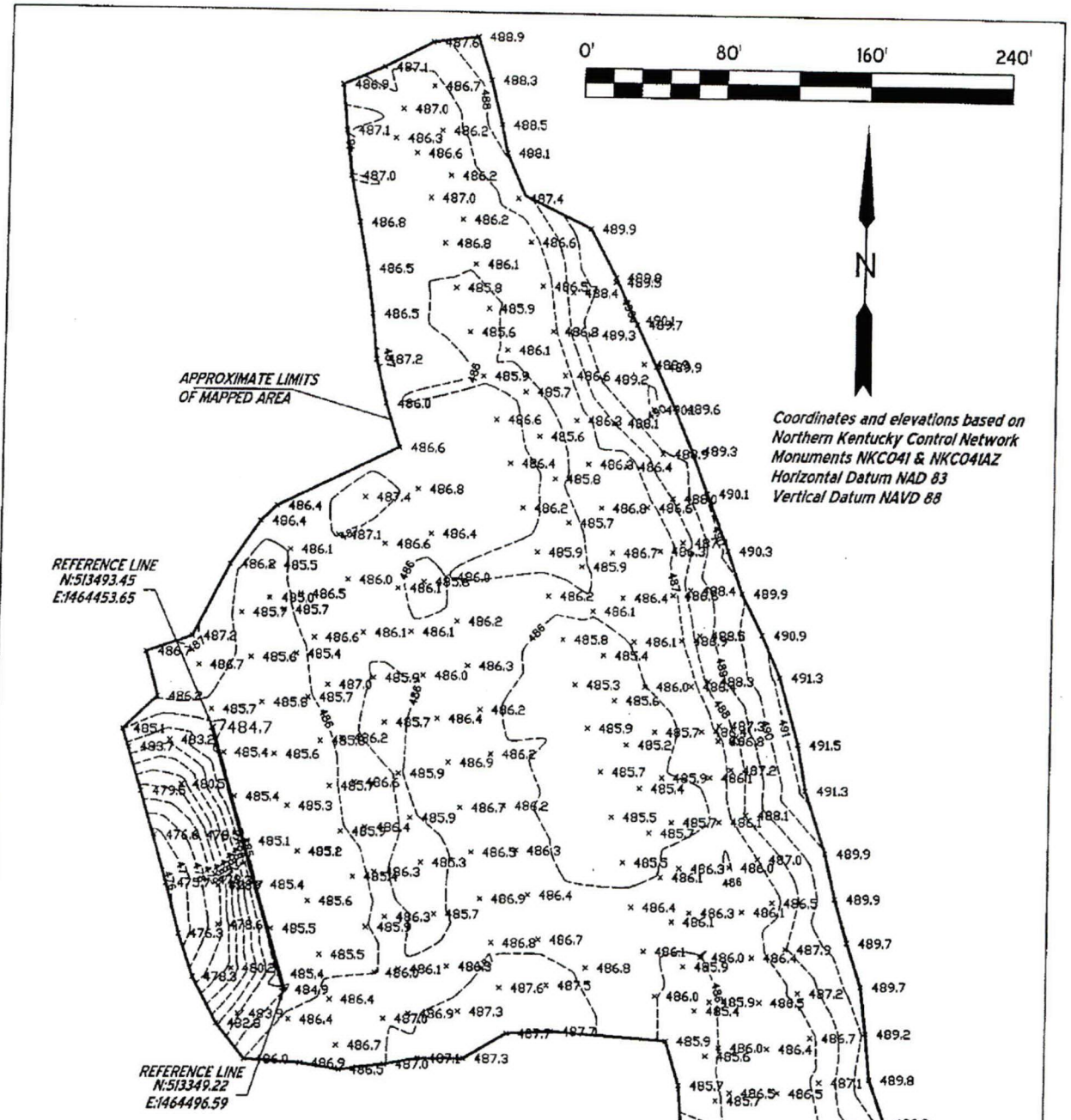
PROJECT: EAST BEND FLOOD PLAIN
LOCATION: RABBIT HASH, KENTUCKY
JOB NO.: 011-09323.011 DATE: 9/21/11

GRN-COMP

PLATE 7

APPENDIX

C



This drawing was created under my supervision with a unverified accuracy of +/- 0.1' using map grade field data in reference to NKAPC control monuments listed above. The reference meridian is based on Kentucky State Plane Coordinates, North Zone (1601). This drawing does not represent a boundary survey per 201 KAR 18:150.

Mark J. Sendelbach PLS 3531 — 8-18-2011 Date

STATE OF KENTUCKY
MARK J. SENDELBACH
3531
LICENSED PROFESSIONAL LAND SURVEYOR

Duke Energy®

EAST BEND POWER STATION
FUTURE LANDFILL TOPO

6293 Beaver Rd Union, Ky 41091	JOB #: 2011592	WORK CODE: OEBS01382X

SCALE:	DRAWN:	CHECKED:	SURVEY DATE:
1"=80'	MJS	MJS	8-04-2011

PLATE

APPENDIX

D

COMMONWEALTH
CCRG
CULTURAL RESOURCES
GROUP, INC.

November 8, 2010
R-0892/J-0728

Mr. Daniel A. Furgason
BBC&M Engineering, Inc.
11699 Chesterdale Road
Cincinnati, Ohio 45246-3917

RE: Archaeological Monitoring
East Bend Station
Boone County, Kentucky

Dear Mr. Furgason:

The Commonwealth Cultural Resources Group, Inc. (CCRG) staff has completed the archaeological monitoring of the subgrade preparation fill project at Duke Energy's East Bend Station (Figure 1). The undertaking consists of: 1) the removal of 3 to 4 feet (ft) (0.9 to 1.2 meters [m]) of sediment from a borrow area of approximately 2 acres (ac) (0.8 hectare [ha]) in area on a low floodplain ridge (Figure 2); 2) filling a 1.5 ac (0.6 ha) area around a ravine to raise it above the 100 ft (30 m) flood level to allow for future development (Figure 3). Both areas are on terraces on the floodplain of the Ohio River within the Upper East Bend Bottom. Both areas are currently used for agriculture. The contractor for the project is Utter Construction.

Archaeological Monitoring

Borrow Area

At the time of the investigation the borrow area was covered with soy bean stubble, and ground surface visibility was about 50 percent. The borrow area was located immediately west of the intersection of two unimproved farm roads, and the north-south trending road had been cut down approximately 4 ft (1.2 m) into the crest of the ridge. A silt fence had been erected around the borrow area prior to stripping. The machinery used for the project consisted of two belly scrapers

Main Office: 2530 Spring Arbor Road Jackson, Michigan 49203 • (517) 788-3550/Fax (517) 788-6594
New York Office: 2495 Main Street Room 448 Buffalo, New York 14214 • (716) 831-9003/Fax (716) 831-9003
Wisconsin Office: P.O. Box 1061 Minocqua, Wisconsin 54548 • (715) 358-5686/Fax (715) 358-6656
www.ccrginc.com

COMMONWEALTH CRG CULTURAL RESOURCES GROUP, INC.

and a bulldozer. The belly scrapers were used for stripping and to transport sediment from the borrow area to the fill area. The plowzone was stripped from the borrow area with the belly scrapers, and the bulldozer was used to knock down five small trees along the field edge next to the farm road (Figures 4 through 7).

After the initial stripping, the archaeological monitor carried out a pedestrian survey of the borrow area at 6.5 ft (2 m) intervals. Only a few fragments of modern aluminum cans were observed; no prehistoric or historic artifacts were found. Sediments in the borrow area consisted of light yellowish brown fine sand with no organic staining, suggesting that an A horizon was present. The ridge appeared to be severely eroded. As the belly scrapers cut deeper into the subsoil at the borrow area, their cuts were examined by the monitor. At greater depths the sediments also consisted of fine sand but included a few pebbles and widely scattered small water-rolled cobbles. No artifacts were uncovered beneath the plowzone.

Fill Area

The fill area was on a lower terrace than the borrow area and it consisted of a ravine and the adjoining side slopes (see Figure 2). At the time of the investigation the fill area was covered with corn stubble, and ground surface visibility was about 30 percent. A dead tree was left in place in the middle of the ravine because it was thought to be potential Indiana bat habitat. The upper plowzone was stripped off with the belly scrapers. After the initial stripping, the archaeological monitor carried out a pedestrian survey of the fill area at 6.5 ft (2 m) intervals. No prehistoric or historic artifacts were found. A few water-rolled cobbles were noted along the side slopes flanking the ravine. The soils in the fill area consisted largely of sand but were slightly darker and contained more silt than the borrow area sediments. Following the plowzone stripping and archaeological survey, the bulldozer was used to compact the subsoil prior to the placement of fill.

Donald J. Weir of Commonwealth Cultural Resources Group, Inc. reviewed the results of previous archaeological surveys in the vicinity of the East Bend Station in a letter report submitted to Cinergy on the *Proposed East Bend Landfill Expansion, Boone County, Kentucky*, (R0561) dated December 17, 2004. One prehistoric site, 15BE260 is located approximately 262 ft (80 m) to the northwest of the borrow area on the same floodplain ridge, but this site was not affected by the project. It was described as a small lithic scatter and was previously evaluated as not eligible for listing in the NRHP.

There are no previously identified archaeological resources located adjacent to the fill area.

COMMONWEALTH
CCRG
CULTURAL RESOURCES GROUP, INC.

Conclusions

In summary, no prehistoric or historic artifacts or features were observed by CCRG's archaeological monitor during the mechanical stripping of the borrow area and the fill area at the East Bend Station. It is CCRG's opinion that the project had no effect on any archaeological site and additional investigations at these locations are not recommended.

Sincerely,

Charles R Moffat

Charles R. Moffat, Ph.D.
Principal Investigator

PLATE

Figure 1. Project Area

PLATE

Figure 2. Project Area Overview, View South

Figure 3. Ravine, View West

PLATE

Figure 4. Borrow Area Plowzone Stripping, View Northwest

Figure 5. Borrow Area Plowzone Stripping, View Southwest

Figure 6. Borrow Area Plowzone Stripping, View Southwest

Figure 7. Borrow Area After Plowzone Stripping, View Southeast

AG-DR-01-005

REQUEST:

Provide a map or diagram showing the distance from the Ohio river to the proposed landfill site.

RESPONSE:

AG-DR-01-004 Attachment A shows this distance. This measurement is the distance from the closest point of the landfill to the Ohio river.

PERSON RESPONSIBLE: Nicholas R. Sellet/Thomas E. Wiest

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-006

REQUEST:

What aspects of the projected site have been designed or planned to prevent threat of flooding on the proposed landfill site?

RESPONSE:

Please see the response to AG-DR-01-004 for information related to the floodplain.

The proposed landfill is designed with drainage ditches and lined sediment pond directly to its south. The drainage system and pond was designed with the capacity to hold precipitation events for the proposed landfill footprint. This pond is connected to a pumping station that conveys the water to the existing ash pond that will be operated as needed to prevent any localized flooding within the landfill footprint.

PERSON RESPONSIBLE: Nicholas R. Sellet/Thomas E. Wiest

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-007

REQUEST:

What volume of material, in cubic yards, does Duke anticipate placing into the landfill annually?

RESPONSE:

Duke Energy Kentucky anticipates average placement of 1,000,000 cubic yards of Poz-o-tec material per year. This only includes material produced by East Bend's waste stabilization plant and is based on historical data.

If future regulations require bottom ash to be placed into the landfill, this number would increase by approximately 35,000 cubic yards of material per year. Duke Energy Kentucky is assuming that a combination of the EPA's CCR rule and Effluent Guidelines (ELG) will require the conversion to dry bottom ash handling in the next 5-10 years.

It is also possible that a combination of the CCR rule and ELG would require that the existing ash basin be cleaned out and closed, the bottom ash material removed from the ash basin would be placed into the proposed landfill. This quantity is estimated to be anywhere from 600,000 cubic yards to 1,000,000 cubic yards based on historical coal burn and coal ash content information.

PERSON RESPONSIBLE: Nicholas R. Sellet/Thomas E. Wiest

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-008

REQUEST:

Reference the Application, paragraph 16 and 17. If the first phase is estimated to cost $30 million, and the subsequent 7 phases are estimated to cost $18 million each, then the total construction estimate should be $156 million. What is the reason for the additional $3 million included in the estimated budget provided in paragraph 16 on page 10 of the Application?

RESPONSE:

The estimate is $29.5 million for the first cell and an average of $18.5 million for each of the additional 7 cells, totaling $159 million. This includes the landfill infrastructure, cell construction, monitoring, and capital closure costs (capping of landfill).

PERSON RESPONSIBLE: Nicholas R. Sellet

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-009

REQUEST:

Does Duke have plans to contract with other generating facilities to accept fly ash? If so, provide an explanation of the plan or actual contracts with other generators.

RESPONSE:

The Poz-o-tec production process requires more fly ash than East Bend Station has the ability to generate. The Poz-o-tec by-product is made primarily to stabilize, solidify, and dispose of the liquid sulfate FGD slurry waste. For this reason, additional fly ash is sometimes obtained from other generating stations. Duke Energy Kentucky has already contracted to take ash from other generating stations, such as W.H. Zimmer Station, the Proctor and Gamble Ivorydale Station and Miami Fort Station, and modified the landfill permit, to obtain fly ash in order to make-up for the deficit in East Bend fly ash production. If necessary and/or economically prudent, it is possible that Duke Energy Kentucky could enter into additional contracts with other utilities going forward to obtain supplemental fly ash. It should be noted that the ability to accept fly ash from other stations is driven by Duke Energy Kentucky's need, not that of any other station. The Company does not intend to simply take fly ash for disposal from other stations unless Duke Energy Kentucky needs it to make the Poz-o-tec.

PERSON RESPONSIBLE: Nicholas R. Sellet

Duke Energy Kentucky
Case No. 2015-00089
AG's First Set Data Requests
Date Received: April 10, 2015

AG-DR-01-010

REQUEST:

Will Duke be placing any materials into the landfill other than Poz-o-tec? If so, what materials and in approximately what amounts annually?

RESPONSE:

Please see the response to AG-DR-01-007. There is potential that bottom ash would be an additional waste stream in the future. The landfill is already permitted to take this material.

PERSON RESPONSIBLE: Tammy Jett