



# Preston Engineering, Inc.

environmental consultants

Corn Belt  
Humboldt Station  
# 46-SDP-4-90C

Corporate Office  
4436 N. Brady St. • Davenport, IA 52806  
Ph. 319/388/8288 • Fax 319/388/9003  
www.prestonengineering.com

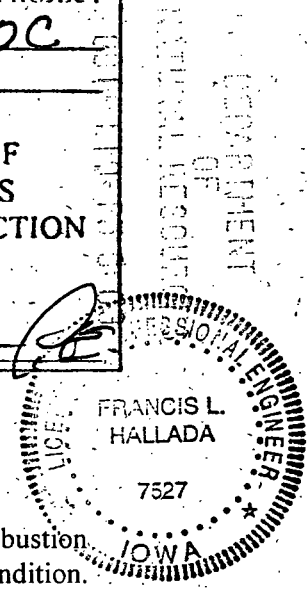
SDP AMENDMENT # <u>3</u>
Date: <u>4/20/2000</u>

PLANS AND SPECIFICATIONS APPURTENANT TO PERMIT FOR SANITARY DISPOSAL PROJECT NO. <u>46-SDP-4-90C</u> DATED <u>4/12/99</u>
IOWA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION
<i>[Signature]</i>

February 7, 2000

Iowa Department of Natural Resources  
attn: Nina Koger  
Wallace State Office Building  
Des Moines, Iowa 50319

RE: Corn Belt Power Cooperative- Humboldt Station  
Permit Number: 46-SPD-4-90C  
Landfill Closure Report



Dear Ms. Koger:

Enclosed are the proper documents showing that the closure requirements for the coal combustion landfill operated by Corn Belt Power Cooperative have been met except for the seeding condition.

The landfill cap was constructed during the fourth quarter of 1999 according to design specifications and permit requirements. The ash was shaped before placing two feet of compacted and one foot of uncompacted soil on the landfill.

### A) "As Built" Drawings

I have enclosed the original design as well as the "as built" drawings for comparison purposes. Four cross-sections and a plan drawing were completed that represent the final cover. Final cross-sections of the two drainage systems have been included with the elevations of the ash, soil cap, and the pipe inverts labeled.

A perforated PVC inlet pipe was substituted for the original beehive inlet. The PVC inlet should be self-cleaning and require less maintenance than the original design.

### B) Final Cover Requirements

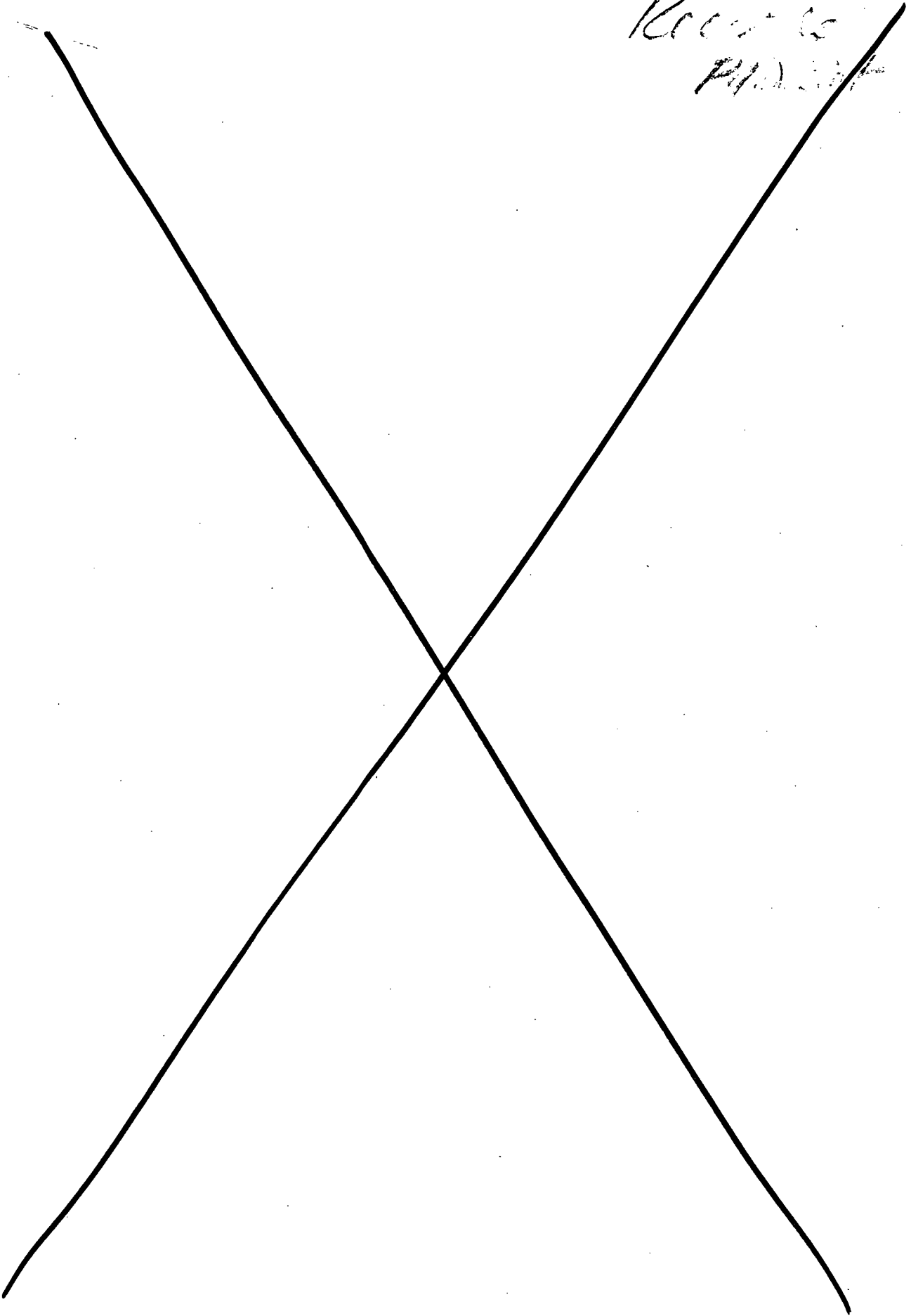
A total of seventeen proctor tests were conducted on the three lifts that comprised the two foot protective layer. The results indicate that the contractor did an excellent job of compaction with densities well above the specified 95%. The permeability test result suggest that it is less than 10<sup>-6</sup> cm/sec. The permeability requirement was deleted from the permit in Amendment #1 dated October 19, 1999.

The results of the compaction and permeability tests have been included.

Con 12-1-1  
Doc # 50788

Regional Office  
5650 N.W. Johnston Dr. Ste. G • Johnston, IA 50131  
Ph. 515/727/9195 • Fax 515/727/9198

Receipt  
P.D. 2014




C) Seeding Requirements

Seeding of the landfill cap and borrow areas has not been completed due to the weather. Corn Belt has scheduled this operation for the spring. I have included the specifications regarding this procedure.

D) A copy of the notation filed with the county recorder is enclosed

E) Engineer Certification

<p>SEAL</p> 	<p>I certify that site closure has been implemented in compliance with the rules, closure/post closure plan, and the amended permit, except for establishment of vegetation on the cover.</p> <p>I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.</p> <p>Signature <u>Morris Preston</u> Date <u>2/7/2000</u></p> <p>Name: Morris L. Preston, P.E.</p> <p>P.E. Registration Number: 08142</p> <p>License Renewal Date: December 31, 2001</p> <p>Pages or sheets covered by this seal: Corn Belt Power Cooperative – Humboldt Station Landfill Closure Report</p>
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If you have any questions or comments regarding the closure report, you may contact me at (319) 388-8288 or Mr. Jensen at (515) 332-257.

Thank you,

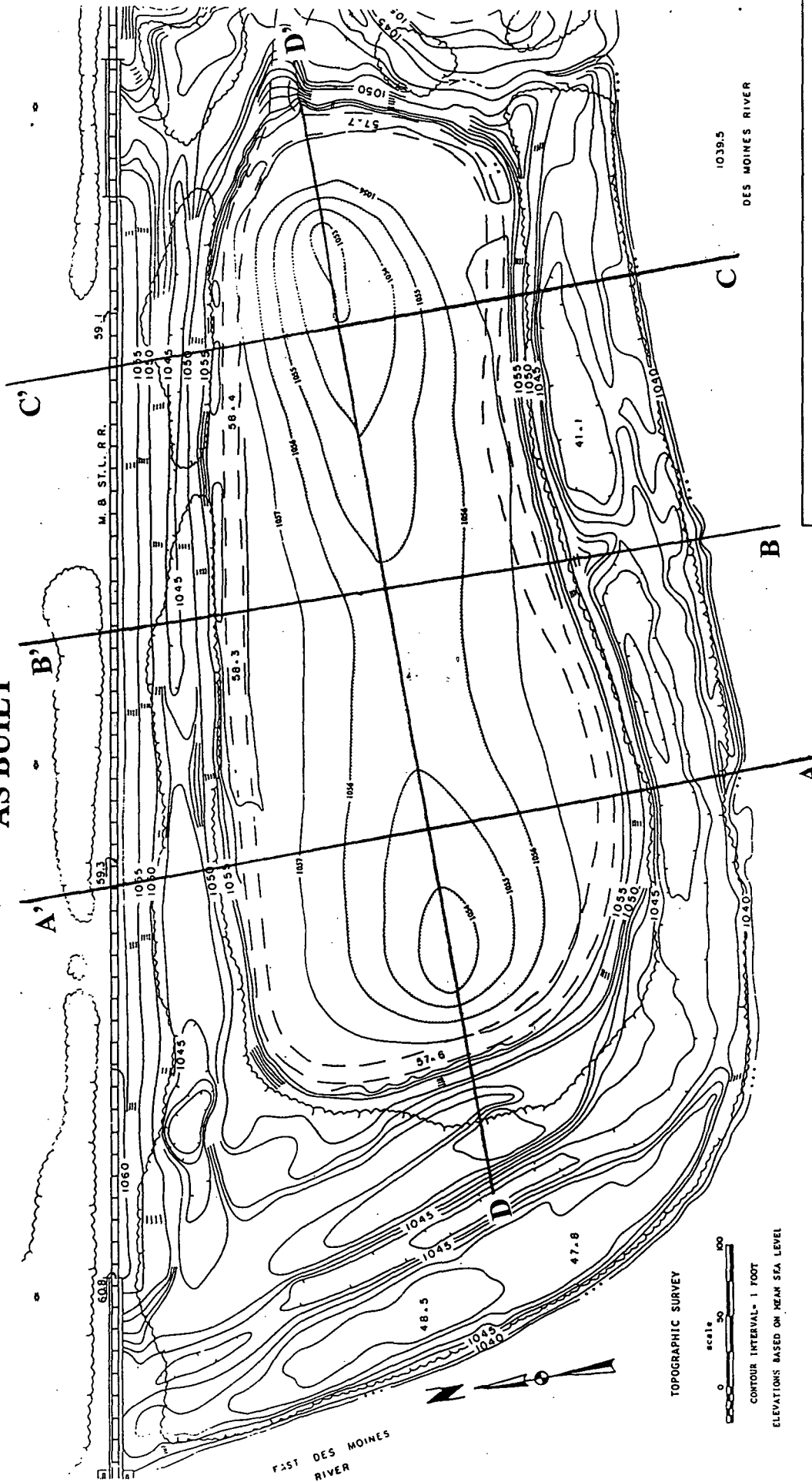


Morris L. Preston, P.E., Q.E.P.  
President

Enclosures (4)

Cc: Don Jensen

# PLAN DRAWING OF LANDFILL SOIL CAP "AS BUILT"



"AS BUILT" PLAN DRAWING

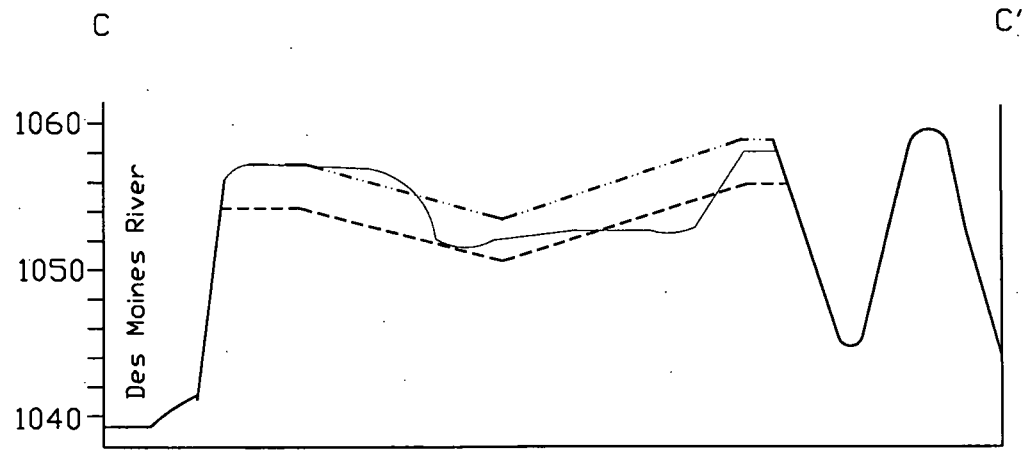
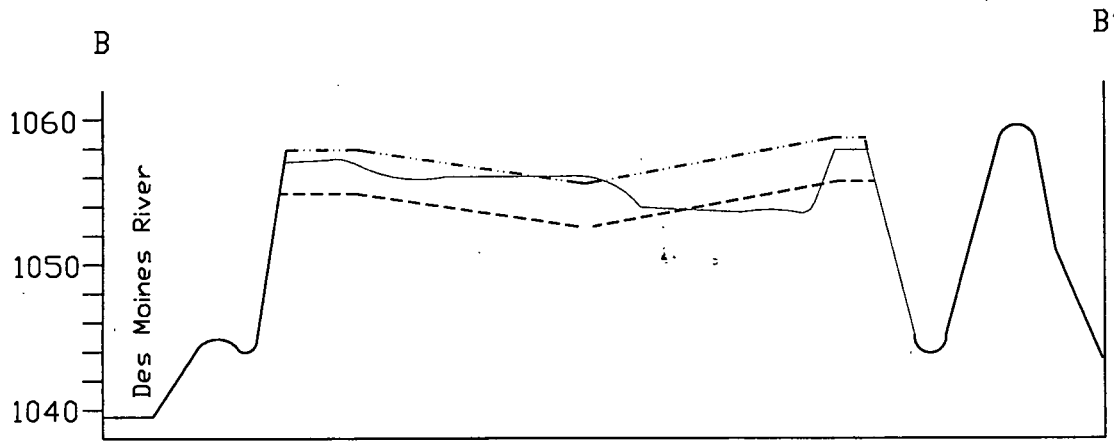
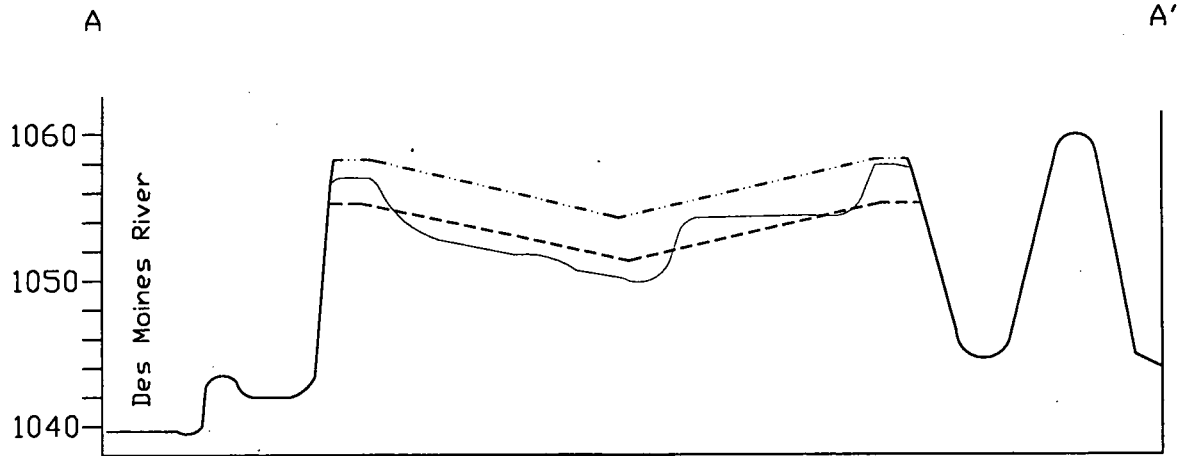
DRAWN BY: JEM    DATE: 1/00    REVISED:    REVISED:

CORN BELT POWER COOP

PRESTON ENGINEERING, INC.  
CONSULTING ENVIRONMENTAL ENGINEERS

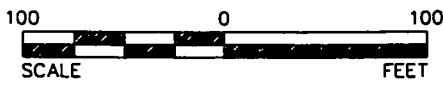
DRAWING NUMBER  
95-269.3

# "AS BUILT" LANDFILL CROSS-SECTIONS



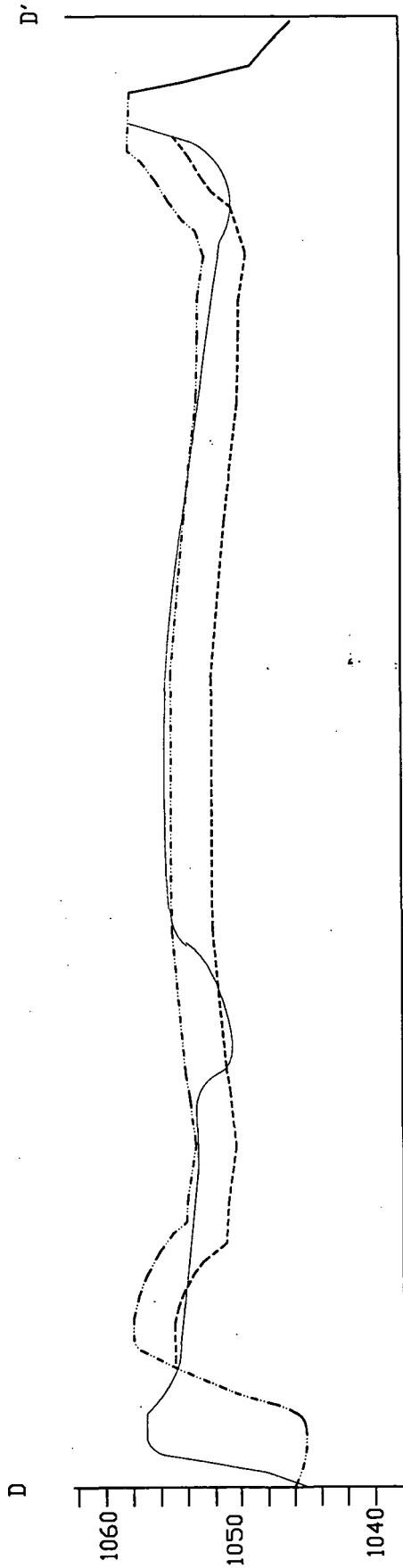
\_\_\_\_\_ Previous Topography  
 - - - - - Final Topography of Waste Material  
 - · - · - Final Topography of Soil Cap

8 X Vertical Exaggeration



<b>CROSS SECTION A-A', B-B', and C-C'</b>			
<small>DRAWN BY:</small> SMS	<small>DATE:</small> 6/28/96	<small>REVISED:</small> JEM	<small>REVISED:</small> 1/00
<b>CORN BELT POWER, HUMBOLDT, IOWA</b>			
<b>PRESTON ENGINEERING, INC.</b> <small>CONSULTING ENVIRONMENTAL ENGINEERS</small>			<small>DRAWING NUMBER</small> 95-269.finxsec

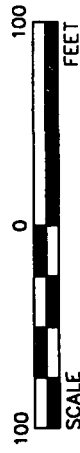
# "AS BUILT" CROSS-SECTION D TO D'



\_\_\_\_ Previous Topography

----- Final Topography of Waste Material

- . - . - . Final Topography of Soil Cap



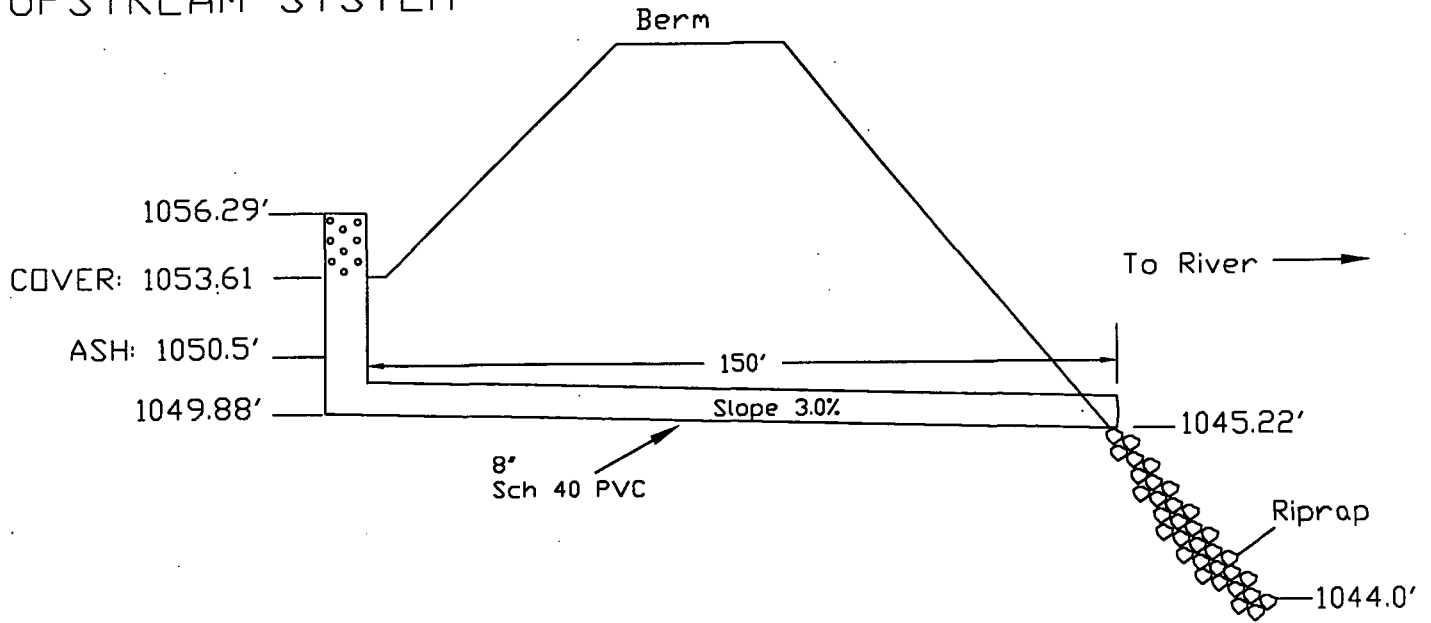
8 X Vertical Exaggeration

## CROSS SECTION D--D'

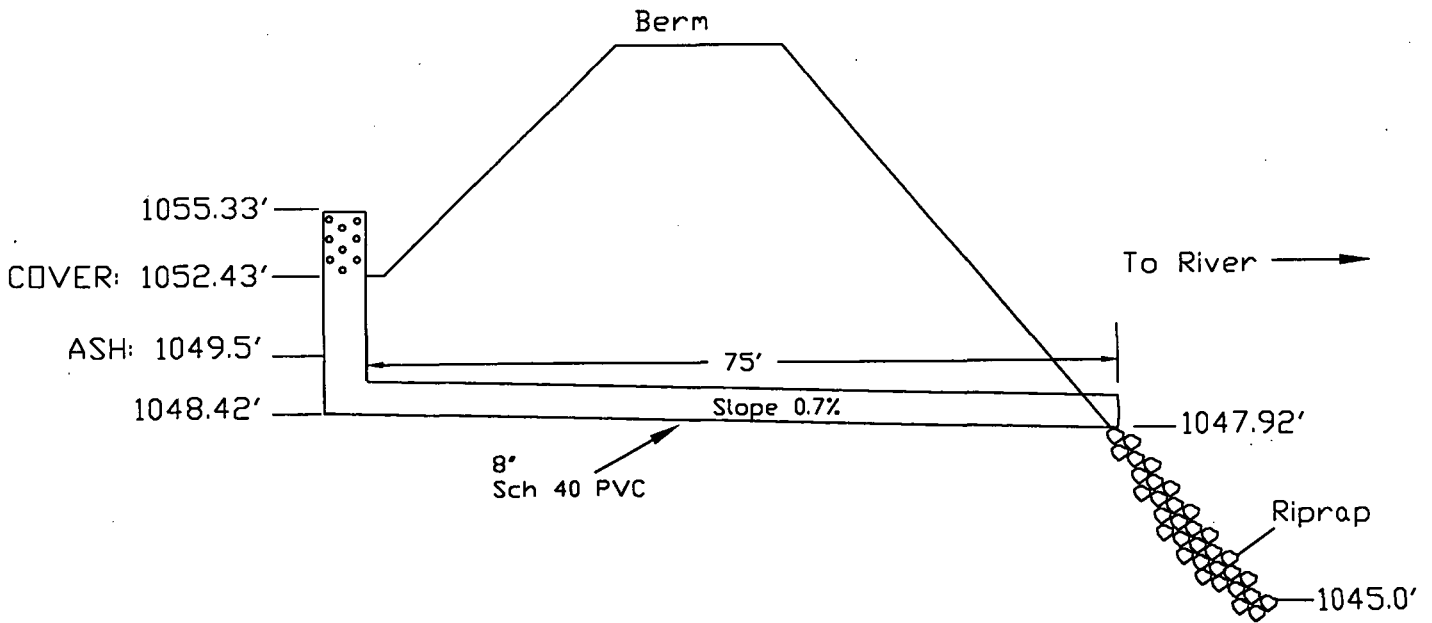
DRAWN BY: SMS	DATE: 6/98	REVISED: JEM	REVISED: 1/00
CORN BELT POWER, HUMBOLDT, IOWA			
PRESTON ENGINEERING, INC.		DRAWING NUMBER - 95-269.finxsec2	
CONSULTING ENVIRONMENTAL ENGINEERS			

# "AS BUILT" DRAINAGE SYSTEMS AND COVER

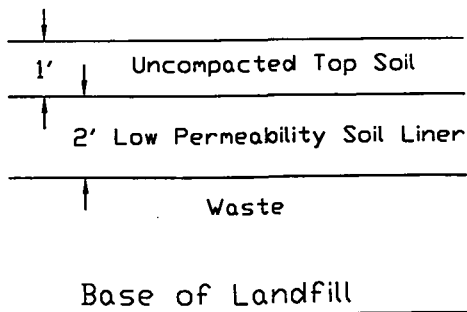
## UPSTREAM SYSTEM



## DOWNSTREAM SYSTEM

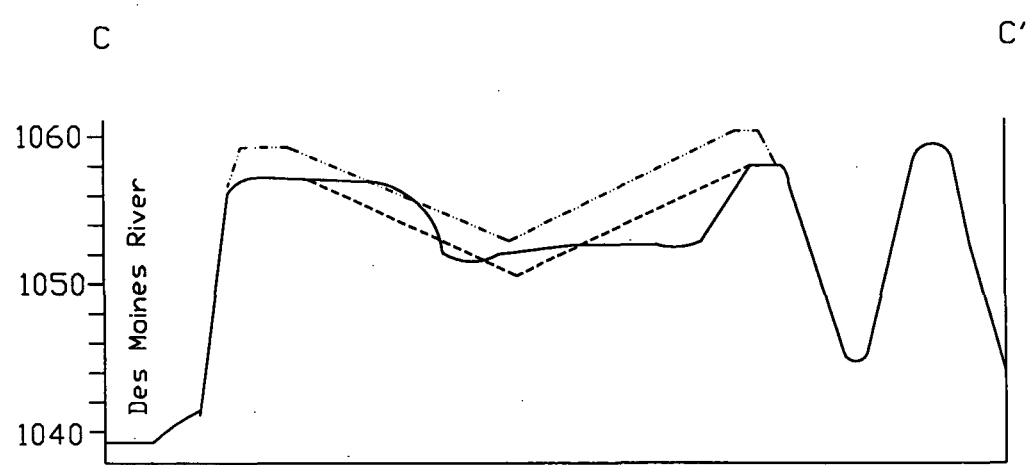
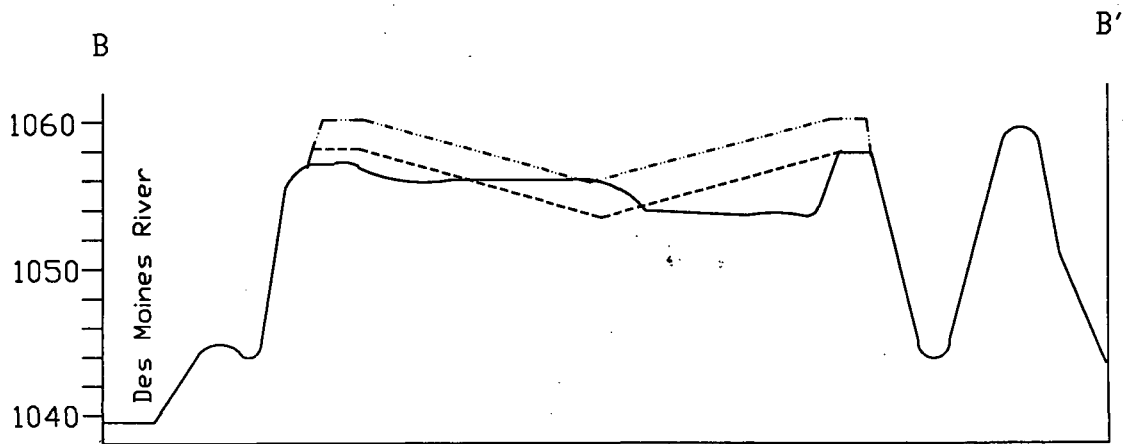
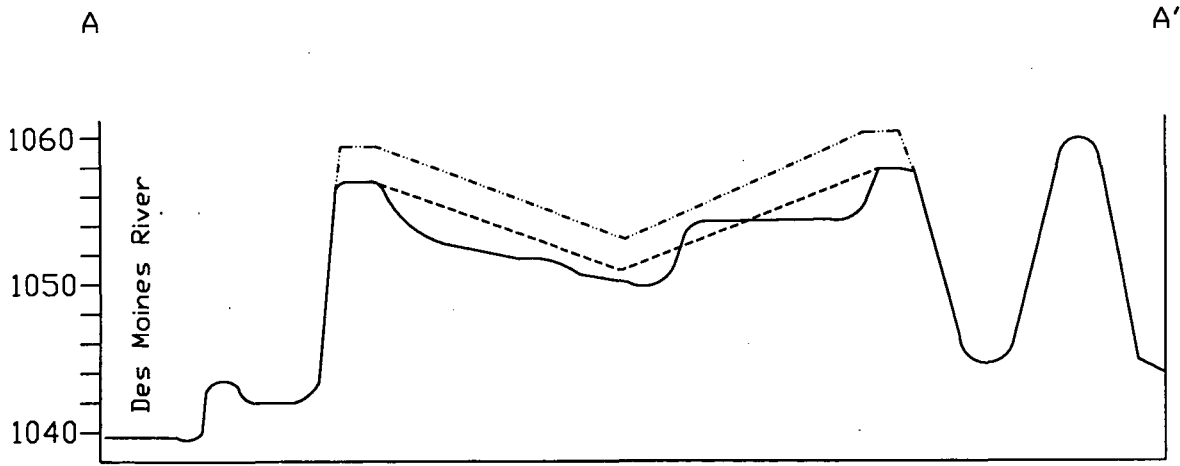


## Cover



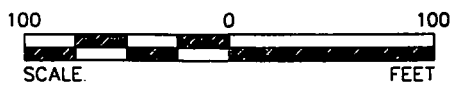
NOTE: NOT TO SCALE

DRAINAGE STRUCTURES: "AS BUILT"			
DRAWN BY: SMS	DATE: 6/98	REVISED: JEM	REVISED: 1/00
CORN BELT POWER, HUMBOLDT, IOWA			
PRESTON ENGINEERING, INC. CONSULTING ENVIRONMENTAL ENGINEERS			DRAWING NUMBER 95-269.DRAIN

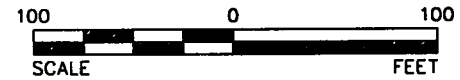
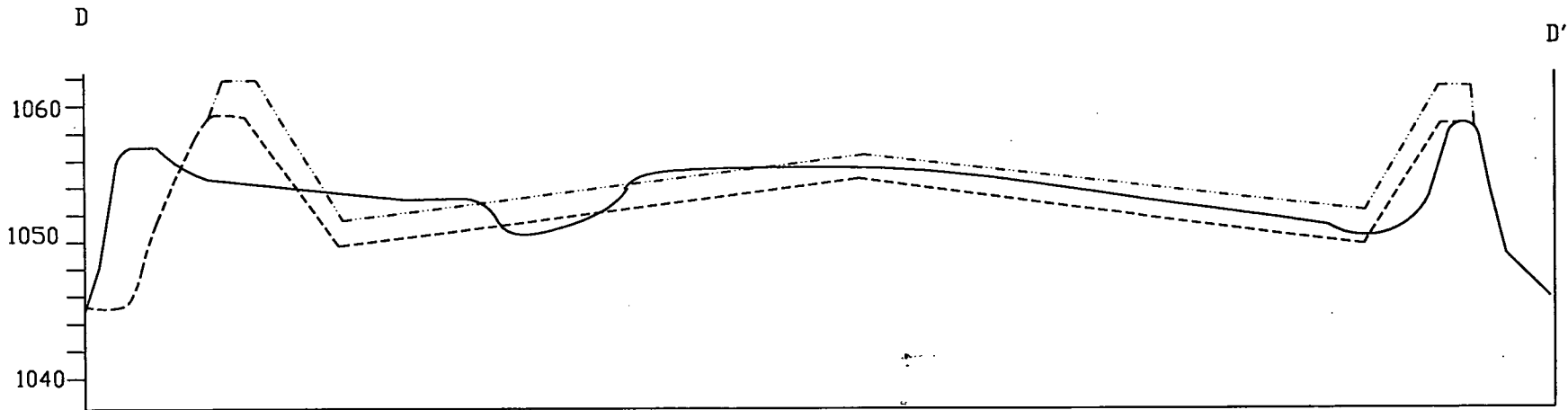


\_\_\_\_\_ Present Topography  
 - - - - - Final Topography of Waste Material  
 - · - · - Final Topography of Soil Cap

8 X Vertical Exaggeration



<b>CROSS SECTION A-A', B-B', and C-C'</b>			
DRAWN BY: SMS	DATE: 6/26/96	REVISED:	REVISED:
<b>CORN BELT POWER, HUMBOLDT, IOWA</b>			
PRESTON ENGINEERING, INC. CONSULTING ENVIRONMENTAL ENGINEERS			DRAWING NUMBER <b>95-269</b>

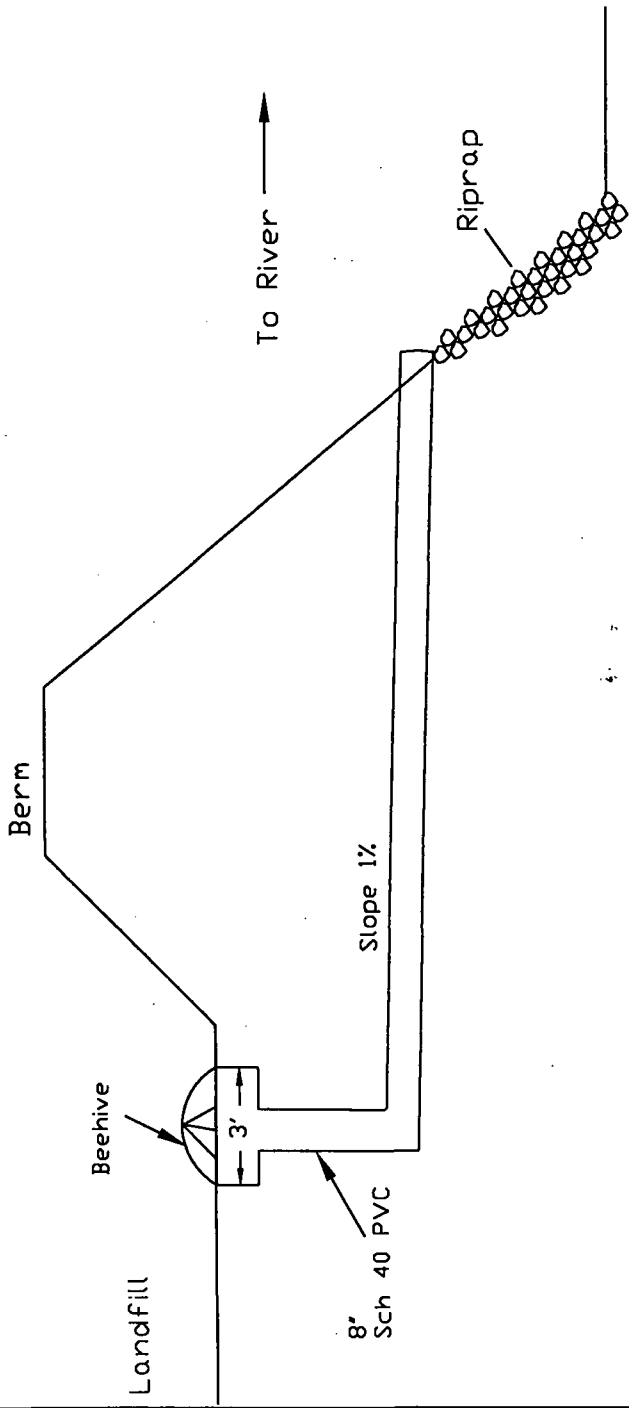


- Present Topography
- Final Topography of Waste Material
- · - · - Final Topography of Soil Cap

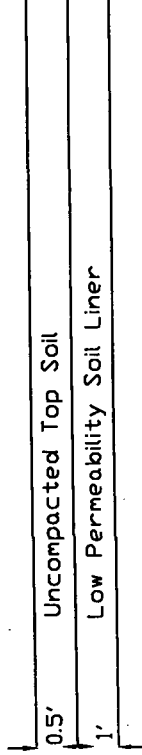
8 X Vertical Exaggeration

CROSS SECTION D-D'			
DRAWN BY: SMS	DATE: 6/27/96	REVISED:	REVISED:
CORN BELT POWER, HUMBOLDT, IOWA			
PRESTON ENGINEERING, INC. CONSULTING ENVIRONMENTAL ENGINEERS			DRAWING NUMBER 95-269.3

# Drainage Structure



# Cover Design



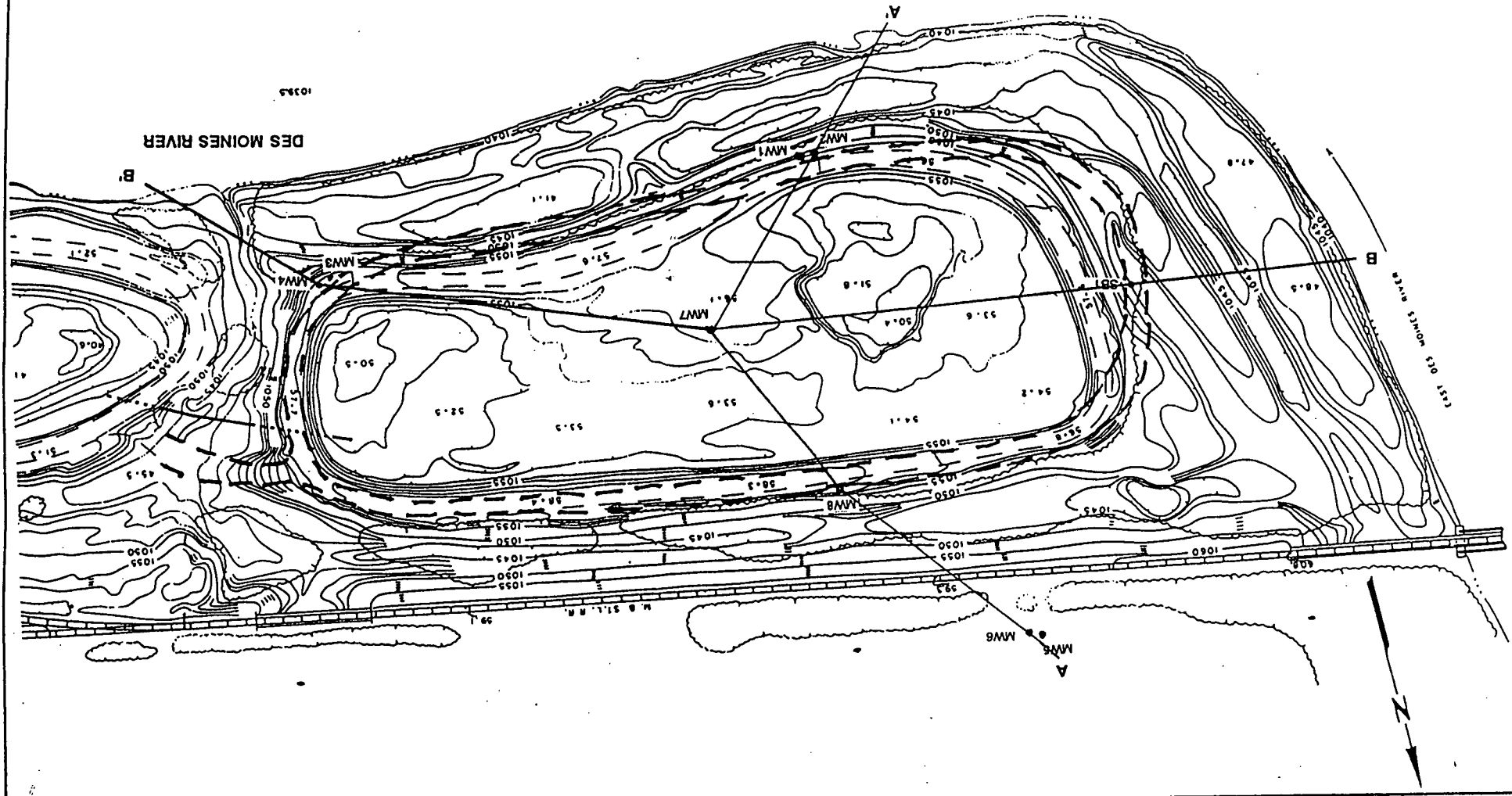
Base of Landfill

NOTE: NOT TO SCALE

LANDFILL DESIGN	
DRAWN BY: SMS	DATE: 6/27/96
REVISED:	REVISED:
CORN BELT POWER, HUMBOLDT, IOWA	
PRESTON ENGINEERING, INC.	DRAWING NUMBER
CONSULTING ENVIRONMENTAL ENGINEERS	95-269.2



DRAWING NUMBER 95-269		PRESTON ENGINEERING, INC. CONSULTING ENVIRONMENTAL ENGINEERS	
CORN BELT POWER, HUMBOLDT, IOWA			
DATE: 4/30/96	REVISION:	DATE: 4/30/96	REVISION:
DRAWN BY: SMS			
FIGURE 6, GEOLOGIC CROSS SECTION			



## TEAM Services

### PERMEABILITY TEST RESULTS

Project Name: Cornbelt Power

Project No.: 5-008

Sample: Proctor E (100% compaction)

Started: 10/13/99 Completed: 10/14/99

Sample Location: N/A

Test Procedure: ASTM D-5084

Sample Description: Sandy lean CLAY, trace gravel, dark brown

Head Pressure: 33 psi

Back Pressure: 30 psi

Confining Pressure: 40 psi

SAMPLE DATA		TEST DATA		
<b>Sample Initials</b>		<b>Elapsed Time (s)</b>	<b>Burette (0.1Xcm<sup>3</sup>)</b>	<b>Flow Rate (cm<sup>3</sup>/s)</b>
Weight (g)	1044.9	0	13.30	-
Height (in)	4.912	120	16.00	0.00225
Diameter (in)	2.875	240	17.25	0.001041667
Area (cm <sup>2</sup> )	41.883	360	18.20	0.00079167
Volume (cm <sup>3</sup> )	522.55	480	19.00	0.00066667
Water Content (%)	17.20	600	19.70	0.00058333
Dry Unit Weight (pcf)	106.52	720	20.30	0.00054167
Initial Dial Reading (in)	0.790	840	20.95	0.00054167
Final Dial Reading (in)	0.765	960	21.55	0.0005
<b>Sample Finals</b>		1080	22.10	0.00045833
Weight (g)	1057.9	1200	22.70	0.0005
Height (in)	4.919			
Diameter (in)	2.8791			
Area (cm <sup>2</sup> )	42.002			
Volume (cm <sup>3</sup> )	524.79			
Water Content (%)	19.5			
Dry Unit Weight (pcf)	105.31			
<b>Difference of Head Pressure (psi)</b>	3		<b>Average Flow Rate Based on last 7 Readings (cm<sup>3</sup>/s)</b>	0.00054167
			<b>Coefficient of Permeability k (cm/s)</b>	7.64e-07

## TEAM Services

### PERMEABILITY TEST RESULTS

Project Name: Cornbelt Power

Project No.: 5-008

Sample: Proctor E (90% compaction)

Started: 10/11/99 Completed: 10/13/99

Sample Location: N/A

Test Procedure: ASTM D-5084

Sample Description: Sandy lean CLAY, trace gravel, dark brown

Head Pressure: 28 psi

Back Pressure: 25 psi

Confining Pressure: 35 psi

SAMPLE DATA		TEST DATA		
Sample Initials		Elapsed Time (s)	Burette (0.1Xcm <sup>3</sup> )	Flow Rate (cm <sup>3</sup> /s)
Weight (g)	1096.6	0	12.5	-
Height (in)	5.70	120	16.3	0.003166667
Diameter (in)	2.88	240	18.5	0.001833333
Area (cm <sup>2</sup> )	42.028	360	20.5	0.001666667
Volume (cm <sup>3</sup> )	608.49	480	22.3	0.0015
Water Content (%)	17.0	600	24	0.001416667
Dry Unit Weight (pcf)	96.162	720	25.2	0.001208333
Initial Dial Reading (in)	0.506	840	27.2	0.001666667
Final Dial Reading (in)	0.460	960	28.7	0.00125
Sample Finals		1020	29.5	0.001333333
Weight (g)	1149.1	1080	30.4	0.0015
Height (in)	5.654			
Diameter (in)	2.8568			
Area (cm <sup>2</sup> )	41.353			
Volume (cm <sup>3</sup> )	593.87			
Water Content (%)	22.6			
Dry Unit Weight (pcf)	98.529			
Difference of Head Pressure (psi)	3		Average Flow Rate Based on last 7 Readings (cm <sup>3</sup> /s)	0.001410714
			Coefficient of Permeability k (cm/s)	2.32e-06

## TEAM Services

### PERMEABILITY TEST RESULTS

Project Name: Cornbelt Power

Project No.: 5-008

Sample: Proctor F (20 blows/lift, 97.8% comp.)

Started: 10/13/99 Completed: 10/18/99

Sample Location: N/A

Test Procedure: ASTM D-5084

Sample Description: Sandy lean CLAY, trace gravel, dark brown

Head Pressure: 38 psi

Back Pressure: 35 psi

Confining Pressure: 45 psi

SAMPLE DATA		TEST DATA		
Sample Initials		Elapsed Time (s)	Burette (0.1Xcm <sup>3</sup> )	Flow Rate (cm <sup>3</sup> /s)
Weight (g)	1204.8	0	7.6	-
Height (in)	5.765	120	9.6	0.001666667
Diameter (in)	2.875	240	9.8	0.00016667
Area (cm <sup>2</sup> )	41.883	360	10.4	0.0005
Volume (cm <sup>3</sup> )	613.29	480	10.85	0.000375
Water Content (%)	16.8	600	11.27	0.00035
Dry Unit Weight (pcf)	105	720	11.65	0.00033333
Initial Dial Reading (in)	0.563	840	12.00	0.00029167
Final Dial Reading (in)	0.553	960	12.33	0.000275
Sample Finals		1080	12.66	0.000275
Weight (g)	1240.9	1200	12.99	0.000275
Height (in)	5.755			
Diameter (in)	2.87			
Area (cm <sup>2</sup> )	41.737			
Volume (cm <sup>3</sup> )	610.11			
Water Content (%)	19.1			
Dry Unit Weight (pcf)	106.61			
Difference of Head Pressure (psi)	3		Average Flow Rate Based on last 4 Readings (cm <sup>3</sup> /s)	0.00027917
			Coefficient of Permeability k (cm/s)	4.64e-07

# NUCLEAR DENSITY FIELD REPORT

# TEAM Services



PROJECT NO: 5-008  
 REPORT NO: 1 (October 8, 1999)  
 PROJECT NAME: Cornbelt Power Corp. (your P.O. #99-0623)  
 Humboldt, Iowa

CLIENT: Cornbelt Power Cooperative  
 P.O. Box 508  
 1300 N. 13<sup>th</sup> Street  
 Humboldt, IA 50548

CC: Preston Engineering, Attn.: Jackie Moore

Attachments: Curves A, B, C, and D

Attn.: Don Jensen

Date	Test No.	Location: Soil Cap	Elev. (Ft.)	Mtl. Mark	Specification		% Compact ASTM D2922-96	% H2O Var. ASTM D3017-96	Comments
					Density %	Moisture %			
10/7	1	90'W 35'N of E. Intake	-1.3	D	95	0 / +4	100	-0.3	
	2	200'W 35'N of E. Intake	-1.3	A	"	"	93	3.9	Low compaction
	3	60'E 40'S of Center Point 2	-1.3	A	"	"	93	3.1	"

LIFT-1

MATERIAL DESCRIPTION	MAXIMUM DRY DENSITY, PCF	OPTIMUM MOISTURE	NOTE: Locations indicated are approximate. Test results represent only the locations tested at the time of testing. Values may change due to construction activity, weather, or environmental conditions.
A Lean CLAY, with sand, brown	118.5	12.0%	Density test reports shall not be reproduced, except in full, without our written permission.  Approved:
B Lean CLAY, trace sand and organic matter, brown	108.0	17.5%	
C Very sandy lean CLAY, trace gravel, brown	118.0	12.5%	
D Fat CLAY, with sand, dark brown	99.5	20.5%	

# NUCLEAR DENSITY FIELD REPORT

**TEAM Services**



PROJECT NO: 5-008  
 REPORT NO: 2 (October 14, 1999)  
 PROJECT NAME: Cornbelt Power Corp. (your P.O. #99-0623)  
 Humboldt, Iowa

CLIENT: Cornbelt Power Cooperative  
 P.O. Box 508  
 1300 N. 13<sup>th</sup> Street  
 Humboldt, IA 50548  
 Attn.: Don Jensen

CC: Preston Engineering, Attn.: Jackie Moore  
 Attachments: Curves E and F

Date	Test No.	Location: Soil Cap	Elev. (Ft.)	Mtl. Mark	Specification		% Compact ASTM D2922-96	% H2O Var. ASTM D3017-96	Comments
					Density %	Moisture %			
10/7 <i>LIFT-1</i>	2	200'W 35'N of E. Intake <sup>(2)</sup>	-1.3	F	95	0 / +4	101	-0.6	Revised (new proctor)
	3	60'E 40'S of Center Point 2 <sup>(3)</sup>	-1.3	F	"	"	101	-1.4	"
<b>Ash Cap - Top Elev. 1060.75</b>									
<i>LIFT-2</i>	4	45'S 80'W of Well #7 <sup>(1)</sup>	-0.7	F	"	"	100	-0.5	
	5	55'N 8'W of Well #7	-0.7	D	"	"	102	-1.1	Dry
	6	25'S 35'E of Well #7	-0.7	F	"	"	98	2.6	
	7	35'S 180'E of Well #7	-0.7	F	"	"	98	-0.6	
	8	70'N 155'E of Well #7	-0.7	A	"	"	96	2.6	
	9	200'W 35'N of E. Intake	-1.3	F	"	"	95	2.3	
	10	60'E 40'S of Well #7	-1.3	E	"	"	99	-0.7	
	11	45'S 80'W of Well #7	-1.3	D	"	"	100	0.9	
	12	45'N 30'E of W. Intake	-1.3	F	"	"	96	1.8	

MATERIAL DESCRIPTION	MAXIMUM DRY DENSITY, PCF	OPTIMUM MOISTURE	NOTE: Locations indicated are approximate. Test results represent only the locations tested at the time of testing. Values may change due to construction activity, weather, or environmental conditions.
A Lean CLAY, with sand, brown	118.5	12.0%	Density test reports shall not be reproduced, except in full, without our written permission.  Approved:
B Lean CLAY, trace sand and organic matter, brown	108.0	17.5%	
C Very sandy lean CLAY, trace gravel, brown	118.0	12.5%	
D Fat CLAY, with sand, dark brown	99.5	20.5%	
E Sandy lean CLAY, medium brown	106.0	17.0%	
F Sandy lean CLAY, medium brown	109.0	16.5%	

# NUCLEAR DENSITY FIELD REPORT

# TEAM Services

PROJECT NO: 5-008  
 REPORT NO: 3 (October 15, 1999)  
 PROJECT NAME: Cornbelt Power Corp. (your P.O. #99-0623)  
 Humboldt, Iowa

**RECEIVED**

**OCT 18 1999**

Corn Belt Power Co-op  
 HUMBOLDT, IOWA



Accredited Laboratory


CLIENT: Cornbelt Power Cooperative  
 P.O. Box 508  
 1300 N. 13<sup>th</sup> Street  
 Humboldt, IA 50548

CC: Preston Engineering, Attn.: Jackie Moore

Attn.: Don Jensen

Date	Test No.	Location	Elev. (Ft.)	Mtl. Mark	Specification		% Compact ASTM D2922-96	% H2O Var. ASTM D3017-96	Comments
					Density %	Moisture %			
<b>Ash Cap</b>									
10/13	13	150'W 60'S of Well #7	FSG	A	95	0 / +4	96	-1.7	Top lift / dry
	14	150'W 45'N of Well #7	"	E	"	"	100	-3.5	"
	15	12'W 15'N of Well #7	"	F	"	"	101	-0.5	Top lift
	16	125'E 65'N of Well #7	"	F	"	"	98	1.8	"
	17	125'E 45'S of Well #7	"	F	"	"	99	0.5	"

LIFT-3

MATERIAL DESCRIPTION	MAXIMUM DRY DENSITY, PCF	OPTIMUM MOISTURE	NOTE: Locations indicated are approximate. Test results represent only the locations tested at the time of testing. Values may change due to construction activity, weather, or environmental conditions.
A Lean CLAY, with sand, brown	118.5	12.0%	Density test reports shall not be reproduced, except in full, without our written permission.  Approved: 
B Lean CLAY, trace sand and organic matter, brown	108.0	17.5%	
C Very sandy lean CLAY, trace gravel, brown	118.0	12.5%	
D Fat CLAY, with sand, dark brown	99.5	20.5%	
E Sandy lean CLAY, medium brown	106.0	17.0%	
F Sandy lean CLAY, medium brown	109.0	16.5%	

# TEAM Services, Inc.

## MOISTURE-DENSITY RELATIONSHIP

Job No. 5-008 Date 10/11/99

Project Cornbelt Power Corp. - Humboldt, Iowa

Source of Material Native, 60'E 40'S of Well #7

Description of Material Sandy lean CLAY, medium brown

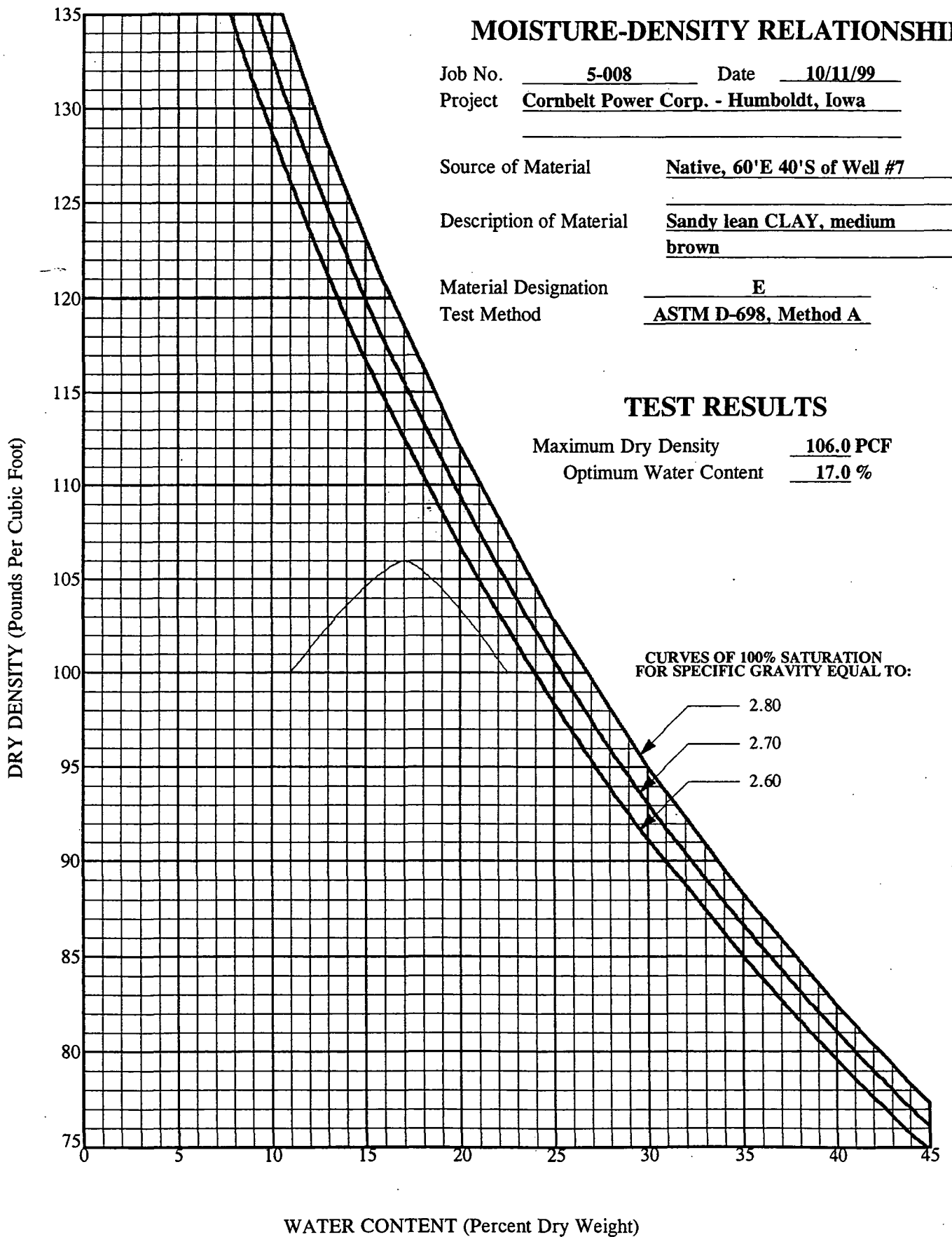
Material Designation E

Test Method ASTM D-698, Method A

### TEST RESULTS

Maximum Dry Density 106.0 PCF

Optimum Water Content 17.0 %



# TEAM Services, Inc.

## MOISTURE-DENSITY RELATIONSHIP

Job No. 5-008 Date 10/14/99

Project Cornbelt Power Corp. - Humboldt, Iowa

Source of Material Native, 200'W 35'N of E. Intake

Description of Material Sandy lean CLAY, medium brown

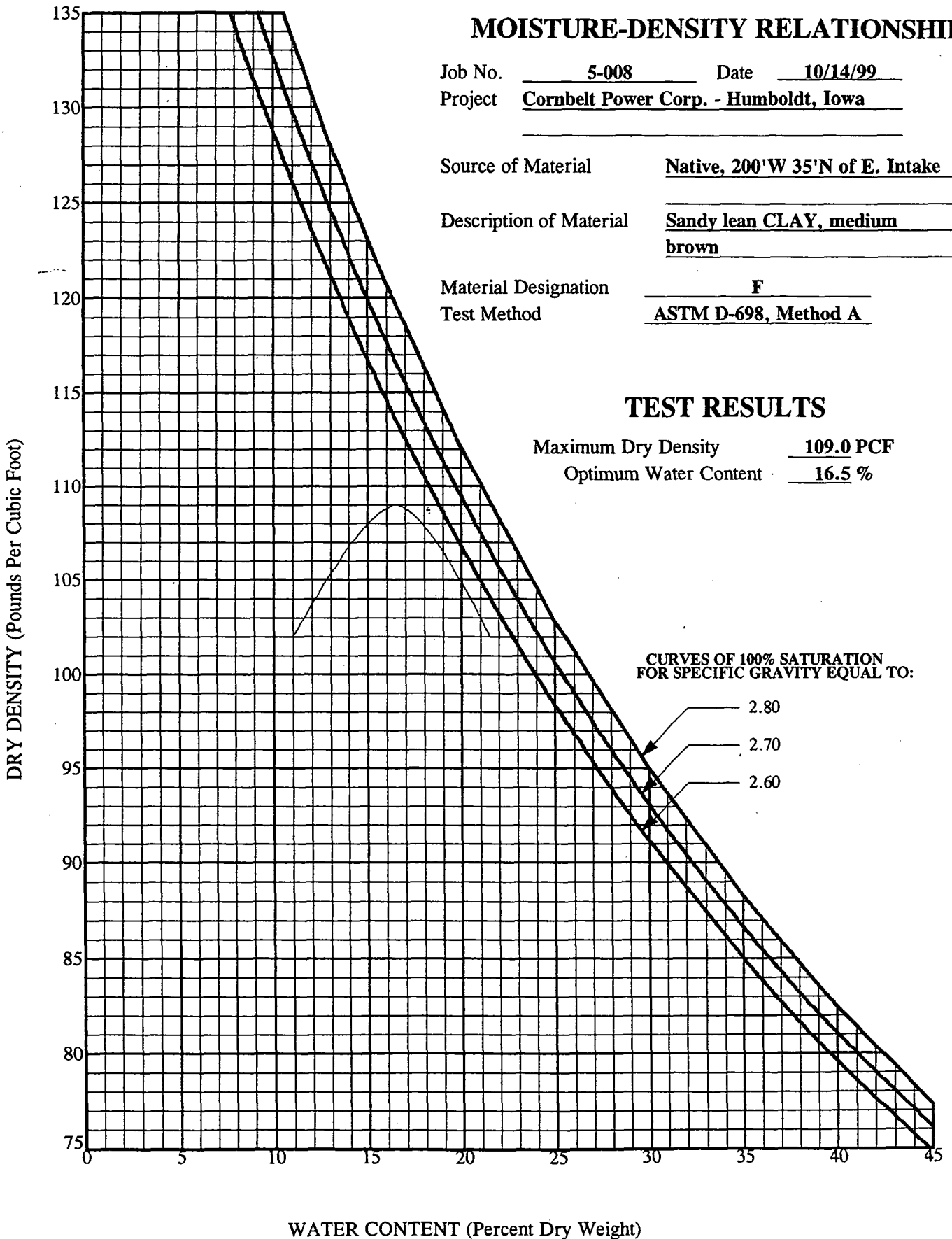
Material Designation F

Test Method ASTM D-698, Method A

### TEST RESULTS

Maximum Dry Density 109.0 PCF

Optimum Water Content 16.5 %



## SEEDING PLAN FOR CORN BELT POWER COOPERATIVE

### Borrow area

This area will be used to transport soil to a site where coal ash has been deposited. The borrow area is presently seeded to an alfalfa-grass mixture, and was used for hay this year. Reseed the area to a similar type of vegetation. Seeding in the spring is usually the most successful. In this case, a dormant seeding would provide good results since the soil will be tilled and ready to sow. Dormant seedings are sowed between November 15 and freeze up. If a spring seeding is used, then a cover crop of 1 ½ bushels of oats is required to control erosion and prevent weed growth. The recommended mixture is:

Oats - 1 ½ bushels per acre (spring seeding only)  
Smooth brome grass - 12 pounds per acre  
Alfalfa - 8 pounds per acre

### Ash site

This area is about 3.2 acres in size. It will be shaped to allow runoff water to collect at both ends where it will be outletted through tile lines. Shallow rooted plants are desirable on this site because the compacted layer cannot be penetrated with plant or tree roots. Native grasses would be a good choice for this site, but they have deep root systems. A one foot non-compacted layer will be the only root area available, so native grasses with five or six feet of roots are not acceptable. Spring seedings are the most successful. In this case, a dormant seeding would provide good results since the soil is tilled and ready to sow. Dormant seedings are completed between November 15 and freeze up. If a spring seeding is used, then a cover crop of one and one half bushels of oats is required to control erosion and prevent weed growth.

The recommended seeding mixture is:

Oats - 1 ½ bushels per acre (spring seeding only)  
Kentucky Bluegrass - 12 pounds per acre  
Birdsfoot trefoil - 8 pounds per acre

By using this seeding mixture, the compacted layer will be not be affected by deep root systems since these two species are shallow rooted.

# BORROW AREA

## CRITICAL AREA PLANTING

Soils exposed during construction of conservation practices must be revegetated to prevent erosion and failure of the practice. This protection must be provided as quickly as possible. Other areas contributing sediment to streams and lakes also need to be seeded to provide a cover of permanent vegetation.

### PREPARATION BEFORE SEEDING

If possible, divert any off-site water away from the exposed area. Then prepare a good, friable, firm seedbed to a depth of three inches. Add limestone at the rate of 2,000 lbs. ECCE per acre and the equivalent of 35 lbs. nitrogen, 140 lbs. phosphate and 70 lbs. potash per acre. Work into seedbed. Firm seedbed with a roller or cultipacker before seeding. On sites that are too steep for regular seeding equipment to operate, hydro seeding may be a good option.

### SOWING THE SEED MIXTURE

Drill or broadcast seed immediately following seedbed preparation. Drilling is the preferred method. Firm and cover seed with a roller after seeding.

Seed a suitable seed mixture. Seed 12 lbs. of Brome grass, 8 lbs. of alfalfa, \_\_\_\_\_ lbs. of \_\_\_\_\_ and \_\_\_\_\_ lbs. of \_\_\_\_\_ per acre. ~~If mulch is not applied, seed not more than one bushel of oats per acre as a companion crop. Mow companion crop before heading.~~ Inoculate legumes with the inoculant specific for that legume. Control depth of seeding. Place legume and grass seed 1/4 to 1/2 inch deep.

### MULCHING FOR SOIL PROTECTION

~~Apply mulch to prevent erosion until the new grass provides adequate protection. Apply cereal straw or grass hay at the rate of \_\_\_\_\_ tons per acre. To prevent mulch from blowing or washing away, anchor with a straight disk or notched coulter equipped machine. Do not disturb planted seeds while tacking the mulch.~~

## TIME OF SEEDING

The best time to seed is in the spring. Some species can be sown in late summer. Seed before \_\_\_\_\_ in the spring. In the late summer begin seeding after August 1 but not later than \_\_\_\_\_. After the late summer seeding period is past; lime, fertilizer and mulch may be applied for winter protection. Seed may be sown on partially frozen soil in late February and early March. Freezing and thawing will cover the seed.

## TEMPORARY SOIL PROTECTION DURING THE SUMMER MONTHS

Permanent grass seedings usually fail when seeded during the hot summer months. In June and July seed a temporary cover of oats (three bushel/acre), corn (three bushel/acre) or sudangrass (35 pounds/acre). Disk residue into the soil when preparing a seedbed for late summer seedings or plant into existing residue with a no-till drill. Seed permanent grass mixture as listed above. This temporary cover may also be left over winter and permanent grass mixture applied as a frost seeding.

## MAINTENANCE AFTER SEEDING

Critical area seedings are often located on extremely fragile soils. Careful attention to maintaining a vigorous stand of vegetation insures successful erosion control on all critical areas and a long life for conservation practices.

## GRAZING

Do not graze the area the first year after seeding. If necessary, fence to control over grazing by livestock in subsequent years.

## WEED CONTROL

Mow or apply herbicides to control unwanted or noxious weeds. Always read and follow all label directions when using herbicide. Warm season grass plantings may benefit from controlled fire designed to eliminate weedy competition and invigorate the native grasses. This burn should be done in the spring of the year and follow a detailed burn plan.

## FERTILITY

After vegetation is well established apply 50 pounds of nitrogen (N), 20 pounds of phosphorous ( $P_2O_5$ ) and 20 pounds of potassium ( $K_2O$ ) each spring. If legumes are in the mixture, eliminate the nitrogen and apply 60 pounds of phosphorous ( $P_2O_5$ ) and 60 pounds of potassium ( $K_2O$ ). Warm season grasses should not be fertilized before they begin growth which will often be three to four weeks later than the more common cool season grasses.

# ASH SITE

## CRITICAL AREA PLANTING

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### PREPARATION BEFORE SEEDING

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### SOWING THE SEED MIXTURE

Drill or broadcast seed immediately following seedbed preparation. Drilling is the preferred method. Firm and cover seed with a roller after seeding.

Seed a suitable seed mixture. Seed 12 lbs. of Kentucky Bluegrass, 8 lbs. of trefoil, \_\_\_\_\_ lbs. of \_\_\_\_\_ and \_\_\_\_\_ lbs. of \_\_\_\_\_ per acre. ~~If mulch is not applied, seed not more than one bushel of oats per acre as a companion crop. Mow companion crop before heading.~~ Inoculate legumes with the inoculant specific for that legume. Control depth of seeding. Place legume and grass seed 1/4 to 1/2 inch deep.

### MULCHING FOR SOIL PROTECTION

~~Apply mulch to prevent erosion until the new grass provides adequate protection. Apply cereal straw or grass hay at the rate of \_\_\_\_\_ tons per acre. To prevent mulch from blowing or washing away, anchor with a straight disk or notched coulter equipped machine. Do not disturb planted seeds while tacking the mulch.~~

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Office of  
**Humboldt County Assessor**

*Linda Fallesen, ASA, ICA*  
*County Assessor*  
*Courthouse*  
*Dakota City, Iowa 50529*

February 7, 2000

Dear Sir,

The Site Legal Information papers have been filed with the Humboldt County Recorder. She has passed this information on to our office. We are able to locate this site in our Sidwell Plat book, Beaver-Norway on page 11-G.

Please contact our office if we can be of any further assistance or if you have any questions.

Sincerely,

*Christine Kleiss*  
*clerk*

Christine Kleiss, clerk  
Humboldt County Assessor Office

IOWA DEPARTMENT OF NATURAL RESOURCES  
SANITARY DISPOSAL PROJECT PERMIT

- I. Permit Number: 46-SDP-4-90C
- II. Permitted Agency: Corn Belt Power Cooperative  
Humboldt Station Ash Landfill
- III. Project Location: SE 1/4, Sec. 19, T91N, R28W, Humboldt  
County (4.5 Acres)
- IV. Responsible Official

Name: Donald E. Jensen  
Address: 1300 13th Street North  
Box 508  
Humboldt, IA 50548-0508  
Phone: 515/332-2571

V. Licensed Design Engineer

Name: Morris L. Preston, P.E.  
Address: Preston Engineering, Inc.  
4436 N. Brady Street  
Davenport, Iowa 52806-4009  
Phone: 319/388-8288

License Number: 8142

- VI. Date Permit Issued: April 12, 1999
- VII. Permit Expiration Date: April 12, 2009

VIII. Issued by:   
Environmental Protection Division  
for the Director



IX. General Provisions

The above named permitted agency is hereby authorized to close the sanitary landfill at the described location in conformance with Chapter 455B of the Code, the rules pursuant thereto existing the time of issuance, and any subsequent new rules which may be duly adopted, and any provisions contained in Section X of this permit.