September 11, 2024
File No. 25220081.00

Mr. Brian Rath
Iowa Department of Natural Resources
6200 Park Avenue
Suite 200
Des Moines, IA 50321

Subject: Cover Repairs – Surface Impoundment Closure Areas
IPL Burlington Generating Station
Permit #29-SDP-13-23C

Dear Mr. Rath:

Alliant Energy (Alliant) has completed repairs to the closure area final cover that was damaged during recent drilling at the Interstate Power and Light Company (IPL) Burlington Generating Station (BGS) (**Figure 1**). Alliant Energy installed four borings into the closed impoundments at BGS as described in our letter dated January 25, 2024, and installed four wells within the limits of the Economizer Pond final cover as detailed in our letter dated April 10, 2024. In addition to repairing the damage caused during drilling, Alliant constructed a gravel ramp onto the Economizer Ash Pond Closure Area (**Figure 2**).

This documentation is provided to the Iowa Department of Natural Resources (IDNR) for review as discussed in the May 29, 2024 letter, "Proposed Cover Repairs – Surface Impoundment Closure Areas" (**Attachment A**). The repair and resurfacing work are discussed in the following sections below.

SOIL BORINGS

Four borings were installed on January 30 and 31, 2024, to identify the elevation of the contact between the bottom of the ash in the closure area and the native soil. The borings were installed at the locations shown on **Figure 2**.

The borings, borehole backfilling, and cap restoration were completed as planned:

- The borings were installed and sealed using a track mounted mini-sonic drilling rig. The work was performed by Cascade Drilling, LP, of Schofield, Wisconsin, and overseen by an Iowa-certified driller in accordance with Iowa Code requirements.

- The rig accessed the drilling locations from the closure area perimeter access road. Drilling mats were used to the extent possible to protect the final cover; however, the cap was wet and soft due to recent precipitation, resulting in significant rutting. The damage was limited to the top 6 inches of topsoil. No compacted clay or CCR were exposed as a result of the rutting.

- The depth of the borings ranged from 22 feet to 47 feet.

- Ash samples from the lower portion of the borings were collected by SCS Engineers (SCS) for leach testing. Ash samples were submitted to Eurofins Laboratory by SCS for testing.

- The borings were abandoned by Cascade and sealed with bentonite grout that was tremied from the bottom of each boring to the ground surface. The boreholes were checked for settlement after 24 hours and topped off with bentonite chips to the top of the compacted cover infiltration layer. Topsoil and grass seed were placed above the chips. Copies of the abandonment forms prepared by Cascade are included in Attachment B.

- Excess drill cuttings were drummed and staged on-site for disposal. Less than one 55-gallon drum of cuttings was generated. A sample of the residual cuttings was submitted to Eurofins by SCS for Toxicity Characteristic Leaching Procedure (TCLP) testing to complete a waste disposal profile. OSI Environmental Inc. (OSI) coordinated the disposal of the cuttings at a permitted solid waste facility in accordance with Iowa Code requirements.

PUMP TEST WELLS

Pump test wells PW-1 and PW-2, and pump test observation wells OW-1 and OW-2 were installed on April 11 to 13, 2024. The well locations shown on Figure 1.

The borings, annular space sealing, and cap restoration were completed as planned:

- The wells were installed using a track-mounted mini-sonic drilling rig. The work was performed by Cascade Drilling, LP, of Schofield, Wisconsin, and overseen by an Iowa-certified driller in accordance with Iowa Code requirements. Copies of the well construction forms are included in Attachment C.

- The annular space of each well was sealed with bentonite. The well boreholes were checked for settlement after 24 hours and settlement, if observed, was topped up with bentonite chips. Each well is protected with a stick-up steel protective cover and up to three bollards. Bentonite chips were used for the surface seal around each well's protective cover and the bollards. This work was performed by an Iowa-certified driller.

- The rig accessed the well locations from the east of the closure area. Cribbing and drilling mats were used as needed to protect the final cover and the perimeter drainage swale.

- The depth of the wells ranged from 25 feet to 36 feet.

- Drill cuttings were drummed and staged on-site for disposal by OSI as described above.

The well drilling activities did not cause damage to the final cover.

REPAIRS

Precision Companies (Precision) of West Burlington, Iowa, repaired ruts in the final cover topsoil layer by fine grading the ruts smooth with the existing top of topsoil adjacent to the ruts. Some areas required additional topsoil to restore the required 6-inch thickness. SCS observed the repair work

and took several thickness measurements to confirm the repair areas were restored with topsoil to a minimum 6-inch thickness (**Figure 2**). Repaired areas were seeded and mulched following grading of the topsoil. **Attachment D** contains a photo log of the repair work.

RESURFACING

Precision completed the installation of the 15-foot-wide ramp (**Figure 2**) onto the Economizer Ash Pond Closure Area with a 6-inch-thick layer of aggregate to facilitate access to the top of the closure area. The contractor stripped away 6 inches of topsoil and replaced it with 6 inches of gravel surface course (**Figure 3**) to maintain the required 24-inch cover thickness. A geotextile was placed between the compacted clay cover and the gravel surface course to minimize the migration of gravel into the clay layer. The stripped topsoil was reused in other cover repairs. Geotextile and gravel surface course materials were consistent with the Construction Quality Assurance/Quality Control (CQA) Plan submitted with the December 2022 CCR Surface Impoundment Closure Permit Application. SCS documented the gravel surface course thickness with hand measurements at multiple locations along the ramp. **Attachment D** contains a photo log of the resurfacing work.

Please contact Jeff Maxted at 608-458-3853 if you have any questions or comments about the cover repair at the Burlington Generating Station.

Sincerely,

Meghan Blodgett
Senior Project Hydrogeologist
SCS Engineers

Eric J. Nelson, PE
Project Director
SCS Engineers

RJG/MDB/lmh/EJN

cc: Jeff Maxted, Alliant Energy
Matt Bizjack, Alliant Energy
Chad Wall, Alliant Energy

Encl. Figure 1 – Site Location Map
Figure 2 – Thickness Measurement Locations
Figure 3 – Ramp Construction
Attachment A – May 29, 2024, IDNR Notification Letter
Attachment B – Abandonment Forms
Attachment C – Well Construction Forms
Attachment D – Photo Log

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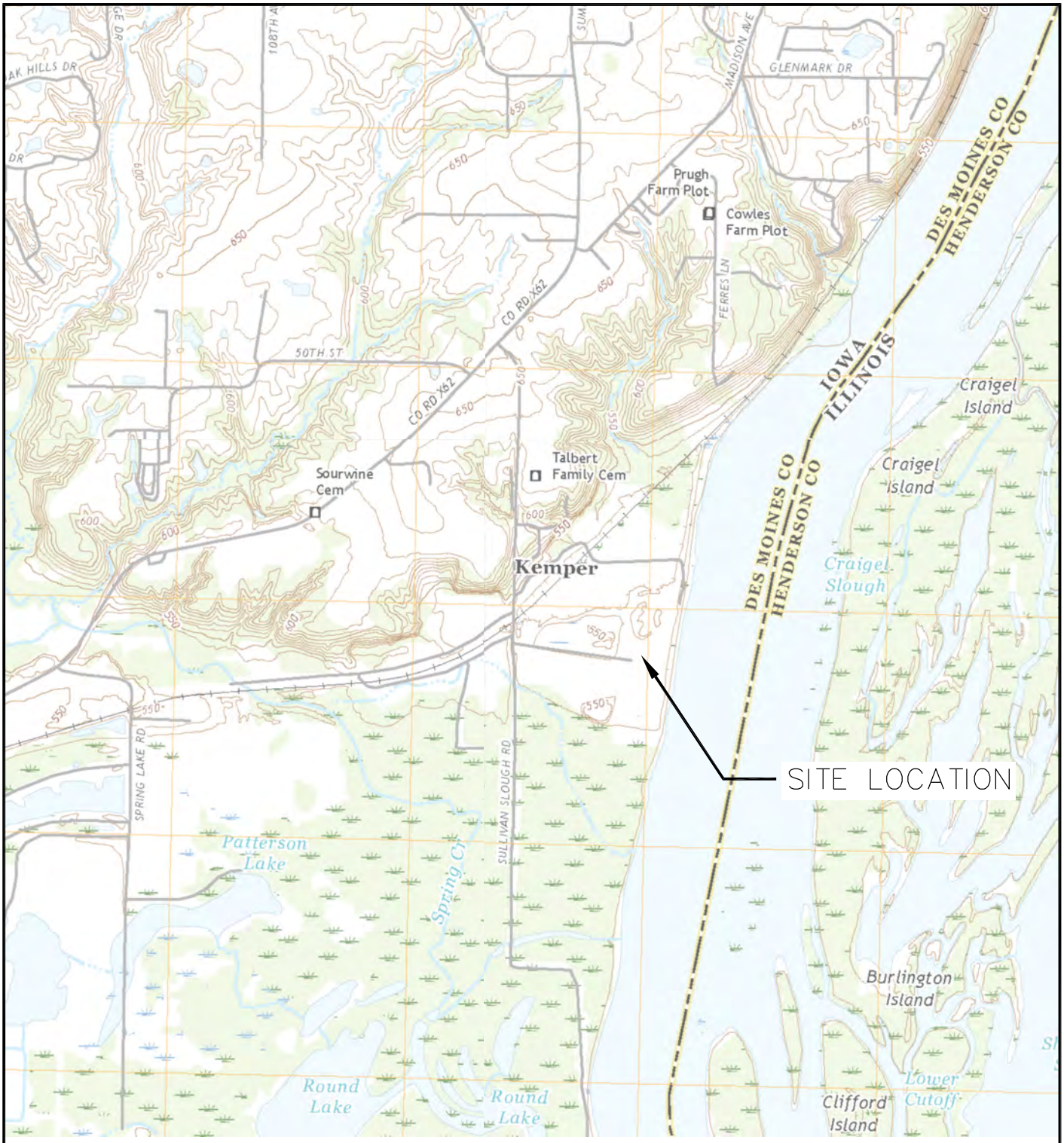
Figures



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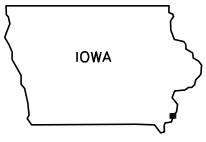
LOMAX QUADRANGLE
ILLINOIS / IOWA–DES MOINES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'



CLIENT	INTERSTATE POWER AND LIGHT 4282 SULLIVAN SLOUGH ROAD BURLINGTON, IOWA 52601	SITE	BURLINGTON GENERATING STATION 4282 SULLIVAN SLOUGH RD BURLINGTON, IA 52601

SITE LOCATION MAP

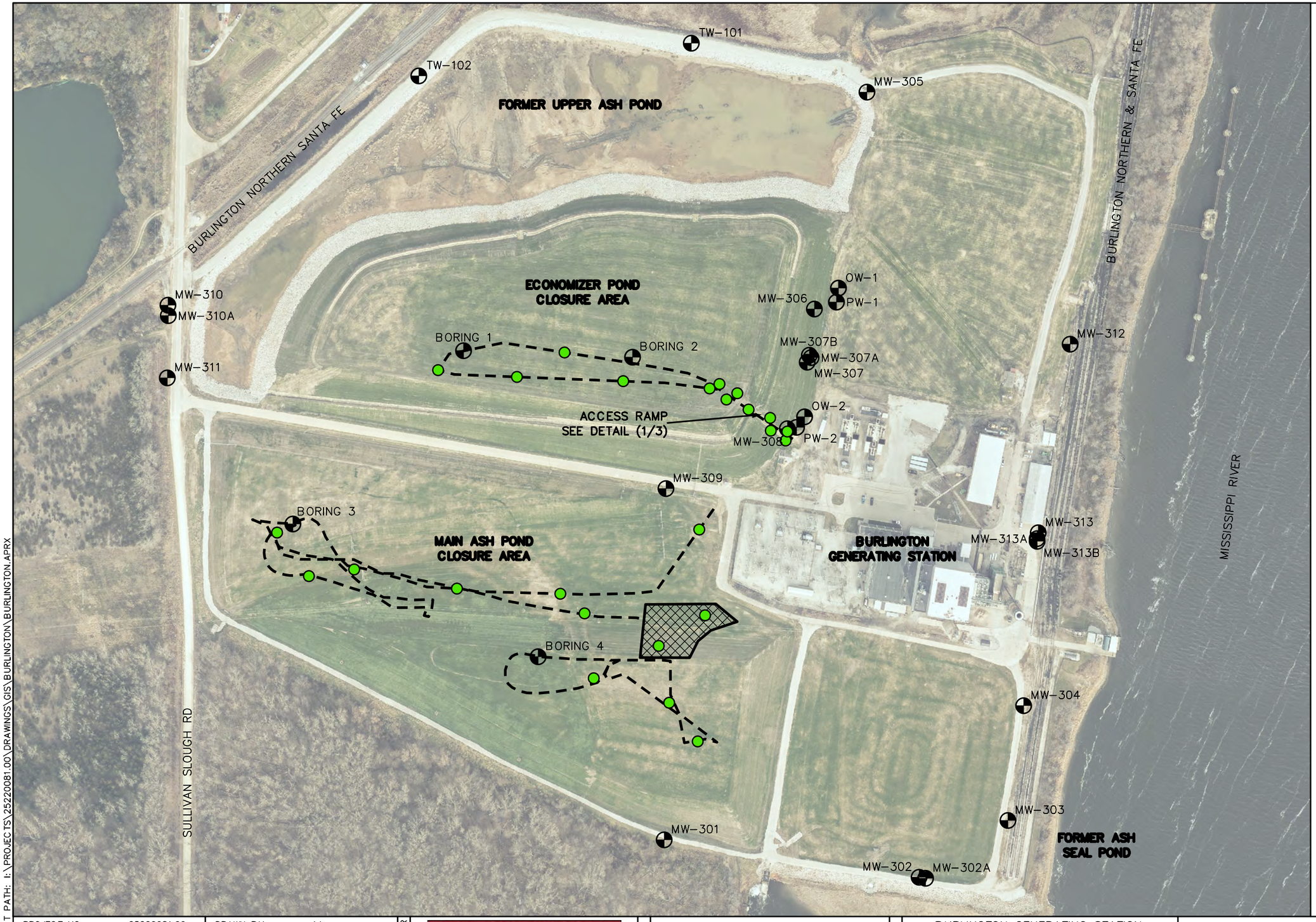
PROJECT NO.	25220081.00	DRAWN BY:	RJG
DRAWN:	09/09/19	CHECKED BY:	PG
REVISED:	04/23/24	APPROVED BY:	EJN 05/29/2024

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

I:\25220081.00\Drawings\1_Site Location Map.dwg, 4/23/2024 11:05:18 AM



LEGEND

- RUTS FROM RIG ACCESS
- DAMAGE AREA FROM RIG ACCESS
- MONITORING/PILOT/ OBSERVATION WELL
- >= 6" THICKNESS CONFIRMATION

NOTES

1. IMAGERY SOURCE: DRONEVIEW MAPPING. IMAGERY DATE: 11/25/2023.

2. COORDINATE SYSTEM: WGS 1984 WEB MERCATOR (AUXILIARY SPHERE).

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300 0 300 '

SCALE: 1" = 300'

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PROJECT NO.	25220081.00	DRAWN BY:	AA
DRAWN:	06/10/2024	CHECKED BY:	RJG
REVISED:	07/10/2024	APPROVED BY:	EJN 09/11/2024

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT

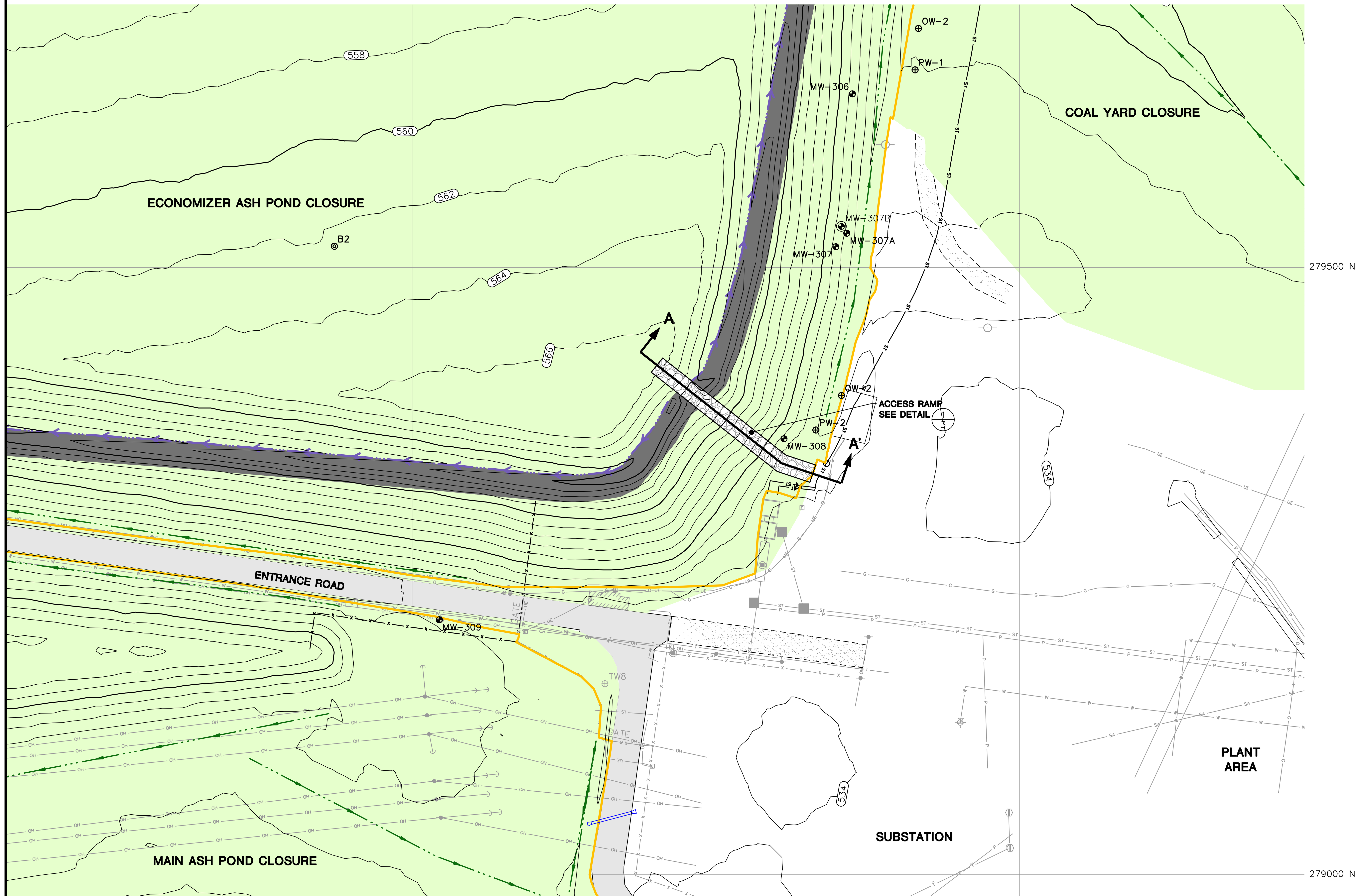
INTERSTATE POWER AND LIGHT CO.
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601

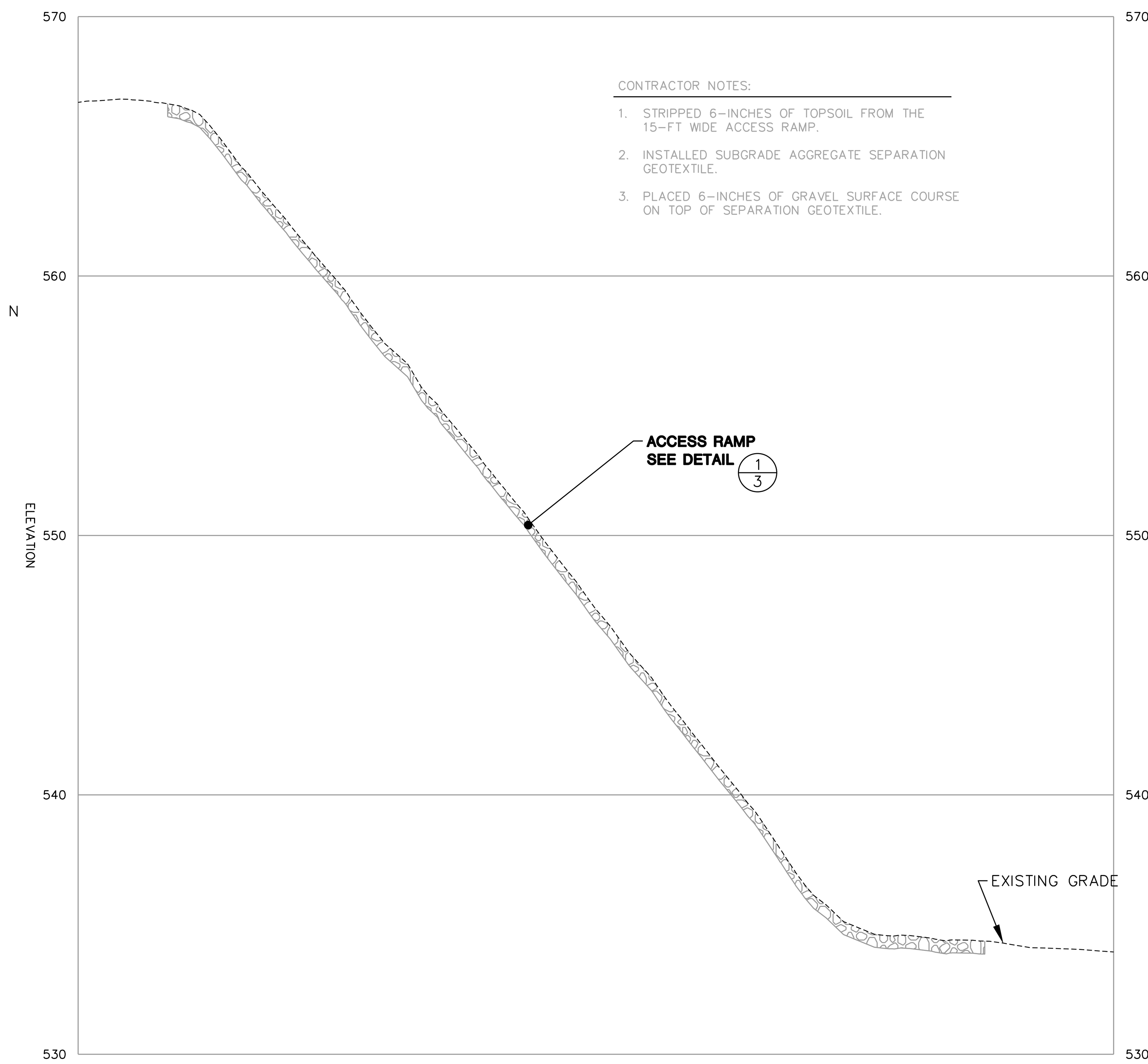
SITE

BURLINGTON GENERATING STATION
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601

THICKNESS MEASUREMENT LOCATIONS

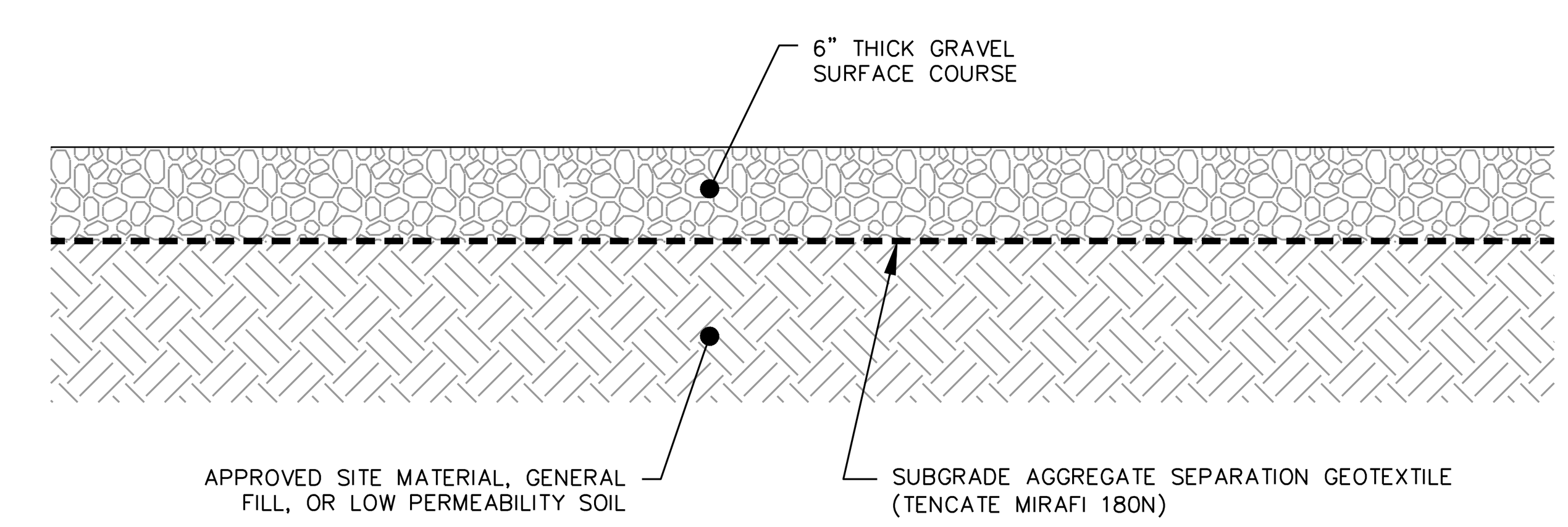
FIGURE 2





SECTION A-A'

(HORIZONTAL SCALE: 1" = 20')
(VERTICAL SCALE: 1" = 4')



1/3 **ACCESS RAMP**

(SCALE: 1" = 1')

LEGEND

- APPROXIMATE PROPERTY LINE
- 2010 EXISTING GRADE (5' CONTOUR)
- 2010 EXISTING GRADE (1' CONTOUR)
- 2019 EXISTING GRADE (5' CONTOUR)
- 2019 EXISTING GRADE (1' CONTOUR)
- EXISTING PAVED ROAD
- EXISTING GRAVEL/DIRT ROAD
- EXISTING FENCE
- EXISTING RAILROAD TRACKS
- DELINEATED WETLAND
- EXISTING GAS MAIN
- EXISTING OVERHEAD UTILITY
- EXISTING SANITARY SEWER
- EXISTING STORM SEWER/CULVERT
- EXISTING PROCESS WATER CONVEYANCE PIPE
- EXISTING TELEPHONE
- EXISTING UNDERGROUND ELECTRIC
- EXISTING WATER MAIN
- EXISTING IMPRESSED CURRENT ANODE INSTALLATION
- EXISTING VALVE
- EXISTING BOLLARD
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM SEWER INLET
- EXISTING STORM SEWER MANHOLE
- EXISTING UTILITY POLE AND GUY WIRE
- EXISTING UTILITY POLE WITH CONCRETE FOUNDATION
- ⊕MW307 MONITORING WELL
- DOCUMENTED FINAL GRADES (10' CONTOUR)
- DOCUMENTED FINAL GRADES (2' CONTOUR)
- LIMITS OF FINAL COVER
- STORM WATER DISCHARGE PIPE
- FENCE
- CULVERT
- DIVERSION BERM
- DRAINAGE SWALE
- DOWNSLOPE FLUME
- ENERGY DISSIPATOR
- ACCESS ROAD RESTORATION
- EROSION/REVETMENT STONE
- VEGETATED RESTORATION
- ARMOR STONE
- STORM WATER BASIN RESTORATION
- FLEXAMAT

NOTES:

1. SEE SHEET 2 FOR ADDITIONAL BASE MAP LEGEND ITEMS AND NOTES.
2. COAL YARD AND COAL YARD RUNOFF BASIN CLOSURE AREAS RESTORED WITH A MINIMUM OF 4-INCHES OF TOPSOIL.
3. ASH SEAL POND CLOSURE AREA RESTORED WITH A MINIMUM OF 4-INCHES OF TOPSOIL OVER GENERAL FILL AND 6-INCHES OVER COVER AREA.
4. PLACED NON-CHANNEL EROSION MAT ON RESTORED SLOPES STEEPER OR EQUAL TO 4:1 OR AS NOTED.
5. PLACED CHANNEL EROSION MAT IN PERIMETER DRAINAGE SWALES AND DIVERSION BERMS.
6. DOCUMENTED FINAL GRADES INSIDE UPPER ASH POND LIMITS BASED ON OCTOBER 2, 2023 DRONE SURVEY BY AMES.
7. DOCUMENTED FINAL GRADES BASED ON NOVEMBER 25, 2023 DRONE SURVEY BY DRONEVIEW MAPPING.

N

50 0 50

SCALE: 1" = 50'

DRAWN BY: BSS/KP
CHECKED BY: RJG
APPROVED BY: EJN 07/11/2024
PROJECT NO. 25220081.00
DRAWN: 10/12/2023
REVISED: 07/10/2024

INTERSTATE POWER AND LIGHT CO.
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601
CLIENT

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830
ENGINEER

COVER REPAIR
BURLINGTON GENERATING STATION
BURLINGTON, IOWA
SITE

SECTION AND DETAIL

FIGURE
3

Attachment A

May 29, 2024, IDNR Notification Letter

May 29, 2024
File No. 25220081.00

Mr. Chad Stobbe
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319

Subject: Proposed Cover Repairs – Surface Impoundment Closure Areas
IPL Burlington Generating Station
Permit #29-SDP-13-23C

Dear Mr. Stobbe:

Alliant Energy (Alliant) is planning to repair damage to the surface impoundment closure area final cover in follow-up to the recent drilling completed in support of ongoing groundwater corrective action at the Interstate Power and Light Company (IPL) Burlington Generating Station (BGS) (**Figure 1**). In addition to the repair work, Alliant plans to resurface the ramp onto the Economizer Ash Pond Closure Area with aggregate (**Figure 2**).

As anticipated in the January 25 and April 10, 2024 letters, "Plan for Drilling Through Impoundment Cover and Proposed Restoration" (**Attachment A**), the final cover constructed in 2023 needs to be repaired following the investigation work. Due to the weather conditions at the time of drilling, the topsoil layer in the final cover was softer than expected, resulting in rutting/damage (**Attachment B**) to the cover. The areas rutted/damaged are shown on **Figure 2**. The rutting was limited to the topsoil; no damage to the underlying low-permeability clay layer was observed and no CCR was exposed.

REPAIRS

A contractor will repair small ruts by fine grading the ruts smoothly with the existing top of topsoil adjacent to the ruts. Larger ruts or damaged areas may require supplemental topsoil to restore topsoil to the required 6-inch thickness. Repaired areas will be seeded and mulched following grading of the topsoil.

RESURFACING

The 15-foot-wide ramp (**Figure 2**) onto the Economizer Ash Pond Closure Area will be resurfaced with aggregate to facilitate easier access to the top of the closure area. The contractor will strip away 6 inches of topsoil and replace it with 6 inches of gravel surface course (**Figure 3**) to maintain the required 24-inch cover thickness. A geotextile will be placed between the compacted clay cover and the gravel surface course to minimize the migration of gravel into the clay layer. The stripped topsoil will be reused to assist with the cover repairs. Geotextile and gravel surface course materials will be consistent with the Construction Quality Assurance/Quality Control (CQA) Plan submitted with the December 2022 CCR Surface Impoundment Closure Permit Application.

As described in our January 25 and April 10, 2024, letters, documentation of the cap repairs and resurfacing will be provided to the IDNR in the form of a letter report once completed. Please contact us at 608-224-2830 if you have any questions or comments about the cover repair at the Burlington Generating Station.

Sincerely,

Meghan Blodgett
Senior Project Hydrogeologist
SCS Engineers

Thomas J. Karwoski
Senior Project Manager
SCS Engineers

RJG/jsn_lmh/EJN

cc: Jeff Maxted, Alliant Energy
Matt Bizjack, Alliant Energy
Robin Nelson, Alliant Energy
Chad Wall, Alliant Energy

Encl. Figure 1 – Site Location Map
Figure 2 – Cover Rutting/Damage Assessment
Figure 3 – Ramp Resurfacing
Attachment A – Previous IDNR Notification Letters
Attachment B – Photographs

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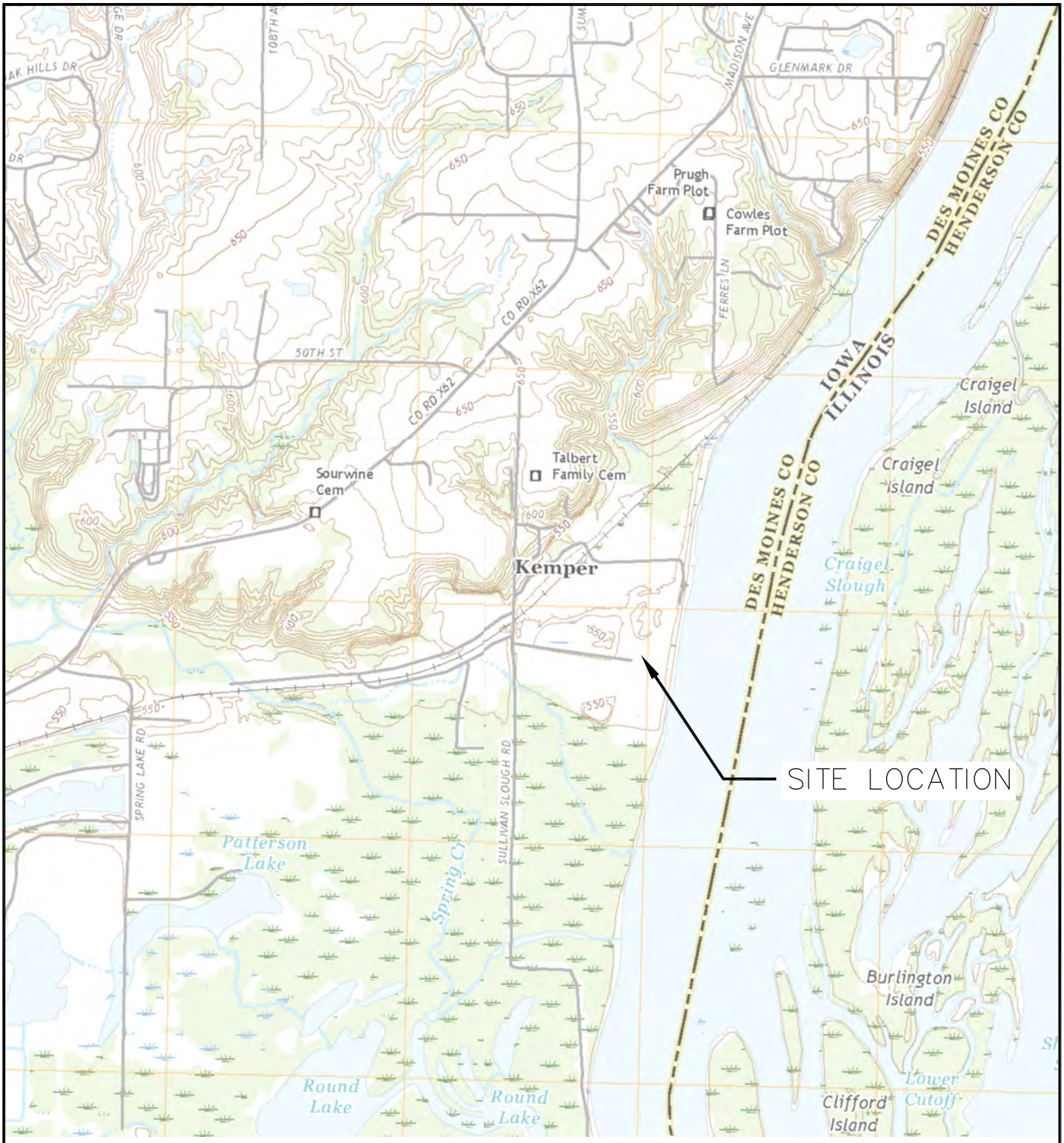
Figures



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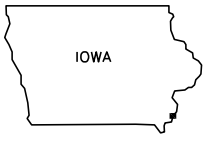
LOMAX QUADRANGLE
ILLINOIS / IOWA–DES MOINES CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
2018
SCALE: 1" = 2,000'



CLIENT	INTERSTATE POWER AND LIGHT 4282 SULLIVAN SLOUGH ROAD BURLINGTON, IOWA 52601	SITE	BURLINGTON GENERATING STATION 4282 SULLIVAN SLOUGH RD BURLINGTON, IA 52601

SITE LOCATION MAP

PROJECT NO.	25220081.00	DRAWN BY:	RJG
DRAWN:	09/09/19	CHECKED BY:	PG
REVISED:	04/23/24	APPROVED BY:	EJN 05/29/2024

ENGINEER

SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

FIGURE
1

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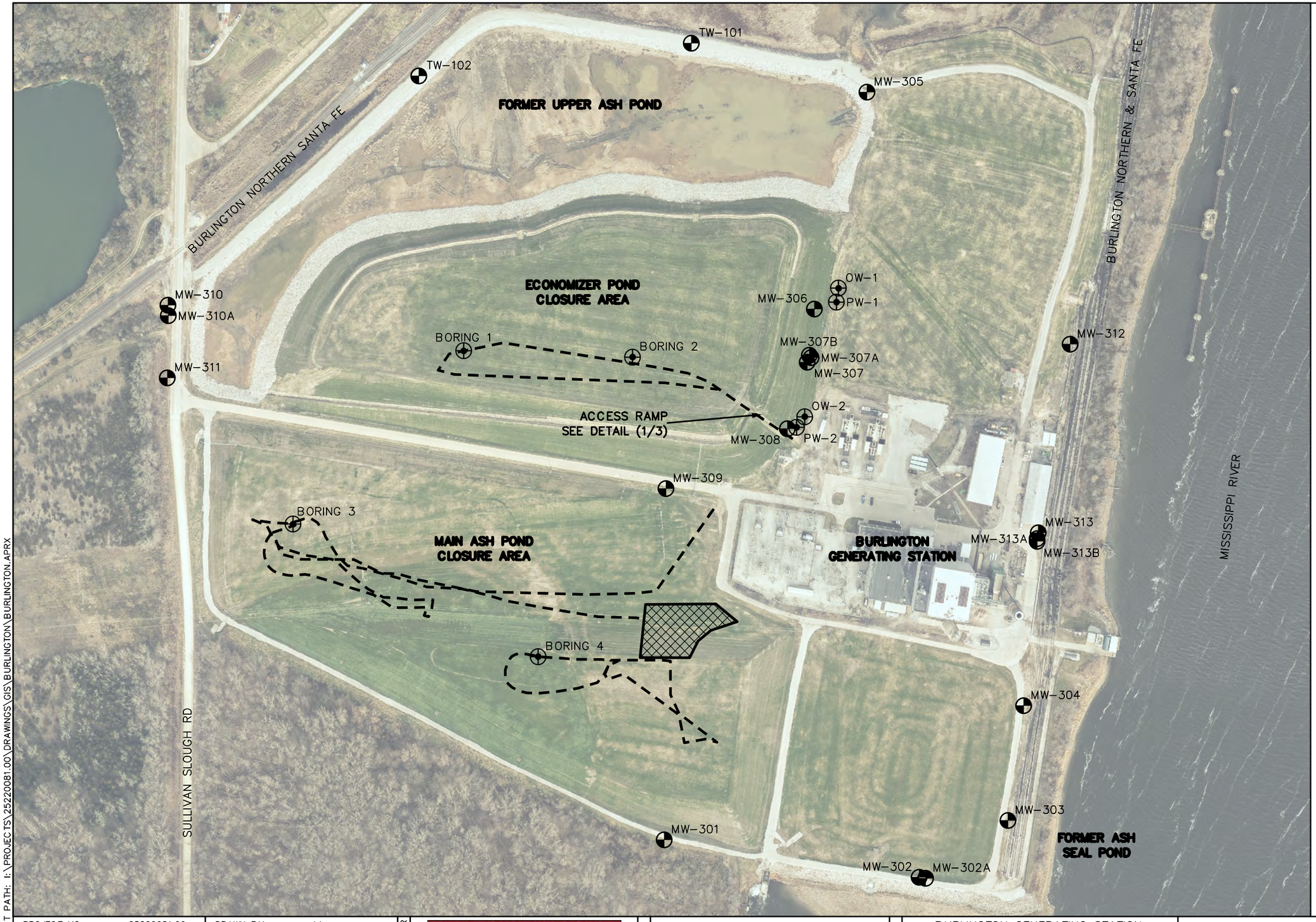

LEGEND

- RUTS FROM RIG ACCESS
- DAMAGE AREA FROM RIG ACCESS
- MONITORING WELL
- ASH BORING

NOTES

1. IMAGERY SOURCE: DRONEVIEW MAPPING. IMAGERY DATE: 11/25/2023.
2. COORDINATE SYSTEM: WGS 1984 WEB MERCATOR (AUXILIARY SPHERE).

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SCALE: 1" = 300'

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DRAWN:	02/05/2024	CHECKED BY:	MDB
REVISED:	04/24/2024	APPROVED BY:	EJN 05/29/2024

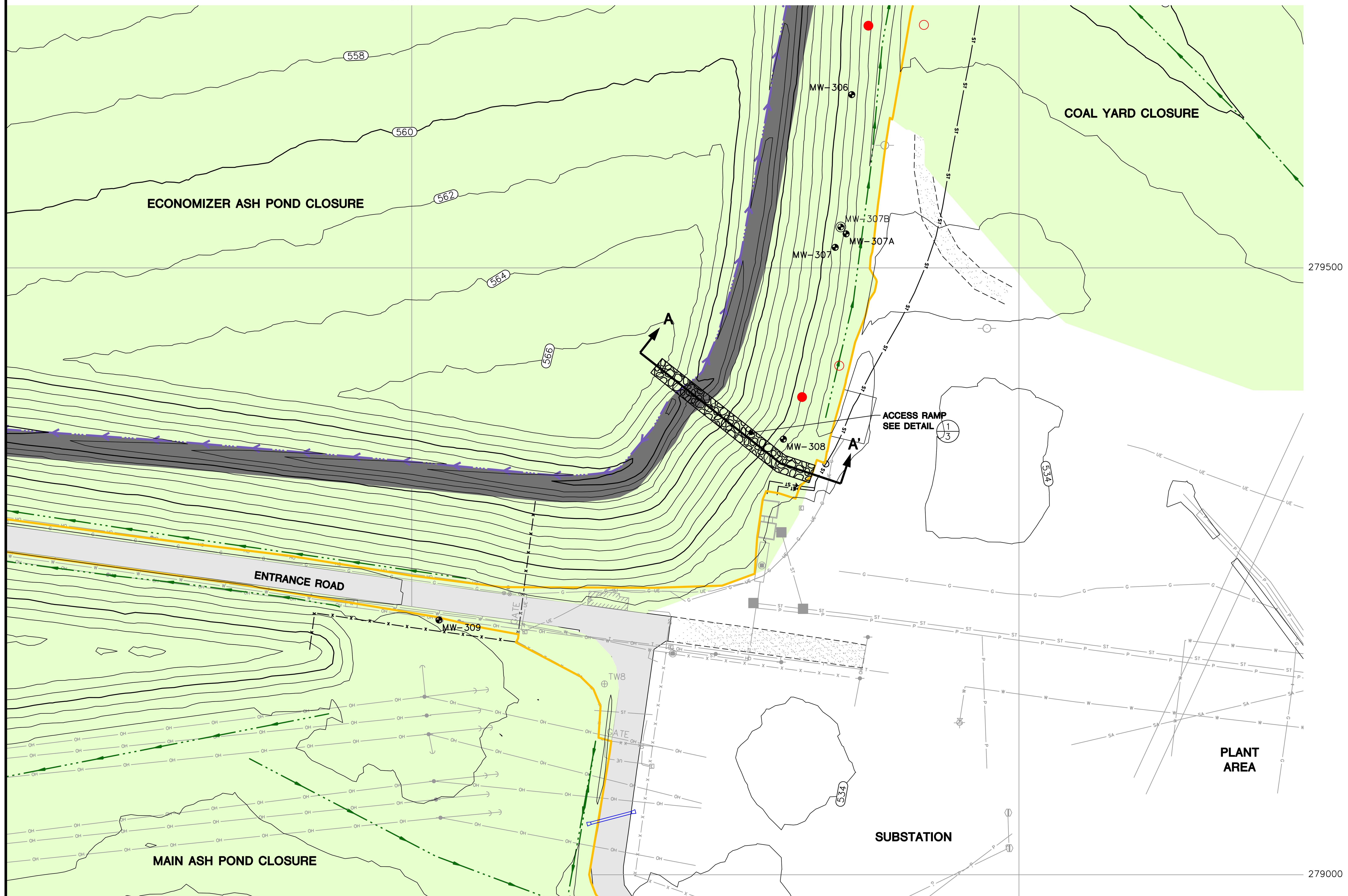
ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

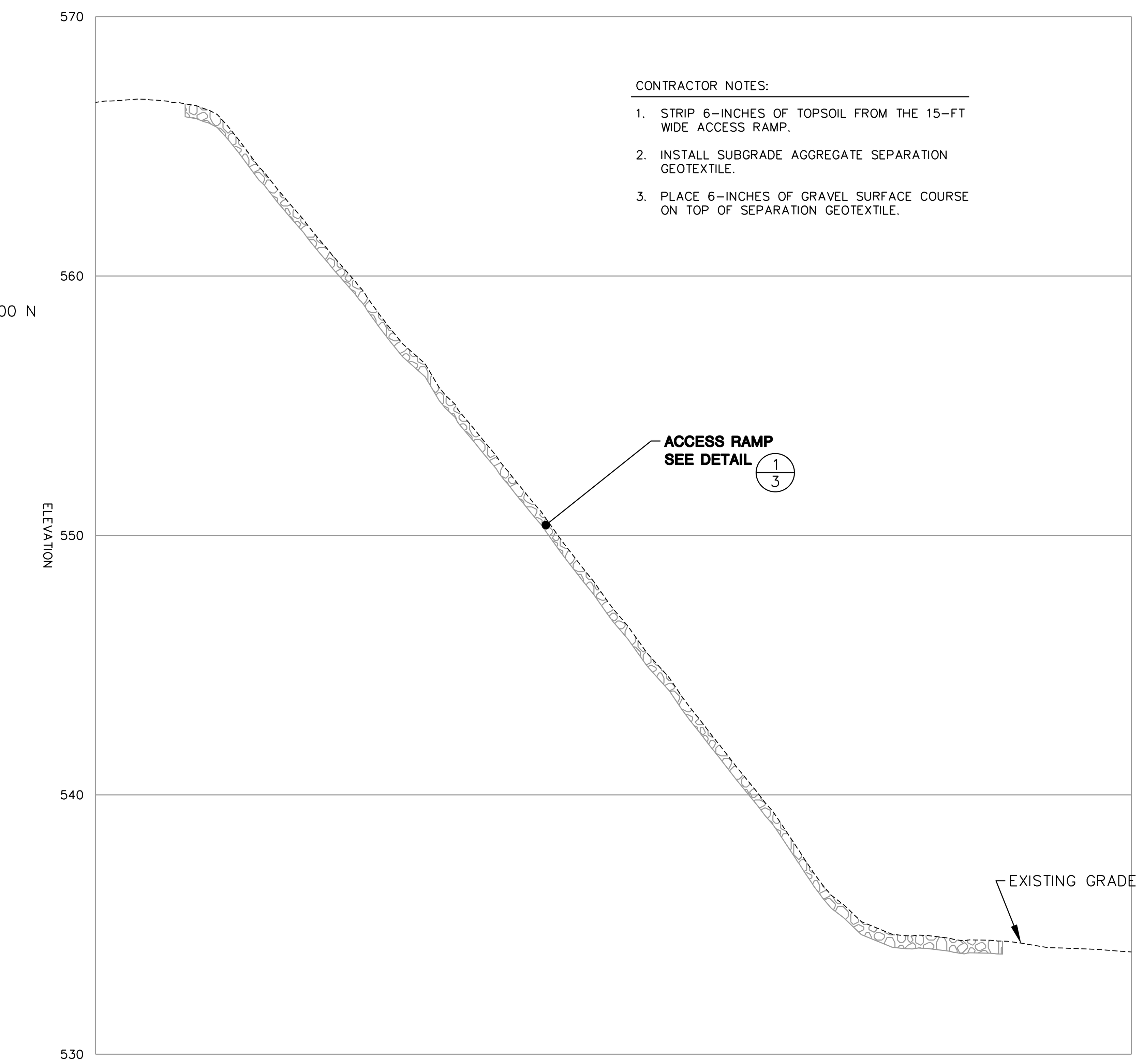
CLIENT: INTERSTATE POWER AND LIGHT CO.
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601

SITE: BURLINGTON GENERATING STATION
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601

COVER RUTTING/DAMAGE ASSESSMENT

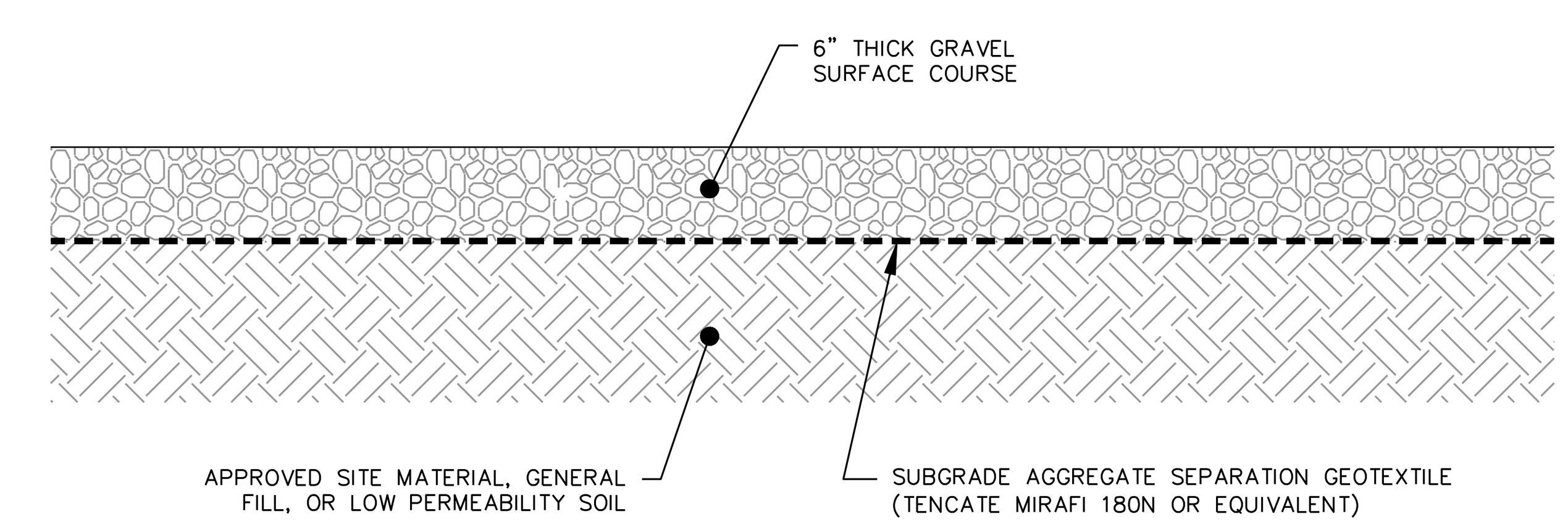
FIGURE 2





SECTION A-A'

(HORIZONTAL SCALE: 1" = 20')
(VERTICAL SCALE: 1" = 4')



1/3 **ACCESS RAMP**

(SCALE: 1" = 1')

LEGEND

- APPROXIMATE PROPERTY LINE
- 2010 EXISTING GRADE (5' CONTOUR)
- 2010 EXISTING GRADE (1' CONTOUR)
- 2019 EXISTING GRADE (5' CONTOUR)
- 2019 EXISTING GRADE (1' CONTOUR)
- EXISTING PAVED ROAD
- EXISTING GRAVEL/DIRT ROAD
- EXISTING FENCE
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- EXISTING OVERHEAD UTILITY
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- EXISTING PROCESS WATER CONVEYANCE PIPE
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- EXISTING UNDERGROUND ELECTRIC
- EXISTING WATER MAIN
- EXISTING IMPRESSED CURRENT ANODE INSTALLATION
- EXISTING VALVE
- EXISTING BOLLARD
- EXISTING SANITARY SEWER MANHOLE
- EXISTING STORM SEWER INLET
- EXISTING STORM SEWER MANHOLE
- EXISTING UTILITY POLE AND GUY WIRE
- EXISTING UTILITY POLE WITH CONCRETE FOUNDATION
- DOCUMENTED FINAL GRADES (10' CONTOUR)
- DOCUMENTED FINAL GRADES (2' CONTOUR)
- LIMITS OF FINAL COVER
- STORM WATER DISCHARGE PIPE
- FENCE
- CULVERT
- DIVERSION BERM
- DRAINAGE SWALE
- DOWNSLOPE FLUME
- ENERGY DISSIPATOR
- ACCESS ROAD RESTORATION
- EROSION/REVETMENT STONE
- VEGETATED RESTORATION
- ARMOR STONE
- STORM WATER BASIN RESTORATION
- FLEXAMAT

NOTES:

1. SEE SHEET 2 FOR ADDITIONAL BASE MAP LEGEND ITEMS AND NOTES.
2. COAL YARD AND COAL YARD RUNOFF BASIN CLOSURE AREAS RESTORED WITH A MINIMUM OF 4-INCHES OF TOPSOIL.
3. ASH SEAL POND CLOSURE AREA RESTORED WITH A MINIMUM OF 4-INCHES OF TOPSOIL OVER GENERAL FILL AND 6-INCHES OVER COVER AREA.
4. PLACED NON-CHANNEL EROSION MAT ON RESTORED SLOPES STEEPER OR EQUAL TO 4:1 OR AS NOTED.
5. PLACED CHANNEL EROSION MAT IN PERIMETER DRAINAGE SWALES AND DIVERSION BERMS.
6. DOCUMENTED FINAL GRADES INSIDE UPPER ASH POND LIMITS BASED ON OCTOBER 2, 2023 DRONE SURVEY BY AMES.
7. DOCUMENTED FINAL GRADES BASED ON NOVEMBER 25, 2023 DRONE SURVEY BY DRONEVIEW MAPPING.

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SCALE: 1" = 50'

DRAWN BY:	BSS/KP
CHECKED BY:	RJG
APPROVED BY:	EJN 05/29/2024
PROJECT NO.	25220081.00
DRAWN:	10/12/2023
REVISED:	04/26/2024

CLIENT: INTERSTATE POWER AND LIGHT CO. 4282 SULLIVAN SLOUGH ROAD BURLINGTON, IA 52601

ENGINEER: SCS ENGINEERS 2830 DAIRY DRIVE MADISON, WI 53718-6751 PHONE: (608) 224-2830

SITE: COVER REPAIR BURLINGTON GENERATING STATION BURLINGTON, IOWA

SECTION AND DETAIL

FIGURE 3

Appendix A

Previous IDNR Notification Letters

January 25, 2024
File No. 25220081.00

Mr. Chad Stobbe
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319

Subject: Plan for Drilling Through Impoundment Cover and Proposed Restoration
IPL Burlington Generating Station
Permit #29-SDP-13-23C

Dear Mr. Stobbe:

As part of the ongoing groundwater corrective action at the site under 40 CFR 257.98, Alliant Energy plans to drill up to five borings into the Main Ash Pond and Economizer Pond Closure Areas at the IPL Burlington Generating Station (BGS) [**Figure 1**]. The borings are to identify the elevation of the contact between the bottom of ash and the native soil. Ash samples will also be obtained for leach testing.

Permitted ash pond closure construction activities completed to date at BGS include placement of the final cover, so this letter is provided to inform you of the proposed cap protection plan during drilling and proposed cap restoration measures upon completion of the drilling. The following provides the specifics for the borings, borehole backfilling, and cap restoration:

- Drill up to five borings into the closed ash impoundments using a track mounted mini-sonic drilling rig.
- Potential drilling rig access points are shown on **Figure 1**. Our intent is to minimize the disturbance of the final cover system when accessing the drilling locations.
- Cribbing and drilling mat protection will be laid down over perimeter drainage ditches as needed for access. The protection will be traversed by the drilling rig to gain access and minimize cover disturbance.
- The estimated depth of the five borings ranges from 20 feet to 40 feet based on the documented ground surface elevation and expected bottom-of-ash elevation at each location.
- Each of the borings will be advanced to a depth where the ash and native soil interface is reached. Ash samples from the lower portion of the borings will be collected for leach testing.
- Ash borings will be abandoned and sealed with bentonite grout that is tremied from the bottom of each boring to the surface, or the top of the compacted cover infiltration layer at a minimum. The boreholes will be checked for settlement after 24 hours, and any settlement will be topped up to the top of the compacted cover infiltration layer at a

minimum. All work will be performed by an Iowa certified driller in accordance with Iowa Code requirements.

- Excess drill cuttings (not retained by SCS for sample analysis) will be drummed and staged on-site for later disposal at an appropriate permitted solid waste facility in accordance with Iowa Code requirements.

- Potential ruts in the cover or other disturbance due to the drilling activities will be repaired with topsoil and grass seed. Restoration will be performed in accordance with the September 11, 2023 closure permit.

- A letter format documentation report will be submitted to Iowa Department of Natural Resources (IDNR) upon completion of the drilling and cap restoration.

IPL would like to take advantage of a potential opening in the driller's schedule and perform this work beginning on January 30, 2024. Please provide your concurrence with this plan, or questions and comments you may have at your earliest convenience.

Sincerely,

Thomas J. Karwoski
Project Manager
SCS Engineers

Eric J. Nelson
Project Director
SCS Engineers

TK/REO/EJN

cc: Jenny Coughlin, Alliant Energy
Jeff Maxted, Alliant Energy
Robin Nelson, IPL Burlington Generating Station

Encl. Figure 1 – Proposed Impoundment Boring Locations

I:\25220081.00\Correspondence\Agency\Cap Disturbance Notification and Restoration\240125_Stobbe_BGS Cap Restoration_Final.docx

LEGEND

⊕ PROPOSED ASH BORING

NOTES

1. IMAGERY SOURCE: DRONEVIEW MAPPING. IMAGERY DATE: 11/25/2023.

2. COORDINATE SYSTEM: NAD 1983 HARN STATEPLANE IOWA SOUTH FIPS 1402 (US FEET).

200 0 200 '

SCALE: 1" = 200'

DOCUMENT PATH: I:\PROJECTS\25220081.00\DRAWINGS\GIS\BURLINGTON\BURLINGTON.APRX

PROJECT NO.	25220081.00	DRAWN BY:	AA
DRAWN:	01/22/2024	CHECKED BY:	EJN
REVISED:	01/23/2024	APPROVED BY:	TK 1/23/2024

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: INTERSTATE POWER AND LIGHT CO.
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601

SITE: BURLINGTON GENERATING STATION
4282 SULLIVAN SLOUGH ROAD
BURLINGTON, IA 52601

PROPOSED ASH BORING LOCATIONS

FIGURE 1

April 10, 2024
File No. 25220081.00

Mr. Chad Stobbe
Iowa Department of Natural Resources
502 East 9th Street
Des Moines, IA 50319

Subject: Plan for Drilling Through Impoundment Cover and Proposed Restoration
IPL Burlington Generating Station
Permit #29-SDP-13-23C

Dear Mr. Stobbe:

As part of the ongoing groundwater corrective action at the site under 40 CFR 257.98, Alliant Energy plans to drill four wells at the IPL Burlington Generating Station (BGS) [**Figure 1**]. The wells will be used to run pumping tests to inform groundwater remediation system design.

Permitted ash pond closure construction activities completed to date at BGS include placement of the final cover, so this letter is provided to inform you of the proposed cap protection plan during drilling and proposed cap restoration measures upon completion of the drilling. The following provides the specifics for the borings, borehole backfilling, and cap restoration:

- Drill up to four borings within the limits of the former Economizer Pond final cover using a track-mounted mini-sonic drilling rig and install 6-inch-diameter pumping wells in two borings and 2-inch observation wells in two borings.

- The planned well locations **Figure 1**. Our intent is to minimize the disturbance of the final cover system when accessing the drilling locations.

- Cribbing and drilling mat protection will be laid down over perimeter drainage ditches as needed for access. The protection will be traversed by the drilling rig to gain access and minimize cover disturbance.

- The estimated depth of the four borings ranges from 30 feet to 35 feet based on the documented ground surface elevation and well screen intervals at each location.

- The annular space of each well will be sealed with bentonite grout that is tremied from the bottom of each boring to the surface, or the top of the compacted cover infiltration layer at a minimum. The boreholes will be checked for settlement after 24 hours, and settlement will be topped up with bentonite chips. Each well will be protected with a stick-up steel protective cover and up to three bollards. Bentonite chips will be used for the surface seal around each well's protective cover. Up to three bollards will be installed around each well, and bentonite will be used to seal around the bollards. All work will be performed by an Iowa-certified driller in accordance with Iowa Code requirements.

- Excess drill cuttings (not retained by SCS for sample analysis) will be drummed and staged on-site for later disposal at an appropriate permitted solid waste facility in accordance with Iowa Code requirements.

- Potential ruts in the cover or other disturbance due to the drilling activities will be repaired with topsoil and grass seed. Restoration will be performed in accordance with the September 11, 2023 closure permit.

- A letter format documentation report will be submitted to Iowa Department of Natural Resources (IDNR) upon completion of the drilling and cap restoration.

IPL would like to take advantage of a potential opening in the driller's schedule and perform this work beginning on April 11, 2024. Please provide your concurrence with this plan, or questions and comments you may have at your earliest convenience.

Sincerely,

Thomas J. Karwoski
Project Manager
SCS Engineers

Eric J. Nelson, PE
Project Director
SCS Engineers

MDB/AJR/EJN

cc: Jenny Coughlin, Alliant Energy
Jeff Maxted, Alliant Energy
Robin Nelson, IPL Burlington Generating Station

Encl. Figure 1 – Proposed Impoundment Boring Locations

I:\25220081.00\Correspondence\Agency\Cap Disturbance Notification and Restoration Letter 2\240410_Stobbe_BGS Cap Restoration_Pump Test Wells_Final.docx

LEGEND

- EXISTING CCR RULE MONITORING WELL
- CCR RULE PIEZOMETER
- LIMITS OF FINAL COVER
- PROPOSED OBSERVATION WELL
- PROPOSED PUMPING WELL

NOTES:

1. MONITORING WELLS MW-303 THROUGH MW-308 WERE INSTALLED BY CASCADE DRILLING, LLP. UNDER THE SUPERVISION OF SCS ENGINEERS ON DECEMBER 15-17, 2015.
2. MONITORING WELLS MW-301, MW-302, AND MW-309 THROUGH MW-311 WERE INSTALLED BY DIRECT PUSH ANALYTICAL SERVICES CORP. UNDER THE SUPERVISION OF SCS ENGINEERS FROM FEBRUARY 29, 2016 TO MARCH 1, 2016.
3. MONITORING WELLS MW-312 AND MW-313 WERE INSTALLED BY ROBERTS ENVIRONMENTAL DRILLING IN MAY 2019.
4. PIEZOMETERS MW-302A, MW-307A, MW-310A, AND MW-311A WERE INSTALLED BY ROBERTS ENVIRONMENTAL DRILLING IN JUNE-JULY 2020.
5. PIEZOMETERS MW-307B AND MW-313B INSTALLED BY CASCADE DRILLING, LLP. UNDER THE SUPERVISION OF SCS ENGINEERS FROM AMY 10-12, 2021.
6. MONITORING WELL MW-314 INSTALLED BY TERRACON CONSULTANTS, INC. UNDER THE SUPERVISION OF SCS ENGINEERS ON FEBRUARY 25, 2022.
7. MW-314 IS LOCATED APPROXIMATELY 4,000 FEET SOUTH OF THE PLANT.
8. AERIAL PHOTOGRAPH SOURCES: DRONEVIEW MAPPING DATED NOVEMBER 25, 2023 SUPPLEMENTED WITH GOOGLE EARTH DATED SEPTEMBER 14, 2017.

N

300 0 300

SCALE: 1" = 300'

PROJECT NO.	25220081.00	DRAWN BY:	BSS/KRG/BWM
DRAWN:	09/14/2020	CHECKED BY:	MDB/NDK/RJG
REVISED:	04/10/2024	APPROVED BY:	MDB 4/10/2024

ENGINEER: SCS ENGINEERS
2830 DAIRY DRIVE MADISON, WI 53718-6751
PHONE: (608) 224-2830

CLIENT: ALLIANT ENERGY
4902 N. BILTMORE LANE, #1000
MADISON, WI 53718

SITE: ALLIANT ENERGY
BURLINGTON GENERATING STATION
BURLINGTON, IOWA

SITE PLAN AND PROPOSED WELL LOCATIONS

FIGURE 1

I:\25220081.00\Drawings\F1_SitePlan-Wells.dwg, 4/10/2024 2:41:41 PM

Appendix B

Photographs

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 1: Rutting on the Economizer Ash Pond Closure Area (looking southwest).

Photo 2: Rutting on the Main Ash Pond Closure Area (looking north).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 3: Economizer Ash Pond Closure Area access ramp (looking southeast).

Attachment B

Abandonment Forms

IOWA DEPARTMENT OF NATURAL RESOURCES

Monitoring Well/Piezometer Abandonment Form

Disposal Site Name: Burlington Generating Station Permit No.: _____

Well/Piezometer No.: Boring 1 BORING ONLY - NO WELL INSTALLED

Applicable Requirements[1]:
- ☐ 567 IAC 113
- ☐ 567 IAC 114
- ☐ 567 IAC 115
- ☐ 567 IAC 139
- ☐ Site Permit
- ☐ Other: _____

1. Location of Well[2]

Site Coordinates: Northing: 279518.44 Easting: 2299533.59

World Coordinates: Latitude: 40.69073° Longitude: -89.31863°

2. Well Description:

Well depth: 47 ft

Depth to water: N/A ft.

Well material: Boring only - no well installed (PVC, stainless, iron, etc.)

Well diameter: 6 in.

Year or decade constructed: 2024

Abandonment date: 1/30/2024

Abandonment method: Bentonite grout (65 gallons, 3 bags of bentonite quick grout), topped with bentonite chips (1.5 bags).

If plugged by owner, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Owner Robert Caffery

If plugged by certified well contractor, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Contractor: Paul Dickinson Cert No: 9361

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov.

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirement, then 567 UAC Chapter 39 shall apply, which requires use of the Abandoned Water Well Plugging Record, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable and include with this form an aerial photograph showing the location. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

IOWA DEPARTMENT OF NATURAL RESOURCES

Monitoring Well/Piezometer Abandonment Form

Disposal Site Name: Burlington Generating Station Permit No.:

Well/Piezometer No.: Boring 2 BORING ONLY - NO WELL INSTALLED

Applicable Requirements[1]:
- ☐ 567 IAC 113
- ☐ 567 IAC 114
- ☐ 567 IAC 115
- ☐ 567 IAC 139
- ☐ Site Permit
- ☐ Other:

1. Location of Well[2]

Site Coordinates: Northing: 279517.31 Easting: 2299936.06

World Coordinates: Latitude: 40.74244° Longitude: -91.11962°

2. Well Description:

Well depth: 47 ft

Depth to water: N/A ft.

Well material: Boring only - no well installed (PVC, stainless, iron, etc.)

Well diameter: 6 in.

Year or decade constructed: 2024

Abandonment date: 1/30/2024

Abandonment method: Bentonite grout (65 gallons, 3 bags of bentonite quick grout), topped with bentonite chips (1.5 bags).

If plugged by owner, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Owner Robert Caffrey

If plugged by certified well contractor, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Contractor: Paul Dickinson Cert No: 9361

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov.

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirement, then 567 UAC Chapter 39 shall apply, which requires use of the Abandoned Water Well Plugging Record, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable and include with this form an aerial photograph showing the location. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

IOWA DEPARTMENT OF NATURAL RESOURCES

Monitoring Well/Piezometer Abandonment Form

Disposal Site Name: Burlington Generating Station Permit No.:

Well/Piezometer No.: Boring 3 BORING ONLY - NO WELL INSTALLED

Applicable Requirements[1]:
- ☐ 567 IAC 113
- ☐ 567 IAC 114
- ☐ 567 IAC 115
- ☐ 567 IAC 139
- ☐ Site Permit
- ☐ Other:

1. Location of Well[2]

Site Coordinates: Northing: 279102.04 Easting: 2299142.1

World Coordinates: Latitude: 40.74136° Longitude: -91.12253°

2. Well Description:

Well depth: 22 ft

Depth to water: N/A ft.

Well material: Boring only - no well installed (PVC, stainless, iron, etc.)

Well diameter: 6 in.

Year or decade constructed: 2024

Abandonment date: 1/30/2024

Abandonment method: Bentonite grout (37 gallons, 2 bags of bentonite quick grout), topped with bentonite chips (1.5 bags).

If plugged by owner, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Owner Robert Caffrey

If plugged by certified well contractor, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Contractor: Paul Dickinson Cert No: 9361

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov.

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirement, then 567 UAC Chapter 39 shall apply, which requires use of the Abandoned Water Well Plugging Record, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable and include with this form an aerial photograph showing the location. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

Questions? Call or Email: Brian Rath, 515-537-4051, brian.rath@dnr.iowa.gov

IOWA DEPARTMENT OF NATURAL RESOURCES

Monitoring Well/Piezometer Abandonment Form

Disposal Site Name: Burlington Generating Station Permit No.: _____

Well/Piezometer No.: Boring 4 BORING ONLY - NO WELL INSTALLED

Applicable Requirements[1]: ☐ 567 IAC 113 ☐ 567 IAC 139
☐ 567 IAC 114 ☐ Site Permit
☐ 567 IAC 115 ☐ Other: _____

1. Location of Well[2]

Site Coordinates: Northing: 278800.52 Easting: 2299732.04

World Coordinates: Latitude: 40.74048° Longitude: -91.12043°

2. Well Description:

Well depth: 37 ft

Depth to water: N/A ft.

Well material: Boring only - no well installed (PVC, stainless, iron, etc.)

Well diameter: 6 in.

Year or decade constructed: 2024

Abandonment date: 1/30/2024

Abandonment method: Bentonite grout (47 gallons, 2 bags of bentonite quick grout), topped with bentonite chips (1.5 bags).

If plugged by owner, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Owner Robert Caffrey

If plugged by certified well contractor, complete the following:
I certify, under penalty of law, I believe the information reported on this form is true, accurate, and complete.

Signature of Contractor: Paul Dickinson Cert No: 9361

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov.

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirement, then 567 UAC Chapter 39 shall apply, which requires use of the Abandoned Water Well Plugging Record, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable and include with this form an aerial photograph showing the location. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

Attachment C

Well Construction Forms

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-BGS Permit No.: 62388

Well/Piezometer No.: OW-2 Date Started: 4/11/2024 Date Completed: 4/13/2024

Applicable Requirements[1]: ☐ 567 IAC 113 ☐ 567 IAC 115 ☐ Site Permit ☐ 567 IAC 114 ☐ 567 IAC 139 ☐ Other:

A. SURVEYED LOCATION[2] AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 533.88 Top of Protective Casing: 536.26

Top of Well Casing: 536.1

Site Coordinates: Northing: 279394.5 Easting: 2300353.33

World Coordinates: Latitude: 40.74207° Longitude: 91.11813°

Elevation and Coordinate Systems: Iowa State Plane South Zone

B. SOIL BORING INFORMATION

Certified Well Contractor Cascade Drilling LLP

Address 301 Alderson Street City, State, Zip Code Schofield, WI 54476

Name of driller Paul Dickinson Cert No. 09361

Drilling method Rotosonic Drilling fluid Water Bore hole diameter 6"

Soil sampling method Bag Depth of boring 32'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 30.8

Casing diameter: 2"

Casing joint type: flush threaded

Casing/screen joint type: flush threaded

Screen material: PVC

Screen opening size: 10 slot

Screen length: 5'

Depth of Well: 33.6

Filter Pack:

Material: Red Flint Sand

Grain Size: #40

Quantity: 2 bags (100 lbs) + 1/2 bag #10 fine sand

Seal (minimum 3 ft. length above filter pack):

Material: 3/8" bentonite chips

Placement method: graveity

Quantity: 4 bags (200 lb)

Backfill (if different from seal): same as seal

Material:

Placement method:

Quantity:

Surface seal design: 3/8 Bentonite

Material of protective casing: Steel

Material of grout between protective casing and well casing: 3/8 Bentonite Chips

Protective cap: Yes

Material: Steel

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap: Yes

Material: Rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level 15.25' Stabilization time

Well development method 10 well volume purge

Average depth of frost line 4'

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature Paul Dickinson **Certification #** 9361 **Date** 4/13/2024

Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface

Top of protective casing (TOP)
Elevation C 536.26
Top of Well Casing (TOC)
Elevation B 536.10
Ground surface (GS)
Elevation A 533.88
Depth Use 0

Top of backfill
Base of concrete plug and bentonite grout
Elevation A-W 533.88
Depth W 0

Base of Protective Casing
Elevation C-A = 528.26
Depth PC-C-A = 5.62

Base of Backfill, Top of Seal
Elevation A-X = 533.88
Depth X 0

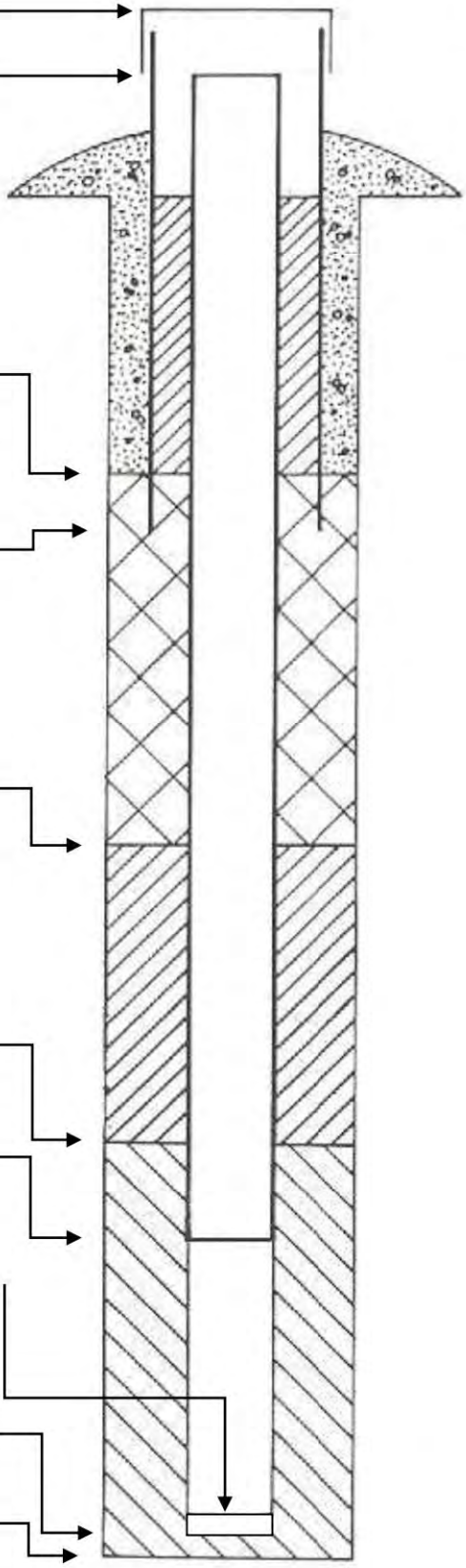
Top of Filter Pack, Base of Seal
Elevation A-Y = 509.88
Depth Y 24

Top of Screen (TOS)
Elevation B-TD-S-WP = 505.3
Depth A-TOS^{elev} = 28.58

Bottom of Screen (BOS)
Elevation B-TD-WP = 500.3
Depth A-BOS^{elev} = 33.58

Bottom of Well
Elevation 500.3
Depth 33.58

Bottom of Filter Pack
Elevation A-Z = 499.88
Depth Z 34



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: 5 S: 5
WP: TD: 35.8

Questions? Call or Email: Brian Rath, 515-537-4051, brian.rath@dnr.iowa.gov

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-BGS Permit No.: 62390

Well/Piezometer No.: PW-2 Date Started: 4/11/2024 Date Completed: 4/12/2024

Applicable Requirements[1]: ☐ 567 IAC 113 ☐ 567 IAC 115 ☐ Site Permit ☐ 567 IAC 114 ☐ 567 IAC 139 ☐ Other:

A. SURVEYED LOCATION[2] AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 531.21 Top of Protective Casing: 533.86

Top of Well Casing: 533.55

Site Coordinates: Northing: 279696.62 Easting: 2300416.68

World Coordinates: Latitude: 40.74289° Longitude: 91.11787°

Elevation and Coordinate Systems: Iowa State Plane South Zone

B. SOIL BORING INFORMATION

Certified Well Contractor Cascade Drilling LLP

Address 301 Alderson Street City, State, Zip Code Schofield, WI 54476

Name of driller Paul Dickinson Cert No. 09361

Drilling method Rotosonic Drilling fluid Water Bore hole diameter 10"

Soil sampling method Bag Depth of boring 37'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 27.8

Casing diameter: 6"

Casing joint type: flush threaded

Casing/screen joint type: flush threaded

Screen material: PVC

Screen opening size: 10 slot

Screen length: 10'

Depth of Well: 35.5

Filter Pack:

Material: Red Flint Sand

Grain Size: #40

Quantity: 8 bags (50 lbs) + 1 bag #10 fine sand

Seal (minimum 3 ft. length above filter pack):

Material: 3/8" bentonite chips

Placement method: Gravity

Quantity: 8 bags (400 lbs)

Backfill (if different from seal): same as seal

Material:

Placement method:

Quantity:

Surface seal design: 3/8 Bentonite

Material of protective casing: Steel

Material of grout between protective casing and well casing: 3/8 Bentonite Chips

Protective cap: Yes

Material: Steel

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap: Yes

Material: Rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level 16.21' Stabilization time

Well development method 10 well volume purge

Average depth of frost line 4'

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature Paul Dickinson **Certification #** 9361 **Date** 4/12/2024

Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface

Top of protective casing (TOP)
Elevation C 533.86
Top of Well Casing (TOC)
Elevation B 533.55
Ground surface (GS)
Elevation A 531.21
Depth Use 0

Top of backfill
Base of concrete plug and bentonite grout
Elevation A-W 0
Depth W 531.21

Base of Protective Casing
Elevation C-A = 525.86
Depth PC-C-A = 5.35

Base of Backfill, Top of Seal
Elevation A-X = 531.21
Depth X 0

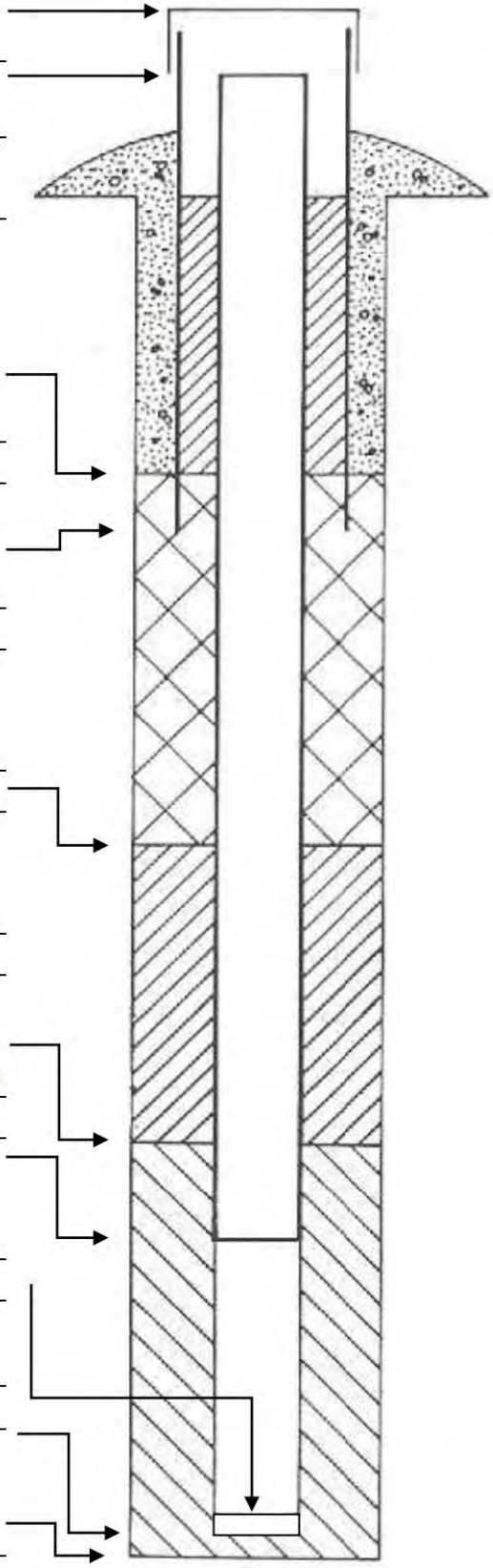
Top of Filter Pack, Base of Seal
Elevation A-Y = 508.21
Depth Y 23

Top of Screen (TOS)
Elevation B-TD-S-WP = 505.75
Depth A-TOS^{elev} = 25.46

Bottom of Screen (BOS)
Elevation B-TD-WP = 495.75
Depth A-BOS^{elev} = 35.46

Bottom of Well
Elevation 495.75
Depth 35.46

Bottom of Filter Pack
Elevation A-Z = 494.21
Depth Z 37



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: 8 S: 10
WP: TD: 37.8

Questions? Call or Email: Brian Rath, 515-537-4051, brian.rath@dnr.iowa.gov

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-BGS Permit No.: 62387

Well/Piezometer No.: OW-1 Date Started: 4/13/2024 Date Completed: 4/14/2024

Applicable Requirements[1]: ☐ 567 IAC 113 ☐ 567 IAC 115 ☐ Site Permit ☐ 567 IAC 114 ☐ 567 IAC 139 ☐ Other:

A. SURVEYED LOCATION[2] AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 534.42 Top of Protective Casing: 537.2

Top of Well Casing: 536.82

Site Coordinates: Northing: 279366.07 Easting: 2300332.28

World Coordinates: Latitude: 40.74200° Longitude: 91.11821°

Elevation and Coordinate Systems: Iowa State Plane South Zone

B. SOIL BORING INFORMATION

Certified Well Contractor: Cascade Drilling LLP

Address: 301 Alderson Street City, State, Zip Code: Schofield, WI 54476

Name of driller: Paul Dickinson Cert No.: 09361

Drilling method: Rotosonic Drilling fluid: Water Bore hole diameter: 6"

Soil sampling method: Bag Depth of boring: 26'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 22.8

Casing diameter: 2"

Casing joint type: flush threaded

Casing/screen joint type: flush threaded

Screen material: PVC

Screen opening size: 10 slot

Screen length: 5'

Depth of Well: 27.8

Filter Pack: 26-18'

Material: Red Flint Sand

Grain Size: #40

Quantity: 2 bags (50 lbs) + 1 bag #10 fine sand

Seal (minimum 3 ft. length above filter pack):

Material: 3/8" bentonite chips

Placement method: Gravity

Quantity: 5 bags (250 lbs)

Backfill (if different from seal): same as seal

Material:

Placement method:

Quantity:

Surface seal design: 3/8 Bentonite

Material of protective casing: Steel

Material of grout between protective casing and well casing: 3/8 Bentonite Chips

Protective cap: Yes

Material: Steel

Vented?: ☐ Y ☐ N Locking?: ☒ Y ☐ N

Well cap: Yes

Material: Standard

Vented?: ☐ Y ☐ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level: 12.73' Stabilization time:

Well development method: 10 well volume purge

Average depth of frost line: 4'

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

DRILLER'S CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate, and complete.

Signature Paul Dickinson **Certification #** 9361 **Date** 4/14/2024

Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface

Top of protective casing (TOP)
Elevation C 537.20
Top of Well Casing (TOC)
Elevation B 536.82
Ground surface (GS)
Elevation A 534.42
Depth Use 0

Top of backfill
Base of concrete plug and bentonite grout
Elevation A-W 534.42
Depth W 0

Base of Protective Casing
Elevation C-A = 529.2
Depth PC-C-A = 5.22

Base of Backfill, Top of Seal
Elevation A-X = 534.42
Depth X 0

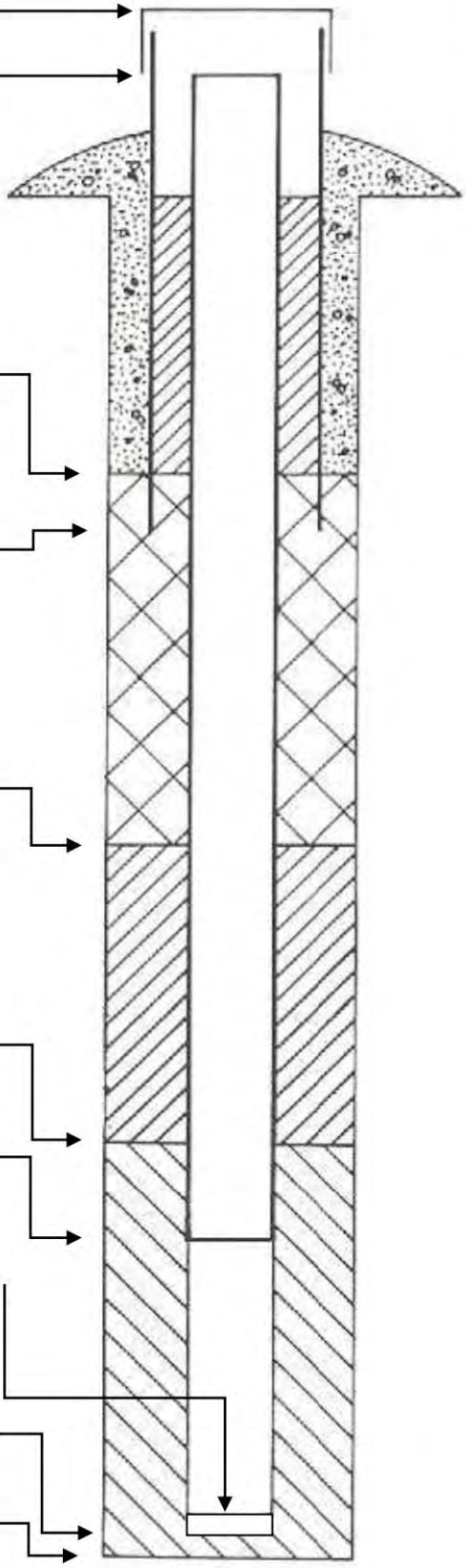
Top of Filter Pack, Base of Seal
Elevation A-Y = 517.42
Depth Y 17

Top of Screen (TOS)
Elevation B-TD-S-WP = 513.99
Depth A-TOS^{elev} = 20.43

Bottom of Screen (BOS)
Elevation B-TD-WP = 508.99
Depth A-BOS^{elev} = 25.43

Bottom of Well
Elevation 508.99
Depth 25.43

Bottom of Filter Pack
Elevation A-Z = 508.42
Depth Z 26



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: 8 S: 5
WP: TD: 27.83

Questions? Call or Email: Brian Rath, 515-537-4051, brian.rath@dnr.iowa.gov

MONITORING WELL / PIEZOMETER CONSTRUCTION DOCUMENTATION FORM

Disposal Site Name: IPL-BGS Permit No.: 62389

Well/Piezometer No.: PW-1 Date Started: 4/13/2024 Date Completed: 4/14/2024

Applicable Requirements[1]: ☐ 567 IAC 113 ☐ 567 IAC 115 ☐ Site Permit ☐ 567 IAC 114 ☐ 567 IAC 139 ☐ Other:

A. SURVEYED LOCATION[2] AND ELEVATION OF POINT

Elevations (MSL): Ground Surface: 532.05 Top of Protective Casing: 534.58

Top of Well Casing: 534.28

Site Coordinates: Northing: 279662.53 Easting: 2300413.88

World Coordinates: Latitude: 40.74280° Longitude: 91.11789°

Elevation and Coordinate Systems: Iowa State Plane South Zone

B. SOIL BORING INFORMATION

Certified Well Contractor Cascade Drilling LLP

Address 301 Alderson Street City, State, Zip Code Schofield, WI 54476

Name of driller Paul Dickinson Cert No. 09361

Drilling method Rotosonic Drilling fluid Water Bore hole diameter 10"

Soil sampling method Bag Depth of boring 32'

C. MONITORING WELL INSTALLATION

Casing material: PVC

Length of casing: 22.5'

Casing diameter: 6"

Casing joint type: flush threaded

Casing/screen joint type: flush threaded

Screen material: PVC

Screen opening size: 10 slot

Screen length: 10'

Depth of Well: 30.3'

Filter Pack:

Material: Red Flint Sand

Grain Size: #40

Quantity: 8 bags (50 lbs) + 1 bag #10 fine sand

Seal (minimum 3 ft. length above filter pack):

Material: 3/8" bentonite

Placement method: Gravity

Quantity: 8 bags (400 lb)

Backfill (if different from seal): same as seal

Material:

Placement method:

Quantity:

Surface seal design: 3/8 Bentonite

Material of protective casing: Steel

Material of grout between protective casing and well casing: 3/8 Bentonite Chips

Protective cap:

Material: Steel

Vented?: ☒ Y ☐ N Locking?: ☒ Y ☐ N

Well cap:

Material: Rubber

Vented?: ☐ Y ☒ N

D. GROUNDWATER MEASUREMENT (±0.01 foot below top of inner well casing)

Water level 13.43' Stabilization time

Well development method 10 well volume purge

Average depth of frost line 4'

[1] Refer to the site's permit to determine applicable requirements. Note that some sites may only be regulated by their permit versus current landfill chapters. If the permit and rule are silent regarding applicable requirements, then 567 IAC Chapter 39 shall apply, which requires use of the Well Log (Well Record) Form, not this form. If the applicable requirements have been modified and approved by the DNR, then note under Other.

[2] The location does not need to be surveyed by a licensed surveyor. A handheld GPS reading accurate to +/- 30 feet is acceptable when an aerial photograph showing the location (pin) is included with this form. The site coordinates should be the same coordinate system currently used for survey control and mapping of the site.

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Note: Attach well log, boring log, and map showing new monitoring well/piezometer location in relation to existing wells or piezometers.

Complete one form for each well plugged and submit within 30 days to the local county agent, DNR project officer, and Erik Day with the DNR's Water Supply Section at erik.day@dnr.iowa.gov. DNR prefers that the forms be completed and submitted electronically.

Well and Boring Logs

Elevations: ±0.01 ft. MSL

Depths: ±0.1 ft from Ground Surface

Top of protective casing (TOP)
Elevation C 534.58

Top of Well Casing (TOC)
Elevation B 534.28

Ground surface (GS)
Elevation A 532.05

Depth Use 0

Top of backfill
Base of concrete plug and bentonite grout
Elevation A-W 532.05
Depth W 0

Base of Protective Casing
Elevation C-A = 526.58
Depth PC-C-A = 5.47

Base of Backfill, Top of Seal
Elevation A-X = 532.05
Depth X 0

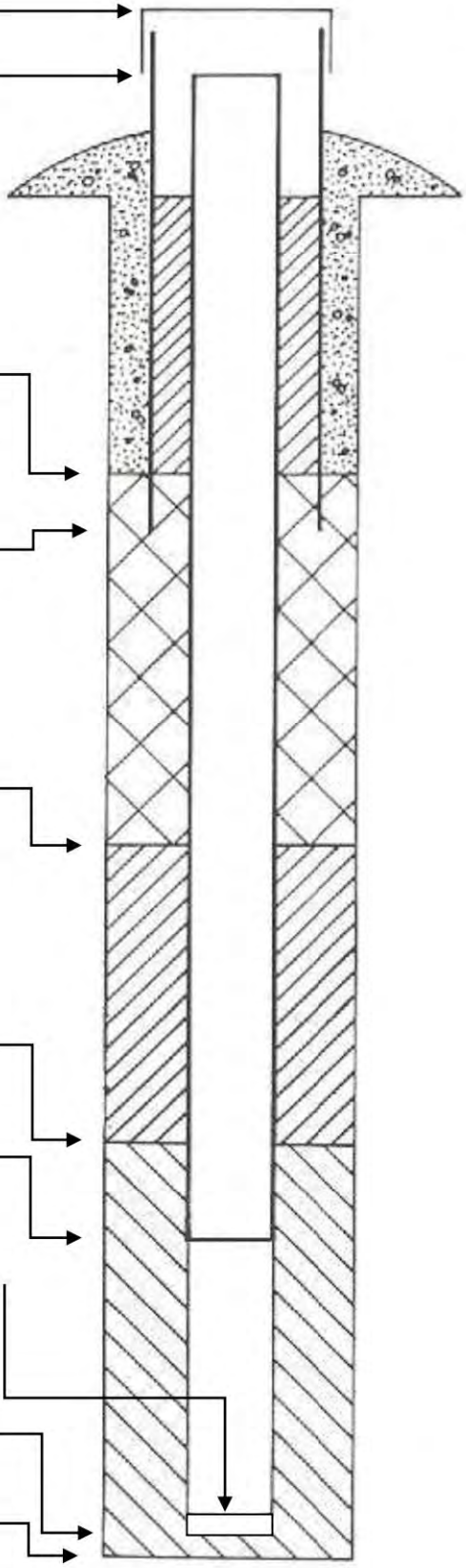
Top of Filter Pack, Base of Seal
Elevation A-Y = 514.05
Depth Y 18

Top of Screen (TOS)
Elevation B-TD-S-WP = 511.74
Depth A-TOS^{elev} = 20.31

Bottom of Screen (BOS)
Elevation B-TD-WP = 501.74
Depth A-BOS^{elev} = 30.31

Bottom of Well
Elevation 501.74
Depth 30.31

Bottom of Filter Pack
Elevation A-Z = 500.05
Depth Z 32



Required Data:

- Elevations for A, B, and C shall be surveyed.
- Depths for W, X, Y, and Z shall be field measured following completion of each item.
- Lengths of the Protective Casing (PC), Screen (S), and Well Point (WP) shall be field measured prior to installation of each item.
- The total Depth (TD) from the Top of Well Casing to the Bottom of Well Point shall be field measured following installation.

PC: 8 S: 10
WP: TD: 32.54

Questions? Call or Email: Brian Rath, 515-537-4051, brian.rath@dnr.iowa.gov

Attachment D

Photo Log

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 1: Precision removing topsoil from proposed ramp access (looking west).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 2: Placing surface course aggregate on geotextile for ramp (looking northwest). Installing geotextile on top of low-permeability clay cover material for ramp (looking southeast).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 3: Placing 6 inches of surface course aggregate on geotextile for ramp (looking northwest).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 4: Fine grading rutting areas on Main Ash Pond Closure Area (looking southwest).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 5: Topsoil placed from ramp area over damaged area in Main Ash Pond Closure Area to reach 6-inch thickness (looking south).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 6: Precision began placing seed and mulch over areas in the Main Ash Pond Closure Area (looking south).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 7: Rutting areas reseeded and mulched in the Main Ash Pond Closure Area (looking northwest).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 8: Fine-graded rutted areas in the Economizer Ash Pond Closure Area (looking west).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 9: Seeded and mulched rutting on Economizer Ash Pond Closure Area (looking southeast).

Burlington Generating Station/Ash Pond Closure
4282 Sullivan Slough Road Burlington, Iowa 52601
SCS Engineers Project #25220081.00

Photo 10: Completed ramp (looking southeast).