



**US Army Corps  
of Engineers** ®  
Rock Island District

# PUBLIC NOTICE

Applicant: Mike O’Hara,  
Lucas Farms, LLC

Date: December 7, 2022

Expires: January 5, 2023

CEMVR-RD-2018-1281

Section 404

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**Joint Public Notice  
US Army Corps of Engineers  
Iowa Department of Natural Resources**

1. **Applicant:** Mike O’Hara – Lucas Farms, LLC, 3125 S. Mont du Lac Drive, Superior, Wisconsin 54880.

Authorized Agent – Robert Stempihar – Barr Engineering Co. 325 S. Lake Avenue, Suite 700, Duluth, Minnesota 55802.

2. **Project Location:** Proposed project is located in wetlands and on an unnamed tributary to White Breast Creek in Section 30, Township 72 North, Range 22 West, in Lucas County, Iowa, approximately 1.3 miles southeast of the town of Lucas. Latitude 41.007674, Longitude -93.446213. UTM Zone 15, NAD 83.

3. **Project Description:**

a. This project was advertised in 2019, however it was withdrawn due to the lack of a stream and wetland mitigation plan. The proposed project description remains the same. The Applicant, Lucas Farms, LLC has proposed to construct an earthen dam that will create a lake approximately 56-acres in size for recreational use, such as swimming, boating, fishing and hunting. The proposed embankment is approximately 600 feet long, 52.5 feet tall and 20 feet wide, and would include an emergency spillway and upstream settling pond. The proposed primary spillway will include two, twin 330 feet long RCP culverts and will empty into the unnamed tributary. The proposed lake will be about 50 feet deep at its deepest point. Borrow material for the proposed lake will come from on-site.

b. The proposed project will impact approximately 6,630 feet of stream. Of this total, 600 feet will be impacted by the embankment, 5,965 feet by the impoundment and 76 feet by the upstream settling basin. There are 0.55 acres of wetland located in the project area that would be permanently inundated by this project also.

c. The Applicant has completed the Iowa Stream Mitigation Method (ISMM) and based on the impacts; the proposed project will require 34,918 stream mitigation credits. At the time of the first Public Notice, a stream mitigation bank was not available in the service area of the impacts. The Applicant was allowed to continue the development of a permittee responsible mitigation plan. The

Applicant has subsequently submitted a final stream mitigation plan for this project. The completed stream mitigation plan entails work at three sites within the same HUC-8. The three proposed locations are called the Home Farm, Clarke Farm, and Lucas Farm. All sites will be protected by conservation easements and will have a monitoring plan that meets the Corps standards. According to the mitigation plan, the credits generated by the proposed sites exceed the impacts.

1) The proposed Home Farm Stream Mitigation Site is located in Section 20, Township 73 North, Range 25 West, Clarke County, Iowa, Latitude 41.11327, Longitude -93.75069 and is approximately 18-miles from the proposed lake. Mitigation at the Home Farm will primarily involve the restoration and creation of riparian buffers. The existing buffer at this location is composed of invasive species and agricultural crops. The stream banks are nearly vertical and in some places are over 10-feet tall. At this site, the existing buffer between Squaw Creek and the unnamed stream and the agricultural field to the east will be restored to native species. Additional buffer will be created where none currently exists. Wetland delineations at this site were completed and no wetlands were identified within the proposed mitigation site. No instream work is planned at this location.

2) The proposed Clarke Farm Stream Mitigation Site is located in Section 6, Township 72 North, Range 23 West, Lucas County, Iowa, Latitude 41.062143, Longitude -93.55188 and is approximately 6.5-miles from the proposed lake. Work at this site will include in-stream work and buffer restoration. South Otter Creek at this location has severely incised banks and the proposed work will involve grading and stabilizing the streambanks at this location. The existing buffer at this location is composed of reed-canary grass, smooth brome, teasel, birds-foot trefoil and wild parsnip. The site is approximately 14-acres and will result in multiple buffer areas and reconnection to the floodplain of South Otter Creek on 3,010 linear feet.

3) The proposed Lucas Farms Site is located in Section 24, Township 72 North, Range 23 West, Lucas County, Iowa, Latitude 41.014649, Longitude -93.447655. This is located less than a mile from the proposed impoundment. Work at this site includes approximately 1,150 linear feet of stabilization on White Breast Creek and nearly 3-acres of riparian buffer creation.

4) To mitigate for the 0.55 acres of emergent wetland, the applicant proposes to purchase 0.55 acres of wetland credit from a wetland mitigation bank within the approved service area of the impacts.

4. **Agency Review.** The project plans have been submitted to the Iowa Department of Natural Resources for state certification of the proposed work in accordance with Section 401 of the Clean Water Act. The certification, if issued, will express the Department's opinion that the proposed activity will comply with Iowa's water quality standards (Chapter 61 IAC). The applicant has also applied for authorization of work in the floodplain pursuant to Chapter 455B of the Iowa Code and other applicable state permits. Written comments concerning possible impacts to waters of Iowa should be addressed to: Iowa Department of Natural Resources, 502 East 9<sup>th</sup> Street, Des Moines, Iowa 50319. A copy of the comments should be provided to the Corps of Engineers office (see paragraph 11, of this public notice for address).

#### 5. **Historical/Archaeological.**

a. The District Archaeologist has determined that the permit area for the proposed lake has been covered by a previous cultural resource assessment (OSA TR 1274) that was completed at the time the project was initiated in 2018. No historic properties were identified in the survey. The report was coordinated with the IA State Historic Preservation Office (IA SHPO) in May 2020. IA SHPO concurred with the District's determination of "no historic properties affected" on 11 May 2020.

b. The District has received and reviewed a report entitled, Phase IA Archeological Reconnaissance of Three Stream Mitigation Parcels Project, Lucas and Clarke Counties, Iowa dated November 2021. Mr. William Whittaker with the Office of the State Archaeologist in Iowa City, Iowa was the Principal Investigator for the report. The District Archaeologist finds the report to be adequate. This report has been submitted to the IA SHPO and coordination is on-going. If any Tribe expresses interest in this project, we will coordinate accordingly.

## 6. Endangered Species.

a. District staff has performed a preliminary review of this application for the potential impact on threatened or endangered species pursuant to Section 7 of the Endangered Species Act as amended. The following threatened or endangered species are listed by the United States Fish and Wildlife Service (FWS) as occurring in Lucas County, Iowa.

- *Prairie bush clover*. The threatened prairie bush clover (*Lespedeza leptostachya*) is considered to potentially occur statewide based on historical habitat. It occupies dry to mesic prairies with gravelly soil.
- *Western prairie fringed orchid*. The threatened western prairie fringed orchid (*Platanthera praeclara*) is considered to potentially occur statewide in Iowa based on historical records and habitat distribution. It occupies wet to mesic grassland habitats.
- *Northern long-eared bat*. The threatened northern long-eared bat (*Myotis septentrionalis*) is considered to potentially occur statewide. It hibernates in caves and mines and swarms in surrounding wooded areas in autumn. It roosts and forages in upland forests during late spring and summer.
- *Indiana bat*. The endangered Indiana bat (*Myotis sodalis*) hibernates in caves and mines and swarms in surrounding wooded areas in autumn. These bats migrate to their summer habitat in wooded areas where they usually roost under loose tree bark on dead or dying trees.

b. The USFWS concurred on September 9, 2020, with the determination that this project **may affect**, but is **not likely to affect** the two bat species if certain cutting dates were implemented. Cutting dates will be restricted to October 1 to March 31.

c. The Corps has determined that the work on the three stream mitigation sites will have No Effect on any of the listed species because habitat for these species is not present.

7. **Dredge/Fill Material Guidelines.** The evaluation of the impact of the proposed activity on the public interest will also include application of the guidelines promulgated by the Administrator of the United States Environmental Protection Agency under authority of Section 404(b) of the Clean Water Act (40 CFR Part 230).

8. **Public Interest Review.** The decision whether to issue the Corps permit will be based on an evaluation of the probable impact including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the

proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

**9. Who Should Reply.** The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity. These statements should be submitted on or before the expiration date specified at the top of page 1. These statements should bear upon the adequacy of plans and suitability of locations and should, if appropriate, suggest any changes considered desirable.

**10. Public Hearing Requests.** Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. A request may be denied if substantive reasons for holding a hearing are not provided.

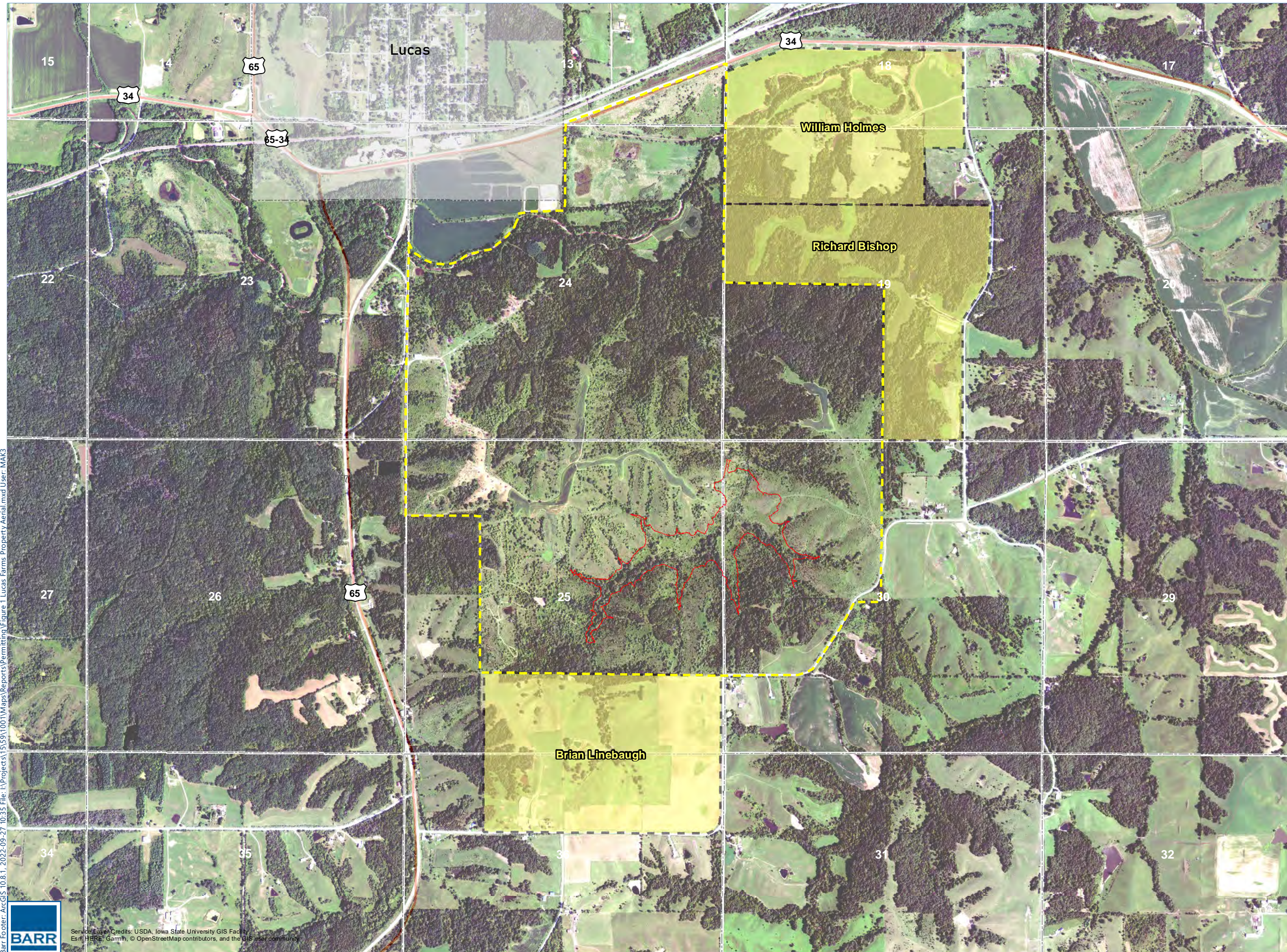
**11. Reply to the Corps of Engineers.** Comments concerning the Corps permit should be addressed to the District Engineer, U. S. Army Corps of Engineers, Rock Island District, ATTN: RD (Frohlich), Clock Tower Building - Post Office Box 2004, Rock Island, Illinois 61204-2004. For additional information contact **Albert Frohlich** at **(309/794-5859)** or email at [albert.j.frohlich@usace.army.mil](mailto:albert.j.frohlich@usace.army.mil).




Attach  
Plans

Mr. Albert J. Frohlich  
Project Manager – Western Branch  
Regulatory Division

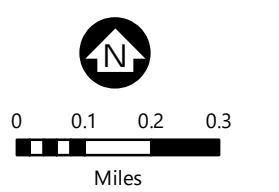
**REQUEST TO POSTMASTERS:** Please post this notice conspicuously and continuously until the expiration date specified at the top of page 1.

**NOTICE TO EDITORS:** This notice is provided as background information for your use in formatting news stories. This notice is not a contract for classified display advertising



-  Approximate Property Boundary
-  Approximate Adjacent Property Boundary
-  Project Area

**2018-1281  
Project Location  
Sheet 1 of 16**



Imagery: USDA NAIP  
2021 0.6m Orthoimagery

**PROJECT AREA**  
Lucas Farms  
Lucas County, Iowa

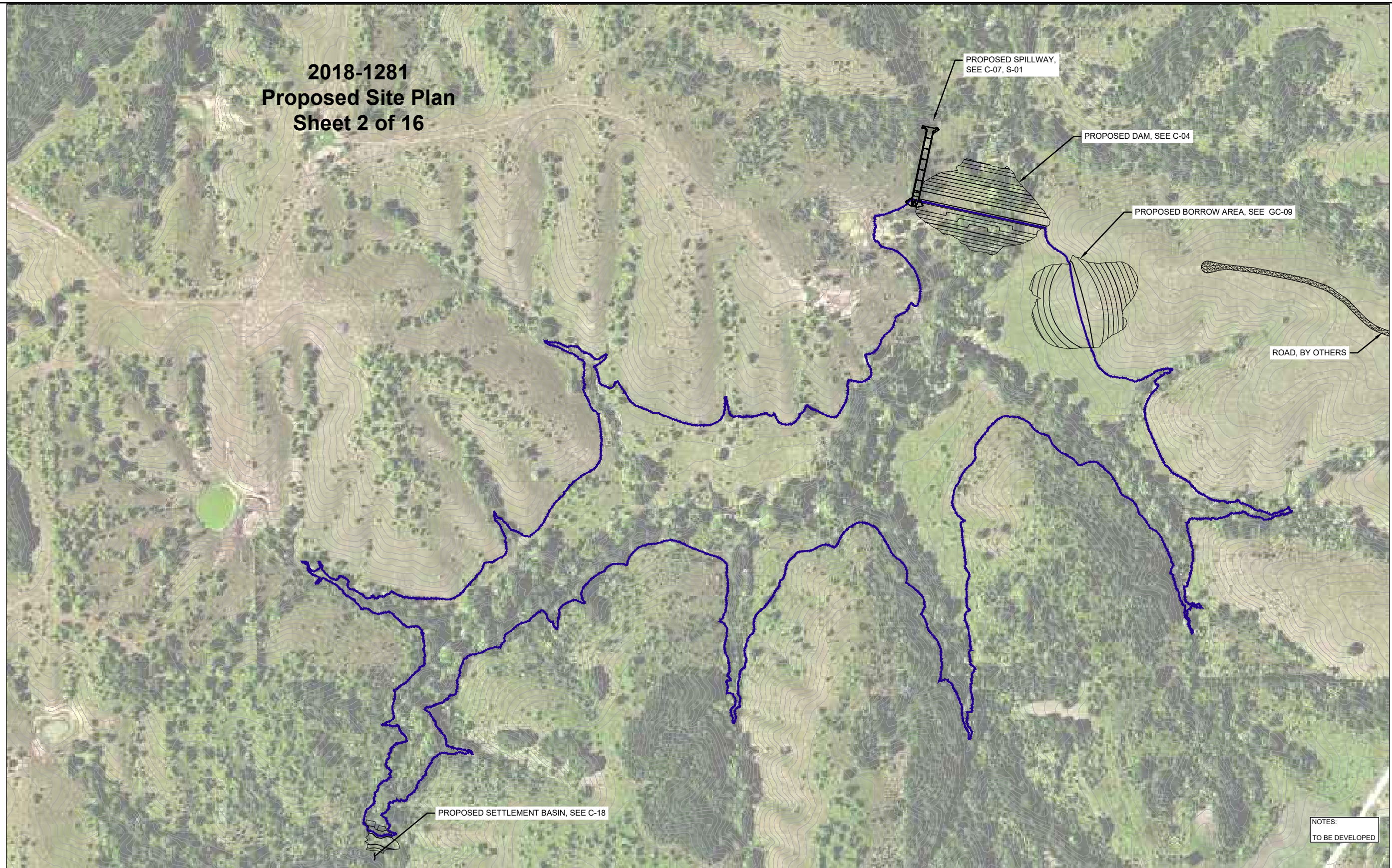
**FIGURE 1**

Barr Footer: ArcGIS 10.8.1, 2022-09-27 10:35 File: I:\Projects\151591001\Maps\Reports\Permitting\Figure 1 Lucas Farms Property Aerial.mxd User: MAK3



Service Layer Credits: USDA, Iowa State University GIS Facility  
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

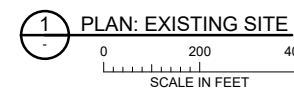
2018-1281  
Proposed Site Plan  
Sheet 2 of 16



NOTES:  
TO BE DEVELOPED

LEGEND

- EXISTING MINOR 5' CONTOUR
- EXISTING MAJOR 25' CONTOUR
- PROPOSED MINOR 5' CONTOUR
- PROPOSED MAJOR 25' CONTOUR
- ELEVATION 948.5 RESERVOIR LEVEL



60% DESIGN  
NOT FOR CONSTRUCTION

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NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION
A	GSJ	RES	JDA	07/01/22	60% DRAFT

CLIENT	BID	CONSTRUCTION	RELEASED TO/FOR
07/01			

**BARR**  
Project Office:  
BARR ENGINEERING CO.  
325 SOUTH LAKE AVENUE  
SUITE 700  
DULUTH, MN 55802  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277

Scale	AS SHOWN
Date	2/28/2022
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Checked	RES
Designed	BARR
Approved	JDA

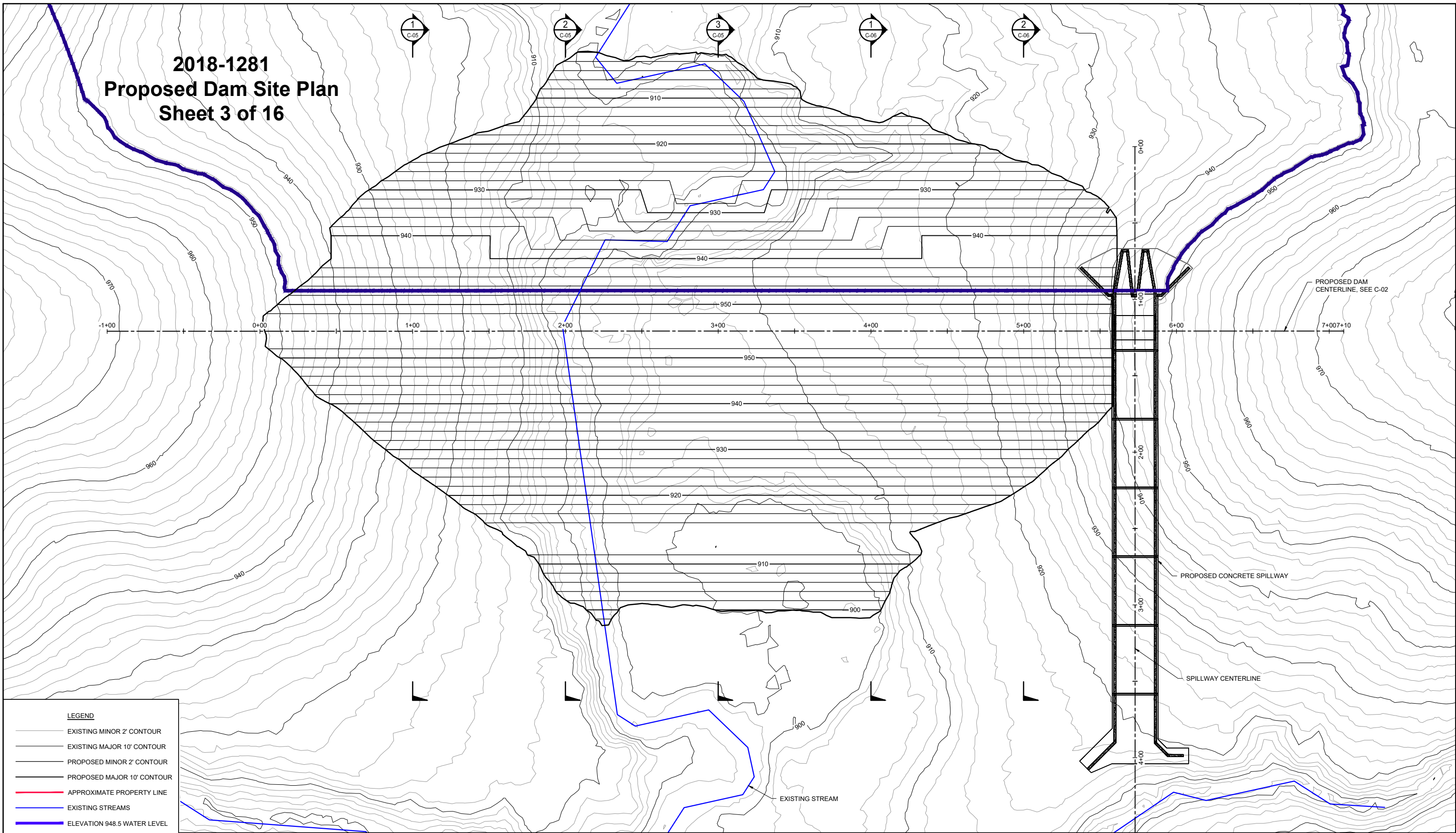
LUCAS FARMS, LLC  
LUCAS, IOWA

CLIENT PROJECT No.
15591001.00

PROPOSED SITE PLAN AND INDEX DRAWING

BARR PROJECT No.	CLIENT PROJECT No.	DWG. No.	REV. No.
15591001.00		GC-05	A

**2018-1281  
Proposed Dam Site Plan  
Sheet 3 of 16**



- LEGEND**
- EXISTING MINOR 2' CONTOUR
  - EXISTING MAJOR 10' CONTOUR
  - PROPOSED MINOR 2' CONTOUR
  - PROPOSED MAJOR 10' CONTOUR
  - APPROXIMATE PROPERTY LINE
  - EXISTING STREAMS
  - ELEVATION 948.5 WATER LEVEL
  - ▼ TEST PIT
  - CPT
  - BORING

1 PLAN: DAM - NEW EMBANKMENT  
0 30 60  
SCALE IN FEET

60% DESIGN  
NOT FOR CONSTRUCTION

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
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CONSTRUCTION									
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DATE RELEASED									

**BARR**  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277

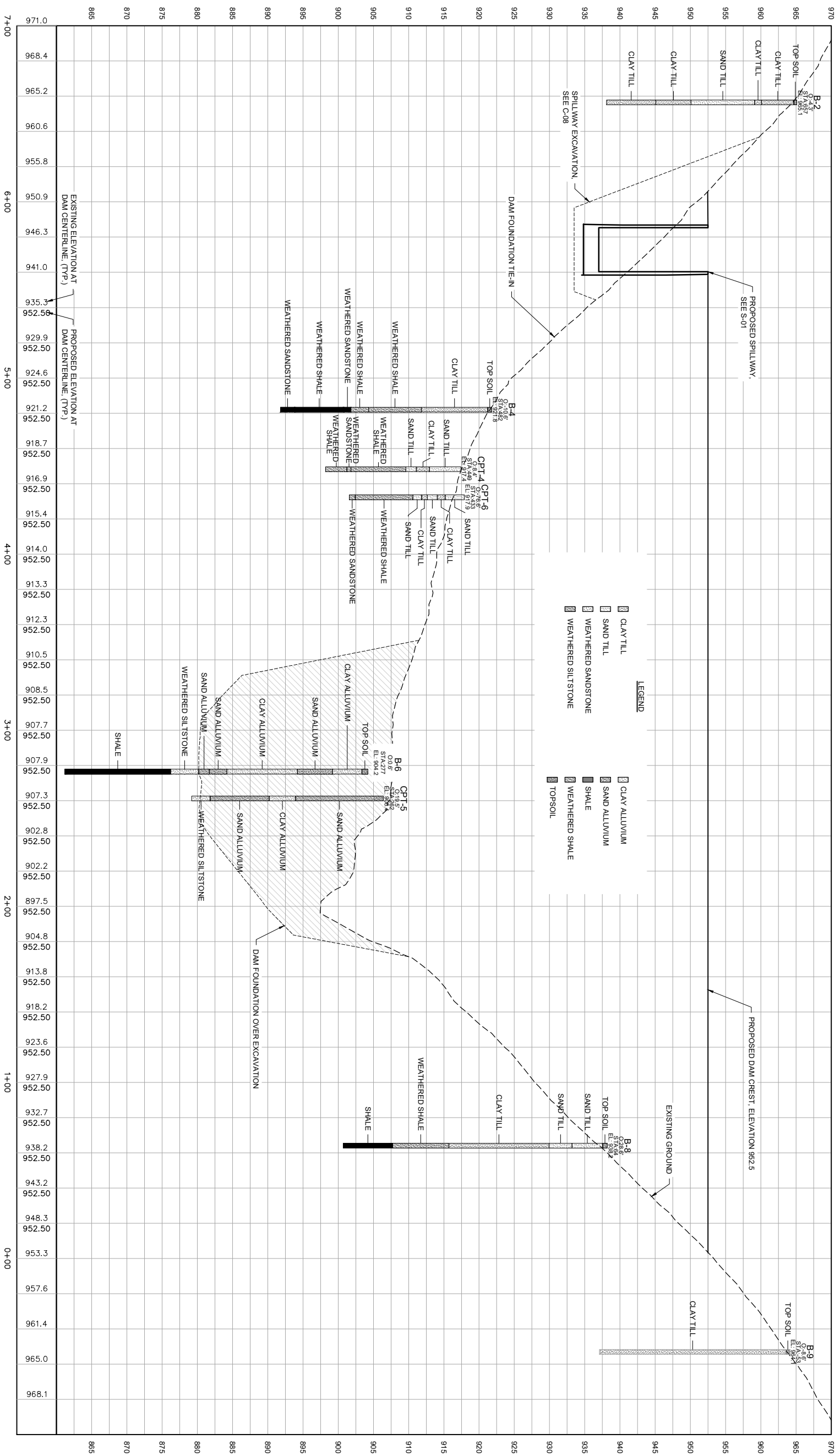
Project Office:  
BARR ENGINEERING CO.  
325 SOUTH LAKE AVENUE  
SUITE 700  
DULUTH, MN 55802  
Ph: 1-800-786-5830  
Fax: (218) 529-9202  
www.barr.com

Scale	AS SHOWN
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Checked	RES
Designed	BARR
Approved	JDA

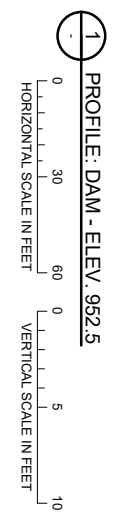
**LUCAS FARMS, LLC**  
LUCAS, IOWA

LUCAS FARMS, LLC LUCAS, IOWA		BARR PROJECT No. 15591001.00
DAM ELEVATION 952.5 RESERVOIR DAM PROPOSED DAM SITE PLAN		CLIENT PROJECT No.
DWG. No. C-04	REV. No. A	

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- LEGEND**
- CLAY TILL
  - SAND TILL
  - WEATHERED SANDSTONE
  - WEATHERED SILTSTONE
  - CLAY ALLUVIUM
  - SAND ALLUVIUM
  - SHALE
  - WEATHERED SHALE
  - TOPSOIL



**2018-1281  
Proposed Dam Profile  
Sheet 4 of 16**

60% DESIGN  
NOT FOR CONSTRUCTION

NO.		BY	CHK	APP	DATE	REVISION DESCRIPTION
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TOP FOR			

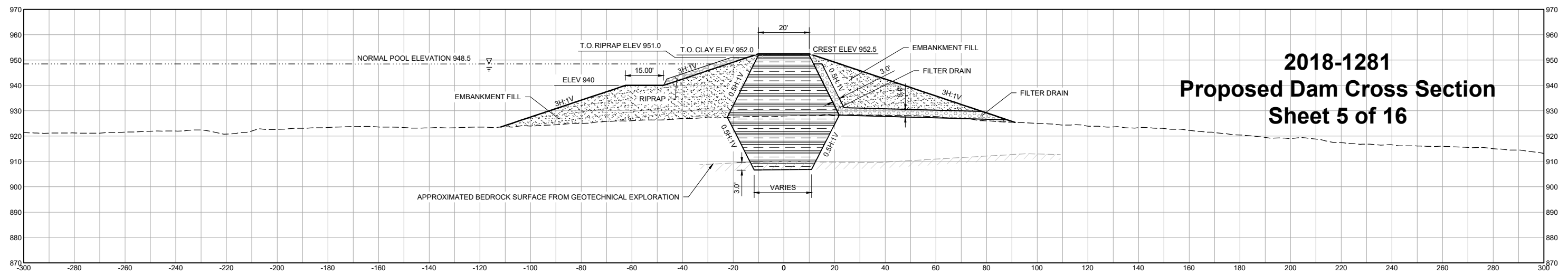
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BARR ENGINEERING CO.	3/01/2022	
325 SOUTH LAKE AVENUE	DRAWN	GSI
SUITE 700	CHECKED	RES
DULUTH, MN 55802	DESIGNED	BARR
Ph: 1-800-786-8380	APPROVED	JDA
Ph: 1-800-632-2277		
www.barr.com		

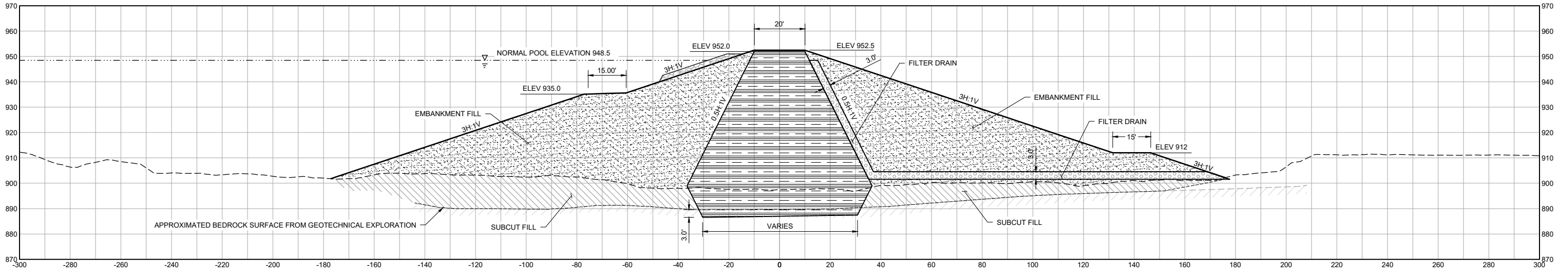
LUCAS FARMS, LLC	LUCAS FARMS, LLC
LUCAS, IOWA	DAM ELEVATION 952.5 RESERVOIR DAM PROFILE



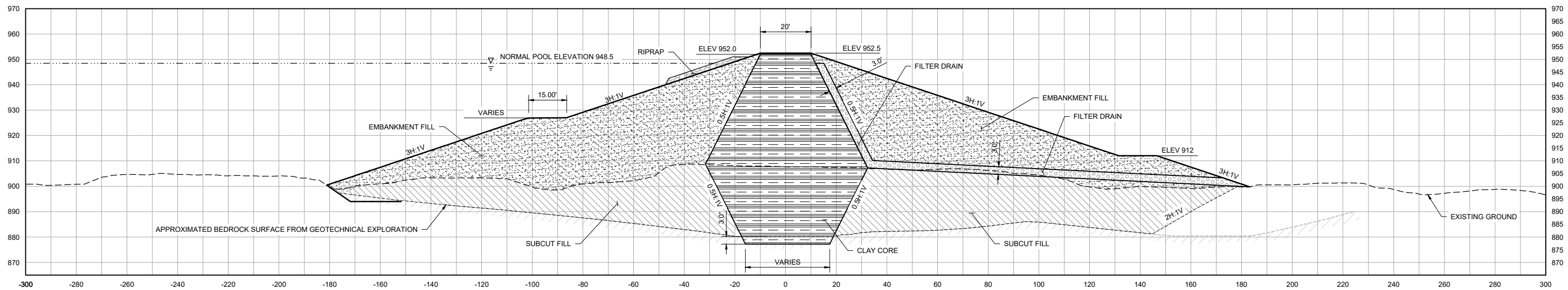
# 2018-1281 Proposed Dam Cross Section Sheet 5 of 16



1 SECTION: DAM STA. 1+00  
SCALE IN FEET



2 SECTION: DAM STA. 2+00  
SCALE IN FEET



3 SECTION: DAM STA. 3+00  
SCALE IN FEET

**LEGEND**

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	FILTER MATERIAL		BEDROCK

**60% DESIGN  
NOT FOR CONSTRUCTION**

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CLIENT	07/01								
BID									
CONSTRUCTION									
RELEASED TO/FOR	A	B	C	0	1	2	3		
DATE RELEASED									

**BARR** Project Office:  
BARR ENGINEERING CO.  
325 SOUTH LAKE AVENUE  
SUITE 700  
DULUTH, MN 55802  
Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-786-5830  
Fax: (218) 529-8202  
www.barr.com

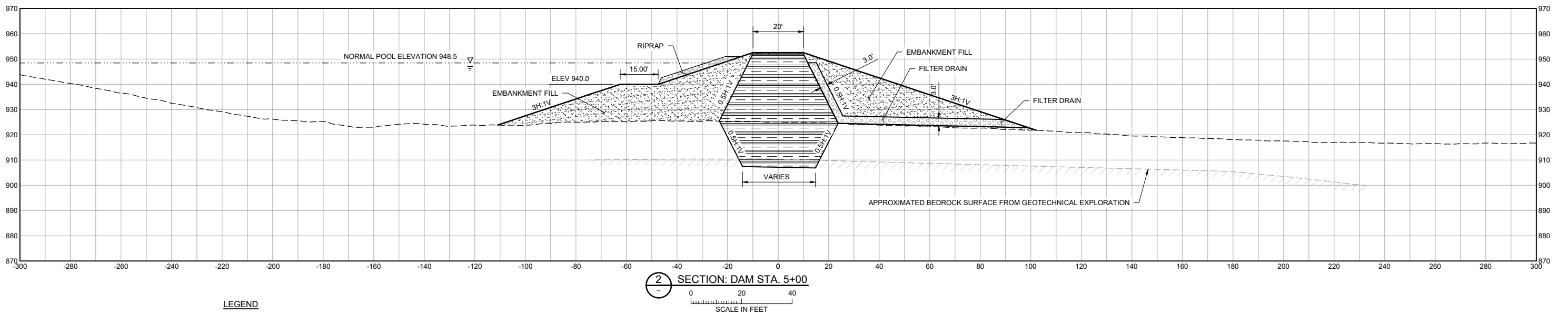
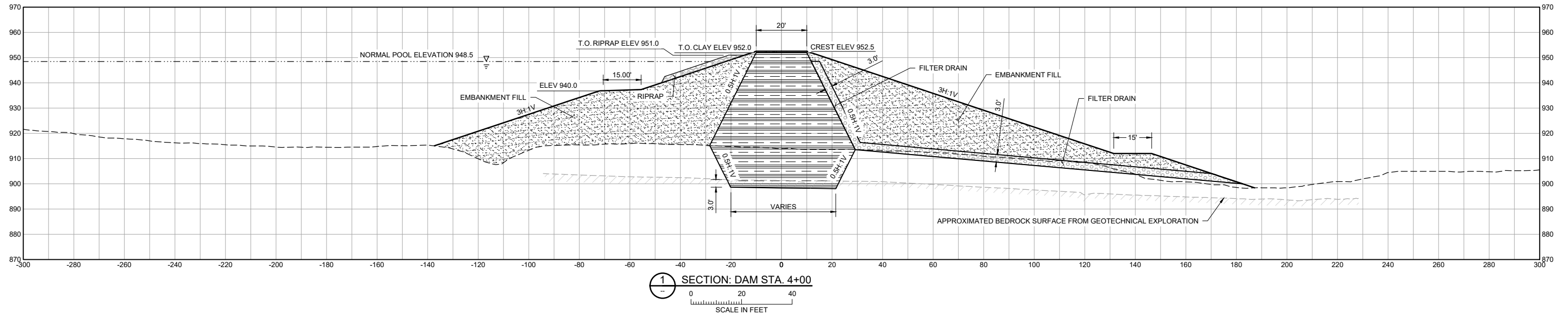
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Date	11/9/2018
Drawn	GSJ
Checked	RES
Designed	BARR
Approved	JDA

**LUCAS FARMS, LLC**  
LUCAS, IOWA

**LUCAS FARMS, LLC**  
LUCAS, IOWA  
DAM ELEVATION 952.5 RESERVOIR DAM  
SECTION

BARR PROJECT No.	15591001.00
CLIENT PROJECT No.	
DWG. No.	C-05
REV. No.	A

# 2018-1281 Proposed Dam Cross Section (2) Sheet 6 of 16



**LEGEND**

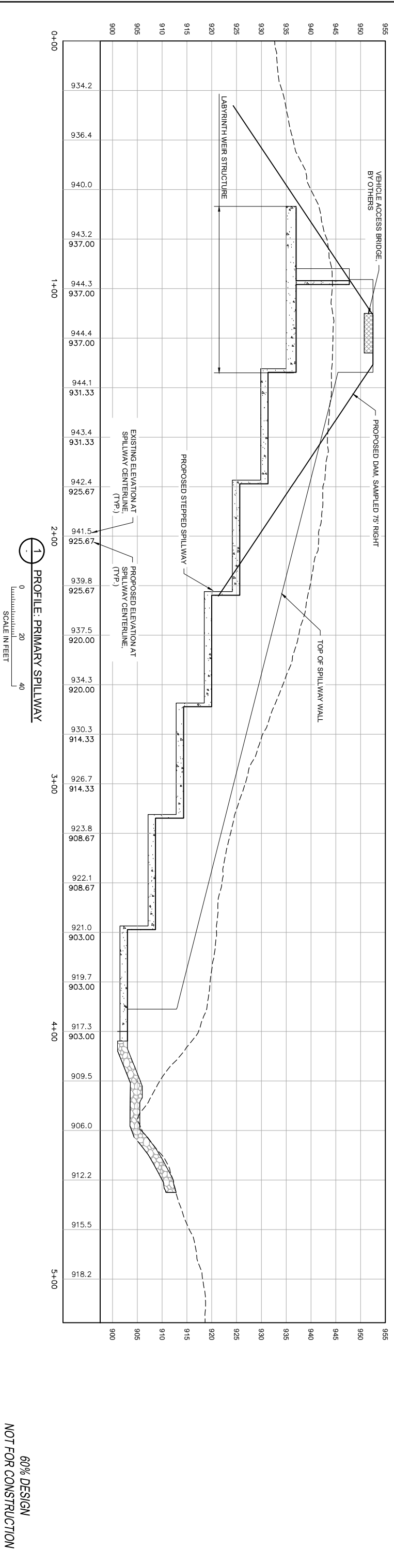
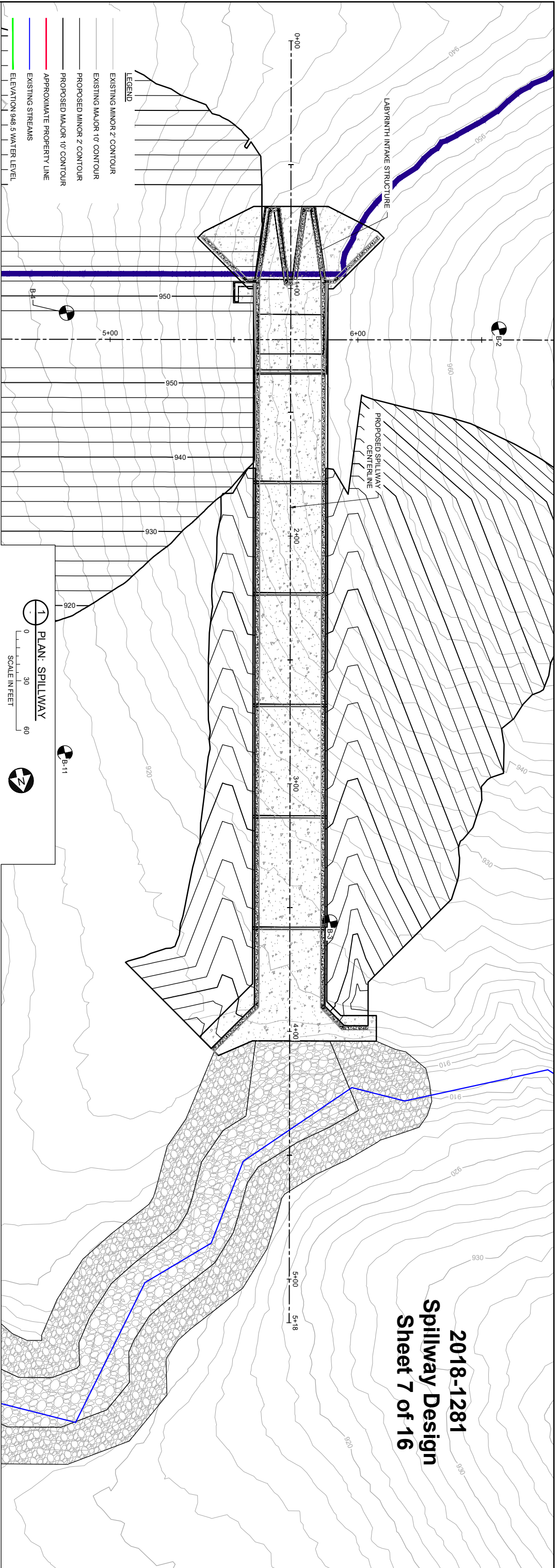
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	FILTER MATERIAL
	GRANULAR FILL
	BEDROCK

60% DESIGN  
NOT FOR CONSTRUCTION

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				CLIENT 07/01					<b>BARR</b> Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-632-2277	Project Office: BARR ENGINEERING CO. 325 SOUTH LAKE AVENUE SUITE 700 DULUTH, MN 55802 Ph: 1-800-786-5830 Fax: (218) 529-8202 www.barr.com	Scale AS SHOWN	<b>LUCAS FARMS, LLC</b> LUCAS, IOWA		LUCAS FARMS, LLC LUCAS, IOWA		BARR PROJECT No. 15591001.00
				CONSTRUCTION							Date 11/9/2018			DAM ELEVATION 952.5 RESERVOIR DAM SECTION		CLIENT PROJECT No.
A	GSJ	RES	JDA	07/01/22	60% DRAFT	DATE RELEASED				Checked RES	DWG. No. C-06		REV. No. A			
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION					RELEASED TO/FOR			A	B	C	0

**2018-1281  
Spillway Design  
Sheet 7 of 16**



60% DESIGN  
NOT FOR CONSTRUCTION

NO.	BY	CHK	APP	DATE	REVISION DESCRIPTION
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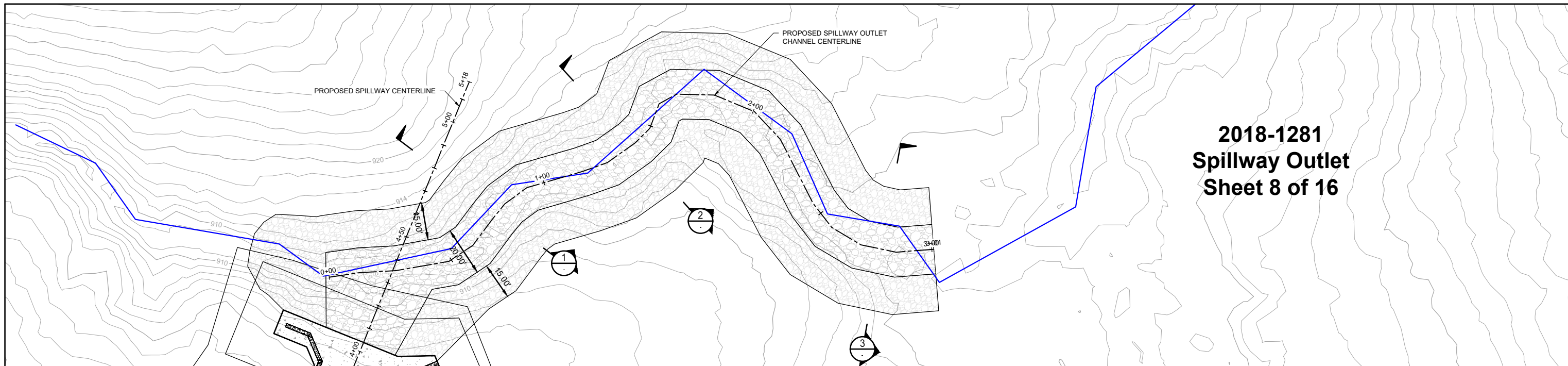
  

CLIENT	3/7/07	PROJECT OFFICE	BARR ENGINEERING CO. 325 SOUTH LAKE AVENUE DULUTH, MN 55802 Corporate Headquarters Ph: 1-800-766-8830 Fax: 1-218-528-8202 www.barr.com			
BID	CONSTRUCTION	DATE	11/9/2018			
RELEASED	TOP FOR	DATE RELEASED	1/19/2018			
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AS SHOWN	DESIGNED	CHECKED	DATE	SCALE		
JDA	BARR	JDA	11/19/2018	AS SHOWN		

CLIENT PROJECT No.	15591001.00
CLIENT PROJECT No.	15591001.00
DWG No.	C-07
REV No.	A

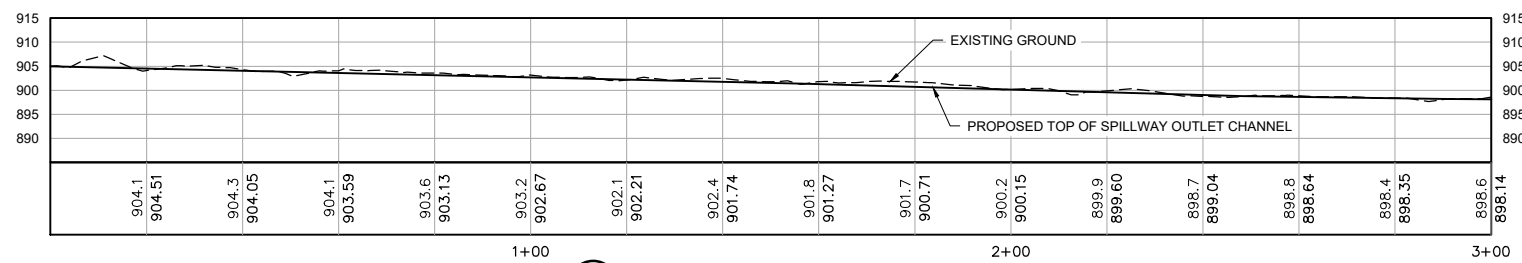
**2018-1281  
Spillway Outlet  
Sheet 8 of 16**



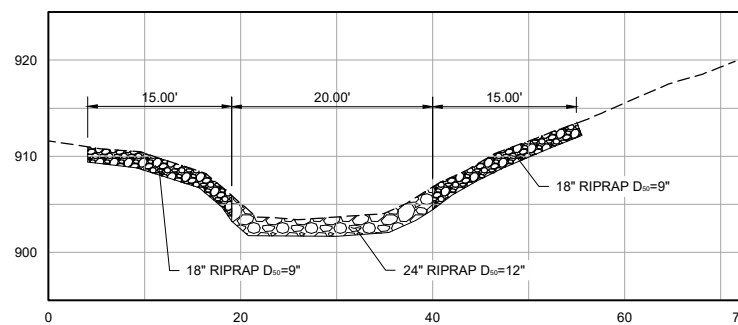
**LEGEND**

- EXISTING MINOR 2' CONTOUR
- EXISTING MAJOR 10' CONTOUR
- PROPOSED MINOR 2' CONTOUR
- PROPOSED MAJOR 10' CONTOUR
- APPROXIMATE PROPERTY LINE
- EXISTING STREAMS
- ELEVATION 948.5 WATER LEVEL

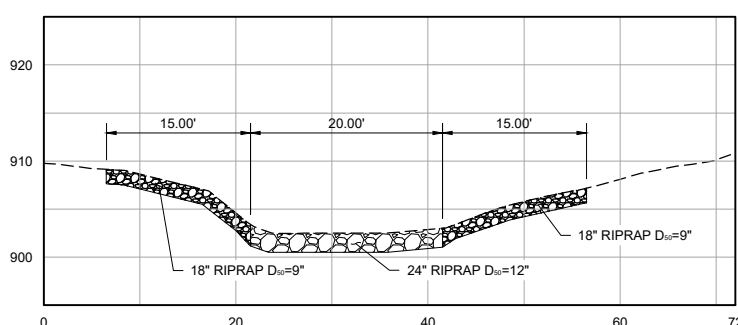
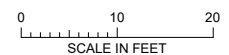
**1 PLAN: SPILLWAY OUTLET**



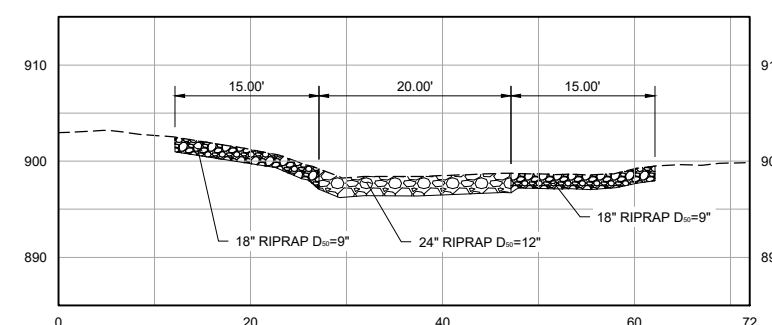
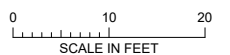
**1 PROFILE: SPILLWAY OUTLET**



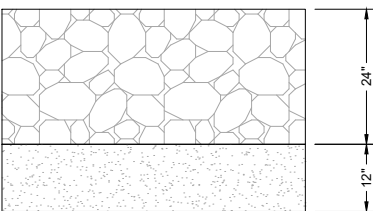
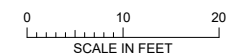
**1 SECTION: SPILLWAY OUTLET**



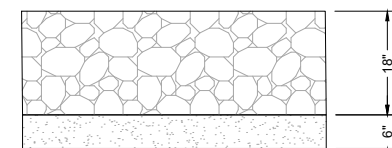
**2 SECTION: SPILLWAY OUTLET**



**3 SECTION: SPILLWAY OUTLET**



**1 DETAIL: RIPRAP D<sub>50</sub> = 12"**  
NOT TO SCALE



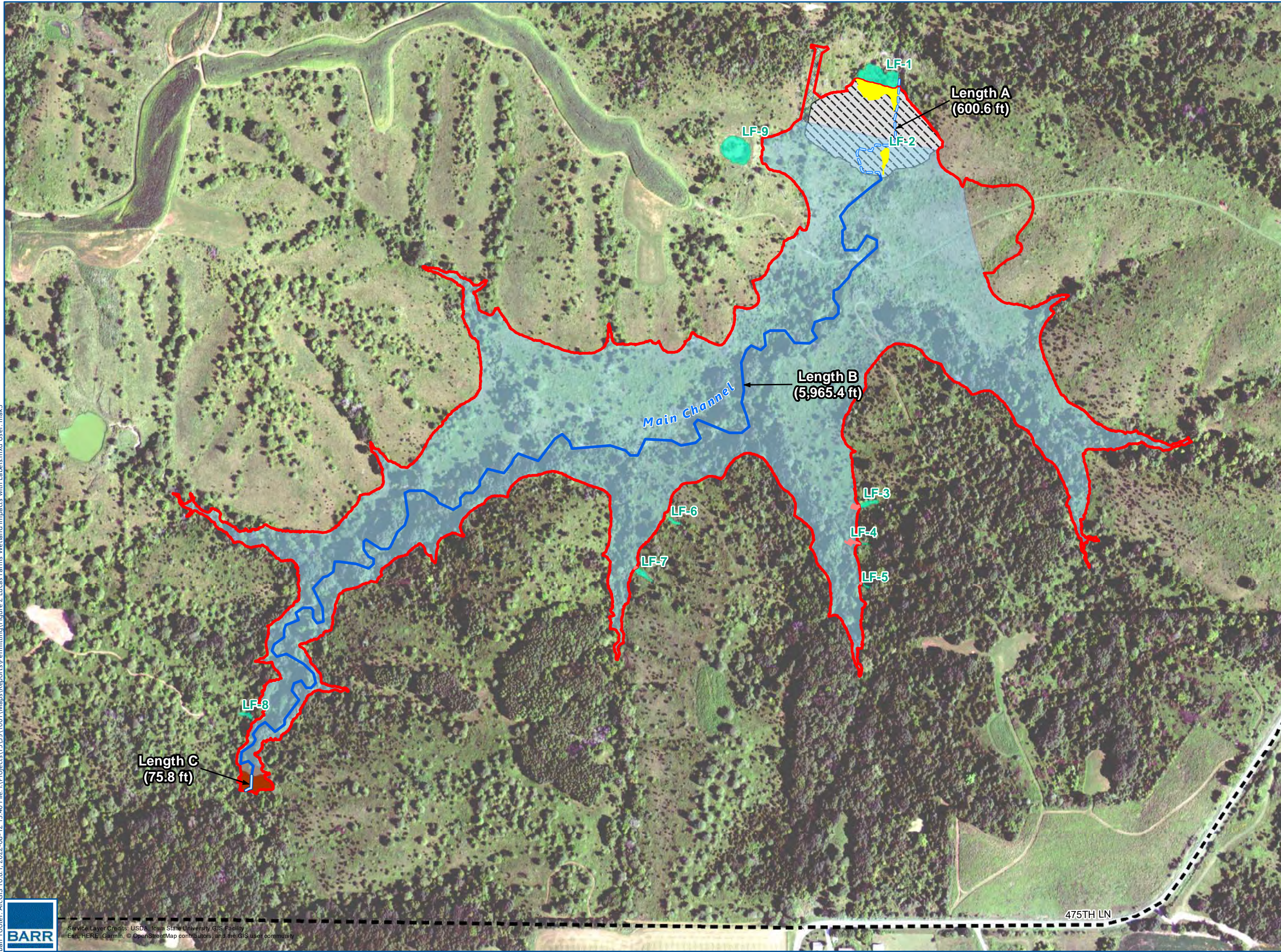
**2 DETAIL: RIPRAP D<sub>50</sub> = 9"**  
NOT TO SCALE












**60% DRAFT  
NOT FOR CONSTRUCTION**

CADD USER: Max J. Jouppe FILE: \\HB-CAD\CAD\DESIGN\15591000\1559100100\_C-11.DWG PLOT SCALE: 1:2 PLOT DATE: 7/1/2022 2:34 PM  
 BARR: \\AucCAD\2011\AucCAD\2011\Support\env\template\Barr\_2011\_Template.dwg Plot at 1: 10/06/2010 14:09:50


				CLIENT	07/01					Scale	AS SHOWN	LUCAS FARMS, LLC LUCAS, IOWA		BARR PROJECT No. 15591001.00													
				BID						Date	11/9/2018	LUCAS FARMS, LLC LUCAS, IOWA		CLIENT PROJECT No.													
				CONSTRUCTION						Drawn	GJS	SPILLWAY OUTLET PLAN AND SECTION		DWG. No. C-11													
				RELEASED TO/FOR	A	B	C	0	1	2	3	REV. No. A															
				DATE RELEASED																							
								Project Office: BARR ENGINEERING CO. 325 SOUTH LAKE AVENUE SUITE 700 DULUTH, MN 55802 Corporate Headquarters: Minneapolis, Minnesota Ph: 1-800-786-5830 Fax: (218) 529-9202 Ph: 1-800-632-2277 www.barr.com				Scale AS SHOWN Date 11/9/2018 Drawn GJS Checked JDA Designed BARR Approved JDA															
<table border="1"> <thead> <tr> <th>NO.</th> <th>BY</th> <th>CHK.</th> <th>APP.</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>GJS</td> <td>RES</td> <td>JDA</td> <td>07/01/22</td> <td>60% DRAFT</td> </tr> </tbody> </table>				NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION	A	GJS	RES	JDA	07/01/22	60% DRAFT												
NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION																						
A	GJS	RES	JDA	07/01/22	60% DRAFT																						


Barr Footer: ArcGIS 10.8.1, 2022-08-12 13:40 File: I:\Projects\15159\10011\Maps\Reports\Permitting\Figure 2 Lucas Farms Wetland Impacts with Labels.mxd User: mak3



-  Approximate Property Boundary
-  Project Area
-  Field Delineated Wetlands
-  Impoundment Area
-  Dam Structure
-  Settling Dam
- Impacted Wetlands**
-  Dam Structure
-  Impoundment
- Field Identified Drainage Way**
- Main Channel**
-  Length A
-  Length B
-  Length C

**2018-1281  
Wetland and  
Waters Impacts  
Sheet 9 of 16**



0  500  
Feet

*Imagery: USDA NAIP  
2021 0.6m Orthoimagery*

# 2018-1281 Mitigation Site Locations of Home, Lucas and Clarke Farms Sheet 10 of 16

**Sale Farm**  
41.213102  
-93.671971

**Home Farm**  
41.11327  
-93.75069

**Clarke-Lucas Farm**  
41.062143  
-93.55188

**McDonald Farm**  
41.092454  
-93.347298

**Lucas Farm**  
41.014649  
-93.447655

**Project Area**

**Approximate Property Boundaries**

- Clarke-Lucas County Lucas Farm
- Lucas Farm
- Home Farm
- McDonald Farm
- Sale Farm

0 1 2  
Miles

**PROPERTY OVERVIEW**  
Lucas Farms  
Lucas County, Iowa

**FIGURE 3**

Barr Footer: ArcGIS 10.7.1, 2020-12-02 11:04 File: \\Projects\15159\1001\Maps\Reports\Permitting\Figure 3 Property Locations Overview.mxd User: MIAK3

Potential Riparian Buffer

- Creation, Zone 1 (~3,130 credits)
- Restoration, Zone 1 (~925 credits)
- Creation, Zone 2 (~625 credits)

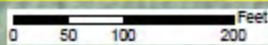
# 2018-1281 Home Farm Mitigation Concept Sheet 11 of 16

Squaw Creek

Unnamed Tributary



Riparian Buffer Restoration & Creation



Potential Riparian Buffer

Creation, Zone 1 (~1,025 credits)

Restoration, Zone 1 (~3,460 credits)

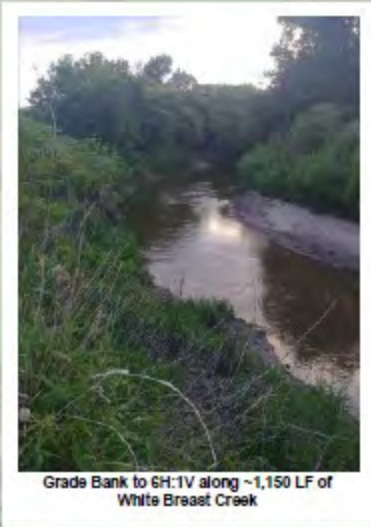
Creation, Zone 2 (~1,990 credits)

Restoration, Zone 2 (~1,720 credits)

Proposed Streambank Grading

White Breast Creek Grading (~3,455 credits)

2018-1281  
Lucas Farm  
Mitigation Concept  
Sheet 12 of 16

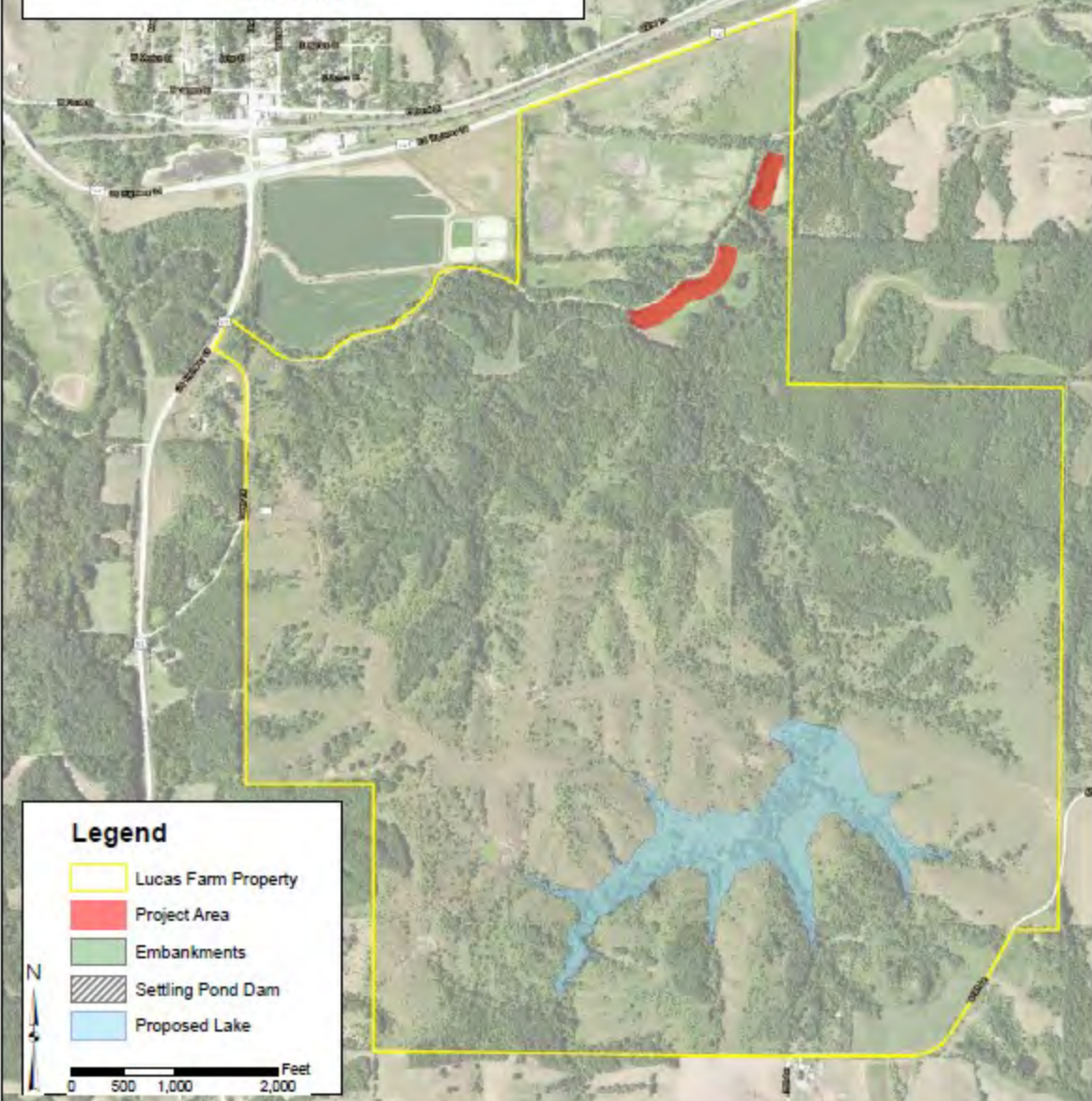




2018-1281  
Lucas Farm  
Mitigation Site  
Location  
Sheet 13 of 16



Lucas County, IA



**Legend**

- Lucas Farm Property
- Project Area
- Embankments
- Settling Pond Dam
- Proposed Lake



0 500 1,000 2,000 Feet

Potential Riparian Buffer

- Restoration, Zone 1 (~7,325 credits)
- Restoration, Zone 2 (~5,390 credits)
- Proposed Streambank Grading
- South Otter Creek Grading (~8,275 credits)

# 2018-1281 Clarke Farm Mitigation Concept Sheet 14 of 16



2018-1281  
Home Farm  
Mitigation Site  
Location  
Sheet 15 of 16



Clarke County, IA



**Legend**

- Home Farm Property
- Project Area

0 325 650 1,300 Feet



Clarke County, IA

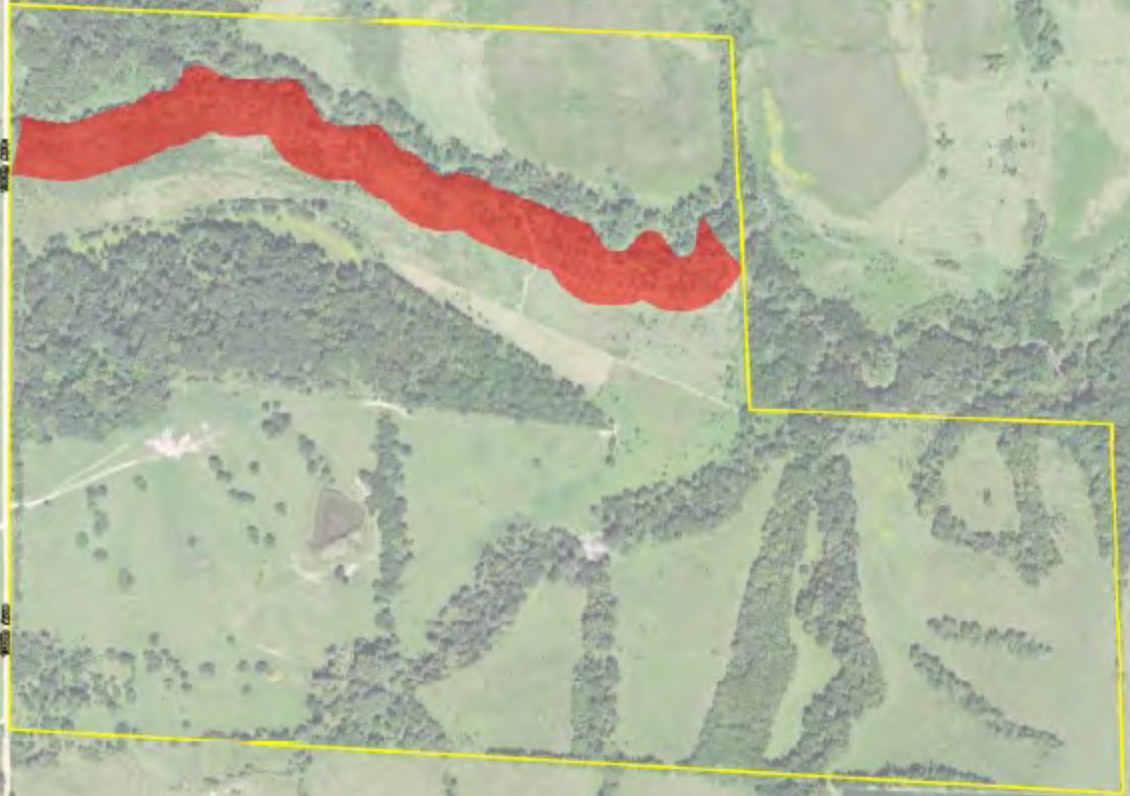
Figure 2  
Home Farm Project Location





**2018-1281  
Project Location  
Sheet 16 of 16**



**Lucas County, IA**



**Legend**

-  Project Area
-  Clarke Farm Property



0 200 400 800 Feet