



## Memorandum

**To:** Bassett Creek Watershed Management Commission  
**From:** Barr Engineering Co. (Patrick Brockamp, PE, Jim Herbert, PE, and Karen Chandler, PE)  
**Subject:** Item 6B: Update Regarding Main Stem Lagoon Dredging Project  
BCWMC May18, 2023 Meeting Agenda  
**Date:** May 11, 2023

### 1.0 Project Update

The Main Stem Lagoon Dredging Project included dredging a plan quantity of 39,600 CY (cubic yards) of contaminated sediment from three lagoons (D, E, F) within the creek in Theodore Wirth Park (feasibility study Alternative 2, Option 1: deepening all three lagoons to a depth of 6 feet). On Nov 10, 2022, the Commission entered into a contract with Fitzgerald Excavating and Trucking (Contractor) for this work. The contract specifications included the expected amount of material to be dredged (39,600 CY) and the design depth of 6 feet for each lagoon. The Contractor started dredging work on January 13, 2023, and the Contractor's last day of hauling occurred on March 3, 2023, after which they demobilized from the site. Photos of the before and after dredging for each lagoon are provided in Attachment A.

On April 10, 2023, the Contractor submitted progress Application for Payment No. 3 for work completed through March 31, 2023. During a review of Application for Payment No. 3, Commission engineers (Barr) determined that a post-construction bathymetric survey was necessary to confirm dredging quantities. Between April 17 and May 5, 2023, Barr performed bathymetric record surveys with a Z-boat (remotely-operated hydrographic survey boat) of the three lagoons. Barr also performed a traditional verification survey of cross-sections with grade rod measurements to confirm the Z-boat results. Barr was in communication with the Contractor during the verification survey and provided an opportunity for them to participate. The attached figures (Attachment B) show the constructed dredging depth relative to the design depth. As shown on the figures, the Contractor did not dredge deep enough across all three lagoons, except for the lagoon side slopes.

Results of the record bathymetric (Z-boat) survey are included in the following table. As shown, the record survey quantity is closer to feasibility study Alternative 1, that included a 4-foot dredge depth, instead of the selected feasibility study Alternative 2, that included a 6-foot dredge depth.

Lagoon	Design Specifications Quantity Feasibility Alt. 2 (6-ft. Depth) (CY)	Record Survey Quantity (Actual Outcome) (CY)	Feasibility Alt. 1 (4-ft. Depth) (CY)
F	12,200	8,000	9,100
E	19,300	11,650	12,600
D	8,100	6,000	6,100
ALL	39,600	25,650	27,800

**To:** Bassett Creek Watershed Management Commission  
**From:** Barr Engineering Co. (Patrick Brockamp, PE, Jim Herbert, PE, and Karen Chandler, PE)  
**Subject:** Item 6B: Update Regarding Main Stem Lagoon Dredging Project  
BCWMC May18, 2023 Meeting Agenda  
**Date:** May 11, 2023  
**Page:** 2

---

At its February 2023 meeting, the Commission approved Application for Payment No. 1(\$363,375.00), which included a total dredging quantity to date of 8,000 CY, and at its March 2023 meeting, the Commission approved Application for Payment No. 2 (an additional \$886,217.00), which included a total dredging quantity to date of 33,660 CY. The reported dredging quantity was based on visual estimates of percent of lagoon dredging completed, material tonnage reports provided by the disposal landfill, and the Contractor's estimated conversion factor from tons to cubic yards. However, based on the subsequent record survey performed by Barr, the dredging quantities were overpaid by approximately 8,000 CY. The following table is a summary of the payments.

<b>Description</b>	<b>Payment Amount</b>
Application for Payment No. 1	\$ 363,375.00
Application for Payment No. 2	\$ 886,217.00
Total Paid to Date	\$ 1,249,592.00
Estimated Final Payment*	\$ 1,121,645.00
Estimated Overpayment	\$ 127,947.00

\*Estimated final payment assumes all remaining work is included in the final contract price, and dredging quantity is reduced to the amount per record survey

The Contractor informed us that they plan to complete restoration at the site prior to the date of the May Commission meeting. We anticipate the Contractor will submit another pay request following completion of the restoration work.

Considering the above information, the Commission attorney is in the process of reviewing the contract documents to evaluate options and next steps for the Commission. Commission staff (Engineer, Administrator, Attorney) will continue working together to evaluate how to proceed, including what formal steps need to be taken under the contract documents to address the situation and preserve any rights the Commission may have as it relates to the issues identified above. Commission staff will provide updates to the Commission on an ongoing basis.

## **Attachment A - Before and After Photos**



## Main Stem – Lagoon D



*Photo 1: Lagoon D before construction, November 22, 2019*



*Photo 2: Lagoon D after construction, April 4, 2023*



## Main Stem – Lagoon E



*Photo 3: Lagoon E before construction, November 11, 2019*



*Photo 4: Lagoon E after construction, April 4, 2023*



## Main Stem – Lagoon F



*Photo 5: Lagoon F before construction, November 22, 2019*



*Photo 6: Lagoon F after construction, April 4, 2023*



## **Attachment B – Dredging Survey Verification Figures**



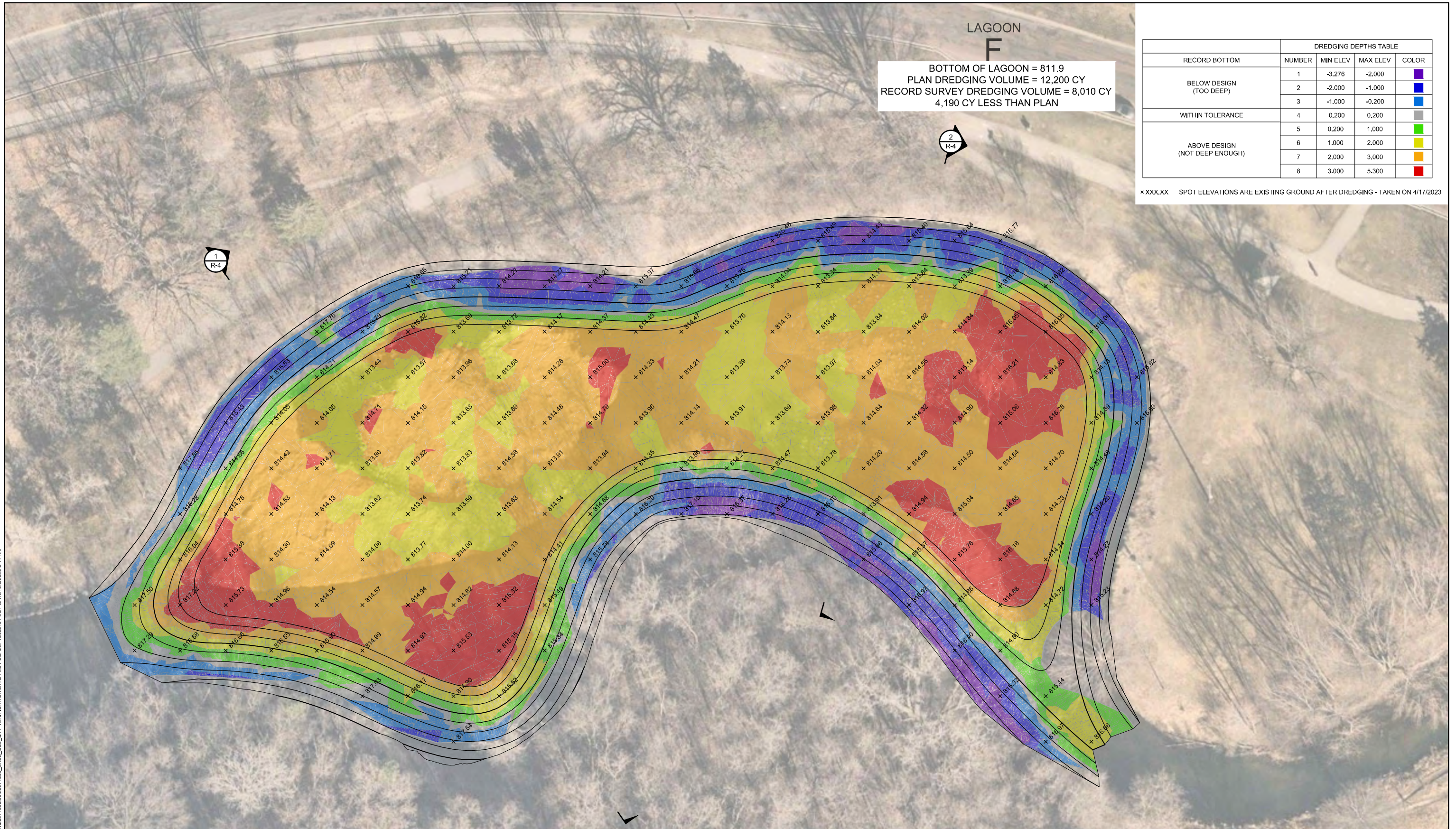
LAGOON

F

BOTTOM OF LAGOON = 811.9  
 PLAN DREDGING VOLUME = 12,200 CY  
 RECORD SURVEY DREDGING VOLUME = 8,010 CY  
 4,190 CY LESS THAN PLAN

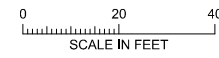
RECORD BOTTOM	DREDGING DEPTHS TABLE			
	NUMBER	MIN ELEV	MAX ELEV	COLOR
BELOW DESIGN (TOO DEEP)	1	-3.276	-2.000	Blue
	2	-2.000	-1.000	Dark Blue
	3	-1.000	-0.200	Light Blue
WITHIN TOLERANCE	4	-0.200	0.200	Grey
	5	0.200	1.000	Green
ABOVE DESIGN (NOT DEEP ENOUGH)	6	1.000	2.000	Yellow
	7	2.000	3.000	Orange
	8	3.000	5.300	Red

\* XXX.XX SPOT ELEVATIONS ARE EXISTING GROUND AFTER DREDGING - TAKEN ON 4/17/2023



CADD USER: Patrick E. Brockamp FILE: M:\DESIGN\23271860\_00\23271860\_BASE\_CADD\_QTY VERIFICATION.DWG PLOT SCALE: 1:2.5849 PLOT DATE: 9/20/23 9:41 AM

1 PLAN: SITE PLAN - LAGOON F



NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE #: \_\_\_\_\_

REVIEW	BID	CONSTRUCTION	RECORD	RELEASED TO/FOR	DATE RELEASED

**BARR** Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	05/09/2023
Drawn	PEB
Checked	PEB
Designed	BARR
Approved	PEB

**BASSETT CREEK WATERSHED  
 MANAGEMENT COMMISSION**  
 GOLDEN VALLEY, MINNESOTA

MAIN STEM LAGOON DREDGING PROJECT  
 GOLDEN VALLEY, MINNESOTA  
 LAGOON F

RECORD SURVEY VOLUME COMPARISON	
BARR PROJECT No.	23/27-1860.00
CLIENT PROJECT No.	BC-7 2021
DWG. No.	R-1
REV. No.	A

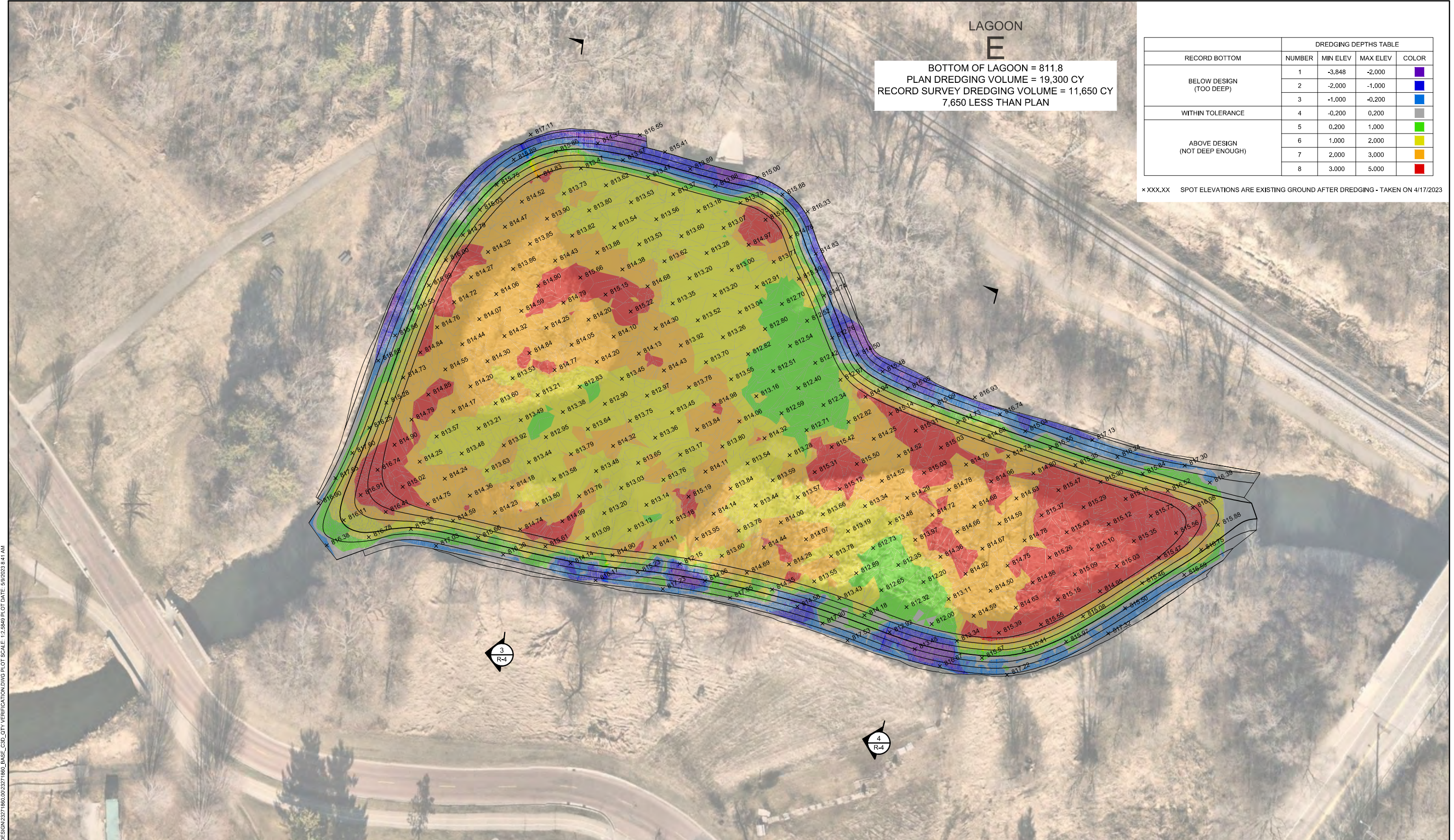


LAGOON  
E

BOTTOM OF LAGOON = 811.8  
 PLAN DREDGING VOLUME = 19,300 CY  
 RECORD SURVEY DREDGING VOLUME = 11,650 CY  
 7,650 LESS THAN PLAN

RECORD BOTTOM	DREDGING DEPTHS TABLE			
	NUMBER	MIN ELEV	MAX ELEV	COLOR
BELOW DESIGN (TOO DEEP)	1	-3.848	-2.000	Blue
	2	-2.000	-1.000	Dark Blue
	3	-1.000	-0.200	Light Blue
WITHIN TOLERANCE	4	-0.200	0.200	Grey
	5	0.200	1.000	Light Green
ABOVE DESIGN (NOT DEEP ENOUGH)	6	1.000	2.000	Yellow
	7	2.000	3.000	Orange
	8	3.000	5.000	Red

x XXX.XX SPOT ELEVATIONS ARE EXISTING GROUND AFTER DREDGING - TAKEN ON 4/17/2023



CADD USER: Patrick E. Brockamp FILE: M:\DESIGN\23271860\_00\23271860\_BASE\_CADD\_QTY\_VERIFICATION.DWG PLOT DATE: 9/20/23 8:41 AM

1 PLAN: SITE PLAN - LAGOON E 0 30 60 SCALE IN FEET

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME \_\_\_\_\_  
 SIGNATURE \_\_\_\_\_  
 DATE \_\_\_\_\_ LICENSE # \_\_\_\_\_

REVIEW	BID	CONSTRUCTION	RECORD

RELEASED TO/FOR	0	1	2	3	4	5	6

**BARR** Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435

Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Fax: (952) 832-2601  
 www.barr.com

Scale	AS SHOWN
Date	05/09/2023
Drawn	PEB
Checked	PEB
Designed	BARR
Approved	PEB

**BASSETT CREEK WATERSHED  
 MANAGEMENT COMMISSION**  
 GOLDEN VALLEY, MINNESOTA

**MAIN STEM LAGOON DREDGING PROJECT  
 GOLDEN VALLEY, MINNESOTA**  
 LAGOON E

BARR PROJECT No.	23/27-1860.00
CLIENT PROJECT No.	BC-7 2021
DWG. No.	R-2
REV. No.	A

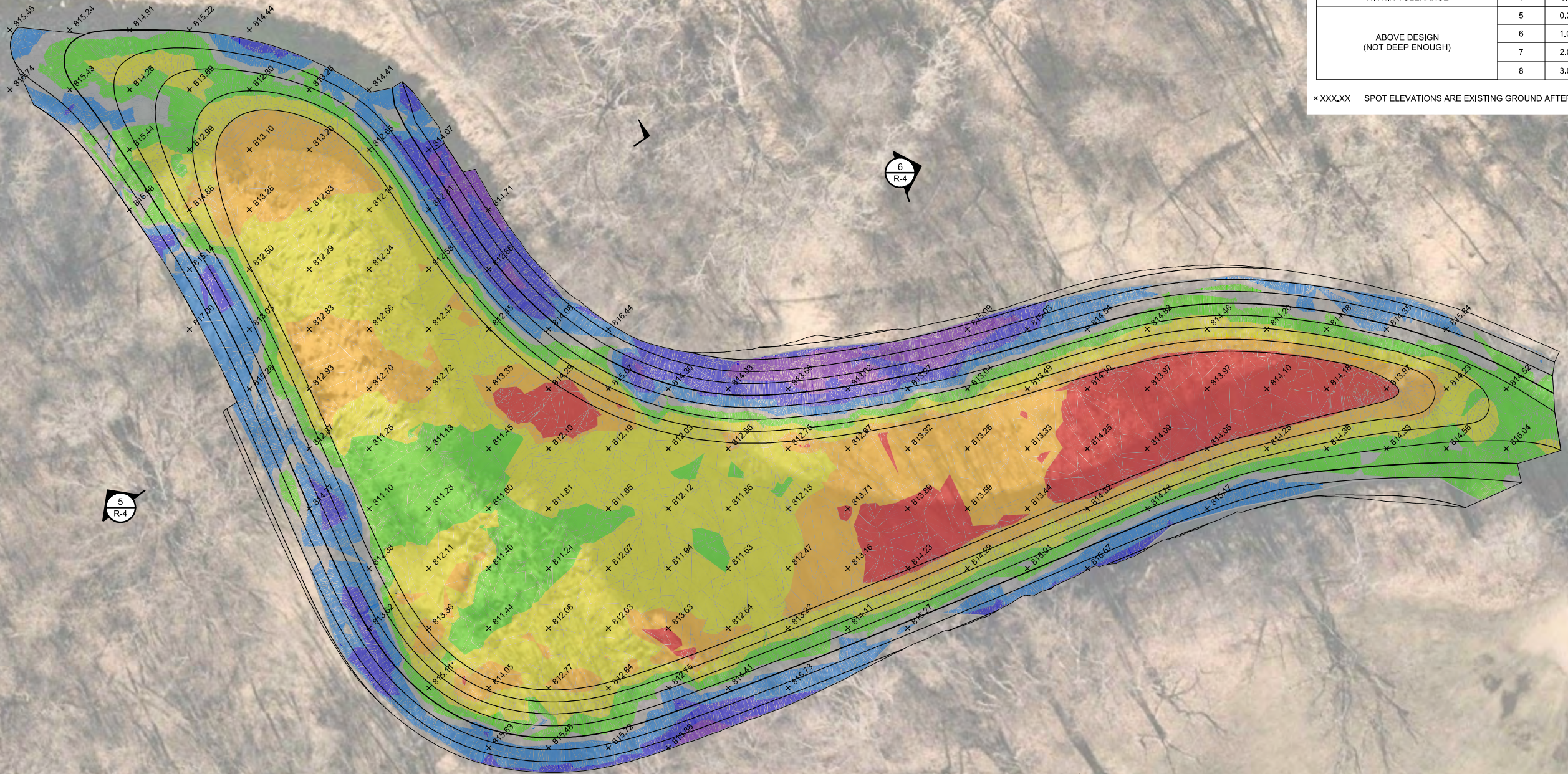


LAGOON  
D

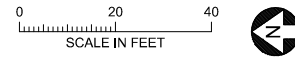
BOTTOM OF LAGOON = 810.6  
 PLAN DREDGING VOLUME = 8,100 CY  
 RECORD SURVEY DREDGING VOLUME = 5,978 CY  
 2,122 CY LESS THAN PLAN

RECORD BOTTOM	DREDGING DEPTHS TABLE			
	NUMBER	MIN ELEV	MAX ELEV	COLOR
BELOW DESIGN (TOO DEEP)	1	-3.154	-2.000	Blue
	2	-2.000	-1.000	Dark Blue
	3	-1.000	-0.200	Light Blue
WITHIN TOLERANCE	4	-0.200	0.200	Grey
ABOVE DESIGN (NOT DEEP ENOUGH)	5	0.200	1.000	Light Green
	6	1.000	2.000	Yellow
	7	2.000	3.000	Orange
	8	3.000	5.100	Red

x XXX.XX SPOT ELEVATIONS ARE EXISTING GROUND AFTER DREDGING - TAKEN ON 4/19/2023



1 PLAN: SITE PLAN - LAGOON D



CADD USER: Priscilla E. Brockamp; FILE: M:\DESIGN\23271860\_BASE\_CADD\_QTY\_VERIFICATION.DWG; PLOT SCALE: 1:2.5849; PLOT DATE: 5/9/2023 9:42 AM

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: \_\_\_\_\_  
 SIGNATURE: \_\_\_\_\_  
 DATE: \_\_\_\_\_ LICENSE # \_\_\_\_\_

REVIEW	BID	CONSTRUCTION	RECORD	RELEASED TO/FOR	DATE RELEASED

**BARR** Engineering Co.  
 Project Office:  
 BARR ENGINEERING CO.  
 4300 MARKETPOINTE DRIVE  
 Suite 200  
 MINNEAPOLIS, MN 55435  
 Corporate Headquarters:  
 Minneapolis, Minnesota  
 Ph: 1-800-632-2277  
 Ph: 1-800-632-2277

Scale	AS SHOWN
Date	05/09/2023
Drawn	PEB
Checked	PEB
Designed	BARR
Approved	PEB

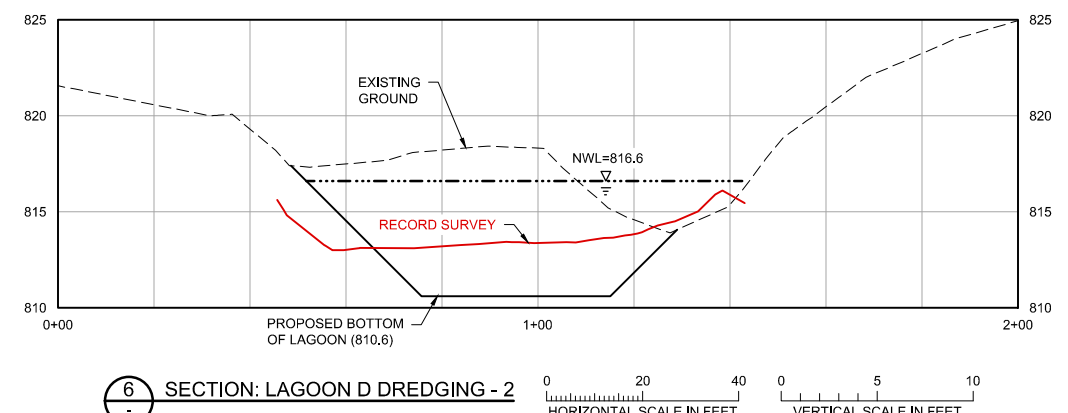
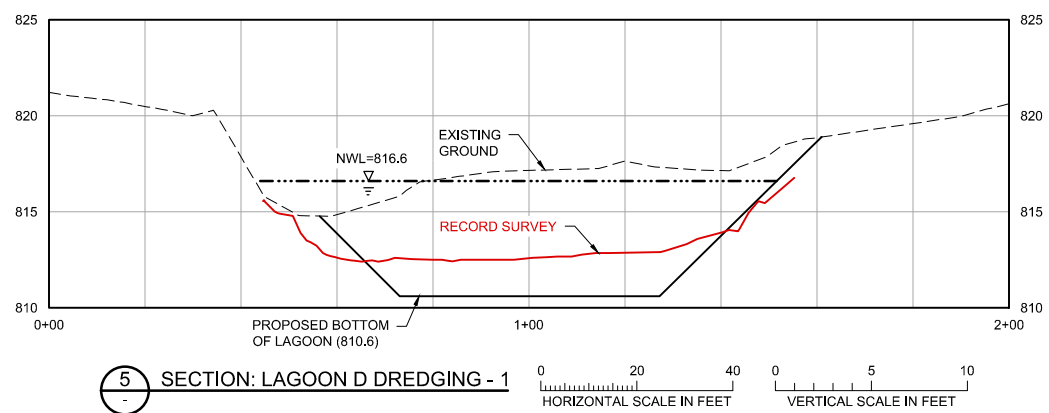
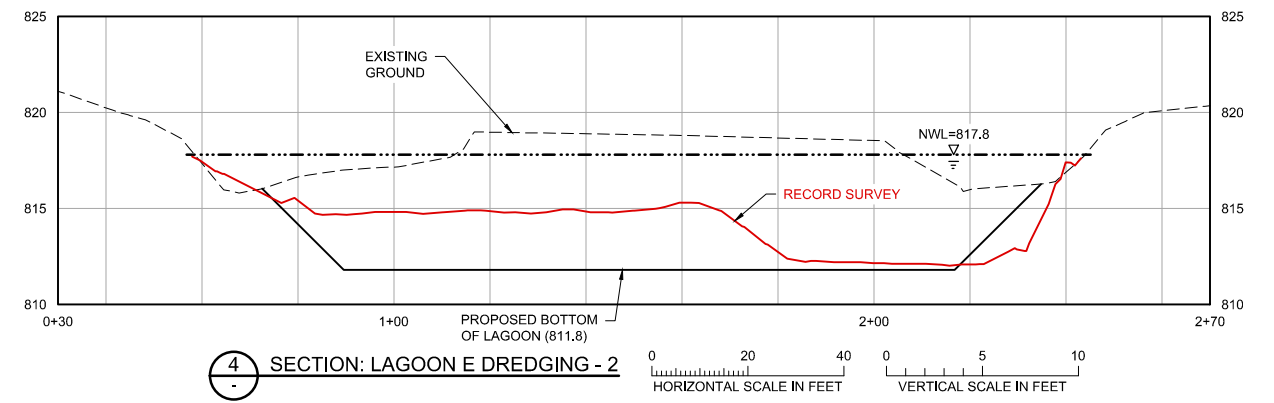
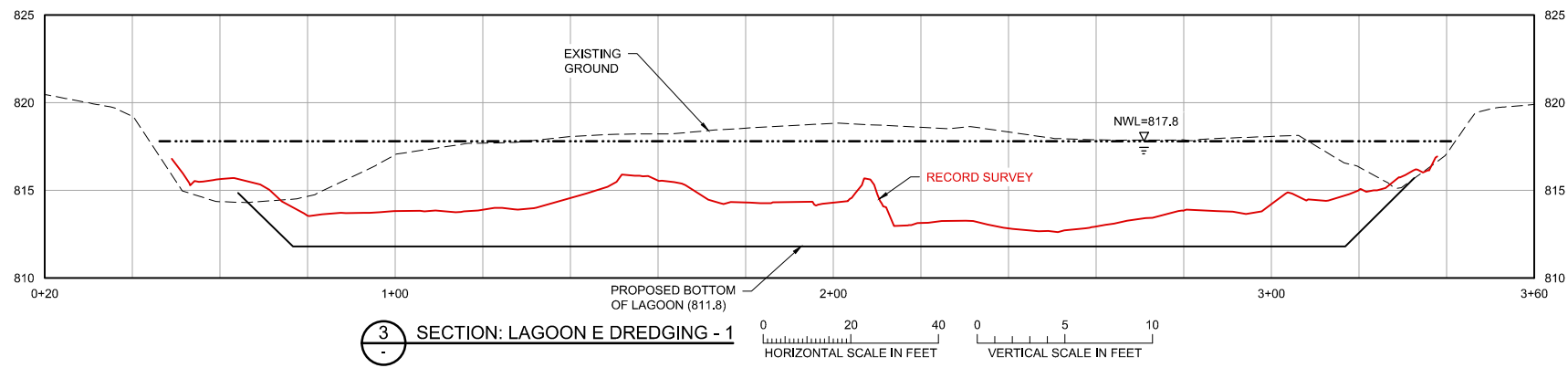
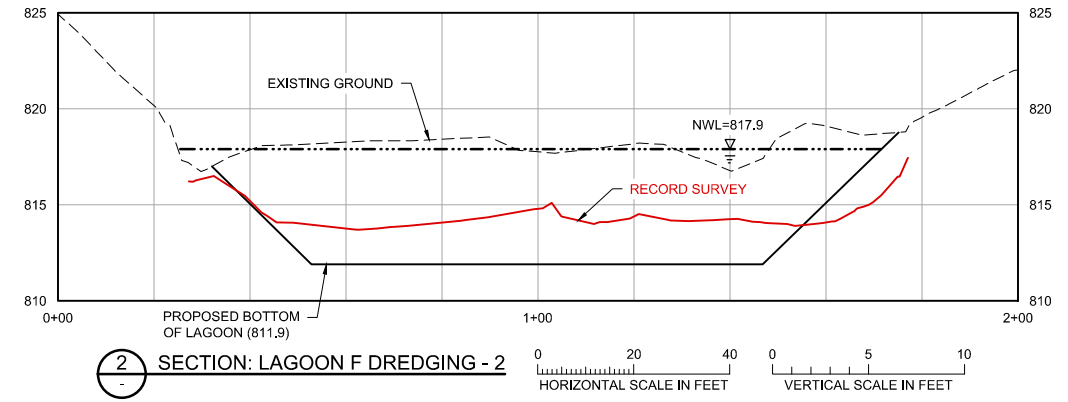
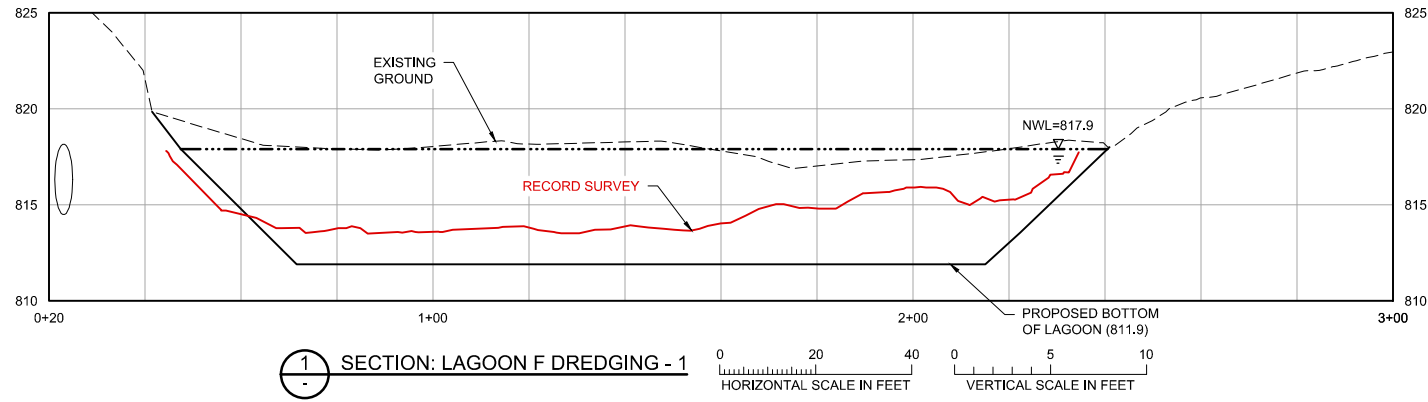
**BASSETT CREEK WATERSHED  
 MANAGEMENT COMMISSION**  
 GOLDEN VALLEY, MINNESOTA

**MAIN STEM LAGOON DREDGING PROJECT**  
 GOLDEN VALLEY, MINNESOTA  
 LAGOON D

RECORD SURVEY VOLUME COMPARISON	
BARR PROJECT No.	23/27-1860.00
CLIENT PROJECT No.	BC-7 2021
DWG. No.	R-3
REV. No.	A



CADD USER: Patrick E. Brockamp; FILE: M:\DESIGN\23271860\_00\23271860\_BASE\_CADD\_QTY\_VERIFICATION\DWG\_PLOT\_SCALE\_12.5849.PLOT DATE: 5/9/2023 5:23 PM



**RECORD SURVEY  
VOLUME COMPARISON**

NO.	BY	CHK.	APP.	DATE	REVISION DESCRIPTION

I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

PRINTED NAME: \_\_\_\_\_  
SIGNATURE: \_\_\_\_\_  
DATE: \_\_\_\_\_ LICENSE #: \_\_\_\_\_

REVIEW	BID	CONSTRUCTION	RECORD	RELEASED TO/FOR	DATE RELEASED

**BARR** ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN 55435

Project Office:  
BARR ENGINEERING CO.  
4300 MARKETPOINTE DRIVE  
SUITE 200  
MINNEAPOLIS, MN 55435

Corporate Headquarters:  
Minneapolis, Minnesota  
Ph: 1-800-632-2277  
Ph: (952) 832-2601  
Ph: 1-800-632-2277  
www.barr.com

Scale	AS SHOWN
Date	05/09/2023
Drawn	PEB
Checked	PEB
Designed	BARR
Approved	PEB

**BASSETT CREEK WATERSHED  
MANAGEMENT COMMISSION**  
GOLDEN VALLEY, MINNESOTA

**MAIN STEM LAGOON DREDGING PROJECT**  
GOLDEN VALLEY, MINNESOTA  
CROSS SECTIONS

BARR PROJECT No.	23/27-1860.00
CLIENT PROJECT No.	BC-7 2021
DWG. No.	R-4
REV. No.	A