

Hogue Island - Bank Stabilization Preliminary Engineering Report

To: Burleigh County Water Resource District
From: Michael H. Gunsch, PE, CFM, Senior Project Manager
Subject: Special Assessment District Evaluation and Recommendations
Date: June 16, 2023
Project: HEI No. 6025-0032-002

MISSOURI RIVER BANKLINE FAILURE

The Burleigh County Water Resource District (BCWRD) was notified of significant erosion and bank failure along the Missouri River from **RM 1321.89 to RM 1322.22** in late January 2023. The erosion occurred between five hardpoints that were installed between 1977 and 1981 as part of the United States Army Corps of Engineers (USACE) *Section 32 - Demonstration Projects*. The primary damages and bank losses were located between the hardpoints and adversely impacted the adjoining residential properties. Only one outbuilding was impacted, however it was removed before it collapsed into the river. Damages to the hardpoint revetement structures resulted in two being fully compromised to the point of failure.

The bank losses impacted eight properties and extended east into the upland after a rapid progression from the south moving north along the river. This situation appears related to a major shift in the main river channel (thalweg) from the west bank to the east bank. This may have resulted from an ice jam situation within the sandbars, general river meandering or other factors. While the exact cause is unknown it is immaterial to the need to restore the protective measures along this bank line.

The BCWRD supported the residents by assisting them with emergency permit applications to allow them to protect their properties. Subsequently, two applications were submitted to and approved by the USACE and North Dakota Department of Water Resources (NDDWR) for interim stabilization measures. The NDDWR and BCWRD conducted routine and regular site observations prior to ice out on the river, which was followed by lower river elevations associated with below average spring flows. During this period the erosion extent and river flows were monitored through drone flights, ground photos and bank measurements. A complete survey of the river bathymetry, erosion extents and upper bank line were secured for monitoring and design.

The BCWRD has been collaborating and communicating with the USACE and the NDDWR to move a project forward to restore/rehabilitate the Section 32 Revetments, as well as to protect the residential properties. The BCWRD inquired with the affected residents who provided a petition of interest to create a special assessment district to implement permanent protection. While there are eight affected properties, only five residents signed the petition, see **Attachment #1**. The remaining three had reasons for not signing that were considered as the project design and this report was prepared.

The BCWRD approved **Resolution #1, Attachment #2**, prior to receiving the petition of interest, given the limited timeline and schedule available to move a project forward to construction in 2023. The schedule includes the need for regulatory considerations regarding the federal projects, residential properties, state funding, and the North Dakota Century Code 61-16.1 process to create the special assessment district, as well as bidding and construction timelines.

BURLEIGH COUNTY WATER RESOURCE DISTRICT – SECTION 32 BANK STABILIZATION EASEMENTS

The BCWRD holds easements along those reaches of the Missouri River containing federal projects constructed under the USACE *Section 32 – Demonstration Program*. These easements provided access for the initial construction and future operation and maintenance of the federally authorized revetments. Pursuant to an Operations and Maintenance (O&M) Agreement, the North Dakota State Water Commission (SWC) is assigned the obligation for O&M activities and to share equally (50%/50%) with the BCWRD in these expenses, see **Appendix A – O&M Agreement**. These federal revetments were constructed by the USACE under Public Law 93-251, Section 32 Streambank Erosion Control Evaluation and Demonstration Act of 1974, which was subsequently amended under Public Law 94-587.

These federally constructed revetments are under the DWR’s and BCWRD’s jurisdiction. The USACE design drawings for the existing revetments are part of the project record and provided in **Appendix B – USACE Project Mapping**. Modifications to these federal structures or work adjacent to them is under the USACE’s jurisdiction and require a Section 408 authorization. The regulatory issues are addressed later in this report.

The BCWRD as part of the Section 32 Demonstration Project provided the easements to allow the construction to occur and for future access for maintenance. In 1985 the BCWRD elected, assuming at the request of the landowner, to vacate the original easement and replaced it with one that would allow rural residential development along the river, see **Appendix C – Revised Easements**.

The current Hogue Island easements are based on a fixed distance of 100 feet from the top of the riverbank. Subsequently, as the riverbank moves with erosion, some of the existing structures are now located within the designated easement. In other areas, these easements were either ignored or miss-located and some residential structures were constructed directly within the easement boundaries. This issue appears to have occurred as the easement line was not placed on the recorded plat and title work failed to identify the issue for the owner. The BCWRD’s jurisdictional authority remains unchanged in these areas, with enforcement relying on notice to the BCWRD by the Burleigh County Building Official prior to any work being completed within the easement.

REGULATORY CONSIDERATIONS – APPENDIX D

Discussions with the USACE indicate that the Section 408 review and authorization may not be required as the Section 32 work relates to the rehabilitation/restoration of an existing federal facility. Subsequently, as a combined project with the residential stabilization completed concurrently, a Section 408 review should not be required for those features, as this would be a joint technical design review. A question arises, however, if the residential stabilization was completed separately, a Section 408 review may then be required to define the potential impacts this private project might have on the federal structures. This would significantly delay the processing of the residential permit applications and construction in 2023 may no longer be practical.

The DWR noted that a Sovereign Land permit is not required to rehabilitate/restore the Section 32 projects as the agency does not need to permit its own project. However, there is need to obtain a sovereign land permit(s) for the residential stabilization measures, as the previous features no longer exist. In addition, all but one lot had no prior authorized USACE or DWR permit for the stabilization that existed. The DWR noted that as a joint application, they would likely issue separate permits for each individual residential lot to cover future private O&M activities.

The BCWRD gathered bathymetry and topographic data to facilitate project design based on the standards established by the USACE as part of the original construction. These standards are necessary to comply with the restoration/rehabilitation of the Section 32 federal facilities. Then considering the residential stabilization, the same standards were applied to maintain consistency as well as to provide the same level of protection. A lesser standard is not desirable as it increases the failure risks and potential impacts to the Section 32 revetements.

Understand the *Section 32 - Demonstration Projects* were neither designed nor intended to protect residential properties. Two notable differences in the USACE standards compared to the private stabilization applications submitted to the USACE and DWR, include the rock rip placement in both elevation and thickness. The two and one-half foot rock depth is a minimum standard dictated by the USACE rock gradation standards.

Information on the design criteria was obtained from the *Operations and Maintenance Manual, Missouri River Garrison Dam to Lake Oahe Section 32 Erosion Control Evaluation and Demonstration Program, North Dakota State Water Commission, September 1982, US Army Corps of Engineers, Omaha District*. The USACE rock grading specifications are provided below, as noted in Section 3.2 of the 1982 O&M Manual.

A regulatory issue that often tends to be overlooked is the required Burleigh County Floodplain Development Permit. This permit is tied to Burleigh County's floodplain ordinance, based on FEMA criteria, related to any activity within the Missouri River regulatory floodplain. The proposed project is in the floodplain as well as the regulatory floodway, subsequently a review of floodplain and floodway impacts is required. Given the erosion that occurred and proposed design, this permit can be secured but requires the necessary documentation to be provided.

3.2 Quarried Stone or Field Boulders

3.2.1 General

The stone shall consist of broken field boulders or quarried stone meeting the quality requirements above. Neither the breadth nor the thickness of any piece of stone shall be less than one-third of its length. Stone shall be reasonably well graded from coarse to fine. Quarry operation shall be controlled to produce a reasonable well graded stone of the required size, and the Contracting Officer may require changes as necessary to produce the required product. Dirt and fines of less than 1/2-inch maximum cross section, accumulated from interledge layers or from blasting or handling operations or breaking shall not exceed 5 percent by weight.

The stone shall be reasonably well graded between the following limits:

Limits of Stone Weight Percent Lighter by Weight %	Weight in Pounds (lbs)		Size in Approx. Spherical Diameter (in)	
	Maximum	Minimum	Maximum	Minimum
100	532	213	22	16.2
50	158	106	14.7	12.8
15	79	33	11.6	8.7

REGULATORY PERMITS

Based on the *Regulatory Considerations, Appendix D* there are four primary permits required. Drafts of these application are included in *Appendix F – Permit Applications*:

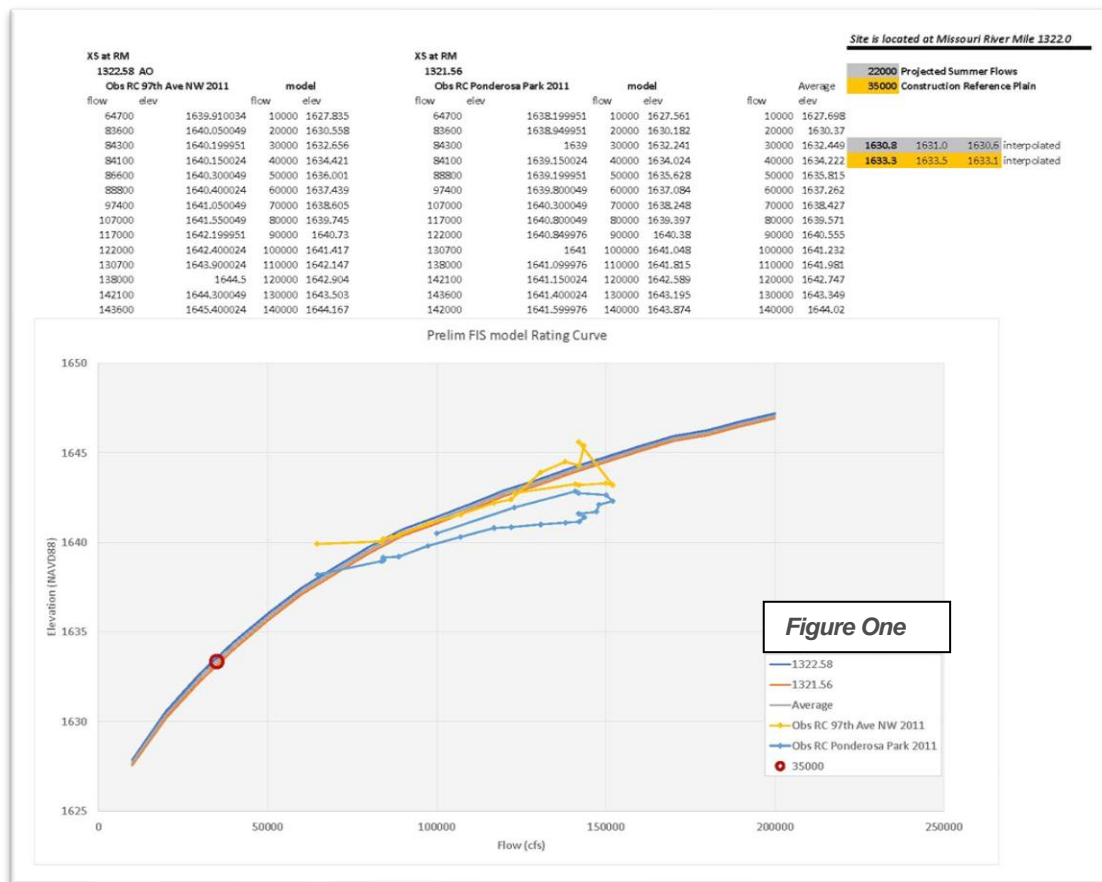
1. **USACE Permit Application** (Section 404, Section 10 and Section 106)
 - a. All structures are required undergo this review
 - b. An individual permit is likely required, which has a 120-day review timeline
 - c. The option for a Nationwide Permit Designation will be discussed with the USACE
2. **USACE Section 408 Permit** – Not anticipated with a joint project design submittal
3. **Sovereign Lands Permit** – Required for the residential stabilization measures with separate permits to be issued for each property.
4. **Floodplain Development Permit** – Required by Burleigh County, which must include completion of a “no-rise” certification as the hardpoints and portions of the revetments are located within the regulatory floodway.

REVTMENT/STABILIZATION DESIGN

The resulting shift in the main river channel subsequently caused the failure of the residential bank stabilization and compromised several Section 32 Hardpoints. The BCWRD’s project focus is a joint project to restore/rehabilitate the Section 32 structures, under the O&M agreement with the North Dakota State Water Commission, and full replacement of the unpermitted/permitted residential stabilization.

Rehabilitation/restoration of the federal revetments and private stabilization requires consideration of several principal design elements as follows, also see **Appendix D - Regulatory Considerations**:

- ✓ The Section 32 Revetments are Operated and Maintained by the State Water Commission with the BCWRD paying an equal share of the expenses, see **Appendix A**. Given the abbreviated timeline to implement the project, the BCWRD took the initiative to move forward with project design versus waiting for the SWC to complete the process.
- ✓ The Section 32 Revetments must be restored to their original intent and purpose, which requires the design to utilize the rock specifications established by the USACE. These are the same as the original design, and those used to rehabilitate upstream structures on Hogue Island in 1999 and after the 2011 flood event. This work was completed by the USACE under congressional authorization and funding, which is not available for this project. The design level for these facilities was reconsidered based on the recently modeled river elevations projected for the USACE Construction Reference Plain, which is based on 35,000 cfs, see **Figure One**.



- ✓ The residential stabilization design has the depth of rock at a minimum of two and one-half feet. The use of geotextile is recommended to the extent that it can be reasonably placed in riverine flow conditions to a functional depth.

- ✓ The extent of the rock placement shall be from the top of the bank to a point into the river that can be reached with onshore equipment. Additional rock shall be placed at the toe of the revetment for undermining protection. A review of the location of the original bank line and rip rap, leads to the conclusion that these materials have fallen into the erosion scour area below the proposed new toe of the restored/protected slope. While the bathymetric data indicated a deep erosion scour in this area, there is evidence this has been filling with sediment as the river reaches a new equilibrium under summer flows. A preconstruction bathymetric survey will be completed to evaluate the depth conditions prior to rock installation.

The result of the design process is the **Preliminary Construction Plan Set - Appendix E**, with the final bid set and project manual (specifications) to be completed following the special assessment district vote.

MISSOURI RIVER BURLEIGH COUNTY SETBACK ORDINANCE

The Burleigh County Zoning Ordinance established the regulatory Ordinary High Water Mark (OHWM) as the elevation based on a flow of 33,000 cfs on the Missouri River. Based on this the County Commission established building setback requirements, which apply to the construction of residential structures along the riverbank. These criteria are contained in ARTICLE 21, Section 7 of the Burleigh County Ordinances as follows:

ARTICLE 21 - FP FLOODPLAIN DISTRICT REGULATIONS

Section 7. Additional Development Standards for Land Abutting the Missouri River (Non-agricultural uses)

In order to preserve and enhance the environmental and recreational qualities of the Missouri River, conserve the scenic and historic values of the Missouri River shoreland, protect shoreland development from riverbank erosion, and provide for the wise use of the river and related land resources, the following additional development standard for non-agricultural uses is hereby established for land abutting the Missouri River:

1. *Structure Setbacks. All structures on lots or parcels with unstablized banks shall be set back a minimum of one hundred (100) feet from the ordinary high water mark of the Missouri River. All structures on lots or parcels with stabilized banks, either by an existing Corps of Engineers' stabilized structure or as permitted and approved by the Corps of Engineers, shall be set back a minimum of seventy-five (75) feet from the ordinary high water mark of the Missouri River.*

Given the bank erosion that has occurred, there is a risk of noncompliance should it result in the actual setbacks being less than the ordinance requirement. The BCWRD is on record that a 100-foot setback should be the minimum standard. The proposed stabilization design looked at this issue and due to economic constraints, compliance was not practical to establish the desired 100-foot. The projected setback after implementation, per the measurements documented on the preliminary plans, **Appendix E - Sheet 4**, indicates that all but one structure is in compliance with the 75 foot setback. It is our recommendation that the 100-foot setback remain the enforceable standard under the easement in all locations where the Section 32 easements are in place.

Given the limitations in this reach, it is recommend the BCWRD secure new access easements. The purpose would be to replace the existing easements with ones that reflect the rehabilitated project boundaries, resolve existing encroachment issues and clarify that all future O&M of the permitted residential protection measures are the obligation and responsibility of the landowners.

SPECIAL ASSESSMENT DISTRICT (SAD) - OPINION OF PROBABLE COST (OPC)

There are several considerations associated with the creation of the Special Assessment District. First, all costs associated with the Section 32 Hardpoints are not included in the SAD. This includes the applicable engineering, administrative and legal (agreement/easement) expenses. These are being tracked independently so they are applied to the SWC/BCWRD project. Second, it is critical that the costs for materials be prorated and appropriately distributed to the individual properties. This has been determined based on the stationing and an application rate along the designed improvements. The OPC and breakdown for the distributed costs is provided on **Table One**.

Table One notes the Section 32 Rehabilitation/Restoration portion has a projected cost of \$545,811. The residential stabilization costs, which are to be assessed if approved by the Special Assessment, are projected at \$787,348. The combined project cost is approximately \$1.33 Million. Budgeting for the Design/Permitting, Administration/Legal, and Bidding and Construction Management Services are based on a percentage of construction costs. The construction materials have a ten percent contingency included to account for the economic variability in bidding. The final assessments will be based on the actual costs for construction and fees for the associated various services. It is recommended that the district consider a 20-year repayment period to reduce the annual costs, however landowner's have the option to repay any or all of this at any time without penalty.

It was noted during the landowner discussion that some did not have the means to pay for the required improvements without the SAD process. That creates a concern that if these properties were not adequately protected, they would represent a "weak link" in the protection measures and place other properties at an increased risk. This situation and the Regulatory Considerations, as documented in **Appendix D**, make it clear without a combined project for permitting and construction the final construction product would not be desirable. In addition, should the SAD not be approved there are concerns regarding the ability to complete regulatory permit reviews and construct the project in 2023.

One variation to the assessment consideration is the northern most lot, Lot 2, where minimal damages occurred that were temporally addressed via an emergency permit. Unfortunately, Lot 2 does not have a permit for the existing stabilization measures, which is why we recommend it remain in the SAD. In addition, there is recommended stabilization that needs to be completed on this property to reduce the risk for additional damages. The result is a lower assessment than other lots.

Table One - Opinion of Probable Cost and Distribuion

Hogue Island Bank Stabilization
Opinion of Probable Cost
Special Assessment and DWR/BCWRD Distribution
 June 7, 2023

Parcel No.	Lot No	Parcel Owner	Topsol	Seeding	Riprap	Geotex.	Cost/Property	% of Assessment	Cost w/Eng-Admin- Legal
23-140-81-50-10-030	2	Richard Beierle	\$429.00	\$145.36	\$3,850.00	\$66.00	\$4,490.36	0.77%	\$6,061.99
		Structure 2	\$66.09	\$66.00	\$22,000.00	\$0.00	\$22,132.09		\$29,878.32
23-140-81-50-10-040	3	Sherri & Scott Neis	\$1,269.03	\$629.27	\$85,800.00	\$1,448.70	\$89,147.01	15.29%	\$120,348.46
23-140-81-50-10-050	4	John & Alice Homelvig	\$1,056.37	\$523.82	\$71,390.00	\$1,204.50	\$74,174.68	12.72%	\$100,135.82
23-140-81-50-10-060	5	Andrew Carlson & Chloe Coleman	\$1,171.04	\$580.68	\$79,200.00	\$1,336.50	\$82,288.22	14.11%	\$111,089.10
23-140-81-50-10-070	6	Nathaniel Strutz	\$1,052.88	\$522.09	\$99,660.00	\$1,683.00	\$102,917.97	17.65%	\$138,939.27
		Structure 3	\$421.94	\$209.23	\$199,043.90	\$0.00	\$199,675.07		\$269,561.34
23-140-81-50-10-080	7	William & Marilyn Strutz	\$1,298.18	\$643.73	\$109,340.00	\$1,844.70	\$113,126.61	19.40%	\$152,720.92
		Structure 4	\$319.37	\$158.36	\$149,985.00	\$0.00	\$150,462.73		\$203,124.69
23-140-81-50-10-090	8	Beverly Brirley	\$866.71	\$429.77	\$58,630.00	\$990.00	\$60,916.48	10.44%	\$82,237.25
23-140-81-50-10-100	9	Laura Beyer	\$27.36	\$261.50	\$54,450.00	\$920.70	\$56,159.56	9.63%	\$75,815.40
		Structure 5	\$278.39	\$138.05	\$31,618.40	\$0.00	\$32,034.84		\$43,247.03
		Subtotal/Bid Item:	\$8,756.37	\$4,307.86	\$964,967.30	\$9,494.10	\$987,525.63		\$1,333,159.60

Construction Only:		Design/Permitting	15%
Residential Stabilization	\$583,220.90	Admin/Legal	\$98,752.56
Section 32 Revetments	\$404,304.73	Bidding/CMS	\$98,752.56
		Total:	\$1,333,159.60

Total Opinion of Probable Cost

Residential Stabilization	\$787,348.22
Section 32 Revetments	\$545,811.38

SWC Share 50% \$272,905.69
 BCWRD 50% \$272,905.69

The voting process is based on one vote for each \$1 of assessment, with **Table One** indicating the number of votes for each residence. The SAD informational meeting, public hearing and voting process will occur after the BCWRD approves **Resolution #2 – Attachment #3**.

CONCLUSIONS AND RECOMMENDATIONS

After completing the evaluation, regular review, project design and this preliminary engineering report, it is recommended for the reasons outlined in **Appendix A – Regulatory Considerations**, and this report, the protective measures be permitted and implemented as a single project. Therefore, it is recommended the BCWRD approve **Resolution #2** and proceed with the Special Assessment District to fund the Residential Stabilization. At their June 14, 2023 meeting the BCWRD also authorized the following:

Directed the preparation and submittal of the DWR, USACE and the Burleigh County Floodplain Development permit applications, see **Appendix F**. The critical path in the regulatory process is the 120-day timeline under the USACE Individual Permit process. It is encouraged that the DWR/BCWRD continue to discuss the options with the USACE to potentially shorten this timeline.

Directed the submittal of this Preliminary Engineering Report along with a formal request to the DWR regarding the designated cost participation per the O&M Agreement for the Section 32 Revetments. This documentation must be submitted to the DWR prior to June 26th to be placed on the August 2023 SWC agenda for funding consideration. If funding is not approved, construction on the Section 32 revetments in 2023 is no longer practical.

Direct the scheduling for the Public Informational Meeting, Public Hearing and Vote Process. This to be concurrent with the SWC cost consideration timelines.

It is anticipated this project could proceed to construction in late September or early October 2023, which would occur during the expected lower river flows.

Attachment #1 – Resolution #1 - Signed

Attachment #2 – Petition of Interest

Attachment #3 – Resolution #2 - Signed

Appendix A – O&M Agreement

Appendix B – USACE Project Mapping

Appendix C – Revised Easements

Appendix D – Regulatory Considerations

Appendix E – Preliminary Construction Plan Set

Appendix F – Regulatory Permit Applications - Submitted

ATTACHMENT #1

HOGUE ISLAND BANK STABILIZATION PETITION OF INTEREST REQUESTING PROJECT CONSIDERATION MAY 2023

We the undersigned, hereby request the Burleigh County Water Resource District initiate a process to review and create a *Special Assessment District* in accordance with North Dakota Century Code Chapter 61-16.1 to restore the failed private bank stabilization located along the Missouri River from River Mile 1321.89 to River Mile 1322.1, if supported by the residents to pursue its construction. This project includes only those properties designated on the attached Figure and DOES NOT include restoration/rehabilitation of the Section 32 federal structures.

It is requested the BCWRD hold a public informational meeting, after evaluating the project extents (i.e., properties to be included), construction costs and their distribution, to determine if there is adequate interest and support to pursue a vote on the Special Assessment District.

We understand project costs must be approved by a simple majority of the benefitted landowners and would be assessed based on the costs associated with the individual properties before it can proceed. There is no obligation of the undersigned relating to the cost or preliminary engineering report, however the expense to establish the project and previous investments associated with the residential stabilization by the BCWRD could be included in the final assessment, if approved.

Name/Address/Lot, Blk, Subdivision

Signature indicating interest

BEIERLE, RICHARD D, 8822 ISLAND RD
Lot 3&4A Blk 10 ISLAND PARK ESTATES

NEIS, SHERRI A & SCOTT E 8812 ISLAND RD
Lot 3A&4 Blk 10 ISLAND PARK ESTATES

HOMELVIG, JOHN D & ALICE E 8800 ISLAND RD
Lot 5 Blk 10 ISLAND PARK ESTATES

CARLSON, ANDREW T & COLEMAN, CHLOE JO 8730 ISLAND RD
Lot 6 Blk 10 ISLAND PARK ESTATES

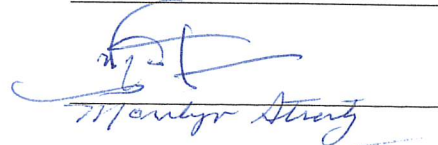
STRUTZ, NATHANIEL P 8720 ISLAND RD
Lot 7 Blk 10 ISLAND PARK ESTATES

STRUTZ, WILLIAM A & MARILYN S TR 8710 ISLAND RD
Lot 8 Blk 10 ISLAND PARK ESTATES

BRIERLY, BEVERLY 8700 ISLAND RD
Lot 9 Blk 10 ISLAND PARK ESTATES

BEYER, LAURA 8636 ISLAND RD
Lot 10 Blk 10 ISLAND PARK ESTATES

KEY LEASING LLC 8626 ISLAND RD
Lot 11 Blk 10 ISLAND PARK ESTATES



N/A

NUMBER	PARCEL NO.	NAME	ADDRESS	LOT	BLOCK	SUBDIVISION
1	23-140-81-50-10-020	VASBINDER, DAVID M & NICOLA M	8832 ISLAND RD	2	10	ISLAND PARK ESTATES
2	23-140-81-50-10-030	BEIERLE, RICHARD D	8822 ISLAND RD	3&4A	10	ISLAND PARK ESTATES
3	23-140-81-50-10-040	NEIS, SHERRI A & SCOTT E	8812 ISLAND RD	3A&4	10	ISLAND PARK ESTATES
4	23-140-81-50-10-050	HOMELVIG, JOHN D & ALICE E	8800 ISLAND RD	5	10	ISLAND PARK ESTATES
5	23-140-81-50-10-060	CARLSON, ANDREW T & COLEMAN, CHLOE JO	8730 ISLAND RD	6	10	ISLAND PARK ESTATES
6	23-140-81-50-10-070	STRUTZ, NATHANIEL P	8720 ISLAND RD	7	10	ISLAND PARK ESTATES
7	23-140-81-50-10-080	STRUTZ, WILLIAM A & MARILYN S TR	8710 ISLAND RD	8	10	ISLAND PARK ESTATES
8	23-140-81-50-10-090	BRIERLY, BEVERLY	8700 ISLAND RD	9	10	ISLAND PARK ESTATES
9	23-140-81-50-10-100	BEYER, LAURA	8636 ISLAND RD	10	10	ISLAND PARK ESTATES
10	23-140-81-50-10-110	KEY LEASING LLC	8626 ISLAND RD	11	10	ISLAND PARK ESTATES
11	23-140-81-50-10-120	HAIDER, MARK & ANGELA	8616 ISLAND RD	12	10	ISLAND PARK ESTATES
12	23-140-81-50-10-130	TSCHIDER, STACY L	8606 ISLAND RD	13	10	ISLAND PARK ESTATES



STRUCTURE NUMBER	DEPTH (FT)
1 Rev 1322.2 HP	80
2 Rev 1322.1 HP	80
3 Rev 1322.0 HP	80
4 Rev 1322.0 HP	80
5 Rev 1321.95 HP	100
6 Rev 1331.92 HP	60
7 Rev 1321.89 HP	60

Figure One

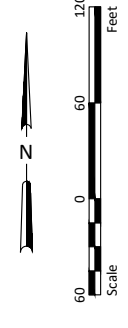


IMAGE DATE: 11/13/2020
 IMAGERY, LOT LINES, & BUILDING FOOTPRINTS FROM
 BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS

LEGEND:

REARVING EASEMENT (CURRENT)	---
POST-EROSION BCWRD EASEMENT	---
REVESTMENT	---
STRUCTURE	---
LOT LINES	---
BANK LINE POST-EROSION	---
BANK LINE PRE-EROSION	---
BUILDING FOOTPRINT	---
MINOR CONTOUR	---
MAJOR CONTOUR	---

 Existing Easement Encroachment
 New Encroachment

Preliminary Special Assessment District Boudnary

PRELIMINARY
NOT FOR CONSTRUCTION

Drawn by CB	Date 2-14-23	HOUSTON engineering, inc.		EROSION & LOT EXHIBIT	SHEET
Checked by MG	Scale AS SHOWN			PROJECT NO. 6025-0021-004	1
No.	Revision			BANK EROSION HOGUE ISLAND BISMARCK, ND	HEI NO. 6025-0021-004

H:\JBM\6000\6025\6025_0021 Missouri River Bank Stable\9514 Island Road Bank Erosion\CAD\Exhibits\Bank Erosion.dwg-Bank Line Exhibit-2/15/2023 12:31 PM (-borders)



Resolution No. 1

**BURLEIGH COUNTY WATER RESOURCE DISTRICT
BURLEIGH COUNTY, NORTH DAKOTA**

**RESOLUTION OF NECESSITY FOR THE
HOGUE ISLAND BANK STABILIZATION – MR 1321.89 TO MR 1322.22**

BE IT RESOLVED by the Water Resource Board of the Burleigh County Water Resource District, Burleigh County, North Dakota (the “Board”), as follows:

There having been proposed through action of this Board, pursuant to Chapter 61-16.1 of the North Dakota Century Code, the construction of a project, hereafter to be known and referred to as the HOGUE ISLAND BANK STABILIZATION – MR 1321.89 TO MR 1322.22 (the “Project”), which Project is proposed to be financed in whole or in part using funds raised through the collection of special assessments levied against lands and premises benefited by the Project’s construction. Coordination with the North Dakota Department of Water Resources and the United States Army Corps of Engineer related to rehabilitating and restoring the Section 32 (Federal Revetments) located within the project limits, as well as permitting under their respective authorities will occur with project design and implementation.

This Board having examined the proposed Project, hereby declares that further proceedings are warranted and that it is necessary to construct the Project, which has the following nature and purpose:

The proposed Hogue Island Bank Stabilization Project would include the following:

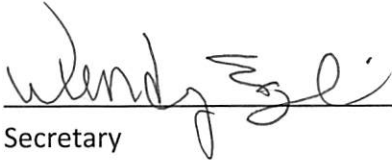
Restoration, rehabilitation, and replacement of the failed private bank stabilization revetment features located along the Missouri River extending from River Mile 1321.89 to River Mile 1322.1. This project includes only those properties designated after the Preliminary Engineering Report is completed and does not include the restoration/rehabilitation of the Section 32 federal revetments. The Section 32 revetments, along with any related easements, will be maintained or modified under the existing agreement with the North Dakota State Water Commission.


Michael H. Gunsch, PE, CFM, Houston Engineering, Inc., Bismarck, North Dakota, is hereby designated as the registered professional engineer to assist the Board with the design of the residential bank stabilization measures and is hereby directed to prepare a preliminary engineering report and preliminary plans for the proposed Project along with estimates of the total cost thereof, which estimates shall include acquisition of any necessary access rights-of-way and shall be in sufficient detail to allow the Board to determine the probable share of costs to be assessed to each benefitted parcel within the proposed assessment district.

Adopted by Board the 10th day of May 2023,

ATTEST:

BURLEIGH COUNTY WATER
RESOURCE DISTRICT


Secretary


Chairman, Water Resource Board

The governing body of the political subdivision acted on the foregoing resolution on May 17, 2023, as follows:

Adoption moved by Mgr. Palm Seconded by Mgr. Binengar.

Roll Call Vote (List Last Names)

"Aye" Reep, Palm, Binengar, Landenberger

"Nay" _____

Absent Smith



Resolution No. 2

ATTACHMENT #3

**BURLEIGH COUNTY WATER RESOURCE DISTRICT
BURLEIGH COUNTY, NORTH DAKOTA**

**RESOLUTION APPROVING ENGINEER’S REPORT, PLANS, SPECIFICATIONS
AND ESTIMATE OF COST AND DIRECTING THE ASSESSMENT OF THE COST FOR THE
HOGUE ISLAND BANK STABILIZATION – MR 1321.89 TO MR 1322.22**

BE IT RESOLVED by the Burleigh County Water Resource District, Burleigh County, North Dakota, as follows:

1. The engineer’s report, preliminary plans, profiles, and opinion of probable cost received by this Board for the proposed construction of the **Hogue Island Bank Stabilization – MR 1321.89 to MR 1322.22 (the “Project”)** on June 14, 2023, are hereby approved and the same shall be forthwith filed in the office of the Secretary.
2. The Board shall proceed with the assessment of the project cost and public hearing process in accordance with N.D.C.C. Section 61-16.1-21. The project assessments are to include project costs, as well as coordination with the rehabilitation/restoration of the *Section 32 Revetements*, per the recommendations contained in the engineer’s report. There is no operation and maintenance provisions included in this project.

Dated this 14th day of June, 2023

ATTEST:

BURLEIGH COUNTY WATER
RESOURCE DISTRICT

Wendy Egli

Digitally signed by Wendy Egli
DN: cn=Wendy Egli, o=Frontiere Payroll Services, ou,
email=wendy@fppayroll.com, c=US
Date: 2023.06.16 10:26:57 -0500

Secretary

James Landenberger, Chairman,
Burleigh County Water Resource District

The governing body of the political subdivision acted on the foregoing resolution on this 14th day of June, 2023 as follows:

Adoption moved by Binegar Seconded by Palm

Roll Call Vote (List Last Names)

“Aye” Reep, Palm, Landenberger

“Nay” _____

Absent Smith

...and after vote the presiding officer declared the resolution adopted.

A G R E E M E N T

FOR THE MAINTENANCE AND OPERATION OF
THE MISSOURI RIVER BANK PROTECTION PROJECT

Burleigh County, North Dakota

This agreement entered into this 28th day of July, 1976
by and between the North Dakota State Water Commission, hereinafter referred to as
the Commission, acting by and through Vernon Fahy, State Engineer, and the Burleigh
County Water Management District, hereinafter referred to as the District, acting
by and through G. A. Neideffer, Chairman.

WHEREAS, the Commission has given certain assurances to the United States
Army Corps of Engineers relative to Missouri River bank protection works below the
Garrison Reservoir as authorized by Section 32 of the Streambank Erosion Control
Evaluation and Demonstration Act of 1974, in Burleigh County, North Dakota, and;

WHEREAS, such bank protection works constructed in Burleigh County, hereinafter
referred to as the Project, is of mutual benefit to both parties to this agreement.

NOW, THEREFORE, IT IS AGREED:

I.

That the District shall provide without cost to the Commission any lands,
easements and right-of-way necessary for the construction, maintenance, and
operation of the project.

II.

That the District shall hold and save the Commission free from damages re-
sulting from the construction of the Project. The District, however, shall not
be liable for damages due to the Project contractor's negligence.

III.

That the Commission shall maintain and operate the project after completion
in accordance with regulations prescribed by the Secretary of the Army.

IV.

That the Commission and the District shall share equally the actual costs
of maintaining and operating the project.

V.

That upon incurring any maintenance or operation expenses the Commission shall provide the District with an itemized statement of all such expenses.

VI.

That within one year of the receipt of such itemized statement the District shall remit its share of such expenses to the Commission.

VII.

That changes in any responsibilities of the parties hereto or conditions herein stated will not be effective or binding unless such changes and conditions are made in writing and attached hereto.

IT WITNESS WHEREOF, the parties hereto have signed this agreement the day and year first above written.

WITNESS:

NORTH DAKOTA STATE WATER COMMISSION

By:

Murray G. Sorensen

Vernon Staley
State Engineer and Secretary

WITNESS:

BURLEIGH COUNTY WATER MANAGEMENT DISTRICT

By:

Edna Agnew

J. A. Gideffer
Chairman

Dist.

Burleigh County Water Management District

EXHIBIT "A"

CERTIFICATE OF AUTHORITY

I, Michael Dwyer, do hereby certify that I am the Special Assistant Attorney General of the North Dakota State Water Commission, that the North Dakota State Water Commission is a legally constituted public body with full authority and legal capability to perform the terms of the agreement between the United States of America and the North Dakota State Water Commission in connection with the Morton, Mercer, Oliver, Burleigh and McLean Counties, North Dakota Projects and to pay damages, if necessary, in the event of the failure to perform in accordance with Section 221 of Public Law 91-611 and that the person(s) who have executed the contract on behalf of the North Dakota State Water Commission have acted within their statutory authority.

IN WITNESS WHEREOF, I have made and executed this Certificate this 5 day of July, 1979.

Michael Dwyer
Special Assistant Attorney General
for the North Dakota State
Water Commission

CERTIFICATE OF APPROVAL

The undersigned Attorney at Law, as attorney for the North Dakota State Water Commission, which said Commission has undertaken to act as local sponsor for certain erosion control demonstration projects in Morton, Mercer, Oliver, Burleigh and McLean Counties, North Dakota, hereby certifies that I have reviewed the contract dated the 5 day of July, 1979, between the United States of America and the North Dakota State Water Commission, and have approved said contract and the provisions contained therein, both as to form and substance, including, but not limited to, those provisions whereby the commission has agreed to pay damages, if necessary, in the event of failure to perform in accordance with Section 221 of Public Law 91-611.

IN WITNESS WHEREOF, I have made and executed this Certificate this 5 day of July, 1979.

Michael Durye
Special Assistant Attorney General
for the North Dakota State Water
Commission

Inc 2²

DECLARATION OF FINANCIAL ABILITY

I, Vern Fahy, State Engineer,
(Name) (Title)

do hereby declare that the North Dakota State Water Commission, under the laws of North Dakota and its authority to levy taxes, is financially capable of meeting the operating and maintenance costs of the projects.

I further declare that the Contract fund will be used for the purpose of operating and maintaining the projects. There was \$ 50,000 allocated to the fund for this fiscal year. As of this day, there is a balance of \$ 50,000 on hand in that fund.

Dated this 5th day of July 1979.

Vern Fahy

ASSURANCE OF COMPLIANCE WITH THE DEPARTMENT OF DEFENSE DIRECTIVE
UNDER TITLE VI OF THE CIVIL RIGHTS ACT OF 1964

North Dakota State Water Commission (hereinafter called
"Applicant-Recipient")

HEREBY AGREES THAT it will comply with Title VI of the Civil Rights Act of 1964 (P.L. 88-352) and all requirements imposed by or pursuant to the Directive of the Department of Defense (32 CFR Part 300, issued as Department of Defense Directive 5500.11, December 28, 1964) issued pursuant to that title, to the end that, in accordance with Title VI of that Act and the Directive, no person in the United States shall, on the ground of race, color, or national origin be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity for which the Applicant-Recipient receives Federal financial assistance from the Department of the Army, and HEREBY GIVES ASSURANCE THAT it will immediately take any measures necessary to effectuate this agreement.

If any real property or structure thereon is provided or improved with the aid of Federal financial assistance extended to the Applicant-Recipient by this Department of the Army, assurance shall obligate the Applicant-Recipient, or in the case of any transfer of such property, any transferee, for the period during which the real property or structure is used for a purpose for which the Federal financial assistance is extended or for another purpose involving the provision of similar services or benefits. If any personal property is so provided, this assurance shall obligate the Applicant-Recipient for the period during which it retains ownership or possession of the property. In all other cases, this assurance shall obligate the Applicant-Recipient for the period during which the Federal financial assistance is extended to it by the Department of the Army.

THIS ASSURANCE is given in consideration of and for the purpose of obtaining any and all Federal grants, loans, contracts, property, discounts or other Federal financial assistance extended after the date hereof to the Applicant-Recipient by the Department, including installment payments after such date on account of arrangements for Federal financial assistance which were approved before such date. The Applicant-Recipient recognizes and agrees that such Federal financial assistance will be extended in reliance on the representations and agreements made in this assurance, and that the United States shall have the right to seek judicial enforcement of this assurance. This assurance is binding on the Applicant-Recipient, its successors, transferees, and assignees, and the person or persons whose signatures appear below are authorized to sign this assurance on behalf of the Applicant-Recipient.

Dated 5 July 1979

North Dakota State Water Commission

(Applicant-Recipient)

By

[Signature]
(President, Chairman of Board, or
comparable authorized official)

900 E. Boulevard

Bismarck, ND 58505

(Applicant-Recipient's Mailing Address)

MRO FORM 1277
1 AUG 66 *Incl 5-2*

TITLE OF FORM

MRO Form 1277 - Assurance of Compliance

PRESCRIBING DIRECTIVE

ER 1130-2-314

AUTHORITY

Title VI of the Civil Rights Act of 1964 (42 USC 2000d-1; 78 Stat. 252)

2. PRINCIPAL PURPOSE(S)

To assure that every application of Federal financial assistance to carry out a program or to provide a facility, as authorized under laws administered by any component of the Department of Defense, shall, as a condition to its approval and the extension of any Federal financial assistance pursuant to the applications, contain or be accompanied by an assurance that the program will be conducted or the facility operated in such a manner that no person in the United States shall, on the ground of race, color or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any such program or activity.

3. ROUTINE USES

Information secured from completed MRO Form 1277 is used in determining whether or not the recipients of nominal or no consideration grants are in continuing compliance with the requirements of Title VI of the Civil Rights Act of 1964. A register of compliance is maintained from reports submitted and checked by field inspectors.

4. Continued:

applicable proceedings under State or local law.

4. MANDATORY OR VOLUNTARY DISCLOSURE AND EFFECT ON INDIVIDUAL NOT PROVIDING INFORMATION

If there appears to be a failure or a threatened failure to provide the necessary information, and if the noncompliance or threatened noncompliance cannot be corrected by informal means, compliance may be effected by the suspension or termination of or refusal to grant or to continue Federal financial assistance or by any other means authorized by law as determined by the responsible Department official. Such other means may include, but are not limited to (1) a reference to the Department of Justice with a recommendation that appropriate proceedings be brought to enforce any rights of the United States or any assurance or other contractual undertaking, and (2) any

Continued above

MRO FORM 1277

Privacy Act Statement - 26 Sep 75

EXHIBIT "B"

AGREEMENT BETWEEN
THE UNITED STATES OF AMERICA
AND
THE NORTH DAKOTA STATE WATER COMMISSION (NORTH DAKOTA)
FOR LOCAL COOPERATION AT
EROSION CONTROL DEMONSTRATION PROJECTS
MISSOURI RIVER IN MORTON, MERCER, OLIVER
BURLEIGH AND MCLEAN COUNTIES, NORTH DAKOTA

THIS AGREEMENT entered into this 11th day of July
19 ⁷⁹ by and between the UNITED STATES OF AMERICA (hereinafter called
the "Government"), represented by the Contracting Officer executing
this agreement, and the North Dakota State Water Commission
(hereinafter called the "Commission")

WITNESSETH THAT:

WHEREAS, construction of the erosion control demonstration
projects along the Missouri River in Morton, Mercer, Oliver, Burleigh
and McLean Counties, North Dakota, downstream from Garrison Dam, was
authorized by the streambank and Erosion Control Evaluation and
Demonstration Act of 1974 (Section 32 Public Law 93-251) (as amended);

WHEREAS, twenty-one (21) sites have been approved as erosion control
demonstration projects within that portion of the reach of the Missouri
River in Morton, Mercer, Oliver, Burleigh and McLean Counties, North
Dakota designated the Hancock Project, Knife Point I Project, Knife
Point II Project, Sandstone Bluff I Project, Sandstone Bluff II Project,
Coal Lake Coulee Project, Lewis and Clark 4-H Camp Project, Wildwood
Project, Sanger Project, Pretty Point Project, Price Area I Project,
Price Area II Project, Wogansport Project, Horseshoe Butte Project,
Indian Mound Project, Eagle Park Project, Burnt Creek Project,
I-94 Highway Project, Pioneer Park Project, Ft. Lincoln Project and
the Custer Flats Project (Hereinafter called the "Projects")

WHEREAS, the Commission hereby represents that it has the
authority and capability to furnish the non-Federal cooperation
required by the Federal legislation authorizing the Projects and by
other applicable law.

WHEREAS, the Projects are considered severally rather than jointly
for purposes of this contract; and

WHEREAS, the Government represents that the Projects will consist
of erosion control demonstration features generally agreeable to the
parties, it being understood that such features may require
modification, replacement, substitution, and/or abandonment, as
necessary toward achieving sound and functional erosion control
demonstration Projects, subject to the availability of funds
appropriated by the Congress for such purposes; and

100 14

WHEREAS, the parties understand that none of the Projects will be transferred to the Commission for operation and maintenance under its hereinafter assurances unless and until demonstrated to provide sound and functional erosion control;

NOW, THEREFORE, the parties agree as follows:

1. The Commission agrees that upon notification that the Government will commence construction of erosion control demonstration Projects in Morton, Mercer, Oliver, Burleigh and McLean Counties, North Dakota, substantially in accordance with Federal legislation authorizing such Projects, pursuant to the Streambank and Erosion Control Evaluation and Demonstration Act of 1974 (Section 32, Public Law 93-251), the Commission shall, in consideration of the Government commencing construction of such projects, fulfill the requirements of non-Federal cooperation specified in such legislation, to wit:

(a) Provide without cost to the United States all lands, easements and rights-of-way necessary for the construction and subsequent operation of the projects.

(b) Hold and save the United States free from damages due to the construction, operation and maintenance of the project except where such damages are due to the fault or negligence of the United States or its contractors.

(c) Maintain and operate all works after completion, in accordance with regulations prescribed by the Secretary of the Army.

(d) Provide Assurances of Compliance with Department of Defense Directive 5500.11, Nondiscrimination in Federally Assisted Programs, published in the Federal Register, 31 December 1964, and any amendments thereto or implementation thereof, as may be required by the Secretary of the Army.

(e) Assure that, in conjunction with acquiring rights-of-way, affected persons will be adequately informed of the benefits, policies, and procedures described in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646) and in accordance with Sections 210 and 305 of said Act and implementing regulations, assure that:

(1) Fair and reasonable relocation payments and assistance shall be provided to or for displaced persons, as are required to be provided by a federal agency under Sections 202, 203 and 204 of the Act;

(2) Relocation assistance programs offering the services described in Section 205 of said Act shall be provided to such displaced persons;

(3) Within a reasonable period of time prior to displacement, decent, safe and sanitary replacement dwellings will be available to displaced persons in accordance with Section 205(c)(3) of said Act;

(4) In acquiring real property it will be guided, to the greatest extent practicable under state law, by the land acquisition policies in Section 301 and the provisions of Section 302 of said Act;

(5) Property owners will be paid or reimbursed for necessary expenses as specified in Sections 303 and 304 of said Act.

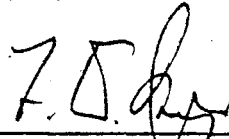
2. The Commission hereby gives the Government a right to enter upon, at reasonable times and in a reasonable manner, lands which the Commission owns or controls, for access to the Projects for the purpose of inspection, and for the purpose of operating and maintaining the Projects, if such inspection shows that the Commission for any reason is failing to operate and maintain the Projects in accordance with the assurances hereunder and has persisted in such failure after a reasonable notice in writing by the Government delivered to the State Engineer of the North Dakota State Water Commission. No operation and maintenance by the government in such event shall relieve the Commission of responsibility to meet its obligations as set forth in paragraph 1 of this Agreement, or to preclude the Government from pursuing any other remedy at law or equity.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

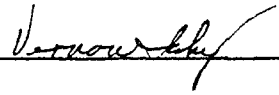
THE UNITED STATES OF AMERICA

NORTH DAKOTA STATE WATER COMMISSION

APPROVED:

By 

V. D. Stipo
Colonel, Corps of Engineers
District Engineer
Contracting Officer




Vern Fahy
State Engineer

FOR THE SECRETARY OF THE ARMY

Date: 11 JULY 1979

Date: 6 JUL 79

SECTION V - MAINTENANCE



5-01. Scope. This section provides the guidelines for the maintenance and rehabilitation of revetments, refusals, hardpoints, and earth core dikes constructed for bank protection at the Section 32 projects in North Dakota between Garrison Dam and Lake Oahe. The engineering staff of the North Dakota State Water Commission (NDSWC) should exercise engineering discretion in evaluating the extent of the rehabilitation necessary to maintain the integrity of each structure in the most cost efficient manner. The "As-Built" typical sections for these structures, plates 22 through 29, present the optimum design criteria used in the original construction. Obvious abrupt changes in the elevation or width of the structure sometimes indicates damage to the structure and the possible need for rehabilitation. Inspection of the individual structures may indicate that rehabilitation to the lines and grades depicted on the typical sections may not be required. All rehabilitation should be completed as soon as possible if any portion of the structure is noted to have deteriorated or degraded to where the stability of the structure is jeopardized.

5-02. Revetment.

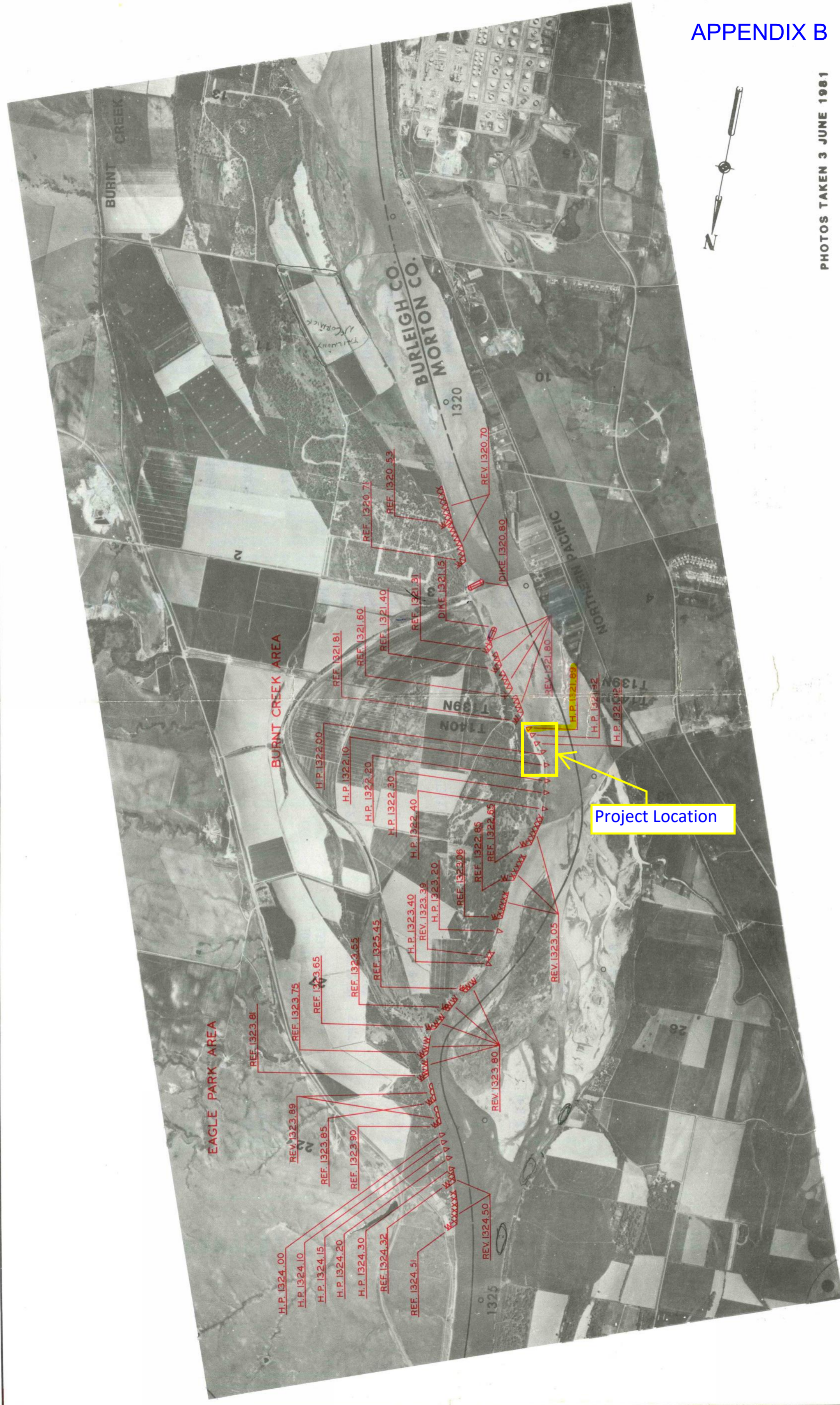
(a) Principal required maintenance is the repair of toe damage caused by excessive underscour and displacement by ice. Damage may also occur in the upper bank zone from concentrated surface drainage, ice, and high flows. The principal required maintenance for Windrow Revetment will consist of adding stone to the Windrow Revetment structure on an as-needed basis until equilibrium (a stable bank) is established.

(b) Typical rehabilitation for revetment structures consists of placing acceptable stone, as specified in Section IV, paragraph 4-02, on the damaged areas to restore the structure to a stable condition. On Composite Revetment the crown of the stone toe should degrade lower than 2 feet below CRP before rehabilitation is undertaken. The crown of the stone toe on both Bankline and Reinforced Revetment should not be allowed to degrade lower than the CRP. On Reinforced Revetment the tiebacks will prevent any damage to the structure system but the revetment should be closely monitored for further damage. Tiebacks should also be carefully monitored for possible damage, especially the tiebacks located at the upstream and downstream end of each reinforced revetment segment. For Windrow Revetment, rehabilitation consists of placing acceptable stone, as specified in Section IV, paragraph 4-02, in an excavated notch or trench immediately landward of the existing windrow revetment similar to the "As-Built" typical section drawings on plate 25. If additional erosion is not acceptable, stone may be placed on top of the existing structure. Minor breaks or abrupt changes in grade or alignment should have stone added directly to the sloped bank. All stone added to Reinforced, Composite, Bankline and Rehabilitated Revetment structures should be covered by a thin layer of gravel to enhance vegetation growth, provide easier access to the river by wildlife, and preserve the natural appearance of the waterway.

APPENDIX B

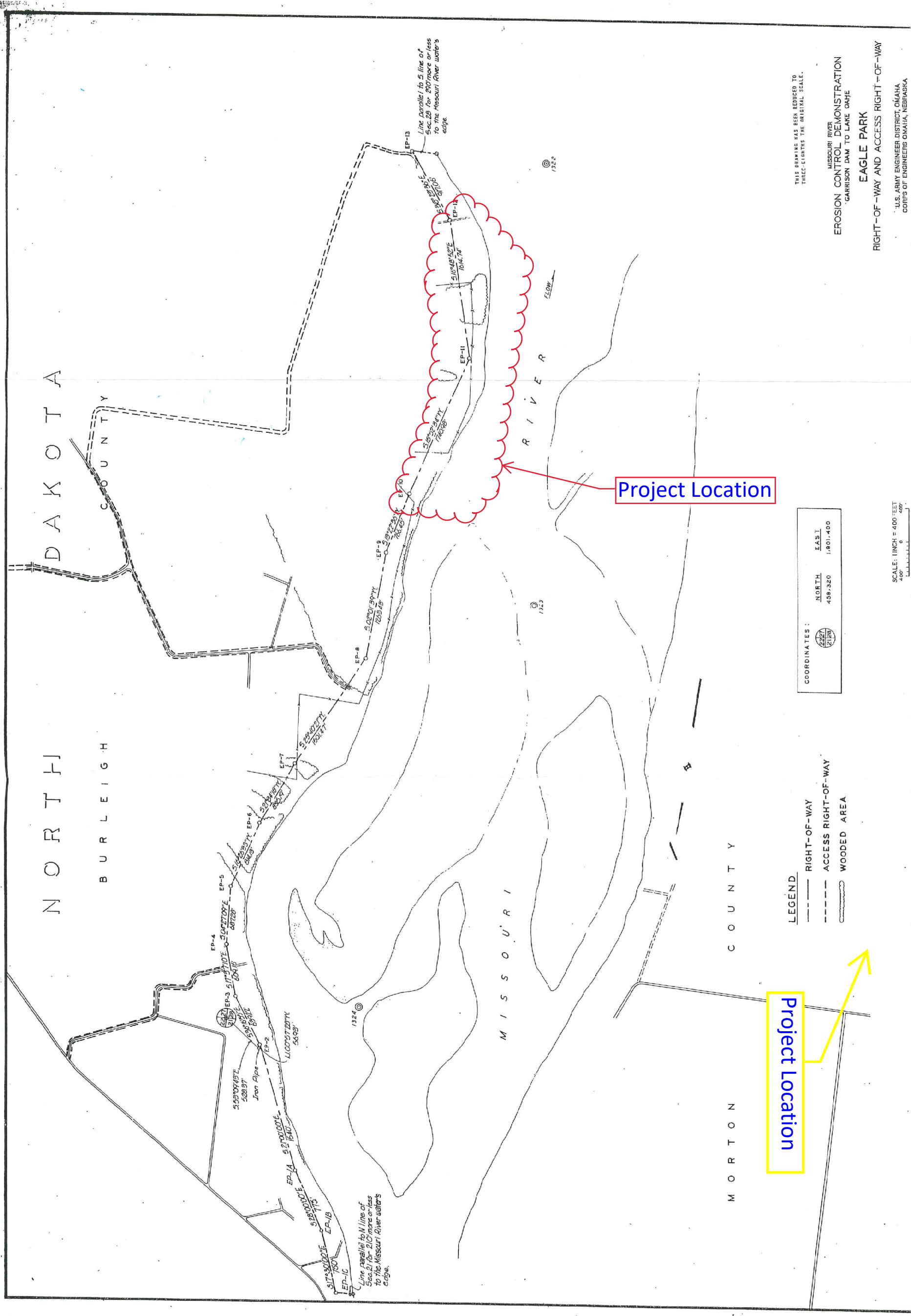
PHOTOS TAKEN 3 JUNE 1981

MISSOURI RIVER
GARRISON DAM TO LAKE OAHE
 AERIAL MOSAIC
 U.S. ARMY ENGINEER DISTRICT, OMAHA
 CORPS OF ENGINEERS
 OMAHA, NEBRASKA
 AS-BUILT CONDITIONS AS OF OCTOBER, 1981



- LEGEND:**
- STONE FILL DIKE OR REFUSAL
 - COMPOSITE REVETMENT
 - WINDROW REVETMENT OR REFUSAL
 - REINFORCED REVETMENT
 - HARDPOINT
 - BANKLINE REVETMENT
 - EARTH CORE DIKE

Project Location



THIS DRAWING HAS BEEN REDUCED TO
THREE-EIGHTHS THE ORIGINAL SCALE.

MISSOURI RIVER
EROSION CONTROL DEMONSTRATION
GARRISON DAM TO LAKE OAHÉ
EAGLE PARK
RIGHT-OF-WAY AND ACCESS RIGHT-OF-WAY

U.S. ARMY ENGINEER DISTRICT, OMAHA,
CORPS OF ENGINEERS OMAHA, NEBRASKA

COORDINATES : NORTH EAST
 458,320 1,801,400

SCALE: 1 INCH = 400 FEET
 400' 0' 400'

LEGEND

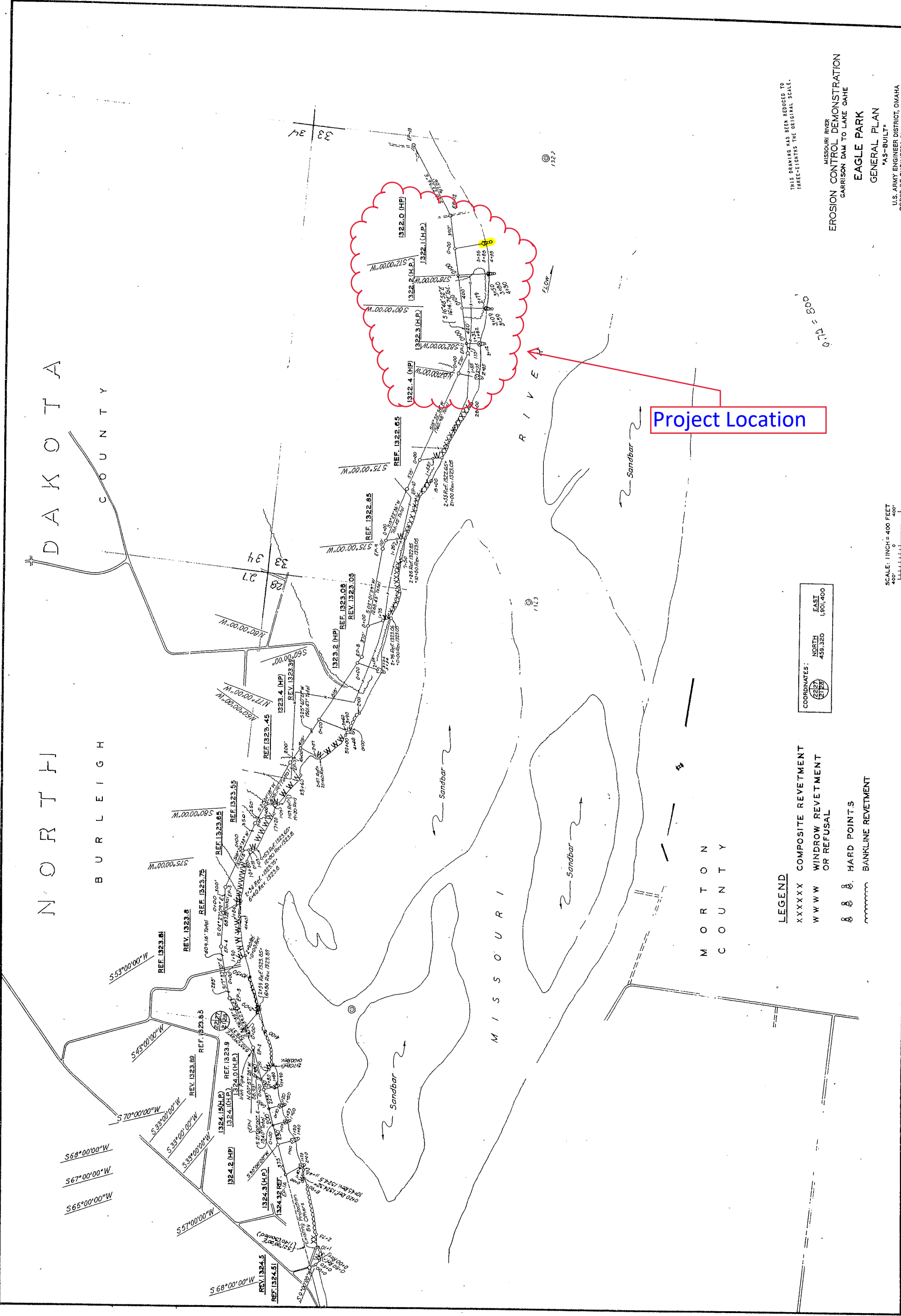
- RIGHT-OF-WAY
- - - ACCESS RIGHT-OF-WAY
- ⊃ WOODED AREA

USACE Section 32 - Demonstration Project
Hogue Island Easement Map

NORTH BURLEIGH COUNTY

MORTON COUNTY

MISSOURI RIVER



Project Location

COORDINATES:

NORTH	EAST
439,320	1,901,400

LEGEND

- XXXXXX COMPOSITE REVETMENT
- W W W W WINDROW REVETMENT OR REFUSAL
- ⊗ & ⊗ HARD POINTS
- ~~~~~ BANKLINE REVETMENT

SCALE: 1 INCH = 400 FEET

THIS DRAWING HAS BEEN REDUCED TO THREE-FIFTHS THE ORIGINAL SCALE.

MISSOURI RIVER
 EROSION CONTROL DEMONSTRATION
 GARRISON DAM TO LAKE OHNE
 EAGLE PARK
 GENERAL PLAN
 AS-BUILT
 U.S. ARMY ENGINEER DISTRICT, OMAHA
 CORPS OF ENGINEERS OMAHA, NEBRASKA

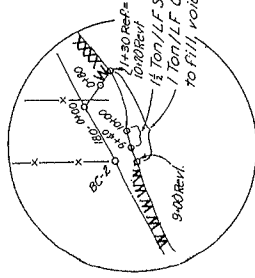
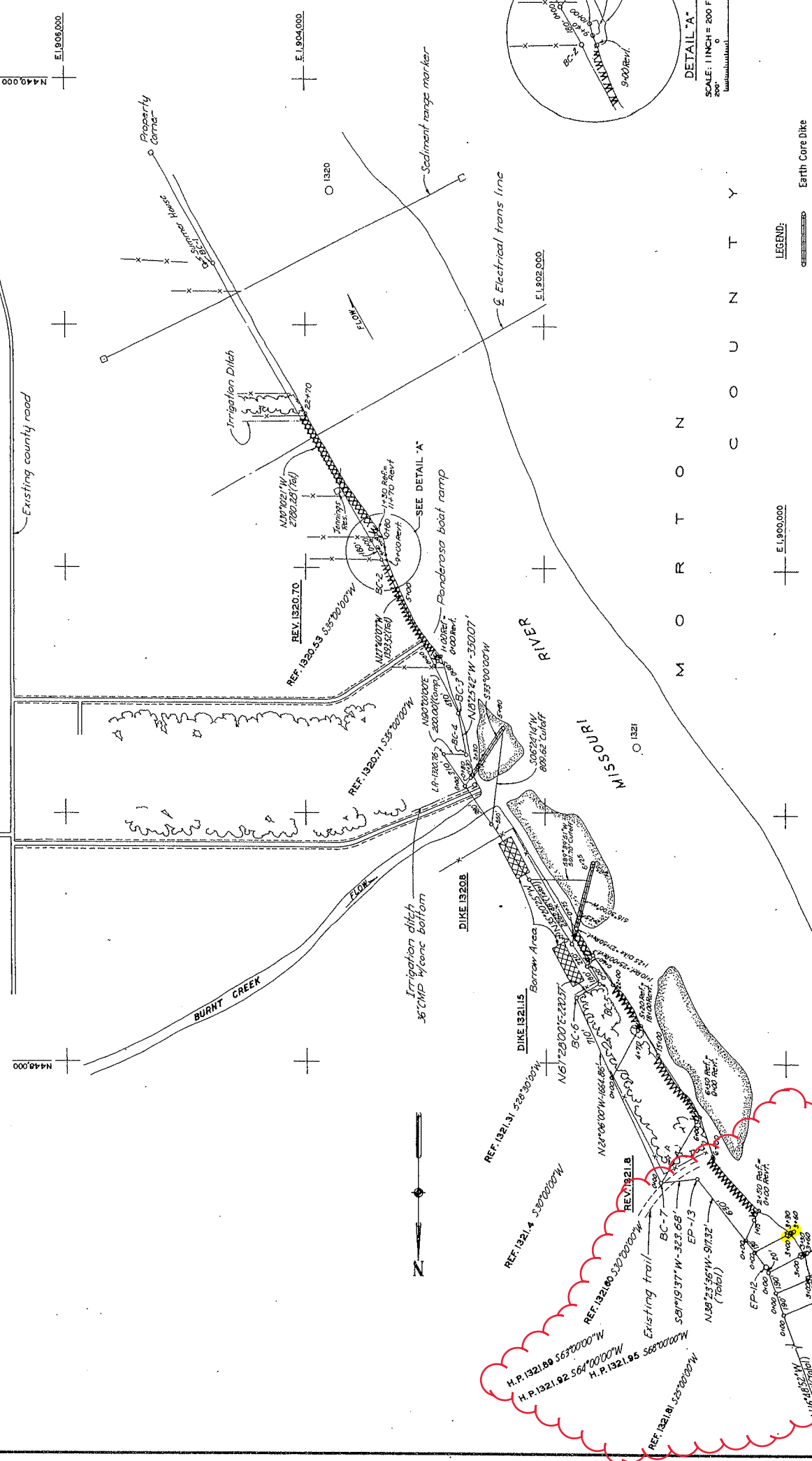
SS - THINK VALUE ENGINEERING SS

OPERATION / MAINTENANCE PLATE 17

N O R T H D A K O T A

HORIZONTAL CONTROL

Station	LAMBERT GRID		NORTH DAKOTA	
	Easting	Northing	Easting	Northing
BC-1	1535.44	441,320.71	N 30° 07' 21" W	1,900,750.79
BC-2	1544.33	440,933.31	N 27° 09' 57" W	1,903,354.33
BC-3	1539.35	445,181.48	N 08° 25' 42" W	1,902,700.12
BC-4	1544.15	445,533.77	N 09° 02' 07" E	1,902,652.81
BC-5	1531.52	445,313.77	N 25° 27' 27" W	1,901,546.32
BC-6	1535.58	447,464.71	N 61° 28' 07" E	1,901,745.90
BC-7	1535.58	448,984.85	N 29° 09' 07" W	1,901,083.52
EP-13	1535.58	448,984.85	S 81° 17' 37" W	1,900,743.54
EP-12	1535.58	448,984.85	N 30° 20' 31" W	1,900,743.54
EP-11	1535.58	448,984.85	N 10° 40' 57" W	1,900,175.83



- LEGEND:**
- Earth Core Dike
 - Windrow Revetment Or Refusal
 - Composite Revetment
 - Reinforced Revetment
 - Hardpoint
 - Fence
 - Access Roads
 - Sand Bar
 - Timbered Area

MISSOURI RIVER
EROSION CONTROL DEMONSTRATION
 GARRISON DAM TO LAKE OAKE
BURNT CREEK
 GENERAL PLAN
 "AS-BUILT"
 U.S. ARMY ENGINEER DISTRICT, OMAHA
 CORPS OF ENGINEERS OMAHA, NEBRASKA

Project Location

STR. NO.	BANK	STA. to STA.	EAGLE PARK AREA	MAX. STRUCTURE ELEVATION	YEAR COMPLETED	STR. NO.	BANK	STA. to STA.	TYPE	MAX. STRUCTURE ELEVATION	YEAR COMPLETED
1324.51	L	0+50-0+80	WSFRF (60)	1639.1	1977	1322.65	L	2+00-3+00	WSFRF (100)	1633.0 (CRP)	1977
1324.5	L	0+00-4+00	BR (400)	1635.1	1977	1322.4	L	2+40-2+90	SFRF (50)	1637.5	1977
		4+00-6+50	BR (250)	1635.1	1977			2+90-3+40	HP (50)	1637.5	1977
		6+50-8+50	BR (200)	1635.1	1977	1322.3	L	1+80-2+10	SFRF	1637.5	1978
		8+50-8+90	BR (40)	1635.0	1977			2+10-2+60	HP (50)	1637.5	1978
		10+45-11+45	BR (100)	1635.0	1977						
1324.32	L	0+00-0+20	WSFRF (20)	1635.1	1978	1322.2	L	2+70-3+00	SFRF	1637.5	1978
1324.3	L	1+40-1+70	SFRF	1639.0	1977			3+00-3+50	HP (50)	1637.5	1978
		1+70-2+00	HP (60)	1639.0	1977	1322.1	L	3+50-3+80	SFRF	1637.5	1978
1324.2	L	1+00-1+50	SFRF	1639.0	1977			3+80-4+30	HP (50)	1637.5	1978
		1+50-1+80	HP (30)	1639.0	1977	1322.0	L	3+55-3+85	SFRF	1637.5	1977
1324.15	L	1+00-1+30	SFRF	1639.0	1978			3+85-4+35	HP (60)	1637.5	1977
		1+30-1+60	HP (60)	1639.0	1978						
1324.1	L	0+90-1+20	SFRF	1639.0	1978	1321.95	L	3+00-3+30	SFRF		1979
		1+20-1+50	HP (30)	1639.0	1978			3+30-4+00	HP (70)		1979
1324.0	L	1+30-1+60	SFRF	1639.0	1977	1321.92	L	3+00-3+30	SFRF		1980
		1+60-1+90	HP (30)	1639.0	1977	1321.89	L	3+30-3+60	HP (30)		1980
1323.9	L	2+50-3+00	WSFRF (60)		1978						1979
1323.89	L	0+00-4+00	BR (100)		1978	1321.81	L	1+75-2+50	WR (75)		1979
		6+50-10+50	BR (400)		1978	1321.80	L	0+00-6+00	RR (600)		1979
1323.81	L	2+25-3+25	WSFRF (100)		1977			9+00-15+00	RR (400)		1979
1323.8	L	0+00-4+40	WR (440)		1977			18+00-22+00	RR (400)		1979
		6+40-10+80	WR (440)		1977			25+00-27+50	CR (250)		1979
		12+80-17+20	WR (440)		1977	1321.60	L	6+00-6+50	WR (50)		1979
		19+20-23+60	WR (440)		1977	1321.40	L	4+70-5+20	WR (50)		1979
		25+60-30+00	WR (500)		1977	1321.31	L	0+60-1+10	WR (60)		1979
1323.75	L	2+20-2+70	WSFRF (50)		1977	1321.15	L	0+75-1+25	SFRF		1979
1323.65	L	1+60-2+10	WSFRF (50)		1977			1+25-2+25	ECD		1979
1323.55	L	2+40-2+90	WSFRF (50)	1633.7 (CRP)	1977			1+75-	EG		1979
1323.45	L	3+60-4+10	WSFRF (50)	1633.6 (CRP)	1977			2+25-6+75	ECD		1979
1323.4	L	4+00-4+30	SFRF	1638.5	1977						
		4+30-4+80	HP (50)	1638.5	1977	1320.8	L	1+30-2+30	SFRF		1979
1323.39	L	0+00-2+00	BR (200)		1979			1+80	EG		1979
1323.2	L	2+20-2+70	SFRF	1638.3	1977			2+30-5+80	ECD		1979
		2+70-3+00	HP (30)	1638.3	1977	1320.71	L	0+50-1+00	WR (50)		1979
1323.06	L	1+75-2+75	WSFRF (100)	1633.2 (CRP)	1977	1320.70	L	0+00-5+00	RR (500)		1979
1323.05	L	0+00-1+00	CR (60)	1633.2 (CRP)	1977			5+00-9+00	WR (400)		1979
		1+00-7+50	CR (650)		1977			11+70-22+70	CR (1100)		1979
		10+50-11+50	CR (100)		1977	1320.53	L	0+80-1+30	WR (50)		1979
		11+50-18+00	CR (650)		1977						
		21+00-22+00	CR (100)		1977						
		22+00-28+00	CR (600)		1977						
1322.85	L	1+50-2+50	WSFRF (100)	1633.1 (CRP)	1977						

2098
23822

151
152
153

109
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111

2475 2 HP1056
3550
3450
3045
Dike 900
WR
CR
RR
2160

sp 1174

RELEASE AND TERMINATION OF EASEMENT

THIS INDENTURE, Made this 22ND day of AUGUST, 1985, between the Burleigh County Water Resource District, formerly known as the Burleigh County Water Management District, a body politic and a corporation under the laws of the State of North Dakota of Bismarck, North Dakota, party of the first part, and Pete Hogue, a/k/a Peter Hogue residing north of Bismarck, North Dakota, party of the second part;

WITNESSETH:

WHEREAS, On September 13, 1976, the party of the second part granted a perpetual easement to the party of the first part to, among other things, enter upon, occupy and use portions of the land described as the West Half (W-1/2) of Section Twenty-seven (27) in Township One Hundred Forty (140) North, Range Eighty-one (81) West in Burleigh County, North Dakota, which easement was filed in the Office of the Register of Deeds at 9:45 A.M., on September 22, 1976, and there recorded as Document No. 272818, and;

WHEREAS, On September 13, 1976, the party of the second part granted a perpetual easement to the party of the first part to, among other others, enter upon, occupy and use portions of the land described as the East Half (E-1/2) of Section Twenty-eight (28) in Township One Hundred Forty (140) North, Range Eighty-one (81) West in Burleigh County, North Dakota, which easement was filed in the Office of the Register of Deeds at 9:45 A.M., on September 22, 1976, and there recorded as Document No. 272820.

NOW, THEREFORE, In consideration of Ten Dollars (\$10.00) and other valuable consideration, receipt of which is hereby acknowledged, the party of the first part hereby releases to the party of the second part the easements described above, it being the intention of the parties to terminate said easement.

IN TESTIMONY WHEREOF, The said grantor has caused these presents to be executed in its corporate name by its Chairman and

PERPETUAL EASEMENT

THIS INDENTURE, made this 13th day of September 1976, by and between Pete Hogue, hereinafter referred to as the Grantor, and the Burleigh County Water Management District, hereinafter referred to as the District.

WITNESSETH:

WHEREAS, the Grantor is owner in fee of the following tract of land situated in Burleigh County, State of North Dakota, to wit:

All that portion of the E $\frac{1}{2}$ of Section 28, Township 140 North, Range 81 West, 5th P. M., lying within a strip of land east of the left bank of the Missouri River and located on the westerly side of and measured at right angles to the following described Corps of Engineers centerline as surveyed and staked. Said easement is for the purpose of bank protection.

Beginning at a point N 53° 09' 43" W five hundred twenty-eight point three seven feet (528.37') from the common corner of Sections 21-22 and 27-28 said Township and Range, thence S 00° 57' 28" E fifty-six point nine three feet (56.93') to the true point of beginning, thence running S 36° 16' 55" E six hundred thirty-nine point twenty-two feet (639.22') to a point, thence running S 17° 37' 10" E six hundred nine point sixteen feet (609.16') to a point, thence running S 04° 27' 09" E six hundred eighty-seven point twenty-eight feet (687.28') to a point, thence running S 16° 26' 33" W eight hundred fourteen point thirteen feet (814.13') to a point, thence running S 21° 34' 18" W eight hundred thirty-five point nineteen feet (835.19') to a point, thence S 25° 40' 21" W one thousand five hundred one point forty-seven feet (1501.47') to a point, thence running S 02° 01' 39" W until said line crosses the south line of said E $\frac{1}{2}$, excepting all that portion belonging to Raymond and Betty Martel and a tract belonging to the Fraternal Order of Eagles. Tract contains 31.73 acres, more or less, also including all right of access, including ingress to and egress from the remaining property.

WHEREAS, said tract of land is needed by the District, the North Dakota State Water Commission, and the United States Army Corps of Engineers in connection with the construction and subsequent maintenance and operation of a bank stabilization and protection project along the Missouri River.

NOW, THEREFORE, in consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and the benefits to be derived by the Grantor from the construction, maintenance and operation of said Missouri River bank stabilization and protection project, the Grantor does hereby grant, bargain, sell and convey to the District and its assigns, a perpetual right and easement to enter upon, occupy and use the aforesaid tract of land for the purpose of constructing, maintaining,

and operating bank stabilization and protection devices, structures and facilities, and appurtenant devices, structures and facilities in connection with said bank stabilization and protection project, including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, and obstructions that interfere with the construction, maintenance or operation of said bank stabilization project, together with the right to perform any and all acts thereupon necessary and incident thereto and all right of access, including ingress to and egress from each aforesaid tract of land.

AND IN FURTHER consideration of the aforesaid sum of money and the benefits to be derived by the Grantor as hereinbefore set forth, the Grantor does hereby grant, bargain, sell and convey to the District and its assigns, a perpetual right and easement over and across the aforesaid described tract for the purpose of constructing and maintaining access roads. In order to confine to a minimum the impact of construction operations on the natural environment, the clearing of timber and brush within right-of-way areas shall be limited to the minimum amount necessary to provide haul roads. The width and amount of such haul roads shall be limited to the amount actually necessary to provide access to construction sites and dike abutments.

All alterations shall be restored as nearly as possible to original conditions after completion of contract work. Where additional required right-of-way is not covered by this easement, the contractor shall make all necessary arrangements with the landowner for the utilization, clearing and restoration of the required areas.

RESERVING, however, to the Grantor and his assigns, all such rights and privileges in said tract of land not specifically granted to the District by this instrument.

TO HAVE AND TO HOLD, the rights and easements hereunto granted to the District and its assigns, forever; the Grantor for himself and his assigns, do hereby covenant with the District, and its assigns, that he has good and sufficient right, title and interest in and to said tract of land to sell and convey the rights and easements as aforesaid, and that he will warrant and defend the title to the District and its assigns, against the lawful claims and demands of all persons.

WITNESS


Pete Hogue

STATE OF NORTH DAKOTA }
COUNTY OF BURLEIGH }

On this 13th day of September, 1976, before me, a Notary Public within and for said County, personally appeared Fete Hogue, who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

James T. Eastgate
Notary Public, Burleigh County
State of North Dakota



My Commission Expires:
JAMES T. EASTGATE
Notary Public, BURLEIGH CO., N. Dak.
My Commission Expires Aug. 4, 1977.



STATE OF NORTH DAKOTA)
COUNTY OF BURLEIGH,) ss
I hereby certify that the within instru-
ment was filed in this office for record on
the 13th day of SEP 22 1976
19... at 9:45 o'clock P. M. and
was duly recorded **DOCUMENT NO. 272820**
Sharon Helms
REGISTER OF DEEDS
By _____ Deputy

#2⁰⁰ Burleigh Co. Notary Seal

PERPETUAL EASEMENT

THIS INDENTURE, Made this 22nd day of August, 1985, by and between Pete Hogue, a/k/a Peter Hogue, hereinafter referred to as the Grantor, and the Burleigh County Water Resource District, hereinafter referred to as the District.

WITNESSETH:

WHEREAS, The Grantor is the owner in fee of the following tract of land situated in Burleigh County, State of North Dakota, to-wit:

All that part of Sections Twenty-seven (27) and Twenty-eight (28) in Township One Hundred Forty (140) North, Range Eighty-one (81) West, Fifth Principal Meridian, that lies within the plat of "Bourgeois Island" as shown on said plat in Document No. 139893 recorded in the Office of the Register of Deeds of said Burleigh County and that lies within one hundred (100) feet of the left bank of the Missouri River, as the same is now or may hereafter be situated.

WHEREAS, Said tract of land is needed by the District, the North Dakota State Water Commission, and the United States Army Corps of Engineers in connection with the construction, maintenance and operation of a bank stabilization and protection project along the Missouri River.

NOW, THEREFORE, In consideration of the sum of One Dollar, the receipt of which is hereby acknowledged, and the benefits to be derived by the Grantor from the construction, maintenance and operation of said Missouri River bank stabilization and protection project, the Grantor does hereby grant, bargain, sell and convey to the District and its assigns, a perpetual right and

easement to enter upon, occupy and use the aforesaid tract of land for the purpose of constructing, maintaining, and operating bank stabilization and protection devices, structures and facilities, and appurtenances, devices, structures and facilities in connection with said bank stabilization and protection project, including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, and obstructions that interfere with the construction, maintenance or operation of said bank stabilization project, together with the right to perform any and all acts thereupon necessary and incident thereto.

AND IN FURTHER Consideration of the aforesaid sum of money and the benefits to be derived by the Grantor as hereinbefore set forth, the Grantor does hereby grant, bargain, sell and convey to the District and its assigns, a perpetual right and easement over and across the aforesaid described tract for the purpose of constructing and maintaining access roads. In order to confine to a minimum the impact of construction operations on the natural environment, the clearing of timber and brush within right-of-way areas shall be limited to the minimum amount necessary to provide haul roads. The width and amount of such haul roads shall be limited to the amount actually necessary to provide access to construction sites and dike abutments.

All alterations shall be restored as nearly as possible to original conditions after completion of contract work. Where additional required right-of-way is not covered by this easement, the contractor shall make all necessary arrangements with the landowner for the utilization, clearing and restoration of the

required areas.

ALSO IN FURTHER Consideration of the aforesaid benefits to be derived by the Grantor, the Grantor does hereby grant, bargain, sell and convey to the District and its assigns, for the purpose of providing access to and from the above described tracts only, a perpetual right and easement over and across the following described land, to-wit:

All that part of Section Twenty-eight (28), Township One Hundred Forty (140) North, Range Eighty-one (81) West, Burleigh County, North Dakota, shown on the survey of Bourgois Island as recorded in the Burleigh County Courthouse as Document No. 139893 and that lies within the following described traverse:

Beginning at the southeast corner of Lot One (1), Block One (1), Riverside Subdivision; thence southwesterly and to the left on a 840.00 foot radius curve, the radius of which bears S. 71°22'33" E. from said point, along an extension of the west line of Island Road, an arc distance of 40.00 feet; thence N. 88°00'00" W. a distance of 388 feet, more or less to the east bank of the Missouri River; thence northeasterly along said east bank a distance of 151 feet, more or less to the southwest corner of Lot One (1), Block One (1) Riverside Subdivision; thence S. 71°22'33" E. along the south line of said Lot One (1) a distance of 375 feet, more or less to the point of beginning.

RESERVING, However, to the Grantor and his assigns, all such rights and privileges in said tract of land not specifically granted to the District by this instrument.

TO HAVE AND TO HOLD, The rights and easements hereunto granted to the District and its assigns, forever; the Grantor for himself and his assigns, does hereby covenant with the District, and its assigns, that he has good and sufficient right, title and interest in and to said tract of land to sell and convey the

rights and easements as aforesaid, and that he will warrant and defend the title to the District and its assigns, against the lawful claims and demands of all persons.

IN WITNESS WHEREOF, The said party of the first part hereunto set his hand the day and year first above written.

Pete Hogue
Pete Hogue

STATE OF NORTH DAKOTA)
COUNTY OF BURLEIGH) ss.

On this 22nd day of AUGUST A.D. 1985, before me personally appeared Pete Hogue known to me to be the same person who is described in and who executed the within and foregoing instrument and acknowledged to me that he executed the



Norman A. Steidle
Notary Public
Burleigh County, North Dakota

My Commission Expires: July 11, 1987



STATE OF NORTH DAKOTA
COUNTY OF BURLEIGH
HEREBY CERTIFY THAT THE WITHIN INSTRUMENT
WAS FILED IN THIS OFFICE FOR RECORD ON
SEP 3 1985 AT 9:15 O'CLOCK A. M. AND
RECORDED AS DOCUMENT No. 302794
BY Norman A. Steidle
DEPUTY REGISTER OF DEEDS

4:00 PM Norman A. Steidle
yours truly
RIP W. Riley B. B. B.

Appendix D - Regulatory Considerations

Hogue Island Bank Stabilization

Special Assessment District

The following is a summary of the regulatory considerations as it relates to the permitting of the restoration/rehabilitation of the Section 32 Demonstration Project (i.e., hardpoints) and the previously existing residential bank stabilization.

1. The USACE Section 32 Demonstration project areas include not only specific revetments, but all properties located along the designated/protected river reach. Subsequently, the residential segments between the hardpoints are considered “project lands”. The access easement provided by the Burleigh County Water Resource District (BCWRD) included the entire bank line along with a larger inland area. This easement was narrowed, however, to 100 feet from the top of bank to allow rural residential development. Unfortunately, this easement line was not included on the plat documents, which has created issues over the years and undesirable encroachments that influence access.
2. The USACE anticipated erosion between these hardpoints would occur, which was a design consideration and part of their original environmental review. Understand at the time there were no residential properties in this area, nor were any anticipated, so the demonstration project revetments were not designed nor intended to protect such property. The design erosion has now occurred or been exceeded (i.e., hardpoint failure); therefore, stabilization of the bank line is no longer an issue regarding river sediments within the permitting process.
3. Most of the residential stabilization previously installed in this reach was neither authorized or permitted, via the USACE, Sovereign Land, or within the BCWRD’s easement. In some instances, there are direct violations with construction occurring within the easements, creating potential title issues for these properties. The new bank erosion has complicated this by placing more structures within the access easements, as the landward boundary moves with the top of bank location. Subsequently, revised easements are recommended after the project restoration/rehabilitation and new residential stabilization is completed. If the residential stabilization is not completed under a combined project the easements would likely not be modified and the property subject to that which exists today.
4. Typical residential stabilization projects, via contractors, do not always comply with recommended design standards, as the regulatory review does not require. The recent private contractor applications are an indication of that lower standard. A separate technical review of these applications was completed and will be provided to the regulatory agencies if they were to proceed independently.

5. Given erosion risks associated with this river reach, along with the North Dakota Department of Water Resources (DWR) and BCWRD obligations to Operate and Maintain the Section 32 features, it is recommended all protection measures, including the residential stabilization, comply with reasonable USACE design standards. This is included in the Preliminary Engineering Report plan set and is necessary to protect the Section 32 rehabilitated/restored facilities, as well as reduce the risks to the residential properties.
6. Subsequently, the project, Section 32 and residential stabilization features, must be submitted under a single regulatory permit application, however the USACE or NDDWR may elect to create individual permits for the various residents to assign responsibility and maintenance provisions. Given the nature of the regulatory permitting and physical interaction of the protective measures individually permitting segments is not recommended as it complicates the regulatory review and comment timelines. The timeline for construction is already shortened by the design, financing, and potential individual permit process. If evaluated un separate applications the impacts of each facility on the other is required, therefore, combining them would significantly streamline the process.
7. Subsequently, leaving segments to be permitted separately is unacceptable if the full regulatory review and construction is to occur in 2023. In addition, to control the quality and compliance with construction specifications by individuals under separate contractors is not recommended. Such individual work, and potentially substandard design/construction places other properties owners at risk along this reach. Construction of individual segments also increases the risk for bank line erosion and failure that may affect other properties not currently impacted.
8. Relating to costs, the project will be publicly bid, offering the selection of the responsible lowest bid. This is required for the Section 32 rehabilitation/restoration and the economy of scale would apply to the residential stabilization features. Expenses associated with engineering design, regulatory permitting and administrative fees will be prorated to the various public and private revetments. Each parcel will be assessed its share under the special assessment district process, based on actual costs. Some residents have noted they would be unable to pay for these improvements out of pocket, therefore, their only means to accomplish the desired protection is through the special assessment district. If the vote fails, the project would not be completed, and those unprotected areas would create a greater risk to those areas that may later be protected by individual landowner actions.
9. The project also requires a *floodplain development permit* from the Burleigh County Floodplain Administrator, which may include a no-rise evaluation to evaluate work located within the floodway.

CONSTRUCTION PLANS FOR BURLEIGH COUNTY WATER RESOURCE DISTRICT HOGUE ISLAND BANK STABILIZATION

APPENDIX E

BISMARCK, ND
JUNE, 2023

SHEET INDEX

- 1 COVER SHEET
- 2 ESTIMATED QUANTITIES
- 3 EXISTING CONDITIONS
- 4 PROPOSED CONDITIONS
- 5 HARDPOINT DETAILS
- 6 TYPICAL SECTION
- 7 - 14 LANDOWNER LOTS



3712 LOCKPORT STREET
BISMARCK, ND 58503
P: 701.323.0200
www.houstoneng.com



LOCATION MAP



VICINITY MAP

GOVERNING STANDARDS:

MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), 2009 EDITION. THIS SPECIFICATION INCLUDES THE SHAPES, COLORS, AND FONTS USED IN ROAD MARKINGS AND SIGNS. ALL TRAFFIC CONTROL DEVICES MUST CONFORM TO THESE STANDARDS.

GOVERNING SPECIFICATIONS:

CONSTRUCTION SPECIFICATIONS FOR MUNICIPAL PUBLIC WORKS IMPROVEMENTS, ADOPTED BY THE CITY OF BISMARCK, NORTH DAKOTA, SHALL APPLY TO ALL STANDARD DRAWINGS CURRENTLY IN EFFECT AND OTHER CONTRACT PROVISIONS SUBMITTED HEREIN.

UTILITY NOTE:

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION, AS BUILT MAPS AS PROVIDED BY MUNICIPALITIES OR UTILITY COMPANIES, AND/OR EXISTING DRAWINGS. THERE IS NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN INDICATE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. NOR IS THERE A GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES. THE CONTRACTOR AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MAY RESULT FROM THEIR FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UTILITIES.

PRELIMINARY
NOT FOR CONSTRUCTION

ESTIMATED QUANTITIES

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
1	CONTRACT BOND	LSUM	1
2	MOBILIZATION	LSUM	1
3	RIPRAP D50	TONS	10213
4	GEOTEXTILE FABRIC	SY	3005
5	TOPSOIL	CY	269
6	SEEDING & MULCHING	AC	0.66

ESTIMATED QUANTITIES BY STATION

STATION RANGE	UNIT	QUANTITY
RIPRAP D50		
STA 0+00.00 TO STA 0+98.77	RESIDENTIAL RESTORATION (BEIERLE)	TONS 35
STA 0+00.00 TO STA 0+07.21	SECTION 32 REVETMENT (STRUCTURE 2)	TONS 626
STA 0+98.77 TO STA 2+37.21	RESIDENTIAL RESTORATION (NEIS)	TONS 780
STA 2+37.21 TO STA 3+52.45	RESIDENTIAL RESTORATION (HOMELVIG)	TONS 649
STA 3+52.45 TO STA 4+80.20	RESIDENTIAL RESTORATION (CARLSON & COLEMAN)	TONS 720
STA 4+80.20 TO STA 6+41.09	RESIDENTIAL RESTORATION (N. STRUTZ)	TONS 906
STA 4+88.59 TO STA 5+34.62	SECTION 32 REVETMENT (STRUCTURE 3)	TONS 2147
STA 6+41.09 TO STA 8+17.55	RESIDENTIAL RESTORATION (W. STRUTZ)	TONS 994
STA 7+18.99 TO STA 7+53.83	SECTION 32 REVETMENT (STRUCTURE 4)	TONS 1701
STA 8+17.55 TO STA 9+12.10	RESIDENTIAL RESTORATION (BRIERLY)	TONS 533
STA 9+12.10 TO STA 10+00.00	RESIDENTIAL RESTORATION (BEYER)	TONS 495
STA 9+61.36 TO STA 9+91.73	SECTION 32 REVETMENT (STRUCTURE 5)	TONS 627
GEOTEXTILE FABRIC		
STA 0+00.00 TO STA 0+98.77	RESIDENTIAL RESTORATION (BEIERLE)	SY 148
STA 0+98.77 TO STA 2+37.21	RESIDENTIAL RESTORATION (NEIS)	SY 439
STA 2+37.21 TO STA 3+52.45	RESIDENTIAL RESTORATION (HOMELVIG)	SY 365
STA 3+52.45 TO STA 4+80.20	RESIDENTIAL RESTORATION (CARLSON & COLEMAN)	SY 405
STA 4+80.20 TO STA 6+41.09	RESIDENTIAL RESTORATION (N. STRUTZ)	SY 510
STA 6+41.09 TO STA 8+17.55	RESIDENTIAL RESTORATION (W. STRUTZ)	SY 559
STA 8+17.55 TO STA 9+12.10	RESIDENTIAL RESTORATION (BRIERLY)	SY 300
STA 9+12.10 TO STA 10+00.00	RESIDENTIAL RESTORATION (BEYER)	SY 279
TOPSOIL		
STA 0+00.00 TO STA 0+98.77	RESIDENTIAL RESTORATION (BEIERLE)	CY 13
STA 0+00.00 TO STA 0+07.21	SECTION 32 REVETMENT (STRUCTURE 2)	CY 2
STA 0+98.77 TO STA 2+37.21	RESIDENTIAL RESTORATION (NEIS)	CY 39
STA 2+37.21 TO STA 3+52.45	RESIDENTIAL RESTORATION (HOMELVIG)	CY 32
STA 3+52.45 TO STA 4+80.20	RESIDENTIAL RESTORATION (CARLSON & COLEMAN)	CY 36
STA 4+80.20 TO STA 6+41.09	RESIDENTIAL RESTORATION (N. STRUTZ)	CY 32
STA 4+88.59 TO STA 5+34.62	SECTION 32 REVETMENT (STRUCTURE 3)	CY 13
STA 6+41.09 TO STA 8+17.55	RESIDENTIAL RESTORATION (W. STRUTZ)	CY 40
STA 7+18.99 TO STA 7+53.83	SECTION 32 REVETMENT (STRUCTURE 4)	CY 10
STA 8+17.55 TO STA 9+12.10	RESIDENTIAL RESTORATION (BRIERLY)	CY 27
STA 9+12.10 TO STA 10+00.00	RESIDENTIAL RESTORATION (BEYER)	CY 16
STA 9+61.36 TO STA 9+91.73	SECTION 32 REVETMENT (STRUCTURE 5)	CY 9
SEEDING & MULCHING		
STA 0+00.00 TO STA 0+98.77	RESIDENTIAL RESTORATION (BEIERLE)	AC 0.02
STA 0+00.00 TO STA 0+07.21	SECTION 32 REVETMENT (STRUCTURE 2)	AC 0.01
STA 0+98.77 TO STA 2+37.21	RESIDENTIAL RESTORATION (NEIS)	AC 0.10
STA 2+37.21 TO STA 3+52.45	RESIDENTIAL RESTORATION (HOMELVIG)	AC 0.08
STA 3+52.45 TO STA 4+80.20	RESIDENTIAL RESTORATION (CARLSON & COLEMAN)	AC 0.09
STA 4+80.20 TO STA 6+41.09	RESIDENTIAL RESTORATION (N. STRUTZ)	AC 0.08
STA 4+88.59 TO STA 5+34.62	SECTION 32 REVETMENT (STRUCTURE 3)	AC 0.03
STA 6+41.09 TO STA 8+17.55	RESIDENTIAL RESTORATION (W. STRUTZ)	AC 0.10
STA 7+18.99 TO STA 7+53.83	SECTION 32 REVETMENT (STRUCTURE 4)	AC 0.02
STA 8+17.55 TO STA 9+12.10	RESIDENTIAL RESTORATION (BRIERLY)	AC 0.07
STA 9+12.10 TO STA 10+00.00	RESIDENTIAL RESTORATION (BEYER)	AC 0.04
STA 9+61.36 TO STA 9+91.73	SECTION 32 REVETMENT (STRUCTURE 5)	AC 0.02

PRELIMINARY
NOT FOR CONSTRUCTION

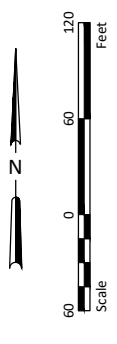
No.	Revision	Date	By

HOUSTON
engineering, inc.

Drawn by: CD
Checked by: MG
Date: 6-2-23
Scale: AS SHOWN

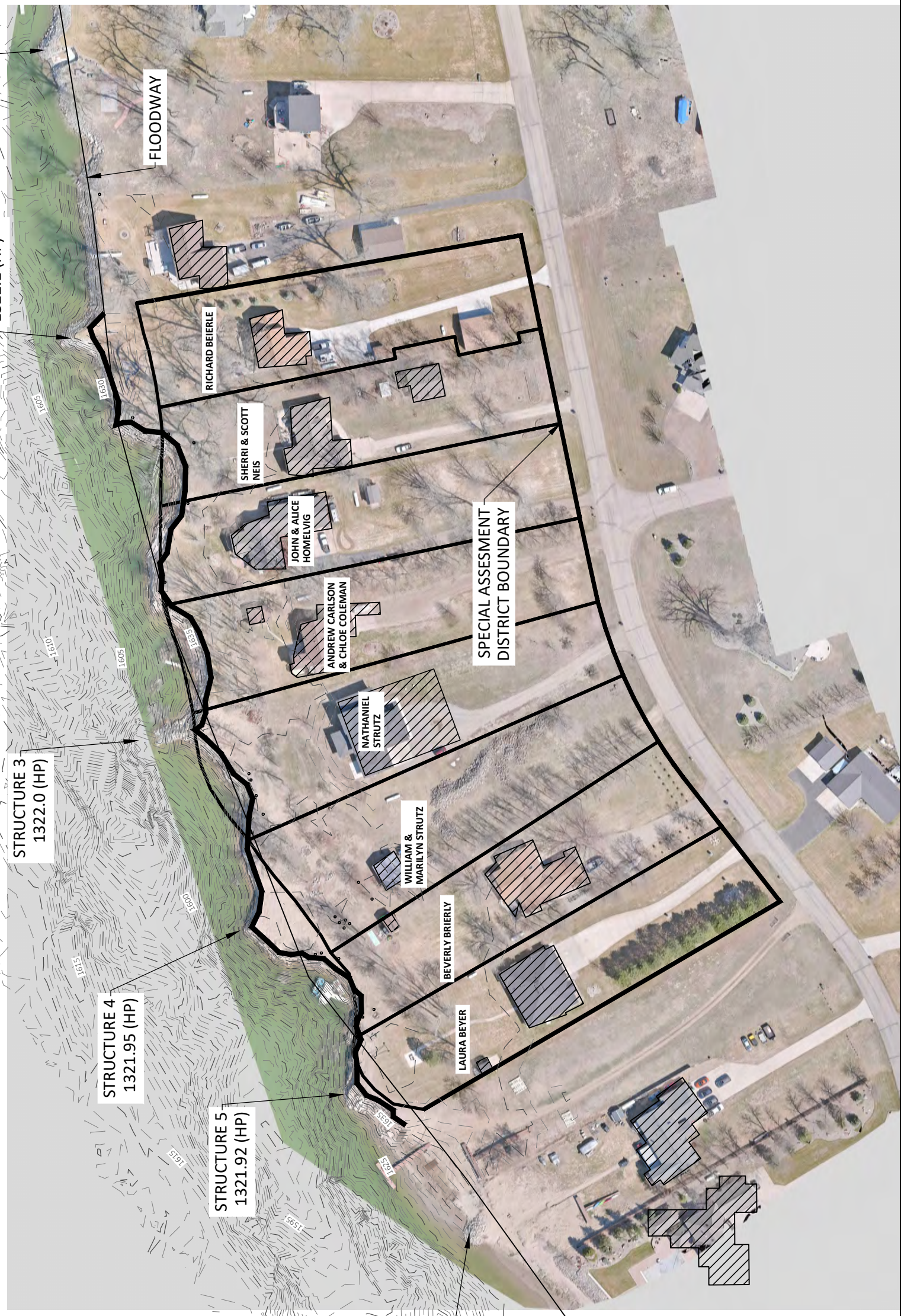
HOGUE ISLAND BANK STABILIZATION
BURLEIGH COUNTY WATER RESOURCE DISTRICT
BISMARCK, ND

H:\BN\6000\6025\6025_0021 Missouri River Bank Stabilization\9514 Island Road Bank Erosion\CAD\Plans\2023\Cover Sheet.dwg-Layout1 (2)-6/8/2023 4:38 PM-(dell)



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

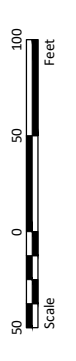
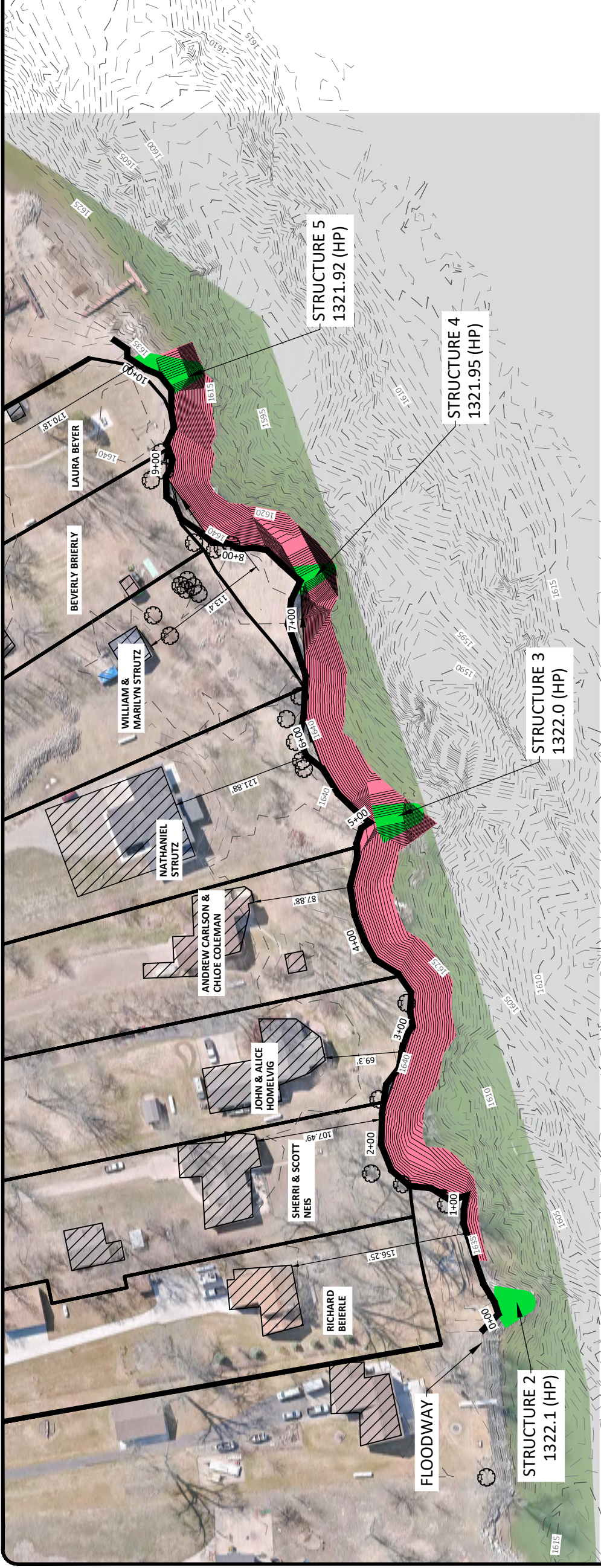
LEGEND:
 LOT LINES
 BANK LINE POST-EROSION
 BUILDING FOOTPRINT
 MINOR CONTOUR
 MAJOR CONTOUR
 SPECIAL ASSESSMENT DISTRICT BOUNDARY



PRELIMINARY
 NOT FOR CONSTRUCTION

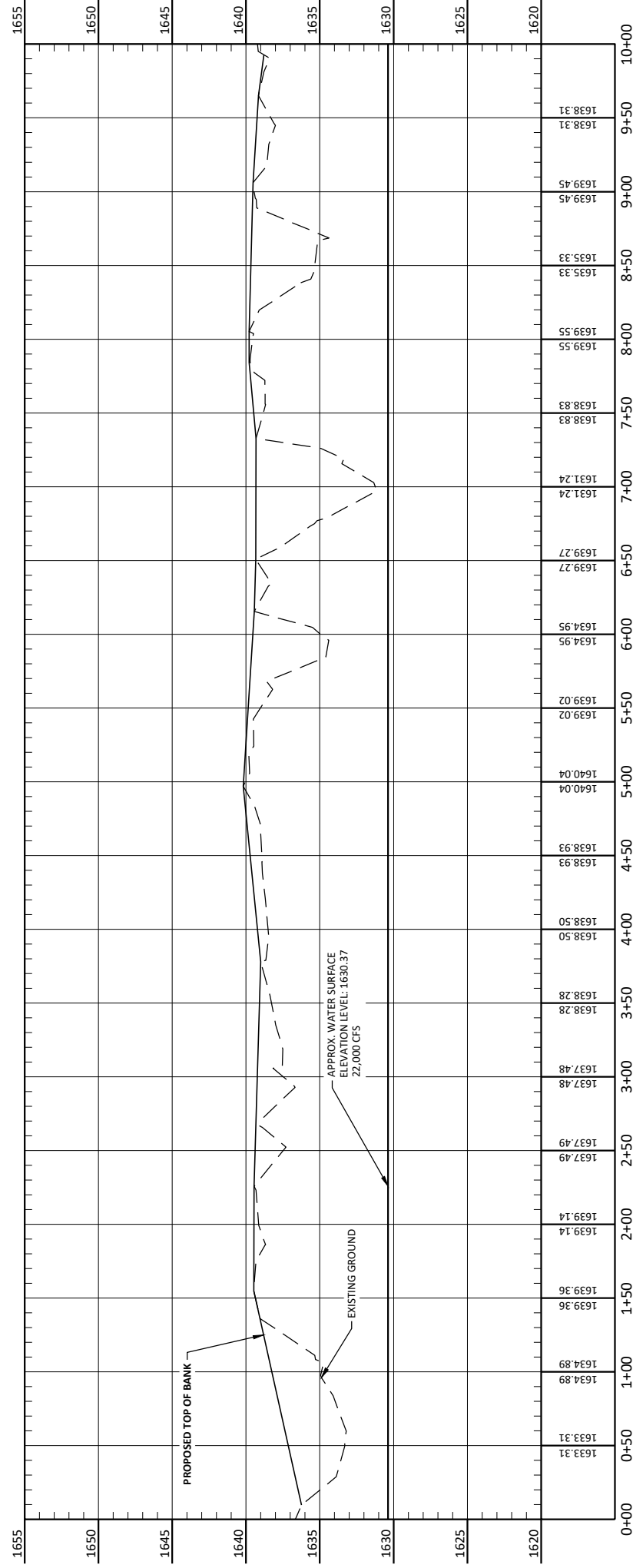
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				HEI NO. 6025-0021					

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 LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLANE ELEVATION: 1633.30
- LEGEND:
- RESTORATION AREA
 - STRUCTURE RESTORATION AREA
 - LOT LINES
 - BANK LINE POST-EROSION
 - BUILDING FOOTPRINT
 - EXISTING MINOR CONTOUR
 - EXISTING MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - SPECIAL ASSESSMENT DISTRICT BOUNDARY

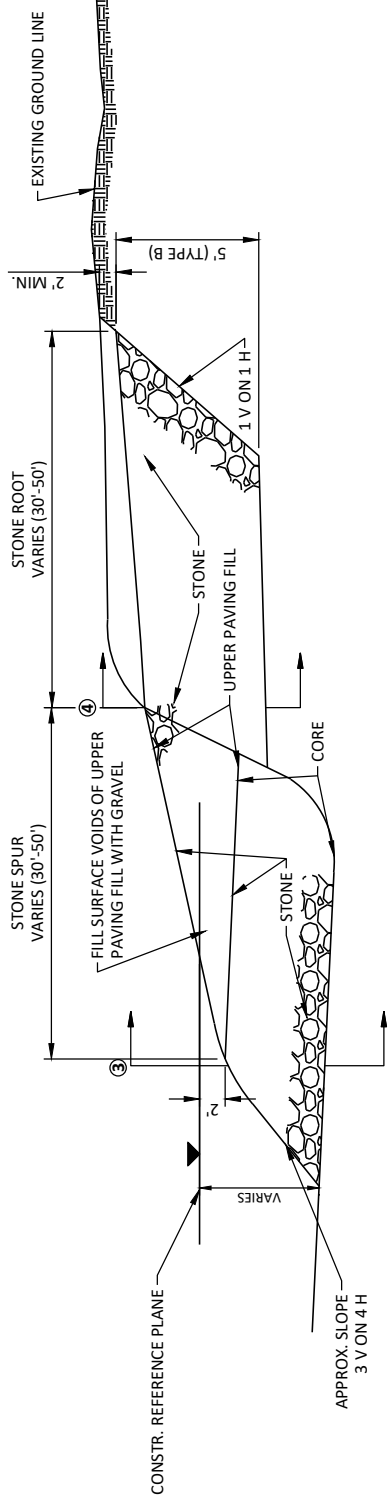
NOTES:
 1. CONTRACTOR TO PLACE RIPRAP ON SLOPES INSTEAD OF EXCAVATING WHERE EXCAVATION WOULD BE SHOWN ON PLAN SHEETS.



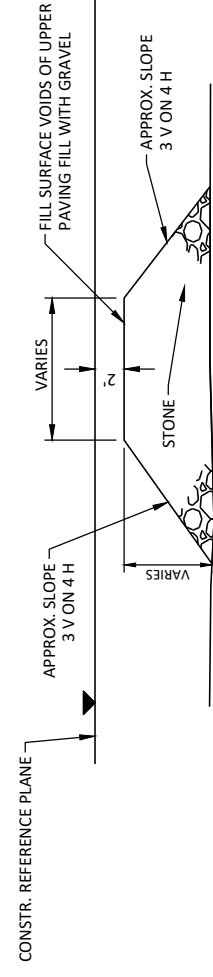
PRELIMINARY
 NOT FOR CONSTRUCTION

No.	Revision	Date	By		Drawn by CD	Date 6-2-23	HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND	PROPOSED CONDITIONS	SHEET 4
					Checked by MG	Scale AS SHOWN		PROJECT NO. 6025-0021	

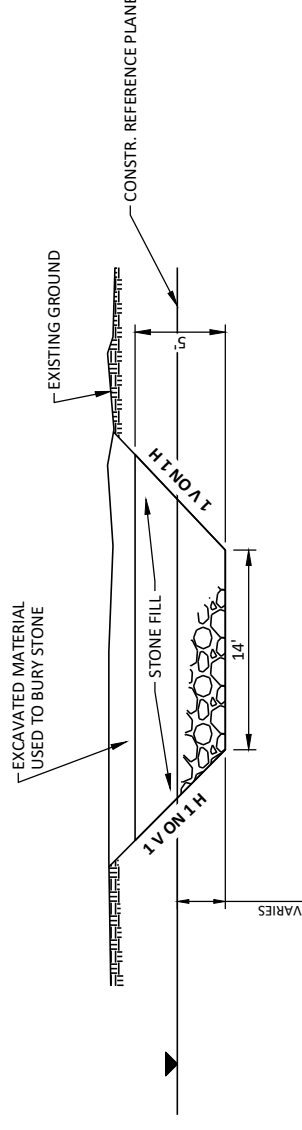
SECTION 32 REVETMENTS



HARD POINT - TYPE II
NOT TO SCALE



SECTION 3 STONE SPUR
NOT TO SCALE



SECTION 4 STONE ROOT - TYPE B
NOT TO SCALE

PRELIMINARY
NOT FOR CONSTRUCTION

No.	Revision	Date	By



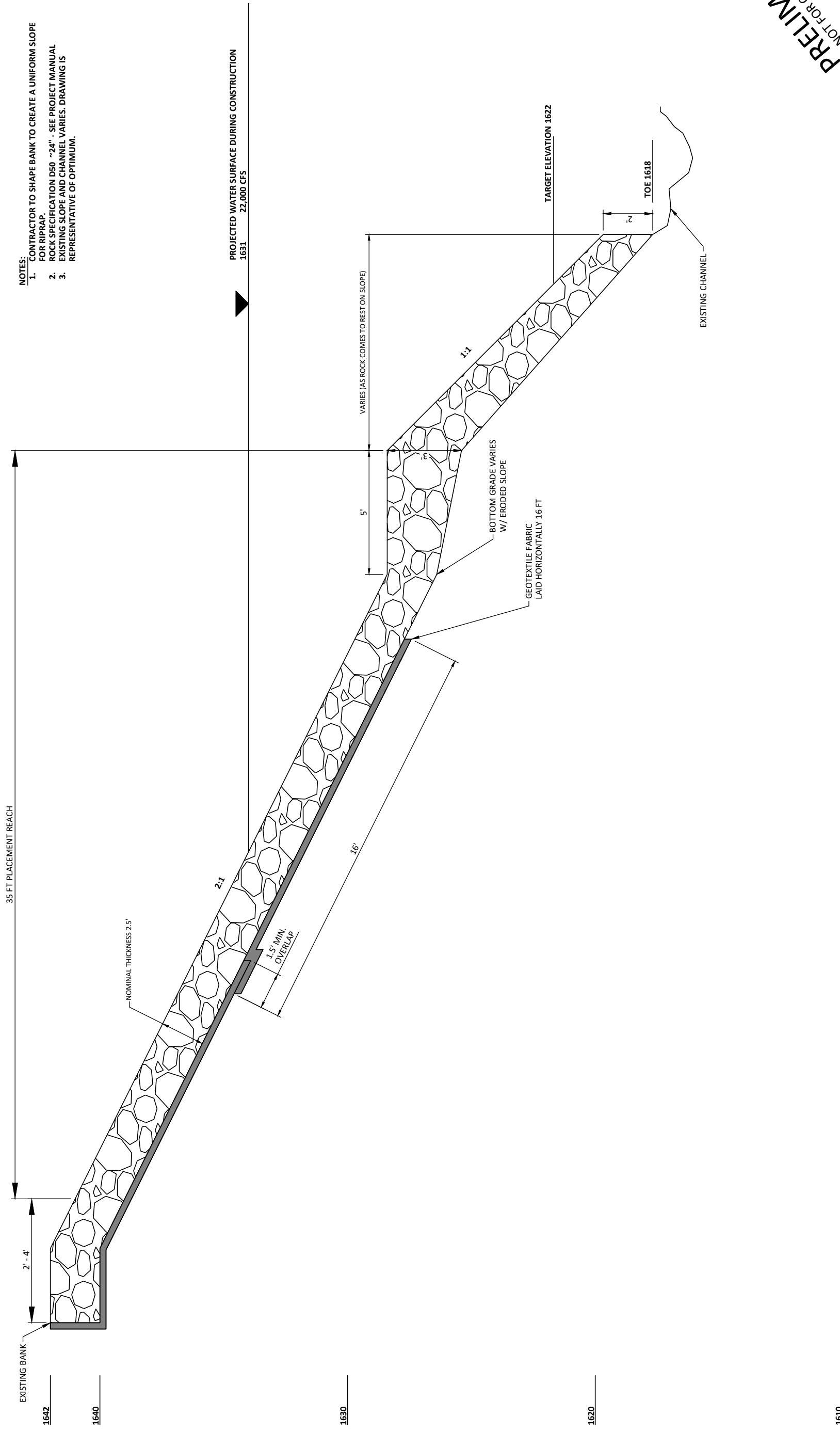
Drawn By	CD	Date	6-2-23
Checked by	MG	Scale	AS SHOWN

HOGUE ISLAND BANK STABILIZATION
BURLEIGH COUNTY WATER RESOURCE DISTRICT
BISMARCK, ND

HARDPOINT DETAILS
PROJECT NO. 6025-0021

SHEET
5

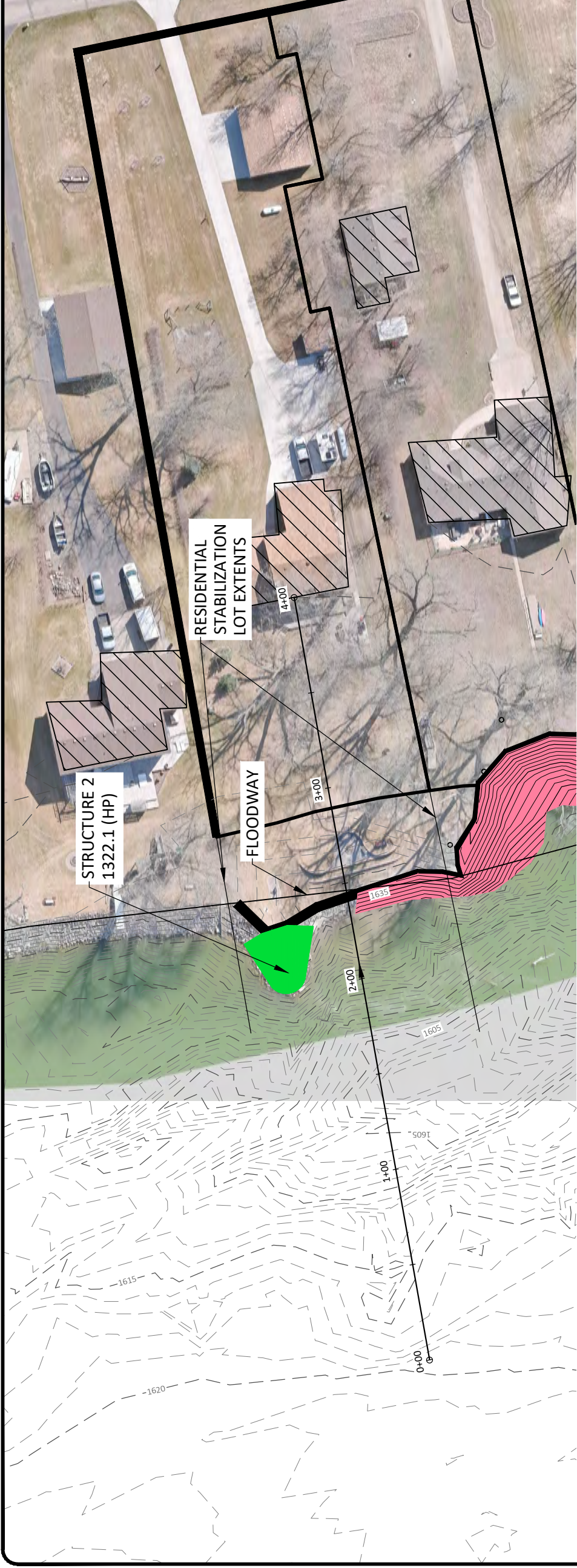
RESIDENTIAL STABILIZATION



- NOTES:
1. CONTRACTOR TO SHAPE BANK TO CREATE A UNIFORM SLOPE FOR RIPRAP.
 2. ROCK SPECIFICATION D50 ~74" - SEE PROJECT MANUAL
 3. EXISTING SLOPE AND CHANNEL VARIES. DRAWING IS REPRESENTATIVE OF OPTIMUM.

PRELIMINARY
NOT FOR CONSTRUCTION

		Drawn by CD	Date 6-2-23	TYPICAL SECTION	SHEET
HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND		Checked by MG	Scale AS SHOWN	PROJECT NO. 6025-0021	6
No.	Revision	Date	By		



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

LEGEND:

- RESTORATION AREA
- STRUCTURE RESTORATION AREA
- LOT LINES
- BANK LINE POST-EROSION
- BUILDING FOOTPRINT
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- SPECIAL ASSESSMENT DISTRICT BOUNDARY

NOTE:

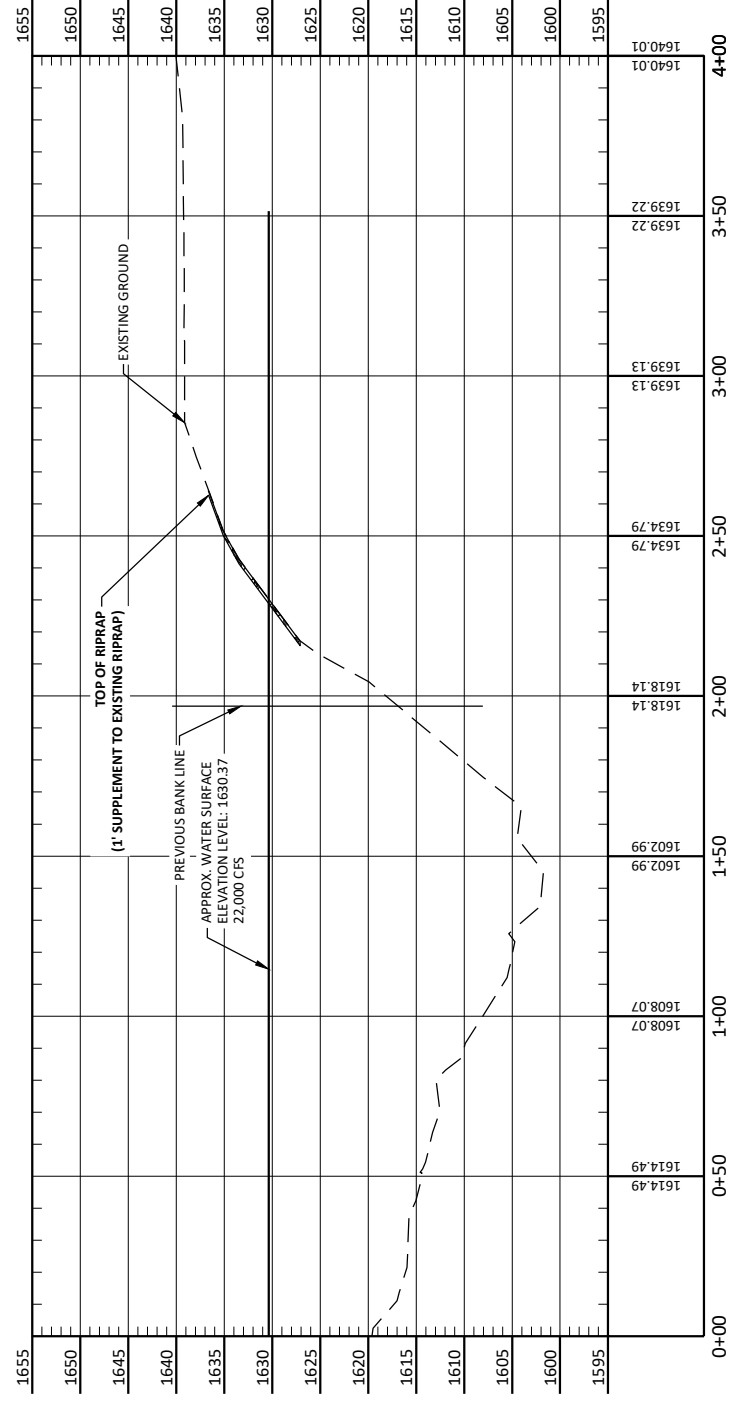
- PROTECT EXISTING LANDSCAPING AND RETAINING WALL.
- STRUCTURE 2 RIPRAP TO SUPPLEMENT EXISTING RIPRAP AND REINFORCE STRUCTURE.

LOT INFORMATION
 NAME: RICHARD BEIERLE
 ADDRESS: 8822 ISLAND RD
 LOT & BLOCK: LOT 3 & 4A BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-030

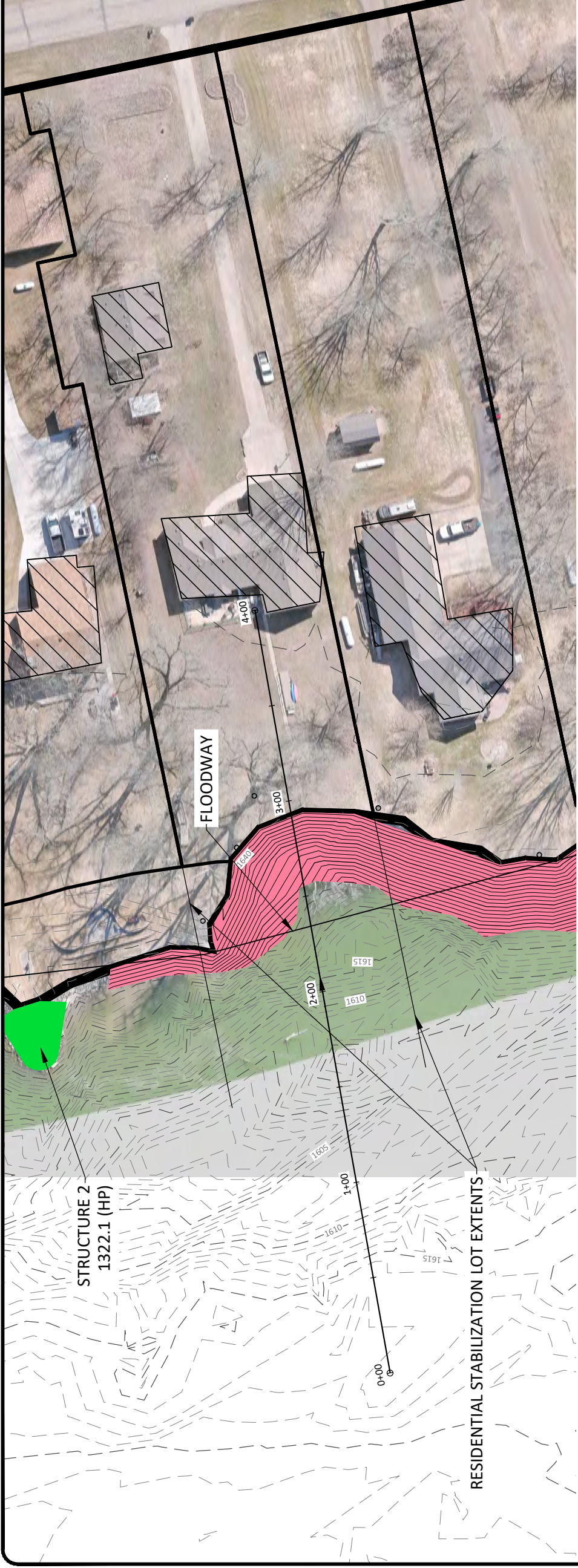
STA 0+00.00 TO STA 0+98.77
 ESTIMATED RESIDENTIAL STABILIZATION QUANTITIES:
 GEOTEXTILE FABRIC 148 SY
 RESIDENTIAL RIPRAP APPROX. 35 TONS
 TOPSOIL 13 CY

ESTIMATED SECTION 32 REVEGETATION QUANTITIES:
 STRUCTURE 2 RIPRAP APPROX. 626 TONS

PRELIMINARY
 NOT FOR CONSTRUCTION



Drawn by	CD	Date	6-2-23	Checked by	MG	Scale
						AS SHOWN
HOUSTON engineering, inc.						
HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND			BEIERLE LOT		SHEET	
			PROJECT NO. 6025-0021		7	
No.	Revision	Date	By			



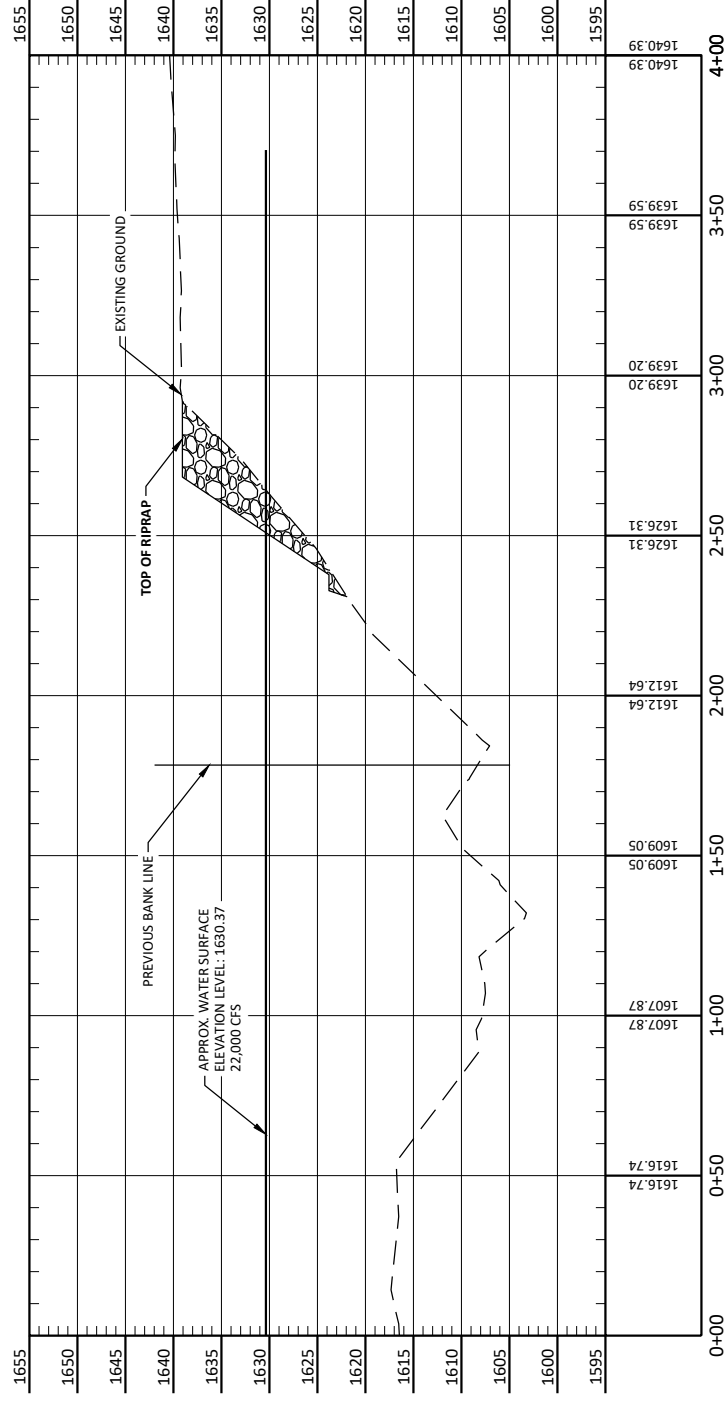
LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

- LEGEND:
- RESIDENTIAL RESTORATION AREA
 - SECTION 32 RESTORATION AREA
 - LOT LINES
 - BANK LINE POST-EROSION
 - BUILDING FOOTPRINT
 - EXISTING MINOR CONTOUR
 - EXISTING MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - SPECIAL ASSESSMENT DISTRICT BOUNDARY

NOTE:
 1. REMOVE FALLEN TREES PRIOR TO RIPRAP PLACEMENT.

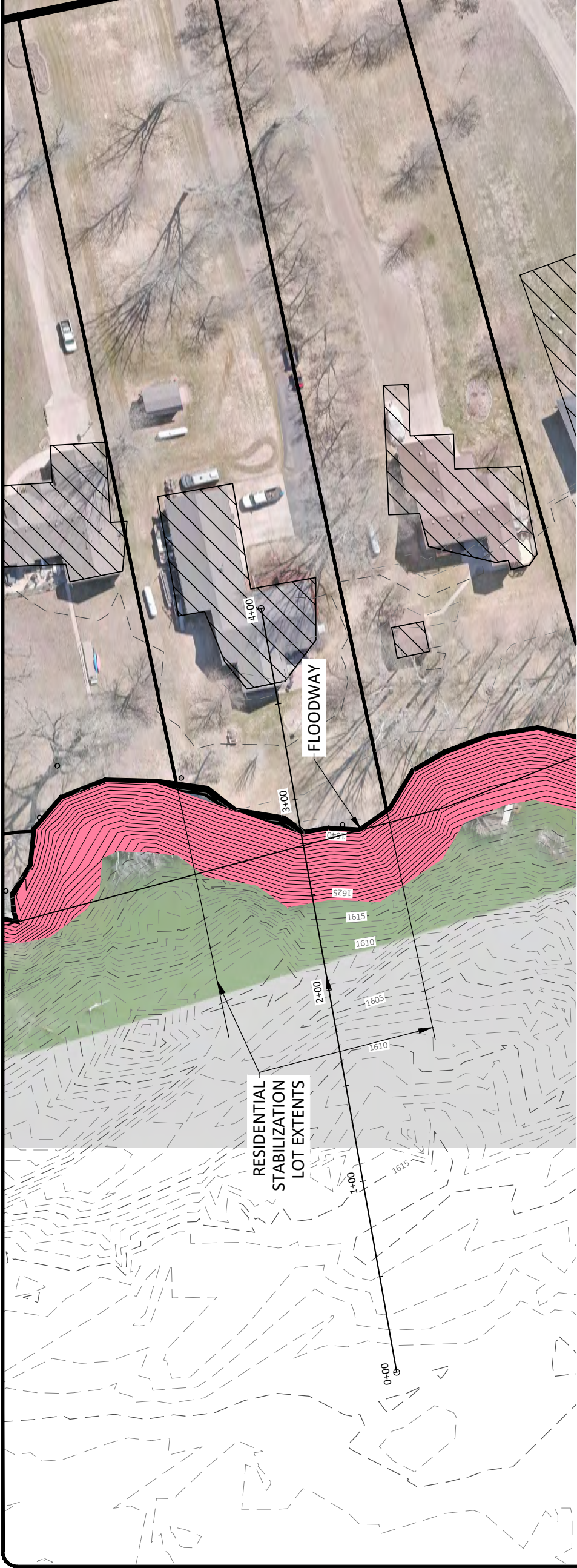
LOT INFORMATION
 NAME: SHERRI & SCOTT NEIS
 ADDRESS: 8812 ISLAND RD
 LOT & BLOCK: LOT 3A & 4 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-040

STA 0+98.77 TO STA 2+37.21
 ESTIMATED RESIDENTIAL STABILIZATION QUANTITIES:
 GEOTEXTILE FABRIC 439 SY
 RIPRAP 780 TONS
 TOPSOIL 39 CY

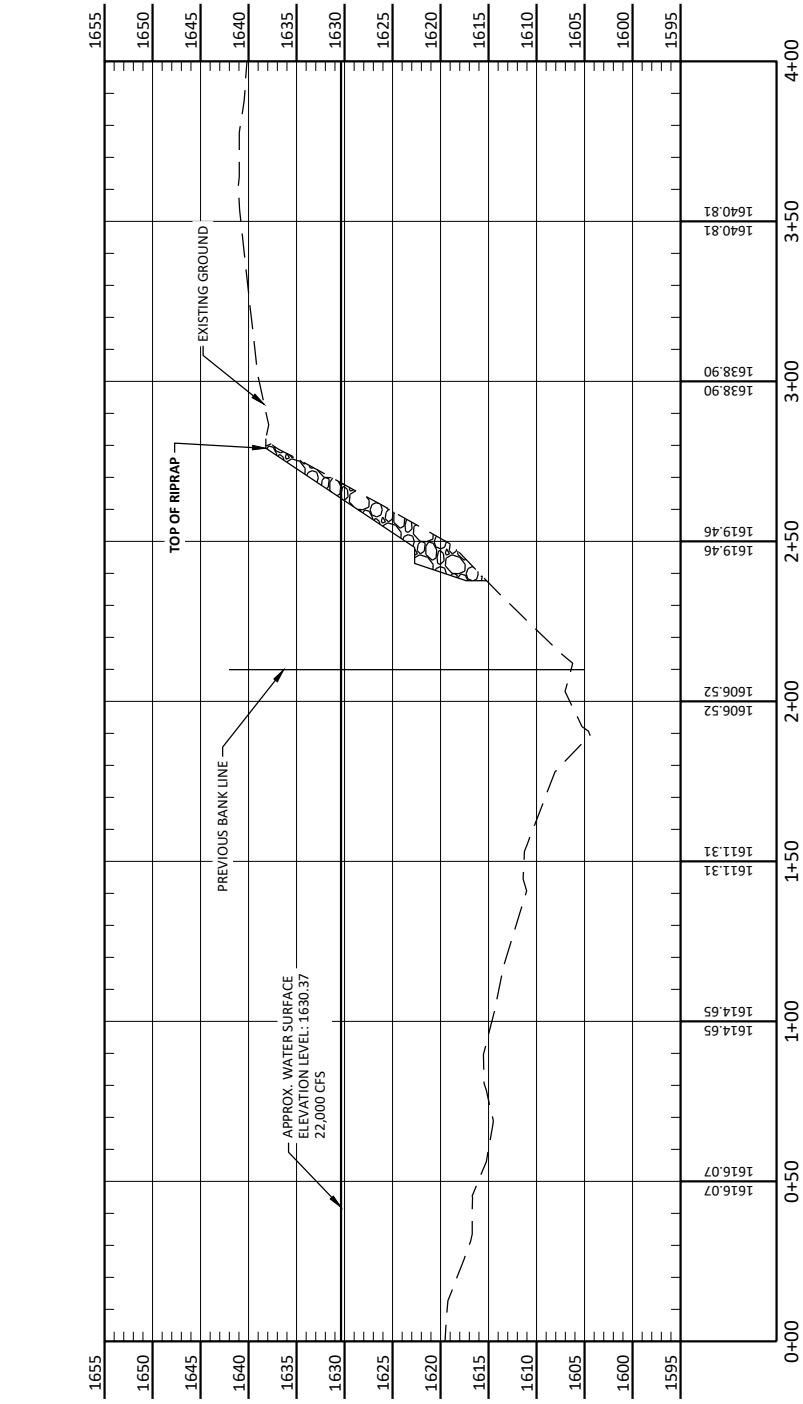


PRELIMINARY
 NOT FOR CONSTRUCTION

No.	Revision	Date	By	Drawn by CD	Date 6-2-23	Checked by MG	Scale AS SHOWN	PROJECT NO. 6025-0021	SHEET 8	NEIS LOT	HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND	HEI NO. 6025-0021



H:\BN\600\6025\6025_0021 Missouri River Bank Erosion\CAD\Plans\2023\Lot 4 Cross Section.dwg-Layout1-6/8/2023 4:42 PM-(cdll)

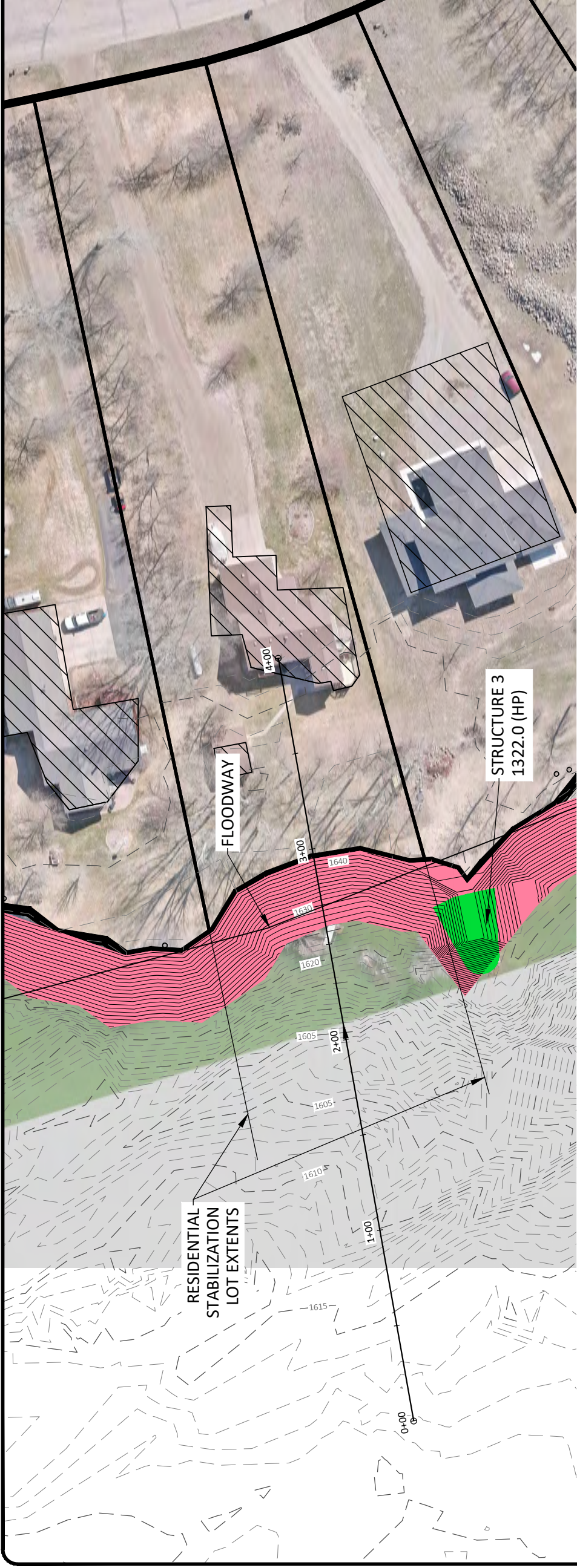


LOT INFORMATION
 NAME: JOHN & ALICE HOMELVIG
 ADDRESS: 8800 ISLAND RD
 LOT & BLOCK: LOT 5 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-050

STA 2+37.21 TO STA 3+52.45
 ESTIMATED RESIDENTIAL STABILIZATION QUANTITIES:
 GEOTEXTILE FABRIC 365 SY
 RESIDENTIAL RIPRAP APPROX. 649 TONS
 TOPSOIL 32 CY

PRELIMINARY
 NOT FOR CONSTRUCTION

No.	Revision	Date	By		Drawn by CD	Date 6-2-23
					Checked by MG	Scale AS SHOWN
				HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND		
				PROJECT NO. 6025-0021		
				SHEET 9		



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

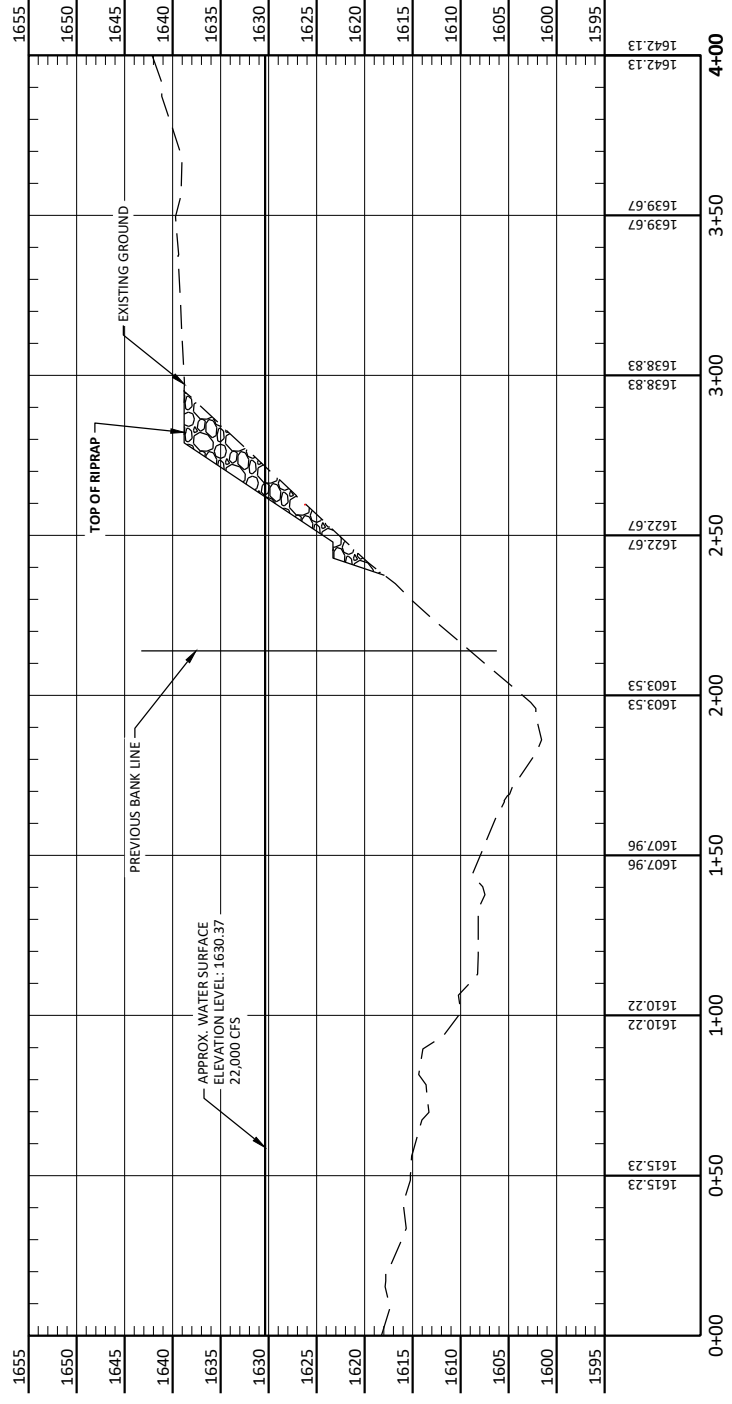
- LEGEND:**
- RESIDENTIAL RESTORATION AREA
 - SECTION 32 RESTORATION AREA
 - LOT LINES
 - BANK LINE POST-EROSION
 - BUILDING FOOTPRINT
 - EXISTING MINOR CONTOUR
 - EXISTING MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - SPECIAL ASSESSMENT DISTRICT BOUNDARY

NOTE:
 1. REMOVE FALLEN TREES PRIOR TO RIPRAP PLACEMENT.

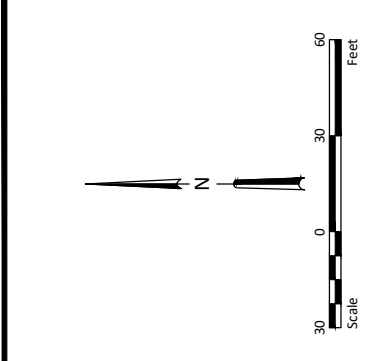
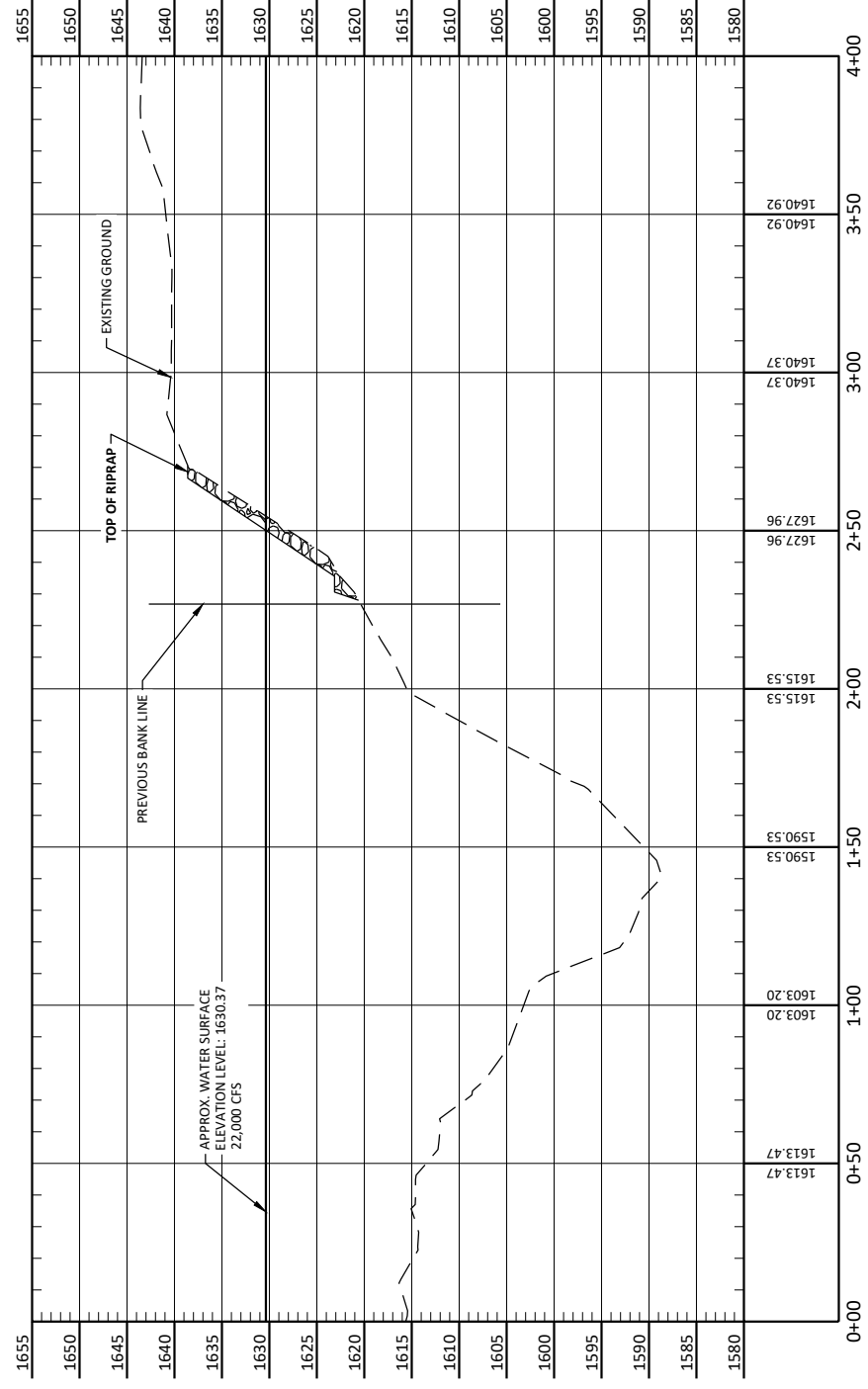
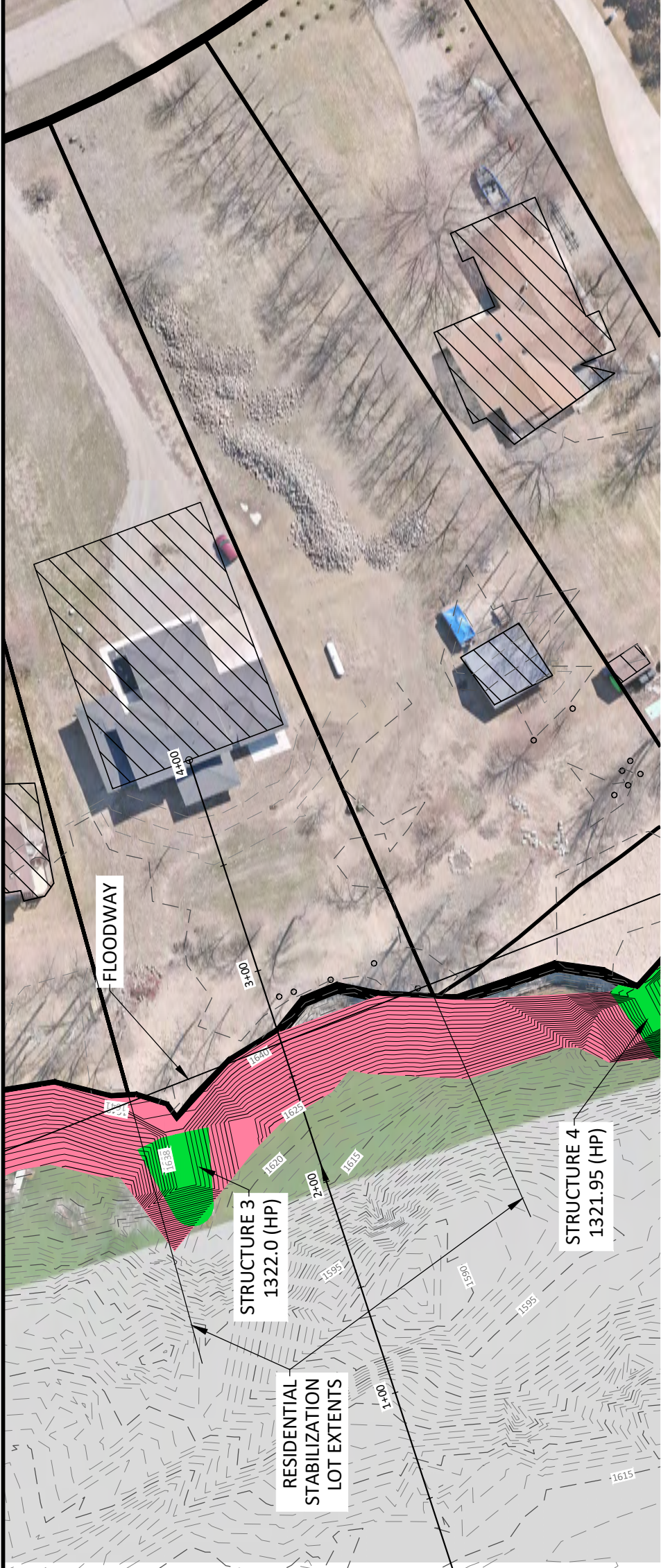
LOT INFORMATION
 NAME: ANDREW CARLSON & CHLOE COLEMAN
 ADDRESS: 8730 ISLAND RD
 LOT & BLOCK: LOT 6 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-060

STA 3+52.45 TO STA 4+80.20
 ESTIMATED RESIDENTIAL RESTORATION QUANTITIES:
 GEOTEXTILE FABRIC 405 SY
 RESIDENTIAL RIPRAP APPROX. 720 TONS
 TOPSOIL 36 CY

PRELIMINARY
 NOT FOR CONSTRUCTION



	Drawn by CD	Date 6-2-23	SHEET 10
	Checked by MG	Scale AS SHOWN	
HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND			
CARLSON & COLEMAN LOT		PROJECT NO. 6025-0021	



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

LEGEND:

- RESIDENTIAL RESTORATION AREA
- SECTION 32 RESTORATION AREA
- LOT LINES
- BANK LINE POST-EROSION
- BUILDING FOOTPRINT
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- SPECIAL ASSESSMENT DISTRICT BOUNDARY

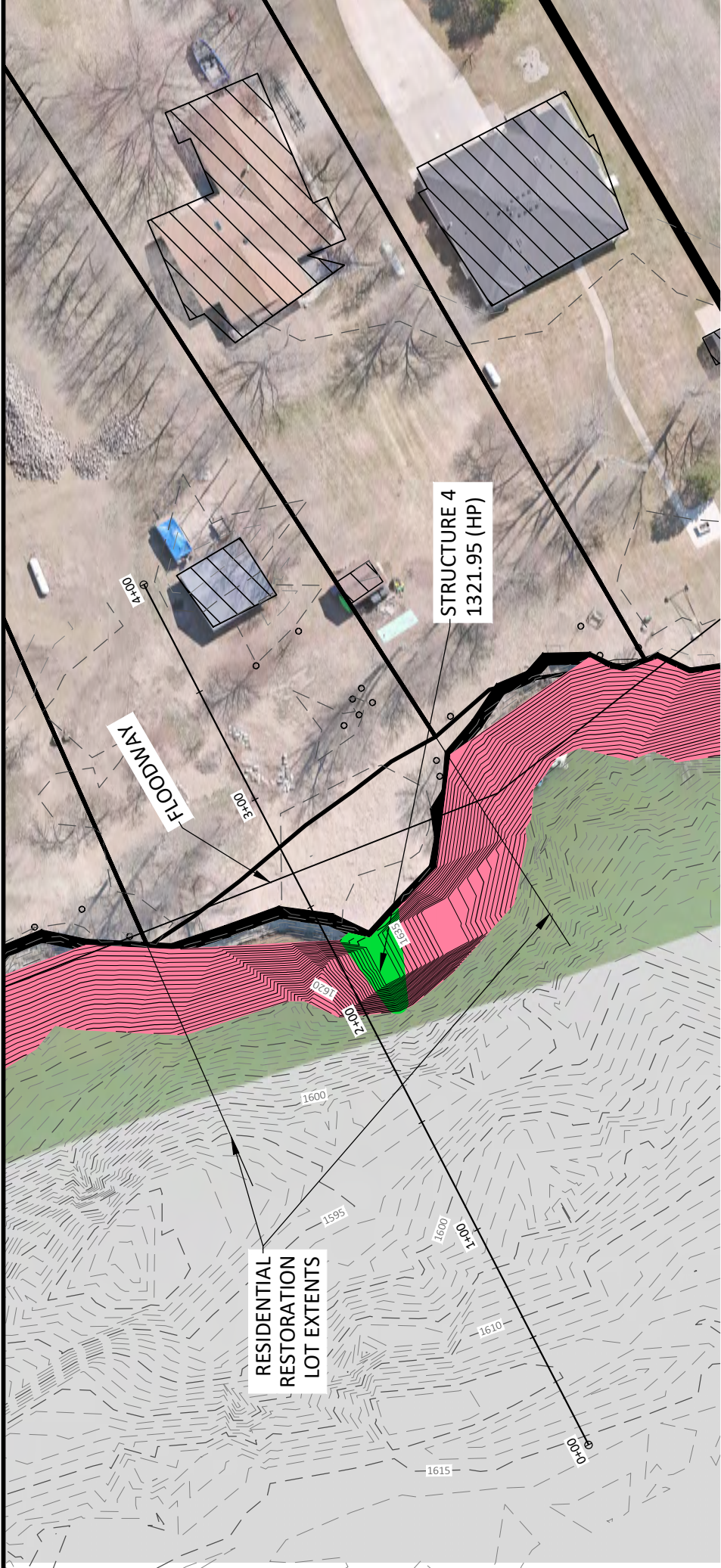
LOT INFORMATION
 NAME: NATHANIEL STRUTZ
 ADDRESS: 8720 ISLAND RD
 LOT & BLOCK: LOT 7 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-070

STA 4+80.20 TO STA 6+41.09
 ESTIMATED RESIDENTIAL STABILIZATION QUANTITIES:
 GEO TEXTILE FABRIC 510 SY
 RESIDENTIAL RIPRAP APPROX. 906 TONS
 TOPSOIL 45 CY

ESTIMATED SECTION 32 REVETMENT QUANTITIES:
 STRUCTURE 3 RIPRAP APPROX. 2147 TONS

PRELIMINARY
 NOT FOR CONSTRUCTION

No.	Revision	Date	By	HOUSTON engineering, inc.		
				Drawn by CD	Date 6-2-23	SHEET 11
				Checked by MG	Scale AS SHOWN	PROJECT NO. 6025-0021
				HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND		N. STRUTZ LOT



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

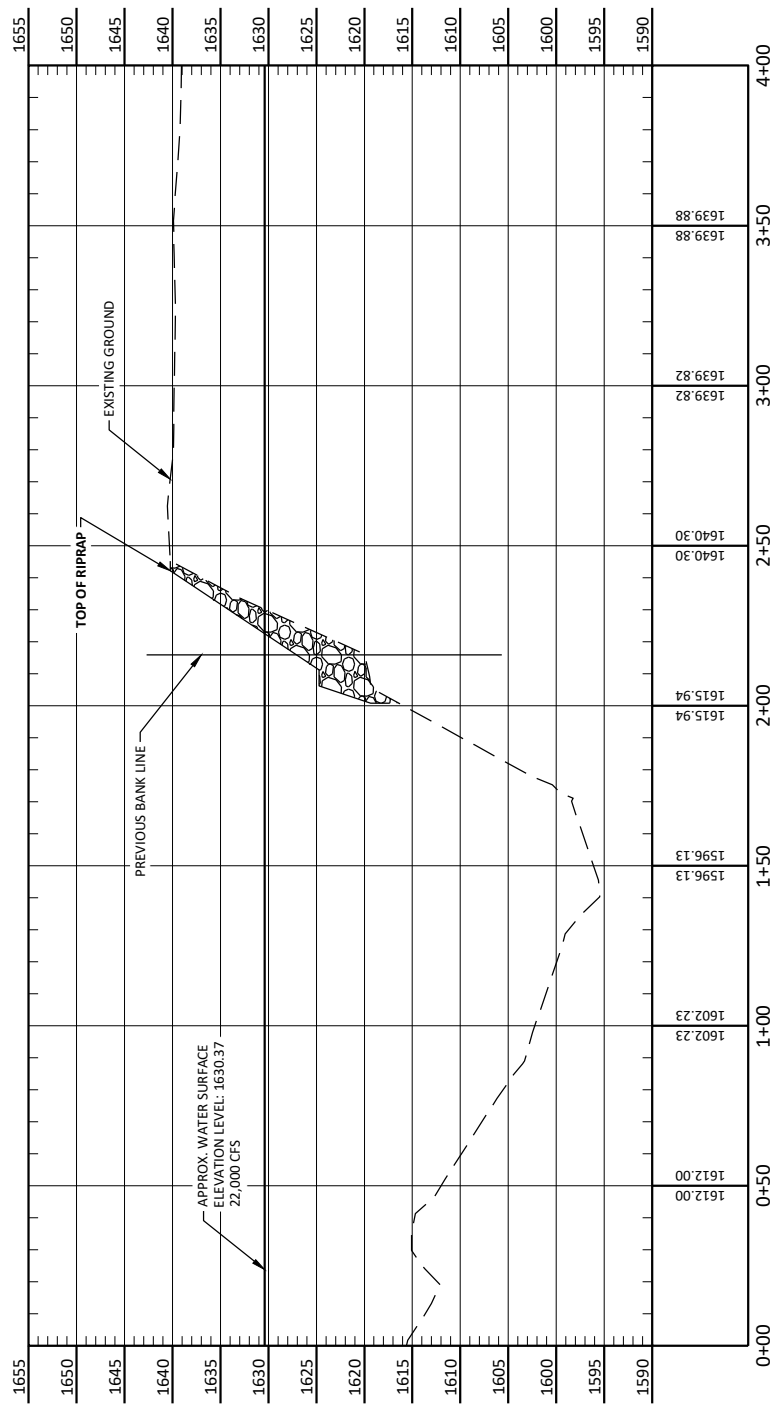
LEGEND:

- RESIDENTIAL RESTORATION AREA
- SECTION 32 RESTORATION AREA
- LOT LINES
- BANK LINE POST-EROSION
- BUILDING FOOTPRINT
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- SPECIAL ASSESSMENT DISTRICT BOUNDARY

LOT INFORMATION
 NAME: WILLIAM & MARILYN STRUTZ
 ADDRESS: 8710 ISLAND RD
 LOT & BLOCK: LOT 8 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-080

STA 6+41.09 TO STA 8+17.55
 ESTIMATED RESIDENTIAL STABILIZATION QUANTITIES:
 GEO TEXTILE FABRIC 559 SY
 RESIDENTIAL RIPRAP APPROX. 994 TONS
 TOPSOIL 49 CY

ESTIMATED SECTION 32 REVETMENT QUANTITIES:
 STRUCTURE 4 RIPRAP APPROX. 1701 TONS



PRELIMINARY
 NOT FOR CONSTRUCTION

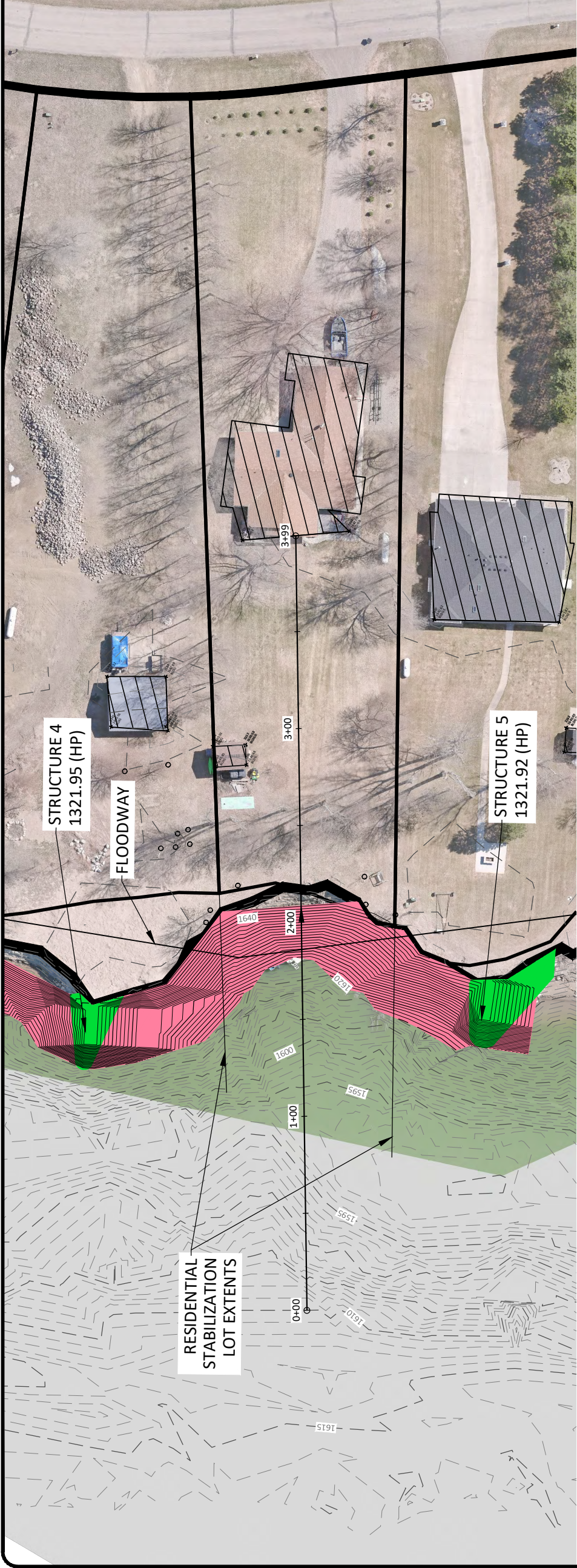
W. STRUTZ LOT
 PROJECT NO. 6025-0021
 SHEET 12

HOGUE ISLAND BANK STABILIZATION
 BURLEIGH COUNTY WATER RESOURCE DISTRICT
 BISMARCK, ND

Drawn by: CD
 Checked by: MG
 Date: 6-2-23
 Scale: AS SHOWN



No.	Revision	Date	By



RESIDENTIAL STABILIZATION LOT EXTENTS

**STRUCTURE 4
1321.95 (HP)**

FLOODWAY

**STRUCTURE 5
1321.92 (HP)**



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS

DATUM: NAD 29

CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

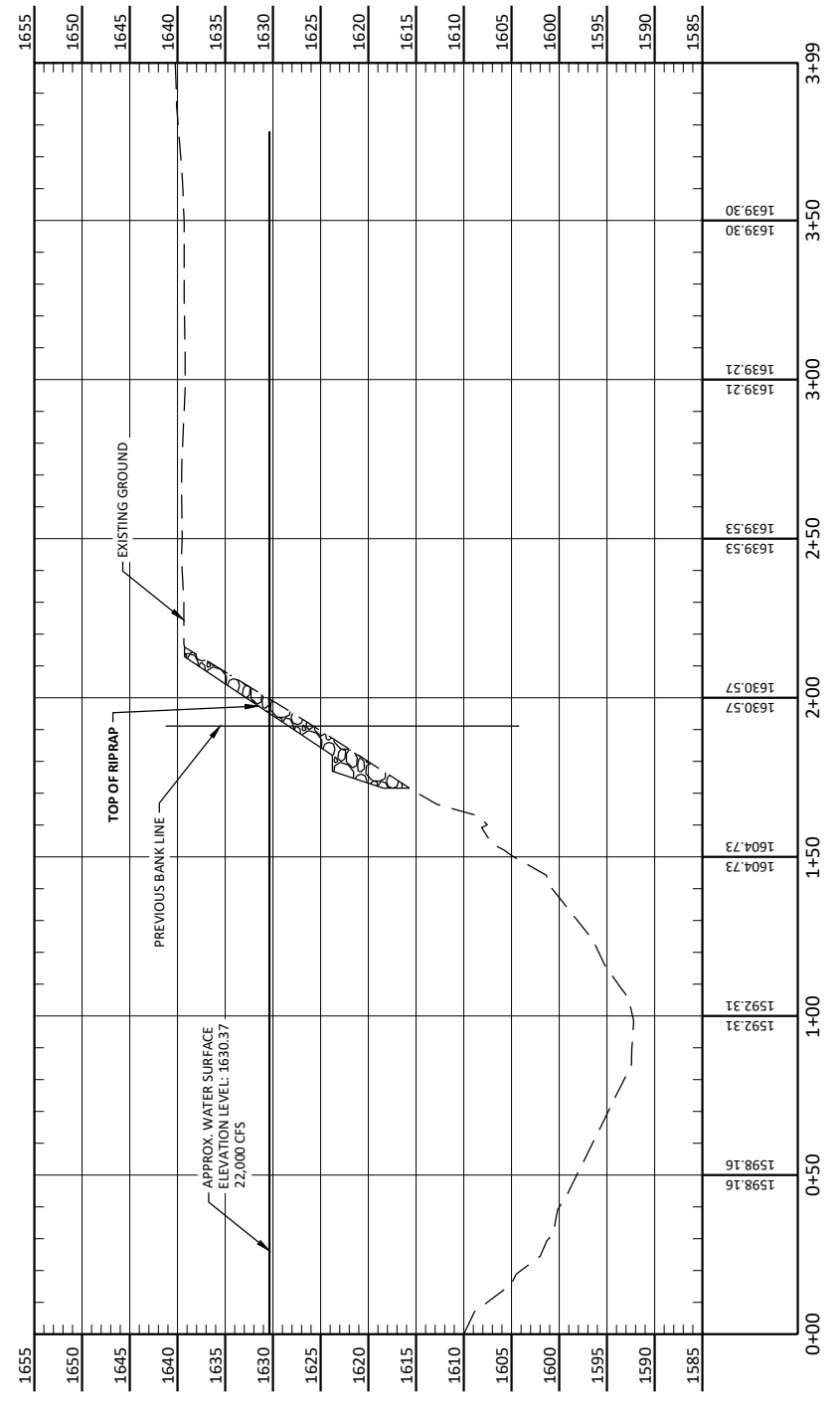
LEGEND:

- RESIDENTIAL RESTORATION AREA
- SECTION 32 RESTORATION AREA
- LOT LINES
- BANK LINE POST-EROSION
- BUILDING FOOTPRINT
- EXISTING MINOR CONTOUR
- EXISTING MAJOR CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- SPECIAL ASSESSMENT DISTRICT BOUNDARY

LOT INFORMATION
 NAME: BEVERLY BRIERLY
 ADDRESS: 8700 ISLAND RD
 LOT & BLOCK: LOT 9 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-090

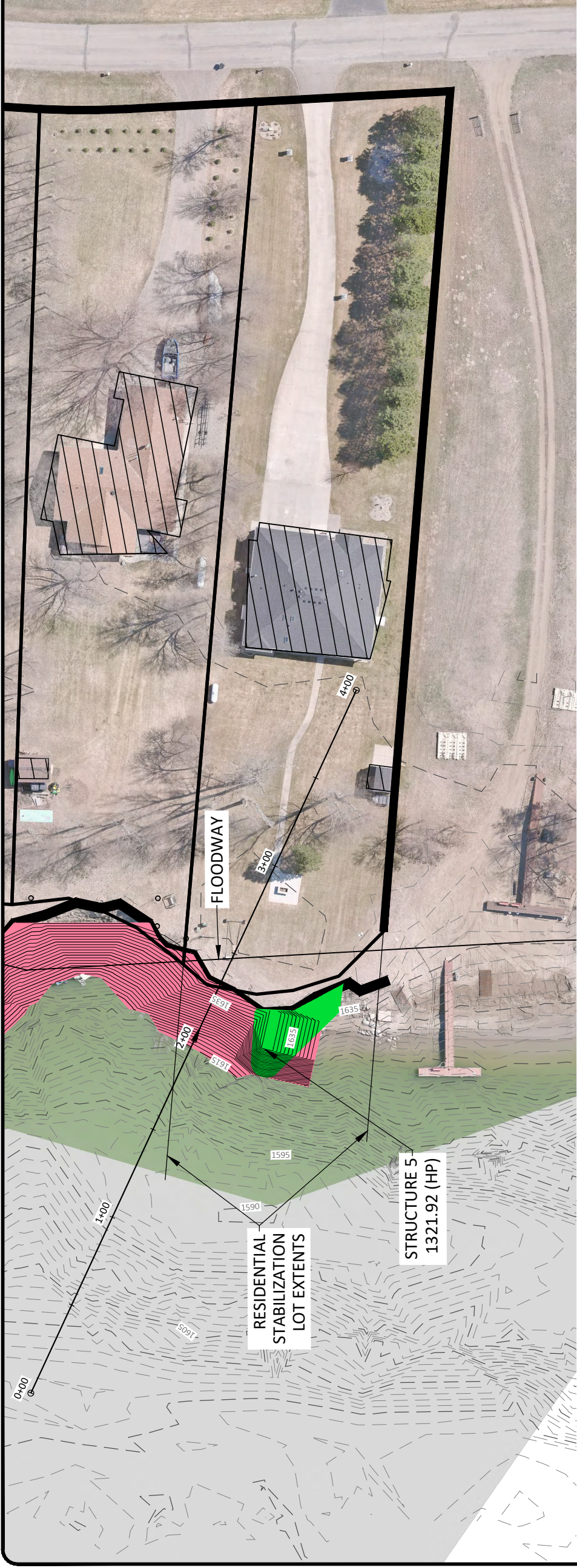
NOTE:
 1. REMOVE FALLEN TREES PRIOR TO PLACING RIPRAP.

STA 8+17.55 TO STA 9+12.10
 ESTIMATED RESIDENTIAL RESTORATION QUANTITIES:
 GEOTEXTILE FABRIC 300 SY
 RESIDENTIAL RIPRAP APPROX. 533 TONS
 TOPSOIL 27 CY



PRELIMINARY
 NOT FOR CONSTRUCTION

No.	Revision	Date	By		Drawn by CD	Checked by MG	Date 6-2-23	Scale AS SHOWN	PROJECT NO. 6025-0021	SHEET 13



LOT LINES FROM BURLEIGH COUNTY GIS & CITY OF BISMARCK GIS
 DATUM: NAD 29
 CONSTRUCTION REFERENCE PLAIN ELEVATION: 1633.30

- LEGEND:**
- RESIDENTIAL RESTORATION AREA
 - SECTION 32 RESTORATION AREA
 - LOT LINES
 - BANK LINE POST-EROSION
 - BUILDING FOOTPRINT
 - EXISTING MINOR CONTOUR
 - EXISTING MAJOR CONTOUR
 - PROPOSED MINOR CONTOUR
 - PROPOSED MAJOR CONTOUR
 - SPECIAL ASSESSMENT DISTRICT BOUNDARY

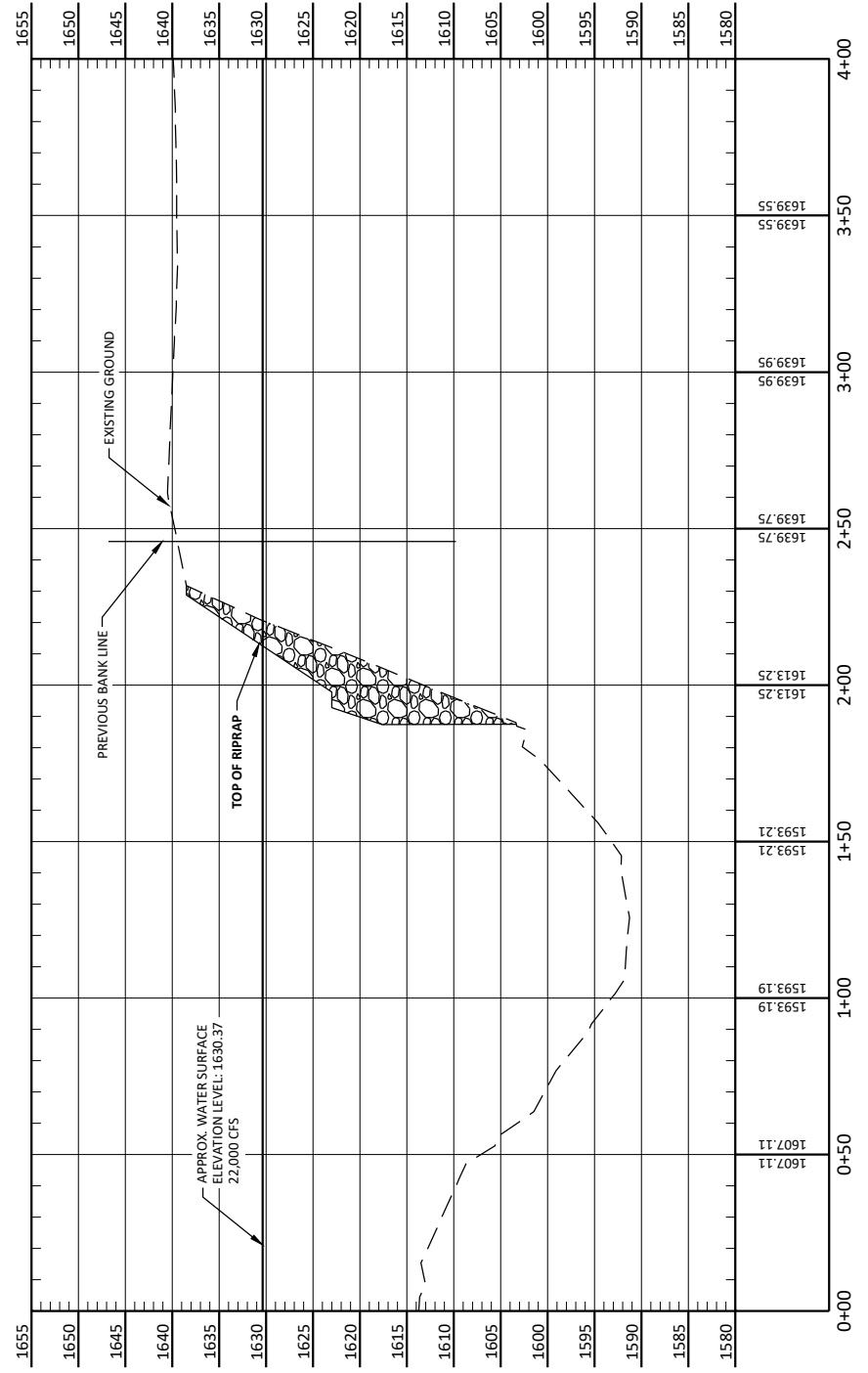
LOT INFORMATION
 NAME: LAURA BEYER
 ADDRESS: 8636 ISLAND RD
 LOT & BLOCK: LOT 10 BLOCK 10
 SUBDIVISION: ISLAND PARK ESTATES
 PARCEL NO.: 23-140-81-50-10-100

NOTE:
 1. PROTECT EXISTING ELECTRICAL AND IRRIGATION FEATURES OR COORDINATE REMOVAL WITH HOMEOWNER.

STA 9+12.10 TO STA 10+00.00
 ESTIMATED RESIDENTIAL STABILIZATION QUANTITIES:
 GEOTEXTILE FABRIC 2795 SY
 RESIDENTIAL RIPRAP APPROX. 495 TONS
 TOPSOIL 25 CY

ESTIMATED SECTION 32 REVETMENT QUANTITIES:
 STRUCTURE 5 RIPRAP APPROX. 627 TONS

PRELIMINARY
 NOT FOR CONSTRUCTION



No. Revision						
	Date	By				
		Drawn By	CD	Date	6-2-23	
		Checked by	MG	Scale	AS SHOWN	
HOGUE ISLAND BANK STABILIZATION BURLEIGH COUNTY WATER RESOURCE DISTRICT BISMARCK, ND			BEYER LOT	PROJECT NO. 6025-0021	SHEET	14

U.S. Army Corps of Engineers (USACE)
NATIONWIDE PERMIT PRE-CONSTRUCTION NOTIFICATION (PCN)
 For use of this form, see 33 CFR 330; the proponent agency is CECW-CO-R.

Form Approved -
OMB No. 0710-0003
Expires: 08-31-2023

DATA REQUIRED BY THE PRIVACY ACT OF 1974

Authority Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Regulatory Program of the Corps of Engineers (Corps); Final Rule 33 CFR 320-332.

Principal Purpose Information provided on this form will be used in evaluating the nationwide permit pre-construction notification.

Routine Uses This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of the agency coordination process.

Disclosure Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued.

The public reporting burden for this collection of information, 0710-0003, is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at . Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

PLEASE DO NOT RETURN YOUR RESPONSE TO THE ABOVE EMAIL.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see *sample drawings and/or instructions*) and be submitted to the district engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)


1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
--------------------	----------------------	------------------	------------------------------

(ITEMS BELOW TO BE FILLED BY APPLICANT)

5. APPLICANT'S NAME First - James Middle - Last - Landenberger Company - Burleigh County Water Resource District Company Title - Chairman E-mail Address - james.landenberger@bartwest.com		8. AUTHORIZED AGENT'S NAME AND TITLE (<i>agent is not required</i>) First - Travis Middle - Last - Johnson Company - Houston Engineering, Inc. E-mail Address - tjohnson@houstoneng.com	
6. APPLICANT'S ADDRESS Address- PO Box 1255 City - Bismarck State - ND Zip - 58502 Country - USA		9. AGENT'S ADDRESS Address- 3712 Lockport Street City - Bismarck State - ND Zip - 58503 Country - USA	
7. APPLICANT'S PHONE NOs. with AREA CODE a. Residence b. Business c. Fax d. Mobile 701-221-8332 701-426-6439		10. AGENT'S PHONE NOs. with AREA CODE a. Residence b. Business c. Fax d. Mobile 701-751-6287 701-226-0227	

STATEMENT OF AUTHORIZATION

11. I hereby authorize, Houston Engineering to act in my behalf as my agent in the processing of this nationwide permit pre-construction notification and to furnish, upon request, supplemental information in support of this nationwide permit pre-construction notification.



 SIGNATURE OF APPLICANT

6/15/2023

 DATE

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

12. PROJECT NAME or TITLE (*see instructions*)
 Hoge Island Bank Stabilization

NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY

13. NAME OF WATERBODY, IF KNOWN (*if applicable*)

Missouri River

14. PROPOSED ACTIVITY STREET ADDRESS (*if applicable*)

8700 to 8820 Island Road

15. LOCATION OF PROPOSED ACTIVITY (*see instructions*)

Latitude	°N	Longitude	°W
46-53'58.89" N		100-54'5.55" W	

City:

Bismarck

State: Zip:

ND 58503

16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (*see instructions*)

State Tax Parcel ID

Multiple

Municipality

Burleigh County

Section

33

Township

140

Range

81

17. DIRECTIONS TO THE SITE

U.S. Hwy 1804 north from Bismarck to 97th Ave NW. Then left on 97th Ave NW 0.67 miles to Hogue Road. Left on Hogue Road 0.75 miles to Kingswood Road. Right on Kingswood Road 0.63 miles to the site on the east bank of the Missouri River.

18. IDENTIFY THE SPECIFIC NATIONWIDE PERMIT(S) YOU PROPOSE TO USE

Project includes repair of three existing Section 32 structures that have failed and reinforcement of a fourth to prevent failure.

19. DESCRIPTION OF PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Placement of rock riprap to cover and stabilize eroding soils and failing banks at an erosion scour across multiple properties on approximately 950 feet total of bankline on the Missouri River.

20. DESCRIPTION OF PROPOSED MITIGATION MEASURES (*see instructions*)

Placement of rock for bank stabilization of an avulsive event along the Missouri River.

21. PURPOSE OF NATIONWIDE PERMIT ACTIVITY (*Describe the reason or purpose of the project, see instructions*)

The purpose is to stabilize the bank and prevent further erosion and loss of property.

22. QUANTITY OF WETLANDS, STREAMS, OR OTHER TYPES OF WATERS DIRECTLY AFFECTED BY PROPOSED NATIONWIDE PERMIT ACTIVITY (*see instructions*)

Acres	Linear Feet	Cubic Yards Dredged or Discharged
	950	6383

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site.

23. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. (*see instructions*)

24. If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and requires pre-construction notification, explain how the compensatory mitigation requirement in paragraph (c) of general condition 23 will be satisfied, or explain why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required for the proposed activity.

25. Is any portion of the nationwide permit activity already complete? Yes No If Yes, describe the completed work:

26. List the name(s) of any species listed as endangered or threatened under the Endangered Species Act that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. (see *instructions*)

27. List any historic properties that have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic property or properties. (see *instructions*)

28. For a proposed NWP activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, identify the Wild and Scenic River or the "study river":

29. If the proposed NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, have you submitted a written request for section 408 permission from the Corps district having jurisdiction over that project? Yes No

If "yes", please provide the date your request was submitted to the Corps district:

30. If the terms of the NWP(s) you want to use require additional information to be included in the PCN, please include that information in this space or provide it on an additional sheet of paper marked Block 30. (see *instructions*)

31. Pre-construction notification is hereby made for one or more nationwide permit(s) to authorize the work described in this notification. I certify that the information in this pre-construction notification is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.



SIGNATURE OF APPLICANT

6/15/2023

DATE



SIGNATURE OF AGENT

6/14/23

DATE

The pre-construction notification must be signed by the person who desires to undertake the proposed activity (applicant) and, if the statement in Block 11 has been filled out and signed, the authorized agent.

18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.

**Instructions for Preparing a
Department of the Army
Nationwide Permit (NWP) Pre-Construction Notification (PCN)**

Blocks 1 through 4. To be completed by the Corps of Engineers.

Block 5. Applicant's Name. Enter the name and the e-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the preconstruction notification, please attach a sheet of paper with the necessary information marked Block 5.

Block 6. Address of Applicant. Please provide the full address of the party or parties responsible for the PCN. If more space is needed, attach an extra sheet of paper marked Block 6.

Block 7. Applicant's Telephone Number(s). Please provide the telephone number where you can usually be reached during normal business hours.

Blocks 8 through 11. To be completed, if you choose to have an agent.

Block 8. Authorized Agent's Name and Title. Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, consultant, or any other person or organization. Note: An agent is not required.

Blocks 9 and 10. Agent's Address and Telephone Number. Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

Block 11. Statement of Authorization. To be completed by the applicant, if an agent is to be employed.

Block 12. Proposed Nationwide Permit Activity Name or Title. Please provide a name identifying the proposed NWP activity, e.g., Windward Marina, Rolling Hills Subdivision, or Smith Commercial Center.

Block 13. Name of Waterbody. Please provide the name (if it has a name) of any stream, lake, marsh, or other waterway to be directly impacted by the NWP activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

Block 14. Proposed Activity Street Address. If the proposed NWP activity is located at a site having a street address (not a box number), please enter it in Block 14.

Block 15. Location of Proposed Activity. Enter the latitude and longitude of where the proposed NWP activity is located. Indicate whether the project location provided is the center of the project or whether the project location is provided as the latitude and longitude for each of the "corners" of the project area requiring evaluation. If there are multiple sites, please list the latitude and longitude of each site (center or corners) on a separate sheet of paper and mark as Block 15.

Block 16. Other Location Descriptions. If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality where the site is located.

Block 17. Directions to the Site. Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide a description of the location of the proposed NWP activity, such as lot numbers, tract numbers, or you may choose to locate the proposed NWP activity site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed NWP activity site if known. If there are multiple locations, please indicate directions to each location on a separate sheet of paper and mark as Block 17.

Block 18. Identify the Specific Nationwide Permit(s) You Propose to Use. List the number(s) of the Nationwide Permit(s) you want to use to authorize the proposed activity (e.g., NWP 29).

Block 19. Description of the Proposed Nationwide Permit Activity. Describe the proposed NWP activity, including the direct and indirect adverse environmental effects the activity would cause. The description of the proposed activity should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal. Identify the materials to be used in construction, as well as the methods by which the work is to be done.

Provide sketches when necessary to show that the proposed NWP activity complies with the terms of the applicable NWP(s). Sketches usually clarify the activity and result in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed NWP activity (e.g., a conceptual plan), but do not need to be detailed engineering plans.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 19.

Block 20. Description of Proposed Mitigation Measures. Describe any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed NWP activity. The description of any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or additional mitigation measures.

Block 21. Purpose of Nationwide Permit Activity. Describe the purpose and need for the proposed NWP activity. What will it be used for and why? Also include a brief description of any related activities associated with the proposed project. Provide the approximate dates you plan to begin and complete all work.

Block 22. Quantity of Wetlands, Streams, or Other Types of Waters Directly Affected by the Proposed Nationwide Permit Activity. For discharges of dredged or fill material into waters of the United States, provide the amount of wetlands, streams, or other types of waters filled, flooded, excavated, or drained by the proposed NWP activity. For structures or work in navigable waters of the United States subject to Section 10 of the Rivers and Harbors Act of 1899, provide the amount of navigable waters filled, dredged, or occupied by one or more structures (e.g., aids to navigation, mooring buoys) by the proposed NWP activity.

For multiple NWPs, or for separate and distant crossings of waters of the United States authorized by NWPs 12 or 14, attach an extra sheet of paper marked Block 21 to provide the quantities of wetlands, streams, or other types of waters filled, flooded, excavated, or drained (or dredged or occupied by structures, if in waters subject to Section 10 of the Rivers and Harbors Act of 1899) for each NWP. For NWPs 12 and 14, include the amount of wetlands, streams, or other types of waters filled, flooded, excavated, or drained for each separate and distant crossing of waters or wetlands. If more space is needed, attach an extra sheet of paper marked Block 22.

Block 23. Identify Any Other Nationwide Permit(s), Regional General Permit(s), or Individual Permit(s) Used to Authorize Any Part of Proposed Activity or Any Related Activity. List any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity. For linear projects, list other separate and distant crossings of waters and wetlands authorized by NWPs 12 or 14 that do not require PCNs. If more space is needed, attach an extra sheet of paper marked Block 23.

Block 24. Compensatory Mitigation Statement for Losses of Greater Than 1/10-Acre of Wetlands When Pre-Construction Notification is Required. Paragraph (c) of NWP general condition 23 requires compensatory mitigation at a minimum one-for-one replacement ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation is more environmentally appropriate or the adverse environmental effects of the proposed NWP activity are no more than minimal without compensatory mitigation, and provides an activity-specific waiver of this requirement. Describe the proposed compensatory mitigation for wetland losses greater than 1/10 acre, or provide an explanation of why the district engineer should not require wetland compensatory mitigation for the proposed NWP activity. If more space is needed, attach an extra sheet of paper marked Block 24.

Block 25. Is Any Portion of the Nationwide Permit Activity Already Complete? Describe any work that has already been completed for the NWP activity.

Block 26. List the Name(s) of Any Species Listed As Endangered or Threatened under the Endangered Species Act that Might be Affected by the Nationwide Permit Activity. If you are not a federal agency, and if any listed species or designated critical habitat might be affected or is in the vicinity of the proposed NWP activity, or if the proposed NWP activity is located in designated critical habitat, list the name(s) of those endangered or threatened species that might be affected by the proposed NWP activity or utilize the designated critical habitat that might be affected by the proposed NWP activity. If you are a Federal agency, and the proposed NWP activity requires a PCN, you must provide documentation demonstrating compliance with Section 7 of the Endangered Species Act.

Block 27. List Any Historic Properties that Have the Potential to be Affected by the Nationwide Permit Activity. If you are not a Federal agency, and if any historic properties have the potential to be affected by the proposed NWP activity, list the name(s) of those historic properties that have the potential to be affected by the proposed NWP activity. If you are a Federal agency, and the proposed NWP activity requires a PCN, you must provide documentation demonstrating compliance with Section 106 of the National Historic Preservation Act.

Block 28. List the Wild and Scenic River or Congressionally Designated Study River if the Nationwide Permit Activity Would Occur in such a River. If the proposed NWP activity will occur in a river in the National Wild and Scenic River System or in a river officially designated by Congress as a "study river" under the Wild and Scenic Rivers Act, provide the name of the river. For a list of Wild and Scenic Rivers and study rivers, please visit .

Block 29. Nationwide Permit Activities that also Require Permission from the Corps Under 33 U.S.C. 408. If the proposed NWP activity also requires permission from the Corps under 33 U.S.C. 408 because it will temporarily or permanently alter, occupy, or use a Corps federal authorized civil works project, indicate whether you have submitted a written request for section 408 permission from the Corps district having jurisdiction over that project.

Block 30. Other Information Required For Nationwide Permit Pre-Construction Notifications. The terms of some of the Nationwide Permits include additional information requirements for preconstruction notifications:

- * NWP 3, Maintenance –information regarding the original design capacities and configurations of the outfalls, intakes, small impoundments, and canals.
- * NWP 31, Maintenance of Existing Flood Control Facilities –a description of the maintenance baseline and the dredged material disposal site.
- * NWP 33, Temporary Construction, Access, and Dewatering –a restoration plan showing how all temporary fills and structures will be removed and the area restored to pre-project conditions.
- * NWP 44, Mining Activities –if reclamation is required by other statutes, then a copy of the final reclamation plan must be submitted with the pre-construction notification.
- * NWP 45, Repair of Uplands Damaged by Discrete Events –documentation, such as a recent topographic survey or photographs, to justify the extent of the proposed restoration.
- * NWP 48, Commercial Shellfish Aquaculture Activities –(1) a map showing the boundaries of the project area, with latitude and longitude coordinates for each corner of the project area; (2) the name(s) of the species that will be cultivated during the period this NWP is in effect; (3) whether canopy predator nets will be used; (4) whether suspended cultivation techniques will be used; and (5) general water depths in the project area (a detailed survey is not required).
- * NWP 49, Coal Remining Activities –a document describing how the overall mining plan will result in a net increase in aquatic resource functions must be submitted to the district engineer and receive written authorization prior to commencing the activity.
- * NWP 50, Underground Coal Mining Activities –if reclamation is required by other statutes, then a copy of the reclamation plan must be submitted with the pre-construction notification.

If more space is needed, attach an extra sheet of paper marked Block 30.

Block 31. Signature of Applicant or Agent. The PCN must be signed by the person proposing to undertake the NWP activity, and if applicable, the authorized party (agent) that prepared the PCN. The signature of the person proposing to undertake the NWP activity shall be an affirmation that the party submitting the PCN possesses the requisite property rights to undertake the NWP activity (including compliance with special conditions, mitigation, etc.).

DELINEATION OF WETLANDS, OTHER SPECIAL AQUATIC SITES, AND OTHER WATERS

Each PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current wetland delineation manual and regional supplement published by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. The 45 day PCN review period will not start until the delineation is submitted or has been completed by the Corps.

DRAWINGS AND ILLUSTRATIONS

General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number. For linear projects (e.g. roads, subsurface utility lines, etc.) gradient drawings should also be included. Please submit one original, or good quality copy, of all drawings on 8½x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations. Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.

ADDITIONAL INFORMATION AND REQUIREMENTS

For proposed NWP activities that involve discharges into waters of the United States, water quality certification from the State, Tribe, or EPA must be obtained or waived (see NWP general condition 25). Some States, Tribes, or EPA have issued water quality certification for one or more NWPs. Please check the appropriate Corps district web site to see if water quality certification has already been issued for the NWP(s) you wish to use. For proposed NWP activities in coastal states, state Coastal Zone Management Act consistency concurrence must be obtained, or a presumption of concurrence must occur (see NWP general condition 26). Some States have issued Coastal Zone Management Act consistency concurrences for one or more NWPs. Please check the appropriate Corps district web site to see if Coastal Zone Management Act consistency concurrence has already been issued for the NWP(s) you wish to use.



APPLICATION FOR AUTHORIZATION TO CONSTRUCT A PROJECT WITHIN ISLANDS AND BEDS OF NAVIGABLE STREAMS AND WATERS

Office of the State Engineer
900 East Boulevard
Bismarck, ND 58505-0850

Permit No. _____

Project No. 1625

Date _____
Received Stamp _____
Location _____

SWC USE ONLY

I, the undersigned, do hereby submit the following information to the Office of the State Engineer as an application to construct a project that may impact islands and beds of navigable streams and waters of North Dakota under NDCC Chapter 61-33.

GENERAL INFORMATION:

This Application must include a map from an actual survey, aerial photo or topographic map and plot map (if a development). The size of the map shall be 8½ by 11 inches. The map shall have a north arrow and approximate scale. Indicate the existing or proposed work on the drawing. Plans and specifications must be submitted if project includes construction work.

- (1) Project will be located in the: _____ Water Resource District
- (2) Legal description to the nearest 40 acre tract: _____ ¼ _____ ¼ Section _____ Township _____ Range _____
- (3) Is this application for modification of an existing project Yes No If so, what year was project constructed: _____
By whom: _____
- (4) Proposed project involves water crossing, type _____ boat dock, boat ramp, water intake, dredge, volume _____ cu. yds. filling, volume _____ cu. yds. , type _____, other (explain) _____
- (5) Water body on which project will be located: _____
- (6) Purpose: _____
- (7) Project Description: _____

- (8) Contractor, if known: _____
- (9) Anticipated construction start date: _____ Completion date: _____

The filing of this application and its approval in no way relieves the applicant or riparian landowner from any responsibility or liability resulting from the construction, operation or failure of the project.

Riparian Land Owner or Organization Sponsor: (Print) _____

Applicant: (Print) _____

Address: _____

Phone: (H) _____

(W) _____

Signature: _____ Date Submitted: 6/15/2023

(Riparian landowner or Organization Sponsoring the project)

Permit No.

BURLEIGH COUNTY

Date of Submittal

Building in the Floodplain Development Permit Application

This form is used for any development in a Special Flood Hazard Area as shown on the community's effective FEMA Flood Insurance Rate Map. Development is defined as any man-made change to improved or unimproved real estate, including but not limited to buildings or other structures, mining, dredging, filling, grading, paving, excavating or drilling operation or storage of equipment or materials.

Property Information

Property Address/Location 8636 to 8832 Island Road, Bismarck, ND		
Legal Disc.	Lot&Blk Block 10, Lot 2-10	Subdivision Island Park Estates

Owner Information

Owner's Name Burleigh County Water Resource District on behalf of owners.	Phone # 701-426-6439
Address 1720 Burnt Boat Road #205	
Email james.landenerger@bartwest.com	Mobile Phone #

Contractor Information

Contractor Name TBD	Phone #
Company Name	Fax #
Address	
Email	Mobile Phone #

Floodplain Map Information

Map # 570D	Panel # 38015C0570D	Flood Zone AE	Floodway? <input checked="" type="checkbox"/> N	Base Flood Elevation 1641.9
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Description of Development: Placement of rock riprap to restore three existing hardpoints on the Missouri River that have failed, and to reinforce a fourth hardpoint. Placement of rock riprap to stabilize bankline between the existing hardpoints to protect private property, stop ongoing erosion, and protect from further erosion losses. Total length of affected area is approximately 950 linear feet of Missouri River bankline.

Submittal Requirements: Site Plan showing the location of all existing and proposed structures, water bodies, adjacent roads, lot dimensions, 100-year floodplain boundary, and floodway boundary, if applicable, and proposed development. If proposed development is a new structure or substantial improvement of an existing structure, a certified and completed FEMA Elevation Certificate that includes the proposed elevation of the structure's lowest floor (including basement) shall be submitted.

Certification and Acknowledgement:

I certify that I am the owner or the authorized agent of the owner of the property upon which the work authorized by the permit sought will be performed. I further certify that the information given is true and correct to the best of my knowledge. All work will be performed in accordance with all applicable laws of the State of North Dakota and Burleigh County.

Printed Name of Owner or Owner Representative

Signature of Owner or Owner Representative

Date

Application Approved/ Denied By

Date

This is an Application only and not the Actual Permit.



**APPLICATION FOR THE STATE
ENGINEER'S FLOODWAY REVIEW**
NORTH DAKOTA DEPARTMENT OF WATER RESOURCES
REGULATORY DIVISION
SFN 61171 (2/2023)

FOR STATE USE ONLY

Project Number 1721-05

Date Received

N.D.C.C. § 61-16.2-14 requires that the community responsible for permitting or authorizing a use in a regulatory floodway must notify the department of the proposed use before issuing the permit or authorization.

1. PERMITTING COMMUNITY

Community Name	Floodplain Administrator's Name		
Address	City	State	ZIP Code
Telephone Number	Email Address		

2. APPLICANT (if different than Permitting Community)

Company/Agency	Contact Name		
Address	City	State	ZIP Code
Telephone Number	Email Address		

3. DEVELOPMENT INFORMATION

Location	
FIRM Panel	FIRM Date
Flood Source (stream name)	
Purpose	
Development Description (attach additional documents as needed)	
Anticipated Construction Start Date	Anticipated Construction Completion Date

4. FLOODWAY ANALYSIS

Floodway Development Federal and State Regulations:

44 CFR 60.3(d)(3) requires that communities must prohibit encroachments, including fill, new construction, substantial improvements, and other development within the adopted regulatory floodway unless it has been demonstrated through hydrologic and hydraulic analyses performed in accordance with standard engineering practice that the proposed encroachment would not result in any increase in flood levels within the community during the occurrence of the base flood discharge.

N.D.C.C. § 61-16.2-06 requires that upon delineation of the floodway under the National Flood Insurance Program [42 U.S.C. 4001 et seq.], uses shall be permitted within the floodway to the extent that they do not result in any increase in flood levels during the occurrence of the base flood discharge.

Please provide the following documentation (note that additional documentation may be required).	
	A map showing the proposed development location, compensatory storage, and all hydraulic cross sections used in the analysis.
	A description of the mitigation measures taken to restore conveyance. Provide volumetric calculations demonstrating compensatory storage, if applicable.
	Completed "No-Rise" Certificate.
	The hydraulic analysis results, including calculated conveyance and any other properties that may be pertinent. Please include at least one cross section both upstream and downstream of the development site, as well as all cross sections used at the development site (at least one). These are needed for both pre-and post-development conditions.

5. SIGNATURES

Submit this document and all attachments to the Department of Water Resources to request a floodway review as required by North Dakota Century Code § 61-16.2-14. Furthermore, I understand a permit issued from the local floodplain Administrator is required before any development may commence.

Applicant's Signature (if not Floodplain Administrator)	Date
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Before issuing a permit or authorization to allow a use in a regulatory floodway, the community responsible for permitting or authorizing such development shall notify the Department of Water Resources of the proposed development. With a signature from the local floodplain administrator, this form will serve as official notification.

Floodplain Administrator's Signature	Date
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Mail this application & supplemental forms to:

North Dakota Department of Water Resources
Regulatory Division
1200 Memorial Highway
Bismarck, ND 58504-5262



FLOODWAY "NO-RISE" CERTIFICATION
 NORTH DAKOTA DEPARTMENT OF WATER RESOURCES
 REGULATORY DIVISION
 SFN 61173 (9/20121)

This document is to certify that I am a duly qualified, registered professional engineer, licensed to practice in the State of North Dakota.

This document is to further certify that the attached technical data supports the fact that the proposed

Name of Development

will not impact the base flood elevations, floodway elevations, or floodway widths on

Name of Stream

at the published cross sections in the Flood Insurance Study for

Name of Community	Study Date
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and will not impact the base flood elevations, floodway elevations, or floodway widths at unpublished cross-sections in the vicinity of the proposed development.

Attached are the following documents to support my findings:

Name		
Title		
Address		
Address		
City	State	ZIP Code

SEAL, SIGNATURE, AND DATE
