2019

Interstate Island EAW

Attachments

Attachment A
St. Louis Area of Concern Background

ATTACHMENT A

St. Louis River Area of Concern Background

The St. Louis River Area of Concern (SLRAOC) Remedial Action Plan (RAP) is a comprehensive plan for delisting the SLRAOC through a series of action steps that address the Beneficial Use Impairments (BUIs) designated for the harbor. The RAP (MPCA and WDNR 2015) collectively describes projects that are implemented by a consortium of partners and stakeholders listed below.

- Minnesota Pollution Control Agency
- Harbor Technical Advisory Committee
- Douglas County, WI
- Wisconsin Department of Natural Resources
- Port Authority
- West Wisconsin Land Trust
- Minnesota Department of Natural Resources
- Duluth-Superior Metropolitan Interstate Council
- University of Wisconsin- Superior (UWS)
- Fond du Lac Band of Lake Superior Chippewa
- City of Duluth, MN
- University of Wisconsin- Superior Extension
- St. Louis River Alliance
- City of Superior, WI
- Wisconsin Sea Grant
- U.S. Army Corps of Engineers Detroit District (USACE)
- Western Lake Superior Sanitary District
- Audubon Minnesota
- U.S. EPA Mid-Continent Ecology Division (U.S. EPA MED)
- Minnesota Land Trust
- Marine Tech
- U.S. Fish and Wildlife Service
- Minnesota Department of Health
- Barr Engineering
- National Oceanic and Atmospheric Administration
- Douglas County Health Department
- LimnoTech
- University of Minnesota Natural Resources Research Institute (NRRI)
- U.S. Department of Agriculture
- Short, Elliot, Hendrickson
- Lake Superior National Estuarine Research Reserve
- Wisconsin Sea Grant
- AMI Consultants
- University of Minnesota–Duluth (UMD)

The RAP details the actions necessary to remove each of the BUIs identified for the SLRAOC. The SLRAOC partners and stakeholders worked together in a concerted effort to complete the RAP (2013 and updated annually since) aimed at removing BUIs and delisting the Area of Concern (AOC) by 2025. The SLRAOC is located on the western arm of Lake Superior and includes the twin port cities of Duluth, Minnesota, and Superior, Wisconsin. The SLRAOC was listed as one of 43 Great Lakes AOCs in 1987 by the International Joint Commission under the Great Lakes Water Quality Agreement between the U.S. and Canada. Historical actions such as improper municipal and industrial waste disposal and unchecked land use practices (including dredging and filling of aquatic habitat and damaging logging practices), contributed to the complex set of issues facing the SLRAOC at the time it was listed. The Stage I RAP (RAP; MPCA and WDNR, 1992) determined that nine of 14 possible BUIs existed in the SLRAOC including:

- BUI 1: Fish Consumption Advisories
- BUI 2: Degraded Fish and Wildlife Populations
- BUI 3: Fish Tumors and Other Deformities
- BUI 4: Degradation of Benthos

- BUI 5: Restrictions on Dredging
- BUI 6: Excessive Loading of Sediment and Nutrients
- BUI 7: Beach Closings and Body Contact Restrictions
- BUI 8: Degradation of Aesthetics
- BUI 9: Loss of Fish and Wildlife Habitat

In addition to its long list of BUIs, the SLRAOC is spatially large and geographically complex, spanning the Minnesota and Wisconsin state line and including tribal interests. The SLRAOC boundary includes the lower 39 miles of the St. Louis River, from upstream of Cloquet, Minnesota, to its mouth at the Duluth/Superior Harbor and Lake Superior, and the Nemadji River watershed (Figure 1). However, most of the actions included in the RAP focus on the St. Louis River below the Fond du Lac Dam, Crawford Creek, and the Nemadji River watershed, as they represent those portions of the SLRAOC most impacted by historical actions.

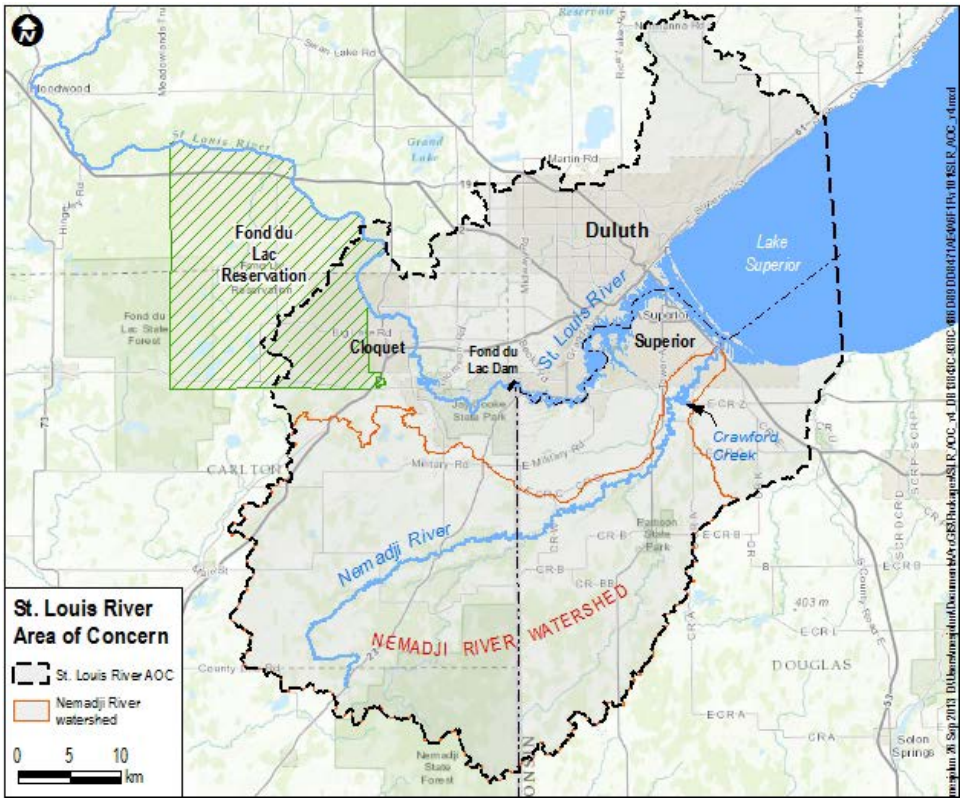


Figure 1: St. Louis River AOC Boundary

Since the Stage I RAP was written in 1992, the Partners have conducted significant work to restore the SLRAOC with well over $420 million invested since 1978 on infrastructure upgrades, remediation, and habitat restoration and protection in the AOC. Improved municipal wastewater treatment and significant progress on control of wet weather overflows have contributed to water quality improvement, and returning fish and wildlife populations. The Partners have remediated and/or restored some contaminated sites, including Hog Island/Newton Creek in Wisconsin and the St. Louis River Interlake/Duluth Tar Superfund site in Minnesota. In addition, the Partners have completed numerous habitat protection and restoration projects across the SLRAOC.

The St. Louis River AOC Stage I RAP (SLRCAC, 1992) was developed as a collaborative effort between the MPCA and the WDNR. At that time, these agencies supported an extensive public participation process that resulted in the development of the Stage 1 RAP and the Stage 2 RAP Progress Report (MPCA and WDNR, 1995). Many efforts in association with the RAP have taken place since this time including the Lower St. Louis River Habitat Plan (2002) which was used extensively to identify the critical habitat restoration projects necessary to remove BUIs.

The primary focus of the majority of "on the ground" management actions represented in the RAP are remediation of contaminated sediments and habitat restoration. Sediment contamination in the SLRAOC contributes directly or indirectly to eight of the nine BUIs (BUI 6: Excess Loading of Sediment and Nutrients is the exception). Cleanup of contaminated sediments is an obvious focus of SLRAOC restoration efforts, not only from an ecological standpoint, but also from the standpoint of stakeholder concern. On the habitat front, recent estimates confirm that approximately 3,400 acres of aquatic habitat has been lost over time in the St. Louis River (Hollenhorst et al., 2013). A goal for SLRAOC delisting is restoration of 50% of this lost habitat (1,700 acres).

Figure 2 displays sites identified for remediation of contaminated sediments in the SLRAOC RAP. Figure 2 also contains planned habitat restoration projects, including both aquatic habitat restoration sites and additional projects in important hydrologically connected habitats. The figure is current as of November 2018.

The RAP has 69 action items the Partners are addressing in relation to removing the designated BUIs related to these legacy issues. Most of these actions are underway in one form or another and each action has a timeframe for completion in keeping with the goal to delist the SLRAOC by 2025. Of the action items, both Kingsbury Bay and Grassy Point Projects are RAP action items and considered necessary for removal of the following BUIs and SLRAOC delisting:

- BUI 2: Degradation of Fish and Wildlife Populations
- BUI 4: Degradation of Benthos
- BUI 9: Loss of Fish and Wildlife Habitat

The Partners have identified all the SLRAOC actions to remediate environmental impacts related to legacy related pollutants and habitat impacts, and provide for a more restored estuary in relation to the health and sustainability of the aquatic habitat.

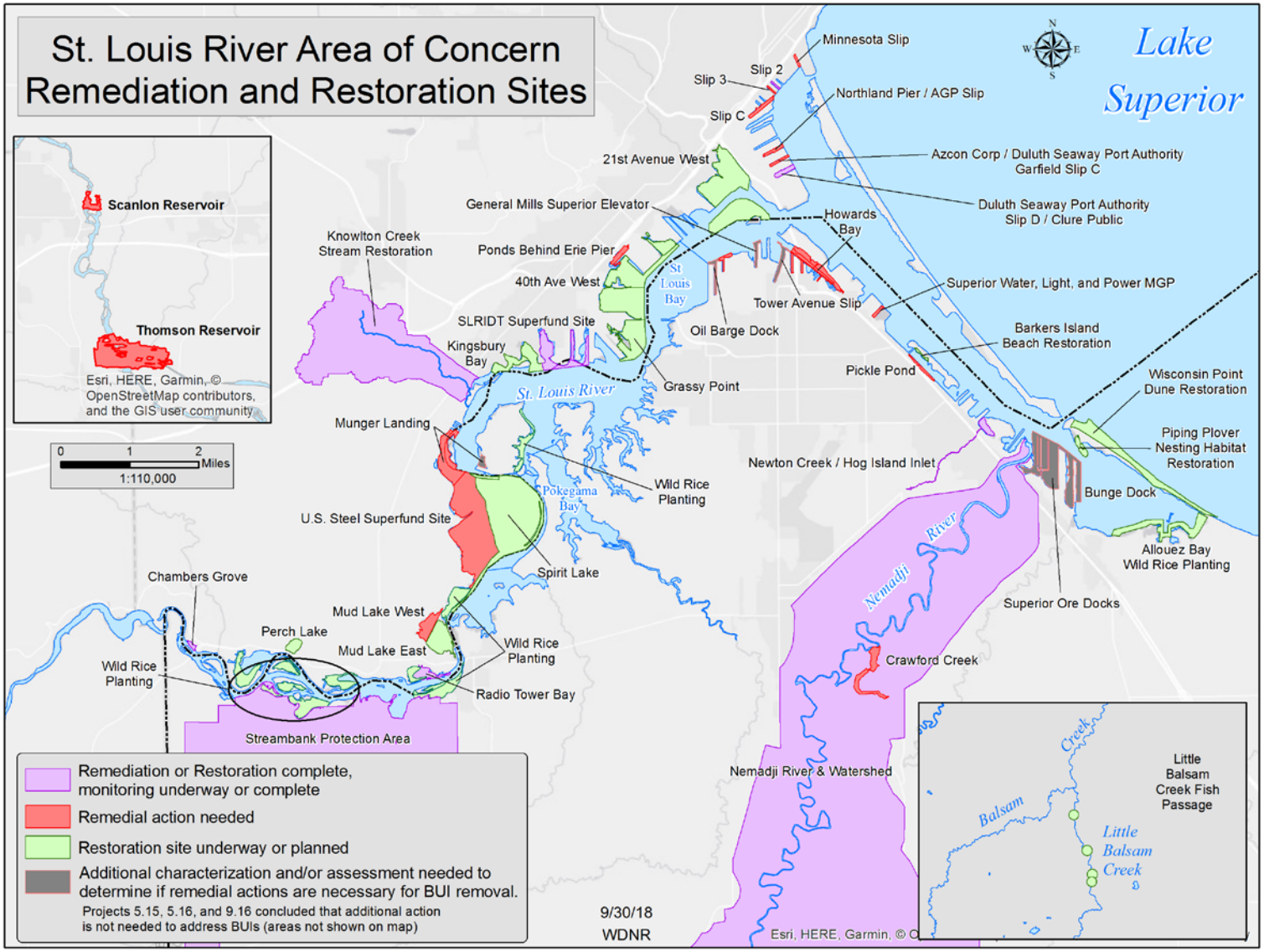


Figure 2. Remediation and Restoration Sites in the St. Louis River AOC.

Attachment B
2014 Environmental Review
Need Determination

ATTACHMENT B. 2014 Environmental Review Need Determination

DEPARTMENT OF NATURAL RESOURCES
Division of Ecological Resources

STATE OF MINNESOTA
Memorandum

DATE: June 27, 2013

PHONE: (651) 259-5115

TO: Adam W. Fulton
MDNR, Division of Ecological and Water Resources

FROM: Jamie Schrenzel
MDNR, Division of Ecological Resources

SUBJECT: Interstate Island Project Environmental Review Need Determination

This memorandum will serve as the Environmental Review Need Determination regarding the proposed Interstate Island Project in St. Louis County, Minnesota.

Materials submitted describing the proposed project were compared to Minnesota Rules, part 4410.4400 Mandatory Environmental Impact Statement (EIS) Categories, Minnesota Rules, part 4410.4600 Exemptions, and Minnesota Rules, part 4410.4300 Mandatory Environmental Assessment Worksheet (EAW) Categories.

None of the mandatory EIS categories in Minnesota Rules, part 4410.4400 applied to the proposed project description.

None of the categories of exemptions in Minnesota Rules, part 4410.4600 applied to the proposed project description.

Minnesota Rules, part 4410.4300 includes mandatory categories for projects in which an EAW must be prepared. Minnesota Rules, part 4410.4300, subpart 27, item B states: "For projects that will change or diminish the course, current, or cross-section of 40 percent or more or five or more acres of types 3 through 8 wetland of 2.5 acres or more, excluding public water wetlands, if any part of the wetland is within a shoreland area, delineated flood plain, a state or federally designated wild and scenic rivers district, the Minnesota River Project Riverbed area, or the Mississippi headwaters area, the local government unit shall be the RGU." This mandatory category was reviewed and compared to the project. Materials submitted for this project state that all fill will be placed in upland areas and not in wetlands. Therefore this mandatory category or any mandatory category regarding wetland impacts does not apply.

Minnesota Rules, part 4410.4300, subpart 36a. (A) states: "For a project that alters 800 feet or more of the shoreline in a sensitive shoreland area or 1,320 feet or more of shoreline in a nonsensitive shoreland area, the local government unit is the RGU." This mandatory category was reviewed and compared to the project. Materials submitted for this project state that the width of impact in the shore impact zone would be 50 feet. Assuming a 50-foot shoreline impact, this impact would be less than the mandatory category threshold. Therefore, this mandatory category does not apply.

Minnesota Rules, part 4410.4300, subpart 36a. (B) states: "For a project that alters more than 50 percent of the shore impact zone if the alteration measures at least 5,000 square feet, the local government unit is the RGU." This mandatory category was also reviewed and compared to the project. Materials submitted for this project state that the area of impact within the shore impact zone would be 1,500 square feet, which is less than the 5,000 square feet threshold for the category. Therefore this mandatory category also does not apply. No other mandatory category descriptions were comparable to the proposed project.

ATTACHMENT B. 2014 Environmental Review Need Determination

Based on the above described considerations, an Environmental Assessment Worksheet or Environmental Impact Statement **is not** mandatory for the Interstate Island Project in St. Louis County, Minnesota.

If the project plans described in this Environmental Review Need Determination change substantially, please contact the MDNR Ecological and Water Resources Environmental Review Unit for a new Environmental Review Need Determination.

Attachment C
Plan Sets for Spring and Fall Work

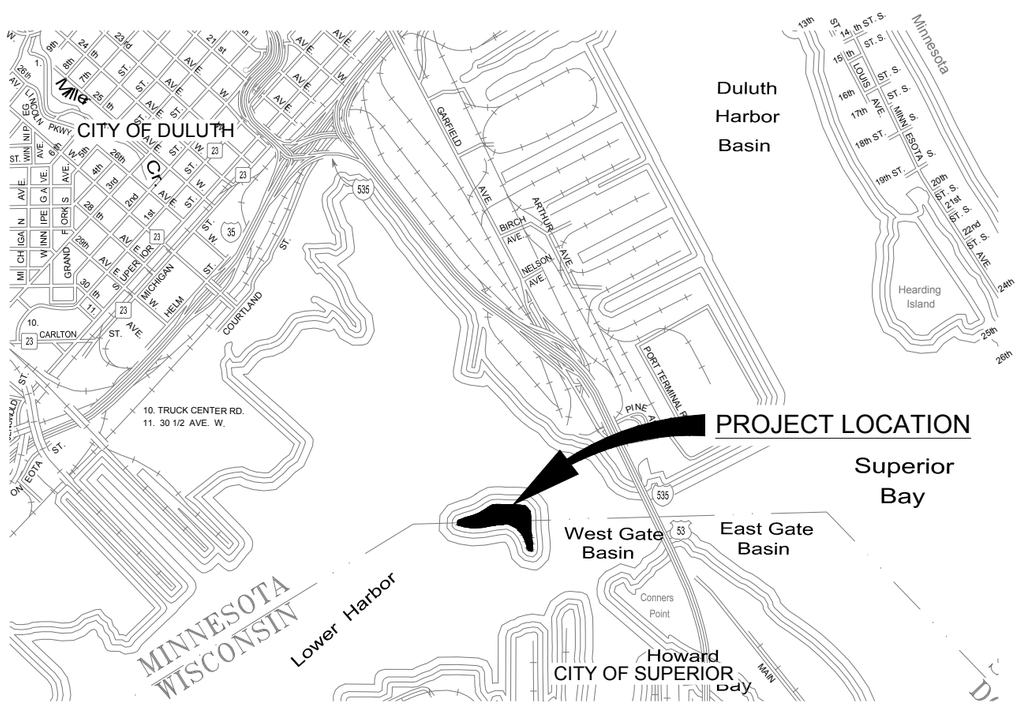
LEGEND

- EXISTING RIPRAP
- PLACE SALVAGED RIPRAP
- 60'x200' NESTING AREA (12,000 SF)
- APPROXIMATE LOCATION OF EXISTING DUNE TO REMAIN
- -599- EXISTING CONTOURS
- 602 PROPOSED CONTOURS

CITY OF
DULUTH, MINNESOTA
& SUPERIOR, WISCONSIN

CONSTRUCTION
PLANS FOR

SPRING INTERSTATE
ISLAND IMPROVEMENTS



NOTE:
THE SUBSURFACE UTILITY QUALITY INFORMATION IN THIS PLAN IS LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE CONTRACTOR SHALL CALL THE GOPHER STATE ONE CALL SYSTEM AT 811 BEFORE COMMENCING EXCAVATION.

811 Know what's **below.** **Call** before you dig.

GOVERNING SPECIFICATIONS

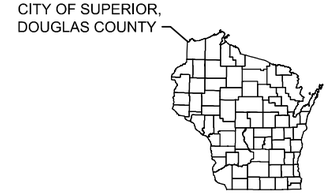
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	STATEMENT OF ESTIMATED QUANTITIES
3	EXISTING CONDITIONS & REMOVAL PLAN
4	SITE LAYOUT & GRADING PLAN
5	TYPICAL SECTIONS
6 & 7	CONSTRUCTION DETAILS
8 - 9	SWPPP

THIS PLAN CONTAINS 9 SHEETS.

PROJECT LOCATION



MINNESOTA & WISCONSIN

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

Signature DANIEL R. HINZMANN, PE

Date: 07/03/19 Lic. No. 49874

FILE NO. MN 150297

1 / 9

STATEMENT OF ESTIMATED QUANTITIES - BASE BID

NOTE	ITEM NO.	ITEM DESCRIPTION		UNIT	TOTAL ESTIMATED QUANTITIES
	2021.501	MOBILIZATION		LUMP SUM	1
1,2	2101.501	CLEARING		LUMP SUM	1
1,3	2104.503	REMOVE SILT FENCE		LIN FT	730
1,3	2104.503	REMOVE SEDIMENT CONTROL LOG		LIN FT	620
4	2104.601	SALVAGE DRIFTWOOD		LUMP SUM	1
3,4	2104.607	SALVAGE RANDOM RIPRAP		CU YD	610
5	2105.504	GEOTEXTILE FABRIC TYPE 3		SY YD	1640
13	2105.507	COMMON EXCAVATION		CU YD	375
4,6	2105.607	SALVAGE AND INSTALL COARSE GRAIN SAND (TERN NESTING AREA) (CV)		CU YD	2050
	2105.607	COMMON BORROW SPECIAL (CV)		CU YD	7100
7	2511.507	RANDOM RIPRAP CLASS I		CU YD	100
8	2511.601	PLACE DRIFTWOOD		LUMP SUM	1
9	2511.607	INSTALL RANDOM RIPRAP		CU YD	610
	2557.502	PEDESTRIAN GATE DESIGN SPECIAL		EACH	1
	2557.503	WIRE FENCE DESIGN SPECIAL		LIN FT	700
	2557.503	EXTERIOR TERN NESTING FENCE		LIN FT	520
	2557.503	INTERIOR TERN NESTING PARTITION FENCE		LIN FT	920
10	2573.503	SEDIMENT CONTROL LOG TYPE WOOD CHIP		LIN FT	1991

STATEMENT OF ESTIMATED QUANTITIES - ALTERNATE 1

NOTE	ITEM NO.	ITEM DESCRIPTION		UNIT	TOTAL ESTIMATED QUANTITIES
	2105.607	COMMON BORROW SPECIAL (CV)		CU YD	4575

STATEMENT OF ESTIMATED QUANTITIES - ALTERNATE 2

NOTE	ITEM NO.	ITEM DESCRIPTION		UNIT	TOTAL ESTIMATED QUANTITIES
11	2105.607	COARSE GRAIN SAND BORROW (TERN NESTING AREA) (CV)		CU YD	2050
12	2105.607	ROCK COVER (TERN NESTING AREA)		CU YD	255

NOTES:

1	REMOVE FROM ISLAND
2	CUT TREES FLUSH TO THE GROUND
3	QUANTITY FROM 2015 CONSTRUCTION PLANS
4	SALVAGE FOR RE-USE
5	PLACED UNDERNEATH RIPRAP AT PROPOSED LOCATION
6	COMMON EXCAVATION IS INCIDENTAL. COMMON EXCAVATION ITEM IS FOR RIPRAP INSTALLATION ONLY.
7	ADDITIONAL RIPRAP TO BE BROUGHT TO THE ISLAND IF SALVAGED QUANTITY IS NOT SUFFICENT
8	PLACE SALVAGED DRIFTWOOD
9	INSTALL SALVAGED RIPRAP
10	REMOVE WHEN CONSTRUCTION IS COMPLETE
11	THIS ALTERNATE ITEM SHALL DECREASE THE BASE BID COMMON BORROW AMOUNT BY 2050 CU. YD. THIS ALTERNATE ITEM SHALL ALSO ELIMINATE THE SALVAGE AND INSTALL COARSE GRAIN SAND (TERN NESTING AREA) BASE BID ITEM
12	PLACED AS DIRECTED IN THE FIELD
13	EXCAVATION FOR INSTALLING RIPRAP AT ELEVATIONS SHOWN IN PLAN

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

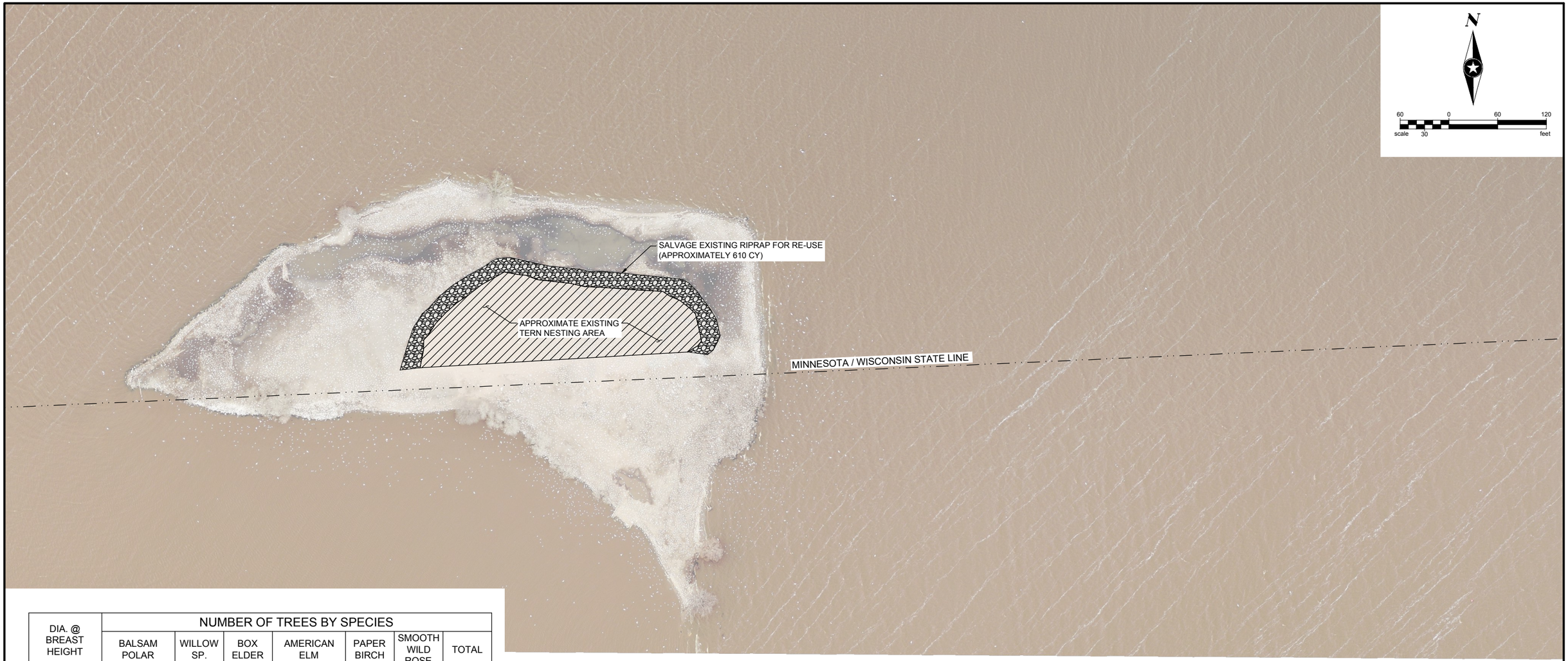
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Date: 07/03/19 — DANIEL R. HINZMANN, PE — Lic. No. 49874

INTERSTATE ISLAND

STATEMENT OF ESTIMATED QUANTITIES

FILE NO. MNLAN 148586



DIA. @ BREAST HEIGHT	NUMBER OF TREES BY SPECIES						
	BALSAM POLAR	WILLOW SP.	BOX ELDER	AMERICAN ELM	PAPER BIRCH	SMOOTH WILD ROSE	TOTAL
1	--	--	--	--	--	2	2
2	27	--	2	--	--	--	29
3	36	--	6	--	--	--	42
4	34	--	--	--	--	--	34
5	22	--	--	2	--	--	24
6	8	1	6	--	--	--	15
7	2	1	--	--	--	--	3
8	1	1	--	--	--	--	2
9	--	1	--	--	--	--	1
10	--	3	1	1	--	--	5
11	--	1	--	--	--	--	1
12	--	2	--	--	--	--	2
13	--	--	--	--	--	--	0
14	--	--	--	--	--	--	0
15	--	--	--	--	--	--	0
16	--	--	--	--	--	--	0
17	1	--	--	--	--	--	1
18	--	--	--	--	1	--	1
TOTAL	131	10	15	3	1	2	162

NOTES:

- REMOVE ALL EXISTING SILT FENCE FROM ISLAND
- REMOVE ALL EXISTING SEDIMENT CONTROL LOGS FROM ISLAND
- CLEAR ALL TREES AND SHRUBS(SEE THE SPECIES TABLE FOR QUANTITY) & REMOVE FROM ISLAND. STUMPS MAY REMAIN IF BURIED
- EXISTING TERN NESTING HUTS (REMOVAL BY OTHERS)
- EXISTING TERN NESTING AREA FENCE (REMOVAL BY OTHERS)
- SALVAGE ALL DRIFTWOOD FOR RE-USE
- SALVAGE ALL RIPRAP FOR RE-USE

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

Date: 07/03/19 DANIEL R. HINZMANN, PE Lic. No. 49874

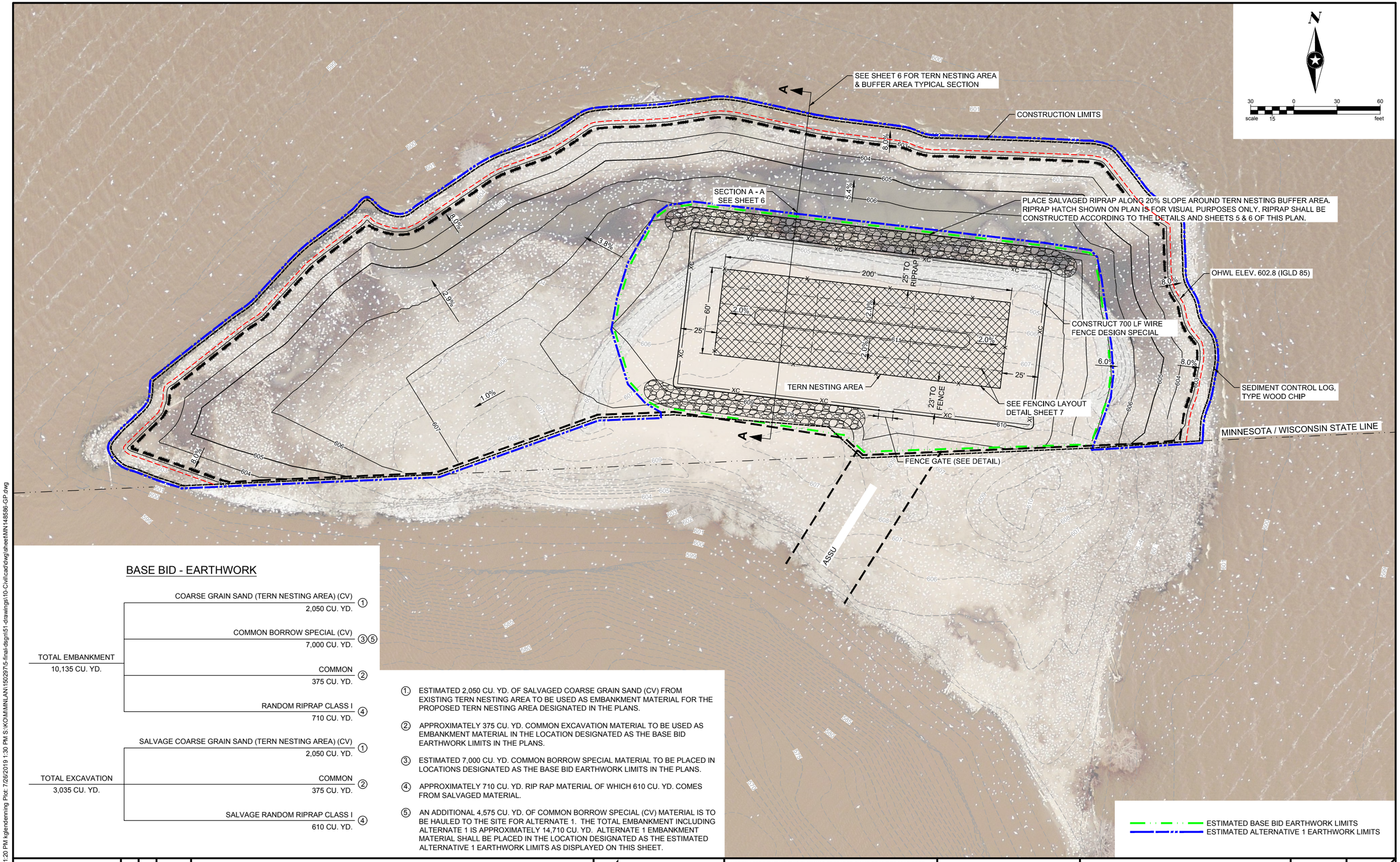
INTERSTATE ISLAND

EXISTING CONDITIONS & REMOVAL PLAN

FILE NO. MNLAN 148586

3/9

Save: 7/3/2019 10:11 AM kglendenning Plot: 7/23/2019 2:47 PM S:\KOM\MNLAN\150297\5-final-dsgn\51-drawings\10-Civil\cad\dwg\sheet\MN148586-RE.dwg



BASE BID - EARTHWORK

TOTAL EMBANKMENT
10,135 CU. YD.

- COARSE GRAIN SAND (TERN NESTING AREA) (CV) ① — 2,050 CU. YD.
- COMMON BORROW SPECIAL (CV) ③⑤ — 7,000 CU. YD.
- COMMON ② — 375 CU. YD.
- RANDOM RIPRAP CLASS I ④ — 710 CU. YD.

TOTAL EXCAVATION
3,035 CU. YD.

- SALVAGE COARSE GRAIN SAND (TERN NESTING AREA) (CV) ① — 2,050 CU. YD.
- COMMON ② — 375 CU. YD.
- SALVAGE RANDOM RIPRAP CLASS I ④ — 610 CU. YD.

① ESTIMATED 2,050 CU. YD. OF SALVAGED COARSE GRAIN SAND (CV) FROM EXISTING TERN NESTING AREA TO BE USED AS EMBANKMENT MATERIAL FOR THE PROPOSED TERN NESTING AREA DESIGNATED IN THE PLANS.

② APPROXIMATELY 375 CU. YD. COMMON EXCAVATION MATERIAL TO BE USED AS EMBANKMENT MATERIAL IN THE LOCATION DESIGNATED AS THE BASE BID EARTHWORK LIMITS IN THE PLANS.

③ ESTIMATED 7,000 CU. YD. COMMON BORROW SPECIAL MATERIAL TO BE PLACED IN LOCATIONS DESIGNATED AS THE BASE BID EARTHWORK LIMITS IN THE PLANS.

④ APPROXIMATELY 710 CU. YD. RIP RAP MATERIAL OF WHICH 610 CU. YD. COMES FROM SALVAGED MATERIAL.

⑤ AN ADDITIONAL 4,575 CU. YD. OF COMMON BORROW SPECIAL (CV) MATERIAL IS TO BE HAULED TO THE SITE FOR ALTERNATE 1. THE TOTAL EMBANKMENT INCLUDING ALTERNATE 1 IS APPROXIMATELY 14,710 CU. YD. ALTERNATE 1 EMBANKMENT MATERIAL SHALL BE PLACED IN THE LOCATION DESIGNATED AS THE ESTIMATED ALTERNATIVE 1 EARTHWORK LIMITS AS DISPLAYED ON THIS SHEET.

ESTIMATED BASE BID EARTHWORK LIMITS
ESTIMATED ALTERNATIVE 1 EARTHWORK LIMITS

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

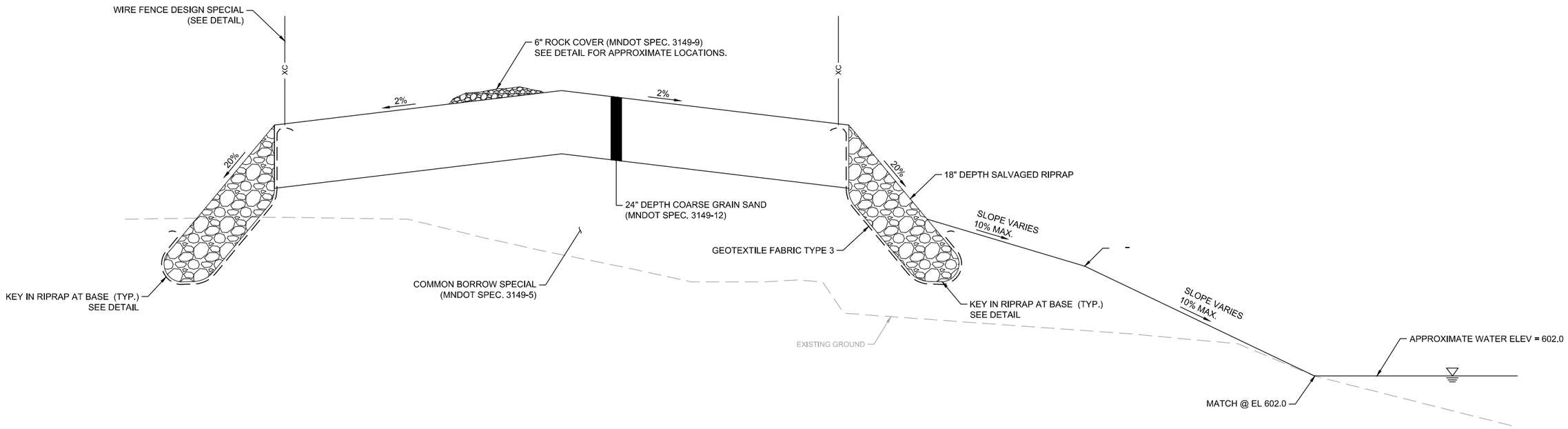
DANIEL R. HINZMANN, PE
Date: 07/03/19 Lic. No. 49874

INTERSTATE ISLAND

SITE LAYOUT AND GRADING PLAN

FILE NO. MNLAN 148586

4 / 9



DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

Date: 07/03/19

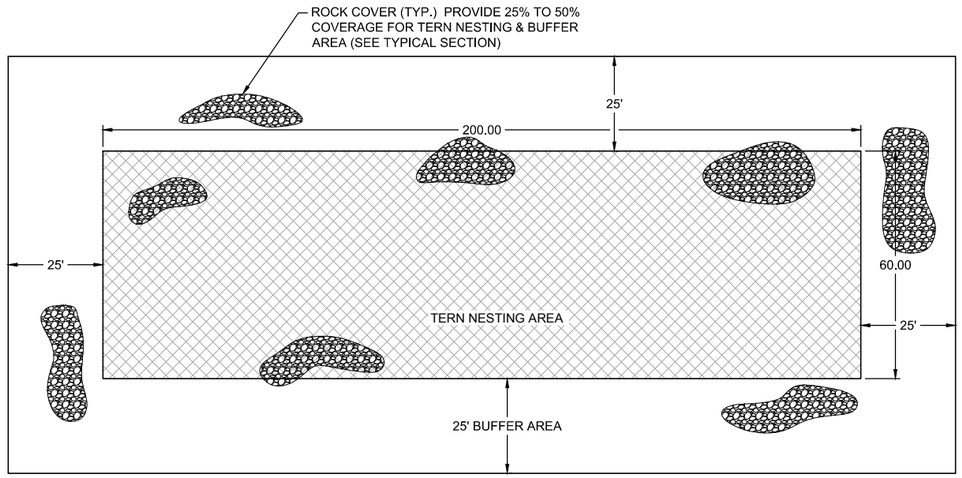
DANIEL R. HINZMANN, PE
Lic. No. 49874

INTERSTATE
ISLAND

TYPICAL SECTION

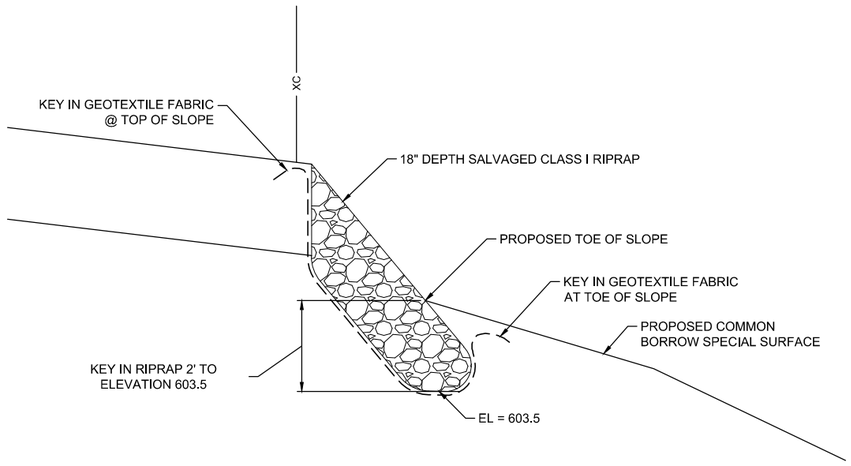
FILE NO.
MNLAN 148586

5
9



NOTE: THIS DETAIL APPLIES TO ALTERNATE 2

TERN AREA ROCK COVER PLACEMENT



KEYED IN RIPRAP

DESIGN TEAM	NO.	BY	DATE	REVISIONS
DRAWN BY: KLG				
DESIGNER: TPY				
CHECKED BY: DRH				

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

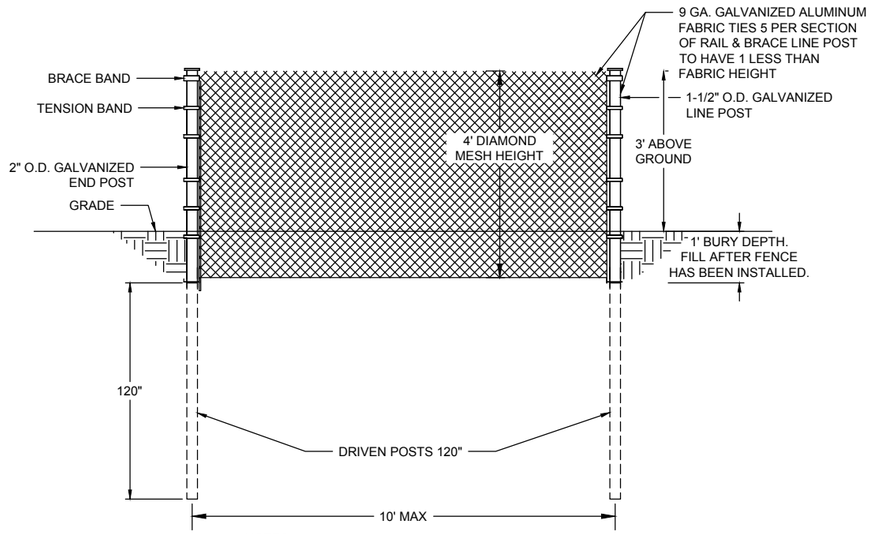
DANIEL R. HINZMANN, PE
Date: 07/03/19 Lic. No. 49874

INTERSTATE ISLAND

DETAILS

FILE NO. MNLAN 148586

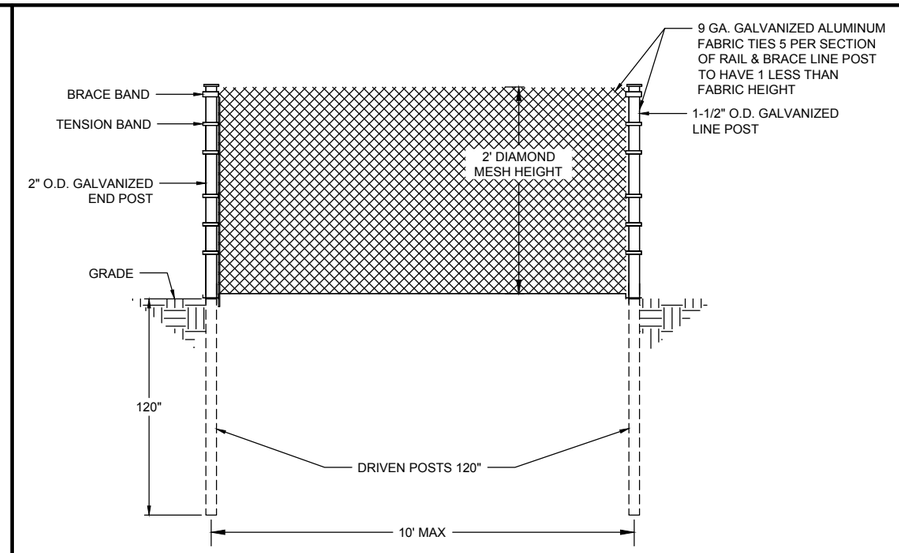
6 / 9



NOTES:

- FOR CORNER, ADD (1) BRACE (SEE MNDOT STD. PLATE 9322)
- BURY LOWER 1' OF CHAIN LINK MESH AFTER INSTALLATION
- FENCE SHALL BE PLACED 2' FROM TOP OF RIP RAP SLOPE
- FENCE POSTS SHALL BE LOCATED OUTSIDE OF MESH WITH MESH ON THE INTERIOR SIDE (TERN NESTING SIDE)
- WIRE FENCE DESIGN SPECIAL SHALL BE 9 GAUGE 2" MESH

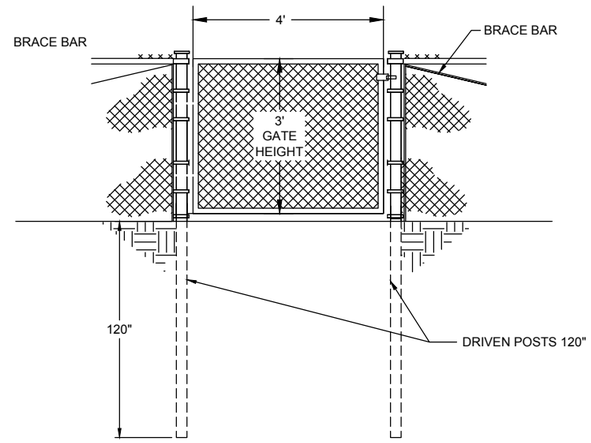
WIRE FENCE DESIGN SPECIAL DETAIL



NOTES:

- CHAIN LINK SHALL BE FLUSH WITH GROUND AND SHALL HAVE NO GAPS
- FOR CORNER, ADD (1) BRACE (SEE MNDOT STD. PLATE 9322)
- EXTERIOR TERN NESTING FENCE SHALL BE 11 GAUGE 1" DIAMOND MESH
- INTERIOR TERN NESTING PARTITION FENCE SHALL BE 11 GAUGE 1/2 " DIAMOND MESH
- SEE FENCING LAYOUT DETAIL FOR LOCATIONS (THIS SHEET)

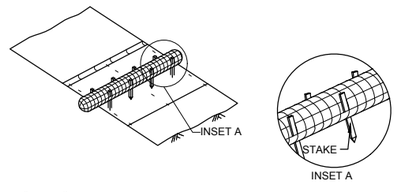
EXTERIOR TERN NESTING FENCE &
INTERIOR TERN NESTING PARTITION FENCE



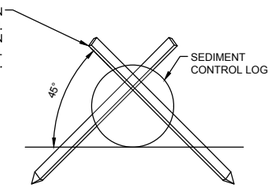
NOTES:

- POSTS FOR PEDESTRIAN GATES SHALL BE: NPS 2" NOM. I.D. AASHTO M181, 6.65 LBS./FT., 8'-0" LENGTH.
- FRAMES FOR PEDESTRIAN GATES SHALL BE: NPS 1" NOM. I.D. AASHTO M181, 1.68 LBS./FT.
- SEE WIRE FENCE DESIGN DETAIL FOR POST, FABRIC AND BRACE BAR REQUIREMENTS.
- PEDESTRIAN GATE FENCE SHALL BE 9 GAUGE 2" MESH.

PEDESTRIAN GATE



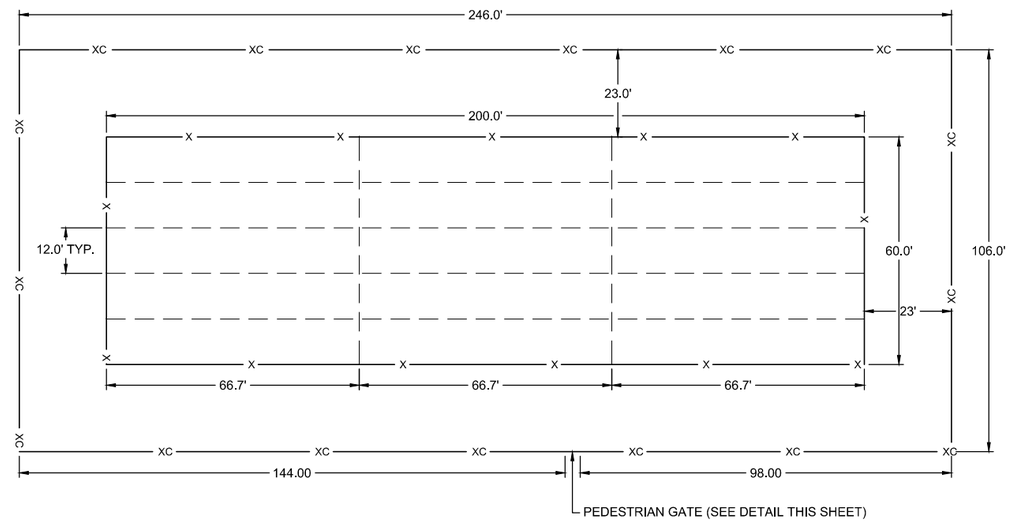
0.5" X 2" X 16" LONG WOO =N ST-K= -T 1' S - ING -XIMUM. ST-K=S SH = DRI =N THROUGH TH= =DI =NT CONTROL LO -T = =GR==S.



NOTE:

P = =DI =NT CONTROL LOG -T 603. = = -TION (== SH==T - \ LO -TION)

SEDIMENT CONTROL LOG TYPE WOOD CHIP



XC WIRE FENCE DESIGN SPECIAL. SEE DETAIL THIS SHEET.
X EXTERIOR TERN NESTING FENCE. SEE DETAIL THIS SHEET.
INTERIOR TERN NESTING PARTITION FENCE. SEE DETAIL THIS SHEET.

FENCING LAYOUT DETAIL

Save: 7/24/2019 10:20 AM kglendenning Plot: 7/24/2019 10:20 AM S:\KO\MN\LAN\150297\5-final-dsgn\51-drawings\10-Civil\cad\dwg\sheet\MN148586-DT.dwg

DRAWN BY:	KLG			
DESIGNER:	TPY			
CHECKED BY:	DRH			
DESIGN TEAM	NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

DANIEL R. HINZMANN, PE
Date: 07/03/19 Lic. No. 49874

INTERSTATE ISLAND

DETAILS

FILE NO. MNLAN 148586

7/9

SWPPP SUMMARY/OVERVIEW:
THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

PROJECT INFORMATION:

LOCATION:	INTERSTATE ISLAND (DULUTH, MINNESOTA / SUPERIOR, WISCONSIN)
LATITUDE/LONGITUDE:	46.749471, -92.109764
PROJECT DESCRIPTION:	ISLAND IMPROVEMENTS AND HABITAT PROTECTION
SOIL DISTURBING ACTIVITIES:	GRADING AND FILL PLACEMENT

CONTACTS:

OWNER:	MINNESOTA LAND TRUST
CONTACT:	GINI BREIDENBACH
ADDRESS:	394 SOUTH LAKE AVENUE, SUITE 404, DULUTH, MN 55802
PHONE:	(218) 221-7033
EMAIL:	GBREIDENBACH@MNLAND.ORG

ENGINEER:	SHORT ELLIOTT HENDRICKSON INC. (SEH)
CONTACT:	DAN HINZMANN, PE (LIC. MN, WI)
PHONE:	218-279-3034
EMAIL:	DHINZMANN@SEHINC.COM
PROJECT NO.:	MNLAN 150297

KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY
THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL COORDINATE WITH ALL CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE THE IMPLEMENTATION OF THE SWPPP.

CONTRACTOR	TBD
CONTACT	TBD
PHONE	TBD
EMAIL	TBD

THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

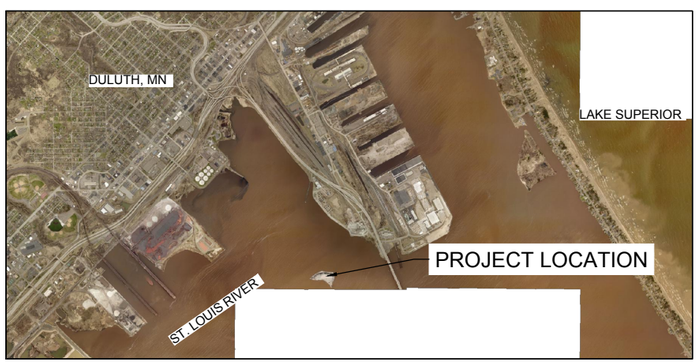
GENERAL SWPPP RESPONSIBILITIES:
THE CONTRACTOR SHALL KEEP THE SWPPP, INCLUDING ALL AMENDMENTS AND INSPECTION AND MAINTENANCE RECORDS ON SITE DURING CONSTRUCTION.

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR.

ALL SWPPP CHANGES MUST BE DONE BY AN INDIVIDUAL TRAINED IN ACCORDANCE WITH SECTION 21.4 OR 21.5. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

LONG TERM OPERATION AND MAINTENANCE
THIS PROJECT IS A HABITAT RESTORATION, AND AS SUCH WILL NOT HAVE A PERMANENT STORMWATER SYSTEM. THERE WILL BE NO PERMANENT STORMWATER MANAGEMENT OR MAINTENANCE RESPONSIBILITIES BY THE OWNER.



TRAINING DOCUMENTATION:

PREPARER/DESIGNER OF SWPPP:	CHLOE GLOEKNER
EMPLOYER:	SEH
DATE OBTAINED / REFRESHED	OCTOBER 2016
INSTRUCTOR(S)/ENTITY PROVIDING TRAINING:	UNIVERSITY OF MINNESOTA

CONTENT OF TRAINING AVAILABLE UPON REQUEST.

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

-INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
-INDIVIDUALS PERFORMING INSPECTIONS
-INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

1) DATES OF TRAINING
2) NAME OF INSTRUCTORS
3) CONTENT AND ENTITY PROVIDING TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

PROJECT SUMMARY:

2019 DISTURBED AREA:	4.2 AC ABOVE 603.1 EL. (PROPOSED ISLAND AREA)
2020 DISTURBED AREA:	4.5 AC ABOVE 603.1 EL. (PROPOSED ISLAND AREA)
TOTAL PROJECT 2019/2020 DISTURBED AREA	8.7 AC ABOVE 603.1 EL. (PROPOSED ISLAND AREA)
PRE-CONSTRUCTION IMPERVIOUS AREA:	0.00 AC
POST-CONSTRUCTION IMPERVIOUS AREA:	0.00 AC
IMPERVIOUS AREA ADDED:	0.00 AC

RECEIVING WATER(S) WITHIN ONE MILE FROM PROJECT BOUNDARIES:
(http://pca-gis02.pca.state.mn.us/CSW/index.html)

ID	NAME	TYPE	SPECIAL WATER?	IMPAIRED WATER?	CONSTRUCTION RELATED IMPAIRMENT OR SPECIAL WATER CLASSIFICATION	TMDL
04010201-105	ST. LOUIS	RIVER	YES	YES	AQC	DDT, DIELDRIN, DIOXIN, HG-F, HG-W, PCB-F, PCB-W, TOXAPHENE
16-0001-00	LAKE SUPERIOR	LAKE	YES	YES	AQC	HG-F, PCB-F
ADDITIONAL BMPS AND/OR ACTIONS REQUIRED: NONE						
SEE SECTION 23 OF THE PERMIT AND APPLICABLE TMDL WLA'S - N/A						

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

SEE DNR PERMIT FOR MORE INFORMATION

SITE SOIL INFORMATION: (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

SOIL NAME:	HYDROLOGIC CLASSIFICATION:
BEACHES, 2 TO 12 PERCENT SLOPES	7C
ANTICIPATED RANGE OF PARTICLE SIZES	SANDY

RELATED REVIEWS & PERMITS:
ENVIRONMENTAL, WETLAND, ENDANGERED OR THREATENED SPECIES, ARCHEOLOGICAL, LOCAL, STATE, AND/OF FEDERAL REVIEWS/PERMITS:

AGENCY:	TYPE OF PERMIT:
MNDNR	PUBLIC WATERS WORK PERMIT
WDNR	WPDES, WATERWAY INDIVIDUAL PERMIT

IMPLEMENTATION SEQUENCE:
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING SEQUENCE.
THE ENGINEER MAY APPROVE ADJUSTMENTS TO THE SEQUENCE AS NEEDED.

1.	INSTALL PERIMETER CONTROL AND STABILIZE DOWN GRADIENT BOUNDARIES
2.	COMPLETE SITE GRADING
3.	COMPLETE FINAL GRADING AND STABILIZE DISTURBED AREAS
4.	AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, REMOVE BMPS, AND RE-STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.

PROJECT SPECIFIC NOTES:
THE INTERSTATE ISLAND PROJECT IS A HABITAT RESTORATION PROJECT THAT CONSISTS OF DEVELOPING HABITAT FOR TERNS. THIS TYPE OF HABITAT IS COMPRISED OF CLEAN SAND THAT IS FREE OF ORGANIC MATERIALS AND FREE OF VEGETATION. FOR THE PURPOSES OF THIS PROJECT, THE COMPACTED CLEAN SAND IS CONSIDERED TO BE THE FINAL STABILIZATION. HOWEVER, ADDITIONAL FEATURES ARE BEING ADDED TO THE PROJECT, WHICH INCLUDE ROCK BERMS, ROCK PILES, AND FENCES, WHICH WILL PROVIDE FOR FURTHER STABILIZATION OF THE ISLAND.

THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:
EXISTING CONDITIONS & REMOVAL PLAN SHEET
SITE LAYOUT & GRADING PLAN SHEET
TYPICAL SECTIONS SHEET
CONSTRUCTION DETAIL SHEETS
SWPPP SHEETS
PROJECT SPECIFICATIONS
PROJECT BID FORM

TEMPORARY BMP DESIGN FACTORS:
EROSION PREVENTION AND SEDIMENT CONTROL BMP'S MUST BE DESIGNED TO ACCOUNT FOR:

THE EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION

THE NATURE OF STORMWATER RUNOFF AND RUN-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES

THE STORMWATER VOLUME, VELOCITY, AND PEAK FLOW RATES TO MINIMIZE DISCHARGE OF POLLUTANTS IN STORMWATER AND TO MINIMIZE CHANNEL AND STREAMBANK EROSION AND SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS

THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT.

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

Date: 07/03/19 DANIEL R. HINZMANN, PE Lic. No. 49874

INTERSTATE ISLAND

SWPPP 1

FILE NO. MNLAN 148586

EROSION PREVENTION MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION.

THE PERMITTEE SHALL DELINEATE AREAS NOT TO BE DISTURBED. PERMITTEE(S) MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT WITH STEEP SLOPES. WHEN STEEP SLOPES MUST BE DISTURBED, PERMITTEES MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES.

THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 7 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION. STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. TEMPORARY STOCKPILES AND WORK AREAS WITHOUT SIGNIFICANT CLAY, SILT, OR ORGANIC COMPONENTS DO NOT REQUIRE STABILIZATION.

DRAINAGE PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPS AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

TEMPORARY OR PERMANENT DITCHES OR SWALES USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.

THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITH IN 24 HOURS OF CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE SHORT TERM CONSTRUCTION ACTIVITY IS COMPLETE, PERMITTEE(S) MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.

THE CONTRACTOR SHALL PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROL AT THE BASE OF THE STOCKPILES.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

RECEIVING WATER	NATURAL BUFFER	IS THE BUFFER BEING ENCROACHED ON?	REASON FOR BUFFER ENCROACHMENT
ST. LOUIS RIVER	0 FT	YES	ISLAND EXPANSION AND IMPROVEMENTS

A 50 FOOT NATURAL BUFFER MUST BE PRESERVED WHEN POSSIBLE. THIS IS A HABITAT RESTORATION PROJECT INTENDED TO PROVIDE A CLEAN SAND ENVIRONMENT. NATURAL EROSION IS TO BE EXPECTED AND A REDUNDANT BMP WILL NOT BE UTILIZED WITHIN 50FT OF THE SURFACE WATER.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

INSPECTION AND MAINTENANCE:
ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE PERMITTEE(S) IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE PERMITTEE(S) SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE PERMITTEE(S) SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

-DATE AND TIME OF INSPECTIONS;
-NAME OF PERSON(S) CONDUCTING INSPECTION;
-FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
-CORRECTIVE ACTIONS TAKEN;
-DATE AND AMOUNT OF RAINFALL EVENTS;
-POINTS OF DISCHARGE OBSERVED DURING INSPECTION AND DESCRIPTION OF THE DISCHARGE
-AMENDMENTS MADE TO THE SWPPP.

THE PERMITTEE(S) SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE CONTRACTOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE CONTRACTOR SHALL RE-STABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND OBTAIN ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANOR AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

EROSION PREVENTION BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

DEWATERING AND BASIN DRAINING ACTIVITIES:
THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL DEWATERING AND SURFACE DRAINAGE REGULATIONS.

WATER FROM DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY AND/OR PERMANENT SEDIMENT BASIN.

IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN, IT SHALL BE TREATED WITH OTHER APPROPRIATE BMPS, TO EFFECTIVELY REMOVE SEDIMENT.

DISCHARGE THAT CONTAINS OIL OR GREASE MUST BE TREATED WITH AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE PRIOR TO DISCHARGE.

WATER FROM DEWATERING SHALL BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION, OR INUNDATION OF WETLANDS.

BACKWASH WATER USED FOR FILTERING SHALL BE HAULED AWAY FOR DISPOSAL, RETURNED TO THE BEGINNING OF TREATMENT PROCESS, OR INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR SHALL REPLACE AND CLEAN FILTER MEDIAS USED IN DEWATERING DEVICES WHEN REQUIRED TO MAINTAIN ADEQUATE FUNCTION.

POLLUTION PREVENTION MANAGEMENT MEASURES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES.

ALL POLLUTION PREVENTION MEASURES ARE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM, UNLESS OTHERWISE NOTED.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL HAZARDOUS MATERIALS, SOLID WASTE, AND PRODUCTS ON-SITE.

THE CONTRACTOR SHALL ENSURE BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEAK POLLUTANTS ARE KEPT UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS ARE COVERED TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE HAZARDOUS MATERIALS AND TOXIC WASTE IS PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.

THE CONTRACTOR SHALL ENSURE ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

THE CONTRACTOR SHALL ENSURE PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURE'S INSTRUCTION.

THE CONTRACTOR SHALL ENSURE SOLID WASTE BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH. 7035.

THE CONTRACTOR SHALL ENSURE POTABLE TOILETS ARE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R, CH. 7041.

THE CONTRACTOR SHALL MONITOR ALL VEHICLES ON-SITE FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.

THE CONTRACTOR SHALL ENSURE WASHOUT WASTE MUST NOT CONTACT THE GROUND AND BE PROPERLY DISPOSED OF IN COMPLIANCE WITH MPCA RULES.

THE CONTRACTOR SHALL INCLUDE SPILL KITS WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL ENSURE SPILLS ARE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1.800.422.0798.

PERMIT TERMINATION CONDITIONS:
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING FINAL STABILIZATION OF THE ENTIRE SITE. PERMIT TERMINATION CONDITIONS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

ALL SOIL DISTURBING ACTIVITIES HAVE BEEN COMPLETED.

ALL TEMPORARY SYNTHETIC BMPS HAVE BEEN REMOVED AND PROPERLY DISPOSED OF.

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.
DANIEL R. HINZMANN, PE
Date: 07/03/19 Lic. No. 49874

INTERSTATE ISLAND

SWPPP 2

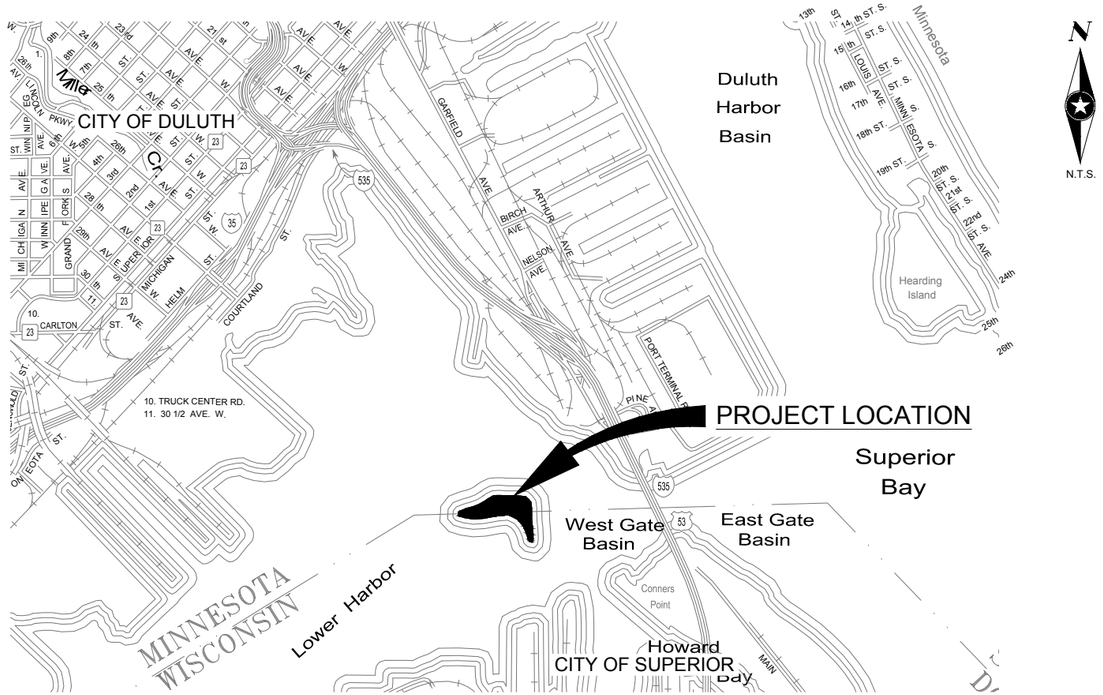
FILE NO. MNLAN 148586

MINNESOTA LAND TRUST &
MINNESOTA DEPARTMENT OF NATURAL RESOURCES

INTERSTATE ISLAND WMA AVIAN HABITAT RESTORATION PROJECT

CONSTRUCTION PLANS FOR

FALL 2020 IMPROVEMENTS
DULUTH/SUPERIOR HARBOR



LEGEND

- 599 — EXISTING CONTOURS
- 602 — PROPOSED CONTOURS
- XC — EXISTING SPRING 2020 FENCING
- ROCK BERM
- EXISTING SPRING 2020 RIP RAP
- EXISTING SPRING 2020 NESTING AREA
- PLANTING AREA

NOTE:
THE SUBSURFACE UTILITY QUALITY INFORMATION IN THIS PLAN IS LEVEL D. THIS UTILITY QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-02 ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

THE CONTRACTOR SHALL CALL THE GOPHER STATE ONE CALL SYSTEM AT 811 BEFORE COMMENCING EXCAVATION.

Know what's **below.**
Call before you dig.

GOVERNING SPECIFICATIONS

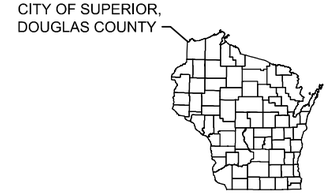
THE 2018 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" SHALL GOVERN EXCEPT AS MODIFIED BY THE SPECIFICATIONS FOR THIS PROJECT.

INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	SITE LAYOUT & GRADING PLAN, TYPICAL SECTION, & EROSION CONTROL
3	CONSTRUCTION DETAILS
4 - 5	SWPPP

THIS PLAN CONTAINS 5 SHEETS.

PROJECT LOCATION



MINNESOTA & WISCONSIN

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

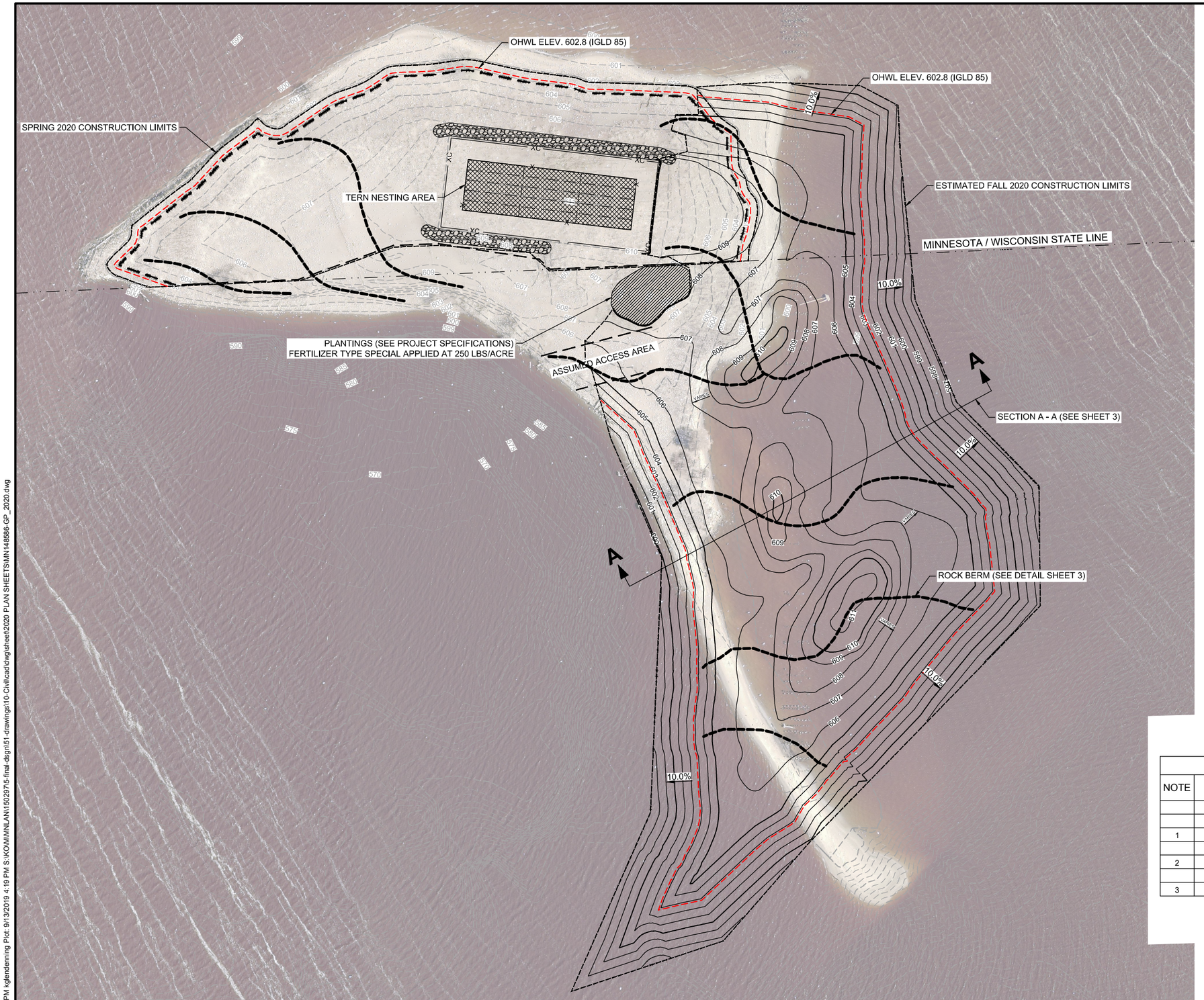
I HEREBY CERTIFY THAT THIS PLAN WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA.

Signature

Date: XX/XX/XX Lic. No. XXXXXX

FILE NO. MNLAN 150297

1 / 5



N

60 0 60 120
scale 30 feet

SUMMARY

TOTAL EMBANKMENT	DREDGE MATERIAL (BY OTHERS)
60,220 CU. YD.	60,220 CU. YD.

TOTAL EXCAVATION	COMMON
0 CU. YD.	0 CU. YD..

STATEMENT OF ESTIMATED QUANTITIES

NOTE	ITEM NO.	ITEM DESCRIPTION	UNIT	TOTAL ESTIMATED QUANTITIES
	2021.501	MOBILIZATION	LUMP SUM	1
1	2571.601	PLANTINGS	LUMP SUM	1
2	2573.607	ROCK BERM	CU YD	500
3	2574.608	FERTILIZER TYPE SPECIAL	POUNDS	28

NOTES:

1	INCLUDES PREPARATION, PLANTING, PLANTS, AND WATERING. REFER TO SPECIFICATIONS FOR PLANT TYPES.
2	FOR WIND EROSION CONTROL
3	Sustane® FERTILIZER APPLIED AT 250 LBS/ACRE

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

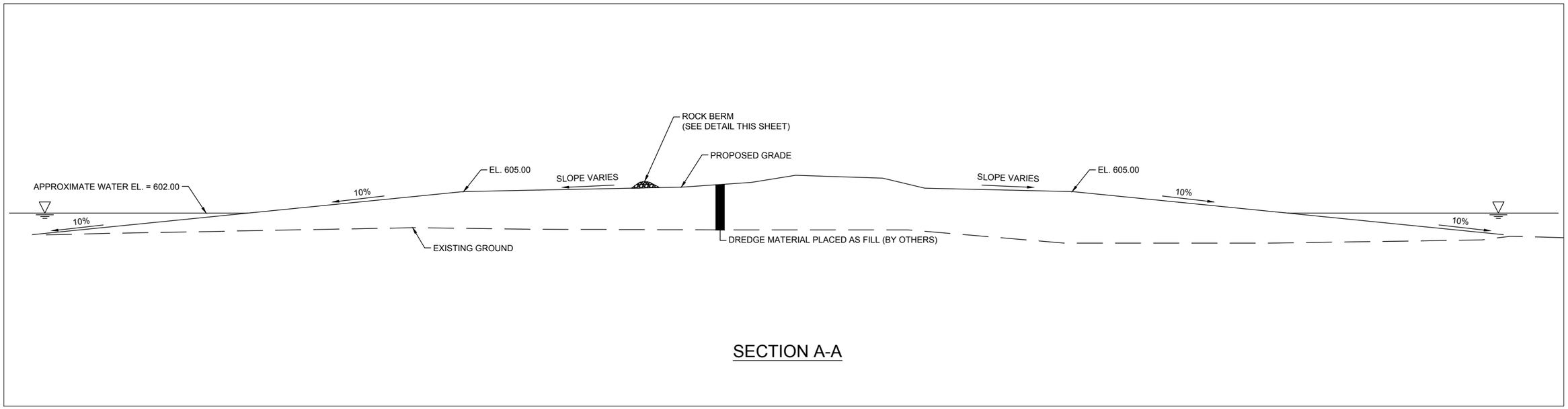
Date: XX/XX/XX
DANIEL R. HINZMANN, P.E.
Lic. No. XXXXXX

INTERSTATE ISLAND

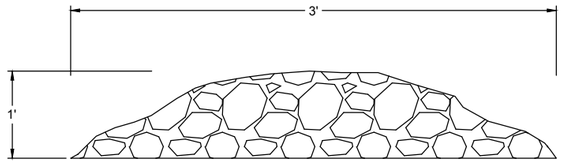
STATEMENT OF ESTIMATED QUANTITIES, SITE LAYOUT, & GRADING PLAN

FILE NO. MNLAN 150297

2/5



SECTION A-A



NOTE:
ROCK BERM MATERIAL SHALL MEET MNDOT
COARSE AGGREGATE MATERIAL SPEC.

ROCK BERM

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

XX
Date: XX/XX/XXXX Lic. No. XXXXX

INTERSTATE ISLAND

DETAILS
2020 CONSTRUCTION

FILE NO.
MNLAN 150297

SWPPP SUMMARY/OVERVIEW:
THIS STORM WATER POLLUTION PREVENTION PLAN (SWPPP) HAS BEEN DEVELOPED TO ADDRESS THE REQUIREMENTS OF NPDES PERMIT MN R100001. THIS SWPPP INCLUDES A COMBINATION OF NARRATIVE AND PLAN SHEETS THAT DESCRIBE THE TEMPORARY AND PERMANENT STORM WATER MANAGEMENT PLAN FOR THE PROJECT.

PROJECT INFORMATION:

LOCATION:	INTERSTATE ISLAND (DULUTH, MINNESOTA / SUPERIOR, WISCONSIN)
LATITUDE/LONGITUDE:	46.749471, -92.109764
PROJECT DESCRIPTION:	ISLAND IMPROVEMENTS AND HABITAT PROTECTION
SOIL DISTURBING ACTIVITIES:	GRADING AND FILL PLACEMENT

CONTACTS:

OWNER:	MINNESOTA LAND TRUST
CONTACT:	GINI BREIDENBACH
ADDRESS:	394 SOUTH LAKE AVENUE, SUITE 404, DULUTH, MN 55802
PHONE:	(218) 221-7033
EMAIL:	GBREIDENBACH@MNLAND.ORG

ENGINEER:	SHORT ELLIOTT HENDRICKSON INC. (SEH)
CONTACT:	DAN HINZMANN, PE (LIC. MN, WI)
PHONE:	218-279-3034
EMAIL:	DHINZMANN@SEHINC.COM
PROJECT NO.:	MNLAN 150297

KNOWLEDGEABLE PERSON/CHAIN OF RESPONSIBILITY
THE CONTRACTOR SHALL IDENTIFY A PERSON KNOWLEDGEABLE AND EXPERIENCED IN THE APPLICATION OF EROSION PREVENTION AND SEDIMENT CONTROL BMPS WHO WILL COORDINATE WITH ALL CONTRACTORS, SUBCONTRACTORS, AND OPERATORS ON-SITE TO OVERSEE THE IMPLEMENTATION OF THE SWPPP.

CONTRACTOR	TBD
CONTACT	TBD
PHONE	TBD
EMAIL	TBD

THE CONTRACTOR SHALL ESTABLISH A CHAIN OF RESPONSIBILITY FOR ALL CONTRACTORS AND SUB-CONTRACTORS ON SITE TO ENSURE THE SWPPP IS BEING PROPERLY IMPLEMENTED AND MAINTAINED. THE CONTRACTOR SHALL PROVIDE THE CHAIN OF RESPONSIBILITY TO THE OWNER AND ATTACH TO THE SWPPP PRIOR TO ANY CONSTRUCTION ACTIVITY.

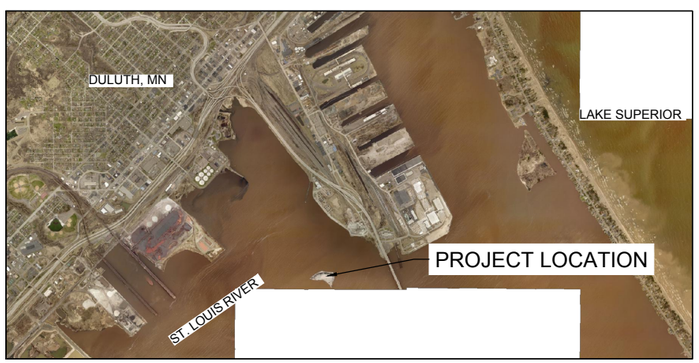
GENERAL SWPPP RESPONSIBILITIES:
THE CONTRACTOR SHALL KEEP THE SWPPP, INCLUDING ALL AMENDMENTS AND INSPECTION AND MAINTENANCE RECORDS ON SITE DURING CONSTRUCTION.

THE SWPPP WILL BE AMENDED AS NEEDED AND/OR AS REQUIRED BY PROVISIONS OF THE PERMIT. PERMITTEES MUST AMEND THE SWPPP TO INCLUDE ADDITIONAL OR MODIFIED BMPS AS NECESSARY TO CORRECT PROBLEMS IDENTIFIED OR ADDRESS SITUATIONS WHENEVER THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS HAVING A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR GROUNDWATER. AMENDMENTS WILL BE APPROVED BY BOTH THE OWNER AND CONTRACTOR AND WILL BE ATTACHED OR OTHERWISE INCLUDED WITH THE SWPPP DOCUMENTS. THE SWPPP AMENDMENTS SHALL BE INITIATED, FACILITATED, AND PROCESSED BY THE CONTRACTOR.

ALL SWPPP CHANGES MUST BE DONE BY AN INDIVIDUAL TRAINED IN ACCORDANCE WITH SECTION 21.4 OR 21.5. CHANGES INVOLVING THE USE OF A LESS STRINGENT BMP MUST INCLUDE A JUSTIFICATION DESCRIBING HOW THE REPLACEMENT BMP IS EFFECTIVE FOR THE SITE CHARACTERISTICS.

BOTH THE OWNER AND CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER TERMINATION AND/OR TRANSFER OF THE PERMIT.

LONG TERM OPERATION AND MAINTENANCE
THIS PROJECT IS A HABITAT RESTORATION, AND AS SUCH WILL NOT HAVE A PERMANENT STORMWATER SYSTEM. THERE WILL BE NO PERMANENT STORMWATER MANAGEMENT OR MAINTENANCE RESPONSIBILITIES BY THE OWNER.



TRAINING DOCUMENTATION:

PREPARER/DESIGNER OF SWPPP:	CHLOE GLOEKNER
EMPLOYER:	SEH
DATE OBTAINED / REFRESHED	OCTOBER 2016
INSTRUCTOR(S)/ENTITY PROVIDING TRAINING:	UNIVERSITY OF MINNESOTA

CONTENT OF TRAINING AVAILABLE UPON REQUEST.

THE CONTRACTOR (OPERATOR) SHALL ADD TO THE SWPPP TRAINING RECORDS FOR THE FOLLOWING PERSONNEL:

-INDIVIDUALS OVERSEEING THE IMPLEMENTATION OF, REVISING, AND AMENDING THE SWPPP
-INDIVIDUALS PERFORMING INSPECTIONS
-INDIVIDUALS PERFORMING OR SUPERVISING THE INSTALLATION, MAINTENANCE AND REPAIR OF BMPS

TRAINING MUST RELATE TO THE INDIVIDUAL'S JOB DUTIES AND RESPONSIBILITIES AND SHALL INCLUDE:

1) DATES OF TRAINING
2) NAME OF INSTRUCTORS
3) CONTENT AND ENTITY PROVIDING TRAINING

THE CONTRACTOR SHALL ENSURE THAT THE INDIVIDUALS ARE TRAINED BY LOCAL, STATE, FEDERAL AGENCIES, PROFESSIONAL ORGANIZATIONS, OR OTHER ENTITIES WITH EXPERTISE IN EROSION PREVENTION, SEDIMENT CONTROL, PERMANENT STORMWATER MANAGEMENT AND THE MINNESOTA NPDES/SDS CONSTRUCTION STORMWATER PERMIT.

PROJECT SUMMARY:

SPRING 2020 DISTURBED AREA:	4.2 AC ABOVE 603.1 EL. (PROPOSED ISLAND AREA)
FALL 2020 DISTURBED AREA:	4.5 AC ABOVE 603.1 EL. (PROPOSED ISLAND AREA)
TOTAL PROJECT 2020 DISTURBED AREA	8.7 AC ABOVE 603.1 EL. (PROPOSED ISLAND AREA)
PRE-CONSTRUCTION IMPERVIOUS AREA:	0.00 AC
POST-CONSTRUCTION IMPERVIOUS AREA:	0.00 AC
IMPERVIOUS AREA ADDED:	0.00 AC

RECEIVING WATER(S) WITHIN ONE MILE FROM PROJECT BOUNDARIES:
(http://pca-gis02.pca.state.mn.us/CSW/index.html)

ID	NAME	TYPE	SPECIAL WATER?	IMPAIRED WATER?	CONSTRUCTION RELATED IMPAIRMENT OR SPECIAL WATER CLASSIFICATION	TMDL
04010201-105	ST. LOUIS	RIVER	YES	YES	AQC	DDT, DIELDRIN, DIOXIN, HG-F, HG-W, PCB-F, PCB-W, TOXAPHENE
16-0001-00	LAKE SUPERIOR	LAKE	YES	YES	AQC	HG-F, PCB-F
ADDITIONAL BMPS AND/OR ACTIONS REQUIRED: NONE						
SEE SECTION 23 OF THE PERMIT AND APPLICABLE TMDL WLA'S - N/A						

WATERBODY	NO WORK DURING
LAKES	APRIL 1 - JUNE 30
NON-TROUT STREAMS	MARCH 15 - JUNE 15
TROUT STREAMS	SEPTEMBER 1 - APRIL 1

SEE DNR PERMIT FOR MORE INFORMATION

SITE SOIL INFORMATION: (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx)
(SOIL INFORMATION PROVIDED IS FOR NPDES PERMIT INFORMATION ONLY. SOIL INFORMATION WAS OBTAINED FROM THE USGS WEBSITE. THE CONTRACTOR SHALL NOT RELY ON THIS SOIL INFORMATION FOR CONSTRUCTION PURPOSES.)

SOIL NAME:	HYDROLOGIC CLASSIFICATION:
BEACHES, 2 TO 12 PERCENT SLOPES	7C
ANTICIPATED RANGE OF PARTICLE SIZES	SANDY

RELATED REVIEWS & PERMITS:
ENVIRONMENTAL, WETLAND, ENDANGERED OR THREATENED SPECIES, ARCHEOLOGICAL, LOCAL, STATE, AND/OF FEDERAL REVIEWS/PERMITS:

AGENCY:	TYPE OF PERMIT:
MNDNR	PUBLIC WATERS WORK PERMIT
WDNR	WPDES, WATERWAY INDIVIDUAL PERMIT

IMPLEMENTATION SEQUENCE:
THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING SEQUENCE.
THE ENGINEER MAY APPROVE ADJUSTMENTS TO THE SEQUENCE AS NEEDED.

1.	COMPLETE SITE GRADING
2.	COMPLETE FINAL GRADING AND STABILIZE DUNE AREAS
3.	AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, REMOVE ACCUMULATED SEDIMENT, REMOVE BMPS, AND RE-STABILIZE ANY AREAS DISTURBED BY THEIR REMOVAL.

PROJECT SPECIFIC NOTES:
THE INTERSTATE ISLAND PROJECT IS A HABITAT RESTORATION PROJECT THAT CONSISTS OF DEVELOPING HABITAT FOR TERNS. THIS TYPE OF HABITAT IS COMPRISED OF DREDGE MATERIAL THAT IS FREE OF VEGETATION. FOR THE PURPOSES OF THIS PROJECT, THE COMPACTED DREDGE MATERIAL IS CONSIDERED TO BE THE FINAL STABILIZATION. HOWEVER, ADDITIONAL FEATURES ARE BEING ADDED TO THE PROJECT, WHICH INCLUDE ROCK BERMS WHICH WILL PROVIDE FOR FURTHER STABILIZATION OF THE ISLAND.

THE FOLLOWING DOCUMENTS ARE CONSIDERED PART OF THE SWPPP:

SITE LAYOUT & GRADING PLAN SHEET
CONSTRUCTION DETAIL SHEETS
SWPPP SHEETS
PROJECT SPECIFICATIONS

TEMPORARY BMP DESIGN FACTORS:
EROSION PREVENTION AND SEDIMENT CONTROL BMP'S MUST BE DESIGNED TO ACCOUNT FOR:

THE EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION

THE NATURE OF STORMWATER RUNOFF AND RUN-ON AT THE SITE, INCLUDING FACTORS SUCH AS EXPECTED FLOW FROM IMPERVIOUS SURFACES, SLOPES, AND SITE DRAINAGE FEATURES

THE STORMWATER VOLUME, VELOCITY, AND PEAK FLOW RATES TO MINIMIZE DISCHARGE OF POLLUTANTS IN STORMWATER AND TO MINIMIZE CHANNEL AND STREAMBANK EROSION AND SCOUR IN THE IMMEDIATE VICINITY OF DISCHARGE POINTS

THE RANGE OF SOIL PARTICLE SIZES EXPECTED TO BE PRESENT.

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

DANIEL R. HINZMANN, P.E.
Date: XX/XX/XX Lic. No. XXXXXX

INTERSTATE ISLAND

SWPPP 1

FILE NO. MNLAN 150297

EROSION PREVENTION MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL EROSION PREVENTION MEASURES FOR THE PROJECT.

EROSION PREVENTION MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL EROSION PREVENTION MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL PLAN AND IMPLEMENT APPROPRIATE CONSTRUCTION PRACTICES AND CONSTRUCTION PHASING TO MINIMIZE EROSION.

THE PERMITTEE SHALL DELINEATE AREAS NOT TO BE DISTURBED. PERMITTEE(S) MUST MINIMIZE THE NEED FOR DISTURBANCE OF PORTIONS OF THE PROJECT WITH STEEP SLOPES. WHEN STEEP SLOPES MUST BE DISTURBED, PERMITTEES MUST USE TECHNIQUES SUCH AS PHASING AND STABILIZATION PRACTICES DESIGNED FOR STEEP SLOPES.

THE CONTRACTOR SHALL STABILIZE ALL EXPOSED SOILS IMMEDIATELY TO LIMIT SOIL EROSION. IN NO CASE SHALL ANY EXPOSED AREAS, INCLUDING STOCK PILES, HAVE EXPOSED SOILS FOR MORE THAN 7 DAYS WITHOUT PROVIDING TEMPORARY OR PERMANENT STABILIZATION. STABILIZATION MUST BE COMPLETED WITHIN 7 DAYS AFTER CONSTRUCTION ACTIVITY HAS CEASED. TEMPORARY STOCKPILES AND WORK AREAS WITHOUT SIGNIFICANT CLAY, SILT, OR ORGANIC COMPONENTS DO NOT REQUIRE STABILIZATION.

DRAINAGE PATHS, DITCHES, AND/OR SWALES SHALL HAVE TEMPORARY OR PERMANENT STABILIZATION WITHIN 24 HOURS OF CONNECTING TO A SURFACE WATER OR 24 HOURS AFTER CONSTRUCTION ACTIVITY IN THE DITCH/SWALE HAS TEMPORARILY OR PERMANENTLY CEASED.

THE CONTRACTOR SHALL COMPLETE THE STABILIZATION OF ALL EXPOSED SOILS WITHIN 24 HOURS THAT LIE WITHIN 200 FEET OF PUBLIC WATERS PROMULGATED "WORK IN WATER RESTRICTIONS" BY THE MN DNR DURING SPECIFIED FISH SPAWNING TIMES.

THE CONTRACTOR SHALL IMPLEMENT EROSION CONTROL BMPS AND VELOCITY DISSIPATION DEVICES ALONG CONSTRUCTED STORMWATER CONVEYANCE CHANNELS AND OUTLETS.

TEMPORARY OR PERMANENT DITCHES OR SWALES USED AS A SEDIMENT CONTAINMENT SYSTEM DURING CONSTRUCTION MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM.

THE CONTRACTOR SHALL NOT UTILIZE HYDROMULCH, TACKIFIER, POLYACRYLAMIDE OR SIMILAR EROSION PREVENTION PRACTICES AS A FORM OF STABILIZATION FOR TEMPORARY OR PERMANENT DRAINAGE DITCHES OR SWALE SECTION WITH A CONTINUOUS SLOPE OF GREATER THAN 2 PERCENT.

THE CONTRACTOR SHALL ENSURE PIPE OUTLETS HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITH IN 24 HOURS OF CONNECTION TO A SURFACE WATER.

SEDIMENT CONTROL MEASURES AND TIMING:
THE CONTRACTOR IS RESPONSIBLE FOR ALL SEDIMENT CONTROL MEASURES FOR THE PROJECT.

SEDIMENT CONTROL MEASURES SHOWN ON PLANS ARE THE ABSOLUTE MINIMUM REQUIREMENTS. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL SEDIMENT CONTROL MEASURES AS NECESSARY TO PROPERLY MANAGE THE PROJECT AREA.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL MEASURES ARE ESTABLISHED ON ALL DOWN GRADIENT PERIMETERS BEFORE ANY UPGRADIENT LAND DISTURBING ACTIVITIES BEGIN. THESE MEASURES SHALL REMAIN IN PLACE UNTIL FINAL STABILIZATION HAS BEEN ESTABLISHED.

A FLOATING SILT CURTAIN PLACED IN THE WATER IS NOT A SEDIMENT CONTROL BMP EXCEPT WHEN WORKING ON A SHORELINE OR BELOW THE WATERLINE. IMMEDIATELY AFTER THE SHORT TERM CONSTRUCTION ACTIVITY IS COMPLETE, PERMITTEE(S) MUST INSTALL AN UPLAND PERIMETER CONTROL PRACTICE IF EXPOSED SOILS STILL DRAIN TO A SURFACE WATER.

THE CONTRACTOR SHALL ENSURE SEDIMENT CONTROL PRACTICES REMOVED OR ADJUSTED FOR SHORT-TERM ACTIVITIES BE RE-INSTALLED IMMEDIATELY AFTER THE SHORT-TERM ACTIVITY HAS BEEN COMPLETED. SEDIMENT CONTROL PRACTICES MUST BE REINSTALLED BEFORE THE NEXT PRECIPITATION EVENT EVEN IF THE SHORT-TERM ACTIVITY IS NOT COMPLETE.

THE CONTRACTOR SHALL ENSURE STORM DRAIN INLETS ARE PROTECTED BY APPROPRIATE BMPS DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED.

THE CONTRACTOR SHALL PROVIDE SILT FENCE OR OTHER EFFECTIVE SEDIMENT CONTROL AT THE BASE OF THE STOCKPILES.

THE CONTRACTOR SHALL INSTALL PERIMETER CONTROL AROUND ALL STAGING AREAS, BORROW PITS, AND AREAS CONSIDERED ENVIRONMENTALLY SENSITIVE.

THE CONTRACTOR SHALL ENSURE VEHICLE TRACKING BE MINIMIZED WITH EFFECTIVE BMPS. WHERE THE BMPS FAIL TO PREVENT SEDIMENT FROM TRACKING ONTO STREETS THE CONTRACTOR SHALL CONDUCT STREET SWEEPING TO REMOVE ALL TRACKED SEDIMENT.

THE CONTRACTOR SHALL IMPLEMENT CONSTRUCTION PRACTICES TO MINIMIZE SOIL COMPACTION.

THE CONTRACTOR SHALL ENSURE ALL CONSTRUCTION ACTIVITY REMAIN WITHIN PROJECT LIMITS AND THAT ALL IDENTIFIED RECEIVING WATER BUFFERS ARE MAINTAINED.

RECEIVING WATER	NATURAL BUFFER	IS THE BUFFER BEING ENCROACHED ON?	REASON FOR BUFFER ENCROACHMENT
ST. LOUIS RIVER	0 FT	YES	ISLAND EXPANSION AND IMPROVEMENTS

A 50 FOOT NATURAL BUFFER MUST BE PRESERVED WHEN POSSIBLE. THIS IS A HABITAT RESTORATION PROJECT INTENDED TO PROVIDE A CLEAN SAND ENVIRONMENT. NATURAL EROSION IS TO BE EXPECTED AND A REDUNDANT BMP WILL NOT BE UTILIZED WITHIN 50FT OF THE SURFACE WATER.

THE CONTRACTOR SHALL NOT UTILIZE SEDIMENT CONTROL CHEMICALS ON SITE.

INSPECTION AND MAINTENANCE:
ALL INSPECTIONS, MAINTENANCE, REPAIRS, REPLACEMENTS, AND REMOVAL OF BMPS IS TO BE CONSIDERED INCIDENTAL TO THE BMP BID ITEMS.

THE PERMITTEE(S) IS RESPONSIBLE FOR COMPLETING SITE INSPECTIONS, AND BMP MAINTENANCE TO ENSURE COMPLIANCE WITH THE PERMIT REQUIREMENTS.

THE PERMITTEE(S) SHALL INSPECT THE CONSTRUCTION SITE ONCE EVERY 7 DAYS DURING ACTIVE CONSTRUCTION AND WITHIN 24 HOURS AFTER A RAINFALL EVENT GREATER THAN 0.5 INCHES IN 24 HOURS.

THE PERMITTEE(S) SHALL DOCUMENT A WRITTEN SUMMARY OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES CONDUCTED WITHIN 24 HOURS OF OCCURRENCE. RECORDS OF EACH ACTIVITY SHALL INCLUDE THE FOLLOWING:

-DATE AND TIME OF INSPECTIONS;
-NAME OF PERSON(S) CONDUCTING INSPECTION;
-FINDINGS AND RECOMMENDATIONS FOR CORRECTIVE ACTIONS IF NECESSARY;
-CORRECTIVE ACTIONS TAKEN;
-DATE AND AMOUNT OF RAINFALL EVENTS;
-POINTS OF DISCHARGE OBSERVED DURING INSPECTION AND DESCRIPTION OF THE DISCHARGE
-AMENDMENTS MADE TO THE SWPPP.

THE PERMITTEE(S) SHALL SUBMIT A COPY OF THE WRITTEN INSPECTIONS TO THE ENGINEER AND OWNER ON A MONTHLY BASIS. IF MONTHLY INSPECTION REPORTS ARE NOT SUBMITTED, MONTHLY PAYMENTS MAY BE HELD.

THE CONTRACTOR SHALL DOCUMENT AMENDMENTS TO THE SWPPP AS A RESULT OF INSPECTION(S) WITHIN 7 DAYS.

THE CONTRACTOR SHALL KEEP THE SWPPP, ALL INSPECTION REPORTS, AND AMENDMENTS ONSITE. THE CONTRACTOR SHALL DESIGNATE A SPECIFIC ONSITE LOCATION TO KEEP THE RECORDS

THE CONTRACTOR IS RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF TEMPORARY AND PERMANENT WATER QUALITY BMP'S, AS WELL AS EROSION AND SEDIMENT CONTROL BMP'S.

THE CONTRACTOR SHALL INSPECT EROSION PREVENTION AND SEDIMENTATION CONTROL BMPS TO ENSURE INTEGRITY AND EFFECTIVENESS. ALL NONFUNCTIONAL BMPS SHALL BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPS WITHIN 24 HOURS OF FINDING. THE CONTRACTOR SHALL INVESTIGATE AND COMPLY WITH THE FOLLOWING INSPECTION AND MAINTENANCE REQUIREMENTS:

PERIMETER CONTROL DEVICES, INCLUDING SILT FENCE SHALL BE REPAIRED, OR REPLACED, WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE DEVICE HEIGHT. THESE REPAIRS SHALL BE MADE WITHIN 24 HOURS OF DISCOVERY.

TEMPORARY AND PERMANENT SEDIMENT BASINS SHALL BE DRAINED AND THE SEDIMENT REMOVED WHEN THE DEPTH OF SEDIMENT COLLECTED IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY.

SURFACE WATERS, INCLUDING DRAINAGE DITCHES AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE CONTRACTOR SHALL REMOVE ALL DELTAS AND SEDIMENT DEPOSITED IN SURFACE WATERS, INCLUDING DRAINAGE WAYS, CATCH BASINS, AND OTHER DRAINAGE SYSTEMS. THE CONTRACTOR SHALL RE-STABILIZE THE AREAS WHERE SEDIMENT REMOVAL RESULTS IN EXPOSED SOIL. REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN 7 DAYS OF DISCOVERY, UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL CONSTRAINTS. THE CONTRACTOR IS RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AUTHORITIES AND OBTAIN ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK IN SURFACE WATERS.

CONSTRUCTION SITE VEHICLE EXIT LOCATIONS SHALL BE INSPECTED DAILY FOR EVIDENCE OF SEDIMENT TRACKING ONTO PAVED SURFACES. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES WITHIN 24 HOURS OF DISCOVERY.

IF SEDIMENT ESCAPES THE CONSTRUCTION SITE, OFF-SITE ACCUMULATIONS OF SEDIMENT MUST BE REMOVED IN A MANOR AND AT A FREQUENCY SUFFICIENT TO MINIMIZE OFF-SITE IMPACTS.

EROSION PREVENTION BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEET AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF EROSION PREVENTION BMPS.

SEDIMENT CONTROL BMP SUMMARY:
SEE EROSION AND SEDIMENT CONTROL PLAN SHEETS AND BID FORM FOR TYPE, LOCATION, AND QUANTITY OF SEDIMENT CONTROL BMPS.

DEWATERING AND BASIN DRAINING ACTIVITIES:
THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO ALL DEWATERING AND SURFACE DRAINAGE REGULATIONS.

WATER FROM DEWATERING ACTIVITIES SHALL DISCHARGE TO A TEMPORARY AND/OR PERMANENT SEDIMENT BASIN.

IF WATER CANNOT BE DISCHARGED TO A SEDIMENTATION BASIN, IT SHALL BE TREATED WITH OTHER APPROPRIATE BMPS, TO EFFECTIVELY REMOVE SEDIMENT.

DISCHARGE THAT CONTAINS OIL OR GREASE MUST BE TREATED WITH AN OIL-WATER SEPARATOR OR SUITABLE FILTRATION DEVICE PRIOR TO DISCHARGE.

WATER FROM DEWATERING SHALL BE DISCHARGED IN A MANNER THAT DOES NOT CAUSE NUISANCE CONDITIONS, EROSION, OR INUNDATION OF WETLANDS.

BACKWASH WATER USED FOR FILTERING SHALL BE HAULED AWAY FOR DISPOSAL, RETURNED TO THE BEGINNING OF TREATMENT PROCESS, OR INCORPORATED INTO THE SITE IN A MANNER THAT DOES NOT CAUSE EROSION. THE CONTRACTOR SHALL REPLACE AND CLEAN FILTER MEDIAS USED IN DEWATERING DEVICES WHEN REQUIRED TO MAINTAIN ADEQUATE FUNCTION.

POLLUTION PREVENTION MANAGEMENT MEASURES:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL POLLUTION PREVENTION MANAGEMENT MEASURES.

ALL POLLUTION PREVENTION MEASURES ARE CONSIDERED INCIDENTAL TO THE MOBILIZATION BID ITEM, UNLESS OTHERWISE NOTED.

THE CONTRACTOR IS RESPONSIBLE FOR THE PROPER DISPOSAL, IN COMPLIANCE WITH MPCA DISPOSAL REQUIREMENTS, OF ALL HAZARDOUS MATERIALS, SOLID WASTE, AND PRODUCTS ON-SITE.

THE CONTRACTOR SHALL ENSURE BUILDING PRODUCTS THAT HAVE THE POTENTIAL TO LEAK POLLUTANTS ARE KEPT UNDER COVER TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE PESTICIDES, HERBICIDES, INSECTICIDES, FERTILIZERS, TREATMENT CHEMICALS, AND LANDSCAPE MATERIALS ARE COVERED TO PREVENT THE DISCHARGE OF POLLUTANTS.

THE CONTRACTOR SHALL ENSURE HAZARDOUS MATERIALS AND TOXIC WASTE IS PROPERLY STORED IN SEALED CONTAINERS TO PREVENT SPILLS, LEAKS, OR OTHER DISCHARGE. STORAGE AND DISPOSAL OF HAZARDOUS WASTE OR HAZARDOUS MATERIALS MUST BE IN COMPLIANCE WITH MINN. R. CH. 7045 INCLUDING SECONDARY CONTAINMENT AS APPLICABLE.

THE CONTRACTOR SHALL ENSURE ASPHALT SUBSTANCES USED ON-SITE SHALL BE APPLIED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

THE CONTRACTOR SHALL ENSURE PAINT CONTAINERS AND CURING COMPOUNDS SHALL BE TIGHTLY SEALED AND STORED WHEN NOT REQUIRED FOR USE. EXCESS PAINT AND/OR CURING COMPOUNDS SHALL NOT BE DISCHARGED INTO THE STORM SEWER SYSTEM AND SHALL BE PROPERLY DISPOSED OF ACCORDING TO MANUFACTURE'S INSTRUCTION.

THE CONTRACTOR SHALL ENSURE SOLID WASTE BE STORED, COLLECTED AND DISPOSED OF PROPERLY IN COMPLIANCE WITH MINN. R. CH. 7035.

THE CONTRACTOR SHALL ENSURE POTABLE TOILETS ARE POSITIONED SO THAT THEY ARE SECURE AND WILL NOT BE TIPPED OR KNOCKED OVER. SANITARY WASTE MUST BE DISPOSED OF PROPERLY IN ACCORDANCE WITH MINN. R, CH. 7041.

THE CONTRACTOR SHALL MONITOR ALL VEHICLES ON-SITE FOR LEAKS AND RECEIVE REGULAR PREVENTION MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE.

THE CONTRACTOR SHALL ENSURE WASHOUT WASTE MUST NOT CONTACT THE GROUND AND BE PROPERLY DISPOSED OF IN COMPLIANCE WITH MPCA RULES.

THE CONTRACTOR SHALL INCLUDE SPILL KITS WITH ALL FUELING SOURCES AND MAINTENANCE ACTIVITIES. SECONDARY CONTAINMENT MEASURES SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR.

THE CONTRACTOR SHALL ENSURE SPILLS ARE CONTAINED AND CLEANED UP IMMEDIATELY UPON DISCOVERY. SPILLS LARGE ENOUGH TO REACH THE STORM WATER CONVEYANCE SYSTEM SHALL BE REPORTED TO THE MINNESOTA DUTY OFFICER AT 1.800.422.0798.

PERMIT TERMINATION CONDITIONS:
THE CONTRACTOR IS RESPONSIBLE FOR ENSURING FINAL STABILIZATION OF THE ENTIRE SITE. PERMIT TERMINATION CONDITIONS INCLUDE BUT ARE NOT LIMITED TO THE FOLLOWING:

ALL SOIL DISTURBING ACTIVITIES HAVE BEEN COMPLETED.

ALL TEMPORARY SYNTHETIC BMPS HAVE BEEN REMOVED AND PROPERLY DISPOSED OF.

DRAWN BY: KLG
DESIGNER: TPY
CHECKED BY: DRH
DESIGN TEAM

NO.	BY	DATE	REVISIONS

SEH
PHONE: 218.279.3000
418 W SUPERIOR ST
STE 200
DULUTH, MN 55802-1512
www.sehinc.com

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

DANIEL R. HINZMANN, P.E.
Date: XX/XX/XX Lic. No. XXXXXX

INTERSTATE ISLAND

SWPPP2

FILE NO. MNLAN 150297

Attachment D

Natural Heritage Review

Minnesota Department of Natural Resources
Division of Ecological & Water Resources
500 Lafayette Road, Box 25
St. Paul, MN 55155-4025

May 3, 2019
Correspondence # ERDB 20130338-0003

Ms. Martha Minchak
MN DNR - Wildlife
4805 Rice Lake Rd
Duluth, MN 55803

RE: Natural Heritage Review of the proposed Interstate Island WMA Habitat Restoration,
T49N R14W Sections 3 & 4; St. Louis County

Dear Ms. Minchak,

As requested, the Minnesota Natural Heritage Information System has been queried to determine if any rare species or other significant natural features are known to occur within an approximate one-mile radius of the proposed project. Based on this query, rare features have been documented within the search area (for details, please visit the Rare Species Guide Website for more information on the biology, habitat use, and conservation measures of these rare species). Please note that the following rare features may be adversely affected by the proposed project:

- St. Louis River Estuary has been identified as a Lake of *Outstanding* Biological Significance. Lakes of Biological Significance were ranked as *Outstanding, High or Moderate* based on unique plant and animal presence. Several state-listed species have been documented within the estuary. As such, it is important that effective erosion prevention and sediment control practices be implemented and maintained near the lake throughout the duration of the project.

- As you are already aware, Interstate Island is a nesting area used by the common tern (*Sterna hirundo*), a state threatened species, and other colonial waterbirds. Piping plover (*Charadrius melodus*), federally and state-listed endangered species, has also been documented in the vicinity, but not within Interstate Island. Undisturbed isolation seems to be an important requirement for rookery sites, as many species will not re-nest if disturbed during the breeding season. Colonies are most likely to desert during the courtship and nest-site selection stages, and least likely to desert when young are present. State and federal laws protect these birds, their nests, and their eggs by prohibitions against disturbance. Unregulated human activity has the potential to disturb the rookery and result in abandonment of the site. Please continue working with the Regional Nongame Specialist, Gaea Crozier, regarding this colony and the details of this project. Given the federal status of the piping plover, please continue coordinating with the U.S. Fish & Wildlife Service's Twin Cities Field Office regarding this project, as well.

- Rhode Island Hairy-necked tiger beetle (*Cicindela hirticollis* ssp. *rhodensis*), a state-listed endangered species, was documented in 1974 the vicinity of the proposed project. This species is found on sandy beaches along Lake Superior shoreline in the Duluth area. This species has since been surveyed for in the area of the known record and was failed to be found. Restoration of the Interstate Island could improve habitat for this species.

- The Environmental Assessment Worksheet should address whether the proposed project has the potential to adversely affect the above rare features and, if so, it should identify specific measures that will be taken to avoid or minimize disturbance. Sufficient information should be provided so the DNR can determine whether a takings permit will be needed for any of the above protected species.

- Please include a copy of this letter in any state or local license or permit application. Please note that measures to avoid or minimize disturbance to the above rare features may be included as restrictions or conditions in any required permits or licenses.

The Natural Heritage Information System (NHIS), a collection of databases that contains information about Minnesota's rare natural features, is maintained by the Division of Ecological and Water Resources, Department of Natural Resources. The NHIS is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. However, the NHIS is not an exhaustive inventory and thus does not represent all of the occurrences of rare features within the state. Therefore, ecologically significant features for which we have no records may exist within the project area. If additional information becomes available regarding rare features in the vicinity of the project, further review may be necessary.

For environmental review purposes, the results of this Natural Heritage Review are valid for one year; the results are only valid for the project location (noted above) and the project description provided on the NHIS Data Request Form. Please contact me if project details change or for an updated review if construction has not occurred within one year.

The Natural Heritage Review does not constitute review or approval by the Department of Natural Resources as a whole. Instead, it identifies issues regarding known occurrences of rare features and potential effects to these rare features. If needed, please contact your DNR Regional Environmental Assessment Ecologist to determine whether there are other natural resource concerns associated with the proposed project. Please be aware that additional site assessments or review may be required. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Samantha Bump
Natural Heritage Review Specialist
Samantha.Bump@state.mn.us

Links: Rare Species Guide
http://www.dnr.state.mn.us/rsg/index.html
Piping Plover Fact Sheet
https://www.fws.gov/midwest/endangered/pipingplover/pipingpl.html
DNR Regional Environmental Assessment Ecologist Contact Info
http://www.dnr.state.mn.us/eco/ereview/erp_regioncontacts.html

Cc: Gaea Crozier
Margi Coyle

Attachment E
SHPO Letter and
Historic Properties Reports

DEPARTMENT OF ADMINISTRATION
STATE HISTORIC PRESERVATION OFFICE

July 9, 2019

Mike Magner
DNR Forestry/ Fish & Wildlife Archaeologist
DNR Forestry Resource Assessment Office
483 Peterson Road
Grand Rapids, MN 55744

RE: Interstate Island WMA Habitat Restoration, St. Louis River Estuary
Restore critical habitat for the Common Tern, Piping Plover and Ring-billed Gulls
Duluth, Saint Louis County
SHPO Number: 2019-1851

Dear Mr. Magner:

Thank you for initiating consultation on the above project. Information received in our office on June 10, 2019 has been reviewed pursuant to the responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and implementing federal regulations at 36 CFR 800, and to the responsibilities given the State Historic Preservation Office by the Minnesota Historic Sites Act and the Minnesota Field Archaeology Act.

As we understand it, the U.S. Fish and Wildlife Service is providing federal funds to the MN Department of Natural Resources for habitat restoration on the Interstate Island WMA. We have completed our review of your correspondence dated June 5, 2019 along with the documentation provided in regards to your agency's determination of the area of potential effect (APE) for the Federal undertaking. We agree that this APE determination is generally appropriate to take into account the potential direct and indirect effects of the proposed undertaking as we currently understand it. As the project's scope of work is further defined, or if it is significantly altered from the current scope, additional consultation with our office may be necessary in order to revise the current APE.

We have reviewed the documentation included with your submittal, and based on information that is available to us at this time, we concur with your agency's determination that **no historic properties will be affected** by the project as it is currently proposed.

Implementation of the undertaking in accordance with this finding, as documented, fulfills your agency's responsibilities under Section 106. If your agency does not construct the undertaking as proposed, including, but not limited to, a situation where design changes to the currently proposed project diverts substantially from what was presented at the time of this review, your agency will need to reopen Section 106 consultation with our office pursuant to 36 CFR 800.5(d)(1).

Please contact Kelly Gragg-Johnson, Environmental Review Specialist, at (651) 201-3285 or kelly.graggjohnson@state.mn.us if you have any questions regarding our review of this project.

Sincerely,

Sarah J. Beimers
Environmental Review Program Manager

Historic Property Assessment for

Proposed Habitat Restoration on Interstate Island, St. Louis River Estuary

St. Louis County, Minnesota
Douglas County, Wisconsin

Township 49 North, Range 14 West; at the common corner of Sections 3, 4, 9, and 10
UTM: Z15, 568000 E, 5177700 N

Interstate Island WMA is a six-acre island located in the St Louis River estuary (SLRE) on the Minnesota-Wisconsin border in the Duluth/Superior metropolitan area (Figure 1). The island is home to the larger of only two remaining Common Tern (*Sterna hirundo*) colonies in the Lake Superior watershed, and is the only federally-listed critical habitat for Piping Plover (*Charadrius melodus*) in Minnesota. The island is also the nesting site for Ring-billed Gulls in the SLRE. Wind, water and ice erosion have significantly reduced the elevation of the island and recent sustained high water levels have resulted in seasonal flooding and a loss of preferred nesting habitat. This project will restore critical nesting habitat for the Common Terns and stopover habitat for Piping Plovers and other shorebirds on Interstate Island.

The two-year restoration plan includes stabilizing the existing Common Tern nesting area, adding habitat enhancements, and increasing the extent of stable upland habitat for use by Common Terns, Piping Plover, and other shorebirds. The Common Tern nesting area will be stabilized by increasing its elevation and armoring higher energy areas using riprap. Achieving this will require placing approximately 7,700 CY of common fill, 2,100 CY of sandy nesting substrate, and 100 CY of small cobble rip-rap. Habitat enhancements include reconstructing gull exclosure fencing, scattering driftwood, covering the nesting area with scattered small stones (approximately 260 CY), removing existing woody vegetation, and planting sparse native dune community vegetation on parts of the island. Outside of the nesting area, the island's elevation will be increased using approximately 50,000-60,000 CY of common fill and sandy substrates to achieve a minimum of 5.5 acres of stable upland habitat.

Interstate Island is an artificial landform, comprised entirely of dredge spoil. The island can be seen on 1939 aerial photography, but is not depicted on earlier maps, suggesting the island began accruing in the 1920s or 1930s. Over the ensuing decades, the island's outline was variable, according to the vagaries of dredge deposition and erosion. The island's only stable shoreline is its eastern shore, which abutted against a railroad trestle (Figures 2-5).

The railroad trestle crossing the St. Louis River estuary at this location was built by Northern Pacific in the 1880s. The twin-track wooden trestle included twin steel truss swing spans at the shipping channels on the Duluth and Superior sides of the harbor. The trestle was removed in the 1980s, but pilings defining the eastern shore of the island were left *in situ* (Figure 6). The piling remnants will be removed or buried as the island is expanded eastward as part of the present undertaking (Figure 7).

As an artificial landform, Interstate Island possesses no potential for intact archaeological deposits (although dredged-up artifacts of unknown provenience could be present). Historic photographs suggest

that no building or other constructions have existed on the island. The trestle pilings that will be removed or buried could potentially date to the late 19th century (assuming they are remnants of the original trestle construction). These trestle remains retain little historic integrity, however, as this short stretch of pilings cannot adequately convey the expanse of the original span, nor the engineering involved in accommodating ship traffic. It therefore appears that properties eligible for inclusion on the NRHP are unlikely to be located within the area to be potentially affected by the undertaking.

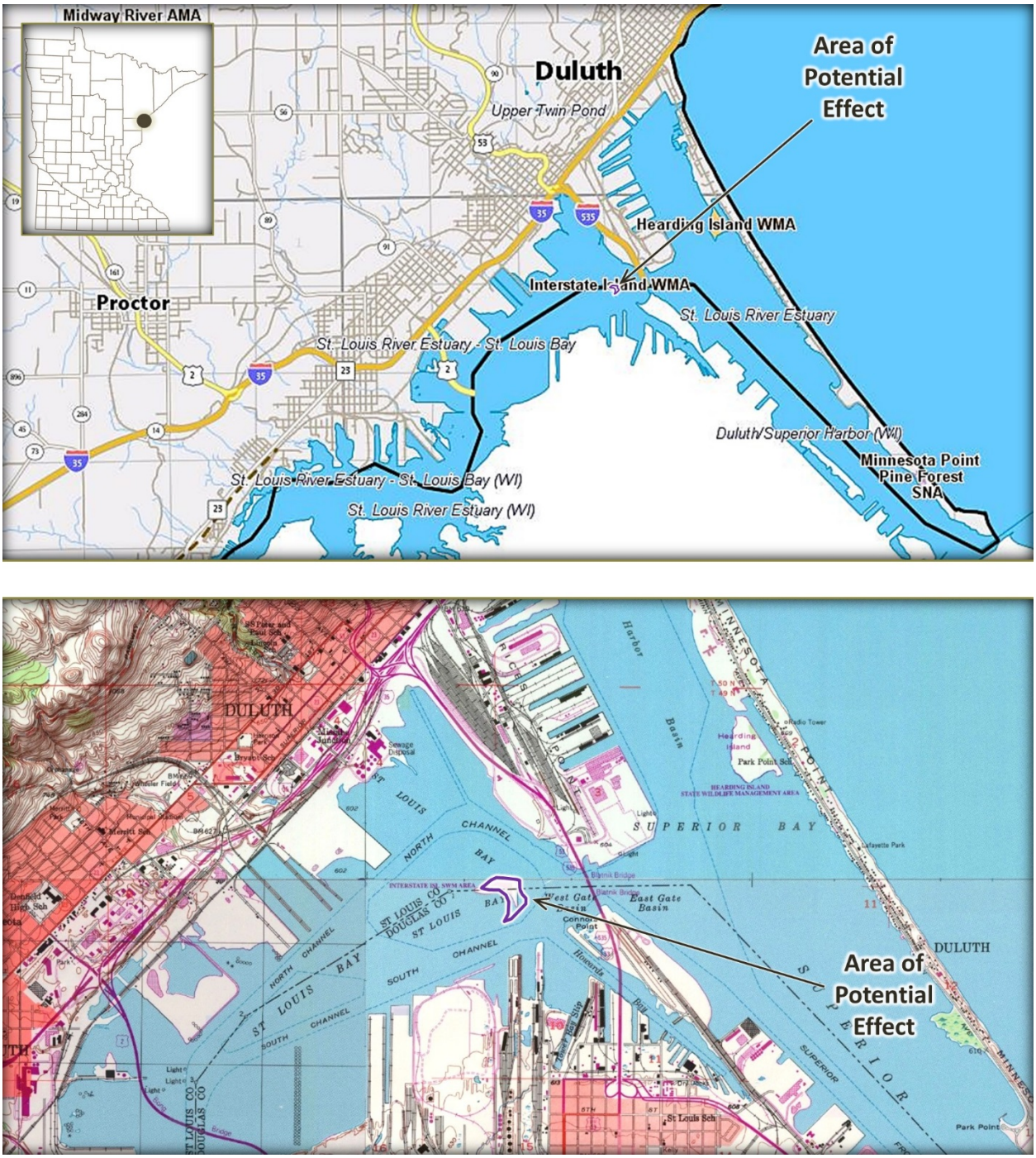


Figure 1. Area of Potential Effect, Interstate Island Habitat Restoration

Above: MnDNR Landview Map;
scale approximately 1:120,000

Below: USGS Duluth and Superior Quadrangles, 7.5 minute series; 10-foot contours;
scale approximately 1:24,000

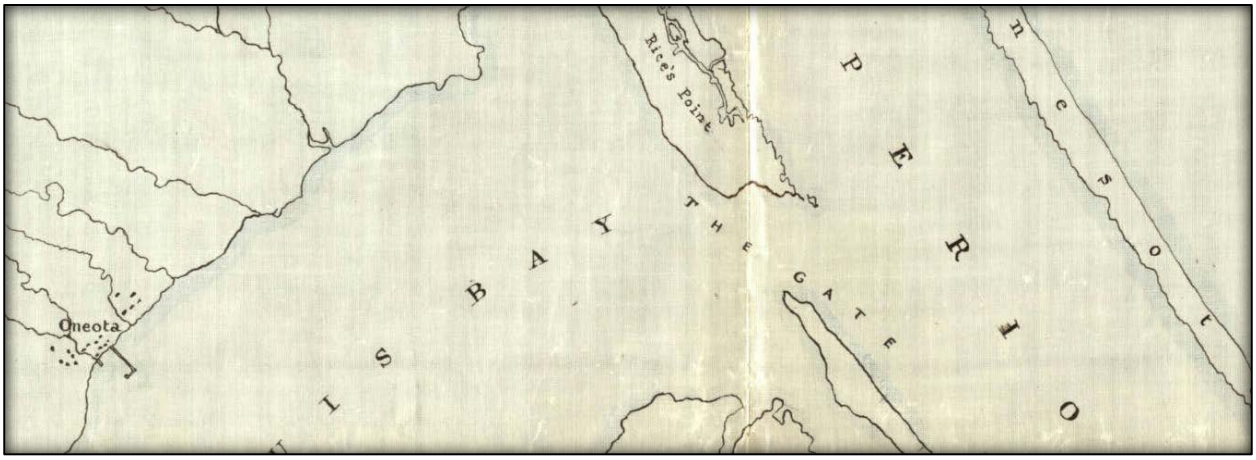


Figure 2. 1861-3 Survey of the St. Louis River Estuary

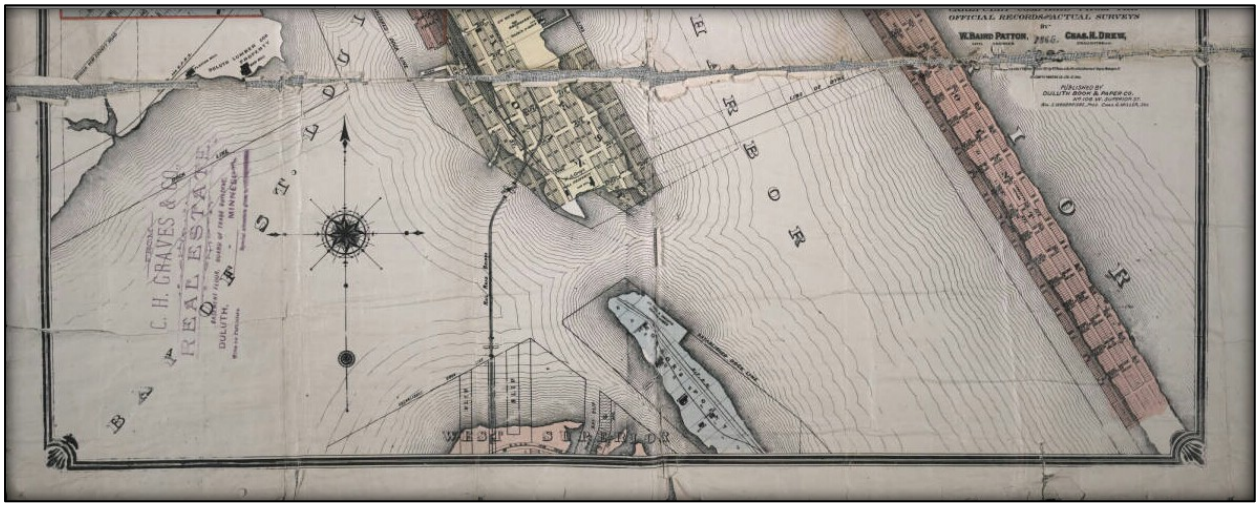


Figure 3. 1886 Map with the Northern Pacific Railroad Trestle in Place

Figure 4. 1921 Map Depicting the Trestle, but Showing no Evidence of Interstate Island

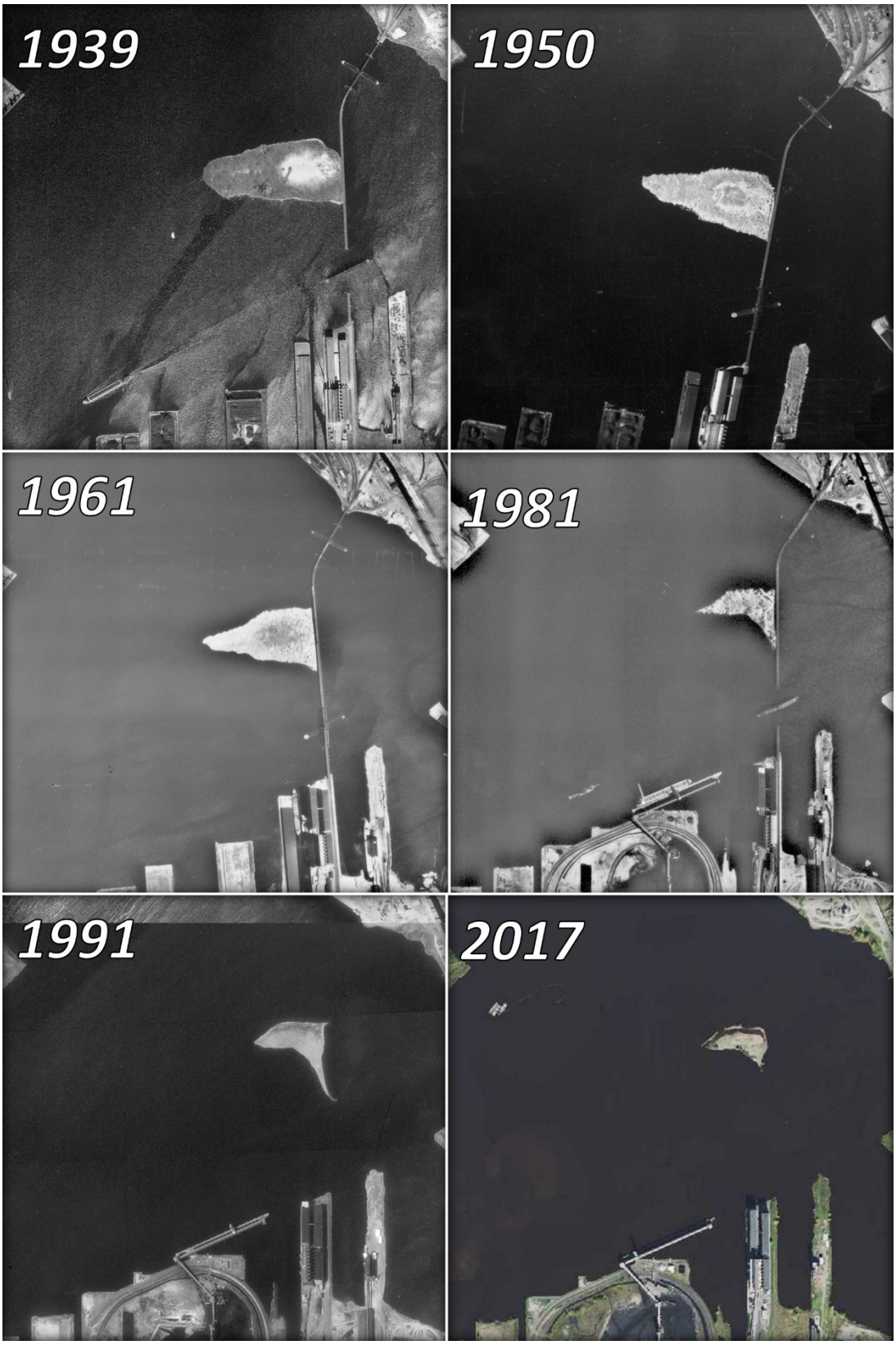


Figure 5. 1939-2017 Aerial Images Depicting the Trestle and the Island

Note the evolving outline of this artificial landform.

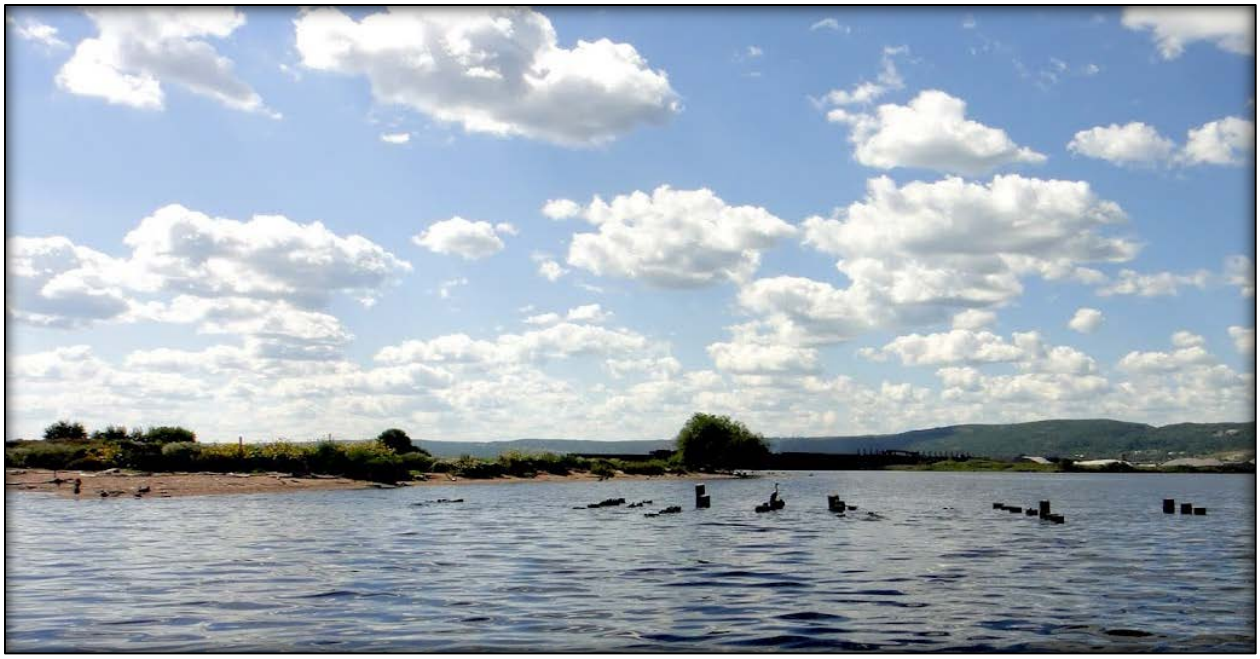


Figure 6. Railroad Trestle Pilings near the Eastern Shore of Interstate Island, 2011
Photograph by Pat Collins, USFWS.

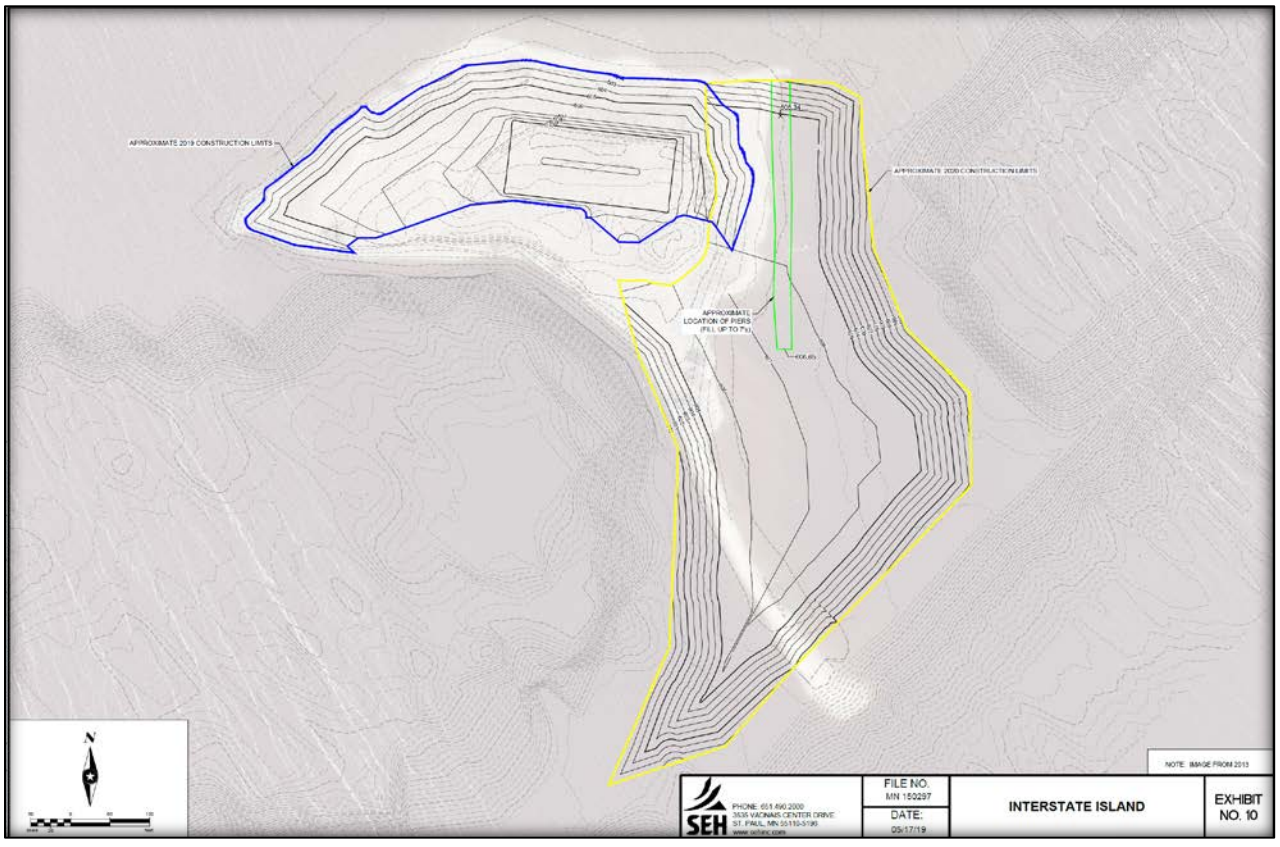


Figure 7. Railroad Trestle Pilings Relative to the Interstate Island Habitat Restoration
Present location of pilings outlined in green.

REQUEST FOR MIDWEST RHPO NHPA CLEARANCE

For Undertakings that have the Potential to Cause Effects on Historic Properties

Project Background: Common Terns & Piping Plovers : Critical Habitat Rest.
Project Name: Interstate Island - SLRE Project Type: Dredge Spoil Island Enhancement
County: St. Louis / Douglas State: MN/WI On USFWS land? Yes ☐ No ☒
USFWS Program: Coastal If Other, please name: _____
Project Location: Township(s) 49 ☒N ☐S, Range(s) 14 ☐E ☒W, Section(s): 3 & 4
Total Project Area Size (in Acres): 5 If road/trail, (linear ft, L and W): _____
USFWS Project Leader: Ted Koehler Station: Ashland/FWCO Phone #: 715 682 6185
If there is a Governmental/NGO partner(s), please name: MN Land Trust, WI DNR, MN DNR

Mandatory Attachments (on separate sheets):

1. USGS topographical map and aerial photo, ensuring that the project boundaries are exact.
2. Details of anticipated project activities, i.e. ground/building disturbance (add maps as necessary)
3. Only the relevant sections of design drawings showing soil disturbance boundaries (e.g. planviews)
4. Landuse history and environmental setting of the project area (add maps as necessary)

☑ **Check here if you have done any informal consultation(s) outside the USFWS** (if not, check here ☐)
If so, did you talk with SHPO? Tribes? Did you consult any database with known surveys or sites?
Please attach any information you have regarding your outside informal consultation(s).

☐ **Check here if there has been a field survey done in the project area already** (if not, check here ☑)
If so, who conducted it and when? Did they find any buildings/sites? Please see the next section.
Please attach any information/report(s) you have regarding any previous field survey(s).

☐ **Check here if there are known buildings/sites* in the project area** (if not, check here ☑)
*Sites are such places as artifact scatters, mounds or earthworks, cemeteries, privy pits, old foundations, ruins, bridges, dams, water control structures, historic roads/trails/fences, and trash pits/piles.

Information needed to be furnished to RHPO if there are known buildings/sites in the project area:

1. Age of building(s)/site(s) or date(s) built: _____ RPI # or State #(s) _____
2. **Attach** ground level photographs of both inside and outside of buildings/sites.
3. **Attach** close-up aerial photo or a sketch map illustrating the placement of the buildings/sites in the project area, key the ground photos to the aerial photo/sketch map.
4. **Attach** detailed descriptions of the buildings/sites with emphasis on their size, floor plans and architectural elements. Individually, what kind of physical shape are they in (good, fair or poor)?

Submitted by: Ted Koehler Date: 04/26/2019 Phone #: 715-682-6185
If applicable, submit this form with the Environmental Action Statement (EAS) or NEPA Checklist

RHPO Only **********

Investigation

☒ No Field Survey Needed
☐ Field Survey Done
- ☐ Phase I (ARPA# _____)
- ☐ Phase II (ARPA# _____)
- ☐ Phase III (ARPA# _____)

**Final Finding by Regional Director via RHPO*

☒ No Potential Effect. ☐ No site/building(s) in APE. No Effect.
☐ Site/Building(s) present, but none are Historic Properties. No Effect.
☐ Historic Property(ies) present, but No Effect/No Adverse Effect.
☐ Historic Property(ies) present, Adverse Effect, Resolved with MOA.
Justify Finding: Artificial landscape reviewed by MNDNR in 2012, no potential, SHPO concurred

☐ Stipulations _____

James E. Myster, USFWS Midwest RHPO — 5/1/19 (Date) — RHPO Project #

*Although the project has been cleared, inadvertent discoveries are still possible. If so, please stop and contact the RHPO at 612-713-5439.

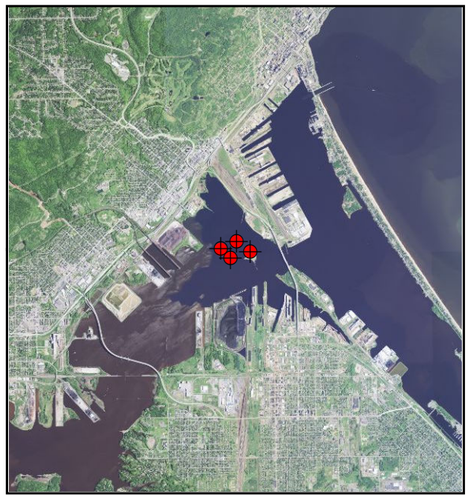
Attachment F
Geotechnical Information

Legend

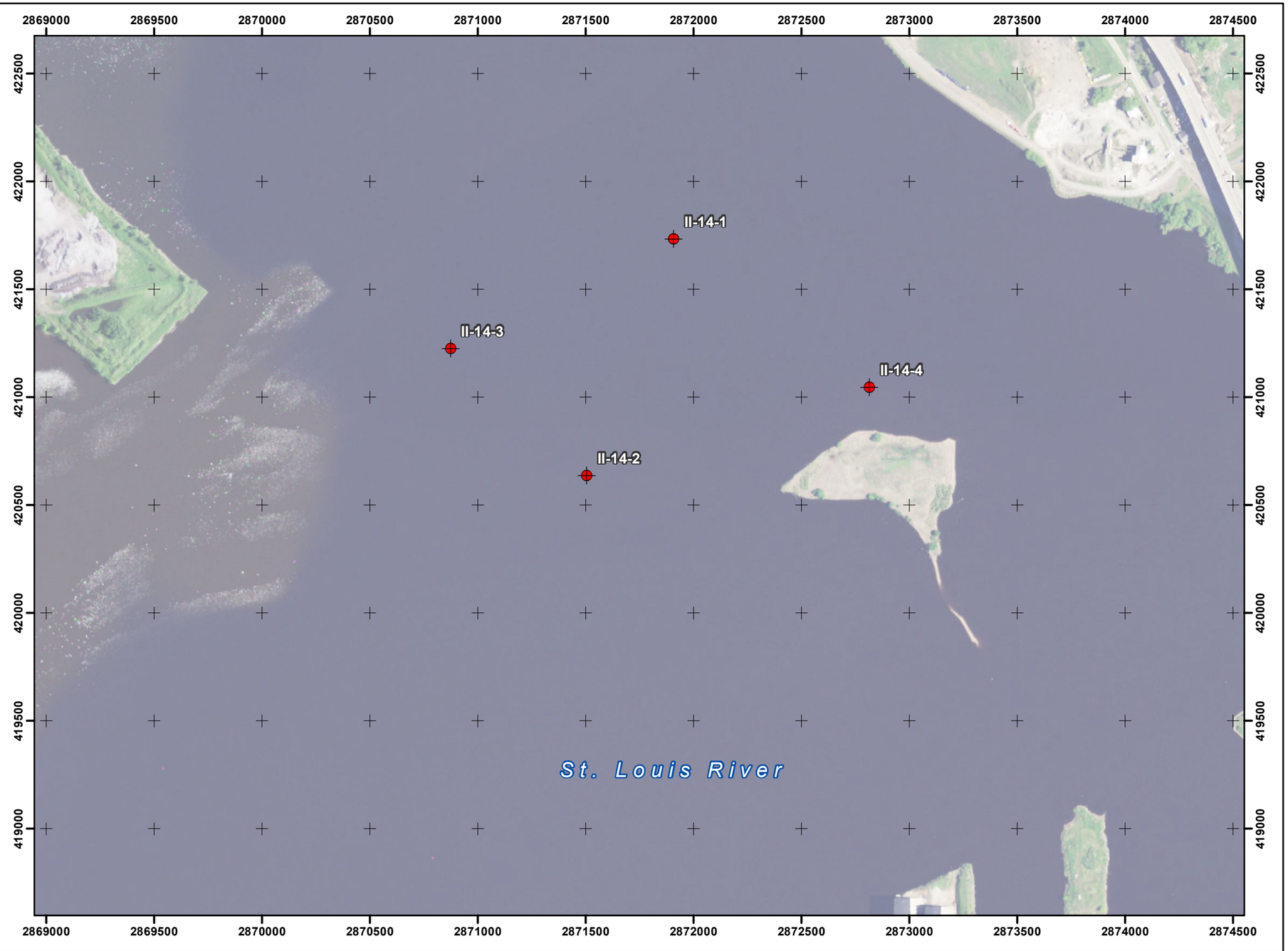
As Drilled Boring Locations

Boring Number	Northing	Easting
II-14-1	421,735.0	2,871,907.0
II-14-2	420,638.0	2,871,505.0
II-14-3	421,229.0	2,870,874.0
II-14-4	421,049.0	2,872,815.0

Notes:
1. Cooridnates ollected during drilling using a Trimble Geo 7X hand-held global positioning system (GPS) receiver.



1 in = 10,000 feet



0 500 1,000 1,500 2,000 Feet

1 inch = 500 feet

N W E S

Projected CoordinateSystem: NAD_1983_StatePlane_Minnesota_North_FIPS_2201_Feet
Background Image: http://gis.apfo.usda.gov/arcgis/services/NAIP/Minnesota_2013_1m_NC/ImageServer

06NOV2014 O:\GIS\1409850_21st Ave_as drilled borings.mxd CEF

United States Army Corps of Engineers

FY14 St. Louis River Area of Concern
Geotechnical Investigation - Specific Area of Interest
(W912P6-14-D-0002), Delivery Order DC01

GEI Consultants

1409850

21ST AVENUE/INTERSTATE ISLAND RAP AS DRILLED BORING LOCATION DIAGRAM

DATE: JANUARY 2015

FIGURE 2

DRILLING LOG

DIVISION	USACE
INSTALLATION	Detroit District
SHEET	1 OF 4 SHEETS
1. PROJECT	FY14 SLRAOC - Interstate Island
2. LOCATION (Coordinates or Station)	MN State Plane North NAD 83 N 421,735 E 2,871,907
3. DRILLING AGENCY	Strata Earth Services, LLC
4. HOLE NO. *(As shown on drawing title and file number)*	II-14-1
5. NAME OF DRILLER	B. McCarthy
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN (FT.)	
8. DEPTH DRILLED INTO ROCK (FT.)	
9. TOTAL DEPTH OF HOLE (FT.)	59.0
10. SIZE AND TYPE OF BIT	3-7/8" roller bit
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich-25
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 9/6/2014 COMPLETED 9/6/2014
17. ELEVATION TOP OF HOLE	+604.0 IGLD85
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+604.0	0.0		Barge Deck			
+602.7	1.3		Water - St. Louis River			
+595.0	9.0		Silt - trace clay and fine sand - brown - very loose - wet (ML)	100.0	1 9.0 11.0	WOH, WOH, WOH N = 0 WC = 90.8%
+592.5	11.5		Silt - some clay - trace to some fine to medium sand - occasional fine sand seams and layers - brown - very loose to loose - wet (MH)	65.0	2 12.5 14.5	WC = 66.3% ST: 12.5'-14.5'

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 604.0

Hole No. II-14-1

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 2 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
			Silt - some clay - trace to some fine to medium sand - occasional fine sand seams and layers - brown - very loose to loose - wet (MH) *(continued)*			
+589.0	15.0		Fine sandy silt - brown - very loose to loose - wet (ML)	75.0	3 15.0 17.0	WC = 24.9% ST: 15'-17'
				140.0	4 17.5 18.0	WOH, WOH, WOH N = 0 WC = 33.9%
				66.7	5 20.0 21.5	8, 2, 3 N = 5 Qp = 0.5 tsf WC = 35.0%
+582.0	22.0		Silt - some clay - trace to some fine sand - brown - very loose - wet (ML)	100.0	6 22.5 24.5	WC = 33.8% ST: 22.5'-24.5'
				80.0	7 27.5 29.0	WOH, WOH, WOH N = 0 Qp = 0.25 tsf WC = 31.9%
+573.0	31.0		Clayey silt - some fine sand - brown - soft to very stiff (CL)			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 604.0

Hole No. II-14-1

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 3 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
			Clayey silt - some fine sand - brown - soft to very stiff (CL) *(continued)*			
	33			100.0	8 32.5 34.5	Torvane (Su) = 0.25 to 1.0 tsf WC = 39.0% ST: 32.5'-34.5'
	34					
	35					
+568.0	36.0					
	36		Fine to medium sand - trace silt and fine to coarse gravel - brown - loose to medium dense - wet (SP)			
	37					
	38			100.0	9 37.5 39.5	ST: 37.5'-39.5'
	39					
	40					
	41					
	42					
	43			66.7	10 42.5 44.0	5, 5, 4 N = 9 WC = 22.6%
	44					
	45					
	46					
	47					
	48			60.0	11 47.5 49.0	4, 4, 6 N = 10 WC = 21.5%
	49					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 604.0

Hole No. II-14-1

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 4 OF 4 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
	51		Fine to medium sand - trace silt and fine to coarse gravel - brown - loose to medium dense - wet (SP) *(continued)*			
	52					
	53			46.7	12 52.5 54.0	7, 10, 10 N = 20 WC = 20.9%
	54					
	55					
	56					
	57					
	58			66.7	13 57.5 59.0	11, 12, 12 N = 24 WC = 22.0%
+545.0	59.0					
	60		End of Boring Boring advanced to 57.5 feet with rock bit and drilling fluid HW casing driven to 6.0 feet below river bottom Boring backfilled with cement bentonite grout			
	61					
	62					
	63					
	64					
	65					
	66					
	67					

Hole No. II-14-2

DRILLING LOG	DIVISION: USACE	INSTALLATION: Detroit District	SHEET 1 OF 3 SHEETS

1. PROJECT: FY14 SLRAOC - Interstate Island	10. SIZE AND TYPE OF BIT: 3-7/8" roller bit
2. LOCATION (Coordinates or Station): MN State Plane North NAD 83 N 420,638 E 2,871,505	11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*
3. DRILLING AGENCY: Strata Earth Services, LLC	12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich-25
4. HOLE NO. *(As shown on drawing title and file number)*: II-14-2	13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN: DISTURBED / UNDISTURBED
5. NAME OF DRILLER: B. McCarthy	14. TOTAL NUMBER CORE BOXES
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.	15. ELEVATION GROUND WATER
7. THICKNESS OF OVERBURDEN (FT.)	16. DATE HOLE: STARTED 9/6/2014 COMPLETED 9/6/2014
8. DEPTH DRILLED INTO ROCK (FT.)	17. ELEVATION TOP OF HOLE: +604.0 IGLD85
9. TOTAL DEPTH OF HOLE (FT.): 37.0	18. TOTAL CORE RECOVERY FOR BORING: %
	19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+604.0	0.0		Barge Deck			
+602.7	1.3		Water - St. Louis River			
+597.0	7.0		Silt - some fine sand - trace to some wood and peat - brown - very loose - wet (ML)	40.0	1 7.0 9.0	1, WOH, 1, WOH N = 1 WC - 50.7%
+594.0	10.0		Organic clay - trace fine sand - occasional silty sand seams and layers - brown - very stiff to stiff (OH)	90.0	2 10.0 12.0	Torvane (Su) = 1.5 tsf to 0.5 tsf WC = 54.5% ST: 10'-12'
+591.5	12.5		Fine to medium sand - trace to some silt - brown - wet (SP-SM)	100.0	3 12.5 14.5	WC = 25.1% ST: 12.5'-14.5'

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 604.0

Hole No. II-14-2

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
			Fine to medium sand - trace to some silt - brown - wet (SP-SM) *(continued)*			
+589.0	15.0					
	15		Fine sand - trace silt - brown - loose - wet (SP)	53.3	4 15.0 16.5	3, 2, 3 N = 5 WC = 29.8%
	16					
	17					
				53.3	5 17.5 19.0	2, 2, 3 N = 5 WC = 24.8%
	18					
	19					
	20			50.0	6 20.0 22.0	3, 3, 4, 3 N = 7 WC = 22.4%
	21					
	22					
	23					
	24					
	25			53.3	7 25.0 26.5	3, 5, 4 N = 9 WC = 29.6%
	26					
	27					
+576.0	28.0					
	28		Fine to medium sand - trace silt and fine gravel - brown - medium dense - wet (SP)			
	29					
	30			53.3	8 30.0 31.5	4, 6, 7 N = 13 WC = 30.6%
	31					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 604.0

Hole No. II-14-2

PROJECT FY14 SLRAOC - Interstate Island

INSTALLATION Detroit District

SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
	33		Fine to medium sand - trace silt and fine gravel - brown - medium dense - wet (SP) *(continued)*			
	34					
	35			55.0	9 35.0 37.0	6, 6, 5, 5 N = 11 WC = 15.6%
	36					
+567.0	37.0					
	37		End of Boring Boring advanced to 35.0 feet with rock bit and drilling fluid HW casing driven to 8.0 feet below river bottom Boring backfilled with cement bentonite grout			
	38					
	39					
	40					
	41					
	42					
	43					
	44					
	45					
	46					
	47					
	48					
	49					

DRILLING LOG

DIVISION	USACE
INSTALLATION	Detroit District
SHEET	1 OF 3 SHEETS
1. PROJECT	FY14 SLRAOC - Interstate Island
2. LOCATION (Coordinates or Station)	MN State Plane North NAD 83 N 421,229 E 2,870,874
3. DRILLING AGENCY	Strata Earth Services, LLC
4. HOLE NO. *(As shown on drawing title and file number)*	II-14-3
5. NAME OF DRILLER	B. McCarthy
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN (FT.)	
8. DEPTH DRILLED INTO ROCK (FT.)	
9. TOTAL DEPTH OF HOLE (FT.)	39.5
10. SIZE AND TYPE OF BIT	3-7/8" roller bit
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*	
12. MANUFACTURER'S DESIGNATION OF DRILL	Diedrich-25
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN	DISTURBED: UNDISTURBED:
14. TOTAL NUMBER CORE BOXES	
15. ELEVATION GROUND WATER	
16. DATE HOLE	STARTED 9/6/2014 COMPLETED 9/6/2014
17. ELEVATION TOP OF HOLE	+604.0 IGLD85
18. TOTAL CORE RECOVERY FOR BORING	%
19. SIGNATURE OF INSPECTOR	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOVERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+604.0	0.0		Barge Deck			
+602.7	1.3		Water - St. Louis River			
+594.5	9.5		Silt - some clay - trace fine to medium sand - occasional silt seams and layers - brown - soft to stiff (MH)	100.0	1 9.5 11.5	WOH, WOH, WOH, WOH N = 0 Qp = 0.25 tsf WC = 71.8%
				100.0	2 12.5 14.5	Torvane (Su) = 0.75 tsf WC = 70.6% ST: 12.5'-14.5'

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE: 604.0

Hole No. II-14-3

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
			Silt - some clay - trace fine to medium sand - occasional silt seams and layers - brown - soft to stiff (MH) *(continued)*			
	15			100.0	3 15.0 17.0	WC = 36.6% ST: 15'-17'
+588.5	15.5		Silt - some fine to medium sand - trace to some clay - brown - loose (ML)			Torvane (Su) = 1.5 tsf at 15.5'
	16					
	17					
				66.7	4 17.5 19.0	3, 3, 3 N = 6 WC = 32.3%
	18					
	19					
+584.5	19.5		Clayey silt - trace to some fine sand - occasional fine sand and silt seams and layers - brown - very stiff - wet (CL-ML)			
	20			100.0	5 20.0 22.0	WC = 23.6% ST: 20'-22'
	21					
	22					
				75.0	6 22.5 24.5	Qp = 2.25 tsf Torvane (Su) = 2.5 tsf ST: 22.5'-24.5'
+581.0	23.0		Fine sand - trace silt - brown - loose - wet (SP)			WC = 24.8%
	24					
	25					
	26					
	27					
				53.3	7 27.5 29.0	4, 3, 3 N = 6 WC = 30.2%
	28					
	29					
	30					
+573.0	31.0		Silty clay - trace fine sand - brown - very soft to very stiff (CL)			

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 604.0

Hole No. II-14-3

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
			Silty clay - trace fine sand - brown - very soft to very stiff (CL) *(continued)*			
	33			100.0	8 32.5 34.0	1, WOH, 1 N = 1 Qp = <0.1 tsf WC = 40.8%
	34					
	35					
	36					
	37					
	38			100.0	9 37.5 39.5	Torvane (Su) = 1.0 tsf ST: 37.5'-39.5'
	39					
+564.5	39.5					
	40		End of Boring Boring advanced to 37.5 feet with rock bit and drilling fluid HW casing driven to 5.5 feet below river bottom Boring backfilled with cement bentonite grout			
	41					
	42					
	43					
	44					
	45					
	46					
	47					
	48					
	49					

DRILLING LOG

DIVISION: USACE

INSTALLATION: Detroit District

SHEET 1 OF 3 SHEETS

1. PROJECT: FY14 SLRAOC - Interstate Island
2. LOCATION (Coordinates or Station): MN State Plane North NAD 83 N 421,049 E 2,872,815
3. DRILLING AGENCY: Strata Earth Services, LLC
4. HOLE NO. *(As shown on drawing title and file number)*: II-14-4
5. NAME OF DRILLER: B. McCarthy
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED --- DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN (FT.)
8. DEPTH DRILLED INTO ROCK (FT.)
9. TOTAL DEPTH OF HOLE (FT.): 35.5
10. SIZE AND TYPE OF BIT: 3-7/8" roller bit
11. DATUM FOR ELEVATION SHOWN *(TBM or MSL)*
12. MANUFACTURER'S DESIGNATION OF DRILL: Diedrich-25
13. TOTAL NO. OF OVERBURDEN SAMPLES TAKEN — DISTURBED — UNDISTURBED
14. TOTAL NUMBER CORE BOXES
15. ELEVATION GROUND WATER
16. DATE HOLE — STARTED 9/5/2014 — COMPLETED 9/5/2014
17. ELEVATION TOP OF HOLE: +603.8 IGLD85
18. TOTAL CORE RECOVERY FOR BORING: %
19. SIGNATURE OF INSPECTOR

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+603.8	0.0		Barge Deck			
+602.5	1.3		Water - St. Louis River			
+598.3	5.5		Silt - some fine sand - trace wood and peat - brown to dark brown - very loose - wet (ML)	33.3	1 5.5 7.0	1, 1, 1 N = 2 WC = 47.0%
				53.3	2 7.5 9.0	1, 1, 1 N = 2 WC = 66.3%
+594.3	9.5		Silt - trace to some clay and fine sand - trace wood and peat - brown - very loose - wet (ML)			
				60.0	3 10.0 11.5	1, WOH, ! N = 1 WC = 61.2%
+591.8	12.0		Silty clay - trace fine sand - brown - very soft (CL)			
				33.3	4 12.5 14.0	WOH, WOH, 1 N = 1 Qp = <0.1 tsf WC = 31.6%

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 603.8

Hole No. II-14-4

PROJECT: FY14 SLRAOC - Interstate Island

INSTALLATION: Detroit District

SHEET 2 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
+589.3	14.5					
	15		Silt - some clay - trace fine sand - brown - stiff (OH)	100.0	5 15.0 17.0	Torvane (Su) = 0.5 tsf WC = 50.7% LOI = 6.9% ST: 15'-17'
	16					
+587.3	16.5					
	17		Wood and fibrous peat - occasional interbedded silt and silty clay seams and layers - dark brown and black (Pt)			
				50.0	6 17.5 19.5	WC = 305% LOI = 47.8% ST: 17.5'-19.5'
	18					
	19					
+584.3	19.5					
	20		Fine sand - some silt - trace to some clay - brown - loose - wet (SM)			
				65.0	7 20.0 22.0	2, 3, 5, 6 N = 8 WC = 22.7%
	21					
	22					
	23					
+580.3	23.5					
	24		Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to loose - wet (SP)			
	25			93.3	8 25.0 26.5	6, 10, 8 N = 18 WC = 12.4%
	26					
	27					
	28					
	29					
	30			73.3	9 30.0 31.5	7, 4, 4 N = 8 WC = 22.1%
	31					

DRILLING LOG (Cont Sheet)

ELEVATION TOP OF HOLE 603.8

Hole No. II-14-4

PROJECT FY14 SLRAOC - Interstate Island

INSTALLATION Detroit District

SHEET 3 OF 3 SHEETS

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS *(Drilling time, water loss, depth weathering, etc., if significant)* g
	33		Fine to medium sand - trace silt and fine to coarse gravel - brown - medium dense to loose - wet (SP) *(continued)*			
	34			66.7	10 34.0 35.5	7, 6, 7 N = 13 WC = 20.7%
	35					
+568.3	35.5					
	36		End of Boring Boring advanced to 34.0 feet with rock bit and drilling fluid HW casing driven to 9.5 feet below river bottom Boring backfilled with cement bentonite grout			
	37					
	38					
	39					
	40					
	41					
	42					
	43					
	44					
	45					
	46					
	47					
	48					
	49					

Attachment G
SEH Design Memorandum

Building a Better World for All of Us®

MEMORANDUM

TO: Natalie White

FROM: Jeremy Walgrave, PE, CFM (Lic. MN)

DATE: August 13, 2019

RE: Interstate Island Design
SEH No. 150297 14.00

The Interstate Island habitat restoration project is being proposed to further develop habitat for terns in the St. Louis River Estuary. This particular type of habitat requires a clean sand surface, no vegetation, and dry conditions. The clean sand (free of organics) and dry conditions help to keep the area free of vegetation.

The purpose of this memorandum is to describe the evaluations, assumptions, and design guidance that was used to develop the Interstate Island construction plans.

The project proposes to import clean sand or dredge sand to the island in order to build up the elevation of the island above the current and potential future high water levels. Additional rock piles, rock berms, and fencing will be incorporated into the project.

Interstate Island was studied by USACE – Detroit District as part of the 21st Avenue West project. This included geotechnical analysis and hydrodynamic and sediment transport modeling. USACE determined that the Interstate Island flats area is suitable for placement of dredge materials and island creation based on geotechnical analysis and the demonstrated stability of Interstate Island in the <80 years since it was created (USACE – Detroit District, 2016). Geotechnical analysis is documented in GEI Consultants Inc., 2015.

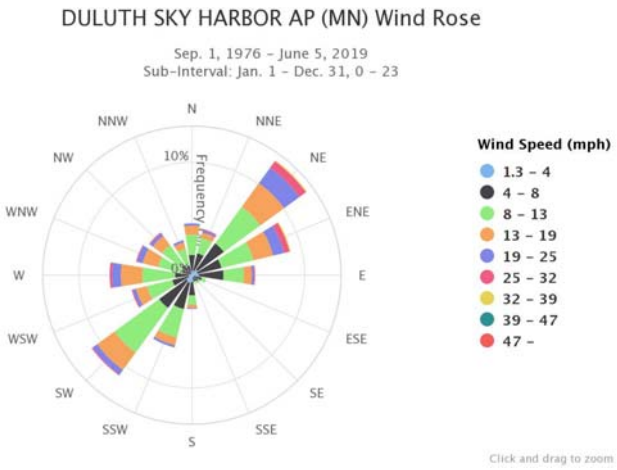
Due to the location of the project and nature of the habitat type, the island will be subjected to wind, wave, runoff, and ice erosional forces. Results from hydrodynamic and sediment transport modeling conducted by USACE for the 21st Ave West project found that Interstate Island is more susceptible to erosion from riverine flow than from erosion due to wave and storm action (Johnson, 2019). The overall design is intended to account for these forces by oversizing portions of the island and letting the island evolve over time to a state of equilibrium. As water levels vary over time, there will be periods where the island shoreline shifts to a new equilibrium.

It should also be noted that as a result of fill being placed on the island, soil settlement should be expected. The total settlement was estimated by the USACE – Detroit District as part of the 21st Ave. W. Study to be 5-7 inches of settlement if 4 feet of fill were placed. The greatest amount of settlement would occur in the areas with the most fill, while areas receiving minimal fill may not experience any settlement.

The project is unique in terms of erosion and sediment control. Final stabilization will be achieved by compacting the imported sand and placing rock berms, rock piles, and fencing rather than using vegetation cover.

Wind Direction and Velocity

The wind rose for Sky Harbor Airport was obtained from the Midwestern Regional Climate Center, which was based on wind direction and wind speed data collected at the Sky Harbor Airport from 1976 to 2019. This is the closest station to the Interstate Island project site. The highest velocity and highest frequency wind forces come from the southwest and the northeast. The island is somewhat protected from the northeast winds by Rice's Point (small fetch). The worst case scenario in terms of wind and waves is from the southwest, because there is a large fetch and some of the highest velocity and winds come from this direction.



Hydrodynamic modeling of the St. Louis River was conducted by the USACE – Detroit District for the 21st Avenue West Project in 2016. The modeling domain included Interstate Island.

The north and east portions of the island are least susceptible to wave erosion, because the fetch is relatively short and the areas under water and adjacent to these areas are relatively shallow (1-3 feet deep). In addition, several old wooden pilings exist along the east edge of the island, which provides additional energy dissipation. The southwest portion of the island is the most susceptible to wave erosion, because the fetch is greater than two miles and the water depth is greater than 30 feet adjacent to the southwest shoreline.

Figure 29 from the USACE 21st Avenue West Study shows the modeled wave heights for two major wind events. Figure 29A represents an event with winds from the northeast direction and Figure 29B represents an event with winds from the southwest.

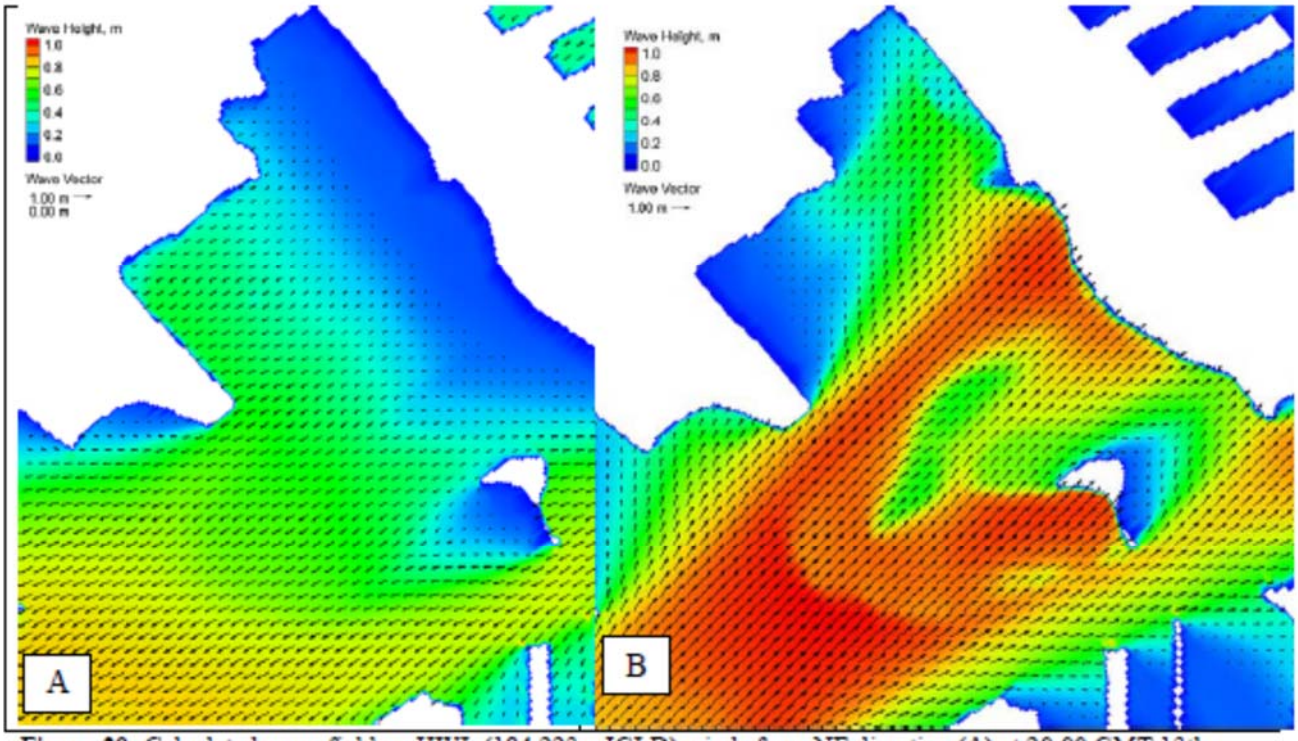


Figure 29: Calculated wave field on HWL (184.223m IGLD) winds from NE direction (A) at 20:00 GMT 13th November 2010 speed of 27kts. Winds from the SW direction (B) at 05:00 GMT 27th October 2010 speeds of 31 kts.

Stratigraphy

A geotechnical investigation was conducted at Interstate Island in support of the USACE 21st Avenue West project. The data is contained in the GEI Consultants, Inc, 2015 and is summarized in Appendix C Geotechnical Investigation of USACE – Detroit District, 2015. The following materials underlay Interstate Island, based on investigation to 75' below ground surface (USACE – Detroit District, 2015):

- Dredged fill material.
- Native silt or clayey silt (ML) – 5-30' deep layer
- Native high plasticity silt or clayey silt (MH) – laterally discontinuous, but may be present in an 8 to 12.5' deep layer
- Native sand (SP)

Sediment Transport Modeling

USACE conducted sediment transport modeling (USACE – ERDC, 2015) for three scenarios to predict erosion rates of both placed and native material surrounding Interstate Island once the 21st Avenue West shoals were built (which is the current pre-construction state):

- High energy event (4-month) – 30.5 knot wind speed, 20,300 cfs peak flow (April to July 2008 including snow melt)
- High river flow – 13.9 knot wind speed, 28,200 cfs river flow (July 1999)

- High wind event – 31.7 knot wind speed, 12,948 cfs river flow (October to November 2010)

For each of the latter two scenarios, bed erosion was predicted under average, high water, and low water conditions. Results indicate that while both erosion and deposition does occur around the shoreline and vicinity of Interstate Island, the magnitude of change is limited (-8 cm to +5 cm for the high energy event). Results also indicate that net erosion is greater during high water level conditions due to the formation of larger waves which cause wave-induced bed shear stresses. Figure 4-13 from the sediment transport modeling report (USACE – ERDC, 2015) presents the sediment transport results for the high energy event, Figure C-19 for the high river flow event at high water level, and Figure C-31 for the high wind event at high water level. Note that the predicted bed elevation changes are for a combination of material placed in the 21st Avenue West shoals and native material.

Figure 4-5 Color contoured plot of the change in bed elevation in Block 10 for the shoals design.

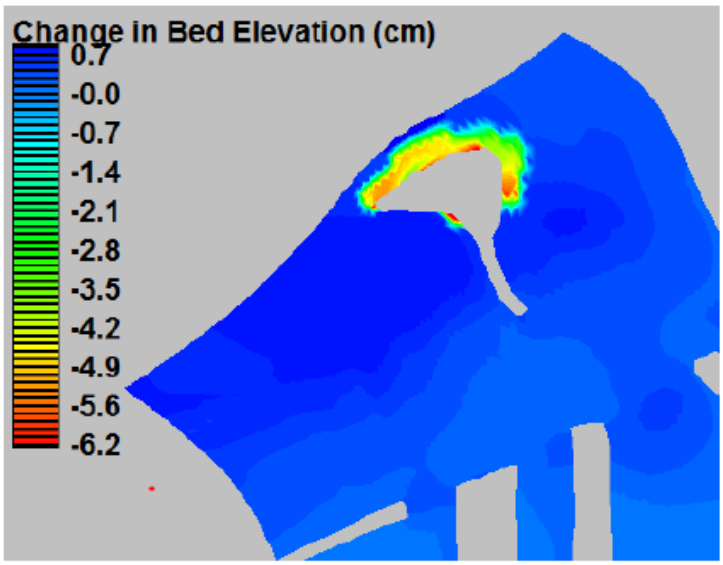


Figure C-19 Color contoured plot of the change in bed elevation in Block 10 for the HWL for the July 1999 event

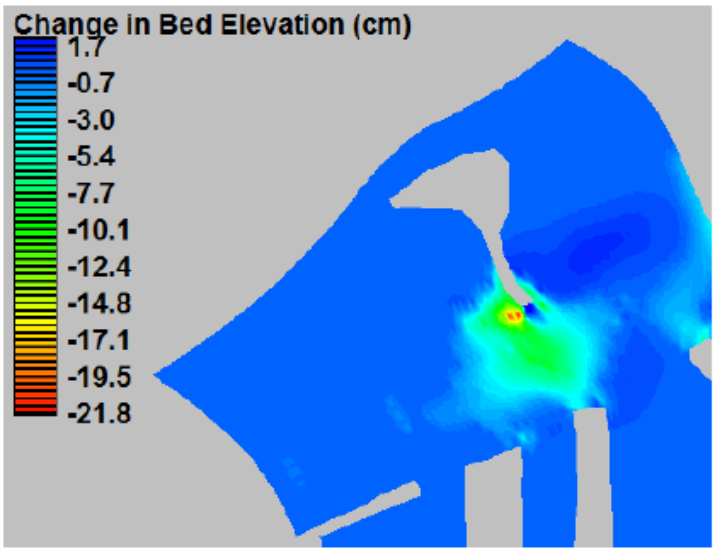


Figure C-31 Color contoured plot of the change in bed elevation in Block 10 for the HWL for the October – November 2010 event

Erosion and Sediment Control (wind, water, waves, ice)

Temporary (during construction)
Sediment logs will be used as perimeter control around the area to be disturbed. Steel fence posts will be required instead of the normal wood stakes that are used to stabilize sediment logs. The steel fence posts will be driven a minimum of 2 feet into the ground. This approach is being taken because of the varying water levels that could be encountered and the dynamic nature of the shoreline.

Permanent
Precipitation - erosion and sediment transport off of the island will be minimized by compacting the sand. Additional rock piles and riprap at various locations on the island will also reduce the potential for erosion and sediment transport.

Wave action – some sand material will move after placement, which is intentional. The sand will be placed with a resulting slope of 1V:3H at the shoreline, but the sand will not be actively worked to achieve the final slope. It is expected that wave action will move the sand to an equilibrium slope of approximately 1V:10H. For this purpose, the shoreline will be built approximately 15 feet wider than the expected equilibrium shoreline location. This shoreline area and beach slope would be expected to shift as water levels change over time. Figure 9-C-5 below, which is from the USACE-Island Design Guidance, illustrates the anticipated island evolution.

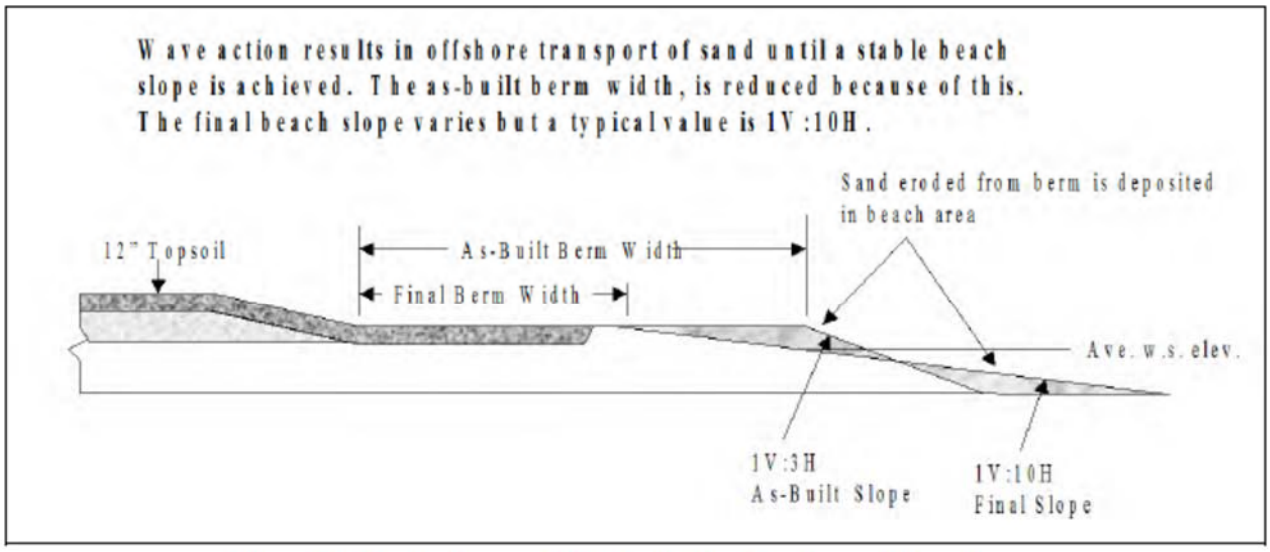


Figure 9-C-5. Reshaping of the Islands Shoreline Due to Wave Action

Wind erosion – the island is exposed to wind and will be constructed of clean sand, which make wind erosion a potential. Rock piles, rock berms, and fencing will be used on the island to break up the wind energy and minimize erosion as a result of wind.

Ice erosion – the St. Louis River Bay freezes over every winter. The island will be exposed to ice forces annually, which may cause some movement of the shoreline. This will vary from year to year based on the water levels.

Island Construction – two gradations of sand are being used for the project to prevent the removal of sediments and foster breeding grounds for terns:

- Nesting Area – Coarse Grain Sand (MNDOT 3149-12)
- Island Augmentation – Imported clean sand or dredge materials (freely draining, free of organics)

References

GEI Consultants, Inc. 2015. Subsurface Investigation Report, FY14 St. Louis River Area of Concern Geotechnical Investigation – 21st Avenue/Interstate Island.

Johnson. 2019. Personal communication with Esther Johnson, PE, Assistant Chief - Engineering & Technical Services, USACE, July 17, 2019.

USACE. 2012. Upper Mississippi River Restoration Environmental Management Program Environmental Design Handbook. Chapter 9 – Island Design.

USACE – Detroit District. 2016. 21st Avenue West Restoration (RAP) Design Document. Duluth, MN.

USACE – ERDC. 2015. Sediment Transport Modeling for the St. Louis River Estuary 21st Ave West Shoals and Islands Designs. Letter Report.

Midwestern Regional Climate Center. Wind Rose for Duluth Sky Harbor Airport. Elevation 610.

jjw

c: Dan Hinzmann, PE
Wayne Wambold, PE

\\sehdu\projects\ko\m\mnlan\150297\5-final-dsgn\50-final-dsgn\50-hydro\memo-13aug2019-final.docx